



# Solar-Geophysical Data prompt reports

Data for November and December 2001

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

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NATIONAL ENVIRONMENTAL SATELLITE,  
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DATA CENTER

BOULDER,  
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JANUARY 2002 NUMBER 689 - Part I

# **Solar-Geophysical Data prompt reports**

Data for November and December 2001

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## **NATIONAL GEOPHYSICAL DATA CENTER**

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Subscription information is on the inside back cover.

# SOLAR-GEOPHYSICAL DATA

Number 689

(Issued in Two Parts)

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## CONTENTS

<b>PART I (PROMPT REPORTS)</b>	<b>Page</b>
DETAILED INDEX FOR 2001 .....	2
DATA FOR DECEMBER 2001 .....	3- 47
DATA FOR NOVEMBER 2001 .....	49-160
<b>PART II (COMPREHENSIVE REPORTS)</b>	<b>Page</b>
DETAILED INDEX FOR 2001 .....	2
DATA FOR JULY 2001 .....	3-31

## DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	MAY 01	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>A. SOLAR AND INTERPLANETARY</b>									
A.1	Sunspot Drawings	683A 52	684A 46	685A 54	686A 56	687A 58	688A 54	689A 56	
A.2aa	International Provisional Sunspot Numbers	682A 27	683A 27	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29
A.2c	American Sunspot Numbers	682A 27	683A 27	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29
A.3a	Mt. Wilson Magnetograms	683A 52	684A 46	685A 54	686A 56	687A 58	688A 54	689A 56	
A.3b	Sunspot Mag Class and Regions	683A102	684A 93	685A101	686A105	687A105	688A102	689A103	
A.3c	Kitt Peak Magnetograms	683A 52	684A 46	685A 54	686A 56	687A 58	688A 54	689A 56	
A.3d	Mean Solar Magnetic Field (Stanford)	682A 37	683A 41	684A 37	685A 45	686A 49	687A 45	688A 45	689A 45
A.3e	Stanford Magnetograms	683A 52	684A 46	685A 54	686A 56	687A 58	688A 54	689A 56	
A.4	H-alpha Filtergrams	683A 52	684A 46	685A 54	686A 56	687A 58	688A 54	689A 56	
A.5d	Photometric Ca II Faculae (San Fernando)	Jan 92-Dec 96 in 631B 22; 1997-1998 in 663B 66							
A.6c	Stanford Solar Mag Field Synoptic Maps	683A 46	684A 40	685A 48	686A 52	687A 48	688A 48	689A 50	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps	683A 51	684A 45	685A 53	686A 55	687A 56	688A 53	689A 55	
A.6f	Active Prominences and Filaments	687B 35	688B 50	689B 29					
A.6g	Sac Peak Coronal Line Synoptic Maps	683A 48	684A 42	685A 50	686A 54	687A 52	688A 50	689A 56	
A.6h	Photometric White Light (San Fernando)	Jul-Dec 96 630B 32; 1997-1998 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	683A 52	684A 46	685A 54	686A 56	687A 58	688A 54	689A 56	
A.7j	Coronal Hole Daily Maps (NSO/KP)	683A 91	684A 84	685A 93	686A 95	687A 96	688A 93	689A 94	
A.7k	Coronal Index (Slovak Academy)	1939-1996 in 644B 28							
A.8aa	2800 MHz- Solar Flux (Penticton)	682A 27	683A 27	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	682A 27	683A 27	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29
A.8g	Adjusted Daily Solar Fluxes (Learmonth)	682A 27	683A 27	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29
A.10g	Nancay Radioheliograph - 164&327 MHz	683A147	684A155	685A134	686A154	687A171	688A159	689A144	
A.10h	Nobeyama Radioheliograph Maps - 17 GHz	683A 96	684A 88	685A 95	686A 99	687A100	688A 96	689A 98	
A.11g	Solar X-ray GOES (graphs/event table)	687B 26	688B 42	689B 20					
A.11k	Solar UV NOAA-9	May 86-Dec 88 in 566B 84							
A.11l	Solar UV NIMBUS7	Nov 78-Oct 84 in 542B 82							
A.11m	Solar UV SOLSTICE (UARS)	Oct 91-Sep 94 in 607B 46							
A.11n	Solar YOHKOH Soft X-ray Images	683A 83	684A 76	685A 85	686A 87	687A 88	688A 85	689A 86	
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.12g	Solar Particles (GOES-7)	682A 4	683A 4	684A 4	685A 4	686A 4	687A 4	688A 4	689A 4
A.12h	Interplanetary Particles (SAMPEX)	Jul 95-Dec 96 in 632B 22; Jan-Dec 97 in 647B 33							
A.13e	Solar Plasma (IMP-8)	687B 36	688B 51	689B 31					
A.16c	ERBS, NOAA-9 & -10 Solar Irradiance	ERBS Oct 84-Jun 00 in 671B 36							
A.16d	UARS Solar Irradiance	Oct 91-May 2001 684B 26 - Complete Mission							
A.16e	VIRGO/SOHO Solar Irradiance	Jan 96-Sep 00 in 678B 46							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan 94 in 611A118							
A.17	IMP-8 Interplanetary Mag Field								
<b>C. SOLAR FLARE-ASSOCIATED EVENTS</b>									
C.1a	H-alpha Flares	682A 30	683A 30	684A 30	685A 30	686A 30	687A 31	688A 29	689A 32
C.1ba	H-alpha Flare Groups	687B 4	688B 4	689B 4					
C.1d	Flare Patrol Observations	687B 12	688B 16	689B 11					
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	687B 14	688B 18	689A 13					
C.3	Radio Bursts Fixed Frequency Selected	682A 36	683A 39	684A 35	685A 42	686A 43	687A 41	688A 40	689A 43
C.4	Radio Bursts Spectral	683A129	684A131	685A127	686A137	687A143	688A134	689A126	
C.6	Sudden Ionospheric Disturbances	683A127	684A128	685A126	686A133	687A140	688A131	689A123	
<b>D. GEOMAGNETIC EVENTS</b>									
D.1a	Geomagnetic Indices	683A158	684A166	685A144	686A164	687A182	688A166	689A151	
D.1ba	27-day Chart of Kp Indices	683A160	684A168	685A146	686A166	687A184	688A168	689A153	
D.1cb	Monthly Mean aa Indices	683A161	684A169	685A147	686A167	687A185	688A169	689A154	
D.1d	Principal Magnetic Storms	683A166	684A174	685A152	686A172	687A190	688A174	689A159	
D.1f	Sudden Commencements/Flare Effects	683A167	684A175	685A153	686A173	687A191	688A175	689A160	
D.1g	Equatorial Indices Dst	683A163	684A171	685A149	686A169	687A187	688A171	689A156	
D.1l	Polar Cap (PC) Index	683A164	684A172	685A150	686A170	687A188	688A172	689A157	
<b>F. COSMIC RAYS</b>									
F.1b	Cosmic Ray Neutron Cts (Climax)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1h	Cosmic Ray Neutron Cts (Thule)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1l	Cosmic Ray Neutron Cts (Kiel)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1n	Cosmic Ray Neutron Cts (Beijing)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1m	Cosmic Ray Neutron Cts (Haleakala)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1o	Cosmic Ray Neutron Cts (Moscow)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1p	Cosmic Ray Neutron Cts (Calgary)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
F.1r	Cosmic Ray Neutron Cts (Goose Bay)	683A150	684A158	685A136	686A156	687A174	688A161	689A146	
<b>H. MISCELLANEOUS</b>									
H.60	ISES Alert Periods	682A 20	683A 19	684A 20	685A 20	686A 19	687A 20	688A 19	689A 20

The entry "683A 52" under May 01, for example, means that the sunspot drawings for May 01 appear in SOLAR-GEOPHYSICAL DATA No. 683, 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 689 Part I

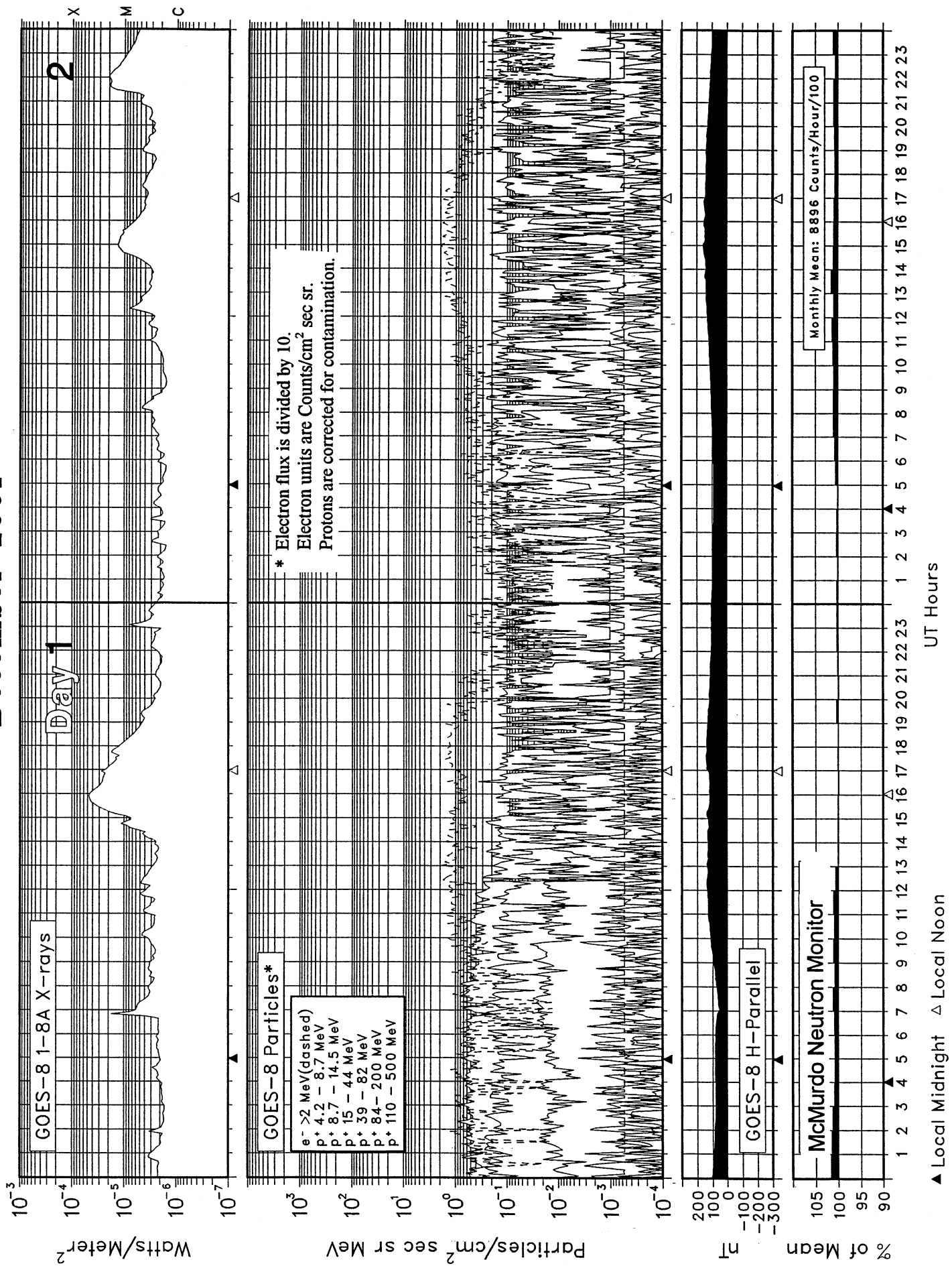
**DATA FOR DECEMBER 2001**

	Page
SOLAR-TERRESTRIAL ENVIRONMENT .....	4-19
Plots of GOES Satellite X-rays, Particles and Magnetometer Data with ground-based McMurdo Neutron Monitor Cosmic Rays	
ISES ALERT PERIODS (Advance and Worldwide) .....	20-26
SOLAR ACTIVITY INDICES	
Daily Sunspot Numbers (12 Months) .....	27
Daily 2800 MHz Solar Flux (12 Months) .....	28
Daily Solar Indices (Sunspot Numbers and Solar Flux) .....	29
Smoothed Observed and Predicted Sunspot Numbers .....	30
Graph and Table of Monthly Mean Sunspot Numbers 1950-present .....	31
SOLAR FLARES	
H-alpha Solar Flares .....	32-42
Intervals of No Flare Patrol (See 6-month late chart in Comprehensive Reports.)	
SOLAR RADIO EMISSION	
Selected Fixed Frequency Events .....	43-44
Selected Bursts (None reported.)	
STANFORD MEAN SOLAR MAGNETIC FIELD	
Table .....	45
Graph .....	46
GOES-8 Daily Electron Fluence .....	47

# SOLAR-TERRESTRIAL ENVIRONMENT

## December 2001

4  
Dec 01

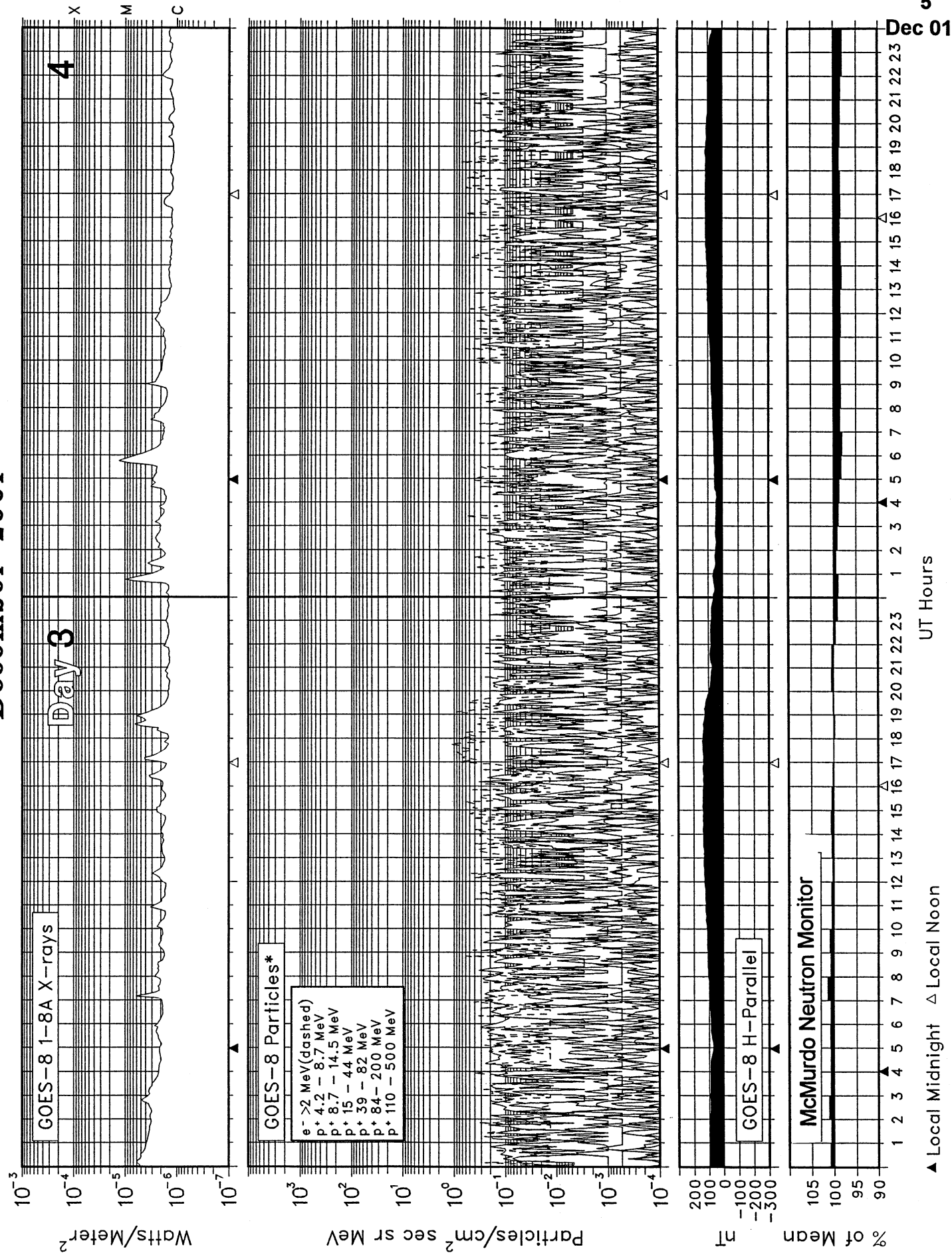


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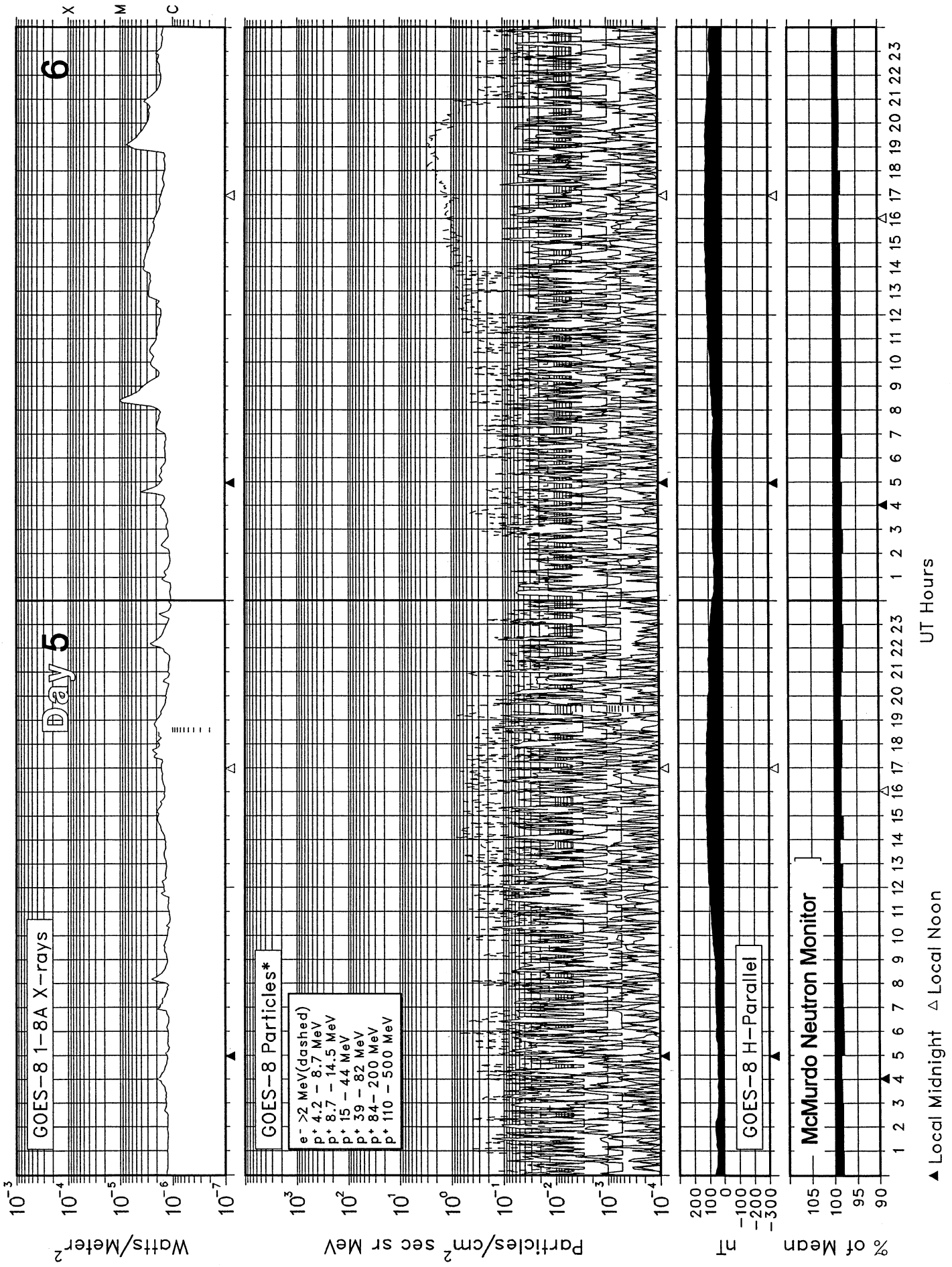
2

X  
M  
C

# SOLAR-TERRESTRIAL ENVIRONMENT December 2001



# SOLAR-TERRESTRIAL ENVIRONMENT December 2001



Day 5

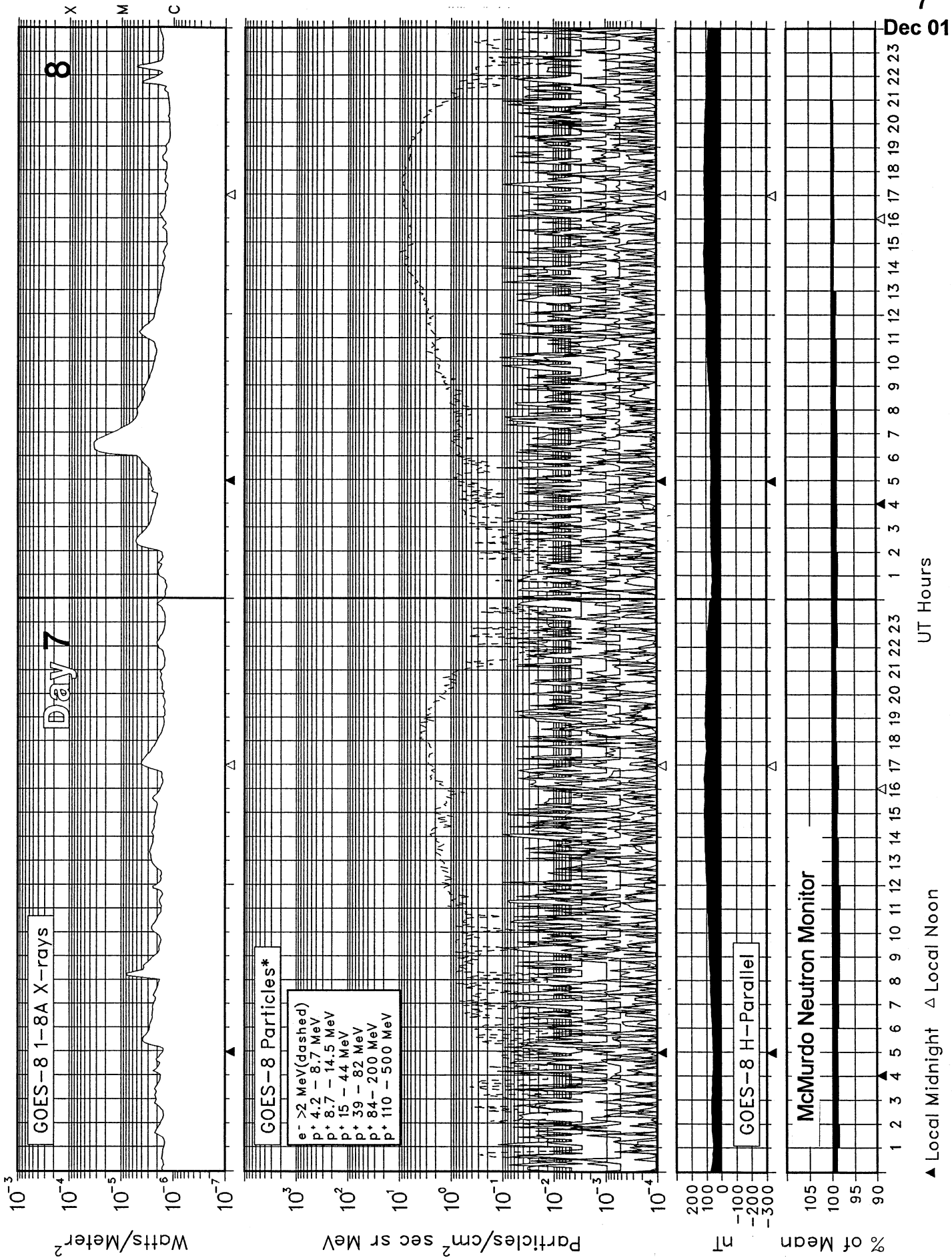
6

X  
M  
C

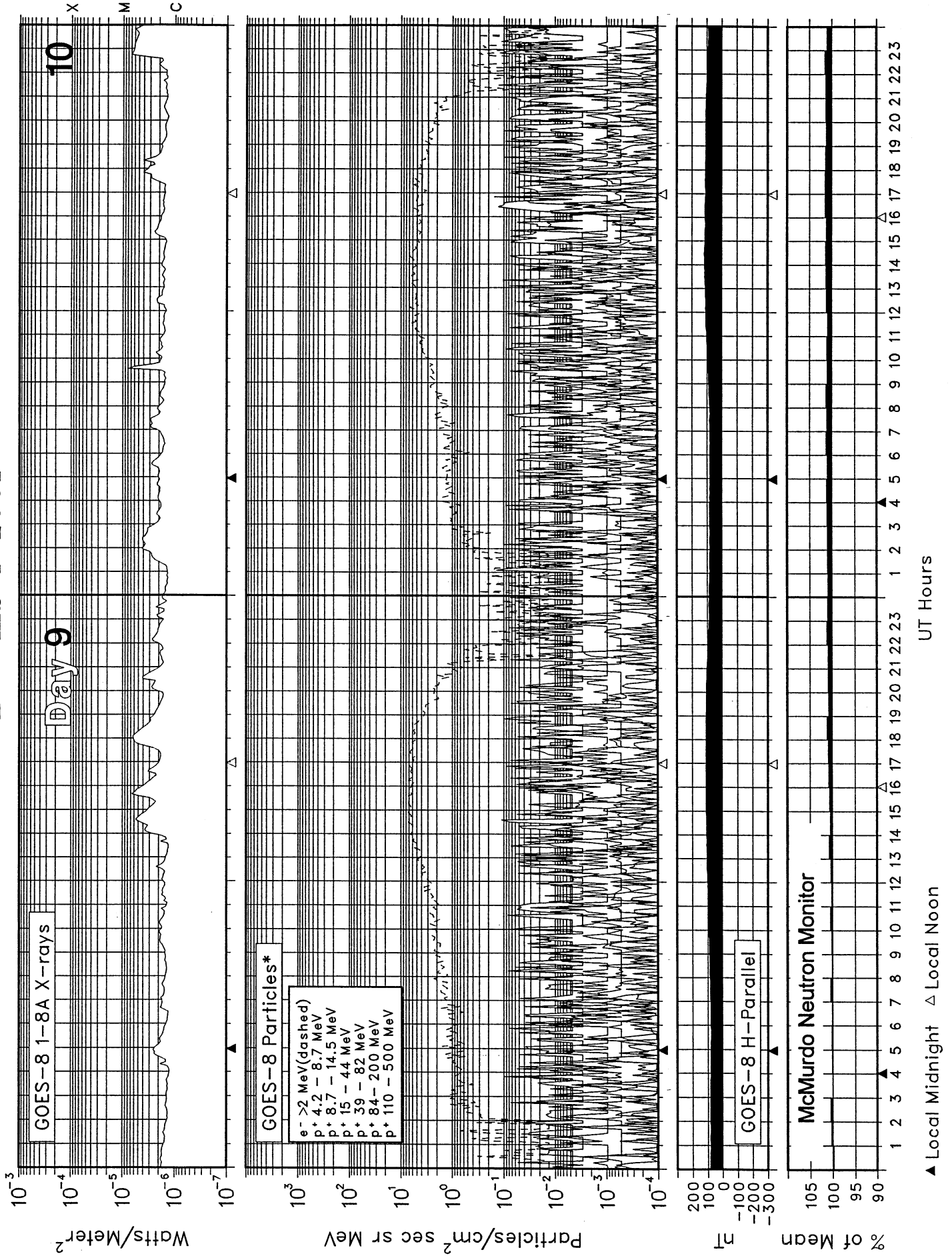


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December 2001

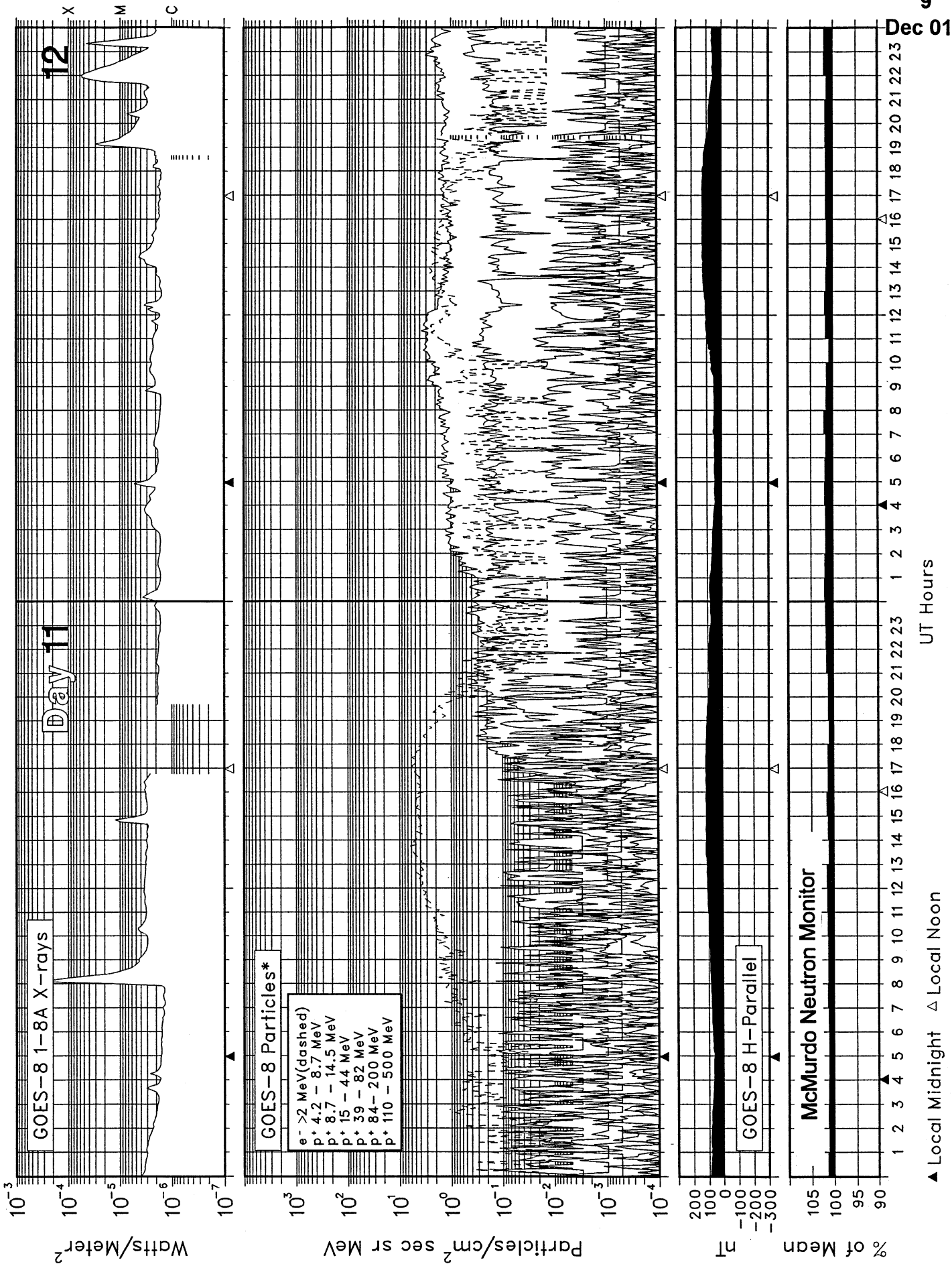


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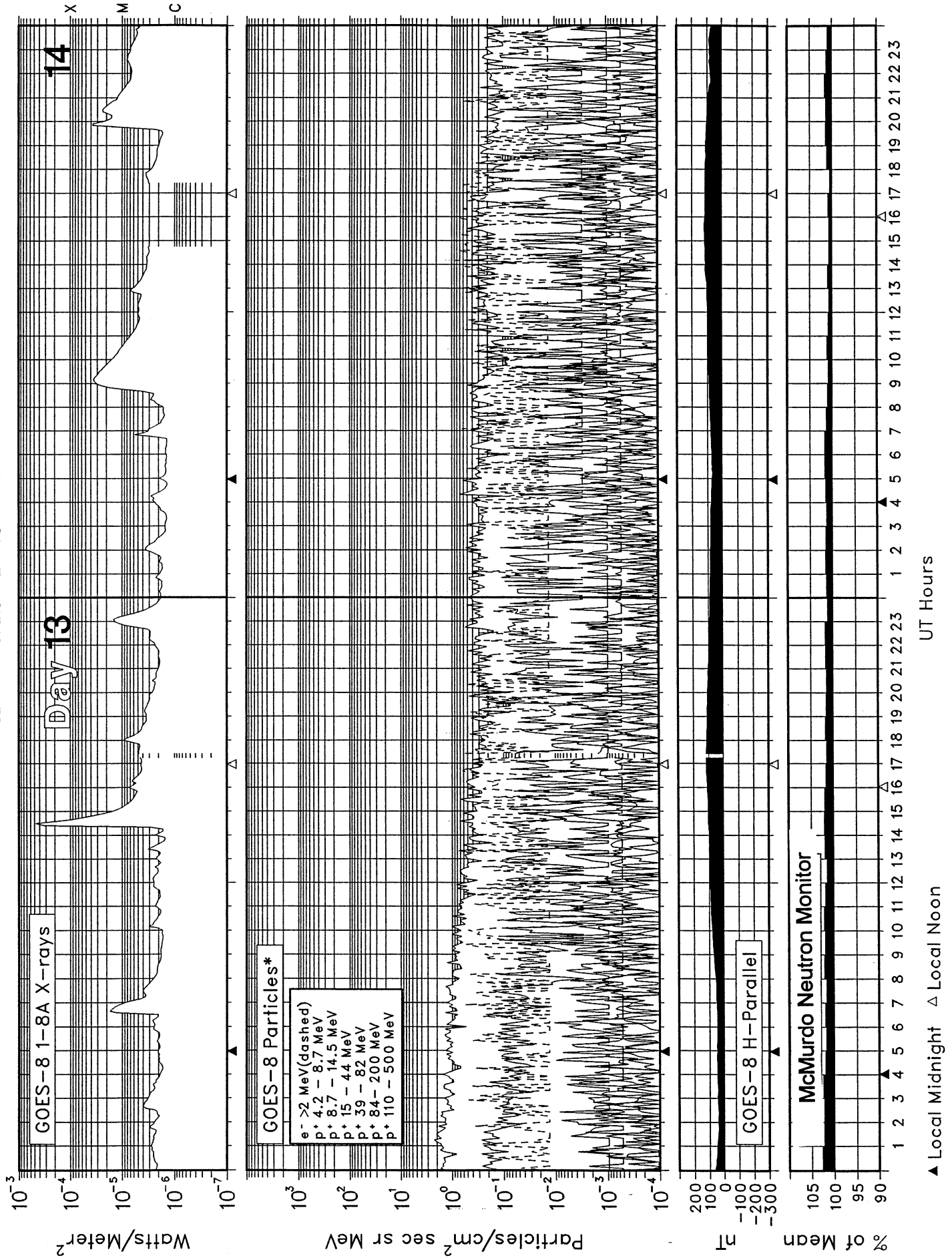


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December 2001

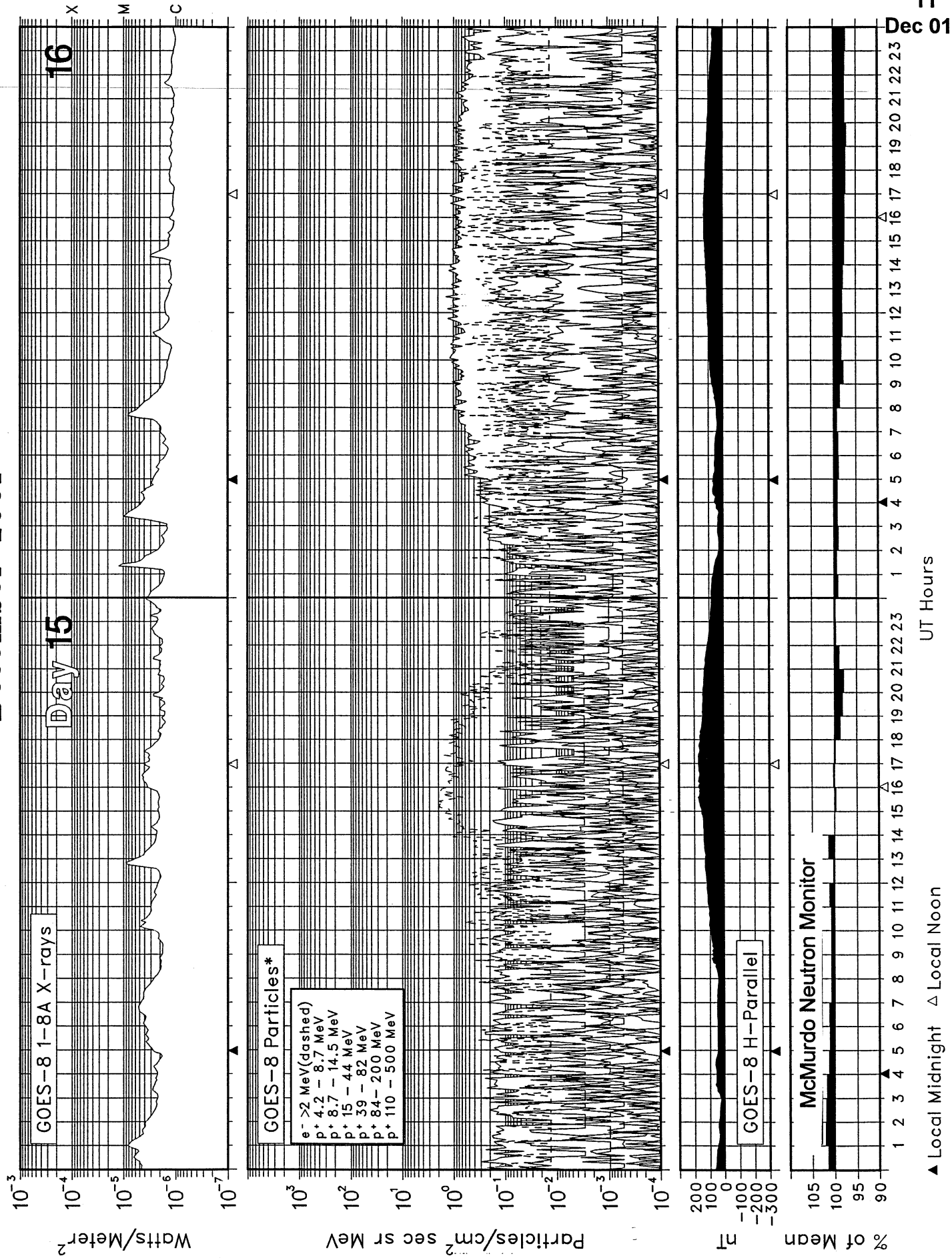


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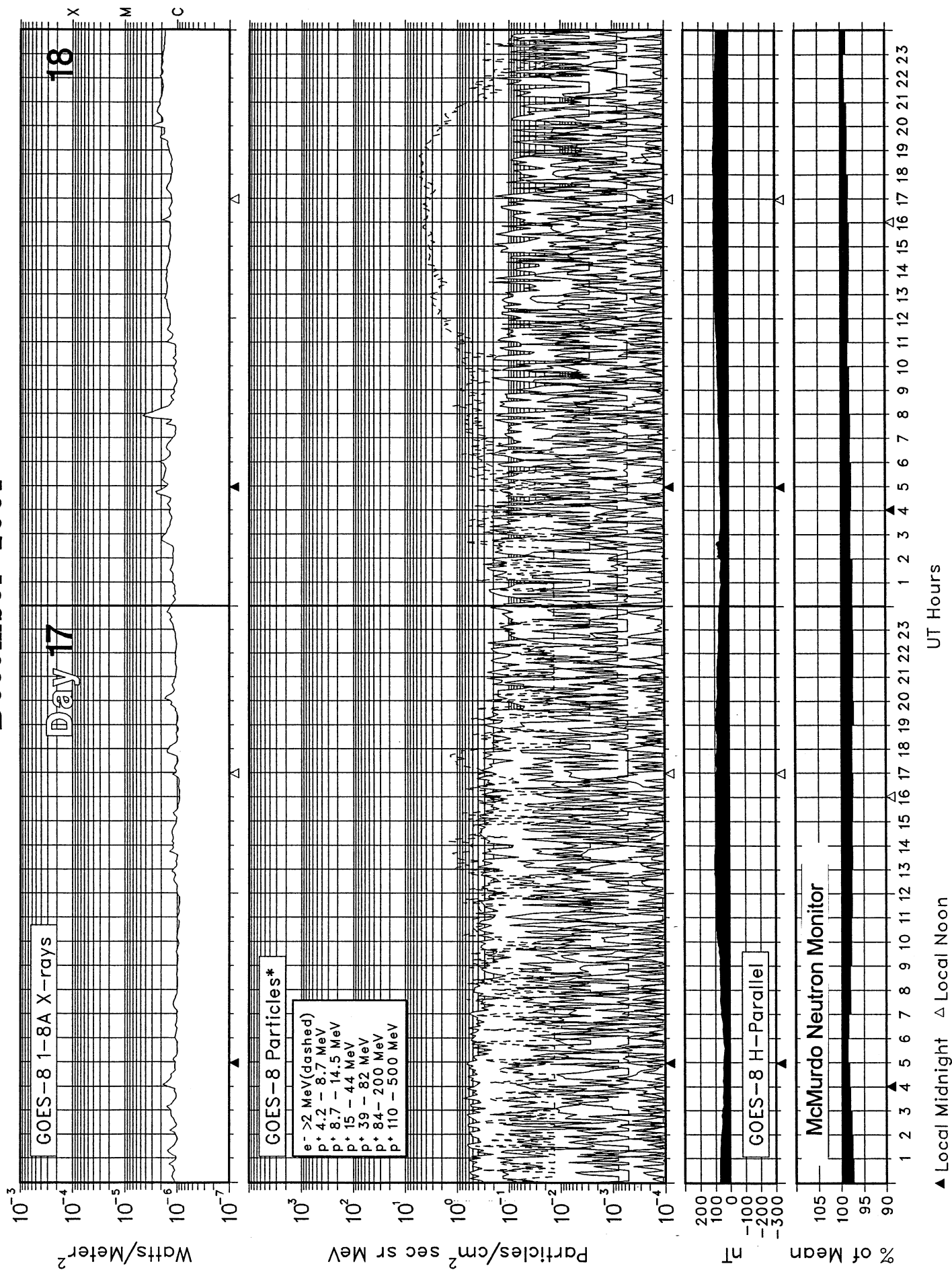


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December 2001

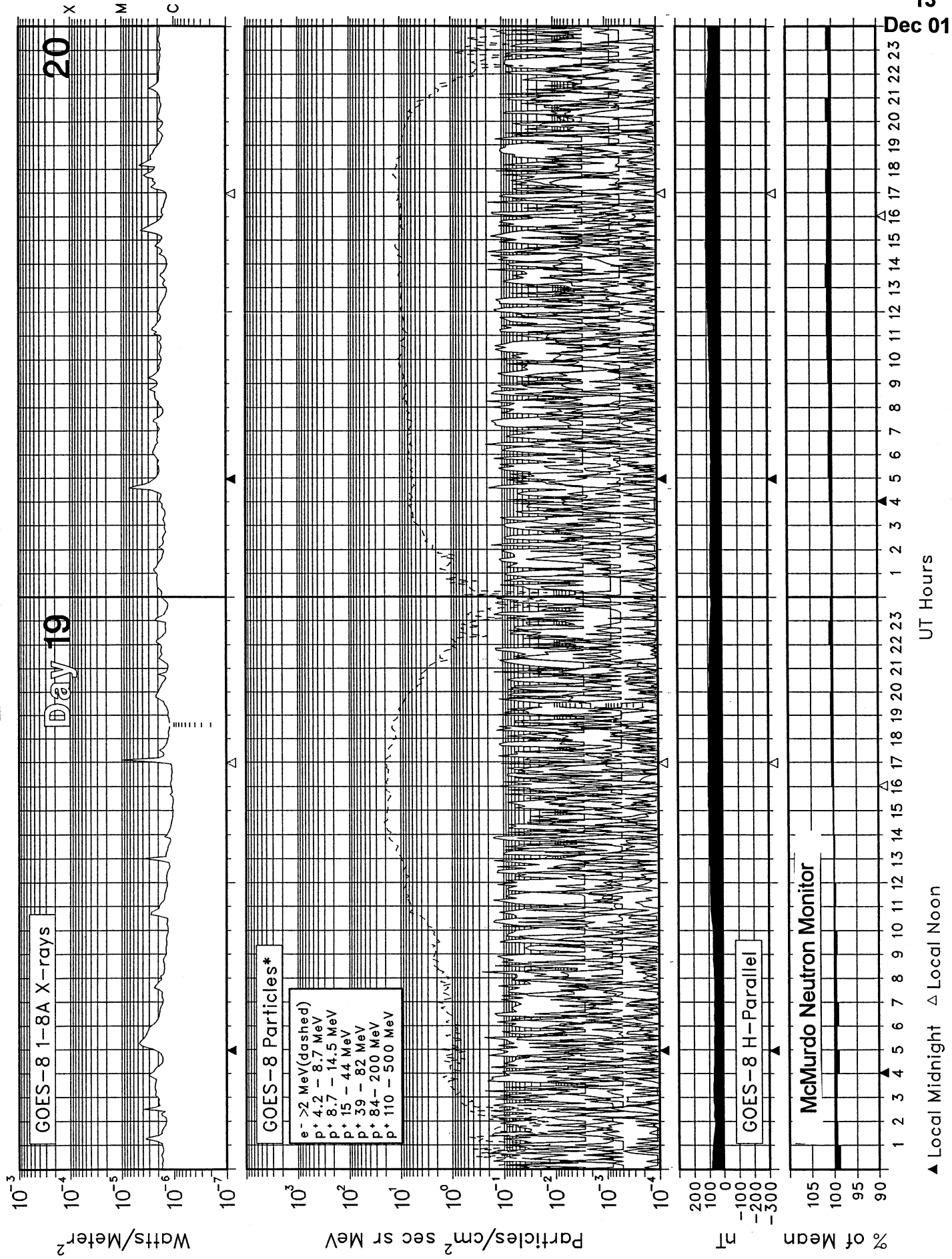


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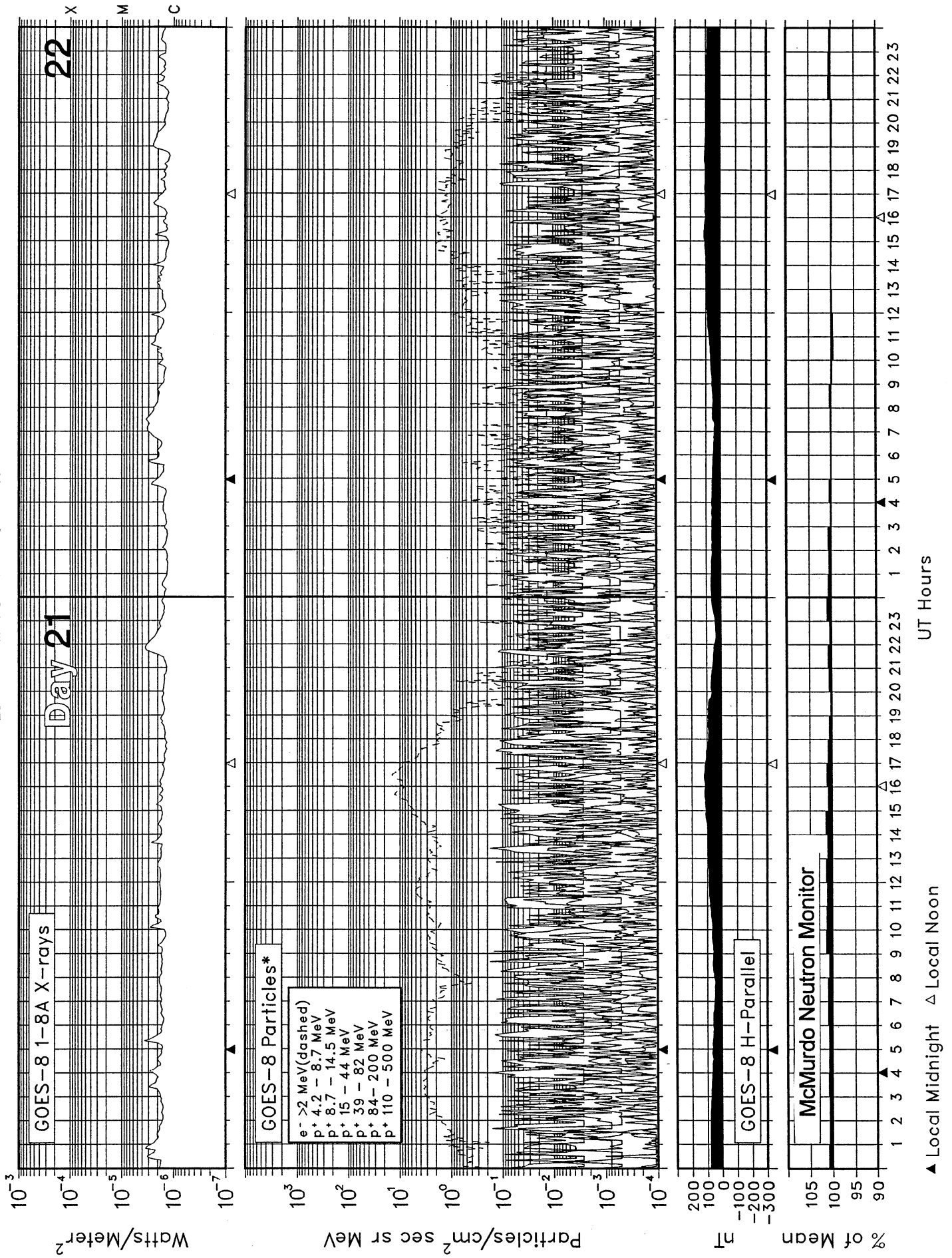


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December 2001



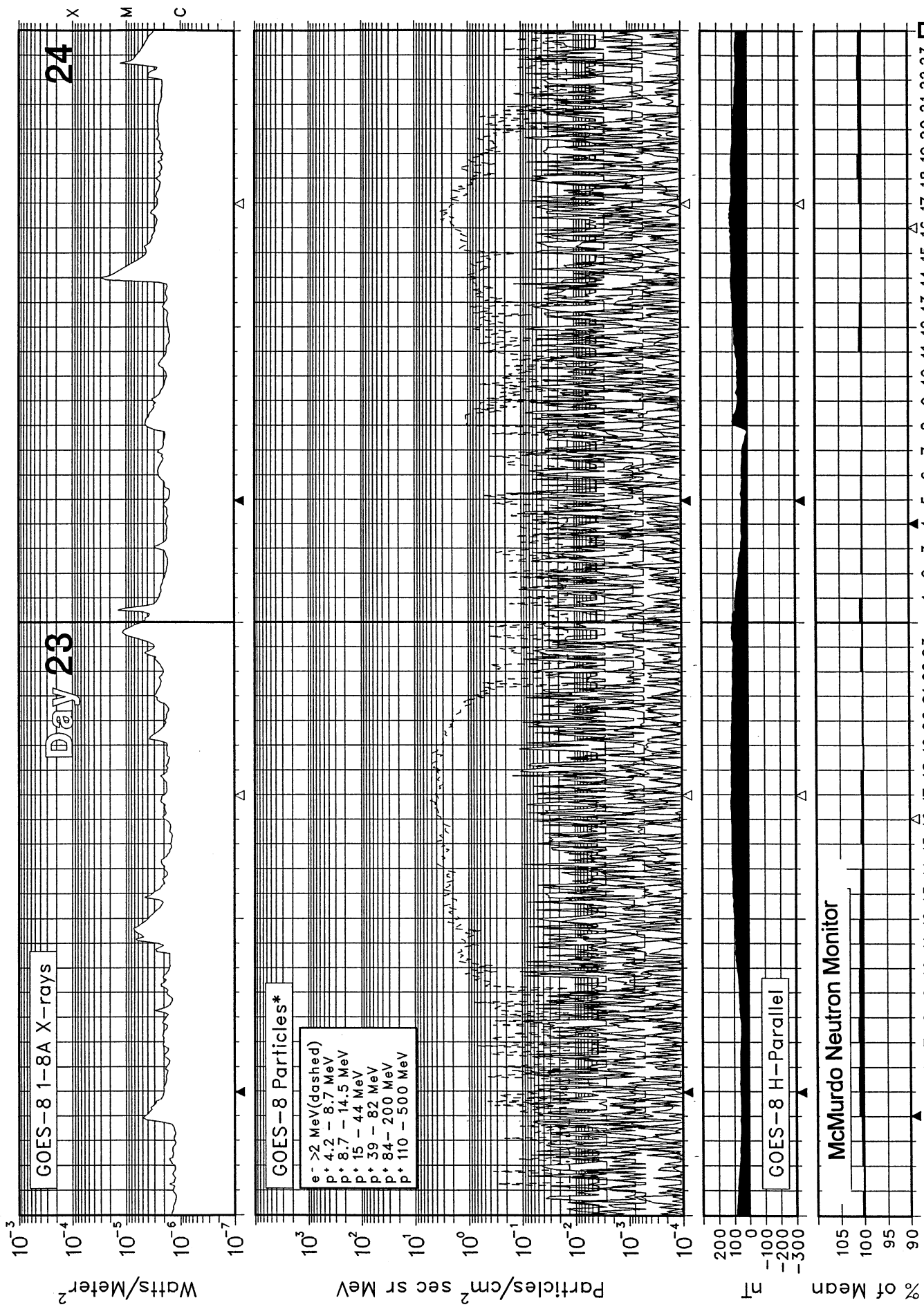
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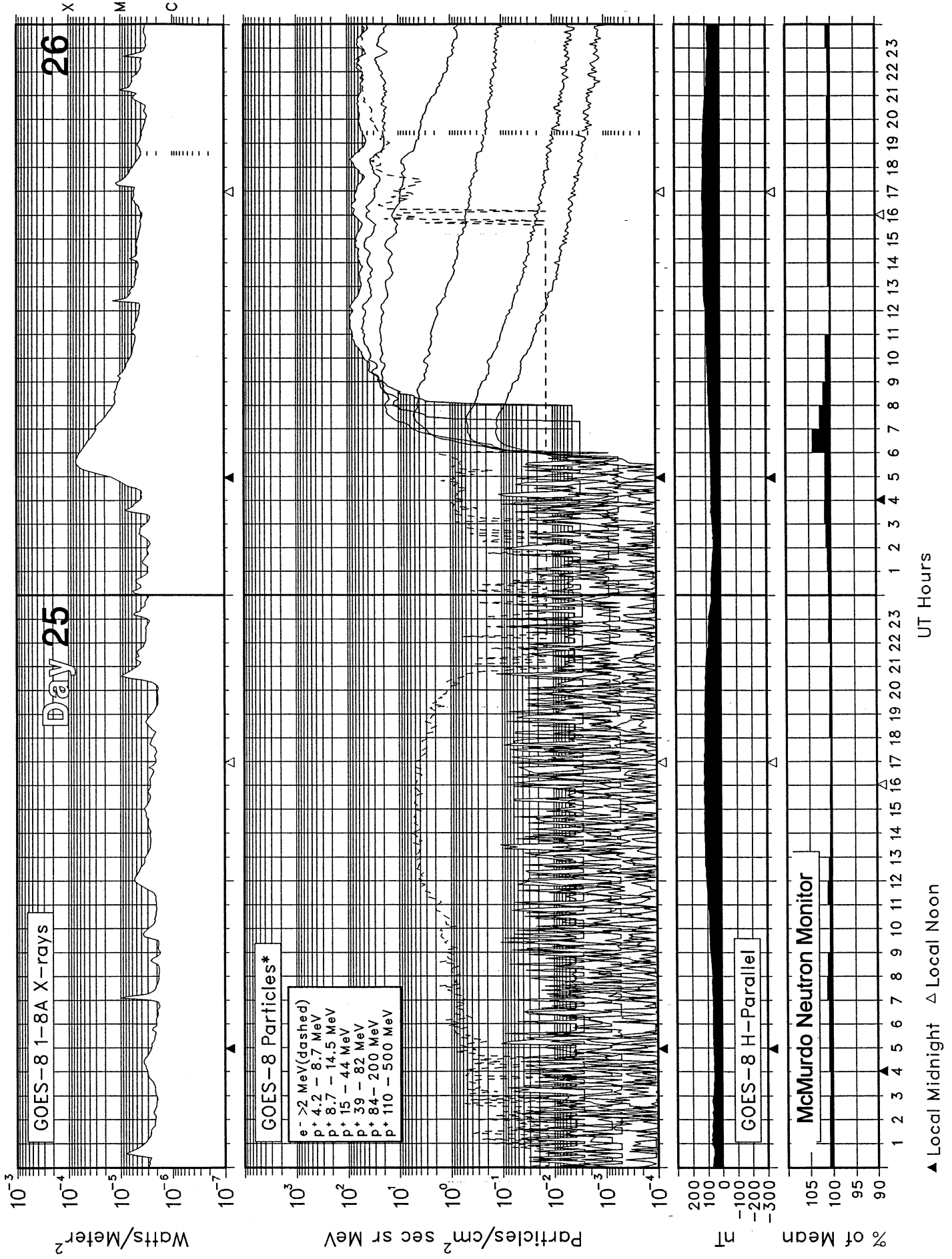


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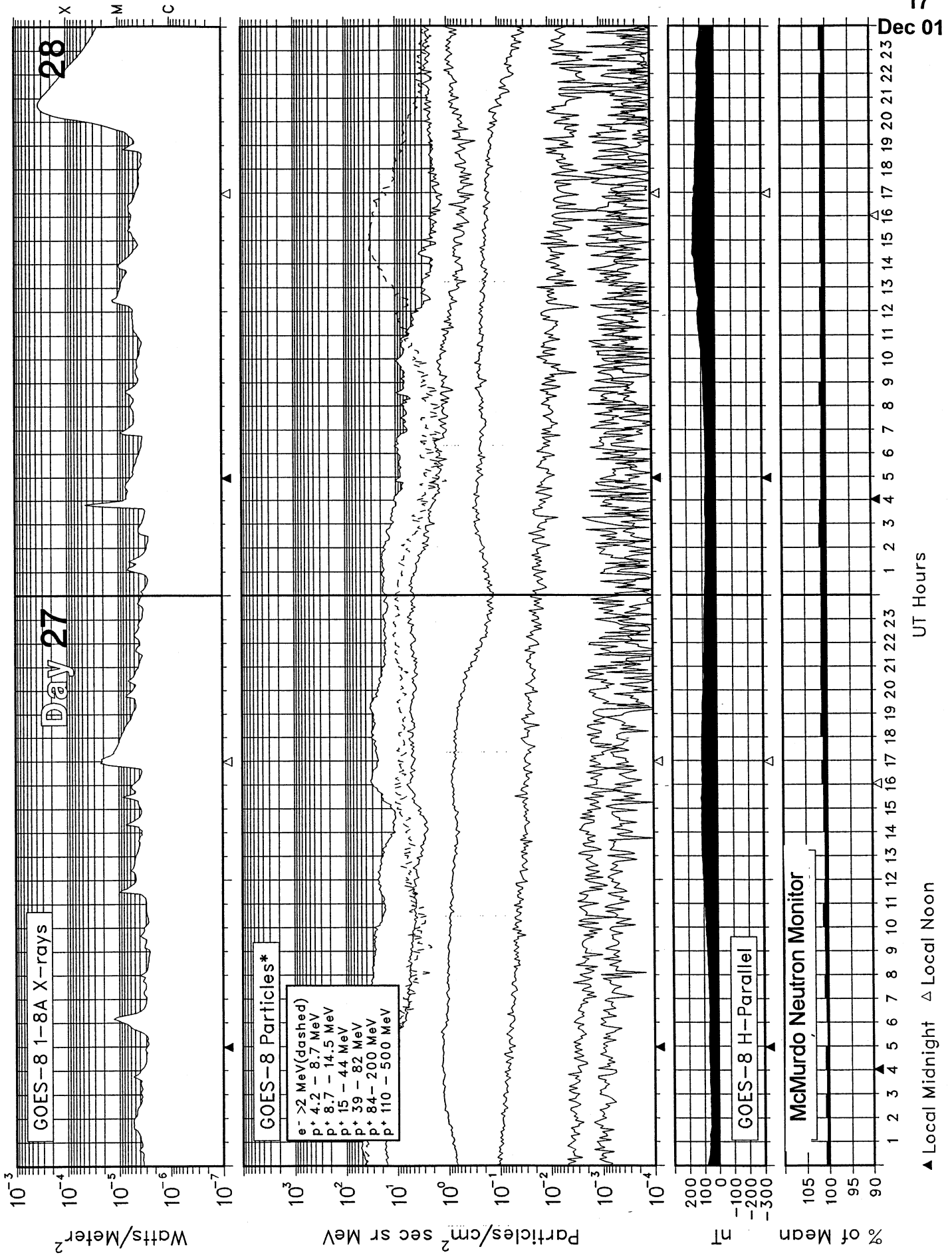


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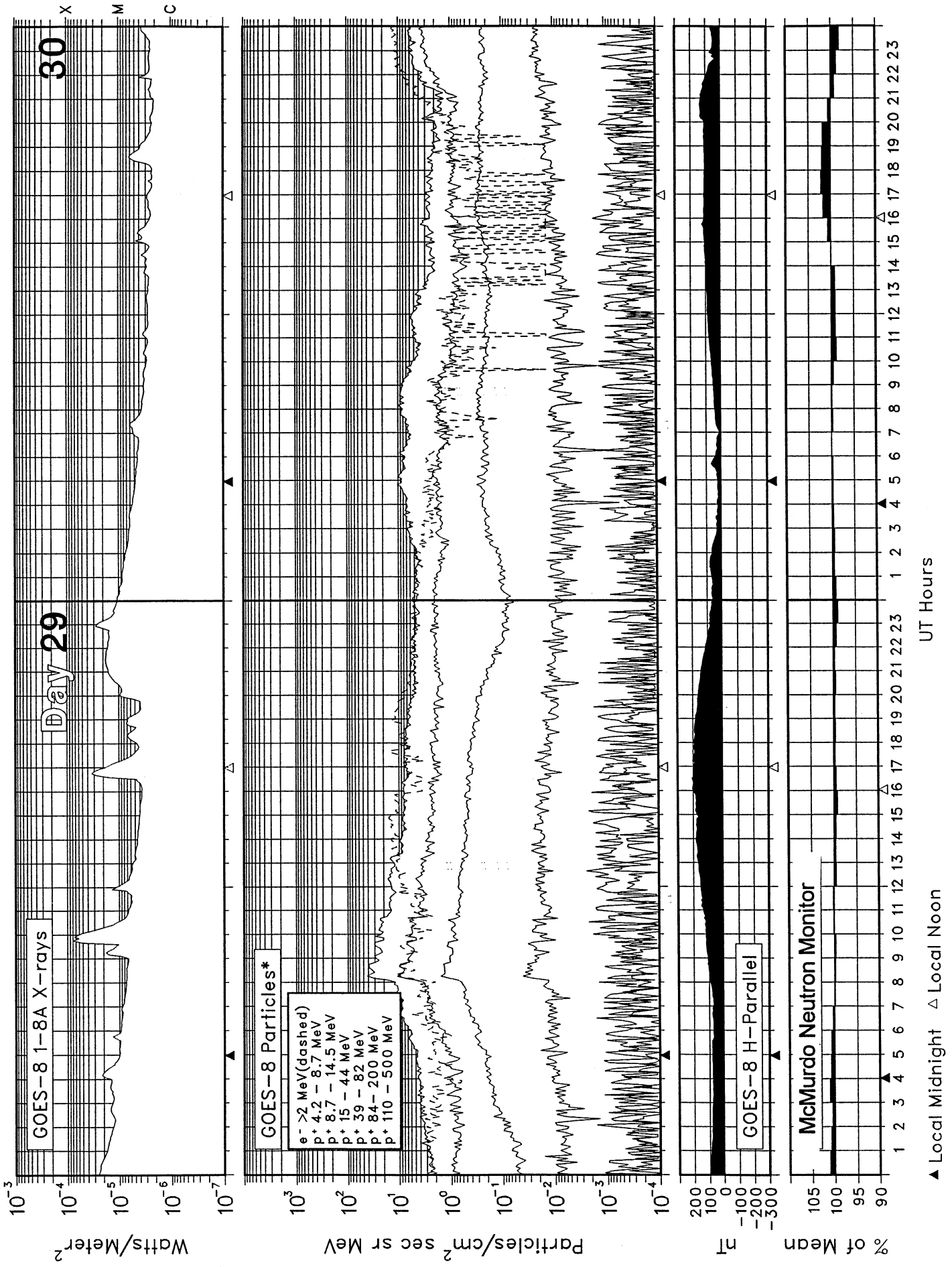


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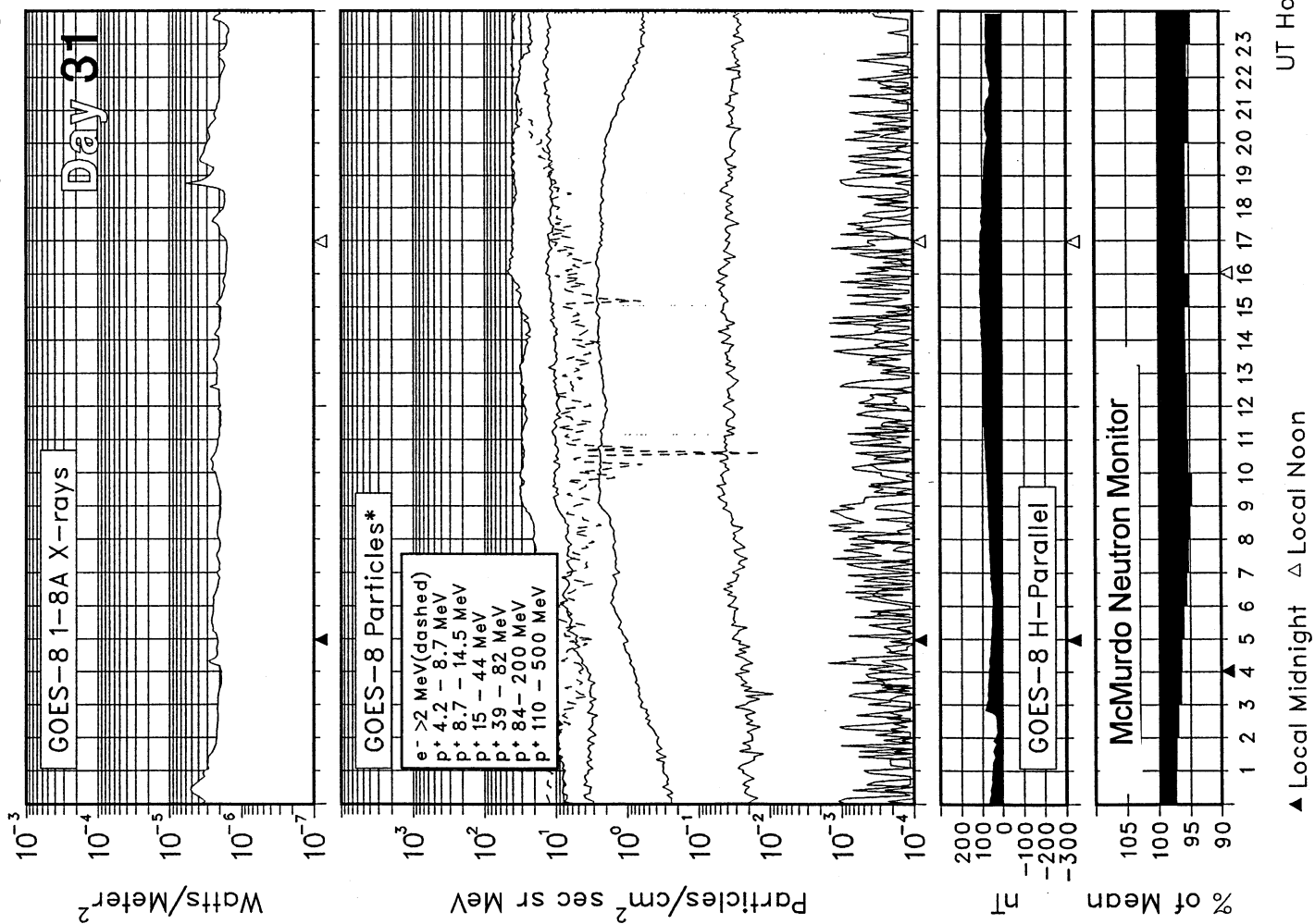
December 2001



# SOLAR-TERRESTRIAL ENVIRONMENT December 2001



# SOLAR-TERRESTRIAL ENVIRONMENT December 2001



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

20  
Dec 01

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

DECEMBER 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)	
							Lat	Lon	Opt	M	X				
335	01	30	158	226	3	9712	N12	W53	1	0	0	01	Q	SOL: Active	
							9714	S09	W69	0	1	0	01	Q	MAG: Active
							9715	N05	W11	5	0	0	01	E	PRO: Quiet
							9716	S05	E01	0	0	0	01	Q	
							9717	N05	E40	0	0	0	01	Q	
							9718	S07	E42	4	1	0	01	E	
							9719	N04	W24	0	0	0	01	Q	
							9720	S18	E46	0	1	0	01	Q	
							9721	N13	E57	0	0	0	01	Q	
336	02	01	208	221	7	9712	N12	W65	0	0	0	02	Q	SOL: Active	
							9714	S10	W84	17	2	0	02	E	MAG: Active
							9715	N05	W23	2	0	0	02	E	PRO: Warning
							9716	S04	W10	0	0	0	02	Q	
							9717	N04	E27	2	0	0	02	E	
							9718	S07	E30	4	2	0	02	E	
							9719	N03	W38	0	0	0	02	Q	
							9720	S18	E33	0	0	0	02	E	
							9721	N13	E43	0	0	0	02	Q	
							9722	S16	W19	0	0	0	02	Q	
							9723	S09	E45	0	0	0	02	Q	
							9724	N09	E74	1	1	0	02	Q	
337	03	02	271	245	5	9712	N12	W78	0	0	0	03	Q	SOL: Active	
							9714	S09	W95	2	2	0	03	E	MAG: Quiet
							9715	N04	W37	6	0	0	03	E	PRO: Quiet
							9716	S04	W23	1	0	0	03	Q	
							9717	N05	E13	4	0	0	03	E	
							9718	S06	E17	2	0	0	03	E	
							9719	N04	W51	0	0	0	03	Q	
							9720	S18	E20	0	0	0	03	Q	
							9721	N13	E30	0	0	0	03	Q	
							9722	S15	W34	0	0	0	03	Q	
							9723	S06	E31	0	0	0	03	Q	
							9724	N09	E59	0	0	0	03	Q	
							9725	S11	W45	0	0	0	03	Q	
9726	S15	E69	0	0	0	03	E								
338	04	03	230	235	7	9715	N04	W49	6	0	0	04	E	SOL: Active	
							9716	S05	W36	5	0	0	04	Q	MAG: Quiet
							9717	N04	E00	0	0	0	04	E	PRO: Quiet
							9718	S07	E03	4	0	0	04	E	
							9720	S18	E05	0	0	0	04	Q	
							9721	N13	E16	0	0	0	04	Q	
							9723	S04	E16	0	0	0	04	Q	
							9724	N10	E47	0	0	0	04	Q	
							9725	S10	W59	1	0	0	04	Q	
							9726	S16	E55	0	0	0	04	Q	
9727	S22	E68	0	0	0	04	Q								
339	05	04	214	233	7	9715	N05	W63	0	0	0	05	A	SOL: Active	
							9716	S06	W49	2	0	0	05	A	MAG: Quiet
							9717	N04	W13	1	0	0	05	A	PRO: Quiet
							9718	S06	W09	6	2	0	05	A	
							9720	S20	W08	0	0	0	05	A	
							9721	N12	E02	0	0	0	05	A	
							9723	S05	E03	0	0	0	05	A	
							9724	N10	E33	0	0	0	05	A	
							9725	S10	W72	3	0	0	05	A	
							9726	S16	E42	0	0	0	05	A	
							9727	S22	E57	0	0	0	05	A	
9728	N36	W07	0	0	0	05	A								
340	06	05	260	237	8	9715	N04	W76	2	0	0	06	A	SOL: Active	
							9716	S06	W61	4	0	0	06	A	MAG: Quiet
							9717	N05	W31	0	0	0	06	A	PRO: Quiet
							9718	S07	W24	1	0	0	06	A	

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

DECEMBER 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
						9720	S22	W16	0	0	0	06	A	
						9721	N11	W11	0	0	0	06	A	
						9723	S04	W11	0	0	0	06	A	
						9724	N10	E19	0	0	0	06	A	
						9725	S10	W86	0	0	0	06	A	
						9726	S16	E29	0	0	0	06	A	
						9727	S21	E42	5	0	0	06	A	
						9728	N36	W20	0	0	0	06	A	
						9729	N24	E04	0	0	0	06	A	
						9730	S13	E49	0	0	0	06	A	
341	07	06	226	247	10	9715	N03	W91	0	0	0	07	E	SOL: Eruptive
						9716	S05	W72	1	0	0	07	Q	MAG: Quiet
						9717	N05	W44	0	0	0	07	Q	PRO: Quiet
						9718	S07	W38	0	0	0	07	E	
						9720	S23	W29	1	0	0	07	E	
						9721	N11	W25	0	0	0	07	Q	
						9723	S04	W25	0	0	0	07	Q	
						9724	N10	E06	1	0	0	07	Q	
						9726	S17	E16	0	0	0	07	Q	
						9727	S21	E29	2	1	0	07	E	
						9728	N35	W34	2	0	0	07	Q	
						9729	N24	W11	0	0	0	07	Q	
						9730	S12	E34	0	0	0	07	Q	
						9731	N24	E36	0	0	0	07	Q	
342	08	07	200	226	7	9716	S05	W86	1	0	0	08	Q	SOL: Active
						9717	N05	W61	1	0	0	08	Q	MAG: Quiet
						9718	S06	W51	0	0	0	08	E	PRO: Quiet
						9720	S26	W41	0	0	0	08	Q	
						9721	N12	W37	0	0	0	08	Q	
						9723	S04	W38	0	0	0	08	Q	
						9724	N10	W07	1	0	0	08	Q	
						9726	S16	E03	0	0	0	08	Q	
						9727	S22	E16	2	0	0	08	E	
						9728	N36	W47	0	0	0	08	Q	
						9729	N23	W22	1	0	0	08	Q	
						9731	N24	E23	0	0	0	08	Q	
						9732	N03	E64	1	0	0	08	Q	
343	09	08	218	221	6	9717	N05	W74	0	0	0	09	Q	SOL: Active
						9718	S06	W63	1	0	0	09	E	MAG: Quiet
						9720	S27	W52	1	0	0	09	Q	PRO: Quiet
						9721	N11	W52	0	0	0	09	Q	
						9723	S04	W54	0	0	0	09	Q	
						9724	N10	W20	0	0	0	09	Q	
						9726	S17	W09	0	0	0	09	Q	
						9727	S22	E03	2	0	0	09	E	
						9728	N36	W60	0	0	0	09	Q	
						9731	N24	E09	0	0	0	09	Q	
						9732	N04	E52	0	0	0	09	Q	
						9733	N14	E67	1	0	0	09	E	
344	10	09	225	224	3	9717	N05	W88	0	0	0	10	Q	SOL: Active
						9718	S06	W76	1	0	0	10	Q	MAG: Quiet
						9720	S28	W63	0	0	0	10	Q	PRO: Quiet
						9721	N11	W64	0	0	0	10	Q	
						9723	S05	W68	0	0	0	10	Q	
						9724	N10	W33	0	0	0	10	Q	
						9726	S16	W22	0	0	0	10	Q	
						9727	S20	W10	3	0	0	10	E	
						9728	N35	W71	0	0	0	10	Q	
						9731	N25	W04	1	0	0	10	Q	
						9732	N04	E36	0	0	0	10	Q	
						9733	N14	E58	1	0	0	10	E	
						9734	S12	E81	0	0	0	10	Q	

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

DECEMBER 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)	
							Lat	Lon	Opt	M	X				
345	11	10	224	219	3	9718	S06	W89	0	0	0	11	E	SOL: Active MAG: Quiet PRO: Quiet	
							9720	S28	W73	0	0	0	11		Q
							9721	N11	W79	0	0	0	11		Q
							9723	S05	W81	0	0	0	11		Q
							9724	N10	W48	0	0	0	11		Q
							9726	S16	W37	0	0	0	11		Q
							9727	S21	W24	6	0	0	11		E
							9728	N35	W90	0	0	0	11		Q
							9732	N04	E20	0	0	0	11		Q
							9733	N14	E44	3	0	0	11		E
							9734	S12	E65	1	0	0	11		Q
							9735	N10	W34	0	0	0	11		Q
							9736	S09	W27	0	0	0	11		Q
							9737	S27	E52	0	0	0	11		Q
346	12	11	154	221	4	9721	N11	W93	0	0	0	12	Q	SOL: Active MAG: Quiet PRO: Quiet	
							9724	N08	W61	0	0	0	12		Q
							9727	S21	W37	3	1	0	12		E
							9732	N04	E08	0	0	0	12		Q
							9733	N14	E32	1	0	1	12		E
							9734	S12	E52	0	0	0	12		Q
							9736	S10	W42	4	0	0	12		Q
							9737	S27	E39	0	0	0	12		Q
347	13	12	183	237	13	9724	N09	W75	0	0	0	13	Q	SOL: Active MAG: Quiet PRO: Quiet	
							9727	S21	W52	8	2	0	13		E
							9732	N04	W05	0	0	0	13		Q
							9733	N14	E18	5	1	0	13		E
							9734	S12	E38	0	0	0	13		Q
							9735	N05	W61	0	0	0	13		Q
							9736	S09	W55	2	0	0	13		E
							9737	S28	E26	0	0	0	13		Q
							9738	S21	E67	0	0	0	13		Q
348	14	13	212	220	4	9724	N09	W88	0	0	0	14	Q	SOL: Active MAG: Quiet PRO: Quiet	
							9727	S21	W66	8	2	0	14		E
							9732	N04	W18	0	0	0	14		Q
							9733	N14	E04	3	0	1	14		E
							9734	S12	E24	0	0	0	14		Q
							9736	S10	W69	0	0	0	14		Q
							9737	S28	E13	1	0	0	14		Q
							9738	S19	E53	2	0	0	14		Q
							9739	S13	W02	0	0	0	14		Q
							9740	S06	E56	0	0	0	14		Q
							9741	N07	E72	0	0	0	14		Q
349	15	14	202	245	5	9727	S21	W77	6	0	0	15	A	SOL: Active MAG: Quiet PRO: Quiet	
							9732	N03	W33	0	0	0	15		A
							9733	N14	W10	10	1	0	15		A
							9734	S13	E12	0	0	0	15		A
							9736	S10	W82	2	0	0	15		A
							9737	S28	E00	1	0	0	15		A
							9738	S20	E40	0	0	0	15		A
							9739	S13	W15	1	0	0	15		A
							9740	S06	E42	0	0	0	15		A
9741	N06	E56	0	0	0	15	A								
350	16	15	198	218	11	9727	S22	W88	1	0	0	16	A	SOL: Active MAG: Quiet PRO: Quiet	
							9732	N03	W49	0	0	0	16		A
							9733	N14	W23	6	0	0	16		A
							9734	S14	E01	0	0	0	16		A
							9737	S27	W12	0	0	0	16		A
							9738	S18	E27	0	0	0	16		A
							9739	S13	W30	0	0	0	16		A
							9741	N05	E43	0	0	0	16		A
							9742	N09	E73	0	0	0	16		A



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

DECEMBER 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
351	17	16	204	209	9	9732	N02	W62	0	0	0	17	Q	SOL: Active MAG: Quiet PRO: Quiet
						9733	N14	W36	3	2	0	17	E	
						9734	S15	W09	0	0	0	17	Q	
						9737	S28	W24	0	0	0	17	Q	
						9738	S19	E15	0	0	0	17	Q	
						9739	S13	W43	0	0	0	17	Q	
						9741	N05	E30	0	0	0	17	Q	
						9742	N08	E64	4	0	0	17	E	
						9743	S11	E73	1	0	0	17	Q	
						9744	S06	E25	0	0	0	17	Q	
352	18	17	215	206	11	9732	N02	W75	1	0	0	18	Q	SOL: Active MAG: Quiet PRO: Quiet
						9733	N14	W48	4	0	0	18	E	
						9734	S15	W23	0	0	0	18	Q	
						9737	S28	W37	0	0	0	18	Q	
						9738	S18	E01	0	0	0	18	Q	
						9739	S13	W57	0	0	0	18	Q	
						9741	N05	E17	1	0	0	18	Q	
						9742	N08	E51	1	0	0	18	Q	
						9743	S12	E59	0	0	0	18	Q	
						9744	S06	E11	0	0	0	18	Q	
353	19	18	210	212	9	9732	N01	W90	0	0	0	19	Q	SOL: Active MAG: Quiet PRO: Quiet
						9733	N13	W65	3	0	0	19	E	
						9734	S16	W36	0	0	0	19	Q	
						9737	S27	W52	0	0	0	19	Q	
						9738	S18	W12	1	0	0	19	Q	
						9739	S14	W69	1	0	0	19	Q	
						9741	N06	E04	0	0	0	19	Q	
						9742	N09	E37	5	0	0	19	E	
						9743	S10	E45	0	0	0	19	Q	
						9744	S05	W03	0	0	0	19	Q	
354	20	19	158	208	9	9733	N13	W75	1	0	0	20	E	SOL: Active MAG: Quiet PRO: Quiet
						9738	S19	W21	1	0	0	20	Q	
						9739	S14	W82	2	1	0	20	E	
						9741	N07	W09	1	0	0	20	Q	
						9742	N12	E27	2	0	0	20	E	
						9743	S10	E34	0	0	0	20	Q	
						9745	N18	E48	0	0	0	20	Q	
						9746	S18	E08	0	0	0	20	Q	
						9747	N12	E71	1	0	0	20	Q	
						355	21	20	171	221	6	9733	N12	
9738	S18	W34	1	0	0							21	Q	
9741	N05	W21	1	0	0							21	Q	
9742	N10	E13	7	0	0							21	E	
9743	S11	E19	0	0	0							21	Q	
9745	N17	E33	0	0	0							21	Q	
9747	N12	E58	3	0	0							21	E	
9748	S11	E36	0	0	0							21	Q	
9749	S08	E72	0	0	0							21	Q	
356	22	21	215	234	11	9737	S29	W83	0	0	0	22	Q	SOL: Active MAG: Quiet PRO: Quiet
						9738	S17	W51	0	0	0	22	Q	
						9742	N10	W03	10	0	0	22	E	
						9743	S10	E04	0	0	0	22	Q	
						9745	N17	E19	0	0	0	22	Q	
						9746	S17	W20	0	0	0	22	Q	
						9747	N12	E44	0	0	0	22	Q	
						9748	S12	E21	0	0	0	22	Q	
						9749	S08	E56	4	0	0	22	Q	
						9750	S16	W64	0	0	0	22	Q	
9751	N04	E68	0	0	0	22	Q							
357	23	22	234	243	8	9741	N04	W57	0	0	0	23	Q	SOL: Active

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

DECEMBER 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)	
							Lat	Lon	Opt	M	X				
						9742	N10	W16	0	0	0	23	E	MAG: Quiet	
						9743	S09	W07	0	0	0	23	Q	PRO: Quiet	
						9745	N17	E06	1	0	0	23	Q		
						9746	S17	W32	0	0	0	23	Q		
						9747	N11	E30	0	0	0	23	Q		
						9748	S11	E07	3	0	0	23	E		
						9749	S08	E43	1	0	0	23	E		
						9750	S15	W77	0	0	0	23	Q		
						9751	N04	E55	0	0	0	23	Q		
						9752	S14	W19	0	0	0	23	Q		
						9753	S20	E67	0	0	0	23	Q		
358	24	23	220	255	9	9742	N10	W29	3	0	0	24	E	SOL: Eruptive	
						9743	S11	W20	0	0	0	24	Q	MAG: Quiet	
						9745	N17	W07	0	0	0	24	Q	PRO: Quiet	
						9747	N11	E17	0	0	0	24	Q		
						9748	S10	W07	5	1	0	24	Q		
						9750	S16	W86	0	0	0	24	Q		
						9751	N04	E44	0	0	0	24	Q		
						9752	S14	W31	0	0	0	24	Q		
						9753	S20	E53	1	0	0	24	Q		
						9754	S09	E61	1	0	0	24	Q		
359	25	24	176	275	19	9742	N11	W44	6	0	0	25	E	SOL: Active	
						9743	S10	W34	0	0	0	25	Q	MAG: Active	
						9745	N17	W22	0	0	0	25	Q	PRO: Quiet	
						9747	N12	E02	0	0	0	25	Q		
						9748	S10	W21	1	0	0	25	E		
						9751	N05	E30	0	0	0	25	Q		
						9753	S18	E37	0	0	0	25	Q		
						9754	S08	E48	2	2	0	25	E		
360	26	25	246	259	11	9742	N12	W57	11	0	0	26	E	SOL: Active	
						9743	S09	W46	0	0	0	26	Q	MAG: Quiet	
						9745	N19	W38	0	0	0	26	Q	PRO: Quiet	
						9747	N12	W10	0	0	0	26	Q		
						9748	S10	W36	3	0	0	26	E		
						9751	N04	E18	3	0	0	26	Q		
						9752	S13	W59	0	0	0	26	Q		
						9753	S18	E12	0	0	0	26	Q		
						9754	S09	E38	4	1	0	26	E		
						9755	S05	E64	0	0	0	26	Q		
361	27	26	290	268	9	9742	N12	W68	11	3	0	27	P	SOL: Active	
						9743	S09	W60	1	0	0	27	A	MAG: Quiet	
						9745	N18	W50	0	0	0	27	A	PRO: IP	
						9747	N12	W26	0	0	0	27	A		
						9748	S10	W48	8	1	0	27	A		
						9751	N04	E04	11	0	0	27	A		
						9753	S19	E09	0	0	0	27	A		
						9754	S09	E24	5	0	0	27	A		
						9755	S04	E50	0	0	0	27	A		
						9756	S28	E72	0	0	0	27	A		
						9757	S09	E02	0	0	0	27	A		
						9758	N13	E20	0	0	0	27	A		
						9759	N17	E28	0	0	0	27	A		
						9760	N06	E35	0	0	0	27	A		
						9761	N09	E75	0	0	0	27	A		
362	28	27	268	275	9	9742	N12	W81	6	1	0	28	A	SOL: Active	
						9743	S09	W74	2	1	0	28	A	MAG: Minor	
						9745	N18	W62	0	0	0	28	A	PRO: IP	
						9748	S11	W64	3	1	0	28	A		
						9751	N04	W10	3	0	0	28	A		
						9753	S18	W06	0	0	0	28	A		
						9754	S08	E11	3	0	0	28	A		
						9755	S04	E37	0	0	0	28	A		

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

DECEMBER 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geadvice(1)
							Lat	Lon	Opt	M	X			
						9756	S29	E60	0	0	0	28	A	
						9757	S08	W12	0	0	0	28	A	
						9760	N07	E21	0	0	0	28	A	
						9761	N10	E61	0	0	0	28	A	
						9762	N03	E07	0	0	0	28	A	
						9763	N06	E76	0	0	0	28	A	
363	29	28	263	263	9	9742	N12	W94	1	1	0	29	A	SOL: Active
						9743	S10	W89	1	0	0	29	A	MAG: Minor
						9748	S11	W77	4	1	0	29	A	PRO: Warning
						9751	N04	W24	3	0	0	29	A	
						9753	S19	W19	0	0	0	29	A	
						9754	S08	W02	5	1	0	29	A	
						9755	S04	E23	1	0	0	29	A	
						9756	S29	E47	0	0	0	29	A	
						9757	S10	W26	0	0	0	29	A	
						9761	N10	E47	0	0	0	29	A	
						9762	N02	W07	0	0	0	29	A	
						9763	N06	E61	0	0	0	29	A	
						9764	N12	E15	0	0	0	29	A	
						9765	N05	E78	0	0	0	29	A	
364	30	29	222	264	13	9748	S10	W91	1	1	0	30	E	SOL: Active
						9751	N04	W38	2	1	0	30	E	MAG: Active
						9753	S19	W33	0	0	0	30	Q	PRO: Quiet
						9754	S08	W17	1	0	0	30	E	
						9755	S04	E10	1	0	0	30	Q	
						9756	S28	E34	0	0	0	30	Q	
						9757	S09	W39	0	0	0	30	Q	
						9761	N10	E34	0	0	0	30	Q	
						9763	N06	E49	1	0	0	30	Q	
						9764	N13	E02	0	0	0	30	Q	
						9765	N06	E63	0	0	0	30	Q	
365	31	30	218	247	17	9751	N05	W51	3	0	0	31	E	SOL: Active
						9753	S18	W48	0	0	0	31	Q	MAG: Minor
						9754	S08	W30	1	0	0	31	E	PRO: IP
						9755	S04	W03	0	0	0	31	Q	
						9756	S29	E20	0	0	0	31	Q	
						9757	S10	W51	0	0	0	31	Q	
						9761	N10	E21	0	0	0	31	Q	
						9763	N06	E35	0	0	0	31	Q	
						9764	N13	W11	0	0	0	31	Q	
						9765	N06	E50	0	0	0	31	Q	
						9766	N05	E62	0	0	0	31	Q	
						9767	S23	E73	2	0	0	31	E	

(1) Region Forecast and Flare (SOL) Advice

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

Magnetic (MAG) Geoadvice

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

Proton (PRO) Geoadvice

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

DECEMBER 2001

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'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	

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STRATWARM ALERTS

12/18/01 03:30:00 GEOALERT WWA352 STRATWARM ALERT EXISTS STRATWARM MONDAY  
IN THE MIDDLE AND UPPER STRATOSPHERE, A STRONG TEMPERATURE INCREASE DURING ONE WEEK IS OBSERVED OVER SIBERIA  
AND NORTHEASTERN ASIA AND A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE NORTH POLE IS EXPECTED WITHIN  
THE NEXT 5 DAYS. STRATOSPHERIC WARMING IN THE UPPER STRATOSPHERE.

12/19/01 03:30:00 GEOALERT WWA353 STRATWARM ALERT EXISTS STRATWARM TUESDAY  
IN THE MIDDLE AND UPPER STRATOSPHERE A STRONG TEMPERATURE INCREASING DURING ONE WEEK IS OBSERVED OVER SIBERIA/  
NORTH EASTERN ASIA AND A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE NORTH POLE IS EXPECTED WITHIN THE  
NEXT 5 DAYS. STRATOSPHERIC WARMING IN THE UPPER STRATOSPHERE IN PROGRESS.

12/20/01 03:30:00 GEOALERT WWA354 STRATWARM ALERT EXISTS STRATWARM WEDNESDAY  
STRATOSPHERIC WARMING IN THE UPPER STRATOSPHERE IN PROGRESS WITH A RESERVED TEMPERATURE GRADIENT BETWEEN 60 N  
AND THE NORTH POLE EXPECTED WITHIN THE NEXT 5 DAYS.

12/22/01 03:30:00 GEOALERT WWA356 STRATWARM ALERT EXISTS STRATWARM FRIDAY  
STRATOSPHERIC WARMING IN THE MIDDLE AND UPPER STRATOSPHERE, FURTHER INTENSIFYING WITH A REVERSED TEMPERATURE  
GRADIENT BETWEEN 60N AND THE POLE IN THE UPPERMOST LEVELS EXPECTED WITHIN THE NEXT 3 DAYS.

12/23/01 03:30:00 GEOALERT WWA357 STRATWARM ALERT EXISTS STRATWARM SATURDAY  
STRONG STRATOSPHERIC WARMING IN THE MIDDLE AND UPPER STRATOSPHERE, FURTHER INTENSIFYING. REVERSED TEMPERATURE  
GRADIENT BETWEEN 60N AND THE NORTH POLE EXPECTED WITHIN THE NEXT 3 DAYS FROM THE UPPER STRATOSPHERE DOWN TO  
30 HPA.

12/24/01 03:30:00 GEOALERT WWA358 STRATWARM ALERT EXISTS STRATWARM SUNDAY  
STRONG STRATOSPHERIC WARMING IN THE MIDDLE AND UPPER STRATOSPHERE, FURTHER INTENSIFYING AND MOVING POLEWARD  
WITH A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE NORTH POLE FROM 5 TO 1 HPA. REVERSED TEMPERATURE  
GRADIENT DOWN TO 30 HPA EXPECTED WITHIN THE NEXT 3 DAYS.

12/26/01 03:30:00 GEOALERT WWA360 STRATWARM ALERT EXISTS STRATWARM TUESDAY  
STRONG STRATOSPHERIC WARMING IN THE MIDDLE AND UPPER STRATOSPHERE, INTENSIFYING. TEMPERATURE GRADIENT  
REVERSED BETWEEN 60N AND THE POLE FROM 10 TO 1 HPA. EASTERLY ZONAL MEAN WINDS AT 60N FROM 3 TO 1 HPA,  
WITHIN 5 DAYS EXPECTED TO PROPAGATE DOWN TO 5 HPA.

12/27/01 03:30:00 GEOALERT WWA361 STRATWARM ALERT EXISTS STRATWARM WEDNESDAY  
STRONG STRATOSPHERIC WARMING IN THE MIDDLE AND UPPER STRATOSPHERE, INTENSIFYING. TEMPERATURE GRADIENT  
REVERSED BETWEEN 60N AND THE POLE FROM 10 TO 1 HPA, WITHIN 5 DAYS EXPECTED TO BE REVERSED BETWEEN  
50 TO 5 HPA. EASTERLY ZONAL REAN WINDS AT 60N FROM 3 TO 1 HPA, WITHIN 3 DAYS EXPECTED TO PROPAGATE  
DOWN TO 5 HPA.

12/28/01 03:30:00 GEOALERT WWA362 STRATWARM ALERT EXISTS STRATWARM THURSDAY  
STRONG STRATOSPHERIC WARMING, WEAKENING IN THE UPPER STRATOSPHERE, INTENSIFYING IN THE LOWER AND MIDDLE  
STRATOSPHERE. TEMPERATURE GRADIENT REVERSED BETWEEN 60N AND THE POLE FROM 10 TO 1 HPA, WITHIN 5 DAYS FROM  
50 TO 5 HPA. EASTERLY ZONAL MEAN WINDS AT 60N FROM 5 TO 1 HPA.

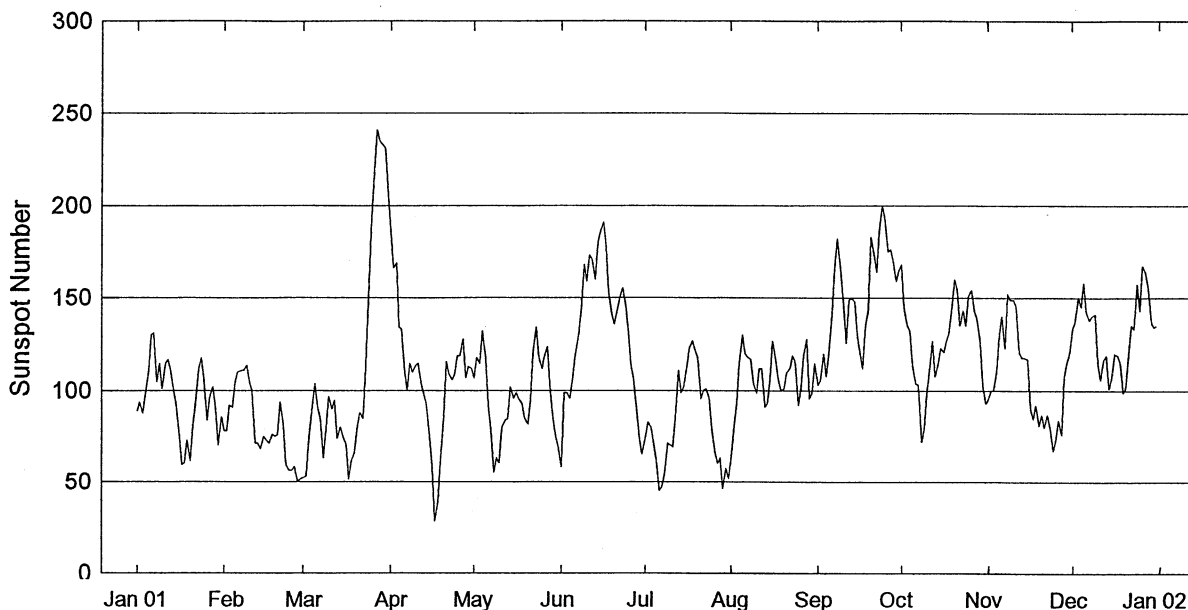
12/29/01 03:30:00 GEOALERT WWA363 STRATWARM ALERT/FRIDAY/STRATWARM EXISTS.  
STRONG STRATOSPHERIC WARMING, INTENSIFYING IN THE LOWER STRATOSPHERE, WEAKENING IN THE UPPER STRATOSPHERE.  
5-DAY FORECASTS INDICATE A SPLIT OF THE POLAR VORTEX IN THE LOWER STRATOSPHERE, A REVERSED TEMPERATURE  
GRADIENT BETWEEN 60N AND THE NORTH POLE FROM 50 TO 10 HPA, NET EASTERLY WINDS AT 60N FROM 5 TO 2 HPA.

12/30/01 03:30:00 GEOALERT WWA364 STRATWARM ALERT EXISTS STRATWARM SATURDAY  
WARM AIR COVERS MOST OF THE POLAR REGION IN THE UPPER AND MIDDLE STRATOSPHERE, FURTHER PENETRATING DOWNWARDS.  
THE TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE WILL BE REVERSED DOWN TO 50 HPA, AND MEAN ZONAL EASTERLY  
WINDS ARE EXPECTED BETWEEN 10 AND 2 HPA AT 60N. MAJOR WARMING IN PROGRESS.

12/31/01 03:30:00 GEOALERT WWA365 STRATWARM ALERT EXISTS STRATWARM SUNDAY  
WARM AIR COVERS MOST OF THE POLAR REGION IN THE UPPER AND MIDDLE STRATOSPHERE, FURTHER PENETRATING DOWNWARDS.  
THE TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE WILL BE REVERSED DOWN TO 50 HPA, AND MEAN ZONAL EASTERLY  
WINDS ARE EXPECTED BETWEEN 10 AND 1 HPA AT 60N. MAJOR WARMING IN PROGRESS.

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# International Relative Sunspot Numbers Jan 2001 - Dec 2001

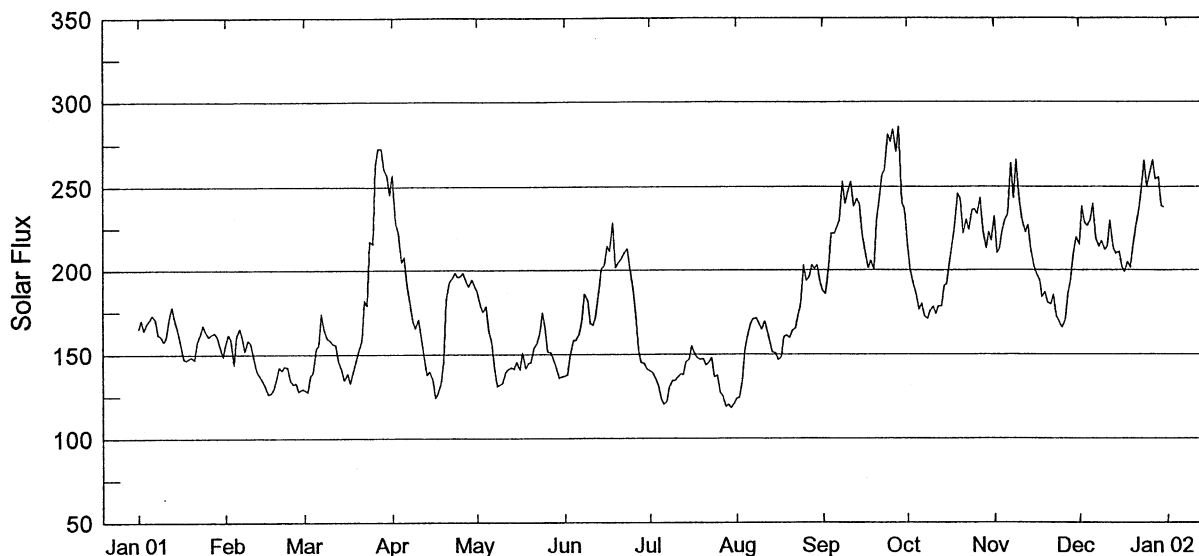


Day	Jan 01	Feb	Mar	Apr	May	Jun	Jul*	Aug*	Sep*	Oct*	Nov*	Dec*
1	89	78	52	186	107	58	74	62	103	168	96	133
2	94	78	53	166	118	99	83	81	106	144	100	137
3	88	92	75	169	115	99	80	93	120	135	100	150
4	98	91	92	134	132	96	71	115	108	132	111	145
5	110	105	104	133	118	106	62	130	120	114	130	158
6	130	110	91	110	92	119	45	120	141	104	140	142
7	131	111	85	100	79	129	47	118	166	103	123	138
8	105	111	63	115	55	142	54	117	182	72	152	140
9	115	114	79	110	63	168	71	104	166	79	149	141
10	101	105	97	114	60	159	70	99	150	98	149	115
11	115	100	90	115	80	173	69	112	126	113	145	106
12	117	71	95	103	84	171	90	112	149	127	121	117
13	111	71	74	98	85	160	111	91	150	108	118	119
14	100	68	80	92	102	180	99	93	148	115	118	101
15	92	75	75	75	96	186	102	106	130	123	117	108
16	75	73	70	58	99	191	113	127	121	121	90	120
17	59	71	51	28	95	178	123	117	112	126	85	119
18	60	76	61	38	93	153	127	106	136	131	92	115
19	73	75	66	62	85	141	122	100	143	143	81	99
20	61	76	80	86	82	136	118	101	183	160	87	101
21	81	94	88	116	95	144	96	110	173	154	80	120
22	93	81	85	109	121	151	100	112	164	135	87	135
23	112	59	113	106	134	155	101	119	186	143	80	133
24	118	56	149	109	118	145	96	116	200	135	67	157
25	106	56	186	119	112	131	79	92	193	151	73	143
26	84	58	218	119	118	114	66	101	175	154	84	167
27	97	50	241	128	124	107	60	119	176	143	76	164
28	102	51	235	107	103	89	63	128	170	139	107	156
29	90		233	113	85	74	46	96	159	127	115	137
30	70		231	112	75	65	57	99	165	103	121	134
31	86		205		69		52	115		93		135
Mean	95.6	80.6	113.5	107.7	96.6	134.0	82.2	106.8	150.7	125.6	106.5	131.8

\* = Provisional.

# Penticton 2800 MHz (10.7cm) Solar Flux Jan 2001 - Dec 2001

Adjusted to 1 AU



Day	Jan 01	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	165.3	156.2	129.0	257.2	187.4~	136.8	119.0	123.8	187.4	216.9	232.0	215.1
2	170.2	161.6	127.4	227.9	179.0	137.8	120.5	124.3	185.7	201.1	210.1	238.1
3	164.2	159.0	137.3	223.1	175.1	149.5	118.0	135.5	202.1	191.8	212.5	228.3
4	168.8	144.0	138.7	205.0	178.6	158.3	120.3	152.7	222.1	186.5	223.5	226.6
5	170.5	160.7	153.4	207.8*	163.5	158.0	135.6	160.5	221.8	176.8	230.6	230.1
6	173.4	165.3	155.4	192.0~	157.8	162.4	120.3	168.3	225.6	180.2	233.2	239.5
7	170.9	159.6	174.0	180.0	140.9	169.8	121.8	171.0	229.5	172.4	263.9	219.3
8	161.5	152.3	164.8	169.7	131.1	185.7	130.5	171.5	253.1	170.8	243.1	213.9
9	160.8	158.1	159.2	165.4	131.9	182.4	134.4	167.8	239.5	175.9	265.6	217.5
10	157.4	156.5	158.0	170.4	133.0	168.0	134.3	164.7	247.8	178.1	241.0	212.3
11	160.5	147.4	155.8	160.3	139.4	167.4	136.3	169.5	252.9	174.1	229.3	213.9
12	172.5	140.9	155.7	149.8	141.0	171.6	138.3	164.0	238.1	178.5	222.6	229.4
13	178.3	137.8	145.6	137.8	141.9	187.1	137.7	155.5	242.6	178.6	226.8	213.4
14	170.6	134.6	140.7	139.6	141.2	200.9	145.4	151.1	239.3	190.8	212.6	209.9#
15	163.8	131.8	134.7	135.1	145.2	203.2	146.8	150.5	221.7	191.7	202.4	211.0
16	156.6	126.5	138.5	124.3	140.9	214.3	154.7	146.2	209.3	205.8	197.6	202.5
17	147.0	126.8	132.9	127.1	150.8	211.2	150.4	148.4	201.1	215.8	194.0	199.0
18	146.6	129.0	138.5	133.0	141.5	228.5	147.7	159.9	205.7	226.9	183.8	205.0
19	147.7	134.0	145.7	145.8	144.6	201.7	146.9	161.3	200.6	245.6	186.8	201.6
20	148.3	142.3	152.1	182.2	144.9	205.0	147.2	159.8	228.7	242.5	180.6	214.0
21	146.7	140.5	158.2	193.0	153.8	206.9	143.5	163.9	240.5	222.0	179.7	226.7
22	157.1	142.7	181.8	194.6	155.8	210.3	144.9	165.2	257.0	230.4	185.3#	234.9
23	162.0	142.2	178.9	198.6	162.8	213.0	147.8	173.4	260.2	224.1	172.9	246.3
24	167.2	134.6	217.5	195.8	174.7	201.3	136.7	178.7	281.0	236.0	168.6	265.5
25	163.4	132.2	215.7	196.3	166.1	188.4	137.5	203.2	276.6	236.1	165.6	250.3
26	160.5	132.8	262.6	198.7	151.3	173.5	127.2	193.8	284.0	233.6	170.3	259.0
27	161.8	128.1	272.4	193.3	150.8	152.8	125.1	195.9	270.6	243.4	185.3	265.6
28	162.6	129.4	272.6	190.4	146.9	144.9	119.0	203.1	285.5	224.2	193.1	254.6#
29	160.5		261.0	194.5	142.3	144.6	120.5	200.9	240.2	212.8	210.5	255.7
30	154.9		256.3	190.7	136.0	141.2	118.0	203.0	236.3	222.7	219.6	238.5
31	148.8		245.3		136.6		120.3	192.2		217.8		237.5
Mean	161.3	143.1	176.1	179.3	152.0	179.2	135.6	167.1	236.2	206.6	208.1	228.2

NOTE: #1800UT reading - burst IP at 2000UT;

~ 1700UT reading - burst IP at 2000UT; \* 2300UT reading - burst IP at 2000UT.

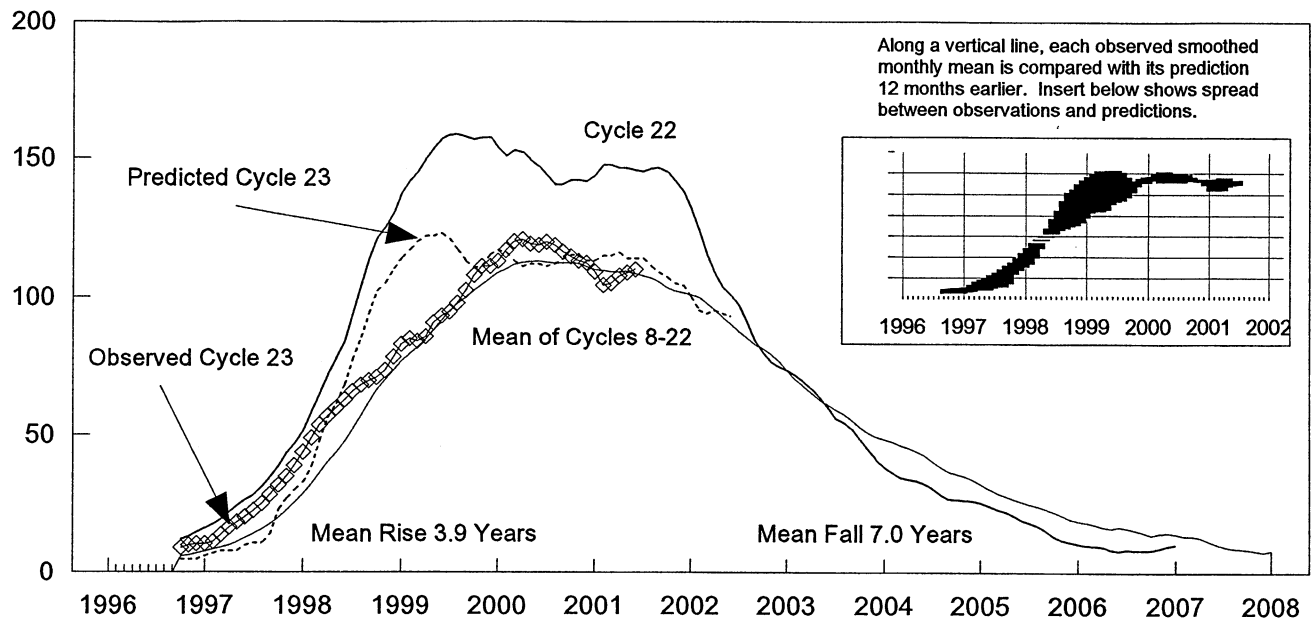
DAILY SOLAR INDICES  
December 2001

29  
Dec 01

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit									
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)	
1	335	5	133	173	221.3	637	424	345	215.1	272	181	63	43	43	
2	336	6	137	163	245.0	589	383	297	238.1	224	150	67	45	45	
3	337	7	150	175	235.0	565	372	275	228.3	214	155	71	45	45	
4	338	8	145	167	233.3	579	354	271	226.6	207	155	66	48	48	
5	339	9	158	174	237.0	573	383	296	230.1	218	159	72	44	44	
6	340	10	142	163	246.7	568	361	285	239.5	214	155	69	43	43	
7	341	11	138	164	225.9	581	364	278	219.3	215	160	69	45	45	
8	342	12	140	163	220.5	583	378	297	213.9	204	143	67	44	44	
9	343	13	141	146	224.2	513	286	245	217.5	221	135	28	43	43	
10	344	14	115	123	219.0	581	360	262	212.3	205	136	61	45	45	
11	345	15	106	113	220.6	588	365	264	213.9	203	144	69	52	52	
12	346	16	117	130	236.7	582	375	297	229.4	206	139	64	45	45	
13	347	17	119	137	220.2	498	320	244	213.4	200	137	62	45	45	
14	348	18	101	118	216.6#	568	348	266	209.9#	193	136	62	43	43	
15	349	19	108	134	217.8	543	347	292	211.0	200	139	68	43	43	
16	350	20	120	139	209.1	564	352	304	202.5	186	135	74	54	54	
17	351	21	119	133	205.5	526	353	267	199.0	183	132	70	50	50	
18	352	22	115	118	211.8	418	313	252	205.0	206	137	66	51	51	
19	353	23	99	101	208.2	576	344	239	201.6	185	138	70	48	48	
20	354	24	101	113	221.1	559	374	293	214.0	207	139	69	46	46	
21	355	25	120	148	234.3	578	374	331	226.7	205	149	71	50	50	
22	356	26	135	156	242.8	589	387	346	234.9	220	148	72	49	49	
23	357	27	133	162	254.6	595	383	333	246.3	231	159	73	50	50	
24	358	1	157	169	274.5	557	376	318	265.5	241	158	79	57	57	
25	359	2	143	178	258.8	579	394	367	250.3	237	157	75	59	59	
26	360	3	167	195	267.8	555	426	419	259.0	251	165	72	52	52	
27	361	4	164	198	274.6	456	376	362	265.6	217	156	80	73	73	
28	362	5	156	181	263.3#	606	408	312	254.6#	235	172	75	49	49	
29	363	6	137	149	264.4	606	395	299	255.7	236	166	70	46	46	
30	364	7	134	159	246.6	582	372	265	238.5	226	169	67	44	44	
31	365	8	135	155	245.6	585	370	259	237.5	225	161	75	49	49	
MEAN			131.8	151.5	235.6	564	368	296	228.2	216	150	68	48	48	

The International and American sunspot numbers shown above are preliminary values.  
NOTE: Radio flux values are from Sagamore Hill, Massachusetts, USA.  
#: 1800UT Reading, Burst in progress at 2000UT.

## Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	121+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	109	108	107	106	105	104	107
							(5)	(10)	(12)	(14)	(14)	(14)	(6)
2002	103	101	99	97	95	93	90	87	85	82	80	77	91
	(15)	(16)	(18)	(20)	(21)	(20)	(19)	(19)	(18)	(18)	(18)	(16)	(18)

Solar Cycle 22    
  Solar Cycle 23    
  Min, Max, and Predictions

\* May 1996 marks Cycle 22's mathematical minimum.    \*\* October 1996 marks the consensus minimum NGDC is now using.

+ April 2000 marks Cycle 23 maximum.

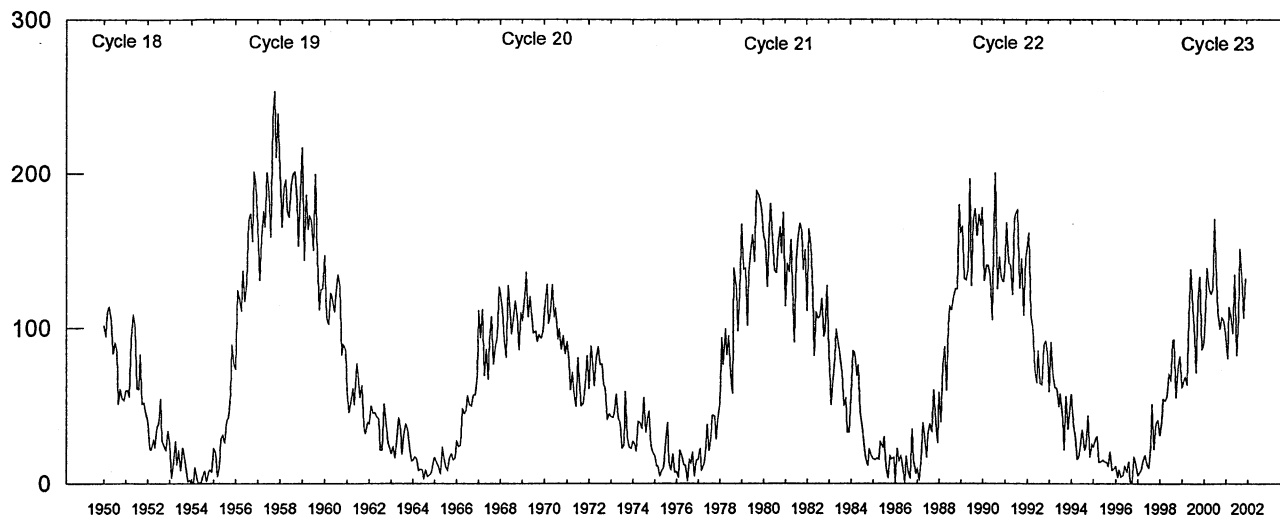
**Observed and Predicted Numbers.** For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Jun 2001 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the June 2002 prediction. There exists a 90% chance that in June 2002, the actual smoothed number will fall somewhere between 73 and 113.

**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 1950 - Dec 2001



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1	83.9
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	82.2	106.8	150.7	125.6	106.5	131.8	111.0

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

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur (Min)	Imp	Obs	Area Measurement	Remarks		
							USAF Region							Mo Day	Time (UT)
LEAR	01	0102	0105	0115	S10	W72	9714	11	25.7	13	SF	3	E	42	
GOES		0153	0157	0200	N02	W10	9715			7	SF C 4.1				1.3E-03
LEAR		0156	0157	0201	N02	W10	9715	11	30.3	5	SF	3	E	29	F
LEAR		0305	0306	0311	S09	W73	9714	11	25.7	6	SF	2	E	18	
LEAR		0325	0328	0331	S10	W72	9714	11	25.8	6	SF	2	E	20	
LEAR		0420	0435	0640	S09	W74	9714	11	25.7	140	2F	3	E	351	F
LEAR		0640	0641	0651	S10	W75	9714	11	25.7	11	SF	3	E	39	
GOES		0647	0651	0654	S06	E42	9718			7	2N M 2.2				6.0E-03
LEAR		0649	0650	0734	S06	E42	9718	12	4.4	45	2N	3	E	276	F
LEAR		0652	0709	0810	S09	W75	9714	11	25.7	78	1F	3	E	243	F
LEAR		0826	0835	0904	S12	W75	9714	11	25.8	38	SF	2	E	70	F
LEAR		0949	0949	0953	S10	W76	9714	11	25.8	4	SF	2	E	26	
RAMY		1125	1126	1135	S10	W75	9714	11	25.9	10	SF	3	E	57	
GOES		1144	1149	1200						16	C 4.9				4.3E-03
RAMY		1206	1206	1209	S12	W79	9714	11	25.6	3	SF	3	E	35	
GOES		1213	1217	1234	N01	W16	9715			21	SF C 5.0				5.6E-03
RAMY		1215	1216	1239	N01	W16	9715	11	30.3	24	SF	3	E	17	F
GOES		1430	1445	1456	S10	W78	9714			26	SF M 1.2				1.3E-02
RAMY		1432	1435	1438	S10	W78	9714	11	25.8	6	SF	3	E	49	
RAMY		1434	1435	1446	N02	E29	9717	12	3.8	12	SF	3	E	18	
GOES		1500	1555	1628						88	M 4.8				1.7E-01
HOLL		1653	1655	1705	S08	W80	9714	11	25.8	12	SF	3	E	71	
GOES		1653	1656	1658	S08	W80	9714			5	SF M 2.9				8.0E-03
HOLL		1725	1726	1732	S08	W82	9714	11	25.7	7	SF	3	E	26	
GOES		1729	1731	1733	S07	E36	9714			4	1F M 1.5				3.6E-03
HOLL		1729	1731	1741	S07	E36	9718	12	4.4	12	1F	3	E	109	F
GOES		1739	1749	1754	N10	E80	9724			15	SF M 1.8				1.5E-02
HOLL		1741	1742	1808	N10	E78		12	7.6	27	SF	3	E	76	F
RAMY		1742	1744	1752	N10	E80		12	7.7	10	SF	3	E	51	
HOLL		1743	1743	1749	N01	E22	9717	12	3.4	6	SF	3	E	28	F
HOLL		1745	1750	1757	S07	E35	9718	12	4.4	12	SF	3	E	58	F
RAMY		1748	1750	1753	S06	E36	9718	12	4.4	5	SF	3	E	35	
HOLL		1835	1838	1841	S08	W82	9714	11	25.7	6	SF	3	E	15	
HOLL		1922	1923	1931	S09	W82	9714	11	25.7	9	SF	3	E	18	
HOLL		1954	2006	2019	S09	W83	9714	11	25.7	25	SF	3	E	36	
RAMY		2007	2012	2016	S10	W83	9714	11	25.7	9	SF	3	E	81	
HOLL		2048	2101	2108	S06	E33	9718	12	4.3	20	SF	3	E	21	F
GOES		2258	2306	2311	S08	W79	9714			13	SF C 8.7				4.7E-03
HOLL		2300	2301	2308	S08	W79	9714	11	26.1	8	SF	3	E	52	
LEAR	02	0043	0045	0056	S09	W84	9714	11	25.8	13	SF	3	E	24	
GOES		0230	0237	0246	S09	W83	9714			16	SF C 3.0				2.5E-03
LEAR		0241	0243	0246	S09	W83	9714	11	26.0	5	SF	3	E	40	
GOES		0328	0334	0338	N04	E17	9717			10	1F C 3.8				1.8E-03
LEAR		0330	0333	0346	N04	E17	9717	12	3.4	16	1F	3	E	107	FH
LEAR		0709E	0711	0722	S02	W40	9715	11	29.4	13D	1F	1	E	126	F
GOES		0808	0814	0825						17	C 4.8				4.3E-03
SVTO		1057	1101	1116	N03	E13	9717	12	3.4	19	SF	3	E	44	FH
RAMY		1058E	1100U	1112D	N03	E13	9717	12	3.4	14D	SN	3	E	50	H
GOES		1133	1145	1153	S06	E24	9718			20	SF C 3.5				3.8E-03
SVTO		1134	1139	1159	S06	E23	9718	12	4.2	25	SF	3	E	29	F
RAMY		1219	1221	1241	N04	W30	9715	11	30.3	22	SF	3	E	56	F
SVTO		1219	1223	1250	N05	W29	9715	11	30.3	31	SF	3	E	47	F
GOES		1409	1500	1548						99	M 1.3				5.7E-02
HOLL		1444	1456	1505	N07	W31	9715	11	30.3	21	SF	3	E	33	
RAMY		1456	1456	1510	N04	W33	9715	11	30.1	14	SF	3	E	12	
HOLL		1532	1534	1553	N04	E09	9717	12	3.3	21	SF	3	E	85	F
RAMY		1533	1534	1619	N04	E09	9717	12	3.3	46	SF	3	E	68	
HOLL		1637	1637	1643	S05	E20	9718	12	4.2	6	SF	3	E	13	F
HOLL		1841	1855	1943	N07	W33	9715	11	30.3	62	SF	3	E	73	F
GOES		1849	1857	1915	N07	W33	9715			26	SF C 4.6				6.5E-03
HOLL		1951	1954	2005	N02	E12	9717	12	3.7	14	SF	3	E	45	F
HOLL		2014	2015	2025	N06	W33	9715	11	30.4	11	SF	3	E	17	
HOLL		2050	2055	2118	N06	W32	9715	11	30.5	28	SF	3	E	43	F
GOES		2125	2206	2229						64	M 2.0				6.6E-02
HOLL		2225	2226	2228	S05	W21	9716	12	1.4	3	SF	3	E	20	
HOLL		2225	2226	2229	N07	W35	9715	11	30.3	4	SF	3	E	27	
LEAR	03	0012	0013	0022	N07	W36	9715	11	30.3	10	SF	2	E	33	H

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement		Remarks	
												Time (UT)	Apparent (10-6 Disk)		Corr (Sq Deg)
LEAR	03	0016	0016	0020	S06	W21	9716	12	1.4	4	SF	2	E	16	F
LEAR		0246	0248	0302	S07	W22	9716	12	1.5	16	SF	1	E	37	F
LEAR		0556	0557	0600	S01	W42	9715	11	30.1	4	SF	2	E	27	F
LEAR		0608	0609	0611	S07	W25	9716	12	1.4	3	SF	2	E	15	F
GOES		0706	0712	0716	S02	W40	9715			10	1F C 7.0				2.8E-03
LEAR		0709E	0711	0722	S02	W40	9715	11	30.3	13D	1F	1	E	126	F
SVTO		0915	0920	0936	S07	E12	9718	12	4.3	21	SF	3	E	13	F
SVTO		0958	1005	1022	N04	W41	9715	11	30.3	24	SF	3	E	26	F
GOES		1049	1055	1103	N01	W43	9715			14	SF C 3.4				2.3E-03
SVTO		1052	1055	1102	N01	W43	9715	11	30.2	10	SF	3	E	27	F
RAMY		1221	1225	1228	S04	W28	9716	12	1.4	7	SF	3	E	27	F
RAMY		1453	1453	1501	S04	W29	9716	12	1.4	8	SF	3	E	12	F
HOLL		1453	1453	1509	S05	W29	9716	12	1.4	16	SF	3	E	25	F
HOLL		1619	1623	1639	S06	E09	9718	12	4.3	20	SF	3	E	22	F
GOES		1620	1625	1629	S06	E09	9718			9	SF C 3.7				1.8E-03
RAMY		1622	1623	1636	S07	E08	9718	12	4.3	14	SF	3	E	13	F
GOES		1701	1709	1717	S06	E08	9718			16	SF C 4.6				3.5E-03
HOLL		1703	1706	1734	S06	E08	9718	12	4.3	31	SF	3	E	32	F
HOLL		1823	1824	1826	S11	W53	9725	11	29.9	3	SF	3	E	19	F
GOES		1829	1835	1843	S06	E07	9718			14	SF C 6.9				4.6E-03
HOLL		1830	1832	1931	S06	E07	9718	12	4.3	61	SF	3	E	54	F
HOLL		1848	1849	1855	N06	W44	9715	11	30.5	7	SF	3	E	30	F
GOES		1852	1856	1901	N06	W44	9715			9	SF C 6.1				3.0E-03
GOES	04	0037	0045	0053	S05	E03	9718			16	SF M 1.0				6.7E-03
LEAR		0042E	0043U	0112	S05	E03	9718	12	4.2	30D	SF	1	E	87	F
GOES		0119	0125	0135	S09	W60	9725			16	SF C 3.8				3.0E-03
LEAR		0123	0125	0130	S04	E00	9718	12	4.0	7	SF	1	E	22	F
LEAR		0131	0132	0138	S09	W60	9725	11	29.6	7	SF	2	E	16	F
LEAR		0203	0207	0221	S02	W38	9716	12	1.2	18	SF	1	E	48	F
LEAR		0255	0300	0307	S10	W61	9725	11	29.6	12	SF	2	E	16	F
LEAR		0312	0313	0314	S09	W62	9725	11	29.6	2	SF	2	E	26	F
GOES		0438	0443	0449						11	C 3.4				1.9E-03
GOES		0537	0546	0558						21	M 1.3				1.2E-02
LEAR		0618E	0619U	0624	S05	W04	9718	12	4.0	6D	SF	2	E	17	F
GOES		0727	0731	0737	S06	W02	9718			10	SF C 3.3				1.7E-03
SVTO		0728	0730	0752	S06	W02	9718	12	4.2	24	SF	3	E	25	F
LEAR		0728	0735	0752	S04	W01	9718	12	4.2	24	SF	2	E	50	F
LEAR		0741	0743	0747	N03	W11	9717	12	3.5	6	SF	2	E	13	F
SVTO		0741	0744	0750	N04	W13	9717	12	3.3	9	SF	3	E	12	F
GOES		0855	0900	0905	S05	W02	9718			10	SF C 4.3				1.9E-03
SVTO		0859E	0859U	0912	S05	W02	9718	12	4.2	13D	SF	2	E	36	F
RAMY		1145	1148	1216	S07	W04	9718	12	4.2	31	SF	3	E	19	F
RAMY		1923	1924	1934	S05	W41	9716	12	1.7	11	SF	3	E	56	F
HOLL		1924	1926	1934	S06	W41	9716	12	1.7	10	SF	3	E	53	F
GOES		2155	2202	2213	S07	W07	9718			18	SF C 1.9				1.9E-03
HOLL		2157	2158	2204	S07	W07	9718	12	4.4	7	SF	3	E	16	F
LEAR	05	0311	0311	0318	S06	W47	9716	12	1.6	7	SF	3	E	24	F
LEAR		0352	0355	0406	S06	W50	9716	12	1.4	14	SF	3	E	25	F
GOES		0400	0403	0405	S06	W50	9716			5	SF C 2.5				6.1E-04
GOES		0653	0656	0658	S07	W48	9716			5	SF C 2.3				5.6E-04
LEAR		0656	0656	0701	S07	W48	9716	12	1.7	5	SF	3	E	17	F
GOES		0804	0810	0818						14	C 2.6				1.9E-03
GOES		1141	1144	1147	N04	W71	9715			6	SF C 2.1				6.1E-04
RAMY		1144	1144	1149	N04	W71	9715	11	30.2	5	SF	3	E	27	F
HOLL		1511	1511	1513	N02	W74	9715	11	30.1	2	SF	3	E	13	F
GOES		1725	1728	1734	S06	W54	9716			9	1F C 2.6				1.2E-03
HOLL		1726	1730	1741	S06	W54	9716	12	1.7	15	1F	3	E	176	F
HOLL		1847	1847	1852	S20	E48	9727	12	9.4	5	SF	3	E	22	F
RAMY		1847	1848	1920	S22	E47	9727	12	9.4	33	SF	3	E	22	F
HOLL		1904	1905	1908	S20	E47	9727	12	9.4	4	SF	3	E	18	F
GOES		2035	2038	2041	S05	W23	9718			6	SF C 1.7				5.5E-04
RAMY		2037	2037	2042	S05	W23	9718	12	4.1	5	SF	3	E	13	F
GOES		2205	2211	2217	S21	E41	9727			12	SF C 2.6				1.8E-03
HOLL		2207E	2208U	2215D	S21	E41	9727	12	9.1	8D	SF	3	E	40	F
HOLL		2216	2216	2240D	S22	E44	9727	12	9.3	24D	1F	3	E	105	F
GOES		2320	2325	2330	S19	E40	9727			10	SF C 1.9				1.0E-03

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement		Remarks
															Time (UT)	Apparent (10-6 Disk)	
LEAR	05	2323	2323	2332	S19	E40	9727	12	9.0	9	SF		3	E		19	
LEAR	06	0051	0051	0055	N35	W22	9728	12	4.3	4	SF		3	E		15	
GOES		0430	0437	0443						13		C 4.2					2.5E-03
LEAR		0807	0823	0918	S19	E34	9727	12	8.9	71	2F		3	E		356	F
GOES		0813	0826	0839	S19	E34	9727			26	2F M	1.0					1.2E-02
SVTO		0838E	0840U	0851D	S20	E31	9727	12	8.7	13D	SF		2	E		35	F
RAMY		1353	1353	1400	S03	W72	9716	12	1.2	7	SF		3	E		14	F
HOLL		1510	1511	1520	S21	E36	9727	12	9.4	10	SF		3	E		15	
RAMY		1558	1558	1602	N36	W30	9728	12	4.2	4	SF		3	E		16	
GOES		1848	1907	1934	S23	W25	9720			46	1F C	7.6					1.5E-02
HOLL		1850	1908	1936	S23	W25	9720	12	4.8	46	1F		3	E		220	FH
RAMY		1851	1909	1947	S24	W22	9720	12	5.1	56	1F		3	E		242	FH
HOLL		1903	1909	1912	N09	E12	9724	12	7.7	9	SF		3	E		23	F
RAMY		1909	1909	1923D	N08	E11	9724	12	7.6	14D	SF		3	E		21	F
GOES		2052	2058	2101			9727			9	C	3.5					1.8E-03
LEAR	07	0233	0307	0347	N24	W15	9729	12	5.9	74	SF		2	E		71	F
GOES		0435	0439	0442						7	C	2.5					9.0E-04
LEAR		0502	0503	0507	S06	W77	9716	12	1.4	5	SF		3	E		37	
GOES		0510	0528	0614	N02	W49	9717			64	1F C	3.9					1.2E-02
LEAR		0514	0525	0613	N02	W49	9717	12	3.5	59	1F		3	E		115	F
GOES		0804	0817	0823	S18	E22	9727			19	2F C	8.2					7.2E-03
LEAR		0806	0809	0904	S18	E22	9727	12	9.0	58	2F		3	E		324	FH
SVTO		0831E	0835U	0906	S21	E20	9727	12	8.9	35D	1F		2	E		113	F
RAMY		1157	1159	1202	N11	E00	9724	12	7.5	5	SF		3	E		15	
GOES		1642	1705	1733						51	C	4.1					1.0E-02
RAMY		1743	1743	1818	S16	E24	9730	12	9.5	35	SF		3	E		16	F
HOLL		1859	1901	1905	N03	E64		12	12.6	6	SF		3	E		53	
RAMY		1901	1902	1905	N01	E63		12	12.5	4	SF		3	E		21	
GOES	08	0156	0224	0256			9733			60	C	5.3					1.4E-02
GOES		0429	0432	0435	S06	W55	9718			6	SF C	2.9					9.2E-04
LEAR		0431	0431	0439	S06	W55	9718	12	4.1	8	SF		3	E		15	
GOES		0602	0634	0655						53	M	3.4					8.8E-02
GOES		1051	1114	1132			9733			41	C	4.5					9.0E-03
RAMY		1534	1537	1542	S21	W57	9720	12	4.3	8	SF		3	E		19	F
HOLL		1534	1539	1544	S22	W55	9720	12	4.4	10	SF		3	E		24	F
GOES		2135	2143	2153	S21	W01	9727			18	1F C	4.2					3.6E-03
HOLL		2138	2140	2211	S21	W01	9727	12	8.8	33	1F		3	E		124	F
GOES		2211	2221	2230			9727			19	C	5.3					4.5E-03
HOLL		2212	2215	2222	N15	E65	9733	12	13.8	10	SF		3	E		10	F
HOLL		2216	2220	2236	S24	E01	9727	12	9.0	20	SF		3	E		70	F
GOES	09	0417	0421	0424			9734			7	C	2.0					7.4E-04
GOES		0425	0458	0514			9734			49	C	2.6					6.9E-03
LEAR		0448	0450	0452	N26	E08	9731	12	9.8	4	SF		2	E		10	F
LEAR		0636	0639	0647	S07	W69	9718	12	4.1	11	SF		2	E		67	FH
GOES		1232	1236	1241			9718			9	C	2.3					1.1E-03
GOES		1339	1342	1344	N10	E66	9733			5	SF C	2.2					5.5E-04
RAMY		1341	1342	1346	N10	E66	9733	12	14.5	5	SF		3	E		26	
RAMY		1426	1428	1518	S20	W08	9727	12	9.0	52	SF		3	E		84	F
HOLL		1440	1446	1518	S20	W10	9727	12	8.8	38	SF		3	E		84	F
HOLL		1526	1538	1626	S22	W12	9727	12	8.7	60	1F		3	E		231	FH
GOES		1533	1541	1554			9727			21	C	6.8					7.1E-03
RAMY		1534	1538	1608	S20	W11	9727	12	8.8	34	1F		3	E		134	F
GOES		1632	1636	1646			9733			14	C	3.2					2.5E-03
GOES		1726	1802	1829			9733			63	C	6.3					1.8E-02
GOES		2027	2034	2045	S21	W09	9727			18	SF C	4.5					4.0E-03
HOLL		2030	2030	2101	S21	W09	9727	12	9.2	31	SF		3	E		32	F
GOES		2305	2309	2313			9732			8	C	2.6					1.1E-03
GOES		2328	2331	2337			9733			9	C	2.3					1.1E-03
LEAR	10	0133	0230	0315	S19	W16	9727	12	8.8	102	1F		3	E		148	UF
LEAR		0710	0713	0717	S20	W16	9727	12	9.1	7	SF		3	E		17	F
LEAR		0718	0735	0739	S19	W17	9727	12	9.0	21	SF		2	E		27	F
GOES		0931	0938	0943	S25	W19	9727			12	SF C	8.6					4.2E-03
SVTO		0934	0935	0951	S25	W19	9727	12	8.9	17	SF		3	E		64	

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	10	0935	0935	0947	S24	W17	9727	12	9.1	12	SF		2	E		36		FH
GOES		1011	1014	1019						8		C 2.6						1.1E-03
GOES		1208	1224	1240	S20	W19	9727			32	SF	C 2.3						3.7E-03
RAMY		1220	1223	1234	S20	W19	9727	12	9.1	14	SF		3	E		14		F
RAMY		1330	1334	1340	S14	E74	9734	12	16.1	10	SF		3	E		10		
RAMY		1628	1628	1659	N12	E51	9733	12	14.5	31	SF		3	E		10		
GOES		1748	1752	1800			9727			12		C 4.2						2.8E-03
RAMY		1749	1750	1826	S19	W24	9727	12	8.9	37	SF		3	E		60		F
RAMY		1806	1806	1811	N12	E50	9733	12	14.5	5	SF		3	E		11		
GOES		1816	1821	1827						11		C 4.3						2.4E-03
GOES		2239	2248	0000	N10	E52	9733			81	1F	C 7.0						2.8E-02
HOLL		2241	2244	2318	N10	E52	9733	12	14.8	37	1F		3	E		102		F
GOES	11	0330	0343	0347						17		C 3.4						2.6E-03
GOES		0412	0416	0421						9		C 2.7						1.3E-03
GOES		0758	0808	0814	N16	E41	9733			16	SF	X 2.8						1.3E-01
LEAR		0802	0805	0903	N16	E41	9733	12	14.4	61	2B		3	E		428		ZF
LEAR		0830	0832	0836	S10	W33	9736	12	8.9	6	SF		3	E		18		F
RAMY		1354	1355	1358	S26	W32	9727	12	9.1	4	SF		3	E		12		
GOES		1442	1451	1457	S26	W35	9727			15	2N	M 1.3						8.5E-03
RAMY		1445	1449	1510	S26	W35	9727	12	8.9	25	2N		3	E		417		FH
RAMY		1625	1625	1632	S10	W38	9736	12	8.8	7	SF		3	E		16		
RAMY		1719	1720	1722	S22	W31	9727	12	9.3	3	SF		3	E		48		F
RAMY		1809	1810	1813	S10	W39	9736	12	8.8	4	SF		3	E		48		
GOES		1854	1901	1908						14		C 3.4						2.4E-03
HOLL		2123	2124	2130D	S10	W39	9736	12	9.0	7D	SF		3	E		16		
GOES	12	0005	0011	0021	S10	W42	9736			16	SF	C 3.7						3.1E-03
LEAR		0007	0015	0029	S10	W42	9736	12	8.8	22	SF		3	E		27		F
LEAR		0306	0311	0317	S16	W40	9727	12	9.1	11	SF		3	E		25		F
LEAR		0333	0349	0410	S16	W42	9727	12	9.0	37	SF		3	E		45		F
GOES		0336	0350	0404	S16	W42	9727			28	SF	C 3.4						5.3E-03
GOES		0448	0456	0502			9736			14		C 5.6						3.6E-03
LEAR		0449	0453	0505	S14	W44	9727	12	8.9	16	SF		3	E		24		F
LEAR		0450	0455	0514	S10	W43	9736	12	9.0	24	SF		3	E		87		F
GOES		0845	0853	0859	S26	W44	9727			14	SF	C 3.2						2.3E-03
LEAR		0849	0849	0852	S26	W44	9727	12	8.9	3	SF		2	E		17		F
GOES		1141	1145	1149						8		C 2.6						1.1E-03
SVTO		1210	1212	1225D	S20	W48	9727	12	8.8	15D	SF		3	E		36		F
RAMY		1211	1212	1220	S19	W39	9727	12	9.5	9	1F		3	E		136		F
GOES		1224	1228	1231	N14	E28	9733			7	SF	C 4.8						1.4E-03
SVTO		1227E	1228U	1238D	N14	E28	9733	12	14.6	11D	SF		3	E		55		F
GOES		1415	1429	1439						24		C 4.4						5.5E-03
RAMY		1441E	1441U	1500D	S19	W52	9727	12	8.6	19D	SF		3	E		18		
RAMY		1441E	1447U	1501D	N14	E27	9733	12	14.6	20D	SF		3	E		26		
HOLL		1549	1550	1553	N15	E28	9733	12	14.8	4	SF		3	E		27		
RAMY		1550	1550	1552	N15	E27	9733	12	14.7	2	SF		3	E		15		
HOLL		1714	1715	1721	N15	E27	9733	12	14.8	7	SF		3	E		17		
RAMY		1801E	1926U	2013D	S18	W54	9727	12	8.6	132D	SF		3	E		75		F
RAMY		1811E	1923U	2017D	N15	E24	9733	12	14.6	126D	1N		3	E		237		F
HOLL		1838	1838	1844	S17	W53	9726	12	8.7	6	SF		3	E		12		
GOES		1900	1911	1918			9733			18		M 3.0						2.2E-02
GOES		2020	2024	2028			9727			8		C 9.3						3.5E-03
GOES		2141	2200	2218			9727			37		M 5.6						8.6E-02
GOES		2313	2322	2328	S19	W55	9727			15	1F	M 4.8						2.6E-02
LEAR		2316	2318	2349	S19	W55	9727	12	8.8	33	1F		3	E		153		F
LEAR	13	0022	0023	0045	S19	W56	9727	12	8.7	23	SF		3	E		22		
LEAR		0100	0135	0410	S18	W57	9727	12	8.7	190	SF		3	E		64		F
GOES		0233	0241	0259	N15	E20	9733			26	SF	C 4.1						5.7E-03
LEAR		0238	0248	0255	N15	E20	9733	12	14.6	17	SF		3	E		29		F
GOES		0632	0640	0700	S20	W58	9727			28	SF	M 1.8						2.2E-02
LEAR		0634	0638	0656	S20	W58	9727	12	8.8	22	SF		2	E		50		F
GOES		1006	1012	1024						18		C 3.1						2.9E-03
GOES		1322	1326	1331						9		C 3.4						1.6E-03
GOES		1358	1403	1407						9		C 2.4						1.2E-03
GOES		1420	1430	1435	N16	E09	9733			15	3B	X 6.2						2.5E-01
RAMY		1424	1430	1545	N16	E09	9733	12	14.3	81	3B		3	E				UF

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	13	1424E	1430U	1628	N14	E08	9733	12	14.2	124D	3B		3	E				UF
HOLL		1555	1600	1609	S18	W61	9727	12	9.0	14	SF		3	E		47		F
RAMY		1556	1600	1623	S20	W64	9727	12	8.8	27	SF		3	E		49		F
HOLL		1616	1616	1623	S19	W64	9727	12	8.8	7	SF		3	E		14		F
HOLL		1656	1657	1708	S18	E58	9738	12	18.1	12	SF		3	E		20		F
HOLL		1714	1715	1722	N15	E12	9733	12	14.6	8	SF		3	E		19		F
HOLL		1752	1755	1814	S18	W65	9727	12	8.8	22	SF		3	E		90		
HOLL		1815	1815	1819	S21	W59	9727	12	9.2	4	SF		3	E		10		
HOLL		1909	1916	1929	S20	E54	9738	12	17.9	20	SF		3	E		45		F
HOLL		1931	1931	1936	S28	E16	9737	12	15.1	5	SF		3	E		13		
LEAR		2243	2301	2333	S19	W67	9727	12	8.8	50	1F		3	E		168		F
GOES		2244	2307	2317	S18	W67	9727			33	1F	M 1.4						2.2E-02
HOLL		2245	2301	2318	S18	W67	9727	12	8.8	33	1F		3	E		126		F
LEAR	14	0046	0052	0126	S20	W69	9727	12	8.7	40	SF		3	E		22		F
LEAR		0050	0050	0058	S14	W03	9739	12	13.8	8	SF		3	E		13		
LEAR		0145	0150	0201	S20	W69	9727	12	8.8	16	SF		3	E		19		
LEAR		0335	0338	0404	S20	W69	9727	12	8.9	29	SF		3	E		52		F
LEAR		0404	0406	0411	S20	W70	9727	12	8.8	7	SF		3	E		22		F
LEAR		0417	0418	0424	S12	W72	9736	12	8.7	7	SF		3	E		57		F
GOES		0645	0652	0657	S20	W70	9727			12	SF	C 5.9						3.2E-03
LEAR		0648	0650	0719	S20	W70	9727	12	8.9	31	SF		3	E		73		F
LEAR		0653	0653	0656	S14	W63	9730	12	9.5	3	SF		3	E		16		
GOES		0840	0913	0953			9736			73		M 3.5						1.1E-01
LEAR		0848	0849	0853	S12	W75	9736	12	8.7	5	SF		3	E		21		F
GOES		1250	1256	1305	N14	W02	9733			15	SF	C 7.0						5.9E-03
RAMY		1250	1257	1310	N14	W02	9733	12	14.4	20	SF		3	E		25		F
HOLL		1525	1536	1548	S25	E05	9737	12	15.0	23	SF		3	E		21		
RAMY		1536	1536	1547	S27	E06	9737	12	15.1	11	SF		3	E		16		F
RAMY		1539	1539	1543	S22	W74	9727	12	9.0	4	SF		3	E		21		F
HOLL		1545	1547	1555	N17	W02	9733	12	14.5	10	SF		3	E		38		F
HOLL		1557	1557	1603	N17	W01	9733	12	14.6	6	SF		3	E		16		F
RAMY		1626	1628	1632	N14	W05	9733	12	14.3	6	SF		3	E		44		F
HOLL		1626	1628	1635	N17	W01	9733	12	14.6	9	SF		3	E		38		F
HOLL		1710	1713	1728	N18	W05	9733	12	14.3	18	SF		3	E		40		F
HOLL		1842	1844	1846	N18	W05	9733	12	14.4	4	SF		3	E		12		F
GOES		1941	1954	2002	N16	W04	9733			21	2N	M 4.4						3.0E-02
HOLL		1944	1950	2124	N16	W04	9733	12	14.5	100	2N		3	E		452		ZU
HOLL		2218	2218	2221	N15	W07	9733	12	14.4	3	SF		3	E		10		
HOLL		2222	2223	2225	N17	W07	9733	12	14.4	3	SF		3	E		14		
HOLL		2233	2235	2250	N14	W10	9733	12	14.2	17	SF		3	E		18		
LEAR		2235	2235	2244	N11	W06	9733	12	14.5	9	SF		2	E		13		F
LEAR	15	0016	0028	0037	N16	W10	9733	12	14.2	21	SF		2	E		50		F
GOES		0024	0030	0041	N16	W10	9733			17	SF	C 6.5						6.2E-03
GOES		0051	0101	0115	S19	W90	9727			24	SF	C 8.3						1.0E-02
LEAR		0054	0058	0110	S19	W90	9727	12	8.2	16	SF		3	E		55		FH
LEAR		1004	1008U	1018D	N14	W16	9733	12	14.2	14D	SF		1	E		40		F
GOES		1005	1010	1019	N14	W16	9733			14	SF	C 4.9						3.7E-03
GOES		1239	1253	1303						24		C 9.4						1.0E-02
GOES		1656	1659	1701						5		C 5.0						1.3E-03
GOES		1728	1733	1735	N18	W17	9733			7	SF	C 4.3						1.6E-03
HOLL		1731	1733	1738	N18	W17	9733	12	14.4	7	SF		3	E		20		F
GOES		1821	1824	1826	N17	W13	9733			5	SF	C 2.9						6.9E-04
HOLL		1824	1825	1829	N17	W13	9733	12	14.8	5	SF		3	E		12		
HOLL		1917	1920	1922	N14	W21	9733	12	14.2	5	SF		3	E		14		
GOES		1950	1953	1958						8		C 3.3						1.3E-03
GOES		2124	2129	2132						8		C 3.3						1.3E-03
GOES		2311	2315	2318	N12	W25	9733			7	SF	C 3.5						1.2E-03
LEAR		2313	2316	2320	N12	W25	9733	12	14.1	7	SF		3	E		38		F
LEAR	16	0114	0121	0229	N15	W23	9733	12	14.3	75	2N		4	E		441		EF
GOES		0114	0124	0129	N15	W23	9733			15	2N	M 1.5						7.9E-03
GOES		0309	0328	0348	N13	W26	9733			39	1F	M 1.0						1.5E-02
LEAR		0317	0328	0440	N13	W26	9733	12	14.2	83	1F		3	E		146		FH
LEAR		0404	0407	0410	N10	E75	9742	12	21.8	6	SF		3	E		11		
LEAR		0434	0435	0443	N08	E78	9742	12	22.0	9	SF		3	E		72		FH
LEAR		0531	0534	0536	N11	E79	9742	12	22.2	5	SF		4	E		20		F

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	16	0733	0743	0757	N13	W29	9733		24	SF C 8.5					9.6E-03
LEAR		0735	0741	0816	N13	W29	9733	12 14.1	41	SF	2	E	50		F
GOES		1043	1111	1119					36	C 2.7					4.5E-03
GOES		1415	1424	1434					19	C 3.2					3.0E-03
RAMY		1435	1437	1441	S12	E81		12 22.7	6	SF	3	E	14		
HOLL		1856	1858	1920	N11	E70	9742	12 22.0	24	SF	3	E	16		
LEAR	17	0111	0111	0133	N14	W37	9733	12 14.2	22	SF	3	E	17		
LEAR		0210	0213	0217	N14	W37	9733	12 14.3	7	SF	3	E	19		F
LEAR		0302	0308	0315	N15	W38	9733	12 14.2	13	SF	3	E	17		F
LEAR		0311	0311	0314	N00	W63	9732	12 12.4	3	SF	3	E	10		
GOES		0359	0405	0413	N13	W37	9733		14	SF C 2.0					1.4E-03
LEAR		0401	0405	0416	N13	W37	9733	12 14.4	15	SF	3	E	24		F
LEAR		0633	0634	0637	N11	E56	9742	12 21.5	4	SF	2	E	18		F
GOES		1342	1345	1349					7	C 1.4					5.6E-04
HOLL		1750	1751	1757	N03	E23	9741	12 19.5	7	SF	3	E	22		
LEAR	18	0111	0111	0114	S13	W57	9739	12 13.7	3	SF	3	E	21		F
LEAR		0409	0415	0421	S15	W06	9738	12 17.7	12	SF	3	E	56		F
LEAR		0435	0444	0454	N12	W50	9733	12 14.4	19	SF	3	E	55		F
GOES		0439	0444	0449	N12	W50	9733		10	SF C 3.0					1.5E-03
LEAR		0451	0451	0457	N16	E71		12 23.6	6	SF	3	E	14		
LEAR		0504	0505	0513	N16	E71		12 23.6	9	SF	3	E	28		
LEAR		0512	0514	0520	N12	E43	9742	12 21.4	8	SF	3	E	67		F
LEAR		0559	0600	0609	N12	W55	9733	12 14.1	10	SF	3	E	33		F
GOES		0732	0736	0742					10	C 1.6					8.8E-04
LEAR		0734	0754	0815	N12	W55	9733	12 14.2	41	1N	3	E	162		FE
GOES		0749	0754	0807	N12	W55	9733		18	1N C 4.8					4.0E-03
LEAR		0842	0844	0852	N09	E41	9742	12 21.4	10	SF	3	E	20		F
HOLL		1604	1604	1615	N11	E39	9742	12 21.6	11	SF	3	E	15		F
RAMY		1605	1607	1616	N13	E37	9742	12 21.5	11	SF	3	E	11		F
HOLL		1931	1936	1944	N04	E42	9742	12 21.9	13	SF	3	E	42		F
GOES		1959	2003	2007	N10	E37	9742		8	SF C 3.7					1.4E-03
HOLL		2001	2001	2011	N10	E37	9742	12 21.6	10	SF	3	E	32		F
GOES	19	0111	0115	0124	N12	W63	9733		13	1F C 3.9					2.4E-03
LEAR		0113	0116	0127	N12	W63	9733	12 14.3	14	1F	3	E	123		F
GOES		0229	0232	0236					7	C 4.9					1.5E-03
GOES		0452	0517	0548	N06	E33	9742		56	SF C 4.6					1.2E-02
LEAR		0504	0509	0529	N06	E33	9742	12 21.7	25	SF	2	E	37		F
GOES		1035	1040	1042					7	C 3.5					1.0E-03
GOES		1256	1301	1303					7	C 5.4					1.4E-03
GOES		1354	1357	1359	S14	W76	9739		5	SF C 1.6					4.5E-04
SVTO		1356E	1356U	1424D	S14	W76	9739	12 13.8	28D	SF	3	E	35		
GOES		1701	1706	1709	S15	W74	9739		8	SF M 1.3					3.6E-03
RAMY		1704	1704	1708	S15	W74	9739	12 14.1	4	SF	3	E	60		H
HOLL		1704	1705	1710	S11	W75	9739	12 14.1	6	SF	3	E	41		
GOES		1726	1730	1734					8	C 2.0					8.6E-04
GOES		1935	1950	2008	S20	W19	9738		33	SF C 2.2					3.9E-03
HOLL		1942	1943	1951	S20	W19	9738	12 18.4	9	SF	3	E	14		F
GOES		2043	2047	2049					6	C 2.1					6.9E-04
HOLL		2129	2130	2137	N06	W08	9741	12 19.3	8	SF	3	E	18		
HOLL		2206	2207	2211	N10	E74	9747	12 25.5	5	SF	3	E	13		
HOLL		2206	2207	2212	N10	E31	9742	12 22.2	6	SF	3	E	16		H
GOES		2258	2303	2310					12	C 2.4					1.5E-03
LEAR	20	0001	0003	0006	N13	E27	9742	12 22.0	5	SF	2	E	18		F
LEAR		0205	0206	0209	N12	E25	9742	12 22.0	4	SF	2	E	26		F
LEAR		0227	0228	0234	N12	E72	9747	12 25.5	7	SF	2	E	19		F
LEAR		0315	0316	0318	N13	E25	9742	12 22.0	3	SF	2	E	16		F
GOES		0432	0438	0442					10	C 8.7					3.6E-03
LEAR		0530	0537	0556	N13	E71	9747	12 25.6	26	SF	2	E	23		F
LEAR		0727	0727	0732	S19	W26	9738	12 18.3	5	SF	3	E	16		F
GOES		0844	0847	0850	N06	W14	9741		6	SF C 3.1					1.0E-03
LEAR		0846	0848	0853	N05	W14	9741	12 19.3	7	SF	2	E	44		F
SVTO		0846	0848	0856	N06	W14	9741	12 19.3	10	SF	3	E	37		F
GOES		1103	1106	1112					9	C 2.4					1.2E-03
GOES		1522	1526	1533	N12	E22	9742		11	SF C 4.4					2.6E-03

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks	
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
HOLL	20	1524	1527	1549	N12	E22	9742	12 22.3	25	SF	3	E	37		F	
	RAMY	1524	1528	1543	N12	E20	9742	12 22.1	19	SF	3	E	29		F	
	GOES	1710	1715	1724	N06	E17	9742		14	SF	C 2.7				2.1E-03	
	RAMY	1711	1717	1740	N06	E17	9742	12 22.0	29	SF		3	E	29		F
	HOLL	1803E	1804U	1808	N05	E18	9742	12 22.1	5D	SF		3	E	12		F
	GOES	1808	1812	1818	N11	E21	9742		10	SF	C 5.0					2.4E-03
	HOLL	1810	1811	1844	N11	E21	9742	12 22.3	34	SF		3	E	35		F
	HOLL	1847	1848	1855	N12	E61	9747	12 25.4	8	SF		3	E	40		F
HOLL	2116	2125	2141	N12	E15	9742	12 22.0	25	SF		3	E	45			
GOES	21	0023	0029	0039	N13	E16	9742		16	SF	C 3.5					2.7E-03
	LEAR	0027	0028	0034	N13	E16	9742	12 22.2	7	SF		2	E	20		F
	GOES	0048	0053	0059					11		C 3.7					2.1E-03
	GOES	0324	0328	0332	N13	E14	9742		8	SF	C 3.1					1.4E-03
	LEAR	0326	0328	0334	N13	E14	9742	12 22.2	8	SF		3	E	21		F
	GOES	0355	0406	0411			9742		16		C 2.9					2.4E-03
	LEAR	0356	0359	0409	S05	E69	9749	12 26.3	13	SF		3	E	39		
	LEAR	0403	0408	0413	N11	E09	9742	12 21.8	10	SF		3	E	21		F
	GOES	0516	0521	0527	N13	E12	9742		11	SF	C 4.0					2.0E-03
	LEAR	0517	0520	0533	N13	E12	9742	12 22.1	16	SF		3	E	55		F
	LEAR	0548	0550	0606	S05	E68	9749	12 26.3	18	SF		3	E	23		
	LEAR	0625	0629	0642	S30	W68		12 15.9	17	SF		3	E	23		
	LEAR	0921	0922	0926	N13	E10	9742	12 22.1	5	SF		3	E	17		F
	GOES	1003	1008	1013	N13	E06	9742		10	SF	C 3.1					1.6E-03
	SVTO	1005	1005	1014	N13	E06	9742	12 21.9	9	SF		3	E	15		F
	LEAR	1005	1007	1011	N13	E06	9742	12 21.9	6	SF		2	E	36		F
	SVTO	1032	1033	1039	N13	E07	9742	12 22.0	7	SF		3	E	16		
	GOES	1338	1341	1345	N11	E06	9742		7	SF	C 3.1					1.0E-03
	SVTO	1340	1342	1351	N12	E08	9742	12 22.2	11	SF		3	E	34		H
	RAMY	1340	1342	1359	N11	E06	9742	12 22.0	19	SF		3	E	64		F
	RAMY	1515	1515	1524	N06	E02	9742	12 21.8	9	SF		3	E	26		F
HOLL	1515E	1516U	1523D	N06	E01	9742	12 21.7	8D	SF		3	E	25		F	
HOLL	1600	1600	1608	N06	E01	9742	12 21.7	8	SF		3	E	19			
RAMY	1600	1600	1609	N05	E01	9742	12 21.7	9	SF		3	E	21			
HOLL	1850	1855	1858	S27	W75		12 15.9	8	SF		3	E	15			
GOES	2130	2152	2216	S10	E58	9749		46	SF	C 3.5					7.9E-03	
HOLL	2144	2144	2153	S10	E58	9749	12 26.3	9	SF		3	E	10			
HOLL	2154	2205	2218	S10	E58	9749	12 26.3	24	SF		3	E	22		F	
LEAR	22	0032	0034	0037	S29	W80		12 15.7	5	SF		3	E	18		
	LEAR	0259	0300	0306	S30	W80		12 15.8	7	SF		3	E	24		
	LEAR	0312	0313	0320	S31	W80		12 15.8	8	SF		3	E	19		
	LEAR	0442	0447	0502	S11	E17	9748	12 23.5	20	SF		3	E	31		F
	GOES	0538	0545	0550					12		C 3.5					1.9E-03
	LEAR	0726	0727	0735	S11	E15	9748	12 23.4	9	SF		3	E	13		
	LEAR	0756	0758	0803	S29	W81		12 16.0	7	SF		3	E	13		
	LEAR	1024	1025	1030	N20	E07	9745	12 23.0	6	SF		2	E	16		
	GOES	1152	1155	1159					7		C 3.0					1.1E-03
	GOES	1514	1517	1520					6		C 2.6					8.1E-04
	HOLL	1631	1635	1642	S11	E09	9748	12 23.4	11	SF		3	E	15		F
	HOLL	1815	1822	1824	S09	E46	9749	12 26.2	9	SF		3	E	15		F
	GOES	2135	2139	2142					7		C 2.6					9.2E-04
	GOES	23	0344	0357	0418	S13	W02	9748		34	SF	C 4.9				
LEAR		0347	0350	0456	S13	W02	9748	12 23.0	69	SF		2	E	91		F
LEAR		0457	0500	0502	S13	W02	9748	12 23.0	5	SF		2	E	13		
LEAR		0654	0655	0706	S02	E64		12 28.1	12	SF		2	E	56		F
GOES		0811	0816	0821	S10	W01	9748		10	SF	C 3.1					1.5E-03
LEAR		0813	0814	0821	S10	E00	9748	12 23.3	8	SF		2	E	44		F
SVTO		0815	0817	0821	S10	W01	9748	12 23.3	6	SF		3	E	17		F
LEAR		0937	0938	0944	S09	W01	9748	12 23.3	7	SF		2	E	21		F
GOES		1039	1043	1052					13		C 3.2					2.1E-03
GOES		1100	1110	1118					18		C 7.1					5.6E-03
GOES		1247	1252	1257					10		C 5.0					2.4E-03
HOLL		1600	1607	1617	S11	E36	9749	12 26.4	17	SF		3	E	19		F
HOLL		1739	1745	1753	N10	W24	9742	12 21.9	14	SF		3	E	14		
HOLL		1811	1813	1818	S06	E63		12 28.5	7	SF		3	E	17		
GOES	1912	1918	1928					16		C 3.9					3.3E-03	



H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region	Mo								Time (UT)	Apparent (10 <sup>-6</sup> Disk)	Corr (Sq Deg)	
HOLL	23	2000	2005	2013	N11	W25	9742		12	21.9	13	SF		3	E		23		
HOLL		2059	2112	2118	N11	W26	9742		12	21.9	19	SF		3	E		15		
HOLL		2106	2108	2111	S20	E49	9753		12	27.6	5	SF		3	E		13		
HOLL		2148	2148	2151	S05	E55			12	28.0	3	SF		3	E		24		
GOES		2238	2247	2252							14		C 4.8						3.4E-03
GOES		2308	2336	2353	S14	W12	9748				45	SF	M 1.2						2.2E-02
LEAR		2322E	2334U	2415	S14	W12	9748		12	23.1	53D	SF		2	E		88		F
GOES	24	0026	0032	0037	S07	E59					11	1N	M 1.7						7.4E-03
LEAR		0030	0032	0045	S07	E59			12	28.4	15	1N		2	E		171		E
LEAR		0124	0129	0142	N10	W30	9742		12	21.8	18	SF		2	E		15		
LEAR		0126	0151	0204	S19	E59	9753		12	28.6	38	SF		2	E		39		
GOES		0259	0304	0310	N11	W30	9742				11	SF	C 3.3						1.9E-03
LEAR		0302	0304	0320	N11	W30	9742		12	21.9	18	SF		2	E		29		F
GOES		0749	0805	0840	S07	W19	9748				51	SF	C 4.4						1.2E-02
LEAR		0750	0811	0842	S07	W19	9748		12	22.9	52	SF		2	E		50		F
LEAR		0752	0815	0822	S08	W25	9743		12	22.4	30	SF		2	E		53		F
LEAR		0828	0829	0833	S18	E44	9753		12	27.7	5	SF		2	E		27		F
LEAR		0900	0903	0912	N11	W30	9742		12	22.1	12	SF		2	E		14		F
GOES		1350	1400	1410							20		M 3.5						2.4E-02
RAMY		1551	1607	1615	N10	W39	9742		12	21.7	24	SF		3	E		10		
RAMY		1626	1637	1656	N10	W39	9742		12	21.7	30	SF		3	E		40		
RAMY		1957	1958	2001	N10	W41	9742		12	21.7	4	SF		3	E		16		
GOES		2203	2208	2222							19		C 4.8						4.4E-03
GOES		2234	2241	2247	S10	E46	9754				13	1F	M 1.4						7.2E-03
LEAR		2238E	2239	2258	S10	E46	9754		12	28.4	20D	1F		3	E		166		F
GOES	25	0028	0037	0048	S11	W20	9748				20	SF	C 8.0						7.3E-03
LEAR		0031	0036	0050	S11	W20	9748		12	23.5	19	SF		3	E		52		F
LEAR		0259	0301	0303	N06	W47	9742		12	21.6	4	SF		3	E		16		
LEAR		0407	0418	0447	S13	W29	9748		12	23.0	40	SF		3	E		25		F
LEAR		0435	0436	0441	N05	W48	9742		12	21.6	6	SF		3	E		27		
LEAR		0508	0508	0515	N10	W41	9742		12	22.1	7	SF		3	E		22		F
GOES		0700	0708	0712	S11	E50	9754				12	1F	M 1.2						5.1E-03
LEAR		0703	0708	0717	S11	E50	9754		12	29.0	14	1F		3	E		103		F
LEAR		0706	0713	0719	N09	W45	9742		12	21.9	13	SF		3	E		25		
LEAR		0835	0843	0857	N09	W46	9742		12	21.9	22	SF		3	E		24		
LEAR		0936	0941	1009	N05	E27	9751		12	27.4	33	SF		2	E		30		F
SVTO		0936	0941	1013	N04	E28	9751		12	27.5	37	SF		3	E		29		F
GOES		1130	1205	1245	N11	W48	9742				75	SF	C 5.4						1.9E-02
SVTO		1148	1152	1208	N11	W48	9742		12	21.9	20	SF		3	E		12		F
HOLL		1646	1647	1651	N08	W56	9742		12	21.5	5	SF		3	E		23		
HOLL		1742	1745	1749	N10	W52	9742		12	21.8	7	SF		3	E		25		F
RAMY		1824	1839	1853	S12	E35	9754		12	28.4	29	SF		3	E		14		
HOLL		1825	1840	1851	S11	E36	9754		12	28.5	26	SF		3	E		16		
RAMY		1952	1953	1955	N10	W58	9742		12	21.5	3	SF		3	E		39		F
HOLL		2025	2034	2113	S11	W40	9748		12	22.8	48	1F		3	E		124		FH
GOES		2028	2037	2049	S11	W40	9748				21	1F	C 9.8						1.0E-02
HOLL		2047	2047	2050	N09	W60	9742		12	21.4	3	SF		3	E		12		
HOLL		2116	2118	2121	N07	W57	9742		12	21.6	5	SF		3	E		39		
HOLL		2116	2124	2132	S11	E42	9754		12	29.0	16	SF		3	E		28		F
HOLL		2131	2131	2208	N06	E18	9751		12	27.2	37	SF		3	E		17		F
HOLL		2303	2305	2316	N08	W58	9742		12	21.6	13	SF		3	E		33		
LEAR		2304	2304	2308	N06	W58	9742		12	21.6	4	SF		3	E		13		
HOLL		2305	2319	2336	N07	E17	9751		12	27.2	31	SF		3	E		37		
LEAR		2306	2322	2335	N06	E17	9751		12	27.2	29	SF		3	E		22		F
GOES		2310	2314	2317	S11	E41	9754				7	1F	C 7.5						2.5E-03
HOLL		2311	2313	2325	S11	E41	9754		12	29.0	14	1F		3	E		151		F
LEAR		2312	2313	2323	S11	E39	9754		12	28.9	11	SF		3	E		78		F
GOES	26	0001	0010	0017	N06	E17	9751				16	SF	C 6.2						4.8E-03
LEAR		0002	0004	0012	S10	W37	9748		12	23.2	10	SF		3	E		27		F
LEAR		0005	0009	0015	N06	W59	9742		12	21.6	10	SF		3	E		37		F
LEAR		0008	0032	0055	N06	E17	9751		12	27.3	47	SF		4	E		17		F
LEAR		0122	0122	0126	S10	W36	9748		12	23.3	4	SF		3	E		18		F
LEAR		0123	0131	0149	N06	E16	9751		12	27.2	26	SF		3	E		19		
LEAR		0231	0235	0243	S10	W38	9748		12	23.2	12	SF		3	E		18		
LEAR		0231	0247	0314	N06	E15	9751		12	27.2	43	SF		3	E		43		F

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur (Min)	Imp	Obs	Time (UT)	Area Measurement	Corr (Sq Deg)	Remarks
							USAF						Region		
LEAR	26	0234	0234	0240	N10	W61	9742	12	21.5	6	SF	3	E	14	FH
GOES		0327	0336	0349	N01	E09	9751			22	SF C 8.2				8.2E-03
LEAR		0330	0331	0431	N01	E09	9751	12	26.8	61	SF	3	E	88	F
LEAR		0401	0403	0406	N10	W59	9742	12	21.7	5	SF	3	E	28	F
LEAR		0432	0514	0823	N08	W54	9742	12	22.1	231	1B	3	E	222	FET
GOES		0432	0540	0647	N08	W54	9742			135	1B M 7.1				3.4E-01
LEAR		0443	0444	0453	N07	E15	9751	12	27.3	10	SF	3	E	15	
LEAR		0526	0531	0542	S10	W40	9748	12	23.2	16	SF	3	E	72	F
LEAR		0541	0548	0553	S10	E29	9754	12	28.4	12	SF	3	E	32	F
LEAR		0713	0724	0726	S08	E35	9754	12	28.9	13	SF	3	E	17	F
LEAR		0825	0841	0857	N05	W58	9742	12	22.0	32	SF	3	E	20	F
LEAR		0833	0838	0841	S10	W42	9748	12	23.2	8	SF	3	E	10	
LEAR		0834	0838	0911	S09	E32	9754	12	28.7	37	1F	3	E	115	F
LEAR		0913	0920	0931	S11	W42	9748	12	23.2	18	SF	3	E	32	F
LEAR		0914	0915	0924	S07	E34	9754	12	28.9	10	SF	3	E	44	F
LEAR		0936	0939	0941	N07	E13	9751	12	27.4	5	SF	3	E	23	
LEAR		0948	0949	0955	N09	W65	9742	12	21.5	7	SF	3	E	46	
GOES		1222	1226	1229	N10	W68	9742			7	1F M 1.8				4.7E-03
RAMY		1224	1226	1235	N10	W68	9742	12	21.4	11	1F	3	E	126	FH
RAMY		1251	1252	1256	N14	W60	9742	12	22.0	5	SF	3	E	26	
GOES		1409	1412	1415	N12	W70	9742			6	SF C 7.4				2.3E-03
RAMY		1411	1411	1418	N12	W70	9742	12	21.3	7	SF	3	E	40	H
RAMY		1614	1616	1623	N14	W63	9742	12	21.9	9	SF	3	E	13	F
HOLL		1630	1632	1640	S12	W48	9748	12	23.1	10	SF	3	E	21	FH
RAMY		1630	1632	1641	S11	W50	9748	12	22.9	11	SF	3	E	21	H
HOLL		1640	1705	1722	S09	E23	9754	12	28.4	42	SF	3	E	20	F
GOES		1713	1718	1731	N10	W72	9742			18	SF M 1.3				1.2E-02
RAMY		1716	1718	1740	N10	W72	9742	12	21.3	24	SF	3	E	70	F
HOLL		1751	1755	1800	N05	E06	9751	12	27.2	9	SF	3	E	28	
HOLL		1752	1752	1756	S10	W56	9743	12	22.5	4	SF	3	E	15	
RAMY		1752	1752	1756	S09	W57	9743	12	22.5	4	SF	3	E	14	
RAMY		1752	1755	1800	N04	E06	9751	12	27.2	8	SF	3	E	17	F
HOLL		1803	1812	1816	N07	E07	9751	12	27.3	13	SF	3	E	10	
RAMY		1854	1856	1906	N04	E08	9751	12	27.4	12	SF	3	E	12	
HOLL		1854	1857	1904	N06	E07	9751	12	27.3	10	SF	3	E	21	
RAMY		1930	1932	1936	N09	W73	9742	12	21.3	6	SF	3	E	13	
RAMY		1932	1932	1936	N04	E06	9751	12	27.3	4	SF	3	E	12	
HOLL		2041	2059	2118	S10	W56	9748	12	22.6	37	SF	3	E	54	
GOES		2111	2115	2119	S10	W56	9748			8	SF M 1.2				4.4E-03
HOLL		2141	2142	2151	S10	W46	9748	12	23.4	10	SF	3	E	18	
HOLL		2226	2226	2235	N02	W01	9751	12	26.9	9	SF	3	E	13	F
GOES		2238	2242	2245						7	M 1.0				3.2E-03
LEAR	27	0040	0040	0048	N07	E06	9751	12	27.5	8	SF	2	E	13	F
LEAR		0137	0137U	0149D	N06	W73	9742	12	21.6	12D	SF	2	E	33	F
LEAR		0252	0252U	0259D	S12	W54	9752	12	23.0	7D	SF	2	E	31	F
LEAR		0314	0314	0318	S11	W57	9752	12	22.8	4	SF	2	E	12	F
GOES		0341	0345	0350			9752			9	C 5.7				2.7E-03
LEAR		0349E	0349U	0404D	N07	W04	9751	12	26.8	15D	SF	2	E	24	F
LEAR		0350E	0417U	0430D	S11	W58	9752	12	22.8	40D	SF	2	E	33	F
LEAR		0354E	0355U	0400D	N10	W72	9742	12	21.7	6D	SF	2	E	20	
LEAR		0431E	0436U	0446D	S11	W54	9752	12	23.1	15D	SF	2	E	24	F
LEAR		0447	0610U	0645	S15	W86	9752	12	20.7	118	2N	2	E	295	F
GOES		0526	0613	0619	S15	W86	9752			53	2N M 1.4				2.2E-02
LEAR		0536E	0537U	0557D	N06	E03	9751	12	27.4	21D	SF	2	E	40	F
LEAR		0647	0649	0656	S11	W55	9752	12	23.1	9	SF	2	E	37	F
LEAR		0717	0721	0724	S10	W56	9752	12	23.1	7	SF	2	E	13	
LEAR		0724	0725	0727	S11	W57	9752	12	23.0	3	SF	2	E	33	
LEAR		0728	0735	0741	S15	W86	9752	12	20.8	13	SF	2	E	15	
LEAR		0755	0759	0804	S15	W87	9752	12	20.7	9	SF	2	E	21	
LEAR		0755	0801	0810	N10	W79	9742	12	21.4	15	SF	2	E	40	F
GOES		0759	0802	0804			9752			5	C 4.5				1.2E-03
LEAR		0855	0856	0900	S11	W57	9752	12	23.1	5	SF	2	E	21	
GOES		0936	0939	0945						9	C 4.2				2.1E-03
GOES		1127	1133	1141	N08	W80	9742			14	SF M 1.0				6.8E-03
SVTO		1130	1130	1143	N08	W80	9742	12	21.5	13	SF	3	E	29	
RAMY		1218	1218	1226	N09	W82	9742	12	21.3	8	SF	3	E	16	
RAMY		1235	1238	1244	S12	E12	9754	12	28.4	9	SF	3	E	18	F

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF		Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement		Remarks	
							Region	Mo Day						Time (UT)	Apparent (10-6 Disk)		Corr (Sq Deg)
GOES	27	1417	1422	1429					12							4.6E-03	
RAMY		1524	1529	1551	S11	E10	9754	12	28.4	27	SF			3	E		F
GOES		1526	1531	1536	S11	E10	9754			10	SF	C 9.0				96	4.5E-03
GOES		1643	1658	1720	S10	W66	9748			37	2N	M 2.3					3.8E-02
RAMY		1644	1651	1920	S10	W66	9748	12	22.7	156	2N			3	E	292	F
RAMY		1657	1657	1703	S08	W72	9743	12	22.3	6	SF			3	E	10	F
RAMY		1704	1705	1707	N11	W89	9742	12	21.0	3	SF			3	E	22	
RAMY		1824	1828	1838	S07	W71	9743	12	22.4	14	SF			3	E	39	
GOES		1943	1948	1954						11		C 7.6					4.5E-03
GOES		2019	2027	2033	S09	E15	9754			14	SF	C 6.5					5.0E-03
RAMY		2020	2025	2041	S09	E15	9754	12	29.0	21	SF			3	E	41	F
RAMY		2103	2107	2116	S09	W65	9748	12	23.0	13	SF			3	E	17	
GOES		2134	2143	2153	S12	W70	9743			19	SF	C 4.7					5.0E-03
HOLL		2134	2144	2155	S12	W70	9743	12	22.6	21	SF			3	E	80	
HOLL		2318	2318	2322	S11	W64	9748	12	23.1	4	SF			3	E	13	
GOES	28	0123	0127	0132						9		C 6.5					3.2E-03
GOES		0234	0240	0307	S11	E03	9754			33	SF	C 4.2					7.7E-03
LEAR		0236	0239	0301	S11	E03	9754	12	28.3	25	SF			3	E	65	F
LEAR		0301	0305	0309	S11	W66	9748	12	23.2	8	SF			3	E	14	F
LEAR		0312	0313	0315	S11	W66	9748	12	23.2	3	SF			3	E	13	F
GOES		0342	0351	0356	N04	W90	9742			14	SF	M 4.7					2.4E-02
LEAR		0346	0347	0353	N04	W90	9742	12	21.4	7	SF			3	E	49	
LEAR		0406	0408	0429	S11	W66	9748	12	23.2	23	SF			3	E	19	F
LEAR		0422	0424	0431	S08	E07	9754	12	28.7	9	SF			3	E	15	F
GOES		0647	0655	0706	S07	E10	9754			19	1F	M 1.0					8.4E-03
LEAR		0649	0656	0707	S07	E10	9754	12	29.0	18	1F			2	E	112	F
LEAR		0833	0838	0846	S09	E06	9754	12	28.8	13	SF			2	E	57	F
GOES		1210	1230	1259	S12	W77	9748			49	SF	M 1.3					2.8E-02
RAMY		1225	1229	1234	S12	W77	9748	12	22.7	9	SF			3	E	11	
RAMY		1335	1336	1339	S10	W90	9743	12	21.8	4	SF			3	E	18	
RAMY		1435	1435	1439	S03	E28	9755	12	30.7	4	SF			3	E	18	
RAMY		1616	1618	1633	N01	W23	9751	12	27.0	17	SF			3	E	19	F
RAMY		1703	1707	1718	N01	W24	9751	12	26.9	15	SF			3	E	13	F
GOES		1846	1853	1902	N03	W26	9751			16	1F	C 8.2					6.2E-03
RAMY		1848	1853	1916	N03	W26	9751	12	26.8	28	1F			3	E	118	UF
HOLL		1848	1853	1917	N00	W25	9751	12	26.9	29	1F			3	E	125	F
GOES		2002	2045	2132						90		X 3.4					1.3E00
HOLL		2048	2052	2056	S11	E01	9754	12	28.9	8	SF			3	E	17	F
GOES	29	0404	0411	0423						19		M 2.1					2.3E-02
LEAR		0513	0513	0521	N00	W30	9751	12	27.0	8	SF			3	E	35	F
LEAR		0529	0546	0559	N02	W32	9751	12	26.8	30	1F			3	E	102	F
GOES		0540	0545	0550	N02	W32	9751			10	1F	M 1.1					7.5E-03
LEAR		0608	0611	0614	N08	E65	9763	01	3.1	6	SF			3	E	49	F
LEAR		0705	0706	0711	S01	E17	9755	12	30.6	6	SF			2	E	15	
GOES		0905	0916	0928						23		M 1.8					2.1E-02
GOES		0938	0945	1006	S07	W85	9748			28	SF	M 9.3					1.1E-01
SVTO		0941	0942	0950	S07	W85	9748	12	23.0	9	SF			3	E	24	
LEAR		0941	0943	0955	S08	W90	9748	12	22.6	14	SF			2	E	80	
GOES		1152	1157	1204	S26	E87				12	SF	M 1.4					8.5E-03
SVTO		1154E	1156U	1205	S26	E87		01	5.2	11D	SF			3	E	86	
GOES		1633	1647	1702						29		M 3.3					4.3E-02
GOES		1950	2127	2355						245		M 1.8					1.9E-01T
HOLL		2242	2246	2250	S09	W15	9754	12	28.8	8	SF			3	E	51	F
HOLL		2249	2301U	2308D	S24	E88	9767	01	5.7	19D	1F			3	E	212	
GOES		2251	2256	2308	S24	E88	9767			17	1F	M 2.8					2.6E-02
GOES	30	0653	0725	0734	N02	W49	9751			41	SF	C 6.1					1.3E-02
LEAR		0656	0659	0710	N02	W49	9751	12	26.6	14	SF			3	E	27	
RAMY		1216	1220	1236	S07	W23	9754	12	28.8	20	SF			3	E	63	
RAMY		1216	1227	1235	N04	W45	9751	12	27.1	19	SF			3	E	14	
GOES		1342	1347	1359	N03	W43	9751			17	SF	C 3.2					3.1E-03
RAMY		1343	1343	1359	N03	W43	9751	12	27.3	16	SF			3	E	22	
GOES		1502	1506	1511	S23	E82	9767			9	SF	C 5.0					2.3E-03
RAMY		1506	1506	1512	S23	E82	9767	01	5.9	6	SF			3	E	14	
GOES		2153	2157	2201	S24	E77	9767			8	1F	C 4.2					1.8E-03
HOLL		2155	2158	2203	S24	E77	9767	01	5.9	8	1F			3	E	240	F

H $\alpha$  SOLAR FLARES

DECEMBER 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement		Remarks	
															Time (UT)	Apparent (10-6 Disk)		Corr (Sq Deg)
LEAR	30	2349	2349	2352	S11	E55		01	4.1	3	SF		2	E		25		F
GOES	31	0415	0419	0422						7		C 3.8						1.2E-03
LEAR		0457	0458	0503	S20	E74	9767	01	5.9	6	SF		3	E		22		
LEAR		0616	0619	0626	S20	E68	9767	01	5.5	10	SF		3	E		24		
GOES		1234	1238	1240						6		C 3.7						9.6E-04
RAMY		1504	1504	1508	N06	W56	9751	12	27.4	4	SF		3	E		10		F
RAMY		1838	1844	1859	S09	W46	9754	12	28.3	21	1F		3	E		118		F
GOES		1841	1845	1849	S09	W46	9754			8	1F	C 6.7						2.4E-03
RAMY		1920	1923	2014	S31	E11	9756	01	1.7	54	SF		3	E		26		F

"Remarks"

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

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

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

S O L A R   R A D I O   E M I S S I O N  
Selected Fixed Frequency Events

43  
Dec 01

D E C E M B E R   2 0 0 1

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Flux Density Mean	Int	Remarks
01	8800	LEAR	8 S	0155.0	0156.0	2.0	190.0			QL=4 ST=2 TYP=3
	8800	PALE	48 C	0155.0	0156.0	1.0	190.0			QL=4 ST=2 TYP=8
	2695	LEAR	4 S/F	0648.0	0649.0	6.0	180.0			QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0648.0	0649.0	6.0	490.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	0649.0	0649.0	5.0	450.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	0649.0	0649.0	5.0	160.0			QL=4 ST=2 TYP=3
02	8800	SVTO	8 S	1218.0	1219.0	1.0	72.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1219.0	1219.0	U	100.0			QL=4 ST=2 TYP=3
03	8800	LEAR	8 S	0710.0	0710.0	U	54.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1831.0	1831.0	U	60.0			QL=2 ST=2 TYP=3
04	8800	PALE	48 C	0039.0	0040.0	2.0	52.0			QL=4 ST=2 TYP=8
	2695	LEAR	4 S/F	0540.0	0542.0	5.0	16.0			QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0541.0	0541.0	5.0	26.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0858.0	0858.0	2.0	130.0			QL=4 ST=2 TYP=3
	8800	SVTO	8 S	0858.0	0858.0	1.0	93.0			QL=4 ST=3 TYP=3
06	2695	LEAR	48 C	0816.0	0819.0	9.0	77.0			QL=4 ST=2 TYP=8
	8800	SVTO	4 S/F	0816.0	0821.0	6.0	31.0			QL=4 ST=2 TYP=3
	2695	SVTO	48 C	0819.0	0819.0	3.0	77.0			QL=4 ST=2 TYP=8
	8800	LEAR	46 C	0822.0	0827.0	5.0	24.0			QL=4 ST=2 TYP=8
	2695	PALE	8 S	1903.0	1904.0	1.0	89.0			QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1903.0	1904.0	2.0	100.0			QL=4 ST=2 TYP=3
07	2695	LEAR	4 S/F	0806.0	0808.0	6.0	220.0			QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0807.0	0808.0	3.0	74.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	0807.0	0808.0	5.0	200.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	0807.0	0808.0	5.0	92.0			QL=4 ST=2 TYP=3
10	8800	SVTO	48 C	0933.0	0935.0	6.0	1200.0			QL=4 ST=2 TYP=8
	8800	LEAR	4 S/F	0934.0	0935.0	9.0	1100.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	0934.0	0935.0	2.0	110.0			QL=4 ST=2 TYP=3
	2695	LEAR	4 S/F	0934.0	0935.0	866.0	110.0			QL=4 ST=1 TYP=3
	2695	LEAR	45 C	0941.0	0941.0	U				QL=4 ST=2 TYP=8
11	8800	LEAR	8 S	0341.0	0342.0	2.0	86.0			QL=4 ST=2 TYP=3
	8800	SVTO	49 GB	0800.0	0805.0	25.0	5200.0			QL=4 ST=2 TYP=6
	8800	LEAR	49 GB	0801.0	0805.0	20.0	4900.0			QL=4 ST=2 TYP=6
	2695	LEAR	49 GB	0802.0	0805.0	18.0	2600.0			QL=4 ST=2 TYP=6
	2695	SVTO	49 GB	0802.0	0805.0	22.0	2200.0			QL=4 ST=2 TYP=6
	2695	SGMR	8 S	1446.0	1446.0	2.0	50.0			QL=4 ST=2 TYP=3
12	8800	SGMR	8 S	1446.0	1446.0	2.0	71.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1903.0	1905.0	8.0	420.0			QL=4 ST=2 TYP=3
	8800	SGMR	49 GB	1903.0	1905.0	8.0	690.0			QL=4 ST=2 TYP=6
	2695	PALE	4 S/F	1904.0	1905.0	4.0	350.0			QL=4 ST=2 TYP=3
	8800	PALE	48 C	1904.0	1905.0	4.0	560.0			QL=4 ST=2 TYP=8
	8800	PALE	48 C	2144.0	2202.0	136.0	68.0			QL=4 ST=2 TYP=8
13	8800	LEAR	8 S	2316.0	2317.0	2.0	120.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2317.0	2317.0	U	110.0			QL=4 ST=2 TYP=3
	8800	LEAR	46 C	0635.0	0636.0	11.0	35.0			QL=4 ST=2 TYP=8
	8800	SVTO	4 S/F	1119.0	1123.0	761.0	29.0			QL=4 ST=1 TYP=3
	8800	SVTO	48 C	1423.0	1426.0	9.0	2200.0			QL=4 ST=2 TYP=8
	2695	SGMR	48 C	1423.0	1425.0	26.0	1800.0			QL=4 ST=2 TYP=8
14	8800	SGMR	48 C	1423.0	1426.0	26.0	3100.0			QL=4 ST=2 TYP=8
	2695	SVTO	49 GB	1423.0	1426.0	24.0	1600.0			QL=4 ST=2 TYP=6
	2695	LEAR	48 C	0846.0	0907.0	46.0	220.0			QL=4 ST=2 TYP=8
	2695	SVTO	48 C	0846.0	0907.0	46.0	220.0			QL=4 ST=2 TYP=8
	8800	LEAR	48 C	0855.0	0906.0	37.0	130.0			QL=4 ST=2 TYP=8
	8800	SVTO	48 C	0855.0	0855.0	37.0	130.0			QL=4 ST=2 TYP=8
18	2695	SGMR	4 S/F	1946.0E	1949.0	8.0D	100.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1948.0E	1949.0	7.0D	63.0			QL=4 ST=2 TYP=3
18	8800	LEAR	4 S/F	0442.0	0442.0	3.0	22.0			QL=2 ST=2 TYP=3
	8800	PALE	8 S	2001.0	2001.0	U	43.0			QL=4 ST=2 TYP=3

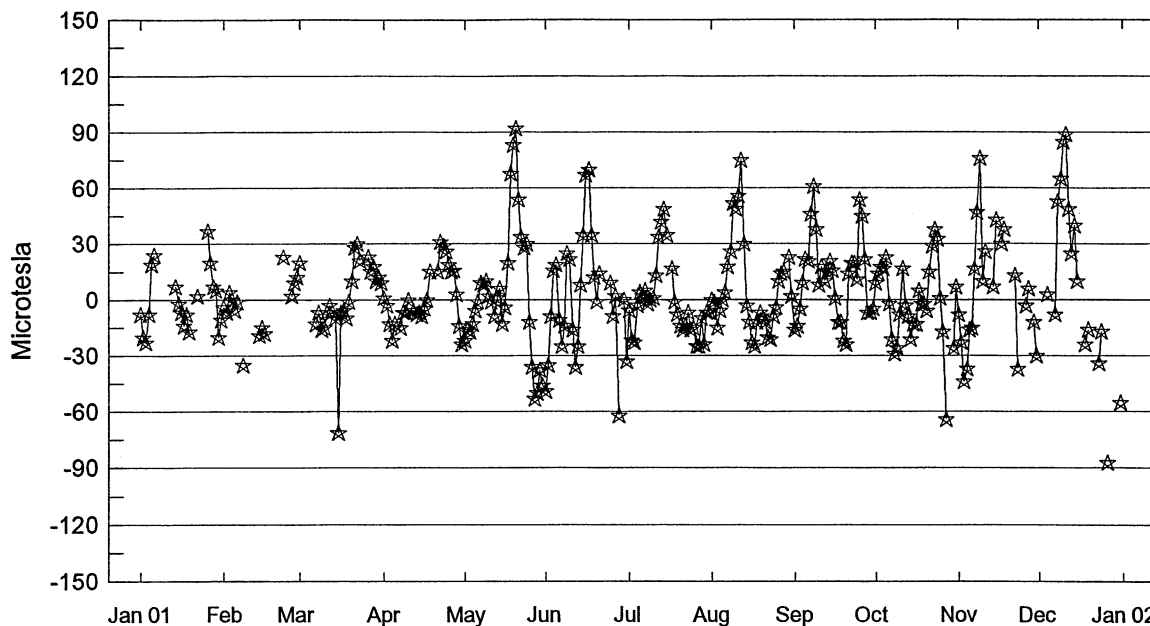
S O L A R R A D I O E M I S S I O N  
Selected Fixed Frequency Events

DECEMBER 2001

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak	Mean		
						(10 -22 W/m 2 Hz)			
19	2695 SVTO	8 S	1258.0	1258.0	U	26.0		QL=4	ST=2 TYP=3
	8800 SVTO	8 S	1258.0	1258.0	U	36.0		QL=4	ST=2 TYP=3
24	8800 LEAR	48 C	0027.0	0031.0	8.0	200.0		QL=4	ST=2 TYP=8
	8800 PALE	48 C	0028.0	0032.0	7.0	180.0		QL=4	ST=2 TYP=8
	2695 PALE	48 C	0029.0	0032.0	3.0	71.0		QL=4	ST=2 TYP=8
	2695 SGMR	48 C	1354.0	1355.0	11.0	100.0		QL=4	ST=2 TYP=8
	2695 SVTO	4 S/F	1354.0	1355.0	16.0	98.0		QL=4	ST=2 TYP=3
	8800 SGMR	48 C	1355.0	1356.0	6.0	150.0		QL=4	ST=2 TYP=8
	8800 SVTO	48 C	1355.0	1356.0	6.0	240.0		QL=4	ST=2 TYP=8
	2695 SGMR	8 S	1411.0	1412.0	1.0	57.0		QL=4	ST=2 TYP=3
	8800 SGMR	20 GRF	1540.0	1608.0	109.0	55.0		QL=4	ST=2 TYP=2
	2695 LEAR	8 S	2238.0	2238.0	1.0	32.0		QL=2	ST=2 TYP=3
25	2695 LEAR	46 C	0703.0	0703.0	1.0	30.0		QL=4	ST=2 TYP=8
	8800 LEAR	4 S/F	0706.0	0707.0	3.0	60.0		QL=4	ST=2 TYP=3
	2695 LEAR	8 S	0707.0	0707.0	2.0	31.0		QL=4	ST=2 TYP=3
	8800 SVTO	8 S	0707.0	0707.0	1.0	72.0		QL=4	ST=2 TYP=3
	2695 LEAR	8 S	2311.0	2312.0	2.0	41.0		QL=4	ST=2 TYP=3
	8800 PALE	46 C	2311.0	2311.0	U	44.0		QL=4	ST=2 TYP=8
	8800 LEAR	8 S	2313.0	2313.0	U	22.0		QL=4	ST=2 TYP=3
	26	2695 LEAR	48 C	0438.0	0513.0	137.0	2600.0		QL=4
8800 LEAR		48 C	0439.0	0512.0	147.0	3800.0		QL=4	ST=2 TYP=8
8800 SVTO		48 C	0638.0E	0703.0U	57.0D	280.0		QL=4	ST=2 TYP=8
2695 SVTO		48 C	0642.0E	0646.0U	53.0D	140.0		QL=4	ST=2 TYP=8
8800 SVTO		4 S/F	1224.0	1225.0	4.0	290.0		QL=4	ST=2 TYP=3
2695 SVTO		8 S	1225.0	1225.0	2.0	71.0		QL=4	ST=2 TYP=3
8800 SGMR		8 S	1716.0	1716.0	1.0	96.0		QL=4	ST=2 TYP=3
8800 PALE		8 S	2112.0	2113.0	1.0	67.0		QL=4	ST=3 TYP=3
27		8800 LEAR	8 S	0342.0	0342.0	U	30.0		QL=4
	2695 LEAR	8 S	0603.0	0603.0	U	26.0		QL=4	ST=2 TYP=3
	8800 SVTO	4 S/F	1128.0	1131.0	5.0	190.0		QL=4	ST=2 TYP=3
	2695 SVTO	8 S	1131.0	1131.0	1.0	44.0		QL=4	ST=2 TYP=3
	8800 SGMR	48 C	1648.0	1650.0	40.0	430.0		QL=4	ST=2 TYP=8
	2695 SGMR	48 C	1649.0	1652.0	23.0	110.0		QL=4	ST=2 TYP=8
	2695 SGMR	4 S/F	1747.0	1749.0	5.0	44.0		QL=4	ST=2 TYP=3
	8800 SGMR	4 S/F	1749.0	1749.0	3.0	50.0		QL=4	ST=2 TYP=3
	8800 SGMR	4 S/F	1752.0	1754.0	6.0	48.0		QL=4	ST=2 TYP=3
	28	8800 LEAR	49 GB	0345.0	0347.0	8.0	1100.0		QL=4
2695 LEAR		4 S/F	0345.0	0347.0	9.0	270.0		QL=4	ST=2 TYP=3
2695 SGMR		48 C	1942.0	2005.0	42.0	760.0		QL=4	ST=2 TYP=8
2695 PALE		48 C	1946.0	2015.0	68.0	1600.0		QL=4	ST=2 TYP=8
8800 SGMR		48 C	1950.0	2004.0	31.0	1900.0		QL=4	ST=2 TYP=8
8800 PALE		48 C	1957.0	2015.0	36.0	1100.0		QL=4	ST=2 TYP=8
8800 PALE		48 C	2152.0	2155.0	5.0	140.0		QL=4	ST=2 TYP=8
8800 LEAR		46 C	2158.0E	2219.0U	52.0D	48.0		QL=2	ST=2 TYP=8
2695 LEAR		48 C	2158.0E	2158.0U	52.0D	61.0		QL=2	ST=2 TYP=8
2695 PALE	8 S	2202.0	2202.0	1.0	34.0		QL=4	ST=2 TYP=3	
29	8800 LEAR	48 C	0939.0	0943.0	9.0	130.0		QL=4	ST=2 TYP=8
	2695 LEAR	48 C	0939.0	0939.0	9.0	98.0		QL=4	ST=2 TYP=8
	2695 SVTO	4 S/F	0939.0	0939.0	4.0	100.0		QL=4	ST=2 TYP=3
	8800 SVTO	4 S/F	0939.0	0943.0	12.0	220.0		QL=4	ST=2 TYP=3
	8800 LEAR	48 C	0950.0	0951.0	3.0	92.0		QL=4	ST=2 TYP=8
	8800 SVTO	4 S/F	0951.0	0951.0	14.0	160.0		QL=4	ST=2 TYP=3
	8800 SGMR	48 C	1635.0	1639.0	16.0	320.0		QL=4	ST=2 TYP=8
	2695 PALE	4 S/F	1930.0	1930.0	4.0	63.0		QL=4	ST=2 TYP=3
	2695 SGMR	4 S/F	1930.0	1930.0	4.0	52.0		QL=4	ST=2 TYP=3
31	2695 SGMR	8 S	1843.0	1843.0	1.0	49.0		QL=4	ST=2 TYP=3

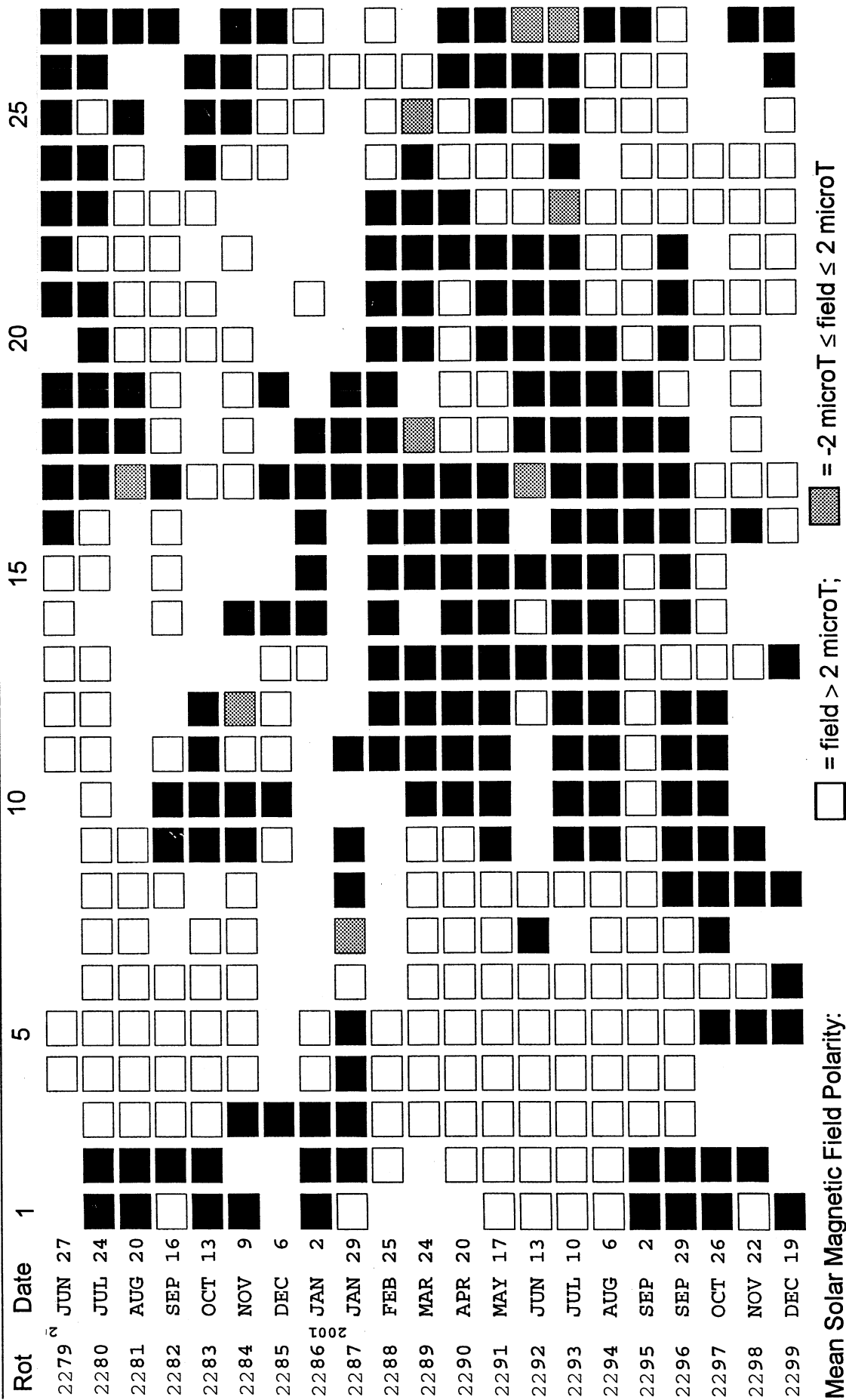
# Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

45  
Dec 01



Day	Jan 01	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-8	-4	20	1	-22	-35	-6	0	-16	9	-8	---
2	-20	-7	---	-3	-16	-9	-22	-1	-14	14	-23	---
3	-23	4	---	-13	-17	16	-23	-15	-5	18	-44	---
4	-8	0	---	-22	-13	19	-3	-6	9	17	-37	3
5	19	-6	---	-13	-6	-11	4	0	22	23	-16	---
6	24	-1	---	---	-1	-25	2	4	21	-2	-15	---
7	---	---	-13	-15	9	-14	5	18	46	-21	17	-8
8	---	-35	-7	-7	8	25	-2	26	61	-29	47	53
9	---	---	-16	-7	10	22	0	52	38	-26	76	65
10	---	---	-15	0	2	-16	1	49	8	-8	10	85
11	---	---	-7	---	-1	-36	13	56	18	17	26	89
12	---	---	-3	-6	-9	-25	34	75	10	-3	---	49
13	---	---	-7	-8	1	8	42	30	15	-9	---	25
14	7	-19	-10	-7	6	35	49	-3	21	-21	7	40
15	-2	-15	-71	-9	-13	67	35	-12	16	-13	43	10
16	-7	-18	-7	-5	-4	70	---	-23	1	-13	---	---
17	-14	---	-6	0	20	35	17	-25	-12	5	30	---
18	-8	---	-10	15	68	12	-1	-12	-12	-2	38	-24
19	-17	---	-1	---	83	-1	-8	-7	-22	-2	---	-16
20	---	---	10	---	92	14	-14	-10	-24	-6	---	---
21	---	---	28	15	54	---	-16	-12	14	15	---	---
22	2	---	30	31	34	---	-14	-20	20	29	13	---
23	---	23	21	29	28	---	-7	-21	20	38	-37	-34
24	---	---	---	26	30	9	-16	-9	11	33	---	-17
25	---	---	---	19	-12	-9	-15	-4	54	1	---	---
26	37	2	23	15	-36	2	-25	10	45	-17	-3	-87
27	20	9	15	16	-53	-62	-25	14	22	-64	6	---
28	7	12	18	3	-50	---	-10	15	-7	---	---	---
29	5	---	10	-14	-38	0	-24	---	-7	---	-12	---
30	-20	---	12	-24	-46	-33	-7	23	-5	-26	-30	---
31	-11	---	9	---	-49	---	-7	2	---	7	---	-55

STANFORD MEAN SOLAR MAGNETIC FIELD

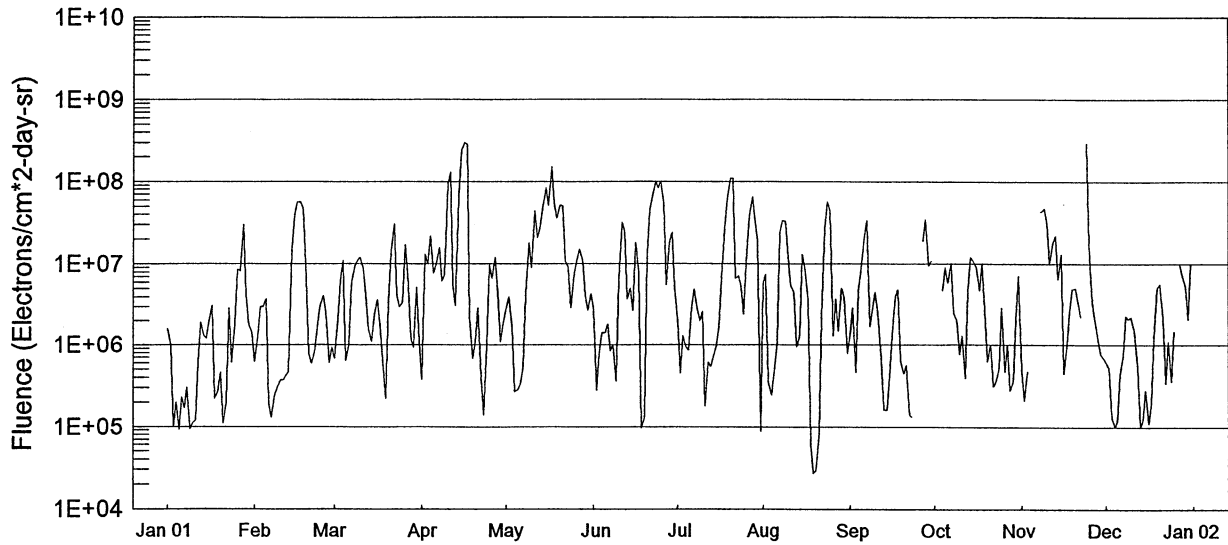


Mean Solar Magnetic Field Polarity:  
 White box = field > 2 microT; Hatched box = field < -2 microT; Black box = field < -2 microT; No box = no data available

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



# GOES Daily Electron Fluence Jan 2001 - Dec 2001



Day	Jan 01	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1.6E+06	6.2E+05	6.8E+05	3.8E+05	2.9E+06	2.8E+06	2.0E+06	5.9E+06	1.3E+06	-999	4.8E+05	6.1E+05
2	1.0E+06	1.3E+06	2.1E+06	1.3E+07	4.0E+06	2.8E+05	4.5E+05	7.4E+06	2.9E+06	-999	2.1E+05	5.2E+05
3	1.0E+05	3.0E+06	6.4E+06	1.0E+07	1.7E+06	8.1E+05	1.3E+06	3.5E+05	4.6E+05	-999	4.8E+05	1.3E+05
4	2.0E+05	3.0E+06	1.1E+07	2.2E+07	2.7E+05	1.4E+06	9.3E+05	2.4E+05	4.8E+06	4.7E+06	-999	9.9E+04
5	9.2E+04	3.8E+06	6.3E+05	7.8E+06	2.8E+05	1.4E+06	8.6E+05	4.5E+05	8.6E+06	9.0E+06	-999	1.2E+05
6	2.3E+05	1.9E+05	1.0E+06	9.8E+06	3.3E+05	1.8E+06	3.0E+06	1.1E+06	2.1E+07	5.9E+06	-999	4.4E+05
7	1.7E+05	1.3E+05	5.8E+06	1.6E+07	5.3E+05	8.4E+05	4.9E+06	2.4E+07	3.4E+07	1.0E+07	-999	7.6E+05
8	3.0E+05	2.4E+05	9.3E+06	6.2E+06	4.2E+06	1.0E+06	3.0E+06	3.4E+07	1.7E+06	2.5E+06	4.3E+07	2.3E+06
9	9.3E+04	3.0E+05	1.1E+07	7.4E+06	1.8E+07	3.6E+05	2.0E+06	3.3E+07	2.8E+06	2.0E+06	4.7E+07	2.1E+06
10	1.1E+05	3.7E+05	1.2E+07	9.5E+07	9.0E+06	6.5E+06	2.6E+06	1.2E+07	4.5E+06	7.7E+05	3.2E+07	2.2E+06
11	1.2E+05	3.7E+05	9.1E+06	1.3E+08	4.4E+07	3.2E+07	1.8E+05	5.4E+06	2.5E+06	1.3E+06	1.0E+07	1.5E+06
12	6.1E+05	4.2E+05	4.2E+06	5.6E+06	2.1E+07	2.5E+07	6.1E+05	4.6E+06	6.9E+05	3.9E+05	1.8E+07	5.4E+05
13	1.9E+06	4.7E+05	1.6E+06	3.1E+06	2.8E+07	3.8E+06	5.4E+05	9.6E+05	1.6E+05	4.7E+06	2.2E+07	1.0E+05
14	1.3E+06	1.5E+07	1.1E+06	6.5E+07	5.5E+07	5.0E+06	7.5E+05	1.3E+06	1.6E+05	1.2E+07	6.5E+06	1.2E+05
15	1.2E+06	3.9E+07	2.3E+06	2.4E+08	8.4E+07	2.7E+06	1.0E+06	1.3E+07	4.1E+05	1.1E+07	1.3E+07	2.8E+05
16	1.9E+06	5.7E+07	3.7E+06	3.0E+08	5.2E+07	1.8E+07	1.7E+06	9.0E+06	1.3E+06	9.2E+06	4.4E+05	1.1E+05
17	3.1E+06	5.6E+07	1.8E+06	2.8E+08	1.5E+08	7.9E+06	6.6E+06	3.6E+06	4.0E+06	4.7E+06	1.0E+06	1.9E+05
18	2.2E+05	4.7E+07	6.5E+05	2.2E+06	5.4E+07	9.5E+04	2.8E+07	5.9E+04	4.8E+06	1.0E+07	2.6E+06	1.2E+06
19	2.7E+05	6.8E+06	2.2E+05	6.8E+05	3.6E+07	1.3E+05	6.2E+07	2.7E+04	6.3E+05	2.8E+06	4.9E+06	5.1E+06
20	4.6E+05	7.7E+05	3.4E+06	1.1E+06	5.2E+07	1.3E+07	1.1E+08	2.9E+04	4.4E+05	6.2E+05	5.0E+06	5.7E+06
21	1.1E+05	5.9E+05	1.4E+07	2.9E+06	5.1E+07	4.5E+07	1.1E+08	8.0E+04	5.6E+05	1.0E+06	3.3E+06	2.2E+06
22	2.0E+05	8.2E+05	3.1E+07	3.9E+05	1.1E+07	7.2E+07	6.6E+06	2.2E+06	1.4E+05	3.1E+05	2.2E+06	3.4E+05
23	2.9E+06	1.7E+06	4.2E+06	1.4E+05	9.1E+06	1.0E+08	7.2E+06	2.8E+07	1.3E+05	3.5E+05	-999	1.1E+06
24	6.1E+05	3.1E+06	3.0E+06	1.0E+06	2.9E+06	8.4E+07	5.3E+06	5.6E+07	-999	5.2E+05	2.9E+08	3.6E+05
25	1.8E+06	4.1E+06	3.4E+06	9.6E+06	7.5E+06	1.0E+08	2.4E+06	4.5E+07	-999	2.9E+06	1.7E+07	1.5E+06
26	8.6E+06	2.5E+06	1.7E+07	6.6E+06	1.1E+07	5.4E+07	1.4E+07	1.3E+06	-999	4.7E+05	3.4E+06	-999
27	8.2E+06	6.0E+05	7.6E+06	1.2E+07	1.5E+07	5.6E+06	3.9E+07	3.7E+06	1.9E+07	1.0E+06	2.0E+06	9.9E+06
28	3.0E+07	9.3E+05	1.2E+06	4.5E+06	1.1E+07	1.9E+07	6.5E+07	1.5E+06	3.5E+07	2.8E+05	1.3E+06	7.2E+06
29	4.2E+06		9.4E+05	1.1E+06	4.2E+06	2.4E+07	3.4E+07	5.0E+06	9.5E+06	3.6E+05	7.6E+05	5.3E+06
30	1.8E+06		5.2E+06	1.8E+06	2.7E+06	5.2E+06	1.9E+07	4.0E+06	1.1E+07	2.1E+06	6.9E+05	2.1E+06
31	1.4E+06		1.1E+06		4.3E+06		8.7E+04	7.8E+05		7.1E+06		1.0E+07

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

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

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CONTENTS

Prompt Reports

Number 689 Part I

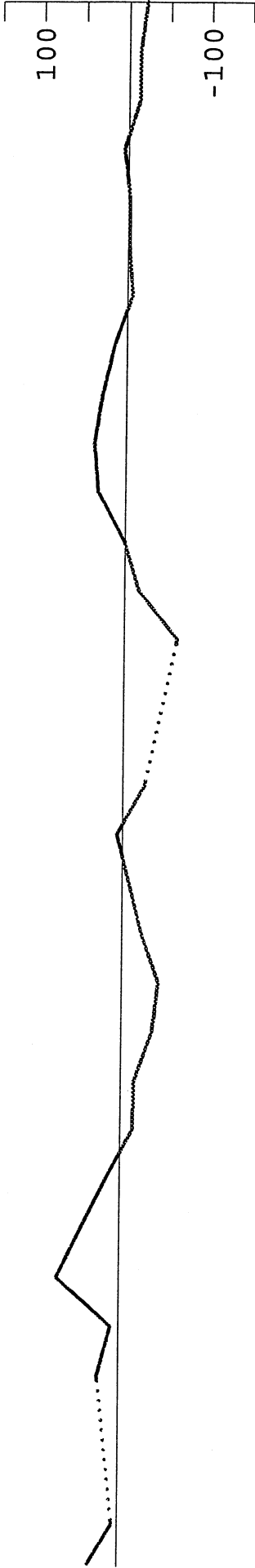
DATA FOR NOVEMBER 2001

	Page
SOLAR ACTIVE REGIONS	
Solar Synoptic Charts .....	50- 55
Daily Activity Solar Maps .....	56- 85
YOHKOH Daily Soft X-ray Images .....	86- 93
Preliminary NSO/KP Coronal Hole Daily Maps .....	94- 97
Nobeyama Daily Radioheliograph Images at 17 GHz .....	98-102
Sunspot Groups .....	103-122
SUDDEN IONOSPHERIC DISTURBANCES .....	123-125
SOLAR RADIO SPECTRAL OBSERVATIONS .....	126-143
SOLAR RADIOHELIOGRAPH - 164 AND 327 MHZ - NANCAY .....	144-145
COSMIC RAY MEASUREMENTS BY NEUTRON MONITOR	
Daily Counting Rates .....	146
Chart of Variations .....	147-149
Graph and Table of Monthly Mean Climax Data Jan 1953-Nov 2001 .....	150
GEOMAGNETIC INDICES	
Geomagnetic Activity Indices .....	151
Daily Average Ap .....	152
Chart of Kp by 27-day Rotation .....	153
Table of Monthly aa Index (1950 to present) .....	154
Chart of 3-hourly Km and aa by 27-day Rotation .....	155
Provisional Values of Hourly Equatorial Dst .....	156
Polar Cap (PC) Geomagnetic Index Plot of 15-min values – Thule .....	157
-- Plot of 1-min values – Vostok .....	158
Principal Magnetic Storms .....	159
Sudden Commencements/Solar Flare Effects .....	160

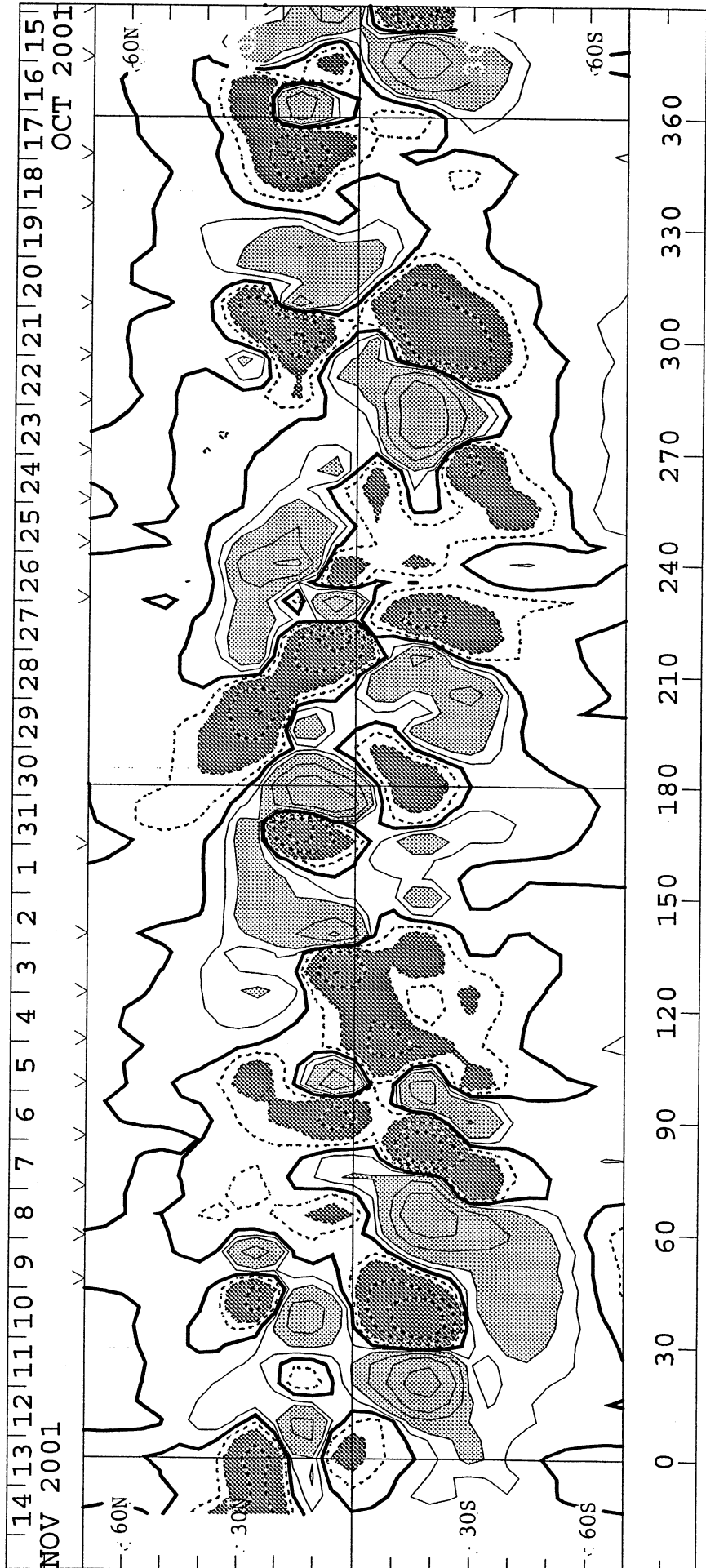
**SOLAR MAGNETIC FIELD SYNOPTIC CHART**  
CARRINGTON ROTATION NUMBER 1982  
(17 October to 13 November 2001)

**WILCOX SOLAR OBSERVATORY**

Mean Field



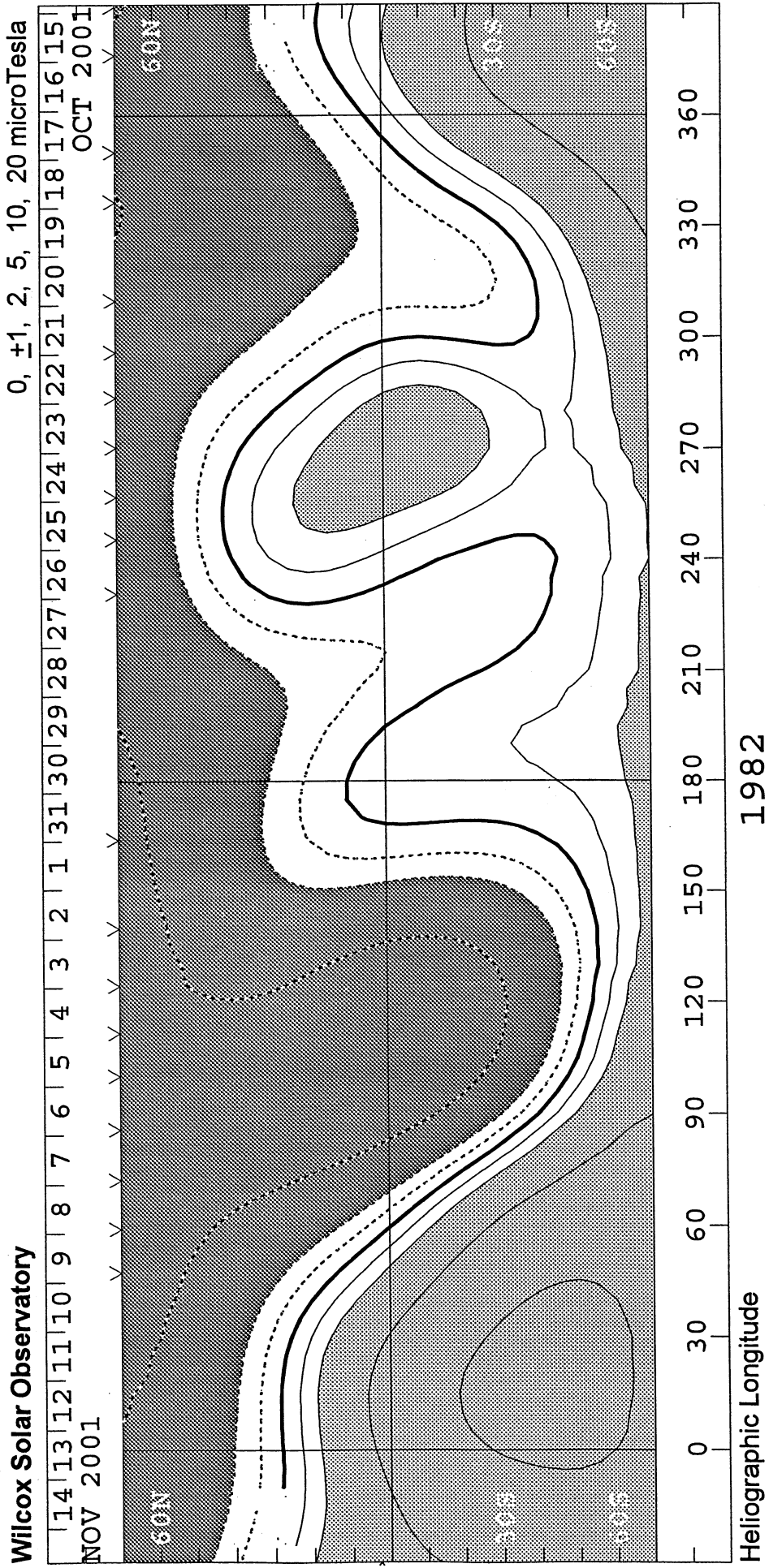
WSO - Photospheric Magnetic Field 0, +100, 200, 500, 1000, 2000 MicroTesla



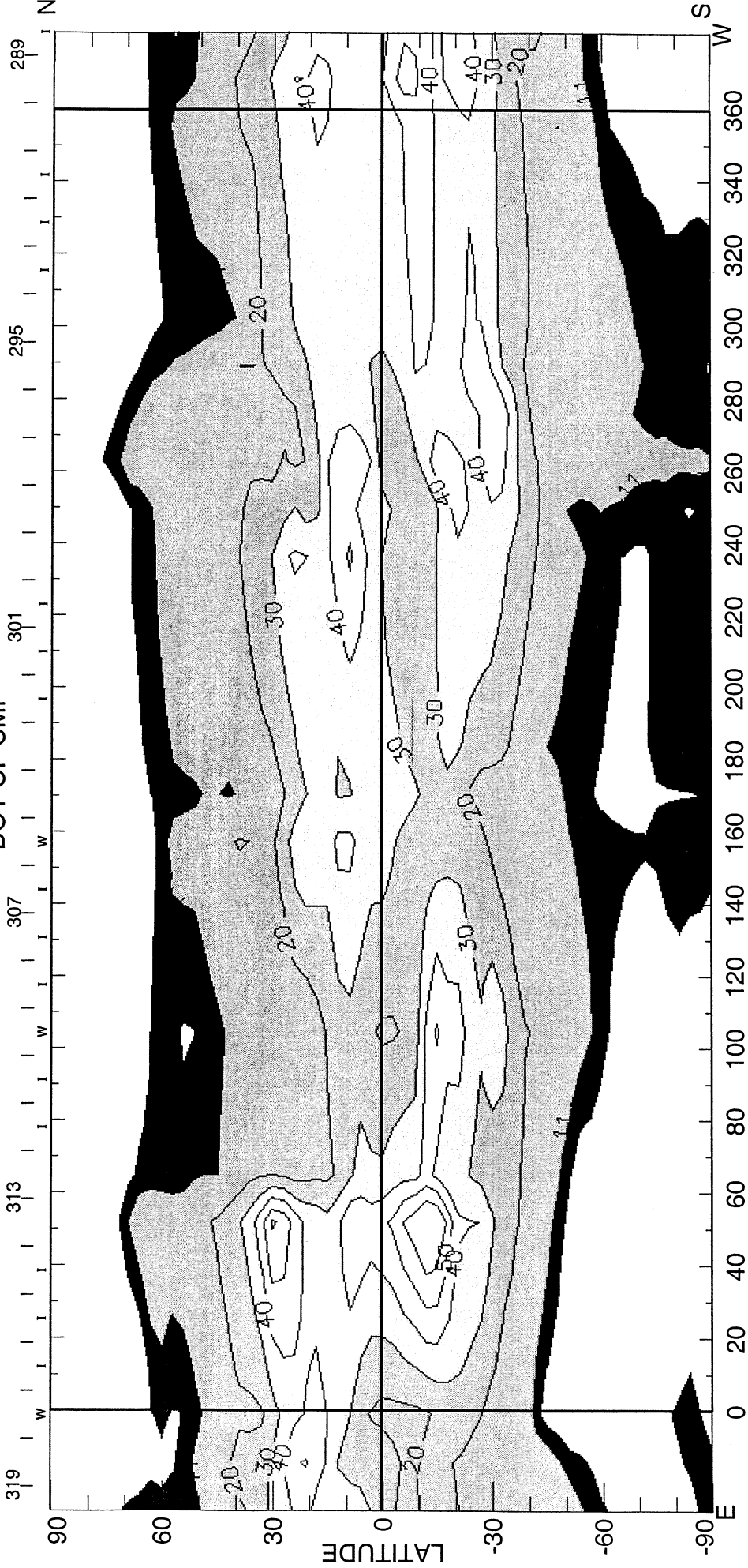
Heliographic Longitude

1982

**SOLAR MAGNETIC FIELD SYNOPTIC CHART**  
**SOURCE SURFACE FIELD**  
 CARRINGTON ROTATION NUMBER 1982  
 (17 October to 13 November 2001)

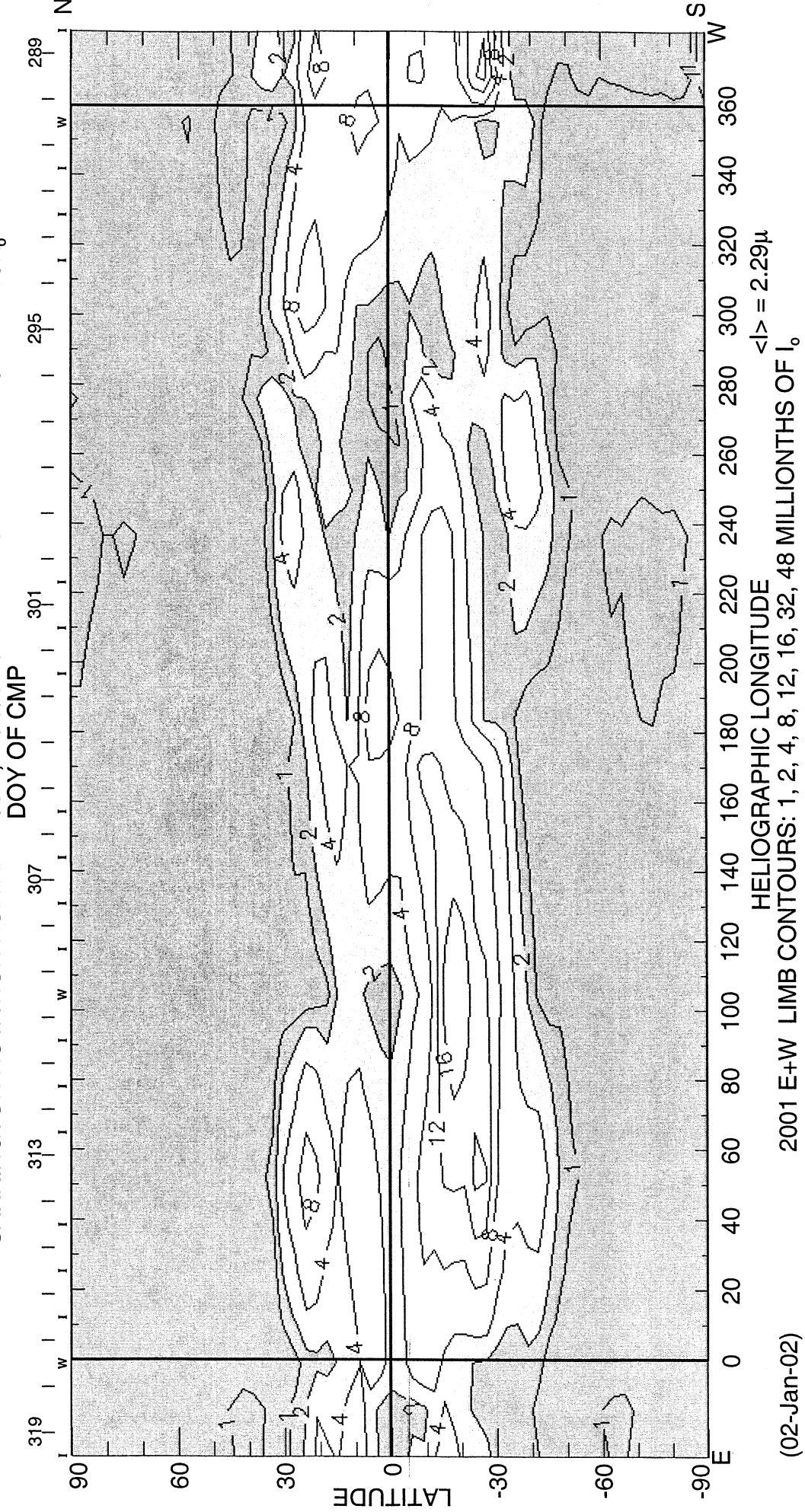


CARRINGTON ROTATION NUMBER 1982; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R<sub>o</sub>  
DOY OF CMP



(02-Jan-02) 2001 E+W LIMB CONTOURS: 8, 11, 20, 30, 40, 50, 60, 80, 100, 120, 140 MILLIONTHS OF I<sub>0</sub>  
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK  
HELIOGRAPHIC LONGITUDE  
<math>\langle I \rangle = 18.27 \mu</math>

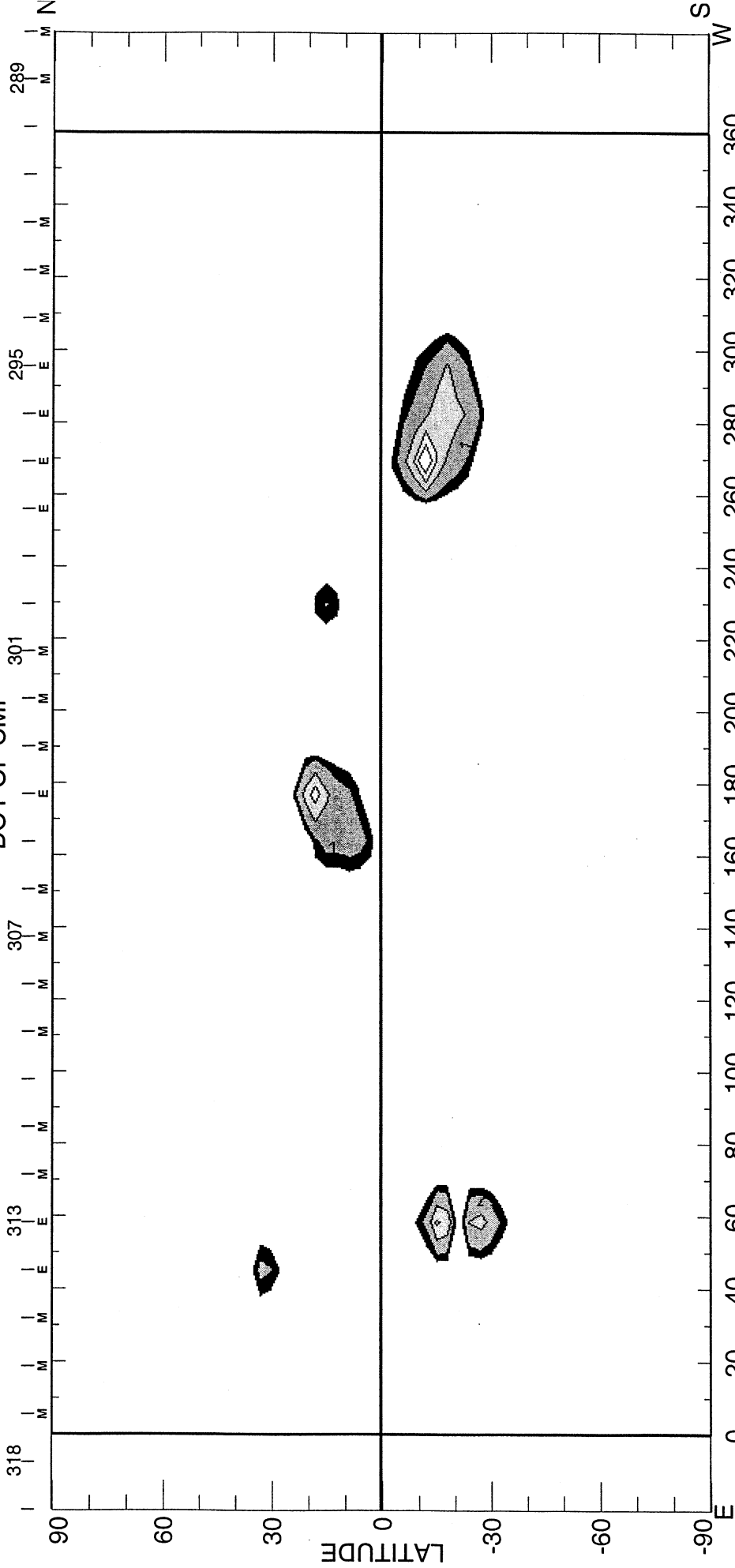
CARRINGTON ROTATION NUMBER 1982 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R<sub>o</sub>



HELIOGRAPHIC LONGITUDE  
2001 E+W LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I<sub>o</sub> <math>\langle I \rangle = 2.29\mu</math>

CARRINGTON ROTATION NUMBER 1982; NSO/SACRAMENTO PEAK CA XV @  $R = 1.15R_0$

DOY OF CMP



HELIOGRAPHIC LONGITUDE

(02-Jan-02) 2001 W+E LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF  $I_0$



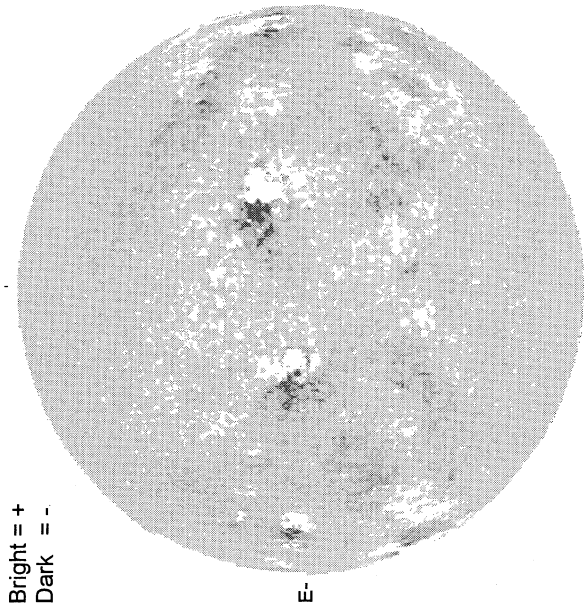
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NOVEMBER 1, 2001 ( P= 24.50, Bo = 4.37, Lo = 163.61)

56  
Nov 01

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

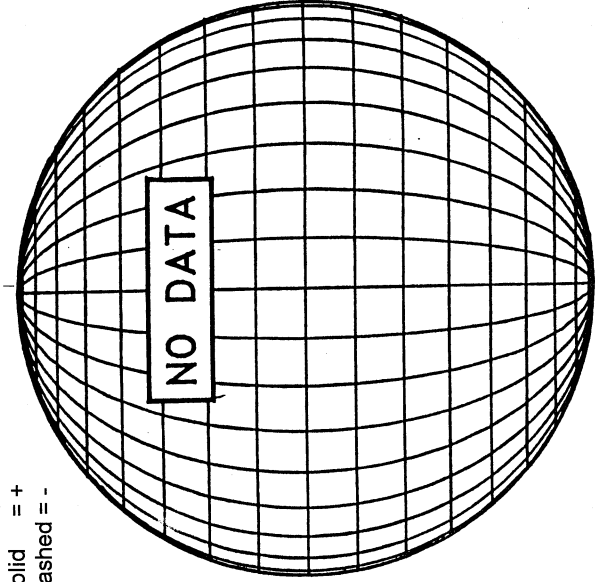


Bright = +  
Dark = -

1650 UT

STANFORD MAGNETOGRAM

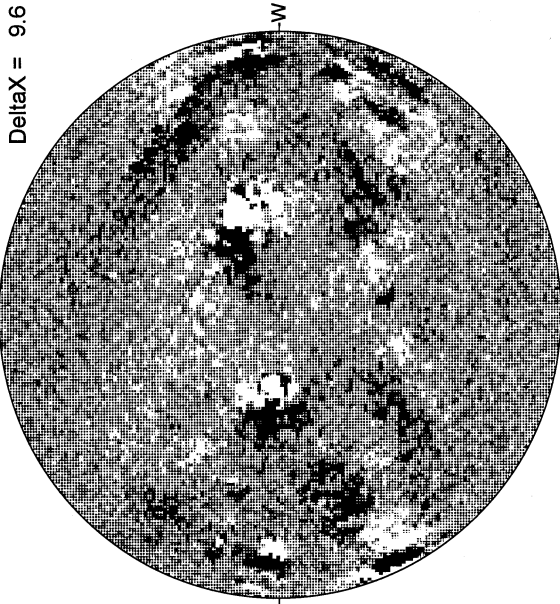
Solid = +  
Dashed = -



17.02 -  
17.98 UT

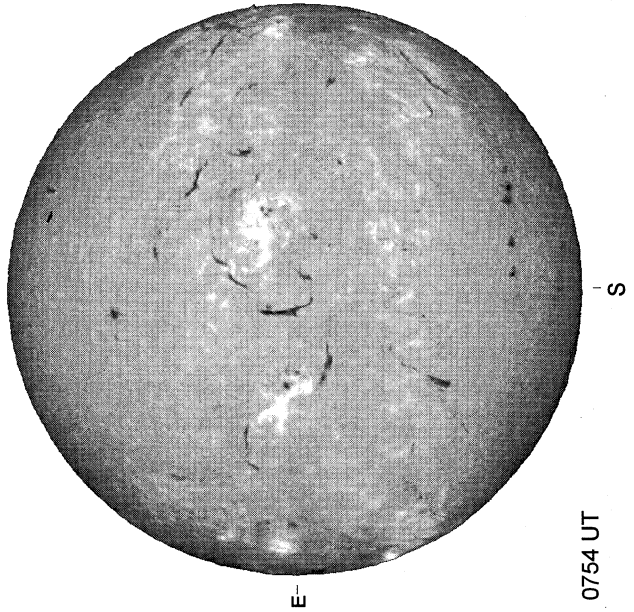
MT. WILSON MAGNETOGRAM

Delta Y = 13.1  
Delta X = 9.6



White = +7.5G  
Black = -7.5G

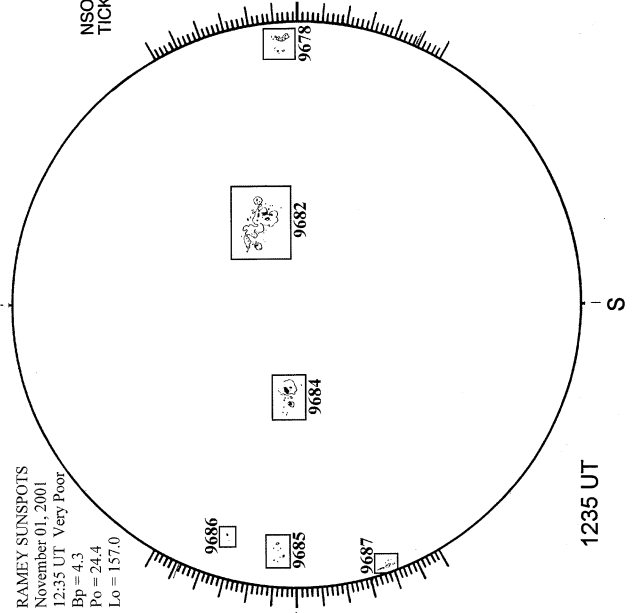
MEUDON H-ALPHA



0754 UT

RAMEY SUNSPOT

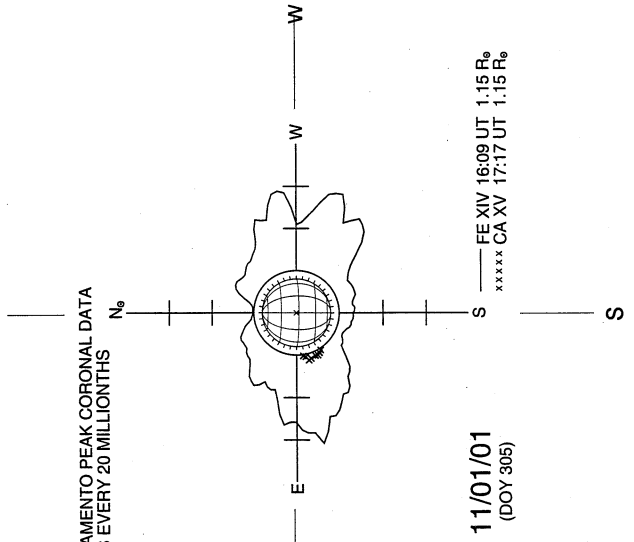
RAMEY SUNSPOTS  
November 01, 2001  
12:35 UT Very Poor  
Bp = 4.3  
Po = 24.4  
Lo = 157.0



1235 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 20 MILLIONTHS



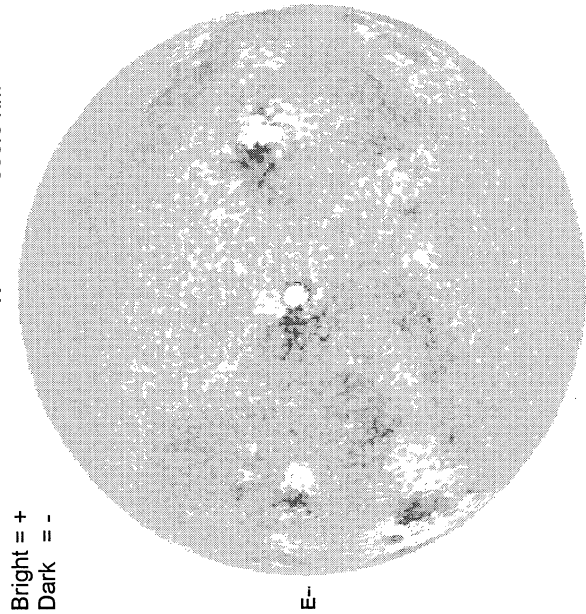
11/01/01  
(DOY 305)

----- FE XIV 16:09 UT 1.15 R<sub>o</sub>  
xxxxx CA XV 17:17 UT 1.15 R<sub>o</sub>

NOVEMBER 2, 2001 ( P= 24.33, Bo = 4.27, Lo = 150.42)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

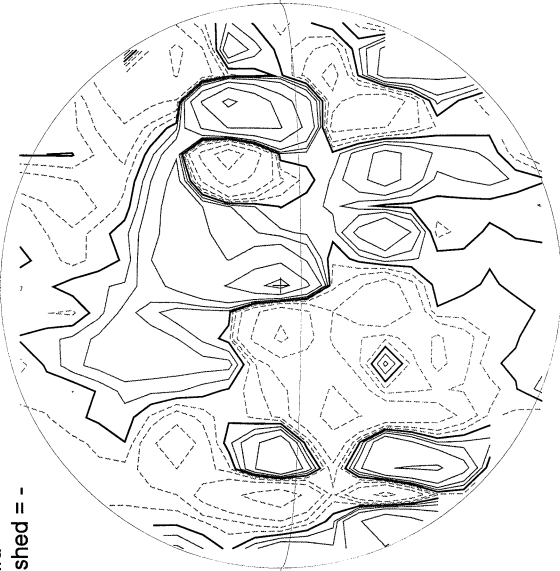


Bright = +  
Dark = -

1651 UT

STANFORD MAGNETOGRAM

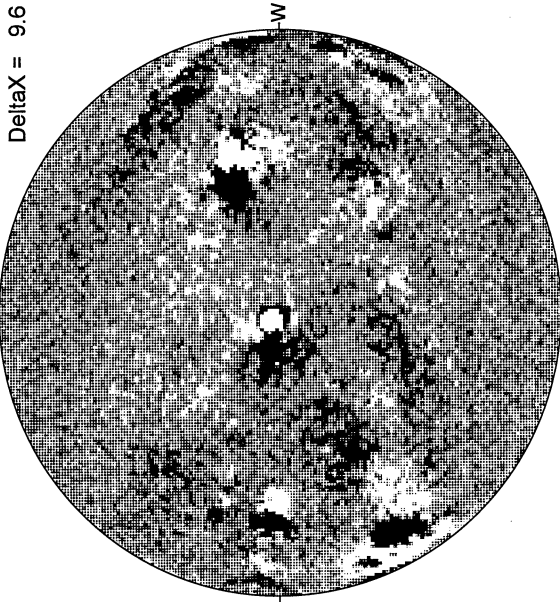
Solid = +  
Dashed = -



1856 UT

MT. WILSON MAGNETOGRAM

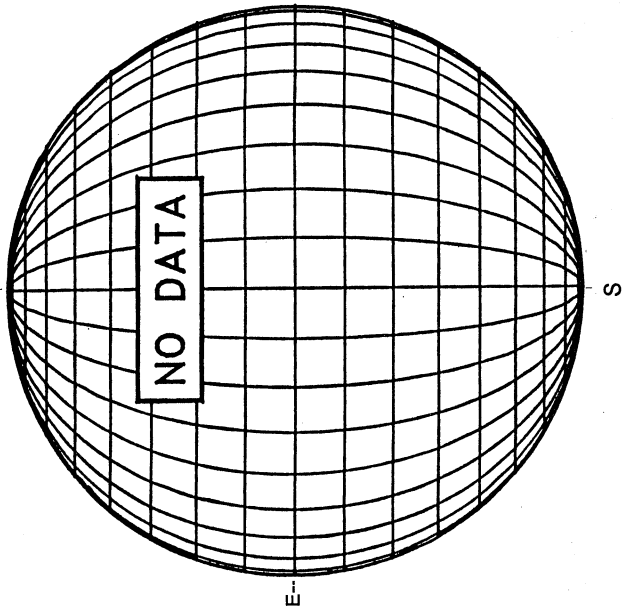
DeltaY = 13.1  
DeltaX = 9.6



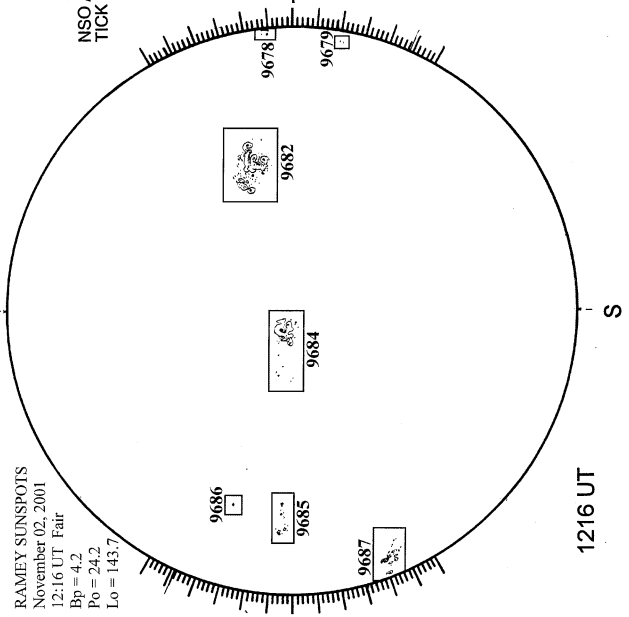
17.14 -  
18.10 UT

White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

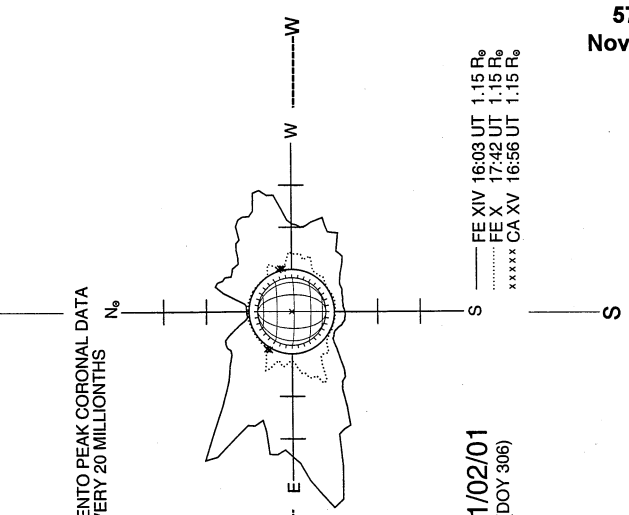


RAMEY SUNSPOT



RAMEY SUNSPOTS  
November 02, 2001  
12:16 UT Fair  
Bp = 4.2  
Po = 24.2  
Lo = 143.7

SACRAMENTO PEAK CORONA (1.15 Radii)----



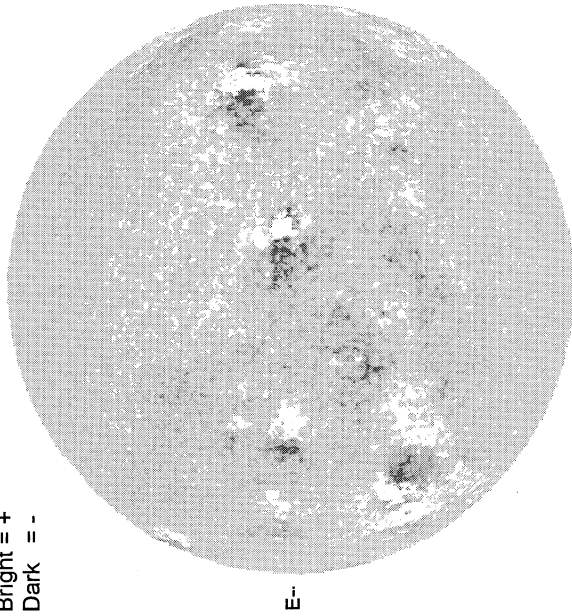
11/02/01  
(DOY 306)

NOVEMBER 3, 2001 ( P = 24.15, Bo = 4.17, Lo = 137.23)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

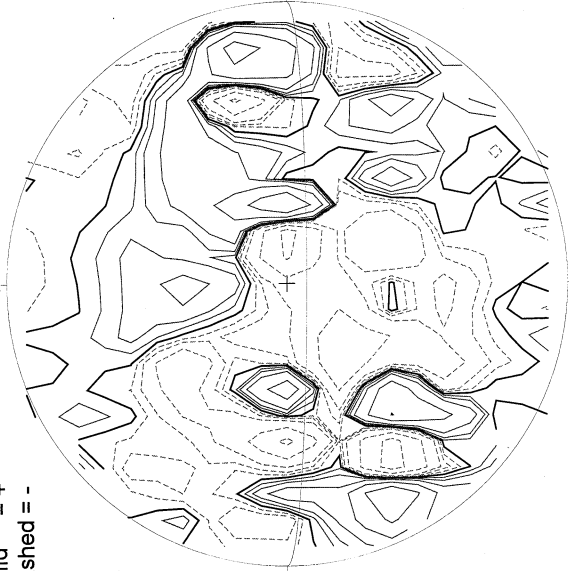
Bright = +  
Dark = -



1717 UT

STANFORD MAGNETOGRAM

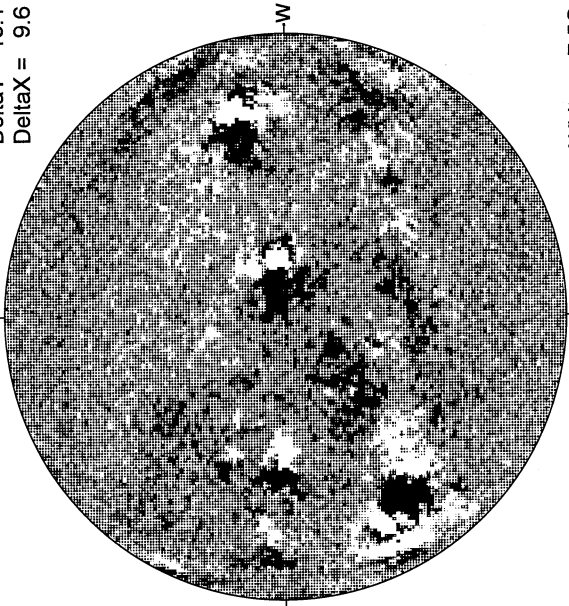
Solid = +  
Dashed = -



2306 UT

MT. WILSON MAGNETOGRAM

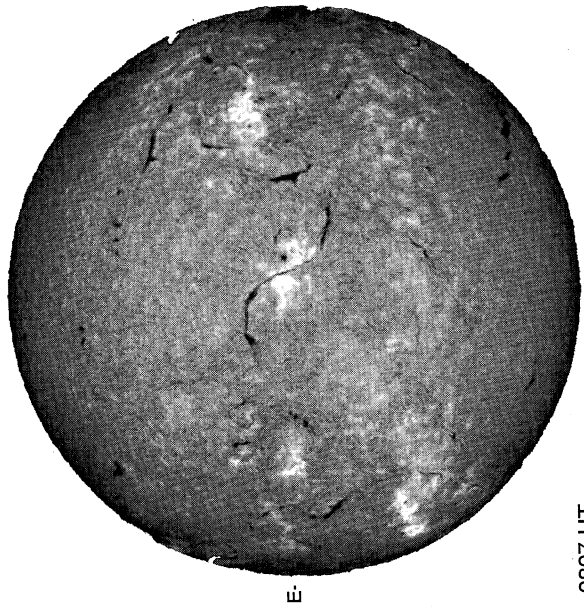
Delta Y = 13.1  
Delta X = 9.6



17.30 -  
18.26 UT

White = +7.5G  
Black = -7.5G

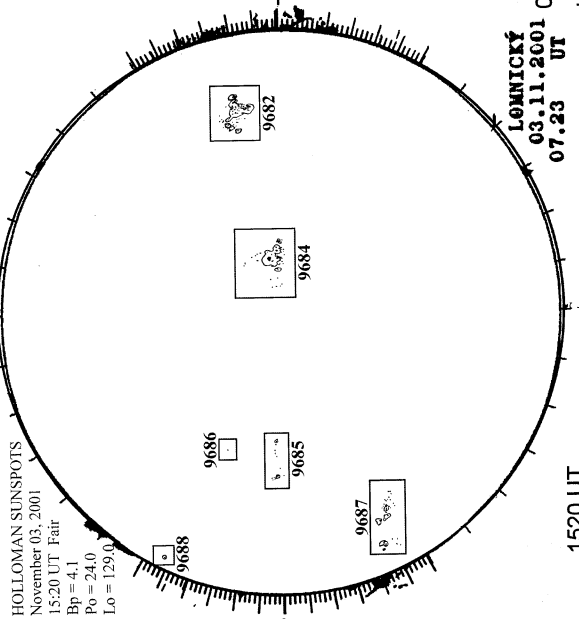
MEUDON H-ALPHA



0807 UT

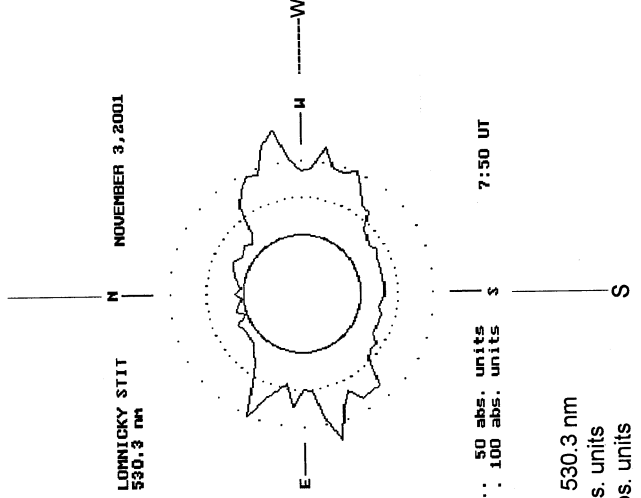
HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS  
November 03, 2001  
15:20 UT Fair  
Bp = 4.1  
Po = 24.0  
Lo = 129.0



1520 UT  
0723 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)---



LOMNICKÝ  
03.11.2001  
07:50 UT, 530.3 nm  
... 50 abs. units  
... 100 abs. units

7:50 UT

NOVEMBER 3, 2001

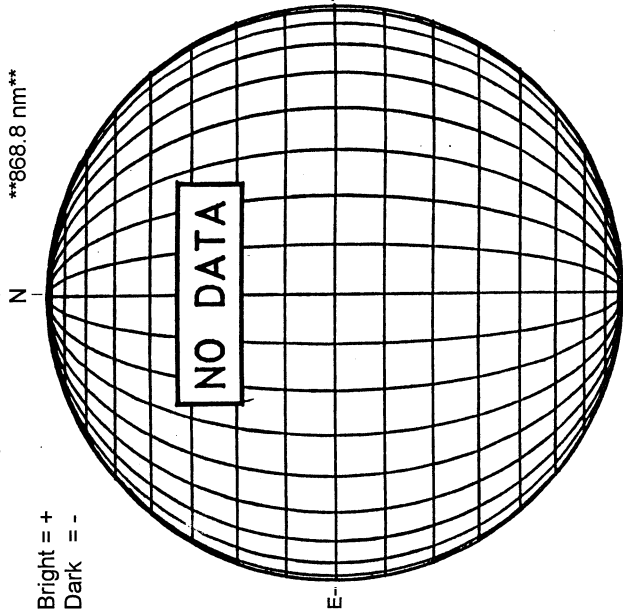
LOMNICKÝ STIT  
530.3 nm

NOVEMBER 4, 2001 ( P= 23.96, Bo = 4.06, Lo = 124.05)

KITT PEAK MAGNETOGRAM

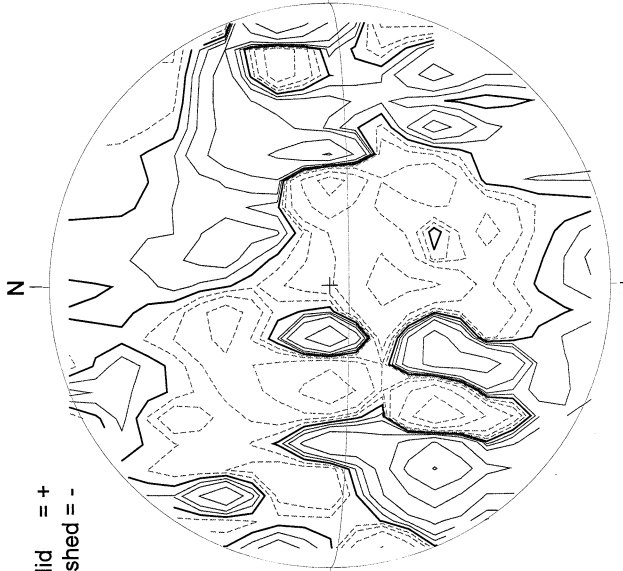
\*\*868.8 nm\*\*

Bright = +  
Dark = -



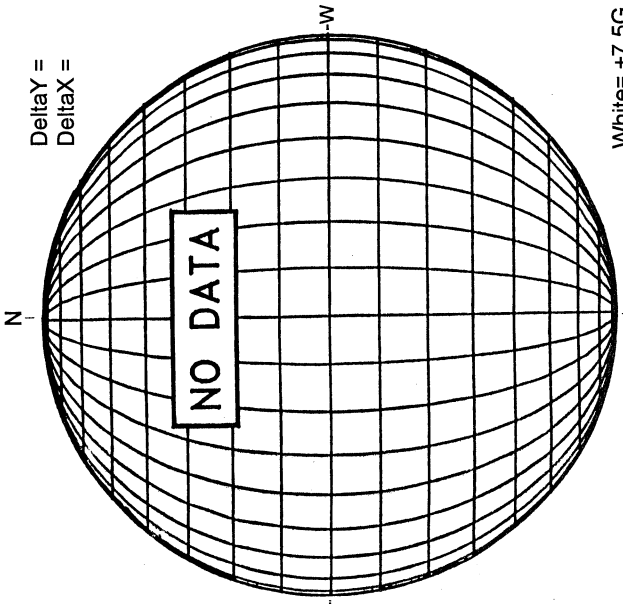
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



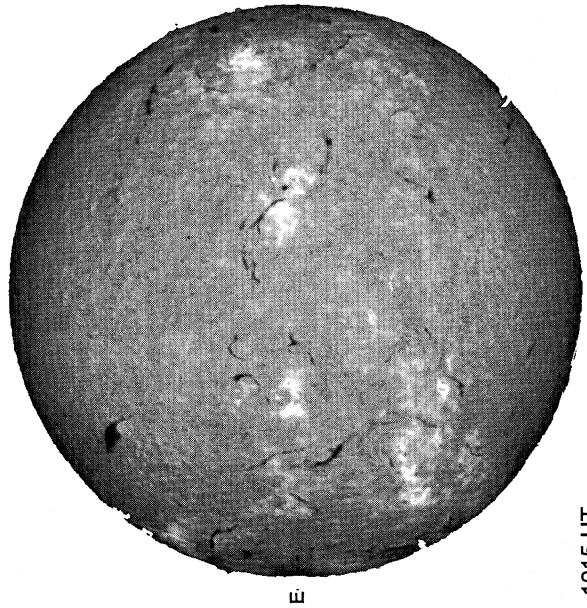
MT. WILSON MAGNETOGRAM

DeltaY =  
DeltaX =



White = +7.5G  
Black = -7.5G

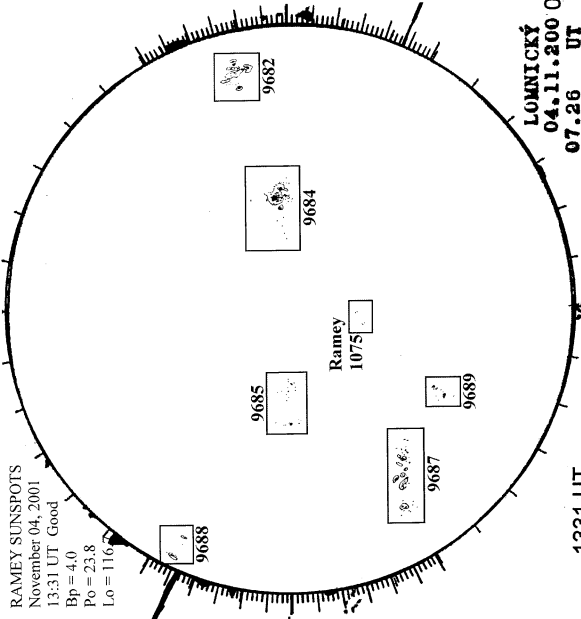
MEUDON H-ALPHA



1015 UT

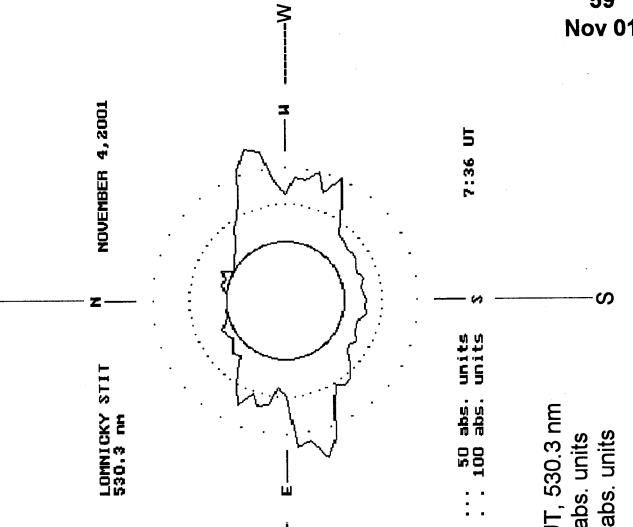
RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 04, 2001  
13:31 UT Good  
Bp = 4.0  
Po = 23.8  
Lo = 116



1331 UT  
0726 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



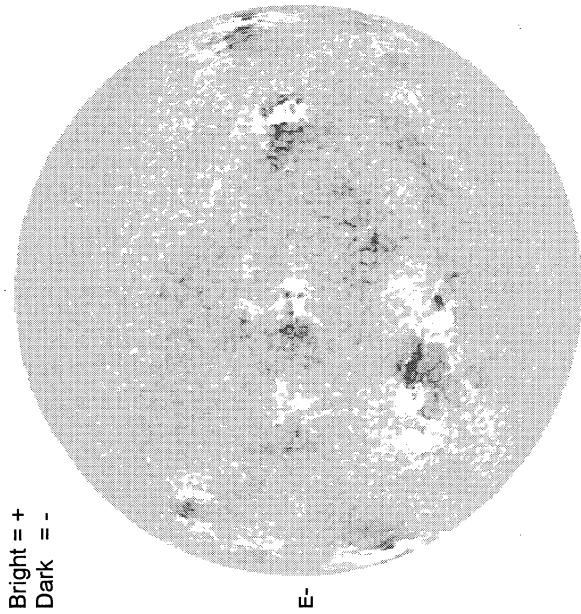
... 50 abs. units  
... 100 abs. units

7:36 UT

LOMNICKY  
04.11.200 0736 UT, 530.3 nm  
07.26 UT  
... 50 abs. units  
... 100 abs. units

60  
Nov 01

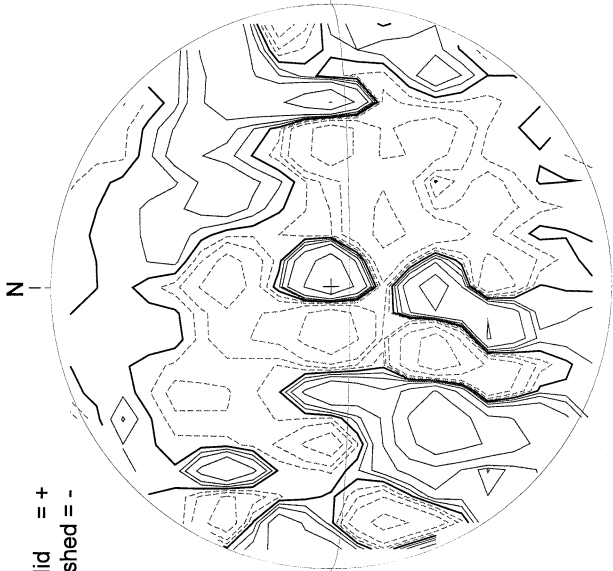
KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



Bright = +  
Dark = -

1649 UT

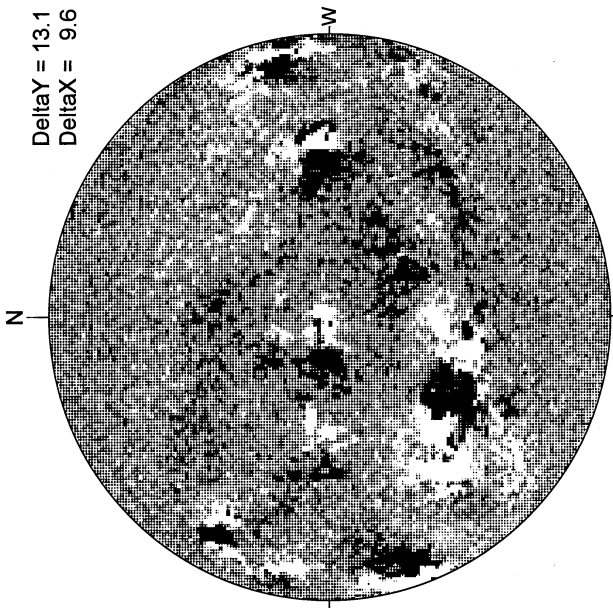
STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

1908 UT

MT. WILSON MAGNETOGRAM

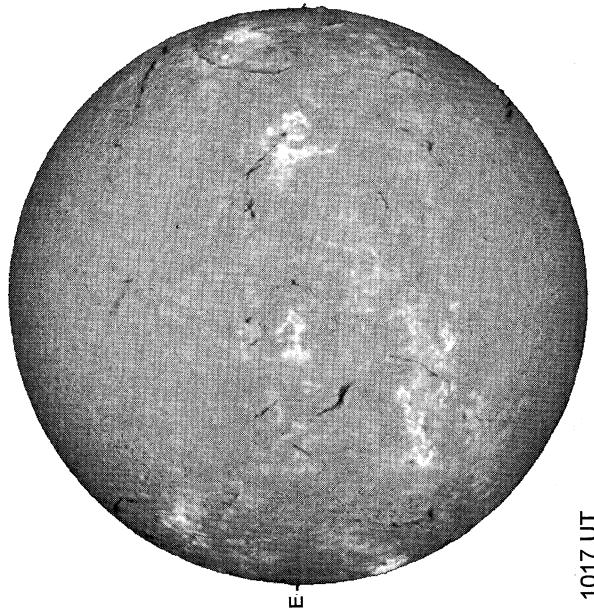


Delta Y = 13.1  
Delta X = 9.6

17.10 -  
18.06 UT

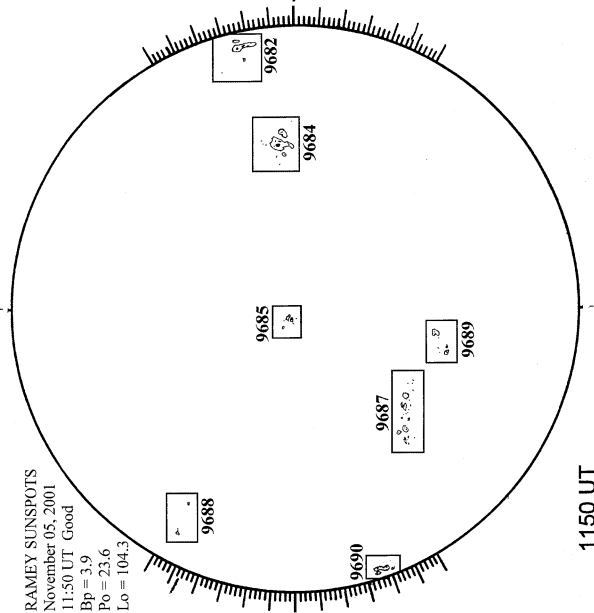
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA



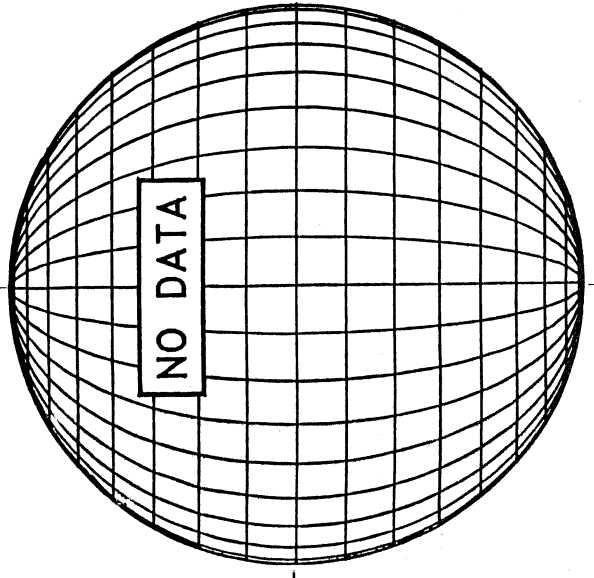
1017 UT

RAMEY SUNSPOT



1150 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

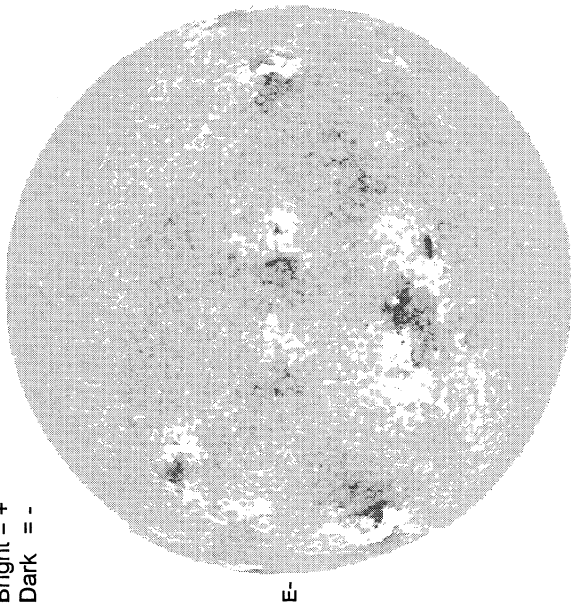


NOVEMBER 6, 2001 ( P= 23.57, Bo = 3.85, Lo = 97.68)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

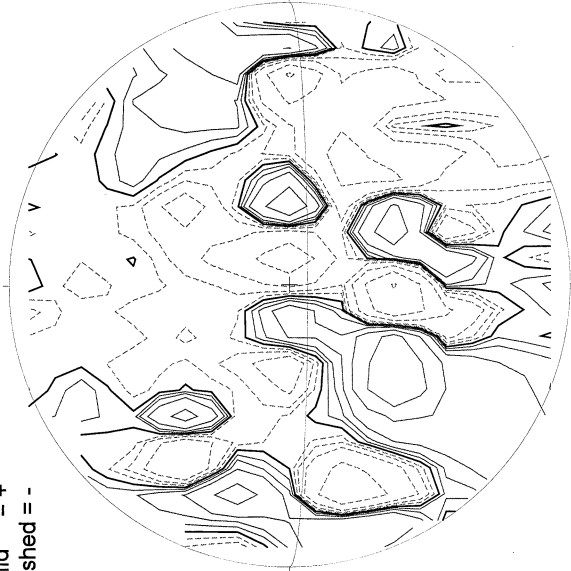
Bright = +  
Dark = -



1637 UT

STANFORD MAGNETOGRAM

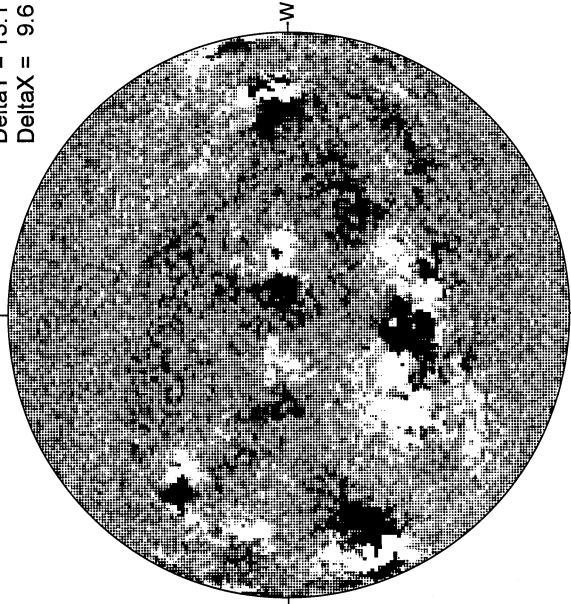
Solid = +  
Dashed = -



2119 UT

MT. WILSON MAGNETOGRAM

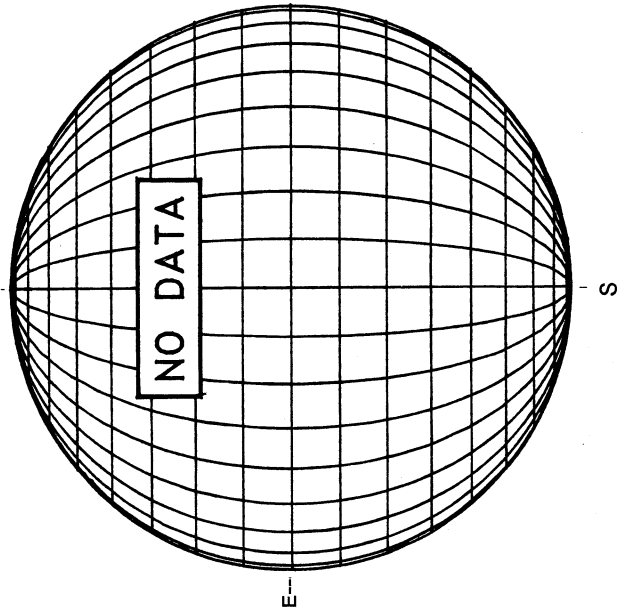
DeltaY = 13.1  
DeltaX = 9.6



18.03 -  
18.99 UT

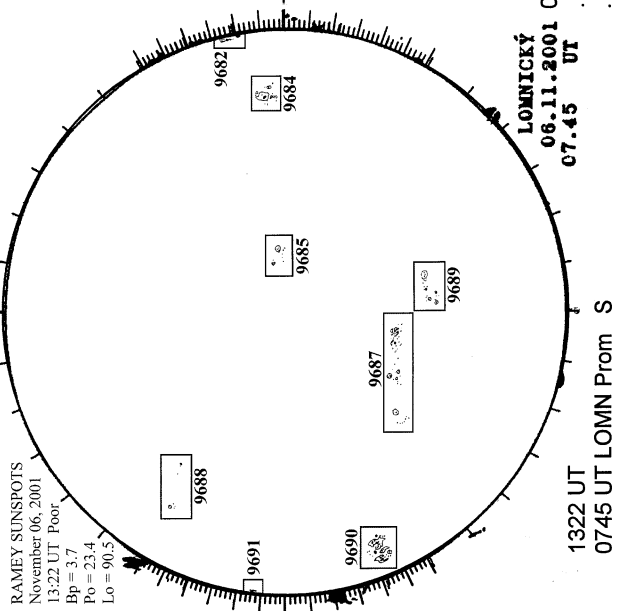
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA



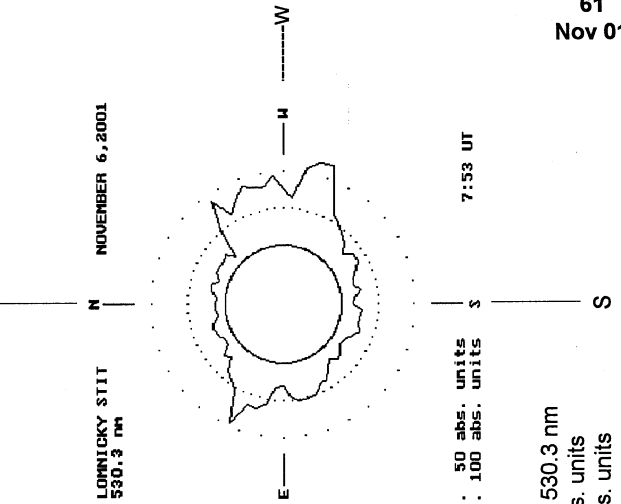
RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 06, 2001  
13:22 UT Poor  
Bp = 3.7  
Po = 23.4  
Lo = 90.5



1322 UT  
0745 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



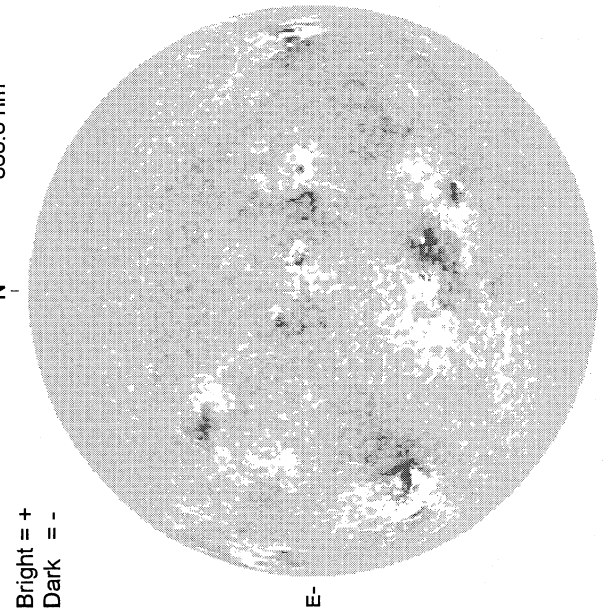
50 abs. units  
100 abs. units

7:53 UT  
LOMNICKY  
06.11.2001 0753 UT, 530.3 nm  
50 abs. units  
100 abs. units

NOVEMBER 7, 2001 ( P= 23.36, Bo = 3.74, Lo = 84.49)

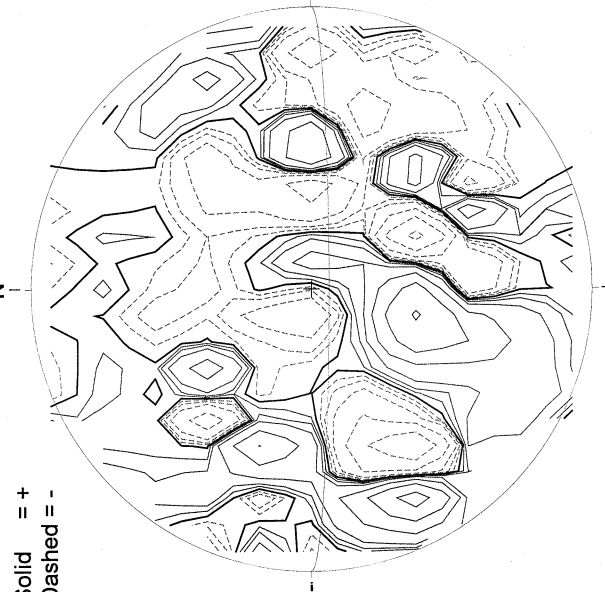
62  
Nov 01

KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



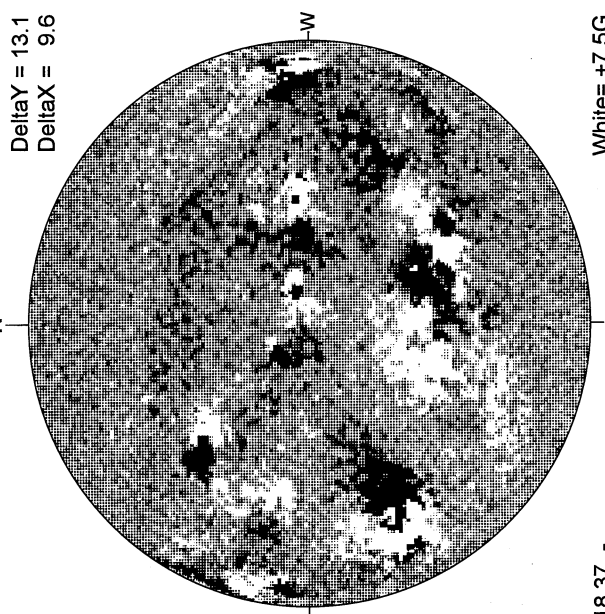
Bright = +  
Dark = -

STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

MT. WILSON MAGNETOGRAM



Delta Y = 13.1  
Delta X = 9.6

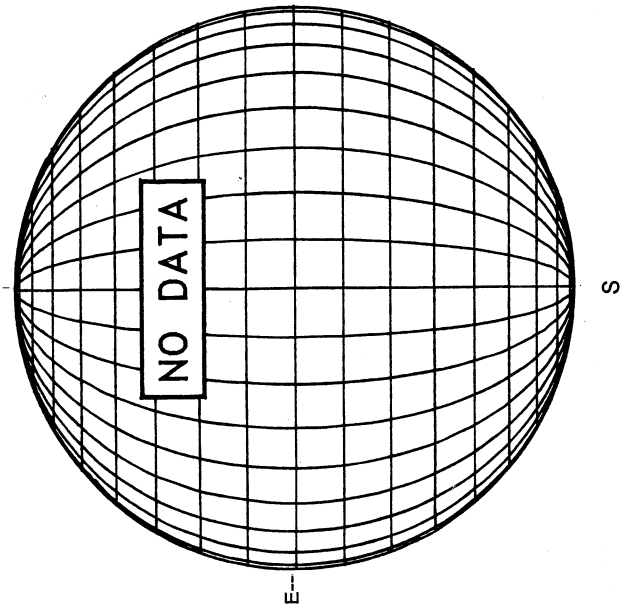
1659 UT

2206 UT

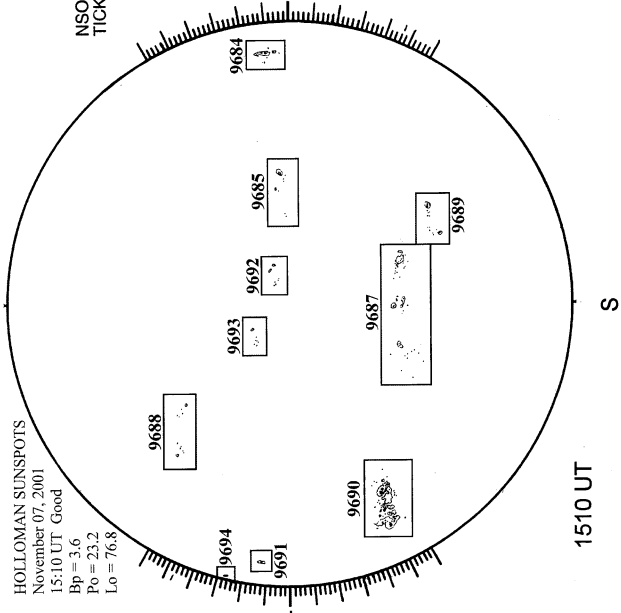
18.37 -  
19.34 UT

White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA



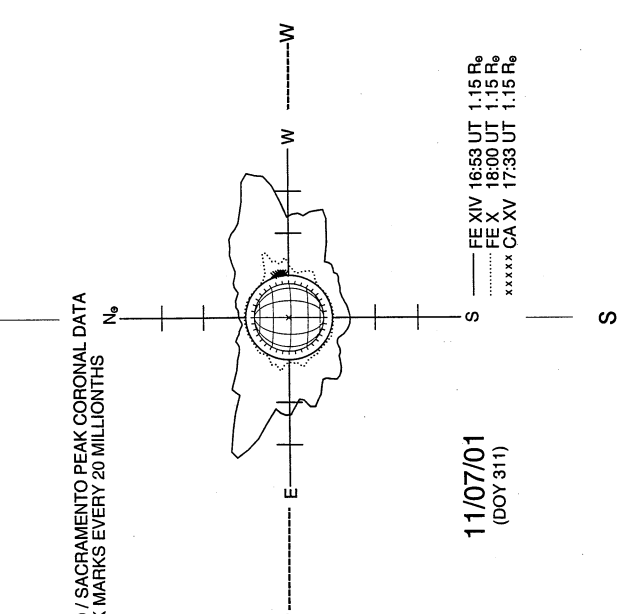
HOLLOMAN SUNSPOTS



HOLLOMAN SUNSPOTS  
November 07, 2001  
15:10 UT Good  
Bp = 3.6  
Po = 23.2  
Lo = 76.8

1510 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 20 MILLIONTHS

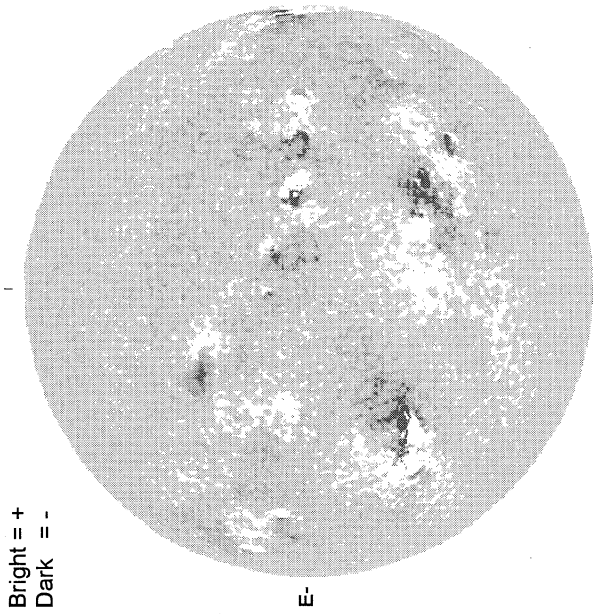
11/07/01  
(DOY 311)

— FE XIV 1653 UT 1.15 R<sub>e</sub>  
..... FE X 18:00 UT 1.15 R<sub>e</sub>  
xxxxx CA XV 17:33 UT 1.15 R<sub>e</sub>



NOVEMBER 8, 2001 ( P = 23.14, Bo = 3.64, Lo = 71.31)

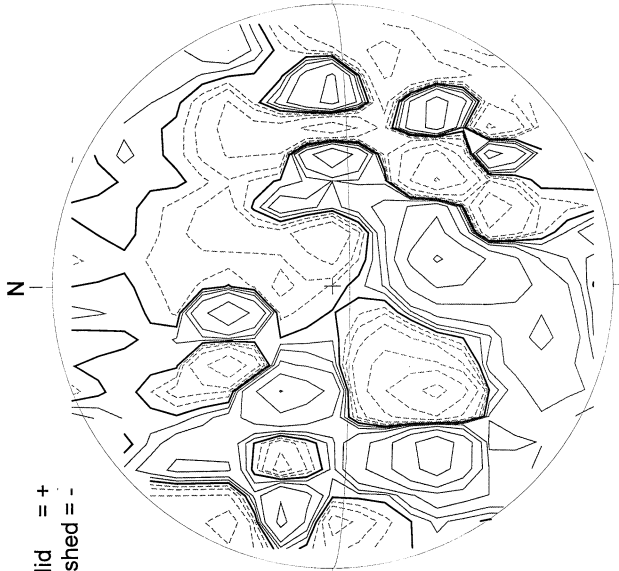
KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



Bright = +  
Dark = -

1656 UT

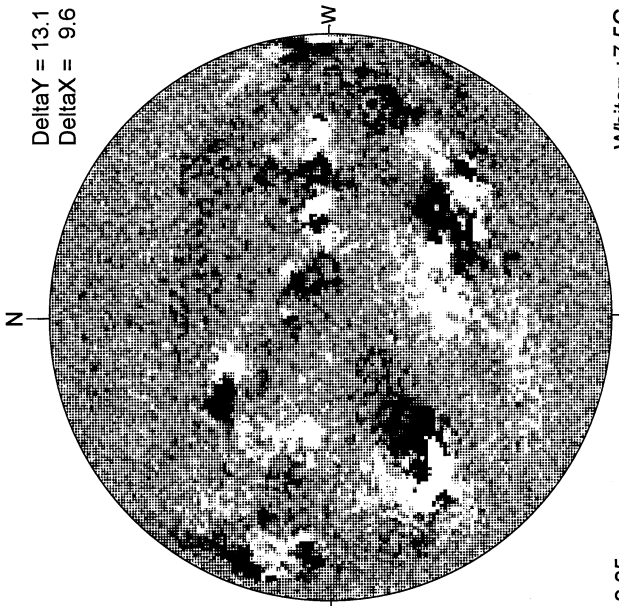
STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

2200 UT

MT. WILSON MAGNETOGRAM

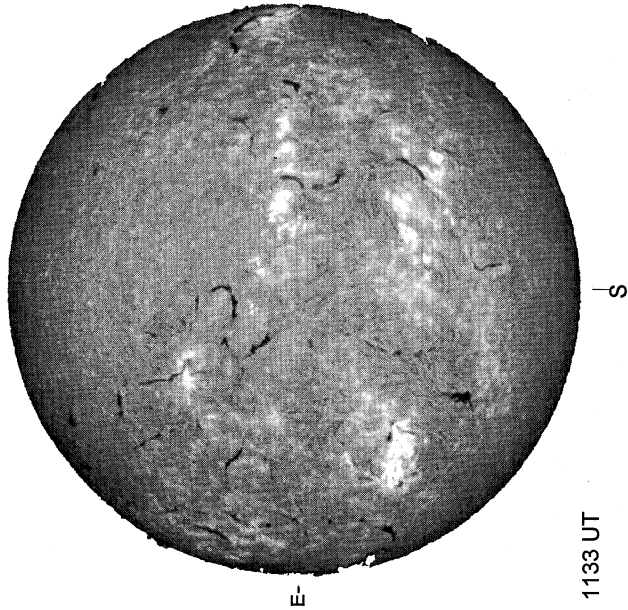


DeltaY = 13.1  
DeltaX = 9.6

18.05 -  
19.02 UT

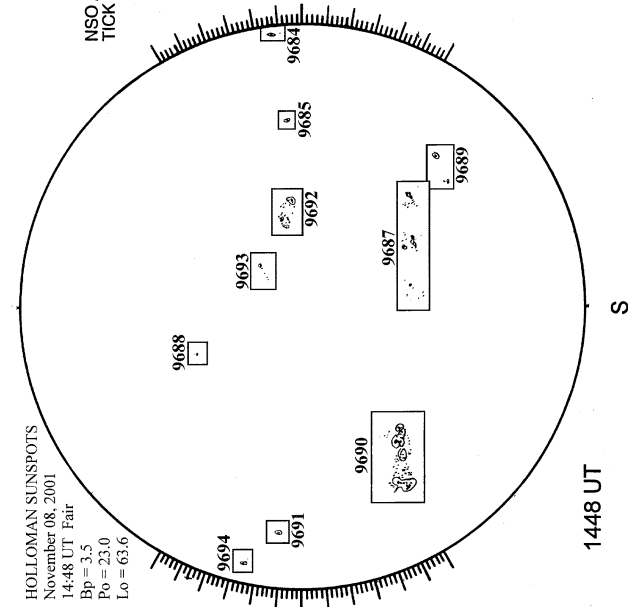
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA



1133 UT

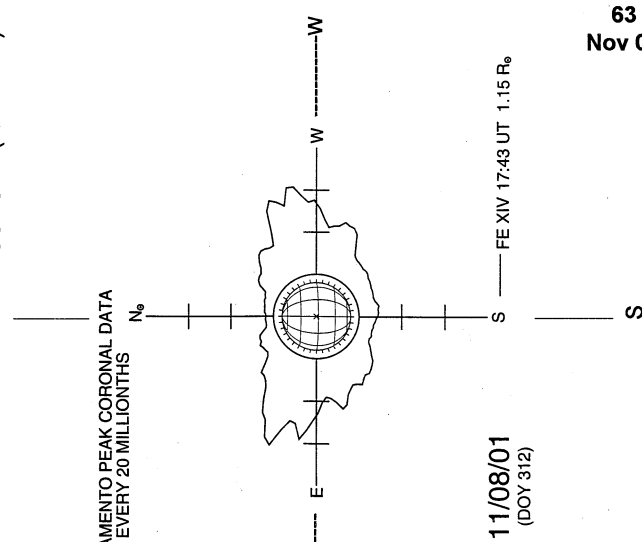
HOLLOMAN SUNSPOT



HOLLOMAN SUNSPOTS  
November 08, 2001  
14:48 UT Fair  
Bp = 3.5  
Po = 23.0  
Lo = 63.6

1448 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 20 MILLIONTHS

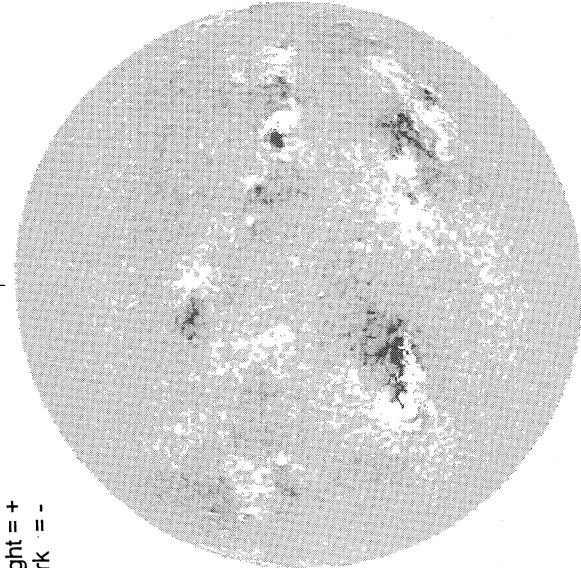
11/08/01  
(DOY 312)

FE XIV 17:43 UT 1.15 R<sub>o</sub>

NOVEMBER 9, 2001 (P= 22.92, Bo = 3.52, Lo = 58.12)

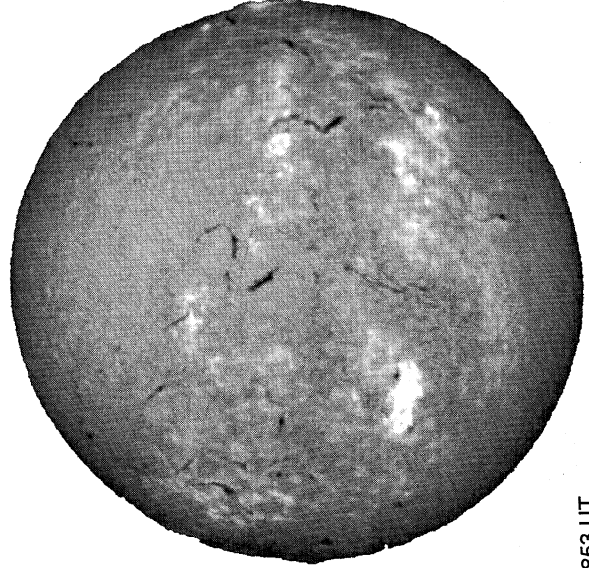
KITT PEAK MAGNETOGRAM

\*\*868.8 nm



1638 UT

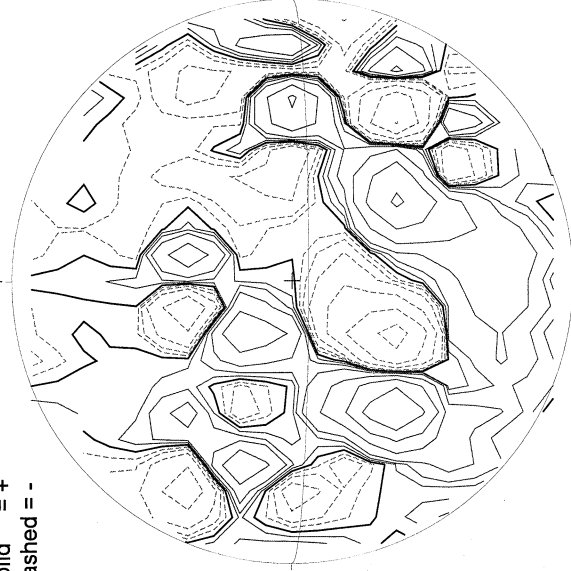
MEUDON H-ALPHA



0853 UT

STANFORD MAGNETOGRAM

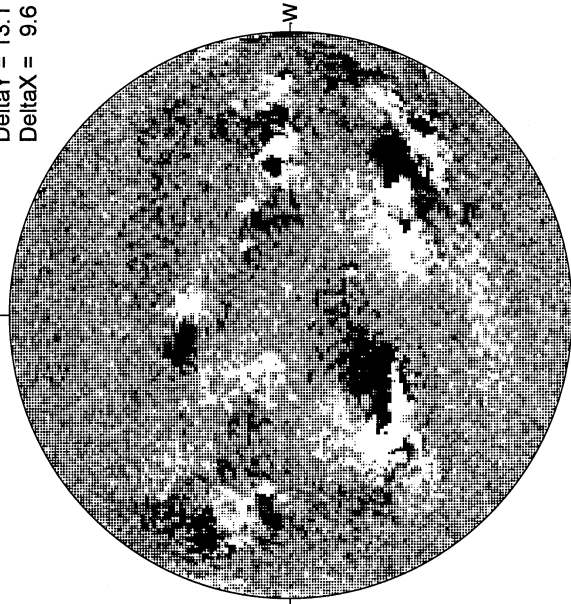
Solid = +  
Dashed = -



1917 UT

MT. WILSON MAGNETOGRAM

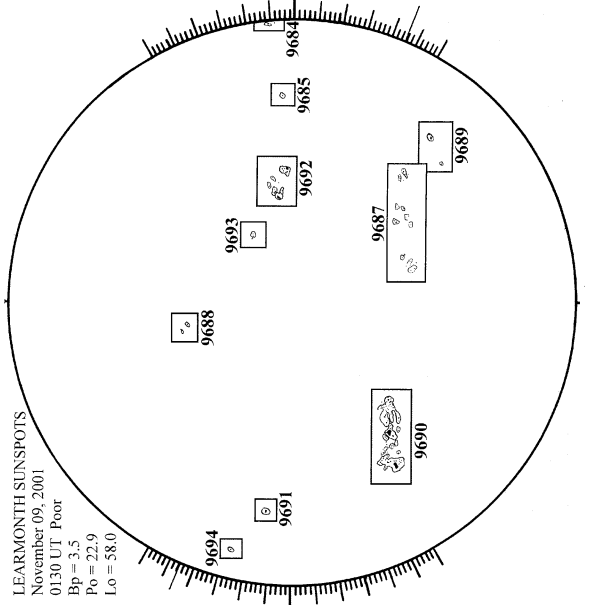
Delta Y = 13.1  
Delta X = 9.6



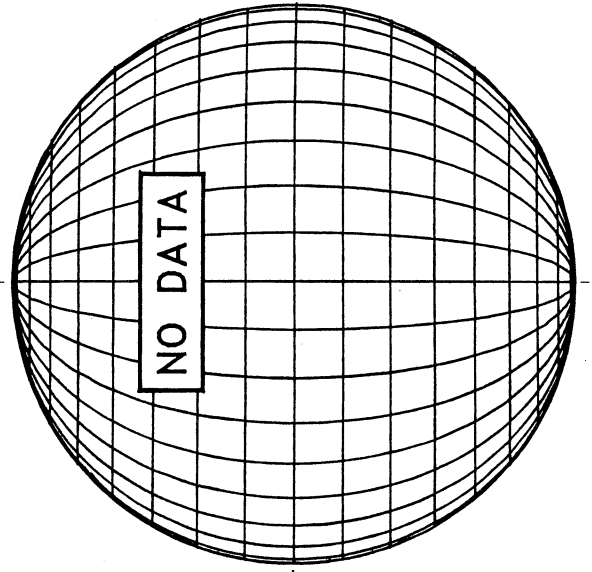
17.41 -  
18.37 UT

RAMEY SUNSPOTS

LEARMONTH SUNSPOTS  
November 09, 2001  
0130 UT Poor  
Bp = 3.5  
Po = 22.9  
Lo = 58.0

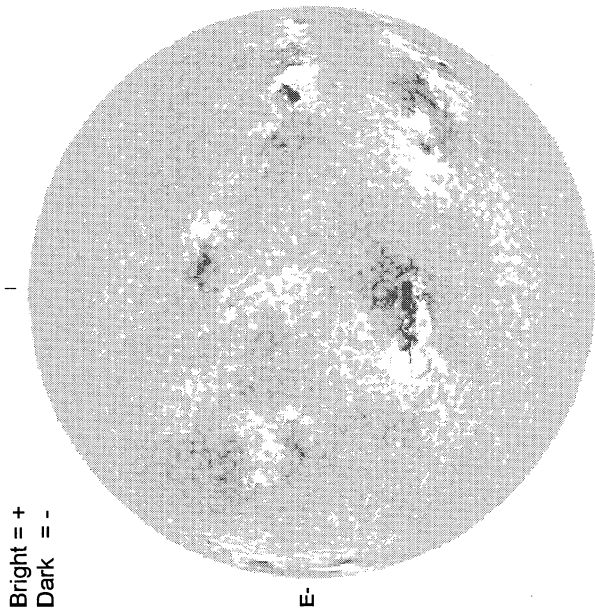


SACRAMENTO PEAK CORONA (1.15 Radii)---



NOVEMBER 10, 2001 ( P= 22.68, Bo = 3.41 Lo = 44.94)

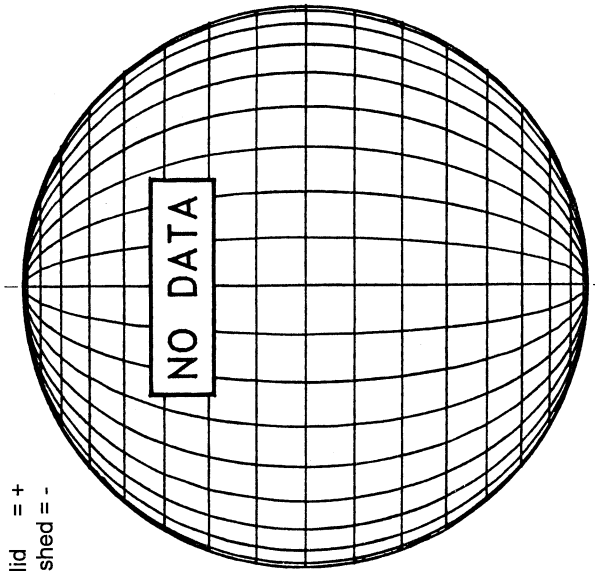
KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



Bright = +  
Dark = -

1618 UT

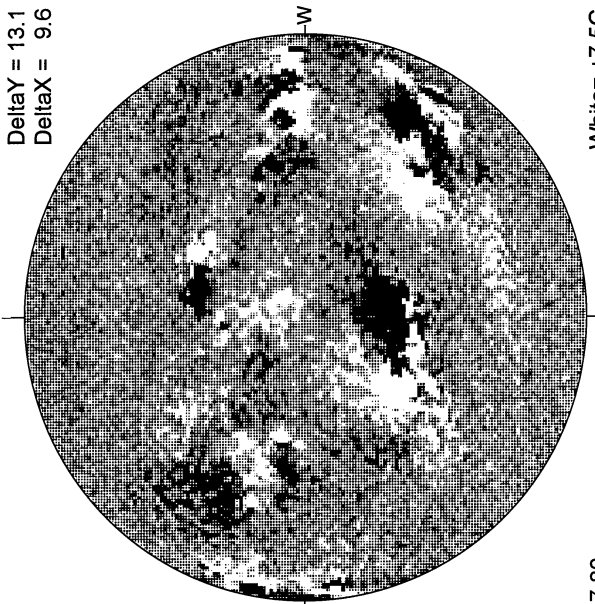
STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

17.80 -  
18.76 UT

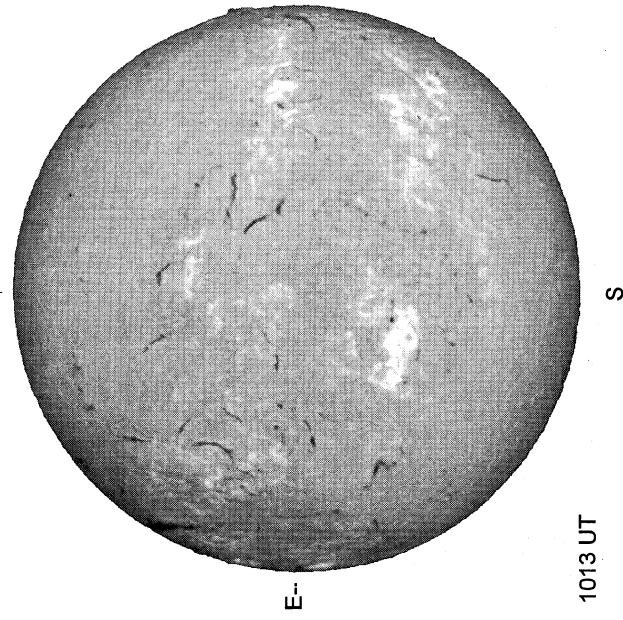
MT. WILSON MAGNETOGRAM



DeltaY = 13.1  
DeltaX = 9.6

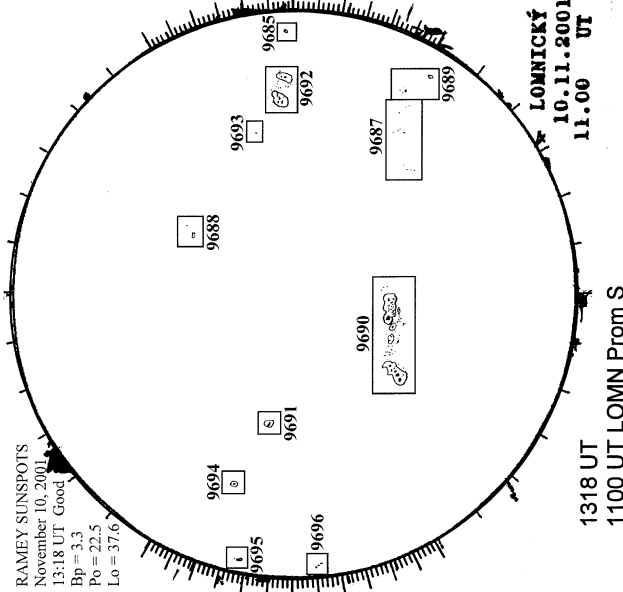
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA



1013 UT

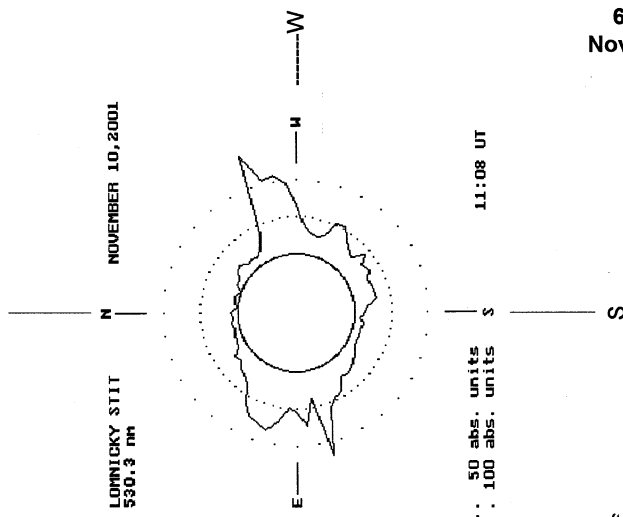
RAMEY SUNSPOTS



RAMEY SUNSPOTS  
November 10, 2001  
13:18 UT Good  
Bp = 3.3  
Po = 22.5  
Lo = 37.6

1318 UT  
1100 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



LOMNICKY STIT  
530.3 nm  
NOVEMBER 10, 2001

50 abs. units  
100 abs. units

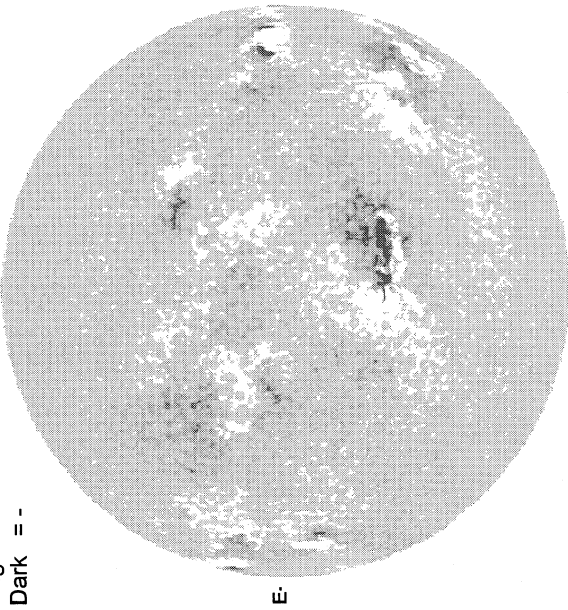
11:08 UT

NOVEMBER 11, 2001 ( P= 22.44, Bo = 3.30, Lo = 31.75)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

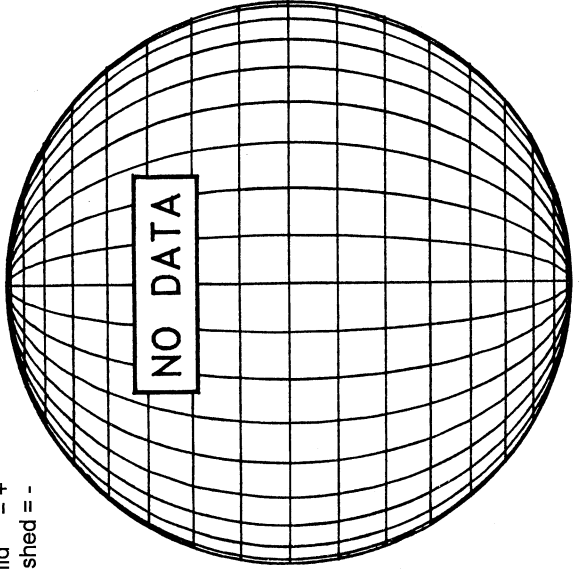
Bright = +  
Dark = -



1605 UT

STANFORD MAGNETOGRAM

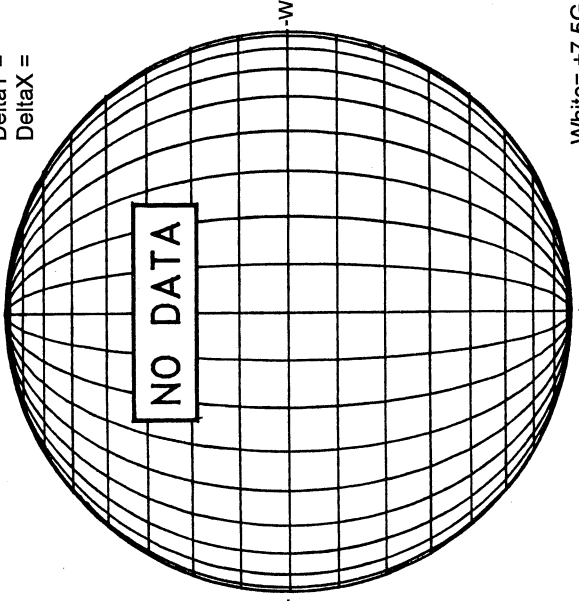
Solid = +  
Dashed = -



1605 UT

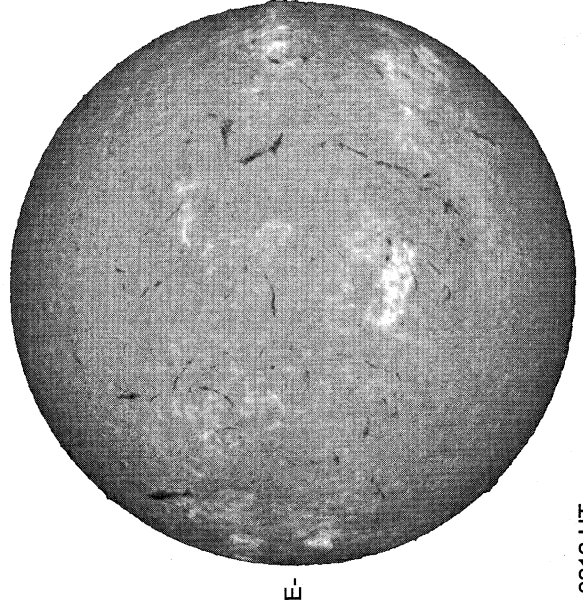
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



White = +7.5G  
Black = -7.5G

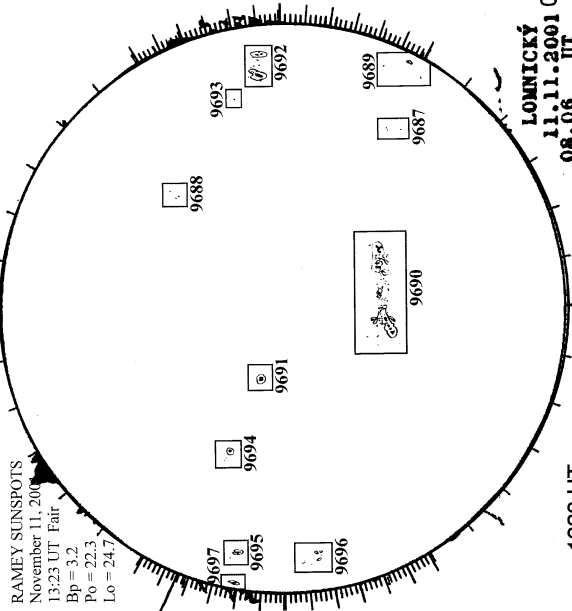
MEUDON H-ALPHA



0812 UT

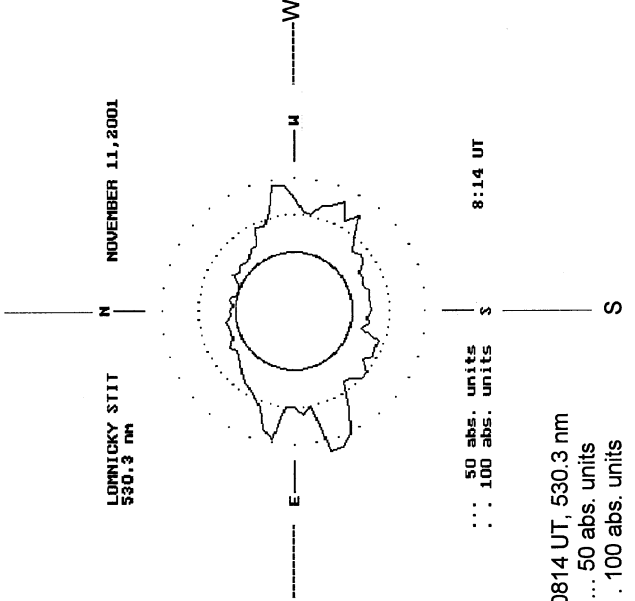
RAMEY SUNSPOTS

RAMEY SUNSPOTS  
November 11, 2001  
13:23 UT Fair  
Bp = 3.2  
Po = 22.3  
Lo = 24.7



1323 UT  
0806 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

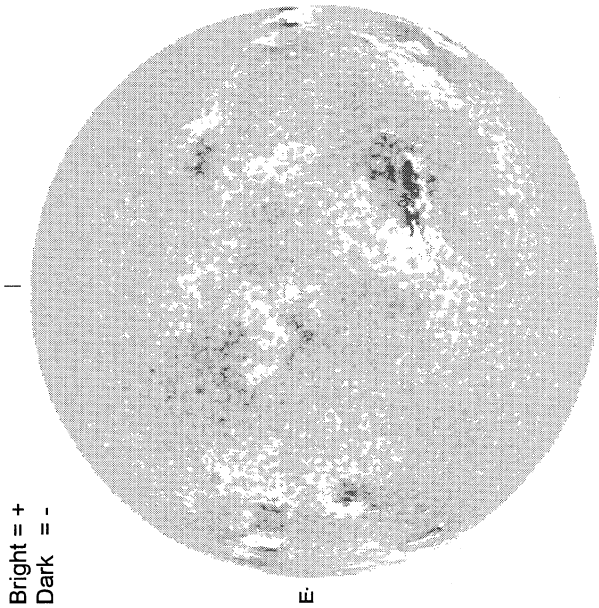


LOMNICKY STIT  
530.3 nm  
NOVEMBER 11, 2001  
8:14 UT  
... 50 abs. units  
... 100 abs. units

LOMNICKY  
11.11.2001 08:14 UT, 530.3 nm  
08.06 UT  
... 50 abs. units  
... 100 abs. units

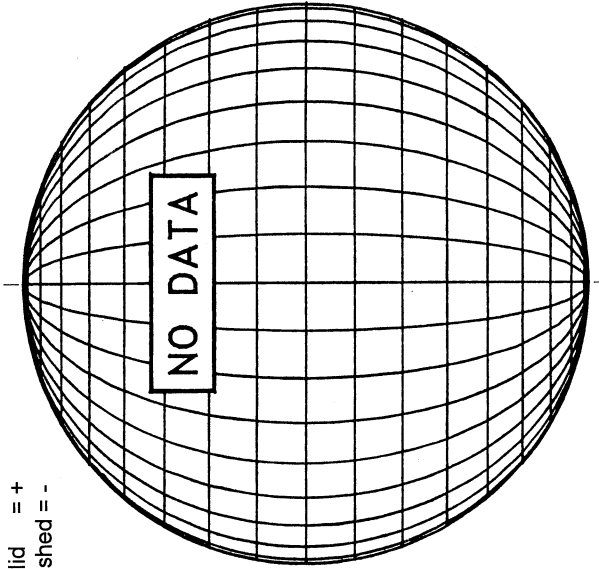
NOVEMBER 12, 2001 (P = 22.19, Bo = 3.19 Lo = 18.57)

KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*

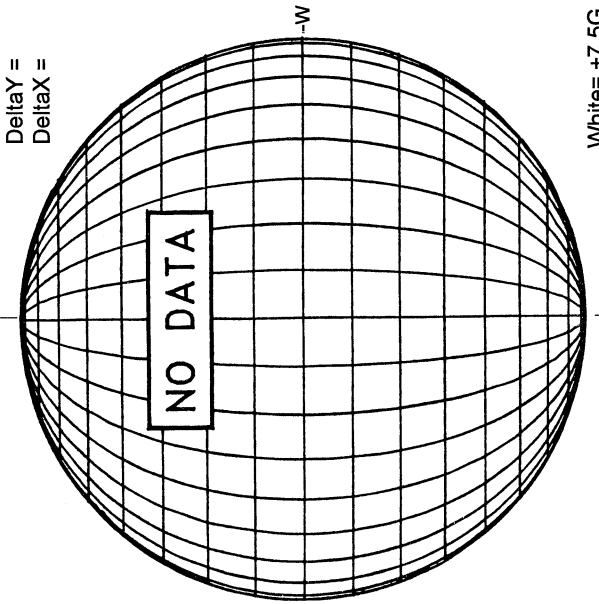


Solid = +  
Dashed = -

STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM

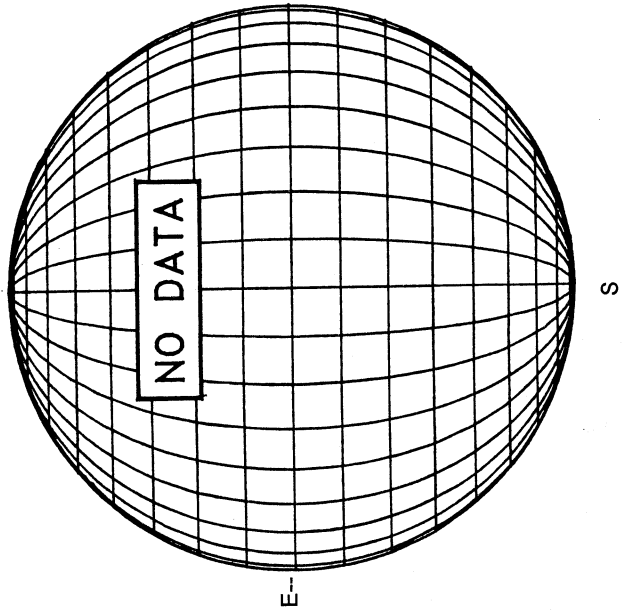


DeltaY =  
DeltaX =

White = +7.5G  
Black = -7.5G

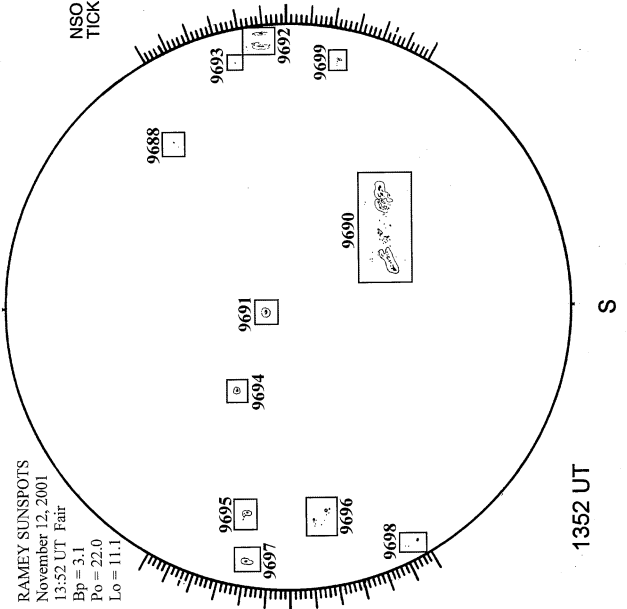
1602 UT

MEUDON H-ALPHA

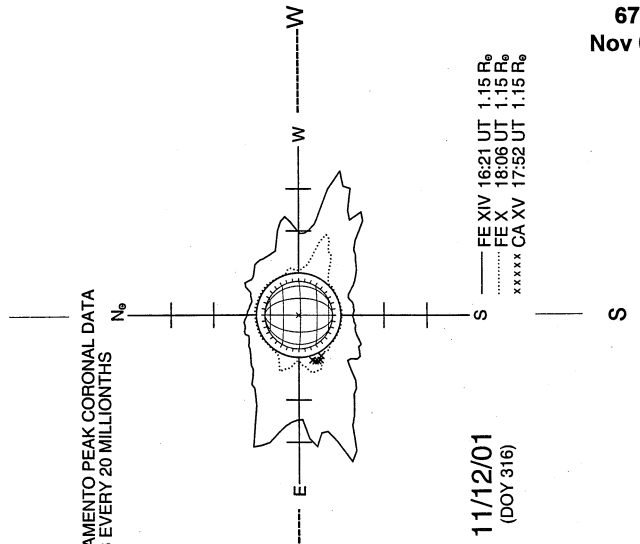


RAMEY SUNSPOTS

RAMEY SUNSPOTS  
November 12, 2001  
13:52 UT Fair  
Bp = 3.1  
Po = 22.0  
Lo = 11.1



SACRAMENTO PEAK CORONA (1.15 Radii)----

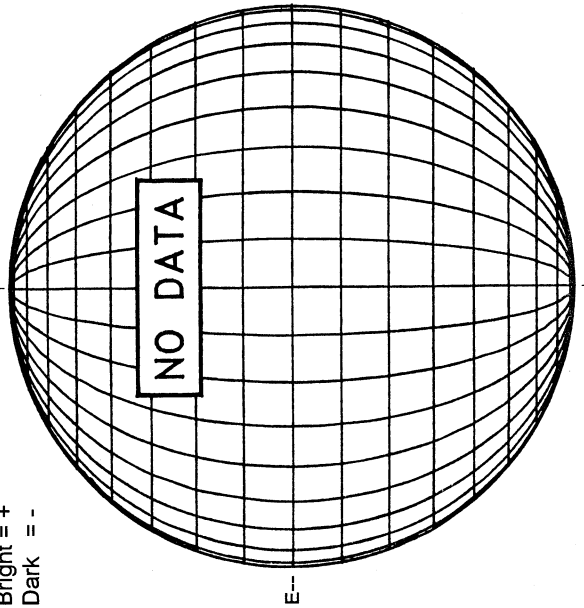


NOVEMBER 13, 2001 (P= 21.94, Bo = 3.07, Lo = 5.39)

KITT PEAK MAGNETOGRAM

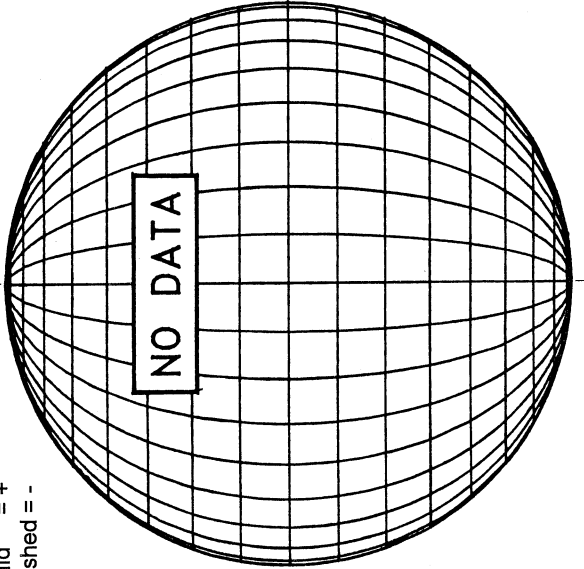
\*\*868.8 nm\*\*

Bright = +  
Dark = -



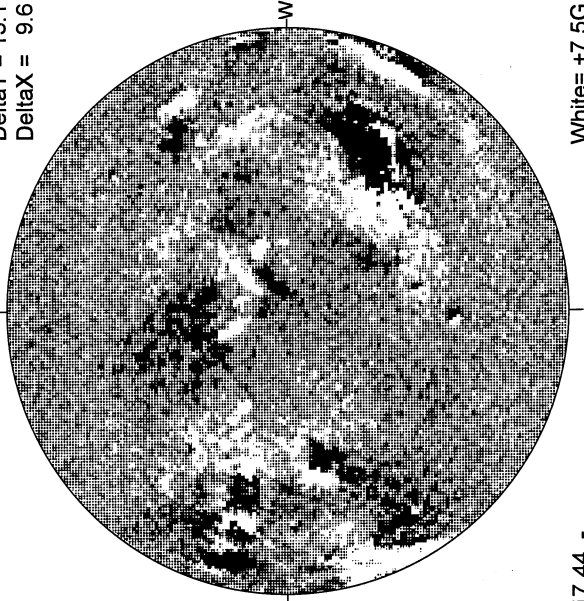
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.1  
DeltaX = 9.6

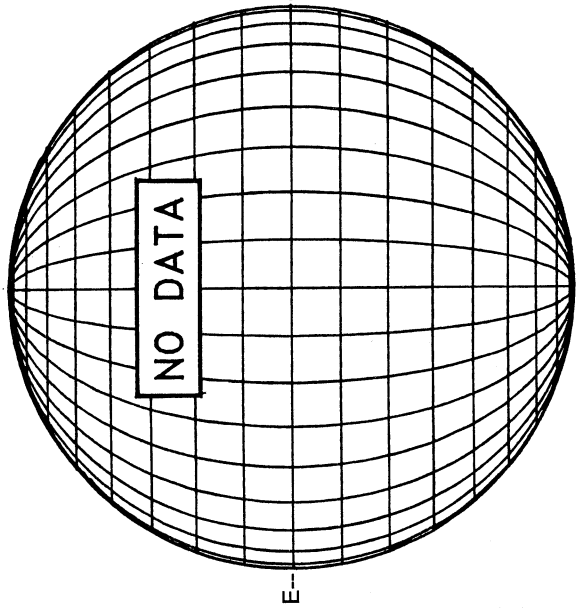


17.44 -  
18.41 UT

White= +7.5G  
Black = -7.5G

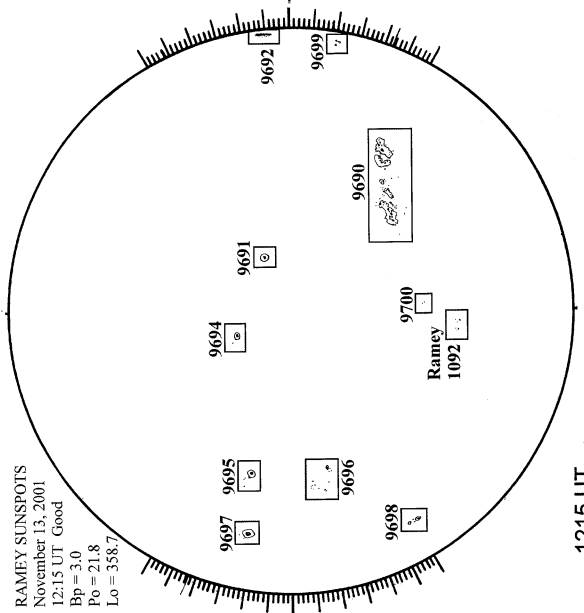
MEUDON H-ALPHA

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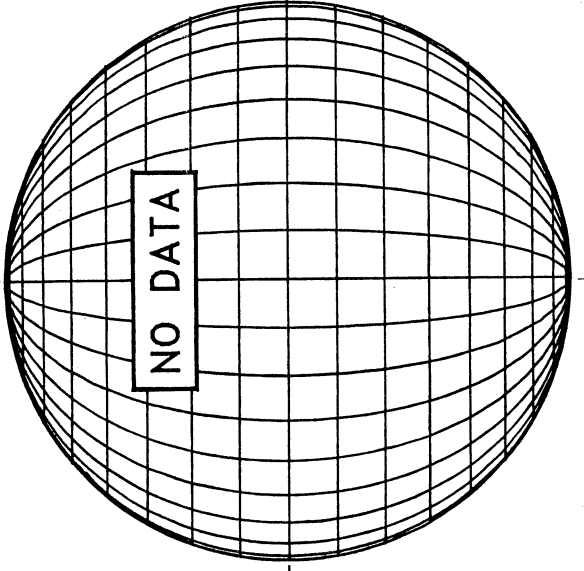


RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 13, 2001  
12:15 UT Good  
Bp = 3.0  
Po = 21.8  
Lo = 358.7



SACRAMENTO PEAK CORONA (1.15 Radii)----

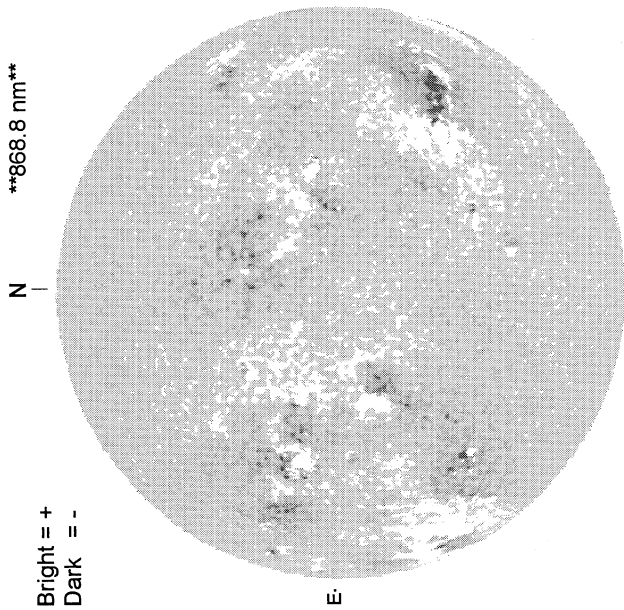


NOVEMBER 14, 2001 ( P = 21.67, Bo = 2.96, Lo = 352.20)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

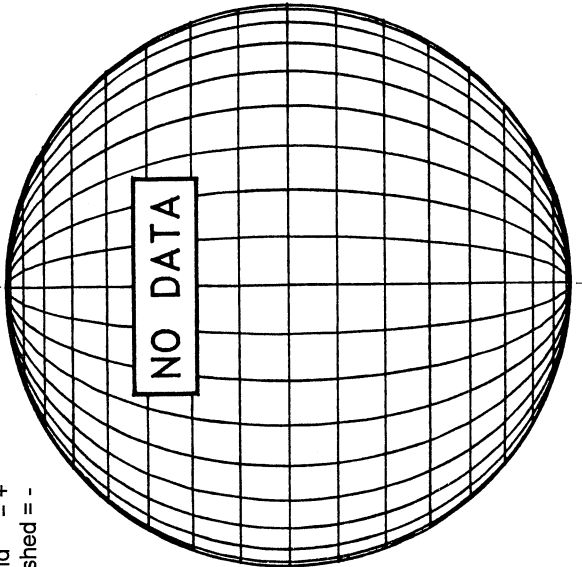
Bright = +  
Dark = -



1606 UT

STANFORD MAGNETOGRAM

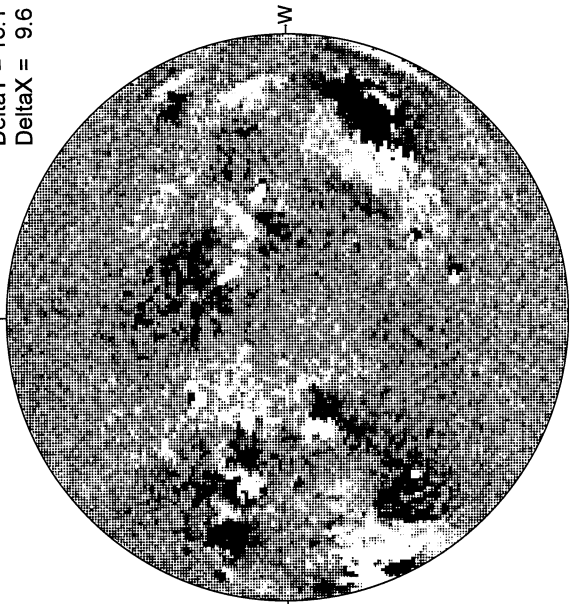
Solid = +  
Dashed = -



17.08 -  
18.05 UT

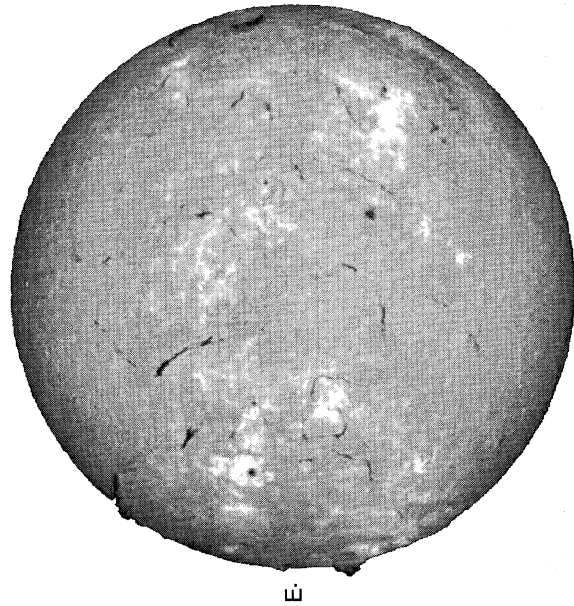
MT. WILSON MAGNETOGRAM

Delta Y = 13.1  
Delta X = 9.6



White = +7.5G  
Black = -7.5G

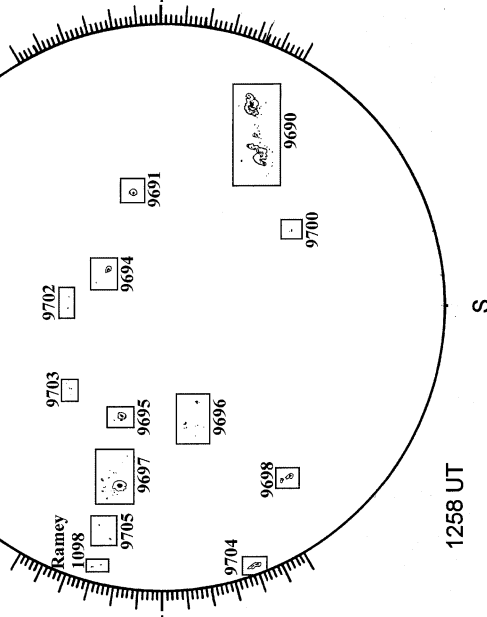
MEUDON H-ALPHA



0850 UT

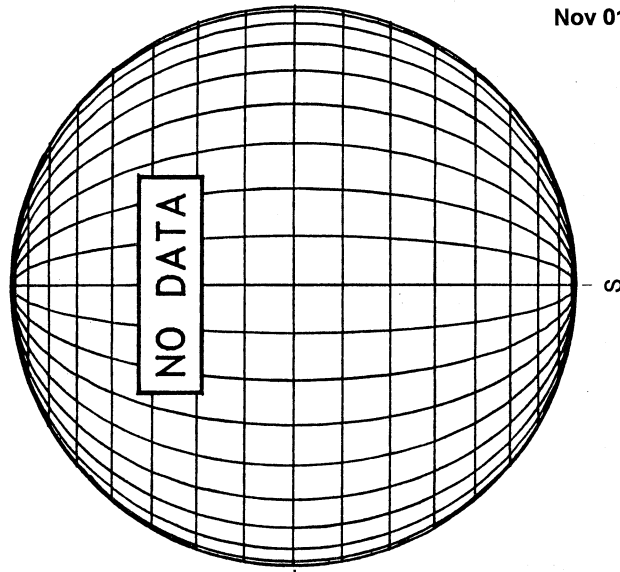
RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 14, 2001  
12:58 UT Fair  
Bp = 2.8  
Po = 21.5  
Lo = 345.2



1258 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



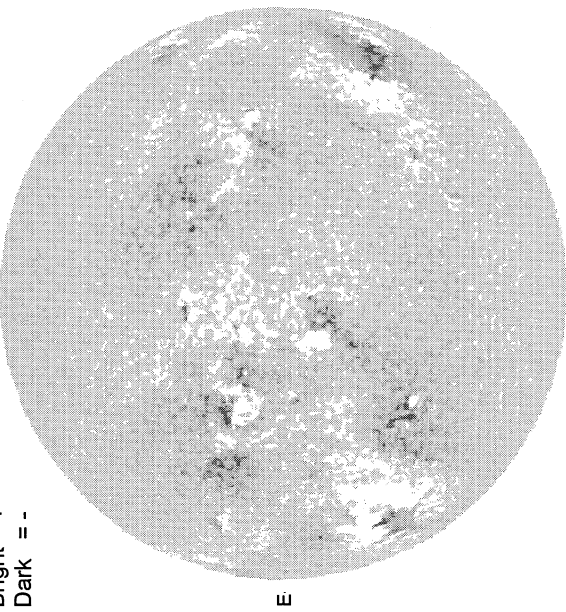
NOVEMBER 15, 2001 (P= 21.40, Bo = 2.84, Lo = 339.02)

70  
Nov 01

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

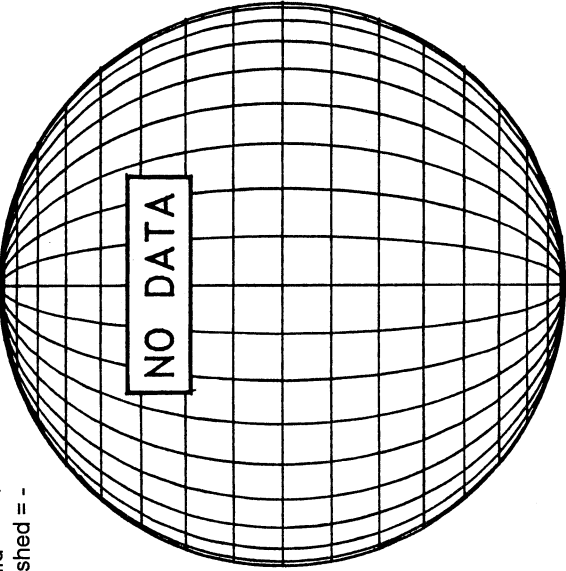
Bright = +  
Dark = -



1622 UT

STANFORD MAGNETOGRAM

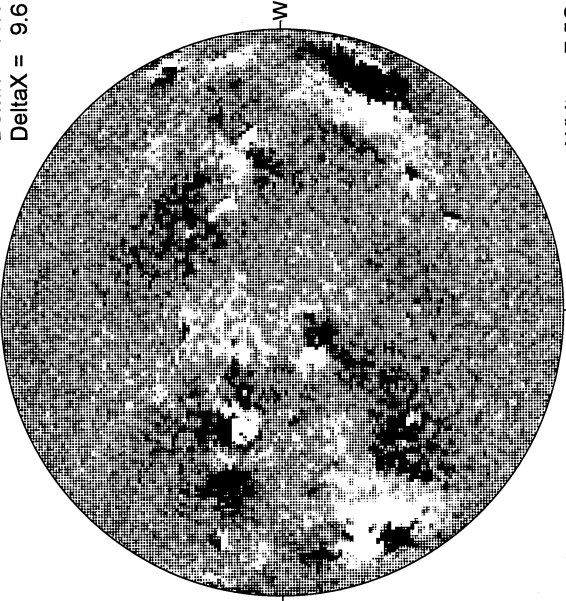
Solid = +  
Dashed = -



17.21 -  
18.17 UT

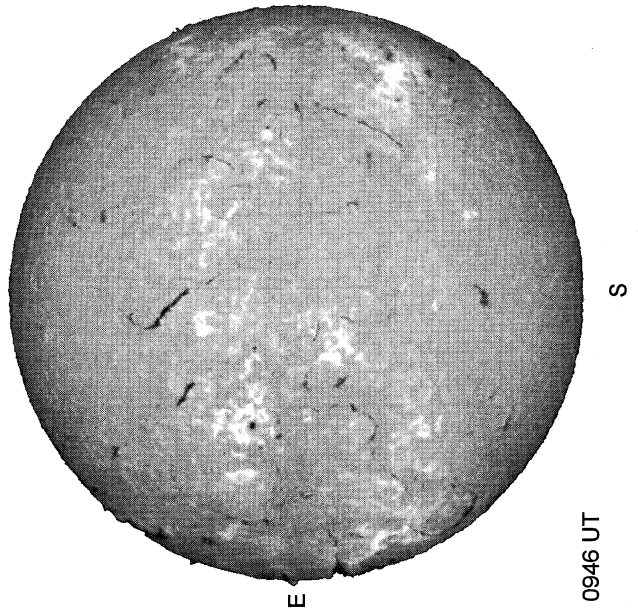
MT. WILSON MAGNETOGRAM

DeltaY = 13.1  
DeltaX = 9.6



White = +7.5G  
Black = -7.5G

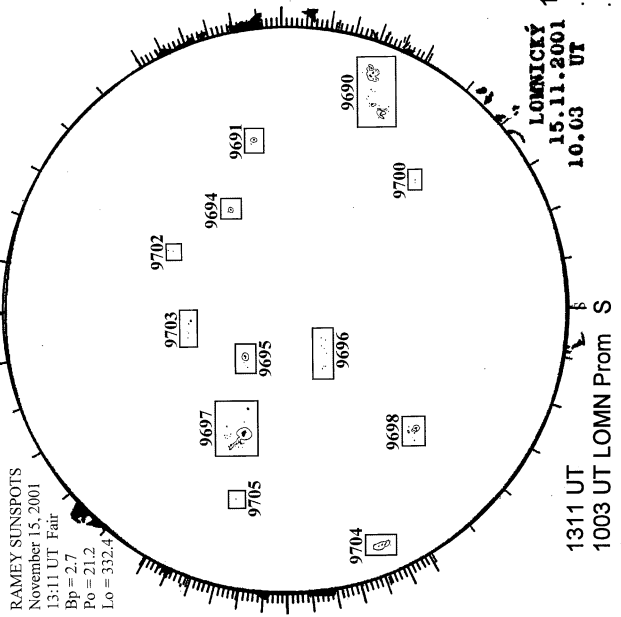
MEUDON H-ALPHA



0946 UT

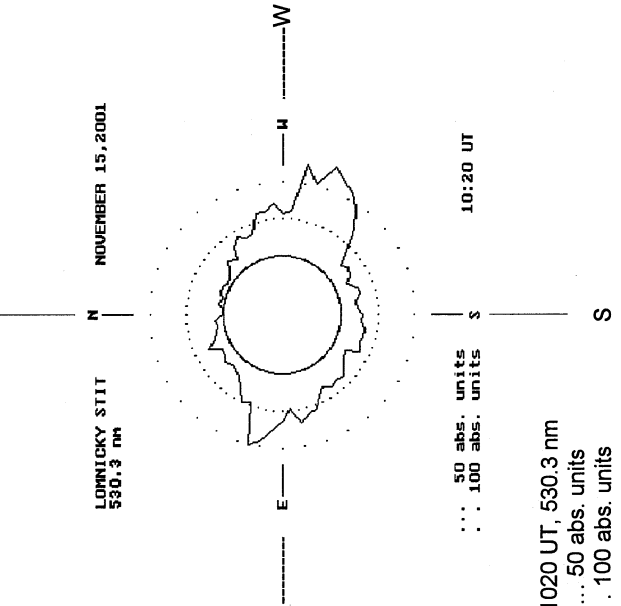
RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 15, 2001  
13:11 UT Fair  
Bp = 2.7  
Po = 21.2  
Lo = 332.4



1311 UT  
1003 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



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

10:20 UT

LOMNICKY 1020 UT, 530.3 nm  
... 50 abs. units  
... 100 abs. units

LOMNICKY STIT  
530.3 nm  
NOVEMBER 15, 2001

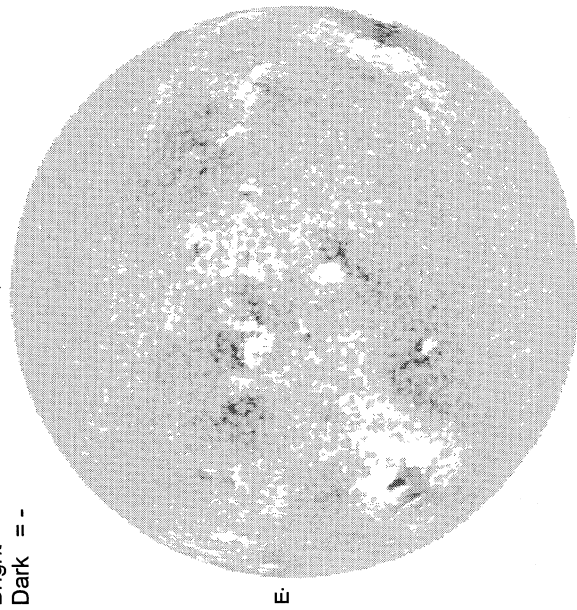


NOVEMBER 16, 2001 ( P= 21.12, Bo = 2.72, Lo = 325.84)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

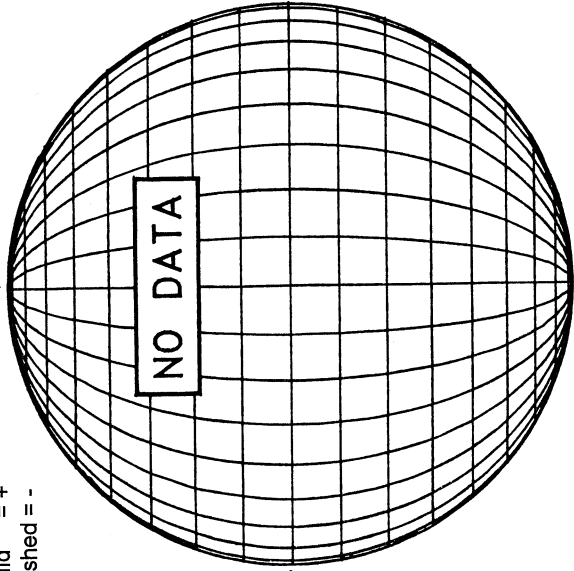
Bright = +  
Dark = -



1559 UT

STANFORD MAGNETOGRAM

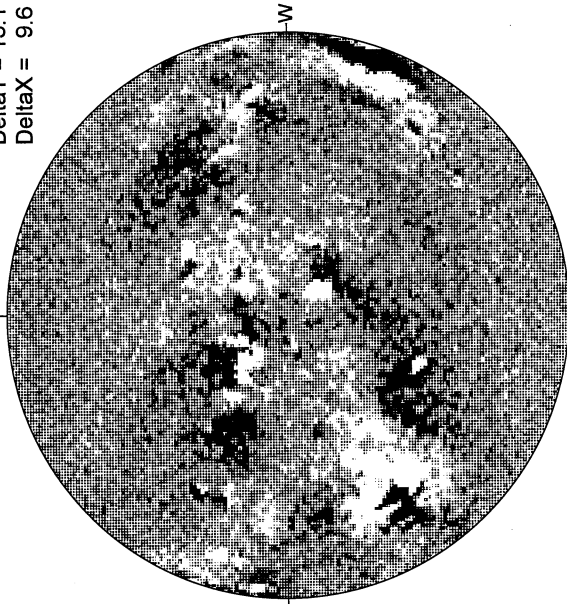
Solid = +  
Dashed = -



18.88 -  
19.85 UT

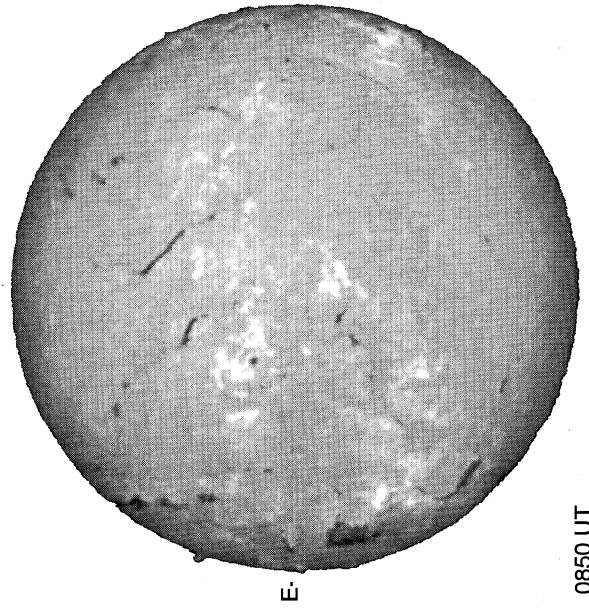
MT. WILSON MAGNETOGRAM

Delta Y = 13.1  
Delta X = 9.6



White = +7.5G  
Black = -7.5G

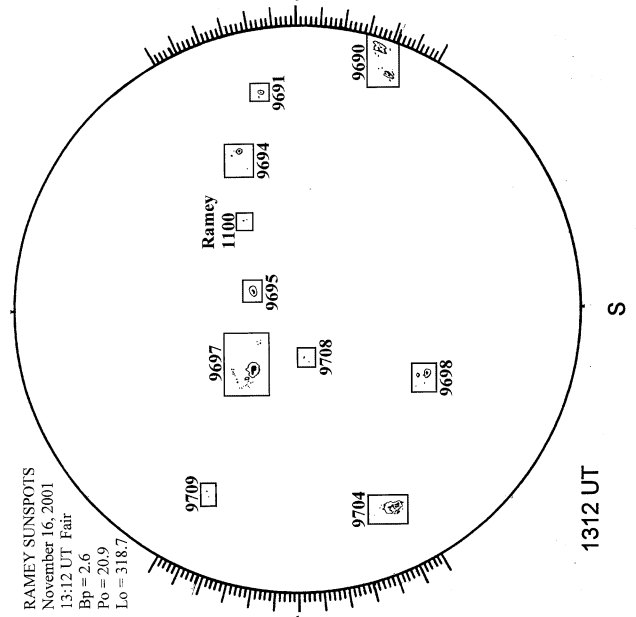
MEUDON H-ALPHA



0850 UT

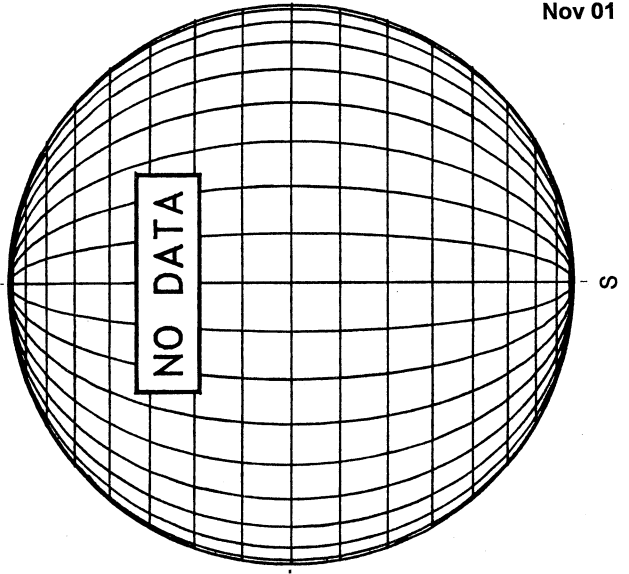
RAMEY SUNSPOTS

RAMEY SUNSPOTS  
November 16, 2001  
13:12 UT Fair  
Bp = 2.6  
Po = 20.9  
Lo = 318.7



1312 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

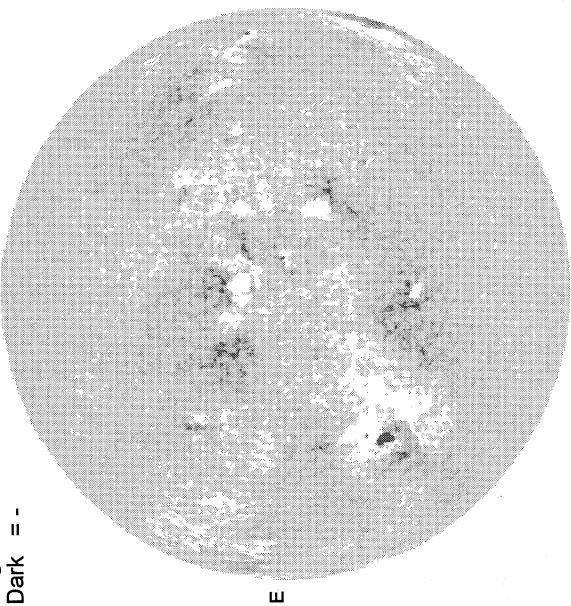


NOVEMBER 17, 2001 (P= 20.83, Bo = 2.60, Lo = 312.66)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

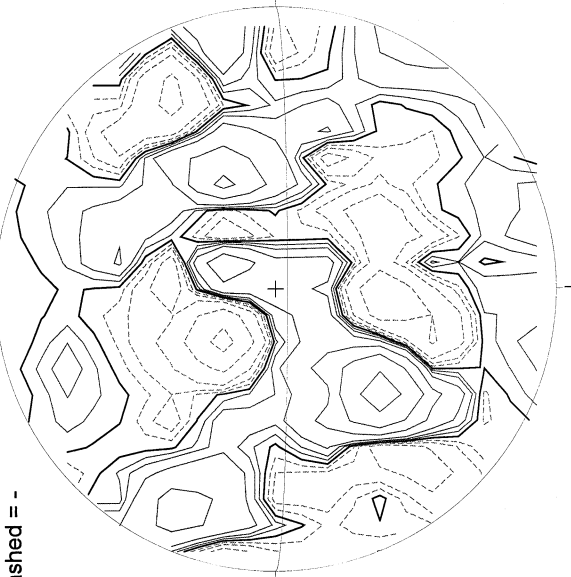
Bright = +  
Dark = -



1615 UT

STANFORD MAGNETOGRAM

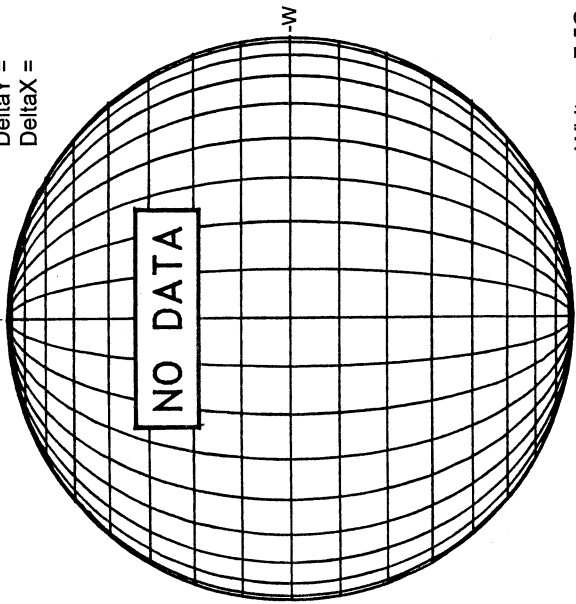
Solid = +  
Dashed = -



2140 UT

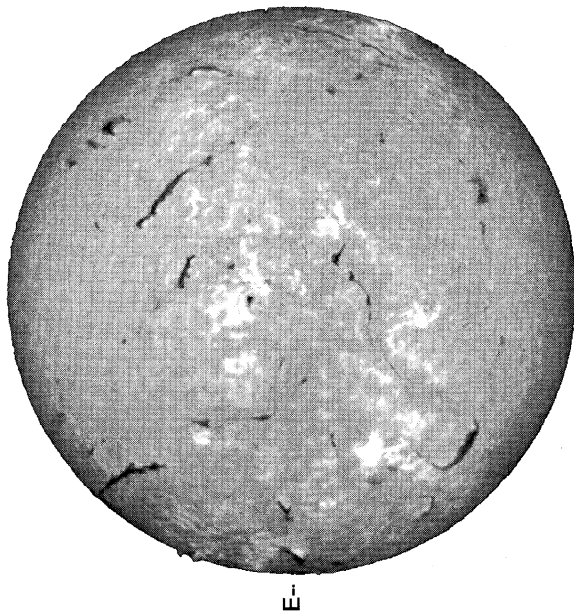
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



White = +7.5G  
Black = -7.5G

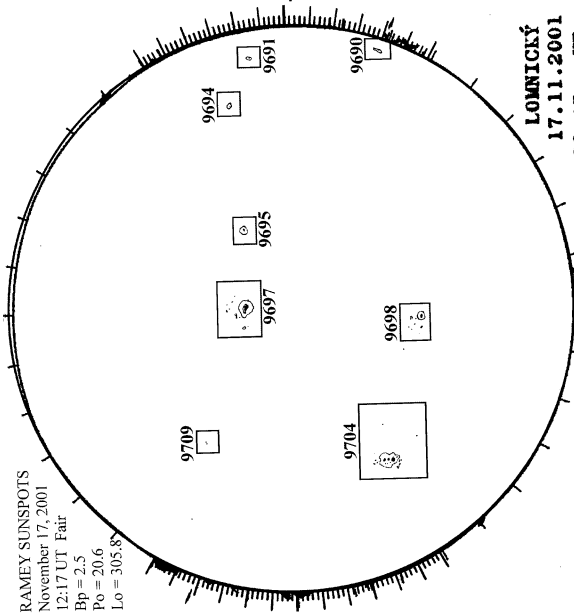
MEUDON H-ALPHA



0846 UT

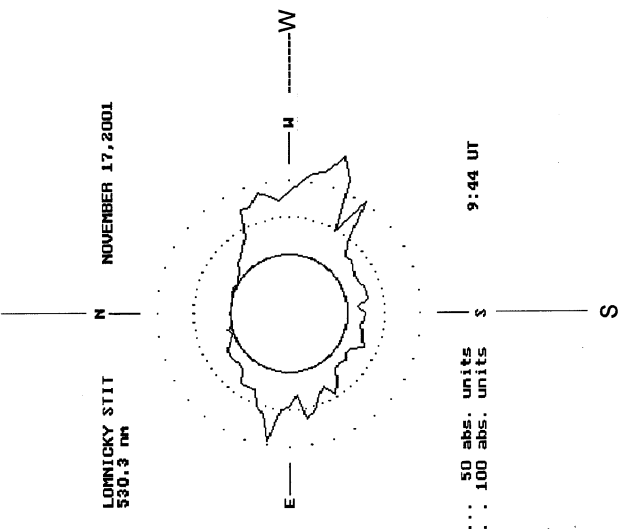
RAMEY SUNSPOTS

RAMEY SUNSPOTS  
November 17, 2001  
12:17 UT Fair  
Bp = 2.5  
Po = 20.6  
Lo = 305.85



1217 UT  
0945 UT LOMN Prom S

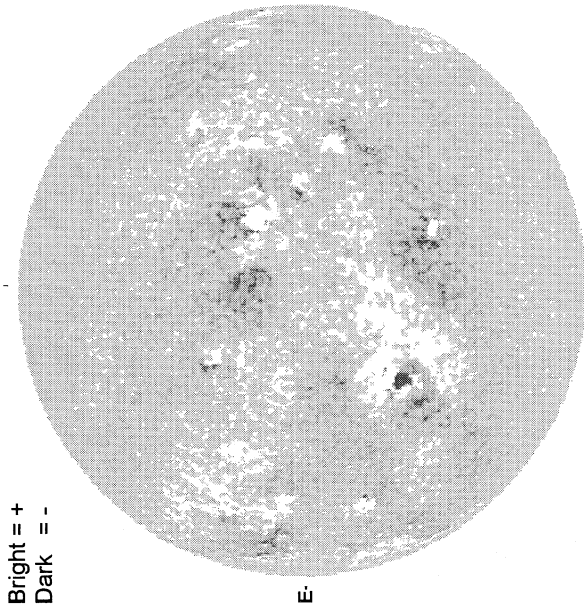
LOMNICKY PEAK CORONA (1.04 Radii)----



50 abs. units  
100 abs. units  
9:44 UT

NOVEMBER 18, 2001 ( P = 20.54, Bo = 2.48, Lo = 299.47)

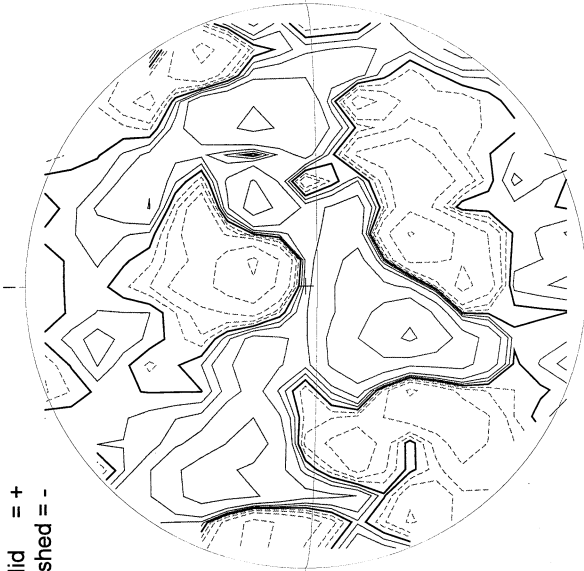
KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



Bright = +  
Dark = -

1641 UT

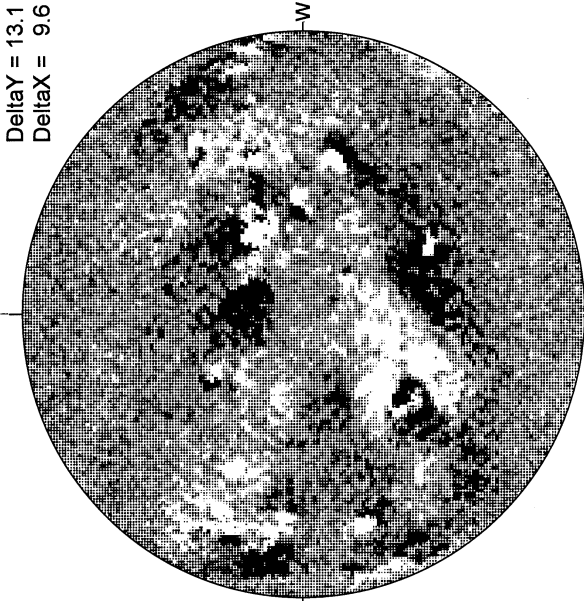
STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

2153 UT

MT. WILSON MAGNETOGRAM

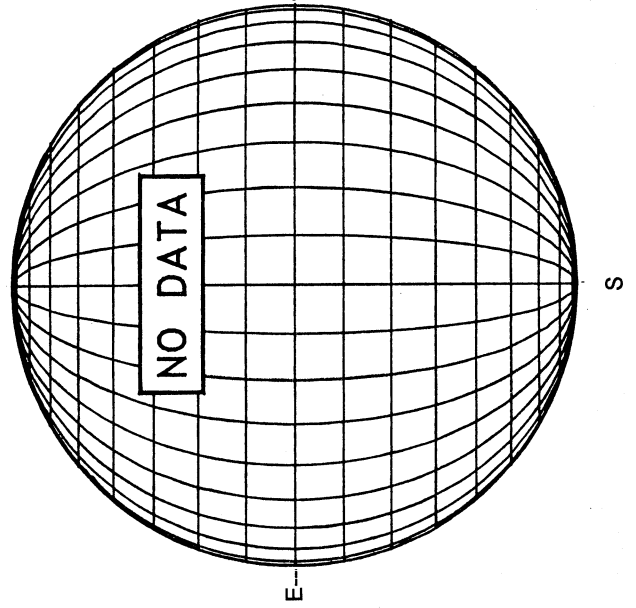


Delta Y = 13.1  
Delta X = 9.6

White = +7.5G  
Black = -7.5G

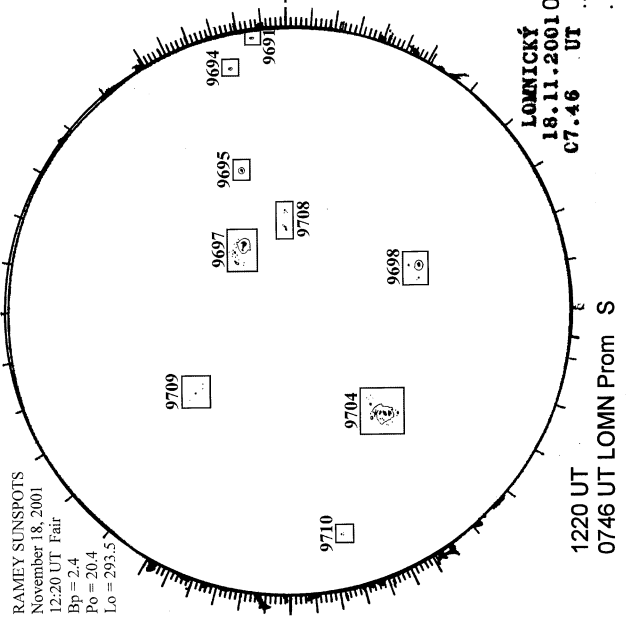
20.27 -  
21.24 UT

MEUDON H-ALPHA



S

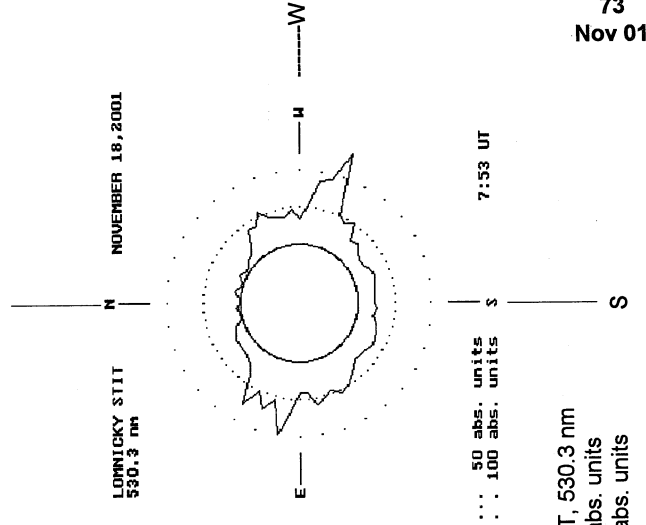
RAMEY SUNSPOT



RAMEY SUNSPOTS  
November 18, 2001  
12:20 UT Fair  
Bn = 2.4  
Po = 20.4  
Lo = 293.5

1220 UT  
0746 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)---



LOMNICKY STIT  
530.3 nm  
NOVEMBER 18, 2001

7:53 UT

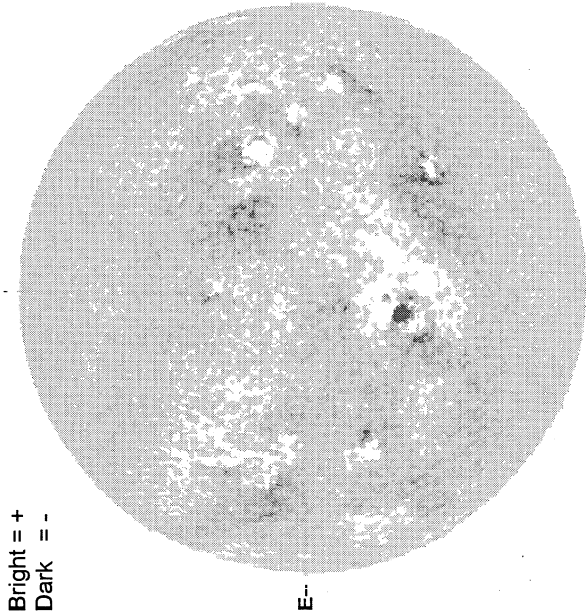
50 abs. units  
100 abs. units

LOMNICKY  
18.11.2001 0753 UT, 530.3 nm  
07.46 UT  
50 abs. units  
100 abs. units

NOVEMBER 19, 2001 ( P= 20.24, Bo = 2.36, Lo = 286.29)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

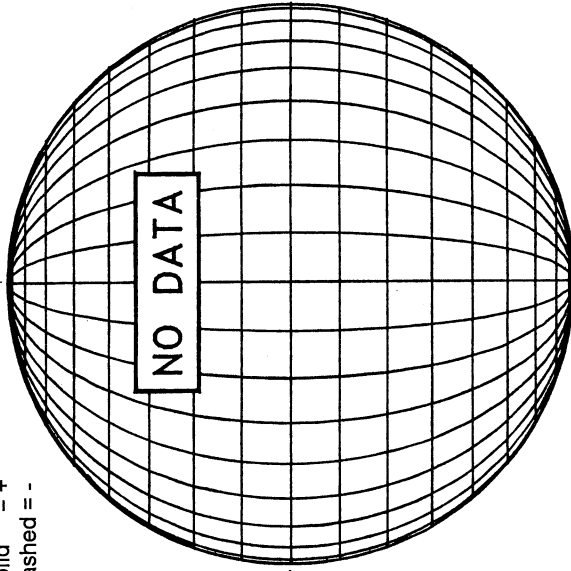


Bright = +  
Dark = -

1850 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

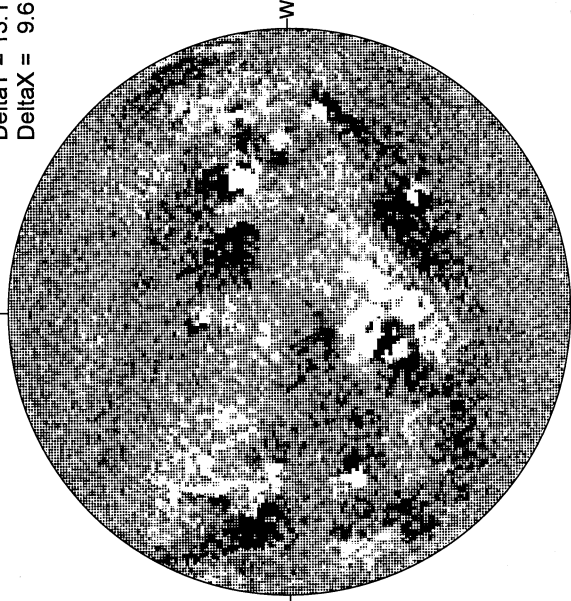


NO DATA

17.57 -  
18.55 UT

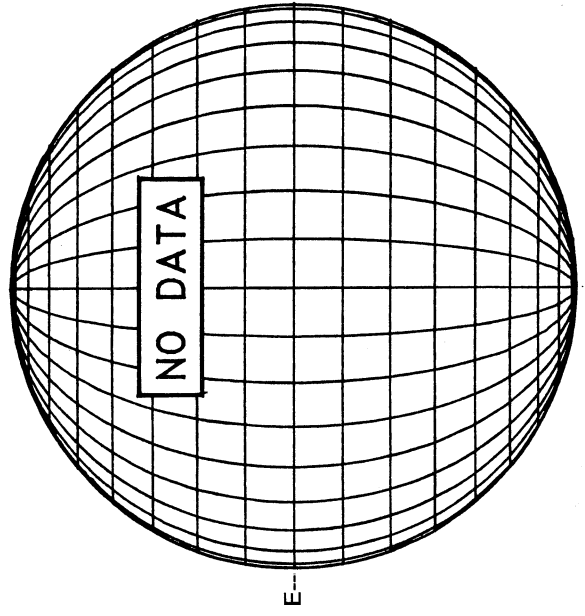
MT. WILSON MAGNETOGRAM

DeltaY = 13.1  
DeltaX = 9.6



White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

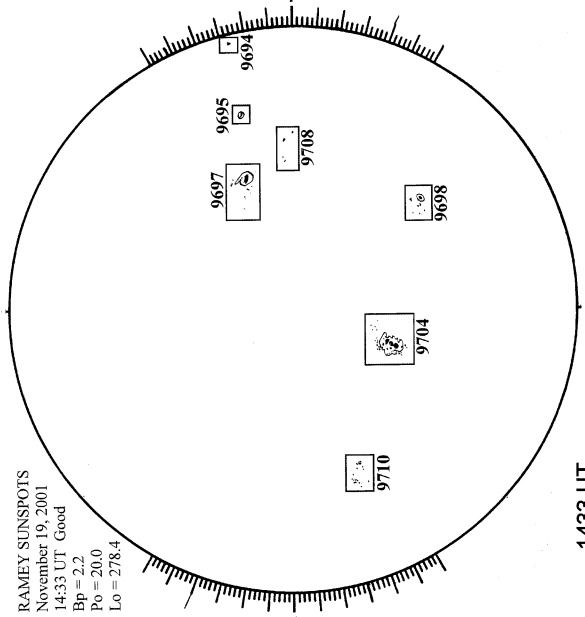


NO DATA

S

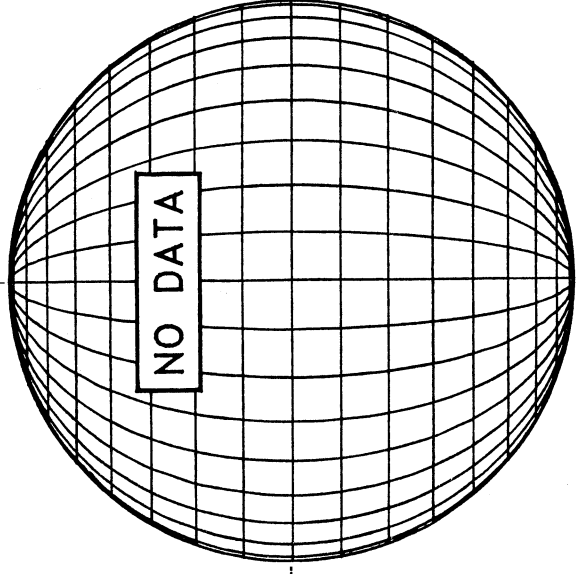
RAMEY SUNSPOTS

RAMEY SUNSPOTS  
November 19, 2001  
14:33 UT Good  
Bp = 2.2  
Po = 20.0  
Lo = 278.4



1433 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



NO DATA

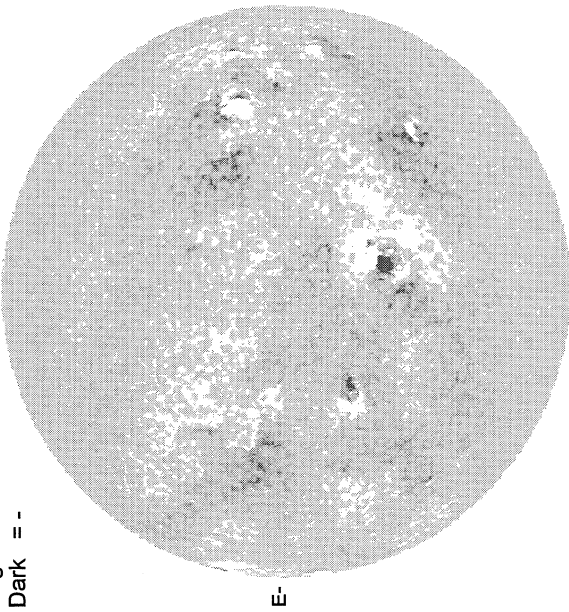
S

NOVEMBER 20, 2001 ( P= 19.93, Bo = 2.24, Lo = 273.11)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

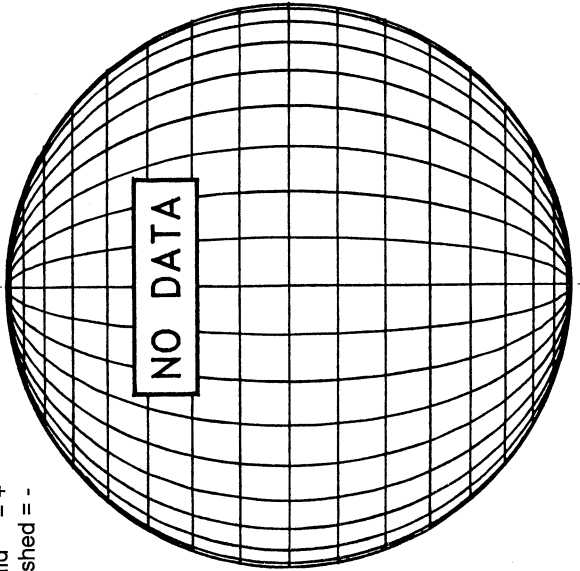
Bright = +  
Dark = -



1557 UT

STANFORD MAGNETOGRAM

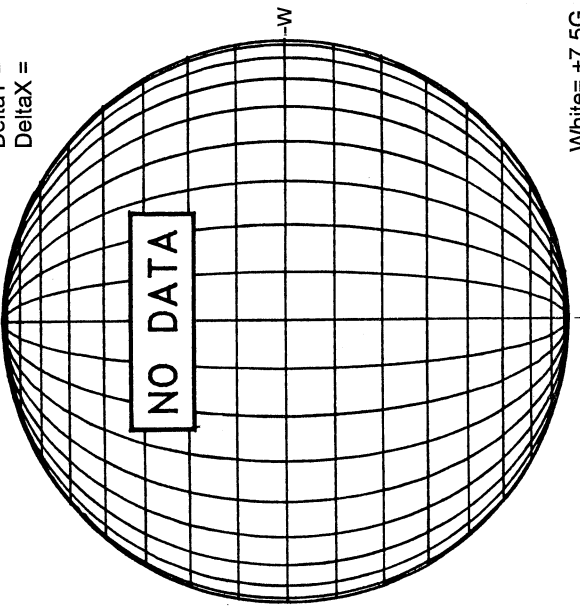
Solid = +  
Dashed = -



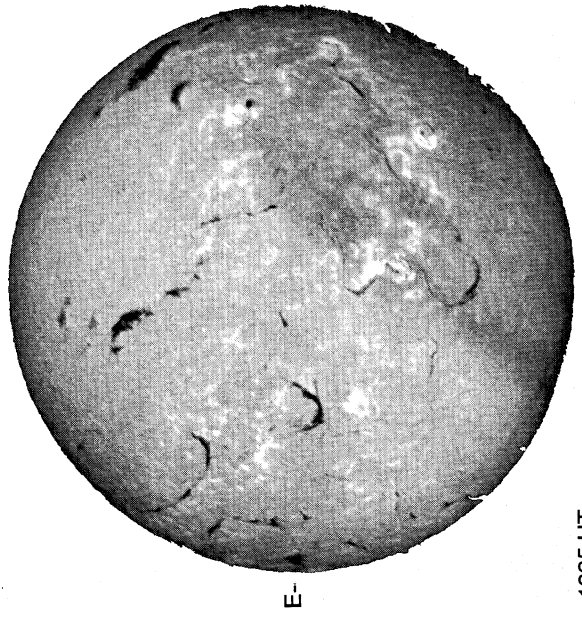
White = +7.5G  
Black = -7.5G

MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



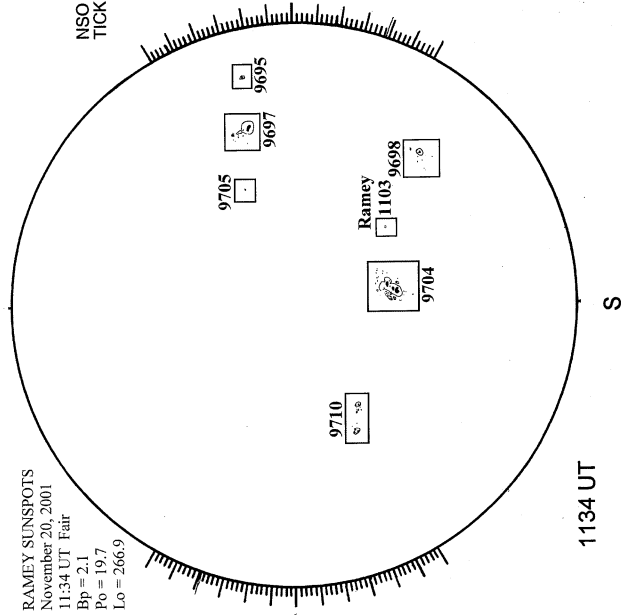
MEUDON H-ALPHA



1325 UT

RAMEY SUNSPOT

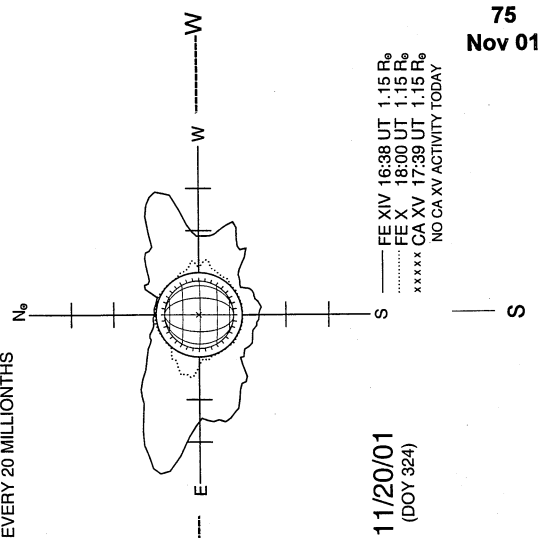
RAMEY SUNSPOTS  
November 20, 2001  
11:34 UT Fair  
Bp = 2.1  
Po = 19.7  
Le = 266.9



1134 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 20 MILLIONTHS



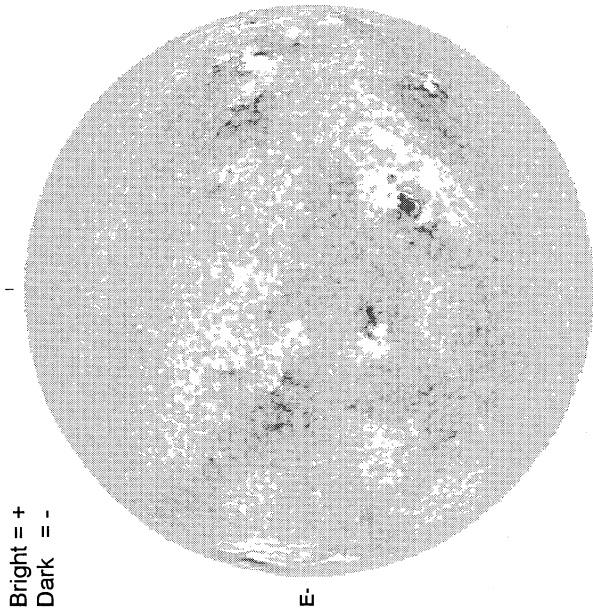
11/20/01  
(DOY 324)

--- EE XIV 16:38 UT 1.15 R<sub>e</sub>  
- - - - - EE X 18:00 UT 1.15 R<sub>e</sub>  
xxxxx CA XV 17:39 UT 1.15 R<sub>e</sub>  
NO CA XV ACTIVITY TODAY

NOVEMBER 21, 2001 ( P= 19.61, Bo = 2.12, Lo = 259.93)

KITT PEAK MAGNETOGRAM

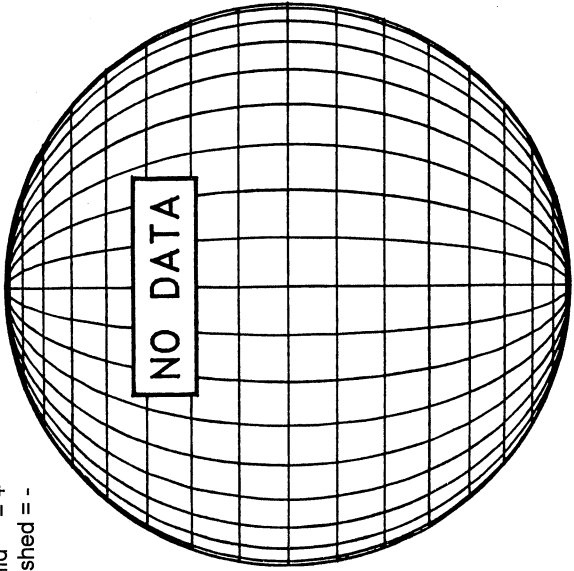
\*\*868.8 nm\*\*



Bright = +  
Dark = -

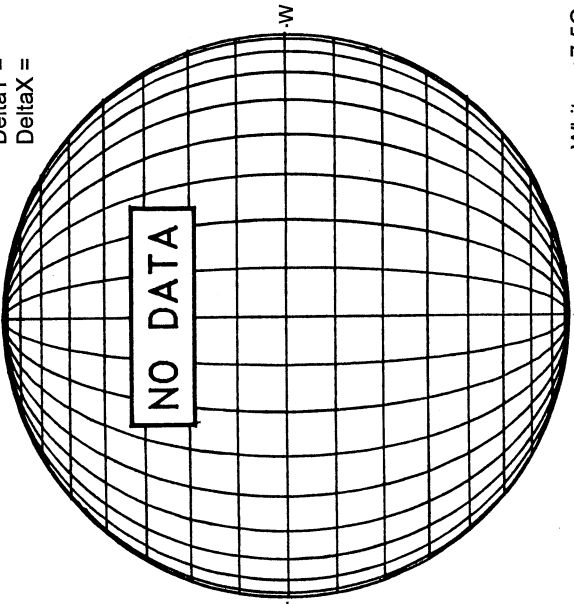
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =

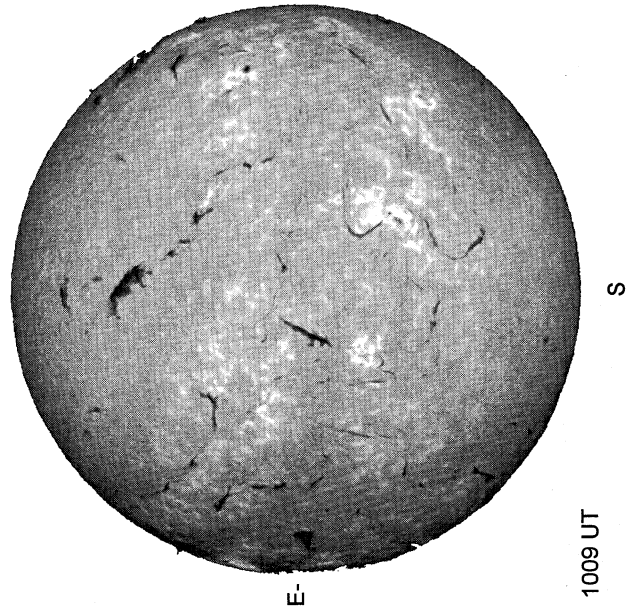


NO DATA

White = +7.5G  
Black = -7.5G

1600 UT

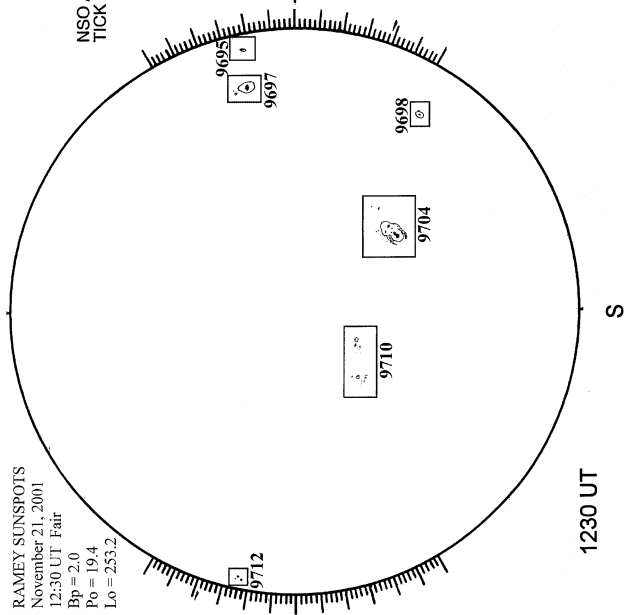
MEUDON H-ALPHA



1009 UT

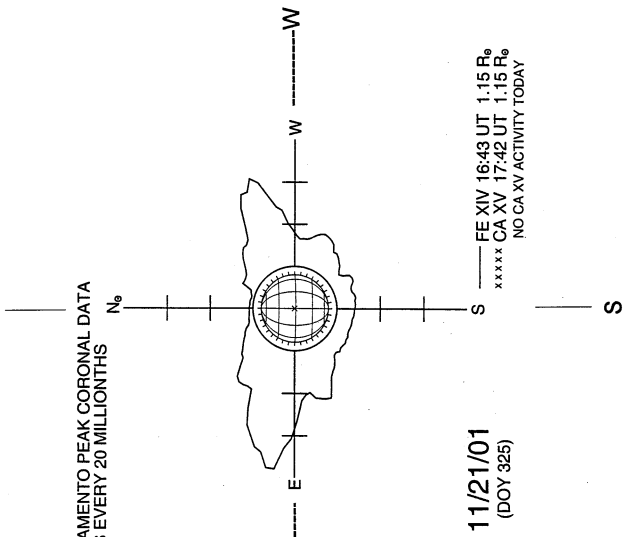
RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 21, 2001  
12:30 UT Fair  
Bp = 2.0  
Po = 19.4  
Lo = 253.2



NSO / SACRAMENTO PEAK CORONAL DATA  
TICK MARKS EVERY 20 MILLIONTHS

SACRAMENTO PEAK CORONA (1.15 Radii)----



11/21/01  
(DOY 325)

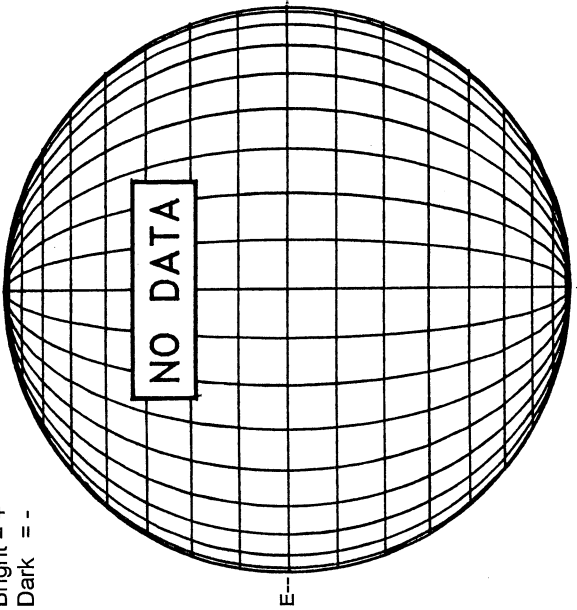
FE XIV 16:43 UT 1.15 R<sub>o</sub>  
CA XV 17:42 UT 1.15 R<sub>o</sub>  
NO CA XV ACTIVITY TODAY

NOVEMBER 22, 2001 ( P= 19.29, Bo = 2.00, Lo = 246.75)

KITT PEAK MAGNETOGRAM

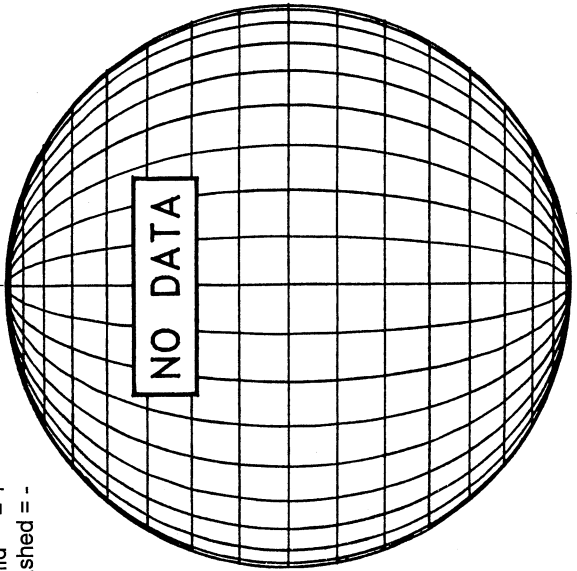
\*\*868.8 nm\*\*

Bright = +  
Dark = -



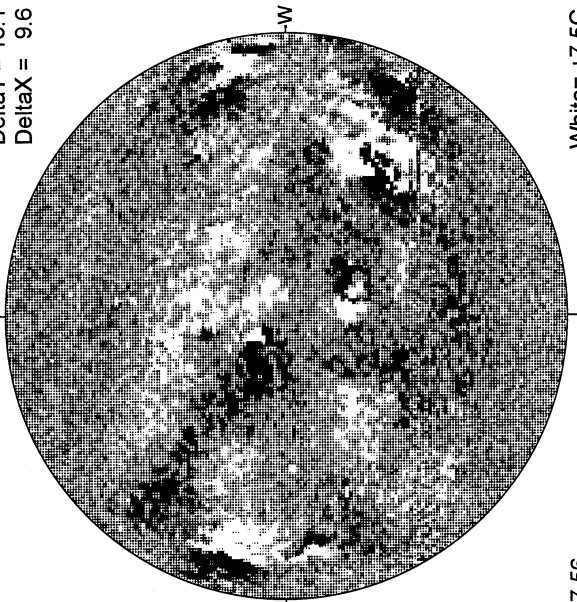
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

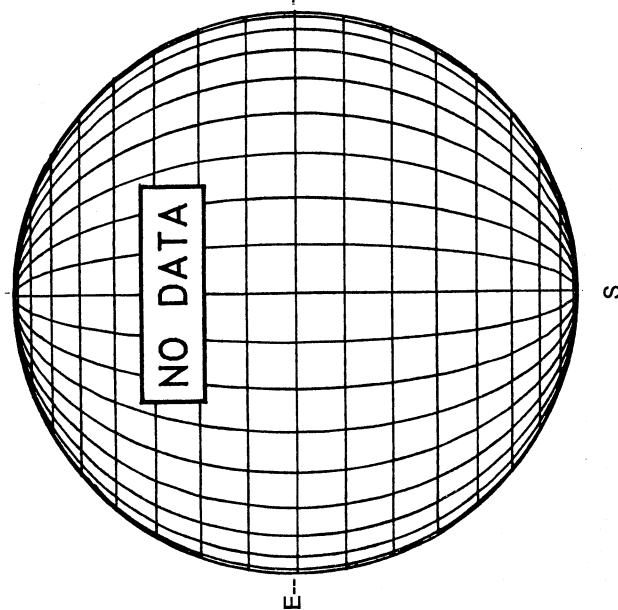
DeltaY = 13.1  
DeltaX = 9.6



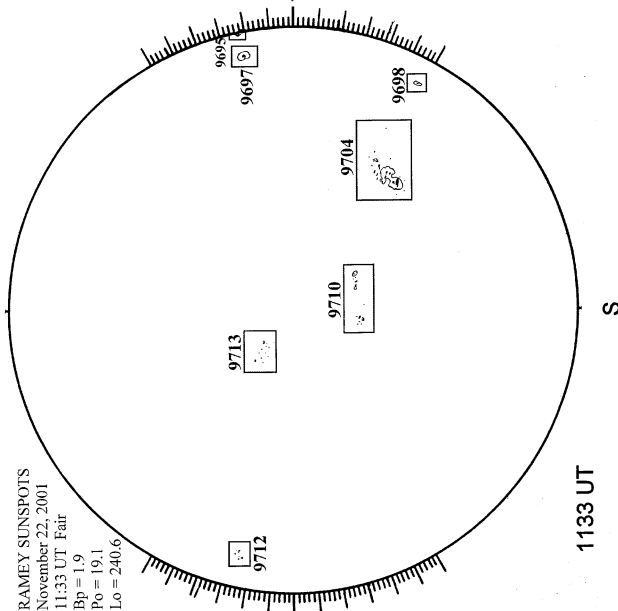
17.56 -  
18.53 UT

White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

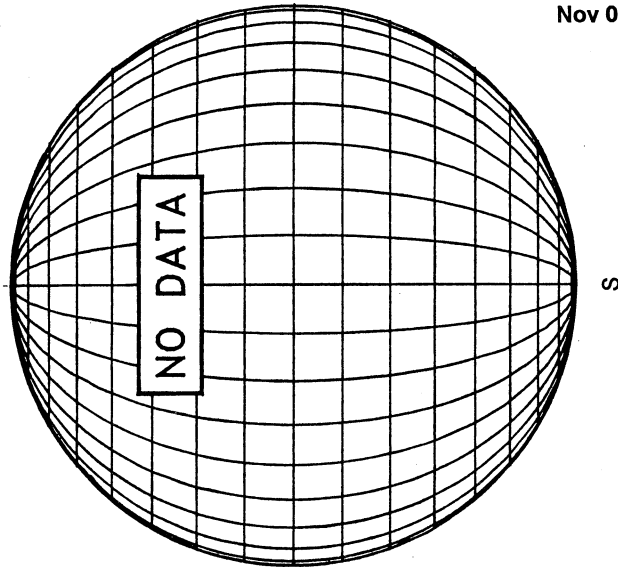


RAMEY SUNSPOT



RAMEY SUNSPOTS  
November 22, 2001  
11:33 UT Fair  
Bp = 1.9  
Po = 19.1  
Lo = 240.6

SACRAMENTO PEAK CORONA (1.15 Radii)----



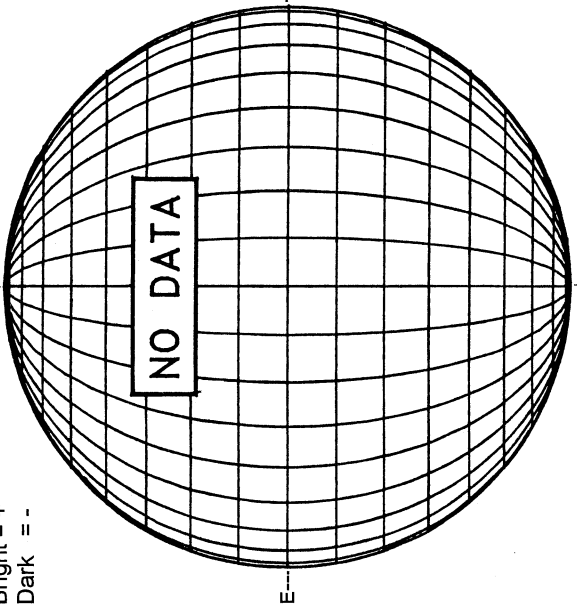
NOVEMBER 23, 2001 ( P= 18.96, Bo = 1.88, Lo = 233.57)

78  
Nov 01

KITT PEAK MAGNETOGRAM

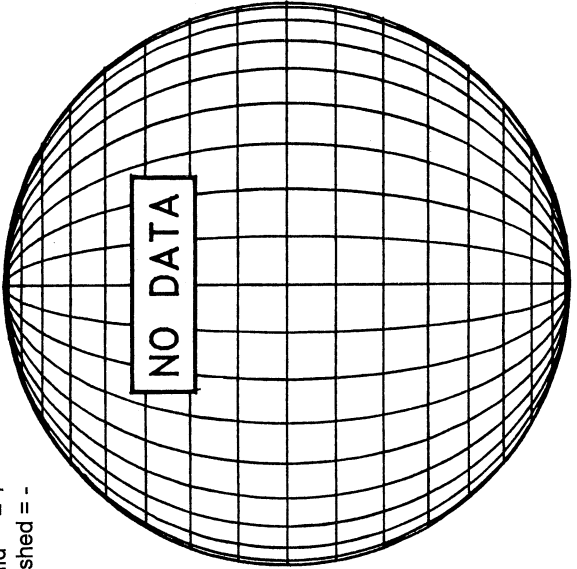
\*\*868.8 nm\*\*

Bright = +  
Dark = -



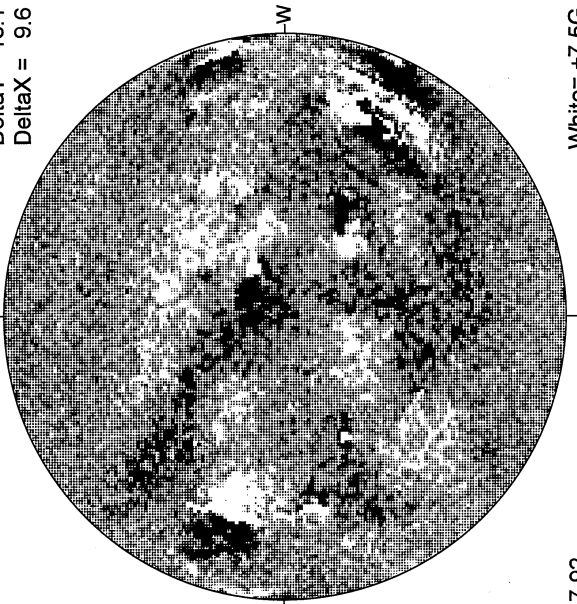
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

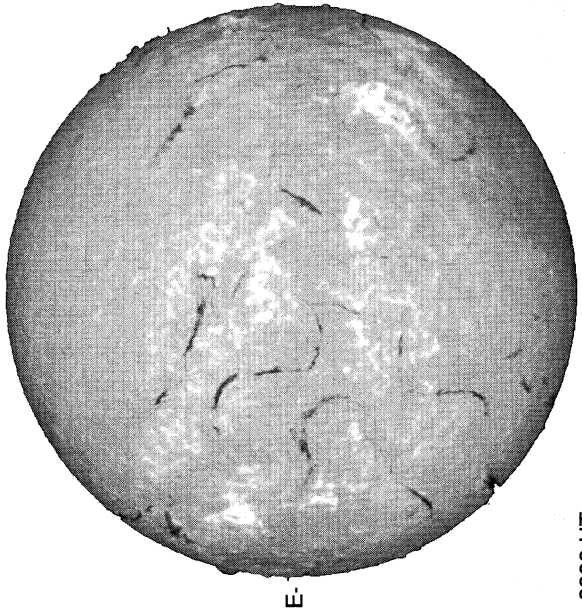
DeltaY = 13.1  
DeltaX = 9.6



17.92 -  
18.89 UT

White = +7.5G  
Black = -7.5G

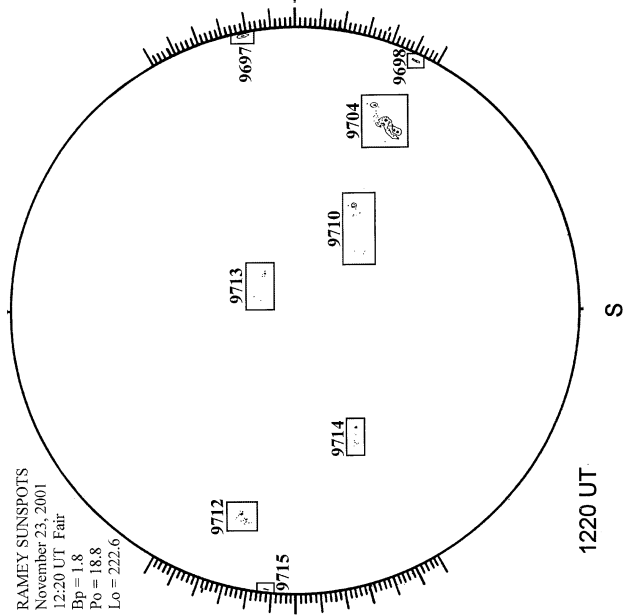
MEUDON H-ALPHA



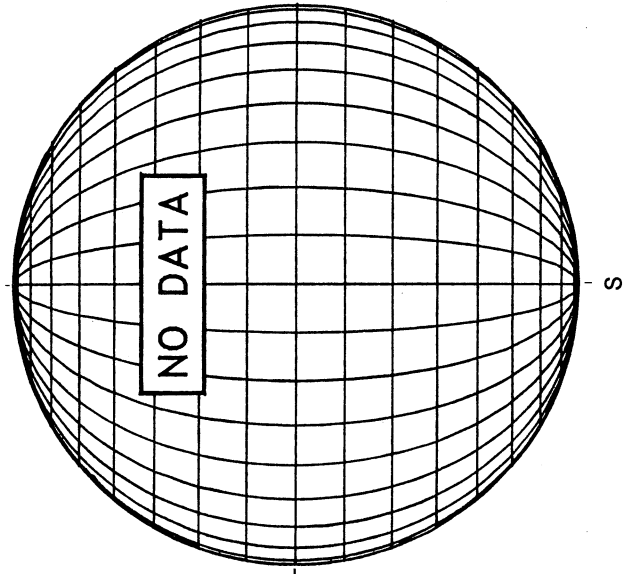
0939 UT

RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 23, 2001  
12:20 UT Fair  
Bp = 1.8  
Po = 18.8  
Lo = 222.6



SACRAMENTO PEAK CORONA (1.15 Radii)----



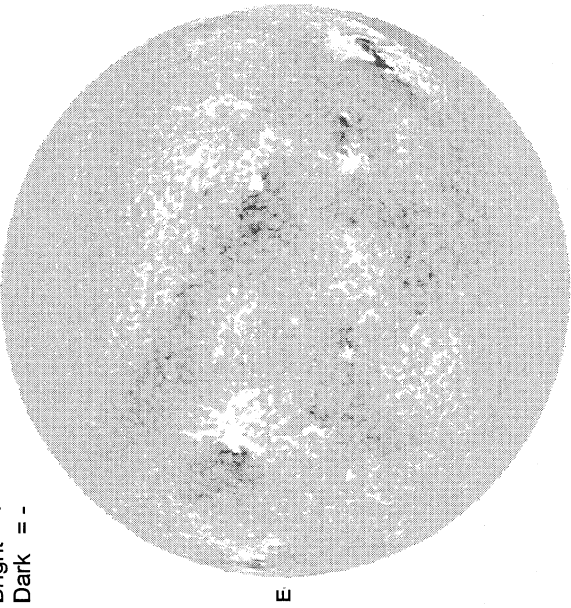


NOVEMBER 24, 2001 ( P= 18.63, Bo = 1.75, Lo = 220.39)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

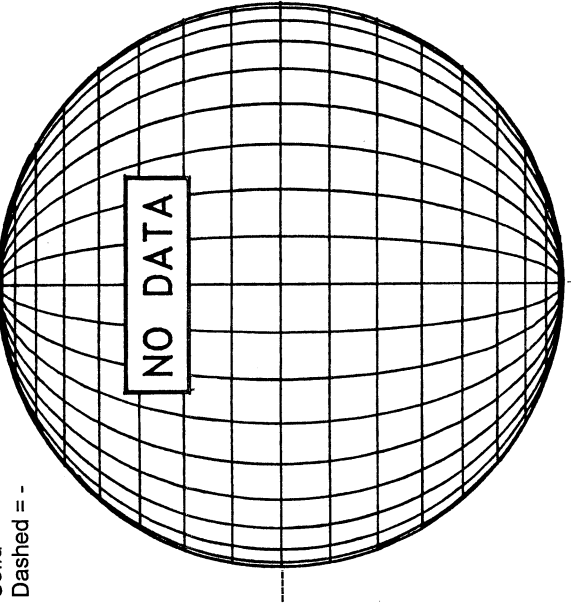
Bright = +  
Dark = -



1553 UT

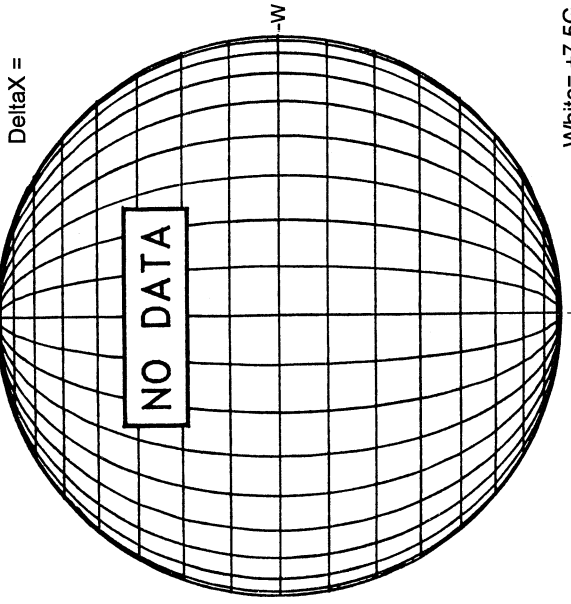
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



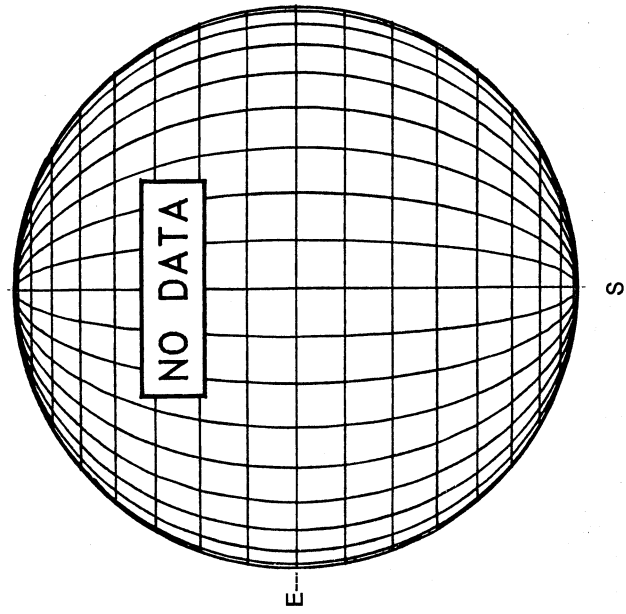
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =

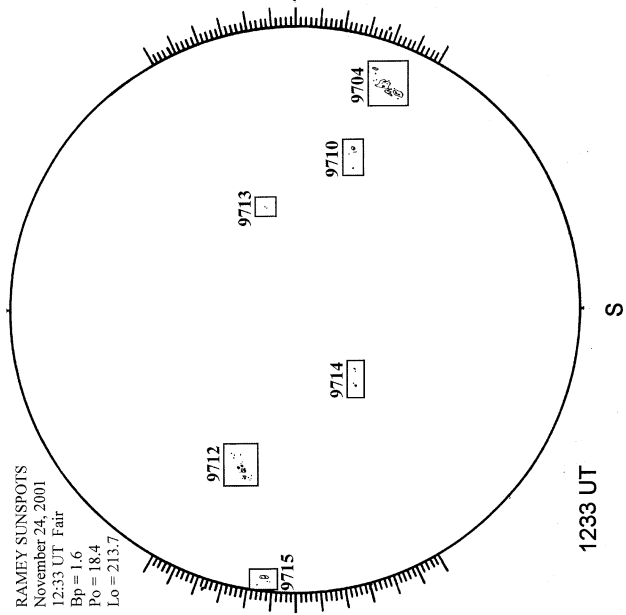


White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

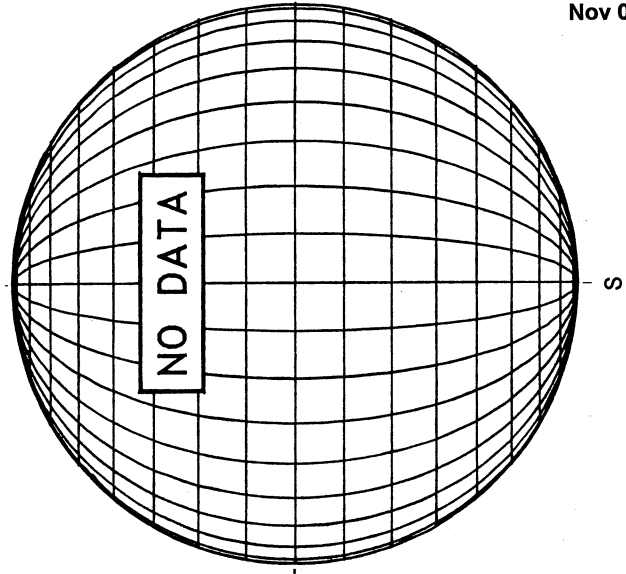


RAMEY SUNSPOT



RAMEY SUNSPOTS  
November 24, 2001  
12:33 UT Fair  
Bp = 1.6  
Po = 18.4  
Lo = 213.7

SACRAMENTO PEAK CORONA (1.15 Radii)----

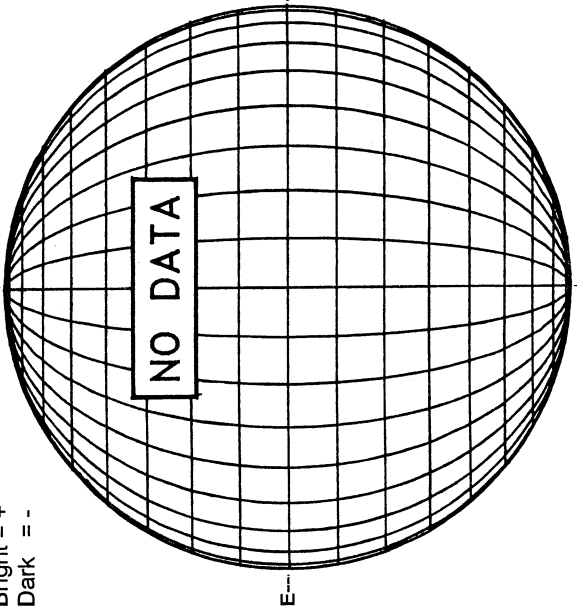


NOVEMBER 25, 2001 ( P= 18.28, Bo = 1.63, Lo = 207.21)

KITT PEAK MAGNETOGRAM

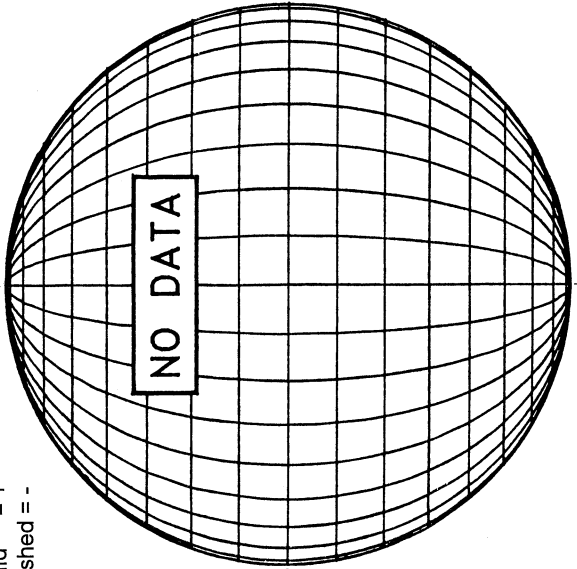
\*\*868.8 nm\*\*

Bright = +  
Dark = -



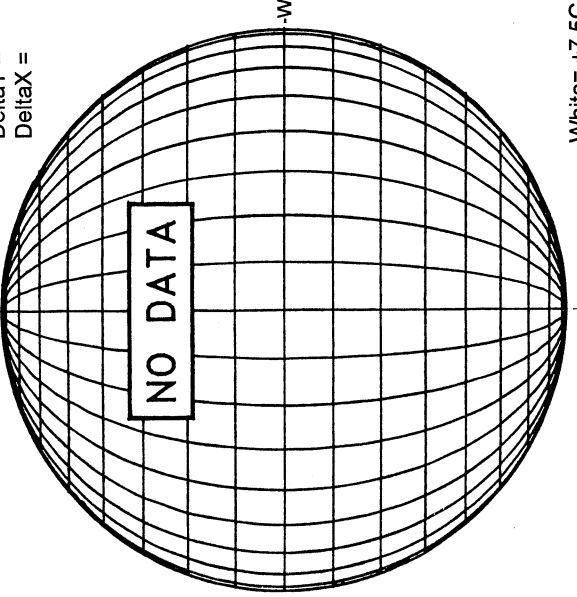
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



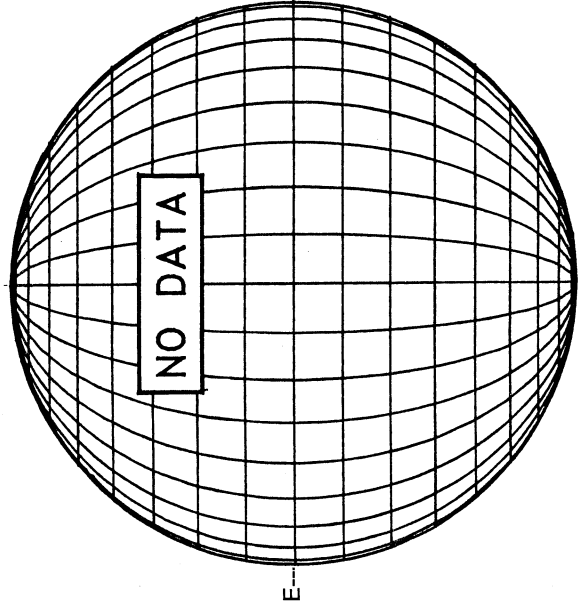
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



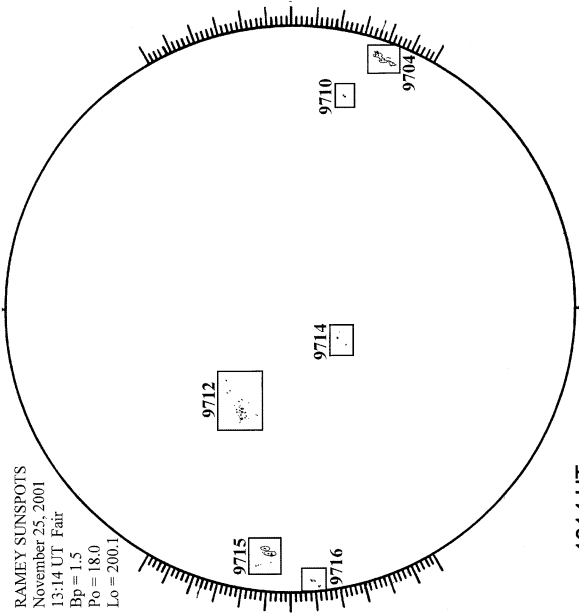
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

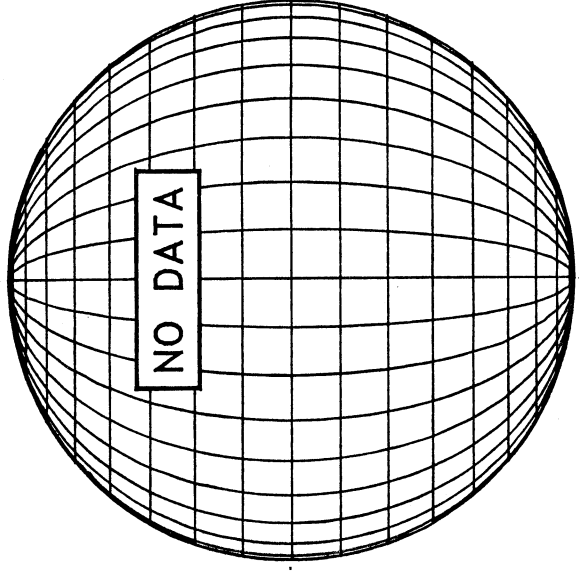


RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 25, 2001  
13:14 UT Fair  
Bp = 1.5  
Po = 18.0  
Lo = 200.1

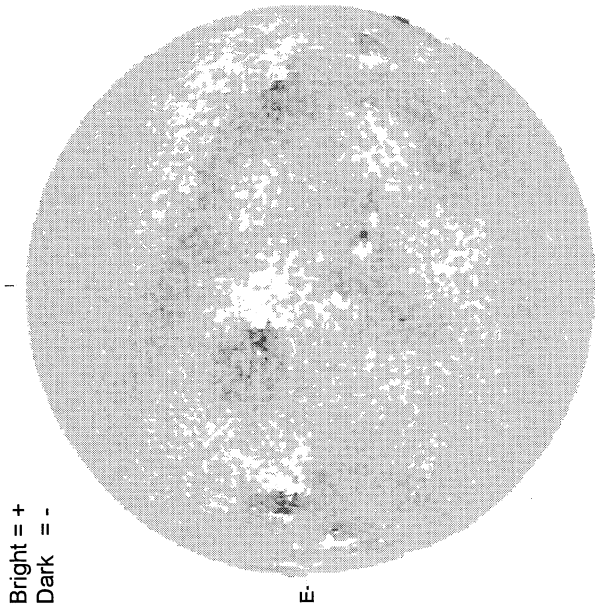


LOMNICKY PEAK CORONA (1.04 Radii)----



NOVEMBER 26, 2001 ( P= 17.93, Bo = 1.50, Lo = 194.03)

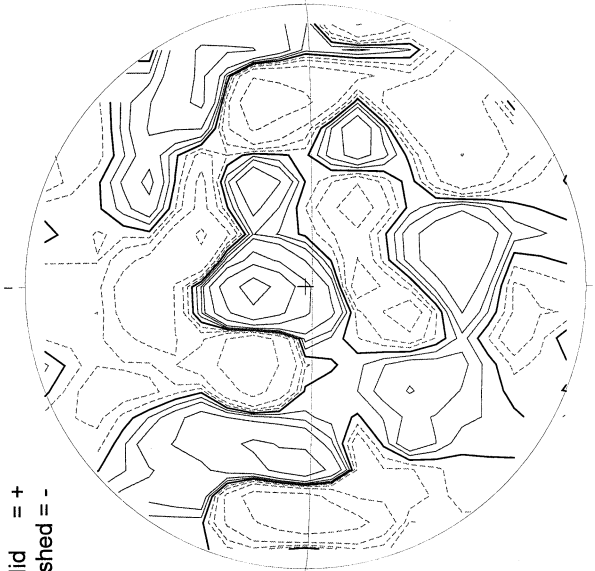
KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



Bright = +  
Dark = -

1709 UT

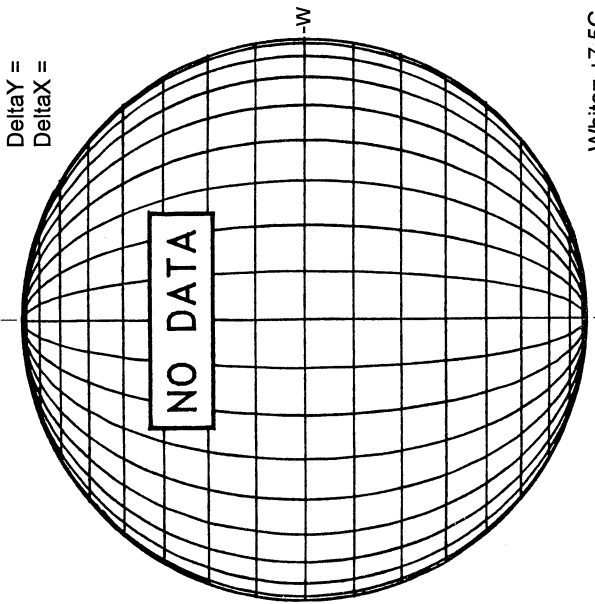
STANFORD MAGNETOGRAM



Solid = +  
Dashed = -

1818 UT

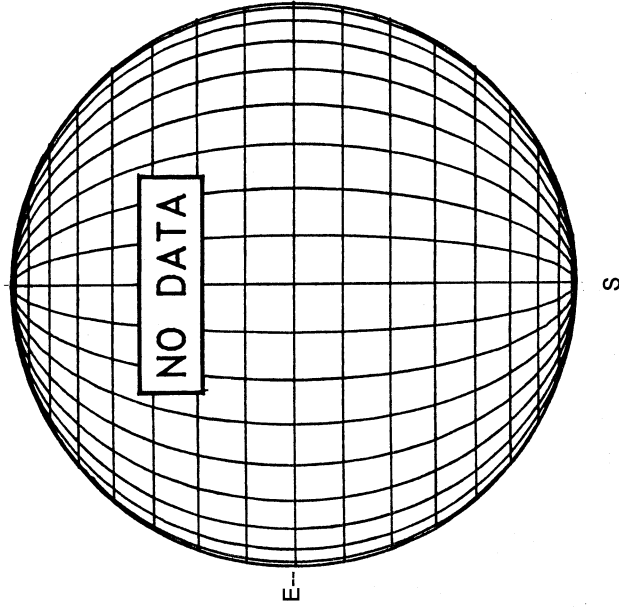
MT. WILSON MAGNETOGRAM



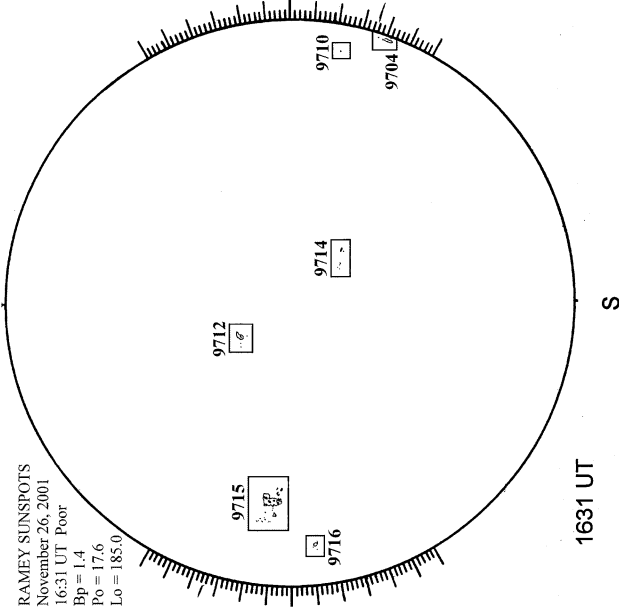
DeltaY =  
DeltaX =

White= +7.5G  
Black = -7.5G

MEUDON H-ALPHA



RAMEY SUNSPOTS



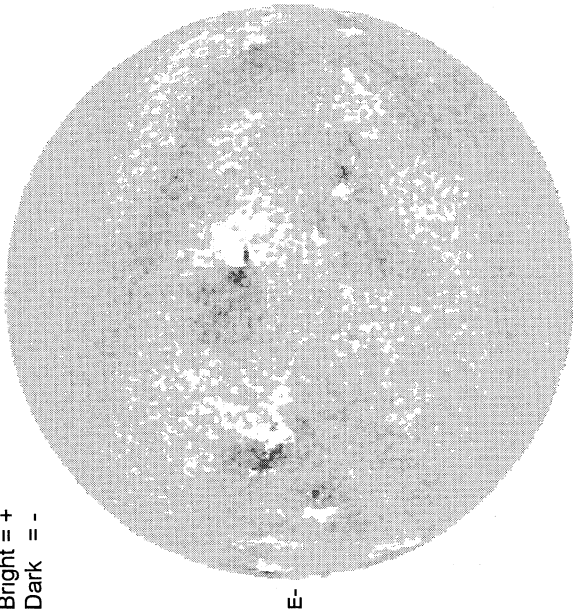
RAMEY SUNSPOTS  
November 26, 2001  
16:31 UT Poor  
Bp = 1.4  
Po = 17.6  
Lo = 185.0

82  
Nov 01

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

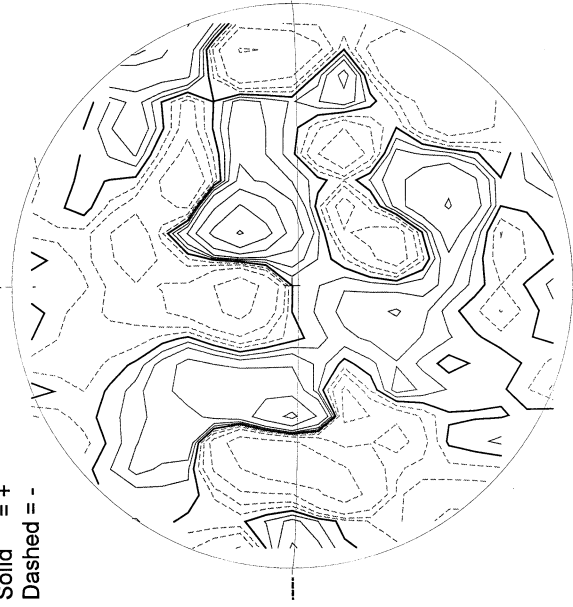
Bright = +  
Dark = -



1634 UT

STANFORD MAGNETOGRAM

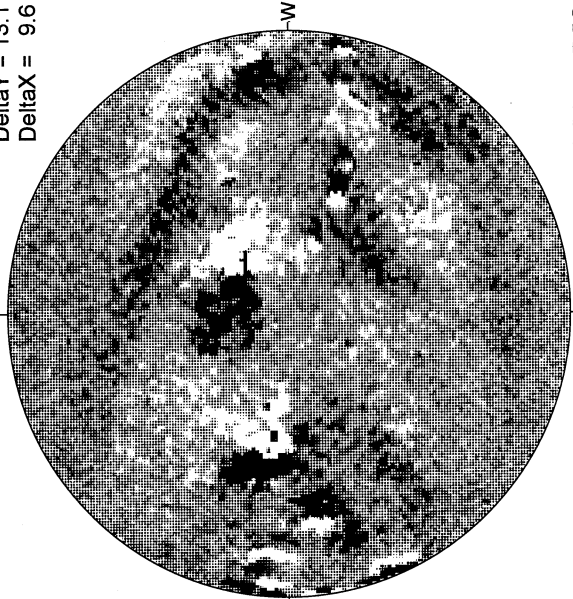
Solid = +  
Dashed = -



1829 UT

MT. WILSON MAGNETOGRAM

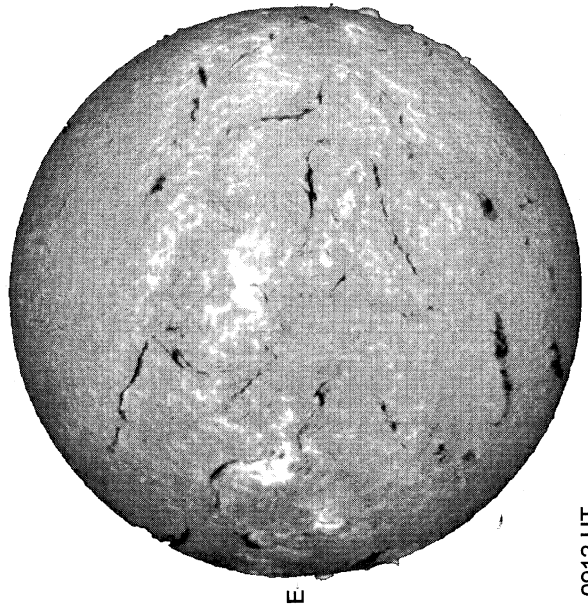
DeltaY = 13.1  
DeltaX = 9.6



22.64 -  
23.62 UT

White = +7.5G  
Black = -7.5G

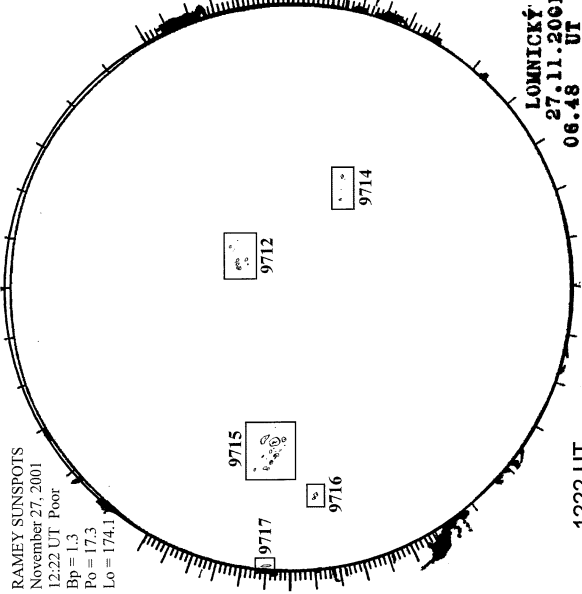
MEUDON H-ALPHA



0912 UT

RAMEY SUNSPOT

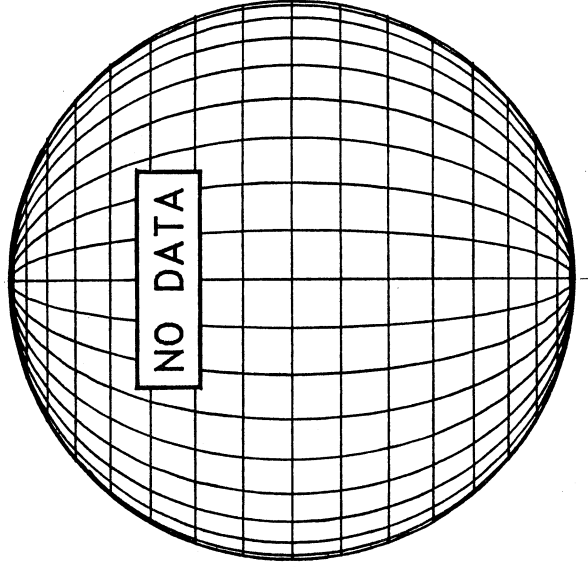
RAMEY SUNSPOTS  
November 27, 2001  
12:22 UT Poor  
Bp = 1.3  
Po = 17.3  
Lo = 174.1



1222 UT  
0848 UT LOMN Prom S

LOMNICKY  
27.11.2001  
06.46 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



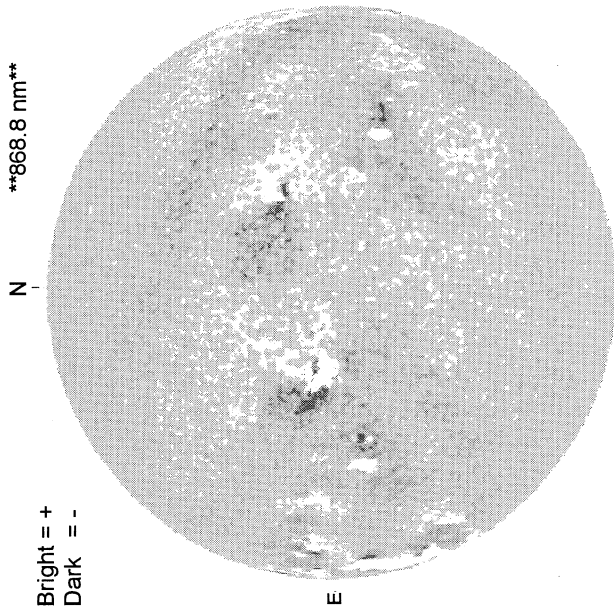
NOVEMBER 27, 2001 ( P= 17.58, Bo = 1.38, Lo = 180.85)

NOVEMBER 28, 2001 ( P= 17.21, Bo = 1.25, Lo = 167.67)

KITT PEAK MAGNETOGRAM

\*\*868.8 nm\*\*

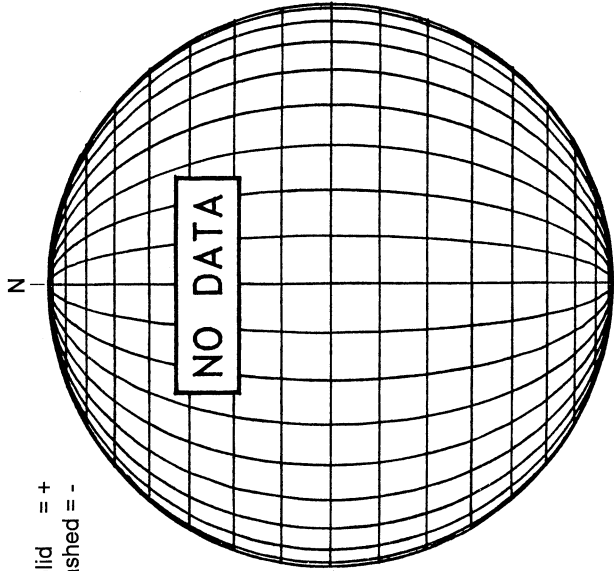
Bright = +  
Dark = -



1715 UT

STANFORD MAGNETOGRAM

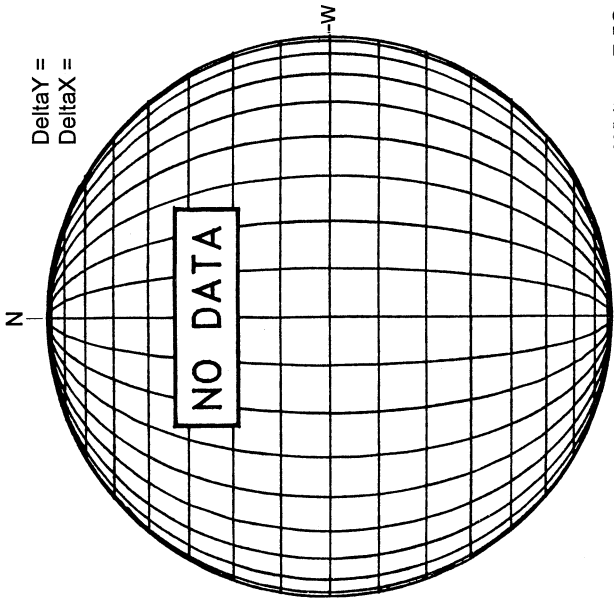
Solid = +  
Dashed = -



1715 UT

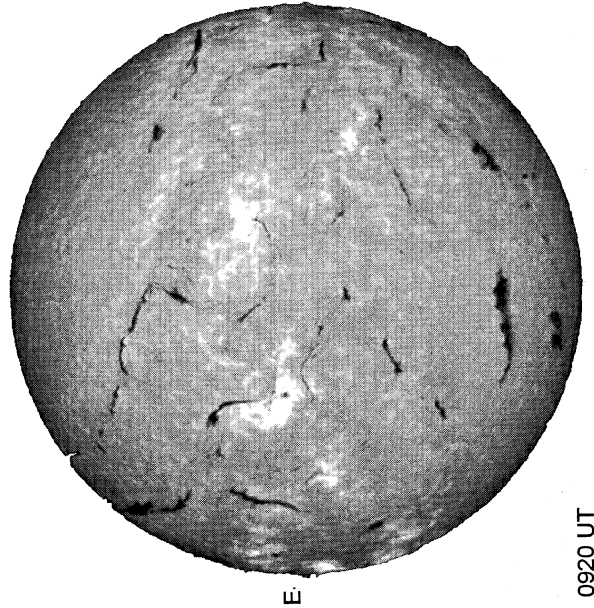
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



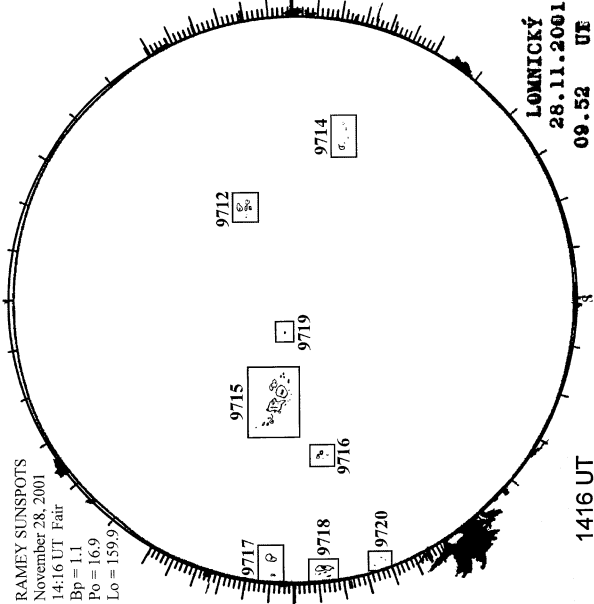
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA



0920 UT

RAMEY SUNSPOT

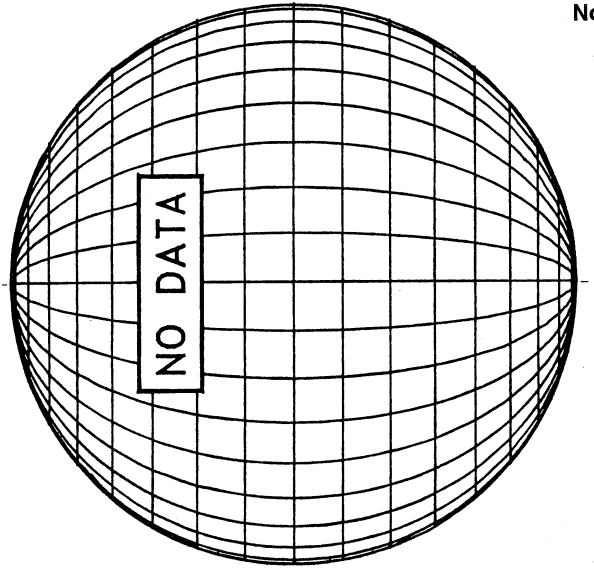


RAMEY SUNSPOTS  
November 28, 2001  
14:16 UT Fair  
Bp = 1.1  
Po = 16.9  
Lo = 159.9

LOMNICKY  
28.11.2001  
09.52 UT

1416 UT  
0952 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



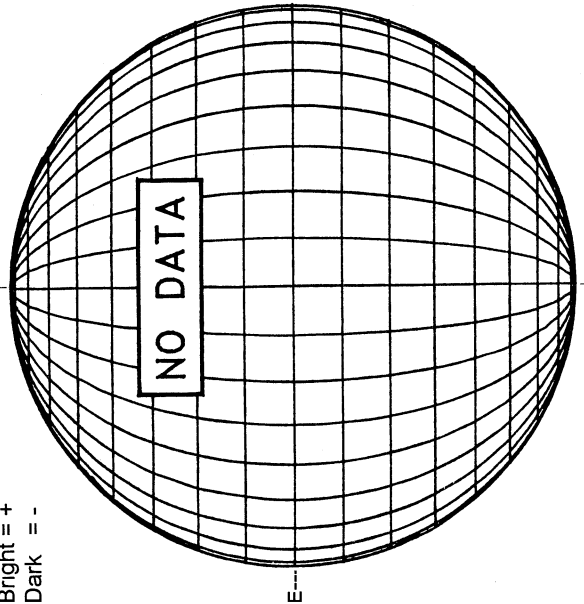
83  
Nov 01

NOVEMBER 29, 2001 ( P = 16.84, Bo = 1.13, Lo = 154.49)

KITT PEAK MAGNETOGRAM

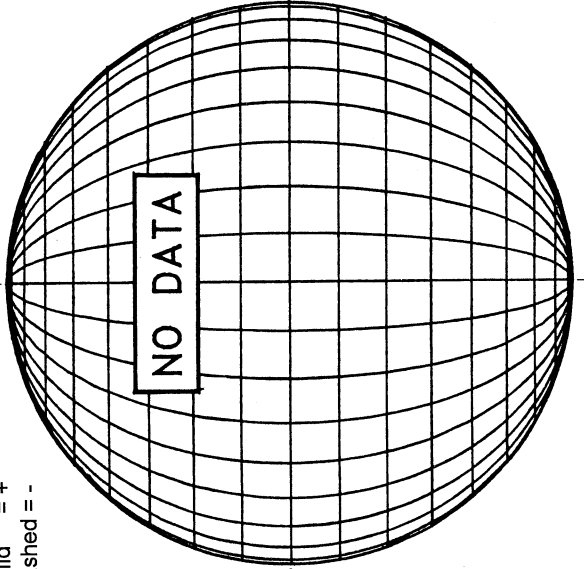
\*\*868.8 nm\*\*

Bright = +  
Dark = -



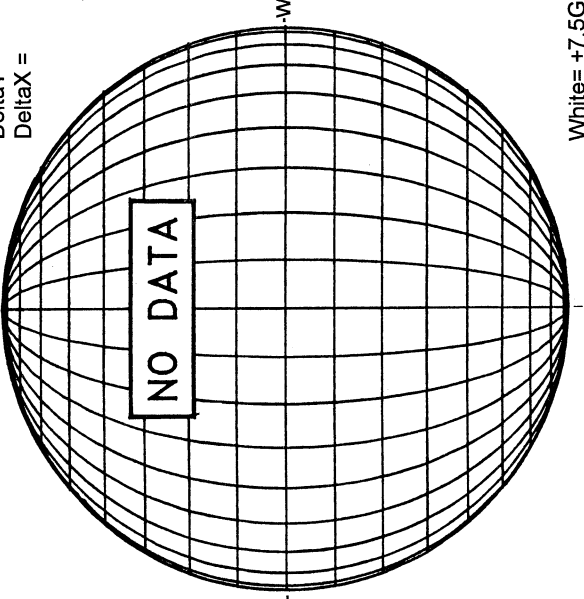
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



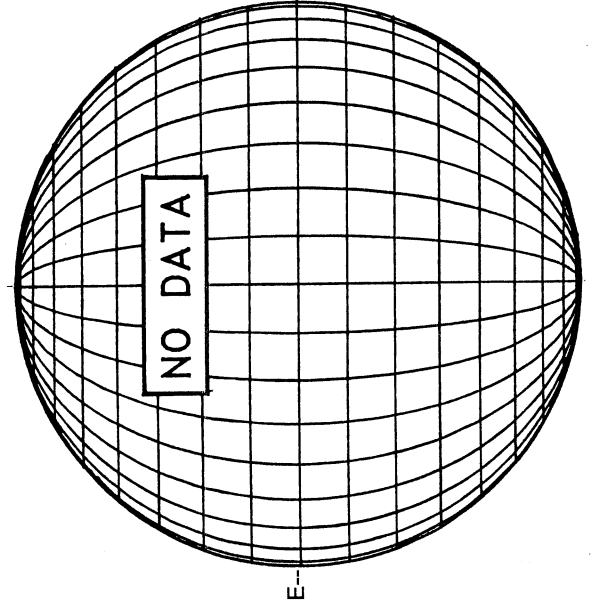
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =



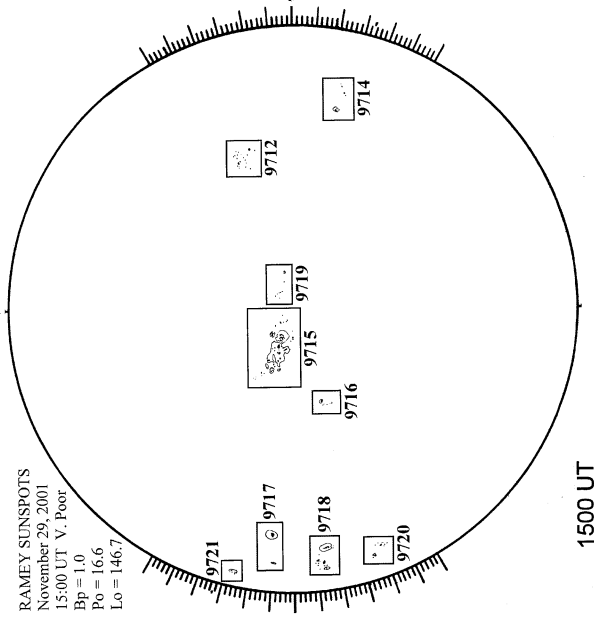
White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

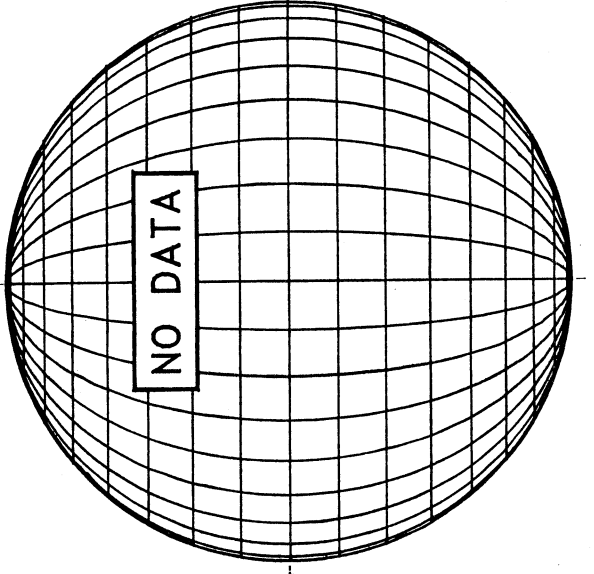


RAMEY SUNSPOT

RAMEY SUNSPOTS  
November 29, 2001  
15:00 UT V. Poor  
Bp = 1.0  
Po = 16.6  
Lo = 146.7

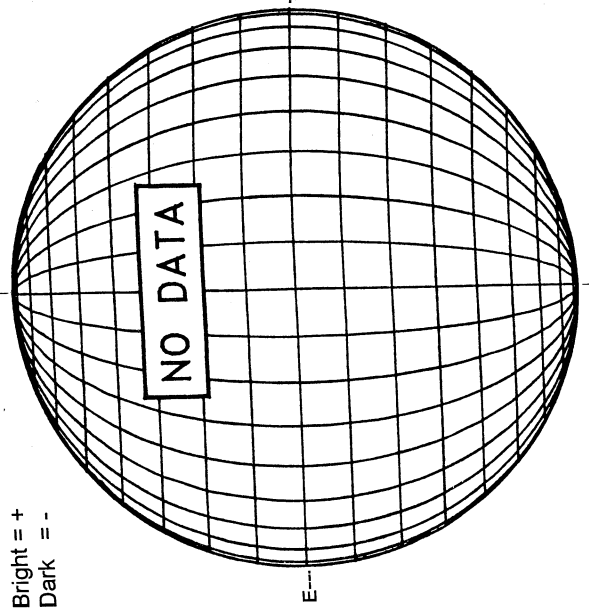


SACRAMENTO PEAK CORONA (1.15 Radii)----

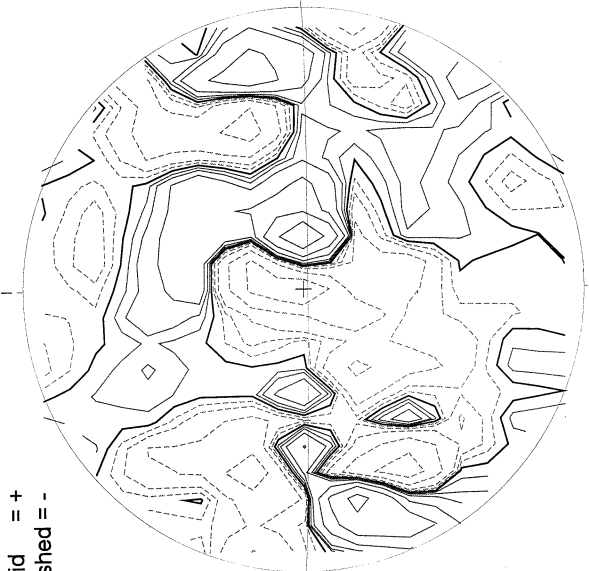


NOVEMBER 30, 2001 ( P= 16.47, Bo = 1.00, Lo = 141.31)

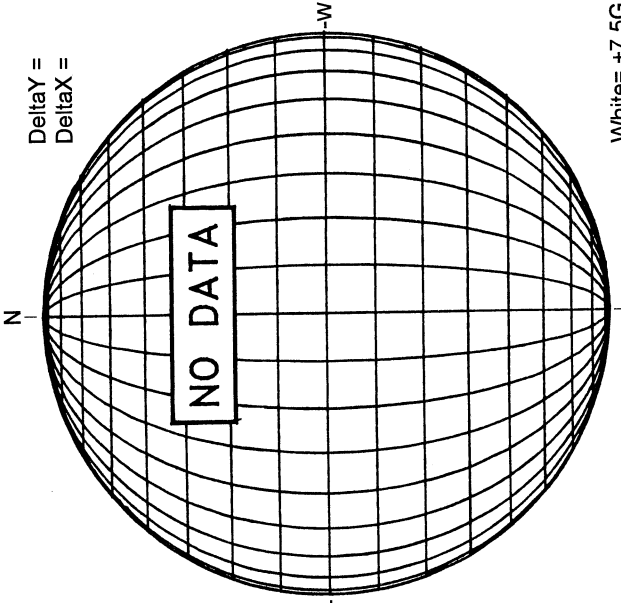
KITT PEAK MAGNETOGRAM  
\*\*868.8 nm\*\*



STANFORD MAGNETOGRAM

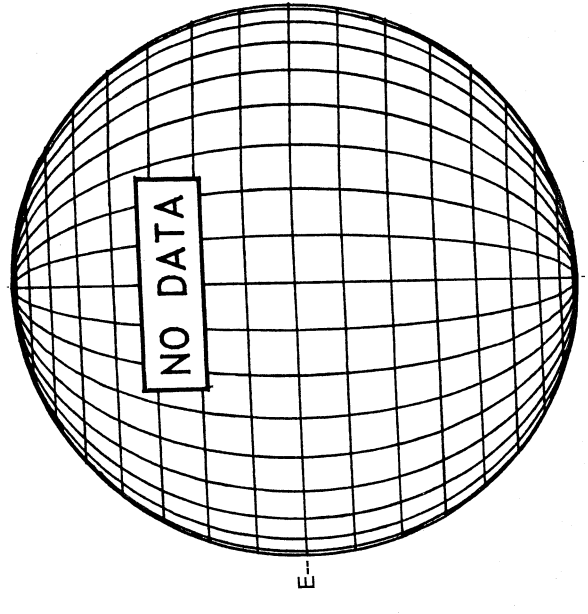


MT. WILSON MAGNETOGRAM

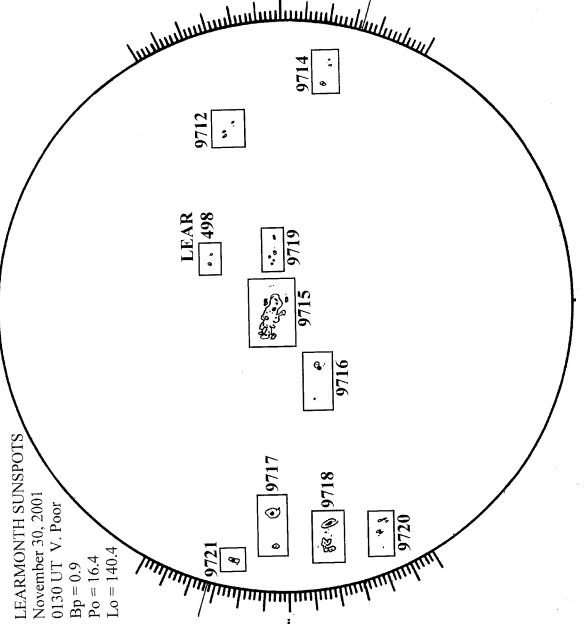


White = +7.5G  
Black = -7.5G

MEUDON H-ALPHA

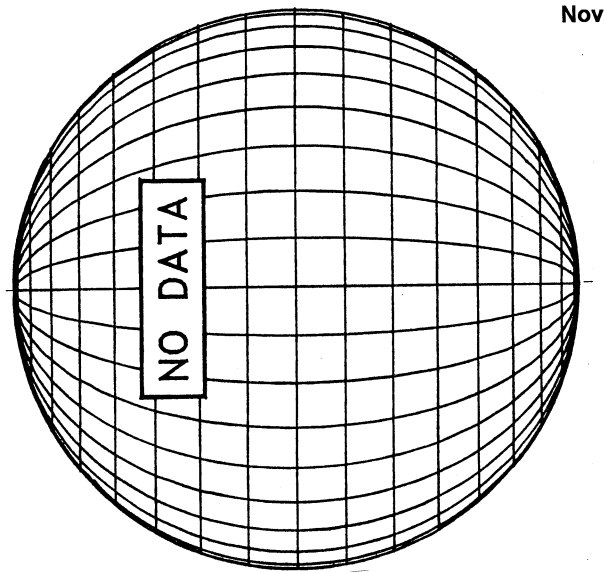


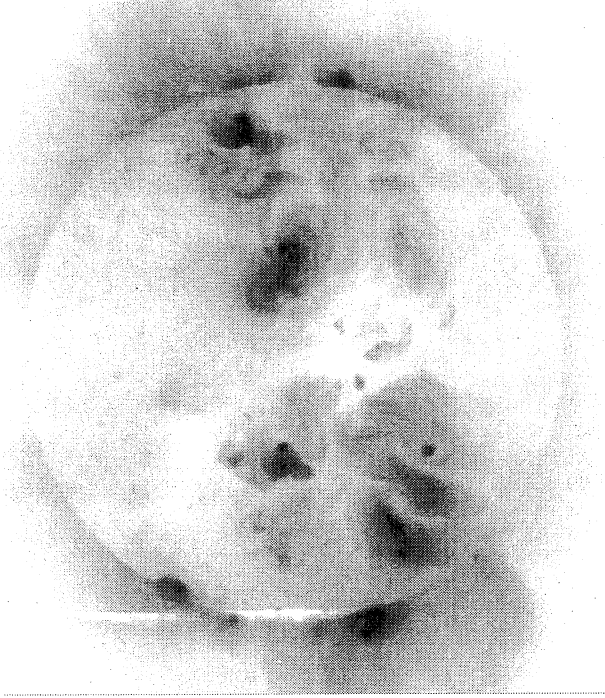
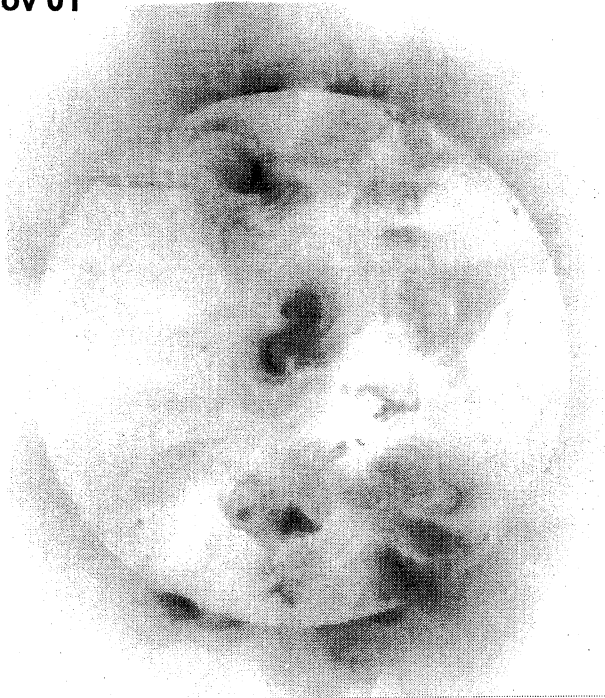
RAMEY SUNSPOT



LEARN MONTH SUNSPOTS  
November 30, 2001  
01:30 UT V. Poor  
Bp = 0.9  
Po = 16.4  
Lo = 140.4

LOMNICKY PEAK CORONA (1.04 Radii)----





YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

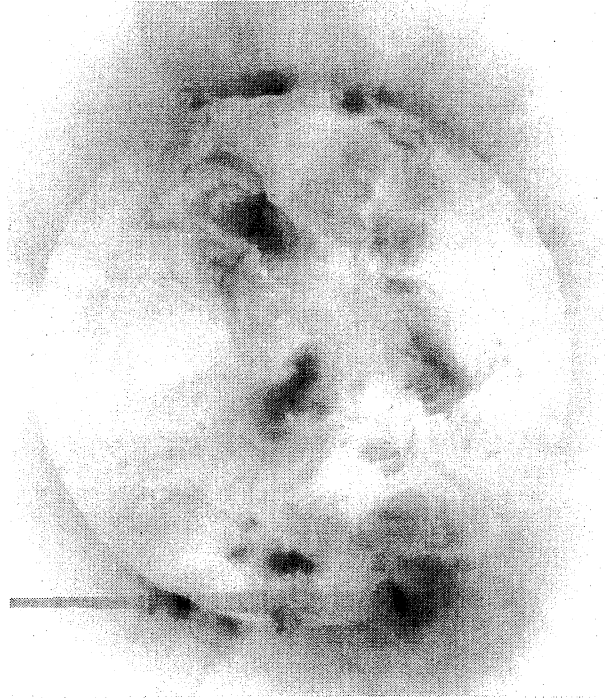
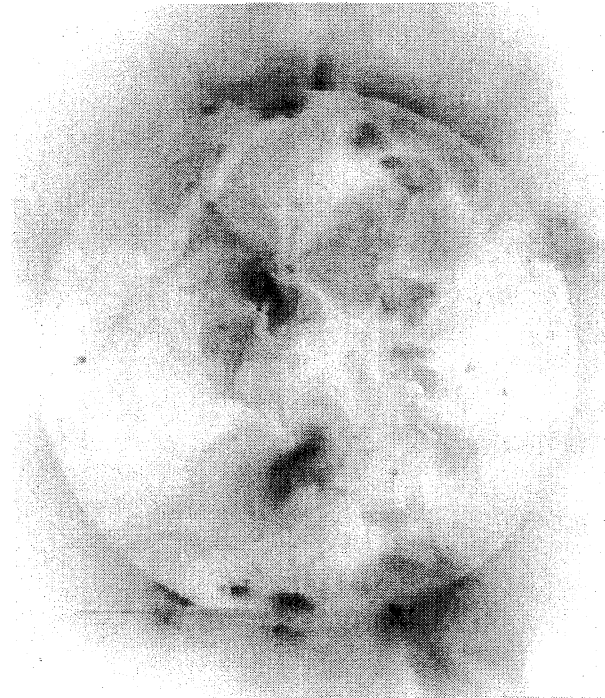
November  
2001

Day 1  
10:07:55 UT

Day 3  
09:59:37 UT

Day 2  
12:43:09 UT

Day 4  
08:12:52 UT



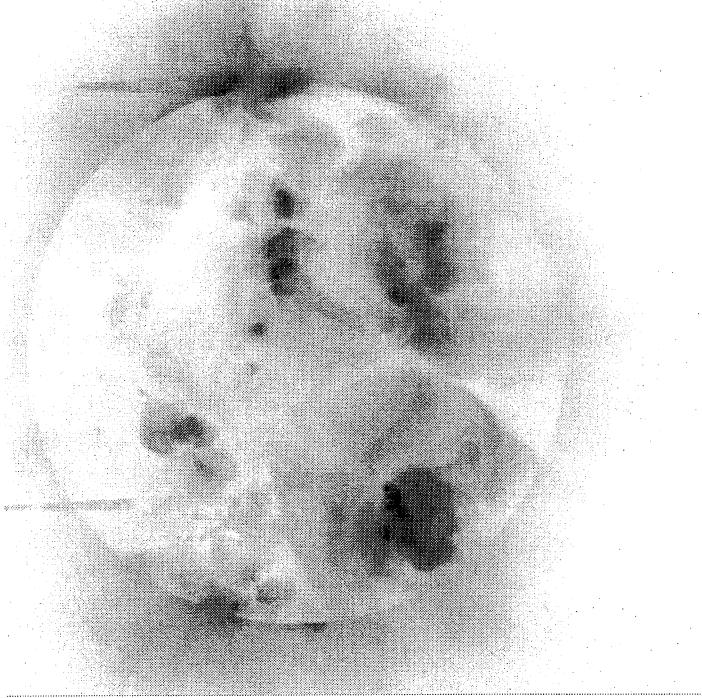
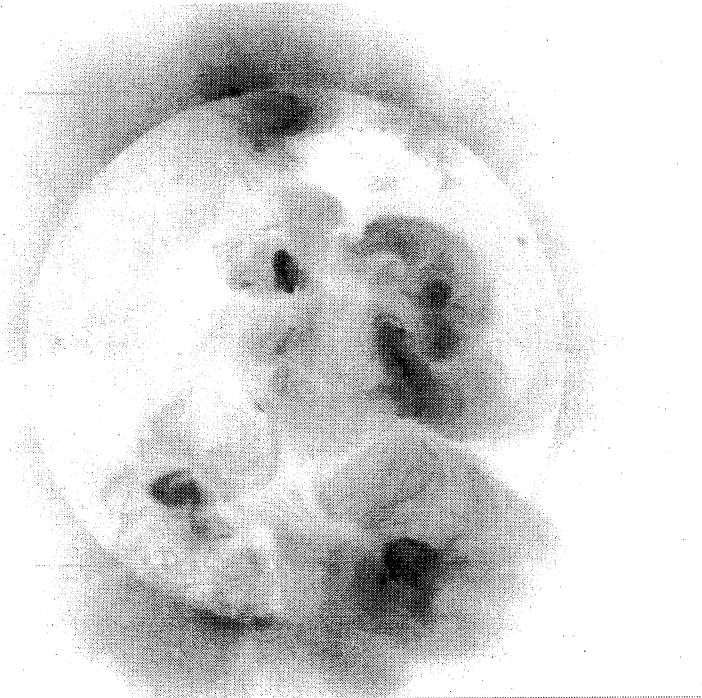
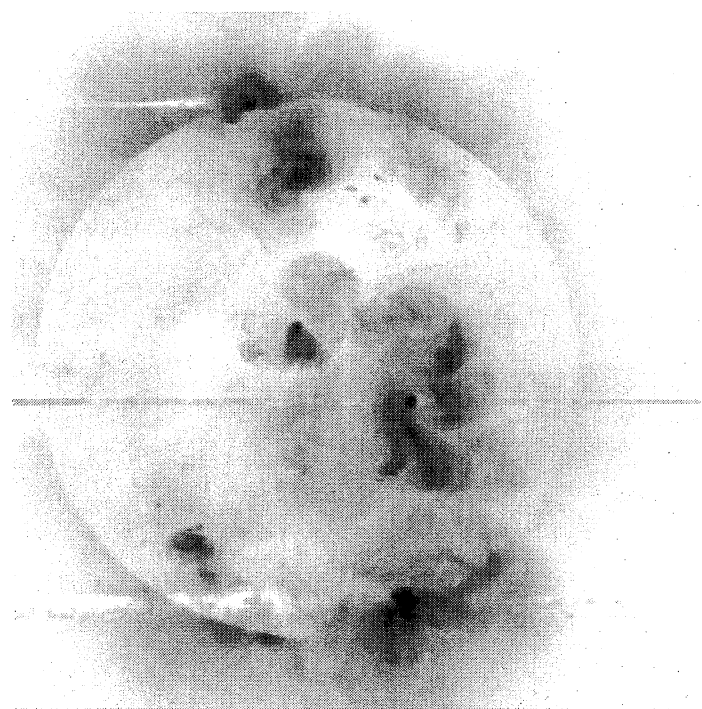
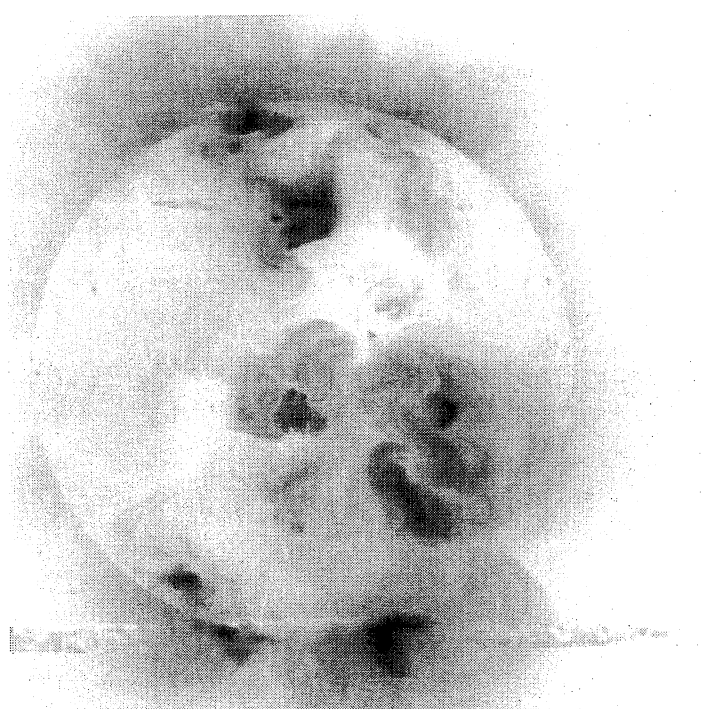


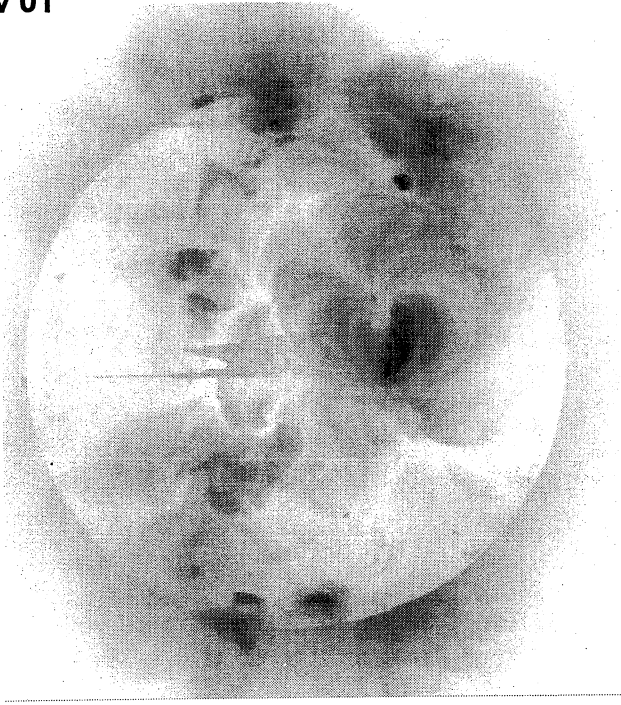
YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

November  
2001

Day 5                      Day 7  
08:17:30 UT              07:57:30 UT

Day 6                      Day 8  
07:54:54 UT              11:17:22 UT

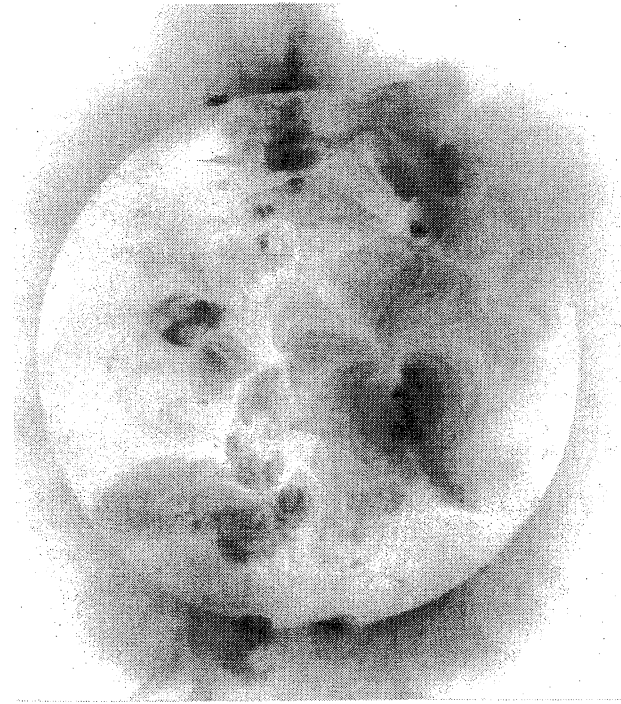
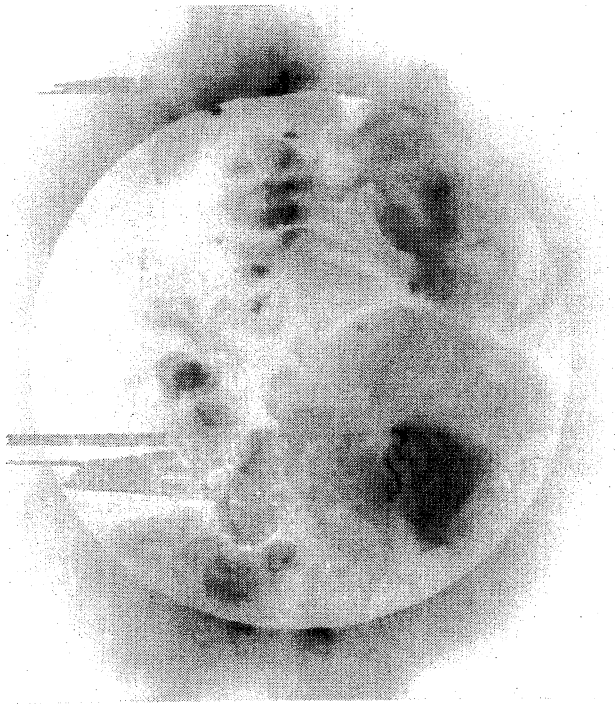




YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

November  
2001

Day 9                      Day 11  
12:48:25 UT              14:16:25 UT



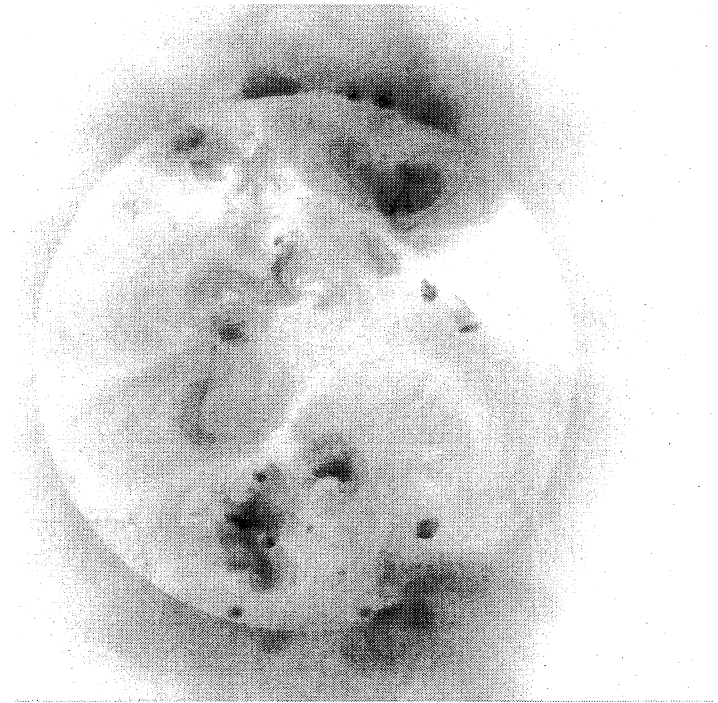
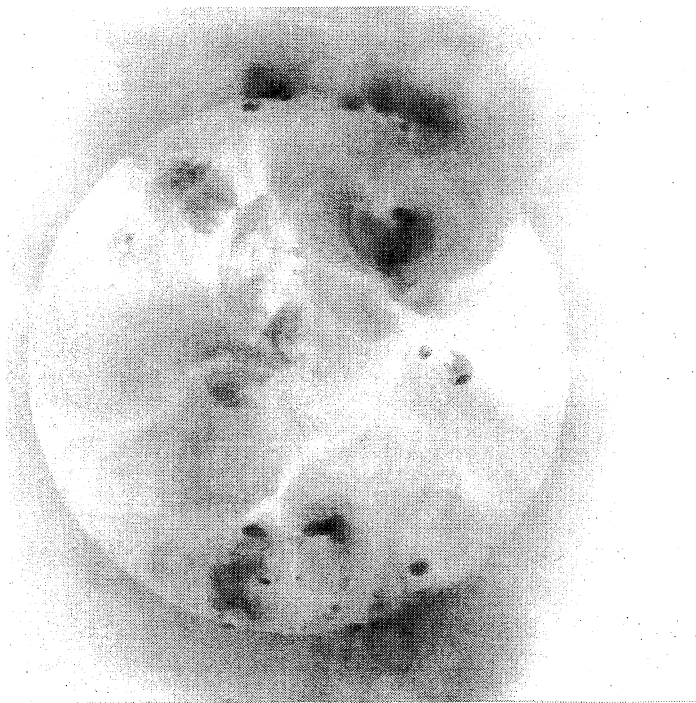
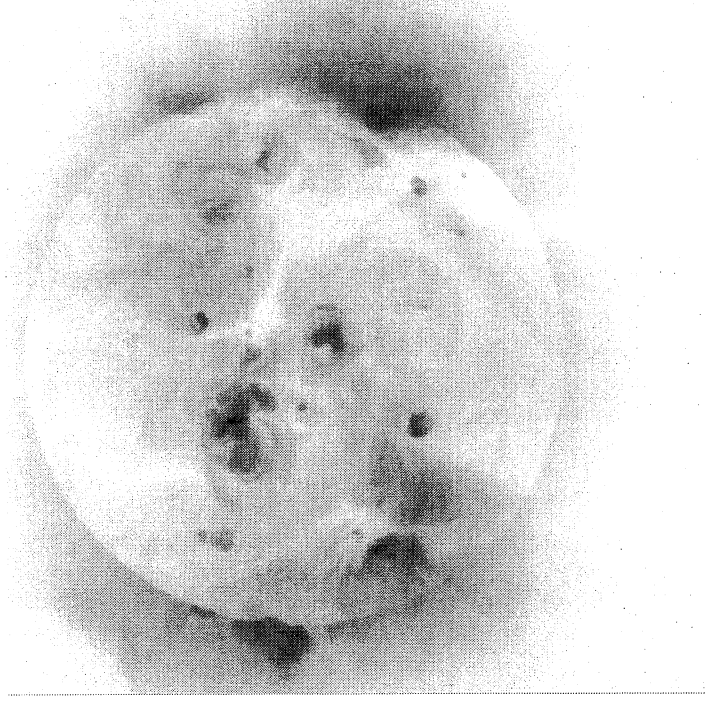
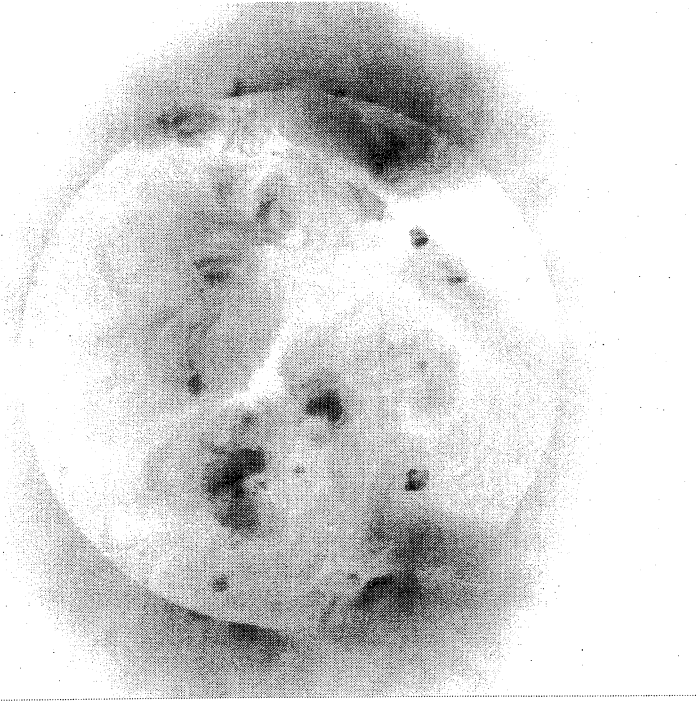
Day 10                      Day 12  
14:21:19 UT              12:41:33 UT

YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

November  
2001

Day 13 12:39:23 UT  
Day 15 12:30:30 UT

Day 14 12:29:44 UT  
Day 16 12:17:32 UT



YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

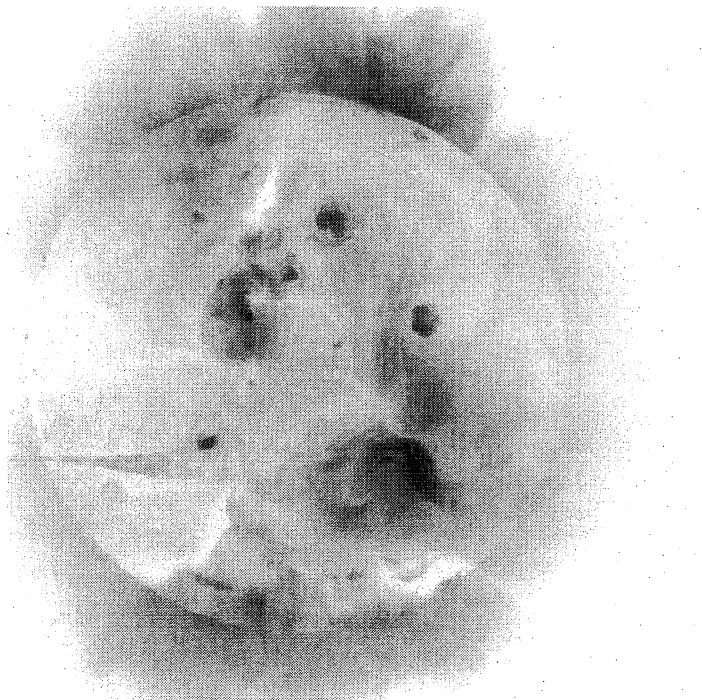
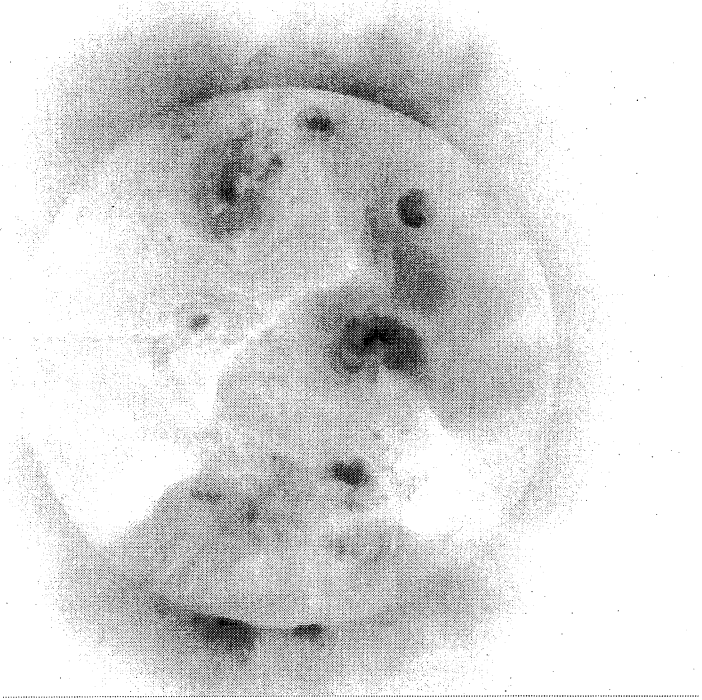
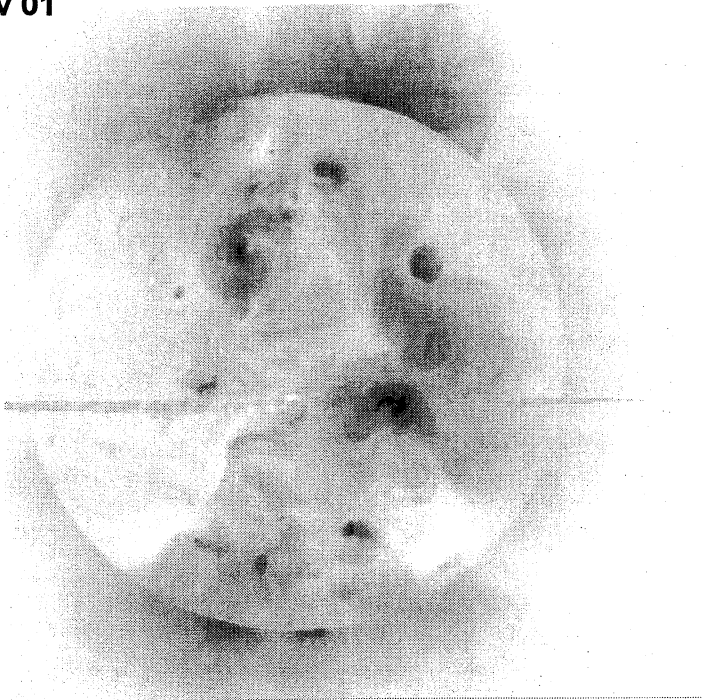
November  
2001

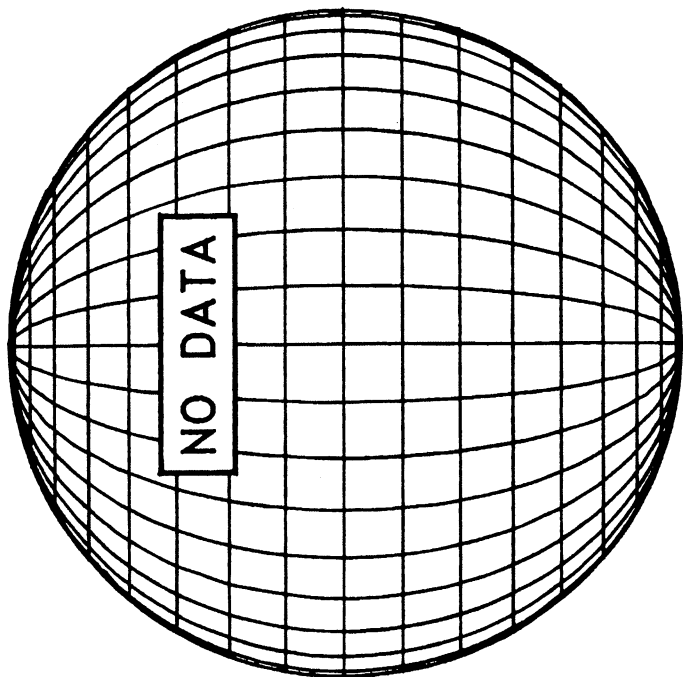
Day 17  
12:14:36 UT

Day 19  
12:04:51 UT

Day 18  
12:08:58 UT

Day 20  
11:55:13 UT

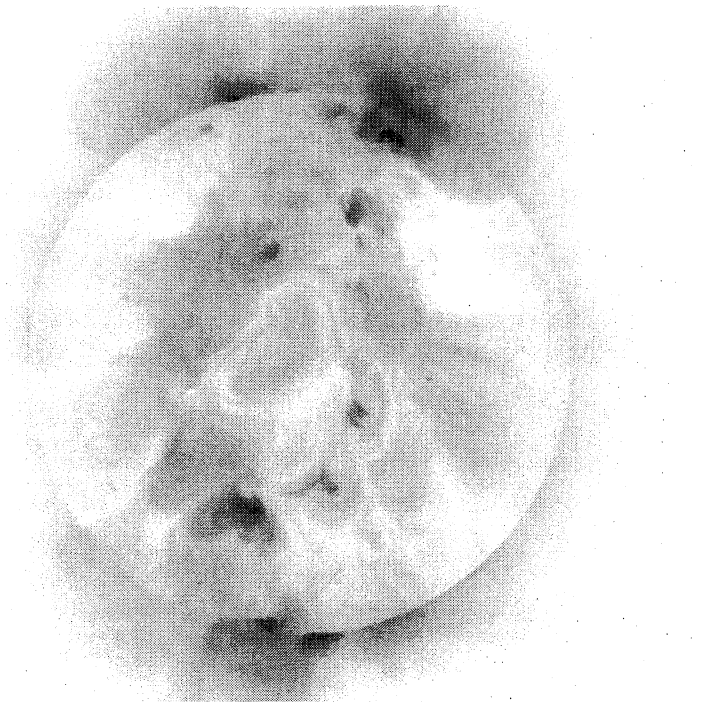
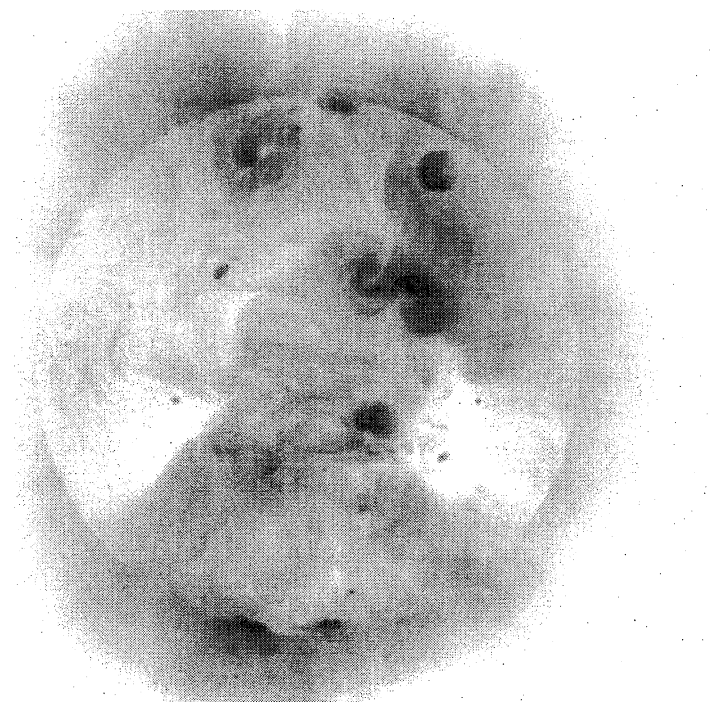




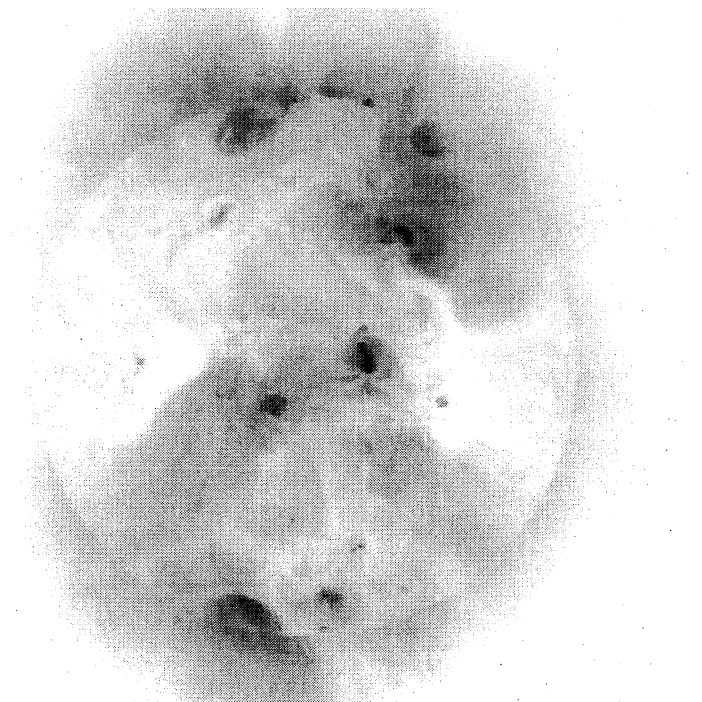
YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

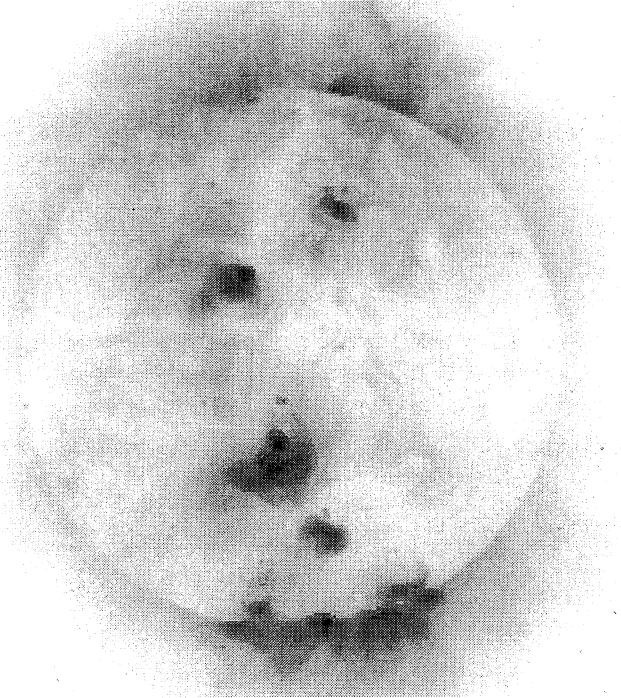
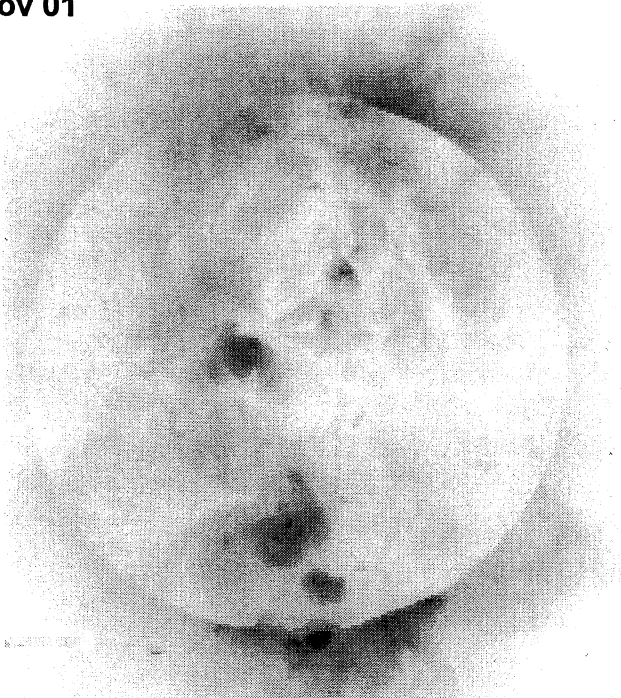
November  
2001

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Day 23



Day 22 12:03:11 UT  
Day 24 20:40:10 UT



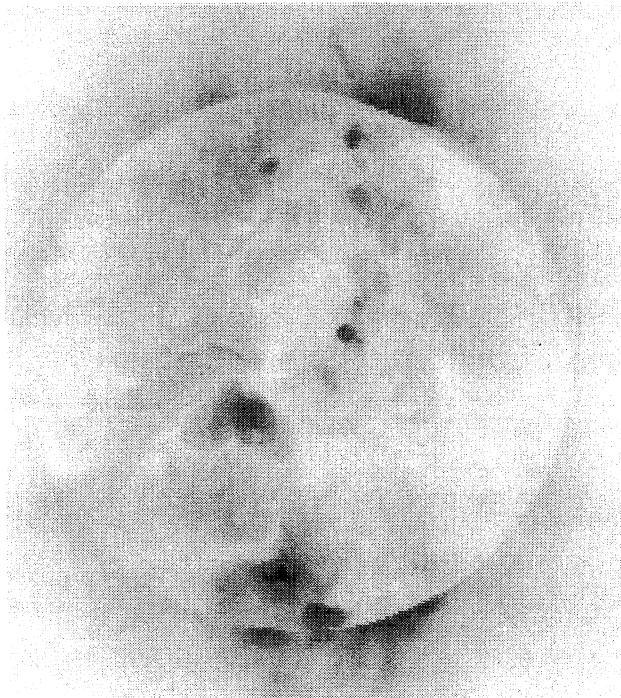
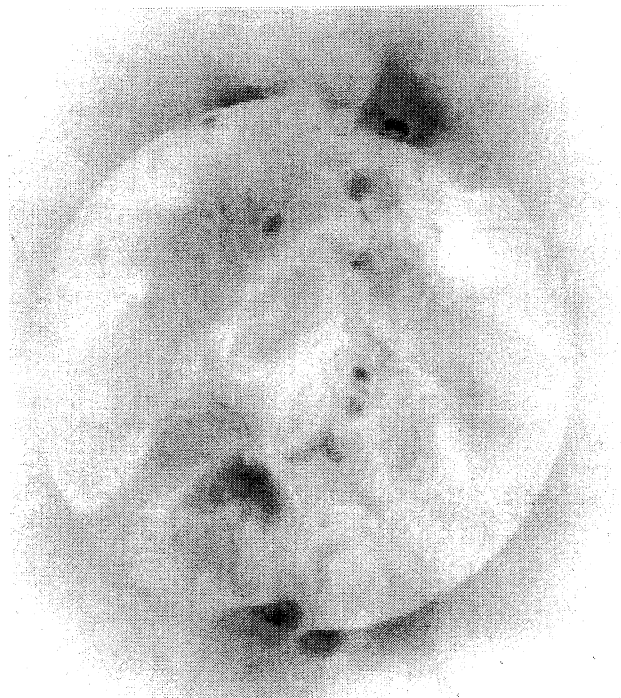


YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

November  
2001

Day 25                      Day 27  
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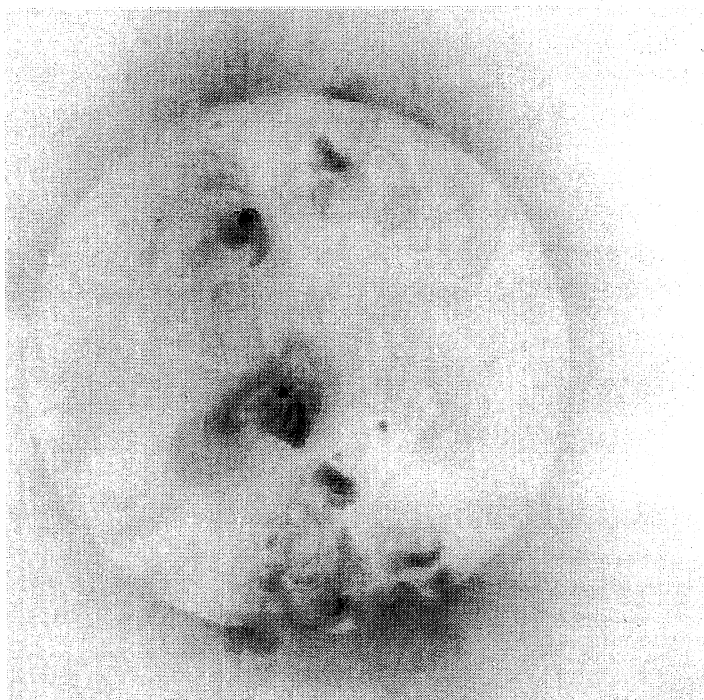
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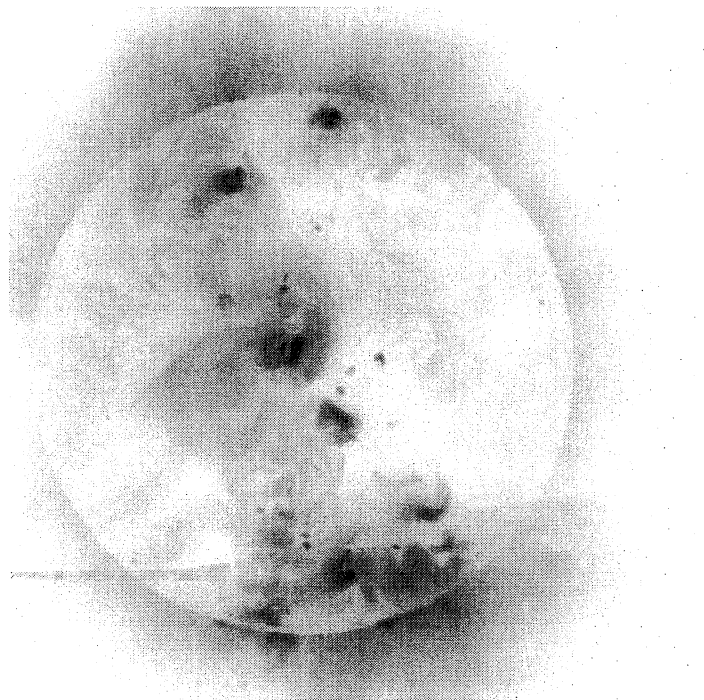
YOHKOH  
SOFT X-RAY  
TELESCOPE  
IMAGES

November  
2001

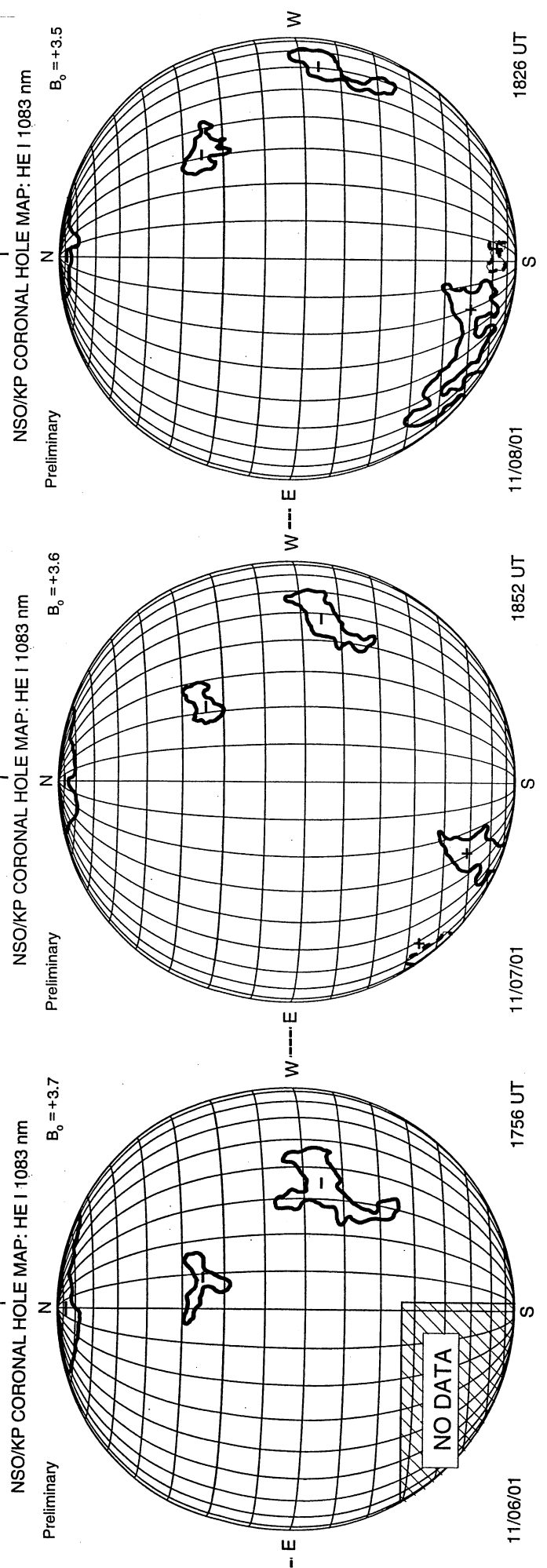
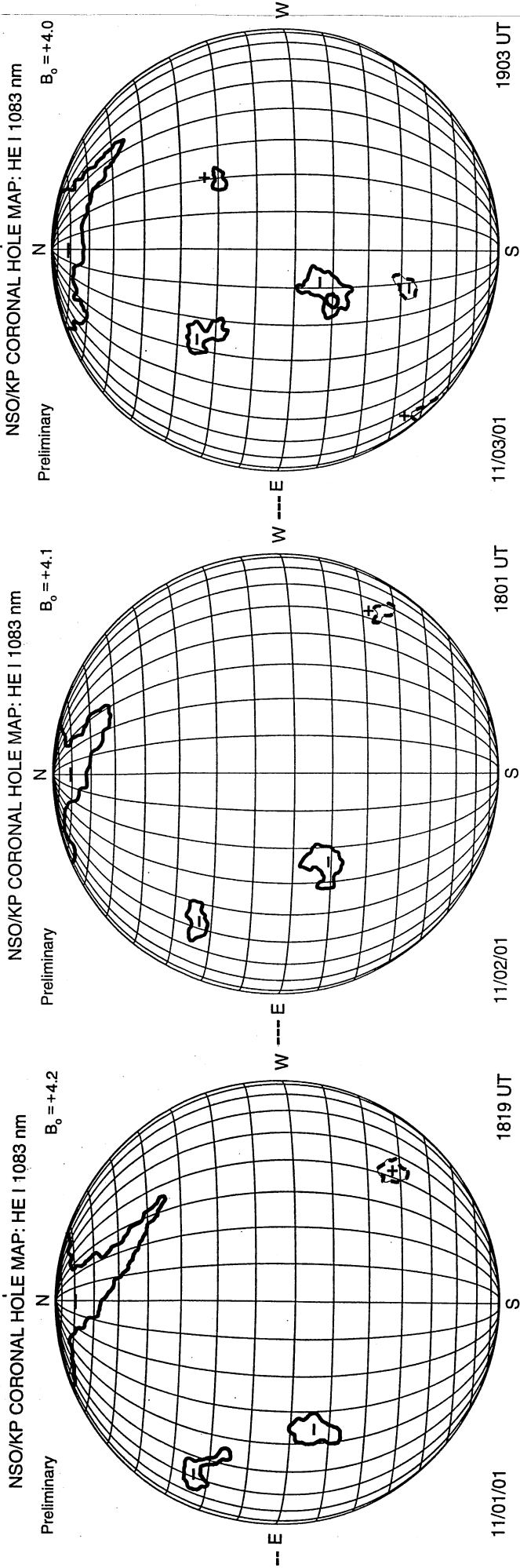
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Day 30  
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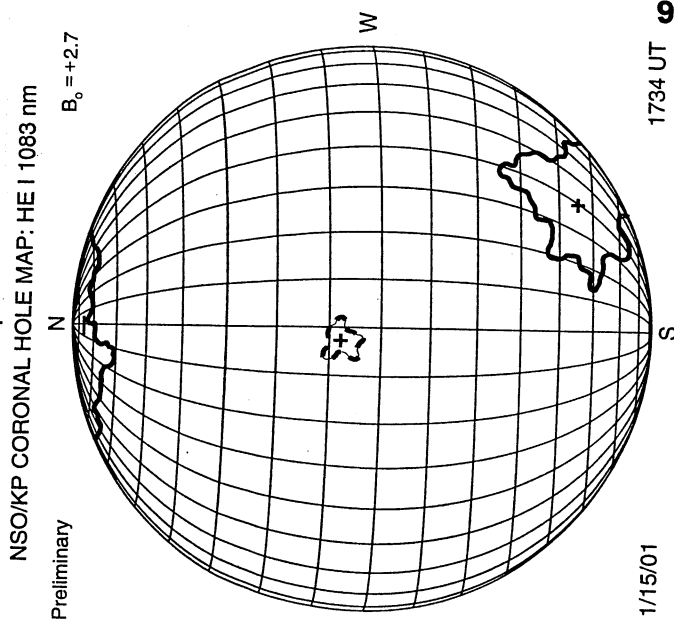
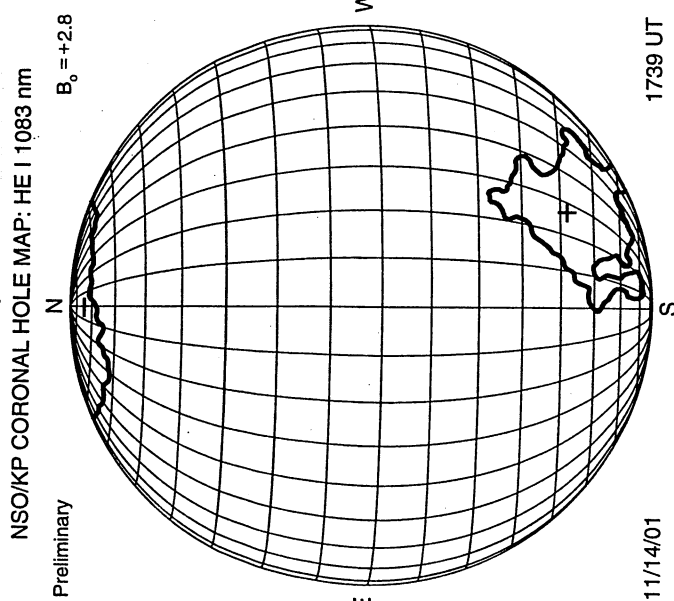
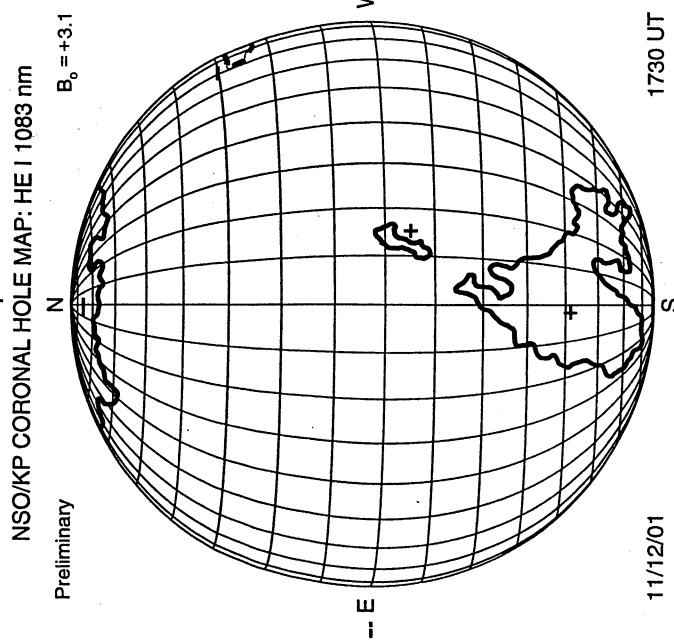
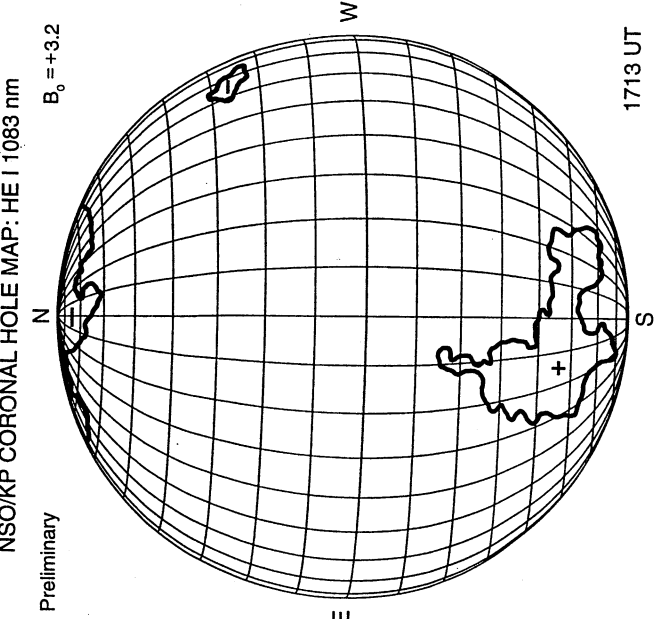
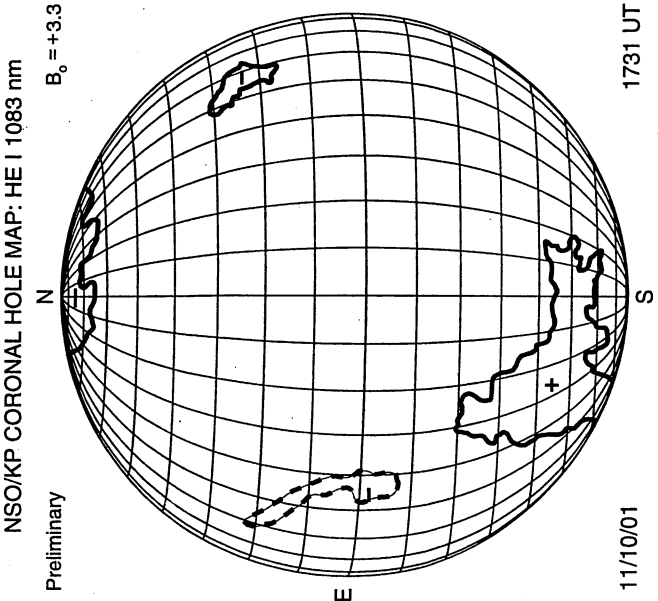
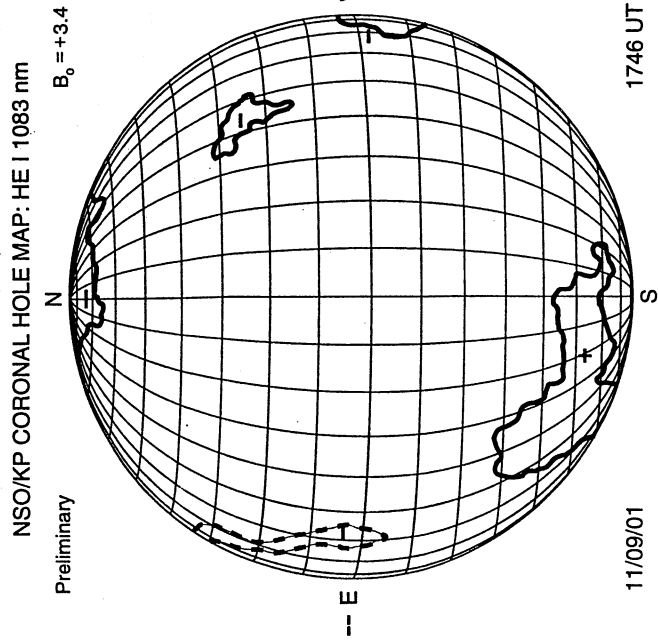


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm  
November 2001

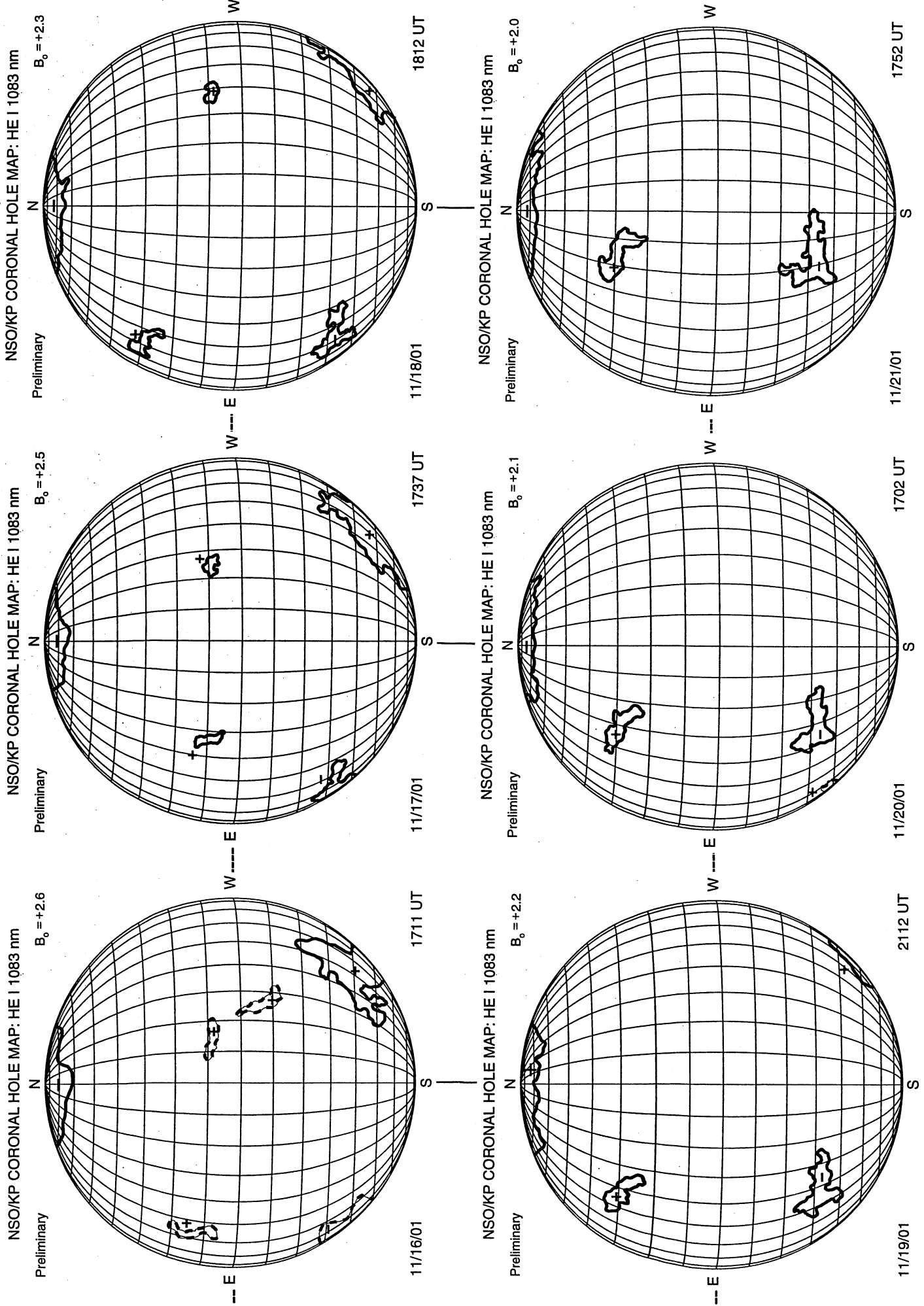




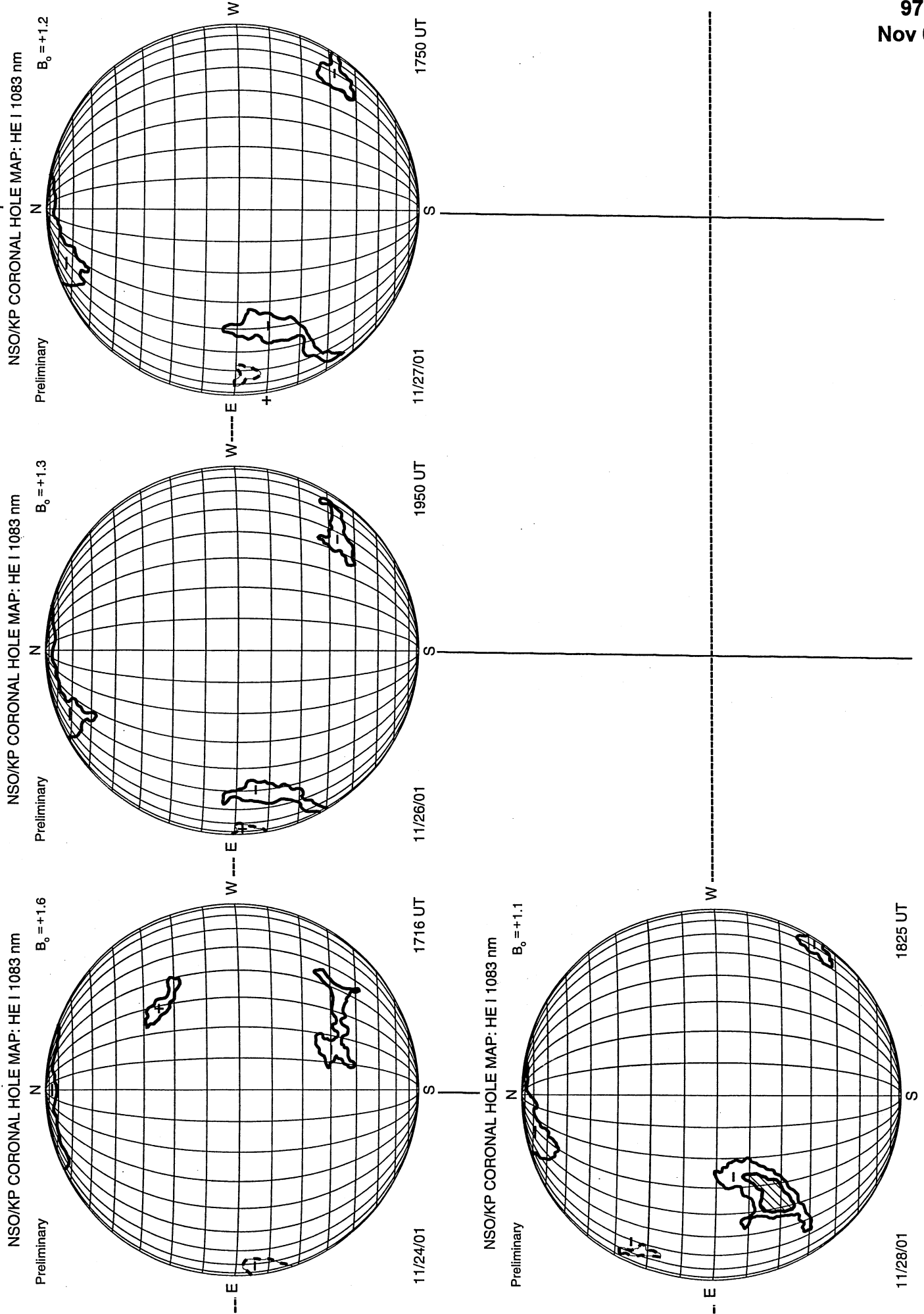
# KITT PEAK CORONAL HOLE MAPS HE I 1083 nm November 2001



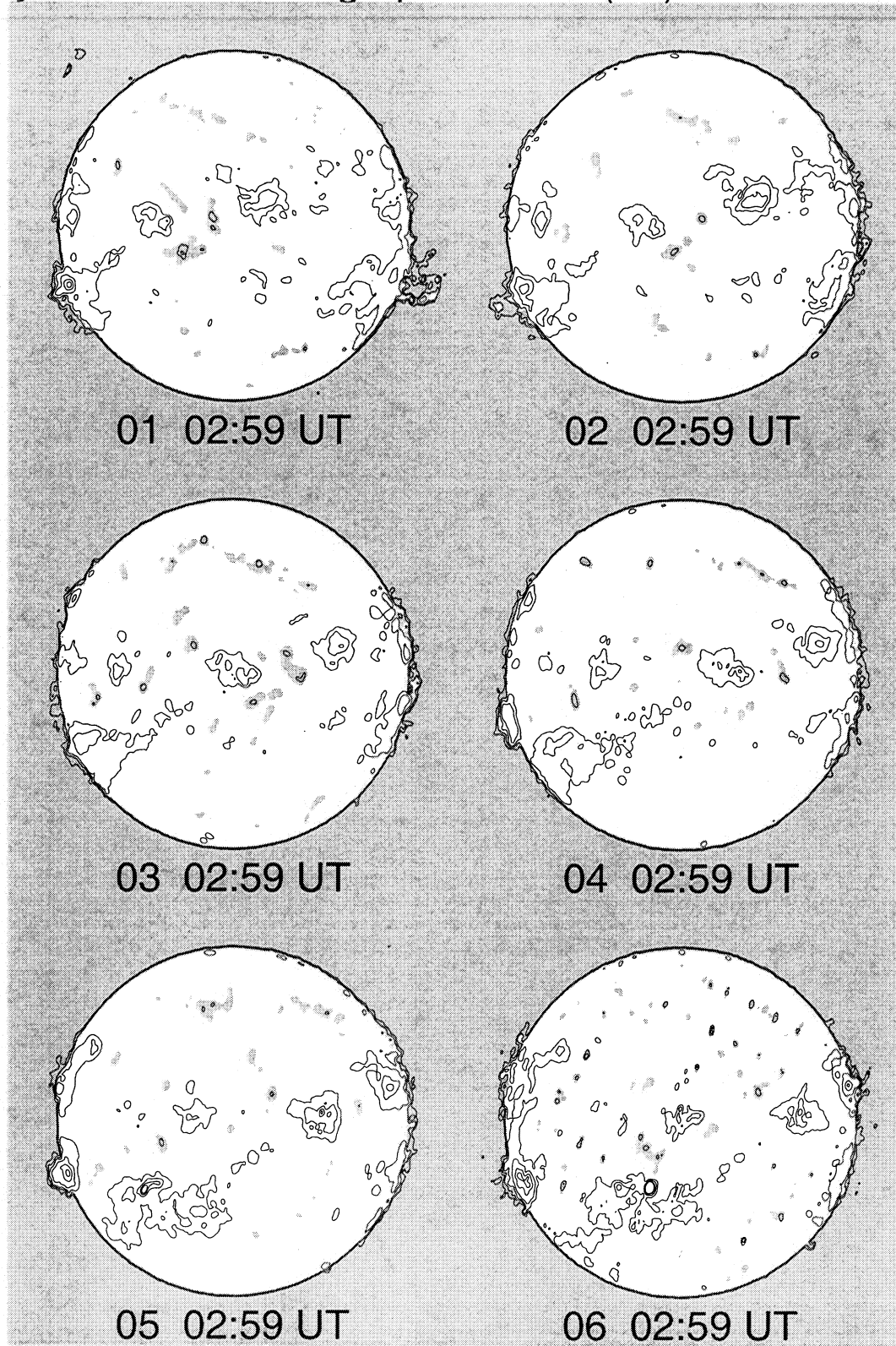
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm  
November 2001



# KITT PEAK CORONAL HOLE MAPS HE I 1083 nm November 2001

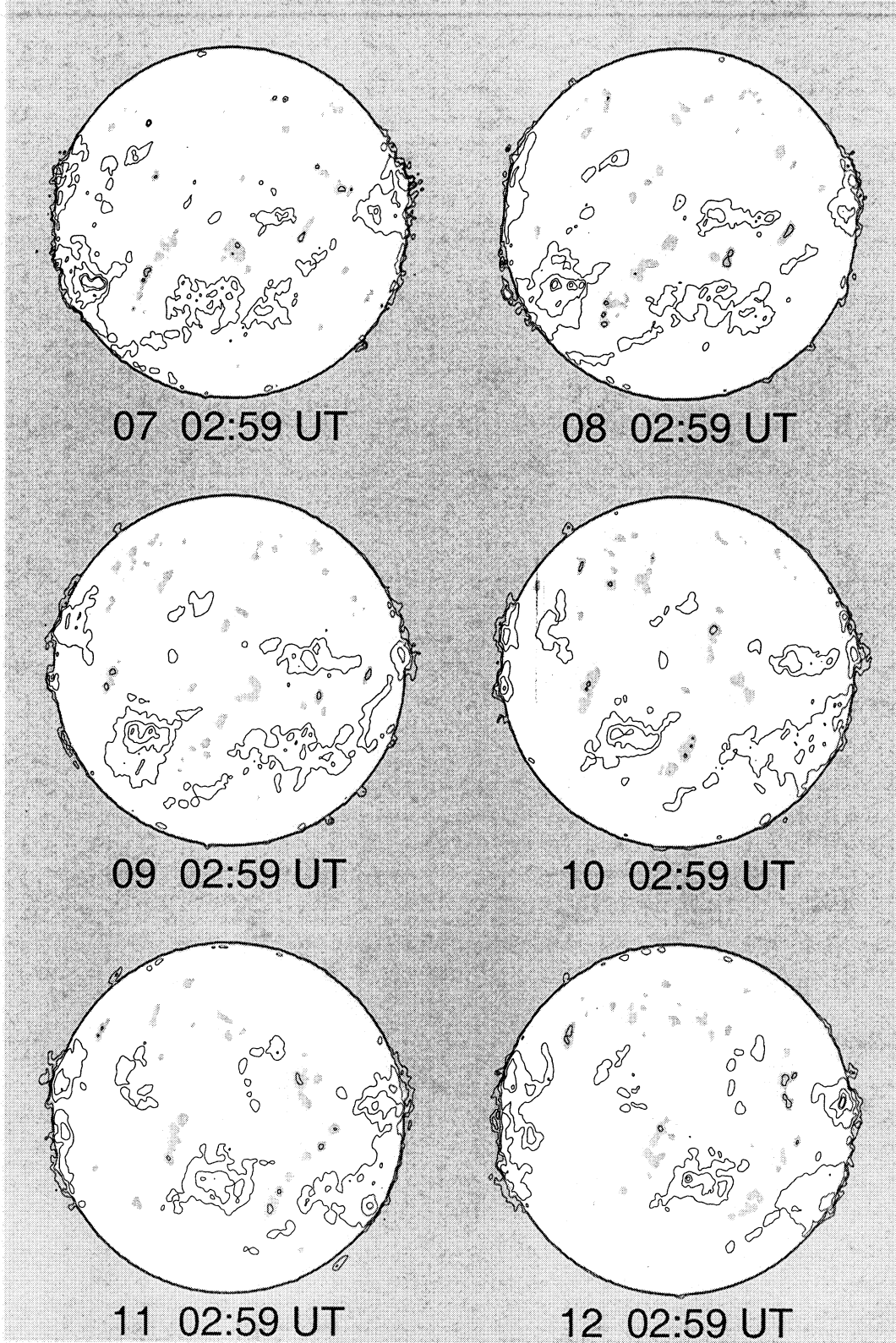


# Nobeyama Radio Heliograph 17 GHz (Tb) 2001 November



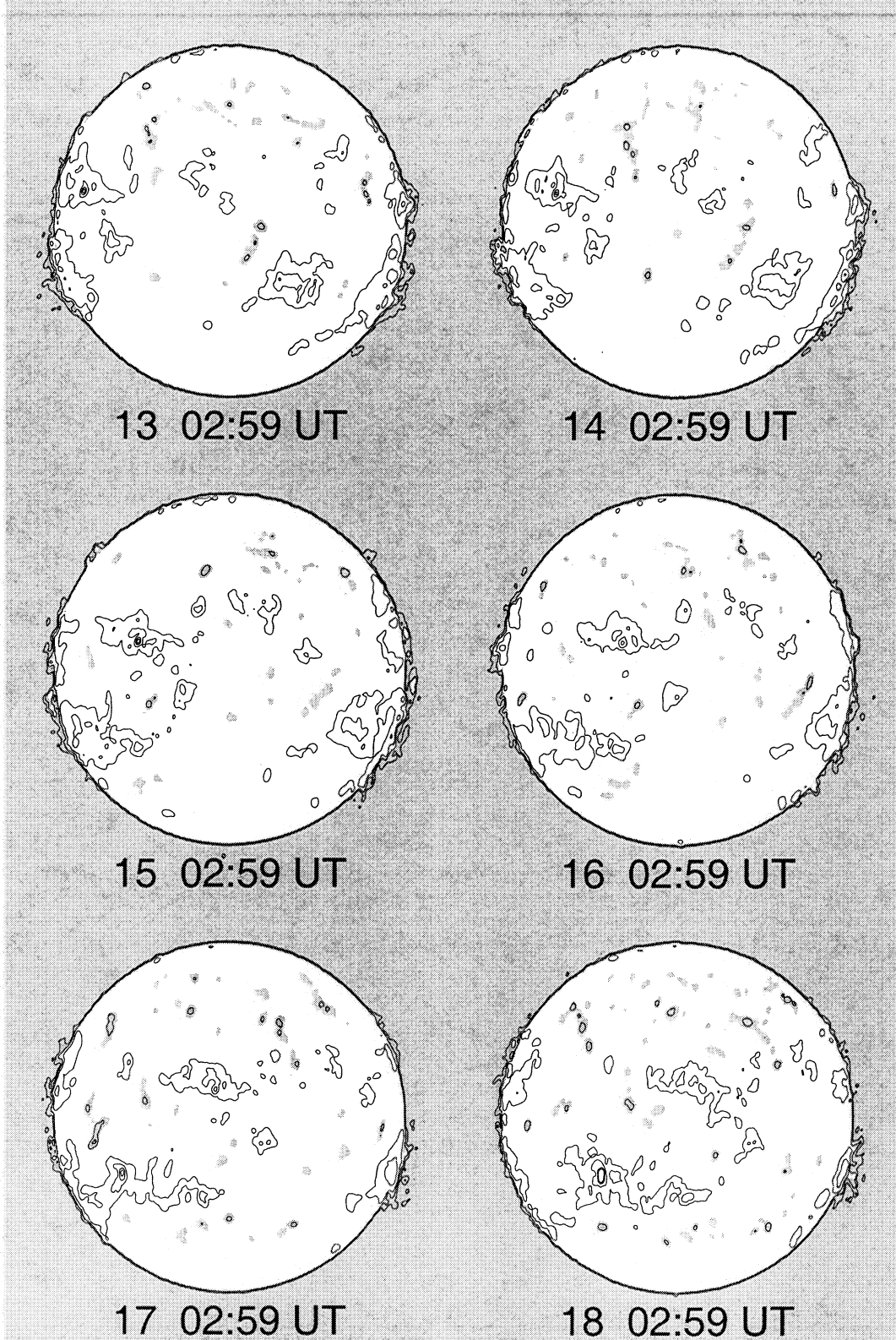
Contour Levels  $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$   
Grey level  $T_b \leq 9,500 \text{ K}$

# Nobeyama Radio Heliograph 17 GHz (Tb) 2001 November



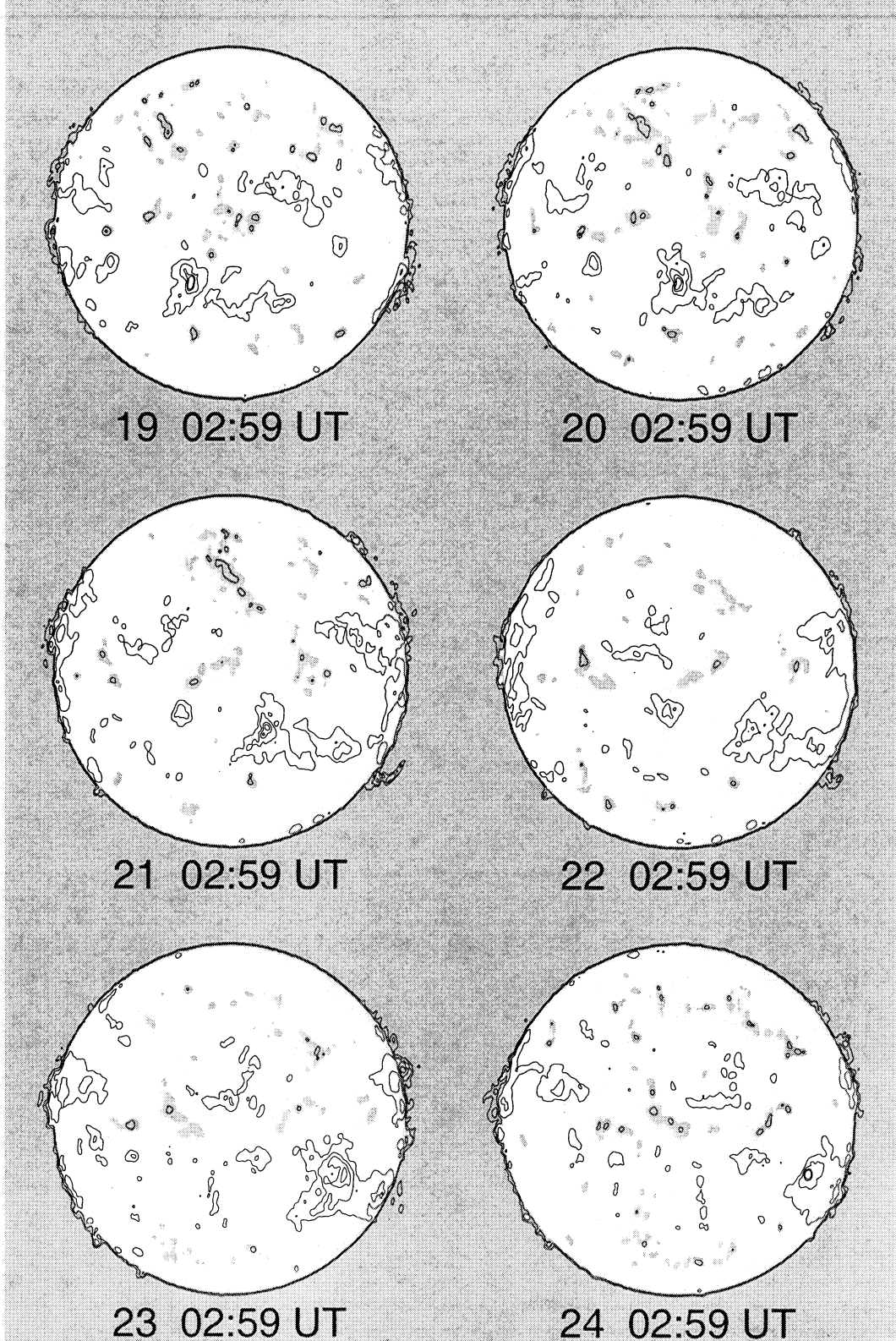
Contour Levels  $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$   
Grey level  $T_b \leq 9,500 \text{ K}$

# Nobeyama Radio Heliograph 17 GHz (Tb) 2001 November



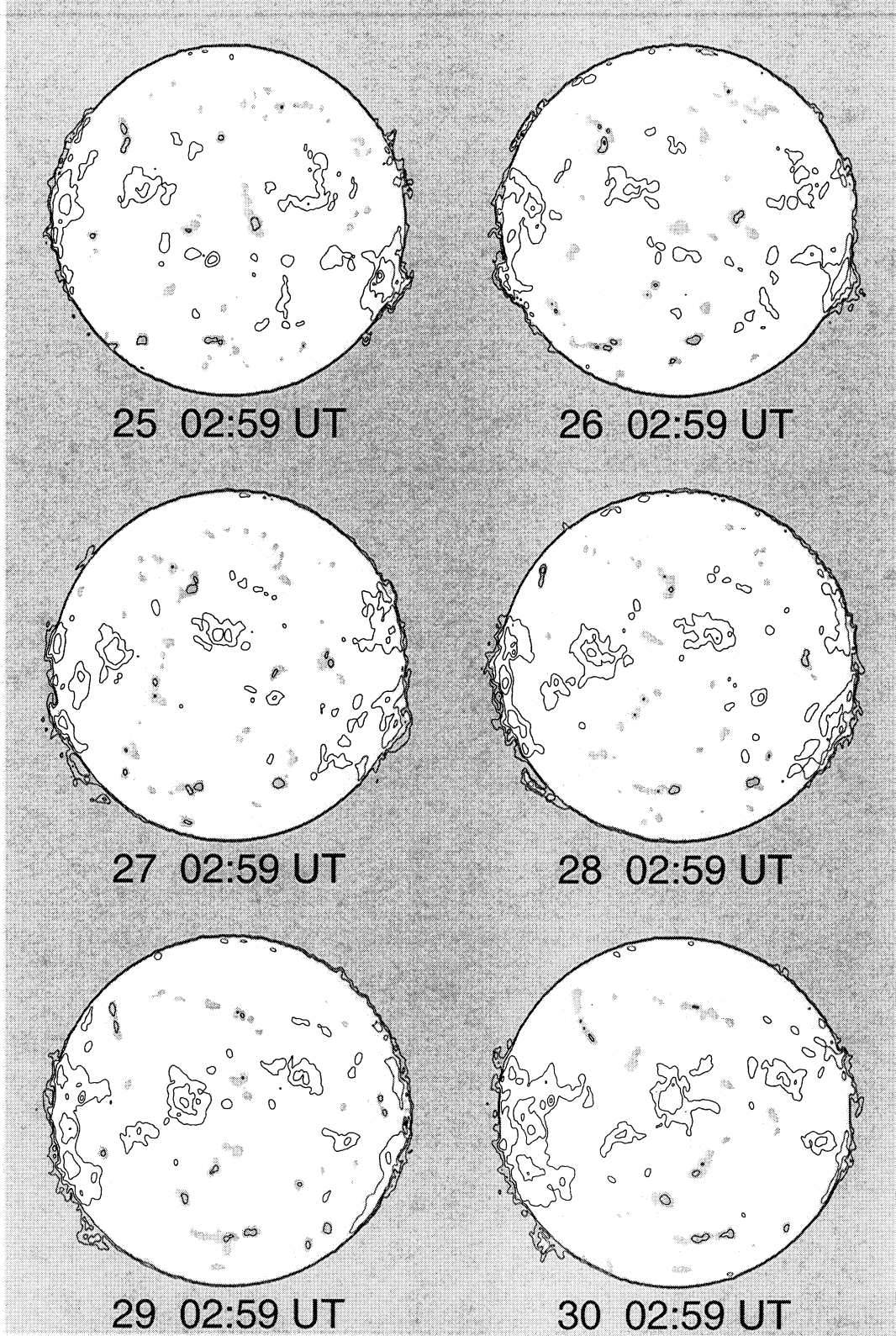
Contour Levels  $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$   
Grey level  $T_b \leq 9,500 \text{ K}$

# Nobeyama Radio Heliograph 17 GHz (Tb) 2001 November



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

# Nobeyama Radio Heliograph 17 GHz (Tb) 2001 November



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



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

103  
Nov 01

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation		Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day			Mo	Day							
9682A	30813	MWIL	10	27	2200	N09 E58	11	1.3	3	(AP)					
9682A	30813	MWIL	10	28	1500	N10 E47	11	1.1	4	(AP)					
9682B	30817	MWIL	10	28	1500	N17 E46	11	1.1	3	(B )					
9684		KAND	10	27	0925	N04 E87	11	2.9			HH	4	3	2	
9684		RAMY	10	27	1210	N05 E85	11	2.9		A	HSX	70	1	2	4
9684		HOLL	10	27	1532	N04 E81	11	2.7		A	HHX	240	1	4	3
9684	30814	MWIL	10	27	2200	N05 E79	11	2.8	5	AP					
9684		LEAR	10	28	0445	N05 E77	11	2.9		B	DAO	330	2	7	1
9684		SVTO	10	28	0658	N06 E77	11	3.0		B	DKO	510	5	7	2
9684		RAMY	10	28	1219	N06 E76	11	3.2		B	EKI	500	15	12	4
9684	30814	MWIL	10	28	1500	N05 E71	11	2.9	5	(B )					
9684		HOLL	10	28	1825	N06 E70	11	3.0		BG	DKI	600	7	5	2
9684		VORO	10	28	2238	N05 E66	11	2.9			DSO	372	4	3	3
9684		LEAR	10	29	0015	N05 E66	11	2.9		BG	DKI	500	11	8	3
9684		SVTO	10	29	0639	N06 E63	11	3.0		B	DKO	460	7	9	3
9684		KAND	10	29	0835	N05 E62	11	3.0			DKO		11	6	3
9684		RAMY	10	29	1221	N07 E60	11	3.0		B	DHI	560	19	8	4
9684		HOLL	10	29	1600	N05 E59	11	3.1		BG	DKI	500	18	7	3
9684	30814	MWIL	10	29	1845	N05 E56	11	3.0	5	B					
9684		VORO	10	29	2253	N05 E53	11	2.9			DKI	637	6	4	3
9684		LEAR	10	30	0007	N05 E54	11	3.0		BG	DKO	420	17	9	3
9684		SVTO	10	30	0745	N05 E49	11	3.0		B	DKO	490	21	10	3
9684		KAND	10	30	1030	N05 E48	11	3.0			DRO		19	9	2
9684		RAMY	10	30	1235	N07 E47	11	3.0		B	DKI	580	21	8	3
9684		HOLL	10	30	1538	N04 E46	11	3.1		B	DKI	340	21	8	2
9684		VORO	10	30	2318	N05 E40	11	3.0			DKI	752	17	4	3
9684		LEAR	10	31	0010	N05 E42	11	3.1		BG	EKI	440	30	12	3
9684		KAND	10	31	0915	N05 E35	11	3.0			DKI		24	8	3
9684		SVTO	10	31	0942	N07 E37	11	3.2		B	EKI	520	28	13	3
9684		RAMY	10	31	1244	N07 E33	11	3.0		BG	EKI	460	24	11	3
9684	30814	MWIL	10	31	1500	N05 E30	11	2.9	5	(BG)					
9684		VORO	10	31	2316	N06 E26	11	2.9			DKI	419	6	2	3
9684		LEAR	11	01	0005	N05 E27	11	3.0		BG	EKI	460	24	11	2
9684		KAND	11	01	0705	N05 E24	11	3.1			DAO		34	10	4
9684		SVTO	11	01	0915	N06 E23	11	3.1		B	EKO	480	15	12	2
9684		RAMY	11	01	1234	N05 E19	11	2.9		BG	DKO	440	14	8	1
9684	30814	MWIL	11	01	1500	N05 E17	11	2.9	5	(BP)					
9684		HOLL	11	01	1614	N06 E16	11	2.9		BG	DHC	390	18	7	2
9684		VORO	11	01	2318	N06 E13	11	2.9			DKI	317	8	3	3
9684		LEAR	11	02	0118	N06 E12	11	2.9		B	DKI	380	5	7	1
9684		SVTO	11	02	0710	N05 E07	11	2.8		B	DKI	470	9	6	3
9684		RAMY	11	02	1216	N06 E08	11	3.1		B	EKO	510	23	12	3
9684		HOLL	11	02	1428	N07 E05	11	3.0		BG	EKI	310	33	12	3
9684	30814	MWIL	11	02	1500	N05 E04	11	2.9	5	(D )					
9684		VORO	11	02	2344	N05 W02	11	2.8			DKI	383	15	4	3
9684		LEAR	11	03	0005	N06 W03	11	2.8		BG	DKI	520	19	7	2
9684		SVTO	11	03	0730	N04 W05	11	2.9		BG	EAI	400	17	11	2
9684	30814	MWIL	11	03	1500	N05 W10	11	2.9	5	(D )					
9684		HOLL	11	03	1520	N06 W11	11	2.8		BG	DKI	420	40	10	3
9684		VORO	11	03	2329	N05 W15	11	2.8			DKI	374	12	4	3
9684		LEAR	11	04	0005	N06 W15	11	2.9		BG	DKI	540	17	10	1
9684		SVTO	11	04	0910	N06 W20	11	2.9		BGD	DKC	530	27	10	2
9684		RAMY	11	04	1331	N05 W22	11	2.9		BG	EKC	550	37	14	3
9684		HOLL	11	04	1820	N05 W25	11	2.9		BGD	EKI	590	39	13	2
9684		LEAR	11	05	0115	N07 W28	11	2.9		BGD	DKC	480	25	8	1
9684		SVTO	11	05	0711	N07 W30	11	3.0		BGD	EKC	480	20	14	3
9684		RAMY	11	05	1331	N07 W35	11	2.9		BG	DKI	550	14	10	4
9684	30814	MWIL	11	05	1500	N06 W37	11	2.8	5	(BG)					
9684		HOLL	11	05	1626	N06 W37	11	2.9		BGD	EKC	440	23	11	3
9684		VORO	11	05	2243	N06 W41	11	2.9			HKX	600	7		2
9684		LEAR	11	06	0150	N06 W43	11	2.8		BGD	DAI	200	8	5	1
9684		SVTO	11	06	0715	N06 W46	11	2.8		BGD	DKI	460	15	10	2
9684		RAMY	11	06	1322	N07 W50	11	2.8		BG	DKO	330	13	9	2
9684	30814	MWIL	11	06	1530	N06 W50	11	2.9	5	(BG)					
9684		HOLL	11	06	1955	N06 W55	11	2.7		BGD	DKI	370	16	8	2
9684		VORO	11	06	2257	N06 W54	11	2.9			HKX	356	17		2
9684		LEAR	11	07	0005	N07 W56	11	2.8		BG	DAI	220	14	7	2

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

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
9684		SVTO	11 07 0845	N05 W59	11 2.9		BG	DAO	230	7	7	2
9684		KAND	11 07 0950	N07 W63	11 2.7			CAO		7	6	3
9684		HOLL	11 07 1510	N07 W65	11 2.8		BG	DHO	230	9	6	4
9684	30814	MWIL	11 07 1515	N06 W64	11 2.8	5	(BP)					
9684		LEAR	11 08 0025	N07 W69	11 2.8		BG	CAO	220	5	5	2
9684		VORO	11 08 0108	N07 W70	11 2.8			HAX	152	1		3
9684		SVTO	11 08 0905	N07 W74	11 2.8		BG	CKO	240	2	3	3
9684		KAND	11 08 1330	N06 W78	11 2.7			HS		1	3	3
9684		HOLL	11 08 1448	N05 W79	11 2.7		B	CAO	120	3	3	3
9684	30814	MWIL	11 08 1600	N07 W78	11 2.8	5	AP					
9684		VORO	11 08 2314	N06 W81	11 2.9			HAX	243	1		3
9691B	30831	MWIL	11 09 1600	N20 W78	11 3.7	3	(AP)					
9684C		LEAR	11 03 0005	S14 E16	11 4.2		A	AXX		1		2
9684C		RAMY	11 04 1331	S10 E02	11 4.7		B	BXO		4	3	3
9685		KAND	10 31 0915	N04 E76	11 6.1			HR		1	1	3
9685		VORO	10 31 2316	N05 E64	11 5.7			HRX	38	1		3
9685		LEAR	11 01 0005	N04 E68	11 6.1		B	CSO	40	6	7	2
9685		KAND	11 01 0705	N04 E60	11 5.8			BXO		12	8	4
9685		SVTO	11 01 0915	N05 E63	11 6.1		B	DSO	80	8	9	2
9685		RAMY	11 01 1234	N06 E63	11 6.2		B	DSO	50	9	8	1
9685	30819	MWIL	11 01 1500	N04 E60	11 6.1	5	(B )					
9685		HOLL	11 01 1614	N05 E59	11 6.1		B	DSO	90	15	8	2
9685		VORO	11 01 2318	N05 E54	11 6.0			CSO	145	5	6	3
9685		LEAR	11 02 0118	N04 E55	11 6.2		B	DSO	40	6	10	1
9685		SVTO	11 02 0710	N05 E49	11 6.0		B	DSO	140	8	9	3
9685		RAMY	11 02 1216	N05 E47	11 6.0		B	D O	80	17	9	3
9685		HOLL	11 02 1428	N05 E46	11 6.0		B	DSO	100	14	9	3
9685	30819	MWIL	11 02 1500	N04 E47	11 6.1	5	(B )					
9685		VORO	11 02 2344	N05 E41	11 6.0			CSO	116	6	9	3
9685		LEAR	11 03 0005	N04 E41	11 6.1		B	DSO	140	9	10	2
9685		SVTO	11 03 0730	N05 E36	11 6.0		B	DSO	100	11	12	2
9685	30819	MWIL	11 03 1500	N04 E33	11 6.1	5	(B )					
9685		HOLL	11 03 1520	N05 E30	11 5.9		B	DAO	50	12	9	3
9685		VORO	11 03 2329	N05 E27	11 6.0			CSO	99	9	9	3
9685		LEAR	11 04 0005	N07 E27	11 6.0		B	DSO	100	7	10	1
9685		SVTO	11 04 0910	N04 E23	11 6.1		B	DRO	60	18	10	2
9685		RAMY	11 04 1331	N04 E19	11 6.0		B	EAI	40	21	10	3
9685		HOLL	11 04 1820	N03 E17	11 6.0		B	DAO	70	23	9	2
9685		LEAR	11 05 0115	N05 E10	11 5.8		B	DSO	120	14	7	1
9685		SVTO	11 05 0711	N05 E06	11 5.7		B	DAO	50	11	5	3
9685		RAMY	11 05 1331	N05 E03	11 5.8		B	DAI	60	8	4	4
9685	30819	MWIL	11 05 1500	N05 E03	11 5.8	5	(BG)					
9685		HOLL	11 05 1626	N04 E06	11 6.1		B	EAI	120	16	13	3
9685		VORO	11 05 2243	N05 W03	11 5.7			CAI	117	5	2	2
9685		LEAR	11 06 0150	N05 W06	11 5.6		BG	DSO	50	9	4	1
9685		SVTO	11 06 0715	N05 W08	11 5.7		BG	DAO	100	7	5	2
9685		RAMY	11 06 1322	N06 W11	11 5.7		B	DAO	90	12	5	2
9685	30819	MWIL	11 06 1530	N05 W11	11 5.8	4	(BP)					
9685		HOLL	11 06 1955	N05 W15	11 5.7		B	DAO	70	17	5	2
9685		VORO	11 06 2257	N05 W17	11 5.7			CSI	93	6	4	2
9685		LEAR	11 07 0005	N06 W17	11 5.7		B	DSO	70	4	5	2
9685		SVTO	11 07 0845	N05 W23	11 5.6		B	CAO	80	5	6	2
9685		KAND	11 07 0950	N05 W20	11 5.9			CSO		12	11	3
9685		HOLL	11 07 1510	N06 W23	11 5.9		B	ESO	80	10	11	4
9685	30819	MWIL	11 07 1515	N06 W26	11 5.7	4	(BP)					
9685		LEAR	11 08 0025	N06 W32	11 5.6		B	CSO	50	3	5	2
9685		VORO	11 08 0108	N05 W34	11 5.5			HAX	78	4		3
9685		SVTO	11 08 0905	N05 W39	11 5.5		A	HSX	20	1	1	3
9685		KAND	11 08 1330	N06 W41	11 5.5			HS		1	1	3
9685		HOLL	11 08 1448	N04 W42	11 5.5		A	HSX	50	1	1	3
9685	30819	MWIL	11 08 1600	N05 W42	11 5.5	4	AP					
9685		VORO	11 08 2314	N05 W46	11 5.5			HAX	71	1		3
9685		SVTO	11 09 0715	N05 W52	11 5.4		A	HSX	50	1	2	3
9685		KAND	11 09 0735	N05 W51	11 5.5			HS		1	1	4
9685	30819	MWIL	11 09 1600	N05 W56	11 5.5	4	(AP)					
9685		VORO	11 09 2301	N05 W60	11 5.5			HAX	89	1		3

S U N S P O T G R O U P S  
(Ordered by Central Meridian Passage Date)  
NOVEMBER 2001

105  
Nov 01

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9685		LEAR	11	10	0100	N06	W62	11	5.4		A	HSX	50	1	2	3
9685		RAMY	11	10	1318	N03	W69	11	5.4		A	HSX	50	1	1	4
9685	30819	MWIL	11	10	1530	N04	W70	11	5.4	4	AP					
9685		VORO	11	10	2346	N04	W74	11	5.4			HSX	62	1		3
9685		LEAR	11	11	0035	N04	W74	11	5.5		A	HAX	30	1	1	2
9685		SVTO	11	11	0748	N03	W80	11	5.3		A	HAX	60	1	3	3
9685A	30822	MWIL	11	05	1500	S21	E03	11	5.8	4	(AF)					
9685A	30822	MWIL	11	06	1530	S20	W07	11	6.1	3	(AF)					
9686		LEAR	10	31	0010	N15	E80	11	6.1		B	BXO	10	2	8	3
9686		KAND	10	31	0915	N14	E79	11	6.3			HR		1	1	3
9686		SVTO	10	31	0942	N15	E77	11	6.2		A	HSX	60	1	2	3
9686		RAMY	10	31	1244	N18	E73	11	6.1		B	CSO	70	4	7	3
9686	30818	MWIL	10	31	1500	N15	E71	11	6.0	4	(AP)					
9686		VORO	10	31	2316	N15	E66	11	6.0			HAX	57	1		3
9686		LEAR	11	01	0005	N14	E66	11	6.0		B	DSO	40	2	3	2
9686		KAND	11	01	0705	N14	E64	11	6.1			AX		4	3	4
9686		SVTO	11	01	0915	N17	E65	11	6.3		B	CSO	30	3	8	2
9686		RAMY	11	01	1234	N17	E59	11	6.0		B	CSO	20	2	2	1
9686	30818	MWIL	11	01	1500	N15	E57	11	5.9	5	(AP)					
9686		HOLL	11	01	1614	N14	E57	11	6.0		A	AXX	10	1	1	2
9686		VORO	11	01	2318	N15	E52	11	5.9			HAX	46	1		3
9686		LEAR	11	02	0118	N14	E51	11	5.9		B	DSO	20	2	3	1
9686		SVTO	11	02	0710	N15	E48	11	5.9		A	HRX	20	1	1	3
9686		RAMY	11	02	1216	N15	E45	11	5.9		A	HSX	10	1	1	3
9686		HOLL	11	02	1428	N15	E43	11	5.8		A	HSX	30	2	1	3
9686	30818	MWIL	11	02	1500	N14	E44	11	5.9	5	(AP)					
9686		VORO	11	02	2344	N14	E38	11	5.9			HAX	26	1		3
9686		LEAR	11	03	0005	N14	E38	11	5.9		A	HSX	10	1	1	2
9686		SVTO	11	03	0730	N15	E35	11	6.0		A	HRX	10	1	1	2
9686	30818	MWIL	11	03	1500	N14	E31	11	6.0	4	(AP)					
9686		HOLL	11	03	1520	N15	E30	11	5.9		A	AXX		1	1	3
9684A		LEAR	10	31	0010	N04	E79	11	5.9		A	AXX		1		3
9684A		KAND	10	31	0915	N04	E76	11	6.1			HR		1	1	3
9684A		SVTO	10	31	0942	N05	E76	11	6.1		B	CSO	50	2	4	3
9684A		RAMY	10	31	1244	N07	E76	11	6.2		B	CSO	50	8	9	3
9684A	30819	MWIL	10	31	1500	N04	E72	11	6.0	4	AP					
9689		SVTO	11	04	0910	S27	E22	11	6.1		B	DRO	40	7	4	2
9689		RAMY	11	04	1331	S28	E20	11	6.1		B	DAI	30	9	5	3
9689		HOLL	11	04	1820	S28	E18	11	6.2		B	DAO	90	8	5	2
9689		LEAR	11	05	0115	S27	E13	11	6.1		B	DAO	130	8	6	1
9689		SVTO	11	05	0711	S27	E11	11	6.1		B	DAO	170	12	8	3
9689		RAMY	11	05	1331	S28	E07	11	6.1		B	DAO	90	6	6	4
9689	30823	MWIL	11	05	1500	S27	E06	11	6.1	5	(B)					
9689		HOLL	11	05	1626	S28	E06	11	6.1		B	DAO	140	8	7	3
9689		VORO	11	05	2243	S28	E02	11	6.1			DAI	289	6	5	2
9689		LEAR	11	06	0150	S27	E01	11	6.1		B	DSO	100	9	6	1
9689		SVTO	11	06	0715	S27	W02	11	6.1		B	DAO	220	15	8	2
9689		RAMY	11	06	1322	S27	W06	11	6.1		B	DAI	150	20	8	2
9689	30823	MWIL	11	06	1530	S27	W07	11	6.1	5	(B)					
9689		HOLL	11	06	1955	S26	W09	11	6.1		B	DAI	140	16	7	2
9689		VORO	11	06	2257	S28	W11	11	6.1			DAI	288	13	6	2
9689		LEAR	11	07	0005	S27	W11	11	6.1		B	DAO	150	12	7	2
9689		SVTO	11	07	0845	S27	W16	11	6.1		B	DSO	180	12	9	2
9689		KAND	11	07	0950	S26	W17	11	6.1			DAO		14	8	3
9689		HOLL	11	07	1510	S27	W19	11	6.1		B	DSO	150	17	10	4
9689	30823	MWIL	11	07	1515	S27	W20	11	6.1	5	(B)					
9689		LEAR	11	08	0025	S26	W25	11	6.1		B	DSO	110	6	9	2
9689		VORO	11	08	0108	S27	W25	11	6.1			CSI	127	8	6	3
9689		SVTO	11	08	0905	S27	W28	11	6.2		B	DAO	100	2	9	3
9689		KAND	11	08	1330	S25	W31	11	6.2			CSO		3	7	3
9689		HOLL	11	08	1448	S26	W35	11	5.9		B	DSO	120	3	7	3
9689	30823	MWIL	11	08	1600	S26	W33	11	6.1	5	B					
9689		VORO	11	08	2314	S28	W37	11	6.1			CSO	129	2	6	3
9689		SVTO	11	09	0715	S28	W43	11	5.9		B	CSO	60	2	8	3
9689		KAND	11	09	0735	S26	W40	11	6.2			DSO		2	7	4

106  
Nov 01

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

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
9689	30823	MWIL	11 09 1600	S26	W48	11 5.9	5	(BP)					
9689		VORO	11 09 2301	S25	W53	11 5.8			HAX	103	1		3
9689		LEAR	11 10 0100	S27	W55	11 5.7		A	HSX	70	1	3	3
9689		RAMY	11 10 1318	S23	W55	11 6.3		B	ESO	80	6	12	4
9689	30823	MWIL	11 10 1530	S26	W60	11 6.0	5	BP					
9689		VORO	11 10 2346	S27	W66	11 5.8			HAX	129	1		3
9689		LEAR	11 11 0035	S26	W65	11 6.0		A	HAX	60	1	2	2
9689		SVTO	11 11 0748	S27	W66	11 6.2		B	DSO	80	2	8	3
9689		RAMY	11 11 1323	S24	W65	11 6.5		B	CAO	60	3	8	3
9689		HOLL	11 11 1555	S26	W68	11 6.4		B	CAO	60	3	5	3
9692		KAND	11 07 0950	N07	W03	11 7.2			BXO		8	3	3
9692		HOLL	11 07 1510	N07	W06	11 7.2		B	CSO	60	8	4	4
9692	30826	MWIL	11 07 1515	N07	W06	11 7.2	5	(BP)					
9692		LEAR	11 08 0025	N06	W12	11 7.1		B	DAO	100	9	6	2
9692		VORO	11 08 0108	N07	W12	11 7.1			CAI	105	27	5	3
9692		SVTO	11 08 0905	N06	W17	11 7.1		B	DAO	90	17	7	3
9692		KAND	11 08 1330	N07	W19	11 7.1			DAI		17	8	3
9692		HOLL	11 08 1448	N08	W20	11 7.1		B	DAO	170	24	8	3
9692	30826	MWIL	11 08 1600	N07	W20	11 7.2	5	B					
9692		VORO	11 08 2314	N06	W24	11 7.2			DAI	350	17	6	3
9692		SVTO	11 09 0715	N06	W30	11 7.0		B	DAO	670	11	10	3
9692		KAND	11 09 0735	N06	W29	11 7.1			DKO		21	9	4
9692	30826	MWIL	11 09 1600	N06	W34	11 7.1	5	(B )					
9692		VORO	11 09 2301	N06	W38	11 7.1			DKI	841	22	7	3
9692		LEAR	11 10 0100	N07	W40	11 7.0		BG	DAI	650	25	9	3
9692		RAMY	11 10 1318	N05	W46	11 7.1		BG	EKI	810	21	11	4
9692	30826	MWIL	11 10 1530	N06	W47	11 7.1	5	(B )					
9692		VORO	11 10 2346	N05	W52	11 7.1			DKI	1017	21	7	3
9692		LEAR	11 11 0035	N06	W51	11 7.2		B	EKO	500	17	11	2
9692		SVTO	11 11 0748	N06	W56	11 7.1		B	EKO	870	10	13	3
9692		RAMY	11 11 1323	N06	W60	11 7.1		B	DKO	700	13	10	3
9692		HOLL	11 11 1555	N08	W62	11 7.0		BG	EKI	550	13	11	3
9692		VORO	11 11 2308	N06	W65	11 7.1			DKI	894	12	9	3
9692		LEAR	11 12 0010	N06	W65	11 7.1		B	EKO	590	13	13	3
9692		KAND	11 12 0830	N06	W71	11 7.0			DHO		5	10	5
9692		RAMY	11 12 1352	N07	W73	11 7.1		B	EKO	510	5	11	3
9692		HOLL	11 12 1500	N07	W75	11 7.0		BG	EKI	500	9	12	3
9692	30826	MWIL	11 12 1600	N06	W75	11 7.0	5	(B )					
9692		VORO	11 12 2312	N06	W78	11 7.1			DSO	505	2	8	3
9692		LEAR	11 13 0055	N07	W77	11 7.3		BG	EKI	490	4	11	2
9692		KAND	11 13 0825	N06	W80	11 7.4			HK		3	2	2
9692		SVTO	11 13 1150	N06	W89	11 6.8		A	HKX	240	1	10	2
9692		RAMY	11 13 1215	N12	W80	11 7.5		A	HKX	90	1	3	4
9692	30826	MWIL	11 13 1500	N06	W85	11 7.3	4	(AF)					
9687		LEAR	11 01 0005	S19	E87	11 7.6		A	AXX	10	1	1	2
9687		KAND	11 01 0705	S20	E79	11 7.3			CAO		9	8	4
9687		SVTO	11 01 0915	S19	E85	11 7.9		B	ESO	240	4	14	2
9687		RAMY	11 01 1234	S18	E76	11 7.3		B	DAO	130	9	4	1
9687	30820	MWIL	11 01 1500	S20	E77	11 7.5	4	B					
9687		HOLL	11 01 1614	S19	E75	11 7.4		B	DAO	200	10	10	2
9687		VORO	11 01 2318	S18	E72	11 7.4			DSO	490	3	0	3
9687		LEAR	11 02 0118	S20	E72	11 7.6		B	DAI	100	6	8	1
9687		SVTO	11 02 0710	S19	E69	11 7.6		B	FKO	550	10	20	3
9687		RAMY	11 02 1216	S19	E70	11 7.8		B	FAI	340	23	24	3
9687		HOLL	11 02 1428	S18	E65	11 7.5		BG	FAI	270	22	19	3
9687	30820	MWIL	11 02 1500	S20	E67	11 7.7	5	(B )					
9687		VORO	11 02 2344	S19	E63	11 7.8			DSO	556	10	10	3
9687		LEAR	11 03 0005	S19	E59	11 7.5		BD	FKI	3700	14	19	2
9687		SVTO	11 03 0730	S19	E56	11 7.6		BG	FAI	400	13	19	2
9687	30820	MWIL	11 03 1500	S19	E51	11 7.5	5	(D )					
9687		HOLL	11 03 1520	S19	E54	11 7.7		B	FAI	250	29	25	3
9687		VORO	11 03 2329	S20	E47	11 7.6			DSO	385	11	19	3
9687		LEAR	11 04 0005	S20	E48	11 7.7		BG	FAI	290	16	20	1
9687		SVTO	11 04 0910	S19	E42	11 7.6		BG	FAC	480	34	20	2
9687		RAMY	11 04 1331	S20	E40	11 7.6		BG	FAC	380	46	21	3
9687		HOLL	11 04 1820	S20	E37	11 7.6		BG	FAC	370	43	22	2
9687		LEAR	11 05 0115	S21	E32	11 7.5		BG	FAC	360	29	21	1

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

107  
Nov 01

NOVEMBER 2001

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
9687		SVTO	11 05 0711	S21	E30	11 7.6		BG	FAC	460	35	22	3
9687		RAMY	11 05 1331	S19	E23	11 7.3		BG	FAC	260	25	16	4
9687	30820	MWIL	11 05 1500	S19	E25	11 7.5	5	(B )					
9687		HOLL	11 05 1626	S19	E25	11 7.6		BG	FAC	310	36	23	3
9687		VORO	11 05 2243	S20	E22	11 7.6			DAI	621	21	17	2
9687		LEAR	11 06 0150	S19	E20	11 7.6		BG	FAI	230	17	20	1
9687		SVTO	11 06 0715	S20	E17	11 7.6		BG	FAI	460	27	23	2
9687		RAMY	11 06 1322	S20	E12	11 7.5		BG	FAC	290	51	22	2
9687	30820	MWIL	11 06 1530	S19	E11	11 7.5	4	(D )					
9687		HOLL	11 06 1955	S20	E09	11 7.5		BG	FAC	240	52	22	2
9687		VORO	11 06 2257	S20	E09	11 7.6			DAI	391	23	19	2
9687		LEAR	11 07 0005	S19	E08	11 7.6		BGD	FKI	300	24	23	2
9687		SVTO	11 07 0845	S21	E05	11 7.7		B	FAI	300	25	27	2
9687		KAND	11 07 0950	S20	E02	11 7.6			FAO	300	23	29	3
9687		HOLL	11 07 1510	S19	E03	11 7.9		BD	FKI	360	45	28	4
9687	30820	MWIL	11 07 1515	S19	W01	11 7.5	5	(D )					
9687		LEAR	11 08 0025	S19	W05	11 7.6		BGD	FKI	300	22	23	2
9687		VORO	11 08 0108	S19	W06	11 7.6			DAI	304	30	19	3
9687		SVTO	11 08 0905	S19	W09	11 7.7		BGD	FAO	180	30	23	3
9687		KAND	11 08 1330	S18	W12	11 7.6			FAO		26	23	3
9687		HOLL	11 08 1448	S18	W15	11 7.5		BD	FAI	210	34	25	3
9687	30820	MWIL	11 08 1600	S19	W15	11 7.5	5	BG					
9687		VORO	11 08 2314	S21	W17	11 7.7			DAI	190	16	22	3
9687		SVTO	11 09 0715	S20	W22	11 7.6		BG	FAO	240	27	25	3
9687		KAND	11 09 0735	S19	W21	11 7.7			FAO		34	24	4
9687	30820	MWIL	11 09 1600	S19	W27	11 7.6	4	(B )					
9687		VORO	11 09 2301	S19	W31	11 7.6			CAI	118	16	24	3
9687		LEAR	11 10 0100	S20	W32	11 7.6		BG	FAO	210	31	26	3
9687		RAMY	11 10 1318	S21	W38	11 7.6		B	BXO	40	12	17	4
9687	30820	MWIL	11 10 1530	S19	W40	11 7.6	4	B					
9687		VORO	11 10 2346	S20	W45	11 7.5			BXI	66	7	23	3
9687		LEAR	11 11 0035	S20	W46	11 7.5		B	BXO	20	7	23	2
9687		SVTO	11 11 0748	S20	W47	11 7.7		B	BXO	30	9	25	3
9687		RAMY	11 11 1323	S21	W52	11 7.6		B	BXO	10	3	4	3
9687		LEAR	11 12 0010	S20	W58	11 7.6		B	BXO	30	9	24	3
9687		SVTO	11 13 1150	S21	W79	11 7.4		B	CAO	70	2	4	2
9699		KAND	11 12 0830	S10	W61	11 7.8			HS		1	1	5
9699		RAMY	11 12 1352	S09	W61	11 8.0		B	CSO	50	4	3	3
9699		HOLL	11 12 1500	S08	W65	11 7.7		B	CAO	50	5	5	3
9699	30835	MWIL	11 12 1600	S09	W64	11 7.9	4	(AF)					
9699		LEAR	11 13 0055	S08	W68	11 7.9		B	DAO	80	3	4	2
9699		KAND	11 13 0825	S09	W73	11 7.9			AX		3	4	2
9699		RAMY	11 13 1215	S09	W75	11 7.9		B	DSO	60	3	5	4
9699	30835	MWIL	11 13 1500	S10	W78	11 7.8	4	(AF)					
9699		HOLL	11 13 1911	S09	W81	11 7.7		A	AXX	30	1	1	2
9693		KAND	11 07 0950	N12	E11	11 8.2			AX		1		3
9693		HOLL	11 07 1510	N11	E07	11 8.1		B	CAO	50	8	4	4
9693	30827	MWIL	11 07 1515	N11	E06	11 8.1	4	(B )					
9693		LEAR	11 08 0025	N11	E01	11 8.1		B	DAO	60	4	4	2
9693		VORO	11 08 0108	N11	E01	11 8.1			BXO	33	4	4	3
9693		VORO	11 08 0108	N13	W02	11 7.9			BXO	33	4	2	3
9693		SVTO	11 08 0905	N12	W04	11 8.1		B	DAO	60	4	5	3
9693		KAND	11 08 1330	N12	W07	11 8.0			HS		1	1	3
9693		HOLL	11 08 1448	N12	W07	11 8.1		B	CSO	30	5	4	3
9693	30827	MWIL	11 08 1600	N12	W09	11 8.0	4	B					
9693		VORO	11 08 2314	N12	W13	11 8.0			AXX	19	1		3
9693		SVTO	11 09 0715	N11	W18	11 7.9		A	HSX	20	2	1	3
9693		KAND	11 09 0735	N13	W17	11 8.0			HA		2	1	4
9693	30827	MWIL	11 09 1600	N12	W23	11 7.9	4	(AP)					
9693		VORO	11 09 2301	N12	W27	11 7.9			AXX	17	1		3
9693		LEAR	11 10 0100	N11	W28	11 7.9		A	HSX	20	1	1	3
9693		RAMY	11 10 1318	N10	W36	11 7.8		A	AXX	10	1		4
9693	30827	MWIL	11 10 1530	N11	W35	11 8.0	4	AP					
9693		VORO	11 10 2346	N11	W41	11 7.9			AXX	11	1		3
9693		LEAR	11 11 0035	N11	W40	11 8.0		A	AXX		1		2
9693		SVTO	11 11 0748	N11	W46	11 7.9		A	HRX	10	1	1	3
9693		RAMY	11 11 1323	N12	W49	11 7.9		A	AXX		1		3

108  
Nov 01

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9693		HOLL	11	11	1555	N11	W50	11	7.9		A	AXX		1		3
9693		LEAR	11	12	0010	N11	W54	11	7.9		A	AXX		1		3
9693		KAND	11	12	0830	N12	W60	11	7.8			AX		1		5
9693		RAMY	11	12	1352	N12	W63	11	7.8		A	AXX		1		3
9693		HOLL	11	12	1500	N12	W63	11	7.9		A	AXX		1		3
9693	30827	MWIL	11	12	1600	N12	W64	11	7.8	4	(AP)					
9693A	30829	MWIL	11	08	1600	N12	E02	11	8.8	4	B					
9693B	30832	MWIL	11	10	1530	S26	W22	11	8.9	3	AF					
9688		LEAR	11	03	0005	N24	E80	11	9.2		A	HSX	30	1	1	2
9688		SVTO	11	03	0730	N25	E82	11	9.7		A	HSX	30	1	2	2
9688	30821	MWIL	11	03	1500	N25	E84	11	10.1	4	(AP)					
9688		HOLL	11	03	1520	N26	E85	11	10.2		A	HSX	60	1	2	3
9688		VORO	11	03	2329	N26	E75	11	9.8			DSO	197	3	11	3
9688		LEAR	11	04	0005	N25	E75	11	9.8		B	ESO	100	3	12	1
9688		SVTO	11	04	0910	N26	E72	11	10.0		B	ESO	90	3	14	2
9688		RAMY	11	04	1331	N26	E69	11	9.9		B	FAO	140	7	16	3
9688		HOLL	11	04	1820	N27	E69	11	10.1		B	EAO	90	6	15	2
9688		LEAR	11	05	0115	N24	E64	11	10.0		BG	EAO	100	4	14	1
9688		SVTO	11	05	0711	N26	E59	11	9.9		B	FAI	80	6	16	3
9688		RAMY	11	05	1331	N26	E56	11	9.9		B	ESO	50	3	15	4
9688	30821	MWIL	11	05	1500	N26	E56	11	10.0	4	(BF)					
9688		HOLL	11	05	1626	N26	E56	11	10.0		B	FAO	100	5	17	3
9688		VORO	11	05	2243	N26	E52	11	10.0			DAO	112	3	14	2
9688		LEAR	11	06	0150	N25	E49	11	9.9		B	FSO	20	2	16	1
9688		SVTO	11	06	0715	N26	E46	11	9.9		B	FSO	80	6	16	2
9688		RAMY	11	06	1322	N26	E43	11	9.9		B	FSO	50	9	16	2
9688	30821	MWIL	11	06	1530	N26	E43	11	10.0	4	(B )					
9688		HOLL	11	06	1955	N25	E41	11	10.0		B	EAO	50	8	15	2
9688		VORO	11	06	2257	N26	E39	11	10.0			CSO	61	2	14	2
9688		LEAR	11	07	0005	N25	E38	11	9.9		B	ESO	50	3	15	2
9688		SVTO	11	07	0845	N26	E33	11	9.9		B	ESO	40	4	14	2
9688		KAND	11	07	0950	N26	E35	11	10.1			BXO		7	15	3
9688		HOLL	11	07	1510	N26	E30	11	10.0		B	ESO	80	12	14	4
9688	30821	MWIL	11	07	1515	N26	E30	11	10.0	4	(B )					
9688		LEAR	11	08	0025	N25	E25	11	9.9		B	DSO	50	3	14	2
9688		SVTO	11	08	0905	N27	E13	11	9.4		A	HSX	10	1	1	3
9688		KAND	11	08	1330	N26	E12	11	9.5			AX		1		3
9688		HOLL	11	08	1448	N26	E11	11	9.5		A	AXX	10	1	1	3
9688	30821	MWIL	11	08	1600	N25	E11	11	9.5	4	BP					
9688		VORO	11	08	2314	N25	E06	11	9.4			AXX	9	1		3
9688		SVTO	11	09	0715	N25	E01	11	9.4		A	HRX	10	1	1	3
9688		KAND	11	09	0735	N26	E02	11	9.5			HS		2	1	4
9688	30821	MWIL	11	09	1600	N25	E02	11	9.8	4	(BP)					
9688		VORO	11	09	2301	N26	W06	11	9.5			BXO	23	2	2	3
9688		LEAR	11	10	0100	N24	W07	11	9.5		B	DSO	10	5	3	3
9688		RAMY	11	10	1318	N24	W15	11	9.4		B	CSO	30	3	3	4
9688	30821	MWIL	11	10	1530	N25	W14	11	9.6	3	AP					
9688		VORO	11	10	2346	N25	W19	11	9.5			BXO	19	2	2	3
9688		LEAR	11	11	0035	N24	W19	11	9.5		A	AXX	10	2	2	2
9688		SVTO	11	11	0748	N26	W25	11	9.4		A	HRX	10	1	1	3
9688		RAMY	11	11	1323	N25	W27	11	9.5		A	AXX	10	3	3	3
9688		HOLL	11	11	1555	N25	W28	11	9.5		A	HSX	20	1	1	3
9688		VORO	11	11	2308	N26	W32	11	9.5			AXX	18	1		3
9688		LEAR	11	12	0010	N26	W33	11	9.4		A	AXX		1		3
9688		KAND	11	12	0830	N27	W37	11	9.5			AX		1		5
9688		RAMY	11	12	1352	N26	W40	11	9.5		B	BXO	10	2	2	3
9688		HOLL	11	12	1500	N27	W41	11	9.4		A	AXX	10	1	1	3
9688	30821	MWIL	11	12	1600	N26	W41	11	9.5	4	(AP)					
9688		LEAR	11	13	0055	N26	W46	11	9.5		A	AXX	10	1	1	2
9690		HOLL	11	04	1820	S16	E85	11	11.2		B	DAO	120	2	4	2
9690		LEAR	11	05	0115	S19	E86	11	11.6		B	DAO	180	3	5	1
9690		SVTO	11	05	0711	S18	E78	11	11.2		B	DAO	180	6	6	3
9690		RAMY	11	05	1331	S18	E77	11	11.4		B	DKI	330	4	8	4
9690	30824	MWIL	11	05	1500	S17	E74	11	11.2	5	BG					
9690		HOLL	11	05	1626	S17	E76	11	11.5		B	DKO	930	6	9	3

S U N S P O T G R O U P S  
(Ordered by Central Meridian Passage Date)  
NOVEMBER 2001

109  
Nov 01

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9690		VORO	11	05	2243	S17	E72	11	11.4			DKI	681	4	9	2
9690		LEAR	11	06	0150	S18	E70	11	11.4		B	EKO	540	12	12	1
9690		SVTO	11	06	0715	S17	E66	11	11.3		B	FKO	740	19	16	2
9690		RAMY	11	06	1322	S18	E64	11	11.4		B	EKI	750	25	14	2
9690	30824	MWIL	11	06	1530	S18	E63	11	11.4	5	(BG)					
9690		HOLL	11	06	1955	S18	E60	11	11.4		B	FKI	800	39	16	2
9690		VORO	11	06	2257	S17	E58	11	11.4			DKI	1295	21	11	2
9690		LEAR	11	07	0005	S18	E58	11	11.4		BG	FKI	720	22	18	2
9690		SVTO	11	07	0845	S16	E53	11	11.4		B	FKI	1000	26	17	2
9690		KAND	11	07	0950	S18	E54	11	11.5			FKO		35	18	3
9690		HOLL	11	07	1510	S17	E49	11	11.3		BG	FKC	840	49	20	4
9690	30824	MWIL	11	07	1515	S17	E49	11	11.3	5	(D )					
9690		LEAR	11	08	0025	S18	E44	11	11.4		BGD	FKC	850	37	17	2
9690		VORO	11	08	0108	S17	E45	11	11.5			EKI	1747	50	13	3
9690		SVTO	11	08	0905	S17	E40	11	11.4		BGD	FKC	1060	43	20	3
9690		KAND	11	08	1330	S17	E36	11	11.3			FKI		35	19	3
9690		HOLL	11	08	1448	S18	E35	11	11.3		BGD	FKC	1200	75	18	3
9690	30824	MWIL	11	08	1600	S18	E34	11	11.2	5	(D )					
9690		VORO	11	08	2314	S18	E32	11	11.4			EKI	1956	51	14	3
9690		SVTO	11	09	0715	S18	E25	11	11.2		BGD	FKC	1410	39	23	3
9690		KAND	11	09	0735	S16	E27	11	11.4			FKC		64	19	4
9690	30824	MWIL	11	09	1600	S18	E22	11	11.3	5	(D )					
9690		VORO	11	09	2301	S18	E18	11	11.3			EKI	1746	55	15	3
9690		LEAR	11	10	0100	S18	E16	11	11.2		BGD	FKC	1410	85	22	3
9690		RAMY	11	10	1318	S18	E08	11	11.2		BG	FKC	1420	65	22	4
9690	30824	MWIL	11	10	1530	S18	E07	11	11.2	5	(D )					
9690		VORO	11	10	2346	S18	E05	11	11.4			EKI	1650	74	16	3
9690		LEAR	11	11	0035	S18	E03	11	11.2		BGD	FKI	1290	64	21	2
9690		SVTO	11	11	0748	S18	E00	11	11.3		B	FKI	1350	56	24	3
9690		RAMY	11	11	1323	S17	W04	11	11.2		BG	FKI	1090	66	22	3
9690		HOLL	11	11	1555	S18	W06	11	11.2		BG	FKC	1180	0	21	3
9690		VORO	11	11	2308	S18	W08	11	11.3			EKI	1445	57	19	3
9690		LEAR	11	12	0010	S18	W09	11	11.3		BGD	FKC	1250	81	22	3
9690		KAND	11	12	0830	S17	W14	11	11.3			FKC		50	19	5
9690		RAMY	11	12	1352	S18	W17	11	11.3		BGD	FKC	1200	55	20	3
9690		HOLL	11	12	1500	S18	W18	11	11.2		BGD	FKC	1080	0	22	3
9690	30824	MWIL	11	12	1600	S17	W17	11	11.4	5	(BG)					
9690		VORO	11	12	2312	S18	W22	11	11.3			EKI	1371	45	19	3
9690		LEAR	11	13	0055	S17	W22	11	11.4		BGD	FKC	1110	74	19	2
9690		KAND	11	13	0825	S17	W27	11	11.3			FKO		44	22	2
9690		SVTO	11	13	1150	S18	W28	11	11.4		B	FKI	1100	51	22	2
9690		RAMY	11	13	1215	S18	W28	11	11.4		BGD	FKC	1190	66	22	4
9690	30824	MWIL	11	13	1500	S17	W30	11	11.3	5	(BG)					
9690		HOLL	11	13	1911	S16	W34	11	11.2		BG	FKC	1060	45	24	2
9690		VORO	11	13	2301	S17	W34	11	11.4			EKI	1302	31	19	3
9690		LEAR	11	14	0340	S17	W37	11	11.3		BGD	FKI	650	29	21	3
9690		KAND	11	14	0935	S17	W40	11	11.3			FKC		18	20	2
9690		RAMY	11	14	1258	S17	W41	11	11.4		BGD	FKC	1020	48	22	3
9690		HOLL	11	14	1525	S18	W44	11	11.3		BG	FKI	700	67	26	4
9690	30824	MWIL	11	14	1600	S17	W43	11	11.4	5	(BG)					
9690		VORO	11	14	2303	S17	W47	11	11.4			EKI	1336	25	18	3
9690		LEAR	11	15	0015	S17	W48	11	11.4		BG	FKI	720	36	22	3
9690		SVTO	11	15	1048	S18	W54	11	11.3		BG	FKI	760	21	23	3
9690		RAMY	11	15	1311	S17	W54	11	11.4		BGD	FKI	720	29	21	3
9690	30824	MWIL	11	15	1530	S17	W55	11	11.5	4	(BG)					
9690		VORO	11	15	2330	S18	W61	11	11.3			EKI	1097	15	16	3
9690		LEAR	11	16	0015	S17	W61	11	11.4		BG	FKI	500	17	19	3
9690		SVTO	11	16	0844	S17	W64	11	11.5		B	FKO	460	9	19	3
9690		RAMY	11	16	1312	S17	W69	11	11.3		BGD	FKO	640	18	22	3
9690	30824	MWIL	11	16	1545	S17	W68	11	11.5	5	(B )					
9690		HOLL	11	16	1640	S17	W75	11	11.0		BGD	DKI	450	6	8	3
9690		LEAR	11	17	0144	S17	W73	11	11.5		BG	EKO	410	5	11	2
9690		SVTO	11	17	0950	S19	W72	11	11.9		A	HSX	120	6	3	3
9690		RAMY	11	17	1217	S18	W82	11	11.3		A	HAX	120	1	3	3
9690	30824	MWIL	11	17	1545	S17	W75	11	11.9	4	(AF)					
9690		HOLL	11	17	1640	S17	W86	11	11.1		A	HSX	120	1	2	3
9690		VORO	11	17	2340	S17	W81	11	11.8			DSO	494	2	13	3
9690		LEAR	11	18	0040	S17	W90	11	11.2		A	HAX	100	1	2	2
9691		RAMY	11	06	1322	N08	E86	11	13.0		A	HSX	60	1	4	2

S U N S P O T G R O U P S  
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NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9691	30825	MWIL	11	06	1530	N07	E80	11	12.6	4	AP					
9691		HOLL	11	06	1955	N08	E79	11	12.7		A	HAX	120	1	2	2
9691		VORO	11	06	2257	N07	E77	11	12.7			HAX	94	1	2	2
9691		LEAR	11	07	0005	N07	E76	11	12.7		A	HAX	90	1	2	2
9691		SVTO	11	07	0845	N08	E71	11	12.7		A	HAX	80	1	3	2
9691		KAND	11	07	0950	N07	E73	11	12.9			HS		1	3	3
9691		HOLL	11	07	1510	N07	E68	11	12.7		A	HSX	50	1	2	4
9691	30825	MWIL	11	07	1515	N07	E67	11	12.6	5	(AP)					
9691		LEAR	11	08	0025	N07	E62	11	12.7		A	HAX	120	1	2	2
9691		VORO	11	08	0108	N08	E62	11	12.7			HAX	124	1	2	3
9691		SVTO	11	08	0905	N08	E58	11	12.7		A	HSX	90	1	2	3
9691		KAND	11	08	1330	N08	E57	11	12.8			HA		2	2	3
9691		HOLL	11	08	1448	N06	E53	11	12.6		A	HSX	70	1	1	3
9691	30825	MWIL	11	08	1600	N07	E53	11	12.6	5	AP					
9691		VORO	11	08	2314	N08	E50	11	12.7			HSX	138	1		3
9691		SVTO	11	09	0715	N07	E45	11	12.7		A	HSX	100	1	2	3
9691		KAND	11	09	0735	N09	E47	11	12.8			HS		1	2	4
9691	30825	MWIL	11	09	1600	N07	E40	11	12.7	4	(AP)					
9691		VORO	11	09	2301	N08	E36	11	12.6			HSX	160	1		3
9691		LEAR	11	10	0100	N08	E37	11	12.8		B	DSO	110	3	5	3
9691		RAMY	11	10	1318	N07	E28	11	12.6		A	HSX	110	1	2	4
9691	30825	MWIL	11	10	1530	N07	E26	11	12.6	4	AP					
9691		VORO	11	10	2346	N07	E22	11	12.6			HSX	145	1		3
9691		LEAR	11	11	0035	N09	E23	11	12.7		B	CSO	80	2	6	2
9691		SVTO	11	11	0748	N08	E18	11	12.7		A	HSX	100	1	2	3
9691		RAMY	11	11	1323	N08	E15	11	12.7		A	HSX	100	1	2	3
9691		HOLL	11	11	1555	N07	E13	11	12.6		A	HSX	100	1	2	3
9691		VORO	11	11	2308	N08	E10	11	12.7			HSX	128	1		3
9691		LEAR	11	12	0010	N07	E09	11	12.7		A	HSX	110	1	2	3
9691		KAND	11	12	0830	N08	E04	11	12.6			HS		1	2	5
9691		RAMY	11	12	1352	N09	E01	11	12.6		A	HSX	100	1	2	3
9691		HOLL	11	12	1500	N08	E01	11	12.7		A	HSX	100	2	2	3
9691	30825	MWIL	11	12	1600	N08	E00	11	12.7	5	(AP)					
9691		VORO	11	12	2312	N08	W04	11	12.7			HSX	114	1		3
9691		LEAR	11	13	0055	N08	W05	11	12.7		A	HAX	100	1	2	2
9691		KAND	11	13	0825	N08	W08	11	12.7			HS		2	2	2
9691		SVTO	11	13	1150	N08	W11	11	12.7		A	HSX	80	1	2	2
9691		RAMY	11	13	1215	N09	W11	11	12.7		A	HSX	80	1	1	4
9691	30825	MWIL	11	13	1500	N08	W13	11	12.6	5	(AP)					
9691		HOLL	11	13	1911	N08	W15	11	12.7		A	HSX	60	1	2	2
9691		VORO	11	13	2301	N09	W16	11	12.7			HAX	124	1		3
9691		LEAR	11	14	0340	N08	W19	11	12.7		A	HSX	40	1	1	3
9691		KAND	11	14	0935	N10	W19	11	13.0			CSO		2	9	2
9691		RAMY	11	14	1258	N09	W25	11	12.7		A	HSX	90	1	2	3
9691		HOLL	11	14	1525	N09	W26	11	12.7		A	HSX	40	1	1	4
9691	30825	MWIL	11	14	1600	N09	W25	11	12.8	5	(AP)					
9691		VORO	11	14	2303	N09	W29	11	12.8			HAX	129	1		3
9691		LEAR	11	15	0015	N09	W31	11	12.7		A	HAX	90	2	2	3
9691		SVTO	11	15	1048	N08	W36	11	12.7		B	CSO	70	3	4	3
9691		RAMY	11	15	1311	N09	W38	11	12.7		B	CSO	50	2	3	3
9691	30825	MWIL	11	15	1530	N09	W38	11	12.8	5	(AP)					
9691		VORO	11	15	2330	N09	W43	11	12.7			HAX	62	1		3
9691		LEAR	11	16	0015	N09	W44	11	12.7		A	HAX	60	2	3	3
9691		SVTO	11	16	0844	N09	W48	11	12.8		B	CSO	60	3	4	3
9691		RAMY	11	16	1312	N09	W51	11	12.7		B	CSO	60	2	1	3
9691	30825	MWIL	11	16	1545	N09	W52	11	12.7	5	(AP)					
9691		HOLL	11	16	1640	N08	W51	11	12.9		B	CSO	30	3	2	3
9691		VORO	11	16	2354	N08	W59	11	12.6			HAX	60	1		3
9691		LEAR	11	17	0144	N09	W58	11	12.7		A	HAX	80	2	2	2
9691		SVTO	11	17	0950	N08	W62	11	12.8		A	HSX	80	1	2	3
9691		RAMY	11	17	1217	N09	W65	11	12.6		A	HSX	60	1	2	3
9691	30825	MWIL	11	17	1545	N09	W65	11	12.8	4	(AP)					
9691		HOLL	11	17	1640	N09	W67	11	12.7		A	HSX	50	1	2	3
9691		VORO	11	17	2340	N09	W69	11	12.8			HAX	45	1		3
9691		LEAR	11	18	0040	N09	W70	11	12.8		A	HSX	80	1	2	2
9691		SVTO	11	18	1025	N07	W79	11	12.5		A	HSX	20	1	1	3
9691		RAMY	11	18	1220	N08	W79	11	12.6		A	HSX	60	1	2	3
9691	30825	MWIL	11	18	1545	N09	W79	11	12.7	4	(AP)					
9691		HOLL	11	18	1630	N09	W80	11	12.7		A	HAX	60	1	1	3



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

111  
Nov 01

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Mo	Day	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9691		VORO	11 18 2307	11	18	N08	W83	11	12.7			HAX	72	1		3
9691		LEAR	11 19 0020	11	19	N10	W82	11	12.8		A	HAX	30	1	2	3
9691A	30830	MWIL	11 08 1600	11	08	N12	E57	11	13.0	3		AP				
9691A	30830	MWIL	11 09 1600	11	09	N12	E45	11	13.0	3	(AP)					
9691A	30830	MWIL	11 10 1530	11	10	N12	E33	11	13.1	3	B					
9700		RAMY	11 13 1215	11	13	S25	W02	11	13.3		A	AXX		2	1	4
9700	30838	MWIL	11 13 1500	11	13	S25	W04	11	13.3	4	(B )					
9700		HOLL	11 13 1911	11	13	S25	W06	11	13.3		B	CSO	10	3	3	2
9700		LEAR	11 14 0340	11	14	S23	W11	11	13.3		B	CSO	10	2	2	3
9700		KAND	11 14 0935	11	14	S24	W15	11	13.2			AX		2	1	2
9700		RAMY	11 14 1258	11	14	S24	W18	11	13.1		A	HRX		2	1	3
9700		HOLL	11 14 1525	11	14	S25	W19	11	13.2		A	AXX	10	1	1	4
9700	30838	MWIL	11 14 1600	11	14	S24	W18	11	13.3	3	(AP)					
9700		LEAR	11 15 0015	11	15	S23	W23	11	13.2		B	BXO	10	2	2	3
9700		RAMY	11 15 1311	11	15	S25	W30	11	13.2		B	BXO		4	1	3
9694		HOLL	11 07 1510	11	07	N14	E83	11	13.9		A	HSX	50	1	2	4
9694	30828	MWIL	11 07 1515	11	07	N14	E82	11	13.8	4	AP					
9694		LEAR	11 08 0025	11	08	N13	E77	11	13.8		A	HAX	60	1	2	2
9694		VORO	11 08 0108	11	08	N14	E79	11	14.0			HSX	98	1		3
9694		SVTO	11 08 0905	11	08	N16	E73	11	13.9		A	HSX	120	1	2	3
9694		KAND	11 08 1330	11	08	N14	E76	11	14.3			HS		1	2	3
9694		HOLL	11 08 1448	11	08	N13	E69	11	13.8		A	HSX	100	1	1	3
9694	30828	MWIL	11 08 1600	11	08	N14	E69	11	13.9	5	AP					
9694		VORO	11 08 2314	11	08	N14	E66	11	13.9			HAX	100	1		3
9694		SVTO	11 09 0715	11	09	N13	E60	11	13.8		A	HSX	70	1	2	3
9694		KAND	11 09 0735	11	09	N15	E64	11	14.2			HA		2	1	4
9694	30828	MWIL	11 09 1600	11	09	N13	E56	11	13.9	4	(AP)					
9694		VORO	11 09 2301	11	09	N14	E53	11	14.0			HAX	116	1		3
9694		LEAR	11 10 0100	11	10	N12	E50	11	13.8		A	HSX	70	1	2	3
9694		RAMY	11 10 1318	11	10	N14	E44	11	13.9		A	HSX	80	1	2	4
9694	30828	MWIL	11 10 1530	11	10	N14	E43	11	13.9	4	AP					
9694		VORO	11 10 2346	11	10	N14	E39	11	13.9			HSX	126	1		3
9694		LEAR	11 11 0035	11	11	N13	E38	11	13.9		A	HSX	80	2	2	2
9694		SVTO	11 11 0748	11	11	N14	E35	11	14.0		A	HSX	50	1	2	3
9694		RAMY	11 11 1323	11	11	N14	E32	11	14.0		A	HSX	70	3	4	3
9694		HOLL	11 11 1555	11	11	N12	E31	11	14.0		A	HSX	70	5	3	3
9694		VORO	11 11 2308	11	11	N14	E25	11	13.8			HSX	110	1		3
9694		LEAR	11 12 0010	11	12	N13	E25	11	13.9		A	HSX	80	1	2	3
9694		KAND	11 12 0830	11	12	N14	E20	11	13.9			HS		1	2	5
9694		RAMY	11 12 1352	11	12	N14	E18	11	13.9		A	HSX	60	1	2	3
9694		HOLL	11 12 1500	11	12	N13	E18	11	14.0		A	HSX	60	2	2	3
9694	30828	MWIL	11 12 1600	11	12	N14	E17	11	13.9	5	(AP)					
9694		VORO	11 12 2312	11	12	N14	E13	11	13.9			HSX	70	1		3
9694		LEAR	11 13 0055	11	13	N13	E12	11	13.9		A	HSX	80	1	1	2
9694		KAND	11 13 0825	11	13	N14	E08	11	13.9			HA		2	2	2
9694		SVTO	11 13 1150	11	13	N15	E06	11	13.9		A	HSX	60	1	2	2
9694		RAMY	11 13 1215	11	13	N14	E06	11	14.0		B	CSO	60	2	2	4
9694	30828	MWIL	11 13 1500	11	13	N14	E04	11	13.9	5	(AP)					
9694		HOLL	11 13 1911	11	13	N14	E02	11	13.9		A	HSX	40	1	1	2
9694		VORO	11 13 2301	11	13	N14	W00	11	13.9			HSX	65	1		3
9694		LEAR	11 14 0340	11	14	N13	W01	11	14.1		A	HSX	30	1	1	3
9694		KAND	11 14 0935	11	14	N16	W05	11	14.0			CSO		2	4	2
9694		RAMY	11 14 1258	11	14	N16	W07	11	14.0		B	CAO	40	3	4	3
9694		HOLL	11 14 1525	11	14	N13	W04	11	14.3		A	HSX	50	1	1	4
9694	30828	MWIL	11 14 1600	11	14	N15	W08	11	14.1	5	(BP)					
9694		VORO	11 14 2303	11	14	N14	W13	11	14.0			HSX	68	1		3
9694		LEAR	11 15 0015	11	15	N14	W14	11	13.9		A	HAX	50	1	2	3
9694		SVTO	11 15 1048	11	15	N14	W21	11	13.9		A	HSX	60	1	2	3
9694		RAMY	11 15 1311	11	15	N14	W22	11	13.9		B	CSO	50	2	2	3
9694	30828	MWIL	11 15 1530	11	15	N14	W23	11	13.9	5	(AP)					
9694		VORO	11 15 2330	11	15	N14	W27	11	13.9			HSX	46	1		3
9694		LEAR	11 16 0015	11	16	N14	W27	11	14.0		A	HSX	50	1	2	3
9694		SVTO	11 16 0844	11	16	N14	W33	11	13.9		B	CSO	40	2	3	3
9694		RAMY	11 16 1312	11	16	N14	W33	11	14.0		B	CSO	50	4	6	3
9694	30828	MWIL	11 16 1545	11	16	N15	W35	11	14.0	5	(AP)					
9694		HOLL	11 16 1640	11	16	N12	W36	11	14.0		B	CSO	50	3	4	3

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9694		LEAR	11	17	0144	N14	W42	11	13.9		B	CAO	40	3	4	2
9694		SVTO	11	17	0950	N14	W47	11	13.8		A	HSX	50	1	1	3
9694		RAMY	11	17	1217	N14	W48	11	13.9		A	HSX	50	1	1	3
9694	30828	MWIL	11	17	1545	N14	W49	11	13.9	4	(AP)					
9694		HOLL	11	17	1640	N14	W50	11	13.9		A	HSX	30	1	2	3
9694		VORO	11	17	2340	N14	W51	11	14.1			HSX	33	1		3
9694		LEAR	11	18	0040	N15	W55	11	13.9		A	HSX	40	1	2	2
9694		SVTO	11	18	1025	N12	W61	11	13.8		A	HSX	20	1	1	3
9694		RAMY	11	18	1220	N12	W61	11	13.9		A	HSX	20	1	2	3
9694	30828	MWIL	11	18	1545	N14	W63	11	13.9	5	(AP)					
9694		HOLL	11	18	1630	N14	W62	11	14.0		A	HAX	40	1	2	3
9694		VORO	11	18	2307	N13	W66	11	14.0			HSX	50	1		3
9694		LEAR	11	19	0020	N15	W66	11	14.0		A	HAX	30	1	2	3
9694		KAND	11	19	0840	N13	W73	11	13.8			HA	1	1	5	
9694		RAMY	11	19	1433	N14	W77	11	13.8		A	HSX	30	1	1	4
9694	30828	MWIL	11	19	1600	N14	W76	11	13.9	4	(AP)					
9694		HOLL	11	19	2045	N14	W78	11	14.0		A	HSX	30	1	1	2
9694		LEAR	11	20	0010	N15	W79	11	14.0		A	HAX	30	1	2	2
9701		LEAR	11	13	0055	S34	E07	11	13.6		B	BXO	10	3	2	2
9701		KAND	11	13	0825	S33	E05	11	13.7			DXO		4	6	2
9701		SVTO	11	13	1150	S32	E06	11	14.0		B	DAO	30	4	4	2
9701		RAMY	11	13	1215	S33	E03	11	13.7		B	DSO	10	6	3	4
9701	30839	MWIL	11	13	1500	S33	W03	11	13.4	4	(B)					
9701		HOLL	11	13	1911	S33	E01	11	13.9		A	AXX	10	1	1	2
9702		RAMY	11	14	1258	N23	W02	11	14.4		B	BXO		3	3	3
9702		HOLL	11	14	1525	N22	W02	11	14.5		B	BXO	10	2	3	4
9702		SVTO	11	15	1048	N26	W13	11	14.4		A	AXX	10	2	1	3
9702		RAMY	11	15	1311	N25	W14	11	14.5		A	AXX		1		3
9702A		RAMY	11	16	1312	N14	W19	11	15.1		A	HRX		1	1	3
9702A		HOLL	11	16	1640	N13	W20	11	15.2		A	AXX	10	3	2	3
9703		LEAR	11	11	0035	N22	E65	11	16.0		A	AXX		1		2
9703		RAMY	11	14	1258	N22	E18	11	15.9		B	BXO		5	3	3
9703		HOLL	11	14	1525	N22	E16	11	15.9		A	AXX	10	2	1	4
9703		LEAR	11	15	0015	N22	E12	11	15.9		B	CSO	30	5	4	3
9703		SVTO	11	15	1048	N24	E05	11	15.8		B	BXO	10	4	4	3
9703		RAMY	11	15	1311	N22	E04	11	15.8		B	CSO	20	6	5	3
9703	30844	MWIL	11	15	1530	N24	E03	11	15.9	4	(B)					
9703		LEAR	11	16	0015	N22	W03	11	15.8		B	CRO	20	4	5	3
9703		SVTO	11	16	0844	N24	W07	11	15.8		B	BXO	10	3	4	3
9703	30844	MWIL	11	16	1545	N23	W10	11	15.9	4	(B)					
9695		LEAR	11	10	0100	N10	E79	11	16.0		A	HSX	100	1	3	3
9695		RAMY	11	10	1318	N12	E73	11	16.0		B	CSO	60	2	3	4
9695	30834	MWIL	11	10	1530	N11	E74	11	16.2	4	AP					
9695		VORO	11	10	2346	N11	E69	11	16.2			HAX	101	1		3
9695		LEAR	11	11	0035	N10	E68	11	16.1		B	CSO	50	2	2	2
9695		SVTO	11	11	0748	N12	E65	11	16.2		B	CAO	90	2	3	3
9695		RAMY	11	11	1323	N12	E62	11	16.2		A	HAX	110	3	2	3
9695		HOLL	11	11	1555	N09	E61	11	16.2		B	CAO	110	2	2	3
9695		VORO	11	11	2308	N11	E56	11	16.2			HAX	87	1		3
9695		LEAR	11	12	0010	N10	E57	11	16.3		B	CAO	130	5	5	3
9695		KAND	11	12	0830	N11	E53	11	16.3			CSO		4	7	5
9695		RAMY	11	12	1352	N11	E49	11	16.3		B	CAO	100	4	4	3
9695		HOLL	11	12	1500	N09	E49	11	16.3		B	CAO	120	6	4	3
9695	30834	MWIL	11	12	1600	N11	E48	11	16.3	5	(AP)					
9695		VORO	11	12	2312	N11	E43	11	16.2			HAX	88	1		3
9695		LEAR	11	13	0055	N10	E43	11	16.3		B	CAO	120	2	3	2
9695		KAND	11	13	0825	N11	E39	11	16.3			CSO		4	5	2
9695		SVTO	11	13	1150	N12	E38	11	16.3		B	CAO	80	3	4	2
9695		RAMY	11	13	1215	N11	E37	11	16.3		B	CAO	100	5	4	4
9695	30834	MWIL	11	13	1500	N11	E34	11	16.2	5	(AP)					
9695		HOLL	11	13	1911	N12	E33	11	16.3		B	CSO	80	4	3	2
9695		VORO	11	13	2301	N11	E31	11	16.3			HAX	75	1		3
9695		LEAR	11	14	0340	N10	E28	11	16.2		A	HSX	70	1	2	3
9695		KAND	11	14	0935	N11	E24	11	16.2			HS		1	2	2

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

113  
Nov 01

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9695		RAMY	11	14	1258	N12	E23	11	16.3		B	CSO	90	3	3	3
9695		HOLL	11	14	1525	N11	E22	11	16.3		A	HSX	70	3	2	4
9695	30834	MWIL	11	14	1600	N11	E21	11	16.2	5	(AP)					
9695		VORO	11	14	2303	N11	E18	11	16.3			HAX	124	1		3
9695		LEAR	11	15	0015	N11	E17	11	16.3		A	HAX	80	2	2	3
9695		SVTO	11	15	1048	N12	E12	11	16.3		A	AXX	10	3	2	3
9695		RAMY	11	15	1311	N11	E10	11	16.3		B	CSO	60	4	3	3
9695	30834	MWIL	11	15	1530	N11	E08	11	16.2	5	(AP)					
9695		VORO	11	15	2330	N12	E04	11	16.3			HAX	56	1		3
9695		LEAR	11	16	0015	N11	E04	11	16.3		A	HSX	100	4	3	3
9695		SVTO	11	16	0844	N12	W02	11	16.2		A	HSX	80	1	3	3
9695		RAMY	11	16	1312	N12	W04	11	16.2		A	HSX	100	1	2	3
9695	30834	MWIL	11	16	1545	N12	W05	11	16.3	5	(AP)					
9695		HOLL	11	16	1640	N11	W05	11	16.3		A	HSX	60	1	2	3
9695		VORO	11	16	2354	N12	W09	11	16.3			HAX	112	1		3
9695		LEAR	11	17	0144	N12	W11	11	16.2		A	HSX	60	1	2	2
9695		SVTO	11	17	0950	N12	W16	11	16.2		A	HSX	60	1	2	3
9695		RAMY	11	17	1217	N12	W17	11	16.2		A	HSX	90	1	2	3
9695	30834	MWIL	11	17	1545	N12	W18	11	16.3	5	(AP)					
9695		HOLL	11	17	1640	N13	W18	11	16.3		A	HSX	80	1	2	3
9695		VORO	11	17	2340	N12	W23	11	16.2			HAX	57	1		3
9695		LEAR	11	18	0040	N12	W23	11	16.3		A	HSX	60	1	2	2
9695		SVTO	11	18	1025	N11	W29	11	16.2		A	HSX	50	1	1	3
9695		RAMY	11	18	1220	N11	W30	11	16.2		A	HSX	40	1	2	3
9695	30834	MWIL	11	18	1545	N12	W32	11	16.2	5	(AP)					
9695		HOLL	11	18	1630	N11	W31	11	16.3		A	HAX	90	2	2	3
9695		VORO	11	18	2307	N12	W36	11	16.2			HSX	112	1		3
9695		LEAR	11	19	0020	N12	W36	11	16.3		A	HSX	60	1	2	3
9695		KAND	11	19	0840	N12	W41	11	16.3			HS		1	2	5
9695		RAMY	11	19	1433	N12	W45	11	16.2		A	HSX	80	1	2	4
9695	30834	MWIL	11	19	1600	N12	W45	11	16.3	5	(AP)					
9695		HOLL	11	19	2045	N13	W47	11	16.3		A	HSX	90	1	2	2
9695		VORO	11	19	2258	N12	W49	11	16.3			HSX	125	1		3
9695		LEAR	11	20	0010	N13	W49	11	16.3		A	HSX	70	1	2	2
9695		RAMY	11	20	1134	N11	W57	11	16.2		A	HSX	20	1	1	3
9695		HOLL	11	20	1535	N12	W58	11	16.3		A	HSX	40	2	2	2
9695	30834	MWIL	11	20	1600	N12	W58	11	16.3	5	(AP)					
9695		VORO	11	20	2258	N12	W61	11	16.4			HSX	88	1		2
9695		LEAR	11	21	0020	N13	W65	11	16.1		A	HAX	40	1	2	2
9695		SVTO	11	21	0900	N10	W70	11	16.1		A	HSX	60	1	2	2
9695		RAMY	11	21	1230	N12	W72	11	16.1		A	HSX	60	1	2	3
9695		HOLL	11	21	1510	N12	W70	11	16.3		A	HSX	60	1	1	3
9695	30834	MWIL	11	21	1600	N12	W72	11	16.2	4	(AP)					
9695		VORO	11	21	2303	N11	W76	11	16.2			HAX	142	1		2
9695		LEAR	11	22	0104	N13	W76	11	16.3		A	HSX	50	1	3	2
9695		SVTO	11	22	0826	N11	W80	11	16.3		A	HSX	60	1	2	3
9695		KAND	11	22	0855	N13	W83	11	16.1			HS		1	2	2
9695		RAMY	11	22	1133	N12	W88	11	15.8		A	HSX	30	1	4	3
9696		LEAR	11	10	0100	S06	E79	11	15.9		A	HSX	60	1	2	3
9696		RAMY	11	10	1318	S05	E74	11	16.1		B	DSO	60	3	6	4
9696	30833	MWIL	11	10	1530	S06	E73	11	16.1	4	AP					
9696		VORO	11	10	2346	S05	E67	11	16.0			CRO	41	2	2	3
9696		LEAR	11	11	0035	S06	E69	11	16.2		B	CRO	30	4	3	2
9696		SVTO	11	11	0748	S04	E66	11	16.2		B	DAO	110	4	5	3
9696		RAMY	11	11	1323	S05	E63	11	16.3		B	CAO	80	9	7	3
9696		HOLL	11	11	1555	S05	E60	11	16.1		B	DAO	50	9	6	3
9696		VORO	11	11	2308	S04	E55	11	16.1			AXX	25	1		3
9696		LEAR	11	12	0010	S05	E56	11	16.2		B	CSO	60	10	6	3
9696		KAND	11	12	0830	S04	E51	11	16.2			DSO		13	6	5
9696		RAMY	11	12	1352	S04	E49	11	16.2		B	DSO	40	11	5	3
9696		HOLL	11	12	1500	S05	E49	11	16.3		B	DAO	60	13	5	3
9696	30833	MWIL	11	12	1600	S04	E48	11	16.2	4	(B )					
9696		VORO	11	12	2312	S03	E43	11	16.2			CRO	60	8	4	3
9696		LEAR	11	13	0055	S05	E43	11	16.2		B	DAO	50	13	5	2
9696		KAND	11	13	0825	S03	E40	11	16.3			CRO		12	6	2
9696		SVTO	11	13	1150	S03	E37	11	16.2		B	DAO	50	10	7	2
9696		RAMY	11	13	1215	S07	E37	11	16.3		B	DSO	40	14	7	4
9696	30833	MWIL	11	13	1500	S04	E35	11	16.2	4	(B )					

114  
Nov 01

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9696		HOLL	11	13	1911	S03	E33	11	16.3		B	CSO	30	3	6	2
9696		LEAR	11	14	0340	S03	E28	11	16.2		B	CSO	10	5	7	3
9696		KAND	11	14	0935	S03	E22	11	16.0			CRO		3	5	2
9696		RAMY	11	14	1258	S04	E24	11	16.3		B	DSO	20	13	8	3
9696		HOLL	11	14	1525	S04	E18	11	16.0		A	AXX	10	2	1	4
9696	30833	MWIL	11	14	1600	S03	E20	11	16.2	3	(B)					
9696		LEAR	11	15	0015	S04	E16	11	16.2		B	CSO	10	4	6	3
9696		SVTO	11	15	1048	S03	E11	11	16.3		B	CAO	30	8	7	3
9696		RAMY	11	15	1311	S05	E09	11	16.2		B	BXO	10	8	7	3
9696	30833	MWIL	11	15	1530	S03	E07	11	16.2	4	(B)					
9696		LEAR	11	16	0015	S04	E04	11	16.3		B	BXO	10	5	4	3
9696	30846	MWIL	11	16	1545	S06	W03	11	16.4	3	(AF)					
9696	30846	MWIL	11	17	1545	S04	W19	11	16.2	4	(BF)					
9708		RAMY	11	16	1312	N01	E10	11	17.3		B	CRO		2	2	3
9708	30847	MWIL	11	16	1545	N01	E09	11	17.3	4	(BP)					
9708		HOLL	11	16	1640	N01	E09	11	17.4		A	AXX	10	3	2	3
9708	30847	MWIL	11	17	1545	N03	W08	11	17.0	4	(B)					
9708		HOLL	11	17	1640	N04	W08	11	17.1		A	AXX	10	3	2	3
9708		LEAR	11	18	0040	N04	W13	11	17.0		B	DSO	20	4	4	2
9708		SVTO	11	18	1025	N02	W18	11	17.1		B	DRO	20	4	4	3
9708		RAMY	11	18	1220	N03	W18	11	17.2		B	DSO	30	7	5	3
9708	30847	MWIL	11	18	1545	N03	W21	11	17.1	4	(B)					
9708		HOLL	11	18	1630	N04	W22	11	17.0		B	DAO	40	8	4	3
9708		VORO	11	18	2307	N03	W25	11	17.1			BXO	50	5	4	3
9708		LEAR	11	19	0020	N04	W25	11	17.1		B	DAO	30	8	6	3
9708		KAND	11	19	0840	N03	W30	11	17.1			BXO		5	7	5
9708		RAMY	11	19	1433	N03	W35	11	17.0		B	DSO	20	4	8	4
9708	30847	MWIL	11	19	1600	N03	W34	11	17.1	4	(B)					
9708		HOLL	11	19	2045	N04	W38	11	17.0		B	BXO	10	4	6	2
9708		LEAR	11	20	0010	N04	W39	11	17.1		B	BXO	20	6	7	2
9708	30847	MWIL	11	20	1600	N03	W46	11	17.2	4	(AF)					
9708		VORO	11	20	2258	N03	W50	11	17.2			AXX	7	1		2
9697		SVTO	11	11	0748	N12	E86	11	17.8		A	HAX	60	1	5	3
9697		RAMY	11	11	1323	N12	E78	11	17.4		A	HSX	120	1	2	3
9697		HOLL	11	11	1555	N10	E80	11	17.7		A	HAX	180	1	2	3
9697		VORO	11	11	2308	N12	E75	11	17.6			HAX	169	1		3
9697		LEAR	11	12	0010	N10	E74	11	17.6		A	HAX	180	1	2	3
9697		KAND	11	12	0830	N11	E70	11	17.6			HA		1	2	5
9697		RAMY	11	12	1352	N10	E66	11	17.5		A	HSX	180	1	4	3
9697		HOLL	11	12	1500	N10	E65	11	17.5		A	HAX	240	3	3	3
9697	30836	MWIL	11	12	1600	N11	E65	11	17.5	5	(AP)					
9697		VORO	11	12	2312	N12	E60	11	17.5			HAX	318	1		3
9697		LEAR	11	13	0055	N10	E59	11	17.5		A	HAX	190	1	3	2
9697		KAND	11	13	0825	N11	E57	11	17.6			HS		1	2	2
9697		SVTO	11	13	1150	N12	E54	11	17.6		A	HSX	180	2	3	2
9697		RAMY	11	13	1215	N11	E53	11	17.5		B	CSO	230	3	3	4
9697	30836	MWIL	11	13	1500	N12	E52	11	17.5	5	(BP)					
9697		HOLL	11	13	1911	N12	E51	11	17.6		B	CSO	190	5	3	2
9697		VORO	11	13	2301	N11	E48	11	17.6			HAX	282	1		3
9697		LEAR	11	14	0340	N12	E46	11	17.6		B	DSO	90	6	4	3
9697		KAND	11	14	0935	N11	E42	11	17.5			CSO		7	8	2
9697		RAMY	11	14	1258	N12	E37	11	17.3		B	DKO	310	21	10	3
9697		HOLL	11	14	1525	N12	E39	11	17.6		B	DHO	250	15	8	4
9697	30836	MWIL	11	14	1600	N13	E39	11	17.6	5	(BP)					
9697		VORO	11	14	2303	N13	E36	11	17.7			DSI	315	9	4	3
9697		LEAR	11	15	0015	N12	E34	11	17.6		BG	DKI	280	26	10	3
9697		SVTO	11	15	1048	N14	E27	11	17.5		BG	EKI	390	20	12	3
9697		RAMY	11	15	1311	N12	E24	11	17.3		B	DKI	320	20	10	3
9697	30845	MWIL	11	15	1530	N10	E19	11	17.1	4	(AF)					
9697	30836	MWIL	11	15	1530	N13	E26	11	17.6	5	(BP)					
9697		VORO	11	15	2330	N13	E22	11	17.6			DSI	429	11	4	3
9697		LEAR	11	16	0015	N12	E19	11	17.4		BG	EKI	340	26	11	3
9697		SVTO	11	16	0844	N14	E14	11	17.4		B	EKO	290	12	12	3
9697		RAMY	11	16	1312	N14	E12	11	17.4		B	DKI	320	26	10	3
9697	30836	MWIL	11	16	1545	N12	E12	11	17.6	6	(BG)					
9697		HOLL	11	16	1640	N11	E11	11	17.5		BG	EKI	220	30	11	3
9697		VORO	11	16	2354	N13	E09	11	17.7			DSI	418	12	4	3

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

115  
Nov 01

NOVEMBER 2001

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
9697		LEAR	11 17 0144	N13	E07	11 17.6		BG	DKI	330	20	6	2
9697		SVTO	11 17 0950	N13	E01	11 17.5		BG	CHI	300	27	12	3
9697		RAMY	11 17 1217	N13	E00	11 17.5		BG	DKO	380	10	9	3
9697	30836	MWIL	11 17 1545	N12	W01	11 17.6	6	(BG)					
9697		HOLL	11 17 1640	N13	W02	11 17.5		BG	DKO	350	21	7	3
9697		LEAR	11 18 0040	N12	W06	11 17.6		BG	DKO	320	13	7	2
9697		SVTO	11 18 1025	N12	W13	11 17.4		BG	DKI	320	11	6	3
9697		RAMY	11 18 1220	N12	W13	11 17.5		BG	DKO	340	16	6	3
9697	30836	MWIL	11 18 1545	N11	W14	11 17.6	6	(BG)					
9697		HOLL	11 18 1630	N11	W15	11 17.5		BG	DKI	340	28	10	3
9697		VORO	11 18 2307	N11	W19	11 17.5			HHX	461	14		3
9697		LEAR	11 19 0020	N12	W18	11 17.6		BG	DKI	310	18	7	3
9697		KAND	11 19 0840	N12	W24	11 17.5			CHO		10	5	5
9697		RAMY	11 19 1433	N12	W27	11 17.6		BG	DKO	320	15	6	4
9697	30836	MWIL	11 19 1600	N11	W27	11 17.6	5	(BG)					
9697		HOLL	11 19 2045	N13	W30	11 17.6		BG	DKO	400	15	6	2
9697		VORO	11 19 2258	N11	W32	11 17.5			HKX	467	10		3
9697		LEAR	11 20 0010	N12	W32	11 17.6		BG	DKI	350	13	7	2
9697		RAMY	11 20 1134	N12	W39	11 17.5		BG	DKO	400	11	6	3
9697		HOLL	11 20 1535	N13	W41	11 17.5		B	CKO	280	7	6	2
9697	30836	MWIL	11 20 1600	N12	W42	11 17.5	5	(BG)					
9697		VORO	11 20 2258	N11	W46	11 17.5			HKX	509	4		2
9697		LEAR	11 21 0020	N13	W47	11 17.5		BG	DKO	450	4	5	2
9697		SVTO	11 21 0900	N11	W53	11 17.4		B	CKO	200	12	6	2
9697		RAMY	11 21 1230	N13	W55	11 17.4		B	DKO	170	3	5	3
9697		HOLL	11 21 1510	N14	W54	11 17.5		B	CHO	270	5	4	3
9697	30836	MWIL	11 21 1600	N11	W56	11 17.4	5	(AP)					
9697		VORO	11 21 2303	N11	W59	11 17.5			HKX	435	2		2
9697		SVTO	11 22 0826	N11	W65	11 17.5		A	HAX	220	1	3	3
9697		KAND	11 22 0855	N12	W67	11 17.3			HH		1	3	2
9697		RAMY	11 22 1133	N12	W67	11 17.4		A	HSX	330	1	4	3
9697		HOLL	11 22 1520	N12	W68	11 17.5		A	HSX	280	1	3	4
9697	30836	MWIL	11 22 1600	N12	W68	11 17.5	5	(AP)					
9697		VORO	11 22 2332	N10	W72	11 17.6			HKX	356	1		2
9697		LEAR	11 23 0010	N12	W74	11 17.4		A	HHX	230	1	3	3
9697		SVTO	11 23 0755	N11	W79	11 17.4		A	HSX	180	1	4	3
9697		KAND	11 23 0755	N12	W79	11 17.4			HS		1	3	2
9697		RAMY	11 23 1220	N11	W83	11 17.3		A	HSX	120	1	6	3
9697		HOLL	11 23 1843	N12	W87	11 17.2		A	HAX	120	1	2	1
9697		LEAR	11 24 0030	N12	W88	11 17.4		A	HKX	90	1	4	3
9698		VORO	11 11 2308	S23	E76	11 17.8			HAX	123	1		3
9698		RAMY	11 12 1352	S24	E68	11 17.8		B	CSO	40	3	4	3
9698		HOLL	11 12 1500	S25	E68	11 17.9		B	CAO	60	6	4	3
9698	30837	MWIL	11 12 1600	S25	E65	11 17.7	4	(B )					
9698		VORO	11 12 2312	S24	E61	11 17.7			HAX	140	2	1	3
9698		LEAR	11 13 0055	S24	E59	11 17.6		B	DAO	90	2	4	2
9698		KAND	11 13 0825	S24	E59	11 17.9			DSO		2	2	2
9698		SVTO	11 13 1150	S23	E57	11 17.9		B	DAO	70	4	8	2
9698		RAMY	11 13 1215	S24	E55	11 17.7		B	DSO	70	4	3	4
9698	30837	MWIL	11 13 1500	S24	E53	11 17.7	4	(B )					
9698		HOLL	11 13 1911	S24	E51	11 17.7		B	CSO	50	2	3	2
9698		VORO	11 13 2301	S23	E48	11 17.6			HAX	84	2	1	3
9698		LEAR	11 14 0340	S25	E45	11 17.6		B	DSO	60	2	2	3
9698		KAND	11 14 0935	S25	E42	11 17.6			CSO		2	2	2
9698		RAMY	11 14 1258	S23	E41	11 17.7		B	DAO	110	2	3	3
9698		HOLL	11 14 1525	S24	E40	11 17.7		B	DSO	50	3	3	4
9698	30837	MWIL	11 14 1600	S24	E39	11 17.7	4	(B )					
9698		VORO	11 14 2303	S23	E35	11 17.6			HAX	88	2	1	3
9698		LEAR	11 15 0015	S24	E34	11 17.6		B	DSO	90	2	3	3
9698		SVTO	11 15 1048	S23	E31	11 17.8		B	CAO	120	6	5	3
9698		RAMY	11 15 1311	S23	E28	11 17.7		B	DAO	50	7	5	3
9698	30837	MWIL	11 15 1530	S24	E26	11 17.6	5	(B )					
9698		VORO	11 15 2330	S24	E22	11 17.7			DSO	107	2	1	3
9698		LEAR	11 16 0015	S24	E22	11 17.7		B	DAO	90	4	5	3
9698		SVTO	11 16 0844	S23	E18	11 17.7		B	DSO	100	2	4	3
9698		RAMY	11 16 1312	S23	E16	11 17.8		B	DAO	110	6	4	3
9698	30837	MWIL	11 16 1545	S23	E13	11 17.6	5	(B )					
9698		HOLL	11 16 1640	S23	E15	11 17.8		B	DSO	100	3	3	3

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9698		VORO	11	16	2354	S24	E09	11	17.7			DSO	126	2	0	3
9698		LEAR	11	17	0144	S24	E08	11	17.7		BG	DAO	120	5	5	2
9698		SVTO	11	17	0950	S24	E06	11	17.9		B	CSO	100	10	5	3
9698		RAMY	11	17	1217	S23	E03	11	17.7		B	DSO	140	8	5	3
9698	30837	MWIL	11	17	1545	S24	E01	11	17.7	5	(BP)					
9698		HOLL	11	17	1640	S23	E01	11	17.8		B	DAO	150	10	4	3
9698		VORO	11	17	2340	S24	W04	11	17.7			DSO	106	2	1	3
9698		LEAR	11	18	0040	S25	W05	11	17.6		B	DSO	110	3	3	2
9698		SVTO	11	18	1025	S26	W08	11	17.8		B	DAO	120	3	5	3
9698		RAMY	11	18	1220	S25	W10	11	17.7		B	DSO	130	4	5	3
9698	30837	MWIL	11	18	1545	S25	W12	11	17.7	5	(BP)					
9698		HOLL	11	18	1630	S26	W12	11	17.7		B	CAO	80	7	3	3
9698		VORO	11	18	2307	S26	W17	11	17.6			HSX	211	6	5	3
9698		LEAR	11	19	0020	S24	W16	11	17.8		B	DAO	130	7	5	3
9698		KAND	11	19	0840	S25	W20	11	17.8			CSO	5	5	5	5
9698		RAMY	11	19	1433	S24	W23	11	17.8		B	DSO	100	8	5	4
9698	30837	MWIL	11	19	1600	S25	W25	11	17.7	5	(BP)					
9698		HOLL	11	19	2045	S25	W27	11	17.8		B	CAO	150	11	5	2
9698		VORO	11	19	2258	S26	W30	11	17.6			HSX	192	6	3	3
9698		LEAR	11	20	0010	S25	W29	11	17.8		B	DAO	150	10	5	2
9698		RAMY	11	20	1134	S26	W35	11	17.8		B	DSO	70	8	8	3
9698		HOLL	11	20	1535	S25	W36	11	17.9		B	DHO	110	5	4	2
9698	30837	MWIL	11	20	1600	S24	W38	11	17.7	5	(BP)					
9698		VORO	11	20	2258	S25	W42	11	17.7			HAX	139	2		2
9698		LEAR	11	21	0020	S23	W44	11	17.6		B	DAO	120	2	3	2
9698		SVTO	11	21	0900	S26	W48	11	17.6		B	CSO	70	2	4	2
9698		RAMY	11	21	1230	S25	W50	11	17.6		A	HSX	140	1	2	3
9698		HOLL	11	21	1510	S24	W49	11	17.8		B	CHO	110	3	3	3
9698	30837	MWIL	11	21	1600	S25	W52	11	17.6	5	(AF)					
9698		VORO	11	21	2303	S25	W56	11	17.6			HAX	158	1		2
9698		LEAR	11	22	0104	S23	W56	11	17.7		A	HSX	100	1	2	2
9698		SVTO	11	22	0826	S25	W61	11	17.6		A	HSX	130	1	2	3
9698		KAND	11	22	0855	S23	W60	11	17.7			HS		1	2	2
9698		RAMY	11	22	1133	S25	W62	11	17.7		A	HSX	90	1	2	3
9698		HOLL	11	22	1520	S25	W63	11	17.7		A	HSX	100	1	2	4
9698	30837	MWIL	11	22	1600	S24	W65	11	17.6	4	(AF)					
9698		VORO	11	22	2332	S25	W69	11	17.6			HAX	132	1		2
9698		LEAR	11	23	0010	S23	W69	11	17.7		A	HSX	110	1	2	3
9698		KAND	11	23	0755	S23	W72	11	17.8			HS		1	2	2
9698		SVTO	11	23	0755	S24	W75	11	17.5		A	HSX	60	1	2	3
9698		RAMY	11	23	1220	S26	W76	11	17.6		A	HSX	60	1	3	3
9698		HOLL	11	23	1843	S25	W79	11	17.6		A	HSX	60	1	2	1
9698		LEAR	11	24	0030	S23	W82	11	17.7		A	HHX	90	1	3	3
9698		SVTO	11	24	0848	S23	W81	11	18.1		A	HSX	30	1	4	3
9705		KAND	11	14	0935	N13	E59	11	18.8			AX		1		2
9705		KAND	11	14	0935	N15	E56	11	18.6			AX		1		2
9705		RAMY	11	14	1258	N14	E55	11	18.7		B	DRO	30	2	7	3
9705	30841	MWIL	11	14	1600	N12	E55	11	18.8	3	(AF)					
9705	30840	MWIL	11	14	1600	N15	E51	11	18.5	3	(AF)					
9705		LEAR	11	15	0015	N13	E50	11	18.8		A	HRX	10	1	1	3
9705		RAMY	11	15	1311	N12	E43	11	18.8		A	AXX		1		3
9705	30841	MWIL	11	15	1530	N13	E42	11	18.8	3	(AF)					
9705	30849	MWIL	11	17	1545	N12	E10	11	18.4	4	(AP)					
9705		HOLL	11	18	1630	N12	W01	11	18.6		B	BXO	20	6	3	3
9705		HOLL	11	19	2045	N15	W16	11	18.6		B	BXO	10	6	3	2
9705		LEAR	11	20	0010	N13	W18	11	18.6		B	BXO	10	4	3	2
9705		RAMY	11	20	1134	N12	W25	11	18.6		A	AXX		1	1	3
9705	30852	MWIL	11	20	1600	N12	W26	11	18.7	4	(AF)					
9711		KAND	11	19	0840	S17	W02	11	19.2			BXO		4	3	5
9711	30851	MWIL	11	19	1600	S17	W06	11	19.2	3	(AF)					
9711		RAMY	11	20	1134	S16	W17	11	19.2		A	HRX	10	1	1	3
9711		HOLL	11	20	1535	S17	W19	11	19.2		A	HRX	10	1	1	2
9711	30851	MWIL	11	20	1600	S16	W19	11	19.2	3	(AF)					
9711		SVTO	11	21	0900	S13	W31	11	19.0		A	HSX	10	1	1	2
9711		HOLL	11	21	1510	S12	W33	11	19.1		A	HSX	20	1	1	3
9711	30851	MWIL	11	21	1600	S13	W36	11	18.9	4	(AF)					
9711		KAND	11	22	0855	S17	W41	11	19.2			AX		2	1	2

S U N S P O T G R O U P S  
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117  
Nov 01

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9711	30851	MWIL	11	22	1600	S17	W45	11	19.2	3	(AF)					
9711		VORO	11	22	2332	S17	W49	11	19.2			AXX	8	1		2
9711		LEAR	11	23	0010	S15	W51	11	19.1		A	AXX		1		3
9711A		KAND	11	19	0840	S25	E04	11	19.7			BXO		2	2	5
9711A	30853	MWIL	11	20	1600	S28	W13	11	19.6	4	(AF)					
9709		RAMY	11	16	1312	N21	E44	11	19.9		B	CRO		2	2	3
9709	30848	MWIL	11	16	1545	N21	E42	11	19.9	4	(B )					
9709		HOLL	11	16	1640	N18	E43	11	20.0		B	BXO	10	3	4	3
9709		LEAR	11	17	0144	N20	E38	11	20.0		B	BXO	10	4	4	2
9709		SVTO	11	17	0950	N21	E33	11	19.9		B	BXO	30	6	6	3
9709		RAMY	11	17	1217	N20	E30	11	19.8		A	AXX	10	3	2	3
9709	30848	MWIL	11	17	1545	N21	E29	11	19.9	4	(B )					
9709		HOLL	11	17	1640	N21	E29	11	19.9		B	BXO	10	6	4	3
9709		LEAR	11	18	0040	N18	E22	11	19.7		B	CSO	10	4	2	2
9709		SVTO	11	18	1025	N21	E18	11	19.8		B	CRO	20	3	6	3
9709		RAMY	11	18	1220	N20	E17	11	19.8		B	CSO	20	4	4	3
9709	30848	MWIL	11	18	1545	N20	E15	11	19.8	4	(B )					
9709		HOLL	11	18	1630	N19	E15	11	19.8		B	BXO	10	3	3	3
9706		RAMY	11	14	1258	N15	E71	11	19.9		B	CRO	10	3	3	3
9706	30842	MWIL	11	14	1600	N15	E70	11	20.0	3	(AF)					
9706		LEAR	11	15	0015	N15	E65	11	19.9		A	AXX		1		3
9704		LEAR	11	14	0340	S18	E79	11	20.2		A	HSX	60	2	2	3
9704		KAND	11	14	0935	S19	E78	11	20.3			HS		1	3	2
9704		RAMY	11	14	1258	S19	E77	11	20.4		A	HAX	200	3	2	3
9704		HOLL	11	14	1525	S18	E75	11	20.3		A	HKX	180	3	2	4
9704	30843	MWIL	11	14	1600	S18	E71	11	20.1	3	(AP)					
9704		VORO	11	14	2303	S18	E65	11	19.9			HAX	280	1		3
9704		LEAR	11	15	0015	S18	E69	11	20.3		A	HKX	330	3	4	3
9704		SVTO	11	15	1048	S17	E63	11	20.2		B	DKO	330	4	6	3
9704		RAMY	11	15	1311	S18	E62	11	20.3		B	CKO	150	7	4	3
9704	30843	MWIL	11	15	1530	S18	E58	11	20.1	4	(D )					
9704		VORO	11	15	2330	S18	E55	11	20.2			HAX	263	1		3
9704		LEAR	11	16	0015	S18	E54	11	20.1		A	HKX	360	4	4	3
9704		SVTO	11	16	0844	S17	E51	11	20.2		B	CKO	380	5	6	3
9704		RAMY	11	16	1312	S16	E48	11	20.2		B	DKO	540	17	7	3
9704	30843	MWIL	11	16	1545	S18	E46	11	20.1	5	(D )					
9704		HOLL	11	16	1640	S20	E42	11	19.9		BG	DKI	450	21	9	3
9704		VORO	11	16	2354	S18	E42	11	20.2			HAX	559	3		3
9704		LEAR	11	17	0144	S18	E41	11	20.2		BG	DKI	420	25	7	2
9704		SVTO	11	17	0950	S16	E37	11	20.2		B	DHC	500	32	8	3
9704		RAMY	11	17	1217	S17	E35	11	20.2		B	EKO	530	19	11	3
9704	30843	MWIL	11	17	1545	S18	E33	11	20.2	5	(D )					
9704		HOLL	11	17	1640	S20	E30	11	20.0		BG	DKI	530	22	8	3
9704		VORO	11	17	2340	S17	E29	11	20.2			DSI	705	19	1	3
9704		LEAR	11	18	0040	S18	E29	11	20.2		BG	DKI	490	13	6	2
9704		SVTO	11	18	1025	S17	E24	11	20.2		BG	DKC	600	22	10	3
9704		RAMY	11	18	1220	S17	E21	11	20.1		BG	DKI	550	27	8	3
9704	30843	MWIL	11	18	1545	S18	E21	11	20.2	5	(D )					
9704		HOLL	11	18	1630	S19	E19	11	20.1		BGD	DKI	600	40	9	3
9704		VORO	11	18	2307	S18	E17	11	20.2			HKX	685	20		3
9704		LEAR	11	19	0020	S18	E15	11	20.1		BGD	DKI	550	26	7	3
9704		KAND	11	19	0840	S18	E11	11	20.2			EKI		22	7	5
9704		RAMY	11	19	1433	S18	E06	11	20.1		BG	DKI	640	35	8	4
9704	30843	MWIL	11	19	1600	S18	E07	11	20.2	5	(D )					
9704		HOLL	11	19	2045	S17	E04	11	20.2		BGD	DKC	640	16	7	2
9704		VORO	11	19	2258	S18	E04	11	20.3			HKX	847	23		3
9704		LEAR	11	20	0010	S18	E02	11	20.1		BGD	DKI	610	32	7	2
9704		RAMY	11	20	1134	S18	W03	11	20.2		BG	DKI	510	32	9	3
9704		HOLL	11	20	1535	S18	W06	11	20.2		BG	DKI	500	26	10	2
9704	30843	MWIL	11	20	1600	S17	W06	11	20.2	5	(D )					
9704		VORO	11	20	2258	S18	W09	11	20.3			HKX	711	23		2
9704		LEAR	11	21	0020	S16	W13	11	20.0		BGD	DKI	610	27	10	2
9704		SVTO	11	21	0900	S18	W15	11	20.2		B	EKC	620	25	12	2
9704		RAMY	11	21	1230	S17	W19	11	20.1		BG	DKI	720	18	10	3
9704		HOLL	11	21	1510	S16	W19	11	20.2		BG	DKI	320	46	9	3

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)  
NOVEMBER 2001

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
9704	30843	MWIL	11 21 1600	S17	W20	11 20.1	5	(D)					
9704		VORO	11 21 2303	S19	W23	11 20.2			HKX	808	18		2
9704		LEAR	11 22 0104	S17	W25	11 20.1			BGD DK1	550	21	9	2
9704		SVTO	11 22 0826	S18	W29	11 20.1			B EAO	580	25	11	3
9704		KAND	11 22 0855	S17	W29	11 20.2			DKO		12	9	2
9704		RAMY	11 22 1133	S18	W35	11 19.8			BG FK1	780	20	16	3
9704		HOLL	11 22 1520	S17	W33	11 20.1			BG FK1	520	27	16	4
9704	30843	MWIL	11 22 1600	S17	W32	11 20.2	5	(D)					
9704		VORO	11 22 2332	S18	W40	11 19.9			HKX	1045	24	10	2
9704		LEAR	11 23 0010	S17	W38	11 20.1			BGD EKC	640	36	11	3
9704		KAND	11 23 0755	S16	W42	11 20.1			DK1		17	10	2
9704		SVTO	11 23 0755	S17	W42	11 20.1			BGD DKO	620	13	9	3
9704		RAMY	11 23 1220	S17	W46	11 20.0			BG DK1	560	28	10	3
9704		HOLL	11 23 1843	S16	W47	11 20.2			BGD EKC	720	26	12	1
9704		LEAR	11 24 0030	S16	W51	11 20.1			BGD EKI	590	28	12	3
9704		SVTO	11 24 0848	S18	W56	11 20.1			B EAI	580	14	14	3
9704		RAMY	11 24 1233	S18	W57	11 20.2			BG DKO	580	14	10	3
9704		HOLL	11 24 1550	S15	W59	11 20.2			BGD DKC	380	17	11	2
9704		VORO	11 24 2320	S18	W65	11 20.0			DK1	765	8	9	2
9704		LEAR	11 25 0025	S16	W62	11 20.3			BGD FK1	580	14	18	2
9704		KAND	11 25 0815	S18	W70	11 20.0			EAO		8	15	1
9704		RAMY	11 25 1314	S18	W69	11 20.3			BG DKO	410	10	6	3
9704		SVTO	11 25 1315	S18	W70	11 20.2			B DAI	340	3	10	3
9704	30843	MWIL	11 25 1600	S18	W71	11 20.3	4	(AP)					
9704		LEAR	11 26 0102	S18	W75	11 20.3			B DAI	400	3	10	3
9704		VORO	11 26 0107	S19	W76	11 20.2			DK1	538	2	2	2
9704		SVTO	11 26 0733	S21	W81	11 20.1			B EAO	300	3	11	3
9704	30843	MWIL	11 26 1600	S18	W85	11 20.2	4	AP					
9704		RAMY	11 26 1631	S20	W85	11 20.2			B CSO	180	2	5	3
9704		HOLL	11 26 2000	S19	W86	11 20.3			A HAX	60	1	2	2
9710		RAMY	11 18 1220	S09	E53	11 22.5			B CSO	10	3	2	3
9710	30850	MWIL	11 18 1545	S11	E50	11 22.4	4	(B)					
9710		HOLL	11 18 1630	S12	E49	11 22.4			B DAO	90	4	2	3
9710		VORO	11 18 2307	S11	E46	11 22.4			CAI	84	5	3	3
9710		LEAR	11 19 0020	S12	E45	11 22.4			B DAO	50	8	5	3
9710		KAND	11 19 0840	S11	E40	11 22.4			CAO		7	7	5
9710		RAMY	11 19 1433	S12	E36	11 22.3			B DSO	30	14	7	4
9710	30850	MWIL	11 19 1600	S11	E36	11 22.4	4	(B)					
9710		HOLL	11 19 2045	S12	E33	11 22.3			B DAO	80	14	6	2
9710		VORO	11 19 2258	S11	E31	11 22.3			CSI	70	7	5	3
9710		LEAR	11 20 0010	S12	E31	11 22.3			B DAO	70	12	7	2
9710		RAMY	11 20 1134	S11	E24	11 22.3			B DAO	100	13	7	3
9710		HOLL	11 20 1535	S11	E22	11 22.3			B DAO	110	11	8	2
9710	30850	MWIL	11 20 1600	S11	E23	11 22.4	5	(B)					
9710		VORO	11 20 2258	S11	E18	11 22.3			DAI	193	16	7	2
9710		LEAR	11 21 0020	S12	E17	11 22.3			B DAO	100	11	8	2
9710		SVTO	11 21 0900	S11	E13	11 22.3			B DSI	80	19	10	2
9710		RAMY	11 21 1230	S11	E10	11 22.3			B DSO	90	20	10	3
9710		HOLL	11 21 1510	S11	E10	11 22.4			B DSO	80	20	10	3
9710	30850	MWIL	11 21 1600	S11	E09	11 22.3	5	(B)					
9710		VORO	11 21 2303	S11	E04	11 22.3			DAI	178	13	8	2
9710		LEAR	11 22 0104	S12	E05	11 22.4			BG EAO	100	20	11	2
9710		SVTO	11 22 0826	S12	W01	11 22.3			B DAO	100	16	10	3
9710		KAND	11 22 0855	S10	E00	11 22.4			DSO		10	10	2
9710		RAMY	11 22 1133	S11	W03	11 22.2			B DSO	90	12	10	3
9710		HOLL	11 22 1520	S11	W04	11 22.3			B EAO	110	13	11	4
9710	30850	MWIL	11 22 1600	S10	W05	11 22.3	4	(B)					
9710		VORO	11 22 2332	S11	W09	11 22.3			CAI	83	12	10	2
9710		LEAR	11 23 0010	S11	W09	11 22.3			B EAO	90	16	12	3
9710		KAND	11 23 0755	S10	W15	11 22.2			CAO		6	11	2
9710		SVTO	11 23 0755	S11	W15	11 22.2			B CSO	60	6	12	3
9710		RAMY	11 23 1220	S10	W16	11 22.3			B CAO	40	12	12	3
9710		HOLL	11 23 1843	S11	W20	11 22.3			B CAO	30	4	12	1
9710		LEAR	11 24 0030	S11	W24	11 22.2			B CAO	50	9	12	3
9710		SVTO	11 24 0848	S11	W33	11 21.9			B CSO	50	5	3	3
9710		RAMY	11 24 1233	S10	W32	11 22.1			B CSO	30	5	6	3
9710		HOLL	11 24 1550	S10	W38	11 21.8			B CAO	30	2	2	2
9710		VORO	11 24 2320	S11	W42	11 21.8			HAX	37	1		2



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

119  
Nov 01

NOVEMBER 2001

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
9710		LEAR	11 25 0025	S10 W37	11 22.2		B	CAO	50	5	11	2
9710		KAND	11 25 0815	S09 W47	11 21.8			HS		1	1	1
9710		RAMY	11 25 1314	S09 W50	11 21.8		B	CSO	10	2	1	3
9710		SVTO	11 25 1315	S09 W49	11 21.9		A	HSX	30	1	1	3
9710	30850	MWIL	11 25 1600	S09 W53	11 21.7	4	(AP)					
9710		LEAR	11 26 0102	S08 W56	11 21.8		B	DSO	30	2	3	3
9710		SVTO	11 26 0733	S12 W59	11 21.9		A	HSX	20	2	1	3
9710	30850	MWIL	11 26 1600	S10 W65	11 21.8	4	(AP)					
9710		RAMY	11 26 1631	S10 W65	11 21.8		A	AXX	10	1	1	3
9710		HOLL	11 26 2000	S08 W67	11 21.8		A	AXX	10	1	1	2
9710		LEAR	11 27 0010	S08 W68	11 21.9		A	HSX	20	1	1	4
9713		HOLL	11 18 1630	N08 E65	11 23.6		A	AXX		1		3
9713		LEAR	11 22 0104	N08 E15	11 23.2		B	DSO	20	4	4	2
9713		SVTO	11 22 0826	N08 E11	11 23.2		B	DAO	40	11	5	3
9713		KAND	11 22 0855	N09 E11	11 23.2			DSO		6	5	2
9713		RAMY	11 22 1133	N08 E08	11 23.1		B	DSO	40	13	5	3
9713		HOLL	11 22 1520	N07 E07	11 23.2		B	DSO	60	11	5	4
9713	30855	MWIL	11 22 1600	N09 E07	11 23.2	4	(BG)					
9713		VORO	11 22 2332	N09 E03	11 23.2			CRI	59	13	4	2
9713		LEAR	11 23 0010	N08 E03	11 23.2		BG	DAO	50	17	7	3
9713		SVTO	11 23 0755	N08 W03	11 23.1		B	DSO	30	4	6	3
9713		KAND	11 23 0755	N09 W01	11 23.2			BXO		5	5	2
9713		RAMY	11 23 1220	N09 W05	11 23.1		B	CSO	20	7	7	3
9713		HOLL	11 23 1843	N09 W08	11 23.2		B	CAO	50	6	7	1
9713		LEAR	11 24 0030	N08 W08	11 23.4		B	ESO	30	9	12	3
9713		SVTO	11 24 0848	N08 W18	11 23.0		B	CSO	20	4	4	3
9713		RAMY	11 24 1233	N09 W21	11 22.9		B	BXO		2	1	3
9713		HOLL	11 24 1550	N08 W22	11 23.0		A	AXX		1	1	2
9713A		KAND	11 25 0815	S10 W21	11 23.8			HA		4	2	1
9713A		SVTO	11 25 1315	S10 W23	11 23.8		B	CSO	20	2	2	3
9713A	30857	MWIL	11 25 1600	S10 W27	11 23.6	3	(AF)					
9713A		LEAR	11 26 0102	S09 W32	11 23.6		A	AXX		1		3
9713A		SVTO	11 26 0733	S13 W32	11 23.9		A	AXX	10	1	1	3
9714		HOLL	11 22 1520	S11 E40	11 25.6		B	DAO	50	4	5	4
9714	30856	MWIL	11 22 1600	S11 E37	11 25.4	3	(B )					
9714		VORO	11 22 2332	S11 E35	11 25.6			BXO	27	3	4	2
9714		LEAR	11 23 0010	S12 E34	11 25.6		B	DSO	30	2	4	3
9714		SVTO	11 23 0755	S11 E29	11 25.5		B	CRO	20	3	3	3
9714		KAND	11 23 0755	S11 E30	11 25.6			CSO		3	4	2
9714		RAMY	11 23 1220	S10 E27	11 25.5		B	CSO	20	8	5	3
9714		HOLL	11 23 1843	S11 E24	11 25.6		B	CSO	20	6	6	1
9714		LEAR	11 24 0030	S12 E20	11 25.5		B	CSO	30	6	5	3
9714		SVTO	11 24 0848	S11 E16	11 25.6		B	CRO	20	2	4	3
9714		RAMY	11 24 1233	S10 E14	11 25.6		B	CSO	20	4	4	3
9714		HOLL	11 24 1550	S11 E11	11 25.5		B	CSO	20	7	6	2
9714		VORO	11 24 2320	S10 E11	11 25.8			BXI	29	4	10	2
9714		LEAR	11 25 0025	S11 E11	11 25.8		B	CRO	20	5	10	2
9714		KAND	11 25 0815	S08 E10	11 26.1			BXO		3	3	1
9714		RAMY	11 25 1314	S08 E06	11 26.0		B	CSO	10	3	3	3
9714		SVTO	11 25 1315	S08 E07	11 26.1		B	BXO	20	4	5	3
9714	30858	MWIL	11 25 1600	S08 E05	11 26.0	3	(B )					
9714		LEAR	11 26 0102	S10 W01	11 26.0		B	DSO	30	6	4	3
9714		SVTO	11 26 0733	S09 W04	11 26.0		BG	CSO	50	8	4	3
9714	30858	MWIL	11 26 1600	S08 W09	11 26.0	4	(B )					
9714		RAMY	11 26 1631	S09 W09	11 26.0		B	CSO	30	6	5	3
9714		HOLL	11 26 2000	S09 W11	11 26.0		B	CAO	40	11	4	2
9714		VORO	11 26 2334	S09 W13	11 26.0			BXO	73	5	4	2
9714		LEAR	11 27 0010	S09 W14	11 25.9		B	DAO	50	13	5	4
9714		SVTO	11 27 0718	S10 W18	11 25.9		B	CSO	40	7	5	3
9714		KAND	11 27 0755	S09 W18	11 26.0			BXO		4	5	4
9714		RAMY	11 27 1222	S10 W21	11 25.9		B	DSO	40	4	6	2
9714		HOLL	11 27 2035	S10 W25	11 26.0		B	DAO	40	6	5	2
9714		VORO	11 27 2328	S09 W27	11 25.9			DSO	90	8	4	2
9714		LEAR	11 28 0010	S09 W28	11 25.9		B	DSO	50	14	7	4
9714		KAND	11 28 0835	S09 W30	11 26.1			CAO		14	7	3
9714		RAMY	11 28 1416	S10 W36	11 25.9		B	DAO	60	7	7	3

120  
Nov 01

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 2001

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
9714	30858	MWIL	11 28 1600	S08	W37	11 25.9	5	(B)					
9714		HOLL	11 28 1705	S08	W37	11 25.9		B	DAO	120	7	8	3
9714		VORO	11 28 2344	S09	W41	11 25.9			DSO	172	10	8	2
9714		LEAR	11 29 0015	S09	W42	11 25.8		B	DAO	100	7	6	1
9714		SVTO	11 29 1412	S09	W48	11 26.0		B	DSO	110	4	8	2
9714		RAMY	11 29 1500	S09	W49	11 25.9		B	DSO	70	7	8	1
9714		HOLL	11 29 1655	S07	W51	11 25.9		B	CSO	70	4	10	3
9714		VORO	11 30 0012	S09	W54	11 25.9			DSO	153	6	7	3
9714		LEAR	11 30 0130	S08	W55	11 25.9		B	DSO	90	4	10	1
9714		SVTO	11 30 0730	S09	W61	11 25.7		B	CSO	100	4	9	3
9714	30858	MWIL	11 30 1715	S08	W65	11 25.8	4	(B)					
9714		LEAR	12 01 0040	S10	W71	11 25.8		B	DAO	150	12	12	3
9714		VORO	12 01 0333	S09	W73	11 25.8			DSO	299	6	11	3
9714		SVTO	12 01 0826	S10	W77	11 25.7		B	CSO	360	7	21	3
9714		RAMY	12 01 1240	S11	W78	11 25.7		B	FAI	270	6	17	4
9714		HOLL	12 01 1524	S10	W80	11 25.7		B	CAO	180	4	7	3
9714	30858	MWIL	12 01 1545	S09	W78	11 25.9	4	(B)					
9714		LEAR	12 02 0010	S09	W82	11 25.9		B	DAO	120	3	4	4
9712		SVTO	11 21 0900	N14	E79	11 27.3		B	CSO	50	5	3	2
9712		RAMY	11 21 1230	N13	E77	11 27.3		B	DSO	60	3	6	3
9712		HOLL	11 21 1510	N12	E76	11 27.3		B	CSO	50	5	8	3
9712	30854	MWIL	11 21 1600	N12	E73	11 27.2	4	(B)					
9712		VORO	11 21 2303	N11	E71	11 27.3			BXI	49	4	2	2
9712		LEAR	11 22 0104	N11	E70	11 27.3		B	DSO	40	4	5	2
9712		SVTO	11 22 0826	N11	E65	11 27.2		B	DSO	80	8	4	3
9712		KAND	11 22 0855	N12	E65	11 27.3			CSO		5	8	2
9712		RAMY	11 22 1133	N12	E63	11 27.2		B	DSO	80	6	6	3
9712		HOLL	11 22 1520	N12	E63	11 27.4		B	DAO	140	8	6	4
9712	30854	MWIL	11 22 1600	N12	E60	11 27.2	4	(B)					
9712		VORO	11 22 2332	N11	E57	11 27.3			CAI	99	7	3	2
9712		LEAR	11 23 0010	N10	E56	11 27.2		B	DAO	70	13	6	3
9712		SVTO	11 23 0755	N11	E51	11 27.2		B	DAO	100	5	5	3
9712		KAND	11 23 0755	N11	E52	11 27.2			CAO		8	4	2
9712		RAMY	11 23 1220	N12	E49	11 27.2		B	DSO	50	17	4	3
9712		HOLL	11 23 1843	N12	E46	11 27.2		B	DAI	160	9	7	1
9712		LEAR	11 24 0030	N11	E42	11 27.2		B	DAO	110	21	7	3
9712		SVTO	11 24 0848	N12	E36	11 27.1		B	DAO	70	10	7	3
9712		RAMY	11 24 1233	N12	E36	11 27.2		B	DAO	100	18	9	3
9712		HOLL	11 24 1550	N10	E35	11 27.3		B	DAI	90	10	6	2
9712		VORO	11 24 2320	N11	E31	11 27.3			HAX	52	2	2	2
9712		LEAR	11 25 0025	N11	E28	11 27.1		B	DAO	110	15	8	2
9712		KAND	11 25 0815	N12	E25	11 27.2			DAO		8	4	1
9712		RAMY	11 25 1314	N13	E19	11 27.0		B	DSO	40	28	9	3
9712		SVTO	11 25 1315	N12	E22	11 27.2		B	DAO	90	11	6	3
9712	30854	MWIL	11 25 1600	N12	E20	11 27.2	4	(B)					
9712		LEAR	11 26 0102	N12	E14	11 27.1		B	DAO	100	18	8	3
9712		VORO	11 26 0107	N12	E16	11 27.2			AXX	82	4	2	2
9712		SVTO	11 26 0733	N12	E12	11 27.2		B	DSI	80	39	10	3
9712	30854	MWIL	11 26 1600	N13	E07	11 27.2	4	(AP)					
9712		RAMY	11 26 1631	N12	E07	11 27.2		B	CSO	60	6	4	3
9712		HOLL	11 26 2000	N12	E05	11 27.2		B	CAO	70	17	6	2
9712		VORO	11 26 2334	N13	E01	11 27.0			HAX	140	12	4	2
9712		LEAR	11 27 0010	N11	E04	11 27.3		B	DAO	100	27	8	4
9712		SVTO	11 27 0718	N11	W02	11 27.1		B	DSO	50	17	8	3
9712		KAND	11 27 0755	N11	W01	11 27.2			DAI		14	7	4
9712		RAMY	11 27 1222	N12	W07	11 27.0		B	DSO	70	9	6	2
9712		HOLL	11 27 2035	N10	W09	11 27.2		B	DAI	130	23	6	2
9712		VORO	11 27 2328	N11	W11	11 27.1			DSO	456	37	2	2
9712		LEAR	11 28 0010	N12	W11	11 27.2		BG	DAO	180	31	7	4
9712		KAND	11 28 0835	N12	W16	11 27.1			BXO		6	6	3
9712		RAMY	11 28 1416	N12	W20	11 27.1		B	DSO	130	6	4	3
9712	30854	MWIL	11 28 1600	N12	W20	11 27.1	4	(B)					
9712		HOLL	11 28 1705	N12	W19	11 27.3		B	DAO	100	17	9	3
9712		VORO	11 28 2344	N11	W25	11 27.1			DSO	153	17	2	2
9712		LEAR	11 29 0015	N12	W24	11 27.2		BG	DAO	50	11	5	1
9712		SVTO	11 29 1412	N12	W33	11 27.1		B	DAO	70	11	6	2
9712		RAMY	11 29 1500	N11	W33	11 27.1		B	DSI	50	24	5	1
9712		HOLL	11 29 1655	N13	W34	11 27.1		B	DAO	80	9	4	3

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

121  
Nov 01

NOVEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9712		VORO	11	30	0012	N11	W38	11	27.1			DSO	85	8	3	3
9712		LEAR	11	30	0130	N12	W40	11	27.0		B	DAO	40	4	4	1
9712		SVTO	11	30	0730	N12	W45	11	26.9		B	CSO	20	3	5	3
9712	30854	MWIL	11	30	1715	N13	W46	11	27.2	4	(AP)					
9712		LEAR	12	01	0040	N12	W53	11	27.1		B	CSO	20	3	4	3
9712	30854	MWIL	12	01	1545	N14	W59	11	27.3	4	(AP)					
9712		LEAR	12	02	0010	N12	W65	11	27.2		A	AXX	10	1	1	4
9712		VORO	12	02	0014	N15	W65	11	27.2			AXX	17	1		3
9712A		SVTO	11	27	0718	S12	E17	11	28.6		A	AXX	10	1	1	3
9712A		KAND	11	27	0755	S12	E16	11	28.5			AX		4		4
9719		HOLL	11	27	2035	N02	E19	11	29.3		A	AXX	10	1	1	2
9719		LEAR	11	28	0010	N04	E17	11	29.3		B	DSO	20	3	3	4
9719		KAND	11	28	0855	N04	E12	11	29.3			BXO	3	3	4	3
9719		RAMY	11	28	1416	N03	E07	11	29.1		A	HSX	10	1		3
9719	30861	MWIL	11	28	1600	N04	E06	11	29.1	3	(AP)					
9719		HOLL	11	28	1705	N02	E06	11	29.2		A	HSX	20	1	1	3
9719		VORO	11	28	2344	N03	E01	11	29.1			AXX	16	3		2
9719		LEAR	11	29	0015	N03	E01	11	29.1		A	HAX	20	1	1	1
9719		SVTO	11	29	1412	N03	W05	11	29.2		B	CSO	30	5	4	2
9719		RAMY	11	29	1500	N03	W06	11	29.2		B	CSO	20	10	7	1
9719		HOLL	11	29	1655	N03	W06	11	29.2		B	CAO	30	8	6	3
9719		VORO	11	30	0012	N03	W08	11	29.4			CSO	80	6	2	3
9719		LEAR	11	30	0130	N03	W11	11	29.2		B	DSO	60	7	7	1
9719		SVTO	11	30	0730	N04	W15	11	29.2		B	DSO	60	6	6	3
9719	30861	MWIL	11	30	1715	N04	W20	11	29.2	4	(BP)					
9719		LEAR	12	01	0040	N04	W25	11	29.2		BG	DAO	60	9	7	3
9719		VORO	12	01	0333	N04	W26	11	29.3			BXO	54	8	5	3
9719		SVTO	12	01	0826	N03	W29	11	29.3		B	DSO	30	5	6	3
9719		RAMY	12	01	1240	N03	W33	11	29.2		B	DSO	50	2	3	4
9719		HOLL	12	01	1524	N03	W34	11	29.2		B	CAO	30	2	3	3
9719	30861	MWIL	12	01	1545	N04	W34	11	29.2	4	(BP)					
9719		LEAR	12	02	0010	N04	W38	11	29.3		BG	DSO	40	6	7	4
9719		VORO	12	02	0014	N02	W38	11	29.3			BXO	33	6	6	3
9719A		LEAR	11	30	0130	N16	W10	11	29.3		B	DSO	30	2	3	1
9725		LEAR	12	02	0010	S11	W32	11	29.7		B	CSO	30	3	3	4
9725		SVTO	12	02	0840	S11	W37	11	29.7		B	DSO	30	3	3	2
9725		RAMY	12	02	1223	S12	W39	11	29.7		B	DSO	20	2	3	4
9725	30870	MWIL	12	02	1530	S10	W42	11	29.6	4	B					
9725		HOLL	12	02	1540	S11	W41	11	29.7		B	BXO	20	3	4	3
9725		VORO	12	02	2342	S11	W47	11	29.5			BXO	25	2	3	3
9725		LEAR	12	03	0100	S11	W46	11	29.7		B	DSO	20	2	4	2
9725		TACH	12	03	0739	S10	W47	11	29.9			BRO	5	3	5	3
9725		SVTO	12	03	0850	S11	W52	11	29.5		B	DSO	40	5	6	2
9725		RAMY	12	03	1228	S10	W52	11	29.7		B	DSO	40	10	6	3
9725		HOLL	12	03	1525	S10	W55	11	29.6		B	CSO	30	6	6	3
9725		LEAR	12	04	0108	S11	W60	11	29.6		B	DSO	80	6	7	2
9725		TACH	12	04	0635	S09	W61	11	29.8			BRO	5	2	7	3
9725		SVTO	12	04	0848	S10	W64	11	29.6		B	BXO	20	6	9	2
9725		LEAR	12	05	0015	S10	W73	11	29.6		B	DSO	50	3	9	4
9715		RAMY	11	23	1220	N07	E85	11	29.9		A	HSX	30	1	3	3
9715		HOLL	11	23	1843	N06	E85	11	30.1		A	HAX	60	1	1	1
9715		LEAR	11	24	0030	N05	E80	11	30.0		A	HSX	90	1	2	3
9715		SVTO	11	24	0848	N06	E75	11	30.0		A	HAX	60	1	3	3
9715		RAMY	11	24	1233	N08	E77	11	30.3		B	CSO	120	5	8	3
9715		HOLL	11	24	1550	N06	E72	11	30.0		B	DAO	150	3	9	2
9715		VORO	11	24	2320	N06	E69	11	30.1			DAI	216	4	3	2
9715		LEAR	11	25	0025	N06	E67	11	30.0		B	EAO	180	10	14	2
9715		KAND	11	25	0815	N06	E63	11	30.0			CAO		4	4	1
9715		RAMY	11	25	1314	N06	E63	11	30.3		B	DSO	300	9	10	3
9715		SVTO	11	25	1315	N07	E64	11	30.3		B	EAO	240	6	11	3
9715	30859	MWIL	11	25	1600	N05	E58	11	30.0	4	(BP)					
9715		LEAR	11	26	0102	N05	E55	11	30.1		B	EAO	240	19	11	3
9715		VORO	11	26	0107	N06	E53	11	30.0			DAI	318	4	2	2
9715		SVTO	11	26	0733	N07	E54	11	30.3		BG	EKI	280	34	14	3

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

NOVEMBER 2001

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
9715	30859	MWIL	11 26 1600	N06	E48	11 30.2	5	(BG)					
9715		RAMY	11 26 1631	N06	E46	11 30.1		B	EKI	490	23	11	3
9715		HOLL	11 26 2000	N04	E46	11 30.3		BG	EKI	480	36	12	2
9715		VORO	11 26 2334	N05	E44	11 30.3			DAI	1010	19	6	2
9715		LEAR	11 27 0010	N05	E44	11 30.3		BG	EKI	430	35	12	4
9715		SVTO	11 27 0718	N06	E39	11 30.2		BG	EKI	600	27	13	3
9715		KAND	11 27 0755	N05	E40	11 30.3			EAC		25	13	4
9715		RAMY	11 27 1222	N05	E36	11 30.2		B	ESI	430	18	11	2
9715		HOLL	11 27 2035	N05	E30	11 30.1		B	EAI	290	32	12	2
9715		VORO	11 27 2328	N05	E30	11 30.2			DKI	989	39	7	2
9715		LEAR	11 28 0010	N04	E30	11 30.2		BG	EKI	500	52	12	4
9715		KAND	11 28 0835	N04	E25	11 30.2			EKC		53	12	3
9715		RAMY	11 28 1416	N05	E22	11 30.2		BG	EKI	740	25	12	3
9715	30859	MWIL	11 28 1600	N05	E21	11 30.2	5	(D )					
9715		HOLL	11 28 1705	N05	E21	11 30.3		BG	EKC	470	37	11	3
9715		VORO	11 28 2344	N06	E16	11 30.2			DKI	1012	42	6	2
9715		LEAR	11 29 0015	N05	E16	11 30.2		BGD	EAC	580	44	14	1
9715		SVTO	11 29 1412	N06	E07	11 30.1		BD	FKC	890	38	16	2
9715		RAMY	11 29 1500	N05	E09	11 30.3		BGD	EKC	840	49	14	1
9715		HOLL	11 29 1655	N04	E07	11 30.2		BD	EKC	1050	67	14	3
9715		VORO	11 30 0012	N04	E04	11 30.3			DKI	894	35	7	3
9715		LEAR	11 30 0130	N04	E02	11 30.2		BGD	EKC	1100	29	11	1
9715		SVTO	11 30 0730	N05	W02	11 30.2		BGD	FKC	950	24	13	3
9715	30859	MWIL	11 30 1715	N04	W06	11 30.3	5	(D )					
9715		LEAR	12 01 0040	N05	W11	11 30.2		BGD	EKC	970	35	13	3
9715		VORO	12 01 0333	N04	W12	11 30.2			DKI	768	25	8	3
9715		SVTO	12 01 0826	N04	W15	11 30.2		BGD	EKC	1030	20	12	3
9715		RAMY	12 01 1240	N05	W17	11 30.2		G	EKC	800	27	11	4
9715		HOLL	12 01 1524	N05	W18	11 30.3		BGD	DKC	800	44	10	3
9715	30859	MWIL	12 01 1545	N04	W18	11 30.3	5	(D )					
9715		LEAR	12 02 0010	N05	W24	11 30.2		BGD	EKC	770	51	13	4
9715		VORO	12 02 0014	N05	W24	11 30.2			DKI	934	20	7	3
9715		SVTO	12 02 0840	N05	W28	11 30.3		BGD	DKC	990	29	9	2
9715		RAMY	12 02 1223	N03	W31	11 30.2		BGD	DKC	760	23	10	4
9715	30859	MWIL	12 02 1530	N04	W32	11 30.2	5	D *					
9715		HOLL	12 02 1540	N04	W33	11 30.2		BGD	DKC	750	75	9	3
9715		VORO	12 02 2342	N05	W37	11 30.2			DKI	927	19	6	2
9715		LEAR	12 03 0100	N04	W37	11 30.3		BGD	DKC	950	33	9	2
9715		TACH	12 03 0739	N05	W36	11 30.6			DAI	1025	12	7	3
9715		SVTO	12 03 0850	N05	W42	11 30.2		B	DKO	610	26	10	2
9715		RAMY	12 03 1228	N05	W44	11 30.2		BG	DKI	610	28	9	3
9715		HOLL	12 03 1525	N04	W45	11 30.3		BG	DKI	660	23	10	3
9715		VORO	12 03 2345	N05	W50	11 30.2			DKI	786	24	7	2
9715		LEAR	12 04 0108	N04	W50	11 30.3		BG	EKI	610	25	11	2
9715		TACH	12 04 0635	N05	W51	11 30.4			CAI	450	16	6	3
9715		SVTO	12 04 0848	N05	W55	11 30.2		B	DKI	560	14	9	2
9715		RAMY	12 04 1237	N05	W57	11 30.3		BG	DKO	520	12	10	4
9715		HOLL	12 04 1530	N04	W58	11 30.3		BG	DHI	480	15	10	2
9715		LEAR	12 05 0015	N04	W64	11 30.2		BG	DKO	450	17	10	4
9715		TACH	12 05 0628	N06	W64	11 30.5			CAO	420	7	9	4
9715		RAMY	12 05 1226	N05	W70	11 30.3		BG	DKO	660	8	10	3
9715	30859	MWIL	12 05 1530	N04	W74	11 30.1	5	(BP)					
9715		HOLL	12 05 1542	N04	W72	11 30.3		BG	DKI	480	6	8	3
9715		VORO	12 05 2338	N03	W78	11 30.1			HKX	656	5		3
9715		LEAR	12 06 0020	N03	W78	11 30.2		A	HKX	240	2	3	3
9715		SVTO	12 06 0732	N03	W82	11 30.2		A	HSX	30	1	5	2
9722		LEAR	12 01 0040	S15	W07	11 30.5		B	CSO	20	4	3	3
9722		SVTO	12 01 0826	S16	W12	11 30.4		B	DRO	20	4	3	3
9722		RAMY	12 01 1240	S16	W13	11 30.5		B	DSO	30	4	4	4
9722		HOLL	12 01 1524	S16	W15	11 30.5		B	DAO	30	4	4	3
9722	30867	MWIL	12 01 1545	S15	W15	11 30.5	4	(B )					
9722		LEAR	12 02 0010	S15	W21	11 30.4		B	DSO	50	5	5	4
9722		VORO	12 02 0014	S16	W21	11 30.4			AXX	27	6	4	3
9722		SVTO	12 02 0840	S15	W25	11 30.5		B	CSO	20	3	4	2

Stations reporting:

HOLL = Holloman

KAND = Kandilli

LEAR = Learmonth

MWIL = Mt. Wilson

PALE = Palehua

RAMY = Ramey

SVTO = San Vito

TACH = Tashkent

VORO = Voroshilov

NOVEMBER 2001

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
01	0647	0651	0716	1	5					2	0645	M1.3	9678
01	0856	0903	0916	2	5	1		1			0855	C2.2	
01	1041	1114U	1132	1	1		1				No flare		
01	1150	1202	1243	3-	5	1	2	1		2	1125	M3.3	9687
01	1355	1402	1429	1	3					4	1351	M1.7	9687
01	1415	1437	1708D	3+	1					1	1351	M1.7	9687
01	1920	1932	1949	1+	3					2	1924		9682
01	1949	1955	2057	2+	3					2	1950	M1.5	9687
02	0730	0815	1000	2	1		1				0742	M1.1	9687
02	1431	1435	1508	2	1					1	1433	C3.1	9687
02	1511	1519	1521	1-	1					1	1511	C2.3	9682
02	1701	1705	1714	1-	3					3	1701	C3.2	9684
02	1937	1943	2015	2	1					1	1938	C2.6	
03	1532	1535	1547	1-	3					2	1537		9684
03	2024	2031	2130	2+	1					1	2029	C3.8	9682
04	0637	0647	0723	1	1		1				0638	C8.4	9682
04	0816	0819	0859	2-	1					1	No flare		
04	0842	0858U	0926	1	1		1				No flare		
04	1029	1032	1038	1-	1					1	No flare		
04	1056	1101	1105	1	1					1	1048	C3.2	9687
04	1117	1120	1137	1-	1					1	1125		9684
04	1348	1353	1428	2-	5		1			5	1344	C5.5	9687
04	1537	1540	1558	1	3					3	1536	C5.1	9687
04	1558	1610	1723	2	5		1			4	1603	X1.0	9684
04	1610	1621	1727	2-	5		1			2	1603	X1.0	9684
04	1806	1812	1845	2	1					1	No flare		
04	1851	1915	1953	1	1					1	1856		9687
05	0740	0755	0838	1	1		1				No flare		
05	0908	0915	0936	1+	1					1	0907	M2.1	9684
05	1136	1147	1232	2-	3		1			1	1130	C7.3	
05	1258	1318	1422	1	1		1				1301	C5.0	
05	1429	1507	1527	2+	1					1	1509	M1.2	
05	1742	1747	1800D	1-	1					1	1744	C8.9	
05	2057	2102	2145	1+	1					1	2103	C8.9	
06	0621	0632	0719	1	1		1				0620	M1.2	
06	0742	0745	0759	1	1					1	0742	C9.1	9687
06	0757	0804	0816	1-	5					2	0803	C6.4	
06	0827	0831	0910	2+	3					2	0829	C9.8	9690
06	0929	0936	0943	2	5	1	1	1		2	0925	C9.0	
06	1155	1203	1302	1	3		1			1	1158	C5.9	
06	1344	1351	1423	1+	5		1			6	1345	M1.2	9687
06	1527	1540	1622	1	1		1			1	1507	M1.1	9690
06	1823	1827	1852D	1+	1					1	1825	C6.6	
06	2100	2107	2315	3+	1					1	2100	C8.2	
07	0930	0932	0952	3	5	1	2	1		2	0927	M2.0	9690
07	1033	1044	1125	2	1					1	1032	C4.1	
07	1144	1159	1248	2+	1					1	1144	C5.0	
07	1258	1328	1425	1	1		1				1309	C6.7	
07	1528	1535	1547	1	3					2	1528	C4.4	9690
07	1805	1808	1821	1	3					2	1805	C5.1	9690
07	1932	1937	2006	1	3					3	1930	M5.7	9690
07	1948	1959	2018	1+	1					1	1930	M5.7	9690
07	2137	2140	2159	1	1					1	2143		9690
07	2152	2158	2230	2	1					1	2153		9690
08	0658	0706	0821	2+	5		1			2	0659	M9.1	9687
08	0749	0754	0803	1-	1					1	0749	C6.1	9690
08	0829	0851	0922	1	1		1				No flare		
08	1012	1018	1022	1	5					2	1016	C7.7	9687
08	1035	1042	1126	2	5		1			2	1036	C9.1	
08	1215	1233	1305	2	5		1			2	1213	M1.3	9690
08	1358	1407	1436	2-	5		1			4	1356	M1.4	

\* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

NOVEMBER 2001

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
08	1443	1459	1525	2-	5					4	1459	M4.2	9690
08	1503	1524	1625	2+	5		1			2	1459	M4.2	9690
08	1900	1902	1930	1+	1					1	1859	C8.8	9687
08	1930	1934	2007	2-	1					1	1933	C5.4	9692
09	0627	0631	0646	1	1					1	0623	M1.0	9690
09	0707	0712	0723	1	1					1	0705	C4.9	
09	0739	0742	0752	1	1					1	0737	C4.8	
09	0842	0851	0902	3-	5	1	2	1		3	0841	M3.3	9690
09	1152	1218U	1239	1	1		1				No flare		
09	1745	1748	1800D	1-	1					1	1747	C3.4	
09	1814	1837	2003	3-	3					2	1823	M1.9	9687
10	0639	0643	0710	1+	1					1	0638	C4.6	9690
10	0733	0735	0749	1-	1					1	No flare		
10	1316	1326	1338	1	1					1	1314	C4.0	9690
10	1807	1814	1822D	1-	1					1	1807	C4.2	
10	1949	1954	2042	2	3					2	1947	M2.3	9690
11	1102	1113	1139	3	5	1	1	1		2	1054	M1.4	9690
11	1239	1326	1503	2	1		1				1303	C3.2	9690
11	1522	1534	1617	2-	3					2	1521	C6.0	9690
11	1732	1737	1751	1-	3					2	1741	C6.9	9690
11	1748	1755	1828	2-	3					3	1741	C6.9	9690
11	1905	1910	1936	1+	1					1	1857	C3.5	9690
12	0752	0756	0910	3	3					2	0752	M1.6	9692
13	0624	0629	0653	2	1					1	0622	M1.5	9690
13	0922	0930	1059	2+	1					1	0919	C6.9	9690
13	1146	1150	1214	2-	1					1	1144	C3.6	9690
13	1656	1703	1739	2	3					2	1655	C2.0	
13	1830	1845	1901	1+	1					1	1838	C7.2	9690
13	1901	1911	2100	3-	1					1	1838	C7.2	9690
14	0720	0730	0746	1+	3		1			1	0718	C3.0	9690
14	0921	0928	0950	2	3		1			2	0919	C5.8	9690
14	1352	1358	1417	1	1					1	1350	C3.0	9690
14	1645	1652	1745	2+	1					1	1644	C2.2	9690
14	1750	1800	1844	2	3					3	1736	C5.4	
18	0916	0924	1136	3	3		1			1	0914	C7.4	9704
18	1108	1158	1312	1	1		1				No flare		
20	1100	1114	1142	1	1		1				1105	C2.2	9704
20	1353	1357	1428	2	1					1	*		
20	1434	1442	1512	1+	5		1			5	1430	C5.1	9704
21	0730	0737	0820	2	1					1	0729	C3.5	
21	0749	0752	0800	1-	1					1	No flare		
21	0828	0836	0851	1	5		1			2	0827	C3.7	9704
21	1102	1111	1137	1+	5					2	1100	C4.4	9704
21	1140	1257	1343	2	1		1				1207	C4.7	9704
21	1750	1755	1805D	1-	1					1	1748	C2.8	9704
21	1805	1818	1836	1+	3					2	1805	C6.3	9704
22	1659	1709	1818	2+	3					5	1700	M1.2	9704
22	2015	2030	2200	3	1					1	2018	M3.8	9698
23	0832	0835	0845	1-	1					1	0828	C6.3	9704
24	1602	1606	1645	2	1					1	1602		9704
24	1706	1714	1745	2	1					1	1718	C3.1	9704
24	1750	1800	1830	2	1					1	1742		9704
25	0925	0927	0939	2	5		2	1		2	0924	C7.6	
25	0948	0959	1037	3	5	1	2	1		2	0945	X1.1	
25	1000	1015	1035	2	1					1	*		

\* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

125  
Nov 01

NOVEMBER 2001

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
25	1117	1120	1120D	3-	5	1	2	1		1	1114	C3.6	
25	1139	1143	1204	3	5		2	1		2	1137	C7.5	
25	1526	1531	1542	1-	1					2	1529	C2.3	9704
25	1543	1547	1625	2-	3					3	1539	C7.8	9704
25	1650	1657	1720	1+	1					1	1648	C2.8	9704
25	1737	1744	1800D	1	1					1	1718	C3.1	9704
25	1800	1812	1853D	2+	1					1	1718	C3.1	9704
25	1853	1900	1922	1+	1					1	1853	C1.9	9704
27	0817	0834	1006	1	1		1				No flare		
27	1021	1031	1031U	1+	1					1	1020	C7.9	
27	1049	1052	1052U	1-	1					1	1048	C8.1	
27	1056	1110	1147	1	3		1			1	1048	C8.1	
27	1112	1130	1240	3	1					1	No flare		
27	1329	1338	1426	1+	5		1			1	1336	C3.5	
27	1544	1548	1623	2-	3					2	1543	C6.9	9715
27	1658	1707	1756	1	1		1				1714	C4.7	
28	0711	0720	0739	1	1		1				*		
28	1455	1456	1517	1	1					1	1453	C3.2	
28	1541	1546	1612	1+	3					3	1538	C7.7	
28	1628	1638	1715	1+	5		1			3	1626	M6.9	9715
28	1712	1714	1719	1-	1					1	1716	C2.3	
29	0950	0953	1002	1-	1					1	0948	C2.7	
29	1006	1020	1146	2-	3		1			1	1012	M5.5	9715
29	1017	1030	1101	3	5	1	2	1		2	1012	M5.5	9715
29	1148	1206	1228	1	1		1				1149	C6.5	
29	1233	1254	1325	1	1		1				1229	C6.0	
29	1403	1408	1440	2	5		2	1		5	1359	C7.6	9715
29	1702	1706	1745	2	1					1	1701	C3.5	9715
29	1802	1807	1841	2-	3					2	1803	C5.6	9715
29	1948	1953	2045D	2+	1					1	1946	C3.7	
29	2045	2047	2115	1+	1					1	2045	C2.7	9715
29	2122	2125	2200	2	1					1	2120	C3.0	
30	0913	0926	1022	2+	1					1	0914	C4.8	9718
30	1411	1417	1433	3	5		1	1		5	1402	M1.5	
30	1826	1831	1851	1	1					1	1837	C2.1	9715
30	1900	1908	1937	2	1					1	1859	C3.1	9715
30	1959	2002	2130	3	1					1	1955	M2.9	

\* = no flare patrol.

OBSERVATORIES REPORTING FOR NOVEMBER 2001

Bedford, Massachusetts, USA	SES	Nerja, Spain	SES
Bern, Switzerland	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Brookline, Massachusetts, USA	SES	Sofia, Bulgaria	SES
Houston, Texas, USA	SES	Sussex, United Kingdom	SES
Marlboro, Massachusetts, USA	SES	Torrington, Connecticut, USA	SES
Milan, Italy	SES	Upice, Czech Republic	SEA

Observations are not necessarily continuous.

126  
Nov 01

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

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks	
Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)		
01	0000 0800	CULG	0000.0E	0520.0	I	S	1	80	180		
		CULG	0000.0E	0800.0D	III	S	1	57X	180		
	LEAR	0036.0	0038.0	V		2	25	180			
	CULG	0037.0	0038.0	III	G	2	57X	260			
	0000 0742	HIRA	0037.0	0037.5	III	B	1	25X	N/A		
		CULG	0438.0	0438.0	III	B	2	57X	180		
		CULG	0450.0	0450.0	III	B	2	57X	180		
		CULG	0511.0	0511.0	III	B	2	57X	260		
		LEAR	0511.0	0511.0	III		2	25	138		
		HIRA	0511.5	0512.0	III	B	1	30	N/A		
		CULG	0520.0	0800.0D	I	S	2	60	160		
		CULG	0530.0	0530.0	III	B	1	100	260		
		SVTO	0539.0	1525.0	CONT		1	25	180		
		IZMI	0648.0E	1009.0D	III	N	1	40	95		
		IZMI	0648.0	1009.0D	I	S,C	2	45	270X		
		0648 1009	0711 1420	0715 1510	ONDR						
	1114 1200	BLEN	0731.8	0745.0	III	GG,RS	3	350	3200		
		SVTO	0752.0	0753.0	III		1	25	180		
		IZMI	0752.6	0753.1	III	GG	2	25	260		
		IZMI	0811.2	0814.1	III	GG	1	30	190		
		IZMI	0840.7	0841.6	III	G	2	45	120		
		IZMI	0909.1	0911.1	III	GG	1	50	190		
		IZMI	0924.0	0924.5	III	G	1	30	240		
		IZMI	0957.8	0958.1	III	G,HARM	2	115	270X		
		IZMI	1114.0E	1200.0D	III	N	1	40	95		
		IZMI	1114.0E	1200.0D	I	S,C	2	90	270X		
		IZMI	1125.5	1125.7	III	G	2	35	270X		
		IZMI	1142.6	1144.3	III	G	2	160	270X		
		BLEN	1212.9	1218.0	DCIM	P	3	660	1450		
		BLEN	1240.9	1242.4	III	GG	3	250	360		
		BLEN	1331.8	1333.7	III	GG,RS,C	3	300	4000X		
		HOLL	1346.0	0000.0	CONT		1	75	180		
		BLEN	1423.1	1505.0X	DCIM	S,C	3	300	4000X		
		SGMR	1442.0	1442.0	III		1	30	50		
		SVTO	1442.0	1442.0	III		1	39U	63U		
		PALE	1652.0	0339.0	CONT		1	25	180		
	2000 2400	2100 2400	CULG	2000.0E	2400.0D	I	S	1	100	170	
			CULG	2000.0E	2400.0D	III	S,C	2	57X	180	
	02	0000 0741	HIRA								
			CULG	0000.0E	0100.0U	I	S	1	100	180	
0000 0800		CULG	0000.0E	0105.0U	III	S,C	2	57X	180		
		CULG	0103.0	0446.0	CONT		3	57X	180		
		CULG	0446.0	0800.0D	CONT		2	57X	180		
0700 1200		0713 1418	SVTO	0540.0	1523.0	CONT		2	63	180	
			IZMI	0700.0E	1200.0D	I	S,C	2	45	270X	
0725 1505		ONDR									
	IZMI	1125.3	1128.2	I	GG,DC	2	200	270			
IZMI	1131.4	1139.3	I	GG,DC	2	160	270				
BLEN	1435.9	1436.2	III	G,RS	2	1450	2050				
PALE	1653.0	0322.0	CONT		1	25	180				
CULG	2000.0E	2400.0D	I	S	1	100	170				
2000 2400	2101 2400	CULG	2000.0E	2400.0D	III	S,C	1	57X	180		
		HIRA									
LEAR	2156.0	0322.0	CONT		1	75	180				
03	0000 0740	HIRA									
		CULG	0000.0E	0109.0	I	S	1	100	170		
	0000 0800	CULG	0000.0E	0800.0D	III	S,C	1	57X	180		
		POTS	0647 E	1515 U	I	C,N	1	120	360		
	0658 1200	0715 1416	IZMI	0658.0E	1200.0D	I	N	2	100	270X	
ONDR											
IZMI	0827.2	0827.3	III	G	2	200	255				



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

127  
Nov 01

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks	
Day (UT)	Start (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)		
03	0730 1500	IZMI	0923.3	0923.4	III	B	2	175	190		
		BLEN	0926.2	0927.6	III	G	2	190	860		
			IZMI	0927.2	0927.8	III	GG	1	120	270X	
			IZMI	0946.2	0946.6	I	GG	2	165	215	
			IZMI	1015.2	1015.3	III	B	2	105	160	
			IZMI	1152.4	1153.3	UNCLF		2	180	200	
			POTS	1237.5	1237.9	DCIM		1	260U	450	
			HOLL	1833.0	1833.0	III		1	25	87	
			PALE	1833.0	1833.0	III		1	25	85	
		2000 2400	CULG								
		2102 2400	HIRA								
			LEAR	2205.0	2400.0	CONT		1	99	180	
	04	0000 0739	HIRA								
			LEAR	0158.0	0158.0	III		1	38	100	
0000 0800		CULG	0158.0	0159.0	III	G	1	57X	90		
		CULG	0241.0	0245.0	III	G	1	57X	90		
		CULG	0350.0	0352.0	III	G	1	120	380		
		CULG	0452.0	0452.0	III	B	1	57X	90		
		CULG	0546.0	0546.0	III	B	1	80	180		
		LEAR	0639.0	0640.0	III		1	25	132		
		CULG	0640.0	0640.0	III	B	1	57X	180		
0650 1200		IZMI	0650.0	1200.0D	I	N	1	110	270X		
0655 1520		POTS	0656 E	1515	I	C,N	1	130	360		
0717 1414		ONDR									
		IZMI	0744.5	0744.6	UNCLF		2	230	270		
		POTS	0746.5	0748.3	DCIM		1	230	500		
		IZMI	0748.5	0749.7	III	G	1	195	270X		
		IZMI	0909.8	0910.3	III	GG	2	130	260		
		POTS	0910.3	0910.8	DCIM		1	320	400		
		IZMI	0911.8	0912.2	III	G	1	50	145		
		POTS	0913.0	0913.1	DCIM		1	300	360		
		POTS	0941.0	0941.1	DCIM		1	310	370		
		POTS	1109.6	1109.8	DCIM		1	280	360		
		IZMI	1129.2	1129.8	III	G	1	180	270X		
		POTS	1132.2	1133.1	DCIM		1	320	400		
		POTS	1201.2	1201.3	DCIM		1	320	360		
		POTS	1207.4	1207.6	III	B	2	140	290		
		POTS	1208.7	1209.0	DCIM		1	280	400		
		POTS	1213.6	1215.8	DCIM		1	320	370		
0730 1500		BLEN	1217.9	1225.9	III	GG	2	180	300		
		POTS	1224.7	1224.8	III	B	1	130	240		
		POTS	1224.7	1224.9	DCIM		1	280	400		
		POTS	1307.6	1307.9	DCIM		1	280	400		
		BLEN	1308.5	1311.0	III	GG	2	260	540		
		POTS	1319.1	1319.4	III	G	1	130	170U		
		BLEN	1347.2	1357.9	III	GG,C	2	560	4000X		
		HOLL	1610.0	1621.0	II		2	29	180	ESS 1329	
		HOLL	1611.0	1715.0	III	N	2	25	180		
		SGMR	1611.0	1628.0	II		2	30	80	ESS 2400	
		HOLL	1612.0	1850.0	IV		1	36	180		
		PALE	1654.0	0337.0	CONT		1	83	180		
		HOLL	1906.0	1907.0	III		1	25	180		
		2000 2400	CULG	2000.0E	2220.0	III	N	1	57X	150	
		CULG	2015.0	2017.0	III	G	2	57X	150		
2103 2400		HIRA									
		CULG	2122.0	2122.0	III	B	2	57X	150		
		CULG	2130.0	2131.0	III	G	2	57X	180		
		LEAR	2155.0	2318.0	III	N	1	25	180		
		CULG	2258.0	2300.0	III	G	2	57X	170		
	HOLL	2258.0	2259.0	III		1	25	150			
	CULG	2313.0	2314.0	III	G	1	57X	180			
	CULG	2327.0	2327.0	III	G	1	57X	90			
	CULG	2354.0	2357.0	III	G	3	57X	180			
	05		LEAR	0031.0	0042.0	III	N	2	25	180	
		0000 0800	CULG	0031.0	0031.0	III	B	1	57X	180	
0000 0415		HIRA	0038.5	0039.0	III	B	1	25X	N/A		
		CULG	0039.0	0042.0	III	G	1	57X	180		

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

NOVEMBER 2001

OBSERVATION		Sta	EVENT		Event Remarks	Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)		Start (UT)	End (UT)			Spectral Class	Lower (MHz)	
05		CULG	0104.0	0106.0	III	G	1	57X 140	
		LEAR	0104.0	0107.0	III		1	25 131	
		CULG	0119.0	0250.0	III	N	1	57X 80	
		LEAR	0119.0	0240.0	III	N	1	25 77	
		CULG	0148.0	0150.0	III	G	3	57X 480	
		LEAR	0148.0	0149.0	V		2	25 180	
		HIRA	0149.0	0149.5	III	B	2	30 N/A	
		CULG	0214.0	0214.0	III	B	1	57X 130	
		LEAR	0409.0	0412.0	III		1	25 180	
		CULG	0410.0	0410.0	III	B	2	57X 420	
		CULG	0412.0	0441.0	III	N	1	57X 100	
		CULG	0520.0	0521.0	III	G	1	57X 90	
		CULG	0558.0	0559.0	III	G	1	57X 80	
0635	0738	HIRA							
		CULG	0648.0	0723.0	III	N	1	57X 100	
0655	1515	POTS	0655	1410	I	S,C,N	2	120 320	
0655	1200	IZMI	0719.5	0721.1	III	G	1	40 150	
		IZMI	0721.9	0722.3	III	G	1	100 190	
		POTS	0735.5	0735.6	III	B	1	270 360	
		IZMI	0830.5	0830.9	III	B	1	40 90	
		IZMI	0836.0	0836.1	III	B	1	55 80	
		IZMI	0906.0U	0955.0U	I	N	1	90 180	
0719	1412	ONDR	0907.4	0910.3		DCIM	GG	2	800X 2000X
0730	1500	BLEN	0907.9	0928.5	II			2	190 2200
		POTS	0910	0936		UNCLF		1	200U 380
		IZMI	0910.0U	0957.0U	III	N	1	45 150	
		IZMI	0912.4	0915.6	III	GG	1	50 270	
		POTS	0917.6	0922.9	III	GG	1	130 370	
		IZMI	0918.4	0931.5	III	S	1	40 270X	
		LEAR	0922.0	0935.0	III	N	1	25 180	
		POTS	0924.5	0927.0	III	G	1	40X 170U	
		IZMI	0933.2	0937.3	III	GG	2	30 220	
		POTS	0933.3	0934.3	III	G	2	40X 220	
		SVTO	0935.0	0935.0	III		1	25U 180U	
		POTS	0945.7	0946.4	III	G	1	120 150	
		POTS	1022.6	1024.8	III	GG	1	130 160	
		IZMI	1027.0	1027.6	III	G	1	40 75	
		POTS	1048.3	1048.5	III	G	1	130 170U	
		IZMI	1050.2	1050.4	III	G	2	90 180	
		POTS	1057.5	1059.9	III	GG	1	120 150	
		IZMI	1059.1	1101.8	III	G	1	50 160	
		POTS	1137.8	1138.3	III	G	1	120 160	
		POTS	1143.3	1143.7		UNCLF		1	40X 60
		IZMI	1145.2	1145.5	III	B	1	40 90	
		POTS	1150.3	1150.4		DCIM		1	260 300
		POTS	1150.7	1150.8		UNCLF		1	40X 50
		POTS	1152.2	1153.8	III	G	2	40X 360	
		IZMI	1152.6	1152.7	III	B	1	35 60	
		IZMI	1153.9	1155.2	III	GG,FS	2	30 270X	
		SGMR	1154.0	1155.0	III		1	30 55	
		SVTO	1154.0	1155.0	III		2	25 180	
		POTS	1154.7	1154.8	III	B	1	120 140	
		POTS	1156.6	1156.9	III	B	2	40X 150	
		POTS	1158.3	1159.4	III	G	1	40X 150	
		IZMI	1158.5	1158.8	III	B	1	35 65	
		POTS	1159.5	1159.8		DCIM		1	200 500
		POTS	1226.2	1229.6	III	G	2	40X 360	
		SVTO	1228.0	1229.0	III		1	25U 180U	
		POTS	1344.3	1344.5	III	B	1	40X 140	
		POTS	1418.7	1419.2		DCIM	RS	1	270 370
		BLEN	1420.5	1441.5	III	GG,RS		2	190 1100
		POTS	1424.2	1424.5	III	G	1	40X 500	
		POTS	1426.5	1428.3	III	G	2	40X 380	
		HOLL	1428.0	1429.0	III		1	25 180	
		SGMR	1428.0	1429.0	III		1	30 55	
		SVTO	1428.0	1429.0	III		1	40 180	
		POTS	1429.7	1429.8	III	B	1	120 210	
		POTS	1458	1509	I	C	1	230 300	
		HOLL	2016.0	2017.0	III		1	25 56	

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

129  
Nov 01

NOVEMBER 2001

OBSERVATION			EVENT					FREQUENCY		Remarks			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)		
05	2000	2400	HOLL	2034.0	2043.0	III		1	25	139			
			CULG	2035.0	2044.0	III	GG	2	57X	170			
			HOLL	2102.0	2330.0	III	N	1	25	83			
	2104	2400	HIRA										
			CULG	2123.0	2124.0	III	G	1	57X	180			
			CULG	2148.0	2158.0	III	G	1	57X	130			
			CULG	2153.0	2154.0	III	G	3	57X	500			
			CULG	2211.0	2211.0	III	B	1	57X	90			
			LEAR	2252.0	2253.0	III		1	25	89			
			CULG	2253.0	2253.0	III	B	1	57X	150			
			LEAR	2354.0	2356.0	III		2	25	180			
			06	0000	0737	HIRA							
LEAR	0027.0	0028.0				III		1	25	83			
CULG	0028.0	0028.0				III	B	1	57X	90			
0000	0800	CULG		0055.0	0055.0	III	B	1	65	180			
		LEAR		0145.0	0147.0	III		1	25	64			
		CULG		0146.0	0147.0	III	G	1	57X	90			
		LEAR		0245.0	0450.0	III	N	1	25	180			
		CULG		0253.0	0257.0	III	G	1	57X	160			
		CULG		0258.0	0300.0	III	G	1	350	1400			
		LEAR		0304.0	0308.0	II		1	40	108	ESS 0593		
		CULG		0306.0	0309.0		UNCLF	1	75	95			
		CULG		0416.0	0416.0	III	B	1	57X	140			
		CULG		0509.0	0636.0	III	N	1	57X	90			
		LEAR		0625.0	0635.0	III		2	25	136			
		SVTO		0632.0	0633.0	III		1	25	67			
		0655		1515	POTS	0700	0722	I	C	1	220	280	
					POTS	0704.8	0705.2	DCIM		1	200U	360	
					IZMI	0706.8	0707.3	III	G	2	175	270X	
0700	1200	POTS		0709.8	0710.3	DCIM		1	340	400			
		POTS		0710.0	0710.3	III	G	1	40X	280			
		IZMI		0712.9	0713.4	III	G	1	40	115			
		LEAR		0713.0	0713.0	III		1	30	94			
		POTS		0714.3	0715.1	DCIM		1	210	500			
		IZMI		0716.3	0717.1	III	G	1	180	270			
		BLEN		0739.5	0750.2	III	GG,RS	3	210	1000			
		POTS		0739.7	0740.4	DCIM		2	200U	700			
		POTS		0741.4	0742.3	DCIM		1	200U	600			
		BLEN		0742.0	0742.4	DCIM	S	2	700	2500			
		IZMI		0742.1	0742.4	III	G	1	185	270			
		IZMI		0743.4	0744.4	III	GG	2	165	270X			
		POTS		0744.3	0744.9	DCIM		1	210	650			
		IZMI		0746.1	0746.9	III	G	2	40	270X			
		POTS		0748.8	0751.0	DCIM		1	200U	330			
		IZMI		0750.9	0753.0	III	GG	2	180	270X			
		POTS		0751	0930	I	C,N	1	120	280			
		ONDR		0830.3	0830.5	DCIM	GG,SP	2	1362	1817			
		0721		1409	ONDR	0830.3	0831.2	DCIM	G	1	2693	4500X	
					IZMI	0911.5	0911.6	III	B	1	45	90	
					POTS	0936.2	0936.5	DCIM		1	260	330	
POTS	0942.7				0942.8	DCIM		1	280	330			
POTS	1018.0				1018.8	DCIM		1	260	500			
POTS	1025.0				1025.3	DCIM		1	210	450			
POTS	1122.5				1122.6	DCIM		1	330	370			
POTS	1132.3				1132.5	III	B	2	40X	220			
SVTO	1134.0				1134.0	III		1	25	145			
IZMI	1134.2				1134.4	III	B	2	25X	250			
POTS	1157				1406	I	C	1	110U	280			
POTS	1223.9				1224.1	DCIM		1	630X	800X			
BLEN	1224.5				1226.2	III	G,C	2	630	4000X			
ONDR	1226.0				1226.1	DCIM	G,W	1	2000X	4500X			
POTS	1237.3				1239.8	DCIM		2	210	500			
POTS	1237.6				1237.8	III	G	1	130	170U			
BLEN	1239.3				1240.5	III	GG	3	150	730			
SVTO	1319.0				1319.0	III		1	25	42			
POTS	1348.4				1348.8	DCIM		1	290	330			
POTS	1351.0				1351.9	DCIM		2	210	750			
0700	1500				BLEN	1353.0	1359.5	III	GG,V	1	270	1000	

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

NOVEMBER 2001

OBSERVATION		Sta	EVENT		Event Remarks	Int (1-3)	FREQUENCY		Remarks		
Start Day (UT)	End (UT)		Start (UT)	End (UT)			Spectral Class	Lower (MHz)		Upper (MHz)	
06		POTS	1354.2	1356.3	DCIM		220	700			
		ONDR	1356.1	1359.3	DCIM	GG	2	800X	2000X		
		ONDR	1357.2	1358.4	DCIM	G	1	2000X	4500X		
		POTS	1446.3	1446.8	III	G	1	200U	320		
		SVTO	1448.0	1448.0	III		1	25	180		
		SVTO	1448.0	1448.0	III		1	128	180		
		POTS	1456	1504	I	C	1	210	300		
		PALE	1654.0	0312.0	CONT		1	25	180		
	2000	2400	CULG								
		LEAR	2154.0	1020.0	CONT		1	25	180		
07	0000	0800	CULG	0105.0	0106.0	III	G	1	180X	480	
			CULG	0110.0	0113.0	III	G	1	180X	520	
			LEAR	0111.0	0112.0	III		2	25	111	
			CULG	0414.0	0414.0	III	B	1	120	340	
			CULG	0434.0	0437.0	III	G	1	75	340	
	0600	0736	HIRA								
			CULG	0647.0	0647.0	III	G	1	57X	150	
			CULG	0650.0	0654.0	III	G	1	300	1000	
	0654	1515	POTS	0704	0725	I	C,N	1	210	350	
	0700	1200	IZMI	0713.7	0714.8	I	GG	1	180	215X	
	0723	1407	ONDR								
			POTS	0733.0	0738.6	UNCLF		1	55	60	
			POTS	0815	0835	I	N	1	120	300	
			POTS	0823.1	0823.3	UNCLF		1	50	70	
			POTS	0843.9	0845.2	III	G	1	120	270	
			IZMI	0846.1	0847.7	III	GG,U	2	95	270X	
			POTS	0856	1515 U	I	N,C	2	120	300	
	0735	1500	BLEN	1035.2	1036.2	DCIM	C	1	2000	4000X	
			IZMI	1142.4	1143.4	I	GG	2	180	190	
			POTS	1313.1	1313.3	III	G	1	200U	350	
			POTS	1314.2	1316.2	III	GG	2	120	600	
			POTS	1317.2	1317.8	III	G	1	200U	350	
			POTS	1359.6	1400.7	III	G	1	130	380	
	2000	2400	CULG	2145.0	2400.0D	I	S	1	80	180	
			LEAR	2153.0	0200.0	CONT		1	70	180	
			CULG	2210.0	2210.0	III	B	1	70	180	
			HOLL	2210.0	2210.0	III		1	25	160	
	2106	2400	HIRA	2210.0	2210.5	III	B	1	80	130	
	08	0000	0800	CULG	0000.0E	0624.0	I	S	1	70	170
		0000	0736	HIRA	0002.0	0002.5	III	B	1	300	730
0650		1200	IZMI	0650.0E	1200.0D	I	S	1	90	270	
			CULG	0700.0	0707.0	III	GG	1	200	500	
			HIRA	0700.0	0703.5	III	G	3	80	500	
0654		1515	POTS	0700.1	0726.4	IV		2	70	400U	
			IZMI	0700.3	0706.2	III	GG	2	120	270X	
			POTS	0701.7	0726.4	II		3	40X	210U	
			CULG	0702.0	0703.0	III	G	3	75	520	
			LEAR	0702.0	0703.0	III		3	71	180	
			SVTO	0702.0	0703.0	III		2	81	180	
			IZMI	0702.2	0703.2	CONT		2	85	270X	
			LEAR	0703.0	0728.0	II		3	25	180	
			SVTO	0703.0	0725.0	II		3	25	180	
			IZMI	0703.8	0721.4	II	HARM	2	30	270X	
			CULG	0704.0	0708.0	II	FN	3	57X	150	
			CULG	0704.0	0710.0	II	SH	3	65	300	
			HIRA	0704.0	0715.0	II		3	60	300	
			CULG	0707.0	0710.0	III	G	2	57X	180	
			CULG	0707.0	0711.0	II	FN	3	57X	70	
			CULG	0707.0	0726.0	II	SH	3	57X	140	
			IZMI	0707.0	0710.3	III	G	2	160	270X	
			IZMI	0717.4	0719.2	III	G,FS	2	130	270X	
			POTS	0726	1513 U	I	C,N	1	50	300	
			IZMI	0727.7	0728.6	III	G	1	40	100	
			CULG	0728.0	0729.0	III	G	1	57X	110	
			POTS	0744.7	0745.0	DCIM		1	620	800X	
0740		1450	BLEN	0746.8	0750.9	III	G,S	2	630	1510	
			POTS	0747.0	0747.2	DCIM		1	620	800X	

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

131  
Nov 01

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
08		POTS	0748.6	0748.7	DCIM		1	620	800X	
		POTS	0759.4	0759.5	DCIM		1	350	800X	
		BLEN	0801.4	0804.8	III	RS	2	620	1150	
		POTS	0802.5	0802.6	DCIM	RS	1	700	800X	
		POTS	0822.7	0822.8	DCIM	RS	1	500	580	
		IZMI	0823.3	0828.8	I	GG	2	95	215	
		POTS	0833.5	0835.7	UNCLF		1	500	600	
		IZMI	0859.0	0859.7	III	GG	2	85	270X	
		POTS	0934.1	0934.9	III	G	1	140	220	
		IZMI	0935.1	0938.2	III	GG	2	120	260	
	0725 1405	ONDR	0935.3	0943.4	DCIM	G	1	800X	2000X	
		POTS	0937.5	0938.7	II		2	40X	400U	
		LEAR	0938.0	0940.0	III		2	25	180	
		SVTO	0938.0	0939.0	III		2	25	180	
		IZMI	0938.3	0940.0	III	GG,C	3	40	270X	
		BLEN	0938.5	0939.5	II	H	2	110X	450	
		BLEN	0939.0	0939.8	DCIM	C,P	2	450	2000	
		IZMI	0940.6	0942.1	I	GG,DC	1	170	270	
		POTS	0946.2	0946.3	DCIM	RS	1	600	700	
		IZMI	1011.7	1012.0	III	G	2	220	275X	
		POTS	1014.6	1018.8	II		3	40X	400U	
		POTS	1014.6	1019.5	IV		2	40X	800X	
		LEAR	1016.0	1019.0	V		2	25	180	
		IZMI	1016.6	1018.3	III	GG,C	3	25X	270X	
		BLEN	1016.8	1018.3	III	GG,S	3	100X	380	
		BLEN	1016.8	1021.8	DCIM	S,P	3	300	4000X	
		IZMI	1017.0	1020.0U	V		2	25X	240U	
		SVTO	1017.0	1020.0	V		2	25	180	
		ONDR	1017.1	1018.4	DCIM	G	1	2000X	4500X	
		ONDR	1017.1	1019.3	DCIM	G	2	800X	2000X	
		IZMI	1019.2	1021.0	III	GG,C	2	90	270X	
		SVTO	1024.0	1024.0	V		2	25	180	
		IZMI	1024.4	1028.6	II		1	65	90	
		SVTO	1026.0	1030.0	II		1	51U	70U	ESS 0255
		IZMI	1026.6	1028.5	III	GG	2	110	270X	
		IZMI	1030.7	1031.4	III	G	2	45	195	
		IZMI	1032.1	1039.1	II		1	40	75	
		POTS	1054.6	1054.7	DCIM		2	470	630	
		POTS	1119.4	1119.6	DCIM		1	470	600	
		POTS	1137.2	1137.5	DCIM		1	570	640	
		POTS	1139.2	1139.3	DCIM	RS	1	570	620	
		POTS	1149.4	1149.6	III	B	1	120	250	
		IZMI	1151.5	1151.8	III	G	1	50	270X	
		POTS	1158.2	1159.2	DCIM	RS	2	300	700	
		POTS	1222.0	1222.7	DCIM		1	480	600	
		BLEN	1224.1	1227.2	III	GG,RS	2	420	620	
		POTS	1224.9	1225.0	DCIM	RS	1	430	520	
		SVTO	1241.0	1243.0	III		1	110U	180U	
		POTS	1241.9	1242.2	DCIM	RS	1	430	600	
		POTS	1330.5	1331.1	DCIM		1	320	430	
		BLEN	1332.8	1350.5	III	GG,U	2	230	1720	
		POTS	1333.2	1333.6	DCIM		1	390	520	
		POTS	1336.1	1336.2	DCIM		1	300	500	
		POTS	1338.6	1338.7	DCIM		1	400	480	
		POTS	1342.9	1344.4	DCIM	RS	2	420	600	
		POTS	1345.7	1347.0	DCIM	RS	2	300	700	
		POTS	1434.0	1434.1	DCIM	RS	1	320	380	
		POTS	1438.8	1439.4	III	G	2	40X	90U	
		POTS	1439.3	1439.6	DCIM	RS	1	300	600	
		POTS	1439.4	1440.5	V		2	40X	80	
		HOLL	1440.0	1442.0	III		1	25	156	
		POTS	1440.3	1441.3	DCIM	RS	1	300	400	
		SVTO	1441.0	1441.0	III		1	25	180	
		BLEN	1441.4	1444.8	III	GG,RS	2	300	770	
		POTS	1442.2	1442.5	DCIM		1	300	500	
		POTS	1456.3	1456.9	DCIM		1	300	700	
		POTS	1458.2	1458.3	DCIM		1	300	400	
		POTS	1505.0	1505.6	DCIM		1	300	450	
		SGMR	1535.0	1543.0	III		1	30	41	

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

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End Day (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
08		PALE	1854.0	1905.0	V		1	25	180	
		HOLL	1858.0	1937.0	III	N	2	25	180	
		SGMR	1901.0	1903.0	V		2	30	80	
		HOLL	1909.0	1917.0	II		1	58	173	ESS 0954
		PALE	1909.0	1913.0	II		2	113	180	ESS 0928
		HOLL	1919.0	2344.0	IV		1	58	180	
	2000 2400	CULG	2004.0	2004.0	III	G	1	57X	140	
		CULG	2024.0	2027.0	III	G	2	57X	180	
		HOLL	2024.0	2025.0	III		1	25	144	
		CULG	2051.0	2136.0	III	N	1	57X	180	
		CULG	2059.0	2200.0	III	G	1	57X	390	
		LEAR	2153.0	0941.0	III	N	1	75	180	
		HOLL	2159.0	2208.0	III		1	60	180	
		PALE	2159.0	2159.0	III		1	84	180	
	2107 2400	HIRA	2159.0	2200.0	III	B	2	80	380	
		CULG	2230.0	2256.0	III	N	1	57X	180	
		HIRA	2230.0	2237.0	III	G	1	N/A	300	
		CULG	2318.0	2325.0	III	G	2	57X	180	
		HOLL	2321.0	2344.0	III	N	1	25	180	
		HIRA	2321.5	2322.0	III	B	2	50	250	
		HIRA	2324.5	2325.0	III	B	1	50	160	
		CULG	2331.0	2338.0	III	G	3	57X	300	
		HIRA	2331.0	2336.0	III	G	3	N/A	500	
		LEAR	2331.0	2335.0	III		3	25	180	
		PALE	2331.0	2335.0	III		1	25	180	
09	0000 0800	CULG	0010.0	0044.0	III	N	1	57X	180	
		CULG	0031.0	0113.0	I	S	1	110	180	
		CULG	0110.0	0111.0	III	G	1	57X	180	
	0000 0735	HIRA	0110.0	0110.5	III	B	1	N/A	310	
		CULG	0121.0	0123.0	III	G	3	57X	180	
		HIRA	0121.0	0123.0	III	G	3	N/A	280	
		LEAR	0121.0	0123.0	V		3	25	180	
		PALE	0121.0	0122.0	III		1	25	180	
		CULG	0125.0	0128.0	III	G	1	340	700	
		CULG	0212.0	0213.0	III	G	1	280	480	
		HIRA	0212.0	0213.0	III	G	2	220	560	
		CULG	0237.0	0246.0	III	GG	2	57X	180	
		HIRA	0237.0	0238.0	III	B	3	N/A	210	
		HIRA	0241.0	0244.5	III	G	2	N/A	300	
		HIRA	0246.5	0247.0	III	B	1	400	600	
		CULG	0304.0	0327.0	III	N	1	57X	180	
		HIRA	0325.5	0327.5	III	G	1	N/A	240	
		CULG	0417.0	0419.0	III	G	1	57X	180	
		CULG	0434.0	0442.0	III	GG	1	57X	180	
		CULG	0500.0	0624.0	I	S	1	110	180	
		CULG	0551.0	0551.0	III	B	1	57X	180	
		CULG	0629.0	0630.0	III	G	1	57X	150	
		HIRA	0629.0	0629.5	III	B	1	N/A	130	
		CULG	0655.0	0659.0	III	G	1	57X	150	
	0702 1200	IZMI	0702.0E	1200.0D	I	S	2	110	270X	
	0655 1510	POTS	0713 E	1507 U	I	C,N	1	130	380	
		POTS	0731.8	0732.1	III	G	1	40X	350	
		CULG	0734.0	0734.0	III	B	1	57X	180	
		IZMI	0734.2	0734.8	III	G	2	35	270X	
		IZMI	0738.6	0738.8	III	B	2	50	270X	
		CULG	0739.0	0739.0	III	B	1	57X	180	
		POTS	0742.7	0743.2	III	G	2	40X	500	
		POTS	0743.2	0743.6	V		2	40X	80	
		CULG	0745.0	0746.0	III	G	2	57X	180	
		SVTO	0745.0	0859.0	III	N	2	25	180	
		IZMI	0745.1	0746.1	III	GG	2	25	270X	
		IZMI	0806.0	0806.5	III	G	1	50	270	
		POTS	0810.9	0813.0	III/V	G	2	40X	360	
		IZMI	0812.8	0816.3	III	GG,C	2	25X	270X	
		LEAR	0813.0	0815.0	III		3	25	180	
		IZMI	0819.7	0820.4	III	G	1	45	90	
	0745 1450	BLEN	0846.0	1450 X	I	DC,C	2	200	4000X	
	0727 1403	ONDR	0852.1	0901.4	DCIM	G,W	1	2146	4500X	

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

133  
Nov 01

NOVEMBER 2001

OBSERVATION			Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks	
Day (UT)	Start (UT)	End (UT)			Sta	Spectral Class		Event Remarks	Lower (MHz)		Upper (MHz)
09			BLEN	0945.0	0951.1	DCIM	C	2	900	4000X	
			POTS	0957.4	0957.5	DCIM		1	330	400	
			IZMI	1010.2	1011.7	III	G	1	180	270X	
			IZMI	1015.4	1015.5	III	B	1	185	270X	
			IZMI	1021.0	1024.0	UNCLF		1	45	130	
			IZMI	1026.4	1029.0U	UNCLF		1	45	140	
			IZMI	1028.1	1029.0	III	G	1	50	70	
			IZMI	1101.8	1102.6	III	G	1	140	270X	
			POTS	1337.3	1337.4	III	B	1	40X	150	
			HOLL	1623.0	1625.0	III		1	107	180	
			HOLL	1822.0	1846.0	III	N	1	25	180	
			SGMR	1824.0	1849.0	III	N	2	30	80	
			HOLL	1832.0	2114.0	IV		1	52	164	
			HOLL	1837.0	1846.0	II		1	54	138	ESS 0473
			HOLL	1954.0	1955.0	III		1	25	130	
	2000	2400	CULG	2106.0	2110.0	III	G	1	57X	180	
			CULG	2125.0	2130.0	III	G	1	57X	180	
			CULG	2144.0	2146.0	III	G	1	57X	180	
	2108	2400	HIRA	2144.0	2145.0	III	B	1	N/A	380	
10			LEAR	0224.0	0225.0	III		1	25	180	
	0000	0734	HIRA	0224.5	0225.0	III	B	2	N/A	200	
	0000	0800	CULG	0225.0	0226.0	III	G	1	57X	180	
			CULG	0314.0	0315.0	III	G	1	57X	90	
			LEAR	0314.0	0315.0	III		1	25	101	
			CULG	0439.0	0440.0	III	G	1	57X	180	
			CULG	0455.0	0456.0	III	G	2	57X	200	
			HIRA	0455.0	0456.0	III	G	2	N/A	190	
			LEAR	0455.0	0500.0	III		2	25	180	
			CULG	0500.0	0500.0	III	B	1	57X	130	
			CULG	0607.0	0610.0	III	G	1	57	150	
			LEAR	0607.0	0610.0	III		1	25	67	
	0650	1200	IZMI	0654.3	0655.2	III	G	2	210	270X	
	0655	1510	POTS	0713 E	1503 U	I	C,N,DC	1	130	370	
			IZMI	0713.1	0713.3	III	B	1	95	185	
			POTS	0729.2	0729.5	III	G	1	210	380	
	0730	1402	ONDR								
			LEAR	0730.0	0730.0	III		1	47	180	
			SVTO	0730.0	0730.0	III		1	74U	180U	
			IZMI	0730.6	0730.8	III	G	2	70	276X	
			CULG	0731.0	0732.0	III	G	1	57X	180	
			IZMI	0731.7	0732.0	III	G	1	80	270	
	0750	1450	BLEN								
			LEAR	0811.0	0813.0	III		1	119	167	
			IZMI	0919.9	0920.5	I	GG	2	165	180	
			POTS	0922.5	0922.8	III	G	1	120	300	
			POTS	0948.0	0949.0	III	G	1	120	160	
			IZMI	0950.5	0951.6	III	G	1	105	160	
			POTS	1229.1	1229.2	III	B	1	40X	300	
			POTS	1229.2	1230.1	V		1	40X	70	
	2000	2400	CULG	2053.0	2053.0	III	B	1	57X	120	
	2109	2400	HIRA	2151.5	2152.0	III	B	1	N/A	110	
			LEAR	2251.0	2252.0	III		1	32	103	
11	0000	0800	CULG	0327.0	0331.0	III	G	1	70	170	
	0000	0733	HIRA	0459.0	0459.5	III	B	1	110	330	
			HIRA	0512.5	0513.0	III	B	1	300	440	
			CULG	0604.0	0604.0	III	B	1	100	200	
			HIRA	0604.0	0604.5	III	B	3	100	370	
			LEAR	0604.0	0604.0	III		1	109	180	
			SVTO	0604.0	0604.0	III		1	108U	180U	
	0655	1510	POTS	0721 E	1456 U	I	C,N	1	130	360	
	0732	1400	ONDR								
	0750	1450	BLEN	0750.0X	1450.0X	I	DC,C	1	140	300	
			POTS	0848.6	0849.0	III	G	1	140	370	
			POTS	0907.5	0907.6	III	B	1	140	300	
	0700	1200	IZMI	0910.0	0910.1	III	B	1	135	270X	
			IZMI	1054.0	1200.0	I	S	2	160	270X	
			POTS	1128.0	1128.9	III	G	1	130	350	

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

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks	
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)		
11		IZMI	1130.5	1132.1	III	GG	2	145X	270X		
		POTS	1433.4	1433.5	III	G	1	200U	370		
		POTS	1441.4	1441.5	III	B	1	200U	370		
	2000	2400	CULG	2252.0	2252.0	III	B	1	57X	90	
			CULG	2301.0	2301.0	III	B	1	80	180	
	2110	2400	HIRA	2301.0	2301.5	III	B	1	120	290	
			CULG	2335.0	2335.0	III	B	1	70	180	
			HIRA	2335.0	2335.5	III	B	1	60	290	
			HIRA	2349.5	2350.5	III	G	1	60	300	
			CULG	2350.0	2350.0	III	G	1	57X	180	
12	0000	0800	CULG	0042.0	0042.0	III	B	1	70	300	
	0000	0732	HIRA	0108.0	0117.0	III	G	1	N/A	420	
			LEAR	0109.0	0115.0	III		2	25	180	
			CULG	0110.0	0116.0	III	GG	2	57X	300	
			HIRA	0144.0	0144.5	III	B	1	110	240	
			CULG	0320.0	0322.0	III	G	1	57X	90	
			CULG	0345.0	0401.0	III	GG	1	57X	180	
			LEAR	0345.0	0352.0	III		1	25	180	
			HIRA	0352.5	0353.5	III	G	1	N/A	260	
			CULG	0440.0	0442.0	III	G	2	57X	300	
			HIRA	0440.0	0441.0	III	B	2	N/A	300	
			LEAR	0440.0	0441.0	III		1	25	180	
	0700	1200	IZMI	0659.4	0659.5	III	B	1	50	270X	
			CULG	0728.0	0728.0	III	B	1	57X	90	
	0734	1358	ONDR								
			IZMI	0814.8	0815.0	III	G	1	195	270X	
	0750	1450	BLEN	1352.9	1353.7	III	G	2	130	370	
			HOLL	1353.0	1353.0	III		1	58	180	
			SVTO	1353.0	1353.0	III		1	60	180	
			BLEN	1437.9	1438.4	III	GG	2	140	400	
			HOLL	1602.0	1602.0	III		1	60	180	
			HOLL	2226.0	2226.0	III		1	56	138	
			LEAR	2226.0	2229.0	III		1	30	146	
	2000	2400	CULG	2226.0	2226.0	III	B	1	57X	150	
	2111	2400	HIRA	2226.0	2226.5	III	B	1	50	130	
		LEAR	2255.0	0057.0	CONT		1	81	180		
		CULG	2305.0	2400.0D	I	S	1	110	160		
13	0000	0800	CULG	0000.0E	0009.0	I	S	1	110	160	
	0000	0732	HIRA	0218.5	0219.0	III	B	1	N/A	160	
			CULG	0258.0	0258.0	III	B	1	57X	180	
			HIRA	0258.0	0258.5	III	B	1	N/A	200	
			LEAR	0258.0	0258.0	III		1	25	180	
			CULG	0313.0	0314.0	III	G	1	80	200	
			LEAR	0313.0	0314.0	III		1	25	180	
			HIRA	0313.5	0314.0	III	B	2	80	140	
			CULG	0725.0	0725.0	III	B	1	57X	80	
	0655	1505	POTS	0729 E	1434 U	I	C,N	1	120	350	
	0700	1200	IZMI	0746.8	0747.8	I	GG	1	160	270X	
			IZMI	0747.6	0747.7	III	B	1	90	130	
			IZMI	0913.8	0913.9	III	B	1	90	150	
			ONDR	0922.1	0923.4	DCIM	GG,SP	2	800X	2000X	
	0800	1450	BLEN	0922.2	0924.1	III	GG,S	2	700	4000X	
	0736	1356	ONDR	0922.4	0924.0	DCIM	G	1	2000X	4500X	
	2000	2400	CULG	2008.0	2008.0	III	B	1	57X	90	
	2112	2400	HIRA								
			LEAR	2151.0	1024.0	III	N	1	78	180	
			CULG	2203.0	2254.0	III	N	1	57X	150	
14	0000	0731	HIRA	0421.5	0422.0	III	B	2	N/A	120	
	0000	0800	CULG	0422.0	0422.0	III	B	2	57X	150	
			CULG	0425.0	0427.0	III	G	1	57X	180	
			CULG	0454.0	0455.0	III	G	1	57X	140	
	0655	1505	POTS	0702 E	1443 U	I	C,N	1	120	360	
	0650	1200	IZMI	0703.0E	1200.0D	I	N	1	180U	270X	
	0738	1354	ONDR								
			IZMI	0841.6	0841.8	III	G	1	40	270	
			IZMI	0915.7	0916.0	I	GG	2	180	230	



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

135  
Nov 01

NOVEMBER 2001

OBSERVATION			EVENT					FREQUENCY		Remarks				
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)			
14	0800	1450	POTS	1247.3	1247.5	DCIM		1	210	400U				
			BLEN	1250.2	1250.4	III	G,V	2	230	780				
	2113	2400	POTS	1252.5	1252.6	UNCLF		1	40X	70				
			HIRA	2150.0	2150.5	III	B	1	130	240				
			LEAR	2151.0	1024.0	CONT		1	38	180				
15	0000	0730	LEAR	0141.0	1024.0	III	N	1	25	180				
			HIRA	0202.0	0204.5	III	G	2	90	300				
	0000	0800	CULG	0202.0	0205.0	III	G	2	57X	280				
			CULG	0209.0	0212.0	III	G	1	57X	180				
				HIRA	0209.0	0209.5	III	B	2	100	200			
				CULG	0230.0	0252.0	III	N	1	57X	180			
				CULG	0405.0	0405.0	III	B	1	57X	90			
				CULG	0419.0	0419.0	III	B	1	57X	180			
				CULG	0425.0	0445.0	I	S	1	110	180			
				CULG	0440.0	0441.0	III	G	1	57X	90			
				CULG	0500.0	0500.0	III	B	1	57X	80			
				CULG	0507.0	0507.0	III	B	1	57X	90			
				CULG	0612.0	0612.0	III	B	1	57X	80			
				CULG	0656.0	0656.0	III	B	1	57X	180			
				HIRA	0656.0	0656.5	III	B	2	90	210			
				CULG	0723.0	0725.0	III	G	1	100	180			
				0654	1500	POTS	0737	1436	E	I	C,N	1	120	390
						CULG	0740.0	0742.0	III	G	1	57X	80	
				0700	1200	IZMI	0806.1	0807.2	III	G,FS	1	40	65	
	IZMI	0841.9	0841.9			III	B	1	180U	270X				
	POTS	1114.7	1115.8			III	G	1	120	360				
				POTS	1119.4	1121.4	III	GG	2	40X	400U			
				IZMI	1120.8	1124.8	III	GG,C	1	25	270X			
				BLEN	1121.4	1125.3	III	S,C,RS	2	180	4000X			
	0741	1352	SVTO	1122.0	1243.0	CONT		1	73	180				
			ONDR	1123.1	1124.4	DCIM	G,W	1	2312	4500X				
				IZMI	1152.7	1153.0	III	G	1	180U	240			
				CULG	2000.0E	2116.0	I	S	1	120	180			
				CULG	2042.0	2212.0	III	N	1	57X	180			
				HIRA	2302.0	2304.5	III	G	1	100	500			
	16	0000	0730	HIRA	0003.0	0004.5	III	G	1	N/A	180			
				CULG	0003.0	0004.0	III	G	1	57X	180			
					HIRA	0320.0	0320.5	III	B	1	N/A	100		
CULG					0340.0	0346.0	III	G	1	57X	180			
0743		1350	ONDR											
0654		1500	POTS	0746	0830	I	C	1	200U	300				
			BLEN	0915.0	1450.0X	I	DC	2	250	420				
0800		1450	POTS	0954.7	0954.8	III	B	1	120	150				
			IZMI	0957.7	0959.8	III	GG	1	110	160				
			POTS	0958.7	1000.0	III	G	1	40X	170U				
			IZMI	1001.7	1003.1	III	GG	2	55	235				
			POTS	1010	1431	U	I	C,N	1	120	380			
			IZMI	1011.4	1111.6	III	B,HARM	1	55X	160				
			IZMI	1013.4	1113.8	III	G	1	120	200				
			IZMI	1020.6	1021.1	III	G	1	100	160				
			IZMI	1023.2	1030.3	I	N	1	220	270X				
			POTS	1143.1	1144.2	III	G	1	40X	150				
			SVTO	1145.0	1147.0	III		1	25	82				
			IZMI	1146.5	1147.2	III	G	1	40	90				
			POTS	1240.9	1243.5	III	GG	1	40X	170U				
			POTS	1245.2	1246.3	III	G	1	40X	160				
			POTS	1249.7	1250.8	III	G	2	40X	360				
0652		1200	SVTO	1252.0	1253.0	III		1	25	180				
			POTS	1314.2	1316.6	III	GG	2	40X	350				
			HOLL	1852.0	1853.0	III		1	63	161				
2115		2400	HIRA	2136.0	2136.0	III	B	1	57X	90				
			CULG	2144.0	2144.0	III	B	1	57X	90				
			LEAR	2204.0	2209.0	III		1	25	108				
17		0000	0729	HIRA										

136  
Nov 01

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

NOVEMBER 2001

OBSERVATION		Sta	EVENT		Event Remarks	Int (1-3)	FREQUENCY		Remarks	
Start Day (UT)	End (UT)		Start (UT)	End (UT)			Spectral Class	Lower (MHz)		Upper (MHz)
17		LEAR	0109.0	0112.0	III		25	57		
	0000 0800	CULG	0204.0	0228.0	I	S	1	120	180	
		CULG	0215.0	0227.0	III	G	1	57X	180	
		LEAR	0219.0	0224.0	III		1	25	180	
		CULG	0432.0	0449.0	I	S	1	110	180	
		LEAR	0438.0	0455.0	CONT		1	100	180	
		CULG	0444.0	0555.0	IV		1	57X	500U	
		CULG	0448.0	0553.0	III	S	2	57X	800	
		LEAR	0450.0	0455.0	II		1	45	145	ESS 0557
		LEAR	0455.0	1025.0	IV		2	25	180	
		LEAR	0500.0	0507.0	II		3	25	55	ESS 0528
		CULG	0553.0	0800.0D	III	S,C	1	57X	160	
		SVTO	0559.0	0937.0	IV		1	25U	180U	
	0658 1200	IZMI	0712.0	1200.0	I	S,C	2	110	270X	
	0654 1500	POTS	0743 E	1433 U	I	C,N	1	120	350	
	0745 1349	ONDR								
	0800 1450	BLEN								
		POTS	0829.6	0830.7	III	G	1	50U	300	
		POTS	0831.1	0831.4	III	B	2	40X	360	
		IZMI	0832.2	0833.8	III	GG	2	45	270X	
		IZMI	0931.1	0931.2	III	B,RS	2	180	215	
		IZMI	0934.2	0934.5	III	G,C	2	40	270X	
		IZMI	0936.6	0938.3	III	GG	2	45	270X	
		IZMI	1037.4	1037.4	III	B	1	95	160	
		IZMI	1056.7	1056.8	III	G	1	55	75	
		POTS	1405.0	1405.6	III	G	1	50U	360	
		PALE	1837.0	2400.0	CONT		1	25	180	
	2000 2400	CULG	2031.0	2031.0	III	B	1	57X	90	
	2116 2400	HIRA								
		LEAR	2150.0	2400.0	III	N	1	25	47	
		LEAR	2228.0	2228.0	III	N	1	25	47	
18	0000 0728	HIRA								
	0000 0800	CULG								
	0800 1450	BLEN								
	0654 1455	POTS	0803	0833	I	C	1	210	300	
		POTS	0852	1420 U	I	C,N	1	110	380	
	0747 1347	ONDR	0916.4	0923.1	DCIM	GG	2	2000X	4500X	
		ONDR	0917.2	0919.3	DCIM	GG	2	1302	2000X	
		POTS	0946.1	0946.3	DCIM		2	400U	700	
	0700 1200	IZMI	1124.0	1126.4	I	N	1	240	270X	
		POTS	1233.4	1233.7	III	G	1	50U	380	
		HOLL	1559.0	2100.0	CONT		1	63	118	
	2000 2400	CULG								
	2117 2400	HIRA								
		LEAR	2150.0	2222.0	III	N	1	25	43	
		LEAR	2222.0	2222.0	III	N	1	25	43	
19		LEAR	0201.0	0204.0	III		1	25	114	
	0000 0728	HIRA	0202.0	0202.5	III	B	1	N/A	140	
	0000 0800	CULG	0202.0	0204.0	III	G	1	57X	140	
	0749 1345	ONDR								
	0654 1455	POTS	0754 E	0920	I	C	1	200U	370	
	0656 1200	IZMI	0759.0	0850.0U	I	N	2	200	270X	
	0800 1450	BLEN	0800.0X	1315.0	I	DC	1	200	420	
		POTS	1140	1430 U	I	C	1	120	300	
	2000 2400	CULG	2034.0	2036.0	III	G	1	57X	180	
		LEAR	2150.0	1027.0	III	N	1	25	43	
	2118 2400	HIRA	2325.5	2326.0	III	B	1	120	280	
		CULG	2326.0	2326.0	III	B	1	130	180	
20	0000 0727	HIRA								
	0000 0800	CULG	0336.0	0537.0	I	S	1	110	180	
		CULG	0358.0	0439.0	III	N	1	57X	150	
	0705 1200	IZMI	0706.0U	1200.0D	I	S	2	100U	270X	
		CULG	0711.0	0800.0D	I	S	1	110	180	
	0751 1344	ONDR								
	0654 1455	POTS	0752 E	0915	I	C	1	120	370	
		LEAR	0753.0	0753.0	III		1	37	97	

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

137  
Nov 01

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
20		SVTO	0753.0	0753.0	III		1	66U	83U	
		IZMI	0753.3	0754.1	III	G	1	50	55	
		CULG	0754.0	0754.0	III	B	1	57X	80	
		SVTO	0758.0	0906.0	CONT		1	75U	180U	
		LEAR	0800.0	1027.0	CONT		1	25	180	
	0800 1450	BLEN	0800.0X	1415.0	I	DC	1	150	300	
		SVTO	0816.0	0816.0	III		1	55U	140U	
		IZMI	1003.7	1004.4	III	G	1	105	160	
		POTS	1030	1415 U	I	C	1	200U	350	
	2000 2400	CULG								
	2119 2400	HIRA								
21	0000 0727	HIRA								
	0000 0800	CULG								
	0655 1200	IZMI	0725.0U	1200.0U	I	N	1	180	270X	
	0655 1455	POTS	0752 E	1011	I	C	1	200	320	
	0753 1342	ONDR								
	0800 1450	BLEN	0800.0X	1450.0X	I	DC	1	150	300	
		POTS	1033	1154	I	C,N	1	200	300	
		POTS	1155	1304	I	C	2	120	350	
		POTS	1210.8	1212.5	III	G	1	40X	170U	
		SVTO	1214.0	1216.0	III		1	52	180	
		SVTO	1256.0	1324.0	CONT		1	25	180	
		POTS	1304	1455 U	I	C,N,DC	2	40X	380	
		HOLL	1355.0	1808.0	IV		1	64	180	
	2000 2400	CULG	2000.0E	2400.0D	III	S	1	57X	120	
	2120 2400	HIRA								
		LEAR	2149.0	1029.0	III	N	1	25	180	
22	0000 0727	HIRA								
	0000 0800	CULG	0000.0E	0800.0D	III	S	1	57X	90	
	0650 1200	IZMI	0650.0	1028.0U	III	N	1	40	95	
		IZMI	0730.4	0736.0	III	GG,FS	1	35	95	
	0700 1455	POTS	0754 E	0834	I	C	1	110U	300	
	0810 1450	BLEN	0800.0X	0814.1	DCIM	P	2	1240	2650	
		IZMI	0829.3	0829.6	III	G	2	40	95	
		POTS	0835.9	0836.1	UNCLF		1	40X	70	
		POTS	0857	1030	I	C	1	200	350	
		ONDR	0949.3	0950.5	DCIM	G	2	2000X	2508	
	0755 1341	ONDR	0949.3	0950.5	DCIM	GG	2	1039	2000X	
		POTS	1029.1	1029.4	DCIM		1	210	380	
		POTS	1030	1130	I	C,N	1	120U	350	
		POTS	1318.8	1318.9	DCIM		1	230U	320	
		POTS	1332.9	1333.3	DCIM		1	230U	400	
		BLEN	1337.0	1337.2	III	S	2	372	730	
		POTS	1406	1412 U	I	C	1	220	300	
		HOLL	2021.0	2025.0	III		1	25	180	
		HOLL	2021.0	2056.0	III	N	1	25	180	
		PALE	2022.0	2047.0	II		3	25	180	ESS 0890
	2000 2400	CULG	2022.0	2057.0	III	N	1	57X	180	
		CULG	2023.0	2026.0	III	G	3	57X	200	
		HOLL	2025.0	2043.0	II		2	25	180	ESS 0974
		CULG	2027.0	2032.0	II	FN	3	57X	80	
		CULG	2027.0	2033.0	II	SH	3	57X	170	ESS 900
		CULG	2038.0	2044.0	UNCLF		3	57X	100	
		CULG	2157.0	2158.0	III	G	1	240	310	
		CULG	2159.0	2248.0	IV	FS	2	600	1600	
		LEAR	2201.0	2202.0	III		1	139	180	
	2121 2400	HIRA	2201.5	2202.0	III	B	2	140	700	
		CULG	2202.0	2202.0	III	G	1	150	670	
		LEAR	2225.0	2231.0	III		1	25	180	
		CULG	2226.0	2242.0	III	GG	1	57X	180	
		LEAR	2231.0	2241.0	II		1	25	116	ESS 0459
		CULG	2233.0	2241.0	CONT		1	100	200	
		HOLL	2235.0	2320.0	CONT		1	74	180	
		HOLL	2235.0	2336.0	IV		1	75	180	
		LEAR	2235.0	0400.0	IV		1	25	180	
		PALE	2235.0	0012.0	IV		2	25	180	
		HIRA	2241.5	2242.0	III	B	1	80	200	

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

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End Day (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
22		CULG	2245.0	2400.00	IV	FS	2	57X	1300	
		HIRA	2245.0	2340.0	IV		2	N/A	700	
		CULG	2253.0	2346.0	III	N	2	57X	1300	
23	0000 0800	CULG	0000.0E	0010.0	IV	FS	1	57X	300	
		CULG	0010.0	0202.0	I	S	1	60	170	
		CULG	0117.0	0119.0	III	G	1	57X	180	
		CULG	0138.0	0138.0	III	B	1	57X	100	
		CULG	0218.0	0230.0	III	G	1	57X	160	
		CULG	0245.0	0800.00	III	N	1	57X	120	
		LEAR	0356.0	0358.0	III		2	25	141	
	0000 0726	HIRA	0356.5	0357.0	III	B	2	N/A	130	
		CULG	0357.0	0357.0	III	B	2	57X	140	
		LEAR	0359.0	1029.0	III	N	1	25	95	
		CULG	0526.0	0530.0	III	G	2	57X	180	
		LEAR	0526.0	0529.0	III		1	25	180	
		HIRA	0529.0	0530.0	III	B	2	N/A	210	
		SVTO	0606.0	0941.0	III	N	1	25	83	
	0700 1200	IZMI	0700.0E	1125.00	III	N	2	40	100	
		IZMI	0725.3	0729.6	III	GG	2	35	100	
	0700 1450	POTS	0733.8E	0750.1	III	GG	1	40X	80U	
		IZMI	0739.0	0739.4	III	G	2	45	150	
		IZMI	0740.1	0749.4	III	GG	2	40	120	
		POTS	0755.4	0808.0	III	GG	1	40X	80U	
		POTS	0812.0	0816.2	III	G	1	40X	80U	
		POTS	0824.6	0829.1	III/V	GG	2	40X	250	
		IZMI	0827.1	0829.1	III	G	2	30	95	
		LEAR	0829.0	0834.0	V		2	25	180	
		SVTO	0829.0	0834.0	V		3	25	180	
	0757 1339	ONDR	0829.1	0833.3	DCIM	GG,SP	2	800X	2000X	
		IZMI	0829.3	0831.5	III	GG,C	3	25X	270X	
		ONDR	0829.3	0832.5	DCIM	GG,SP	2	2000X	4500X	
		POTS	0829.7	0831.6	UNCLF		2	40X	160	
	0810 1445	BLEN	0829.8	0832.9	III	GG	3	110X	650	
		BLEN	0830.0	0834.5	DCIM	P	3	400	4000X	
		IZMI	0831.6	0836.3	III	GG,FS	2	30	270X	
		POTS	0831.6	0842.00	UNCLF		1	40X	70U	
		IZMI	0839.8	0841.0	III	G,FS	2	35	130	
		POTS	0855.9	0920.0	UNCLF		1	40X	80U	
		POTS	0927 E	1413 U	I	C,N	1	120	380	
		POTS	0929.0	1051 U	UNCLF		1	40X	80	
		POTS	0929.4	0929.6	DCIM		1	350	700	
		IZMI	0933.0	0934.1	III	G,C	2	40	95	
		POTS	0938.4	0939.6	DCIM		1	320	600	
		IZMI	0941.3	0943.8	III	G	2	40	90	
		IZMI	1010.00U	1150.00	I	S	1	220	270X	
		POTS	1040.9	1041.0	DCIM		1	330	650	
		IZMI	1044.5	1045.3	III	G	2	35	75	
		IZMI	1049.0	1049.5	III	G	2	40	75	
		SVTO	1058.0	1110.0	III	N	2	25	86	
		POTS	1103.6	1107.4	III/V	G	1	40X	150	
		POTS	1105.7	1107.3	DCIM		1	320	800X	
		IZMI	1107.3	1109.8	III	GG	2	40	125	
		POTS	1108.3	1110 U	UNCLF		1	40X	70	
		POTS	1108.6	1108.8	DCIM		1	320	630	
		BLEN	1109.3	1113.8	DCIM	P	3	300	900	
		POTS	1111.6	1213 U	UNCLF	N,C	1	40X	80U	
		POTS	1318.0	1318.2	III	B	1	120	370	
		POTS	1337.6	1337.8	UNCLF		1	40X	70U	
		HOLL	1711.0	1724.0	III	N	1	25	138	
		PALE	1938.0	0041.0	III	N	1	25	180	
		HOLL	1949.0	1951.0	III		1	25	86	
		LEAR	2304.0	2304.0	III		3	25	180	
	2122 2400	HIRA	2304.0	2304.5	III	B	2	N/A	500	
	2300 2400	CULG	2304.0	2304.0	III	B	3	57X	180	
24	0000 0800	CULG	0127.0	0128.0	III	G	1	57X	75	
		CULG	0548.0	0553.0	III	G	1	150	500	
	0000 0726	HIRA	0549.5	0554.0	III	G	1	N/A	620	

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

139  
Nov 01

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
24		LEAR	0550.0	0552.0	III		2	25	163	
		CULG	0552.0	0552.0	III	B	2	57X	150	
		CULG	0618.0	0618.0	III	B	1	57X	140	
		LEAR	0618.0	0618.0	III		1	25	105	
		LEAR	0618.0	0618.0	III	N	1	25	180	
		LEAR	0618.0	0633.0	III	N	1	25	180	
		CULG	0633.0	0634.0	III	G	1	57X	150	
		HIRA	0633.0	0633.5	III	B	1	N/A	150	
		SVTO	0633.0	0633.0	III		1	28	123	
		LEAR	0703.0	0714.0	III	N	1	25	85	
	0712 1200	IZMI	0712.0E	1041.0U	I	N	1	220	270X	
		CULG	0713.0	0713.0	III	B	1	57X	80	
		IZMI	0713.1	0713.5	III	G	2	50	100	
	0700 1450	POTS	0757 E	1408 U	I	C,N	1	120	350	
	0759 1338	ONDR								
	0810 1445	BLEN								
		POTS	0854.6	0855.3	DCIM		1	300	550U	
		POTS	1024.9	1025.2	DCIM		1	300	400U	
		POTS	1222.8	1223.3	III	G	1	120	300	
		POTS	1225.8	1226.0	III	B	1	120	300	
		HOLL	1752.0	1753.0	III		1	25	106	
	2000 2400	CULG	2056.0	2056.0	III	B	1	57X	180	
	2123 2400	HIRA								
		CULG	2131.0	2131.0	III	B	1	57X	180	
25		LEAR	0112.0	0114.0	III		3	25	180	
		PALE	0112.0	0113.0	III		1	25	180	
	0000 0725	HIRA	0112.0	0114.0	III	G	3	N/A	800	
	0000 0800	CULG	0113.0	0114.0	III	G	3	57X	650	
	0700 1200	IZMI	0706.3	0706.7	III	G	1	230	270X	
		SVTO	0716.0	0733.0	III	N	2	25	81	
	0801 1336	ONDR								
	0810 1445	BLEN								
	0700 1450	POTS	0826 U	1414 U	I	C,N	1	120	300	
	2000 2400	CULG	2034.0	2034.0	III	B	1	57X	150	
		LEAR	2148.0	0300.0	CONT		1	110	180	
		CULG	2157.0	2313.0	I	S	1	110	150	
	2124 2400	HIRA	2253.5	2304.5	III	G	1	70	280	
		LEAR	2255.0	2301.0	III		1	36	180	
		CULG	2256.0	2307.0	III	GG	1	57X	180	
		LEAR	2258.0	2304.0	II		1	39	49	ESS 0251
26	0000 0800	CULG								
	0000 0725	HIRA	0104.0	0106.0	III	G	1	330	620	
	0655 1200	IZMI	0702.0U	1155.0U	I	N	1	160	270	
	0803 1351	ONDR								
	0810 1445	BLEN								
	0705 1445	POTS	0825 U	1408 U	I	C,N	1	120	350	
	2000 2400	CULG	2032.0	2034.0	III	G	1	57X	120	
		CULG	2126.0	2126.0	III	B	1	270	400	
		LEAR	2148.0	2400.0	III	N	1	25	46	
		CULG	2320.0	2323.0	III	G	1	57X	150	
		HOLL	2320.0	2326.0	III		1	25	145	
		LEAR	2320.0	2323.0	III		1	25	137	
		PALE	2320.0	2322.0	III		1	25	54	
	2125 2400	HIRA	2320.5	2322.5	III	G	1	N/A	130	
		HIRA	2340.5	2341.0	III	B	1	150	310	
27	0000 0800	CULG	0103.0	0103.0	III	B	1	57X	180	
	0000 0725	HIRA	0103.5	0104.0	III	B	1	100	190	
		LEAR	0532.0	0534.0	III		1	25	125	
		HIRA	0532.5	0534.0	III	G	1	N/A	140	
		CULG	0533.0	0534.0	III	G	1	57X	160	
	0705 1445	POTS	0847	1407 U	I	C	1	200U	300	
	0805 1334	ONDR	1023.2	1028.2	DCIM	G	1	2098	4500X	
		POTS	1030.6	1032.2	III	G	1	120	170	
		POTS	1033.2	1034.0	UNCLF		1	40X	70U	
	0700 1200	IZMI	1037.3	1037.6	III	G	2	40	70	
		POTS	1402.6	1403.2	III	G	1	40X	300	

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

NOVEMBER 2001

OBSERVATION			EVENT					FREQUENCY		Remarks			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)		
27			SVTO	1406.0	1407.0	III		2	25U	180U			
	0825	1445	BLEN	1433.8	1436.5	III	G,S	2	200	3300			
			PALE	2121.0	2121.0	III		1	25	62			
	2000	2400	CULG	2121.0	2121.0	III	B	1	57X	140			
			CULG	2124.0	2125.0	III	G	1	57X	180			
			CULG	2134.0	2136.0	III	G	1	100	180			
			CULG	2203.0	2235.0	III	N	1	57X	160			
			LEAR	2206.0	2206.0	III		1	32	147			
	2126	2400	HIRA	2206.0	2206.5	III	B	1	30	130			
			CULG	2340.0	2340.0	III	G	1	57X	75			
			CULG	2359.0	2400.00	III	G	1	57X	90			
28	0000	0014	HIRA										
			CULG	0000.0E	0002.0	III	G	1	57X	90			
	0000	0800	CULG	0007.0	0007.0	III	B	1	57X	90			
			CULG	0027.0	0027.0	III	B	1	57X	90			
	0137	0522	LEAR	0157.0	0203.0	III		2	25	138			
			CULG	0158.0	0158.0	III	G	1	57X	90			
			HIRA	0158.0	0158.5	III	G	1	25X	120			
			CULG	0202.0	0204.0	III	G	2	57X	140			
			HIRA	0202.5	0204.0	III	G	3	30	130			
			CULG	0246.0	0248.0	III	G	1	57X	90			
			LEAR	0246.0	0247.0	III		1	25	111			
			HIRA	0246.5	0247.5	III	G	1	25X	110			
			CULG	0308.0	0309.0	III	G	1	57X	90			
			LEAR	0308.0	0308.0	III		1	29	111			
			HIRA	0308.5	0309.0	III	B	1	40	200			
			PALE	0329.0	0331.0	III	N	2	25	180			
			CULG	0348.0	0352.0	III	G	1	57X	150			
			LEAR	0348.0	0352.0	III		1	25	124			
			HIRA	0349.0	0349.5	III	B	1	25X	130			
			CULG	0419.0	0430.0	III	G	1	57X	150			
			HIRA	0419.0	0419.5	III	B	1	25X	100			
			LEAR	0419.0	0429.0	III		2	25	180			
			HIRA	0424.0	0429.0	III	G	3	25X	550			
			CULG	0429.0	0429.0	III	B	3	57X	350			
			CULG	0454.0	0455.0	III	G	1	70	180			
			HIRA	0454.5	0455.0	III	B	1	100	160			
			CULG	0626.0	0629.0	III	G	2	57X	180			
			LEAR	0626.0	0629.0	III		1	25	175			
			SVTO	0626.0	0629.0	III		1	25	164			
			0656	1200	IZMI	0644.5	0644.7	III	B	1	45	95U	
					CULG	0645.0	0645.0	III	B	1	57X	80	
					CULG	0659.0	0659.0	III	B	1	57X	80	
			0700	0724	HIRA								
					IZMI	0756.0	0756.2	III	B	1	50	70	
			0807	1332	ONDR								
					POTS	0816 E	1407 U	I	C,N	1	120	350	
			0705	1445	POTS	0816.7	0817.0	III	G	2	40X	150	
					IZMI	0821.0	0821.4	III	G	2	40	155	
					LEAR	0821.0	0821.0	III		1	29	102	
					SVTO	0821.0	0821.0	III		1	62U	84U	
					IZMI	0823.2	0823.9	III	G	1	90	145	
	POTS	0826.5			0829.1	UNCLF		2	40X	70U			
	IZMI	0830.1			0833.5	III	GG	1	40	90			
	POTS	0926.0			0926.5	UNCLF		1	40X	60U			
	IZMI	0930.2			0931.6	III	GG	1	40	90			
	POTS	1000.6			1003.3	III	G	2	40X	150			
	IZMI	1005.0			1007.7	III	GG	2	35	140			
LEAR	1005.0	1011.0			III		1	38	146				
SVTO	1005.0	1011.0			III	N	1	33	132				
POTS	1007.2	1007.6			III	G	2	40X	170U				
IZMI	1011.4	1012.0			III	G	2	50	180				
POTS	1014.0	1014.4			III	G,W	1	40X	150				
POTS	1016.5	1017.0			UNCLF		1	40X	60U				
IZMI	1018.3	1018.6			III	G	1	50	90				
POTS	1115.7	1116.1			UNCLF		1	40X	70U				
IZMI	1120.2	1120.3			III	B	1	50	75				
POTS	1125.1	1125.3			UNCLF		1	40X	80U				

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

141  
Nov 01

NOVEMBER 2001

OBSERVATION		Sta	EVENT		Int (1-3)	FREQUENCY		Remarks			
Start Day (UT)	End Day (UT)		Start (UT)	End (UT)		Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
28		POTS	1128.9	1129.1		UNCLF	1	40X	80U		
		IZMI	1129.5	1129.7		III	B	1	45	90	
		POTS	1132.0	1132.3		III	W	1	40X	150	
		IZMI	1133.5	1133.6		III	B	1	50	85	
		POTS	1138.2	1139.6		III	G	2	40X	170U	
		POTS	1141.4	1145.1		III	G	2	40X	350	
		SVTO	1142.0	1309.0		III	N	1	25	180	
		IZMI	1142.6	1143.1		III	GG	2	35	160	
		IZMI	1148.1	1149.4		III	GG	1	30	270	
		IZMI	1152.6	1152.7		III	G	1	45	75	
		POTS	1215.7	1216.6		III	G	2	40X	170U	
		POTS	1220.5	1226.1		III	GG	2	40X	300	
		POTS	1235.4	1236.2		DCIM		1	200U	600	
		POTS	1236.1	1236.3		III	B	1	120	300	
		POTS	1241.7	1242.6		III	G	1	120	350	
		POTS	1259.1	1259.4		III	G	1	110U	400	
		POTS	1314.6	1315.8		DCIM		1	300	500	
	0825 1445	BLEN	1319.0	1320.2		III	GG,RS	2	280	570	
		POTS	1344.6	1345.0		III	B	1	40X	150	
		POTS	1355.6	1356.0		DCIM		1	250	320	
		POTS	1401.1	1401.3		III	B	1	40X	140U	
		POTS	1405.1	1405.3		III	B,W	1	40X	140U	
		BLEN	1449.8	1456.3		III	GG,RS	2	200	4000X	
		HOLL	1547.0	1554.0		II		1	34	146	ESS 0889
		HOLL	1559.0	1600.0		III		2	25	178	
		SGMR	1559.0	1600.0		III		2	30	80	
		HOLL	1627.0	1635.0		III	N	2	25	180	
		SGMR	1630.0	1648.0		III	N	3	30	80	
		HOLL	1636.0	1646.0		II		2	28	180	ESS 0674
		HOLL	1636.0	1659.0		IV		1	53	180	
		HOLL	1722.0	1722.0		III		1	25	118	
		PALE	1722.0	1722.0		III		1	25	54	
		PALE	1839.0	1839.0		III		1	25	49	
		HOLL	1858.0	2317.0		III	N	1	25	148	
		PALE	1858.0	2142.0		III	N	1	25	135	
		SGMR	1911.0	1912.0		III		2	30	50	
	1930 2400	CULG	1937.0	2234.0		III	N	1	57X	180	
		LEAR	2202.0	1034.0		III	N	1	25	180	
	2127 2400	HIRA	2202.0	2205.0		III	G	1	30	200	
		HIRA	2214.5	2217.5		III	G	1	30	70	
		HIRA	2231.0	2231.5		III	B	1	30	70	
		CULG	2300.0	2301.0		III	G	2	57X	200	
		HIRA	2300.0	2301.0		III	B	2	30	130	
		CULG	2308.0	2314.0		III	G	1	57X	140	
		HIRA	2311.0	2312.0		III	B	1	30	140	
		LEAR	2359.0	0052.0		III	N	1	35	94	
29	0000 0724	HIRA	0004.5	0014.0		III	G	1	30	270	
	0000 0810	CULG	0005.0	0014.0		III	GG	2	57X	180	
		CULG	0023.0	0647.0		III	N	1	57X	180	
		HIRA	0039.5	0040.0		III	B	1	30	150	
		CULG	0111.0	0111.0		III	B	1	240	350	
		HIRA	0120.5	0121.0		III	B	1	90	520	
		HIRA	0144.5	0145.0		III	B	3	60	600	
		CULG	0145.0	0145.0		III	B	3	57X	680	
		CULG	0146.0	0149.0		III	G	1	370	700	
		CULG	0148.0	0156.0		II	FN	2	57X	150	
		CULG	0148.0	0156.0		II	SH	1	110	280	FLA ESS 600
		HIRA	0148.0	0154.0		II		2	50	130	
		HIRA	0148.0	0156.0		II		2	100	280	
		PALE	0150.0	0154.0		II		1	52	180	ESS 0774
		CULG	0333.0	0335.0		III	G	2	57X	180	
		HIRA	0333.5	0335.0		III	G	2	25X	190	
		CULG	0441.0	0444.0		III	G	2	57X	180	
		HIRA	0441.5	0444.0		III	G	2	25X	200	
		CULG	0515.0	0517.0		III	G	3	57X	450	
		HIRA	0515.0	0517.5		III	G	3	30	520	
		LEAR	0515.0	0517.0		III		2	25	180	
		LEAR	0520.0	0522.0		V		2	25	180	

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

NOVEMBER 2001

OBSERVATION		Sta	EVENT		Spectral Class	Event Remarks	Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End Day (UT)		Start (UT)	End (UT)				Lower (MHz)	Upper (MHz)	
29		CULG	0521.0	0522.0	III	G	3	57X	700	
		HIRA	0521.0	0522.5	III	G	3	30	800	
		CULG	0522.0	0523.0	V		1	57X	120	
		CULG	0610.0	0610.0	III	B	2	57X	160	
		HIRA	0610.5	0611.0	III	B	2	40	130	
0708	1200	IZMI	0716.0U	1200.0E	I	N	1	80	250	
0710	1445	POTS	0724.0	0724.3	III	B	1	40X	80U	
		CULG	0728.0	0729.0	III	B	1	57X	100	
		SVTO	0728.0	0729.0	III		1	34U	81U	
		IZMI	0728.2	0729.5	III	G	2	30	210	
		POTS	0750.0	0754.4	III	G	1	40X	150U	
		IZMI	0751.3	0752.3	III	G	1	40	180	
		IZMI	0754.3	0758.8	III	GG	2	30	270X	
		SVTO	0755.0	0758.0	III		2	30U	149U	
		POTS	0759.9	0800.1	III	B	1	40X	150U	
		IZMI	0803.4	0803.6	UNCLF		2	45	155	
		POTS	0806 U	1411 U	I	C,N	1	120	350	
		POTS	0807.7	0811.0	III	G	2	40X	220	
		IZMI	0811.0	0816.2	III	GG	2	40	90	
		SVTO	0815.0	0815.0	III		2	31U	148U	
		IZMI	0815.1	0815.6	III	G	2	25	260	
		IZMI	0830.5	0830.7	III	G	1	40	75	
		POTS	0919.3	0920.7	III	G	1	40X	170U	
		IZMI	0922.0	0925.9	III	GG	2	25X	95	
		IZMI	0923.0	0926.3	I	GG,DC	2	160	200	
		SVTO	0924.0	0925.0	III		1	38U	66U	
		POTS	0924.4	0925.1	DCIM		1	260	400	
		POTS	0928.0	0928.5	III	G	1	40X	210	
		SVTO	0932.0	0932.0	III		1	51	82	
		IZMI	0932.5	0933.1	III	G	2	40	150	
		POTS	0946.5	0947.6	III	G	1	40X	170U	
		IZMI	0950.9	0952.6	III	GG	2	40	160	
		SVTO	0951.0	1326.0	III	N	1	25	180	
		POTS	0954.4	0954.7	III	B	1	40X	450	
		POTS	0958.0	0958.2	III	B	1	40X	300	
		IZMI	0958.9	0959.1	III	G,C	2	35	90	
		IZMI	1002.4	1002.5	III	B	2	35	75	
0809	1341	ONDR	1015.1	1113.4	DCIM	GG	2	2000X	4500X	
		POTS	1016.0	1018.1	III	G	1	40X	300	
		IZMI	1020.4	1022.4	III	GG,FS	2	35	270	
		ONDR	1020.4	1030.4	DCIM	W	1	1091	2000X	
0825	1445	BLEN	1020.6	1024.9	DCIM	C	2	1600	4000X	
		POTS	1021.5	1021.7	III	B	1	40X	300	
		IZMI	1026.0	1026.1	III	G,FS	1	30	95	
		POTS	1045.5	1046.4	III	G	2	40X	250	
		IZMI	1050.0	1052.0	III	G	2	45	270X	
		ONDR	1057.4	1107.4	DCIM	G	1	800X	2000X	
		POTS	1100.7	1105.5	III/V	G	2	40X	700	
		POTS	1101.8	1101.9	DCIM		1	350	600	
		BLEN	1104.6	1404.1	III	GG,N	3	130	500	
		IZMI	1104.8	1104.9	UNCLF		2	90	270X	
		IZMI	1106.6	1110.1	III	GG,C	2	30	210	
		POTS	1137.4	1137.7	DCIM		2	200	800X	
		POTS	1140.4	1141.8	DCIM		1	250	700	
		ONDR	1141.5	1202.0	DCIM	GG	2	800X	2000X	
		IZMI	1141.9	1141.9	III	B	2	220	270X	
		POTS	1145.3	1146.7	DCIM		1	250	800X	
		ONDR	1149.5	1151.1	DCIM	G	1	2000X	4500X	
		IZMI	1150.1	1150.2	III	B	1	240	270X	
		POTS	1155.6	1156.1	DCIM		1	250	500	
		POTS	1156.5	1156.8	III	B	2	40X	600	
		POTS	1156.7	1157.6	DCIM		2	150	800X	
		POTS	1159.3	1159.4	DCIM		1	500	650	
		POTS	1205.5	1206.4	III	G	2	40X	300	
		POTS	1222.4	1225.8	III/V	G	2	40X	350	
		POTS	1226.0	1226.3	DCIM		1	300U	400	
		ONDR	1237.0	1249.0	DCIM	G	1	2000X	4500X	
		POTS	1239.7	1239.9	DCIM		1	400U	700	
		ONDR	1240.2	1248.1	DCIM	G	2	800X	2000X	



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

143  
Nov 01

NOVEMBER 2001

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day (UT)	Start End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
29		POTS	1241.4	1241.7	DCIM		2	400U	750	
		POTS	1242.2	1242.6	III	G,W	1	40X	150	
		POTS	1242.6	1243.6	DCIM		2	300U	750	
		POTS	1255.4	1256.1	III	G	2	120	600	
		POTS	1257.6	1257.8	III	B	1	40X	150	
		POTS	1320.5	1320.8	DCIM	RS	1	350	800X	
		POTS	1320.7	1321.0	III	G	2	110U	350	
		POTS	1323.4	1323.5	III	B	1	150	300	
		POTS	1344.8	1345.0	III	B	1	110U	300	
		POTS	1358.0	1401.0	III/V	GG	2	40X	450	
		POTS	1402.6	1412	II	U	2	40X	300	
		HOLL	1403.0	1404.0	III		1	25	180	
		SVTO	1403.0	1405.0	III		2	55	177	
		HOLL	1407.0	1414.0	II		1	75	180	ESS 0751
		SVTO	1407.0	1413.0	II		2	59	147	ESS 0924
		SVTO	1409.0	1414.0	II		1	113	180	ESS 0543
		POTS	1415.5	1415.7	III	B	1	40X	90U	
		SVTO	1420.0	1420.0	III		2	59	84	
		HOLL	1510.0	2131.0	III	N	1	25	164	
		SGMR	1513.0	1519.0	III		1	30	60	
		HOLL	1610.0	1611.0	III		2	25	180	
		SGMR	1610.0	1611.0	III		3	30	80	
		HOLL	1701.0	1704.0	V		2	25	180	
		SGMR	1703.0	1705.0	V		2	30	80	
		HOLL	1724.0	1726.0	III		2	25	180	
		PALE	1724.0	1726.0	V		2	25	180	
		SGMR	1724.0	1726.0	V		3	30	80	
		HOLL	1804.0	1807.0	III		2	25	180	
		PALE	1804.0	1807.0	V		3	25	180	
		SGMR	1804.0	1807.0	V		2	30	80	
		PALE	1901.0	1958.0	III	N	1	25	180	
1930	2400	CULG	1946.0	1946.0	III	B	1	57X	150	
		CULG	1958.0	1958.0	III	G	1	57X	80	
		CULG	2040.0	2400.0D	I	S	1	110	160	
		CULG	2043.0	2052.0	III	G	1	57X	120	
		PALE	2048.0	2051.0	V		3	25	180	
		CULG	2049.0	2050.0	III	G	3	57X	550	
		HOLL	2049.0	2050.0	III		2	25	180	
		CULG	2120.0	2122.0	III	G	1	57X	80	
		CULG	2131.0	2131.0	III	B	1	57X	130	
2128	2400	HIRA	2144.0	2144.5	III	B	1	30	250	
		LEAR	2231.0	1034.0	III	N	1	25	151	
30	0000 0810	CULG	0000.0E	0700.0	I	S	1	100	160	
		CULG	0028.0	0036.0	III	G	1	57X	90	
	0000 0724	HIRA	0104.0	0105.5	III	G	1	220	2000	
		CULG	0105.0	0105.0	III	G	1	240	1300	
		HIRA	0123.0	0123.5	III	B	1	130	500	
		CULG	0145.0	0145.0	III	B	1	57X	90	
		CULG	0209.0	0210.0	III	G	2	57X	160	
		HIRA	0210.0	0210.5	III	B	2	25X	200	
		CULG	0222.0	0222.0	III	B	1	100	320	
		HIRA	0222.0	0222.5	III	B	1	130	330	
		CULG	0300.0	0637.0	III	N	1	57X	150	
		HIRA	0320.0	0320.5	III	B	1	30	120	
		CULG	0539.0	0545.0	III	G	2	57X	250	
		HIRA	0539.0	0544.5	III	G	2	30	250	
		LEAR	0539.0	0544.0	III		1	25	180	
	0650 1200	IZMI	0650.0E	1200.0D	I	S	1	110	240	
		IZMI	0742.4	0742.7	III	G	1	200	270X	
		IZMI	0802.9	0805.9	III	G	1	230	270X	
0710	1445	POTS	0811	E 1410	I	C	1	120	300	
1122	1330	ONDR								
0825	1445	BLEN	1405.7	1414.5	III	GG,RS	2	280	4000X	
1930	2400	CULG	2053.0	2053.0	III	B	1	57X	180	
2129	2400	HIRA	2142.5	2143.5	III	B	1	40	110	
		CULG	2304.0	2305.0	III	G	1	57X	180	

N/A: Hiraiso 50-500 MHz not available.

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

NOVEMBER 2001

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES <sup>1</sup>		IMP <sup>2</sup>	OBSERVING TIME <sup>3</sup>	
	E-W	S-N		START( UT)	END(UT)
01/11/01	+0.37	+0.19	IV	8H03 E	13H57 D
02/11/01*	+0.50	+0.16	V	11H05 E	15H05 D
03/11/01*	+0.64	+0.20	III	8H03 E	15H05 D
04/11/01*	+1.04	+0.40	II	9H13 E	15H05 D
05/11/01*	+0.74	+0.05	I	9H10	14H10
06/11/01	-1.13	-0.59	I	8H30 E	15H04 D
07/11/01*	-1.16	-0.48	II	8H03 E	15H04 D
07/11/01*	+0.19	-0.99	I	8H03 E	15H04 D
08/11/01*	-0.90	-0.42	III	8H03 E	15H04 D
08/11/01*	+0.57	-0.62	III	8H03 E	15H04 D
09/11/01*	-0.36	-0.08	I	8H04 E	15H05 D
09/11/01*	+0.87	+0.45	I	8H04 E	15H05 D
11/11/01*	-0.23	+0.16	III	8H04 E	15H05 D
11/11/01*	+0.33	+0.14	II	8H04 E	15H05 D
11/11/01*	+0.09	-0.25	II	12H20	15H05 D
12/11/01*	+0.54	-0.28	I	8H31 E	15H05 D
12/11/01*	-0.03	+0.19	I	8H31 E	15H05 D
13/11/01*	+0.36	+0.14	I	8H04 E	15H05 D
13/11/01*	+0.84	-0.29	II	8H04 E	15H05 D
14/11/01*	+0.67	+0.20	II	13H03	15H05 D
14/11/01*	+1.24	-0.28	III	8H04 E	15H05 D
15/11/01*	+0.90	+0.02	I	8H04 E	15H05 D
15/11/01*	+1.30	-0.43	I	8H04 E	15H05 D
17/11/01*	-0.93	-0.33	I	8H05 E	15H06 D
17/11/01*	+0.17	+0.23	II	8H05 E	15H06 D
17/11/01*	+1.32	+0.29	II	8H05 E	15H06 D
18/11/01*	-0.73	-0.03	I	8H05 E	15H06 D
20/11/01*	+0.98	+0.40	I	8H05 E	15H06 D
21/11/01*	+0.19	-0.26	III	12H05	15H07 D
22/11/01*	+0.54	-0.26	I	8H17 E	15H07 D
22/11/01*	+1.29	+0.71	I	8H17 E	15H07 D
23/11/01*	+0.81	+0.05	I	10H00 E	12H25
26/11/01*	-0.99	-0.23	I	9H00	15H08 D
29/11/01*	-0.43	+0.05	II	8H09 E	15H09 D
29/11/01*	+0.53	+0.19	II	12H28	15H09 D
30/11/01*	-0.03	+0.16	III	8H10 E	15H09 D

<sup>1</sup> POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT

<sup>2</sup> IMP1: FLUX < 5 SFU IMP2: 5 < FLUX < 20 SFU IMP3: 20 < FLUX < 100 SFU  
IMP4: 100 < FLUX < 300 SFU IMP5 > 300 SFU

<sup>3</sup> E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS  
D NOISE STORM IN PROGRESS AT THE END OF THE NANÇAY OBSERVATIONS

**NOISE STORM AT 327 MHZ  
FROM NANÇAY RADIOHELIOGRAPH  
NOVEMBER 2001**

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES <sup>1</sup>		IMP <sup>2</sup>	OBSERVING TIME <sup>3</sup>	
	E-W	S-N		START(UT)	END(UT)
01/11/01	+0.28	+0.06	IV	8H03 E	13H57 D
02/11/01*	+0.54	+0.00	III	11H05 E	15H05 D
03/11/01*	+0.73	+0.00	III	8H03 E	15H05 D
04/11/01*	+0.99	+0.22	III	9H13 E	15H05 D
05/11/01	+1.07	+0.25	I	8H03 E	15H03 D
06/11/01	-1.01	-0.53	I	8H30 E	15H04 D
06/11/01	+0.00	-0.53	II	8H30 E	15H04 D
07/11/01*	-0.88	-0.47	I	8H03 E	15H04 D
07/11/01*	+0.29	-0.50	I	8H03 E	15H04 D
07/11/01*	+1.02	+0.12	I	8H03 E	15H04 D
08/11/01*	-0.59	-0.36	III	8H03 E	15H04 D
08/11/01*	+0.47	-0.59	III	8H03 E	15H04 D
09/11/01*	+0.51	+0.23	III	8H04 E	15H05 D
11/11/01*	+0.11	-0.45	II	8H04 E	15H05 D
12/11/01*	+0.47	-0.42	I	8H31 E	15H05 D
12/11/01*	+0.08	-0.03	II	13H40	15H05 D
13/11/01*	+0.76	-0.42	III	8H04 E	15H05 D
14/11/01*	-0.62	+0.05	II	8H04 E	15H05 D
14/11/01*	+0.45	+0.02	I	8H04 E	15H05 D
14/11/01*	+0.98	-0.54	II	8H04 E	15H05 D
15/11/01*	-0.47	+0.06	II	8H04 E	15H05 D
15/11/01*	+1.10	+0.57	II	8H04 E	15H05 D
16/11/01	-0.23	+0.17	II	8H05 E	15H06 D
16/11/01	+1.22	-0.53	II	8H05 E	15H06 D
17/11/01*	-0.79	-0.28	II	8H05 E	15H06 D
17/11/01*	+0.14	+0.11	III	8H05 E	15H06 D
18/11/01*	+0.48	+0.09	I	10H55	15H06 D
19/11/01	-0.84	-0.20	I	8H19 E	15H17 D
19/11/01	+0.56	+0.19	I	8H19 E	15H17 D
20/11/01*	-0.62	-0.36	I	8H05 E	15H06 D
20/11/01*	+0.84	+0.08	I	8H05 E	15H06 D
21/11/01*	+0.16	-0.39	I	10H25	15H07 D
21/11/01*	+1.02	+0.14	I	8H40 E	11H20
22/11/01*	+0.42	-0.40	I	8H17 E	15H07 D
22/11/01*	+1.09	+0.16	I	8H17 E	15H07 D
23/11/01*	+0.78	-0.47	I	12H00	15H08 D
23/11/01*	+1.27	+0.09	I	10H00 E	13H28
26/11/01*	-1.01	-0.06	I	8H08 E	13H31
27/11/01*	-1.10	-0.12	I	10H05	15H08 D
27/11/01*	-0.43	+0.20	I	8H08 E	15H08 D
28/11/01	-1.13	-0.19	I	8H09 E	15H09 D
29/11/01*	-0.95	-0.09	I	8H09 E	15H09 D
29/11/01*	+0.50	+0.03		8H09 E	15H09 D
30/11/01*	-0.96	-0.05	I	8H10 E	15H09 D
30/11/01*	-0.11	-0.12	I	8H10 E	15H09 D

**10 NOVEMBER NO DATA**

**OTHERS DAYS: NO DETECTABLE NOISE STORM**

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

\*\* Following a large burst

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

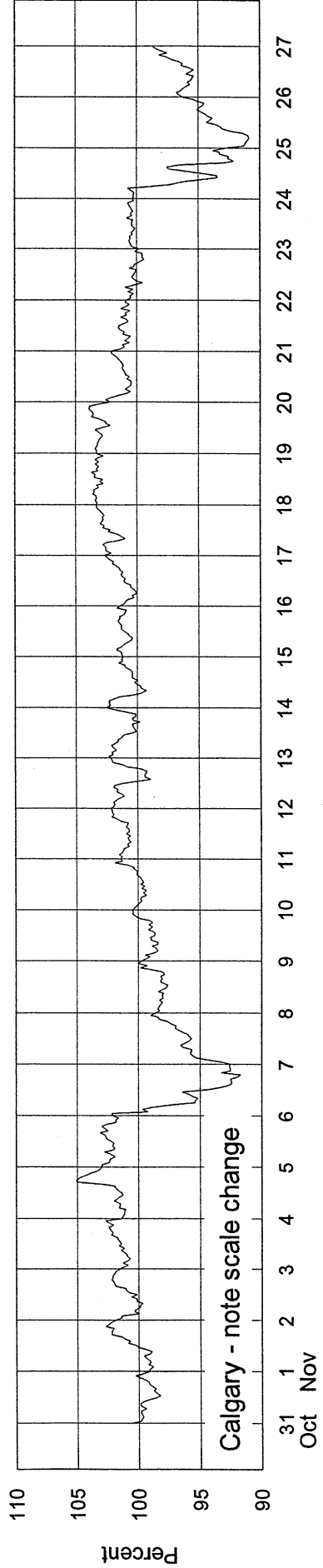
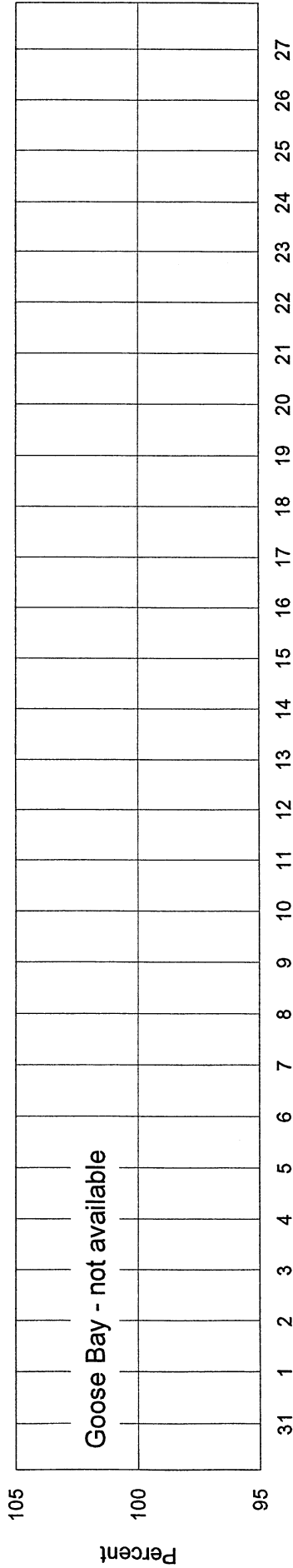
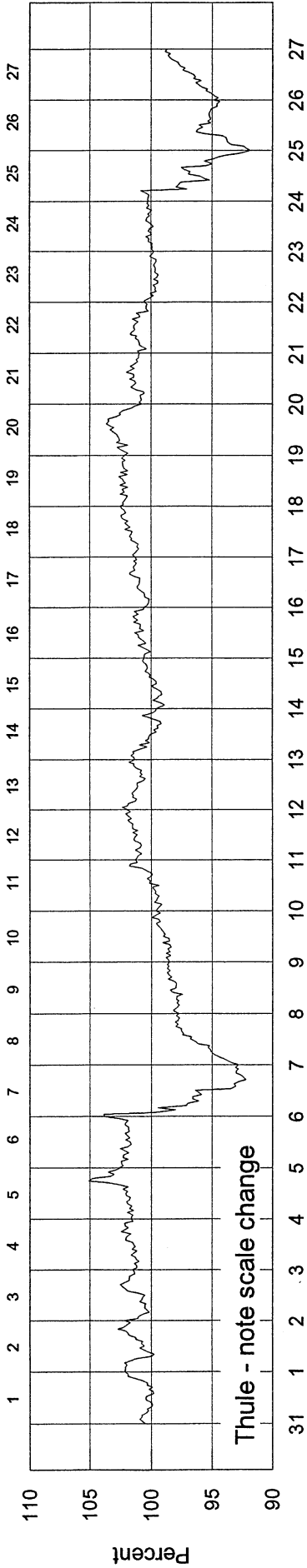
COSMIC RAY INDICES  
(Neutron Monitor)  
November 2001

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	4050.4	not available	3537.0	5668.4	8527.1	3801.2	1988.2	3524.7
2	4043.5	available	3556.7	5662.7	8545.2	3780.8	1989.5	3518.2
3	4058.6		3577.5	5676.5	8563.2	3787.5	1992.8	3524.3
4	4090.2		3603.7	5714.2	8629.9	3814.5	2003.1	3531.6
5	4077.3		3605.2	5735.4	8656.6	3824.3	2009.7	3533.2
6	3824.6		3354.5	5449.9	8177.1	3596.3	1970.6	3444.5
7	3839.7		3388.0	5431.8	8122.1	3605.8	1960.5	3461.8
8	3920.4		3463.7	5576.2	8328.9	3666.5	1984.8	3490.5
9	3952.2		3490.0	5622.3	8372.8	3700.8	1988.8	3502.8
10	3994.4		3522.3	5624.7	8424.0	3733.2	1990.7	3507.7
11	4047.7		3562.0	5678.4	8512.0	3779.7	2002.6	3522.1
12	4045.8		3556.0	5696.4	8544.0	3781.8	2000.2	3520.8
13	4006.1		3560.3	5687.6	8524.2	3794.0	1996.0	3529.8
14	3986.0		3549.7	5682.2	8496.5	3782.2	1988.8	3527.4
15	4027.9		3561.2	5674.7	8539.2	3795.8	1980.3	3532.5
16	4031.7		3559.0	5683.0	8596.7	3803.8	1968.6	3512.5
17	4062.8		3607.8	5730.9	8598.1	3842.1	1966.1	3522.0
18	4083.0		3635.8	5752.2	8624.3	3862.5	1964.8	3532.2
19	4099.8		3633.2	5776.5	8643.7	3868.5	1962.0	3538.5
20	4042.5		3563.3	5688.3	8518.5	3802.3	1944.4	3523.0
21	4034.2		3557.2	5664.5	8489.7	3794.2	1933.1	3501.7
22	3985.2		3526.7	5642.3	8417.6	3775.4	1914.8	3486.3
23	3997.6		3535.8	5645.6	8412.8(20)	3778.4	1916.6	3487.2
24	3876.9		3387.0	5491.4	8157.9	3669.8	1911.6	3473.7
25	3778.2		3283.8	5313.8	7944.1	3544.8	1884.5	3399.5
26	3862.4		3397.3	5494.2	8214.0	3674.5	1916.5	3430.6
27	3951.4		3466.0	5589.5	8353.2	3729.8	1924.5	3394.0
28	4001.3		3509.2	5659.4	8446.0	3786.8	1931.5	3454.3
29	4032.0		3530.8	5698.0	8515.2	3817.3	1943.0	3492.9
30	4056.9		3556.7	5705.9	8523.4	3845.8	1946.6	3508.8
31								
Mean	3995.0		3521.2	5637.2	8447.3	3761.3	1962.5	3497.6

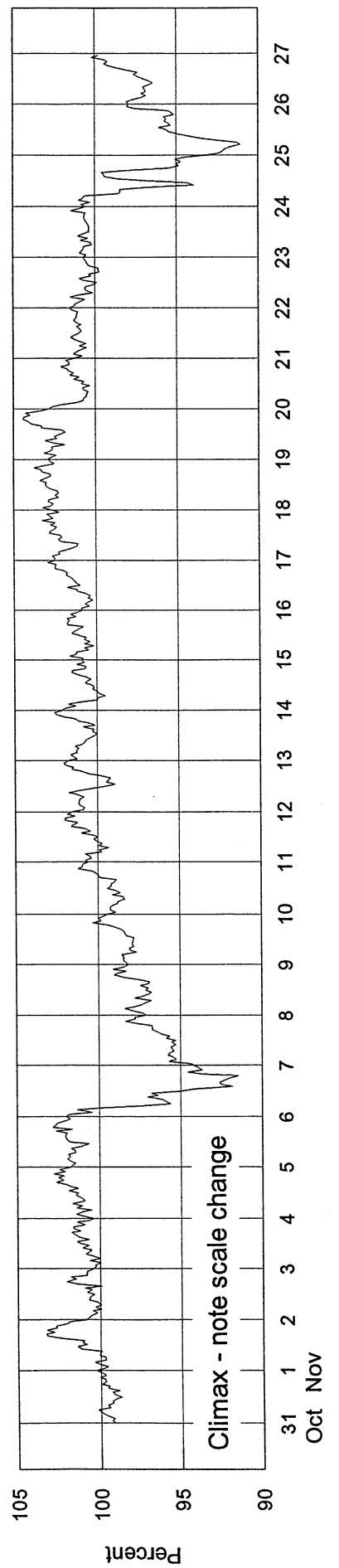
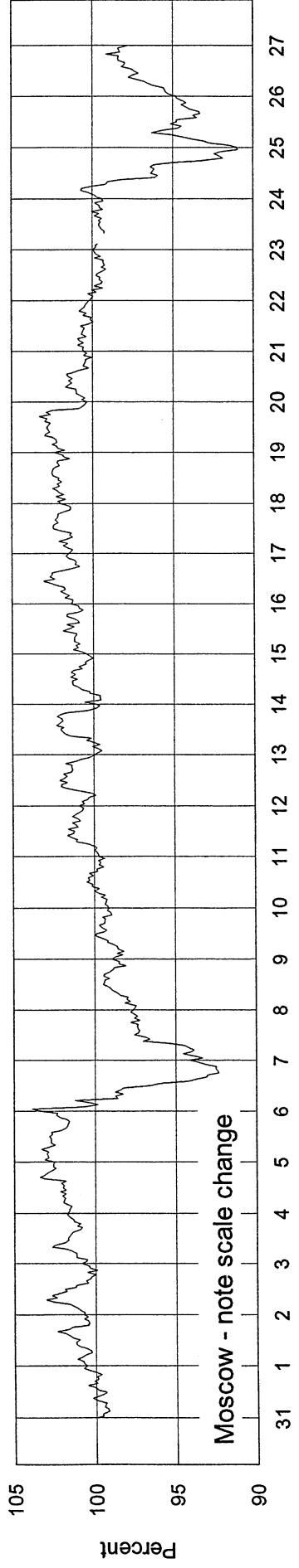
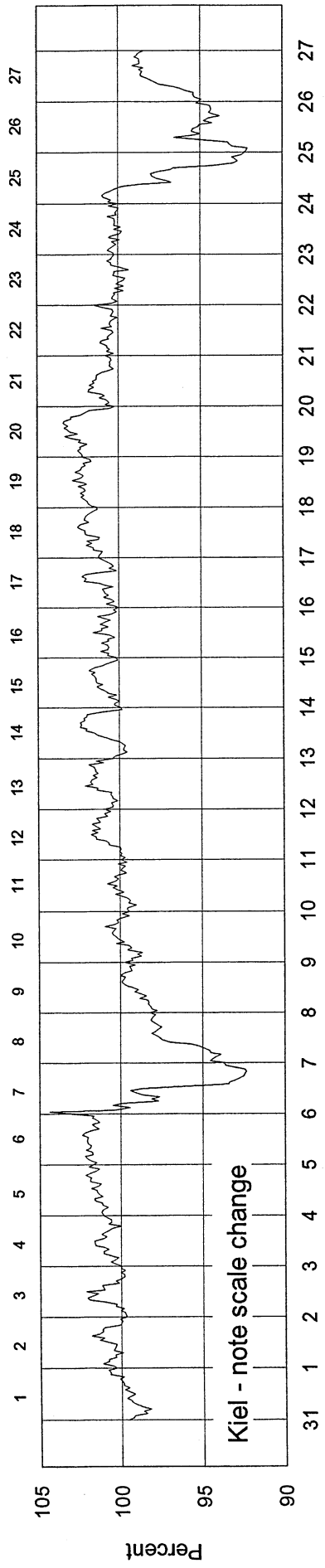
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

# COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2297 - Beginning 31 October 2001

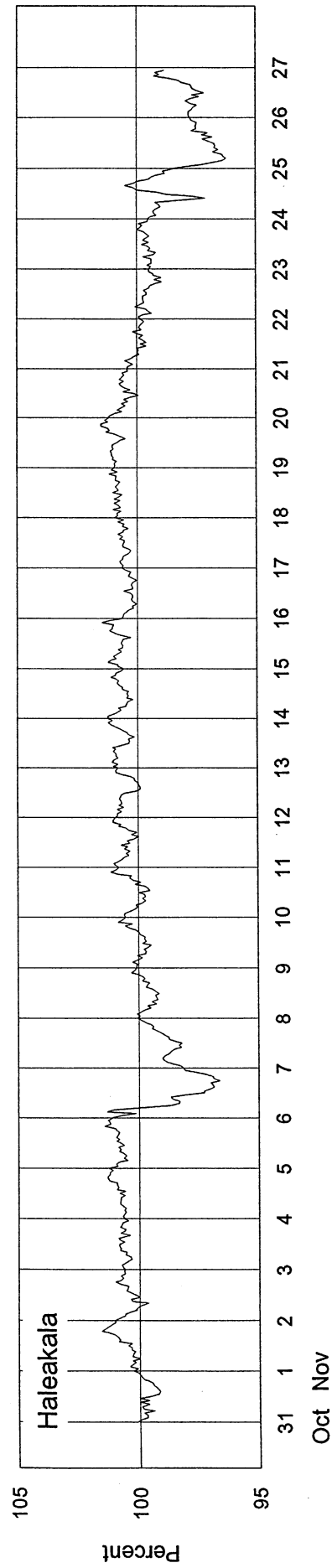
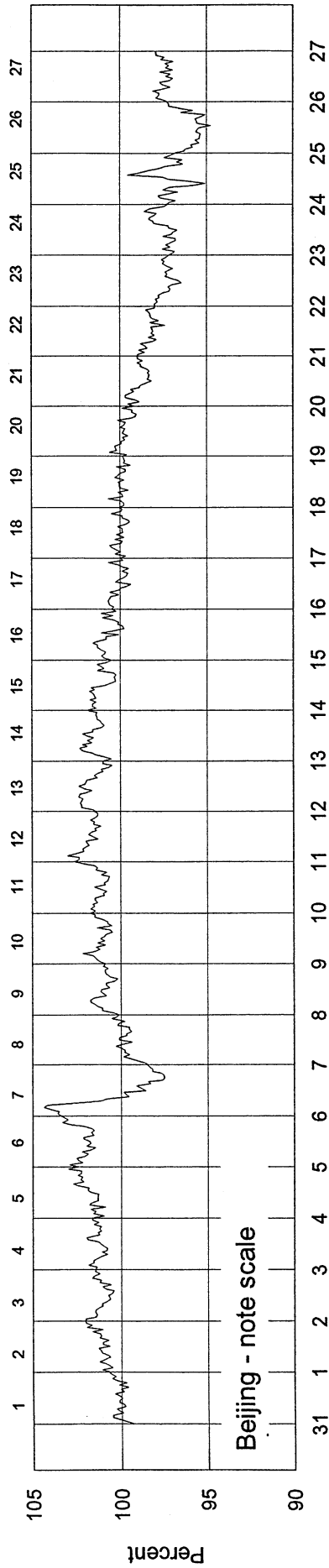


# COSMIC RAY INDICES (Neutron Monitor) Bartels Rotation 2297 - Beginning 31 October 2001

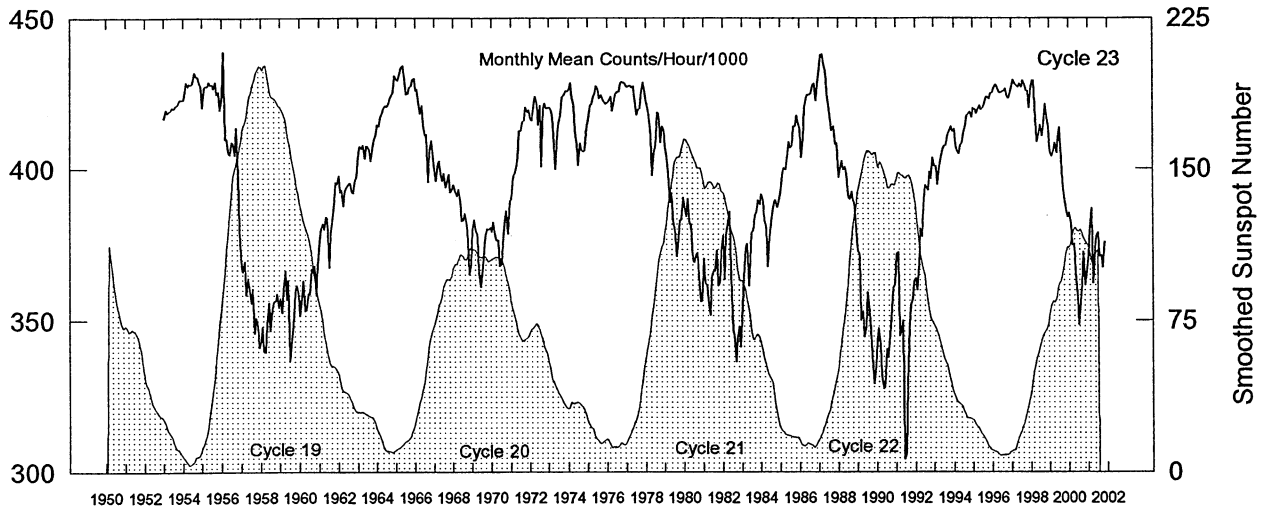


# COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2297 - Beginning 31 October 2001



# Climax Neutron Monitor Pressure-Corrected Values Jan 1953 - Nov 2001



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

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

NOTE: Data may differ from previously reported values due to subsequent cleanup of data and slight changes in the averaging algorithm. See <http://astro.uchicago.edu/home/web/pyle/neutron.html> for latest changes. Sunspot numbers are preliminary after June, 2001..



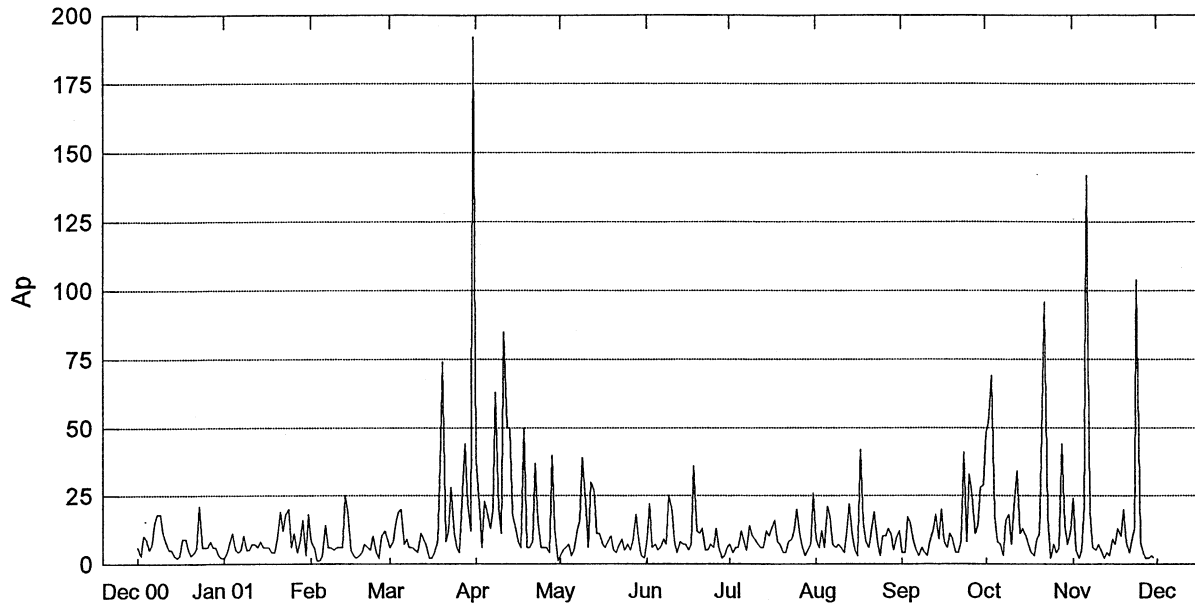
## Geomagnetic Activity Indices November 2001

Day	Kp	Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								Am	aa Provisional				
		1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8		N	S	M		
1	D3	5	5-	5-	3-	4	3+	2	1-	27	24	1.2	4+	4-	4-	3+	4o	3o	3-	1+	38	34	29	35	29	
2		1-	1	2-	1-	3+	1	0+	1-	9+	5	0.2	1+	1+	2o	1-	3o	1+	0+	1o	11	9	15	11	14 K	
3	Q1	1-	0	0+	0+	0+	1-	0+	0	3-	2	0.0	1-	0+	0o	0+	1-	0+	1-	0o	3	4	5	5	3 CK	
4		0	0+	2-	3-	2+	2+	1	0	10+	5	0.2	1-	1o	2-	2+	3-	3-	1+	0+	13	12	11	12	11 CK	
5		1-	0+	1+	3-	3	4	5+	5	22+	21	1.1	1-	0+	1+	3o	3o	4o	5+	5-	38	43	28	14	58	
6	D1	9-	9-	7	5	5+	7-	6+	6+	54	142	2.0	8o	8o	6+	4+	5-	6+	6o	6-	203	172	133	193	112	
7	D4*	6-	4	2-	3-	2+	2	2+	3-	23+	19	1.0	4+	3+	2-	3-	2+	2o	2+	3o	27	32	22	36	19	
8		2	2+	2	2	1-	1	1	1+	12+	6	0.3	2+	2o	2o	2o	1-	1o	1+	1+	11	12	12	16	8 CC	
9	Q10	1+	1	1	1	1-	1+	2	2-	10	5	0.2	1+	1+	2	2-	1-	2-	2+	2-	10	11	10	10	11 CC	
10		2-	2-	1-	1+	1+	1+	2-	3+	13	7	0.3	1+	1o	1-	1+	1+	1+	2o	3o	12	17	12	9	20	
11		2+	2-	1+	2+	1	1	1-	0+	11-	5	0.2	2o	1+	1+	3-	1-	1o	1o	1-	9	10	10	14	7 CK	
12	Q6	1+	0+	0+	1+	1	0	0	0	4+	2	0.0	1+	1-	0+	1+	1+	0+	0o	0o	5	7	6	8	5 CC	
13	Q8	1-	1	1-	0+	1-	2-	2-	1+	8	4	0.1	1+	1-	0+	0+	0+	2o	2-	1+	7	10	6	7	10 CC	
14	Q5	1-	1-	1+	1-	1-	0+	1-	0+	5+	3	0.1	1+	1o	1+	0+	1o	0+	1-	0+	6	6	11	9	8 CC	
15		0	0	0+	1	1+	4-	4+	2-	12+	9	0.5	0+	0+	0+	1+	1+	4o	5-	2-	21	19	23	6	37	
16		2+	2+	2+	2	2+	2-	1	1	15	7	0.4	2o	2+	2o	2+	3-	2o	1+	1+	16	16	21	17	20	
17		2	3+	2	2+	4-	3-	3	3	22	13	0.8	2-	3-	2o	2+	4-	3o	3o	3-	24	31	27	23	35	
18		2+	3-	1+	2	3-	3-	2+	3+	19+	10	0.6	2-	2o	2-	2+	3-	2+	2-	3-	17	23	18	17	24	
19	D5	4	3	2+	3	3+	3+	4+	4-	27	20	1.0	3o	2o	2o	3o	3o	3o	5-	4-	33	50	26	27	49	
20		3+	3	4	1+	0+	0	0	0	12	8	0.5	3-	2+	3o	1+	1+	0+	0o	0+	12	14	10	20	4 K	
21	Q9	1-	0+	2-	1	1+	2	1	0+	8+	4	0.1	1o	1-	2-	1+	2-	2-	1+	1o	9	7	8	7	9 CC	
22		1	3-	2	2+	2+	2	3-	3-	18-	9	0.5	1+	2o	2o	3-	2o	2o	3-	3-	18	20	15	15	20	
23		3-	2+	2+	3-	3	3	3-	3+	22	13	0.7	2+	2o	2+	3-	3o	3o	3o	3o	25	29	23	21	31	
24	D2	3+	5+	8+	7	8-	7+	3	5-	47-	104	1.9	3-	5o	8o	7-	7+	7-	3+	4+	176	130	160	175	116	
25		2-	3-	3-	3	2	2	1	1-	16-	8	0.4	2-	2+	3-	3o	2o	2-	1-	1+	16	15	19	23	11	
26		2-	1	3-	2-	1-	0+	0	1-	9-	4	0.2	1+	1+	2o	1o	1-	0+	0o	1-	6	9	8	13	4 CC	
27	Q2	1-	0+	0	0+	0	1-	1-	1	4-	2	0.0	1+	0+	0+	1-	0+	1+	1-	2-	6	4	9	6	7 CC	
28	Q4	0+	0	0+	0	1-	1	1-	1+	4+	2	0.0	1-	0o	0+	1-	1-	1+	1-	1+	5	4	8	4	8 CC	
29	Q7	1+	0+	1+	1	1-	0+	0+	0	5+	3	0.1	1+	1-	0+	1+	1o	0+	1-	0+	5	7	8	9	5 CC	
30	Q3	1-	0+	0	0+	0+	0+	1	1	4	2	0.0	1o	0+	0o	0o	0+	1-	1+	1+	5	4	5	4	5 CC	
Mean										16		0.49									26.2	25.5	23.3			24.4

Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								As	Sa	Prov			
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			Ri	Ra	Rs	IMF
1	4o	4-	4o	3+	4o	3o	3-	1-	38	5-	4o	3o	3+	4-	3-	3-	2-	39	232.0	96	111	189	
2	1o	1o	2-	1-	3o	1+	0o	1-	9	2-	2-	2+	1-	3-	1+	1-	1+	12	210.1	100	120	165	
3	1-	0+	0o	0o	1-	1-	1-	0o	3	1o	0+	0+	0+	0+	0+	1-	0+	3	212.5	100	123	168	
4	0+	0+	2-	2+	3o	3o	1o	0o	12	1+	1+	2-	2o	2+	3-	1+	1-	13	223.5	111	132	179	
5	0+	0o	1+	3-	3o	4o	5o	4+	35	1+	1-	2-	3o	3-	4o	5+	5-	41	230.6	130	145	187	
6	8o	8o	7-	4+	5-	6+	6-	6-	210	8o	8-	6o	4+	5o	6o	6o	6-	196	233.2	140	147	190	
7	4+	4-	2-	3-	2+	2o	2+	3-	27	4+	3o	2-	2+	2+	2o	3-	3o	26	263.9	123	169	223	
8	2o	2-	2o	2o	0+	0+	1-	1o	9	3-	2o	2o	2-	1o	1+	2-	2-	13	243.1	152	189	201	
9	1o	1-	1-	1o	0+	1+	2o	2-	8	2-	1+	1o	1+	1o	2o	2o	2o	12	265.6	149	174	225	
10	1o	1o	1-	1+	1+	1+	1+	3o	11	2-	1+	1-	2-	2-	2-	2+	3o	14	241.0	149	174	198	
11	2o	1-	1o	2+	1-	1o	1o	0+	8	2o	2-	1+	3o	0+	1o	1+	1o	11	229.3	145	150	186	
12	1o	0o	0o	1o	1+	0+	0o	0o	3	2-	1+	0+	2-	1+	0o	0o	0+	6	222.6	121	143	178	
13	1-	1-	0o	0+	1-	2-	2-	1+	6	2-	1o	1-	1-	0o	2o	2-	1+	8	226.8	118	132	183	
14	1-	1-	1+	1-	1-	0+	1-	0o	4	2o	1+	1+	1-	1o	0+	1o	1-	8	212.6	118	132	168	
15	0+	0+	0+	1o	1o	4+	4+	1+	20	0+	0+	1-	2-	2-	4o	5-	2o	22	202.4	117	118	157	
16	2o	1+	2o	2+	3o	2+	1-	1+	15	2o	3-	2o	3-	3-	2-	2-	1+	17	197.6	90	109	151	
17	2-	3-	2o	2+	4-	3o	3+	3-	26	2o	2+	2-	2o	3+	3o	3o	3o	23	194.0	85	101	148	
18	1+	2o	1+	2-	3-	2+	2o	3o	17	2o	2o	2-	3-	3-	2+	1+	3-	18	183.8	92	109	137	
19	3o	2+	2-	3o	3o	3+	5-	4-	34	3o	3-	2o	3-	3o	3o	5-	3+	32	186.8	81	92	140	
20	3o	2+	4-	1+	0+	0o	0o	0o	13	2o	2o	2o	1+	2-	0+	0+	1-	10	180.6	87	83	133	
21	1-	0+	2-	1+	1+	2o	1+	0o	8	1o	1o	1+	1+	2-	2-	1+	2-	9	179.7	80	92	132	
22	1o	2o	1+	3o	2o	2+	3o	3-	18	2-	2o	3-	3-	2+	2-	3-	3-	19	185.3#	87	112	138	
23	2+	2o	3-	2+	3-	3+	3o	3o	24	3-	2+	2o	3-	3o	3o	3+	3o	25	172.9	80	103	125	
24	3-	5+	8o	7-	7+	7-	3+	4o	174	3o	5-	8-	7o	8-	7-	3+	5-	178	168.6	67	77	120	
25	2-	2o	2o	3o	2-	2o	1-	1-	14	2o	3-	3o	3+	2o	2-	1-	1+	18	165.6	73	91	117	
26	1+	1+	2o	1o	1o	0+	0o	0+	6	1+	1+	2-	1+	1-	0+	0o	1o	6	170.3	84	86	122	
27	0+	0o	0o	1-	0o	1+	0+	1o	3	2-	1-	1o	1o	0+	1o	1+	2o	8	185.3	76	88	138	
28	0+	0o	0o	0o	0+	1+	0+	1o	3	1o	0+	1o	1o	1o	1+	1o	2-	7	193.1	107	131	147	
29	1o	0+	1o	0+	1-	0+	0o	0o	3	1+	1o	2-	1+	1o	0o	1o	1o	8	210.5	115	146	165	
30	0+	0o	0o	0o	0+	0o	1+	1-	3	2-	1-	0+	0+	1-	1+	2-	2-	7	219.6	121	148	175	
Mean									25.5									27.0	208.1	106.5	124.2	162.7	

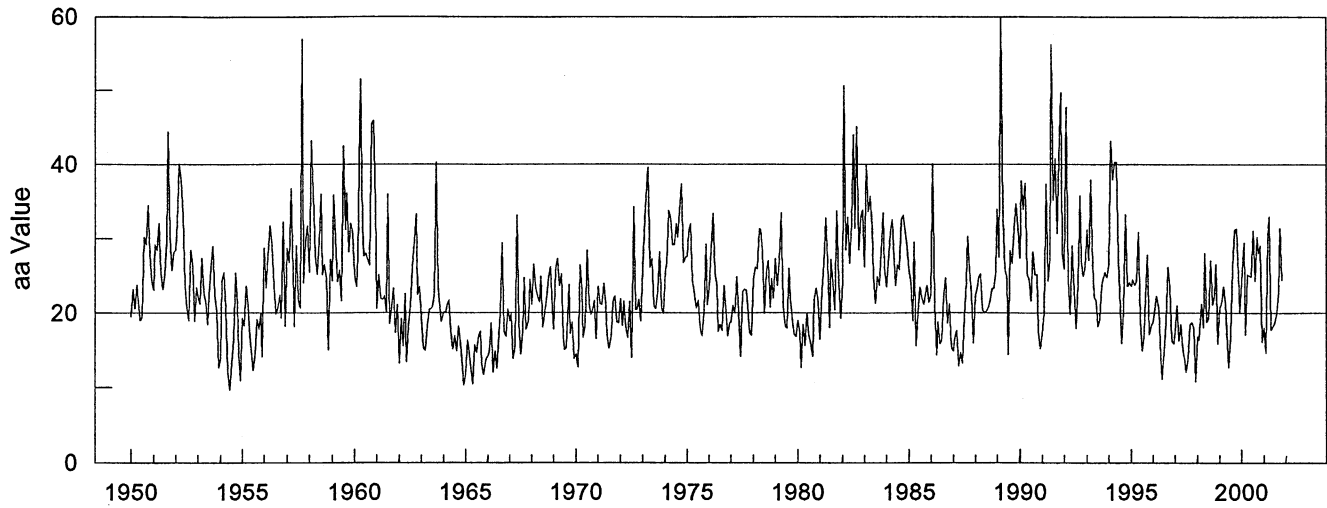
### Daily Average Indices Ap Dec 2000 -Nov 2001



Day	Dec 00	Jan 01	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	6	2	8	6	38	3	9	7	9	4	48	24
2	3	4	6	8	22	5	22	4	6	4	52	5
3	10	8	1	15	6	6	6	6	12	17	69	2
4	9	11	1	19	23	7	7	6	6	15	17	5
5	5	5	3	20	19	3	5	12	21	8	8	21
6	7	4	14	7	13	5	6	8	17	5	7	142
7	15	5	6	9	20	12	9	5	7	3	3	19
8	18	10	6	6	63	16	7	14	6	6	16	6
9	18	5	5	6	20	39	25	10	7	4	18	5
10	11	5	6	5	11	23	20	9	6	3	7	7
11	8	7	6	4	85	6	8	7	4	9	21	5
12	5	7	6	11	50	30	4	6	12	12	34	2
13	5	6	25	9	50	27	8	6	22	18	11	4
14	3	8	19	7	18	11	7	12	10	9	13	3
15	2	6	5	2	13	11	7	10	5	20	10	9
16	3	6	3	2	8	7	5	13	3	8	7	7
17	9	6	2	4	6	6	7	16	42	6	4	13
18	9	4	3	8	50	8	36	8	15	11	3	10
19	5	4	4	37	6	10	12	7	8	9	9	20
20	3	9	7	74	6	5	11	4	6	4	11	8
21	4	19	6	8	8	4	13	4	13	4	57	4
22	6	12	5	12	37	7	5	8	19	8	96	9
23	21	18	10	28	16	9	5	9	8	41	17	13
24	6	20	4	11	6	5	7	12	3	8	2	104
25	6	6	2	6	6	7	6	20	10	33	7	8
26	6	11	10	4	6	5	13	10	10	26	4	4
27	8	4	12	27	4	8	6	6	13	11	6	2
28	6	8	9	44	40	18	2	3	11	14	44	2
29	6	16		22	13	9	3	5	5	28	14	3
30	3	3		12	1	3	6	7	10	29	7	2
31	2	18		192		2		26	12		12	
Mean	7	8	7	20	22	10	10	9	11	13	20	16



# Monthly Mean aa Index Jan 1950 - Nov 2001

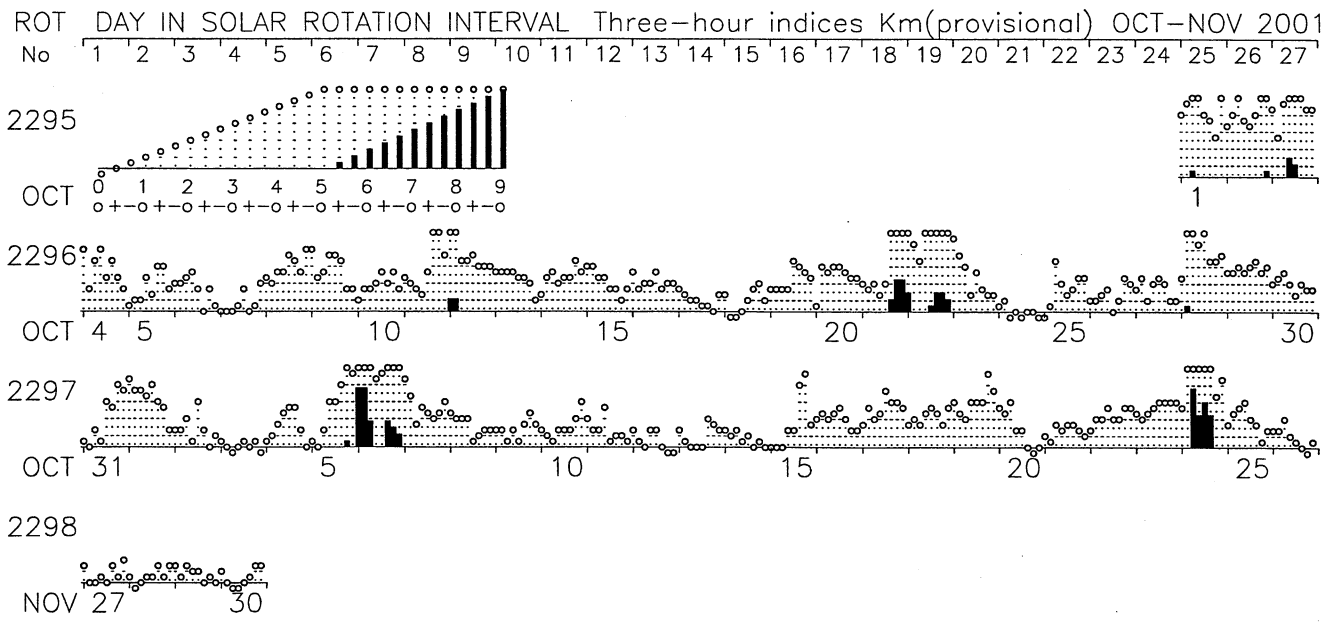


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	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		22.6

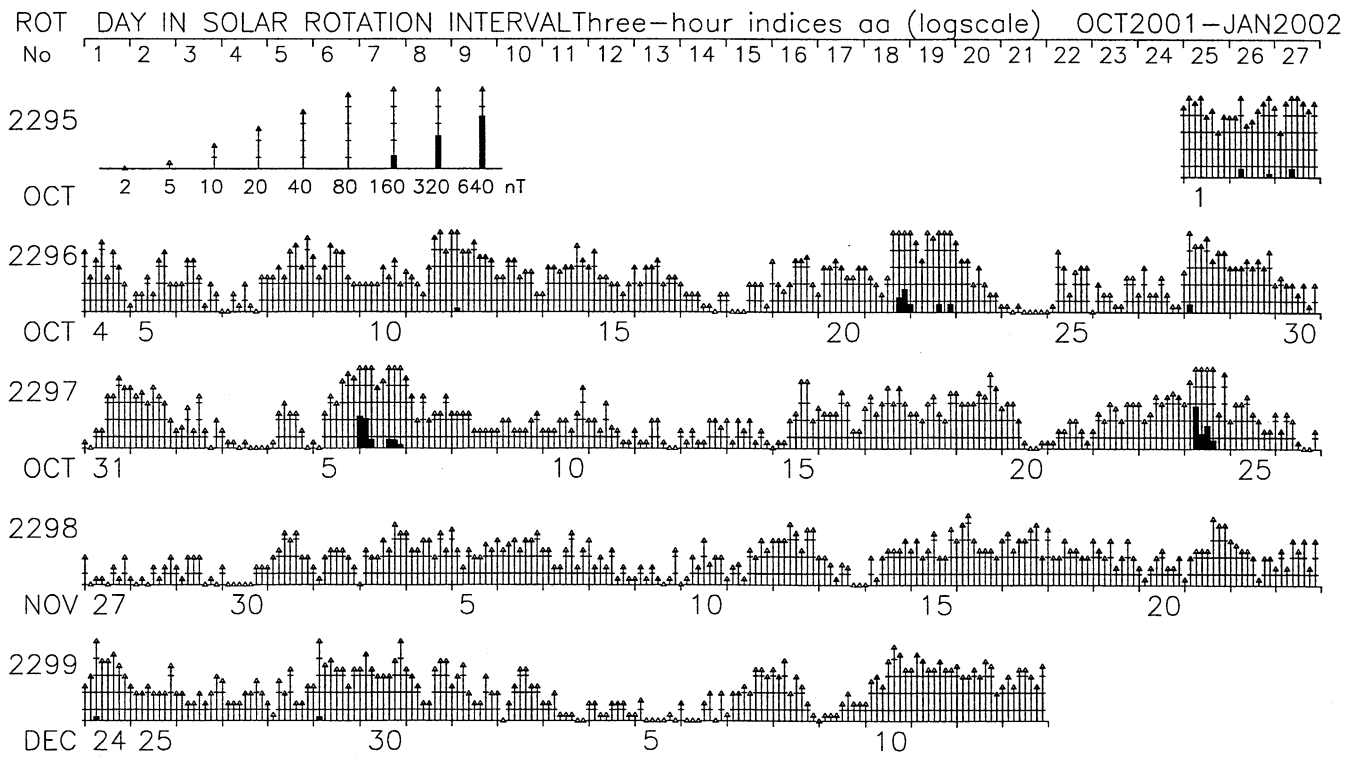
PLANETARY GEOMAGNETIC ACTIVITY

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

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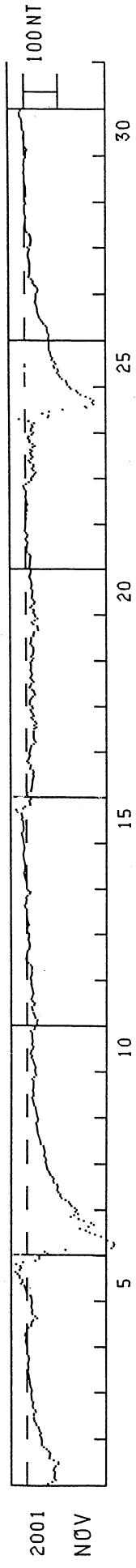


Indices Derivation at C.E.T.P.; Graph Prepared at ISGI Publication Office.

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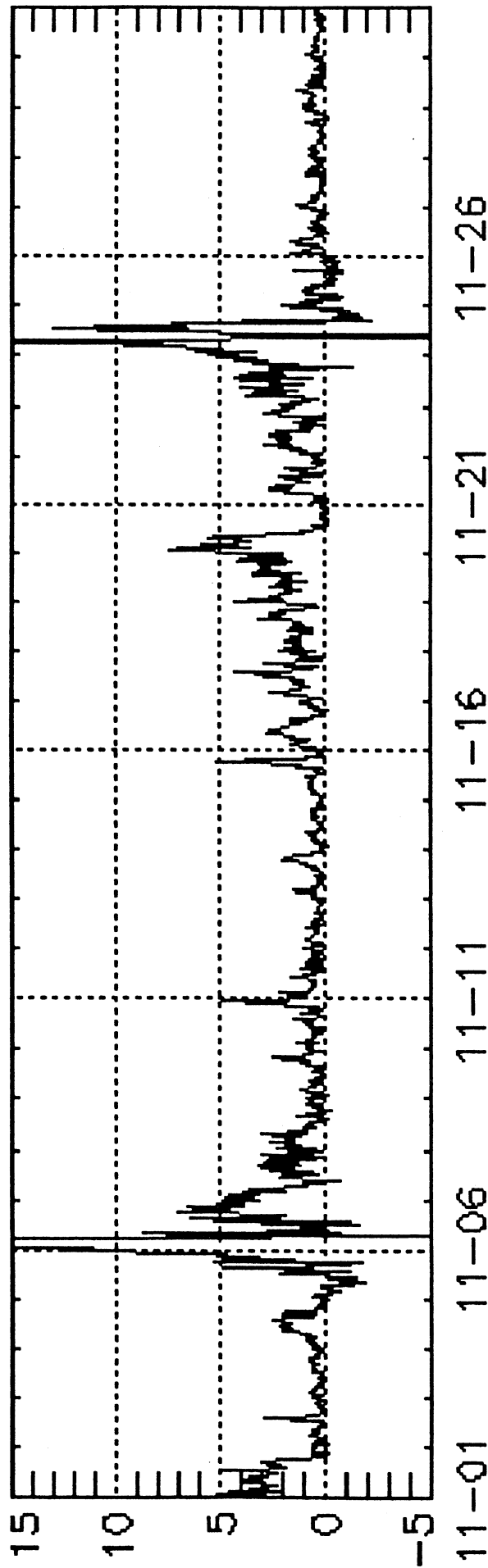
HOURLY EQUATORIAL DST VALUES (PROVISIONAL)  
NOVEMBER 2001

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	
UNIT=NT																									U. T.
1	-65	-77	-88	-84	-84	-85	-86	-81	-83	-87	-96	-97	-81	-68	-68	-70	-70	-67	-60	-51	-46	-46	-45	-45	
2	-43	-40	-43	-39	-37	-36	-28	-27	-23	-20	-20	-20	-21	-26	-24	-17	-15	-17	-18	-14	-13	-11	-11	-12	
3	-14	-12	-10	-7	-7	-7	-6	-5	-4	-3	-2	-3	-3	-3	-2	-3	-5	-5	-4	0	2	2	0	0	
4	3	5	6	4	4	7	5	0	0	-4	-12	-12	-14	-18	-30	-24	-16	-14	-16	-13	-11	-13	-14	-14	
5	-13	-12	-9	0	3	5	7	10	21	15	16	25	24	30	37	25	20	22	34	13	-25	-37	-38	-41	
6	-62	-54	-119	-267	-273	-277	-275	-254	-251	-233	-215	-198	-185	-166	-194	-210	-202	-178	-162	-137	-148	-159	-152	-155	
7	-150	-138	-134	-130	-120	-106	-103	-102	-96	-92	-93	-95	-91	-82	-80	-82	-77	-72	-68	-67	-62	-60	-60	-59	
8	-57	-58	-57	-51	-52	-53	-51	-51	-49	-42	-41	-39	-37	-34	-32	-31	-31	-30	-28	-28	-27	-30	-32	-31	
9	-29	-28	-27	-25	-24	-19	-17	-17	-16	-14	-18	-18	-18	-16	-17	-17	-18	-17	-17	-14	-19	-26	-24	-23	
10	-23	-25	-23	-19	-18	-16	-12	-13	-10	-9	-11	-15	-17	-13	-14	-15	-14	-13	-14	-13	-10	-19	-22	-24	
11	-28	-28	-30	-25	-22	-19	-17	-15	-13	-13	-21	-22	-15	-12	-13	-16	-17	-15	-15	-13	-11	-11	-11	-11	
12	-10	-12	-14	-13	-13	-13	-13	-9	-4	1	3	1	0	2	-1	-6	-8	-7	-7	-6	-4	-5	-5	-5	
13	-2	1	-1	-2	-5	-3	-2	-2	2	2	1	0	2	5	7	4	3	2	4	-1	-8	-9	-3	0	
14	2	2	2	3	6	7	7	9	7	6	5	6	6	7	9	9	11	11	9	8	7	7	9	10	
15	11	11	13	15	15	12	10	10	11	11	12	16	13	15	16	29	32	12	5	-10	-10	-8	-11	-6	
16	-1	-4	-12	-14	-14	-16	-16	-15	-17	-18	-19	-18	-19	-18	-9	-12	-12	-13	-1	-6	-8	-9	-8	-9	
17	-10	-12	-14	-19	-26	-22	-21	-20	-20	-21	-20	-22	-28	-23	-28	-24	-18	-13	-20	-17	-13	-12	-17	-15	
18	-10	-10	-10	-13	-17	-24	-22	-20	-16	-10	-11	-13	-19	-15	-12	-14	-16	-14	-12	-13	-14	-12	-11	-16	
19	-19	-13	-18	-21	-19	-21	-20	-16	-12	-14	-14	-13	-19	-21	-23	-36	-33	-33	-20	-16	-25	-32	-26	-24	
20	-21	-23	-20	-11	-16	-22	-25	-20	-16	-15	-18	-18	-17	-13	-15	-15	-15	-14	-12	-10	-11	-13	-13	-12	
21	-10	-11	-12	-12	-11	-13	-14	-9	-3	-1	-3	-3	-4	-5	-2	0	-3	-6	-1	4	4	0	0	0	
22	1	1	-1	2	-2	0	-4	-3	-2	-5	-3	-2	-1	1	-2	-1	-2	3	6	8	-1	-9	-16	-16	
23	-20	-25	-28	-23	-18	-23	-22	-14	-10	-15	-19	-16	-14	-17	-14	-19	-26	-20	-12	-11	-8	-10	-18	-22	
24	-15	-16	-19	-18	-25	-9	20	-67	-68	-49	-71	-15	-190	-185	-212	-209	-213	-202	-187	-170	-161	-157	-141	-187	
25	-131	-128	-126	-114	-106	-102	-96	-100	-99	-88	-86	-91	-88	-80	-81	-78	-75	-75	-72	-70	-70	-71	-71	-68	
26	-68	-70	-70	-67	-65	-64	-65	-61	-54	-49	-46	-42	-40	-37	-36	-36	-35	-33	-30	-29	-30	-30	-31	-31	
27	-35	-38	-35	-30	-27	-23	-23	-18	-12	-13	-13	-14	-4	-13	-13	-13	-13	-12	-10	-9	-10	-12	-14	-10	
28	-15	-15	-17	-18	-17	-16	-13	-8	-4	-1	-2	-2	-1	-1	-3	-4	-1	0	2	1	1	0	-3	-2	
29	-1	0	-4	-4	-4	-3	-4	-4	-2	1	1	2	2	1	3	1	0	1	3	1	1	0	-3	-3	
30	-3	-5	-7	-3	0	2	2	4	4	3	2	2	5	3	8	7	7	7	10	14	15	15	12	14	



Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for November 2001.

WDC C1 for Geomagnetism, Copenhagen  
Polar Cap index  
Thule(Qaanaaq), THL

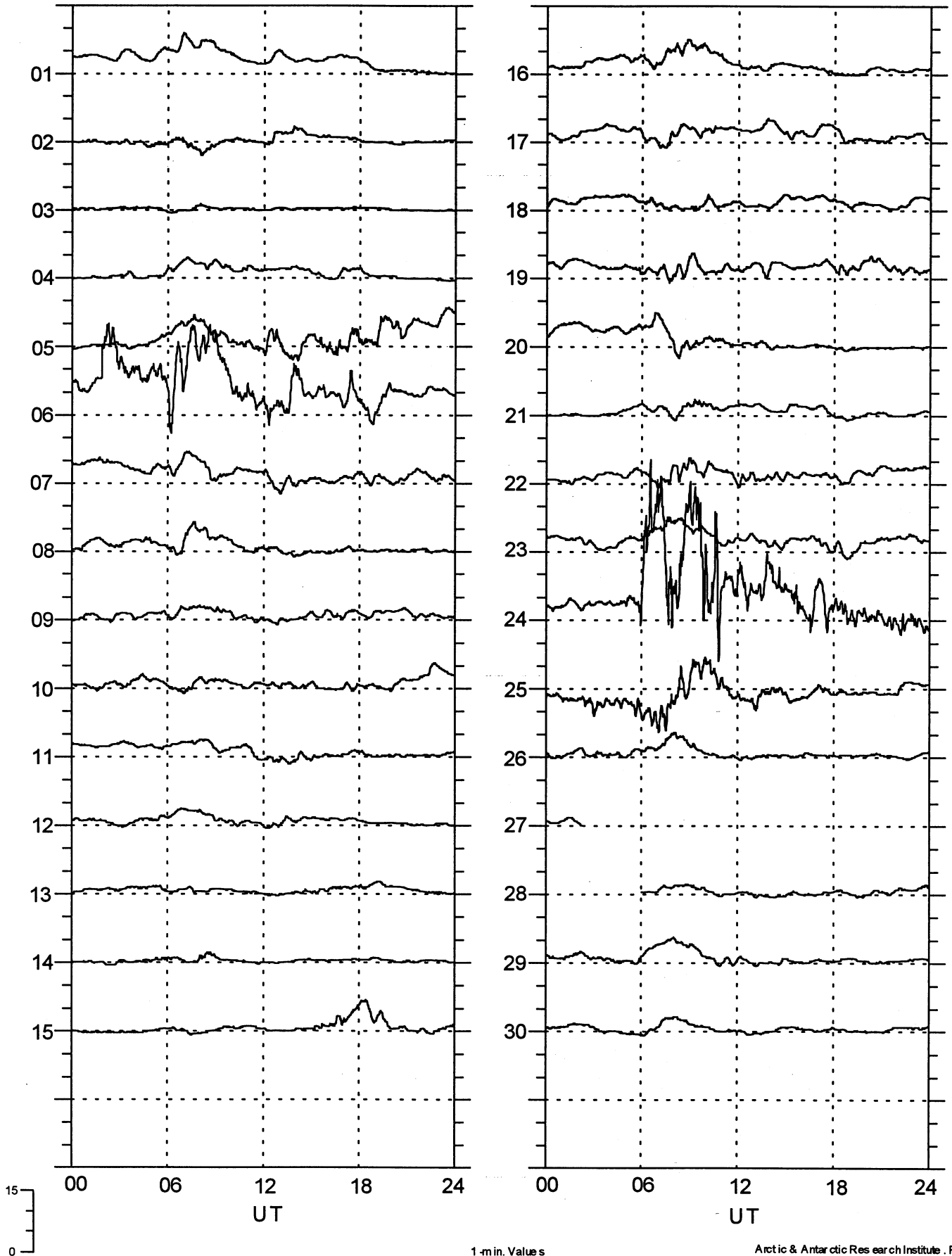


Date, mm-dd  
Data source: Solar-Terrestrial Physics Division  
Danish Meteorological Institute

# PC-INDEX

Vostok

November, 2001





PRINCIPAL MAGNETIC STORMS

NOVEMBER 2001

Sta	Geomag Lat	Commencement		SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour Day (UT)		
		Time Day (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		D K (Min)	H (Gamma)	Z (Gamma)			
UJJ	13.6N	05	1100	..	..	..		-	9	332	48	07 07	
NGP	11.3N	05	1100	..	..	..		-	9	376	42	07 07	
ABG	09.4N	05	1100	..	..	..	06(1)	9	8	359	75	07 07	
PND	02.0N	05	1100	..	..	..		-	6	368	193	07 07	
TIR	00.6S	05	1100	..	..	..		-	8	504	179	07 07	
HER	33.6S	05	11--	..	..	..	05(7)	6	27	102	166	06 01	
KRC	16.4N	06	0648	SC	- 8	121	44	06(1,2)	7	14	425	154	08 07
ETT	00.7S	06	0152	SC	- 3.5	140	62		-	6	468	227	07 22
HER	33.6S	06	0152	SC	15	89	80	06(1)	7	47	321	193	07 02
UJJ	13.6N	15	1506	SC*	- 0.3	22	- 5		-	3	75	15	16 18
NGP	11.3N	15	1506	SC*	--	22	- 2		-	2	101	19	16 18
ABG	09.4N	15	1506	SC*	- 0.3	21	- 4	15(6,7)	5	2	87	21	16 18
PND	02.0N	15	1506	SC*	- 0.1	21	18		-	2	90	42	16 18
TIR	00.6S	15	1506	SC*	- 0.2	18	16		-	2	133	45	16 18
ETT	00.7S	15	1507	SC	- 0.1	20	19		-	3	143	45	17 24
HER	33.6S	15	1510	SC	3	20	18	15(6)	5	19	78	97	15 22
ETT	00.7S	19	1812	SC	- 0.1	24	22		-	--	--	--	-- --
HER	33.6S	19	1818	SC	- 2.0	23	12	19(8)	4	7	35	33	19 24
KRC	16.4N	24	1200	..	..	..	..	24(3)	8	25	527	131	25 06
UJJ	13.6N	24	0554	SC	- 1.2	67	- 10		-	10	409	47	25 22
NGP	11.3N	24	0554	SC	--	59	- 9		-	11	475	44	25 22
ABG	09.4N	24	0554	SC	- 0.8	64	- 11	24(4)	8	10	455	58	25 22
PND	02.0N	24	0554	SC	- 0.2	33	11		-	--	--	--	25 22
TIR	00.6S	24	0554	SC	--	--	--		-	--	--	--	25 22
ETT	00.7S	24	0500	SC	- 0.4	58	31		-	--	--	--	-- --
ETT	00.7S	24	0552	SC	- 1.0	93	95		-	9	570	247	26 13
HER	33.6S	24	05--	..	..	..	..	24(3)	9	118	323	355	24 24

Stations:

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

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

November 2001

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
06	0152	A: NUR* WNG* NGK* BDV* NAG* GCK	08	0702-0710	KNY+
		MMB* EBR* SPT* KAK* KNY* HYB	27	0857-0911	NAG
		B: HRB HER	30	0102-0115	MMB+ KAK+ KNY+
15	1509	A: NAG SPT*			
		B: NUR* WNG HRB EBR* HYB HER			
		C: SOD* NGK VAL* BDV GCK			
19	1815	B: WNG* EBR HYB HER*			
		C: NGK* BDV* GCK SPT			
24	0556	A: MMB* SPT* KAK* KNY* GUI*			
		B: NUR WNG* NGK* VAL BDV HRB GCK*			
		C: NAG* EBR*			

**REPORTING OBSERVATORIES** (up to the 4th of January 2002):

SOD NUR WNG NGK VAL BDV CLF HRB NAG GCK MMB EBR SPT KAK KNY GUI HYB HER

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 (+).