FEBRUARY 2001 NUMBER 678 - Part I

Solar-Geophysical Data prompt reports

Data for December 2000 and January 2001
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

SGD On-line Edition:
http://www.ngdc.noaa.gov/stp -- Click on SGD Online
SGD PDF version:
http://ftp.ngdc.noaa.gov/STP/SOLAR_DATA
Total Solar Irradiance
VIRGO/SOHO Version 3.5 Jan 1996-Sep 2000

NGDC On-Line Addresses:

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

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL GEOPHYSICAL DATA CENTER / BOULDER, COLORADO

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

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Scott B. Gudes, Acting Under Secretary/Administrator

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

FEBRUARY 2001 NUMBER 678 - Part I

Solar-Geophysical Data prompt reports

Data for December 2000 and January 2001

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

NATIONAL GEOPHYSICAL DATA CENTER
Michael S. Loughridge, Director
Boulder, Colorado

Subscription information is on the inside back cover.

SOLAR-GEOPHYSICAL DATA

Number 678

(Issued in Two Parts)

Editor: Helen E. Coffey

Chief: Herbert W. Kroehl
Solar-Terrestrial Physics Division

Staff: Edward H. Erwin

CONTENTS

PART I (PROMPT REPORTS) Page

DETAILED INDEX FOR 2000-2001 2
DATA FOR JANUARY 2001 ..... 3- 40
DATA FOR DECEMBER 2000 41-159

PART II (COMPREHENSIVE REPORTS) Page

DETAILED INDEX FOR 2000-2001 2
DATA FOR AUGUST 2000 3-44
MISCELLANEOUS DATA 45-53
Total Solar Irradiance from VIRGO January 1996-September 2000
(Variability of solar IRradiance and Gravity Oscillations) onboard SOHO

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	JUN 00	JUL	AUG	SEP	OCT	NOV	DEC	JAN 01
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	672A 64	673A 50	674A 50	675A 48	676A 48	677A 52	678A 54	
A.2aa	International Provisional Sunspot Numbers	671A 27	672A 29	673A 28	674A 25	675A 27	676A 26	677A 29	678A 28
A.2c	American Sunspot Numbers	671A 27	672A 29	673A 28	674A 25	675A 27	676A 26	677A 29	678A 28
A.3a	Mt. Wilson Magnetograms	672A 64	673A 50	674A 50	675A 48	676A 48	677A 52	678A 54	
A.3b	Sunspot Mag Class and Regions	672A105	673A 99	674A 98	675A 95	676A 96	677A 99	678A104	
A.3c	Kitt Peak Magnetograms	672A 64	673A 50	674A 50	675A 48	676A 48	677A 52	678A 54	
A.3d	Mean Solar Magnetic Field (Stanford)	671A 45	672A 55	673A 41	674A 41	675A 37	676A 39	677A 41	678A 39
A.3e	Stanford Magnetograms	672A 64	673A 50	674A 50	675A 48	676A 48	677A 52	678A 54	
A.4	H-alpha Filtergrams	672A 64	673A 50	674A 50	675A 48	676A 48	677A 52	678A 54	
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	672A 58	673A 44	674A 44	675A 42	676A 42	677A 46	678A 42	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps	672A 63	673A 49	674A 49	675A 47	676A 47	677A 51	678A 52	
A.6f	Active Prominences and Filaments	676B 69	677B 91	678B 42					
A.6g	Sac Peak Coronal Line Synoptic Maps	672A 60	673A 46	674A 46	675A 44	676A 44	677A 48	678A 46	
A.6h	Photometric White Light (San Fernando)	Aug 95-Jun 96 in 624B 24; Jul-Dec 96 630B 32; 97-98 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	672A 64	673A 50	674A 50	675A 48	676A 48	677A 52	678A 54	
A.7j	Coronal Hole Daily Maps (NSO/KP)	672A102	673A 89	674A 89	675A 86	676A 87	677A 90	678A 93	
A.7k	Coronal Index (Slovak Academy)	1939-1996 in 644B 28							
A.8aa	2800 MHz- Solar Flux (Penticton)	671A 27	672A 29	673A 28	674A 25	675A 27	676A 26	677A 29	678A 28
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	671A 27	672A 29	673A 28	674A 25	675A 27	676A 26	677A 29	678A 28
A.8g	Adjusted Daily Solar Fluxes (Learmonth)	671A 27	672A 29	673A 28	674A 25	675A 27	676A 26	677A 29	678A 28
A.10g	Nancay Radioheliograph - 164&327 MHz	672A171	673A157	674A151	675A139	676A134	677A143	678A140	
A.10h	Nobeyama Radioheliograph Maps - 17 GHz	672A105	673A 93	674A 92	675A 90	676A 90	677A 94	678A 98	
A.11g	Solar X-ray GOES (graphs/event table)	676B 61	677B 81	678B 33					
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	672A 94	673 A 81	674A 81	675A 78	676A 79	677A 82	678A 85	
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.12g	Solar Particles (GOES-7)	671A 4	672A 4	673A 4	674A 4	675A 4	676A 4	677A 4	678A 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)	676B 71	677B 93	678B 44					
A.16c	ERBS, NOAA-9 & -10 Solar Irradiance	ERBS Oct 84-Jun 00 in 671B 36							
A.16d	UARS Solar Irradiance	Oct 91-Dec 97 in 642B 32							
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	676B 72	———	———					
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	671A 30	672A 32	673A 31	674A 28	675A 30	676A 29	677A 32	678A 31
C.1ba	H-alpha Flare Groups	676B 4	677B 4	678B 4					
C.1d	Flare Patrol Obsevations	676B 25	677B 36	678B 19					
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	676B 27	677B 38	678B 21					
C.3	Radio Bursts Fixed Frequency Selected	671A 42	672A 50	673A 39	674A 37	675A 36	676A 36	677A 40	678A 37
C.4	Radio Bursts Spectral	672A144	673A131	674A134	675A120	676A120	677A126	678A125	
C.6	Sudden Ionospheric Disturbances	672A142	673A127	674A132	675A117	676A118	677A124	678A123	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	672A180	673A166	674A158	675A149	676A144	677A153	678A150	
D.1ba	27-day Chart of Kp Indices	672A182	673A168	674A160	675A151	676A146	677A155	678A152	
D.1cb	Monthly Mean aa Indices	672A183	673A169	674A161	675A152	676A147	677A156	678A153	
D.1d	Principal Magnetic Storms	672A188	673A174	674A166	675A157	676A152	677A161	678A158	
D.1f	Sudden Commencements/Flare Effects	672A189	673A175	674A167	675A158	676A153	677A162	678A159	
D.1g	Equatorial Indices Dst	672A185	673A171	674A163	675A154	676A149	677A158	678A155	
D.1i	Polar Cap (PC) Index	672A186	673A172	674A164	675A155	676A150	677A159	678A156	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
F.1h	Cosmic Ray Neutron Cts (Thule)	———	———	———	———	———	———	———	
F.1i	Cosmic Ray Neutron Cts (Kiel)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
F.1n	Cosmic Ray Neutron Cts (Beijing)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
F.1m	Cosmic Ray Neutron Cts (Haleakala)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
F.1o	Cosmic Ray Neutron Cts (Moscow)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
F.1p	Cosmic Ray Neutron Cts (Calgary)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
F.1r	Cosmic Ray Neutron Cts (Goose Bay)	672A175	673A161	674A153	675A141	676A136	677A145	678A142	
H.	MISCELLANEOUS								
H.60	ISES Alert Periods	671A 19	672A 20	673A 20	674A 19	675A 20	676A 19	677A 20	678A 20

The entry "672A 64" under Jun 00, for example, means that the sunspot drawings for Jun 00 appear in SOLAR-GEOPHYSICAL DATA No. 672, Part I, and that they begin on page 64. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

CONTENTS

Prompt Reports Number 678 Part I

DATA FOR JANUARY 2001

Page

SOLAR-TERRESTRIAL ENVIRONMENT 4-19
Plots of GOES Satellite X-rays, Particles and Magnetometer Data
with ground-based Goose Bay Neutron Monitor Cosmic Rays

ISES ALERT PERIODS (Advance and Worldwide) 20-25

SOLAR ACTIVITY INDICES
Daily Sunspot Numbers (12 Months) 26
Daily 2800 MHz Solar Flux (12 Months) 27
Daily Solar Indices (Sunspot Numbers and Solar Flux) 28

Smoothed Observed and Predicted Sunspot Numbers 29
Graph and Table of Monthly Mean Sunspot Numbers 1950-present 30

SOLAR FLARES
H-alpha Solar Flares 31-36

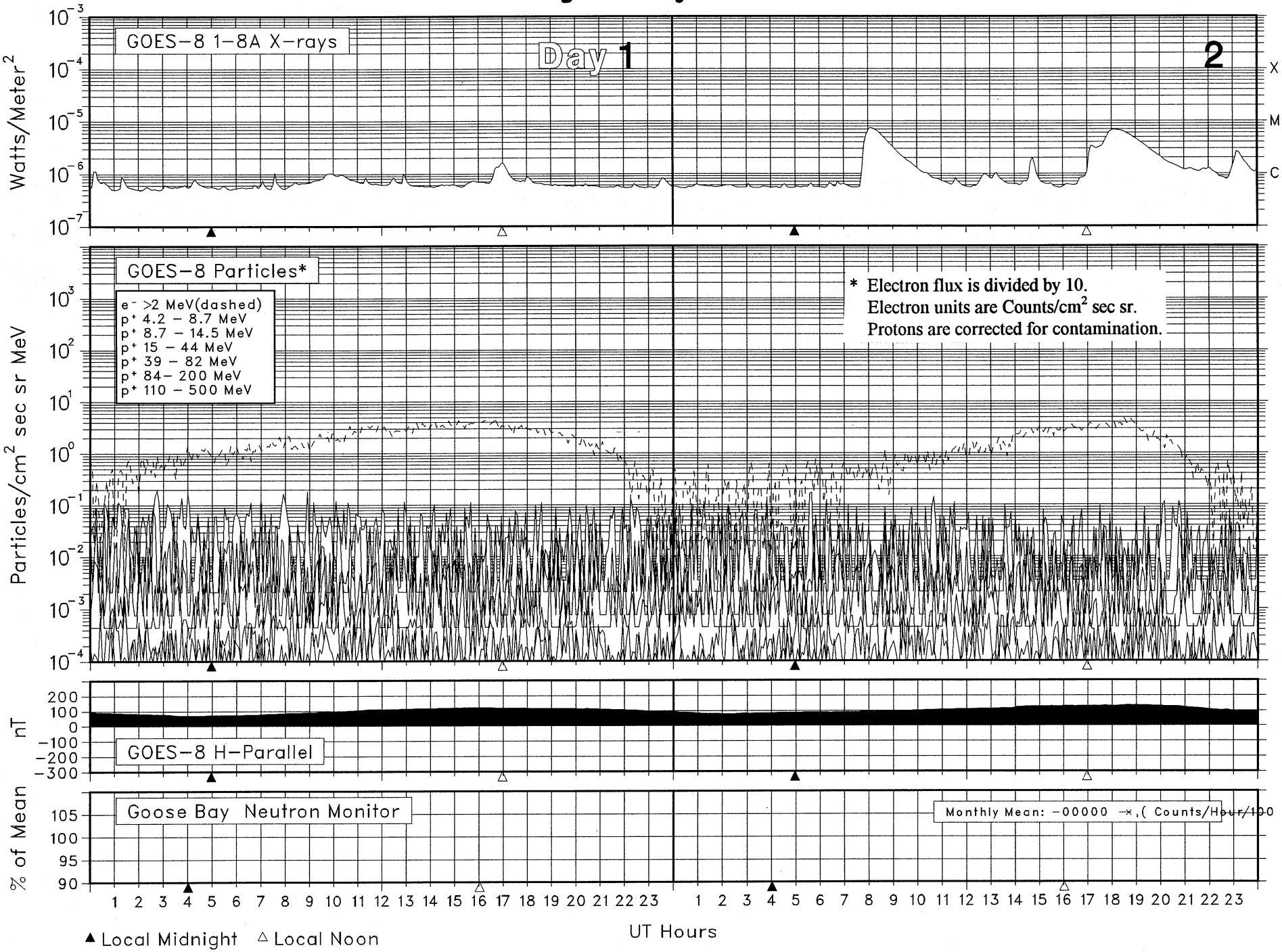
Intervals of No Flare Patrol (See 6-month late chart in Comprehensive Reports.)

SOLAR RADIO EMISSION
Selected Fixed Frequency Events 37
Selected Bursts (None reported.)

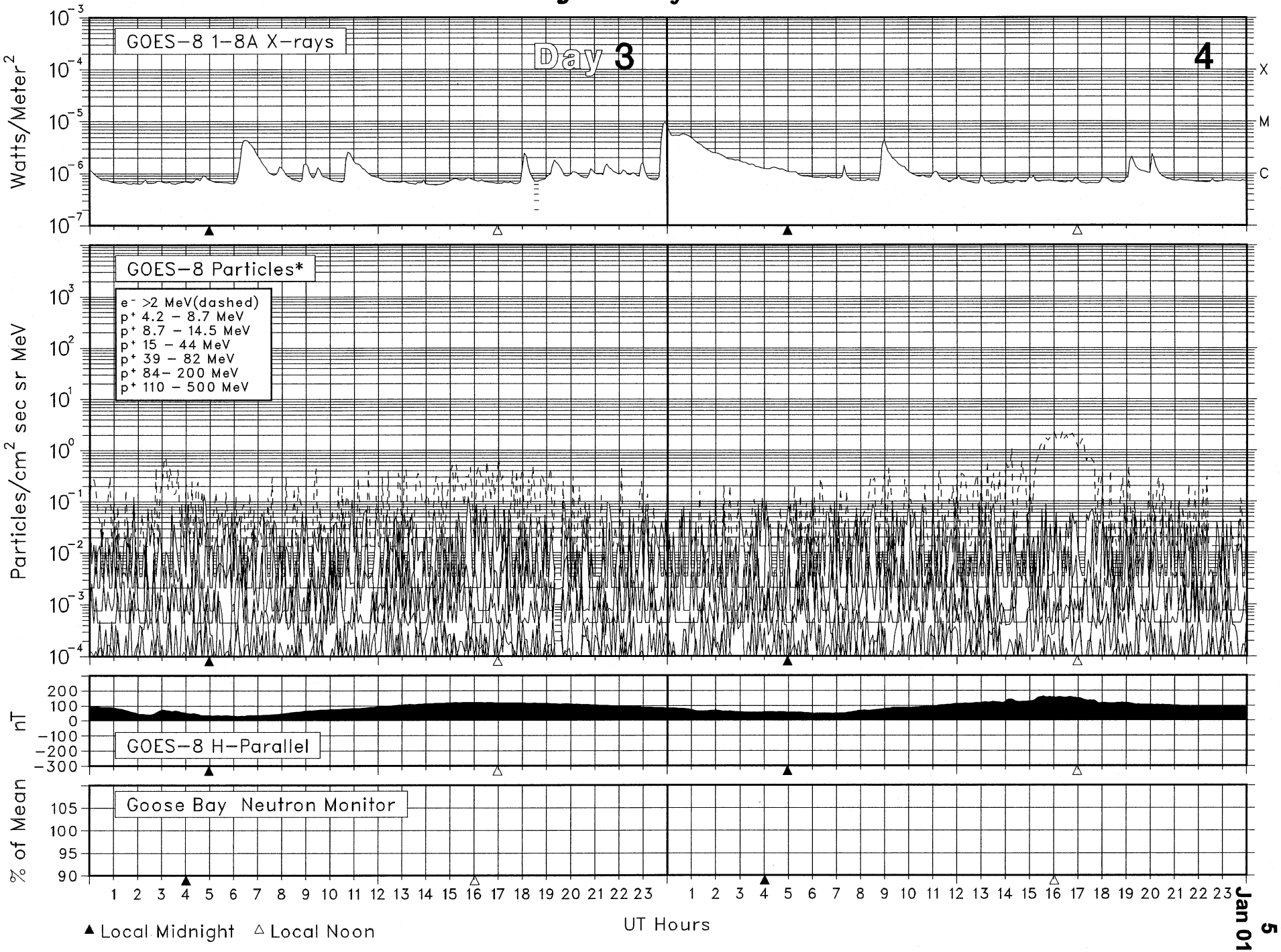
STANFORD MEAN SOLAR MAGNETIC FIELD Graph 38
Table 39

GOES-8 Daily Electron Fluence 40

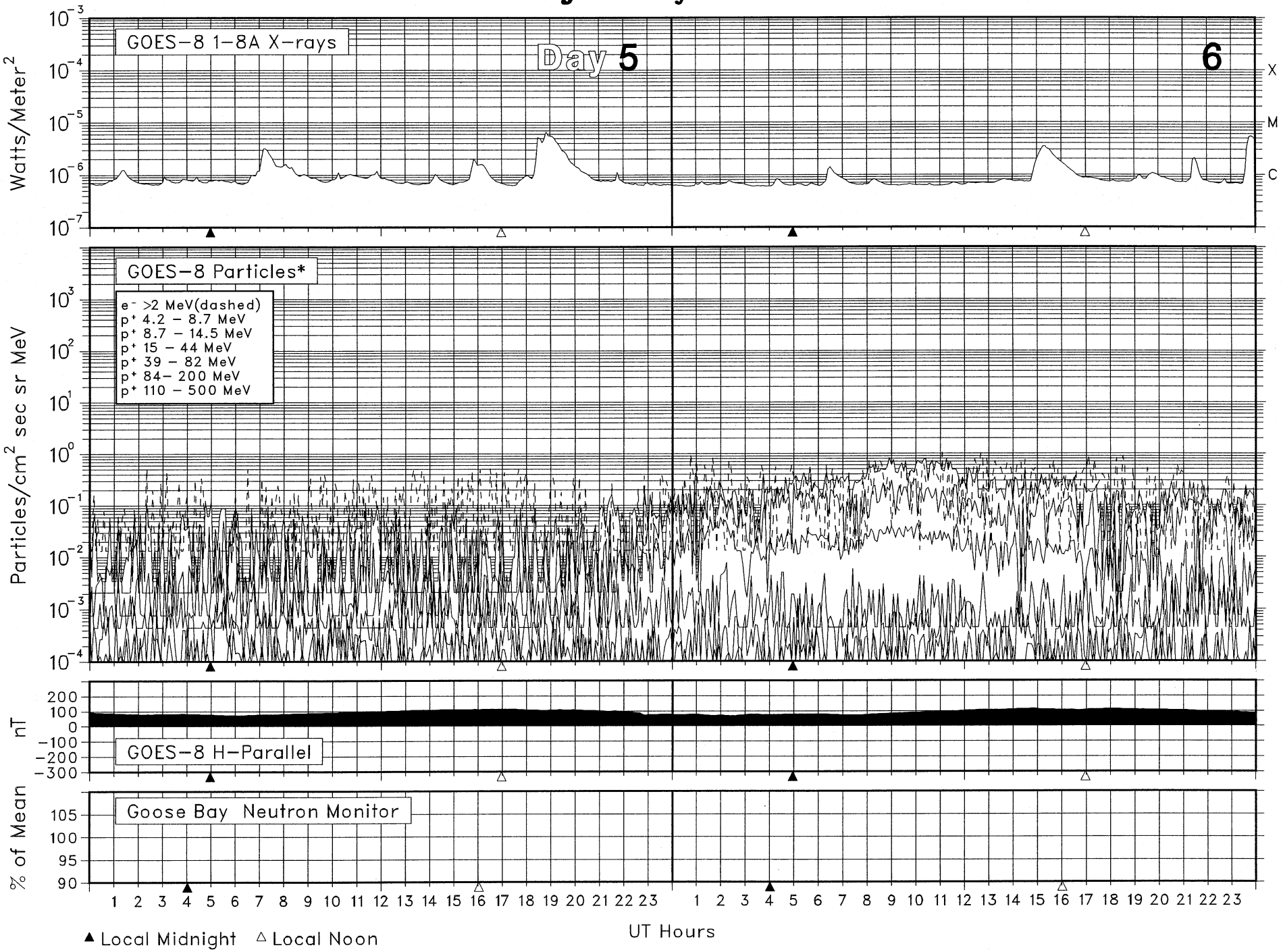
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



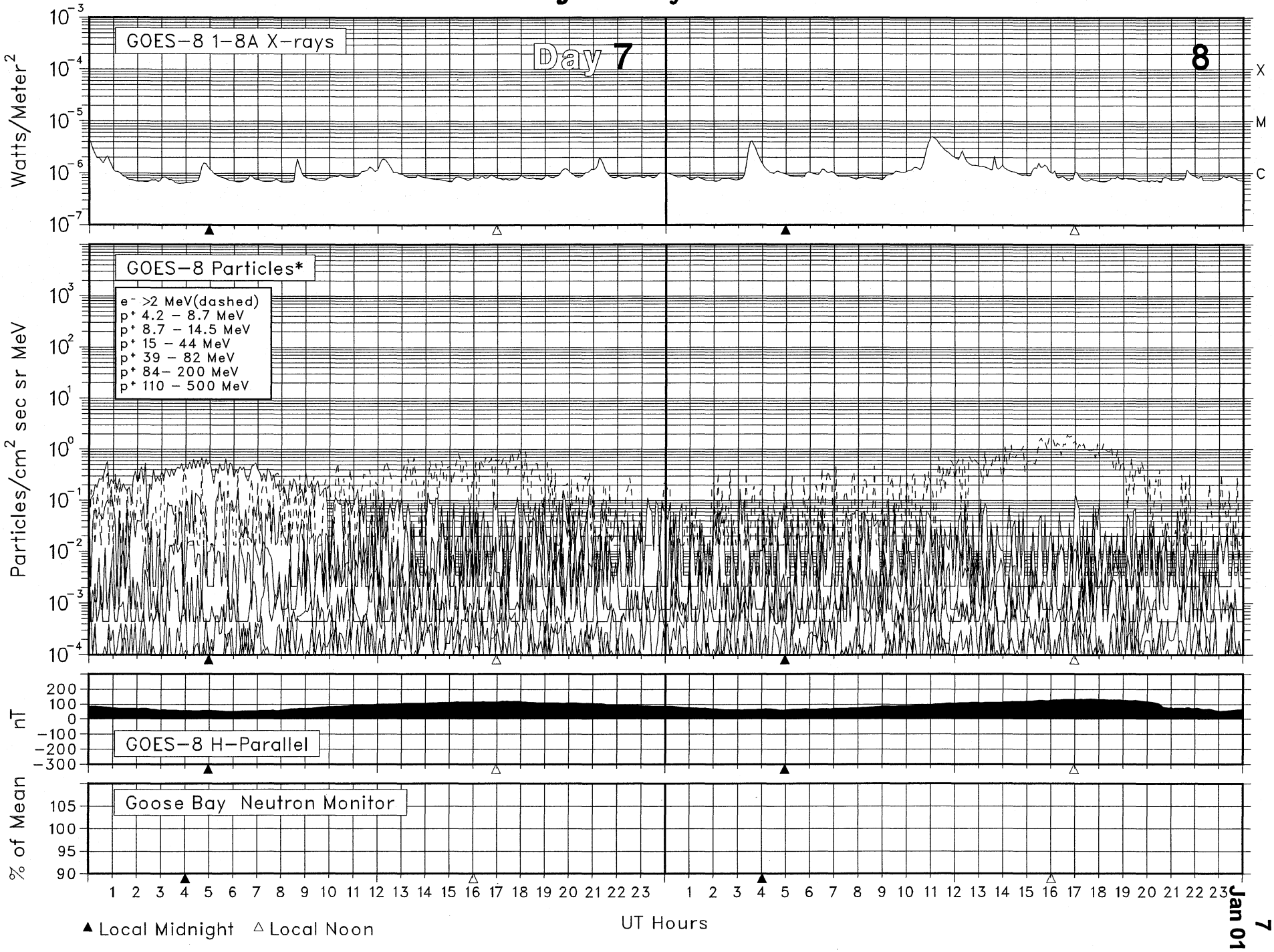
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



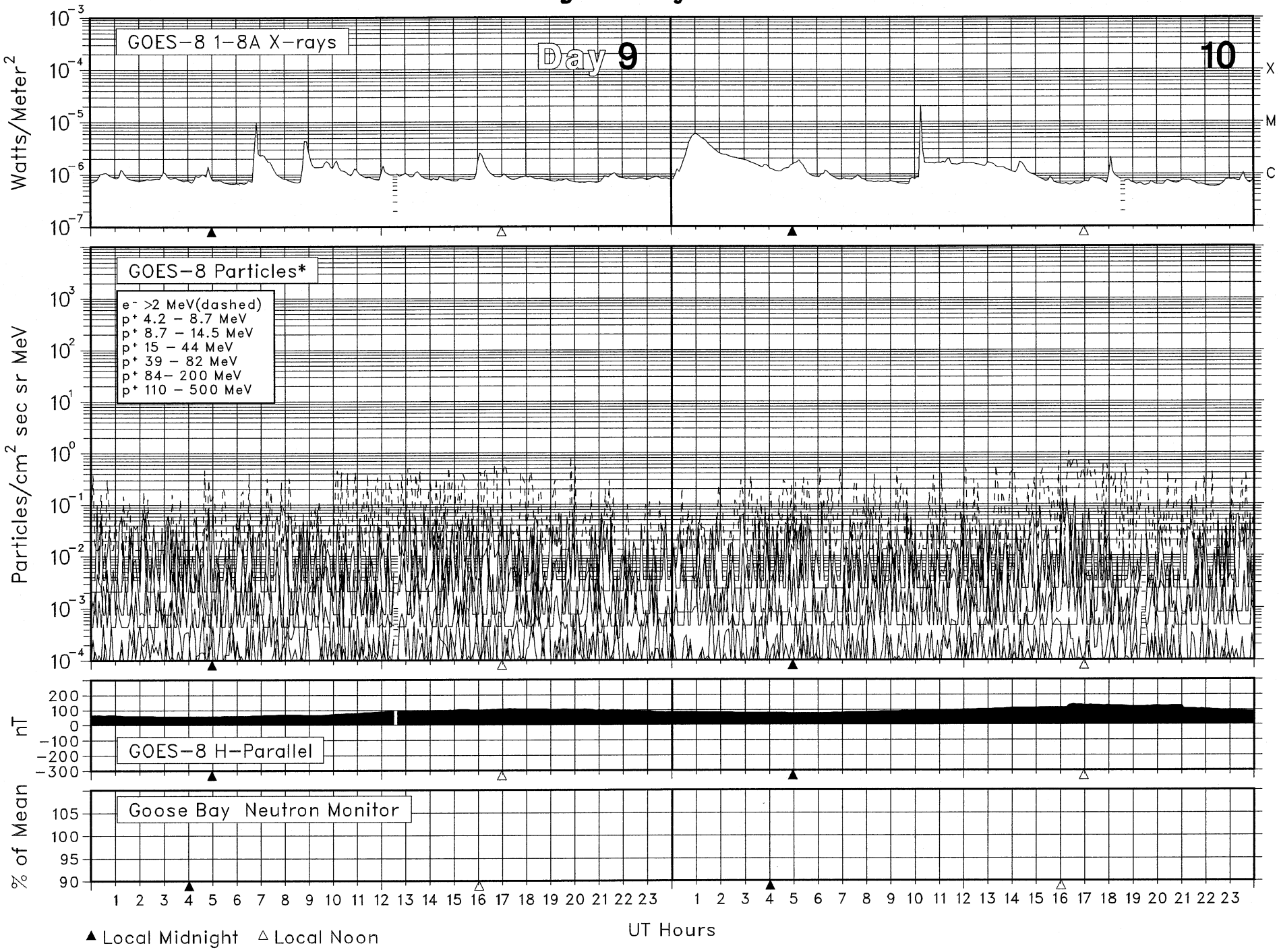
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



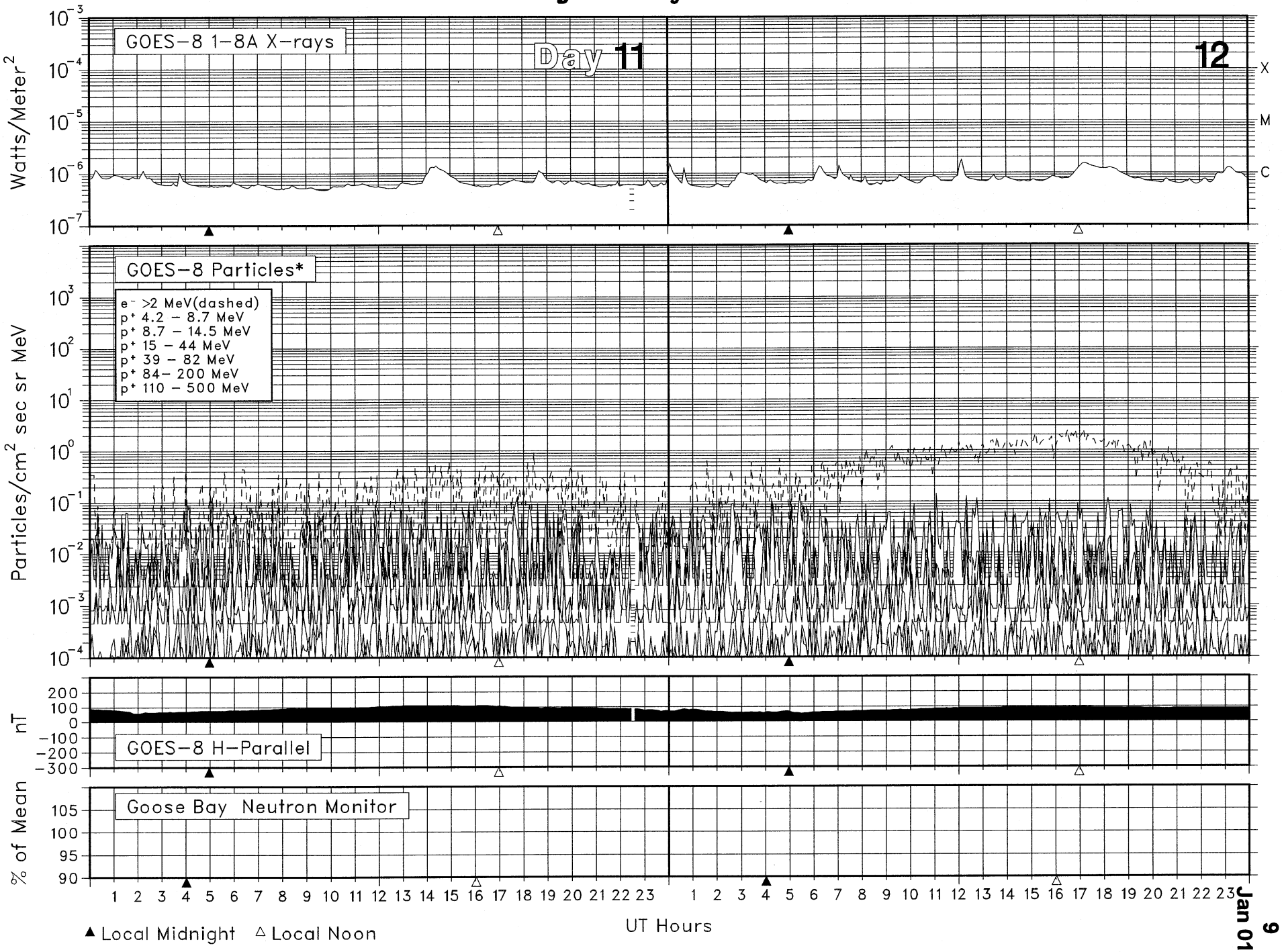
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



SOLAR-TERRESTRIAL ENVIRONMENT
January 2001

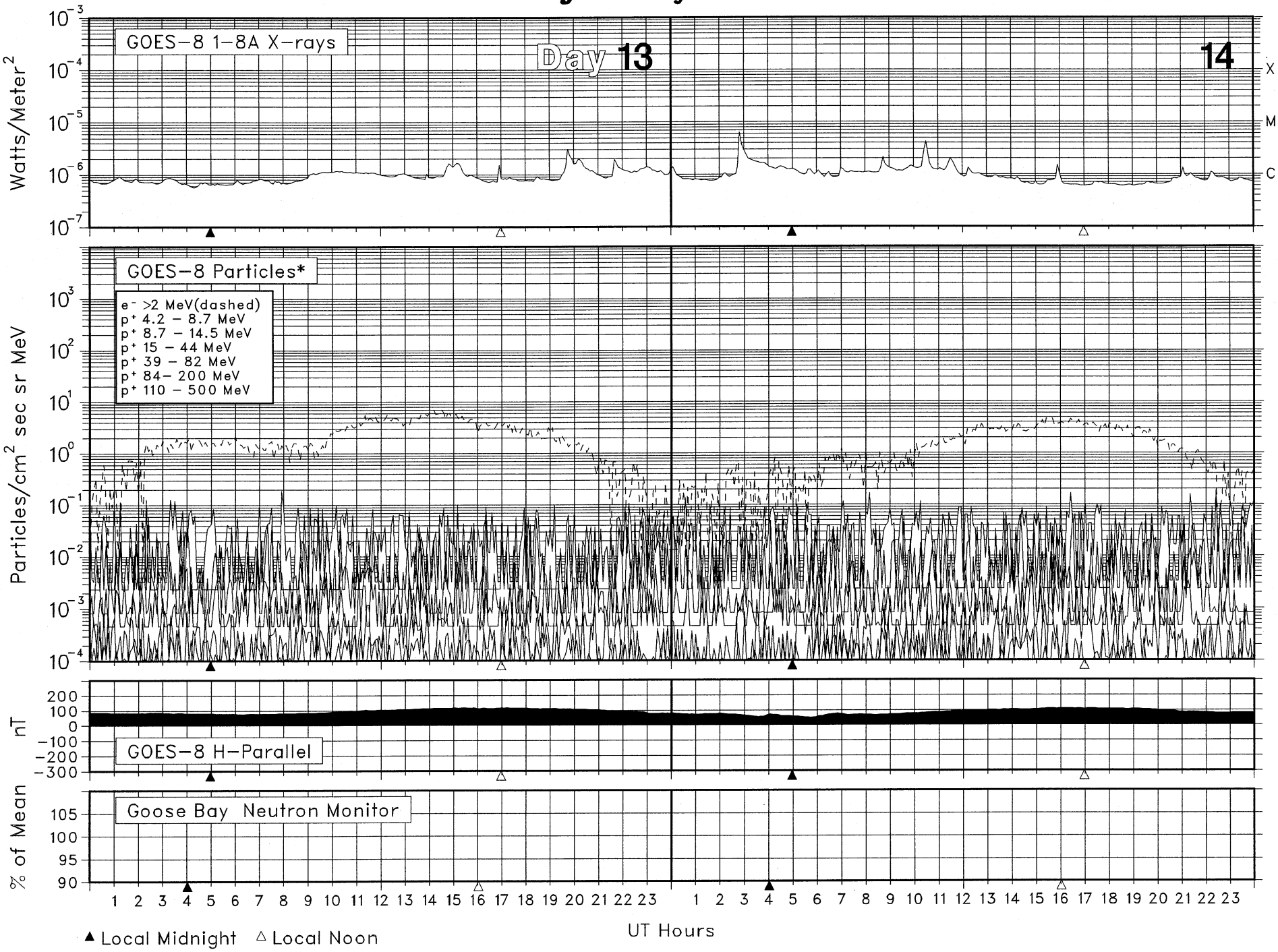


SOLAR-TERRESTRIAL ENVIRONMENT
January 2001

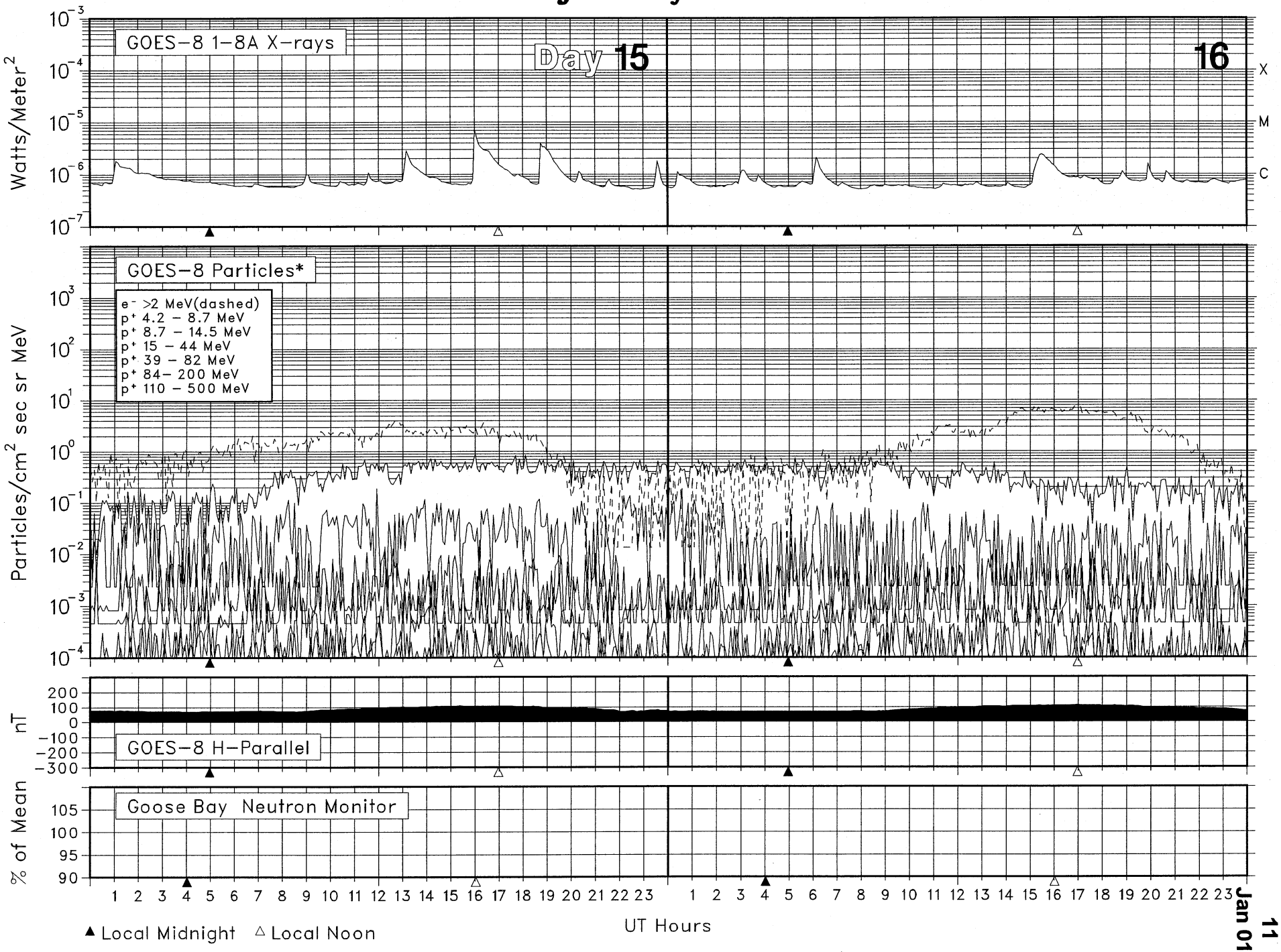


SOLAR-TERRESTRIAL ENVIRONMENT
January 2001

10
Jan 01

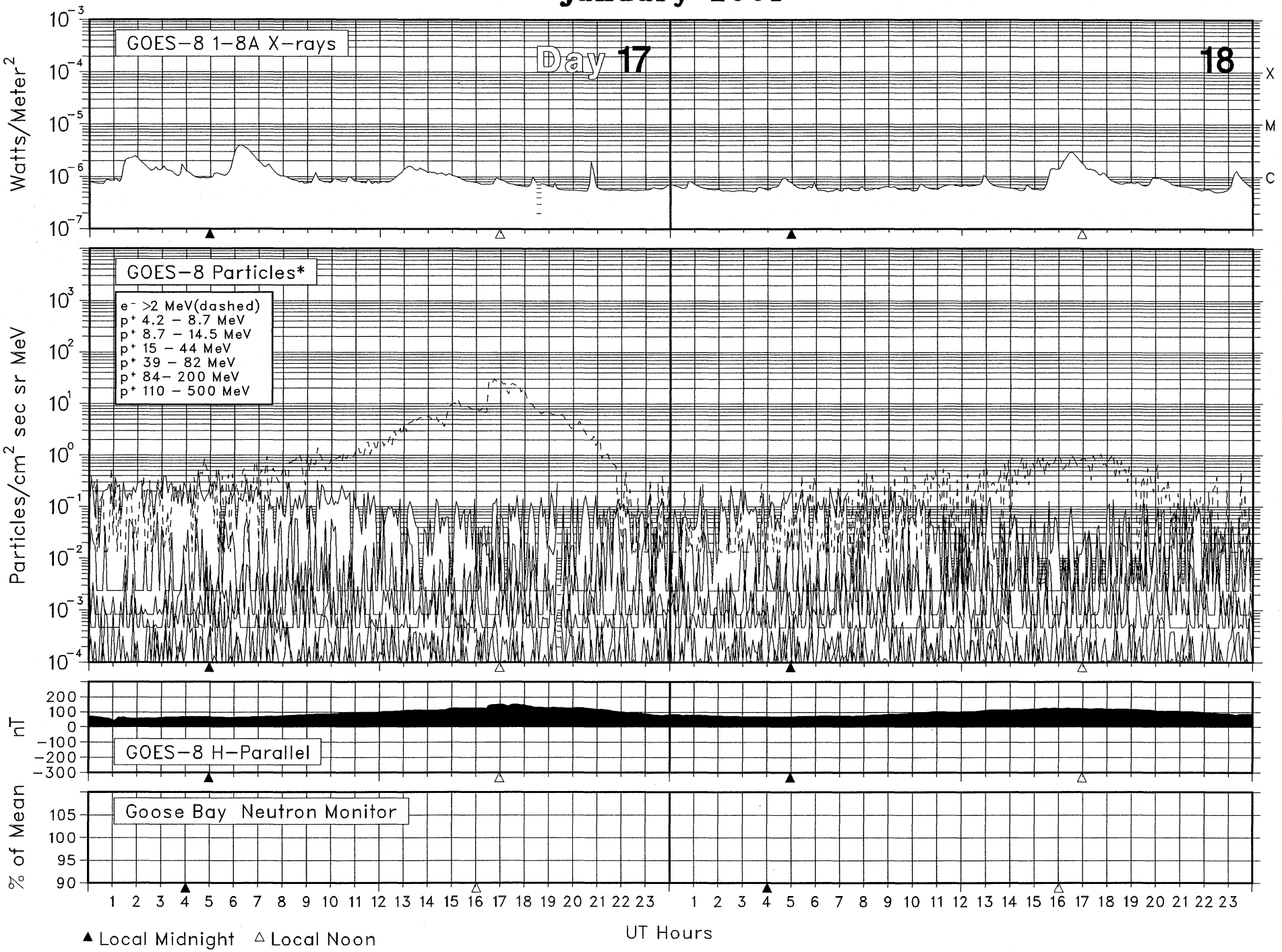


SOLAR-TERRESTRIAL ENVIRONMENT
January 2001

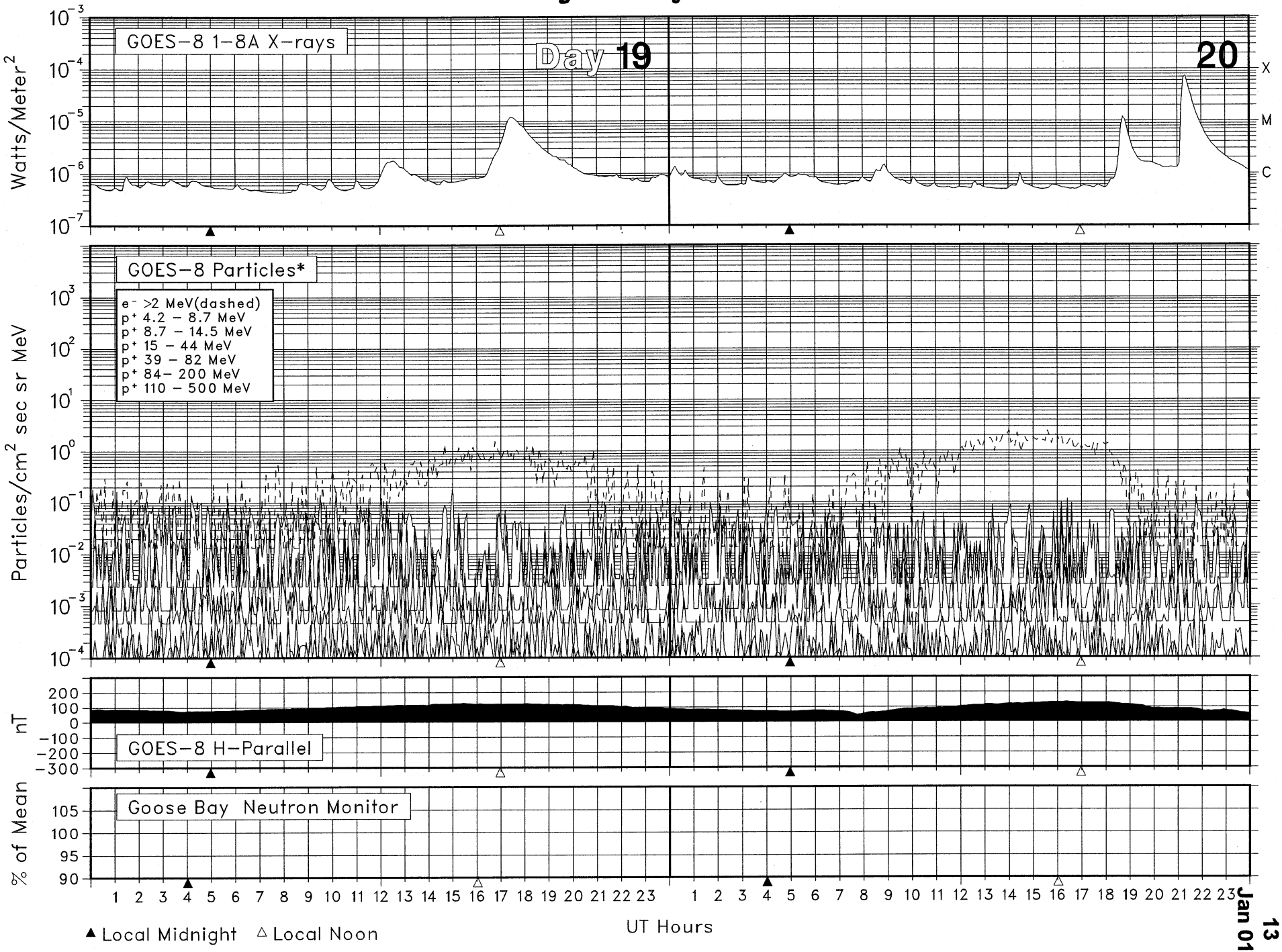


SOLAR-TERRESTRIAL ENVIRONMENT
January 2001

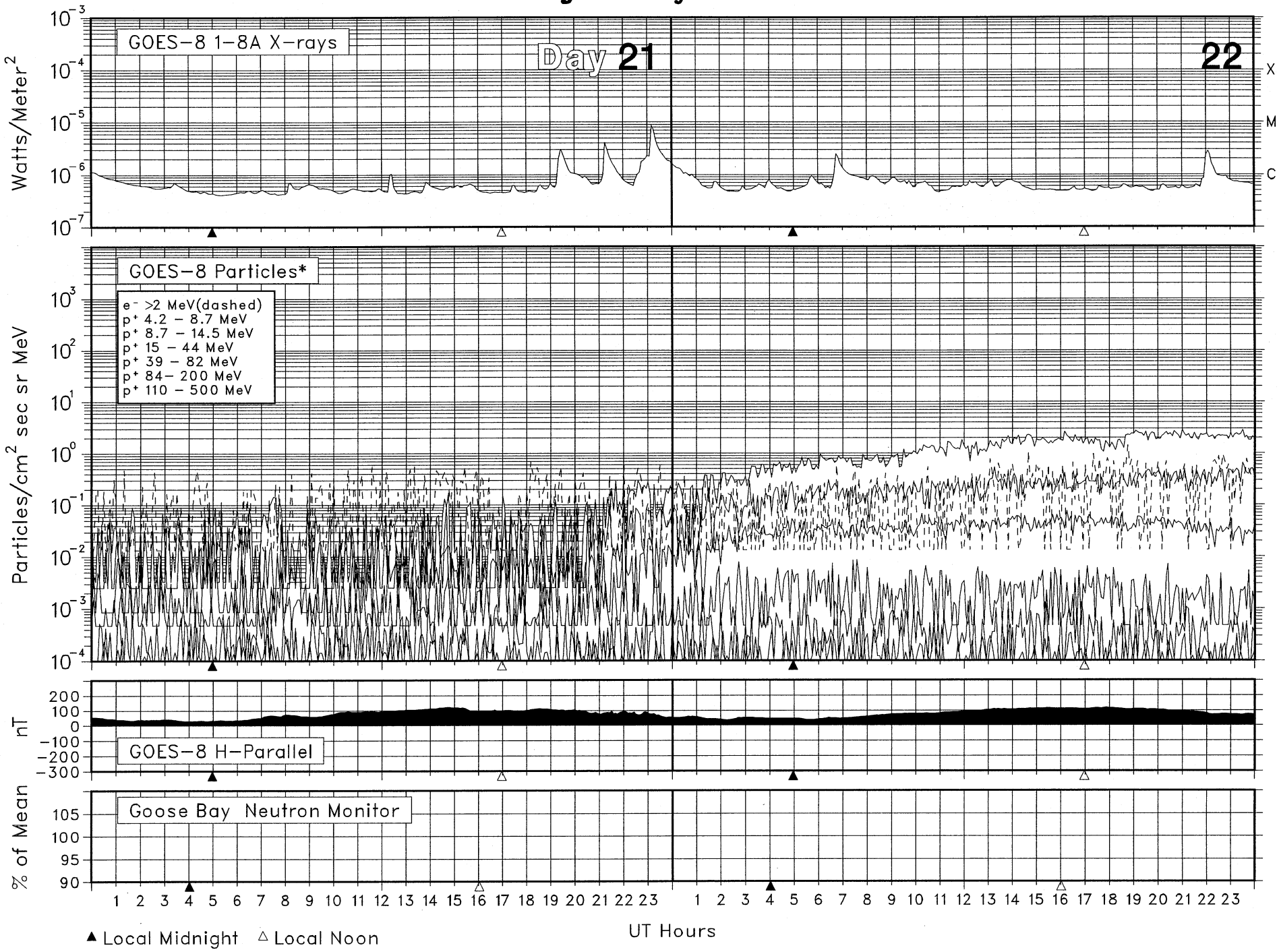
12
Jan 01



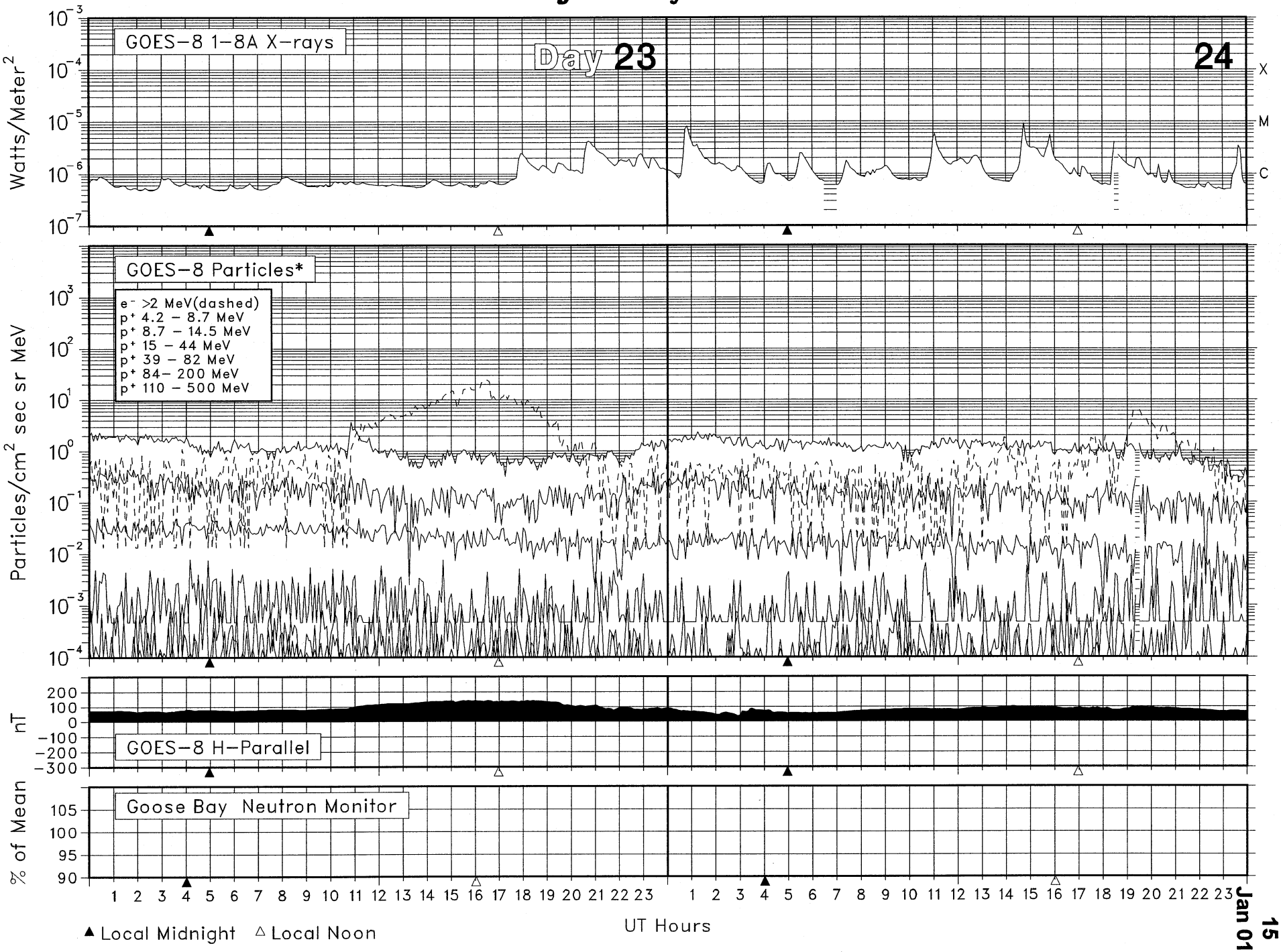
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



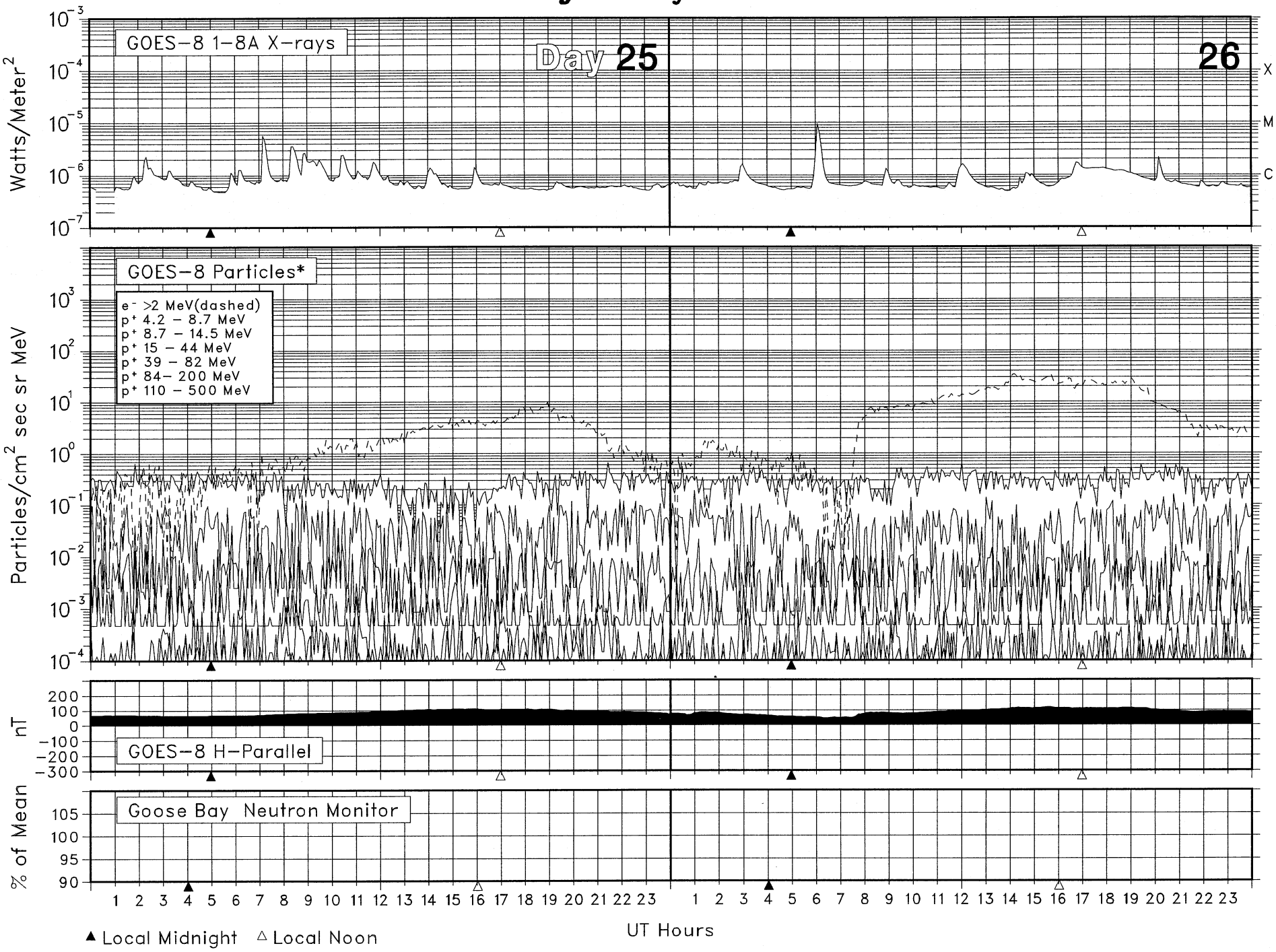
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



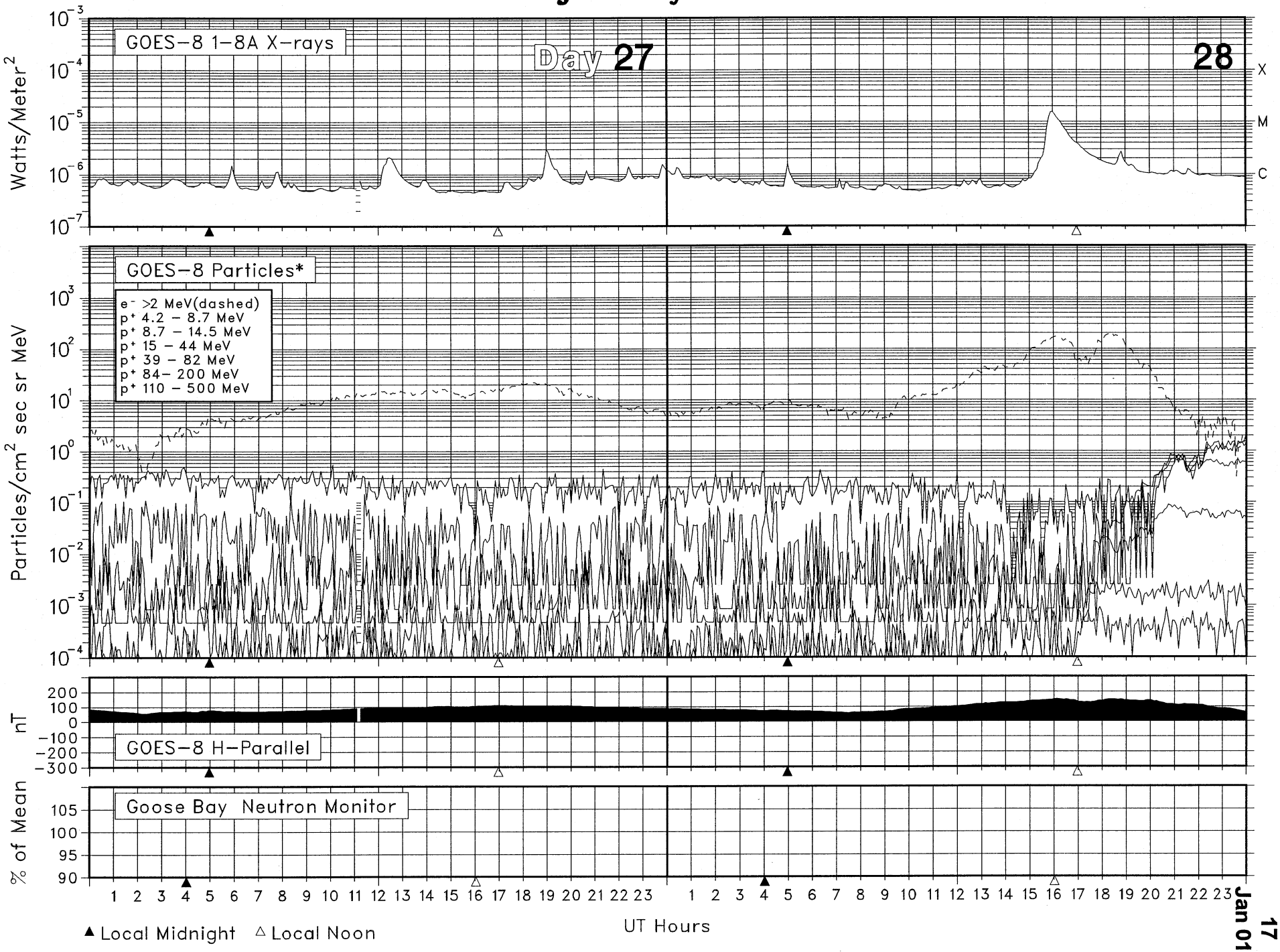
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



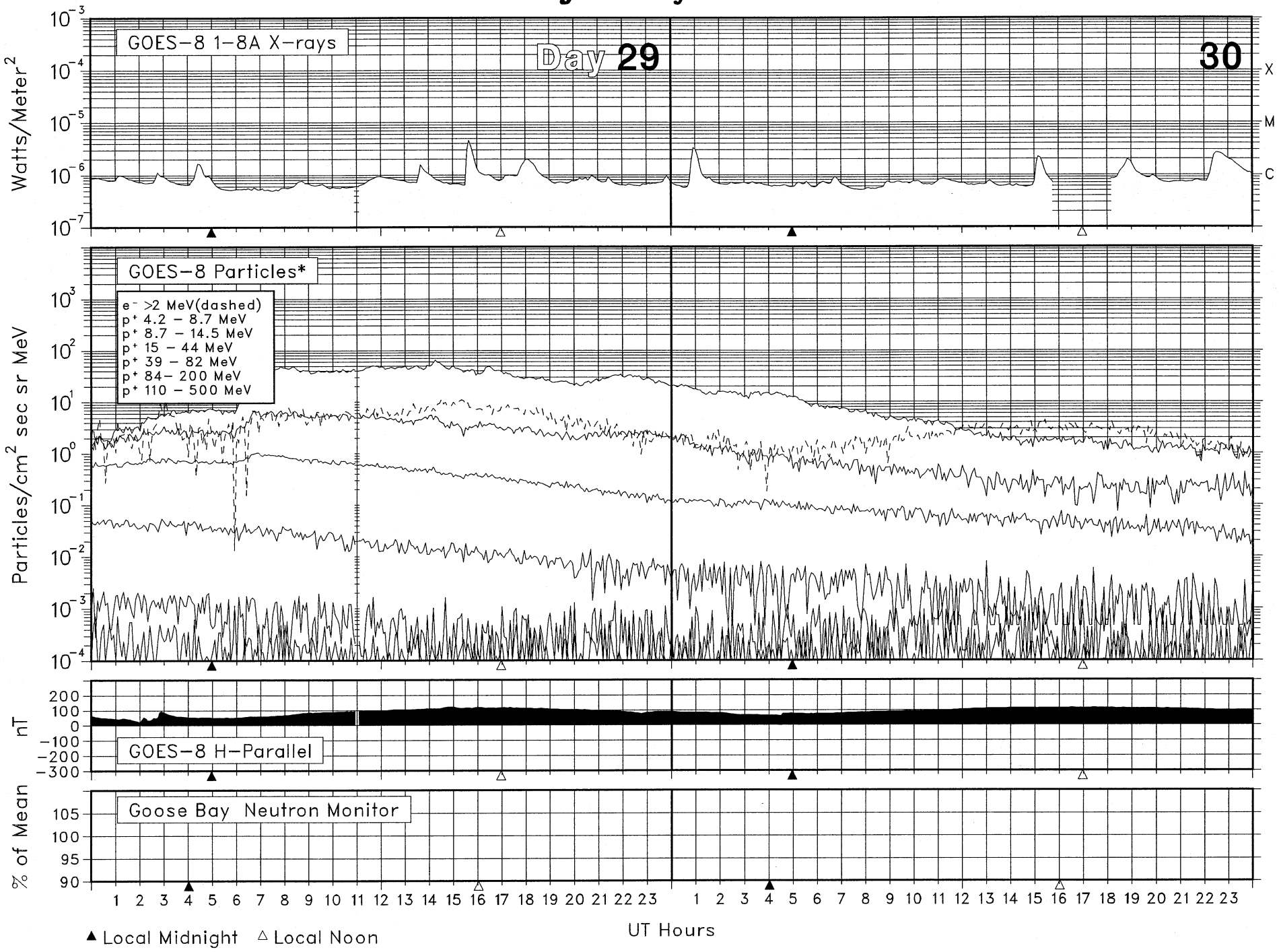
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



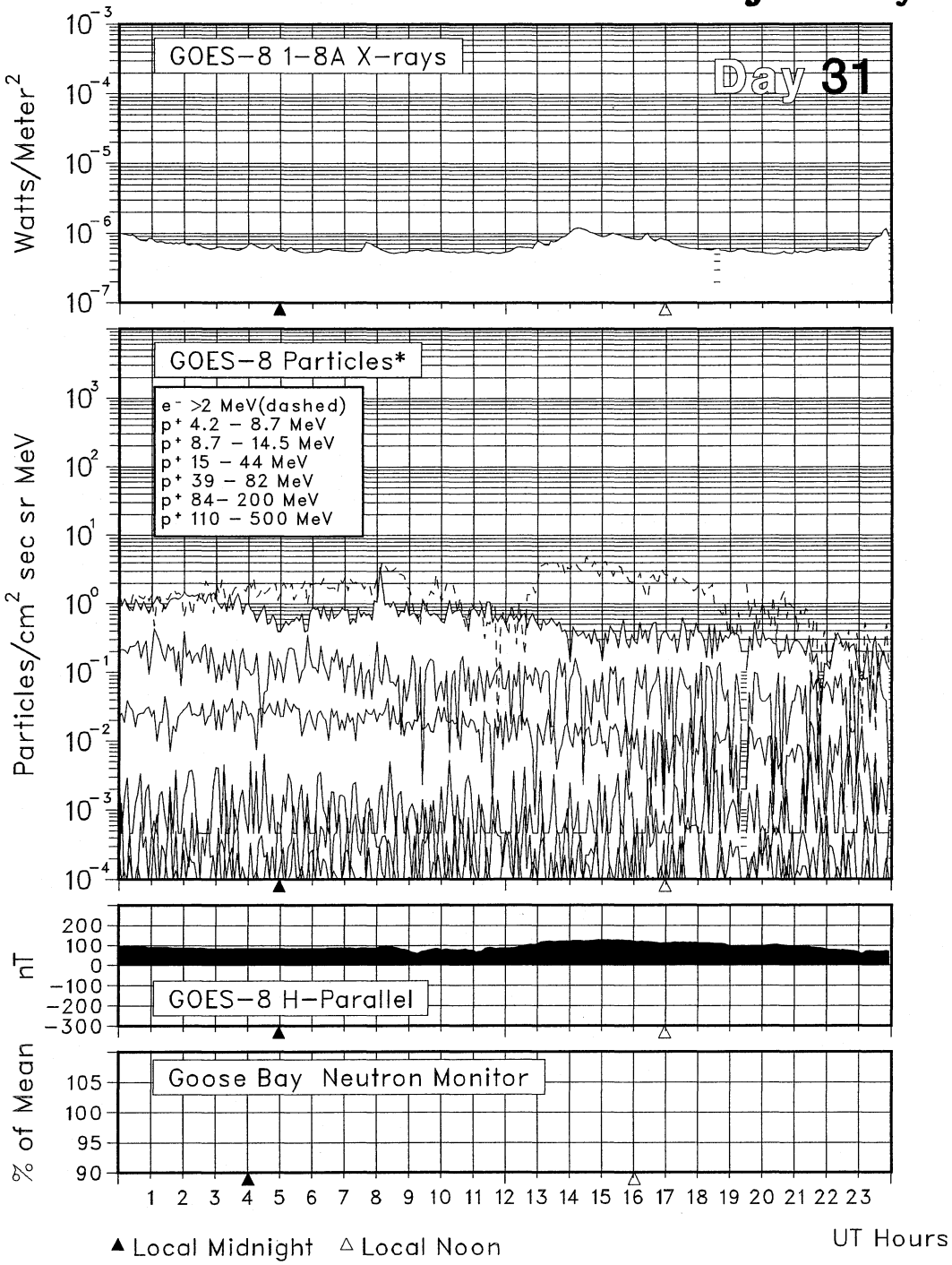
SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



SOLAR-TERRESTRIAL ENVIRONMENT
January 2001



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

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

JANUARY 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
001	01	31	153	170	1	9280	N09	W82	0	0	0	01	Q	SOL: Active
						9282	N21	W61	0	0	0	01	Q	MAG: Quiet
						9283	S10	W42	0	0	0	01	E	PRO: Quiet
						9285	N07	W32	0	0	0	01	Q	
						9289	S07	E16	0	0	0	01	E	
						9290	N30	W18	0	0	0	01	Q	
						9291	S12	E09	0	0	0	01	Q	
						9292	N24	E47	1	0	0	01	Q	
002	02	01	119	171	2	9283	S10	W57	2	0	0	02	E	SOL: Eruptive
						9289	S06	E03	1	0	0	02	E	MAG: Quiet
						9290	N29	W31	0	0	0	02	Q	PRO: Quiet
						9291	S12	W06	0	0	0	02	Q	
						9293	N13	E41	0	0	0	02	Q	
						9294	N22	E69	0	0	0	02	Q	
003	03	02	143	176	2	9283	S12	W71	0	0	0	03	E	SOL: Eruptive
						9289	S07	W10	0	0	0	03	E	MAG: Quiet
						9290	N28	W48	0	0	0	03	Q	PRO: Quiet
						9291	S12	W21	0	0	0	03	Q	
						9293	N13	E26	0	0	0	03	Q	
						9294	N22	E55	0	0	0	03	Q	
						9295	S12	E73	0	0	0	03	Q	
						9296	N10	E76	0	0	0	03	Q	
004	04	03	128	170	11	9283	S11	W82	0	0	0	04	Q	SOL: Eruptive
						9289	S07	W25	1	0	0	04	E	MAG: Quiet
						9290	N29	W60	1	0	0	04	Q	PRO: Quiet
						9291	S12	W34	0	0	0	04	Q	
						9293	N13	E13	0	0	0	04	Q	
						9294	N22	E43	1	0	0	04	Q	
						9295	S14	E60	0	0	0	04	Q	
						9296	N08	E59	0	0	0	04	Q	
005	05	04	180	175	11	9289	S07	W38	1	0	0	05	E	SOL: Eruptive
						9290	N28	W72	0	0	0	05	Q	MAG: Quiet
						9291	S12	W50	0	0	0	05	Q	PRO: Quiet
						9292	N25	W04	0	0	0	05	Q	
						9293	N14	W03	0	0	0	05	Q	
						9294	N23	E31	0	0	0	05	Q	
						9295	S13	E45	0	0	0	05	Q	
						9296	N08	E47	0	0	0	05	Q	
						9297	N24	W16	0	0	0	05	Q	
						9298	S22	W04	0	0	0	05	Q	
						9299	N09	E39	0	0	0	05	Q	
						9300	S14	E55	0	0	0	05	Q	
						9301	N07	E73	1	0	0	05	Q	
006	06	05	158	176	4	9289	S07	W52	0	0	0	06	E	SOL: Active
						9291	S13	W63	0	0	0	06	Q	MAG: Quiet
						9292	N24	W18	0	0	0	06	Q	PRO: Quiet
						9293	N14	W18	0	0	0	06	Q	
						9294	N22	E18	0	0	0	06	Q	
						9295	S14	E30	0	0	0	06	Q	
						9296	N08	E34	1	0	0	06	Q	
						9297	N23	W28	0	0	0	06	E	
						9299	N09	E26	0	0	0	06	Q	
						9300	S13	E44	0	0	0	06	Q	
						9301	N07	E61	0	0	0	06	Q	
						9302	N19	E66	3	0	0	06	E	
007	07	06	172	179	5	9289	S06	W67	0	0	0	07	E	SOL: Eruptive
						9291	S13	W76	1	0	0	07	Q	MAG: Quiet
						9292	N24	W29	0	0	0	07	Q	PRO: Quiet
						9293	N11	W26	0	0	0	07	Q	
						9294	N22	E06	0	0	0	07	Q	
						9295	S14	E19	0	0	0	07	Q	

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

JANUARY 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9296	N09	E22	0	0	0	07	Q	
						9297	N23	W41	0	0	0	07	E	
						9300	S13	E32	0	0	0	07	Q	
						9301	N07	E48	0	0	0	07	Q	
						9302	N19	E52	1	0	0	07	E	
						9303	S04	W47	0	0	0	07	Q	
008	08	07	183	177	6	9289	S06	W83	0	0	0	08	Q	SOL: Eruptive
						9291	S12	W91	0	0	0	08	Q	MAG: Quiet
						9294	N22	W10	0	0	0	08	Q	PRO: Quiet
						9295	S13	E05	0	0	0	08	Q	
						9296	N08	E08	0	0	0	08	Q	
						9297	N23	W55	0	0	0	08	Q	
						9299	N10	W03	0	0	0	08	Q	
						9300	S14	E18	0	0	0	08	Q	
						9301	N08	E34	0	0	0	08	E	
						9302	N20	E39	0	0	0	08	E	
						9303	S04	W62	0	0	0	08	Q	
						9304	N11	E58	0	0	0	08	Q	
						9305	S07	E64	0	0	0	08	Q	
009	09	08	167	167	8	9289	S07	W96	0	0	0	09	Q	SOL: Eruptive
						9294	N23	W20	0	0	0	09	Q	MAG: Quiet
						9295	S13	W08	0	0	0	09	Q	PRO: Quiet
						9296	N08	W06	0	0	0	09	Q	
						9297	N24	W71	0	0	0	09	Q	
						9300	S13	E06	0	0	0	09	Q	
						9301	N08	E22	0	0	0	09	Q	
						9302	N18	E25	0	0	0	09	E	
						9303	S04	W75	1	0	0	09	Q	
						9304	N12	E44	0	0	0	09	Q	
						9305	S07	E50	0	0	0	09	Q	
						9306	N12	E58	2	0	0	09	E	
010	10	09	140	166	4	9294	N23	W33	0	0	0	10	Q	SOL: Eruptive
						9295	S13	W21	0	0	0	10	Q	MAG: Quiet
						9296	N08	W18	0	0	0	10	Q	PRO: Quiet
						9297	N23	W86	0	0	0	10	Q	
						9301	N07	E06	0	0	0	10	Q	
						9302	N18	E12	0	0	0	10	E	
						9303	S04	W90	0	0	0	10	Q	
						9304	N11	E29	0	0	0	10	Q	
						9306	N11	E43	3	1	0	10	E	
						9307	S13	W59	0	0	0	10	Q	
011	11	10	139	163	5	9294	N24	W47	0	0	0	11	Q	SOL: Eruptive
						9295	S13	W34	0	0	0	11	Q	MAG: Quiet
						9296	N08	W31	0	0	0	11	Q	PRO: Quiet
						9301	N08	W06	0	0	0	11	Q	
						9302	N18	W02	2	1	0	11	E	
						9304	N11	E14	0	0	0	11	Q	
						9306	N11	E31	4	0	0	11	E	
						9307	S13	W72	0	0	0	11	Q	
						9308	N14	E52	0	0	0	11	Q	
012	12	11	173	166	4	9294	N22	W62	0	0	0	12	Q	SOL: Eruptive
						9295	S12	W47	0	0	0	12	Q	MAG: Quiet
						9296	N08	W45	0	0	0	12	Q	PRO: Quiet
						9301	N08	W20	1	0	0	12	Q	
						9302	N18	W15	0	0	0	12	Q	
						9304	N12	W01	0	0	0	12	Q	
						9305	S07	E10	0	0	0	12	Q	
						9306	N12	E14	1	0	0	12	E	
						9308	N14	E39	1	0	0	12	Q	
						9309	N10	W14	0	0	0	12	Q	
013	13	12	173	178	9	9295	S12	W60	1	0	0	13	Q	SOL: Eruptive

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

JANUARY 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9296	N09	W59	0	0	0	13	Q	MAG: Quiet
						9301	N09	W32	0	0	0	13	Q	PRO: Quiet
						9302	N19	W28	1	0	0	13	Q	
						9304	N11	W16	0	0	0	13	Q	
						9305	S06	W04	0	0	0	13	Q	
						9306	N12	E04	0	0	0	13	E	
						9308	N14	E25	1	0	0	13	E	
						9309	N10	W26	0	0	0	13	Q	
014	14	13	146	184	5	9295	S12	W72	0	0	0	14	Q	SOL: Eruptive
						9296	N08	W72	0	0	0	14	Q	MAG: Quiet
						9301	N08	W45	0	0	0	14	Q	PRO: Quiet
						9302	N19	W41	2	0	0	14	Q	
						9304	N11	W30	0	0	0	14	Q	
						9306	N13	W13	2	0	0	14	E	
						9308	N16	E11	1	0	0	14	Q	
						9309	N10	W39	0	0	0	14	Q	
015	15	14	181	176	7	9295	S13	W84	0	0	0	15	Q	SOL: Eruptive
						9296	N08	W84	1	0	0	15	Q	MAG: Quiet
						9301	N08	W58	0	0	0	15	Q	PRO: Quiet
						9302	N19	W54	0	0	0	15	Q	
						9304	N11	W44	0	0	0	15	Q	
						9306	N12	W25	2	0	0	15	E	
						9308	N15	W01	0	0	0	15	Q	
						9309	N09	W51	0	0	0	15	Q	
						9310	N26	E52	0	0	0	15	Q	
016	16	15	154	169	7	9301	N08	W73	0	0	0	16	Q	SOL: Eruptive
						9302	N19	W69	0	0	0	16	Q	MAG: Quiet
						9304	N12	W56	0	0	0	16	Q	PRO: Quiet
						9306	N12	W38	4	0	0	16	E	
						9308	N15	W17	0	0	0	16	E	
						9309	N10	W64	0	0	0	16	Q	
						9310	N26	E37	0	0	0	16	Q	
						9311	N04	E53	0	0	0	16	Q	
017	17	16	115	162	4	9304	N11	W70	0	0	0	17	Q	SOL: Eruptive
						9306	N11	W53	1	0	0	17	E	MAG: Quiet
						9308	N14	W28	0	0	0	17	E	PRO: Quiet
						9310	N26	E22	0	0	0	17	Q	
						9311	N04	E36	0	0	0	17	Q	
						9312	N08	E60	0	0	0	17	Q	
018	18	17	71	152	6	9306	N13	W66	3	0	0	18	E	SOL: Eruptive
						9308	N16	W41	0	0	0	18	E	MAG: Quiet
						9311	N04	E25	0	0	0	18	Q	PRO: Quiet
						9312	N08	E47	0	0	0	18	Q	
019	19	18	99	152	3	9306	N13	W87	0	0	0	19	E	SOL: Eruptive
						9308	N16	W56	0	0	0	19	Q	MAG: Quiet
						9311	N04	E11	0	0	0	19	Q	PRO: Quiet
						9312	N08	E36	0	0	0	19	Q	
						9313	S08	E72	0	0	0	19	E	
						9314	N15	W44	0	0	0	19	Q	
020	20	19	134	153	3	9308	N17	W70	0	0	0	20	Q	SOL: Eruptive
						9310	N27	W15	0	0	0	20	Q	MAG: Quiet
						9311	N04	W04	0	0	0	20	Q	PRO: Quiet
						9312	N08	E22	0	0	0	20	Q	
						9313	S07	E57	2	1	0	20	E	
						9314	N17	W58	0	0	0	20	Q	
						9315	S28	E44	0	0	0	20	Q	
						9316	S17	E75	0	0	0	20	Q	
						9317	N08	W72	0	0	0	20	Q	
021	21	20	91	153	8	9308	N17	W82	0	0	0	21	Q	SOL: Eruptive

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

JANUARY 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9311	N05	W20	0	0	0	21	Q	MAG: Quiet
						9312	N06	E07	0	0	0	21	Q	PRO: Quiet
						9313	S07	E42	3	2	0	21	E	
						9316	S17	E64	0	0	0	21	Q	
						9318	S05	E05	0	0	0	21	Q	
022	22	21	108	152	18	9311	N05	W36	4	1	0	22	Q	SOL: Eruptive
						9313	S07	E28	2	0	0	22	E	MAG: Quiet
						9316	S16	E50	0	0	0	22	Q	PRO: Quiet
						9318	S04	W09	0	0	0	22	Q	
						9319	S20	W43	0	0	0	22	Q	
						9320	S25	E01	0	0	0	22	Q	
						9321	S05	E69	0	0	0	22	Q	
023	23	22	108	162	12	9311	N05	W48	2	0	0	23	E	SOL: Eruptive
						9313	S07	E15	1	0	0	23	E	MAG: Active
						9316	S16	E38	0	0	0	23	Q	PRO: Quiet
						9319	S18	W56	0	0	0	23	Q	
						9320	S24	W11	0	0	0	23	Q	
						9321	S06	E53	0	0	0	23	Q	
024	24	23	178	167	13	9311	N06	W62	2	0	0	24	E	SOL: Eruptive
						9313	S06	E01	2	0	0	24	E	MAG: Active
						9315	S28	W09	0	0	0	24	Q	PRO: Quiet
						9316	S16	E23	0	0	0	24	Q	
						9319	S18	W70	0	0	0	24	Q	
						9320	S23	W25	0	0	0	24	Q	
						9321	S06	E43	1	0	0	24	Q	
						9322	S23	E00	0	0	0	24	Q	
						9323	S29	E03	0	0	0	24	Q	
						9324	N10	E42	0	0	0	24	Q	
025	25	24	186	173	17	9311	N06	W76	10	1	0	25	A	SOL: Eruptive
						9313	S07	W12	2	0	0	25	A	MAG: Active
						9316	S15	E11	0	0	0	25	A	PRO: Quiet
						9319	S18	W89	1	0	0	25	A	
						9320	S23	W39	0	0	0	25	A	
						9321	S06	E31	2	0	0	25	A	
						9322	S22	W16	1	0	0	25	A	
						9323	S28	W10	0	0	0	25	A	
						9324	N09	E29	0	0	0	25	A	
026	26	25	163	169	4	9311	N05	W86	1	0	0	26	E	SOL: Eruptive
						9313	S07	W27	2	0	0	26	E	MAG: Quiet
						9316	S16	W03	0	0	0	26	Q	PRO: Quiet
						9320	S24	W50	0	0	0	26	Q	
						9321	S05	E16	0	0	0	26	Q	
						9322	S22	W32	0	0	0	26	Q	
						9323	S29	W23	0	0	0	26	Q	
						9324	N10	E16	0	0	0	26	Q	
						9325	N10	E64	0	0	0	26	E	
027	27	26	157	166	9	9313	S07	W40	3	0	0	27	E	SOL: Eruptive
						9316	S17	W16	0	0	0	27	Q	MAG: Quiet
						9320	S25	W61	1	0	0	27	Q	PRO: Quiet
						9321	S04	E03	0	0	0	27	E	
						9322	S22	W44	0	0	0	27	Q	
						9323	S29	W34	1	0	0	27	Q	
						9324	N10	E02	0	0	0	27	Q	
						9325	N10	E50	1	1	0	27	E	
						9326	N27	W27	0	0	0	27	Q	
028	28	27	134	167	4	9313	S06	W52	0	0	0	28	E	SOL: Eruptive
						9316	S16	W29	0	0	0	28	Q	MAG: Quiet
						9321	S05	W10	1	0	0	28	E	PRO: Quiet
						9322	S22	W56	0	0	0	28	Q	
						9325	N11	E37	1	0	0	28	E	

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

JANUARY 2001

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9326	N27	W40	0	0	0	28	Q	
						9327	N17	E47	0	0	0	28	Q	
029	29	28	124	168	8	9313	S04	W65	2	1	0	29	E	SOL: Eruptive
						9316	S14	W44	0	0	0	29	Q	MAG: Quiet
						9321	S04	W24	2	0	0	29	E	PRO: IP
						9322	S22	W68	0	0	0	29	Q	
						9325	N10	E25	1	0	0	29	Q	
						9326	N28	W53	0	0	0	29	Q	
						9327	N14	E32	0	0	0	29	Q	
						9328	N06	W58	0	0	0	29	Q	
030	30	29	142	165	14	9313	S04	W79	0	0	0	30	E	SOL: Eruptive
						9316	S15	W58	0	0	0	30	Q	MAG: Quiet
						9321	S03	W37	0	0	0	30	E	PRO: IP
						9322	S22	W80	0	0	0	30	Q	
						9325	N09	E10	0	0	0	30	Q	
						9326	N26	W68	0	0	0	30	Q	
						9327	N14	E18	0	0	0	30	Q	
						9328	N05	W73	0	0	0	30	Q	
						9329	S10	E50	2	0	0	30	Q	
031	31	30	128	160	3	9321	S06	W51	1	0	0	31	E	SOL: Eruptive
						9325	N10	W04	0	0	0	31	Q	MAG: Active
						9327	N18	E06	0	0	0	31	Q	PRO: Quiet
						9328	N06	W87	0	0	0	31	Q	
						9329	S10	E36	0	0	0	31	Q	
						9330	N24	E67	1	0	0	31	Q	
						9331	N13	E27	0	0	0	31	Q	
						9332	N08	E24	0	0	0	31	Q	

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

Magnetic (MAG) Geoadvice

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

Proton (PRO) Geoadvice

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

STRATWARM ALERTS

01/26/01 03:30:00 GEOALERT WWA026 STRATWARM ALERT/THURSDAY/STRATWARM EXISTS.
MINOR WARMING OVER CENTRAL ASIA/SIBERIA CONTINUES. STRONG TEMPERATURE INCREASE DURING THE LAST WEEK IN THE UPPER STRATOSPHERE (+50C AT 5 HPA) OVER CENTRAL RUSSIA.

01/27/01 03:30:00 GEOALERT WWA027 STRATWARM ALERT EXISTS STRATWARM FRIDAY
MINOR WARMING CONTINUES WITH THE HIGHEST TEMPERATURE AT 10 HPA OVER EASTERN SIBERIA SLOPING WESTWARDS WITH HEIGHT TO SOUTHERN GREENLAND (PLUS 37C AT 1 HPA) WITHIN THE NEXT 5 DAYS.

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

JANUARY 2001

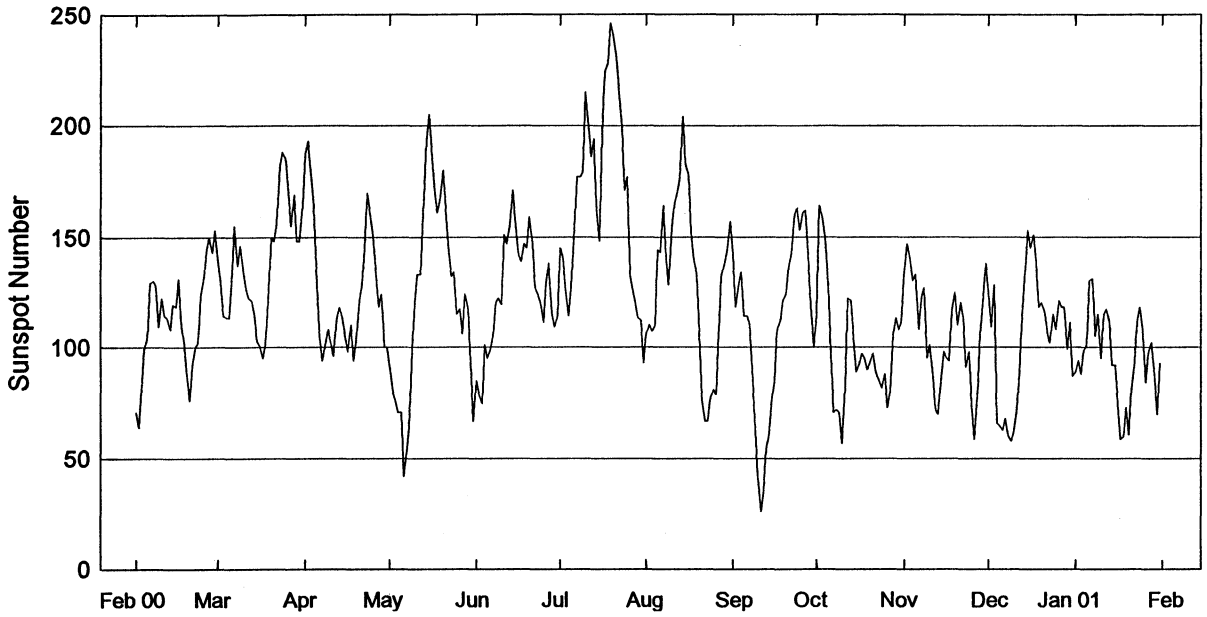
01/28/01 03:30:00 GEOALERT WWA028 STRATWARM ALERT EXISTS STRATWARM SATURDAY
MINOR WARMING CONTINUES WITH THE HIGHEST TEMPERATURES AT 10 HPA OVER EASTERN SIBERIA SLOPING EASTWARDS WITH HEIGHT TO A MAXIMUM TEMPERATURE OF +37 C OVER NOVAYA ZEMLYA TODAY.

01/29/01 03:30:00 GEOALERT WWA029 STRATWARM ALERT EXISTS SUNDAY
MINOR WARMING CONTINUES WITH THE HIGHEST TEMPERATURES AT 10 HPA OVER CENTRAL SIBERIA AND AT 1 HPA OVER FRANZ JOSEF LAND WITH A MAXIMUM TEMPERATURE OF +49 C LEADING TO A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE IN 1 HPA.

01/30/01 03:30:00 GEOALERT WWA030 STRATWARM ALERT EXISTS MONDAY
STRONG MINOR WARMING IS IN PROGRESS. THE TEMPERATURE GRADIENT IS REVERSED IN THE UPPER STRATOSPHERE.

01/31/01 03:30:00 GEOALERT WWA031 STRATWARM ALERT/TUESDAY/STRATWARM EXISTS.
STRONG MINOR WARMING CONTINUES. TEMPERATURE GRADIENT REVERSED AT 1 HPA.

International Relative Sunspot Numbers
Feb 2000 - Jan 2001

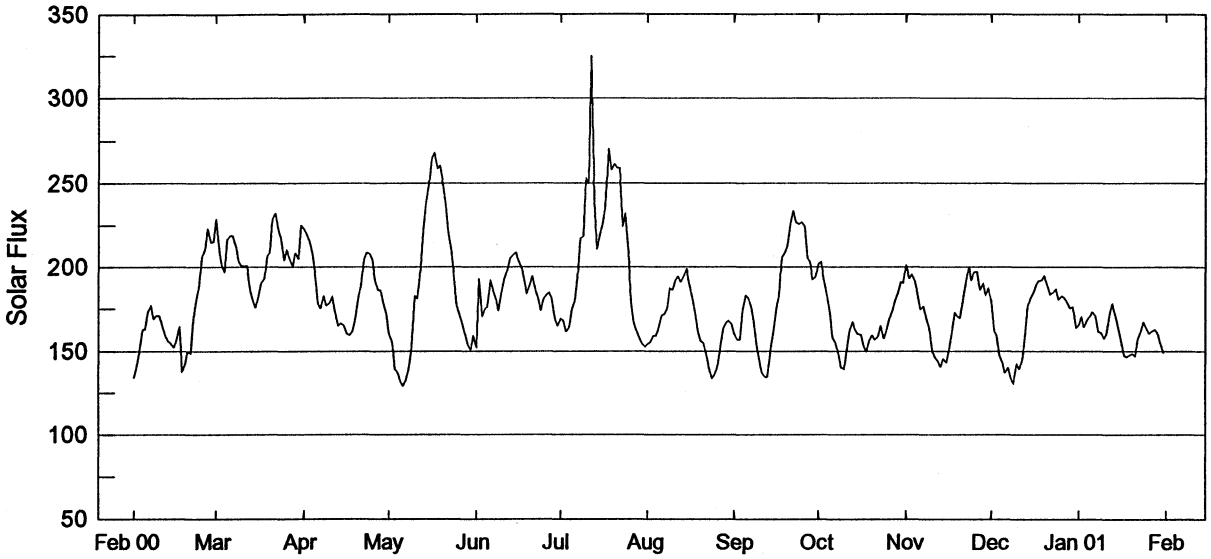


Day	Feb 00	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 01*
1	71	138	187	91	85	145	106	142	115	135	124	89
2	64	130	193	80	79	141	110	118	164	147	109	94
3	81	114	177	76	75	124	107	128	159	141	128	88
4	99	113	164	71	101	114	110	134	150	130	66	98
5	104	113	129	71	95	127	144	114	128	133	65	101
6	136	129	108	42	99	154	143	114	97	108	63	130
7	130	155	94	52	105	177	164	110	71	122	68	131
8	128	145	100	64	120	177	140	85	72	127	61	105
9	109	146	108	99	122	179	128	55	71	95	58	115
10	122	137	102	120	119	215	154	42	57	101	62	95
11	114	127	96	133	151	202	165	26	82	90	72	115
12	113	122	113	133	147	186	170	35	122	72	89	117
13	108	121	118	161	156	194	176	63	121	70	114	111
14	119	115	114	193	171	164	204	60	104	84	135	92
15	118	103	105	205	158	148	183	77	89	98	153	92
16	131	100	98	189	142	197	178	85	92	95	145	75
17	109	95	110	170	139	224	152	108	97	94	151	59
18	104	101	94	161	147	228	140	112	95	116	138	60
19	89	126	103	167	145	246	133	121	90	125	118	73
20	76	150	121	180	159	241	106	124	94	110	120	61
21	92	148	128	163	147	231	77	137	97	120	116	81
22	100	156	145	143	127	216	67	142	89	113	107	93
23	95	182	170	132	124	199	67	160	85	91	102	112
24	123	188	160	134	119	171	77	163	82	98	115	118
25	131	185	151	115	111	177	81	153	88	74	108	106
26	144	170	136	117	129	133	79	161	73	59	121	84
27	150	155	118	106	138	126	113	162	80	79	118	97
28	151	169	124	124	115	120	132	142	106	106	118	102
29	162	148	100	117	109	113	138	119	113	123	99	90
30		148	100	93	114	112	144	100	108	138	111	70
31		164		67		93	157		111		87	93
Mean	122.9	138.5	125.5	121.6	124.9	170.1	130.5	109.7	100.1	106.5	104.5	95.1

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Feb 2000 - Jan Dec 2001

Adjusted to 1 AU



Day	Feb 00	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 00
1	134.1	228.7	222.7	160.1	152.3	169.2	153.9	160.5	201.9	201.2	179.3	165.3
2	140.2	209.6	219.3	155.3	192.7+	167.9	155.1	156.7	202.9	193.2	162.3	170.2
3	149.7	200.4	215.5	139.6	170.7	161.5	158.8	156.7	192.1	195.5	158.9	164.2
4	162.7	197.0	206.9	136.8	174.7	163.7	158.7	173.6	184.1	191.4	147.6	168.8
5	163.1	216.8	194.7	132.1	176.1	174.4	163.2	183.1	173.7	183.1	142.7	170.5
6	172.8	219.1	178.1	129.1	192.0	180.1	170.8	181.5	157.9	174.9	136.9	173.4
7	177.0	218.5	175.4	133.4	185.8	193.5	171.6	175.8	155.3	176.6	139.9	170.9
8	169.0	211.8	182.5	139.6	179.9	217.1	175.6	165.7	148.6	169.5	134.1	161.5
9	170.8#	203.0	176.9	152.5	174.1	218.4	187.2	153.0	140.4	163.0	130.7	160.8
10	171.1	200.7	178.6	182.8+	185.1	252.7	185.9	142.5	139.1	150.4	142.1	157.4
11	165.8	200.6	182.4	181.3	192.6	249.7	192.3	136.7	150.8	146.6	139.2	160.5
12	159.1	200.8	173.9	194.4	198.7	325.1+	194.3	134.2	161.9	143.6	145.2	172.5
13	155.9	186.0	165.0	222.0	205.5	239.6	190.9	134.8	167.2	140.6	159.5	178.3
14	154.7	180.6	166.3	237.6	206.9	210.6	194.3	152.5	162.3	145.4	176.5	170.6
15	152.2	175.9	164.9	249.9	208.9	220.1	198.9	161.1	160.1	143.2	181.9	163.8
16	156.3	182.5	160.2	264.5	203.8	226.1	190.3	176.4	159.8	150.7	184.4	156.6
17	164.4	190.6	159.2	268.1	199.4	235.8	181.5	183.2	153.0	159.6	190.4	147.0
18	137.8	193.0	161.8	258.8	193.7	270.5	173.6	205.7	149.9	172.9	191.6	146.6
19	141.5	206.5	169.2	260.4	184.2	258.0	160.8	208.8	156.5	170.7	192.2	147.7
20	149.9	208.7	182.4	251.6	189.7	261.1	156.0	213.1	159.3	169.6	194.8	148.3
21	148.7	228.9	189.2	238.0	194.2	259.0	154.9	226.7	156.5	180.9	188.2	146.7
22	168.6	232.2	204.1	220.3	185.6	259.0	147.5	233.8	158.6	190.1	183.8	157.1
23	181.2	222.7	208.4	209.5	181.0	224.3	139.9	226.7	164.8	200.1	184.7	162.0
24	188.3	217.7	208.1	194.3	173.9	232.0	133.5	225.8	157.5	192.1	186.7	167.2
25	206.2	204.1	205.1	177.4	180.9	208.2	136.0	226.8	162.0	197.0#	180.9	163.4
26	210.6	210.4	192.4	172.4	183.4	180.1	139.9	224.7	168.9	197.0	182.6	160.5
27	222.9	204.1	186.0	166.2	184.6	167.4	153.2	205.5	173.7	186.6	181.4	161.8
28	214.7	200.3	186.0	160.2	181.2	162.7	163.2	203.0	179.7	190.3	179.3	162.6
29	215.1	208.3	177.5	153.1	168.8	157.9	166.5	192.6	184.5	183.2	175.5	160.5
30		205.1	172.0	150.5	165.0	154.5	167.9	194.0	191.0	187.0	176.1	154.9
31		225.1		158.7		152.4	165.9		190.5		163.9	148.8
Mean	153.9	206.1	185.5	188.7	185.5	211.4	167.2	183.8	166.6	174.9	168.2	161.3

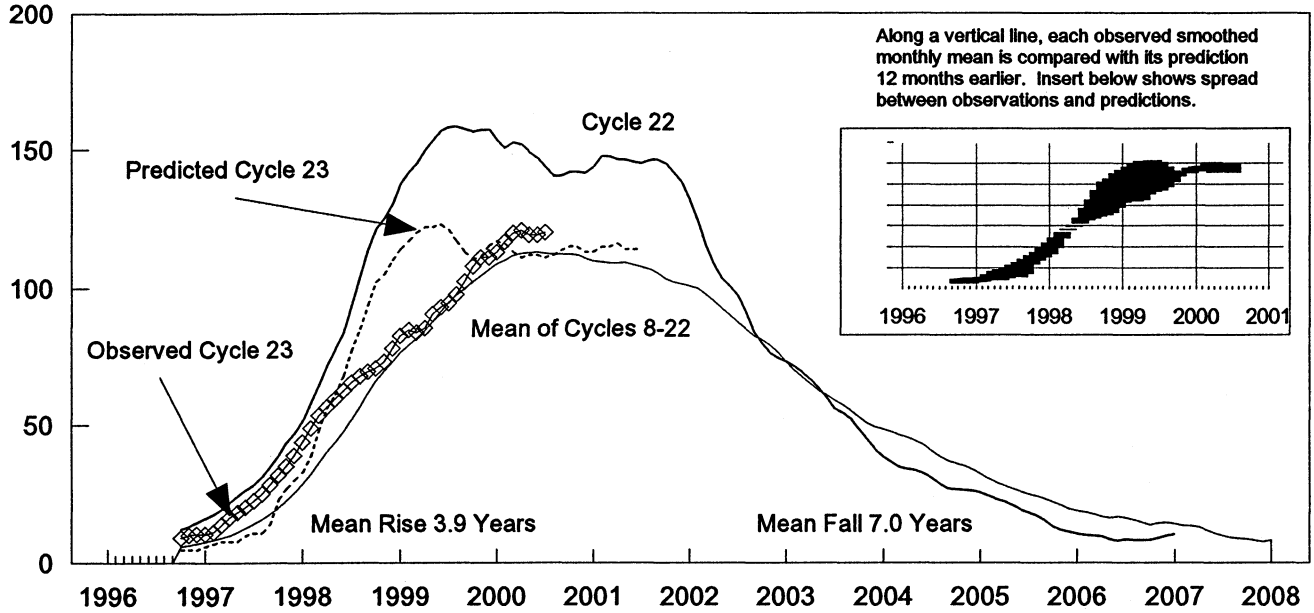
NOTE: #1800UT reading - burst in progress at 2000UT; + Burst in progress.

DAILY SOLAR INDICES
January 2001

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	1	22	89	90	171.0	--	--	--	165.3	--	--	--	--	--
2	2	23	94	106	176.1	530	305	196	170.2	144	120	67	44	15
3	3	24	88	94	169.9	537	296	189	164.2	145	122	70	46	27
4	4	25	98	109	174.6	523	304	196	168.8	148	124	67	44	17
5	5	26	101	118	176.3	527	302	194	170.5	147	123	68	43	15
6	6	27	130	130	179.4	521	301	197	173.4	150	126	69	50	24
7	7	1	131	126	176.7	533	298	190	170.9	148	127	65	47	--
8	8	2	105	116	167.1	539	295	186	161.5	143	128	68	46	19
9	9	3	115	109	166.3	539	292	182	160.8	139	123	62	42	15
10	10	4	95	105	162.8	539	297	181	157.4	139	124	65	41	14
11	11	5	115	119	165.9	540	295	184	160.5	144	128	69	43	18
12	12	6	117	125	178.3	531	300	196	172.5	152	132	66	43	18
13	13	7	111	122	184.3	533	295	197	178.3	153	130	67	42	17
14	14	8	92	115	176.3	536	288	188	170.6	147	126	68	--	--
15	15	9	92	104	169.2	--	--	170	163.8	161	--	--	37	17
16	16	10	75	88	161.9	506	289	177	156.6	132	116	56	39	12
17	17	11	59	58	151.9	531	279	173	147.0	127	111	65	42	16
18	18	12	60	66	151.5	531	296	182	146.6	130	113	65	40	14
19	19	13	73	73	152.5	462	276	180	147.7	139	113	61	42	15
20	20	14	61	66	153.2	498	289	175	148.3	125	112	67	43	14
21	21	15	81	82	151.5	520	302	179	146.7	129	111	63		14
22	22	16	93	106	162.1	537	291	184	157.1	137	117	67	41	15
23	23	17	112	122	167.1	533	292	184	162.0	141	125	--	44	
24	24	18	118	129	172.5	544	289	186	167.2	147	130	72	44	17
25	25	19	106	109	168.6	541	286	184	163.4	141	128	69	47	21
26	26	20	84	99	165.6	531	284	182	160.5	138	127	68	42	17
27	27	21	97	109	166.8	533	290	188	161.8	140	126	66	41	16
28	28	22	102	103	167.6	545	299	192	162.6	149	131	--		17
29	29	23	90	95	165.4	542	285	183	160.5	137	126	69	42	17
30	30	24	70	97	159.6	481	265	172	154.9	135	116	57	40	16
31	31	25	93	91	153.3	548	284	176	148.8	130	116	64	40	15
MEAN			95.1	102.6	166.6	527	291	184	161.3	141	122	65	42	16

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1993	71	69	67	64	60	56	55	52	48	45	41	38	56
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	120	120	119	118	117	118
								(7)	(11)	(15)	(19)	(22)	(6)
2001	117	117	116	116	115	115	114	112	111	110	109	108	113
	(24)	(25)	(27)	(30)	(33)	(32)	(30)	(30)	(31)	(32)	(32)	(31)	(30)

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

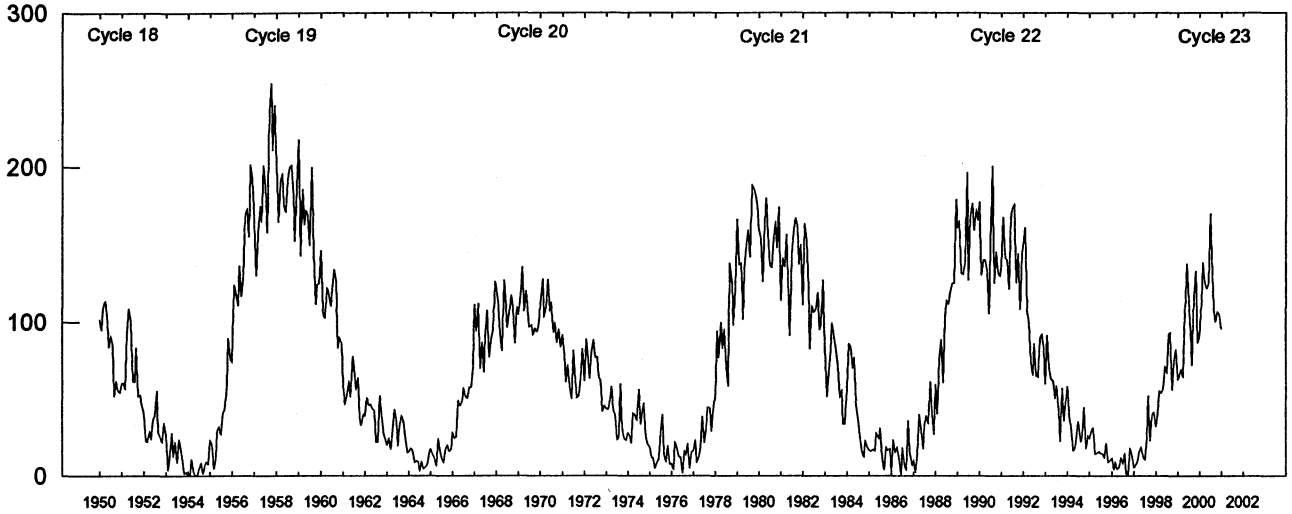
*** May 1996 marks Cycle 22's mathematical minimum. ** October 1996 marks the consensus minimum NGDC is now using.**

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 Sep 2000 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 July 2001 prediction. There exists a 90% chance that in July 2001, the actual smoothed number will fall somewhere between 84 and 144.

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 - Jan 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	169.1	130.5	109.9	100.1	106.5	104.5	119.5	
2001	95.1												95.1	

Values are preliminary after Jun 00. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

Hα SOLAR FLARES

JANUARY 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0007	0013	0020						13		C 1.2						8.1E-04
GOES		0118	0121	0127						9		C 1.0						4.5E-04
LEAR		0347	0349	0352	N25	E45	9292	01	4.6	5	SF		3	E		13		F
GOES		0731	0735	0739	S09	E13	9289			8	SF	C 1.2						4.3E-04
LEAR		0735	0735	0738	S09	E13	9289	01	2.3	3	SF		3	E		30		
GOES		0933	0951	1009	S11	W46	9283			36	SF	C 1.0						2.1E-03
LEAR		0946	0954	1015D	S11	W46	9283	12	29.0	29D	SF		2	E		15		
GOES		1252	1257	1301						9		C 1.0						4.9E-04
GOES		1628	1645	1652	S12	W52	9283			24	SF	C 1.4						1.5E-03
RAMY		1641	1643	1659	S12	W52	9283	12	28.9	18	SF		3	E		17		F
GOES		1653	1702	1707						14		C 1.7						1.3E-03
GOES	02	0744	0811	0852						68		C 7.5						2.2E-02
GOES		1436	1445	1453						17		C 2.1						1.6E-03
GOES		1701	1807	1916						135		C 6.9						4.0E-02
GOES		2240	2313	2331						51		C 2.7						5.0E-03
GOES	03	0614	0631	0657						43		C 4.4						9.0E-03
GOES		0746	0757	0807						21		C 1.4						1.5E-03
GOES		0851	0858	0911						20		C 1.6						1.6E-03
GOES		0924	0932	0938	S03	W16	9289			14	SF	C 1.4						9.5E-04
LEAR		0931	0933	0940	S03	W16	9289	01	2.2	9	SF		3	E		15		F
GOES		1037	1047	1102						25		C 2.6						3.1E-03
GOES		1759	1808	1815	N29	W52	9290			16	SF	C 2.7						1.8E-03
HOLL		1802	1802	1809	N30	W51	9290	12	30.8	7	SF		3	E		19		F
RAMY		1802	1804	1816	N29	W52	9290	12	30.8	14	SF		3	E		37		F
GOES		1914	1921	1932	N27	E52	9294			18	SF	C 1.9						1.7E-03
HOLL		1920	1921	1927	N27	E52	9294	01	7.8	7	SF		3	E		25		F
GOES		2125	2128	2135						10		C 1.7						8.8E-04
GOES		2253	2259	2305						12		C 1.8						1.1E-03
GOES		2342	2355	2412						30		M 1.0						1.2E-02
GOES	04	0717	0721	0724						7		C 1.6						5.4E-04
GOES		0850	0900	0911						21		C 4.5						4.0E-03
SVTO		1205	1207	1210	N05	E80		01	10.5	5	SF		3	E		41		
RAMY		1207	1207	1210	N06	E81		01	10.6	3	SF		3	E		36		H
GOES		1259	1303	1308						9		B 9.8						4.8E-04
GOES		1909	1914	1921	N06	E76	9301			12	SF	C 2.5						1.3E-03
HOLL		1919	1920	1926	N06	E76		01	10.5	7	SF		3	E		31		
RAMY		1920	1922	1926	N06	E74		01	10.3	6	SF		3	E		35		
GOES		2004	2008	2011	S08	W41	9289			7	SF	C 3.6						9.8E-04
RAMY		2007	2007	2010	S09	W44	9289	01	1.5	3	SF		3	E		51		
HOLL		2007	2007	2012	S08	W41	9289	01	1.8	5	SF		3	E		50		FS
GOES	05	0302	0305	0308						6		C 1.0						3.3E-04
GOES		0422	0425	0427						5		C 1.1						2.9E-04
GOES		0703	0715	0731	N19	E76	9302			28	SF	C 3.2						4.6E-03
LEAR		0705	0714	0716	N19	E76		01	11.1	11	SF		3	E		30		F
LEAR		0717	0718	0723	N19	E74		01	10.9	6	SF		3	E		20		F
LEAR		0821	0823	0831	N10	E42	9296	01	8.5	10	SF		3	E		25		
GOES		1012	1015	1018						6		C 1.2						4.0E-04
GOES		1544	1553	1620						36		C 2.0						3.5E-03
GOES		1823	1851	1922	N20	E72	9302			59	SF	C 6.8						1.7E-02
HOLL		1827	1836	1917	N20	E72	9302	01	11.3	50	SF		3	E		197		FH
GOES		2143	2146	2148						5		C 1.4						3.3E-04
GOES	06	0623	0630	0641	N25	E64				18	SF	C 1.4						1.4E-03
LEAR		0626	0628	0632	N25	E64		01	11.2	6	SF		3	E		10		F
GOES		1449	1520	1548			9302			59		C 3.6						9.2E-03
HOLL		1502	1527	1549	S11	W70	9291	01	1.4	47	SF		3	E		29		
RAMY		1503	1522	1602	S11	W67	9291	01	1.6	59	SF		3	E		35		
HOLL		1530	1533	1541	N21	E58	9302	01	11.1	11	SF		3	E		42		
GOES		2122	2130	2140						18		C 2.2						1.9E-03
GOES		2335	2350	2411						36		C 5.5						9.0E-03
GOES	07	0431	0447	0524						53		C 1.6						3.7E-03
GOES		0834	0840	0847						13		C 2.0						1.2E-03
GOES		1116	1142	1153						37		C 1.3						2.6E-03

Hα SOLAR FLARES

JANUARY 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	07	1204	1218	1228						24		C 1.9						2.5E-03
GOES		2111	2118	2124						13		C 2.0						1.4E-03
GOES	08	0320	0335	0349						29		C 4.2						5.5E-03
LEAR		0633	0634	0639	S04	W68	9289	01	3.2	6	SF		3	E		18		
GOES		1041	1105	1133						52		C 5.1						1.2E-02
GOES		1216	1220	1225						9		C 2.9						1.4E-03
GOES		1338	1342	1344						6		C 2.9						7.1E-04
RAMY		1359	1359	1404	N10	E62		01	13.2	5	SF		3	E		33		
RAMY		1521	1532	1537	N10	E63		01	13.4	16	SF		3	E		40		F
RAMY		1609	1610	1614	N09	E61		01	13.2	5	SF		3	E		25		F
GOES		2041	2044	2047						6		C 1.0						3.2E-04
GOES	09	0113	0117	0124						11		C 1.2						7.7E-04
GOES		0448	0454	0456						8		C 1.7						6.3E-04
GOES		0645	0650	0652	N10	E50	9306			7	1N	M 1.8						3.4E-03
LEAR		0648	0650	0657	N10	E50	9306	01	13.0	9	1N		3	E		104		EF
GOES		0844	0854	0902						18		C 5.1						3.6E-03
LEAR		1005	1009	1012	N10	E47	9306	01	12.9	7	SF		3	E		34		H
GOES		1200	1205	1211						11		C 1.6						8.4E-04
RAMY		1331	1331	1345	N09	E53	9306	01	13.5	14	SF		3	E		11		F
GOES		1557	1608	1617						20		C 2.6						2.5E-03
RAMY		1703	1705	1712	N27	W16		01	8.5	9	SF		3	E		12		
GOES	10	0011	0015	0020						9		C 1.4						6.5E-04
GOES		0023	0103	0140	N13	E36	9306			77	1N	C 5.9						1.9E-02
LEAR		0034	0058	0138	N13	E36	9306	01	12.7	64	1N		3	E		245		F
LEAR		0208	0209	0212	N11	E41	9306	01	13.2	4	SF		3	E		11		
GOES		1012	1016	1018	N19	E06	9302			6	1N	M 3.5						5.6E-03
SVTO		1015	1015	1023	N19	E06	9302	01	10.9	8	1N		3	E		103		H
LEAR		1018E	1022U	1032D	N17	E08	9302	01	11.0	14D	1N		1	E		110		F
GOES		1121	1125	1127						6		C 2.3						7.5E-04
GOES		1416	1420	1433	N10	E38	9306			17	SF	C 1.8						1.6E-03
RAMY		1419	1419	1423	N10	E38	9306	01	13.4	4	SF		3	E		22		
GOES		1800	1806	1809	N17	E02	9302			9	SN	C 2.5						8.9E-04
RAMY		1803	1804	1813	N17	E02	9302	01	10.9	10	SN		3	E		48		H
RAMY		1946	1947	1950	N09	E35	9306	01	13.4	4	SF		3	E		13		
GOES		2331	2335	2339						8		C 1.1						4.8E-04
GOES	11	0009	0017	0025	N10	W01	9301			16	SF	C 1.2						1.0E-03
LEAR		0016	0016	0022	N10	W01	9301	01	10.9	6	SF		3	E		14		F
GOES		0211	0215	0220	N13	E51	9308			9	SF	C 1.2						5.9E-04
LEAR		0212	0212	0217	N13	E51	9308	01	14.9	5	SF		3	E		17		
GOES		0343	0348	0351						8		C 1.3						4.7E-04
GOES		1352	1426	1452						60		C 1.4						4.1E-03
GOES		1828	1842	1856						28		C 1.8						1.6E-03
GOES		2152	2155	2157	N11	E17	9306			5	SF	B 8.2						2.0E-04
HOLL		2154	2155	2158	N11	E17	9306	01	13.2	4	SF		3	E		20		
GOES	12	0001	0007	0013	N14	E39	9308			12	SF	C 1.6						9.8E-04
LEAR		0003	0004	0015	N14	E39	9308	01	14.9	12	SF		2	E		18		F
GOES		0038	0042	0045	N18	W15	9302			7	SF	C 1.5						4.8E-04
LEAR		0041	0045	0049	N18	W15	9302	01	10.9	8	SF		2	E		12		F
GOES		0600	0618	0628						28		C 1.4						1.8E-03
GOES		0701	0706	0712						11		C 1.4						7.7E-04
GOES		1202	1212	1216						14		C 2.1						1.2E-03
RAMY		1355	1357	1429	S13	W51	9295	01	8.7	34	SF		3	E		35		
GOES		1634	1718	1836						122		C 1.5						8.9E-03
GOES	13	1353	1356	1358	N18	W36	9302			5	SF	C 1.2						3.1E-04
RAMY		1356	1356	1400	N18	W36	9302	01	10.8	4	SF		4	E		15		F
GOES		1436	1513	1525						49		C 1.6						4.2E-03
GOES		1654	1657	1659	N18	W37	9302			5	SF	C 2.3						4.5E-04
HOLL		1657	1658	1701	N18	W37	9302	01	10.9	4	SF		3	E		25		
RAMY		1657	1658	1703	N17	W36	9302	01	11.0	6	SF		3	E		33		
GOES		1940	1946	1953	N11	W12	9306			13	SF	C 3.4						1.9E-03
RAMY		1943	1947	1954	N11	W12	9306	01	12.9	11	SF		3	E		46		F
HOLL		1944	1946	1952	N12	W11	9306	01	13.0	8	SF		3	E		24		F

Hα SOLAR FLARES

JANUARY 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
RAMY	13	1956	1957	2000	N11	W09	9306	01	13.1	4	SF		3	E		24		
RAMY		2011	2012	2031	N13	E13	9308	01	14.8	20	SF		3	E		14		F
GOES		2137	2143	2150						13		C 2.0						1.3E-03
GOES	14	0246	0251	0254	N10	W17	9306			8	SF	C 8.1						2.2E-03
LEAR		0249	0250	0306	N10	W17	9306	01	12.8	17	SF		4	E		90		F
LEAR		0435	0442	0446	N08	W74	9296	01	8.6	11	SF		3	E		17		
GOES		0659	0703	0709						10		C 1.4						7.6E-04
GOES		0843	0847	0850						7		C 2.4						8.4E-04
GOES		1024	1030	1036						12		C 4.6						2.5E-03
GOES		1213	1217	1223						10		C 1.3						7.5E-04
GOES		1553	1557	1600	N14	W19	9306			7	SF	C 1.7						5.8E-04
RAMY		1556	1558	1605	N14	W19	9306	01	13.2	9	SF		3	E		53		
GOES		2103	2107	2110						7		C 1.5						5.2E-04
GOES	15	0057	0108	0145	N12	W29	9306			48	SF	C 1.9						4.1E-03
LEAR		0103	0106	0116	N12	W29	9306	01	12.8	13	SF		4	E		29		
GOES		0900	0904	0907	N11	W34	9306			7	SF	C 1.2						4.4E-04
LEAR		0902	0904	0907	N11	W34	9306	01	12.8	5	SF		3	E		15		
GOES		1132	1136	1141						9		C 1.1						5.3E-04
GOES		1304	1311	1321						17		C 2.9						2.2E-03
GOES		1556	1603	1607	N12	W37	9306			11	SF	C 9.4						3.3E-03
HOLL		1602	1602	1618	N12	W37	9306	01	12.9	16	SF		3	E		88		F
GOES		1842	1847	1908	N13	W37	9306			26	SF	C 4.9						4.9E-03
HOLL		1846	1848	1854	N13	W37	9306	01	13.0	8	SF		3	E		13		F
GOES		2019	2024	2027						8		C 1.3						5.4E-04
GOES		2330	2336	2342						12		C 1.9						9.8E-04
GOES	16	0022	0027	0032						10		C 1.3						5.9E-04
GOES		0259	0304	0320						21		C 1.1						1.4E-03
GOES		0605	0611	0619	N12	W44	9306			14	SF	C 2.2						1.4E-03
LEAR		0608	0609	0619	N12	W44	9306	01	12.9	11	SF		4	E		41		F
GOES		1509	1530	1558						49		C 2.4						5.5E-03
GOES		1952	1957	2001						9		C 1.8						7.2E-04
GOES		2038	2042	2049						11		C 1.1						7.0E-04
GOES	17	0123	0155	0218						55		C 2.5						7.1E-03
LEAR		0303	0305	0310	N12	W56	9306	01	12.9	7	SF		3	E		34		F
GOES		0347	0352	0358	N14	W53	9306			11	SF	C 1.8						1.0E-03
LEAR		0351	0351	0356	N14	W53	9306	01	13.1	5	SF		3	E		22		F
GOES		0539	0616	0650						71		C 4.0						1.2E-02
GOES		0916	0919	0925						9		C 1.3						6.2E-04
GOES		1131	1134	1136	N12	W66	9304			5	SF	C 1.1						2.9E-04
SVTO		1133	1134	1137	N12	W66	9304	01	12.5	4	SF		3	E		13		
GOES		1219	1315	1402						103		C 1.6						7.7E-03
GOES		1818	1822	1826						8		C 1.0						4.6E-04
GOES		2040	2046	2052	N16	W64	9306			12	SF	C 2.3						1.0E-03
RAMY		2047	2051	2057	N16	W64	9306	01	13.0	10	SF		3	E		41		
GOES	18	1252	1256	1305						13		C 1.0						7.7E-04
GOES		1525	1634	1725						120		C 2.9						1.3E-02
GOES		2240	2320	2335						55		C 1.3						2.6E-03
GOES	19	0124	0130	0140						16		B 9.3						7.7E-04
LEAR		0310	0311	0314	N05	W59	9306	01	14.7	4	SF		3	E		24		
LEAR		0317	0317	0319	N05	W60	9306	01	14.6	2	SF		3	E		19		
GOES		1059	1102	1111						12		B 8.5						5.2E-04
GOES		1131	1236	1311						100		C 1.8						7.1E-03
GOES		1625	1730	1819	S07	E61	9313			114	SF	M 1.0						4.3E-02
HOLL		1639	1640	1643	S06	E62	9313	01	24.3	4	SF		3	E		14		FS
HOLL		1644	1651	1654	S06	E62	9313	01	24.3	10	SF		3	E		14		F
HOLL		1655	1706	1710	S05	E62	9313	01	24.3	15	SF		3	E		26		
RAMY		1714	1726	1807	S07	E61	9313	01	24.3	53	SF		3	E		23		F
HOLL		1722	1729	1807	S06	E61	9313	01	24.3	45	SF		3	E		33		F
HOLL		1933	1934	1937	S07	E61	9313	01	24.4	4	SF		3	E		20		
GOES	20	0005	0016	0023						18		C 1.3						1.3E-03
GOES		0157	0201	0203						6		C 1.1						3.1E-04

Hα SOLAR FLARES

JANUARY 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	20	0313	0317	0320						7		C 1.0						3.7E-04
GOES		0849	0856	0900						11		C 1.4						9.1E-04
GOES		1004	1007	1013						9		B 8.5						4.2E-04
GOES		1235	1239	1243						8		B 8.0						3.3E-04
GOES		1428	1431	1435						7		C 1.0						4.0E-04
GOES		1833	1847	1859	S07	E40	9313			26	2F	M 1.2						1.2E-02
RAMY		1834E	1844U	1938	S08	E42	9313	01	23.9	64D	1F		3	E		226		U
HOLL		1840E	1853U	2002	S07	E40	9313	01	23.8	82D	2F		3	E		386		F
GOES		2106	2120	2132	S07	E46	9313			26	2B	M 7.7						7.2E-02
HOLL		2108	2119	2226	S07	E46	9313	01	24.3	78	2B		3	E		434		UF
RAMY		2120E	2120U	2132D	S07	E47	9313	01	24.4	12D	2N		3	E		395		U
GOES	21	0807	0814	0821						14		B 7.3						5.5E-04
GOES		1219	1223	1227						8		C 1.7						5.2E-04
GOES		1346	1350	1403						17		B 7.8						6.9E-04
RAMY		1450	1450	1454	S19	W37		01	18.8	4	SF		4	E		13		H
GOES		1725	1729	1734						9		B 6.9						3.4E-04
GOES		1917	1928	1939	S08	E36	9313			22	SF	C 3.0						3.0E-03
HOLL		1919	1923	1956	S08	E36	9313	01	24.5	37	SF		3	E		71		UF
RAMY		1920	1923	1946	S09	E37	9313	01	24.6	26	SF		3	E		50		S
GOES		2111	2116	2125	N06	W32	9311			14	SF	C 4.5						2.5E-03
RAMY		2114	2117	2122	N06	W32	9311	01	19.5	8	SF		3	E		23		E
HOLL		2114	2119	2130	N05	W33	9311	01	19.4	16	SF		3	E		37		F
HOLL		2235	2238	2254	S09	E27	9313	01	24.0	19	SF		3	E		15		F
HOLL		2245	2245	2251	N06	W34	9311	01	19.4	6	SF		3	E		13		F
HOLL		2254	2256	2303	N06	W35	9311	01	19.3	9	SF		3	E		16		F
HOLL		2307	2311	2338	N05	W32	9311	01	19.6	31	SF		3	E		42		F
GOES		2308	2312	2319	N05	W32	9311			11	SF	M 1.1						4.9E-03
LEAR		2308E	2317	2337	N05	W34	9311	01	19.4	29D	SF		3	E		62		
LEAR	22	0542	0545	0550	N07	W38	9311	01	19.4	8	SF		3	E		13		F
GOES		0640	0649	0657	S05	E24	9313			17	SF	C 2.7						2.0E-03
LEAR		0642	0646	0707	S05	E24	9313	01	24.1	25	SF		3	E		62		F
LEAR		0934	0935	0942	N06	W39	9311	01	19.5	8	SF		3	E		18		
GOES		2157	2205	2215						18		C 2.8						2.5E-03
GOES	23	0256	0303	0326						30		B 9.8						1.4E-03
LEAR		0443	0444	0449	S06	E13	9313	01	24.2	6	SF		3	E		13		
LEAR		0936	0936	0940	S06	E49	9321	01	27.1	4	SF		3	E		16		
GOES		1747	1759	1818						31		C 2.5						3.8E-03
GOES		2032	2044	2114	N05	W65	9311			42	SF	C 4.3						8.3E-03
HOLL		2036	2037	2044	N05	W65	9311	01	19.0	8	SF		3	E		26		
HOLL		2154	2156	2200	N05	W65	9311	01	19.0	6	SF		3	E		16		
HOLL		2312	2313	2317	S07	E01	9313	01	24.0	5	SF		3	E		12		
GOES		2319	2324	2334						15		C 2.2						1.8E-03
LEAR	24	0010	0023	0033	N04	W65	9311	01	19.1	23	SF		3	E		24		F
GOES		0038	0049	0100	N06	W65	9311			22	1F	C 9.2						7.3E-03
LEAR		0041	0051	0247	N06	W65	9311	01	19.2	126	1F		3	E		101		FE
LEAR		0124	0124	0129	S07	E00	9313	01	24.0	5	SF		3	E		12		
LEAR		0202	0205	0226	S06	E00	9313	01	24.1	24	SF		3	E		13		F
LEAR		0220	0220	0225	S06	E45	9321	01	27.5	5	SF		3	E		18		
LEAR		0249	0249	0255	S21	W03	9322	01	23.9	6	SF		3	E		14		
LEAR		0249	0254	0255	N04	W67	9311	01	19.1	6	SF		3	E		26		
GOES		0404	0419	0425						21		C 1.6						1.7E-03
GOES		0525	0534	0547						22		C 2.6						2.9E-03
GOES		0716	0727	0737	S05	E41	9321			21	SF	C 1.8						1.8E-03
LEAR		0723E	0723U	0732	S05	E41	9321	01	27.4	9D	SF		3	E		52		
GOES		0815	0818	0822	N04	W69	9311			7	SF	C 1.3						4.7E-04
LEAR		0818	0818	0827	N04	W69	9311	01	19.2	9	SF		3	E		23		F
GOES		0828	0831	0834						6		C 1.2						4.0E-04
LEAR		0842	0842	0905	N03	W70	9311	01	19.1	23	SF		3	E		20		F
GOES		1055	1106	1111						16		C 6.4						4.2E-03
RAMY		1230	1231	1252	S17	W80	9319	01	18.4	22	SF		3	E		18		H
GOES		1236	1250	1255	S17	W80	9319			19	SF	C 2.2						2.4E-03
GOES		1437	1447	1450	N06	W77	9311			13	2F	M 1.0						4.4E-03
RAMY		1441	1444	1501	N06	W77	9311	01	18.8	20	2F		3	E		257		H
GOES		1540	1551	1555	N06	W78	9311			15	SF	C 6.3						3.6E-03

Hα SOLAR FLARES

JANUARY 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
RAMY	24	1548	1548	1557	N06	W78	9311	01	18.8	9	SF		3	E		29		
GOES		1708	1713	1722						14		C 1.4						1.1E-03
RAMY		1825	1829	1848	N06	W78	9311	01	18.9	23	SF		3	E		33		
GOES		1825	1834	1842	N06	W78	9311			17	SF	C 4.5						3.6E-03
HOLL		1828	1829	1831	N03	W66	9311	01	19.8	3	SF		3	E		14		
GOES		1929	1932	1939	N07	W79	9311			10	SF	C 2.1						1.2E-03
RAMY		1929	1933	1939	N07	W79	9311	01	18.9	10	SF		3	E		41		
HOLL		1933	1934	1938	N05	W78	9311	01	19.0	5	SF		3	E		10		
GOES		2019	2022	2025						6		C 1.9						5.1E-04
GOES		2041	2045	2048	N07	W80	9311			7	SF	C 1.4						4.3E-04
HOLL		2046	2047	2049	N07	W80	9311	01	18.9	3	SF		3	E		18		F
GOES		2323	2345	2348						25		C 4.2						2.9E-03
GOES	25	0026	0031	0035						9		C 1.7						6.6E-04
GOES		0145	0150	0155						10		C 1.0						5.6E-04
GOES		0213	0219	0224						11		C 2.9						1.3E-03
GOES		0313	0319	0324						11		C 1.3						8.0E-04
GOES		0547	0551	0600						13		C 1.2						7.7E-04
GOES		0608	0614	0619						11		C 1.5						8.1E-04
GOES		0707	0713	0718						11		C 7.4						3.0E-03
GOES		0816	0823	0835						19		C 4.0						3.3E-03
GOES		0850	0854	0857						7		C 4.2						1.3E-03
GOES		1022	1028	1036						14		C 2.9						1.8E-03
GOES		1102	1106	1115						13		C 1.2						8.8E-04
GOES		1143	1147	1152						9		C 1.8						9.2E-04
GOES		1217	1220	1223	N05	W89	9311			6	SF	C 1.1						3.6E-04
RAMY		1220	1220	1226	N05	W89	9311	01	18.8	6	SF		3	E		20		
GOES		1358	1407	1417	S06	W29	9313			19	SF	C 1.4						1.4E-03
RAMY		1400	1402	1415	S06	W29	9313	01	23.4	15	SF		3	E		26		F
RAMY		1442	1443	1446	S08	W28	9313	01	23.5	4	SF		3	E		12		
GOES		1552	1557	1605						13		C 1.4						9.4E-04
GOES	26	0253	0300	0309						16		C 1.6						1.4E-03
GOES		0553	0607	0613	N10	E63	9325			20	1B	M 1.0						5.5E-03
LEAR		0558	0607	0630	N10	E63	9325	01	31.0	32	1B		3	E		163		
GOES		0850	0856	0904	S07	W28	9313			14	SF	C 1.3						9.6E-04
LEAR		0853	0853	0907	S07	W28	9313	01	24.3	14	SF		3	E		11		
GOES		1150	1206	1220	S23	W57	9320			30	SF	C 1.6						2.4E-03
RAMY		1153E	1154U	1219	S27	W57	9320	01	22.0	26D	1F		3	E		149		
RAMY		1220	1222	1226	S23	W57	9320	01	22.1	6	SF		3	E		11		
GOES		1421	1426	1431	S04	W32	9313			10	SF	B 8.9						4.6E-04
RAMY		1424	1425	1429	S04	W32	9313	01	24.2	5	SF		3	E		16		U
RAMY		1454	1458	1505	S27	W35	9323	01	23.9	11	SF		3	E		20		UH
HOLL		1455	1458	1502	S27	W35	9323	01	23.9	7	SF		3	E		17		F
GOES		1556	1752	1915						199		C 1.3						1.4E-02
GOES		2006	2012	2016	S05	W35	9313			10	SF	C 2.4						1.0E-03
HOLL		2010	2012	2017	S05	W35	9313	01	24.2	7	SF		3	E		51		F
GOES	27	0553	0557	0600	N11	E48	9325			7	SF	C 1.6						5.8E-04
LEAR		0555	0555	0604	N11	E48	9325	01	30.8	9	SF		3	E		12		F
GOES		0732	0751	0756	S05	W04	9321			24	SF	C 1.2						1.3E-03
LEAR		0746	0747	0800	S05	W04	9321	01	27.0	14	SF		3	E		17		FH
GOES		1110	1114	1117						7		C 1.0						3.4E-04
GOES		1209	1228	1246						37		C 2.1						3.8E-03
GOES		1854	1903	1911						17		C 3.1						2.4E-03
GOES		2037	2041	2046						9		C 1.2						6.0E-04
GOES		2223	2227	2231						8		C 1.4						6.3E-04
GOES		2346	2351	2358						12		C 1.6						1.0E-03
GOES	28	0019	0029	0035	S05	W49	9313			16	SF	C 1.4						1.2E-03
LEAR		0026	0028	0040	S05	W49	9313	01	24.3	14	SF		4	E		28		
GOES		0455	0500	0507	S12	E76				12	SF	C 1.6						9.2E-04
LEAR		0458	0459	0515	S12	E76		02	2.9	17	SF		3	E		38		F
GOES		0708	0711	0713	S04	W16	9321			5	SF	C 1.0						2.4E-04
LEAR		0711	0711	0714	S04	W16	9321	01	27.1	3	SF		3	E		24		F
GOES		0724	0727	0734	N11	E31	9325			10	SF	B 7.7						4.0E-04
LEAR		0727	0727	0735	N11	E31	9325	01	30.6	8	SF		2	E		17		
GOES		1255	1259	1303						8		B 9.5						3.9E-04

Hα SOLAR FLARES

JANUARY 2001

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	28	1508	1546	1730	S04	W59	9313	01	24.2	142	1N		3	E		187		FH
GOES		1540	1600	1624	S04	W59	9313			44	1N	M 1.5						3.0E-02
RAMY		1714	1716	1727	S05	W23	9321	01	27.0	13	SF		3	E		21		
RAMY		1846	1846U	2016D	S14	E67		02	2.8	90D	SF		3	E		14		
GOES		1846	1850	1854	S14	E67				8	SF	C 2.9						1.3E-03
GOES	29	0406	0428	0440	S10	E60	9329			34	SF	C 1.8						2.4E-03
LEAR		0422	0423	0448	S10	E60		02	2.7	26	SF		4	E		70		F
GOES		1335	1341	1353						18		C 1.6						1.4E-03
HOLL		1525E	1539U	1604	S09	E57	9329	02	2.9	39D	SF		3	E		47		FH
GOES		1532	1540	1550	S09	E57	9329			18	SF	C 5.7						3.6E-03
GOES		1741	1804	1825						44		C 2.1						4.3E-03
GOES	30	0048	0055	0109						21		C 3.7						3.2E-03
LEAR		0605	0611	0613	N24	E78		02	5.3	8	SF		3	E		24		
RAMY		1432	1433U	1447	S04	W48	9321	01	27.0	15	SF		3	E		23		
GOES		1501	1513	1525						24		C 2.2						2.5E-03
GOES		1822	1853	1906	N23	E74	9330			44	SF	C 2.0						3.8E-03
RAMY		1903	1904	1906	N23	E74	9330	02	5.5	3	SF		3	E		23		
GOES		2218	2237	2307						49		C 2.6						6.9E-03
GOES	31	2315	2350	2356						41		C 1.3						2.1E-03

"Remarks"

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

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

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

S O L A R R A D I O E M I S S I O N
Selected Fixed Frequency Events
JANUARY 2001

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean	Int	Remarks
03	2695	LEAR	4	S/F	2345.0	2348.0	5.0	50.0			QL=4 ST=2 TYP=3
	2695	PALE	4	S/F	2346.0	2348.0	9.0	48.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	2347.0	2347.0	1.0	41.0			QL=4 ST=2 TYP=3
04	8800	SGMR	8	S	2006.0	2007.0	2.0	95.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2007.0	2007.0	U	81.0			QL=4 ST=2 TYP=3
06	2695	PALE	46	C	1757.0	1802.0	11.0	31.0			QL=4 ST=2 TYP=8
09	2695	SVTO	8	S	0648.0	0648.0	1.0	32.0			QL=2 ST=2 TYP=3
10	2695	LEAR	4	S/F	0040.0	0043.0	5.0	38.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	1014.0	1015.0	5.0	250.0			QL=2 ST=2 TYP=3
	8800	LEAR	49	GB	1014.0	1015.0	3.0	610.0			QL=2 ST=2 TYP=6
	8800	SVTO	49	GB	1014.0	1015.0	3.0	650.0			QL=4 ST=2 TYP=6
	2695	SVTO	4	S/F	1014.0	1015.0	3.0	210.0			QL=4 ST=2 TYP=3
14	8800	LEAR	4	S/F	1026.0	1027.0	4.0	59.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	1026.0	1027.0	4.0	24.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	1027.0	1027.0	1.0	54.0			QL=4 ST=2 TYP=3
15	2695	SGMR	8	S	1600.0	1601.0	2.0	58.0			QL=2 ST=2 TYP=3
	8800	SGMR	8	S	1600.0	1601.0	2.0	98.0			QL=2 ST=2 TYP=3
	2695	PALE	8	S	1845.0	1845.0	2.0	66.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1845.0	1845.0	1.0	48.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1845.0	1845.0	6.0	83.0			QL=2 ST=2 TYP=3
	2695	SGMR	4	S/F	1845.0	1845.0	3.0	50.0			QL=2 ST=2 TYP=3
18	8800	SGMR	48	C	2012.0	2049.0	228.0	6000.0			QL=4 ST=1 TYP=8
19	2695	SGMR	4	S/F	1715.0	1718.0	11.0	150.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1716.0	1717.0	10.0	72.0			QL=4 ST=2 TYP=3
20	2695	SGMR	4	S/F	1840.0	1844.0	15.0	110.0			QL=4 ST=2 TYP=3
	2695	PALE	4	S/F	1842.0	1844.0	10.0	96.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1842.0	1847.0	13.0	58.0			QL=4 ST=2 TYP=3
	2695	PALE	49	GB	2109.0	2112.0	33.0	850.0			QL=4 ST=2 TYP=6
	8800	PALE	49	GB	2110.0	2112.0	15.0	1100.0			QL=4 ST=2 TYP=6
25	8800	LEAR	4	S/F	0710.0	0711.0	3.0	250.0			QL=2 ST=2 TYP=3
	8800	SVTO	4	S/F	0710.0	0711.0	3.0	240.0			QL=4 ST=2 TYP=3
26	2695	LEAR	4	S/F	0603.0	0606.0	3.0	79.0			QL=2 ST=2 TYP=3
	8800	LEAR	4	S/F	0603.0	0606.0	3.0	49.0			QL=2 ST=2 TYP=3
	2695	SVTO	8	S	0851.0	0852.0	1.0	30.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0852.0	0852.0	U	32.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0852.0	0852.0	U	39.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	0853.0	0854.0	1.0	1.0			QL=4 ST=2 TYP=3
28	2695	SGMR	48	C	1542.0	1552.0	25.0	130.0			QL=4 ST=2 TYP=8
	8800	SGMR	20	GRF	1548.0	1602.0	19.0	39.0			QL=4 ST=2 TYP=2

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

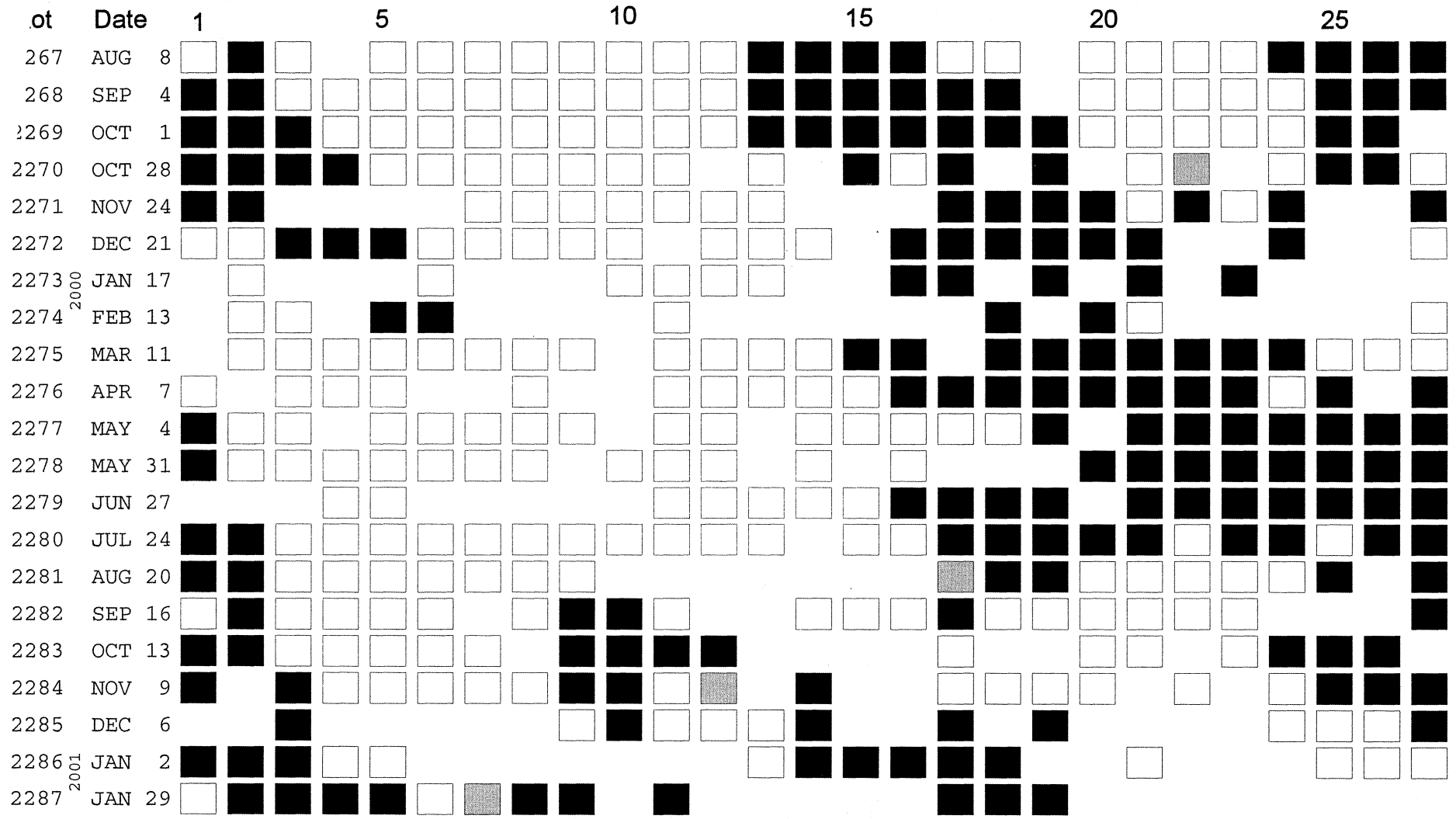
Explanation of Type Code:

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

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD

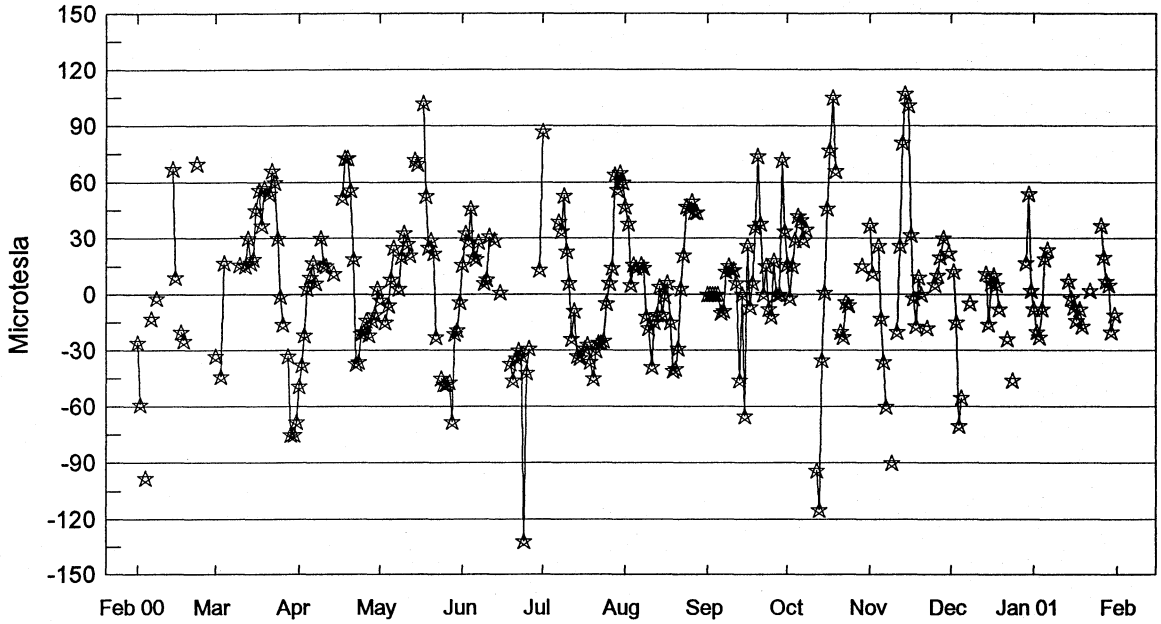


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

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

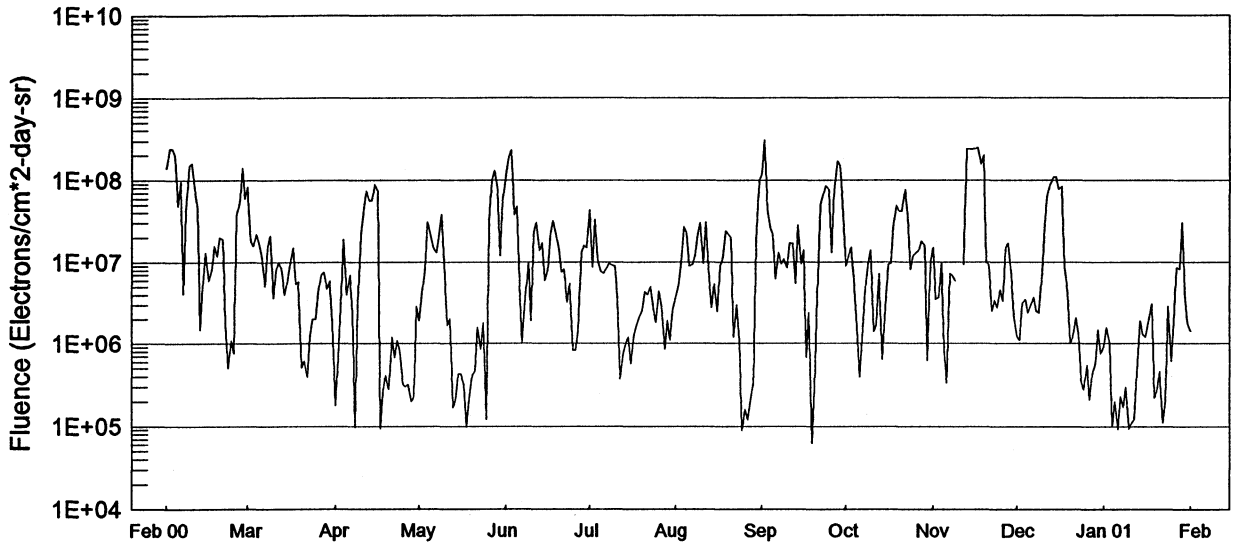
Rotation numbers given are the Bartels series, but the dates are not; these dates are five Sun that affect the Earth during the given Bartels Rotation.

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



Day	Feb 00	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 01
1	-26	-33	-49	-3	16	87	47	---	16	37	---	-8
2	-59	---	-38	---	33	---	38	---	-2	11	12	-20
3	---	-44	-22	-15	28	---	5	---	15	---	-15	-23
4	-98	17	3	-6	46	---	16	---	29	26	-70	-8
5	---	---	9	8	20	---	14	0	42	-13	-55	19
6	-13	---	17	25	19	---	---	-10	40	-36	---	24
7	---	---	6		28	39	16	-9	29	-60	---	---
8	-2	---	---	3	---	34	14	12	35	---	-5	---
9	---	---	30	20	6	53	-12	15	---	-90	---	---
10	---	16	26	33	8	23	-18	13	---	---	---	---
11	---	---	15	27	31	6	-39	13	---	-20	---	---
12	---	15	---	21	---	-24	-15	6	-94	26	---	---
13	---	30	---	---	29	-9	-11	-46	-115	81	---	---
14	67	17	11	72	---	-33	4	---	-35	107	11	7
15	9	19	---	70	1	-34	-11	-65	1	101	-16	-2
16	---	45	---	---	---	---	-1	26	46	32	6	-7
17	-20	56	52	102	---	-29	6	-7	77	-2	10	-14
18	-25	37	73	53	---	-27	-15	6	105	-17	5	-8
19	---	57	73	25	-37	-36	-41	36	66	9	-8	-17
20	---	---	56	29	-46	-45	-40	74	---	0	---	---
21	---	54	19	22	-34	-30	-29	38	-20	---	---	---
22	---	66	-37	-23	-30	-26	3	---	-23	-18	-24	2
23	70	60	-36	---	-33	-26	21	15	-4	---	---	---
24	---	30	-21	-45	-132	-25	47	-8	-6	---	-46	---
25	---	-1	-20	-48	-42	-5	46	-12	---	5	---	---
26	---	-16	-14	-48	-29	6	50	18	---	10	---	37
27	---	---	-22	-47	---	14	44	---	---	20	---	20
28	---	-33	-14	-68	---	64	44	---	---	30	---	7
29	---	-75	-11	-21	---	56	---	72	15	---	17	5
30		-75	3	-19	13	65	---	34	---	22	54	-20
31		-68		-4		60	---		---		2	-11

GOES Daily Electron Fluence
Feb 2000 - Jan 2001



Day	Feb 00	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 01
1	2.4E+08	1.8E+07	6.8E+05	4.6E+06	1.9E+08	8.7E+06	5.0E+06	3.1E+08	1.2E+07	3.5E+06	1.1E+06	1.6E+06
2	2.4E+08	1.6E+07	2.9E+06	8.1E+06	2.3E+08	3.3E+07	9.5E+06	4.3E+07	1.5E+07	3.7E+06	3.1E+06	1.0E+06
3	2.0E+08	2.2E+07	1.9E+07	3.1E+07	3.8E+07	1.1E+07	2.7E+07	2.7E+07	4.8E+06	1.0E+07	3.5E+06	1.0E+05
4	4.8E+07	1.7E+07	4.0E+06	2.1E+07	4.7E+07	7.7E+06	2.3E+07	2.2E+07	1.6E+06	8.3E+05	2.4E+06	2.0E+05
5	9.6E+07	1.2E+07	6.9E+06	1.5E+07	5.5E+06	7.3E+06	9.0E+06	6.2E+06	3.9E+05	3.3E+05	2.9E+06	9.2E+04
6	4.1E+06	5.1E+06	2.4E+06	1.3E+07	1.0E+06	8.3E+06	9.4E+06	1.3E+07	1.5E+06	7.1E+06	3.7E+06	2.3E+05
7	4.2E+07	1.5E+07	9.7E+04	2.1E+07	3.7E+06	9.6E+06	1.2E+07	9.5E+06	4.8E+06	6.8E+06	2.5E+06	1.7E+05
8	1.5E+08	2.1E+07	3.1E+06	3.8E+07	1.0E+07	9.2E+06	2.1E+07	1.1E+07	9.5E+06	5.8E+06	2.4E+06	3.0E+05
9	1.6E+08	3.6E+06	2.2E+07	6.6E+06	1.9E+06	9.1E+06	3.0E+07	8.6E+06	1.4E+07	-999	7.6E+06	9.3E+04
10	8.4E+07	8.2E+06	4.1E+07	1.7E+06	2.3E+07	3.7E+06	9.7E+06	1.7E+07	1.4E+06	-999	2.8E+07	1.1E+05
11	4.7E+07	9.8E+06	7.4E+07	2.0E+06	3.0E+07	3.7E+05	3.1E+07	1.7E+07	1.7E+06	9.4E+06	6.9E+07	1.2E+05
12	1.5E+06	8.5E+06	5.7E+07	1.7E+05	1.4E+07	7.4E+05	6.3E+06	5.5E+06	7.1E+06	2.4E+08	8.9E+07	6.1E+05
13	5.2E+06	4.0E+06	5.7E+07	2.1E+05	1.7E+07	1.0E+06	2.8E+06	2.8E+07	6.4E+05	2.4E+08	1.1E+08	1.9E+06
14	1.3E+07	5.7E+06	8.8E+07	4.3E+05	6.0E+06	1.2E+06	5.4E+06	9.5E+06	2.1E+06	2.4E+08	1.1E+08	1.3E+06
15	6.0E+06	9.4E+06	7.4E+07	4.3E+05	8.2E+06	5.7E+05	2.5E+06	1.4E+07	9.4E+06	2.4E+08	7.8E+07	1.2E+06
16	8.2E+06	1.5E+07	9.3E+04	3.2E+05	2.2E+07	1.3E+06	9.1E+06	6.8E+05	9.7E+06	2.5E+08	8.3E+07	1.9E+06
17	1.6E+07	5.4E+06	2.6E+05	9.8E+04	3.2E+07	1.7E+06	1.1E+07	2.4E+06	2.9E+07	1.6E+08	8.9E+06	3.1E+06
18	1.2E+07	5.8E+06	4.1E+05	2.1E+05	2.3E+07	2.1E+06	2.4E+07	6.2E+04	4.8E+07	2.0E+08	4.3E+06	2.2E+05
19	2.0E+07	5.1E+05	2.8E+05	4.2E+05	1.5E+07	2.6E+06	2.2E+07	3.0E+05	4.2E+07	1.0E+07	1.0E+06	2.7E+05
20	1.9E+07	6.2E+05	1.2E+06	4.6E+05	7.6E+06	4.3E+06	2.0E+07	3.9E+06	4.2E+07	9.4E+06	1.2E+06	4.6E+05
21	1.8E+06	3.9E+05	6.8E+05	1.6E+06	8.3E+06	4.0E+06	1.2E+06	5.0E+07	7.6E+07	2.5E+06	2.1E+06	1.1E+05
22	5.0E+05	1.2E+06	1.1E+06	8.6E+05	3.2E+06	5.0E+06	3.0E+06	6.7E+07	3.7E+07	3.4E+06	1.3E+06	2.0E+05
23	1.1E+06	2.0E+06	8.1E+05	1.8E+06	5.5E+06	2.8E+06	1.1E+06	8.6E+07	8.1E+06	2.8E+06	3.5E+05	2.9E+06
24	7.5E+05	2.0E+06	3.2E+05	1.2E+05	8.3E+05	1.8E+06	8.9E+04	7.6E+07	1.2E+07	4.6E+06	2.8E+05	6.1E+05
25	3.8E+07	4.6E+06	3.0E+05	3.2E+07	8.3E+05	4.4E+06	1.6E+05	1.3E+07	1.3E+07	3.3E+06	5.5E+05	1.8E+06
26	5.2E+07	7.0E+06	3.2E+05	1.0E+08	1.4E+06	2.9E+06	1.2E+05	7.6E+07	1.4E+07	1.5E+07	2.1E+05	8.6E+06
27	1.4E+08	7.5E+06	2.0E+05	1.3E+08	1.3E+07	8.6E+05	2.2E+05	1.7E+08	1.8E+07	1.7E+07	4.3E+05	8.2E+06
28	6.0E+07	4.7E+06	2.3E+05	7.8E+07	1.6E+07	1.9E+06	3.3E+05	1.5E+08	1.6E+07	7.0E+06	5.8E+05	3.0E+07
29	8.3E+07	5.9E+06	2.9E+06	1.2E+07	1.5E+07	1.1E+06	1.8E+07	5.4E+07	6.2E+05	2.2E+06	1.5E+06	4.2E+06
30		1.8E+06	1.9E+06	5.7E+07	4.3E+07	2.6E+06	1.0E+08	9.0E+06	1.0E+07	1.2E+06	7.5E+05	1.8E+06
31		1.8E+05		1.2E+08		3.7E+06	1.2E+08		1.5E+07		9.3E+05	1.4E+06

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '--' indicates data not available.
NOTE: GOES9 data began April, 1996 and ended on 26 July, 1998. GOES8 is primary satellite as of 27 July, 1998.

CONTENTS

Prompt Reports Number 678 Part I

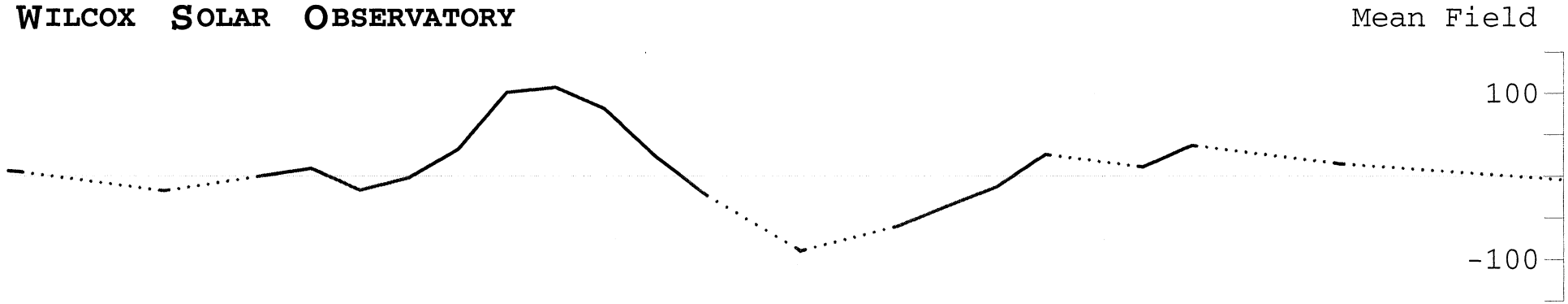
DATA FOR DECEMBER 2000

	Page
SOLAR ACTIVE REGIONS	
Solar Synoptic Charts	42- 53
Daily Activity Solar Maps	54- 84
YOHKOH Daily Soft X-ray Images	85- 92
Preliminary NSO/KP Coronal Hole Daily Maps	93- 97
Nobeyama Daily Radioheliograph Images at 17 GHz	98-103
Sunspot Groups	104-122
SUDDEN IONOSPHERIC DISTURBANCES	123-124
SOLAR RADIO SPECTRAL OBSERVATIONS	125-139
SOLAR RADIOHELIOGRAPH - 164 AND 327 MHZ - NANCAY	140-141
COSMIC RAY MEASUREMENTS BY NEUTRON MONITOR	
Daily Counting Rates	142
Chart of Variations	143-148
Graph and Table of Monthly Mean Moscow Data Jan 1958-Dec 2000	149
GEOMAGNETIC INDICES	
Geomagnetic Activity Indices	150
Daily Average Ap	151
Chart of Kp by 27-day Rotation	152
Table of Monthly aa Index (1950 to present)	153
Chart of 3-hourly Km and aa by 27-day Rotation	154
Provisional Values of Hourly Equatorial Dst	155
Polar Cap (PC) Geomagnetic Index Plot of 15-min values – Thule	156
-- Plot of 1-min values – Vostok	157
Principal Magnetic Storms	158
Sudden Commencements/Solar Flare Effects	159

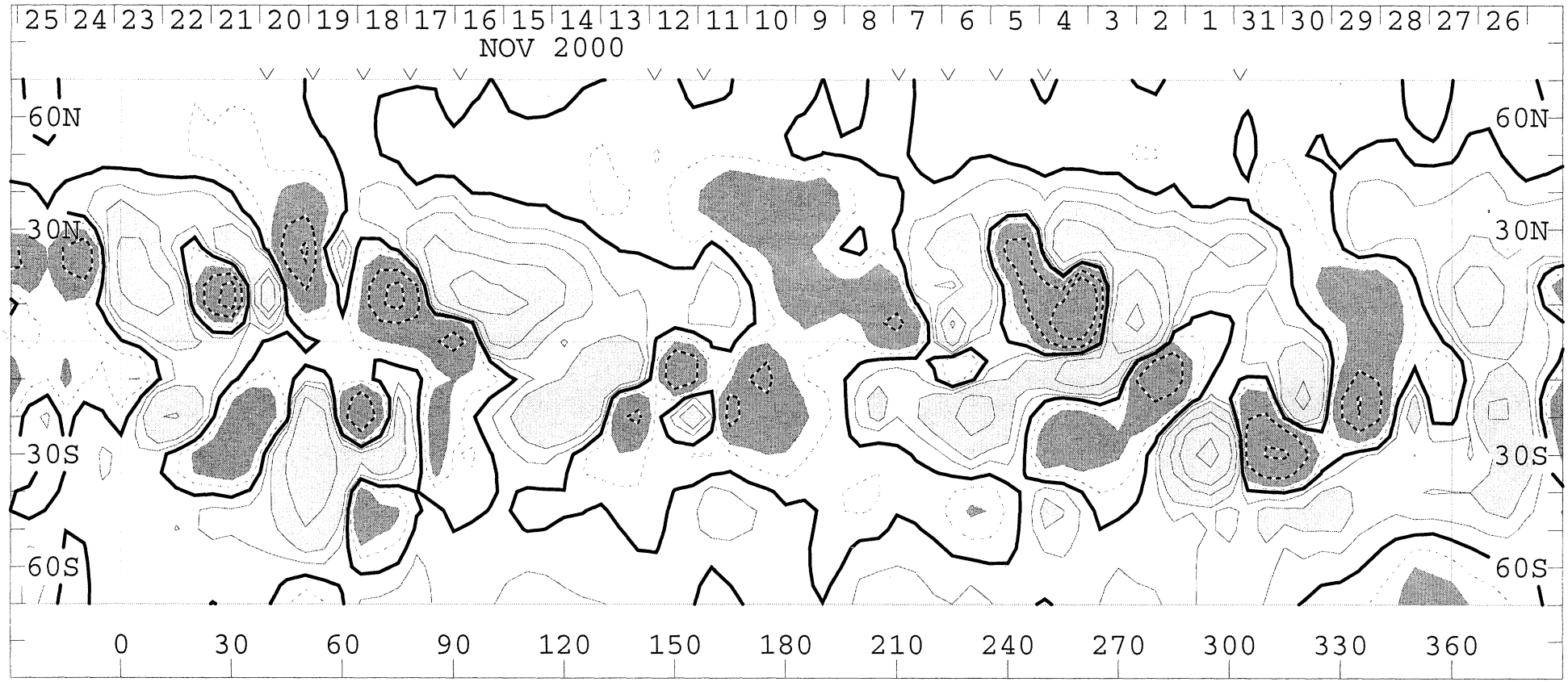
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1969
(27 October to 23 November 2000)

WILCOX SOLAR OBSERVATORY



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



Heliographic Longitude

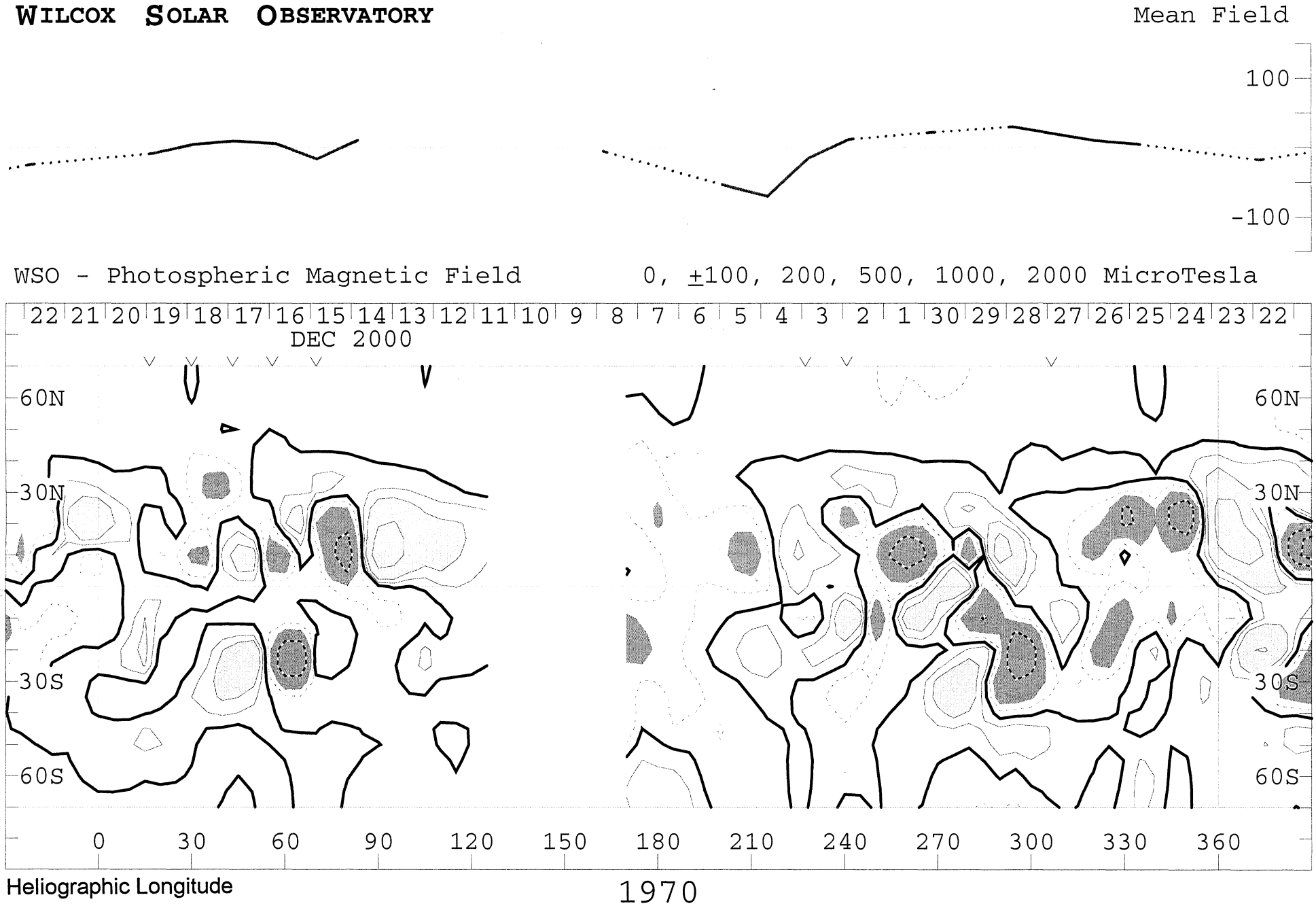
1969

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1970

(23 November to 21 December 2000)

WILCOX SOLAR OBSERVATORY



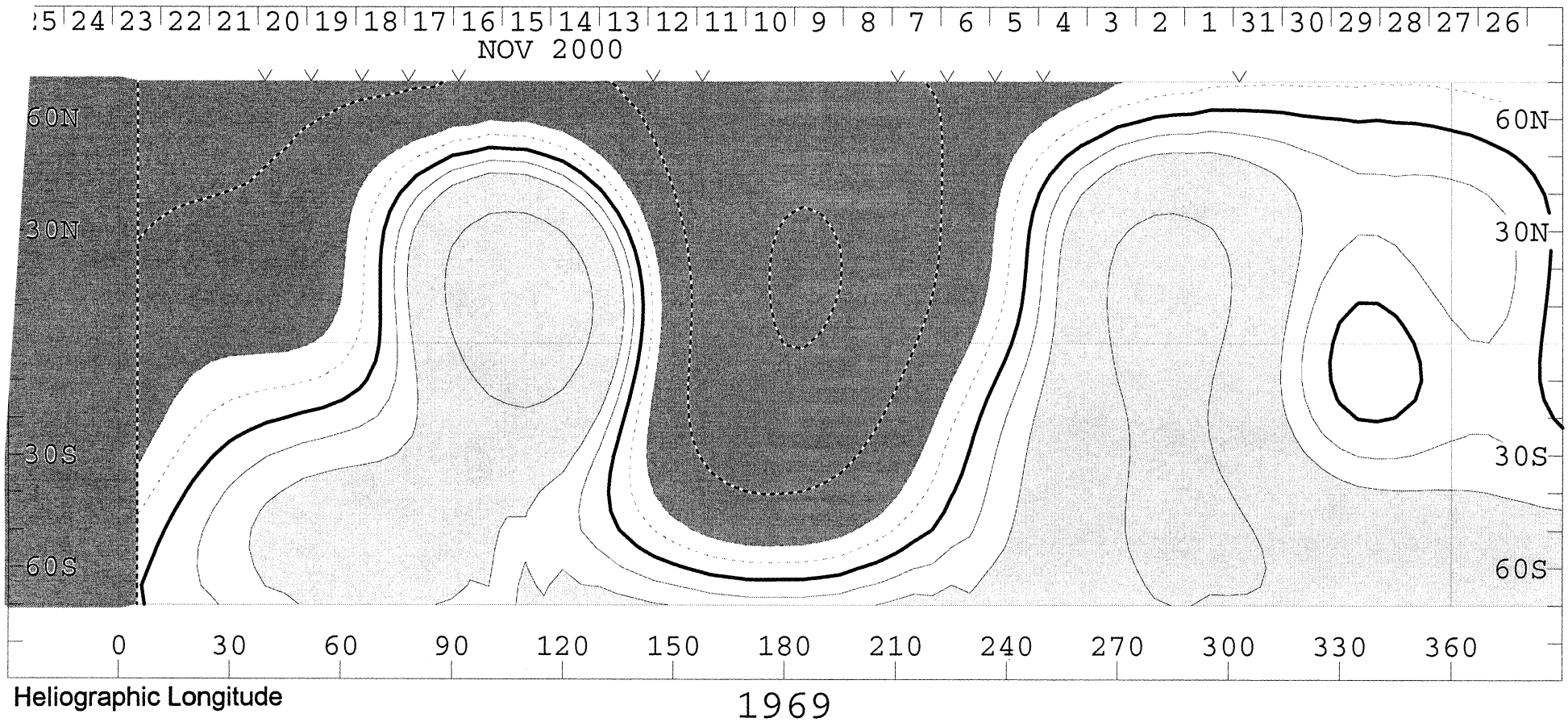
SOLAR MAGNETIC FIELD SYNOPTIC CHART

SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1969
(27 October to 23 November 2000)

'ilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



SOLAR MAGNETIC FIELD SYNOPTIC CHART

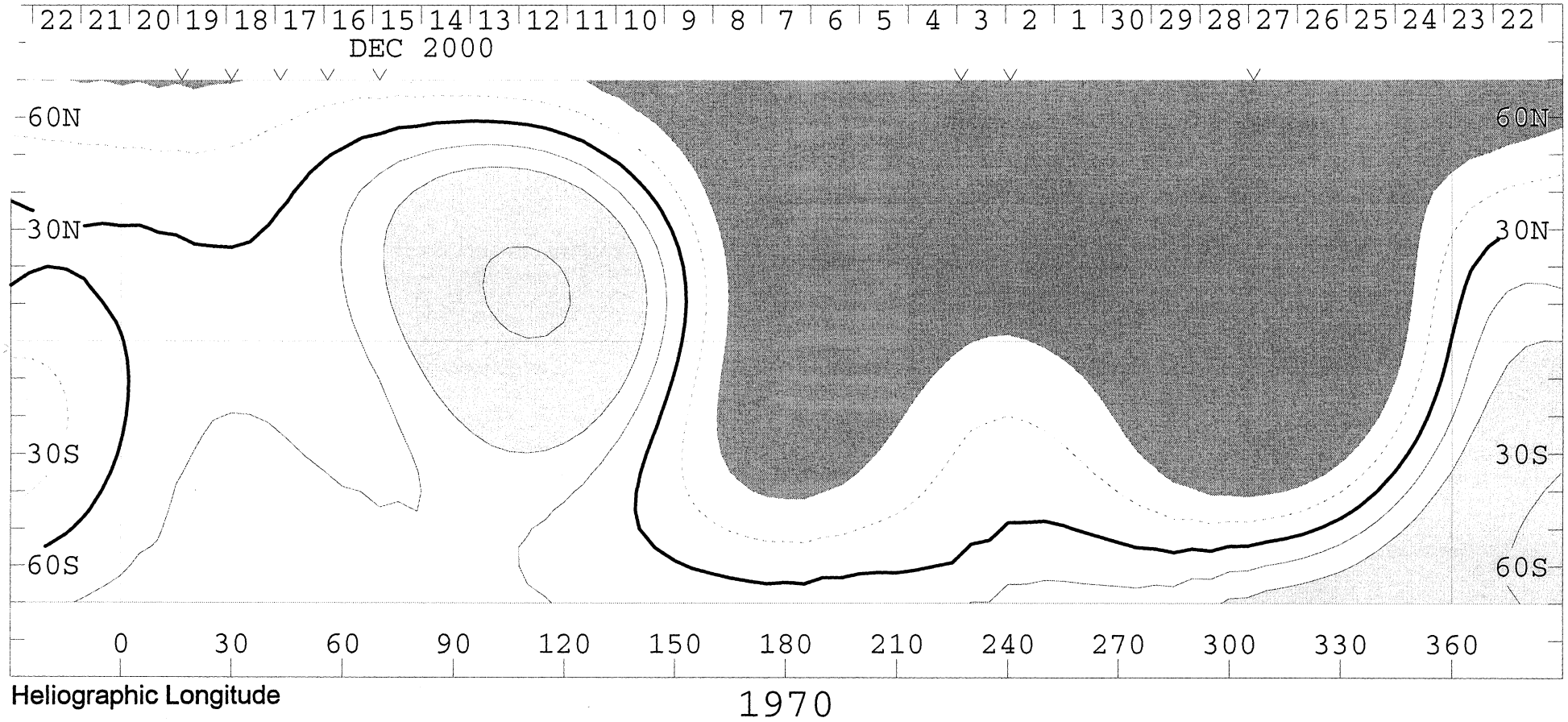
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1970

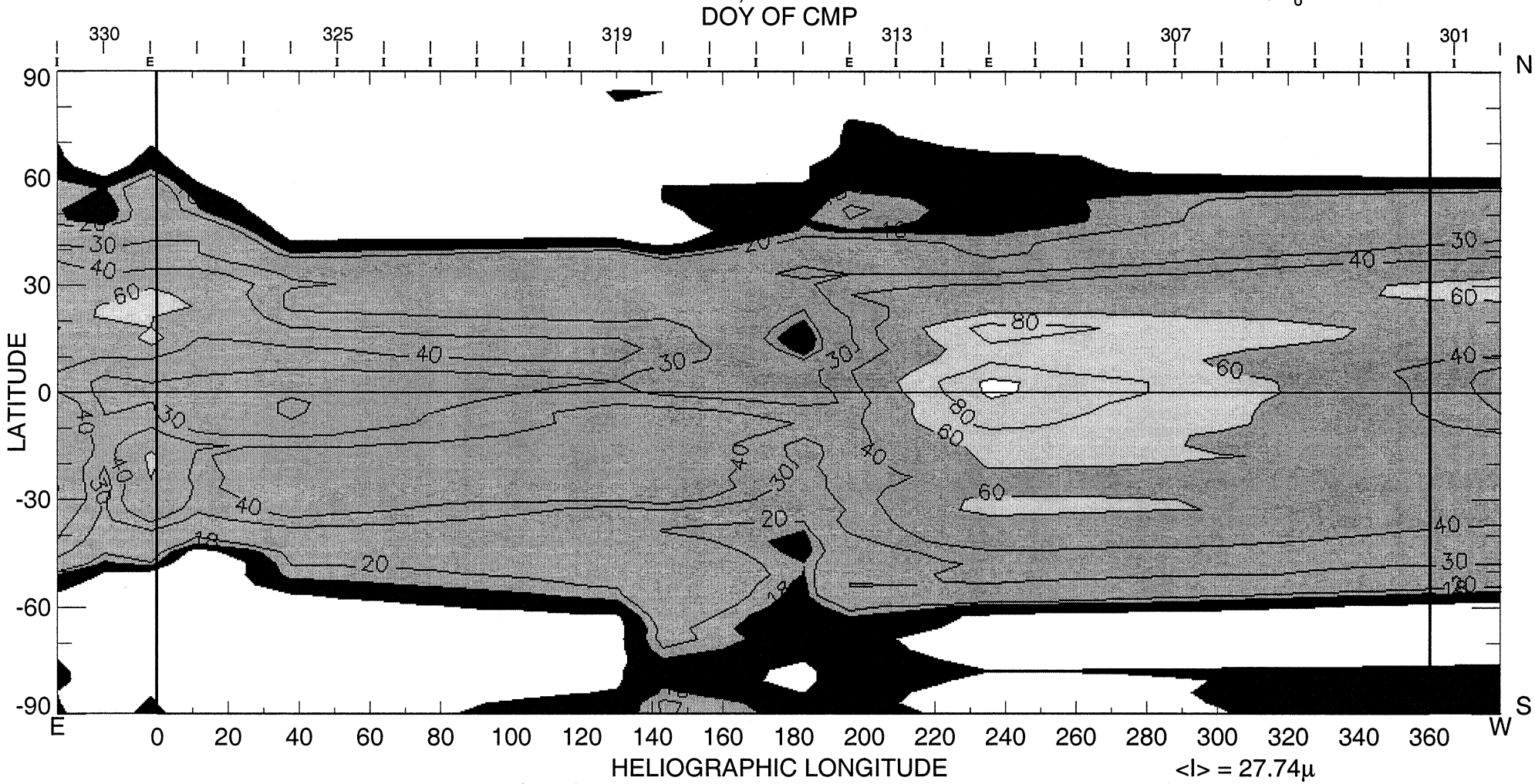
(23 November to 21 December 2000)

Vilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1969 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

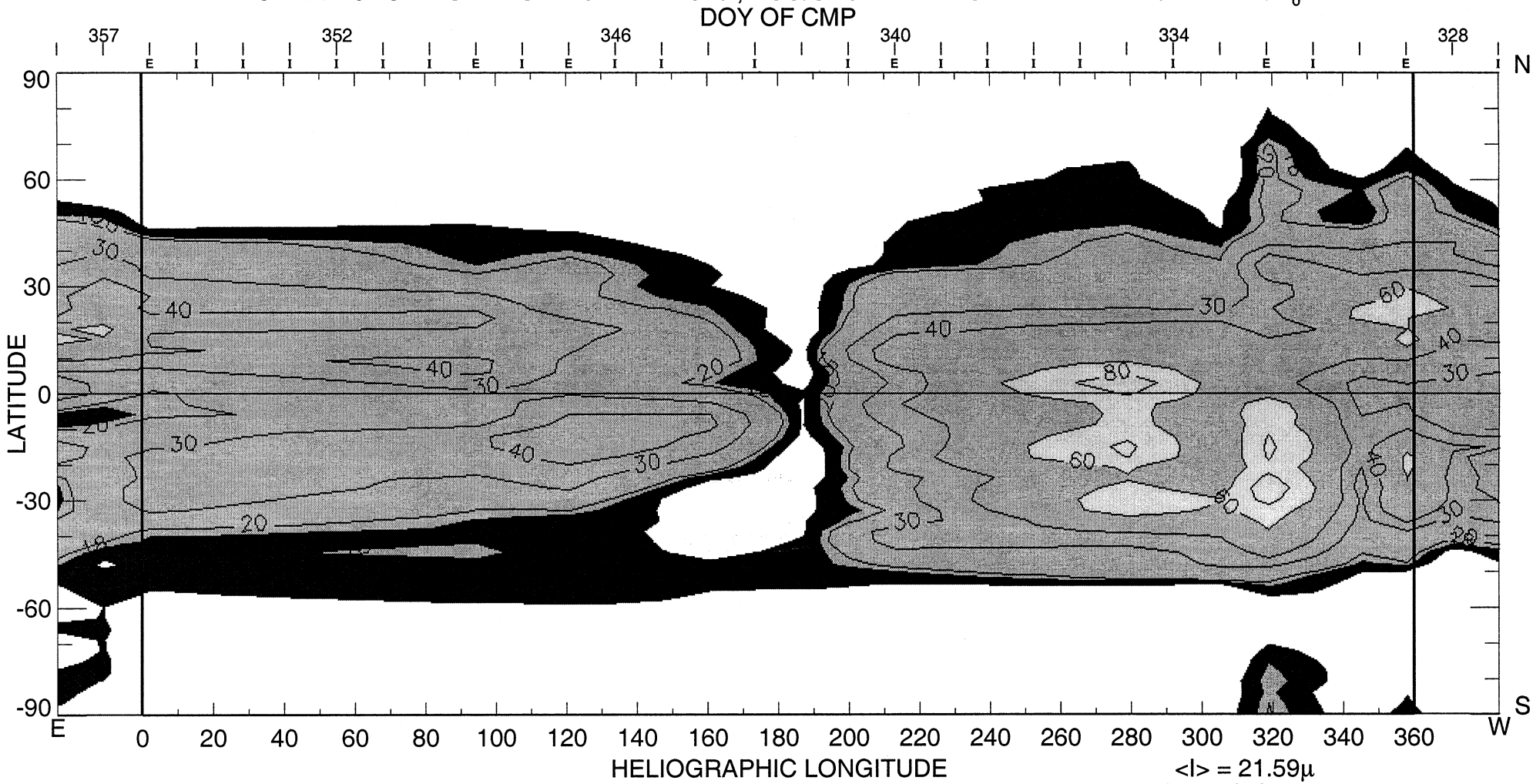


<I> = 27.74μ

(26-Jan-01) 2000 W+E LIMB CONTOURS: 14, 18, 20, 30, 40, 60, 80, 100, 120, 140, 160 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CARRINGTON ROTATION NUMBER 1970 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o

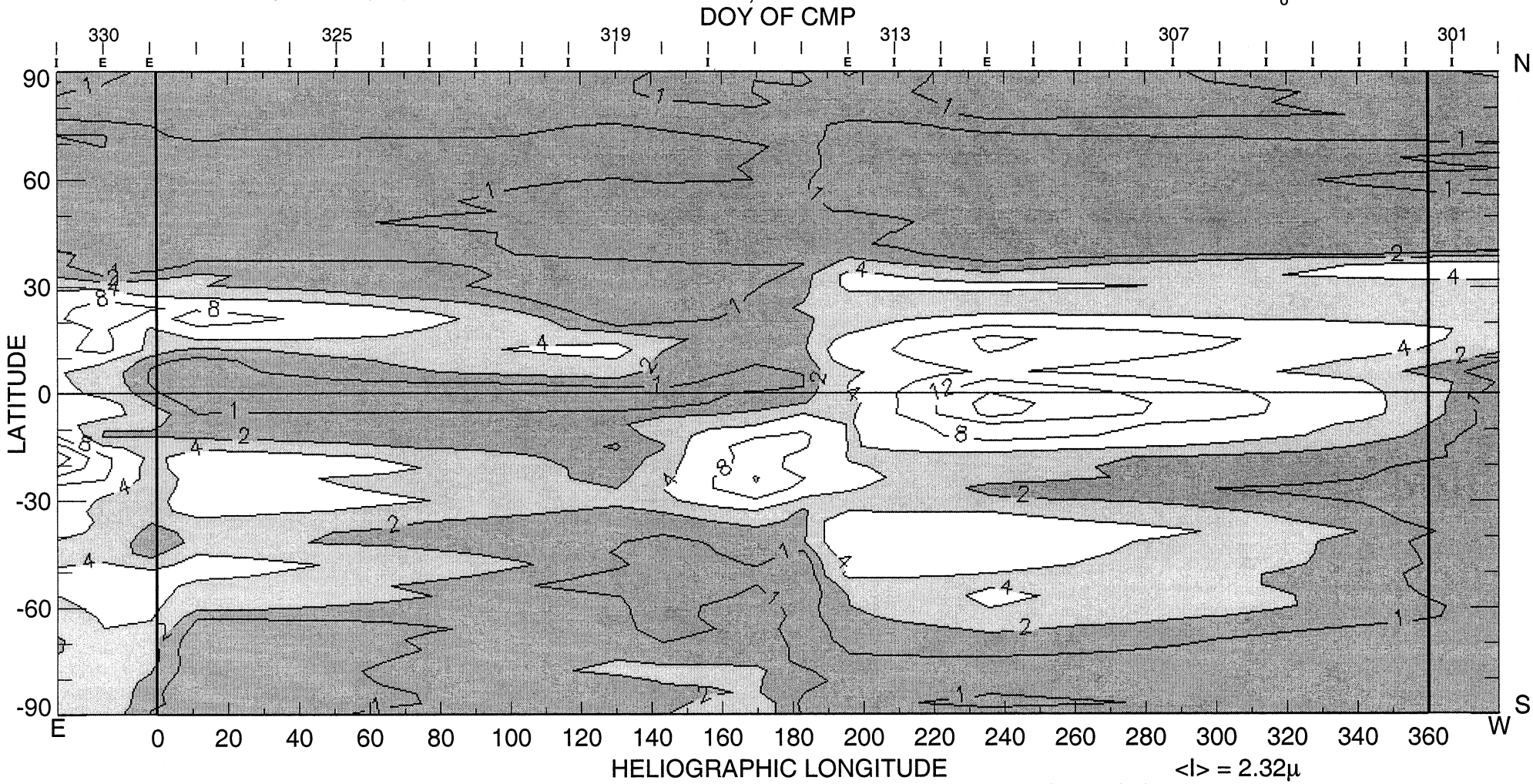


<I> = 21.59μ

(26-Jan-01) 2000 W+E LIMB CONTOURS: 14, 18, 20, 30, 40, 60, 80, 100, 120, 140, 160 MILLIONTHS OF I_o

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CARRINGTON ROTATION NUMBER 1969 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o

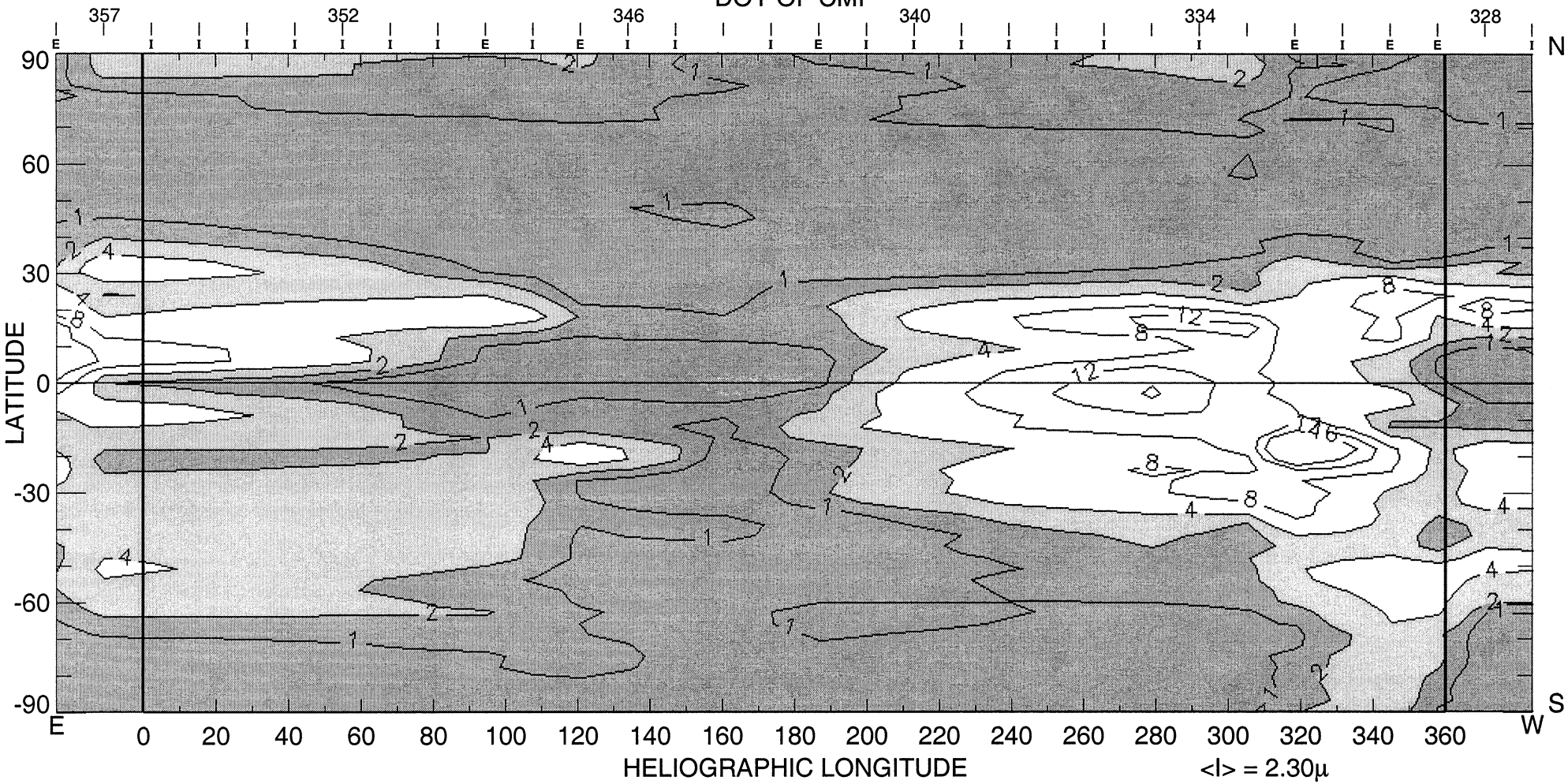


<I> = 2.32μ

(26-Jan-01)

2000 W+E LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I_o

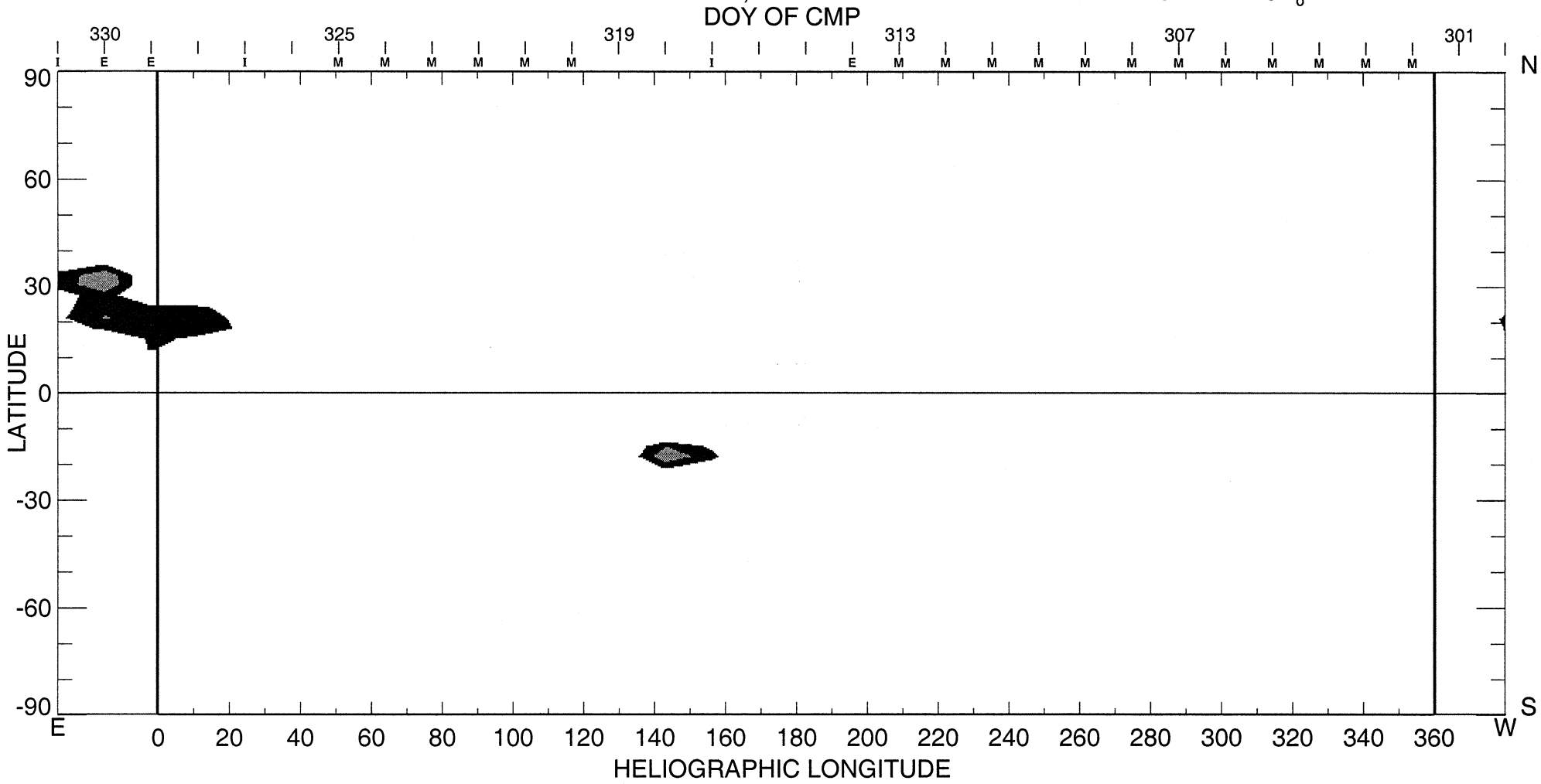
CARRINGTON ROTATION NUMBER 1970 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o



(26-Jan-01)

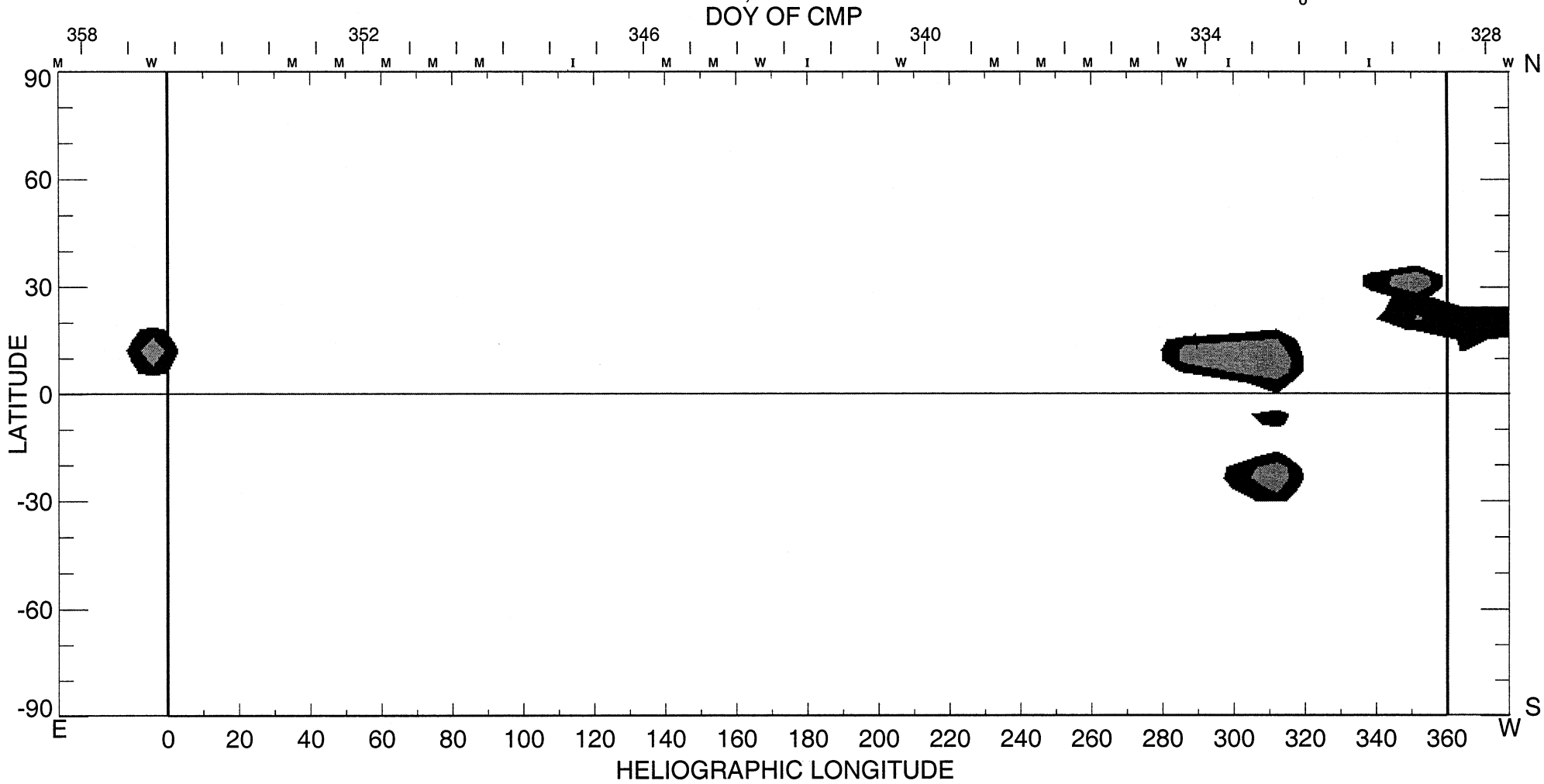
2001 W+E LIMB CONTOURS: 1, 2, 4, 8, 12, 16, 32, 48 MILLIONTHS OF I_o

CARRINGTON ROTATION NUMBER 1969 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



(26-Jan-01) 2000 W+E LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

CARRINGTON ROTATION NUMBER 1970 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



(21-Feb-01) 2000 E+W LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20 MILLIONTHS OF I_o

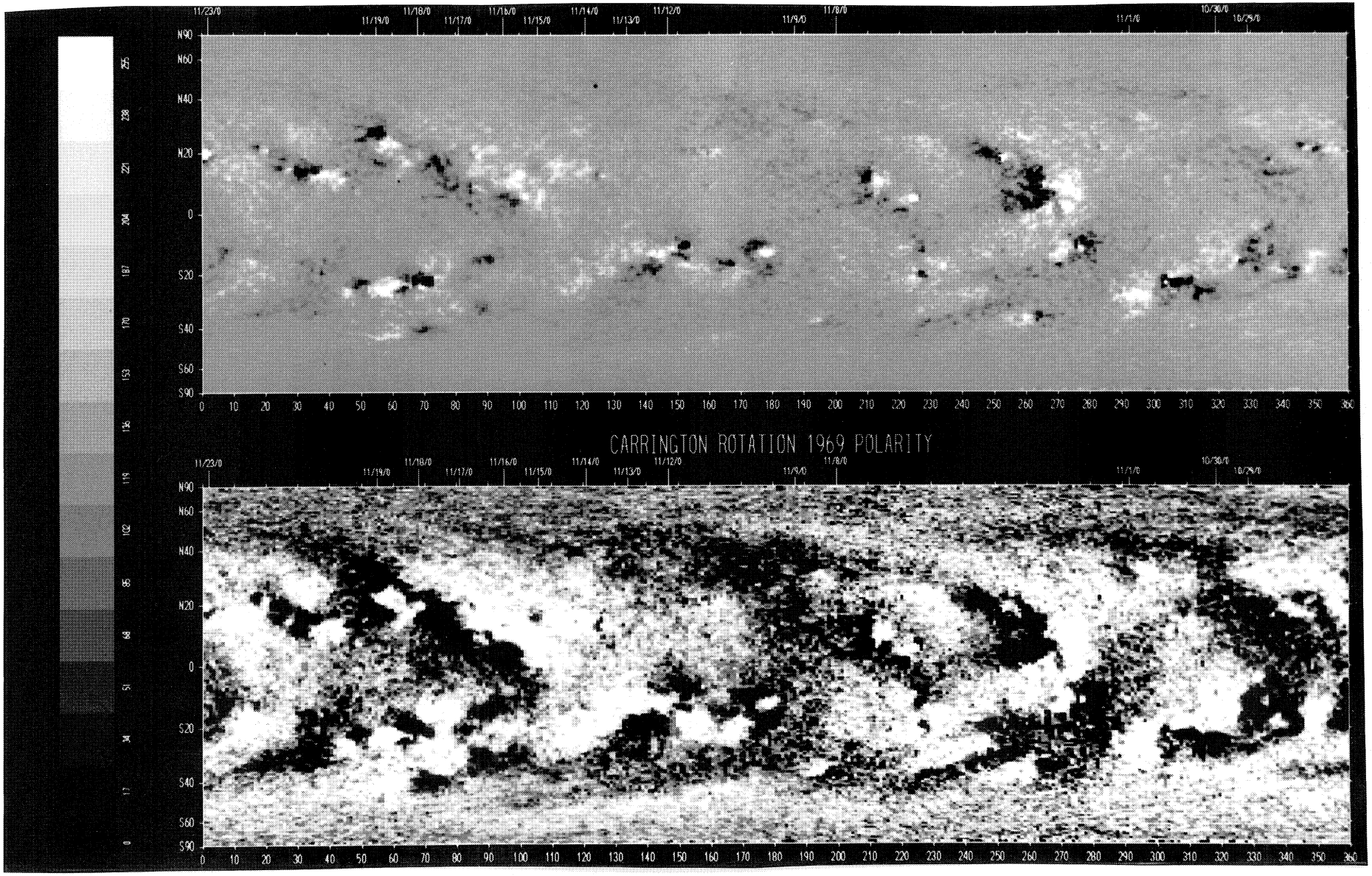
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1969

(27 October to 23 November 2000)

National Solar Observatory/Kitt Peak

Dates of Observation



Heliographic Longitude

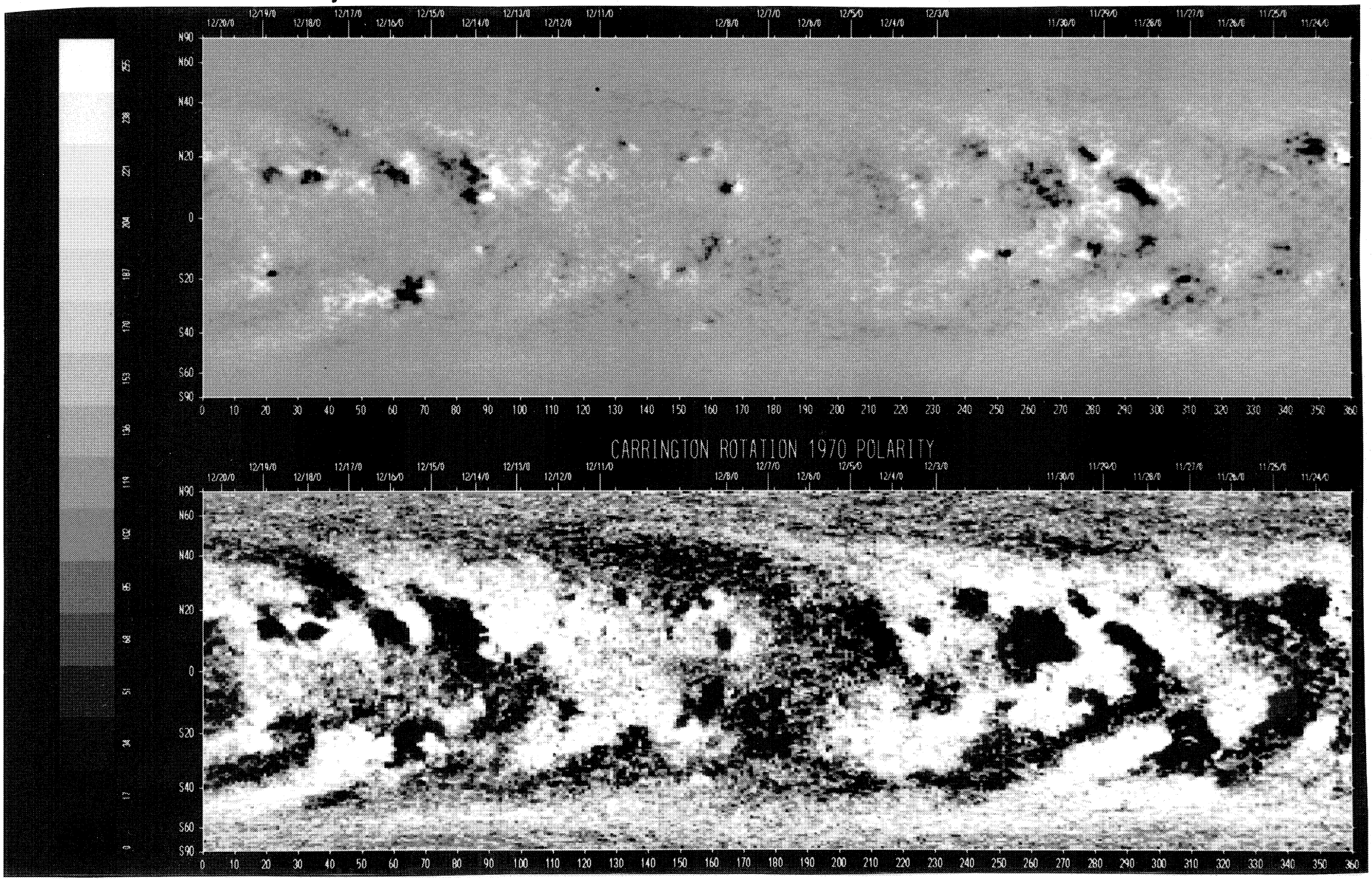
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1970

(23 November to 21 December 2000)

National Solar Observatory/Kitt Peak

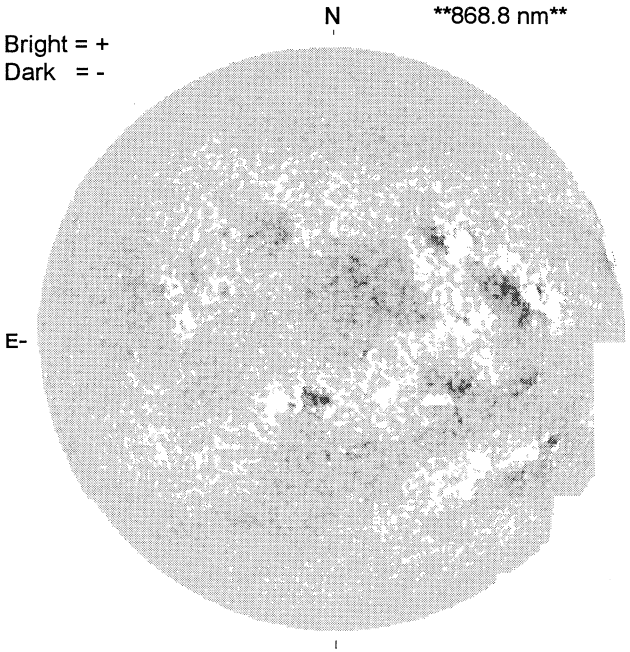
Dates of Observation



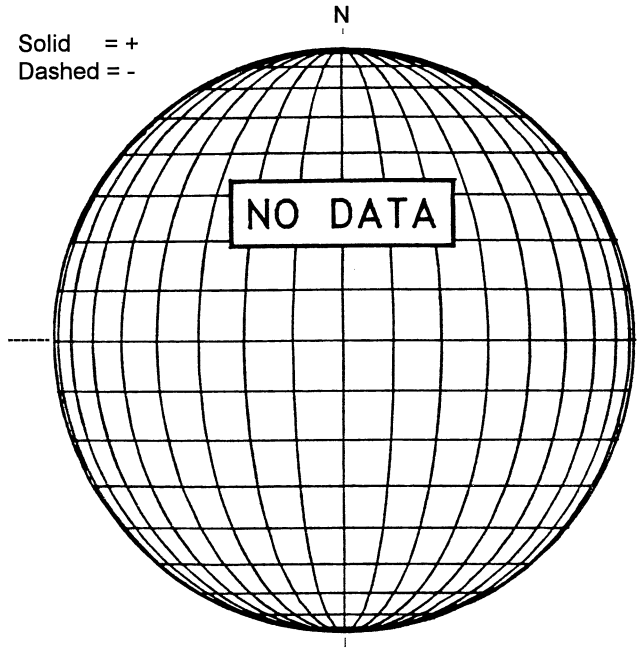
Heliographic Longitude

DECEMBER 1, 2000 (P= 15.99, Bo = 0.84, Lo = 265.69)

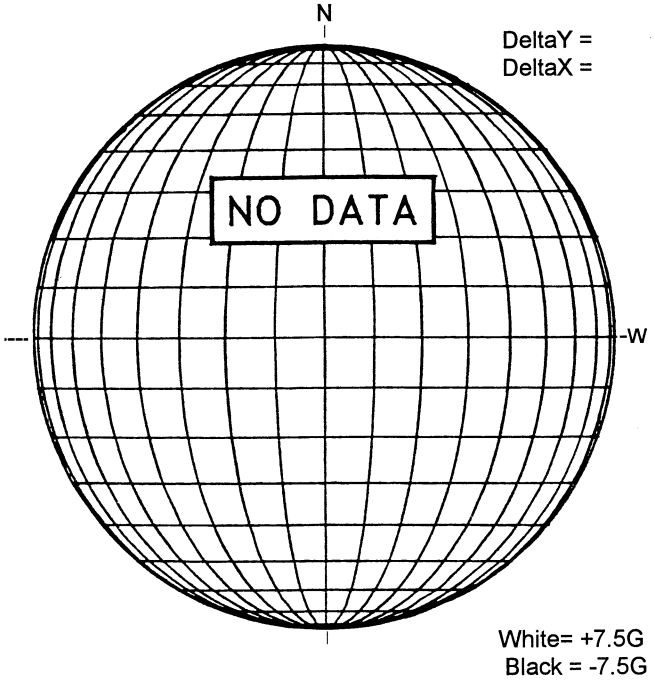
KITT PEAK MAGNETOGRAM



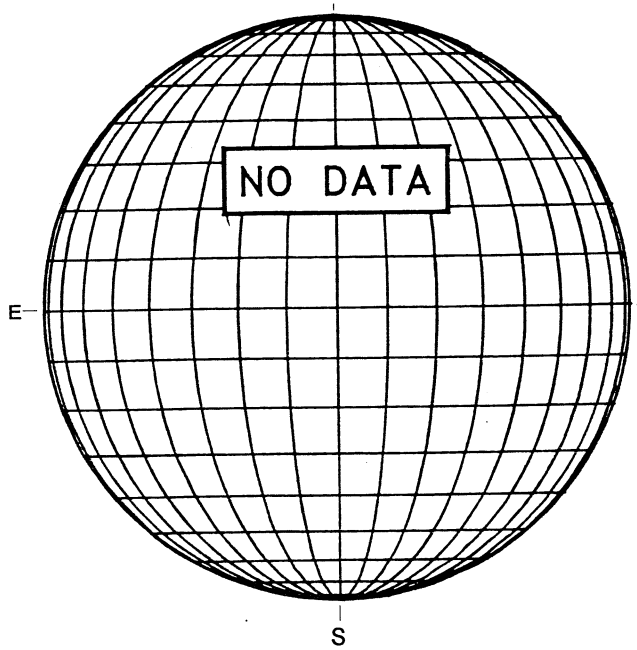
STANFORD MAGNETOGRAM



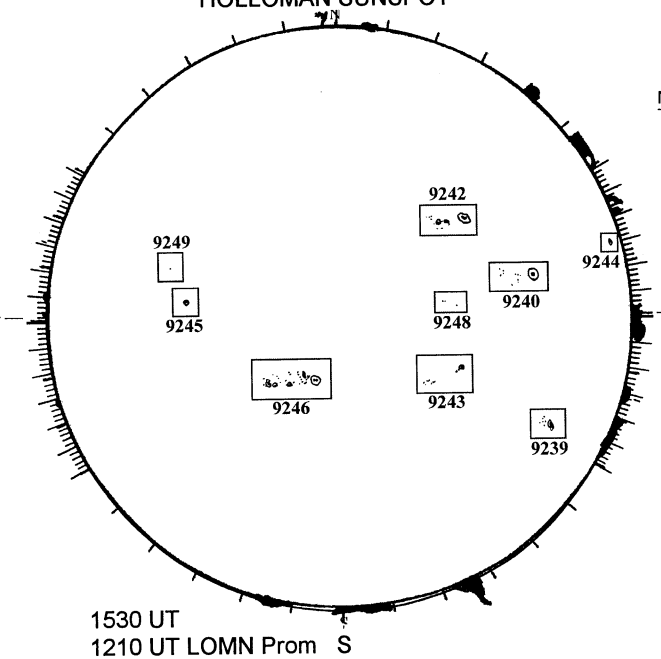
MT. WILSON MAGNETOGRAM



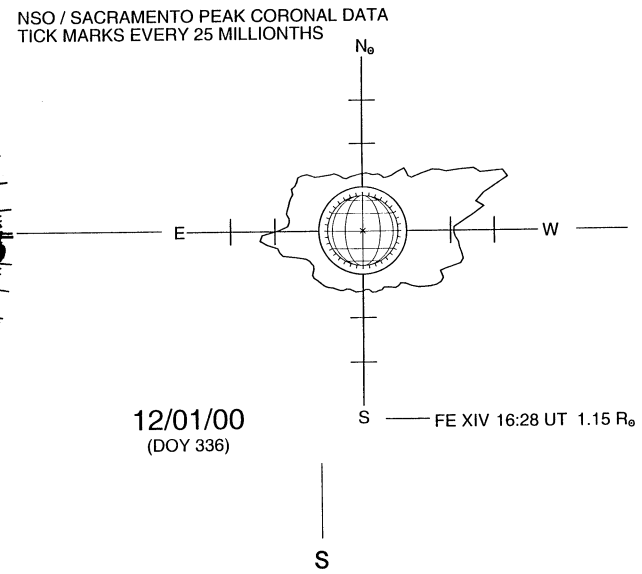
MEUDON H-ALPHA



HOLLOMAN SUNSPOT

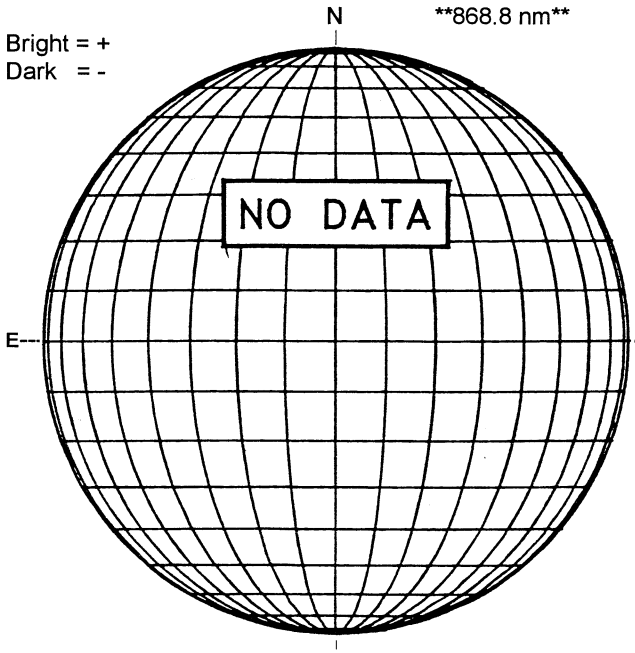


SACRAMENTO PEAK CORONA (1.15 Radii)----

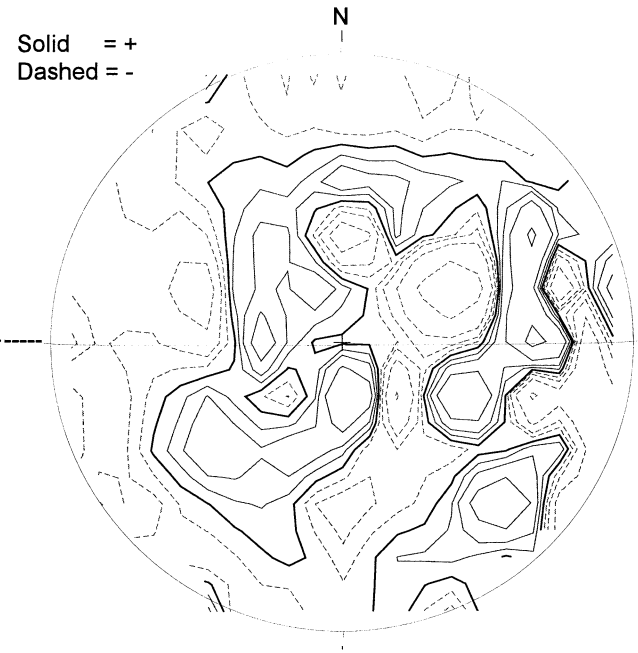


DECEMBER 2, 2000 (P= 15.60, Bo = 0.71, Lo = 252.51)

KITT PEAK MAGNETOGRAM

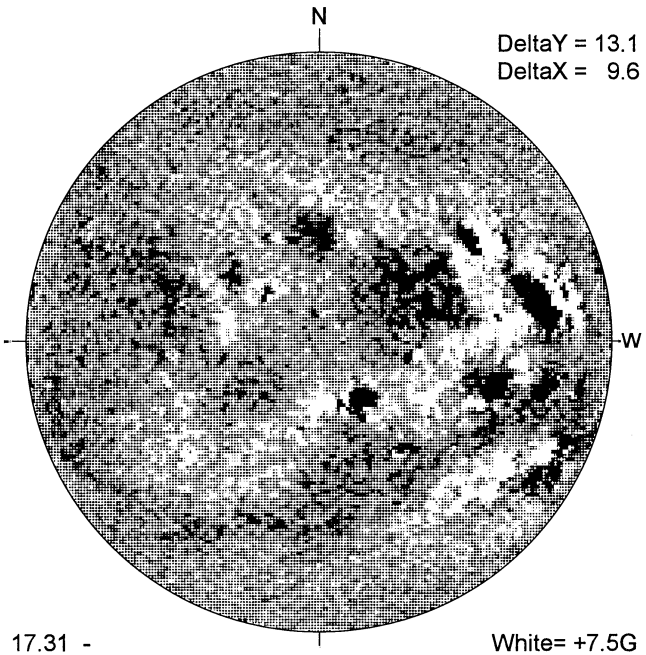


STANFORD MAGNETOGRAM



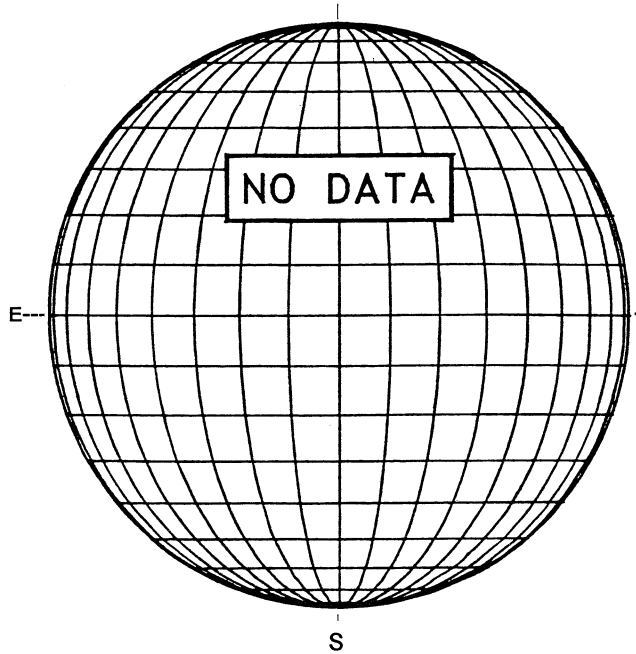
2141 UT

MT. WILSON MAGNETOGRAM

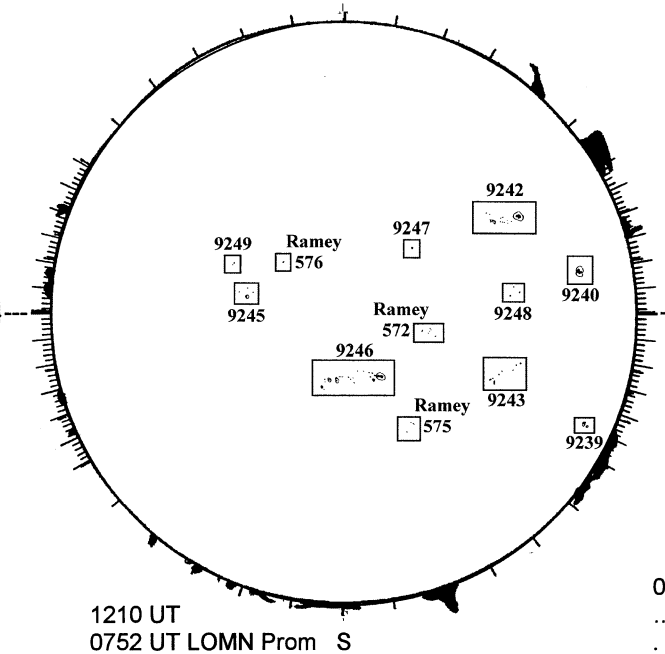


17.31 -
18.29 UT

MEUDON H-ALPHA

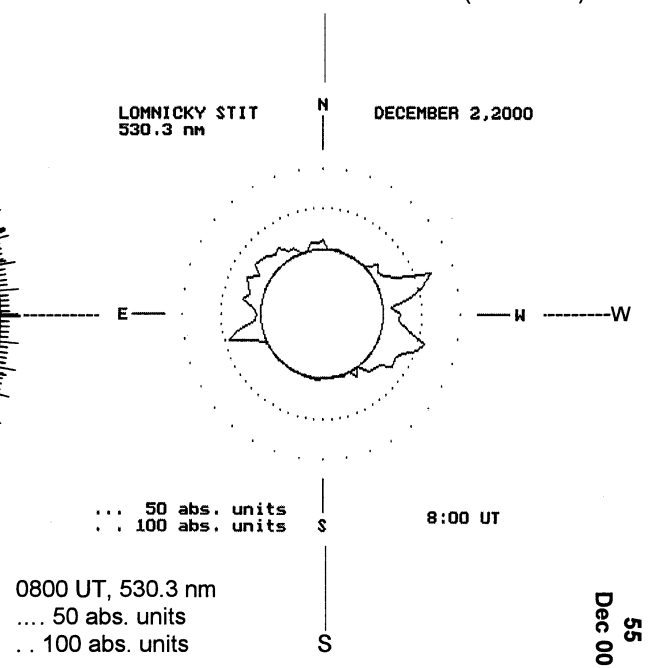


RAMEY SUNSPOT



1210 UT
0752 UT LOMN Prom

LOMNICKY PEAK CORONA (1.04 Radii)----



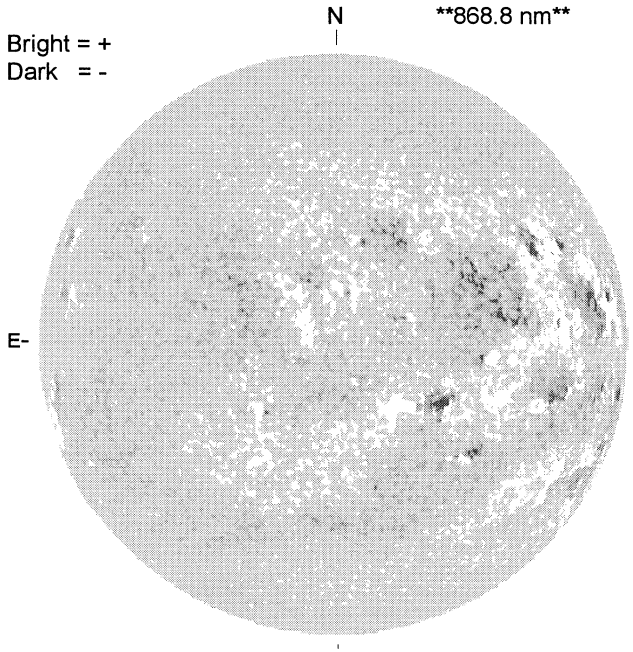
0800 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

DECEMBER 3, 2000 (P= 15.21, Bo = 0.59, Lo = 239.33)

KITT PEAK MAGNETOGRAM

868.8 nm

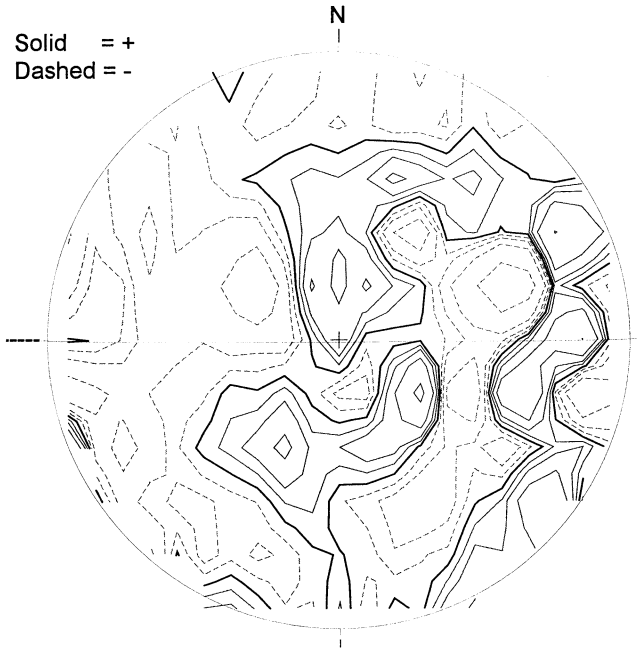
Bright = +
Dark = -



1605 UT

STANFORD MAGNETOGRAM

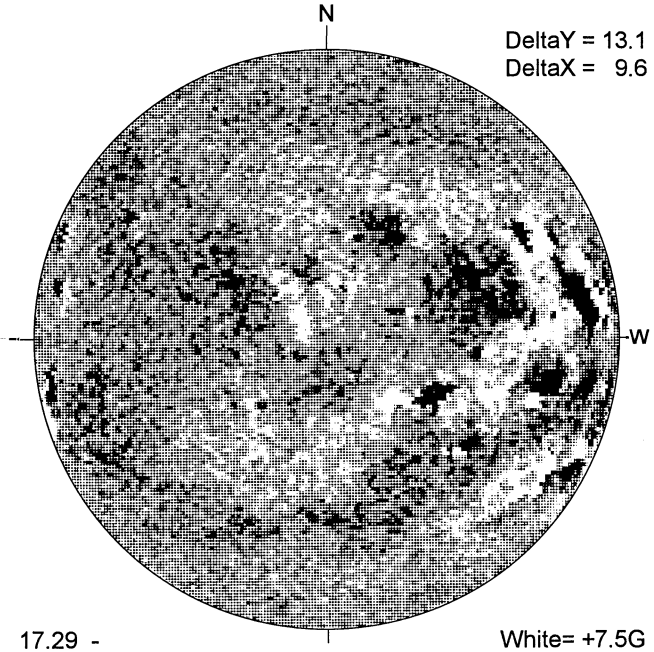
Solid = +
Dashed = -



2156 UT

MT. WILSON MAGNETOGRAM

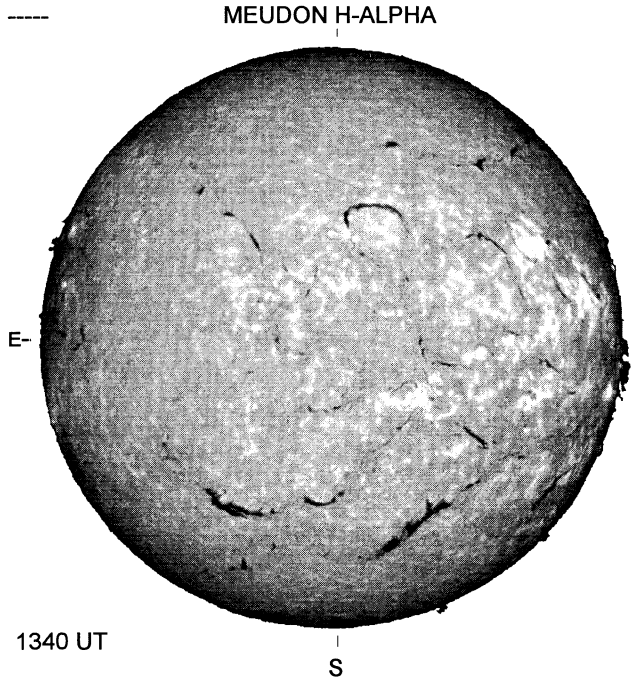
DeltaY = 13.1
DeltaX = 9.6



17.29 -
18.26 UT

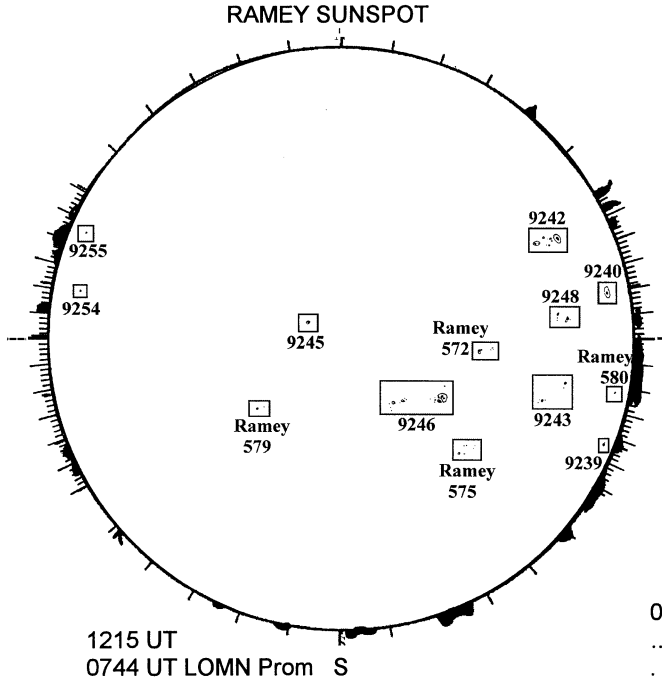
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



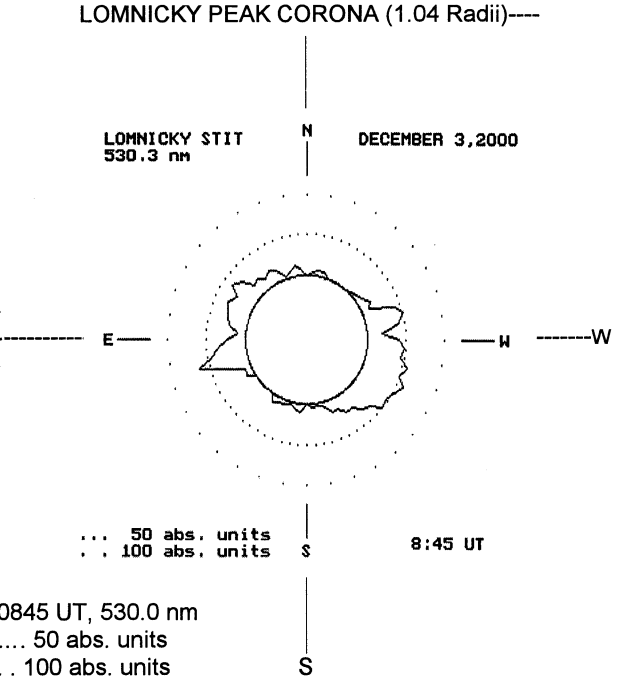
1340 UT

RAMEY SUNSPOT



1215 UT
0744 UT LOMN Prom S

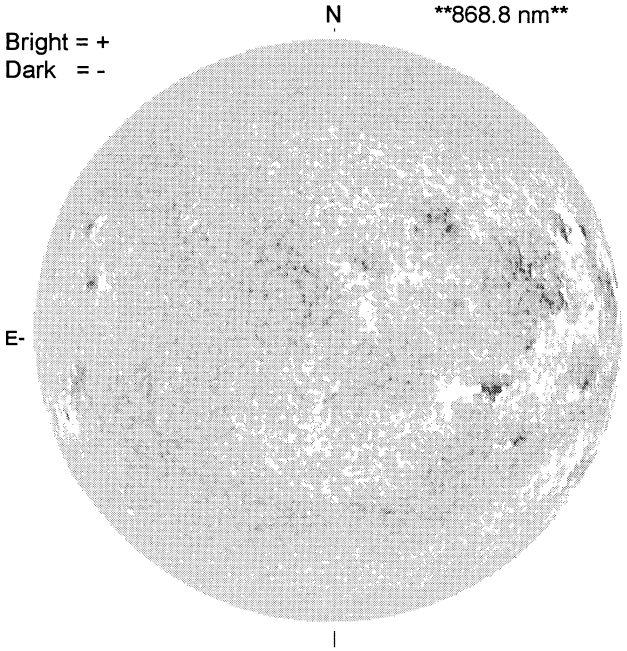
LOMNICKY PEAK CORONA (1.04 Radii)



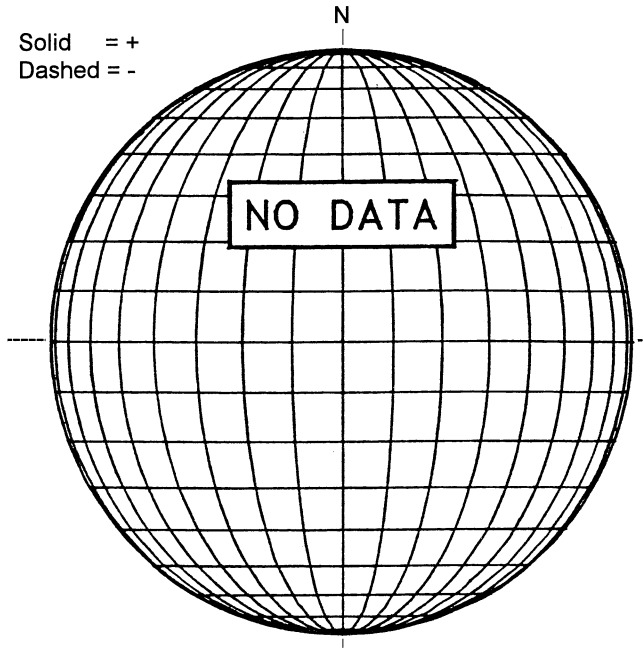
0845 UT, 530.0 nm
.... 50 abs. units
. . 100 abs. units
S

DECEMBER 4, 2000 (P= 14.81, Bo = 0.46, Lo = 226.16)

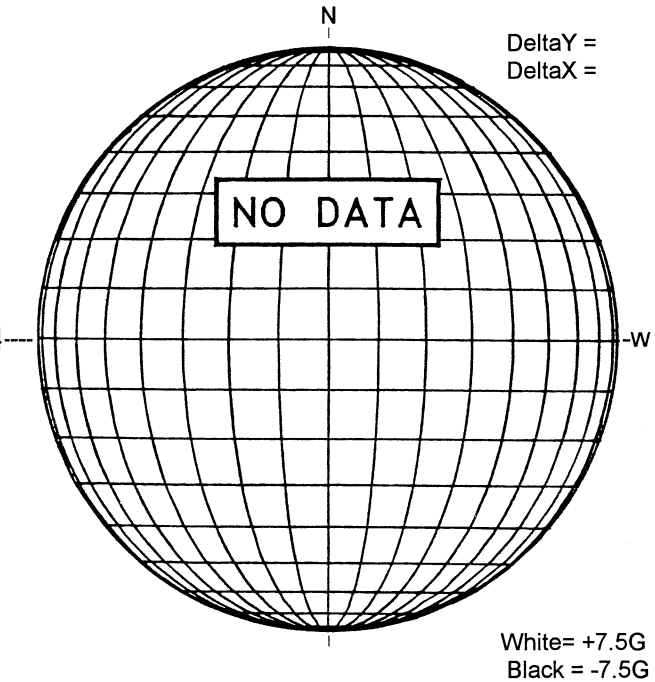
KITT PEAK MAGNETOGRAM



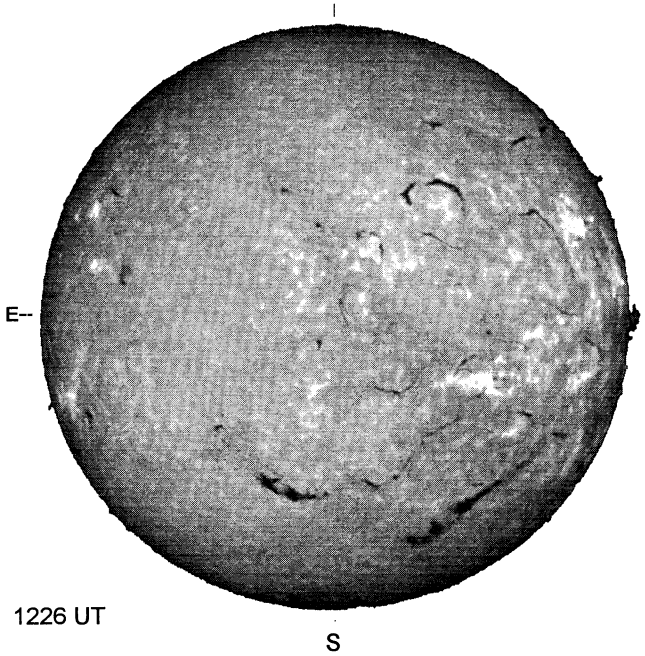
STANFORD MAGNETOGRAM



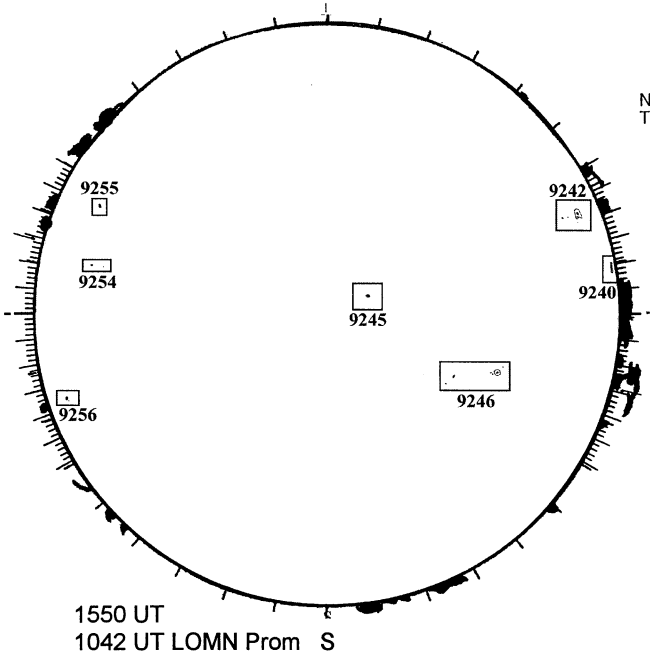
MT. WILSON MAGNETOGRAM



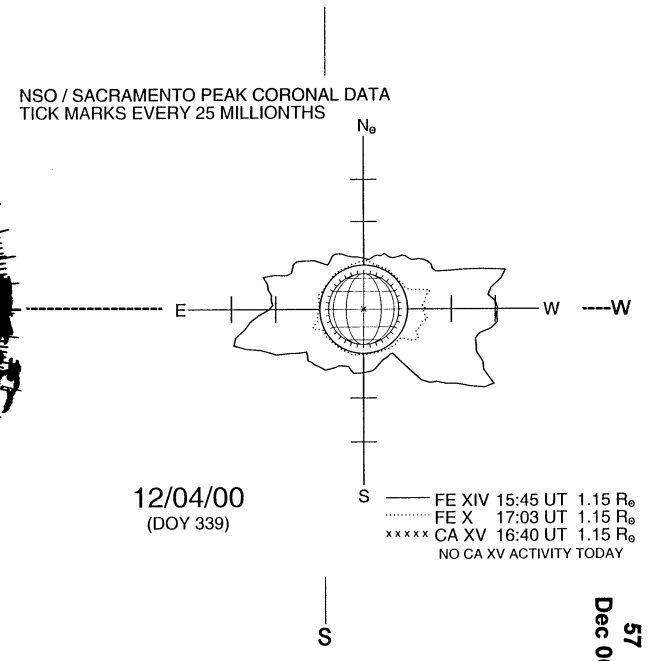
MEUDON H-ALPHA



RAMEY SUNSPOT



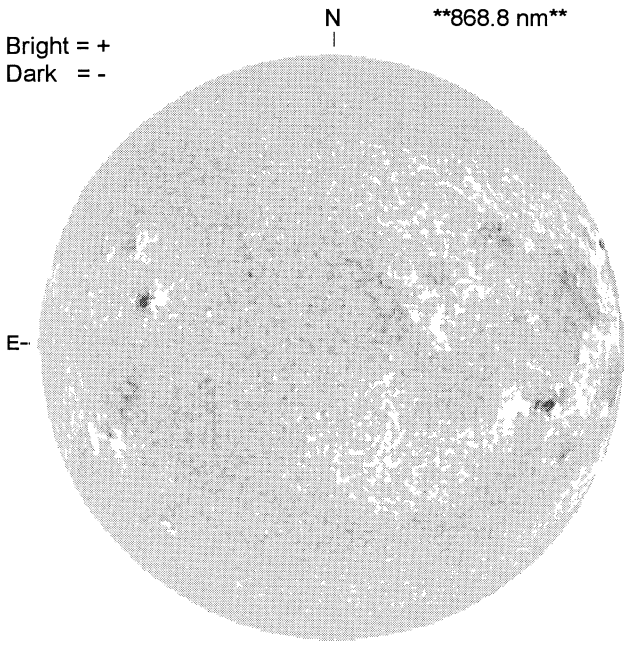
SACRAMENTO PEAK CORONA (1.15 Radii)----



DECEMBER 5, 2000 (P= 14.40, Bo = 0.33, Lo = 212.98)

KITT PEAK MAGNETOGRAM

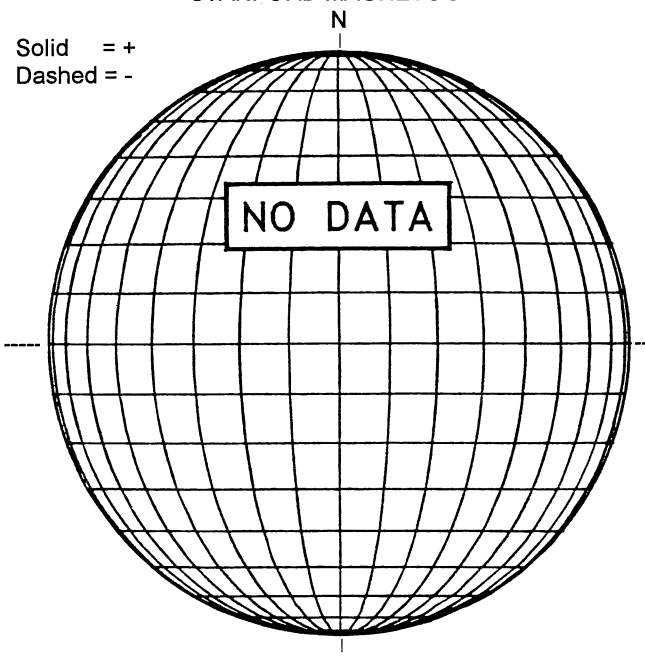
Bright = +
Dark = -



1707 UT

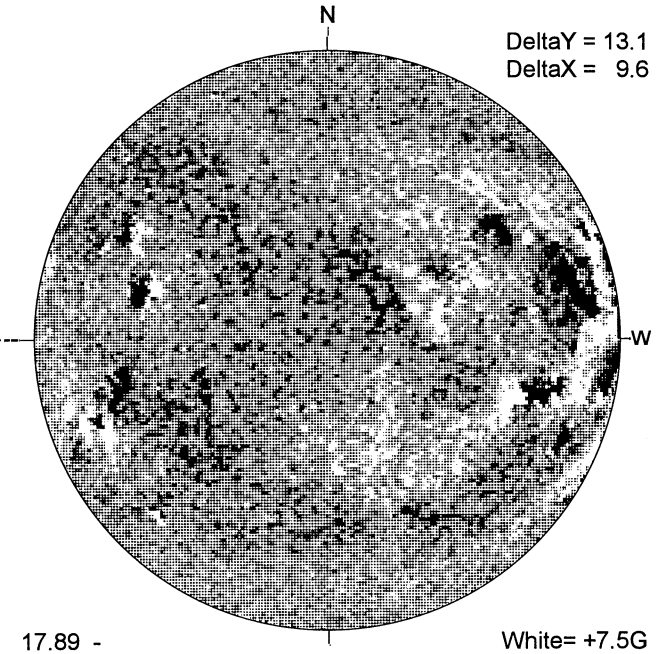
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

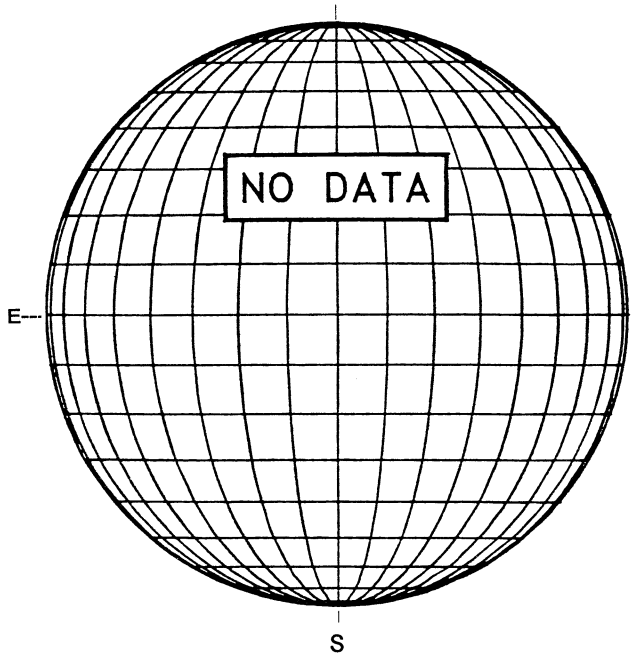
DeltaY = 13.1
DeltaX = 9.6



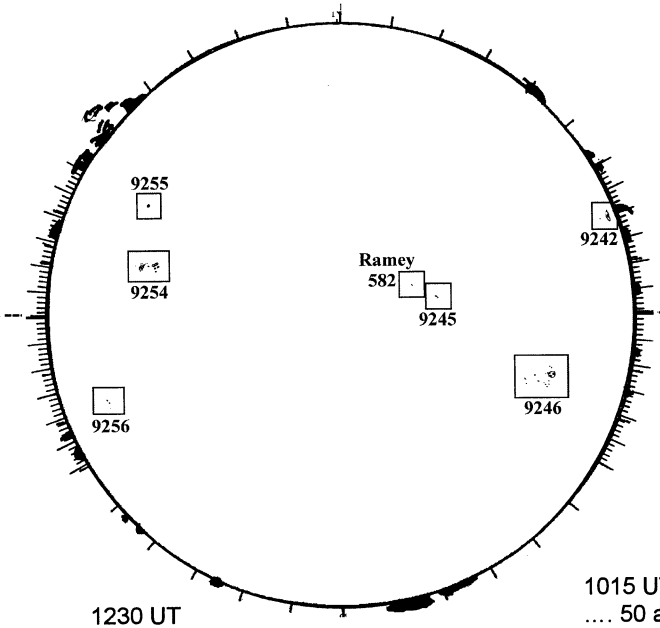
17.89 -
18.86 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

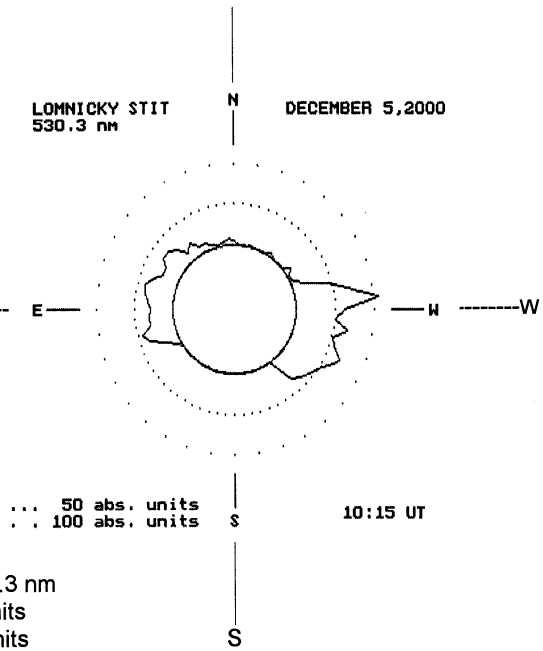


RAMEY SUNSPOT



1230 UT
0834 UT LOMN Prom S

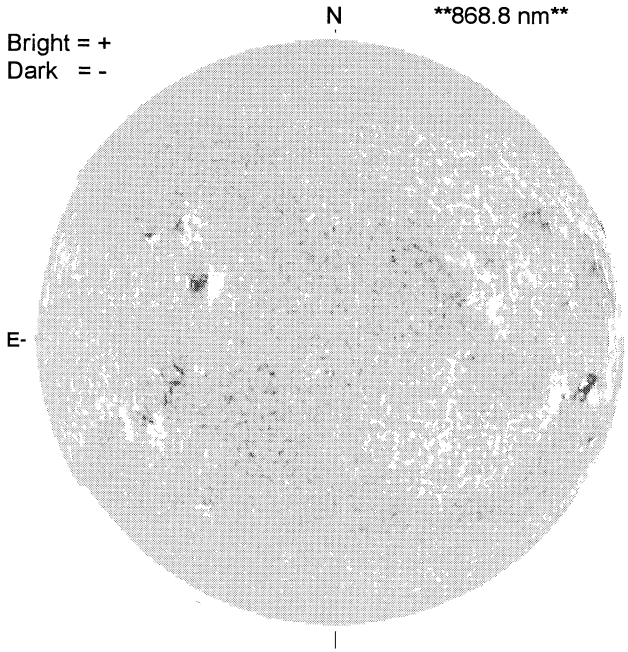
LOMNICKY PEAK CORONA (1.04 Radii)



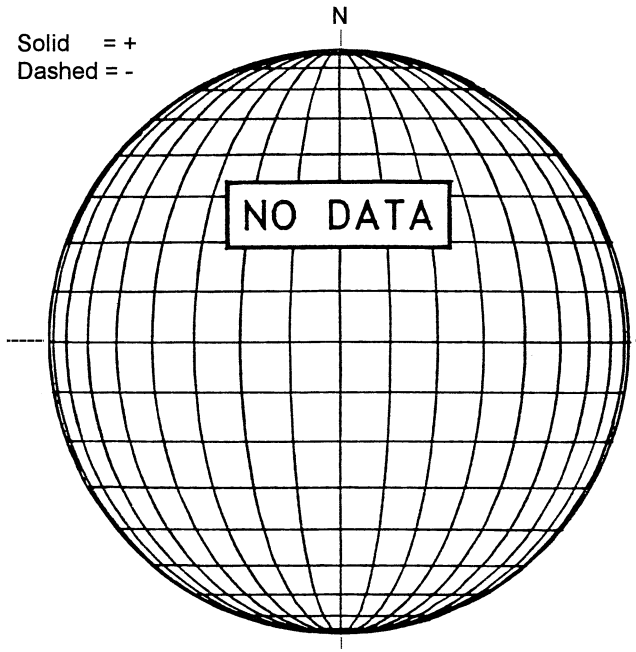
1015 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

DECEMBER 6, 2000 (P= 13.99, Bo = 0.20, Lo = 199.80)

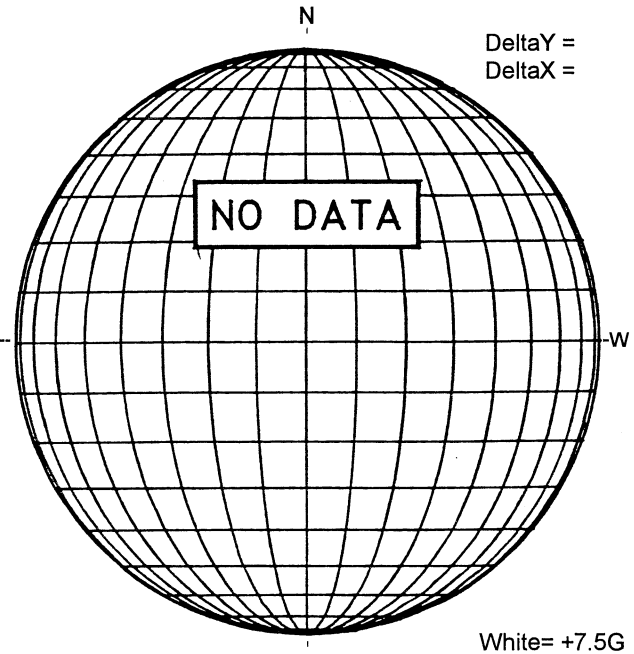
KITT PEAK MAGNETOGRAM



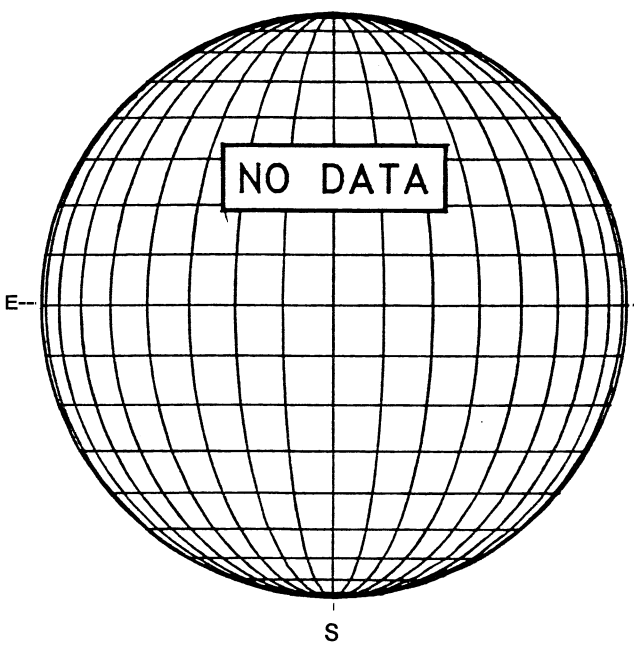
STANFORD MAGNETOGRAM



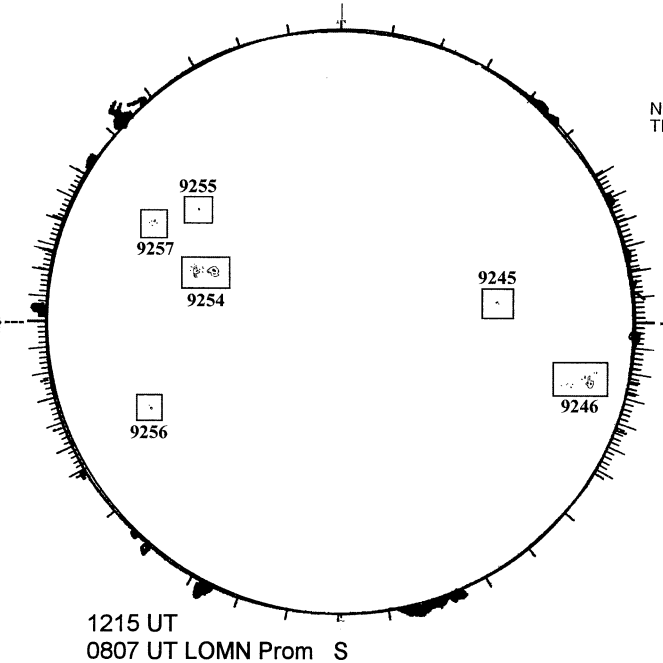
MT. WILSON MAGNETOGRAM



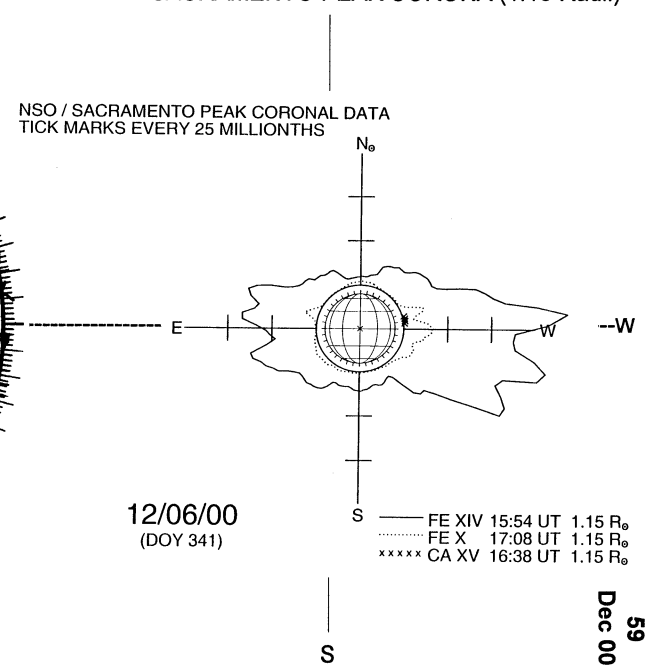
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

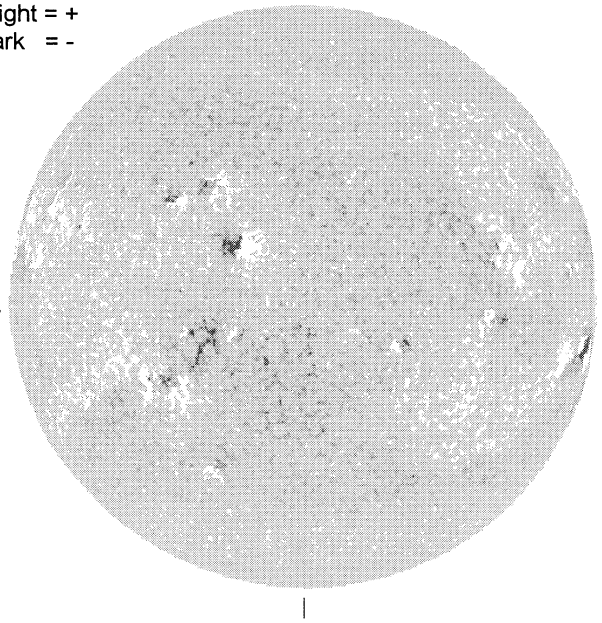


DECEMBER 7, 2000 (P= 13.57, Bo = 0.07, Lo = 186.62)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



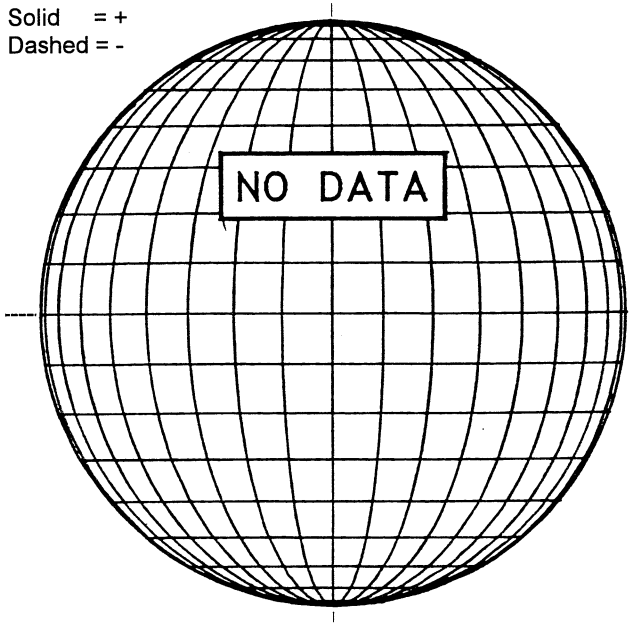
E--

1546 UT

STANFORD MAGNETOGRAM

N

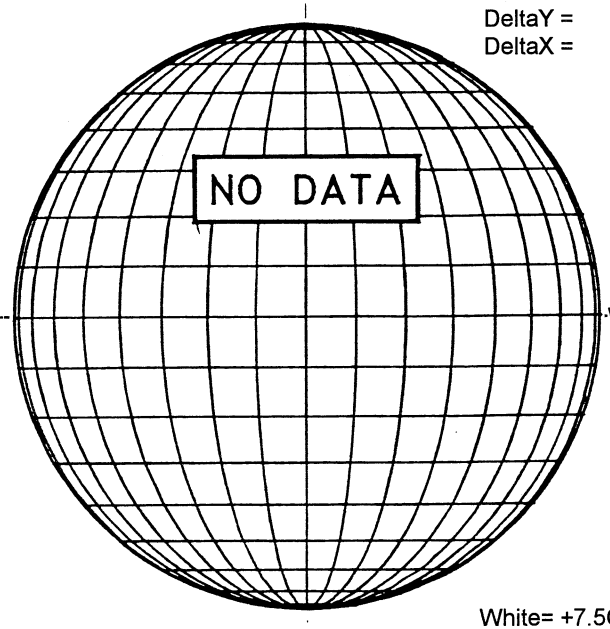
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

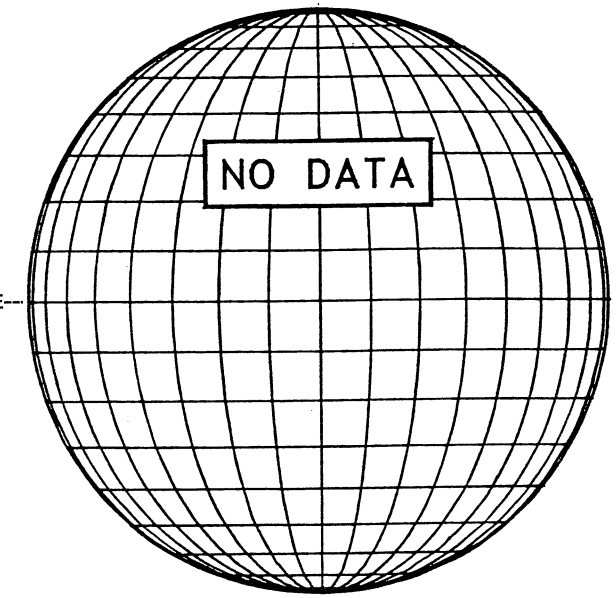
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

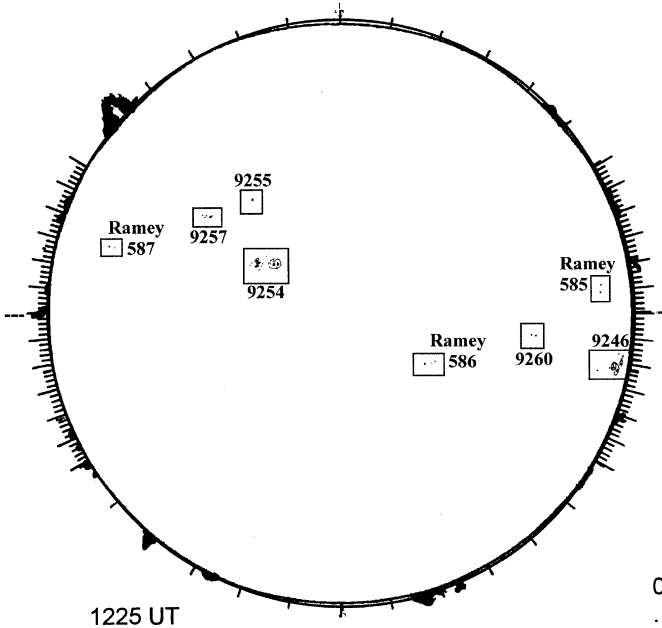
MEUDON H-ALPHA



E--

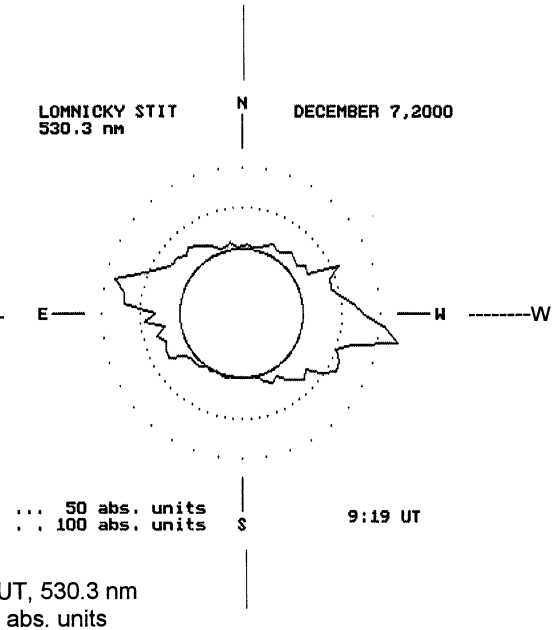
S

RAMEY SUNSPOTS



1225 UT
0807 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



0919 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

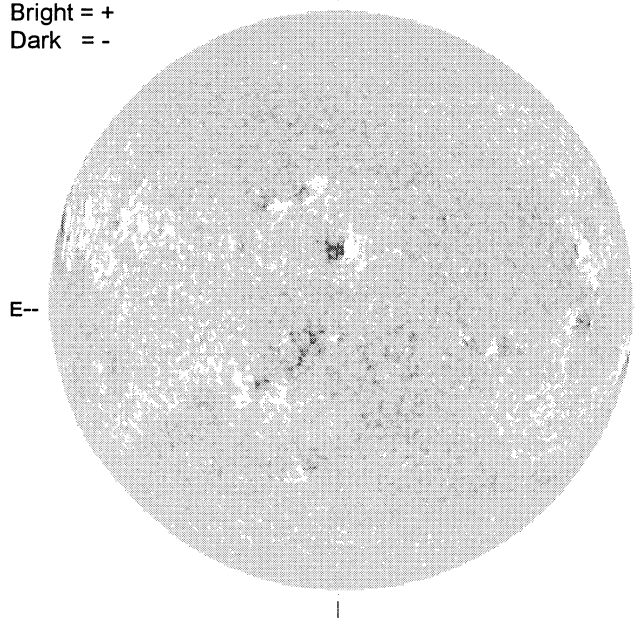
S

DECEMBER 8, 2000 (P= 13.15, Bo = -0.05, Lo = 173.45)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



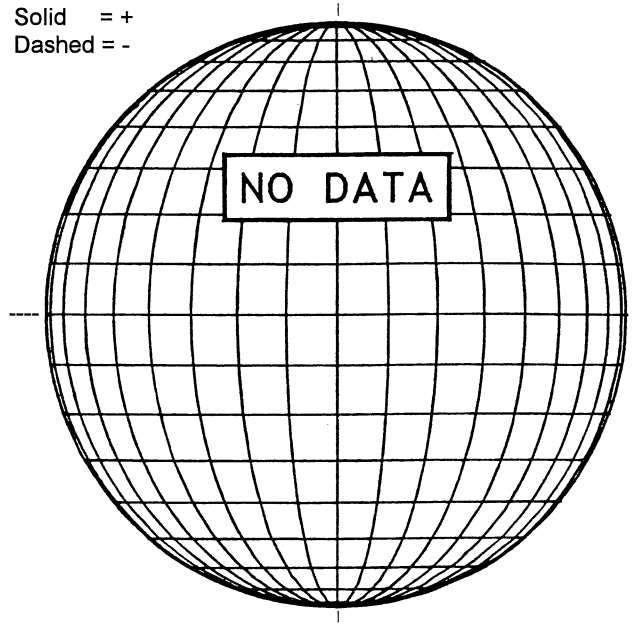
E--

1547 UT

STANFORD MAGNETOGRAM

N

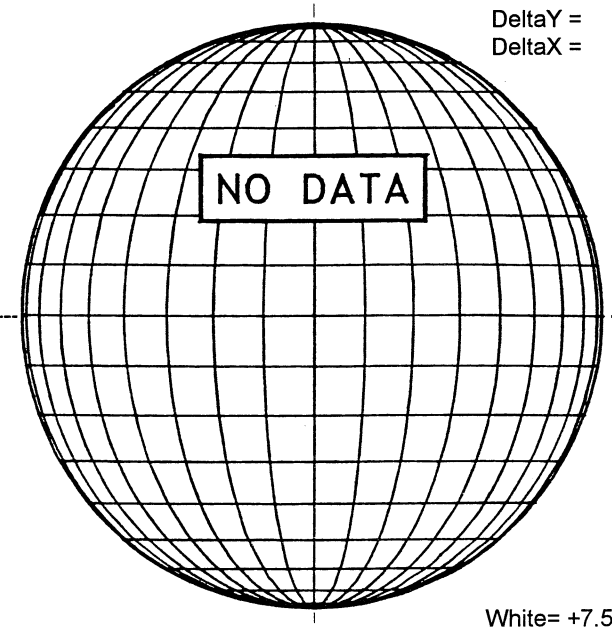
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

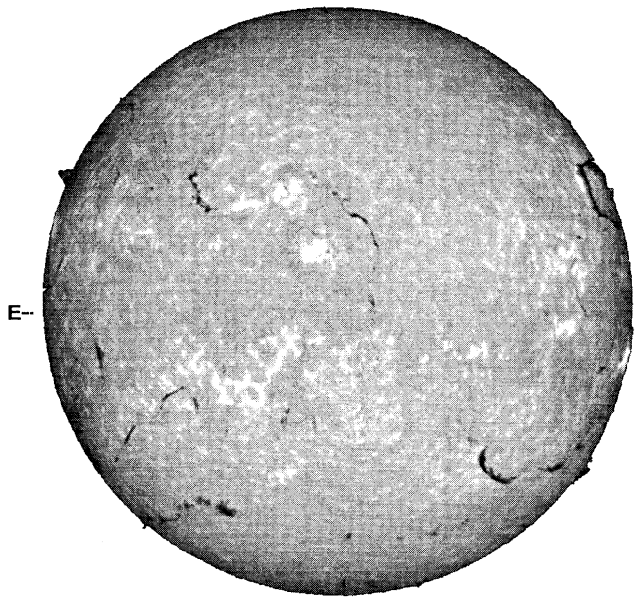
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

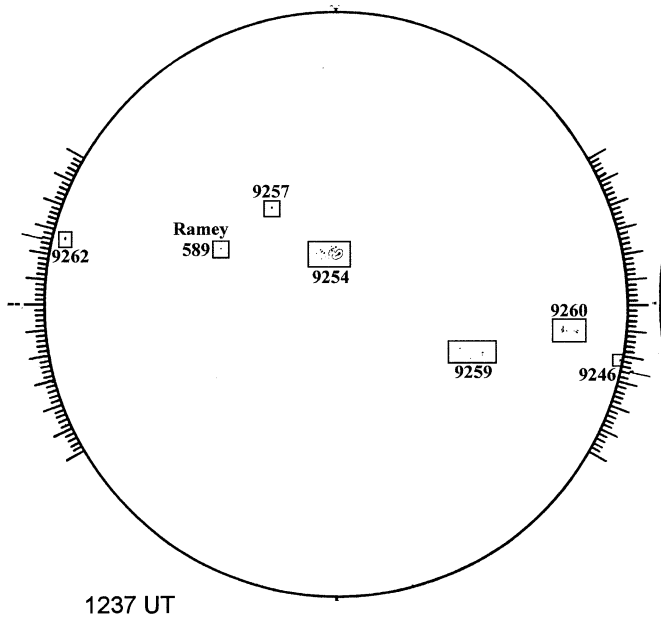


E--

0853 UT

S

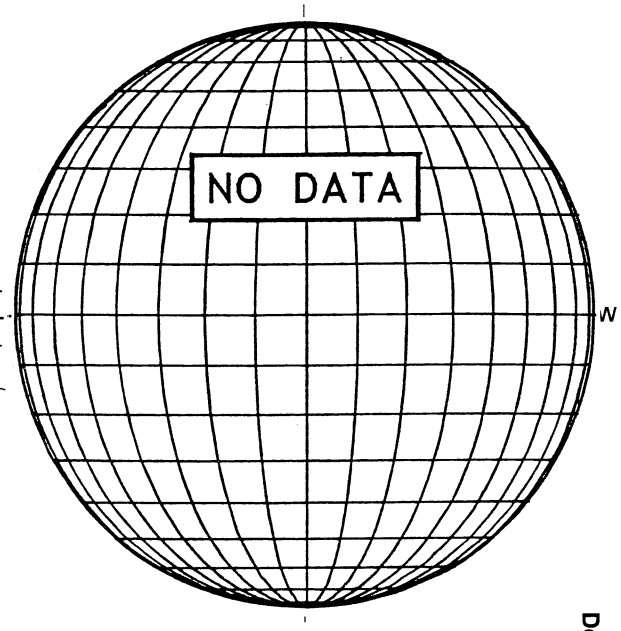
RAMEY SUNSPOT



1237 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



W

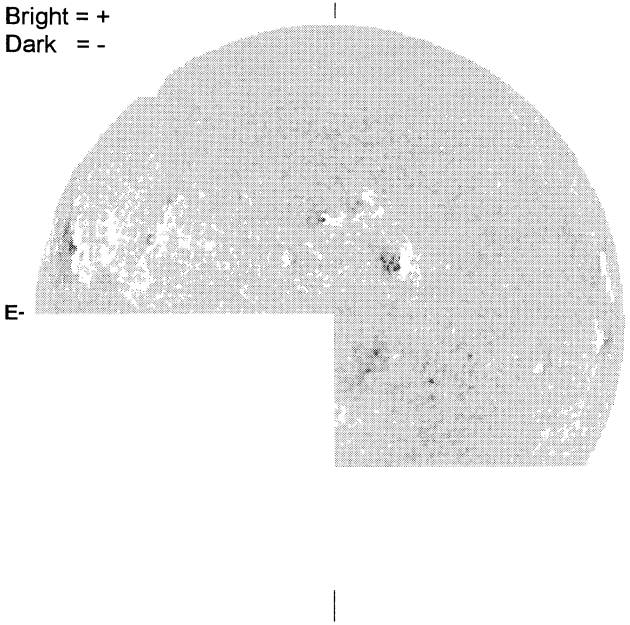
S

DECEMBER 9, 2000 (P= 12.73, Bo = -0.18, Lo = 160.27)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

N **868.8 nm



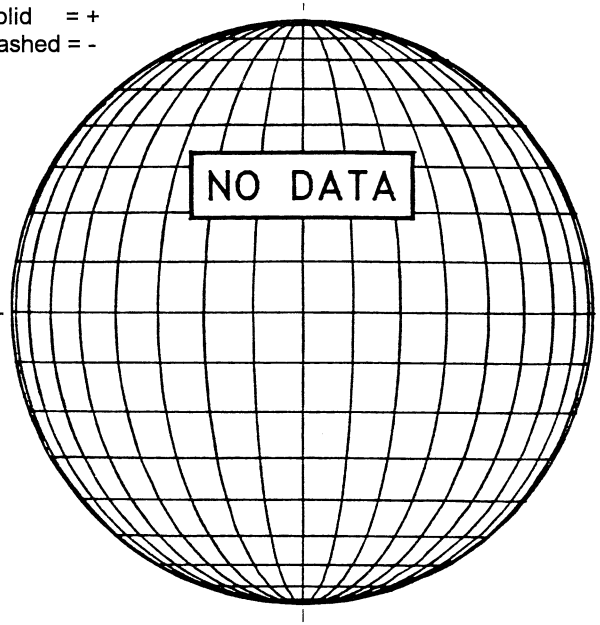
E-

1548 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

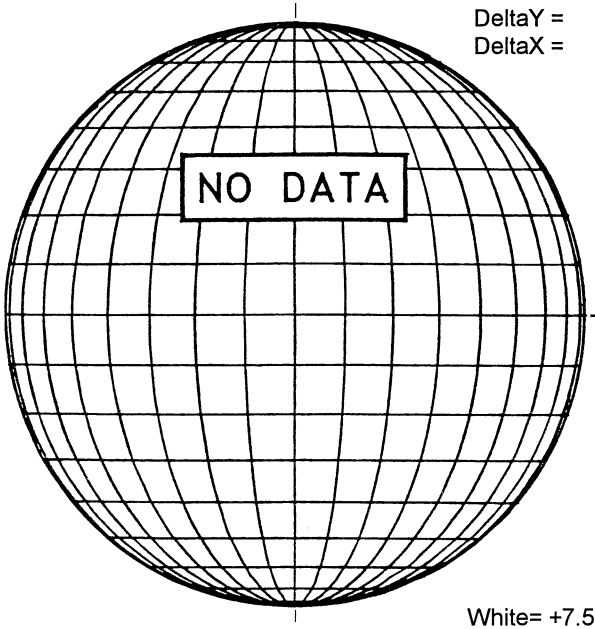
N



MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

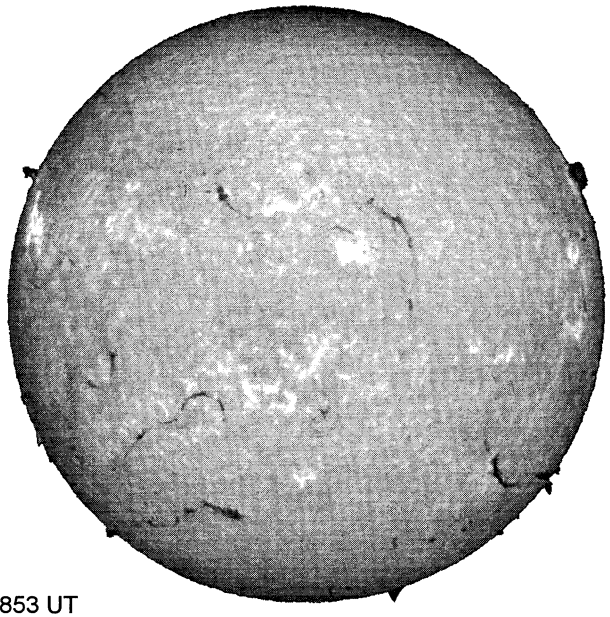
N



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

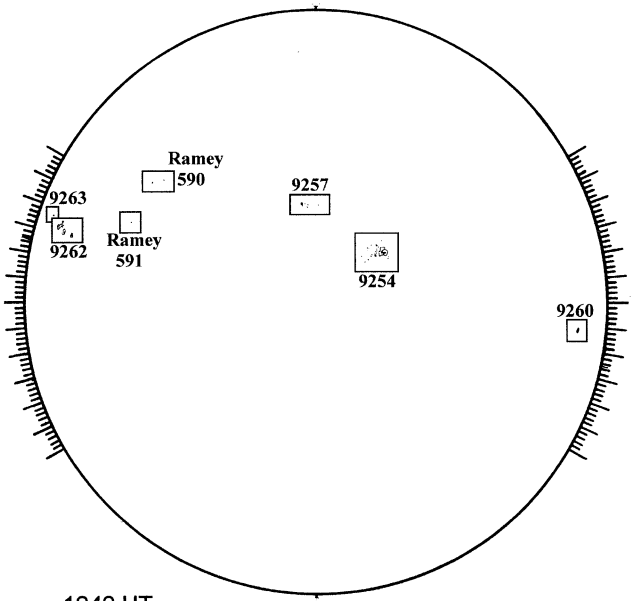


E-

0853 UT

S

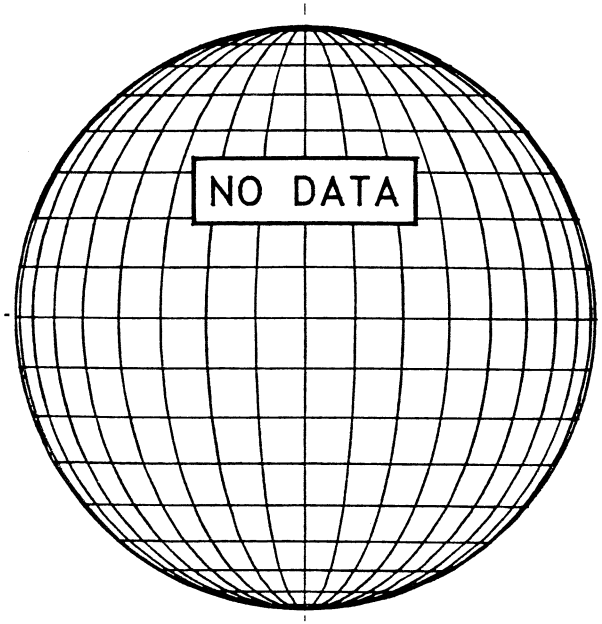
RAMEY SUNSPOT



1240 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



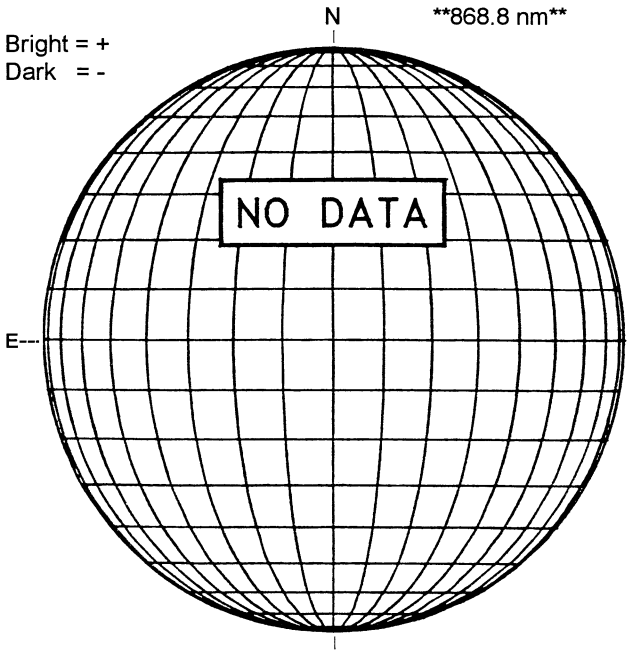
S

DECEMBER 10, 2000 (P= 12.30, Bo = -0.31 Lo = 147.09)

KITT PEAK MAGNETOGRAM

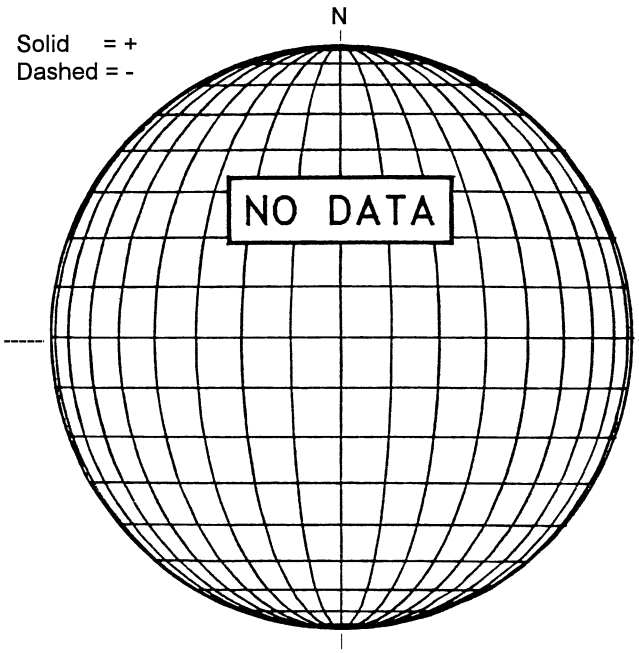
868.8 nm

Bright = +
Dark = -



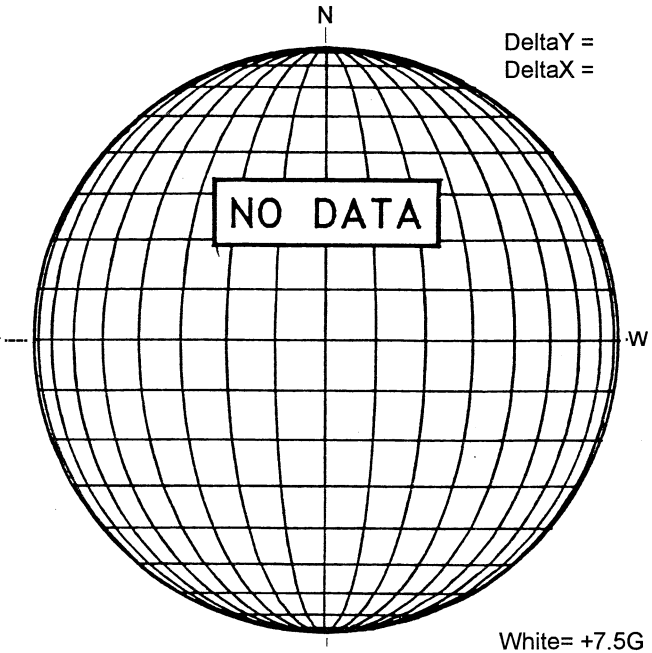
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



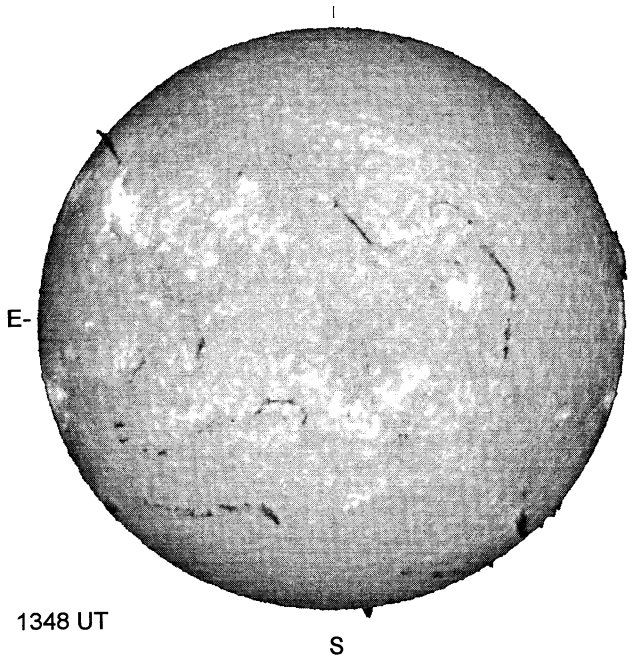
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



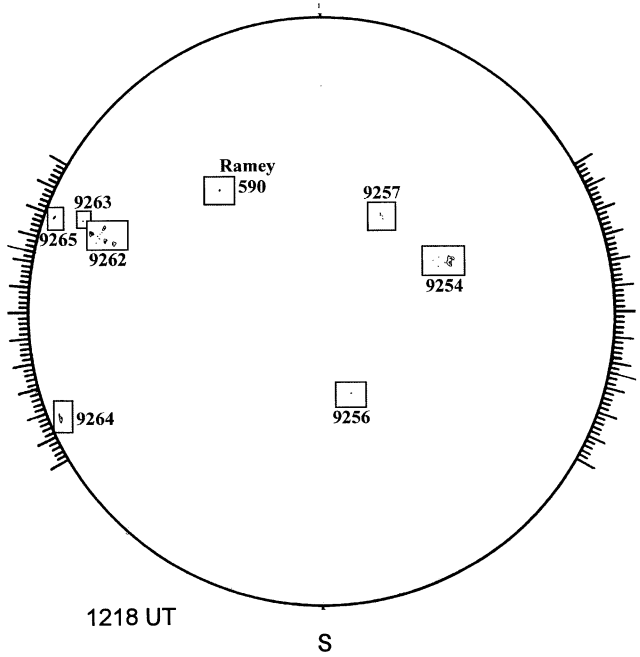
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



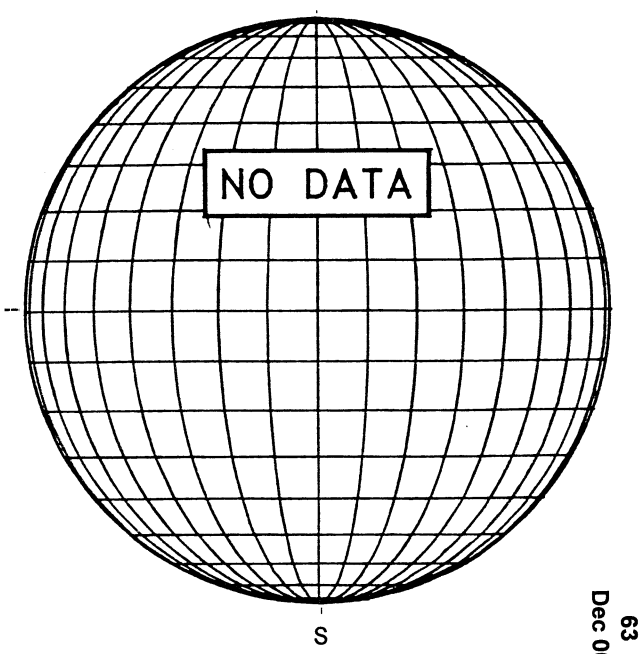
1348 UT

RAMEY SUNSPOTS



1218 UT

LOMNICKY PEAK CORONA (1.04 Radii)

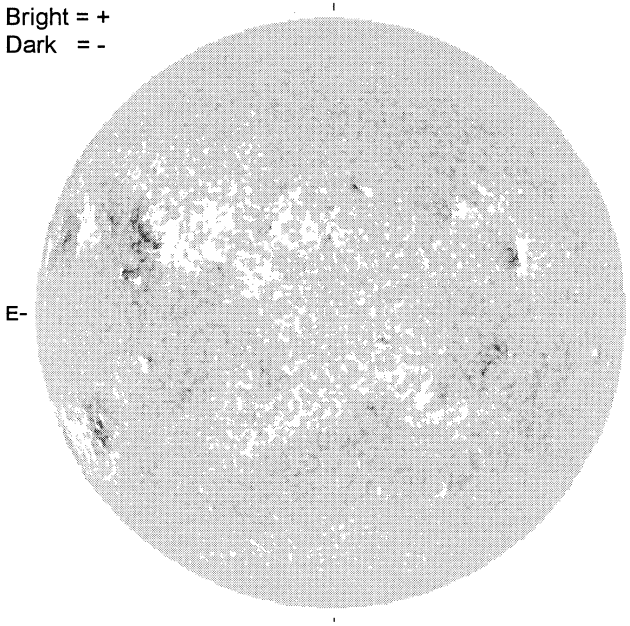


DECEMBER 11, 2000 (P= 11.86, Bo = -0.44, Lo = 133.92)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



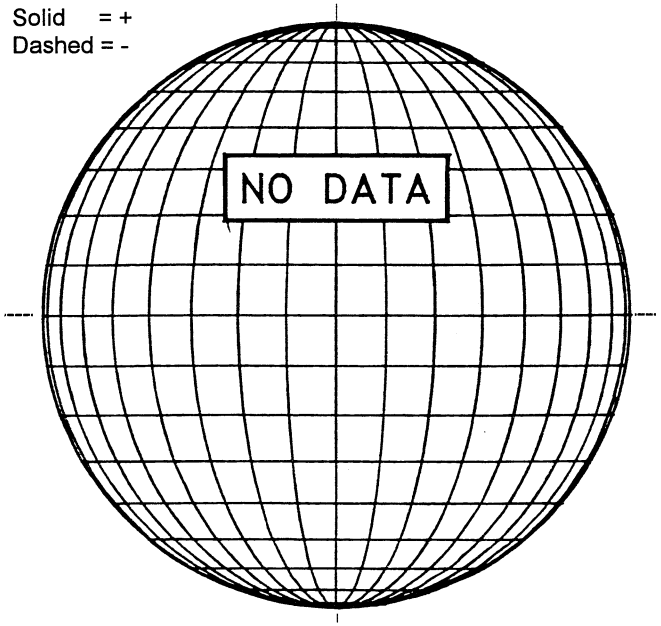
E-

1616 UT

STANFORD MAGNETOGRAM

N

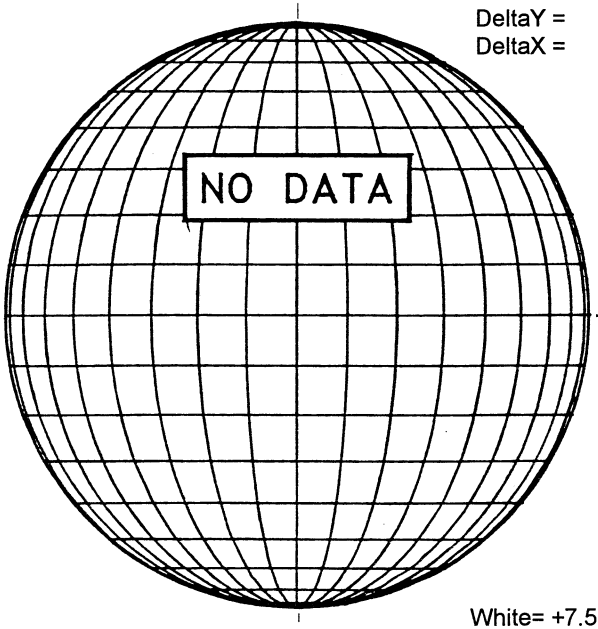
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

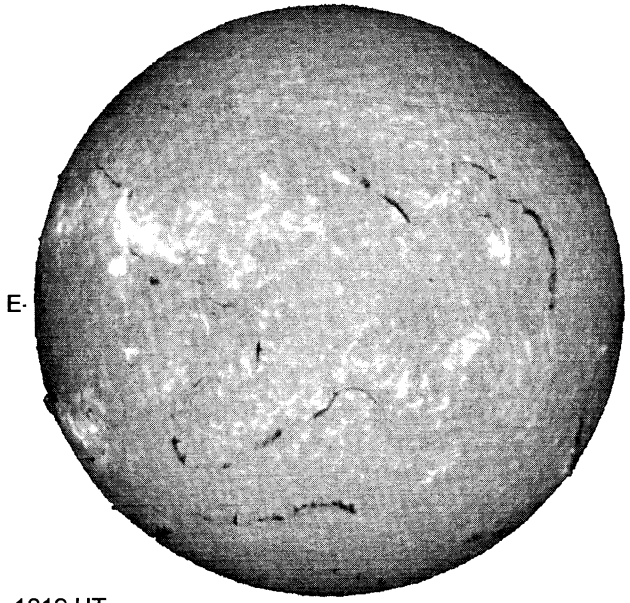
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

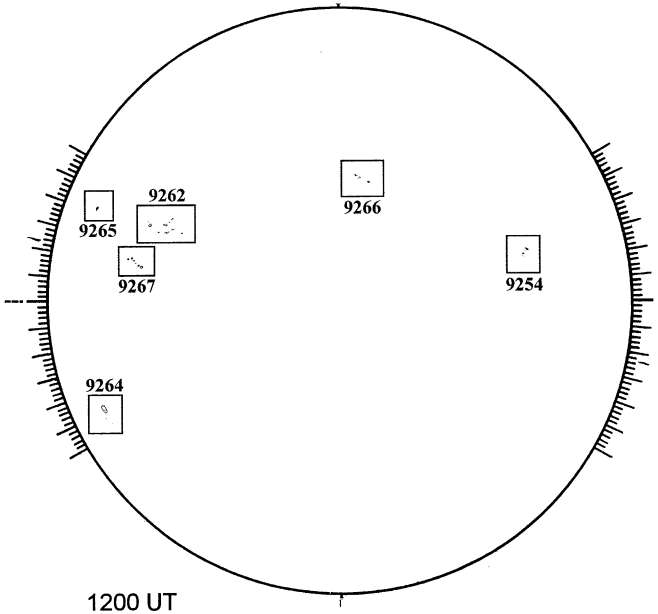


E-

1019 UT

S

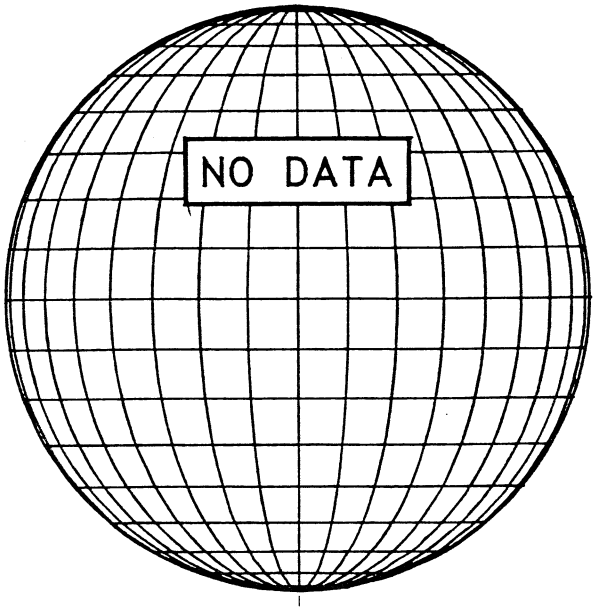
RAMEY SUNSPOTS



1200 UT

S

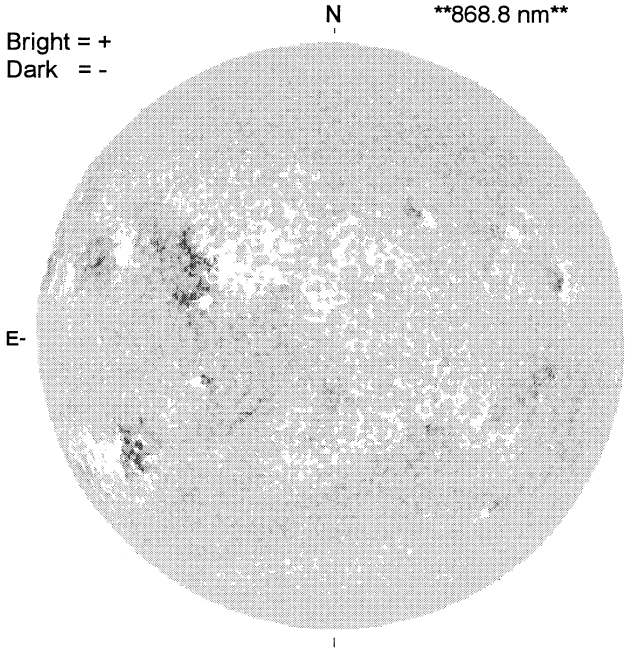
SACRAMENTO PEAK CORONA (1.15 Radii)----



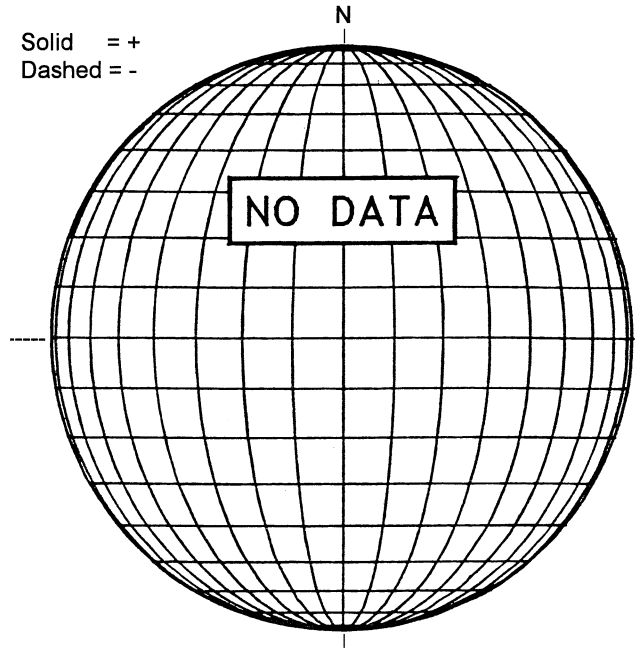
S

DECEMBER 12, 2000 (P= 11.42, Bo = -0.57, Lo = 120.74)

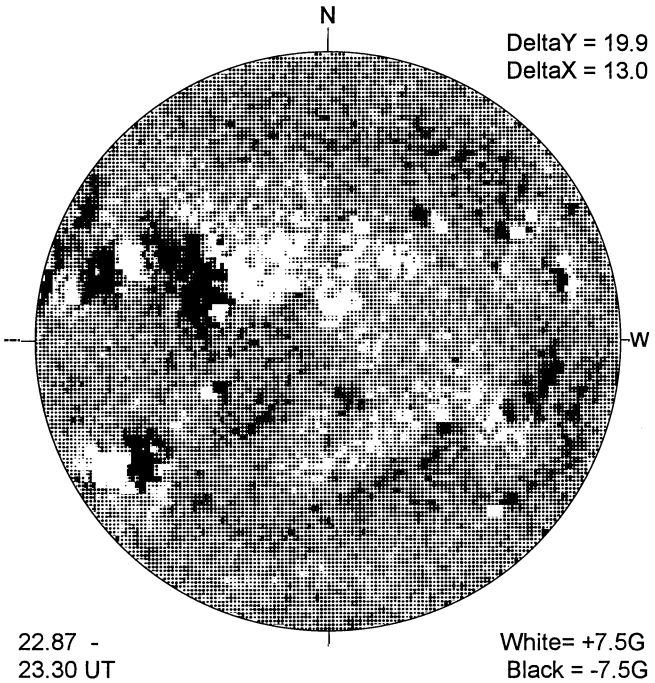
KITT PEAK MAGNETOGRAM



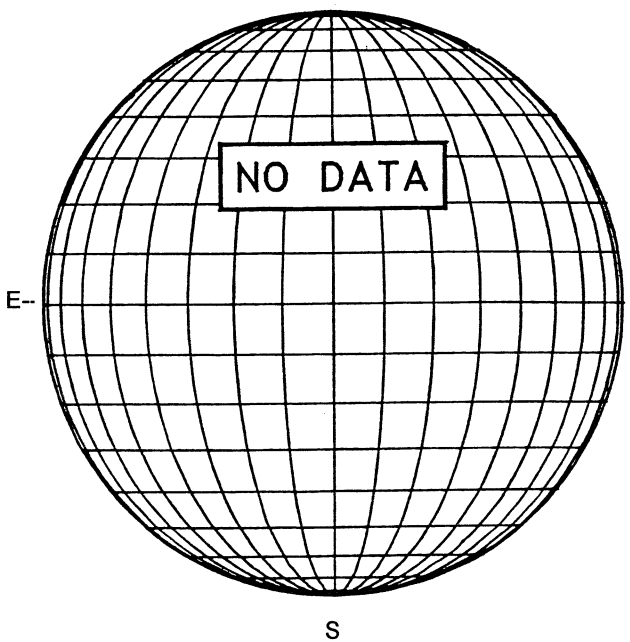
STANFORD MAGNETOGRAM



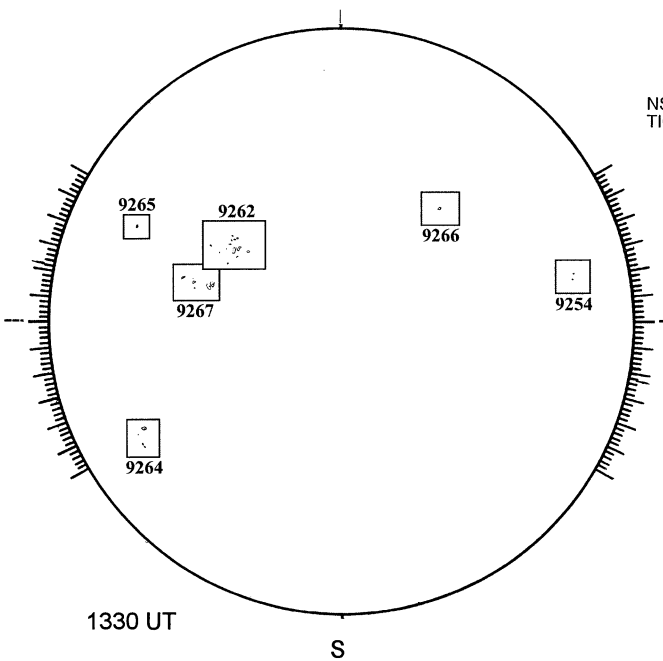
MT. WILSON MAGNETOGRAM



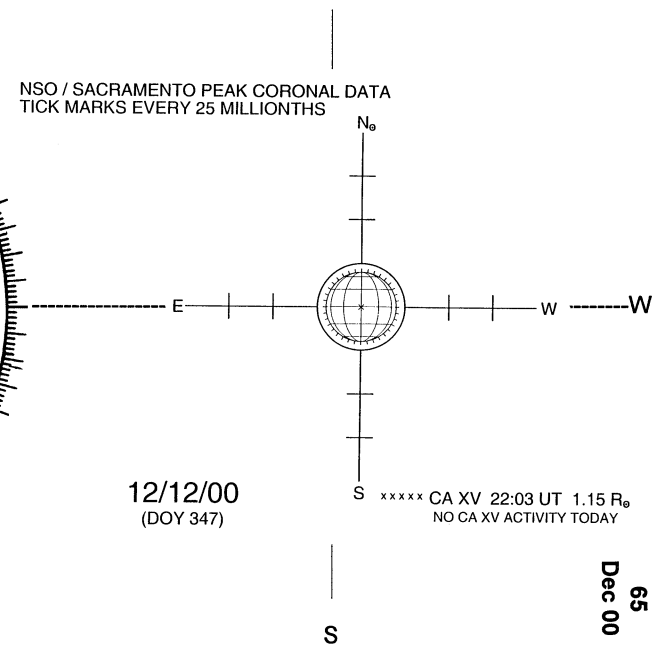
MEUDON H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----

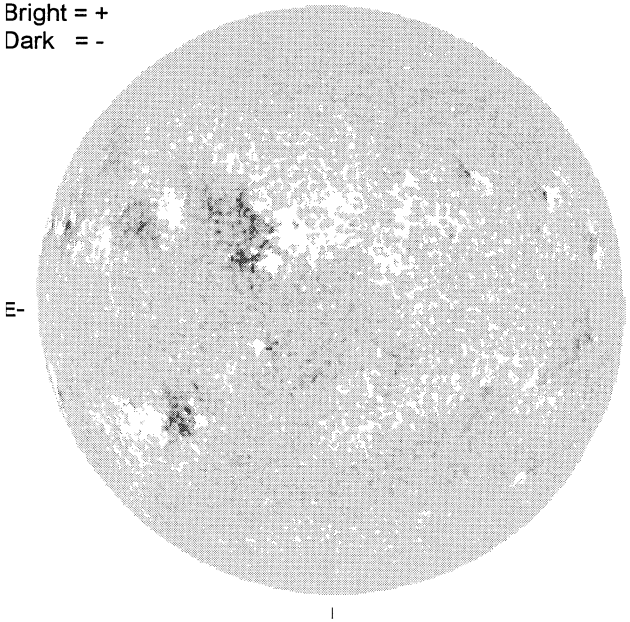


DECEMBER 13, 2000 (P= 10.98, Bo = -0.69, Lo = 107.56)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



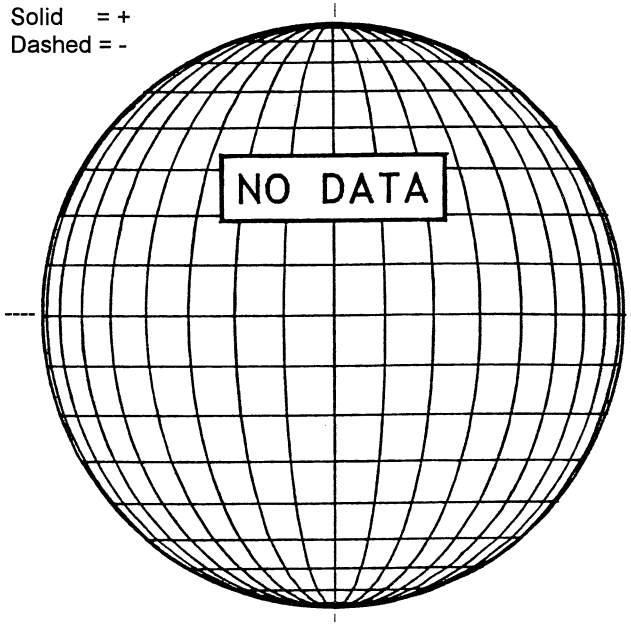
E-

1521 UT

STANFORD MAGNETOGRAM

N

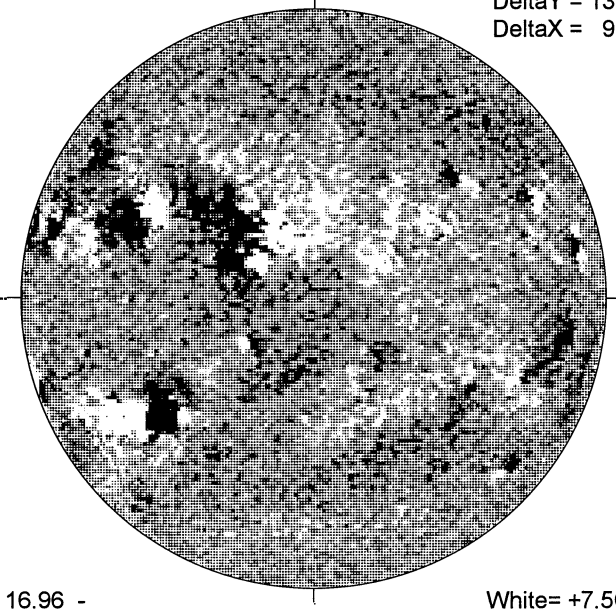
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.0
DeltaX = 9.6

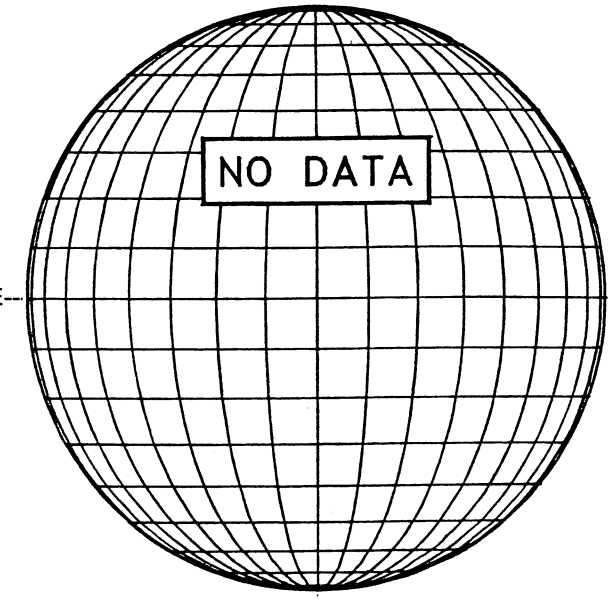


W

16.96 -
17.93 UT

White= +7.5G
Black = -7.5G

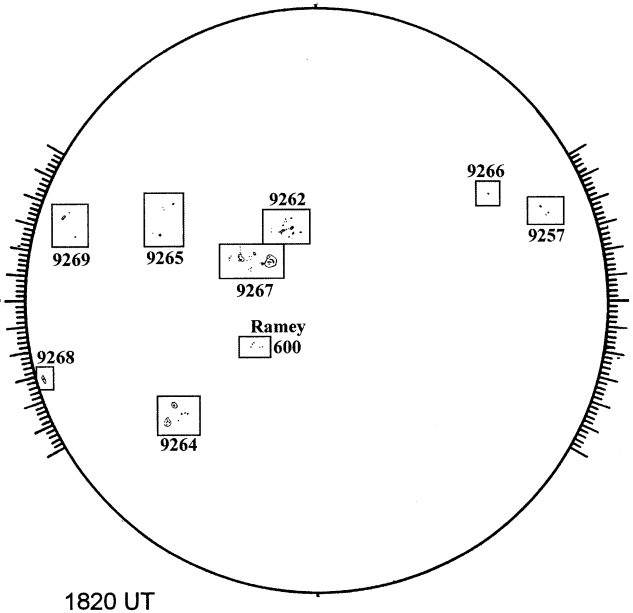
MEUDON H-ALPHA



E

S

RAMEY SUNSPOT

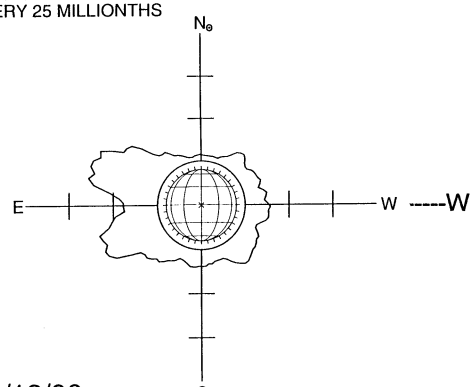


1820 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 25 MILLIONTHS



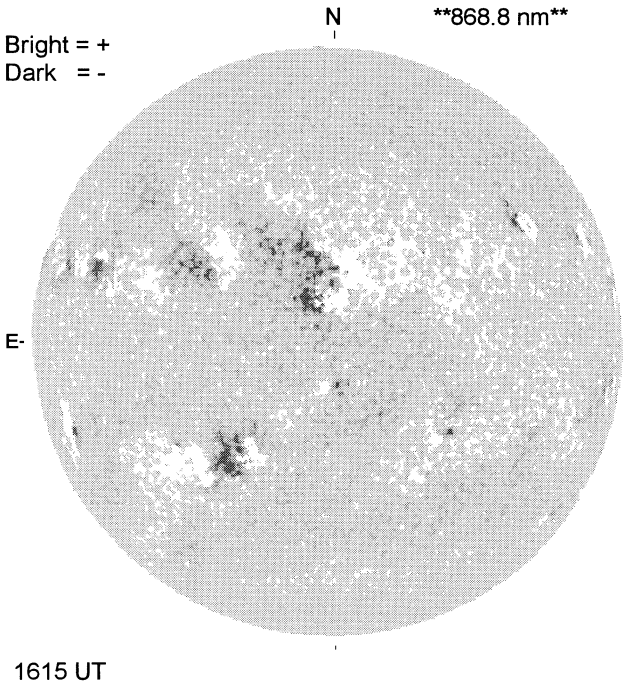
12/13/00
(DOY 348)

—— FE XIV 19:53 UT 1.15 R☉
xxxxx CA XV 17:41 UT 1.15 R☉
NO CA XV ACTIVITY TODAY

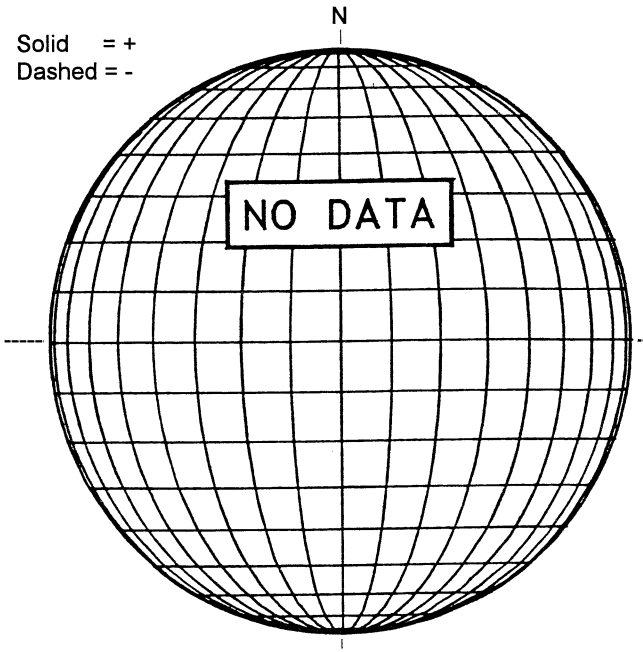
S

DECEMBER 14, 2000 (P= 10.53, Bo = -0.82, Lo = 94.39)

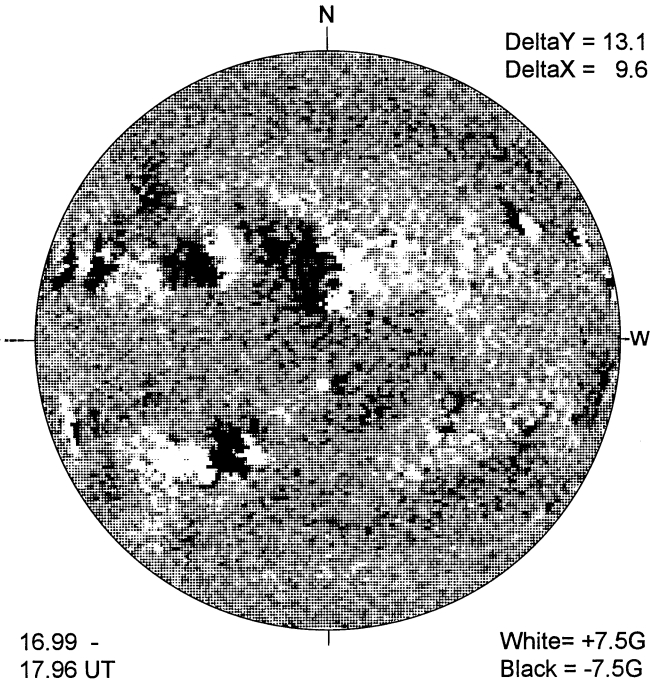
KITT PEAK MAGNETOGRAM



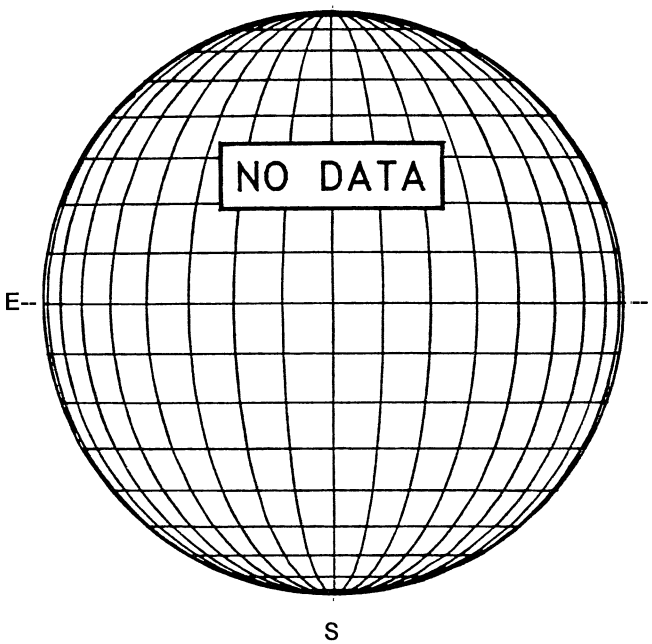
STANFORD MAGNETOGRAM



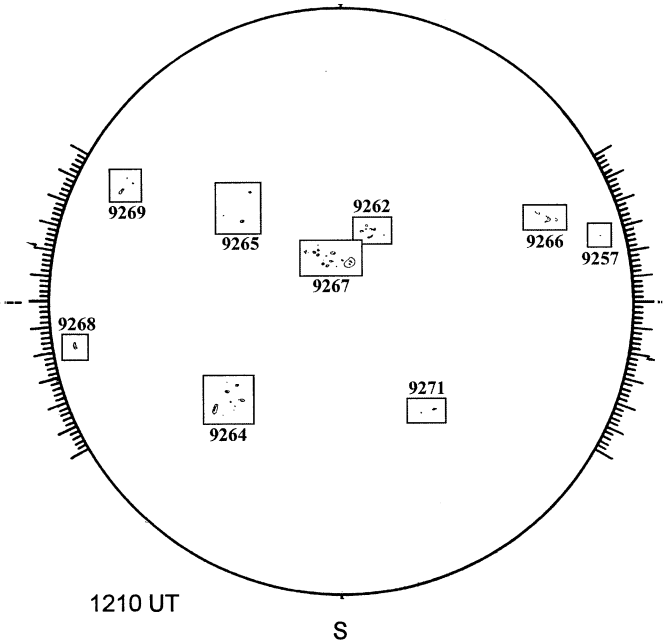
MT. WILSON MAGNETOGRAM



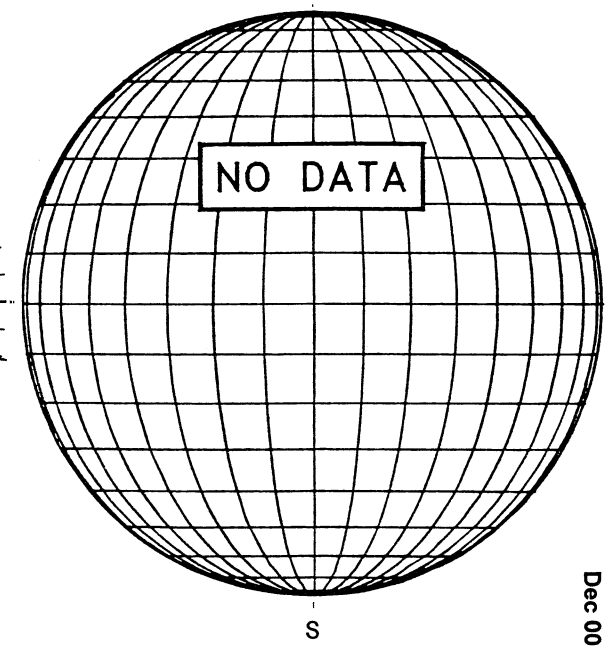
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

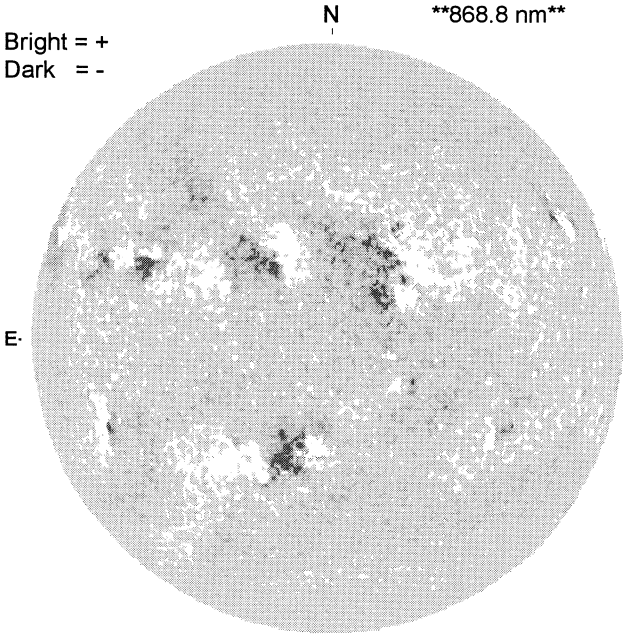


DECEMBER 15, 2000 (P= 10.08, Bo = -0.95, Lo = 81.21)

KITT PEAK MAGNETOGRAM

868.8 nm

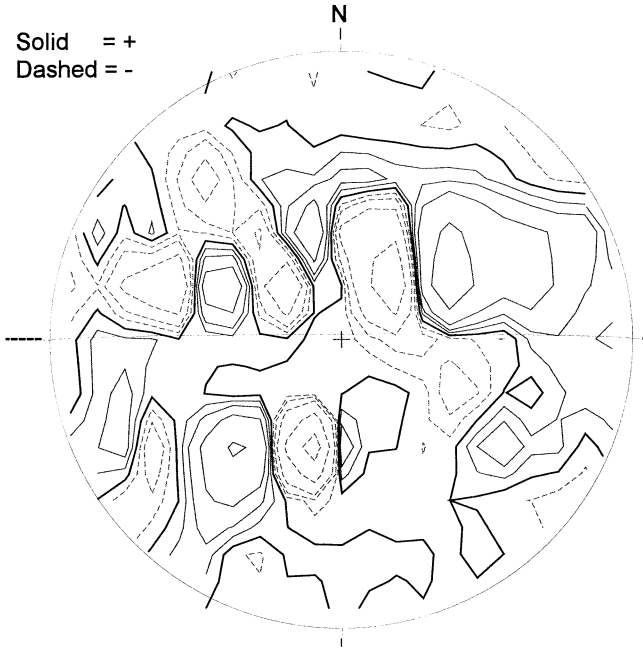
Bright = +
Dark = -



1721 UT

STANFORD MAGNETOGRAM

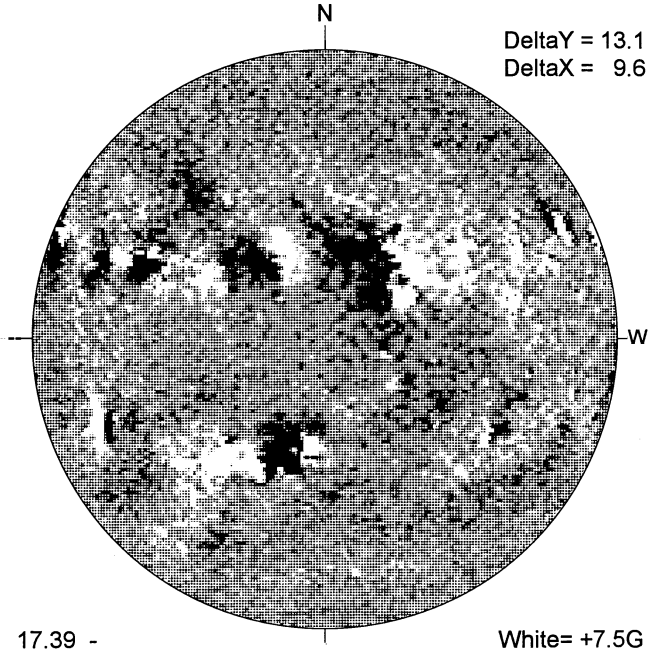
Solid = +
Dashed = -



2035 UT

MT. WILSON MAGNETOGRAM

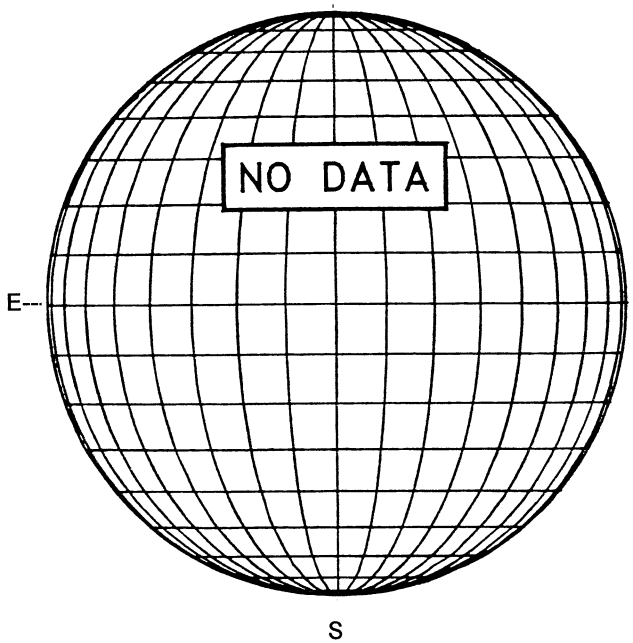
DeltaY = 13.1
DeltaX = 9.6



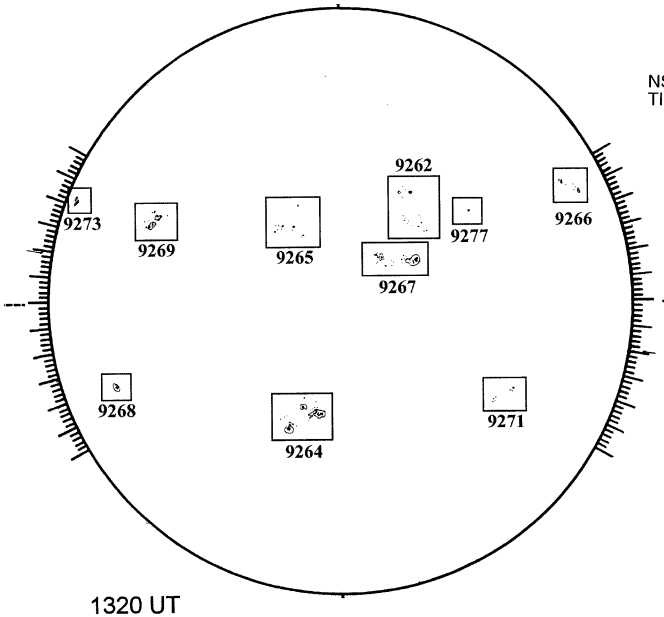
17.39 -
18.36 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



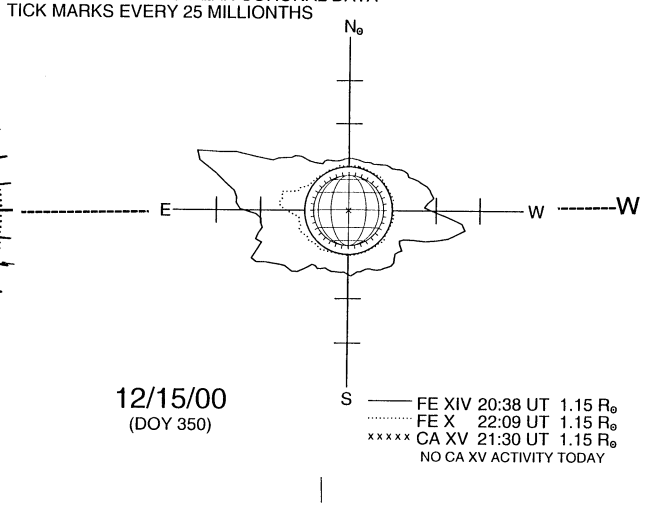
RAMEY SUNSPOT



1320 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 25 MILLIONTHS

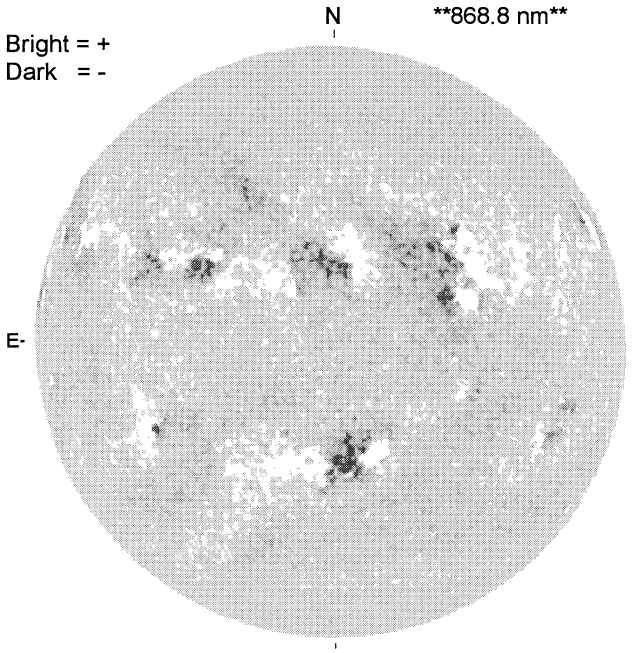


12/15/00
(DOY 350)

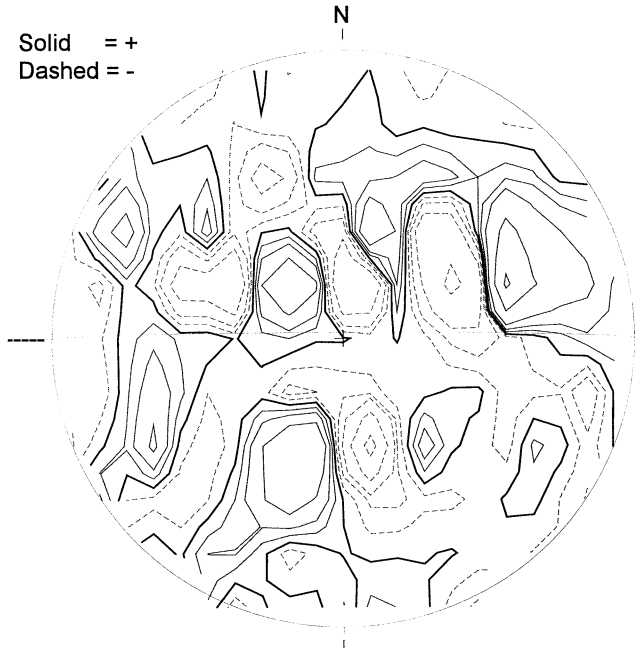
FE XIV 20:38 UT 1.15 R☉
FE X 22:09 UT 1.15 R☉
CA XV 21:30 UT 1.15 R☉
NO CA XV ACTIVITY TODAY

DECEMBER 16, 2000 (P= 9.62, Bo = -1.08, Lo = 68.04)

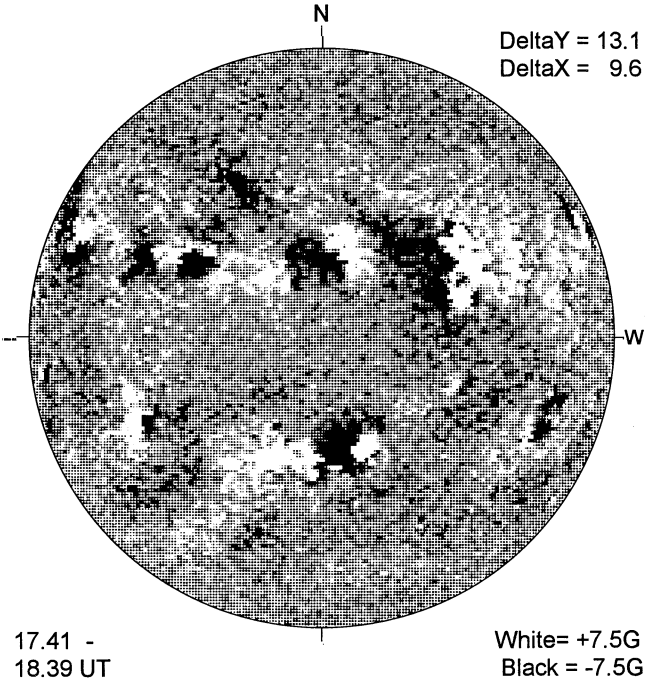
KITT PEAK MAGNETOGRAM



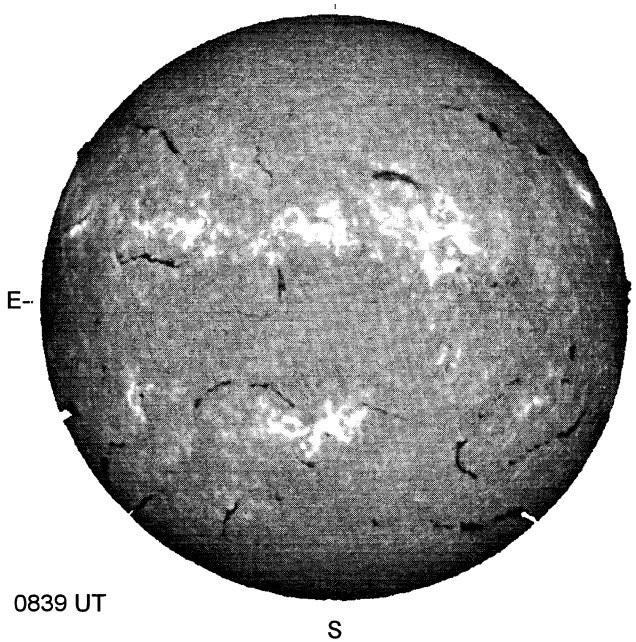
STANFORD MAGNETOGRAM



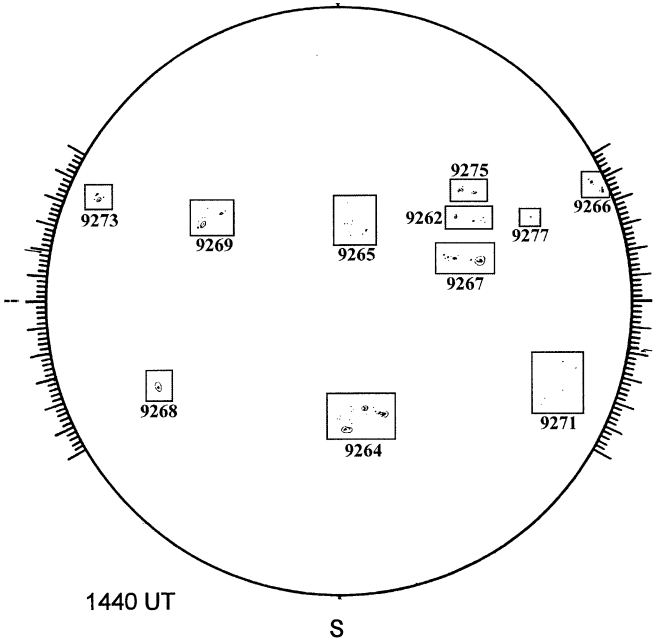
MT. WILSON MAGNETOGRAM



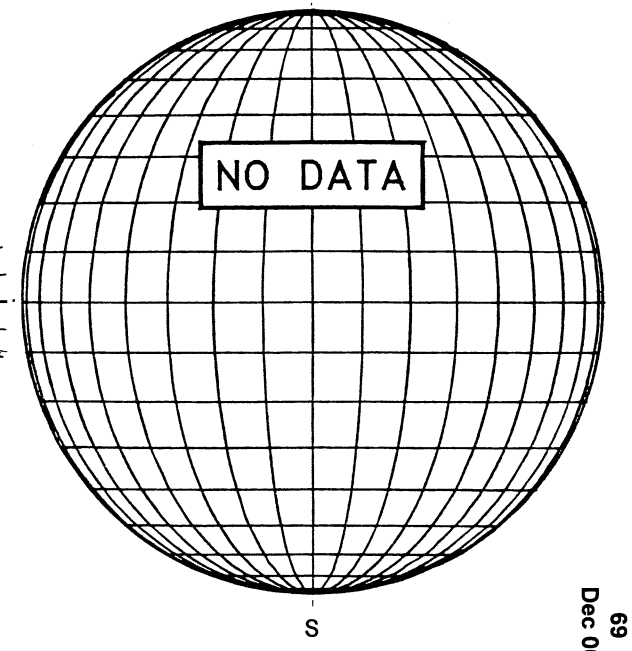
MEUDON H-ALPHA



RAMEY SUNSPOT

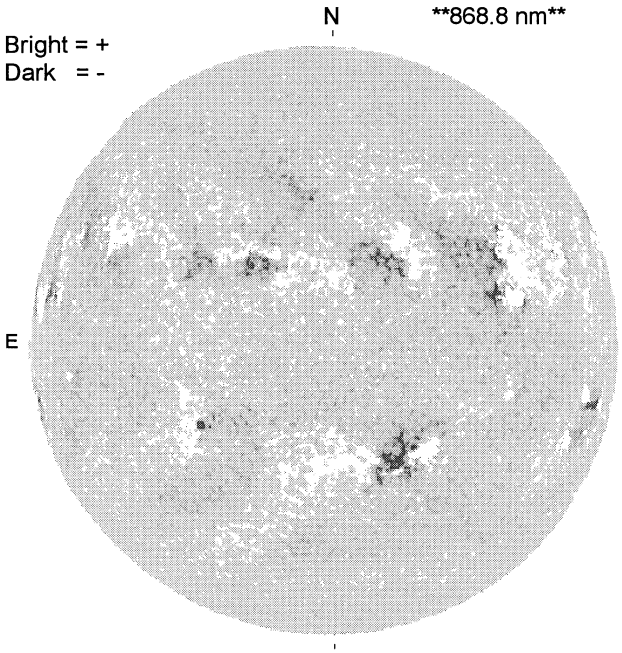


SACRAMENTO PEAK CORONA (1.15 Radii)----

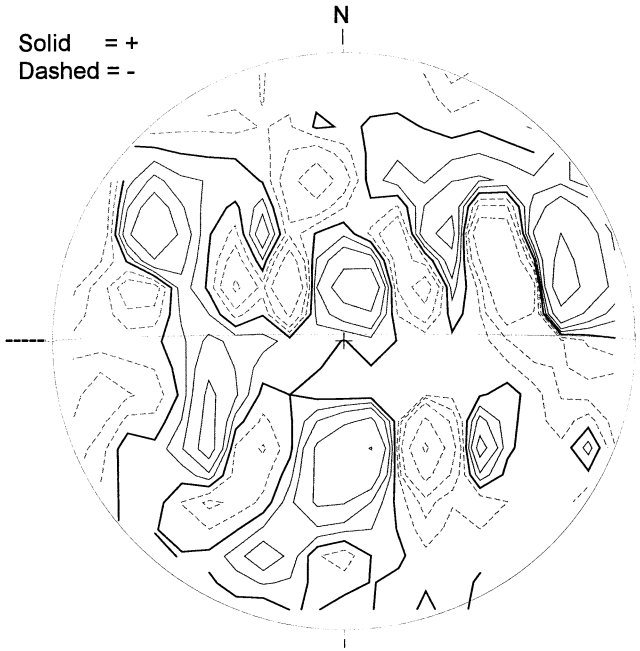


DECEMBER 17, 2000 (P= 9.16, Bo = -1.20, Lo = 54.86)

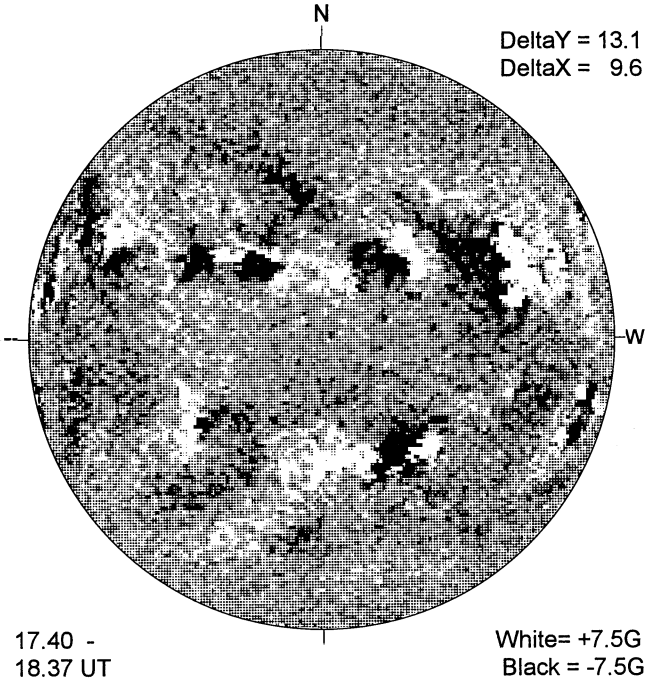
KITT PEAK MAGNETOGRAM



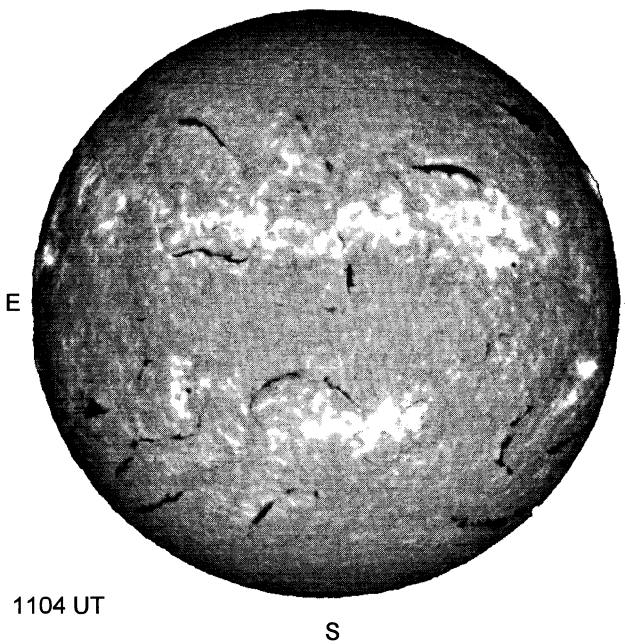
STANFORD MAGNETOGRAM



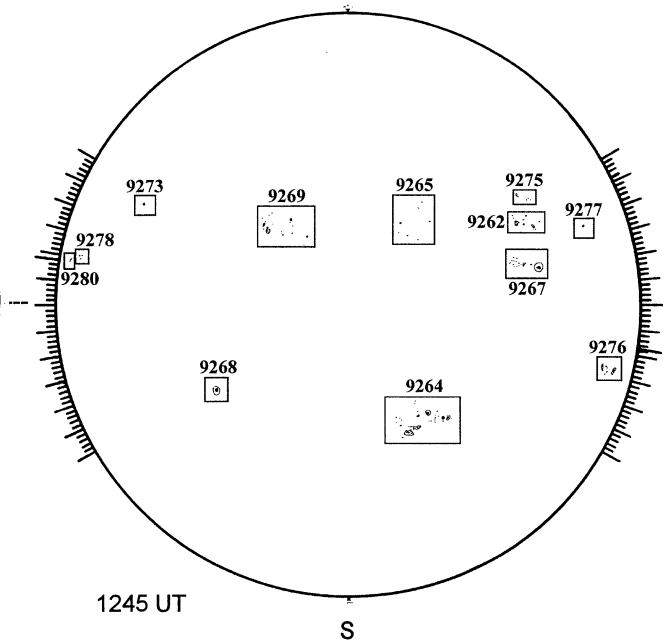
MT. WILSON MAGNETOGRAM



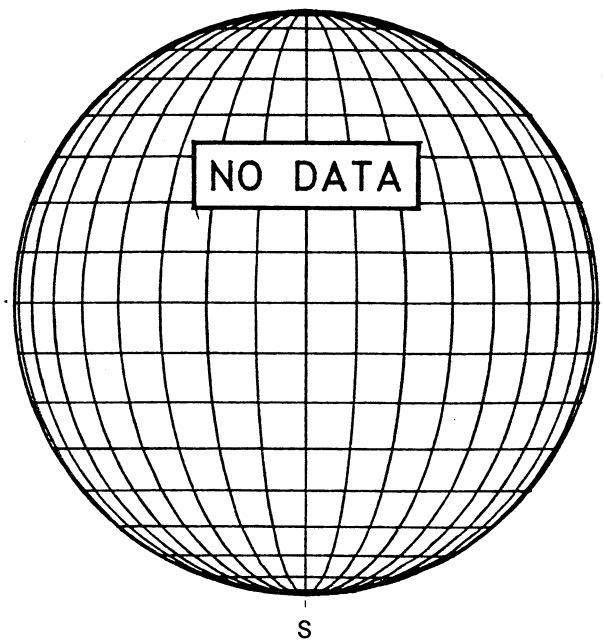
MEUDON H-ALPHA



RAMEY SUNSPOT

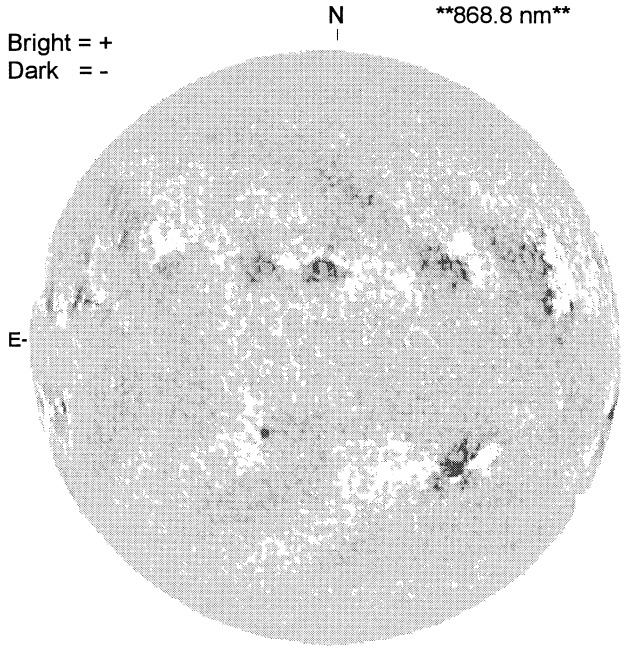


SACRAMENTO PEAK CORONA (1.15 Radii)

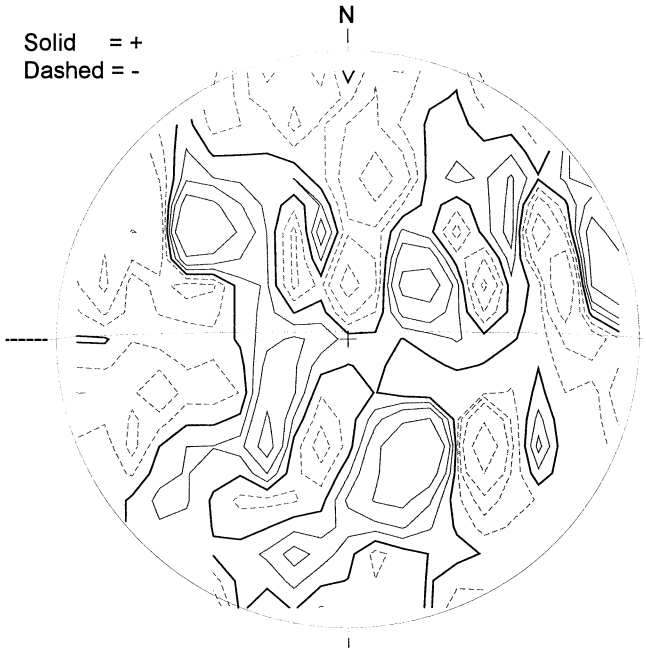


DECEMBER 18, 2000 (P= 8.70, Bo = -1.33, Lo = 41.69)

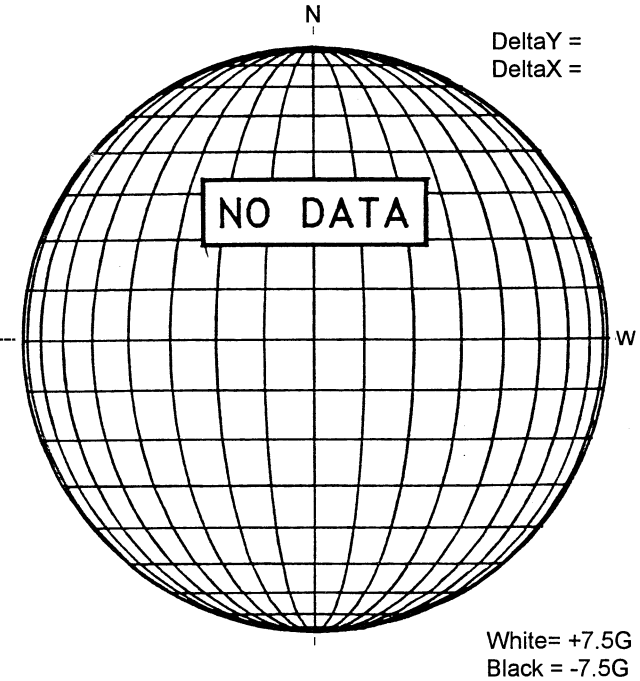
KITT PEAK MAGNETOGRAM



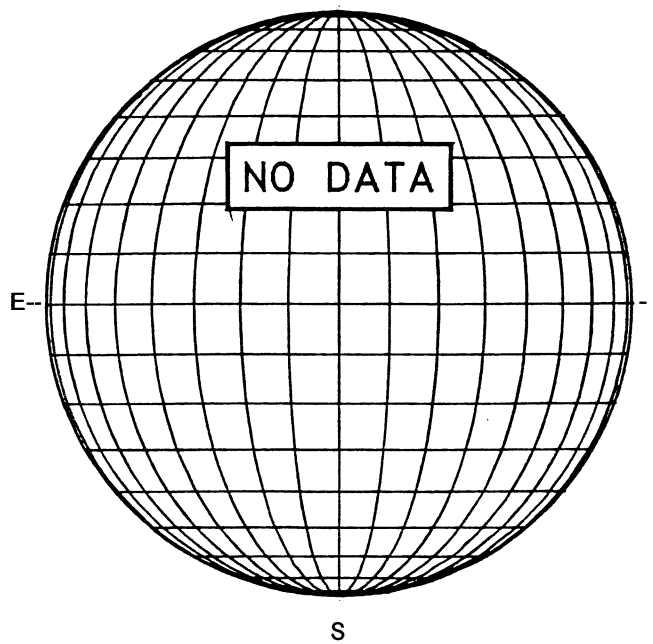
STANFORD MAGNETOGRAM



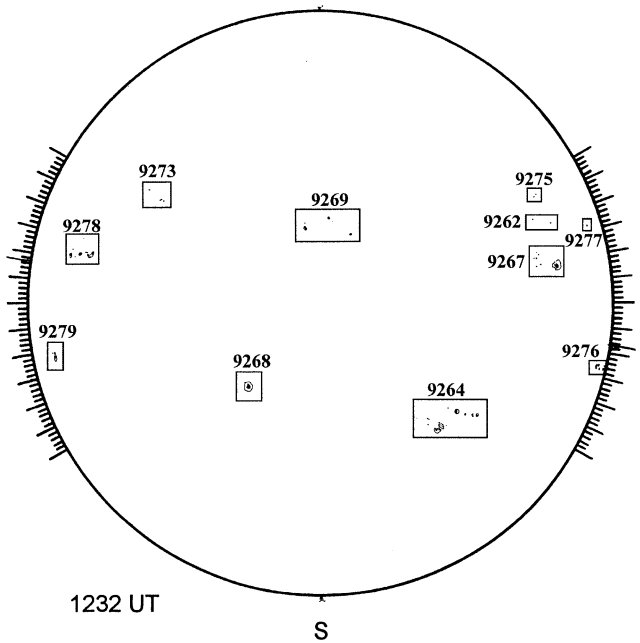
MT. WILSON MAGNETOGRAM



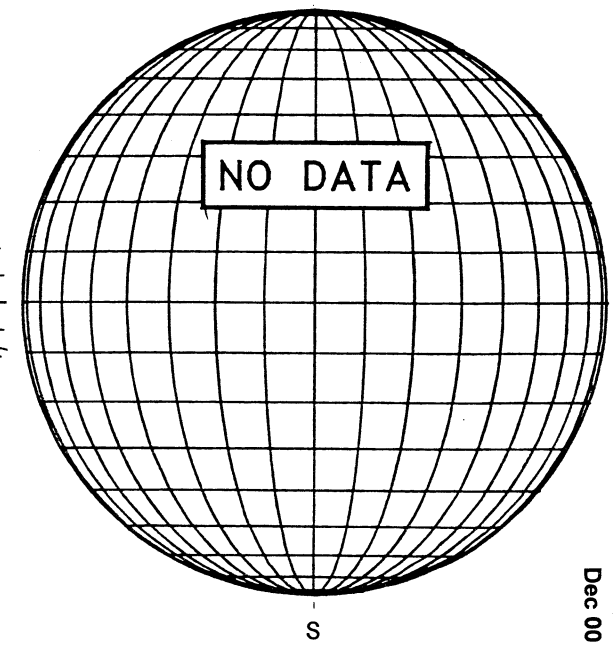
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



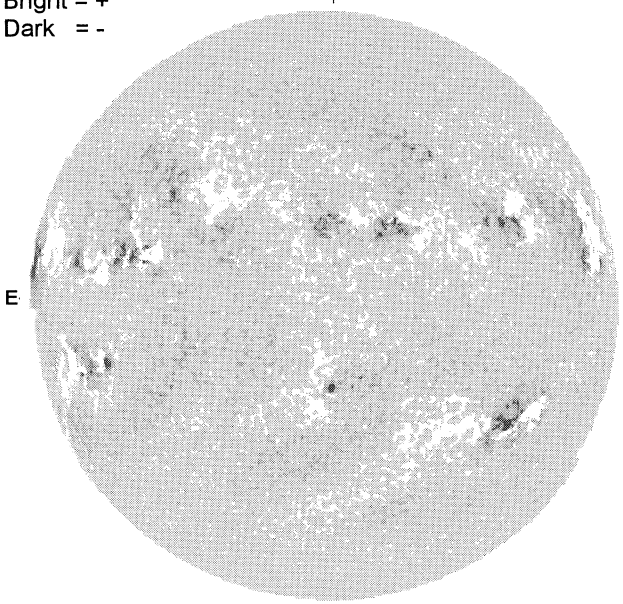
DECEMBER 19, 2000 (P= 8.24, Bo = -1.46, Lo = 28.51)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E

1731 UT

STANFORD MAGNETOGRAM

N

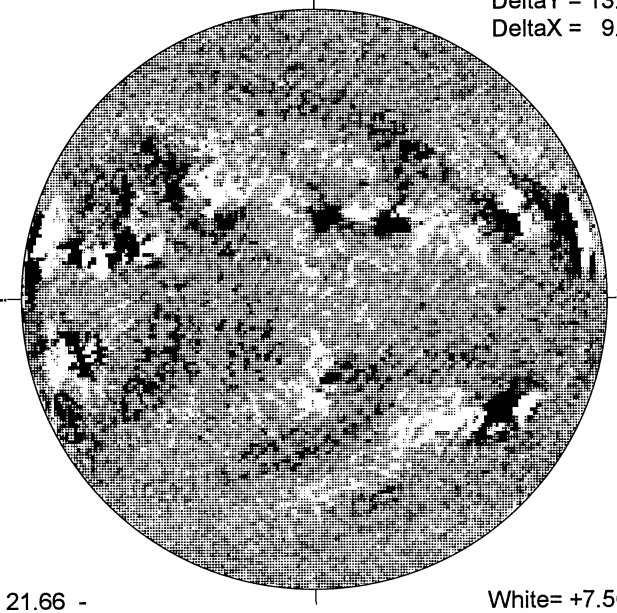
Solid = +
Dashed = -

2205 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

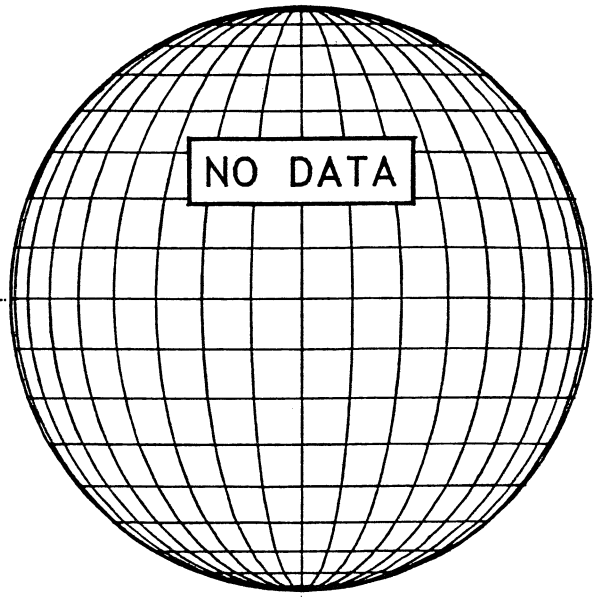


W

21.66 -
22.63 UT

White= +7.5G
Black = -7.5G

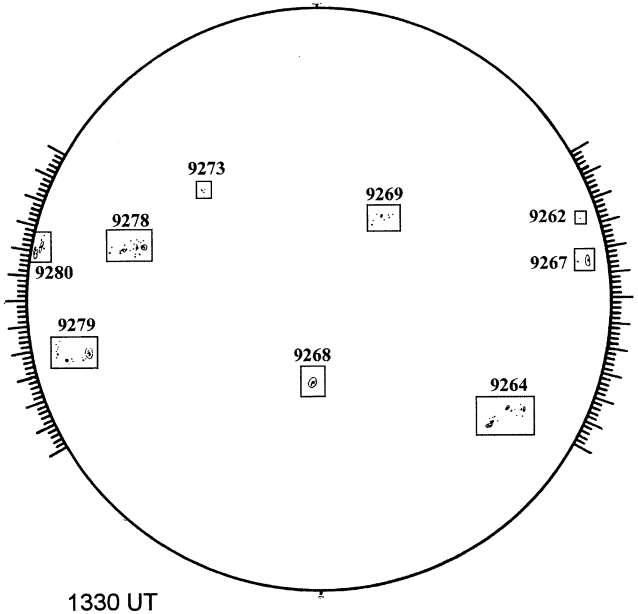
MEUDON H-ALPHA



E

S

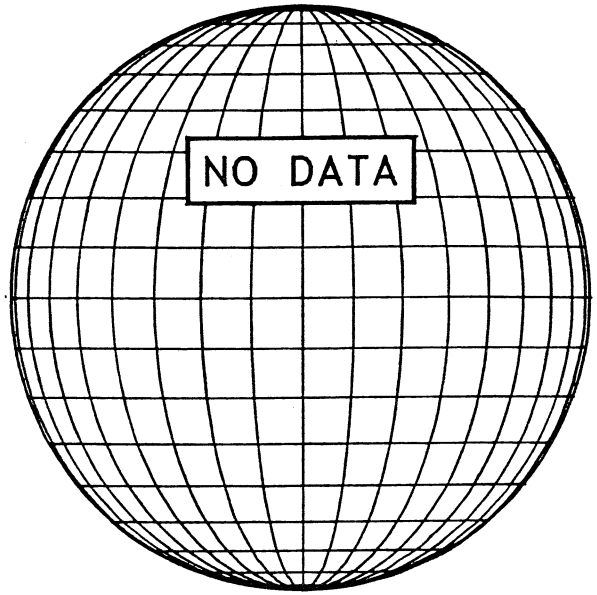
RAMEY SUNSPOT



1330 UT

S

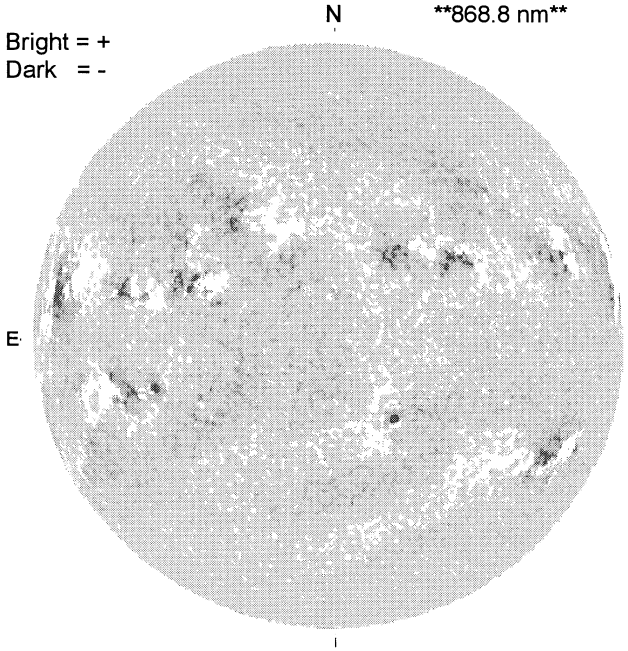
SACRAMENTO PEAK CORONA (1.15 Radii)



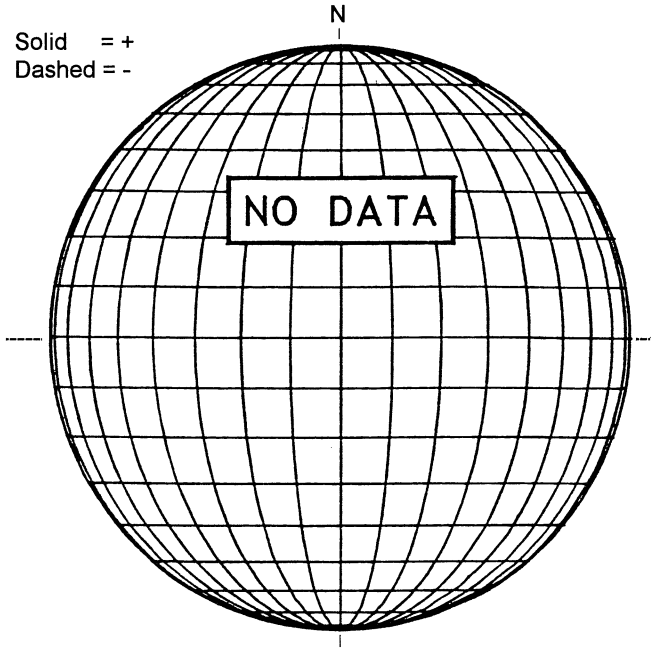
S

DECEMBER 20, 2000 (P= 7.77, Bo = -1.58, Lo = 15.34)

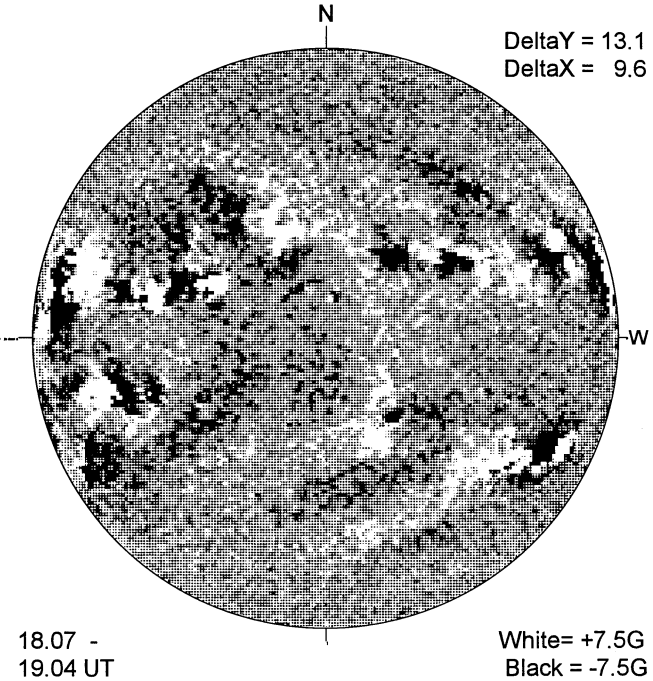
KITT PEAK MAGNETOGRAM



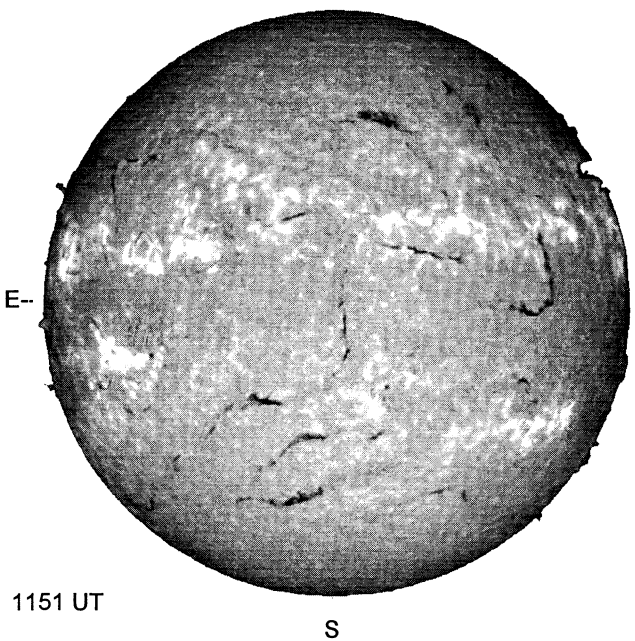
STANFORD MAGNETOGRAM



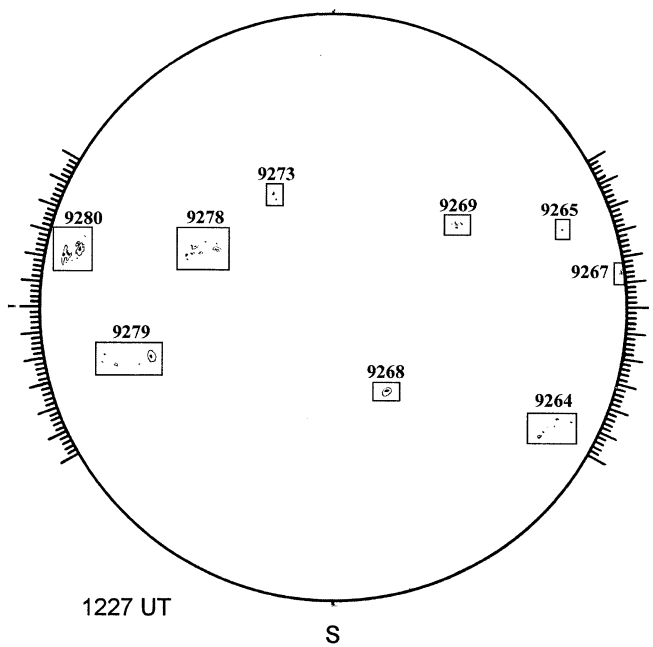
MT. WILSON MAGNETOGRAM



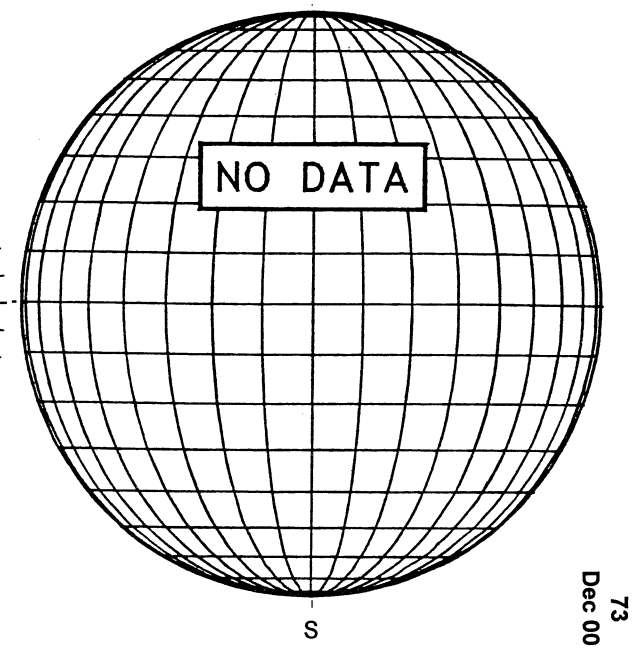
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

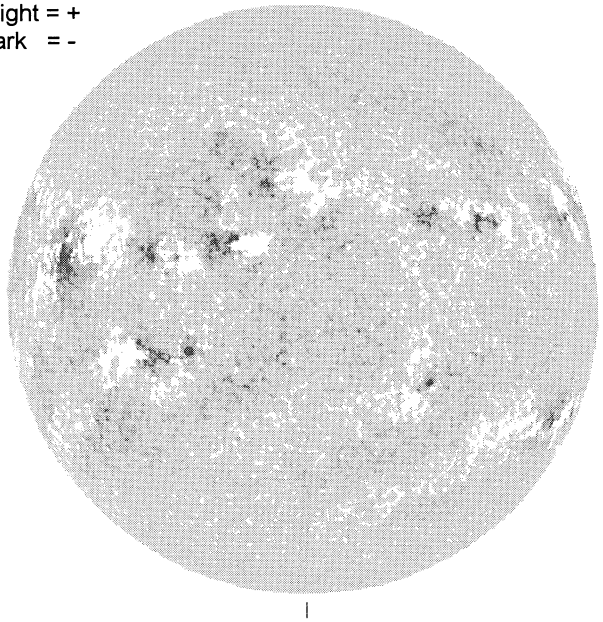


DECEMBER 21, 2000 (P= 7.30, Bo = -1.71, Lo = 2.17)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



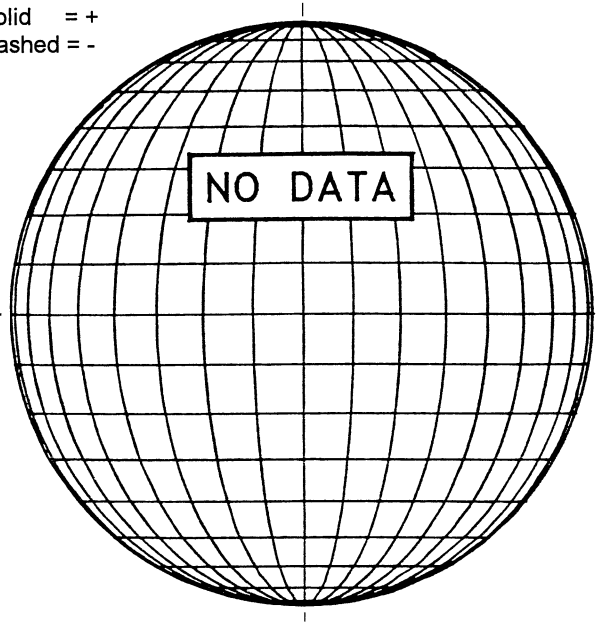
E-

1610 UT

STANFORD MAGNETOGRAM

N

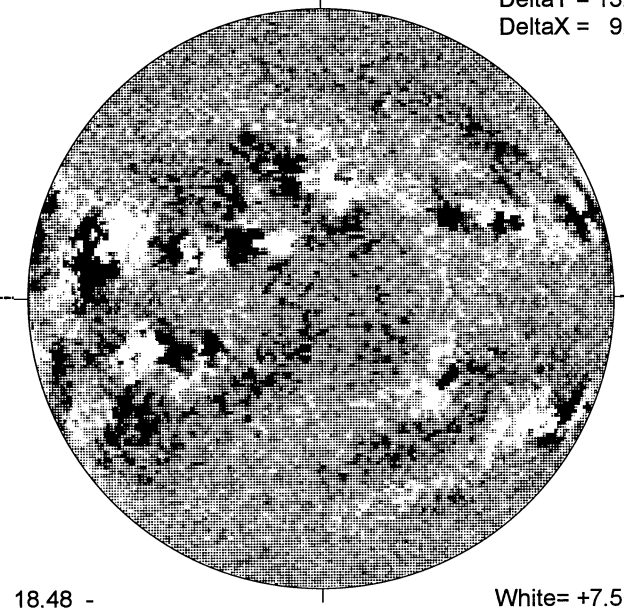
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

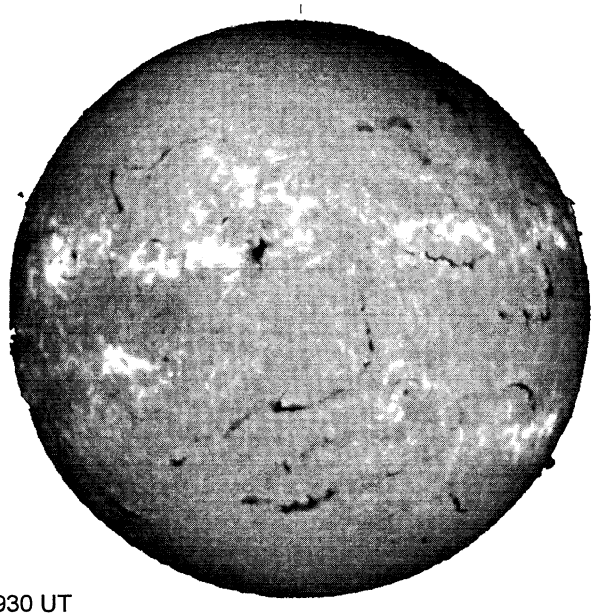


-W

18.48 -
19.45 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

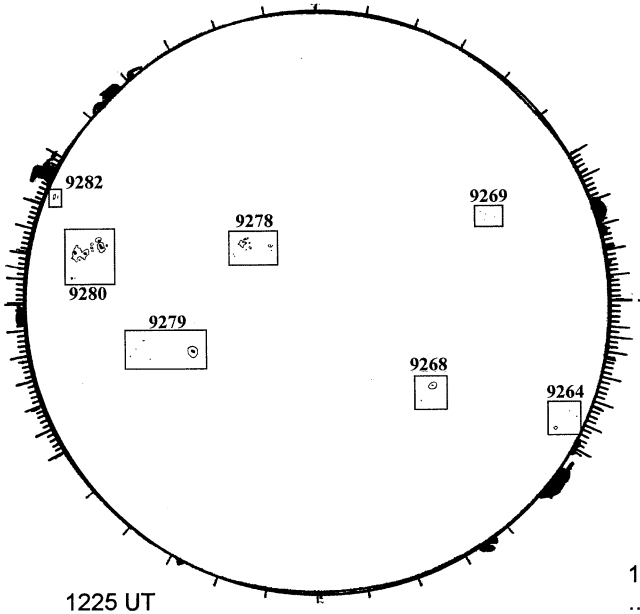


E-

0930 UT

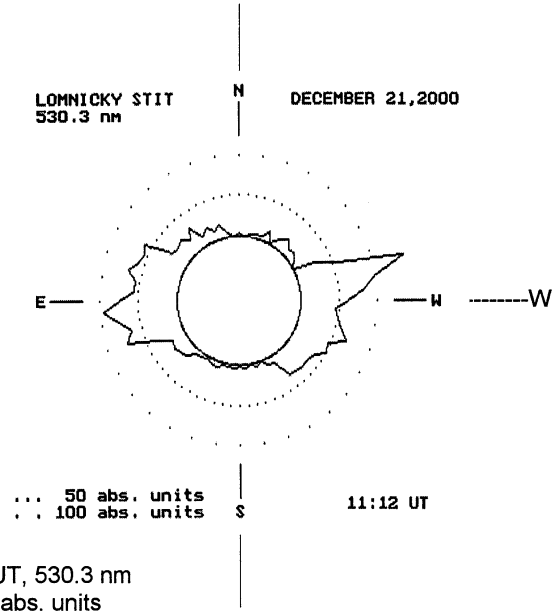
S

RAMEY SUNSPOT



1225 UT
1058 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

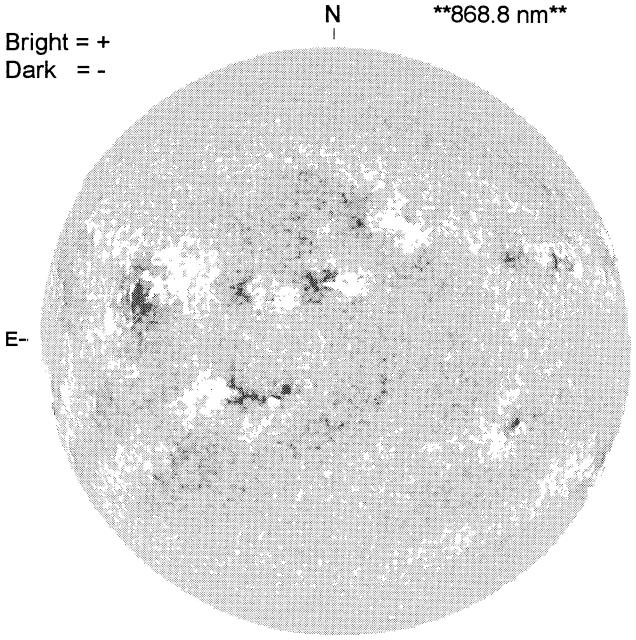


1112 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

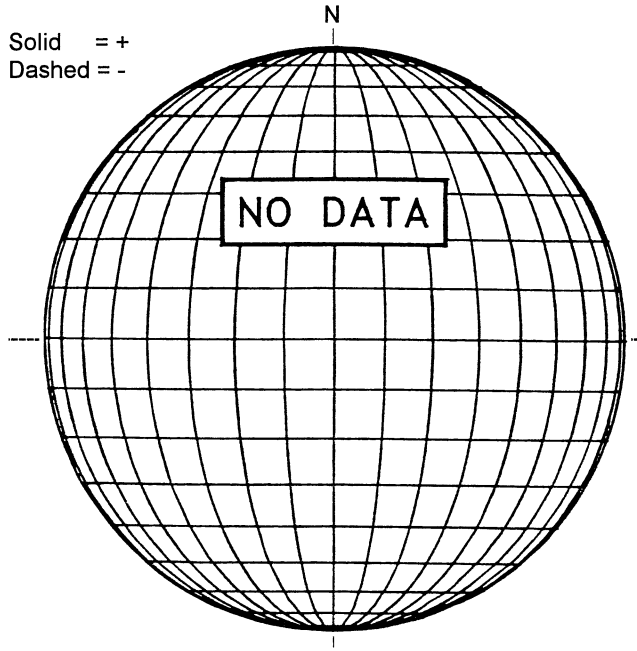
S

DECEMBER 22, 2000 (P= 6.82, Bo = -1.83, Lo = 348.99)

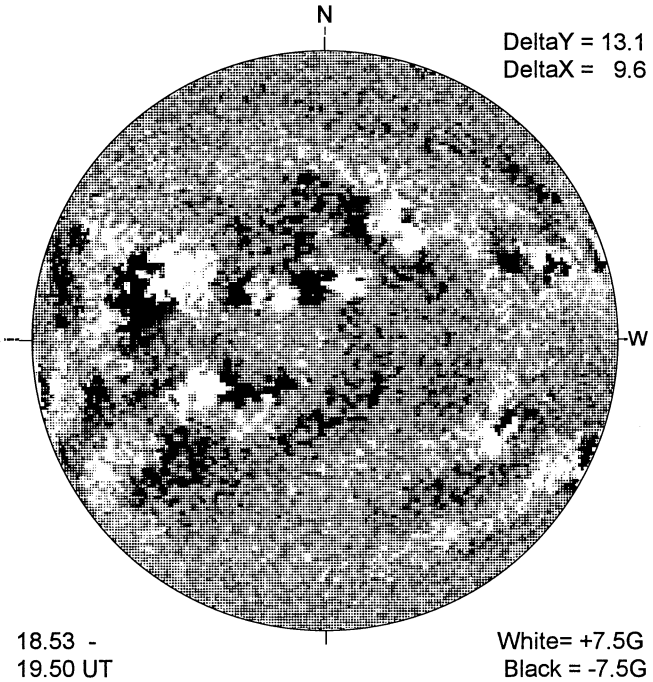
KITT PEAK MAGNETOGRAM



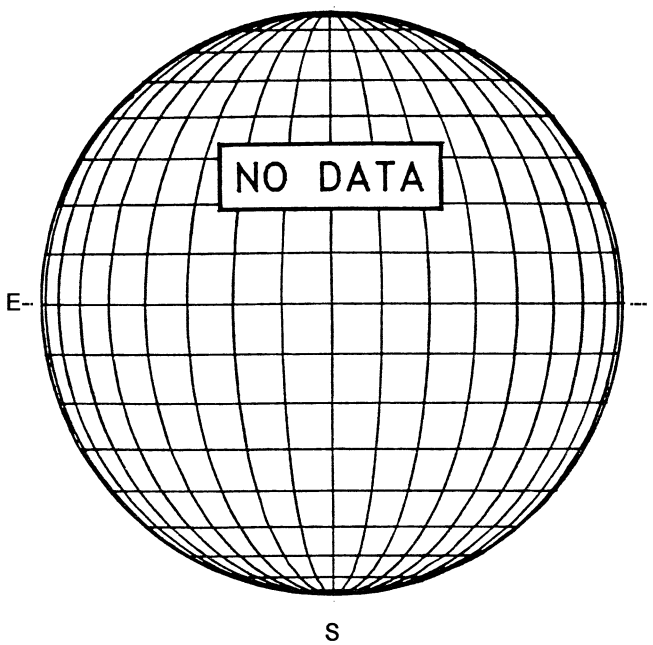
STANFORD MAGNETOGRAM



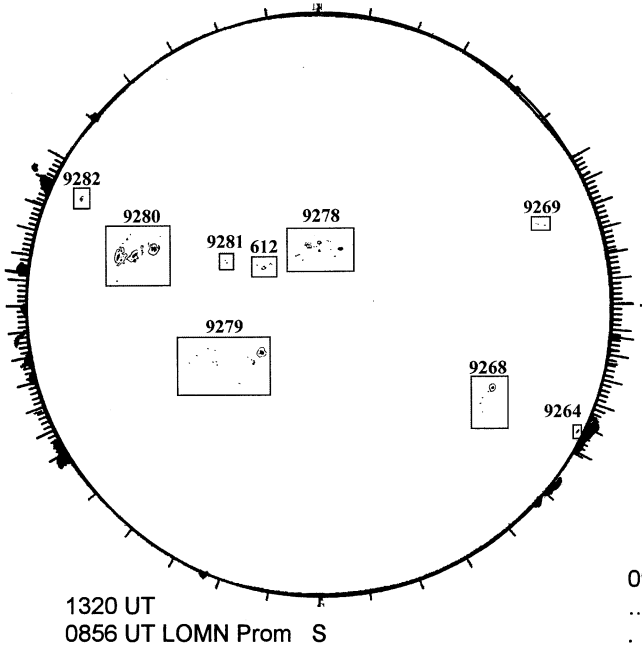
MT. WILSON MAGNETOGRAM



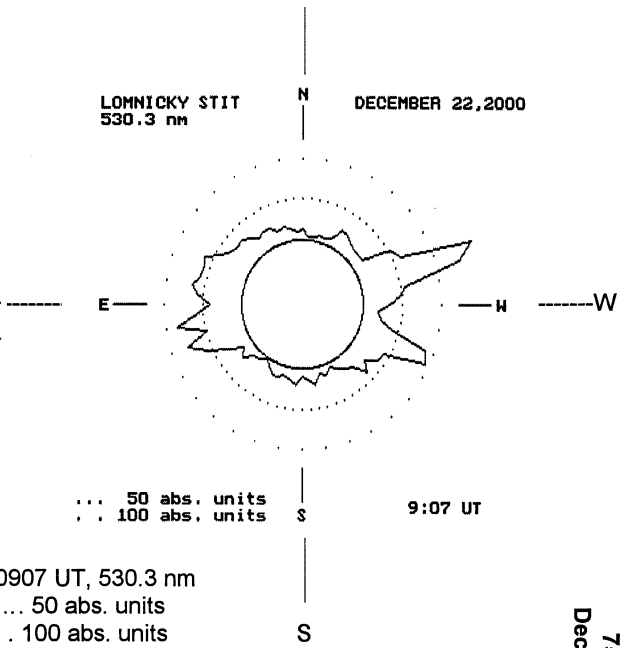
MEUDON H-ALPHA



RAMEY SUNSPOT



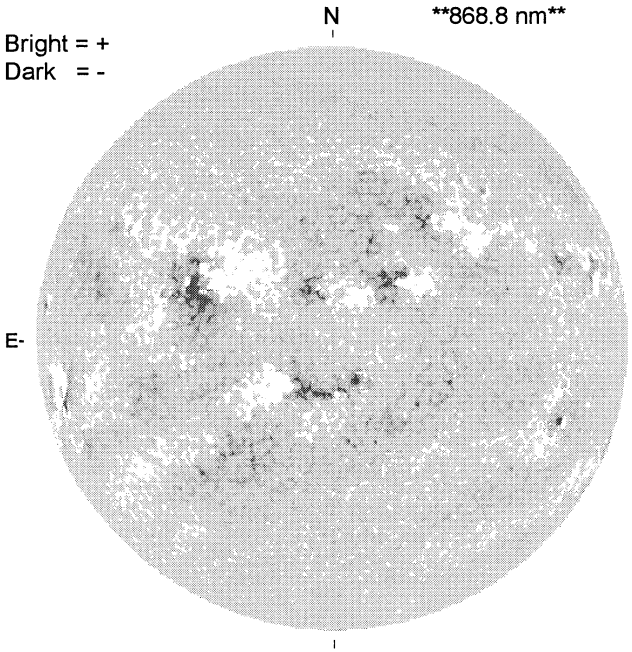
LOMNICKY PEAK CORONA (1.04 Radii)



DECEMBER 23, 2000 (P= 6.35, Bo = -1.96, Lo = 335.82)

KITT PEAK MAGNETOGRAM

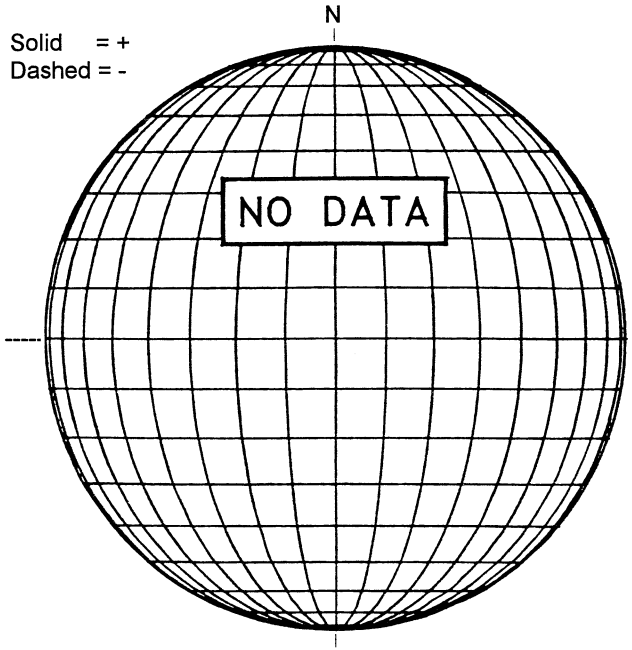
Bright = +
Dark = -



1705 UT

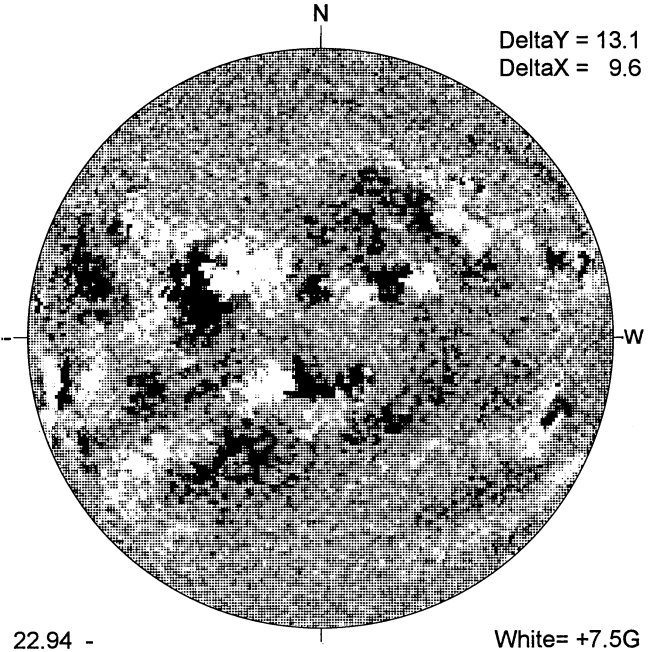
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

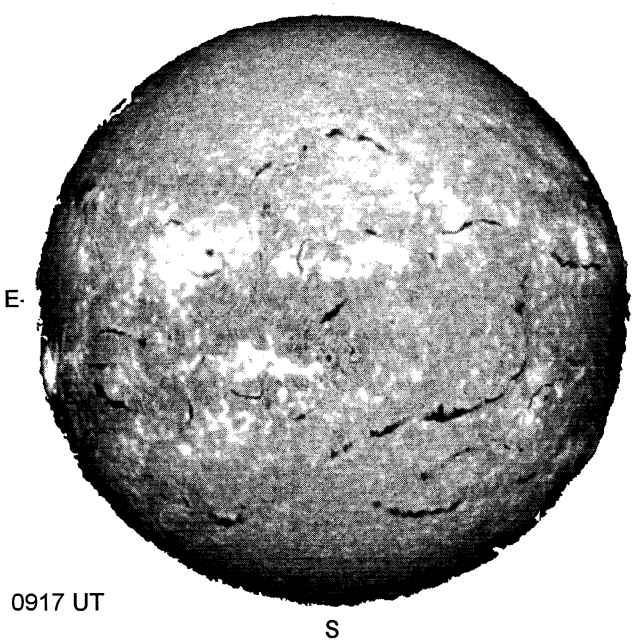
DeltaY = 13.1
DeltaX = 9.6



22.94 -
23.92 UT

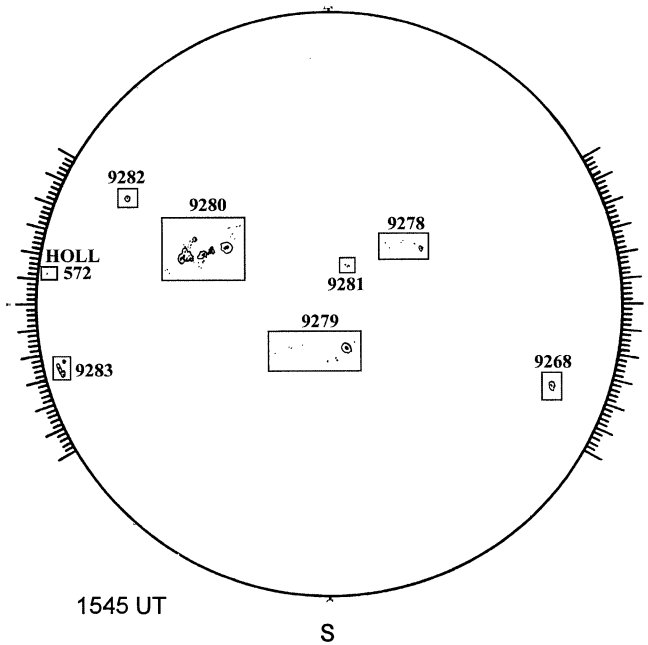
White= +7.5G
Black = -7.5G

----- MEUDON H-ALPHA



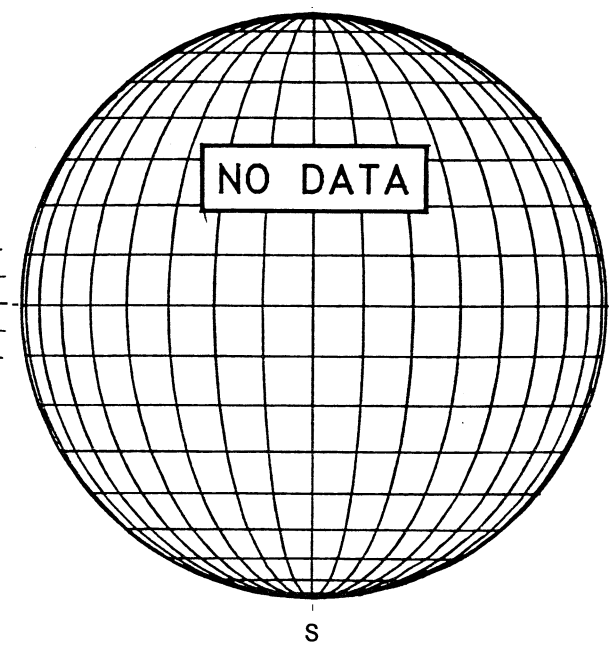
0917 UT

HOLLOMAN SUNSPOT



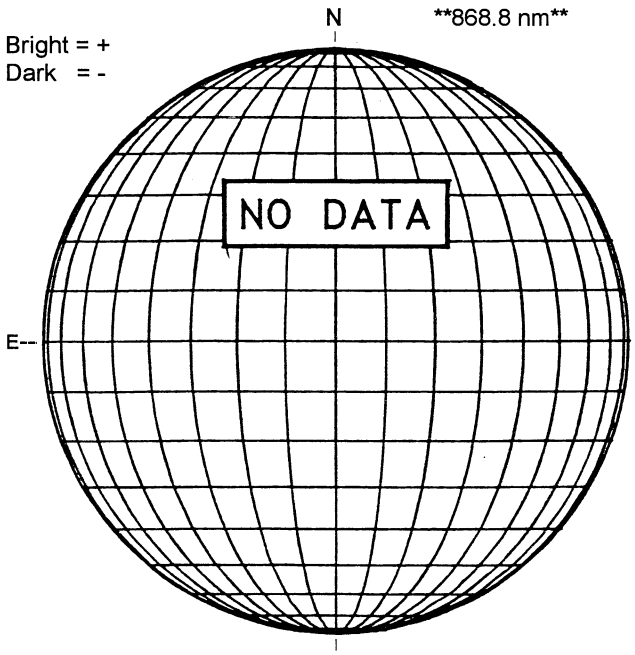
1545 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

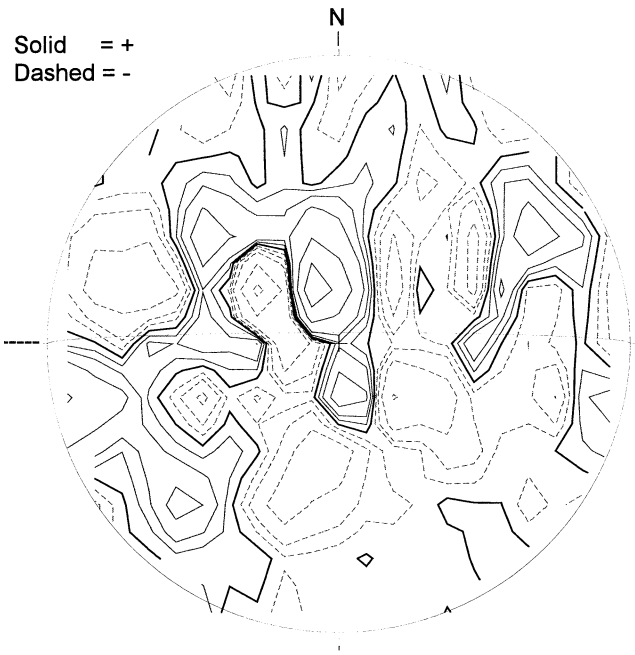


DECEMBER 24, 2000 (P= 5.87, Bo = -2.08, Lo = 322.65)

KITT PEAK MAGNETOGRAM

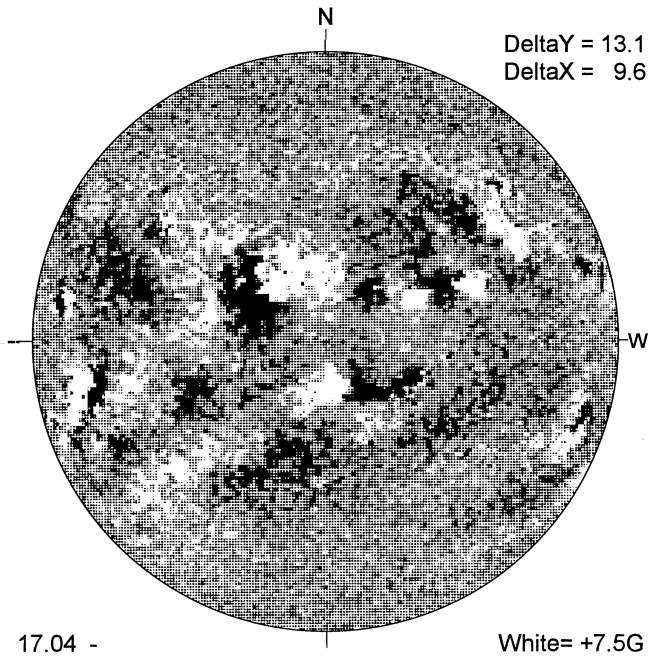


STANFORD MAGNETOGRAM



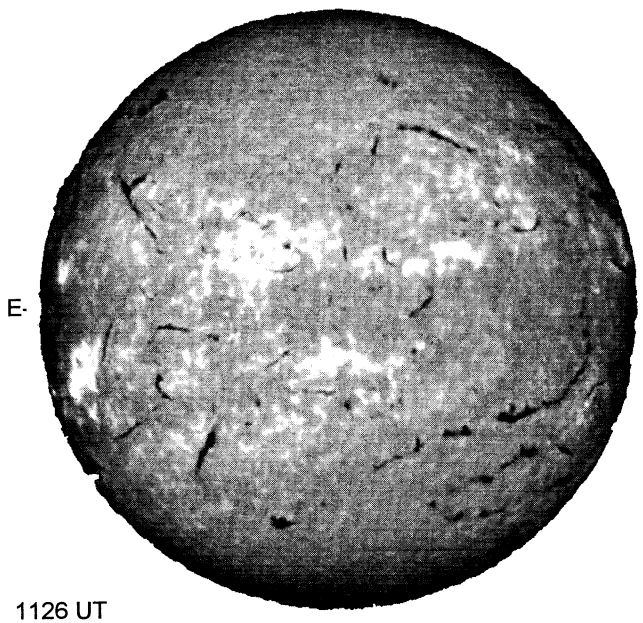
2104 UT

MT. WILSON MAGNETOGRAM



17.04 -
18.01 UT

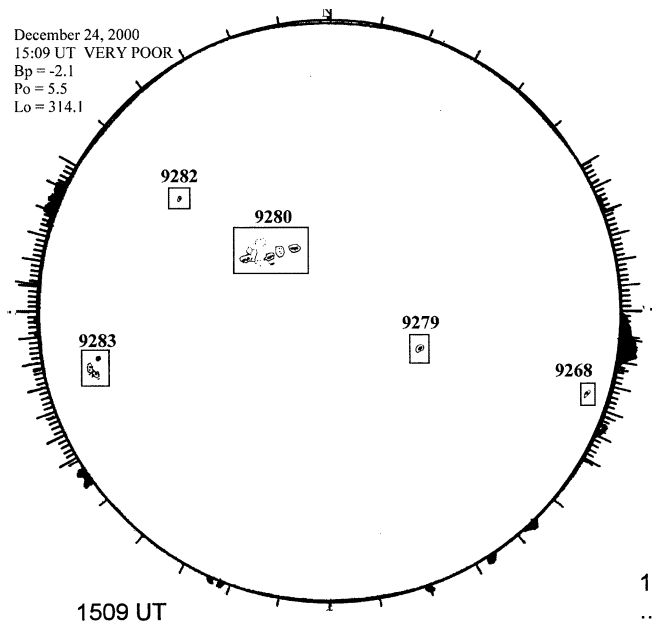
MEUDON H-ALPHA



1126 UT

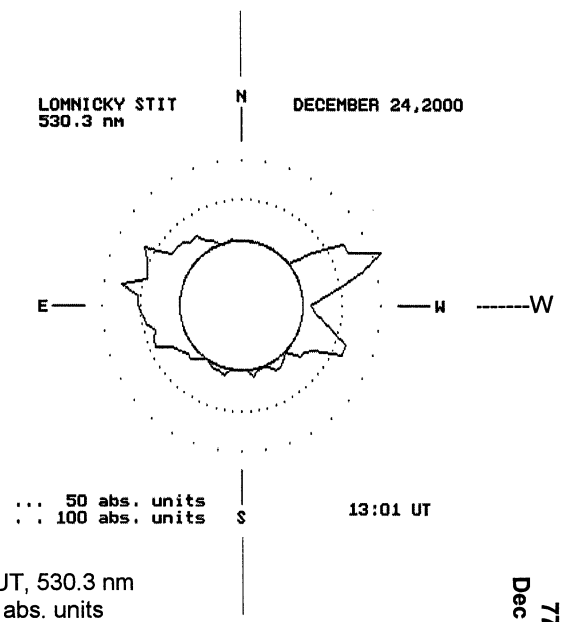
S

RAMEY SUNSPOT



1509 UT
1251 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



1301 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

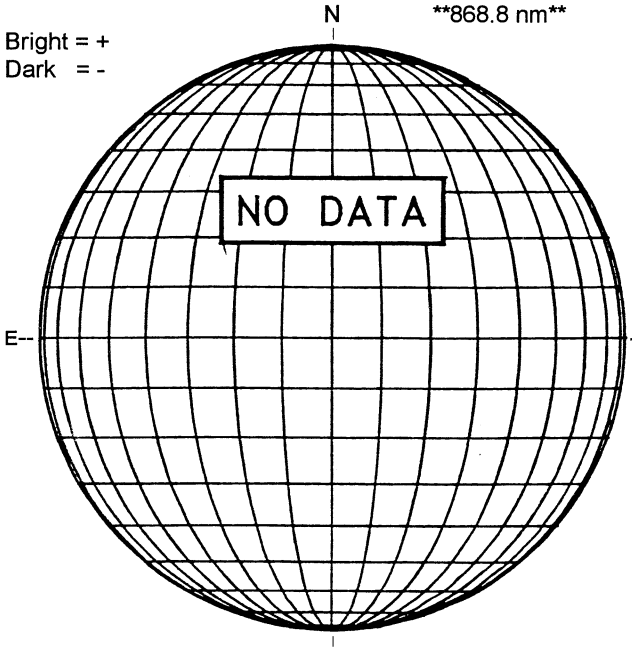
S

77
Dec 00

DECEMBER 25, 2000 (P= 5.39, Bo = -2.20, Lo = 309.48)

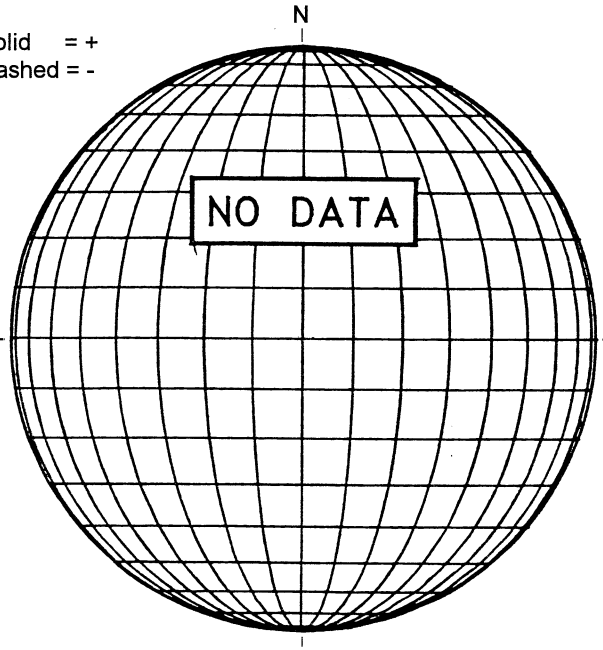
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



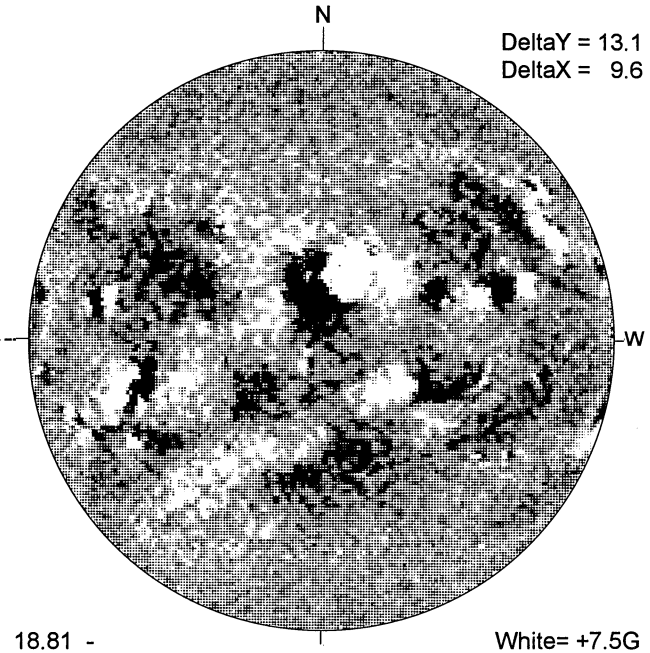
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

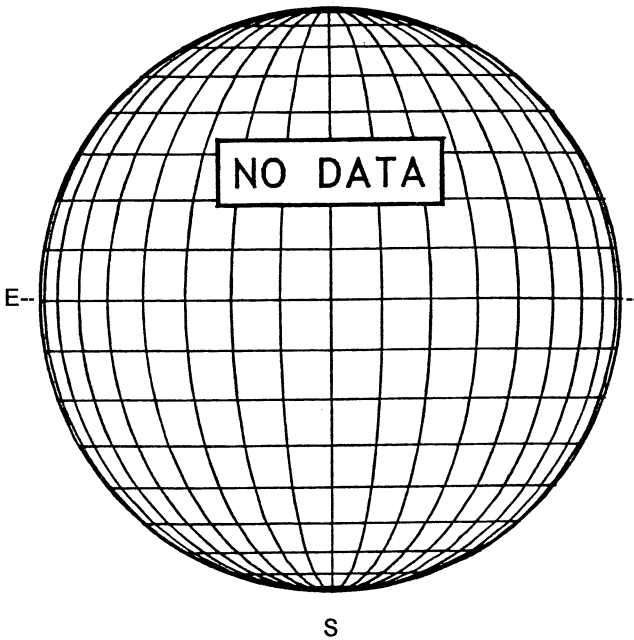
DeltaY = 13.1
DeltaX = 9.6



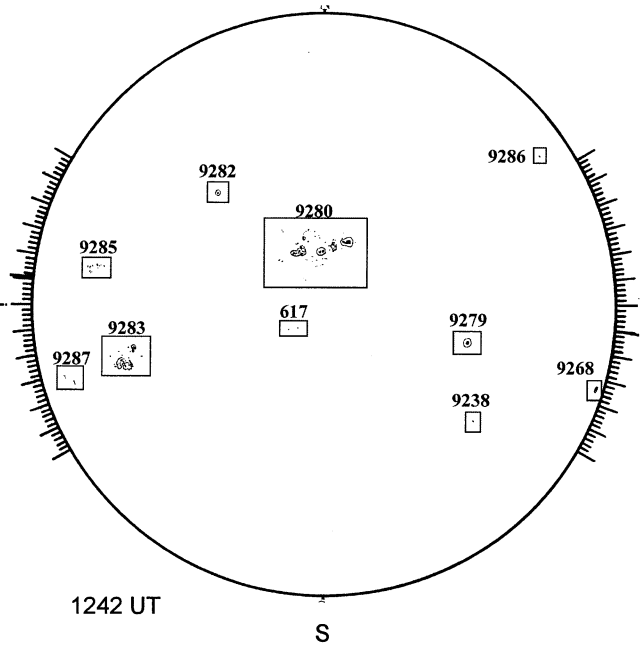
18.81 -
19.79 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

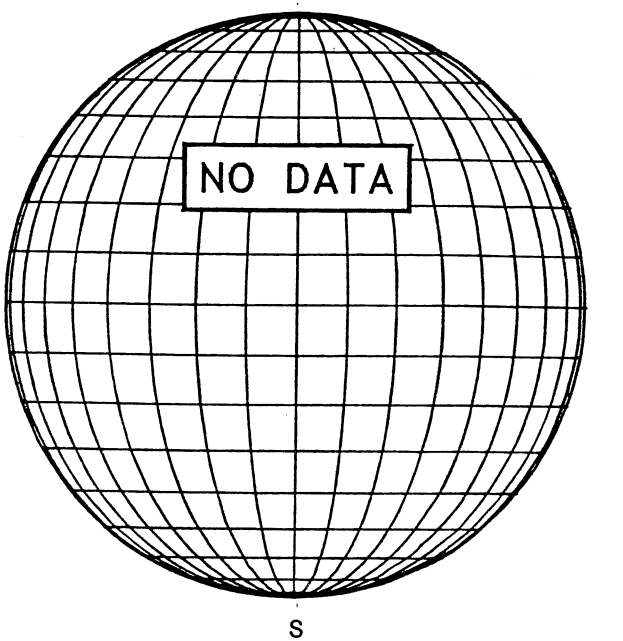


RAMEY SUNSPOT



1242 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

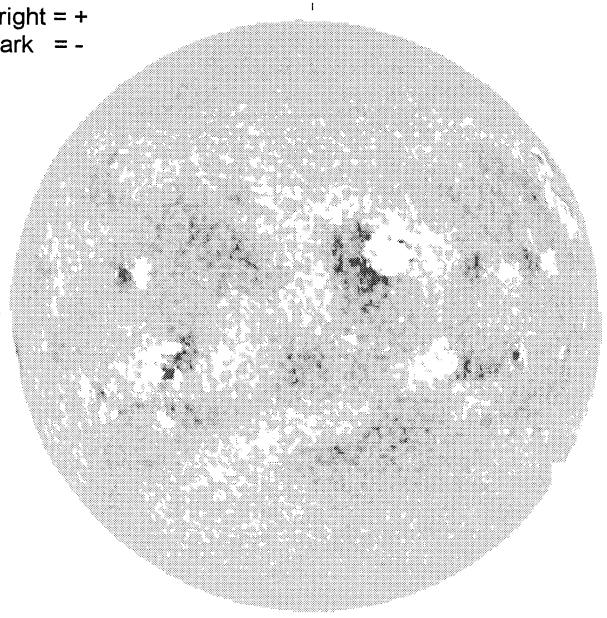


DECEMBER 26, 2000 (P= 4.91, Bo = -2.33, Lo = 296.31)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



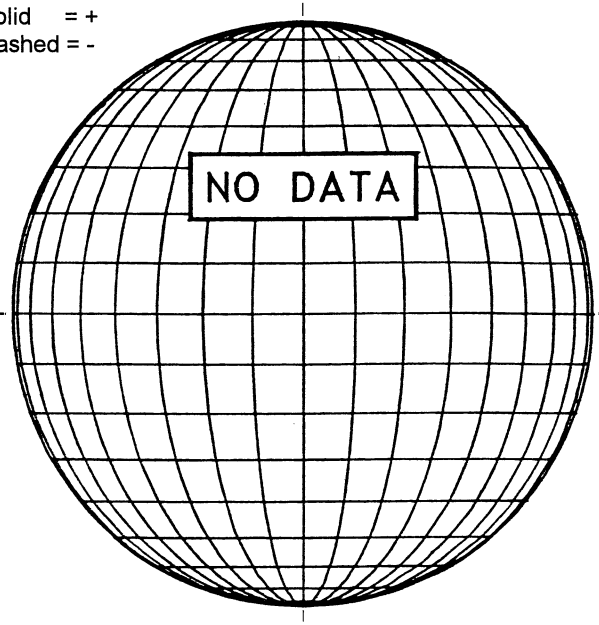
E-

1621 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

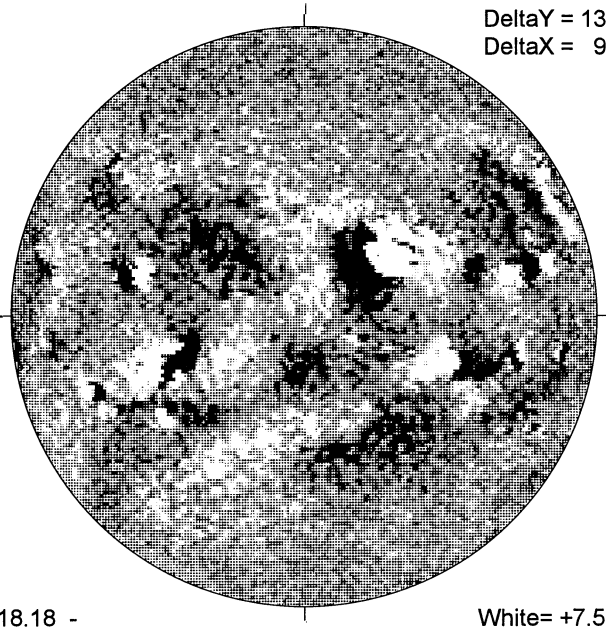


18.18 -
19.16 UT

MT. WILSON MAGNETOGRAM

N

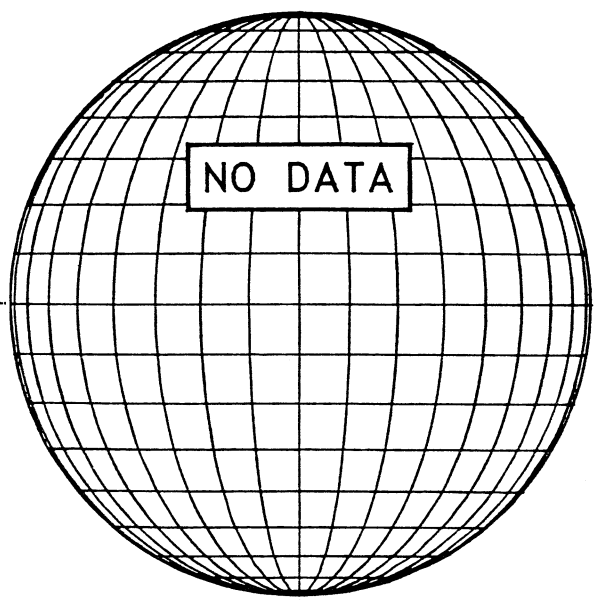
DeltaY = 13.1
DeltaX = 9.6



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

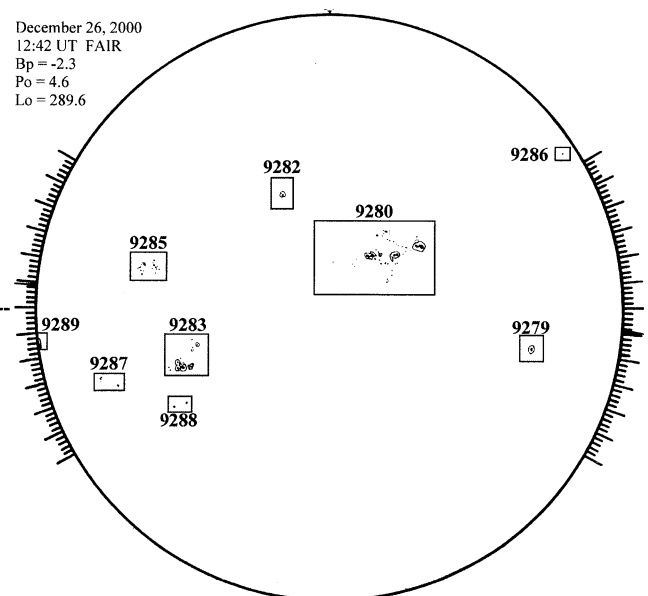


E---

S

RAMEY SUNSPOT

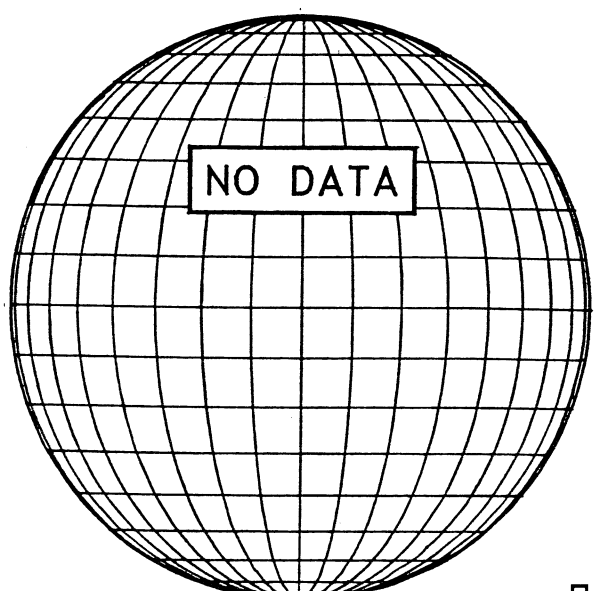
December 26, 2000
12:42 UT FAIR
Bp = -2.3
Po = 4.6
Lo = 289.6



1242 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

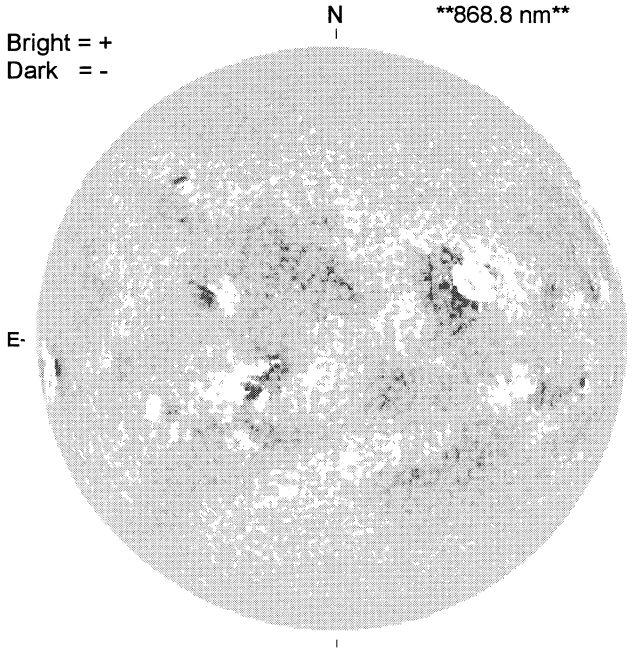
79
Dec 00

DECEMBER 27, 2000 (P= 4.43, Bo = -2.45, Lo = 283.13)

KITT PEAK MAGNETOGRAM

868.8 nm

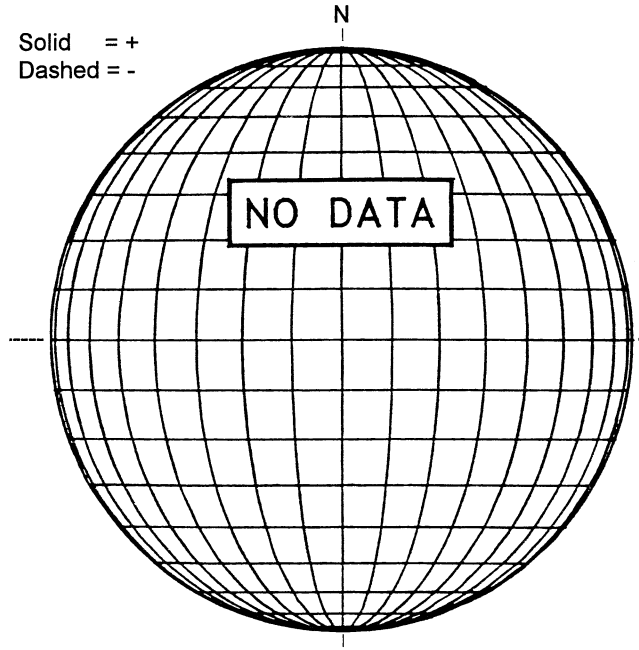
Bright = +
Dark = -



1603 UT

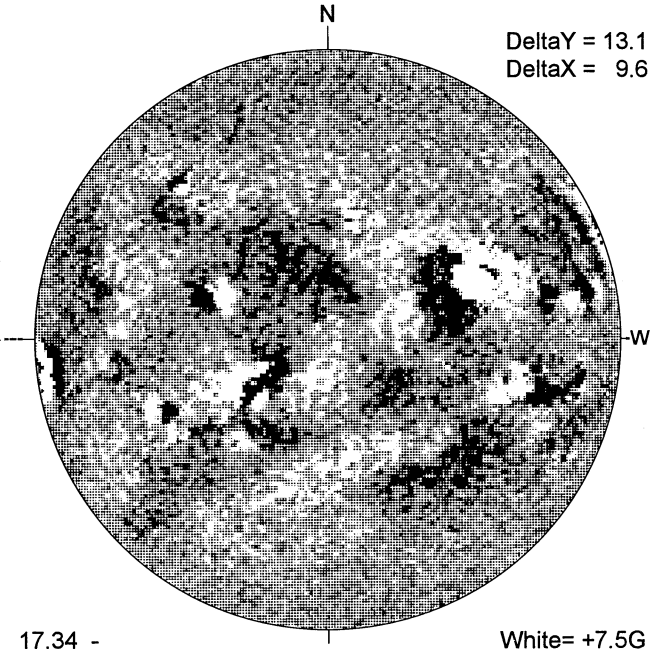
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

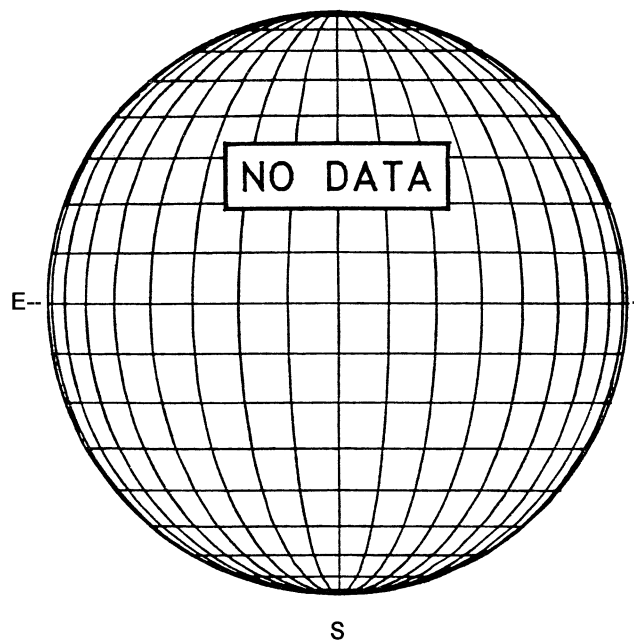
DeltaY = 13.1
DeltaX = 9.6



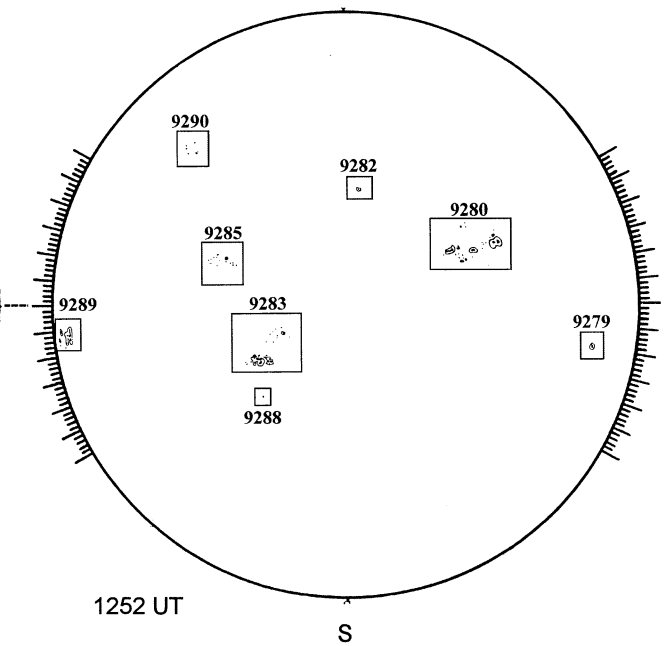
17.34 -
18.32 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

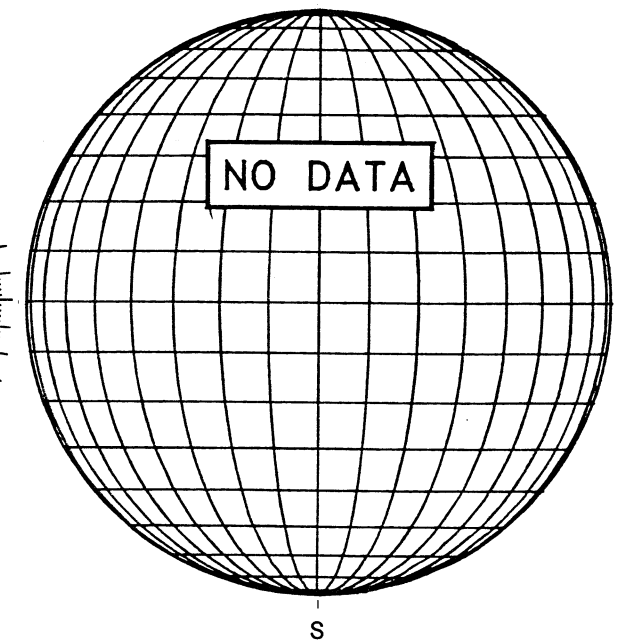


RAMEY SUNSPOT



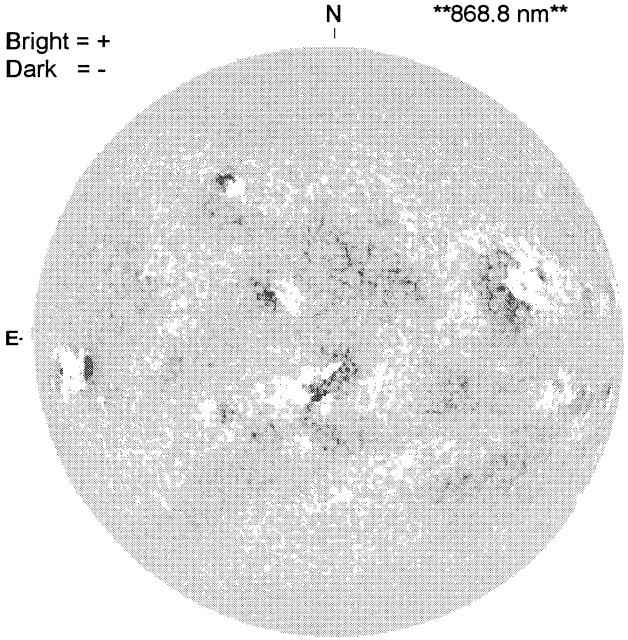
1252 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

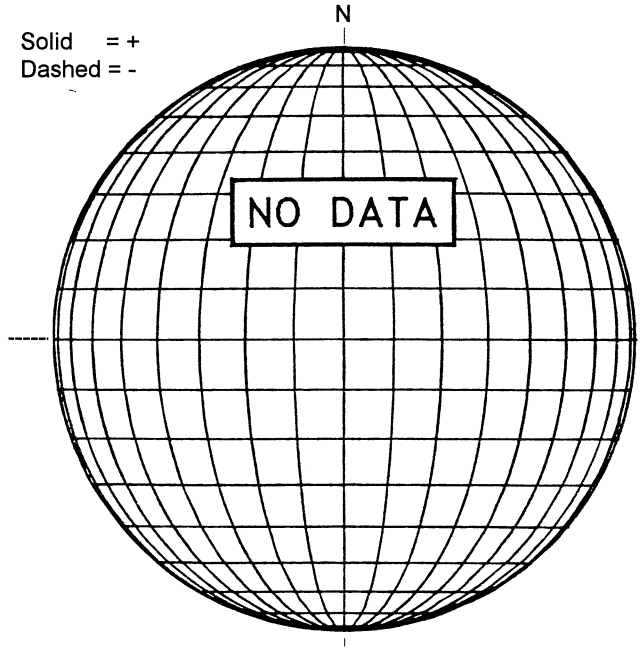


DECEMBER 28, 2000 (P= 3.95, Bo = -2.57, Lo = 269.96)

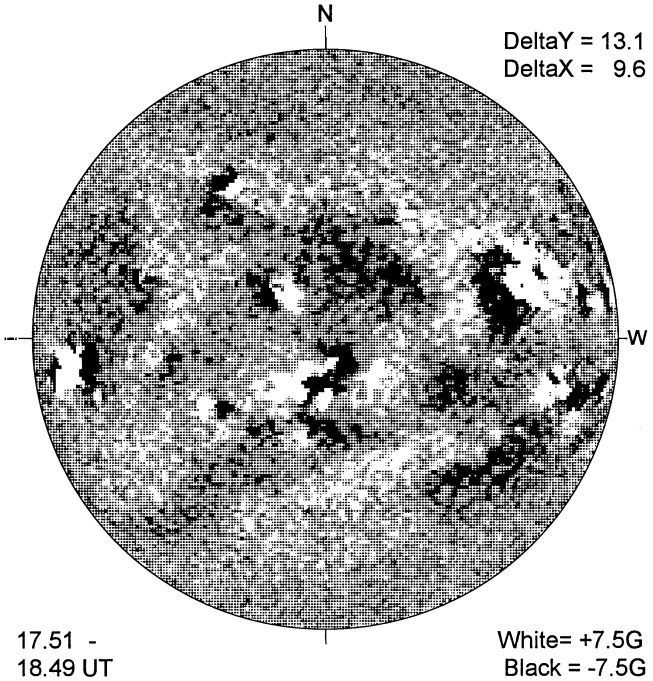
KITT PEAK MAGNETOGRAM



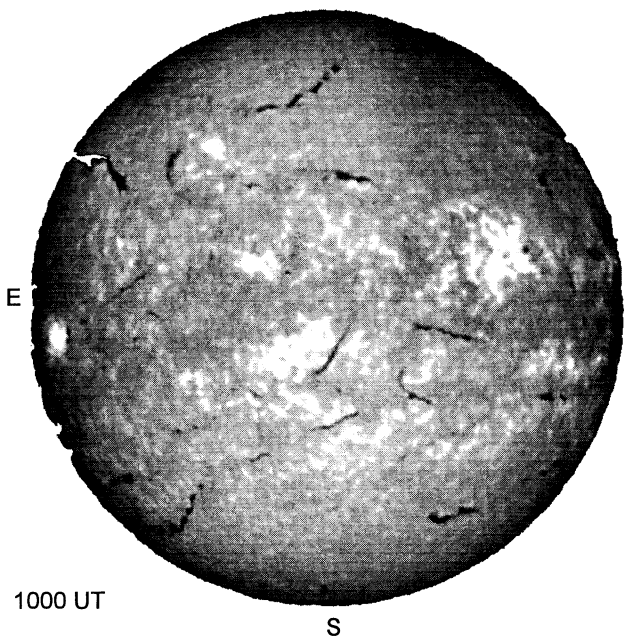
STANFORD MAGNETOGRAM



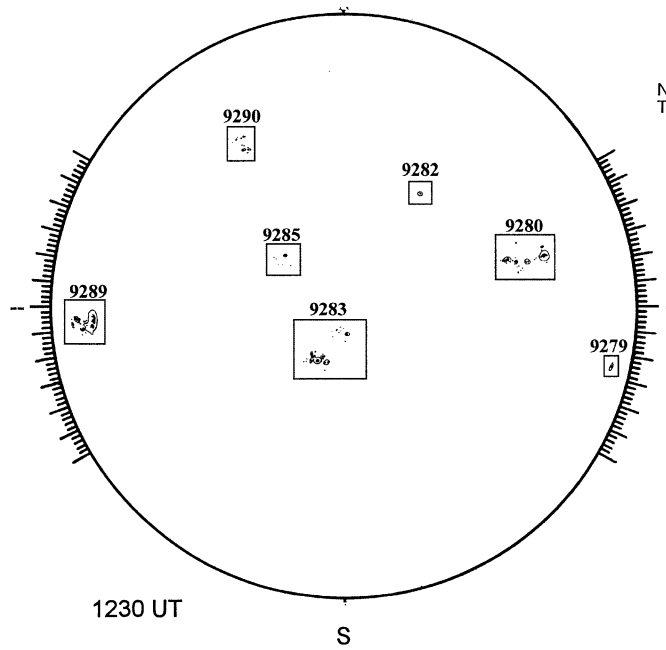
MT. WILSON MAGNETOGRAM



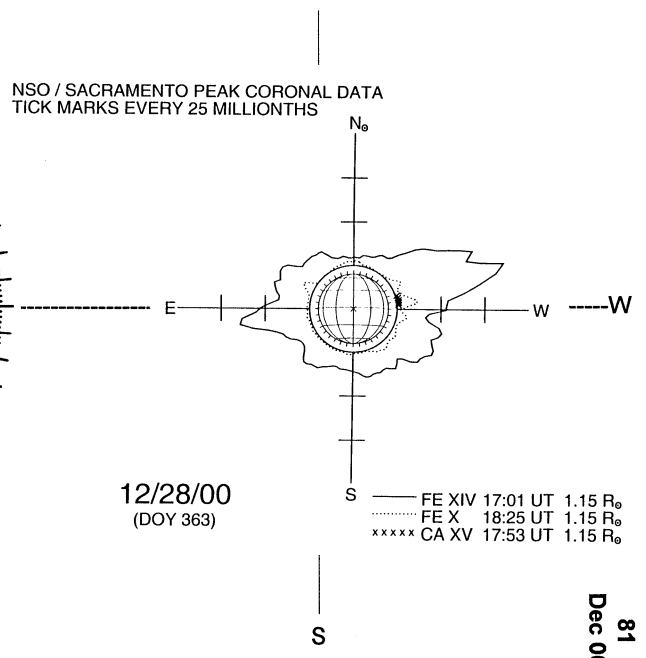
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

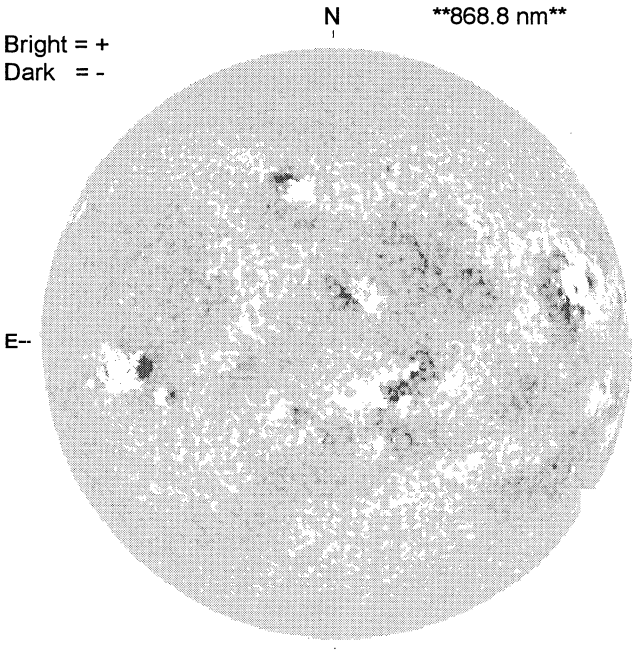


DECEMBER 29, 2000 (P= 3.46, Bo = -2.69, Lo = 256.79)

KITT PEAK MAGNETOGRAM

868.8 nm

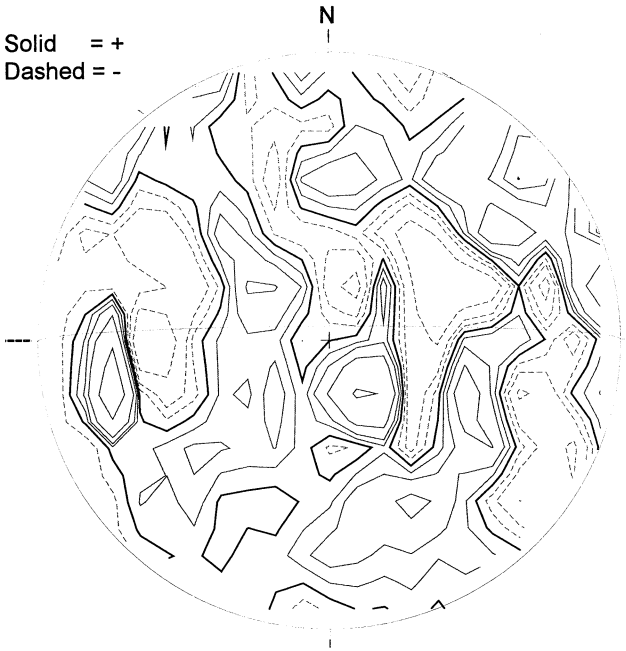
Bright = +
Dark = -



1730 UT

STANFORD MAGNETOGRAM

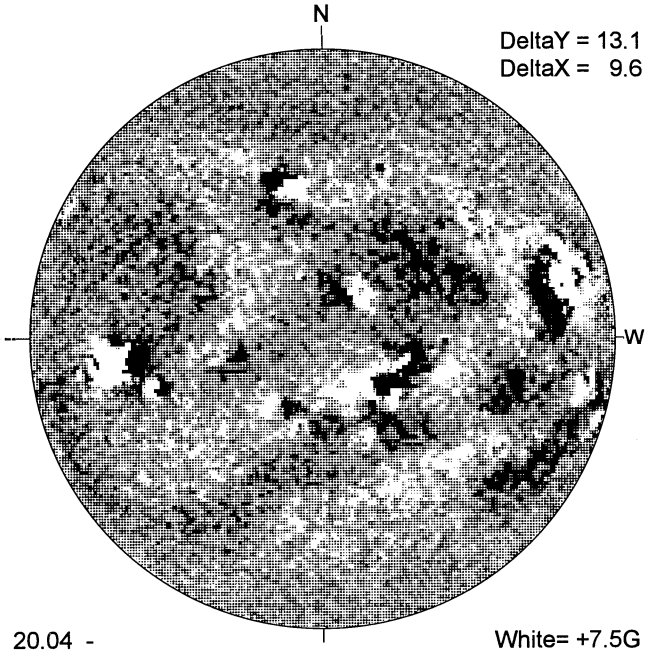
Solid = +
Dashed = -



2303 UT

MT. WILSON MAGNETOGRAM

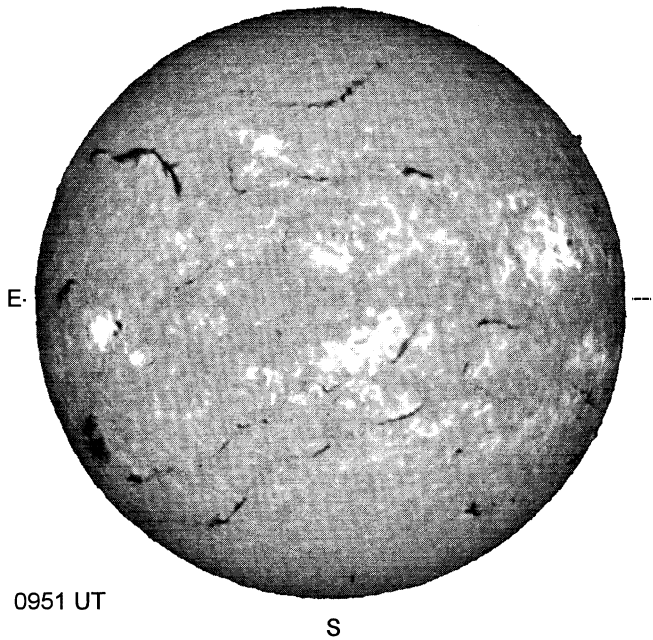
DeltaY = 13.1
DeltaX = 9.6



20.04 -
21.02 UT

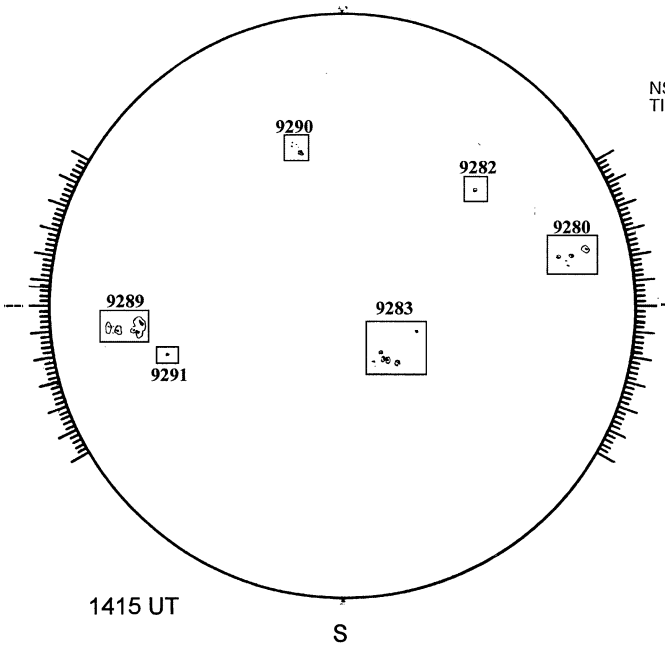
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



0951 UT

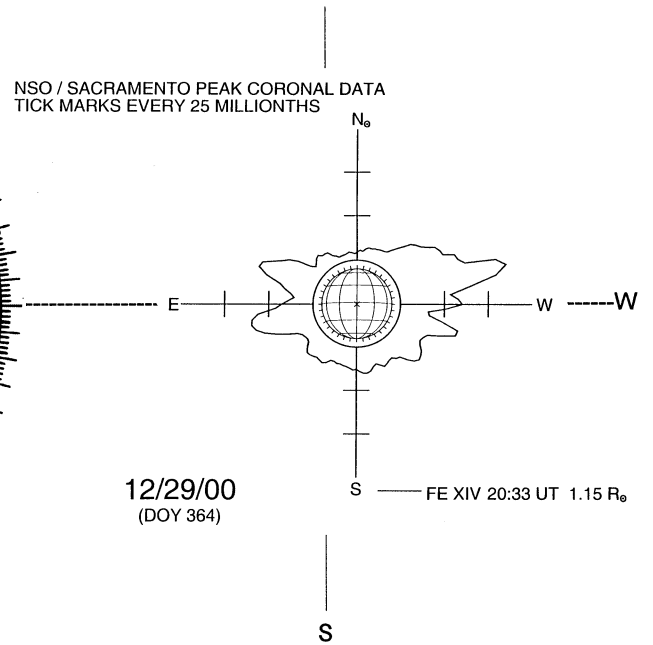
RAMEY SUNSPOT



1415 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 25 MILLIONTHS

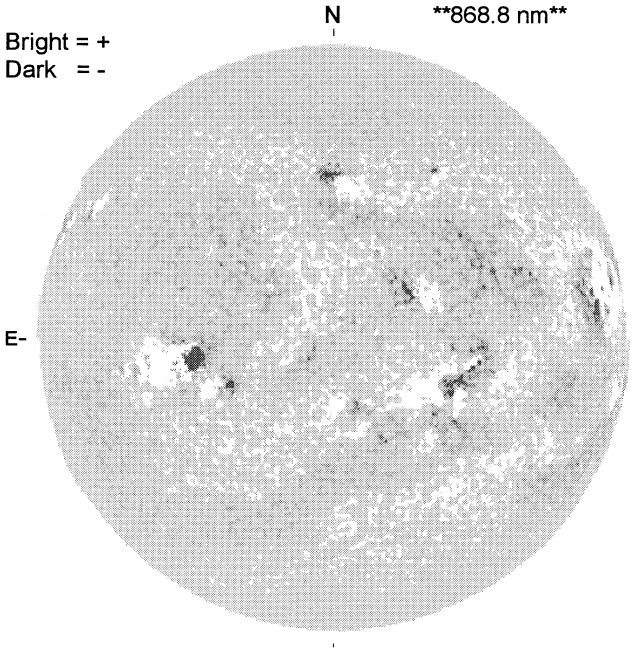


12/29/00
(DOY 364)

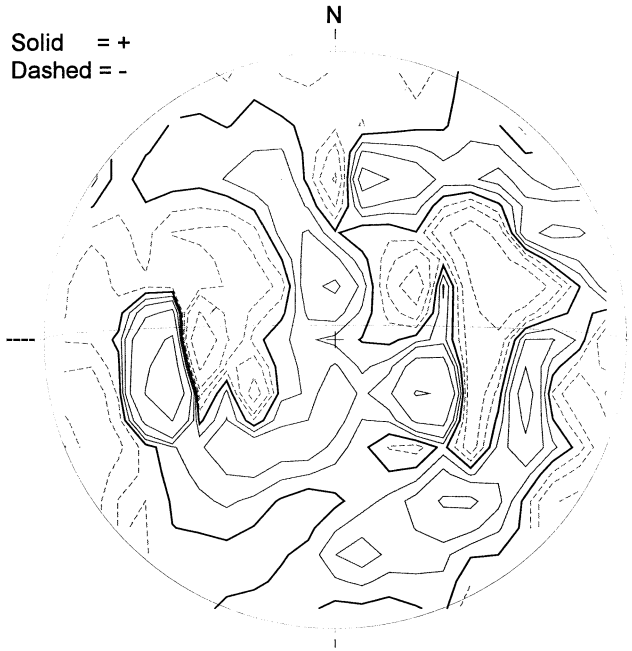
FE XIV 20:33 UT 1.15 R⊙

DECEMBER 30, 2000 (P= 2.98, Bo = -2.81, Lo = 243.62)

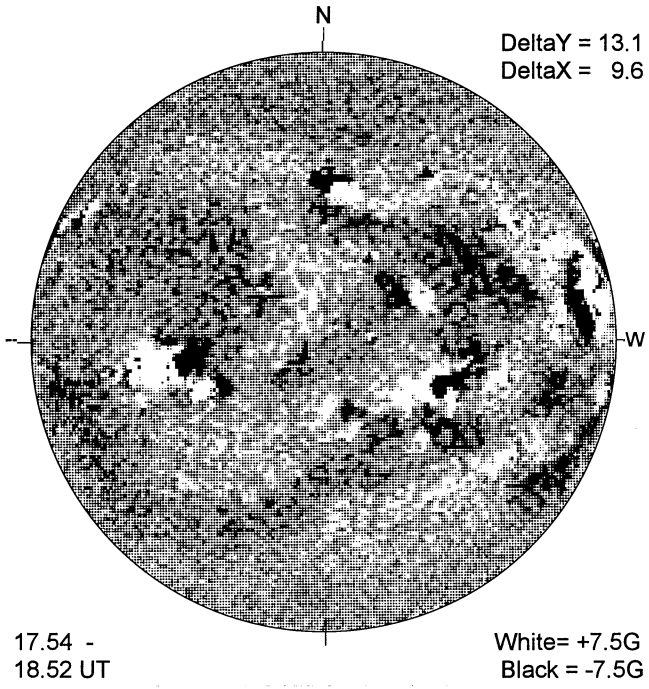
KITT PEAK MAGNETOGRAM



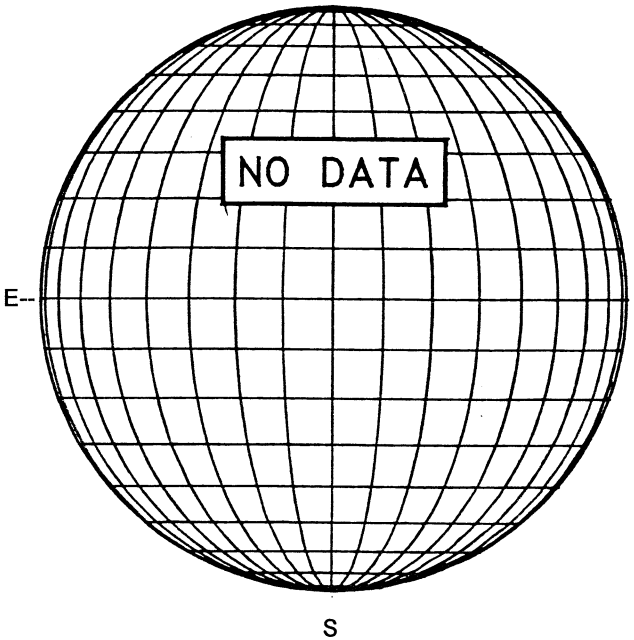
STANFORD MAGNETOGRAM



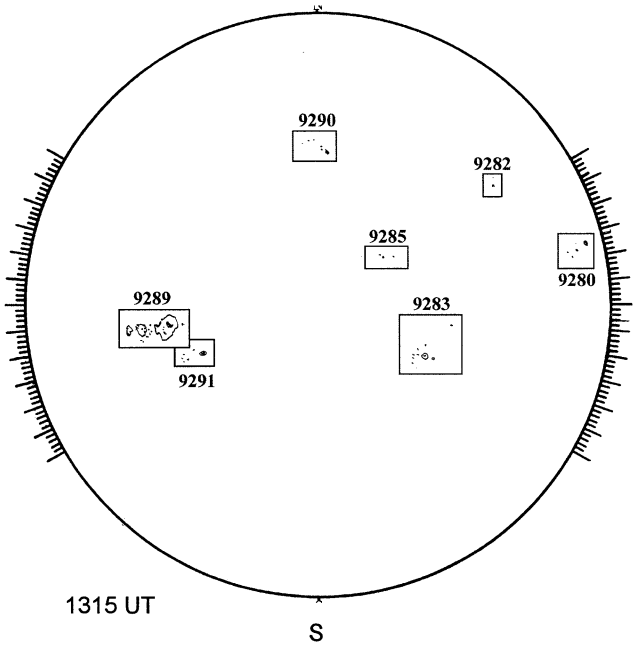
MT. WILSON MAGNETOGRAM



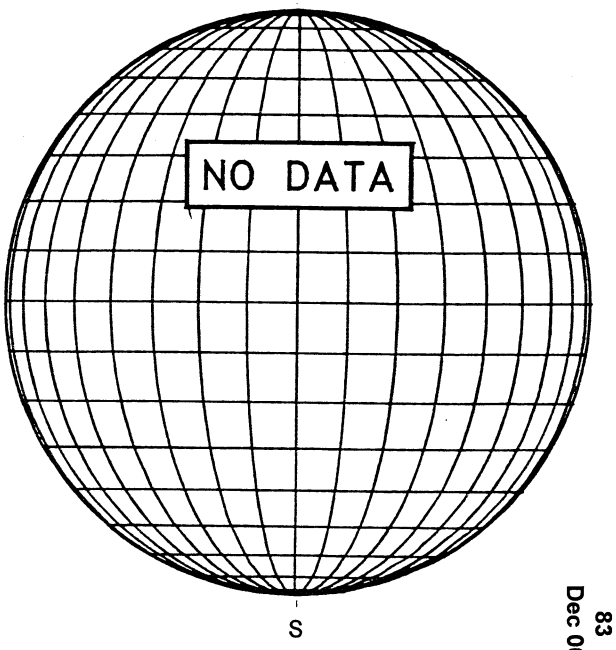
MEUDON H-ALPHA



RAMEY SUNSPOT

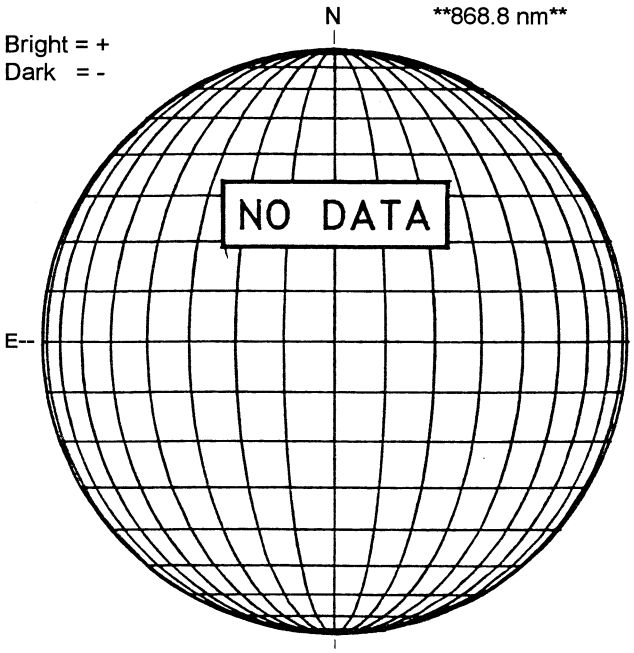


SACRAMENTO PEAK CORONA (1.15 Radii)----

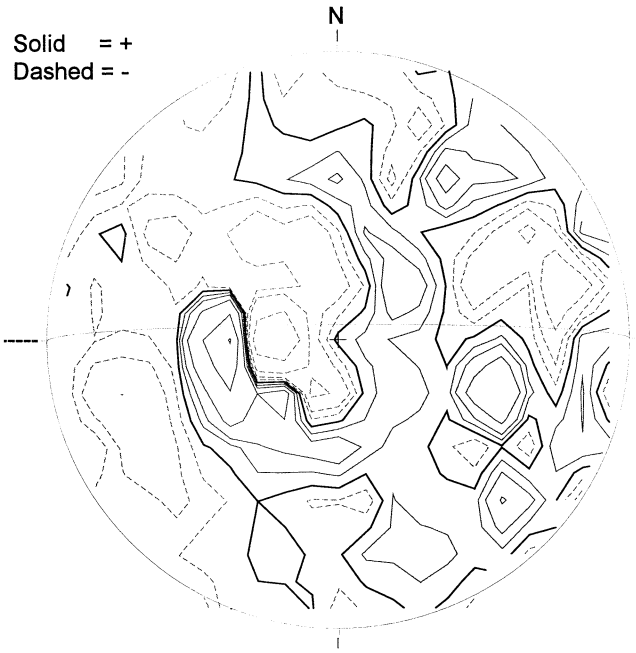


DECEMBER 31, 2000 (P= 2.49, Bo = -2.93, Lo = 230.45)

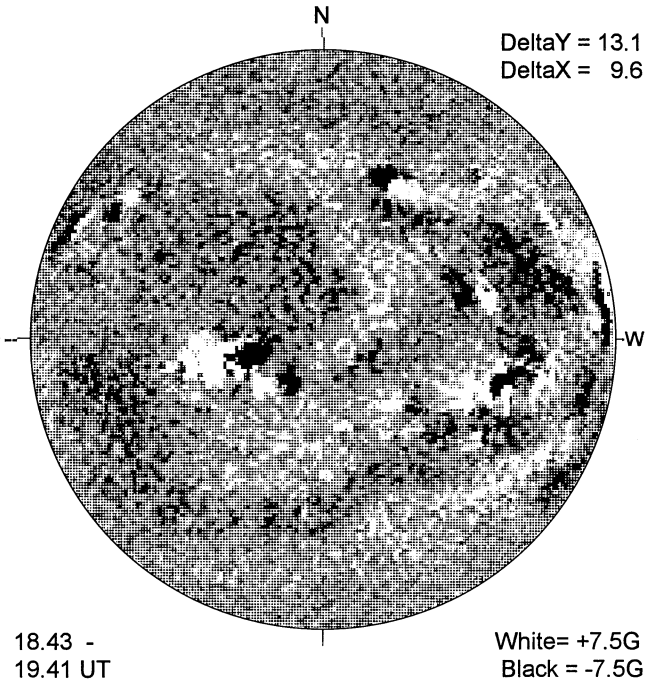
KITT PEAK MAGNETOGRAM



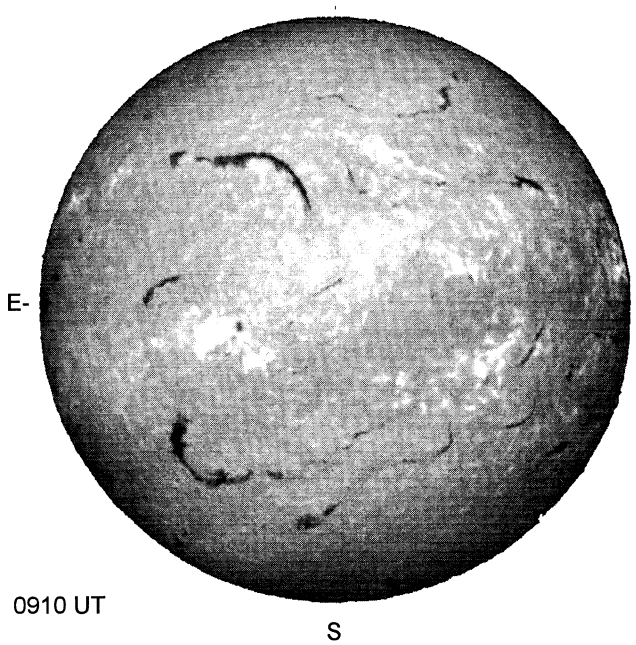
STANFORD MAGNETOGRAM



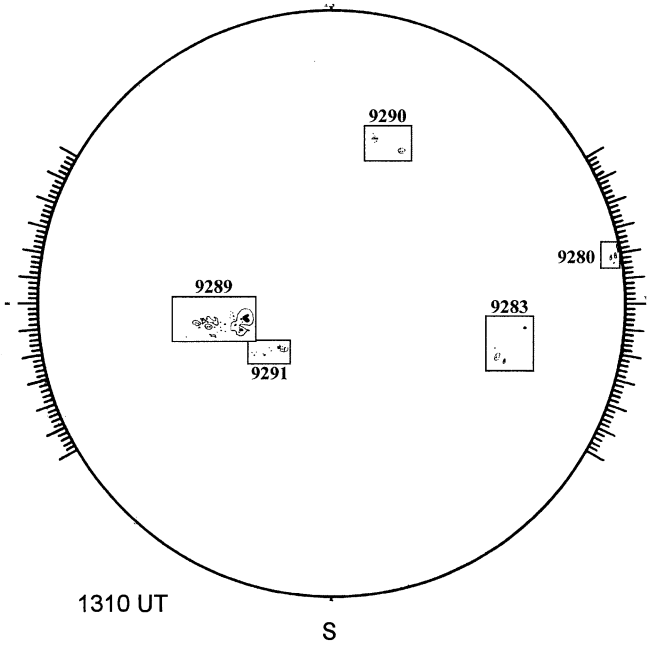
MT. WILSON MAGNETOGRAM



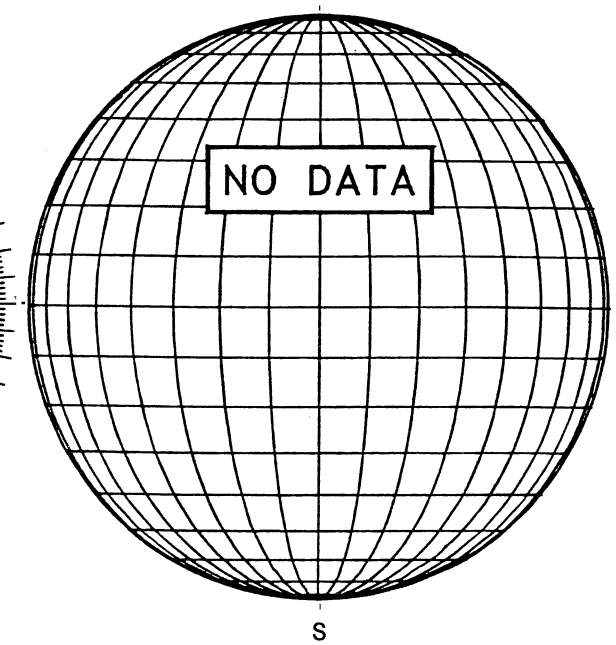
MEUDON H-ALPHA



RAMEY SUNSPOT

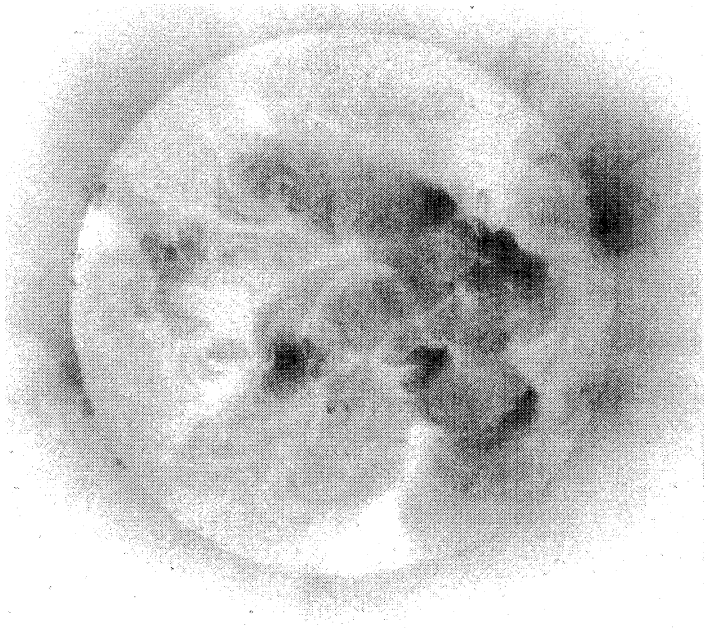


SACRAMENTO PEAK CORONA (1.15 Radii)----

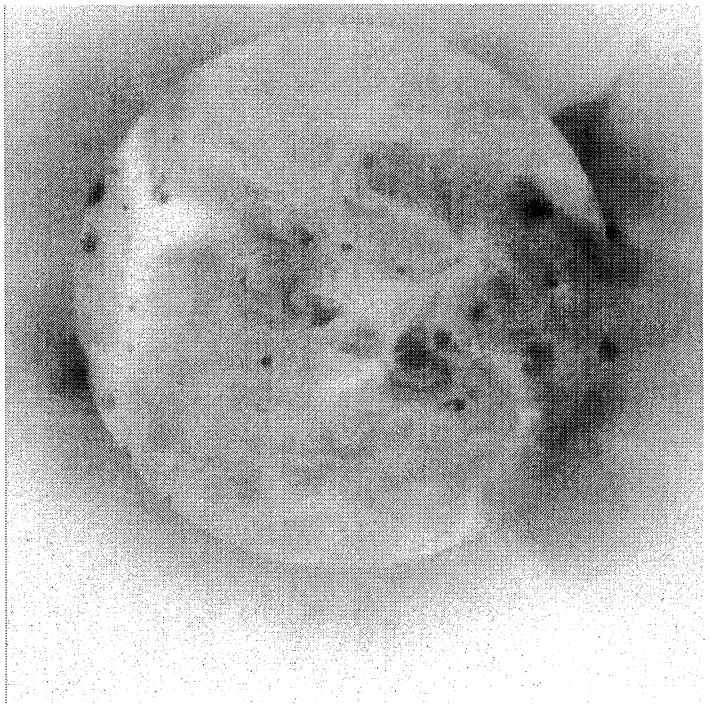


YOHKOH SOFT X-RAY TELESCOPE IMAGES

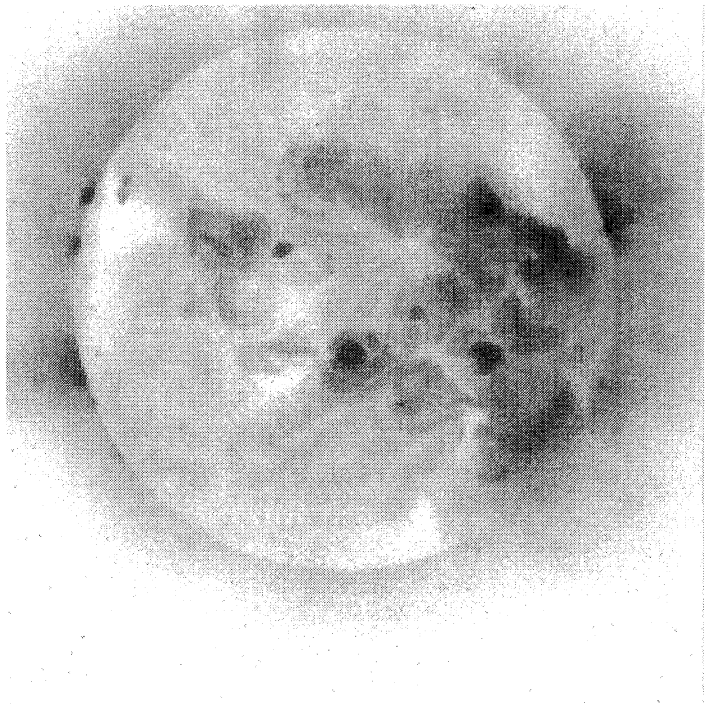
December 2000



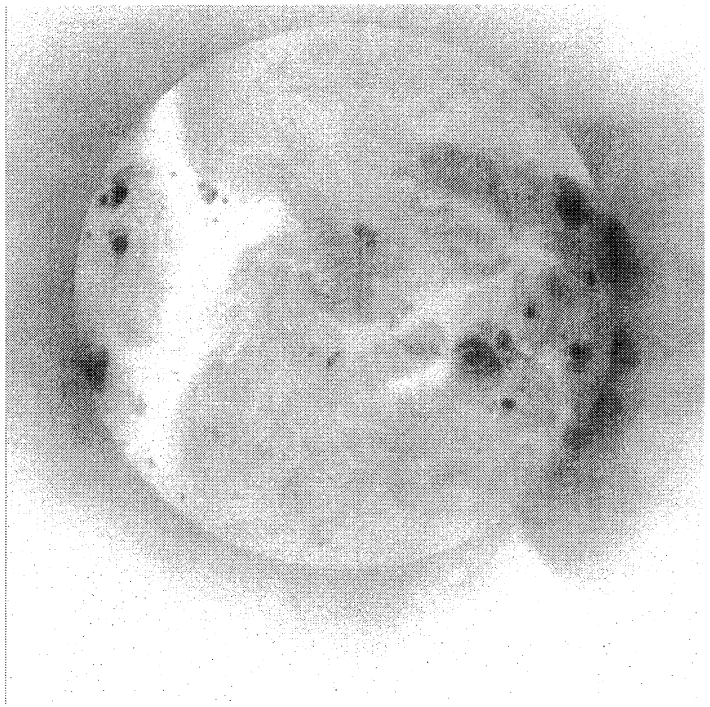
Day 1
12:17:24 UT



Day 3
11:45:56 UT



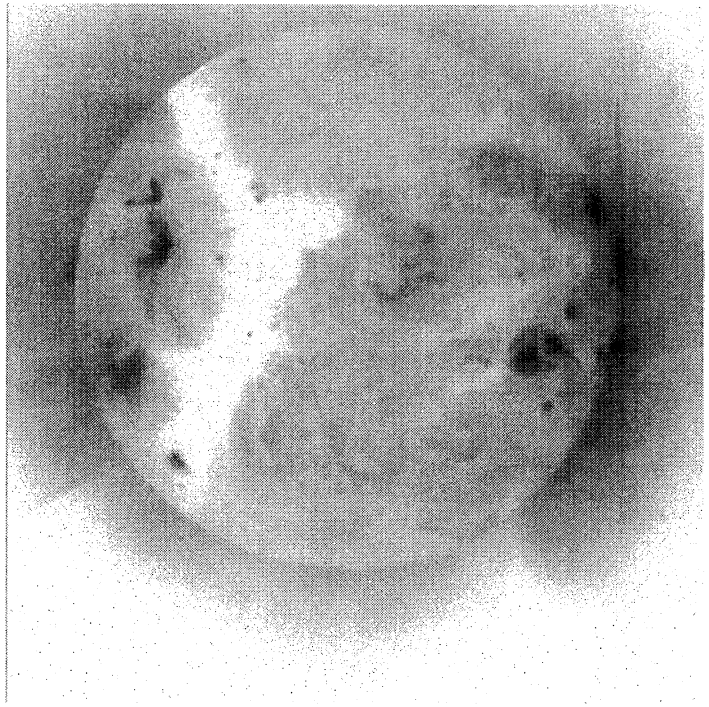
Day 2
11:44:52 UT



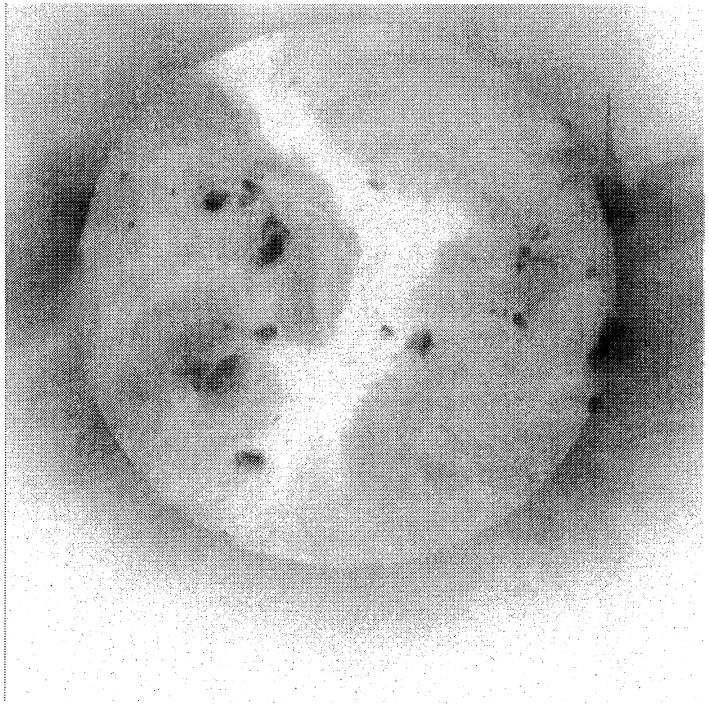
Day 4
11:56:19 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

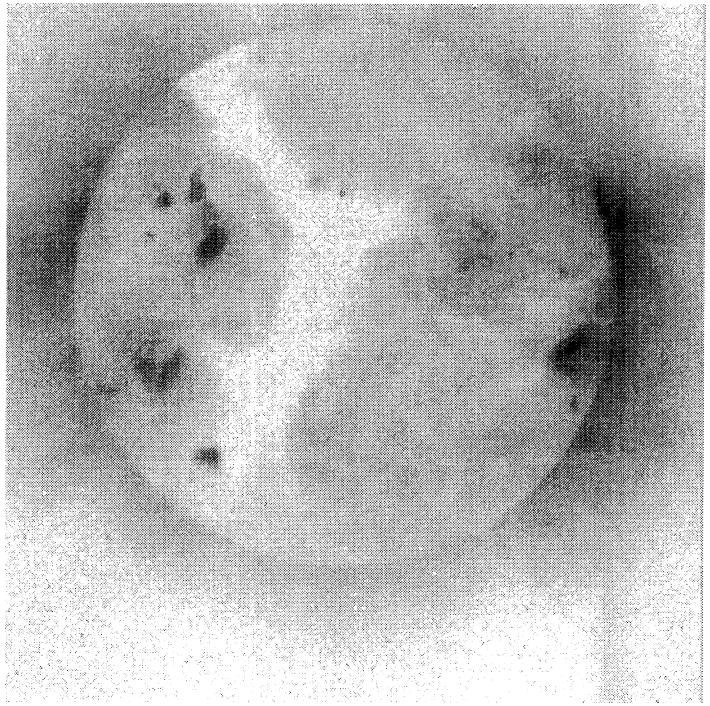
December 2000



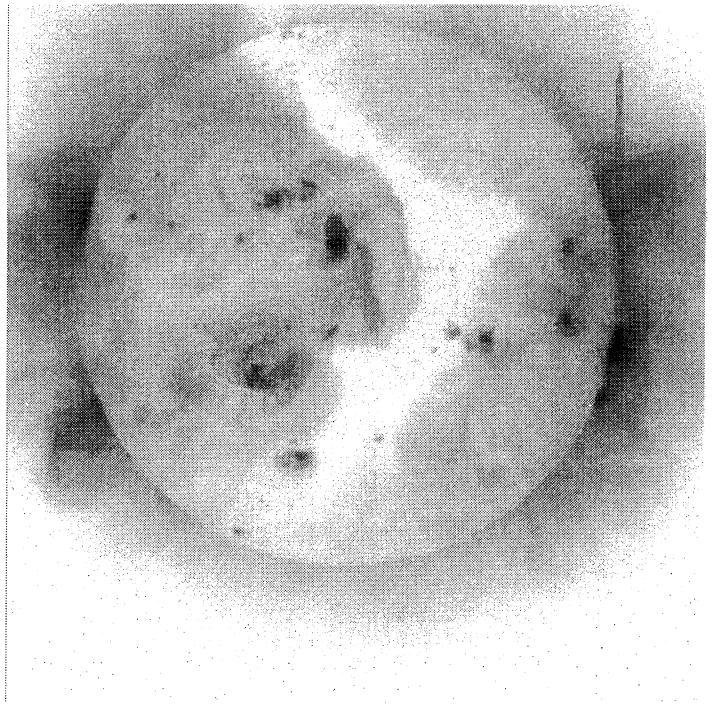
Day 5
11:57:31 UT



Day 7
11:59:01 UT



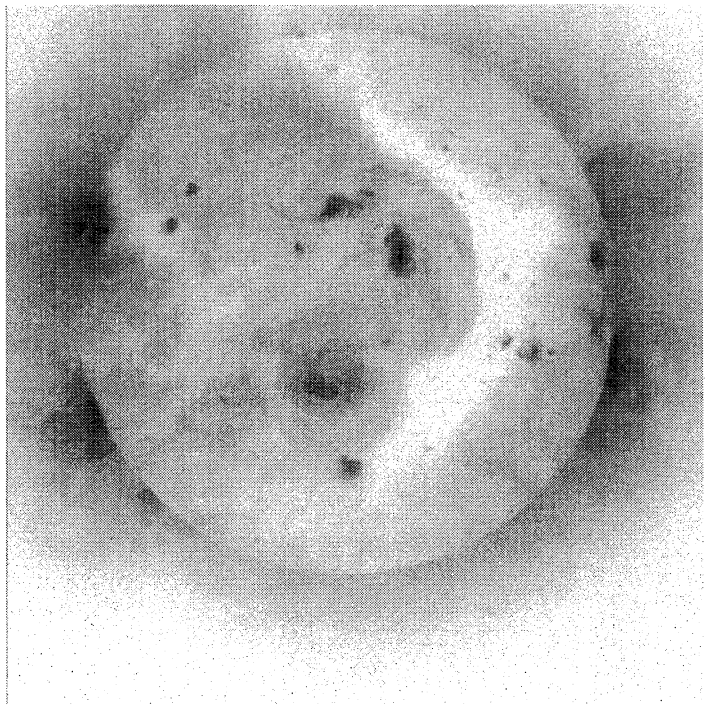
Day 6
11:36:51 UT



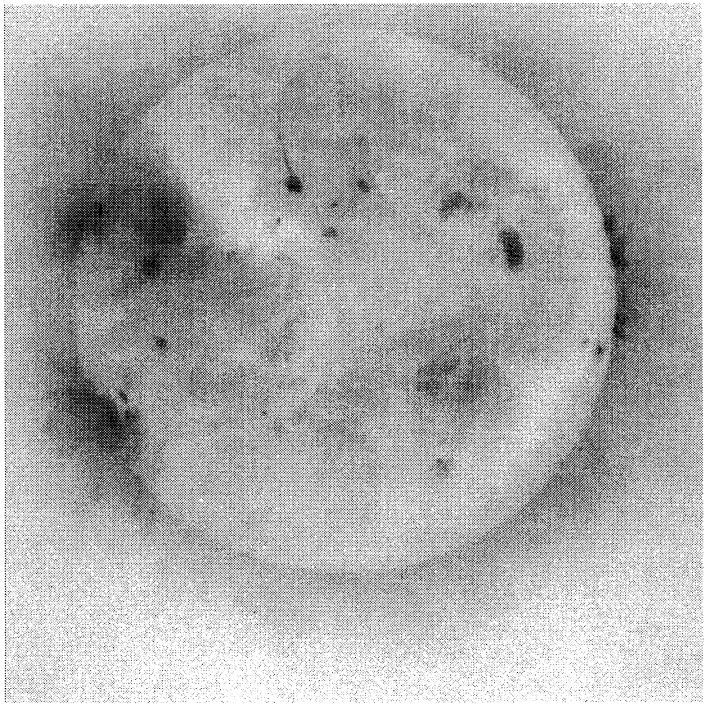
Day 8
11:59:37 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

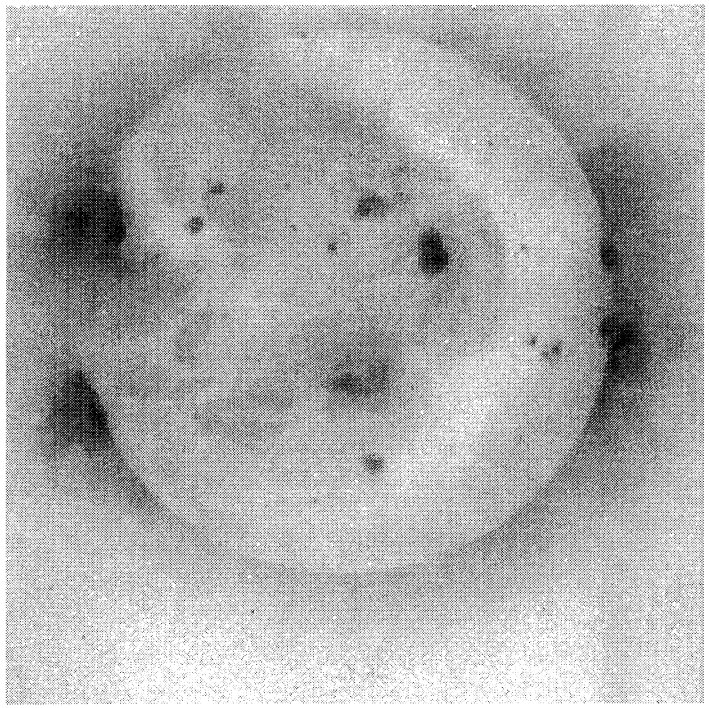
December 2000



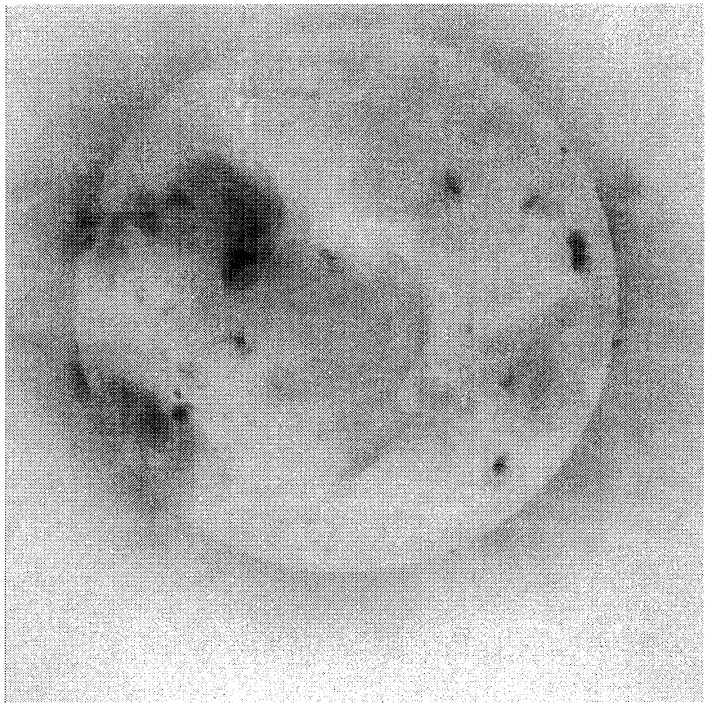
Day 9
12:00:30 UT



Day 11
11:56:28 UT



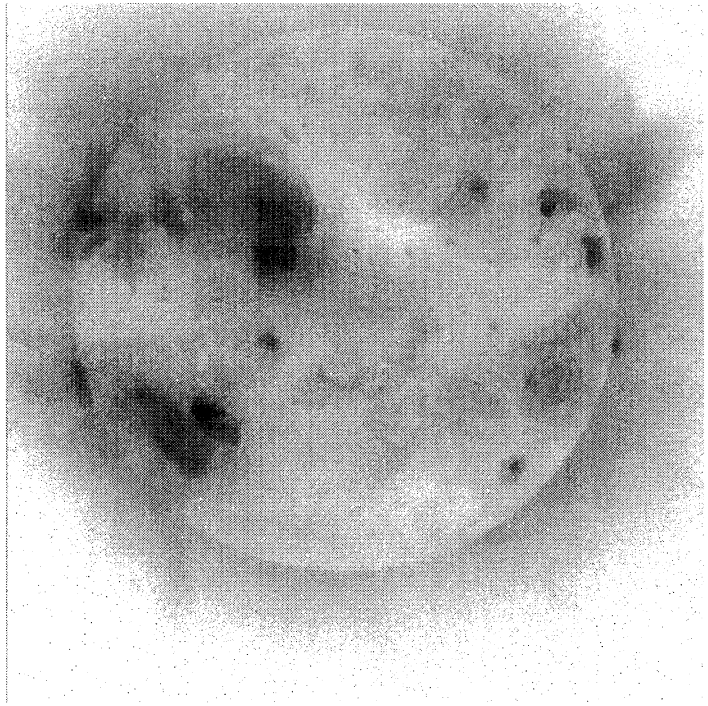
Day 10
00:53:38 UT



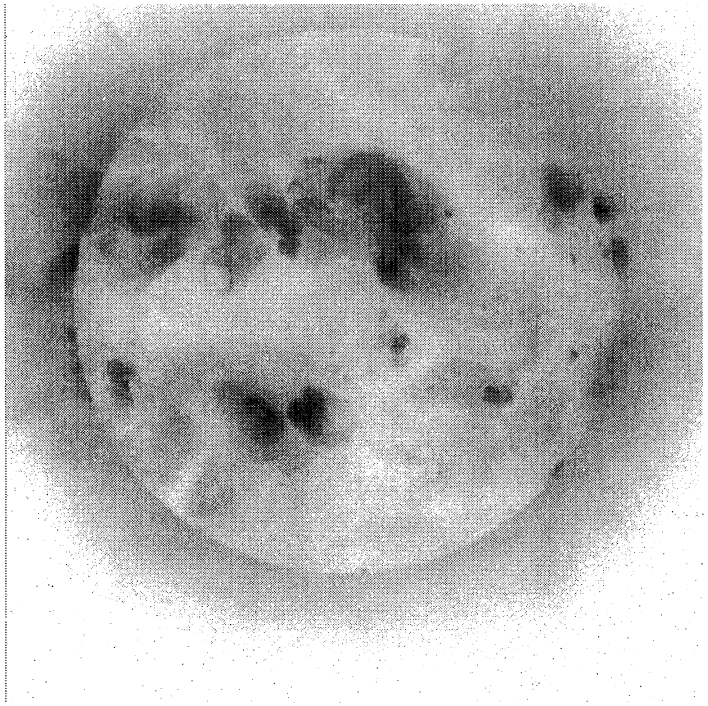
Day 12
23:25:52 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

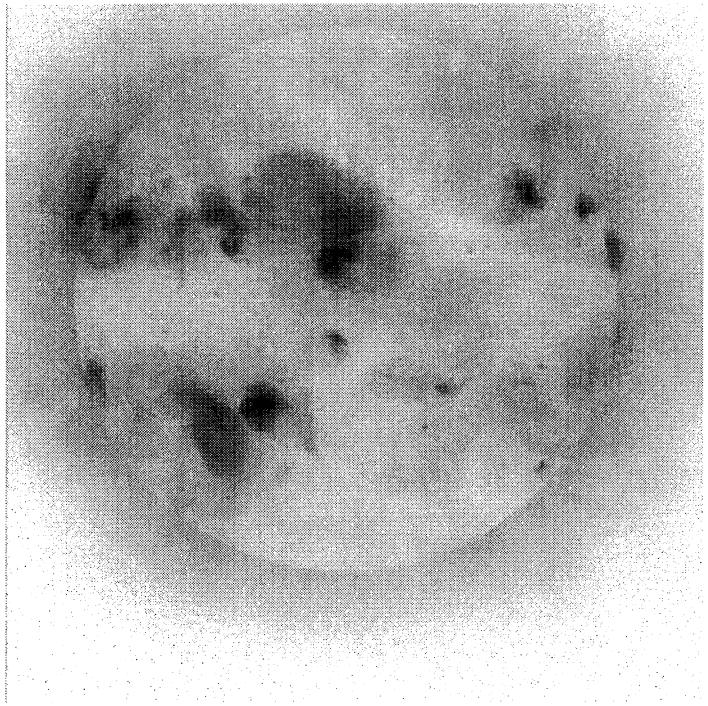
December 2000



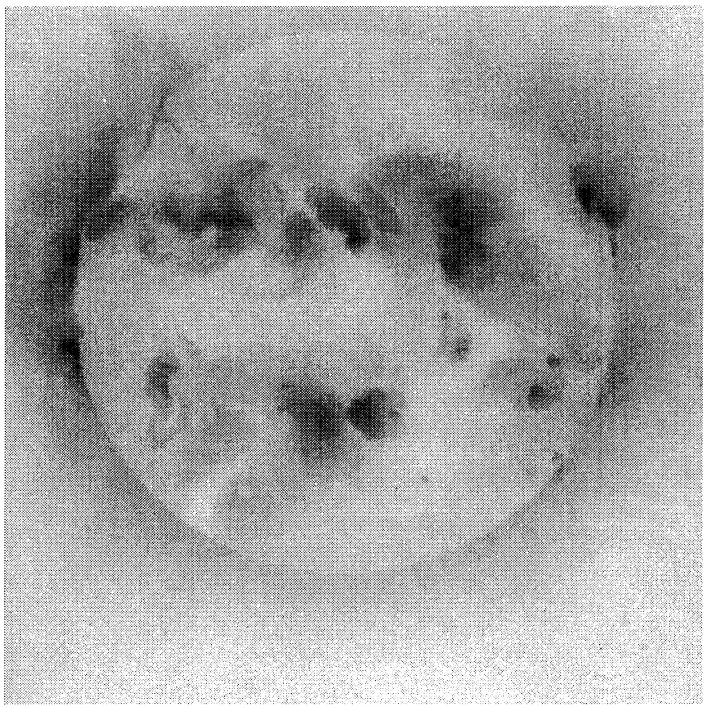
Day 13
11:45:48 UT



Day 15
11:02:11 UT



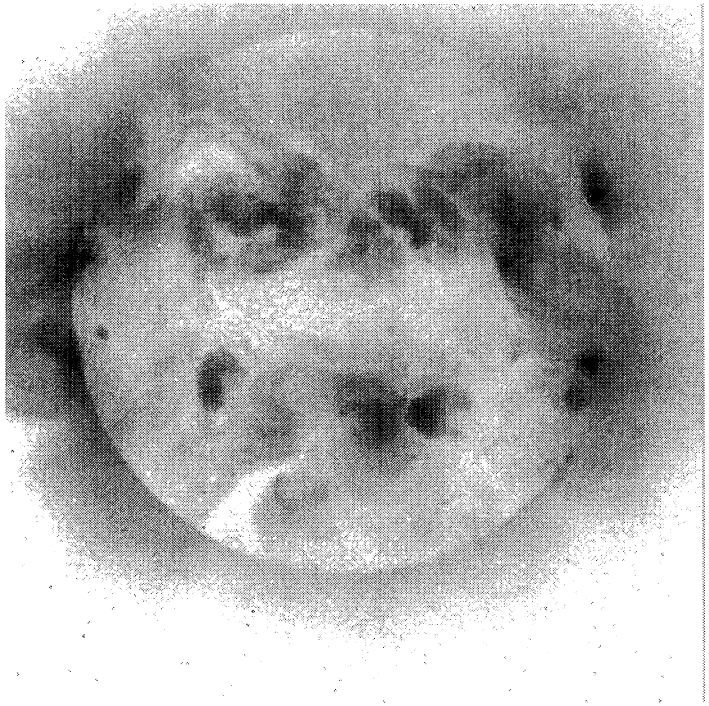
Day 14
12:23:24 UT



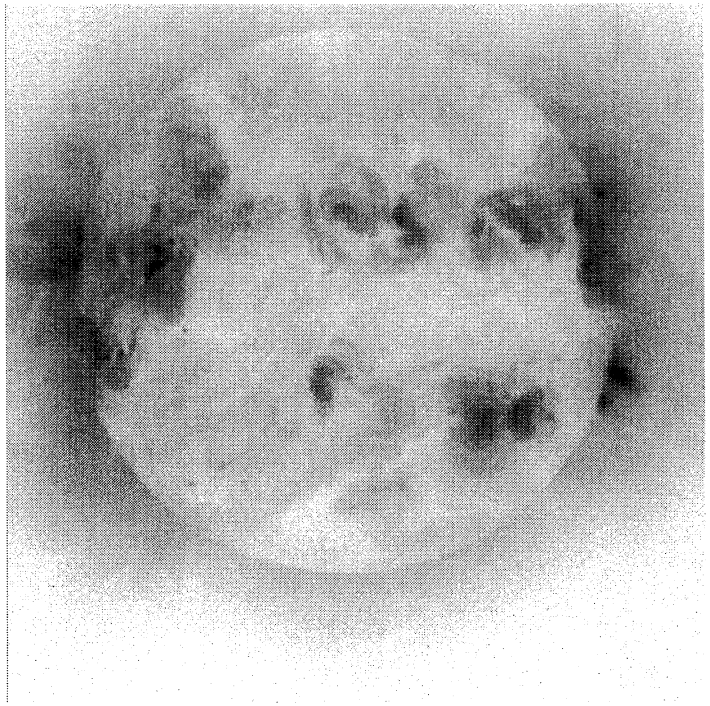
Day 16
11:58:27 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

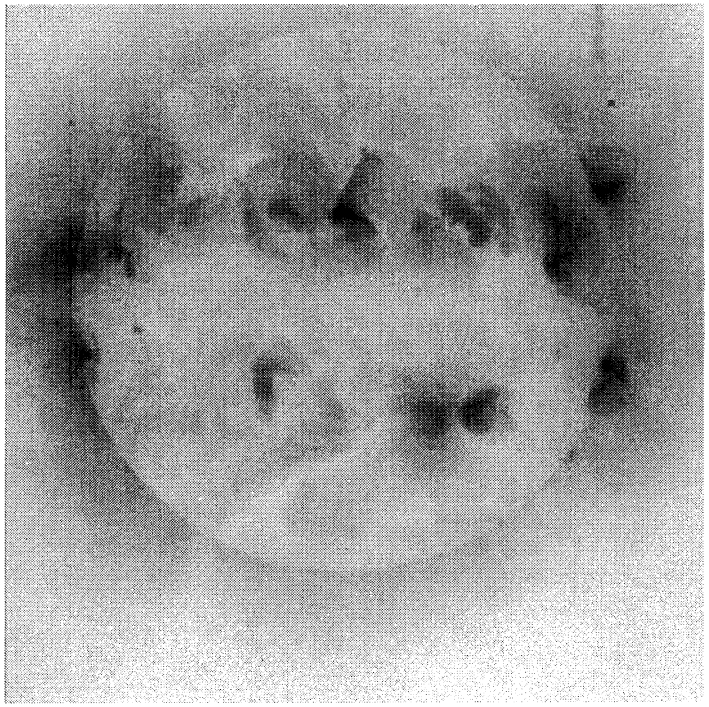
December 2000



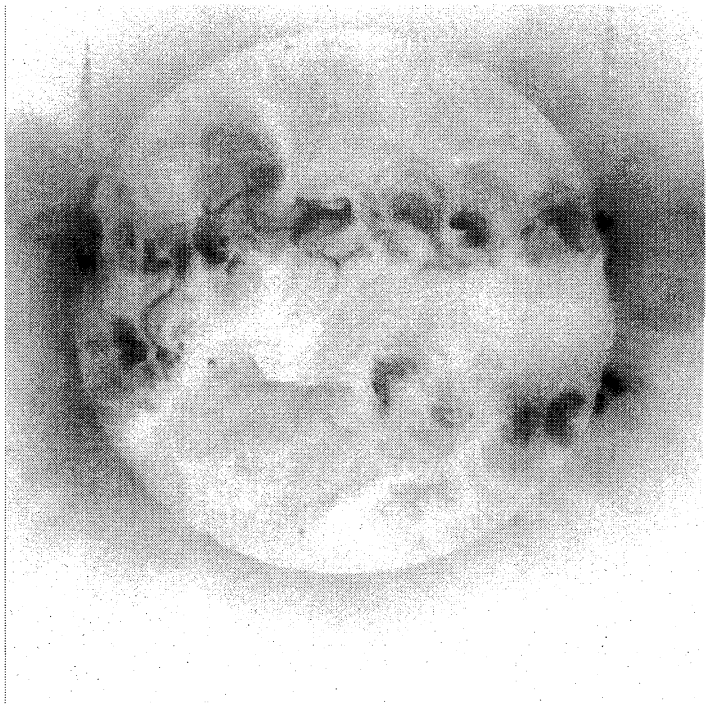
Day 17
12:43:45 UT



Day 19
11:11:09 UT



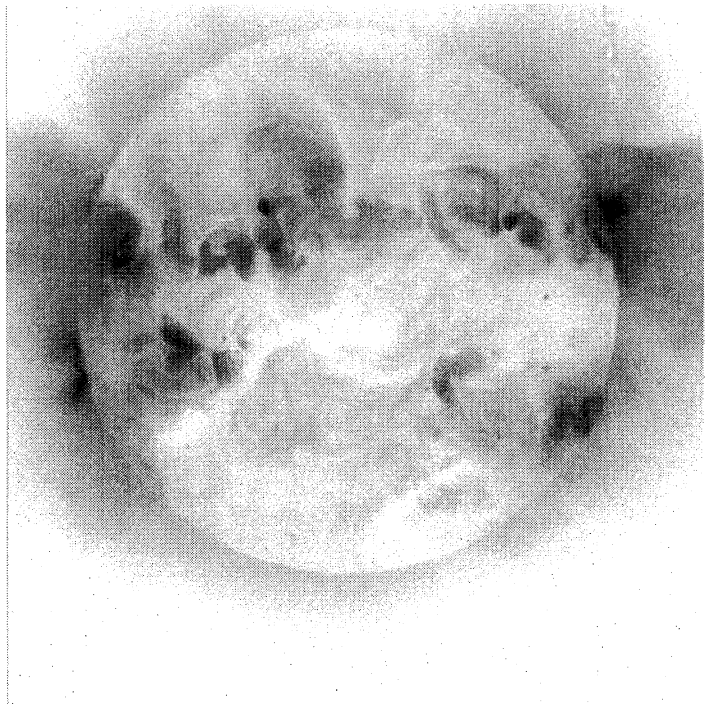
Day 18
12:06:21 UT



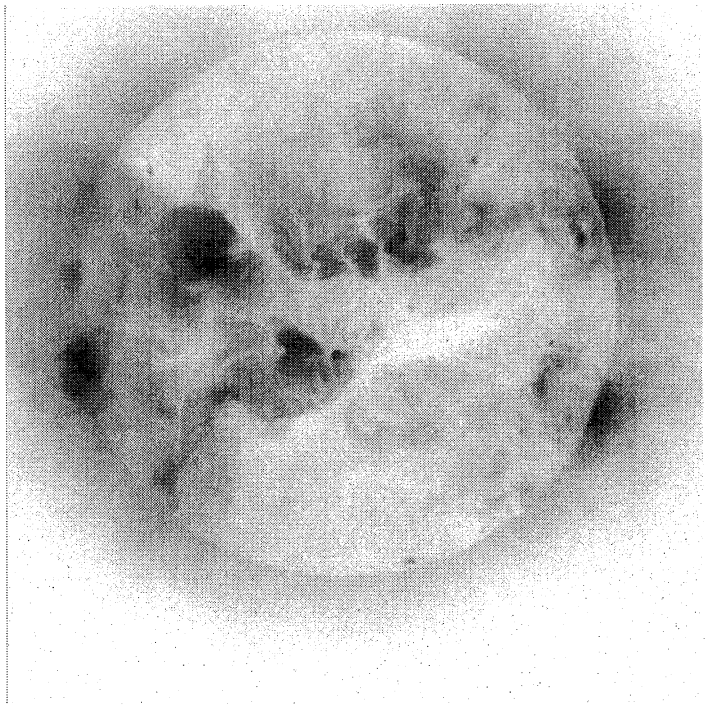
Day 20
12:05:10 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

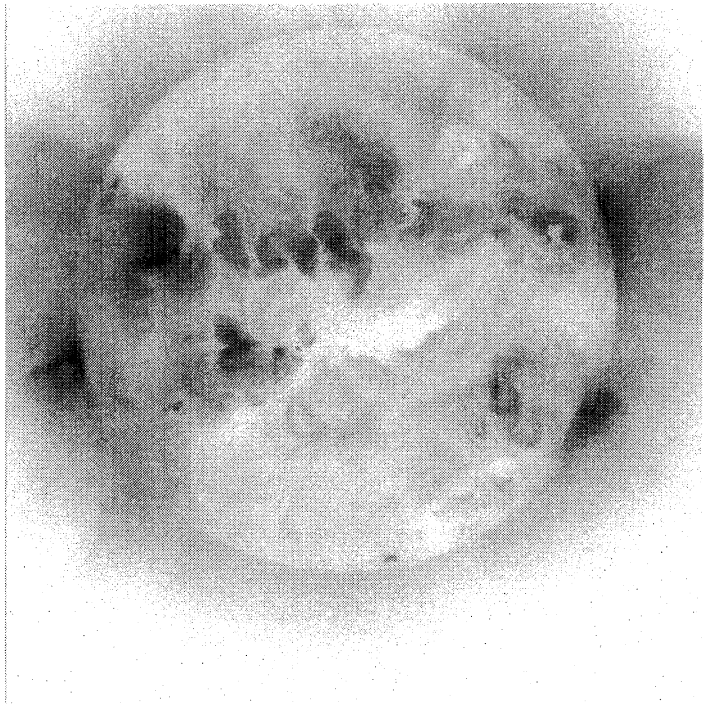
December 2000



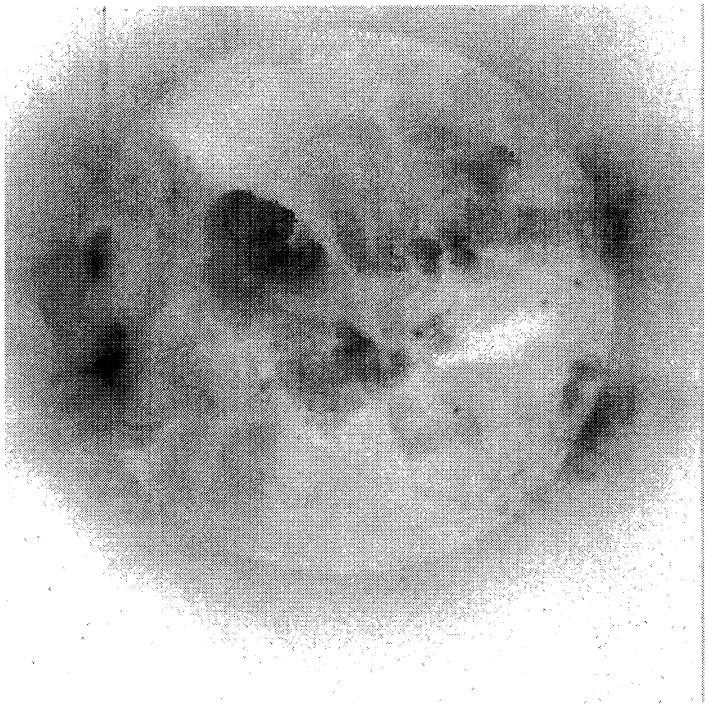
Day 21
12:50:42 UT



Day 23
12:15:50 UT



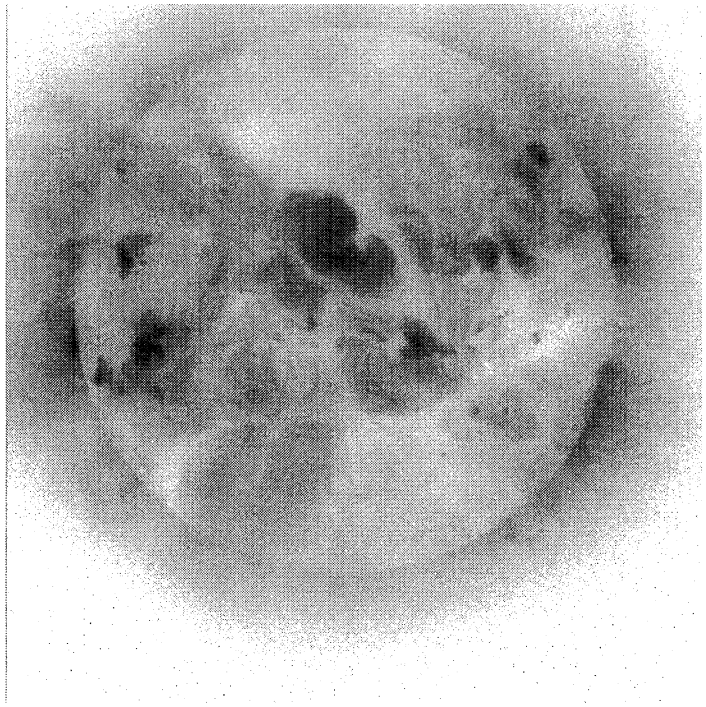
Day 22
12:53:54 UT



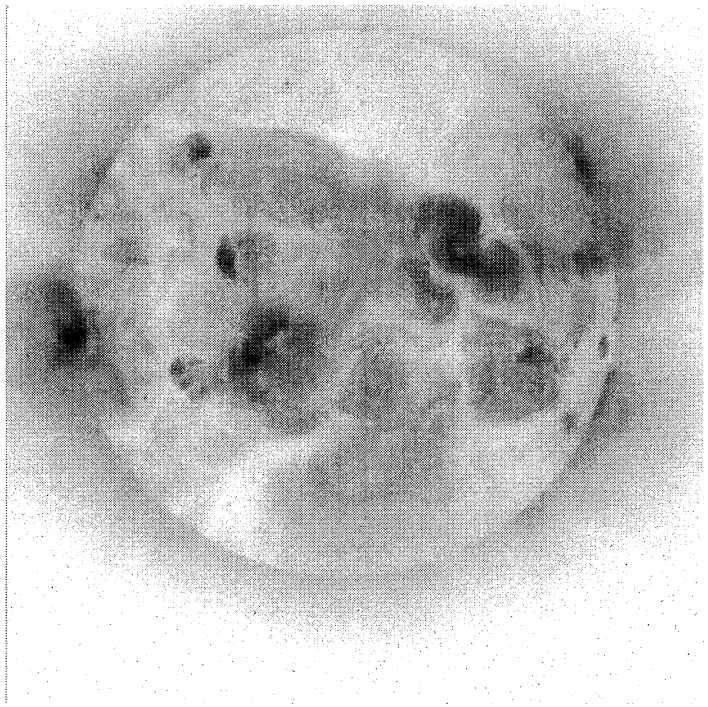
Day 24
11:31:28 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

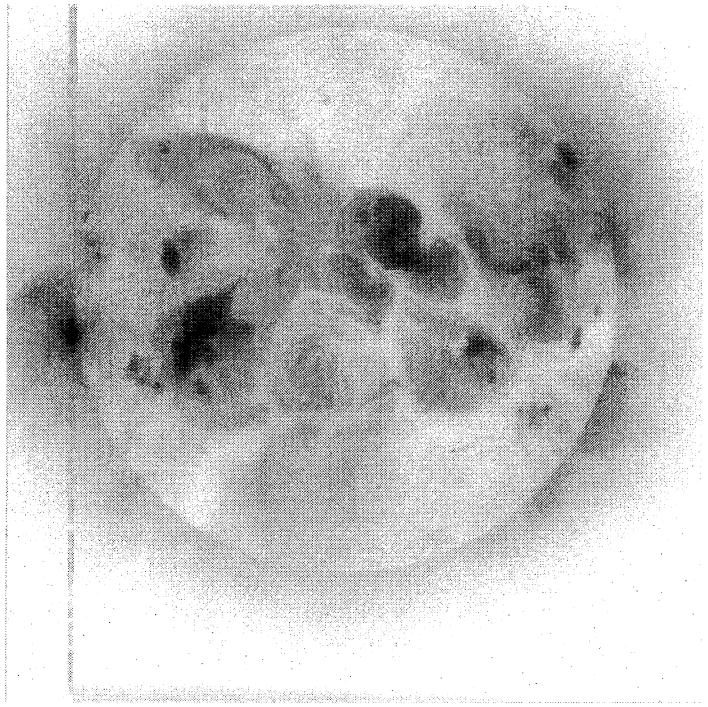
December 2000



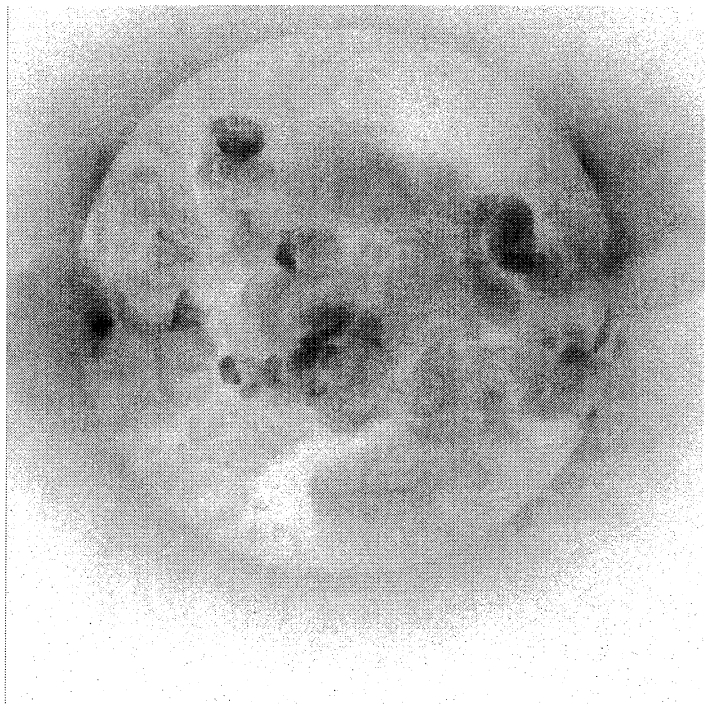
Day 25
11:36:40 UT



Day 27
12:31:49 UT



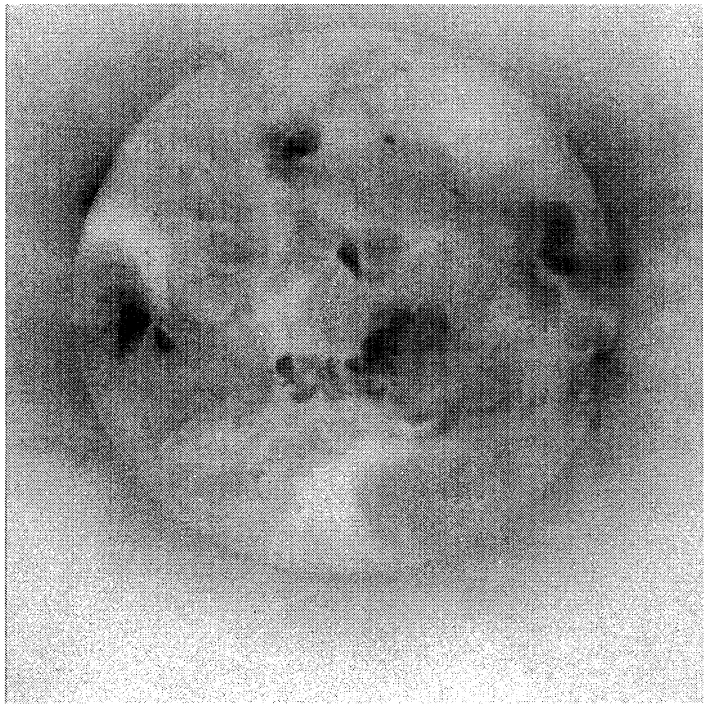
Day 26
11:42:05 UT



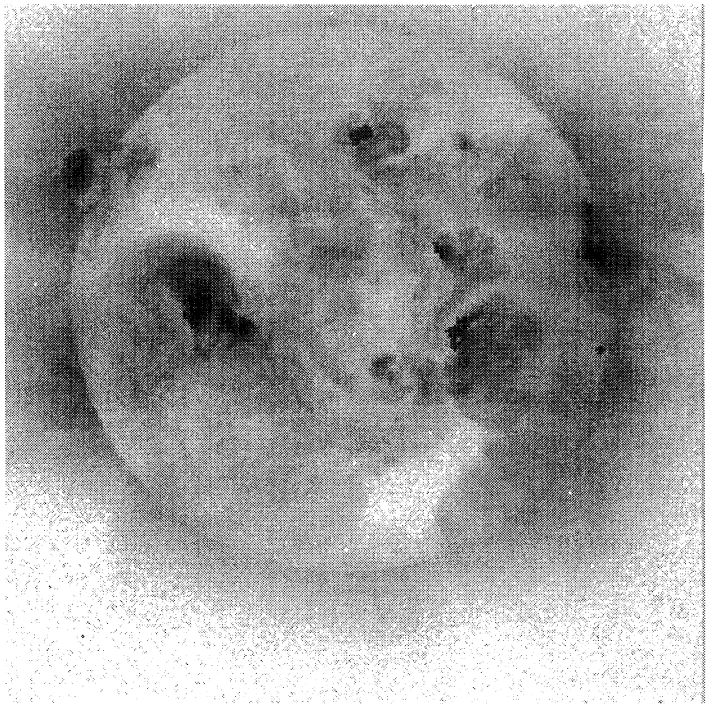
Day 28
11:47:05 UT

YOHKOH SOFT X-RAY TELESCOPE IMAGES

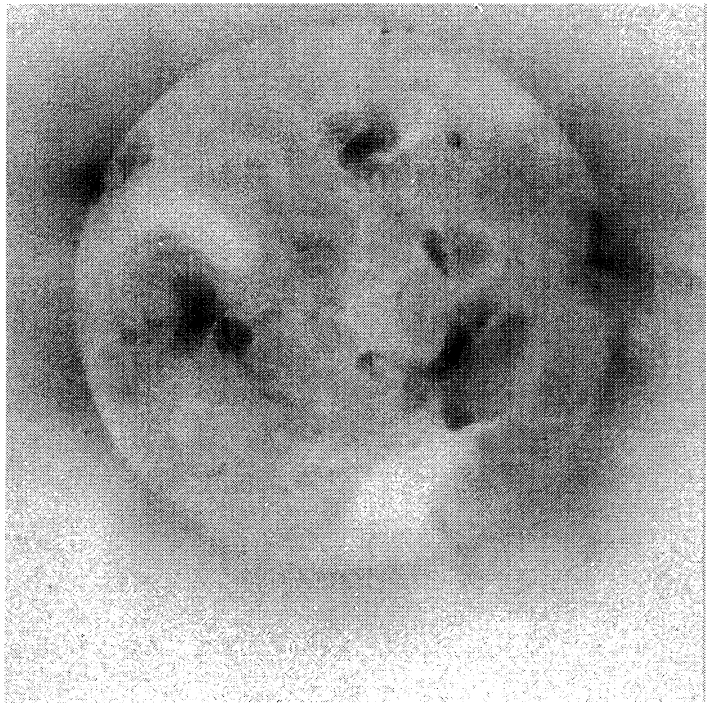
December 2000



Day 29
11:54:01 UT

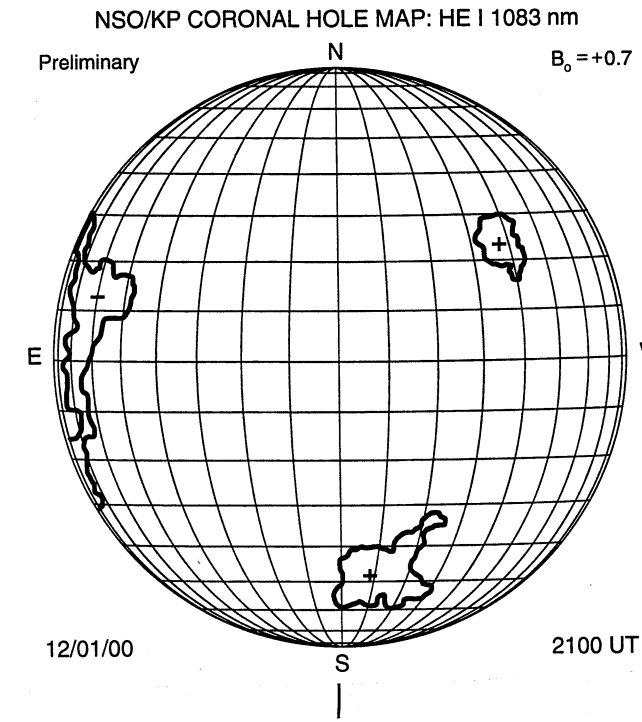


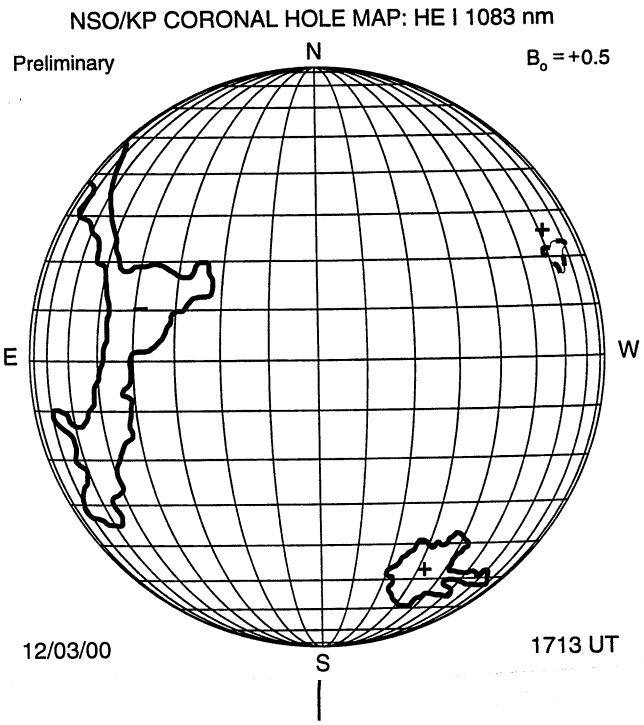
Day 31
02:19:26 UT

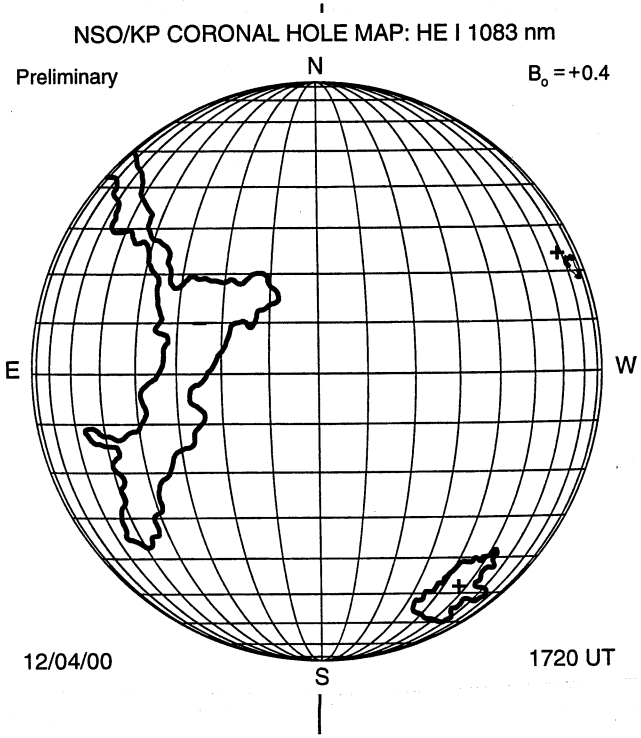


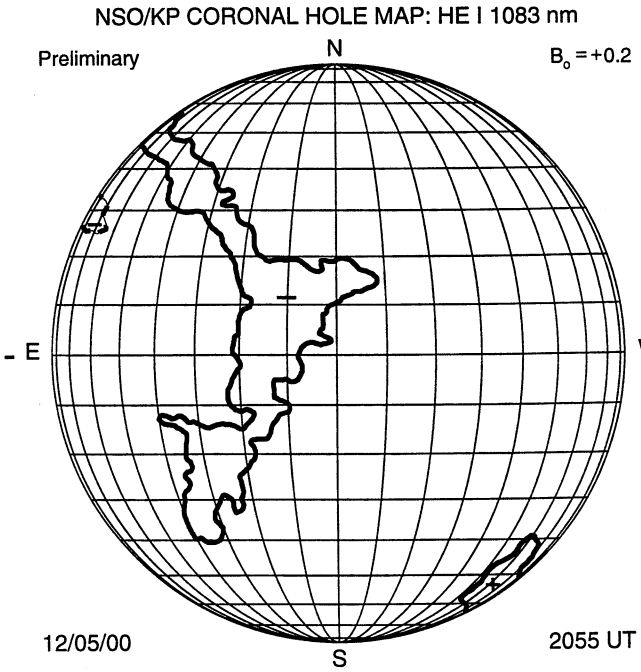
Day 30
19:40:31 UT

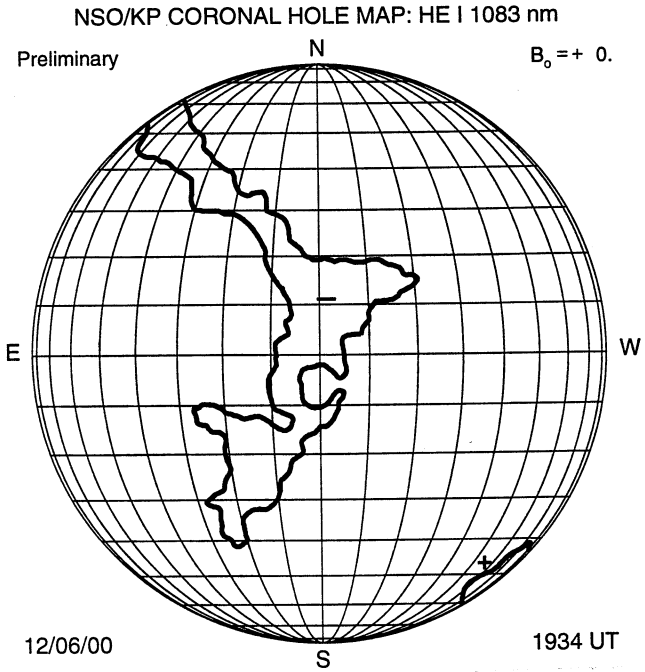
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2000

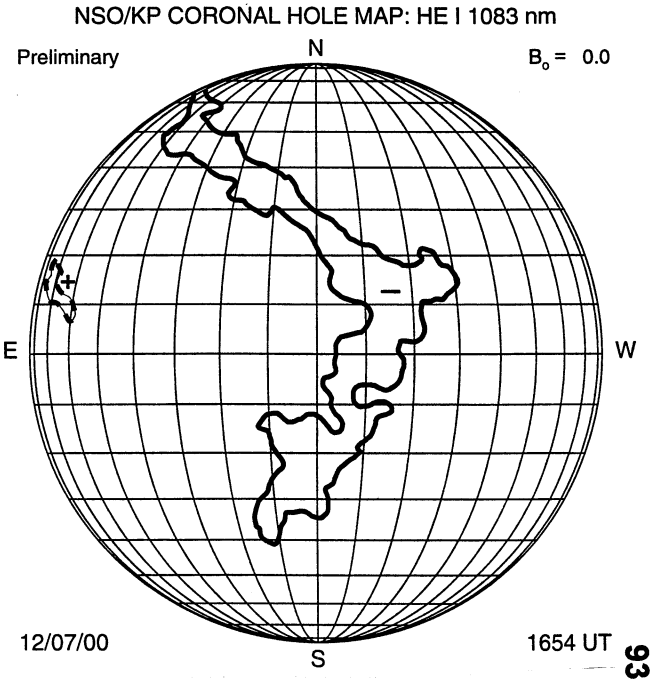




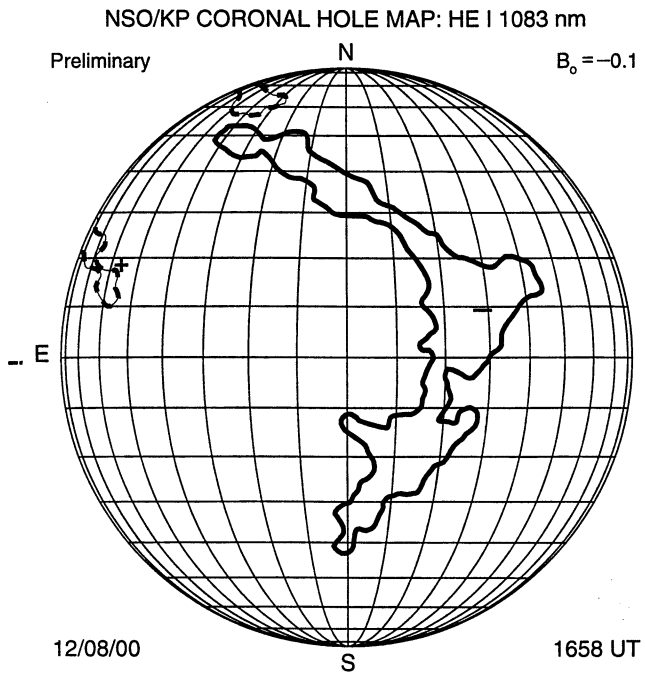


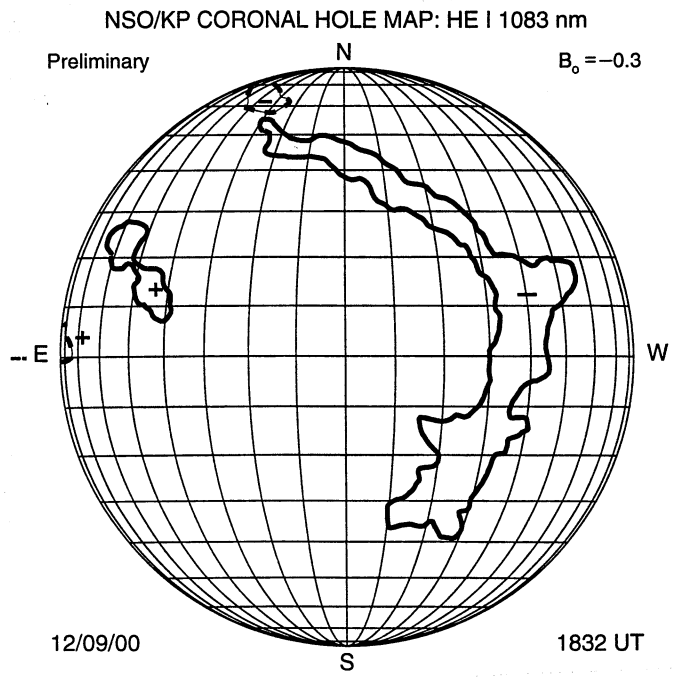


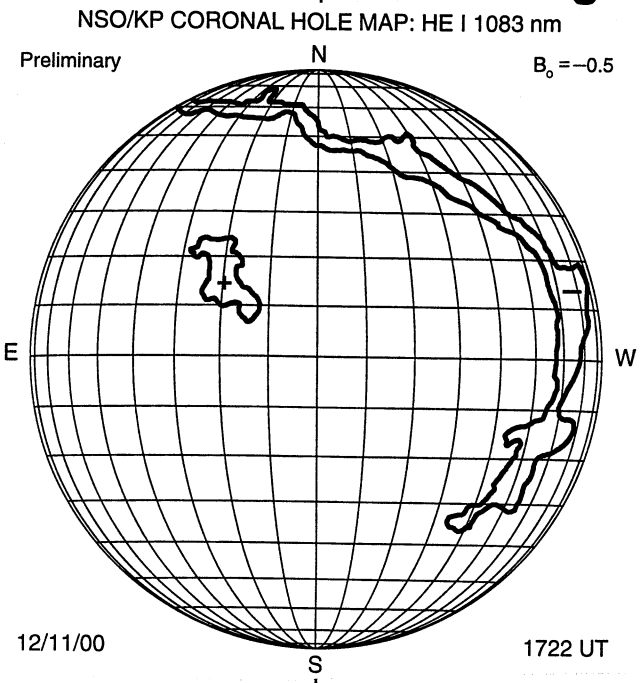


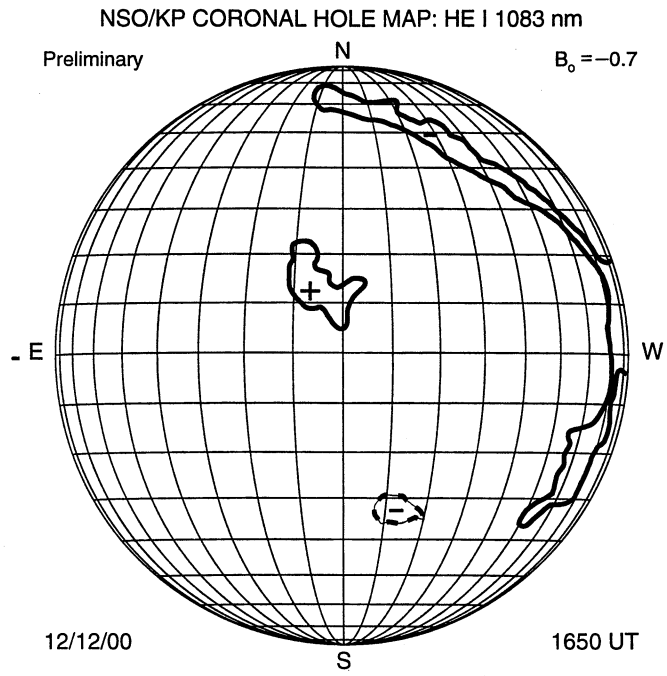


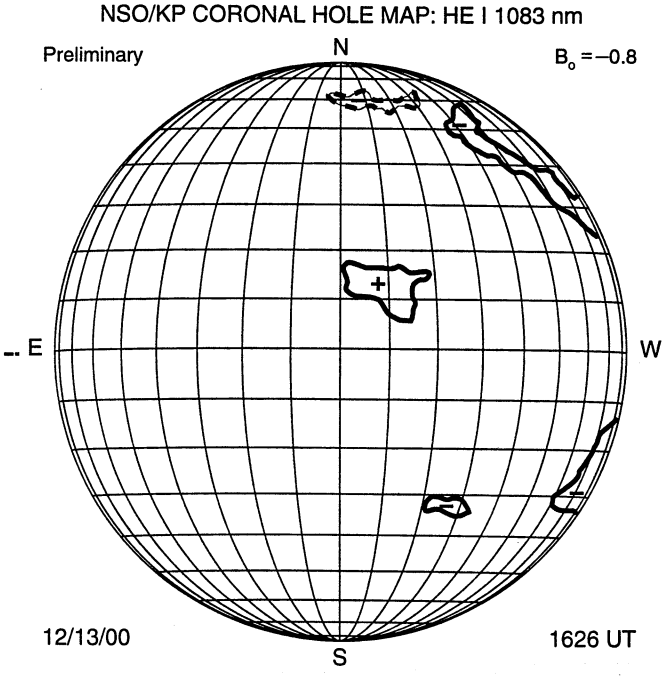
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2000

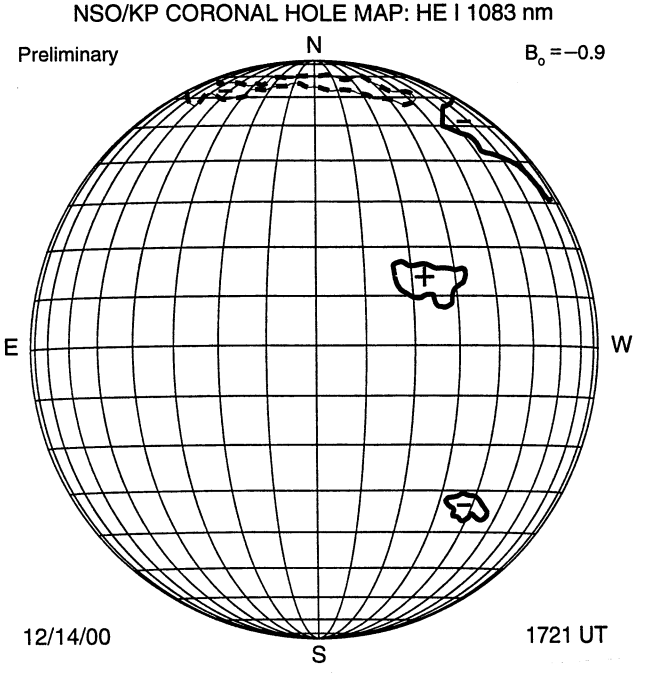




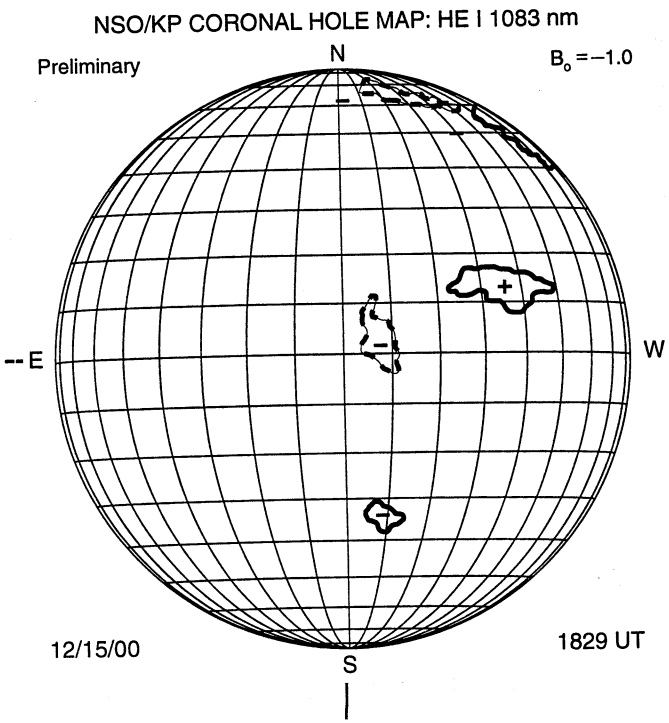


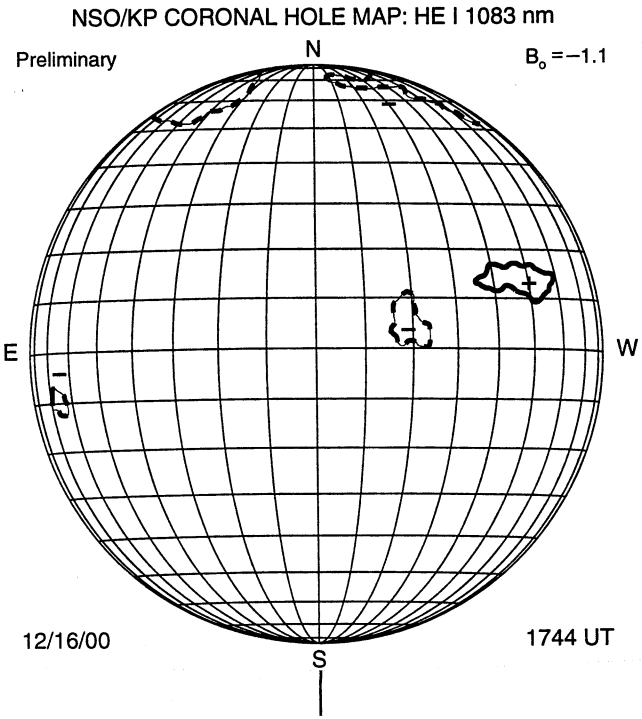


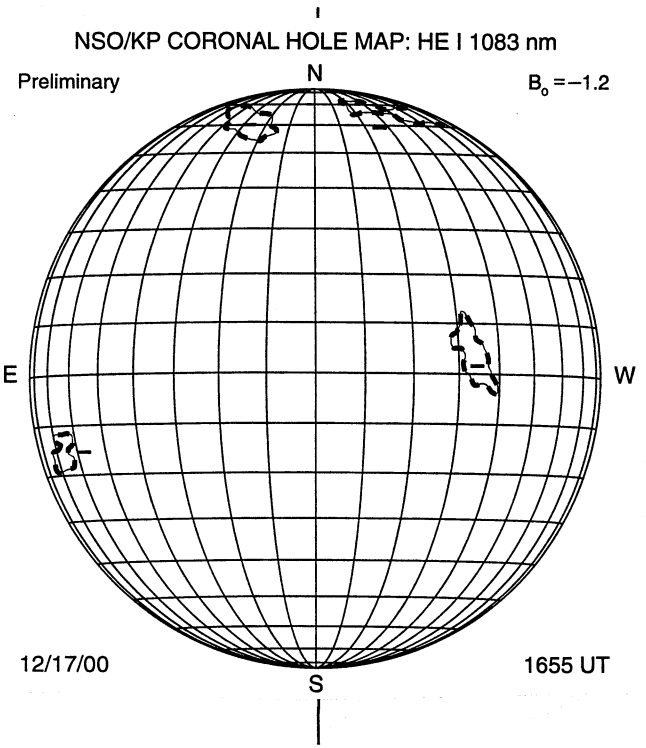


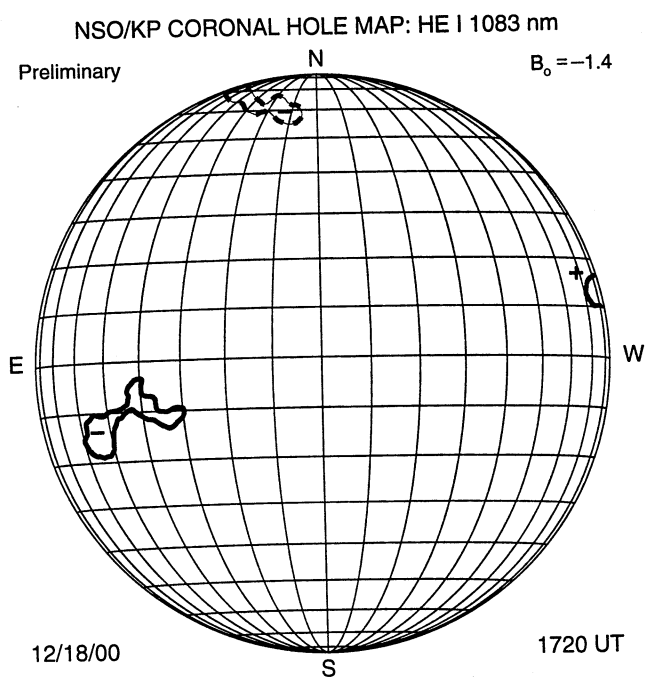


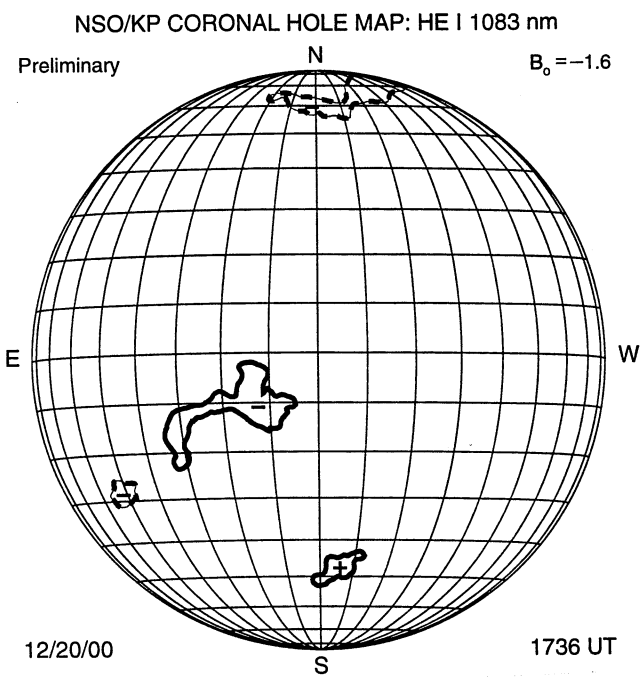
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2000

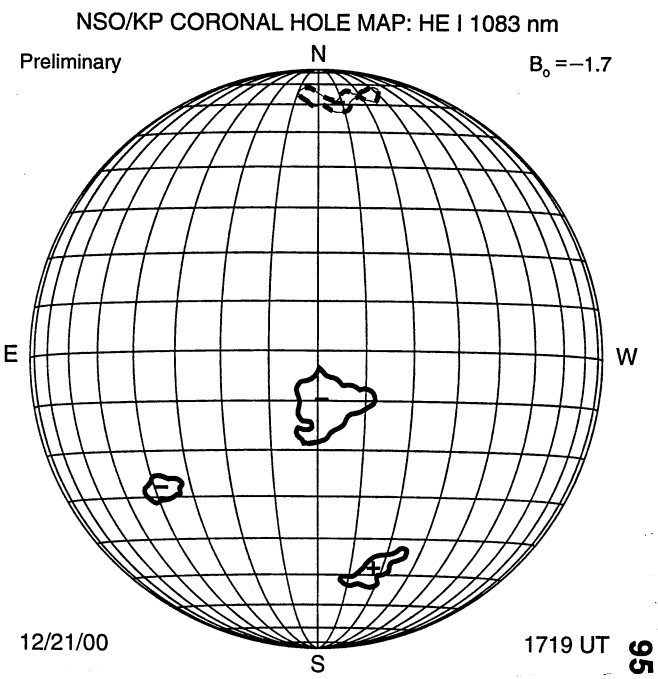






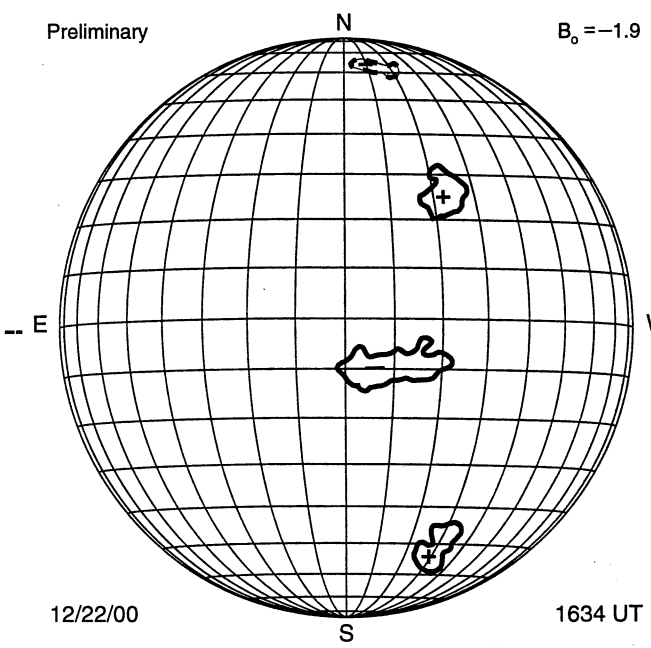




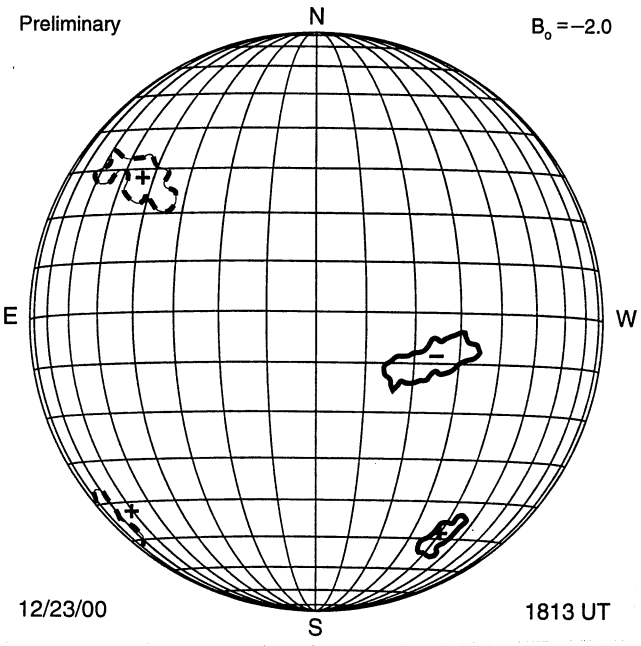


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2000

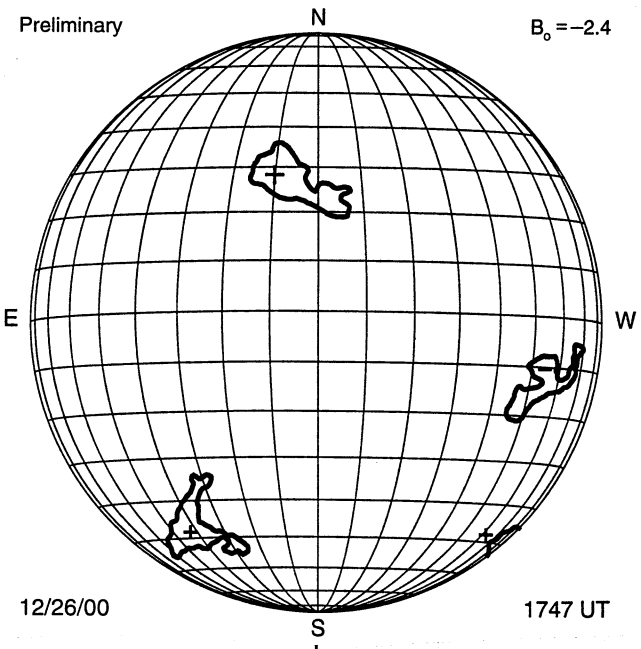
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



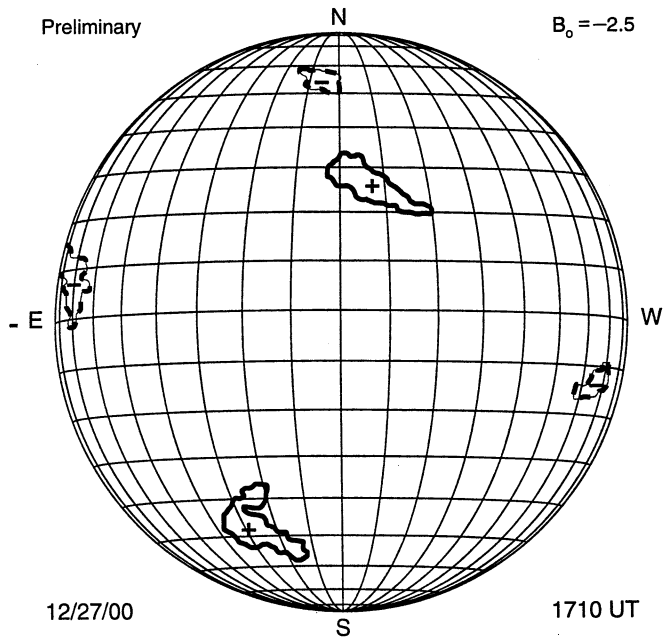
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



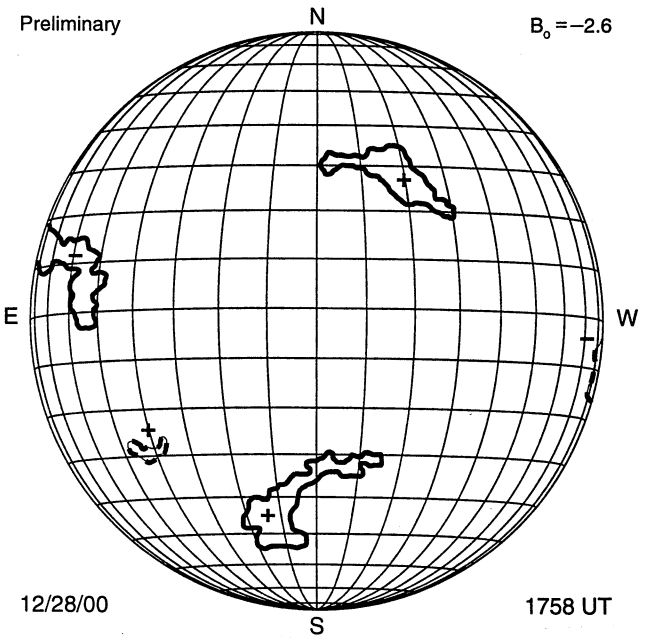
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



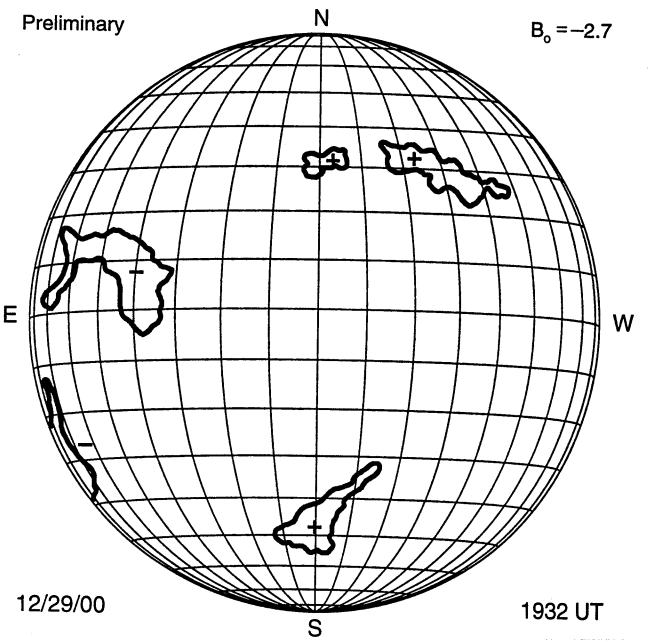
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



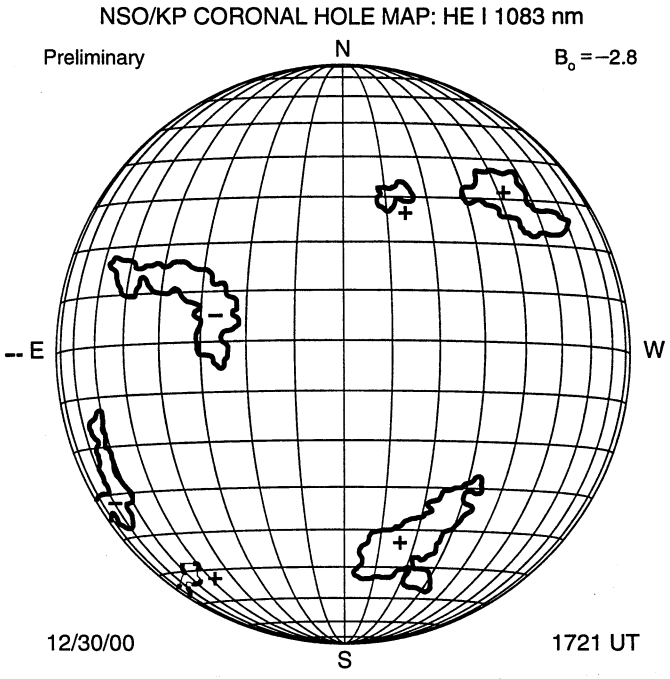
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



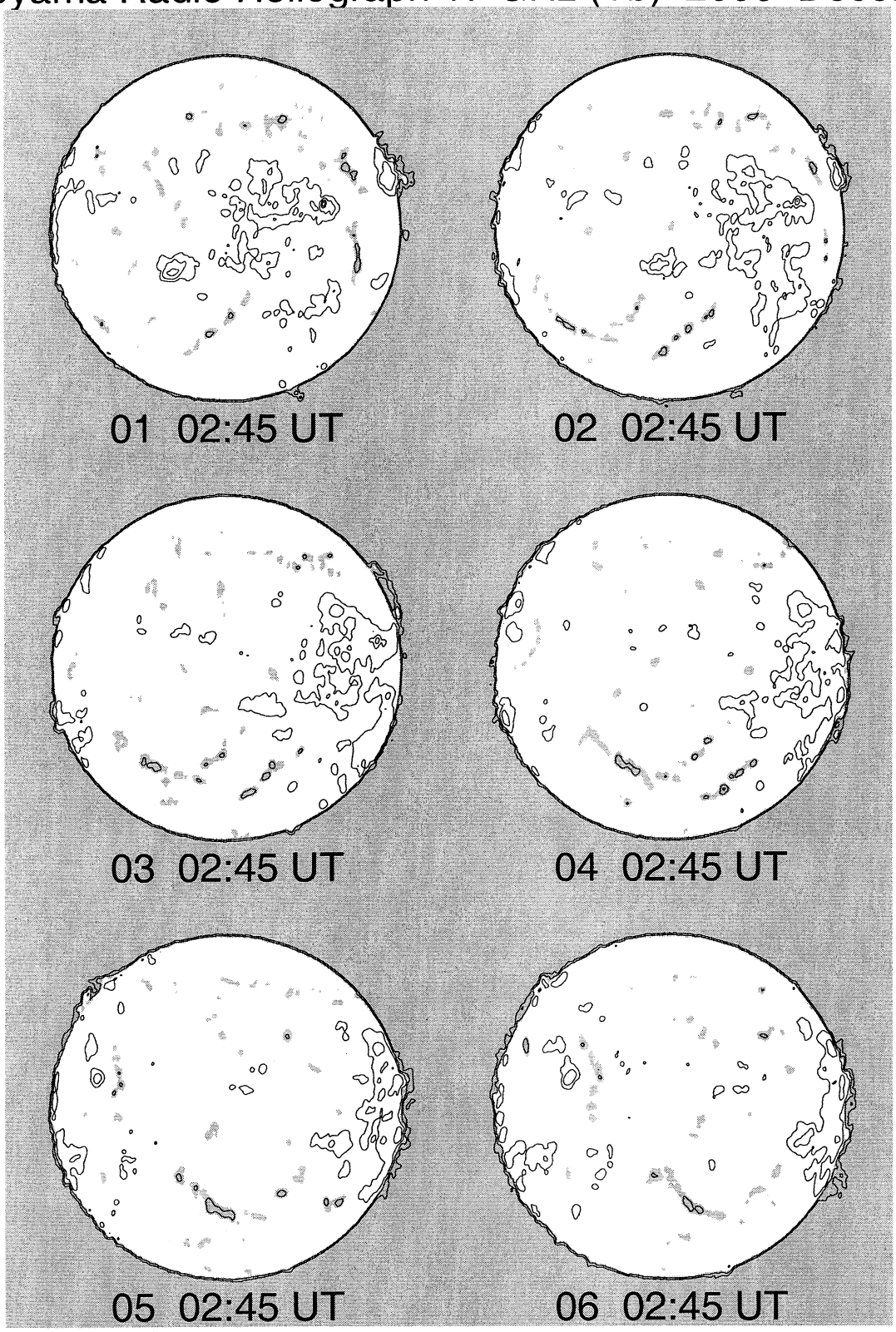
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2000

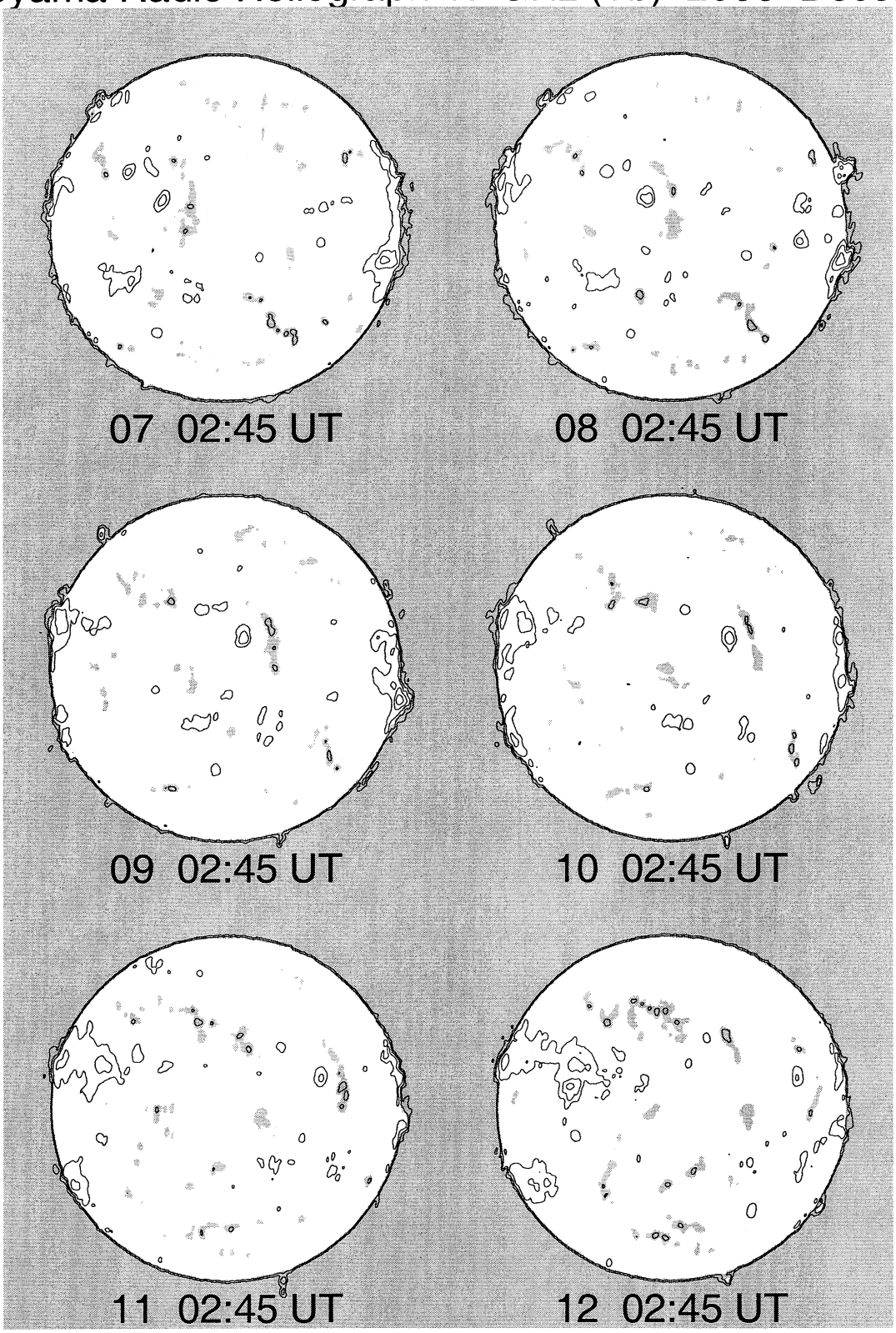


Nobeyama Radio Heliograph 17 GHz (Tb) 2000 December



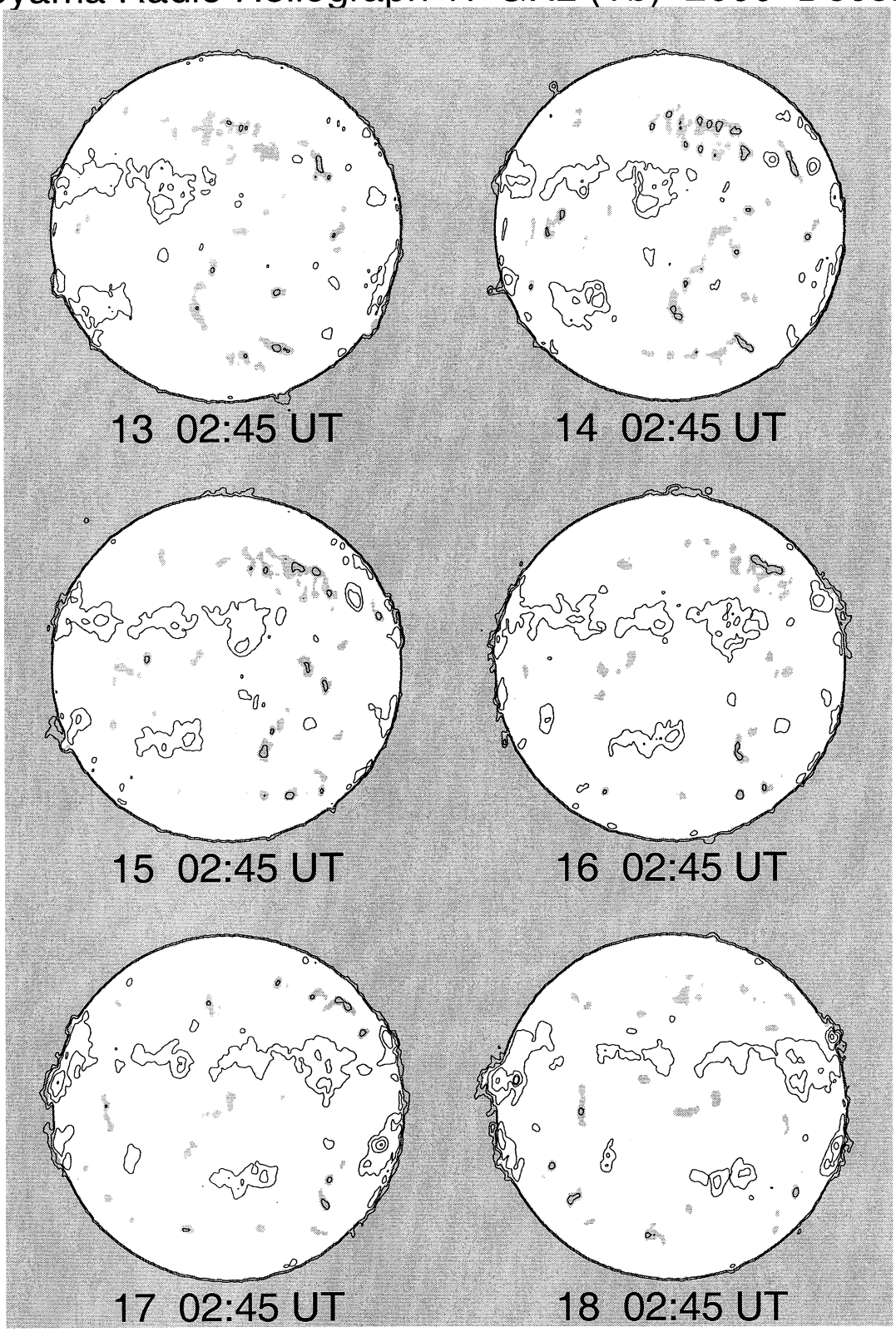
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2000 December



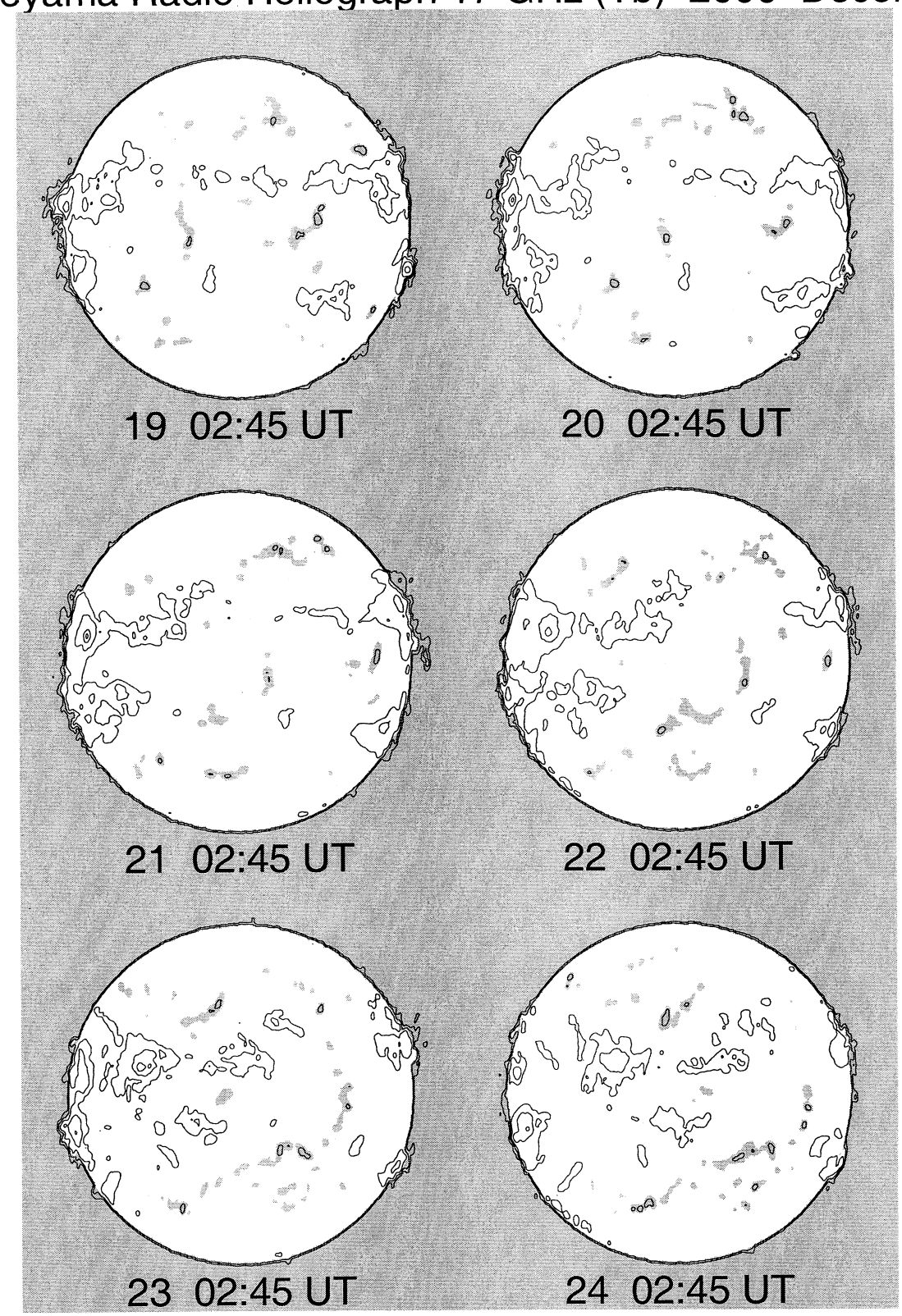
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2000 December



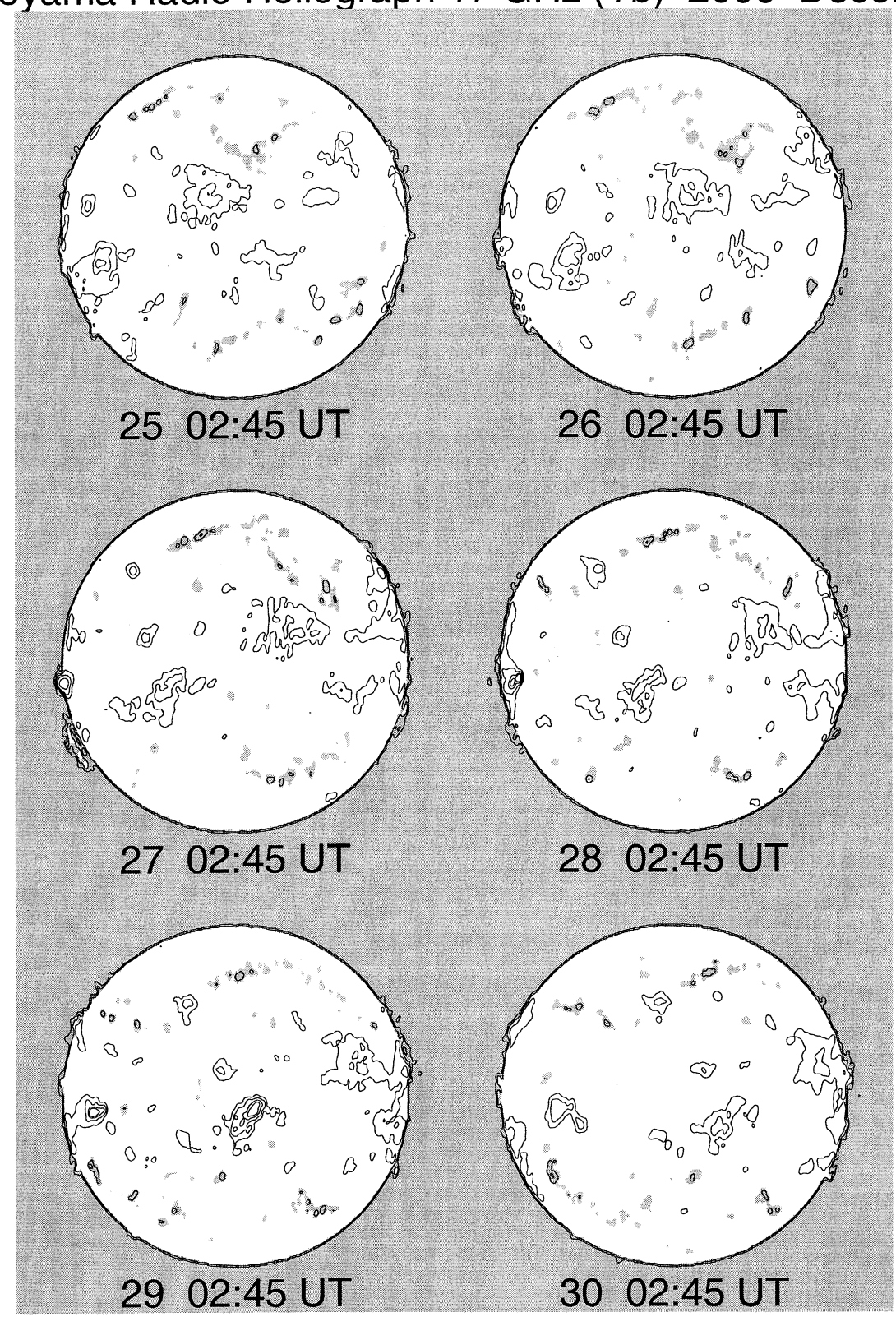
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2000 December



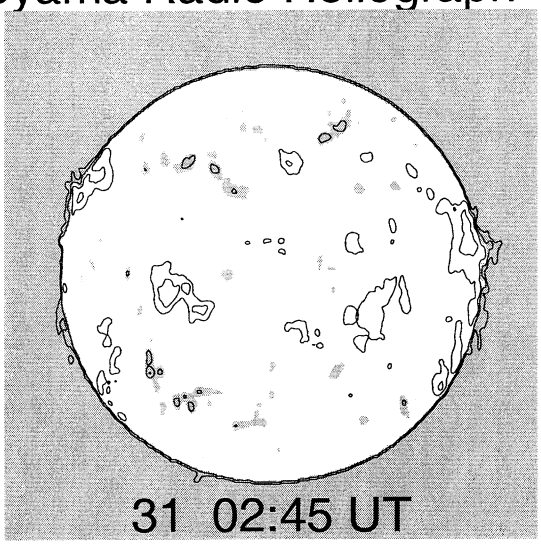
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2000 December



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

Nobeyama Radio Heliograph 17 GHz (Tb) 2000 December



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

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

DECEMBER 2000

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
9243C	30189	MWIL	11	29	1530	S03	E23	12	1.4	4	(AP)					
9243C		HOLL	11	29	1545	S01	E23	12	1.4		A	AXX	10	1	1	3
9243C		RAMY	12	02	1210	S02	W18	12	1.2		B	BXO	10	7	3	3
9243C		VORO	12	02	2337	S02	W21	12	1.4			AXX	26	2		3
9243C		LEAR	12	03	0151	S01	W24	12	1.3		B	DSO	10	4	4	2
9243C		RAMY	12	03	1215	S02	W30	12	1.3		B	CAO	20	4	4	3
9243C	30193	MWIL	12	03	1545	S02	W30	12	1.4	4	(AP)					
9243A		TACH	11	30	0544	S19	E15	12	1.4			AXX	3	1	1	3
9243A		SVTO	11	30	1108	S21	E11	12	1.3		A	AXX		1		3
9243A		RAMY	12	02	1210	S22	W14	12	1.4		B	BXO		4	3	3
9243A		LEAR	12	03	0151	S21	W21	12	1.5		B	DSO	20	4	3	2
9243A		RAMY	12	03	1215	S22	W28	12	1.3		B	CSO	40	6	5	3
9243A	30196	MWIL	12	03	1545	S22	W29	12	1.4	4	(B)					
9247		TACH	11	29	0517	N12	E30	12	1.5			AXX	5	1	1	3
9247		SVTO	11	29	0753	N12	E28	12	1.4		A	AXX		1		2
9247		RAMY	11	29	1230	N13	E26	12	1.5		A	AXX	10	1		4
9247	30190	MWIL	11	29	1530	N12	E25	12	1.5	4	(AF)					
9247		HOLL	11	29	1545	N13	E25	12	1.5		A	AXX	10	1	1	3
9247		RAMY	12	02	1210	N14	W14	12	1.4		A	AXX		1		3
9246		KAND	11	28	0755	S12	E54	12	2.4			AX		2	2	3
9246		SVTO	11	28	0805	S12	E53	12	2.3		A	HSX	10	1	1	3
9246		RAMY	11	28	1238	S12	E54	12	2.6		B	BXO	50	6	6	4
9246	30185	MWIL	11	28	1530	S12	E51	12	2.5	4	(BG)					
9246		VORO	11	28	2325	S12	E46	12	2.4			CRI	138	5	7	2
9246		LEAR	11	29	0148	S13	E45	12	2.5		B	DSO	90	9	8	3
9246		TACH	11	29	0517	S11	E42	12	2.4			BRI	37	7	9	3
9246		SVTO	11	29	0753	S11	E42	12	2.5		B	DAO	100	11	8	2
9246		RAMY	11	29	1230	S11	E39	12	2.4		B	DSC	130	17	10	4
9246	30185	MWIL	11	29	1530	S12	E37	12	2.4	5	(D)					
9246		HOLL	11	29	1545	S12	E36	12	2.4		B	DSO	130	21	10	3
9246		VORO	11	30	0020	S12	E32	12	2.4			DAI	367	24	8	3
9246		TACH	11	30	0544	S11	E28	12	2.3			DAI	342	18	12	3
9246		SVTO	11	30	1108	S12	E25	12	2.3		B	EAI	180	19	11	3
9246		RAMY	11	30	1530	S11	E25	12	2.5		B	EAI	170	25	11	2
9246	30185	MWIL	11	30	1545	S11	E23	12	2.4	5	BG					
9246		HOLL	11	30	1550	S12	E23	12	2.4		B	EAI	280	29	12	3
9246		VORO	11	30	2327	S11	E19	12	2.4			EAI	585	16	10	2
9246		LEAR	12	01	0035	S12	E16	12	2.2		BG	ESO	150	13	12	2
9246		TACH	12	01	0558	S11	E15	12	2.4			DAI	238	21	10	3
9246		SVTO	12	01	0725	S12	E13	12	2.3		B	EAC	230	28	13	2
9246		HOLL	12	01	1530	S11	E09	12	2.3		BG	EAI	200	30	11	3
9246		LEAR	12	02	0110	S12	E03	12	2.3		BG	ESO	80	14	11	3
9246		KAND	12	02	0720	S11	E00	12	2.3			ESI		19	12	2
9246		SVTO	12	02	0725	S12	E01	12	2.4		B	EAI	220	19	13	3
9246		RAMY	12	02	1210	S12	W02	12	2.3		B	ESI	160	23	12	3
9246	30185	MWIL	12	02	1545	S12	W05	12	2.3	5	(B)					
9246		VORO	12	02	2337	S11	W09	12	2.3			DAI	322	9	8	3
9246		LEAR	12	03	0151	S11	W09	12	2.4		B	ESO	160	17	13	2
9246		RAMY	12	03	1215	S12	W15	12	2.4		B	EAO	110	17	12	3
9246	30185	MWIL	12	03	1545	S12	W18	12	2.3	5	(BG)					
9246		VORO	12	03	2324	S11	W26	12	2.0			HAX	168	3		2
9246		LEAR	12	04	0118	S12	W22	12	2.4		B	ESO	90	16	13	4
9246		RAMY	12	04	1550	S12	W30	12	2.4		B	DSO	70	8	13	1
9246	30185	MWIL	12	04	1730	S12	W34	12	2.2	5	(BP)					
9246		HOLL	12	04	1835	S12	W37	12	2.0		B	CSO	100	5	2	2
9246		VORO	12	05	0004	S11	W41	12	1.9			HAX	138	3		2
9246		LEAR	12	05	0030	S12	W37	12	2.2		A	HSX	100	3	2	3
9246		KAND	12	05	0940	S13	W45	12	2.0			CAO		5	7	2
9246		RAMY	12	05	1230	S12	W44	12	2.2		B	CSO	100	16	9	3
9246		HOLL	12	05	1542	S14	W47	12	2.1		B	CSO	110	9	7	3
9246	30185	MWIL	12	05	1545	S12	W47	12	2.1	5	(BG)					
9246		VORO	12	05	2312	S12	W54	12	1.9			HAX	137	1		1
9246		LEAR	12	06	0024	S12	W52	12	2.1		B	DAO	50	7	9	4
9246		TACH	12	06	0739	S09	W57	12	2.0			CAI	122	5	1	2
9246		SVTO	12	06	0844	S10	W54	12	2.3		B	EAO	80	10	12	2
9246		RAMY	12	06	1215	S11	W56	12	2.3		B	EAO	140	11	13	3

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

DECEMBER 2000

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9246	30185	MWIL	12	06	1615	S11	W60	12	2.2	5	BP					
9246		HOLL	12	06	1650	S12	W57	12	2.4		B	CAO	160	10	13	3
9246		LEAR	12	07	0143	S11	W63	12	2.3		B	CAO	240	10	11	3
9246		VORO	12	07	0421	S12	W70	12	1.9			HAX	223	1		1
9246		SVTO	12	07	0805	S10	W69	12	2.1		B	EAO	290	5	12	2
9246		KAND	12	07	1045	S12	W73	12	1.9			DAC		4	8	3
9246		RAMY	12	07	1225	S10	W70	12	2.2		B	EAO	240	8	14	3
9246		HOLL	12	07	1945	S12	W78	12	1.9		B	EAO	240	5	15	2
9246	30185	MWIL	12	07	2200	S10	W80	12	1.9	3	(BP)					
9246		RAMY	12	08	1237	S11	W88	12	1.9		A	AXX	10	1	1	3
9246A	30197	MWIL	12	03	1545	N05	W15	12	2.5	4	(AP)					
9246A		SVTO	12	07	0805	N05	W59	12	2.9		B	BXO	10	2	2	2
9246A		KAND	12	07	1045	N05	W69	12	2.3			BXO		2	1	3
9246A		RAMY	12	07	1225	N05	W64	12	2.7		B	BXO	10	2	2	3
9246B		LEAR	12	02	0110	N11	E18	12	3.4		B	BXX		2	2	3
9246B		KAND	12	02	0720	N11	E14	12	3.3			BXO		2	3	2
9246B		RAMY	12	02	1210	N12	E12	12	3.4		A	AXX		1		3
9245		RAMY	11	27	1845	N05	E85	12	4.1		A	HSX	30	1	4	3
9245		LEAR	11	28	0025	N03	E77	12	3.8		A	HSX	30	1	1	3
9245		KAND	11	28	0755	N04	E76	12	4.0			HS		1	2	3
9245		SVTO	11	28	0805	N05	E71	12	3.6		A	HAX	20	1	1	3
9245		RAMY	11	28	1238	N05	E72	12	3.9		A	HSX	30	1	2	4
9245	30186	MWIL	11	28	1530	N04	E71	12	3.9	4	(AP)					
9245		VORO	11	28	2325	N04	E67	12	4.0			HRX	60	1		2
9245		LEAR	11	29	0148	N03	E65	12	3.9		A	HSX	40	1	1	3
9245		TACH	11	29	0517	N04	E64	12	4.0			HSX	36	1	1	3
9245		SVTO	11	29	0753	N04	E61	12	3.9		A	HSX	40	1	1	2
9245		RAMY	11	29	1230	N05	E59	12	3.9		A	HAX	30	1	1	4
9245	30186	MWIL	11	29	1530	N03	E58	12	4.0	5	(AP)					
9245		HOLL	11	29	1545	N04	E57	12	3.9		A	HSX	50	1	2	3
9245		VORO	11	30	0020	N04	E53	12	4.0			HRX	34	1		3
9245		TACH	11	30	0544	N05	E50	12	4.0			HSX	50	1	1	3
9245		SVTO	11	30	1108	N04	E46	12	3.9		A	HSX	30	1	1	3
9245		RAMY	11	30	1530	N04	E45	12	4.0		A	HSX	30	1	1	2
9245	30186	MWIL	11	30	1545	N03	E45	12	4.0	5	AP					
9245		HOLL	11	30	1550	N05	E44	12	3.9		A	HSX	40	1	2	3
9245		VORO	11	30	2327	N04	E40	12	4.0			HRX	58	1		2
9245		LEAR	12	01	0035	N03	E38	12	3.9		A	HSX	50	1	2	2
9245		TACH	12	01	0558	N04	E37	12	4.0			HSX	50	1	1	3
9245		SVTO	12	01	0725	N05	E35	12	3.9		A	HSX		1		2
9245		HOLL	12	01	1530	N05	E31	12	4.0		A	HSX	20	1	1	3
9245		LEAR	12	02	0110	N04	E26	12	4.0		A	HSX	20	1	1	3
9245		KAND	12	02	0720	N04	E23	12	4.0			HS		1	1	2
9245		SVTO	12	02	0725	N04	E23	12	4.0		A	HSX	20	1	1	3
9245		RAMY	12	02	1210	N05	E19	12	3.9		B	CSO	20	4	3	3
9245	30186	MWIL	12	02	1545	N04	E18	12	4.0	5	(AP)					
9245		VORO	12	02	2337	N04	E14	12	4.0			HRX	26	1		3
9245		LEAR	12	03	0151	N04	E12	12	4.0		A	HSX	20	2	1	2
9245		RAMY	12	03	1215	N04	E06	12	3.9		A	HSX	20	1	1	3
9245	30186	MWIL	12	03	1545	N03	E05	12	4.0	5	(AP)					
9245		VORO	12	03	2324	N04	E01	12	4.0			HRX	31	1		2
9245		LEAR	12	04	0118	N03	E00	12	4.0		A	HSX	10	1		4
9245		RAMY	12	04	1550	N04	W08	12	4.1		A	HSX	20	1	1	1
9245	30186	MWIL	12	04	1730	N04	W07	12	4.2	4	(AP)					
9245		HOLL	12	04	1835	N08	W08	12	4.2		B	BXO	10	4	7	2
9245		VORO	12	05	0004	N04	W13	12	4.0			AXX	13	1		2
9245		LEAR	12	05	0030	N04	W12	12	4.1		A	HSX	20	1	1	3
9245		KAND	12	05	0940	N04	W18	12	4.0			AX		2	1	2
9245		RAMY	12	05	1230	N04	W19	12	4.1		A	AXX	10	3	1	3
9245		HOLL	12	05	1542	N04	W22	12	4.0		A	AXX	10	1	1	3
9245	30186	MWIL	12	05	1545	N04	W21	12	4.1	4	(AP)					
9245		LEAR	12	06	0024	N04	W26	12	4.1		A	HRX	10	2		4
9245		SVTO	12	06	0844	N05	W31	12	4.0		A	AXX		1		2
9245		RAMY	12	06	1215	N04	W32	12	4.1		A	HRX		2	1	3
9245	30186	MWIL	12	06	1615	N04	W35	12	4.1	4	AP					
9245		HOLL	12	06	1650	N04	W37	12	3.9		A	AXX	10	1	1	3

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

DECEMBER 2000

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
9245	30186	MWIL	12	07	2200	N04	W45	12	4.5	3	(B)					
9245	30186	MWIL	12	10	1600	N11	W82	12	4.5	3	B					
9249		VORO	11	30	0020	N10	E58	12	4.4			AXX	8	1		3
9249		3TAC	11	30	0544	N12	E56	12	4.4			AHS	1 2			
9249		SVTO	11	30	1108	N10	E50	12	4.2		A	HRX	10	1	1	3
9249		RAMY	11	30	1530	N10	E50	12	4.4		B	BXO	10	2	2	2
9249	30192	MWIL	11	30	1545	N10	E51	12	4.5	4	B					
9249		HOLL	11	30	1550	N12	E50	12	4.4		A	AXX	10	2	3	3
9249		SVTO	12	01	0725	N11	E39	12	4.2		B	BXO	20	2	2	2
9249		HOLL	12	01	1530	N11	E36	12	4.3		A	AXX		1		3
9249		KAND	12	02	0720	N10	E26	12	4.2			AX		1		2
9249		SVTO	12	02	0725	N11	E27	12	4.3		A	HRX		1		3
9249		RAMY	12	02	1210	N12	E22	12	4.2		A	AXX		2	1	3
9249		LEAR	12	05	0030	N07	W08	12	4.4		A	AXX		1		3
9249		KAND	12	07	1045	N10	W40	12	4.4			BXO		2	2	3
9249		HOLL	12	07	1945	N09	W46	12	4.4		A	AXX	10	1	2	2
9249	30204	MWIL	12	07	2200	N11	W48	12	4.3	3	(B)					
9249		KAND	12	10	0820	N10	W80	12	4.3			AX		3	4	3
9260		RAMY	12	05	1230	S06	W13	12	4.5		A	AXX		2		3
9260	30202	MWIL	12	06	1615	S05	W28	12	4.6	3	AP					
9260		HOLL	12	06	1650	S06	W29	12	4.5		A	AXX		1	1	3
9260		LEAR	12	07	0143	S05	W35	12	4.4		A	AXX	10	1		3
9260		SVTO	12	07	0805	S04	W38	12	4.5		B	BXO	10	4	4	2
9260		KAND	12	07	1045	S05	W40	12	4.4			BXO		2	2	3
9260		RAMY	12	07	1225	S04	W41	12	4.4		B	BXO	10	2	2	3
9260		HOLL	12	07	1945	S04	W45	12	4.4		B	BXO	10	7	5	2
9260		LEAR	12	08	0615	S04	W50	12	4.5		B	CSO	30	4	7	3
9260		KAND	12	08	0830	S06	W51	12	4.5			DRO		4	6	2
9260		SVTO	12	08	0957	S04	W51	12	4.6		B	DAO	50	3	6	2
9260		RAMY	12	08	1237	S05	W54	12	4.5		B	CSO	40	6	7	3
9260		HOLL	12	08	1720	S06	W57	12	4.4		B	CAO	50	2	6	2
9260		LEAR	12	09	0005	S04	W60	12	4.5		B	CSO	20	2	6	3
9260		KAND	12	09	0805	S05	W63	12	4.6			HA		1	2	3
9260		RAMY	12	09	1240	S05	W65	12	4.7		A	HSX	20	1	1	3
9260		SVTO	12	09	1310	S05	W65	12	4.7		A	HSX	10	1	1	2
9260		HOLL	12	09	1538	S07	W67	12	4.6		A	HSX	50	2	2	4
9260		LEAR	12	10	0130	S04	W79	12	4.1		A	AXX		1		3
9260A		RAMY	12	03	1215	S14	E17	12	4.8		B	CSO	20	2	2	3
9260A	30198	MWIL	12	03	1545	S14	E15	12	4.8	4	(B)					
9259		SVTO	12	07	0805	S09	W15	12	6.2		B	BXO	10	4	3	2
9259		KAND	12	07	1045	S10	W17	12	6.2			BXO		4	3	3
9259		RAMY	12	07	1225	S10	W18	12	6.2		B	BXO	10	3	3	3
9259		HOLL	12	07	1945	S10	W22	12	6.2		B	BXO	10	7	4	2
9259	30205	MWIL	12	07	2200	S09	W22	12	6.3	3	(BF)					
9259		RAMY	12	08	1237	S09	W29	12	6.3		B	BXO	20	3	6	3
9254		RAMY	12	03	1215	N10	E65	12	8.4		A	HSX	10	1	1	3
9254	30199	MWIL	12	03	1545	N09	E65	12	8.5	4	(AP)					
9254		LEAR	12	04	0118	N08	E58	12	8.4		A	AXX		1		4
9254		RAMY	12	04	1550	N10	E52	12	8.6		B	CSO	10	2	5	1
9254	30199	MWIL	12	04	1730	N10	E53	12	8.7	4	(B)					
9254		HOLL	12	04	1835	N11	E52	12	8.7		B	BXO	20	4	3	2
9254		VORO	12	05	0004	N10	E49	12	8.7			CRO	86	2	3	2
9254		LEAR	12	05	0030	N09	E49	12	8.7		B	DAO	60	5	5	3
9254		KAND	12	05	0940	N10	E44	12	8.7			DAI		9	5	2
9254		RAMY	12	05	1230	N10	E42	12	8.7		B	DAO	70	15	6	3
9254		HOLL	12	05	1542	N11	E40	12	8.7		B	DAO	80	11	4	3
9254	30199	MWIL	12	05	1545	N10	E40	12	8.7	5	(B)					
9254		VORO	12	05	2312	N11	E35	12	8.6			DAI	164	3	4	1
9254		LEAR	12	06	0024	N09	E36	12	8.7		B	DAO	140	8	5	4
9254		SVTO	12	06	0844	N09	E30	12	8.6		B	DAO	160	8	6	2
9254		RAMY	12	06	1215	N10	E28	12	8.6		B	DAO	190	16	7	3
9254	30199	MWIL	12	06	1615	N10	E27	12	8.7	5	B					
9254		HOLL	12	06	1650	N10	E26	12	8.6		B	DSO	130	9	8	3
9254		LEAR	12	07	0143	N09	E22	12	8.7		B	DAO	200	5	7	3

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

DECEMBER 2000

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
9254		VORO	12	07	0421	N10	E20	12	8.7			DAI	134	3	4	1
9254		SVTO	12	07	0805	N10	E19	12	8.8		B	DAO	160	9	7	2
9254		KAND	12	07	1045	N10	E16	12	8.6			DAO		12	6	3
9254		RAMY	12	07	1225	N10	E16	12	8.7		B	DAO	150	15	6	3
9254		HOLL	12	07	1945	N10	E11	12	8.6		B	DAO	120	11	5	2
9254	30199	MWIL	12	07	2200	N10	E09	12	8.6	4	(BP)					
9254		LEAR	12	08	0615	N10	E06	12	8.7		B	DAO	120	10	5	3
9254		KAND	12	08	0830	N10	E03	12	8.6			DAO		7	5	2
9254		SVTO	12	08	0957	N11	E04	12	8.7		B	DAO	120	7	5	2
9254		RAMY	12	08	1237	N11	E02	12	8.7		B	DAO	110	12	5	3
9254		HOLL	12	08	1720	N11	W02	12	8.6		B	DAI	140	9	5	2
9254		LEAR	12	09	0005	N10	W06	12	8.5		B	DAO	60	10	5	3
9254		VORO	12	09	0026	N11	W05	12	8.6			DAI	150	8	4	2
9254		KAND	12	09	0805	N10	W10	12	8.6			DSI		7	4	3
9254		RAMY	12	09	1240	N10	W13	12	8.5		B	DAO	110	22	6	3
9254		SVTO	12	09	1310	N09	W12	12	8.6		B	DAO	120	11	5	2
9254		HOLL	12	09	1538	N10	W15	12	8.5		B	CSO	50	12	4	4
9254		VORO	12	10	0014	N11	W17	12	8.7			DAI	209	3	1	2
9254		LEAR	12	10	0130	N11	W20	12	8.5		B	CSO	60	4	4	3
9254		KAND	12	10	0820	N10	W23	12	8.6			CAO		7	4	3
9254	30199	MWIL	12	10	1600	N11	W28	12	8.6	5	(AP)					
9254		VORO	12	10	2347	N10	W32	12	8.6			DAI	198	3	1	2
9254		LEAR	12	11	0019	N11	W32	12	8.6		B	CAO	20	4	2	2
9254		TACH	12	11	0702	N09	W35	12	8.7			HA	75	3	1	3
9254		KAND	12	11	0840	N10	W37	12	8.6			HA		2	2	3
9254		SVTO	12	11	0845	N10	W36	12	8.6		B	DAO	30	4	3	3
9254		RAMY	12	11	1213	N09	W40	12	8.5		B	DAO	30	2	3	3
9254		HOLL	12	11	1520	N09	W42	12	8.5		B	CAO	30	3	3	3
9254	30199	MWIL	12	11	1545	N10	W41	12	8.6	4	(BP)					
9254		VORO	12	11	2348	N09	W45	12	8.6			AXX	11	1		3
9254		LEAR	12	12	0010	N10	W45	12	8.6		A	HSX	20	2	1	1
9254		SVTO	12	12	0809	N09	W49	12	8.7		A	AXX	20	2	1	2
9254		RAMY	12	12	1213	N09	W54	12	8.4		A	AXX	20	2	2	2
9254		KAND	12	12	1235	N09	W54	12	8.5			CSO		2	1	3
9254	30199	MWIL	12	12	2030	N11	W58	12	8.5	4	(AP)					
9254		LEAR	12	13	0050	N11	W59	12	8.6		A	AXX		1		3
9254A		TACH	12	06	0739	S09	E32	12	8.7			DAO	280	4	4	2
9255		RAMY	12	03	1215	N21	E70	12	8.9		A	HSX	10	1	1	3
9255	30200	MWIL	12	03	1545	N21	E70	12	9.0	4	(AP)					
9255		LEAR	12	04	0118	N21	E65	12	9.0		A	HRX	20	1	1	4
9255		RAMY	12	04	1550	N21	E58	12	9.1		A	HSX	20	1	1	1
9255	30200	MWIL	12	04	1730	N22	E56	12	9.0	4	(AP)					
9255		HOLL	12	04	1835	N23	E56	12	9.1		A	AXX	20	1	1	2
9255		LEAR	12	05	0030	N21	E52	12	9.0		A	AXX		1		3
9255		KAND	12	05	0940	N23	E47	12	9.0			AX		1		2
9255		RAMY	12	05	1230	N22	E46	12	9.0		A	HSX		1		3
9255		HOLL	12	05	1542	N23	E44	12	9.0		A	AXX	10	1	1	3
9255	30200	MWIL	12	05	1545	N22	E44	12	9.0	4	(AP)					
9255		LEAR	12	06	0024	N23	E39	12	9.0		A	HRX	10	1		4
9255		TACH	12	06	0739	N22	E36	12	9.1			AXX	10	1	1	2
9255		SVTO	12	06	0844	N22	E34	12	9.0		A	AXX		1		2
9255		RAMY	12	06	1215	N23	E32	12	9.0		A	HSX	10	1	1	3
9255	30200	MWIL	12	06	1615	N22	E31	12	9.0	7	(AP)					
9255		HOLL	12	06	1650	N23	E29	12	8.9		A	HSX	10	1	1	3
9255		LEAR	12	07	0143	N23	E26	12	9.1		A	AXX	10	1		3
9255		SVTO	12	07	0805	N22	E22	12	9.0		A	AXX		1		2
9255		KAND	12	07	1045	N22	E21	12	9.1			BXO		2	2	3
9255		RAMY	12	07	1225	N22	E19	12	9.0		A	AXX	10	1	1	3
9255		HOLL	12	07	1945	N24	E16	12	9.0		A	AXX	10	1		2
9255	30200	MWIL	12	07	2200	N23	E13	12	8.9	3	(AP)					
9255A		SVTO	12	13	0757	S27	W50	12	9.4		A	HRX	20	1	1	3
9255B		SVTO	12	12	0809	S37	W35	12	9.5		A	AXX		1		2
9257		SVTO	12	06	0844	N18	E46	12	9.9		B	BXO	10	2	2	2
9257		RAMY	12	06	1215	N19	E44	12	9.9		A	HRX	10	5	2	3

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

DECEMBER 2000

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9257	30203	MWIL	12	06	1615	N19	E42	12	9.9	4	(B)					
9257		HOLL	12	06	1650	N20	E40	12	9.8		A	HRX	20	3	2	3
9257		LEAR	12	07	0143	N19	E36	12	9.8		B	CRO	20	5	3	3
9257		SVTO	12	07	0805	N19	E32	12	9.8		B	BXO	20	3	3	2
9257		KAND	12	07	1045	N19	E30	12	9.7			DSI		5	3	3
9257		RAMY	12	07	1225	N20	E29	12	9.7		B	BXO	30	4	3	3
9257		HOLL	12	07	1945	N19	E26	12	9.8		B	BXO	20	3	4	2
9257	30203	MWIL	12	07	2200	N19	E25	12	9.8	3	(BP)					
9257		LEAR	12	08	0615	N19	E18	12	9.6		A	AXX		1		3
9257		KAND	12	08	0830	N19	E16	12	9.6			AX		1		2
9257		SVTO	12	08	0957	N20	E17	12	9.7		B	CRO	10	2	1	2
9257		RAMY	12	08	1237	N20	E15	12	9.7		A	AXX	10	1	1	3
9257		HOLL	12	08	1720	N19	E12	12	9.6		A	AXX	10	1	1	2
9257		LEAR	12	09	0005	N19	E09	12	9.7		B	BXX		2	3	3
9257		KAND	12	09	0805	N19	E04	12	9.6			CRO		3	4	3
9257		RAMY	12	09	1240	N19	E02	12	9.7		B	CRO	10	5	4	3
9257		SVTO	12	09	1310	N18	E03	12	9.8		B	DSO	10	2	2	2
9257		HOLL	12	09	1538	N19	E01	12	9.7		A	AXX	10	1	1	4
9257	30203	MWIL	12	10	1600	N21	W13	12	9.7	3	(B)					
9257		HOLL	12	13	1615	N18	W52	12	9.7		B	CAO	30	5	5	2
9257		RAMY	12	13	1820	N18	W55	12	9.6		B	CSO	30	3	4	3
9257	30213	MWIL	12	13	2230	N21	W56	12	9.6	4	(B)					
9257		KAND	12	14	0800	N19	W61	12	9.7			AX		1	1	3
9257		RAMY	12	14	1210	N18	W66	12	9.5		A	AXX	10	1		2
9257	30213	MWIL	12	14	1545	N20	W65	12	9.7	4	(B)					
9256		LEAR	12	04	0118	S17	E77	12	9.9		A	AXX		1		4
9256		RAMY	12	04	1550	S17	E69	12	9.9		B	CSO	30	2	1	1
9256	30201	MWIL	12	04	1730	S17	E68	12	9.9	4	(AP)					
9256		HOLL	12	04	1835	S15	E68	12	9.9		B	BXO	10	3	1	2
9256		LEAR	12	05	0030	S18	E62	12	9.7		B	BXX	10	2	2	3
9256		KAND	12	05	0940	S16	E59	12	9.9			AX		2	1	2
9256		RAMY	12	05	1230	S17	E58	12	9.9		A	AXX		2	2	3
9256		HOLL	12	05	1542	S16	E56	12	9.9		A	AXX	10	2	1	3
9256	30201	MWIL	12	05	1545	S17	E55	12	9.8	4	(AP)					
9256		LEAR	12	06	0024	S18	E49	12	9.7		A	HSX	20	2	1	4
9256		SVTO	12	06	0844	S17	E43	12	9.6		A	AXX		1		2
9256		RAMY	12	06	1215	S12	E43	12	9.8		A	HSX	10	2	1	3
9256	30201	MWIL	12	06	1615	S17	E41	12	9.8	4	AP					
9256		KAND	12	07	1045	S16	E33	12	9.9			AX		1		3
9256		KAND	12	10	0820	S16	W04	12	10.0			AX		1		3
9256	30207	MWIL	12	10	1600	S17	W07	12	10.1	3	(AF)					
9257A		RAMY	12	08	1237	N11	E24	12	10.3		A	AXX	10	1	1	3
9257A		SVTO	12	12	0809	N13	W30	12	10.1		A	AXX		1		2
9266		TACH	12	11	0702	N25	W00	12	11.3			HSX	50	1	1	3
9266		KAND	12	11	0840	N21	W02	12	11.2			CSO		2	3	3
9266		SVTO	12	11	0845	N24	W03	12	11.1		B	CRO	10	3	3	3
9266		RAMY	12	11	1213	N24	W05	12	11.1		B	DSO	30	3	4	3
9266		HOLL	12	11	1520	N24	W07	12	11.1		B	CAO	30	5	4	3
9266	30208	MWIL	12	11	1545	N24	W05	12	11.3	4	(BP)					
9266		VORO	12	11	2348	N24	W10	12	11.2			BXO	20	3	4	3
9266		LEAR	12	12	0010	N23	W11	12	11.1		B	CSO	10	3	5	1
9266		SVTO	12	12	0809	N24	W15	12	11.2		B	CSO	10	2	4	2
9266		RAMY	12	12	1213	N22	W22	12	10.8		A	HSX	20	1	1	2
9266		KAND	12	12	1235	N22	W21	12	10.9			HS		1	1	3
9266	30208	MWIL	12	12	2030	N23	W23	12	11.1	4	(B)					
9266		HOLL	12	12	2035	N22	W24	12	11.0		B	BXO	20	3	4	1
9266		VORO	12	12	2350	N23	W25	12	11.1			BXO	17	2	4	3
9266		LEAR	12	13	0050	N23	W25	12	11.1		B	BXO	10	3	4	3
9266		SVTO	12	13	0757	N23	W29	12	11.1		B	CRO	10	2	5	3
9266		HOLL	12	13	1615	N22	W37	12	10.8		A	AXX		1		2
9266		RAMY	12	13	1820	N22	W39	12	10.8		A	AXX	10	1	1	3
9266	30208	MWIL	12	13	2230	N23	W39	12	10.9	4	(AP)					
9266		LEAR	12	14	0210	N19	W38	12	11.2		B	BXO	10	2	3	3
9266		KAND	12	14	0800	N22	W43	12	11.0			CSO		6	5	3
9266		SVTO	12	14	0815	N23	W45	12	10.9		B	BXO	10	4	6	2
9266		RAMY	12	14	1210	N22	W47	12	10.9		B	DAO	60	3	6	2

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

DECEMBER 2000

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9266	30208	MWIL	12	14	1545	N22	W46	12	11.1	4	(BP)					
9266		LEAR	12	15	0033	N22	W50	12	11.2		B	DAO	90	6	6	2
9266		SVTO	12	15	0810	N23	W54	12	11.2		B	BXO	40	4	8	2
9266		KAND	12	15	0925	N22	W57	12	11.0			CSO		6	8	2
9266	30208	MWIL	12	15	1545	N23	W58	12	11.2	4	(B)					
9266		HOLL	12	15	1940	N23	W62	12	11.0		B	DAO	100	6	8	2
9266		VORO	12	16	0003	N23	W63	12	11.1			BXO	37	2	5	2
9266		LEAR	12	16	0053	N24	W62	12	11.2		B	CAO	90	4	5	4
9266		KAND	12	16	0635	N20	W69	12	11.0			CSO		3	7	1
9266		SVTO	12	16	0945	N24	W70	12	11.0		B	CAO	120	6	9	3
9266	30208	MWIL	12	16	1545	N23	W70	12	11.3	4	(BF)					
9266		HOLL	12	16	1630	N21	W71	12	11.2		B	CAO	60	4	10	3
9266		LEAR	12	17	0110	N25	W75	12	11.2		A	AXX	60	1	1	3
9266		SVTO	12	17	0900	N25	W85	12	10.8		B	CRO	60	2	8	3
9276B		VORO	12	16	0003	S13	W61	12	11.4			CRI	102	4	6	2
9258		SVTO	12	07	0805	N14	E56	12	11.6		A	AXX	10	2	1	2
9258		KAND	12	07	1045	N14	E54	12	11.5			AX		2	1	3
9258		RAMY	12	07	1225	N13	E54	12	11.6		B	BXO	10	2	2	3
9258		HOLL	12	07	1945	N14	E50	12	11.6		A	AXX	10	1		2
9258		LEAR	12	11	0019	N14	E08	12	11.6		B	CSO	10	3	2	2
9258		KAND	12	11	0840	N14	E04	12	11.7			BXO		2	2	3
9258		SVTO	12	11	0845	N14	E04	12	11.7		B	BXO		2	2	3
9258A		KAND	12	09	0805	N24	E38	12	12.3			AX		1		3
9258A		RAMY	12	09	1240	N25	E37	12	12.4		B	CRO		2	3	3
9258A	30208A	MWIL	12	10	1600	N24	E21	12	12.3	4	(AP)					
9276	30223	MWIL	12	16	1545	S13	W54	12	12.6	4	(B)					
9276		HOLL	12	16	1630	S15	W56	12	12.4		B	BXO	30	4	4	3
9276		LEAR	12	17	0110	S12	W58	12	12.7		B	BXO	40	6	4	3
9276		SVTO	12	17	0900	S12	W66	12	12.4		B	DAO	140	8	8	3
9276		KAND	12	17	0940	S13	W65	12	12.5			DAO		7	9	2
9276		RAMY	12	17	1245	S17	W66	12	12.5		B	DAO	90	6	8	3
9276	30223	MWIL	12	17	1530	S13	W67	12	12.6	4	(B)					
9276		HOLL	12	17	1555	S13	W67	12	12.6		B	DAO	220	7	10	3
9276		LEAR	12	18	0120	S12	W71	12	12.7		B	DAO	100	6	10	3
9276		TACH	12	18	0507	S13	W74	12	12.6			DAO	83	4	8	2
9276		SVTO	12	18	0803	S13	W79	12	12.4		B	DAO	180	4	8	2
9276		KAND	12	18	0925	S12	W80	12	12.4			ESO		3	11	2
9276		RAMY	12	18	1232	S13	W80	12	12.5		B	DSO	90	6	9	3
9276		HOLL	12	18	1544	S12	W80	12	12.6		B	CSO	50	5	7	2
9276	30223	MWIL	12	18	1600	S13	W80	12	12.6	4	(B)					
9271		LEAR	12	14	0210	S19	W17	12	12.8		A	AXX		1		3
9271		KAND	12	14	0800	S20	W19	12	12.9			CSO		2	3	3
9271		SVTO	12	14	0815	S20	W21	12	12.7		B	BXO	10	2	4	2
9271		RAMY	12	14	1210	S23	W18	12	13.1		B	CSO	10	2	4	2
9271	30218	MWIL	12	14	1545	S20	W24	12	12.8	4	(BP)					
9271		LEAR	12	15	0033	S19	W28	12	12.9		A	AXX	20	3	3	2
9271		SVTO	12	15	0810	S19	W33	12	12.8		B	BXO	40	5	6	2
9271		KAND	12	15	0925	S19	W34	12	12.8			BXO		4	8	2
9271	30218	MWIL	12	15	1545	S20	W37	12	12.8	4	(BF)					
9271		HOLL	12	15	1940	S20	W40	12	12.7		B	BXO	20	5	6	2
9271		VORO	12	16	0003	S20	W43	12	12.7			BXO	32	2	5	2
9271		KAND	12	16	0635	S20	W45	12	12.8			BXO		4	6	1
9271		SVTO	12	16	0945	S20	W47	12	12.8		B	BXO	30	5	8	3
9271	30218	MWIL	12	16	1545	S19	W51	12	12.8	4	(B)					
9271		HOLL	12	16	1630	S15	W56	12	12.4		B	BXO	30	4	4	3
9271		LEAR	12	17	0110	S19	W55	12	12.8		A	AXX	10	1		3
9271		SVTO	12	17	0900	S21	W59	12	12.8		A	AXX		1		3
9271		RAMY	12	17	1245	S17	W66	12	12.5		B	DAO	90	6	8	3
9276A		KAND	12	09	0805	N16	E44	12	12.7			AX		1		3
9276A		RAMY	12	09	1240	N16	E42	12	12.7		A	AXX		1		3
9276A		HOLL	12	09	1538	N17	E41	12	12.8		A	AXX		1	1	4
9277	30219	MWIL	12	14	1545	N18	W14	12	13.6	4	(AP)					

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

DECEMBER 2000

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
9277		LEAR	12	15	0033	N17	W19	12	13.6		A	AXX		1		2
9277		SVTO	12	15	0810	N18	W24	12	13.5		A	AXX	10	1	1	2
9277		KAND	12	15	0925	N17	W26	12	13.4			HS		1	1	2
9277	30219	MWIL	12	15	1545	N17	W28	12	13.5	4	(AP)					
9277		HOLL	12	15	1940	N16	W31	12	13.5		A	AXX	10	1	1	2
9277		VORO	12	16	0003	N15	W34	12	13.4			AXX	18	1		2
9277		LEAR	12	16	0053	N17	W34	12	13.4		A	AXX		1		4
9277		KAND	12	16	0635	N15	W37	12	13.5			AX		2	1	1
9277		SVTO	12	16	0945	N17	W40	12	13.4		A	AXX		1		3
9277	30219	MWIL	12	16	1545	N17	W42	12	13.5	4	(AP)					
9277		SVTO	12	17	0900	N16	W55	12	13.2		A	HAX	10	1		3
9277		KAND	12	17	0940	N15	W54	12	13.3			HS		1	1	2
9277		RAMY	12	17	1245	N16	W57	12	13.2		A	HRX	10	1	1	3
9277	30219	MWIL	12	17	1530	N16	W58	12	13.2	4	(AP)					
9277		HOLL	12	17	1555	N15	W58	12	13.3		A	HSX	20	1	1	3
9277		LEAR	12	18	0120	N16	W63	12	13.3		A	AXX	10	1	1	3
9277		TACH	12	18	0507	N16	W66	12	13.2			AXX	20	1	1	2
9277		SVTO	12	18	0803	N15	W70	12	13.0		A	HRX	10	1	1	2
9277		RAMY	12	18	1232	N16	W72	12	13.1		A	HRX	10	1	1	3
9277		HOLL	12	18	1544	N16	W70	12	13.3		A	AXX	10	1	1	2
9277	30219	MWIL	12	18	1600	N16	W72	12	13.2	4	(AP)					
9277		LEAR	12	19	0045	N16	W77	12	13.2		A	AXX		1		3
9262	30206	MWIL	12	07	2200	N12	E81	12	14.0	4	AP					
9262		LEAR	12	08	0615	N12	E78	12	14.1		A	AXX		1		3
9262		SVTO	12	08	0957	N15	E79	12	14.4		A	HSX	30	1	1	2
9262		RAMY	12	08	1237	N13	E75	12	14.2		A	HSX	20	1	1	3
9262		HOLL	12	08	1720	N14	E75	12	14.4		B	BXO	10	2	6	2
9262		LEAR	12	09	0005	N12	E66	12	14.0		B	DSO	10	2	5	3
9262		VORO	12	09	0026	N13	E71	12	14.4			BXO	46	2	7	2
9262		KAND	12	09	0805	N15	E67	12	14.4			ESO		5	13	3
9262		RAMY	12	09	1240	N15	E64	12	14.4		B	DAO	130	6	9	3
9262		SVTO	12	09	1310	N14	E63	12	14.3		B	DAO	90	4	9	2
9262		HOLL	12	09	1538	N15	E65	12	14.6		B	CAO	170	4	7	4
9262		VORO	12	10	0014	N14	E58	12	14.4			DAI	249	5	7	2
9262		LEAR	12	10	0130	N13	E55	12	14.2		B	DAO	80	4	8	3
9262		KAND	12	10	0820	N14	E54	12	14.4			DSO		8	9	3
9262	30209	MWIL	12	10	1600	N13	E49	12	14.4	5	(B)					
9262		VORO	12	10	2347	N14	E45	12	14.4			DAI	158	7	8	2
9262		LEAR	12	11	0019	N13	E43	12	14.2		B	DSO	60	12	9	2
9262		KAND	12	11	0840	N14	E40	12	14.4			DSI		14	10	3
9262		SVTO	12	11	0845	N14	E41	12	14.5		B	DAO	150	14	10	3
9262		RAMY	12	11	1213	N14	E39	12	14.4		B	DAO	100	9	10	3
9262		HOLL	12	11	1520	N15	E36	12	14.4		B	DAO	80	9	9	3
9262	30209	MWIL	12	11	1545	N13	E36	12	14.4	5	(BP)					
9262		VORO	12	11	2348	N13	E33	12	14.5			CRI	162	11	9	3
9262		LEAR	12	12	0010	N12	E31	12	14.3		B	DAO	70	12	9	1
9262		SVTO	12	12	0809	N14	E28	12	14.4		B	DAO	80	14	10	2
9262		RAMY	12	12	1213	N14	E24	12	14.3		B	DSI	120	13	9	2
9262		KAND	12	12	1235	N14	E24	12	14.3			CSO		13	10	3
9262	30209	MWIL	12	12	2030	N13	E18	12	14.2	5	(BP)					
9262		HOLL	12	12	2035	N14	E19	12	14.3		B	DAI	140	21	8	1
9262		VORO	12	12	2350	N13	E17	12	14.3			AXX	87	11		3
9262		LEAR	12	13	0050	N13	E16	12	14.2		B	DRI	60	22	6	3
9262		SVTO	12	13	0757	N13	E13	12	14.3		B	DAO	60	12	6	3
9262		HOLL	12	13	1615	N14	E09	12	14.3		B	CAO	40	33	8	2
9262		RAMY	12	13	1820	N15	E07	12	14.3		B	DAO	40	15	6	3
9262	30209	MWIL	12	13	2230	N14	E05	12	14.3	4	(BP)					
9262		VORO	12	13	2331	N13	E03	12	14.2			AXX	60	8		1
9262		LEAR	12	14	0210	N13	E02	12	14.2		B	CAO	30	11	5	3
9262		KAND	12	14	0800	N13	W01	12	14.2			CSO		12	5	3
9262		SVTO	12	14	0815	N13	W02	12	14.2		B	CAO	30	10	5	2
9262		RAMY	12	14	1210	N13	W06	12	14.0		B	DAO	60	7	5	2
9262	30209	MWIL	12	14	1545	N14	W05	12	14.3	4	(AP)					
9262		LEAR	12	15	0033	N15	W10	12	14.3		B	BXO	20	6	12	2
9262		SVTO	12	15	0810	N15	W10	12	14.6		B	ESO	40	12	15	2
9262		KAND	12	15	0925	N13	W13	12	14.4			BXI		7	4	2
9262	30209	MWIL	12	15	1545	N14	W17	12	14.4	4	(BP)					
9262		HOLL	12	15	1940	N17	W17	12	14.5		B	CAO	80	17	6	2

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

DECEMBER 2000

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
9262		LEAR	12	16	0053	N14	W23	12	14.3		B	BXO	20	5	4	4
9262		KAND	12	16	0635	N14	W23	12	14.5			BXO		7	6	1
9262		SVTO	12	16	0945	N18	W25	12	14.5		B	EAO	70	16	11	3
9262	30209	MWIL	12	16	1545	N14	W26	12	14.7	4	(B)					
9262		HOLL	12	16	1630	N16	W27	12	14.6		B	DAO	20	15	7	3
9262		LEAR	12	17	0110	N18	W32	12	14.6		B	CAO	40	7	5	3
9262		SVTO	12	17	0900	N19	W37	12	14.5		B	EAO	80	11	11	3
9262		KAND	12	17	0940	N15	W38	12	14.5			DSI		7	6	2
9262		RAMY	12	17	1245	N16	W38	12	14.6		B	DAO	60	11	7	3
9262	30209	MWIL	12	17	1530	N17	W39	12	14.7	4	(B)					
9262		HOLL	12	17	1555	N16	W41	12	14.5		B	DAO	70	10	7	3
9262		LEAR	12	18	0120	N17	W44	12	14.7		B	DSO	30	2	6	3
9262		SVTO	12	18	0803	N16	W49	12	14.6		B	BXO	10	2	6	2
9262		KAND	12	18	0925	N15	W50	12	14.6			BXO		2	5	2
9262		RAMY	12	18	1232	N16	W52	12	14.6		B	BXO		2	6	3
9262		HOLL	12	18	1544	N15	W57	12	14.3		B	BXO	10	2	7	2
9262	30209	MWIL	12	18	1600	N16	W53	12	14.6	4	(B)					
9262		RAMY	12	19	1330	N16	W69	12	14.3		A	AXX		1	1	3
9275		KAND	12	15	0925	N20	W13	12	14.4			CSO		3	3	2
9275	30220	MWIL	12	15	1545	N20	W14	12	14.6	4	(B)					
9275		VORO	12	16	0003	N21	W19	12	14.5			BXO	31	2	3	2
9275		LEAR	12	16	0053	N20	W20	12	14.5		B	CAO	30	5	4	4
9275		KAND	12	16	0635	N20	W23	12	14.5			CSO		5	4	1
9275	30220	MWIL	12	16	1545	N21	W27	12	14.6	4	(B)					
9275		HOLL	12	16	1630	N20	W28	12	14.5		B	BXO	10	8	4	3
9275		LEAR	12	17	0110	N22	W33	12	14.5		B	CAO	40	9	4	3
9275		KAND	12	17	0940	N20	W39	12	14.4			CSO		3	4	2
9275		RAMY	12	17	1245	N21	W40	12	14.5		B	CSO	20	5	4	3
9275	30220	MWIL	12	17	1530	N22	W41	12	14.5	4	(BP)					
9275		HOLL	12	17	1555	N21	W41	12	14.5		B	BXO	10	6	6	3
9275		LEAR	12	18	0120	N22	W44	12	14.7		A	AXX		1		3
9275		RAMY	12	18	1232	N21	W51	12	14.6		A	AXX	10	2	1	3
9275A		SVTO	12	12	0809	S09	E32	12	14.7		B	CSO	20	2	3	2
9275A		SVTO	12	13	0757	S11	E18	12	14.7		A	HSX	10	1	1	3
9275A		HOLL	12	13	1615	S11	E13	12	14.6		A	AXX		4	2	2
9275A		RAMY	12	13	1820	S09	E13	12	14.7		B	BXO	10	5	3	3
9263		RAMY	12	09	1240	N18	E73	12	15.1		A	HRX	10	1	1	3
9263		HOLL	12	09	1538	N18	E71	12	15.0		A	AXX	10	1	1	4
9263		LEAR	12	10	0130	N16	E63	12	14.8		A	AXX		1		3
9263		TACH	12	11	0702	N14	E42	12	14.5			CAI	154	11	9	3
9263		LEAR	12	12	0010	N17	E35	12	14.7		A	HSX	40	1	1	1
9263		TACH	12	18	0507	N16	W46	12	14.7			BXO	7	2	6	2
9267		TACH	12	11	0702	N06	E47	12	14.8			AXX	25	1	1	3
9267		KAND	12	11	0840	N07	E47	12	14.9			DRO		5	82	3
9267		SVTO	12	11	0845	N07	E47	12	14.9		B	DAO	60	8	5	3
9267		RAMY	12	11	1213	N08	E46	12	14.9		B	DAI	70	6	6	3
9267		HOLL	12	11	1520	N08	E43	12	14.9		B	DAI	80	7	6	3
9267	30212	MWIL	12	11	1545	N06	E43	12	14.9	4	(B)					
9267		VORO	12	11	2348	N07	E39	12	14.9			DRI	112	5	5	3
9267		LEAR	12	12	0010	N07	E38	12	14.8		B	DAO	60	5	7	1
9267		SVTO	12	12	0809	N07	E34	12	14.9		B	DAO	80	9	7	2
9267		RAMY	12	12	1213	N08	E30	12	14.7		B	DAO	70	6	8	2
9267		KAND	12	12	1235	N07	E30	12	14.8			CAI		15	9	3
9267	30212	MWIL	12	12	2030	N06	E26	12	14.8	5	(B)					
9267		HOLL	12	12	2035	N08	E26	12	14.8		B	DAO	240	22	9	1
9267		VORO	12	12	2350	N07	E25	12	14.9			DAI	395	20	8	3
9267		LEAR	12	13	0050	N07	E23	12	14.7		B	DAI	160	24	9	3
9267		SVTO	12	13	0757	N07	E19	12	14.7		B	DAI	240	14	10	3
9267		HOLL	12	13	1615	N08	E15	12	14.8		B	DAI	210	35	9	2
9267		RAMY	12	13	1820	N09	E14	12	14.8		B	DAI	210	23	9	3
9267	30212	MWIL	12	13	2230	N07	E11	12	14.8	5	(BP)					
9267		VORO	12	13	2331	N07	E09	12	14.6			DAI	294	14	7	1
9267		LEAR	12	14	0210	N07	E10	12	14.8		B	DAO	180	14	10	3
9267		KAND	12	14	0800	N02	E05	12	14.7			DAO		24	10	3
9267		SVTO	12	14	0815	N07	E05	12	14.7		B	DAI	170	24	10	2

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

DECEMBER 2000

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
9267		RAMY	12	14	1210	N07	E03	12	14.7		B	DSI	220	17	10	2
9267	30212	MWIL	12	14	1545	N07	E01	12	14.7	5	(B)					
9267		LEAR	12	15	0033	N06	W06	12	14.6		B	CAO	170	12	9	2
9267		SVTO	12	15	0810	N08	W08	12	14.7		B	DAI	200	15	9	2
9267		KAND	12	15	0925	N07	W09	12	14.7			DSO		15	9	2
9267	30212	MWIL	12	15	1545	N07	W13	12	14.7	5	(BP)					
9267		HOLL	12	15	1940	N07	W14	12	14.8		B	DAI	250	16	9	2
9267		VORO	12	16	0003	N07	W17	12	14.7			DSI	298	9	7	2
9267		LEAR	12	16	0053	N08	W18	12	14.7		B	CSO	130	10	8	4
9267		KAND	12	16	0635	N06	W21	12	14.7			DSO		5	9	1
9267		SVTO	12	16	0945	N08	W25	12	14.5		B	DAI	150	15	9	3
9267	30212	MWIL	12	16	1545	N07	W25	12	14.8	5	(BP)					
9267		HOLL	12	16	1630	N06	W27	12	14.7		B	CSO	120	18	11	3
9267		VORO	12	16	2342	N07	W31	12	14.7			CSI	258	6	6	3
9267		LEAR	12	17	0110	N08	W30	12	14.8		B	CSO	130	11	7	3
9267		SVTO	12	17	0900	N08	W35	12	14.7		B	CAO	140	15	8	3
9267		KAND	12	17	0940	N07	W36	12	14.7			DSI		7	9	2
9267		RAMY	12	17	1245	N08	W38	12	14.7		B	DAO	150	16	9	3
9267	30212	MWIL	12	17	1530	N08	W39	12	14.7	5	(BP)					
9267		HOLL	12	17	1555	N07	W38	12	14.8		B	CAO	170	14	9	3
9267		LEAR	12	18	0120	N08	W44	12	14.7		B	DSO	70	8	8	3
9267		TACH	12	18	0507	N07	W45	12	14.8			CAO	145	5	6	2
9267		SVTO	12	18	0803	N08	W48	12	14.7		B	DAO	150	6	7	2
9267		KAND	12	18	0925	N07	W53	12	14.4			HS		1	2	2
9267		RAMY	12	18	1232	N08	W53	12	14.5		B	DAO	170	8	8	3
9267		HOLL	12	18	1544	N08	W53	12	14.7		B	CSO	120	8	9	2
9267	30212	MWIL	12	18	1600	N08	W53	12	14.7	5	(BP)					
9267		LEAR	12	19	0045	N08	W57	12	14.7		B	DSO	120	4	8	3
9267		VORO	12	19	0329	N07	W63	12	14.4			HAX	209	1		2
9267		TACH	12	19	0736	N07	W61	12	14.7			CSO	85	2	6	3
9267		SVTO	12	19	0851	N07	W63	12	14.6		B	CSO	100	3	8	2
9267		RAMY	12	19	1330	N07	W66	12	14.6		B	CSO	100	2	6	3
9267	30212	MWIL	12	19	1700	N08	W69	12	14.5	5	(AP)					
9267		HOLL	12	19	1710	N07	W72	12	14.3		A	HAX	110	1	2	3
9267		LEAR	12	20	0025	N07	W73	12	14.5		A	HSX	120	1	2	3
9267		SVTO	12	20	1123	N07	W85	12	14.1		A	HSX	90	1	2	2
9267	30212	MWIL	12	20	1545	N07	W81	12	14.6	4	(AP)					
9267		HOLL	12	20	1558	N07	W86	12	14.2		A	HAX	120	1	5	2
9263A		LEAR	12	10	0130	S11	E78	12	15.9		B	BXO	10	2	3	3
9265		KAND	12	10	0820	N18	E78	12	16.3			HS		1	2	3
9265	30211	MWIL	12	10	1600	N17	E74	12	16.3	4	(AP)					
9265		LEAR	12	11	0019	N17	E67	12	16.1		A	HSX	20	1	1	2
9265		TACH	12	11	0702	N18	E65	12	16.2			HSX	100	1	1	3
9265		KAND	12	11	0840	N18	E64	12	16.2			HS		1	1	3
9265		SVTO	12	11	0845	N18	E64	12	16.2		A	HSX	20	1	1	3
9265		RAMY	12	11	1213	N19	E62	12	16.2		A	HAX	20	1	1	3
9265		HOLL	12	11	1520	N19	E60	12	16.2		A	AXX	10	1	1	3
9265	30211	MWIL	12	11	1545	N17	E59	12	16.1	5	(AP)					
9265		VORO	12	11	2348	N18	E56	12	16.2			HRX	25	1		3
9265		LEAR	12	12	0010	N17	E53	12	16.0		A	HSX	40	1	1	1
9265		SVTO	12	12	0809	N18	E52	12	16.3		A	HRX	10	1	1	2
9265		RAMY	12	12	1213	N19	E49	12	16.2		A	HSX	20	1	1	2
9265		KAND	12	12	1235	N19	E49	12	16.3			HS		1	1	3
9265	30211	MWIL	12	12	2030	N17	E45	12	16.3	5	(AP)					
9265		HOLL	12	12	2035	N18	E45	12	16.3		B	BXO	30	3	3	1
9265		VORO	12	12	2350	N18	E43	12	16.3			AXX	24	2		3
9265		LEAR	12	13	0050	N16	E42	12	16.2		B	CRO	20	2	4	3
9265		SVTO	12	13	0757	N18	E38	12	16.2		A	HSX	10	1	1	3
9265		HOLL	12	13	1615	N17	E35	12	16.3		B	CSO	10	3	3	2
9265		RAMY	12	13	1820	N16	E34	12	16.3		B	CSO	30	6	5	3
9265	30211	MWIL	12	13	2230	N17	E31	12	16.3	4	(AP)					
9265		LEAR	12	14	0210	N14	E28	12	16.2		B	CSO	30	3	2	3
9265		KAND	12	14	0800	N17	E25	12	16.2			HA		1	1	3
9265		SVTO	12	14	0815	N18	E24	12	16.2		A	HRX	10	1	1	2
9265		RAMY	12	14	1210	N18	E23	12	16.2		B	DSO	20	3	9	2
9265	30211	MWIL	12	14	1545	N18	E21	12	16.2	4	(AP)					
9265		LEAR	12	15	0033	N14	E17	12	16.3		B	BXO	20	6	7	2

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

DECEMBER 2000

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
9265		SVTO	12	15	0810	N18	E12	12	16.2		A	AXX		1	1	2
9265		KAND	12	15	0925	N18	E11	12	16.2			AX		1		1
9265	30211	MWIL	12	15	1545	N18	E08	12	16.3	4	(AP)					
9265		HOLL	12	15	1940	N15	E06	12	16.3		B	BXO	20	12	8	2
9265		VORO	12	16	0003	N14	E10	12	16.7			BXO	14	2	11	2
9265		VORO	12	16	0003	N17	E04	12	16.3			AXX	8	1		2
9265		LEAR	12	16	0053	N15	E04	12	16.3		B	BXO	20	5	7	4
9265		KAND	12	16	0635	N17	W01	12	16.2			AX		2	1	1
9265	30211	MWIL	12	16	1545	N18	W03	12	16.4	4	(AP)					
9265		HOLL	12	16	1630	N13	W04	12	16.4		B	BXO	20	17	10	3
9265		LEAR	12	17	0110	N15	W07	12	16.5		A	AXX		2	1	3
9265		KAND	12	17	0940	N20	W13	12	16.4			AX		1		2
9265		RAMY	12	17	1245	N15	W14	12	16.5		B	CSO	20	8	10	3
9265	30211	MWIL	12	17	1530	N19	W16	12	16.4	4	(AP)					
9265		SVTO	12	18	0803	N19	W26	12	16.3		A	HRX	10	1	1	2
9265	30229	MWIL	12	20	1545	N14	W55	12	16.5	4	(AF)					
9265		HOLL	12	20	1558	N15	W55	12	16.5		A	AXX	10	1		2
9265		LEAR	12	21	0050	N14	W59	12	16.6		A	AXX		1		3
9265		HOLL	12	21	1538	N15	W69	12	16.4		A	AXX		1		3
9264		LEAR	12	10	0130	S23	E75	12	15.8		A	HSX	30	1	2	3
9264		KAND	12	10	0820	S21	E77	12	16.2			HS		1	2	3
9264	30210	MWIL	12	10	1600	S23	E71	12	16.1	4	(AP)					
9264		VORO	12	10	2347	S22	E67	12	16.1			HAX	163	1		2
9264		LEAR	12	11	0019	S25	E65	12	16.0		A	HSX	50	1	1	2
9264		TACH	12	11	0702	S22	E64	12	16.2			HSX	25	1	1	3
9264		KAND	12	11	0840	S22	E63	12	16.2			CSO		3	3	3
9264		SVTO	12	11	0845	S23	E63	12	16.2		B	CSO	100	3	4	3
9264		RAMY	12	11	1213	S23	E63	12	16.4		B	CSO	80	4	6	3
9264		HOLL	12	11	1520	S23	E59	12	16.2		B	CSO	60	3	4	3
9264	30210	MWIL	12	11	1545	S24	E59	12	16.2	4	(B)					
9264		VORO	12	11	2348	S25	E55	12	16.2			HAX	94	2	1	3
9264		LEAR	12	12	0010	S25	E52	12	16.0		B	CSO	50	4	5	1
9264		SVTO	12	12	0809	S24	E50	12	16.2		B	CSO	80	5	3	2
9264		RAMY	12	12	1213	S23	E49	12	16.3		B	DSO	40	4	3	2
9264		KAND	12	12	1235	S22	E48	12	16.2			CSO		6	6	3
9264	30210	MWIL	12	12	2030	S24	E44	12	16.2	5	(AP)					
9264		HOLL	12	12	2035	S23	E44	12	16.2		B	DSO	90	5	7	1
9264		VORO	12	12	2350	S23	E42	12	16.2			HSX	165	2		3
9264		LEAR	12	13	0050	S25	E42	12	16.3		B	CAO	80	5	7	3
9264		SVTO	12	13	0757	S24	E38	12	16.3		B	DAO	80	6	7	3
9264		HOLL	12	13	1615	S26	E35	12	16.4		B	DAO	100	24	8	2
9264		RAMY	12	13	1820	S22	E32	12	16.2		B	DAO	110	11	8	3
9264	30210	MWIL	12	13	2230	S24	E30	12	16.2	5	(BF)					
9264		VORO	12	13	2331	S22	E27	12	16.0			HRX	257	6		1
9264		LEAR	12	14	0210	S25	E26	12	16.1		B	DSO	40	10	7	3
9264		KAND	12	14	0800	S23	E24	12	16.2			DAO		11	9	3
9264		SVTO	12	14	0815	S24	E23	12	16.1		B	EAO	130	9	11	2
9264		RAMY	12	14	1210	S21	E24	12	16.3		B	DAO	120	10	8	2
9264	30210	MWIL	12	14	1545	S24	E21	12	16.3	5	(BF)					
9264		LEAR	12	15	0033	S25	E15	12	16.2		BG	DAI	250	16	8	2
9264		SVTO	12	15	0810	S23	E12	12	16.3		B	EAI	220	19	12	2
9264		KAND	12	15	0925	S24	E11	12	16.2			DAO		22	10	2
9264	30210	MWIL	12	15	1545	S24	E08	12	16.3	5	(BF)					
9264		HOLL	12	15	1940	S23	E06	12	16.3		B	EAI	270	19	11	2
9264		VORO	12	16	0003	S26	E02	12	16.1			DSI	205	8	7	2
9264		LEAR	12	16	0053	S24	E02	12	16.2		BG	DAI	190	14	12	4
9264		KAND	12	16	0635	S24	E00	12	16.3			EAO		15	11	1
9264		SVTO	12	16	0945	S25	W02	12	16.2		B	EAI	310	25	13	3
9264	30210	MWIL	12	16	1545	S24	W06	12	16.2	5	(BF)					
9264		HOLL	12	16	1630	S26	W05	12	16.3		BG	EAO	200	33	12	3
9264		VORO	12	16	2342	S26	W11	12	16.1			DAI	376	10	8	3
9264		LEAR	12	17	0110	S24	W09	12	16.3		BG	EAO	190	14	14	3
9264		SVTO	12	17	0900	S25	W16	12	16.1		B	EAI	230	14	12	3
9264		KAND	12	17	0940	S24	W15	12	16.2			DSO		12	10	2
9264		RAMY	12	17	1245	S24	W16	12	16.3		BG	EAI	190	29	12	3
9264	30210	MWIL	12	17	1530	S24	W18	12	16.2	5	(B)					
9264		HOLL	12	17	1555	S24	W17	12	16.3		BG	EAI	200	22	11	3
9264		LEAR	12	18	0120	S24	W25	12	16.1		BG	EAO	100	12	11	3

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

DECEMBER 2000

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
9264		TACH	12	18	0507	S25	W25	12	16.3			DAI	188	7	8	2
9264		SVTO	12	18	0803	S25	W26	12	16.3		B	EAO	180	11	13	2
9264		KAND	12	18	0925	S25	W30	12	16.1			ESO		10	11	2
9264		RAMY	12	18	1232	S25	W30	12	16.2		BG	EAO	140	17	12	3
9264		HOLL	12	18	1544	S25	W31	12	16.2		BG	ESO	140	18	11	2
9264	30210	MWIL	12	18	1600	S24	W31	12	16.3	5	(BF)					
9264		LEAR	12	19	0045	S24	W36	12	16.2		B	DSO	90	15	10	3
9264		VORO	12	19	0329	S25	W39	12	16.1			DAI	250	6	9	2
9264		TACH	12	19	0736	S24	W41	12	16.1			DAO	180	4	9	3
9264		SVTO	12	19	0851	S25	W42	12	16.1		B	EAO	110	8	12	2
9264		RAMY	12	19	1330	S25	W44	12	16.1		B	DSI	110	17	10	3
9264	30210	MWIL	12	19	1700	S24	W45	12	16.2	5	(BF)					
9264		HOLL	12	19	1710	S25	W45	12	16.2		B	DSO	150	11	10	3
9264		LEAR	12	20	0025	S24	W49	12	16.2		B	DSO	60	11	10	3
9264		SVTO	12	20	1123	S25	W57	12	16.0		B	EAO	100	8	11	2
9264	30210	MWIL	12	20	1545	S24	W58	12	16.2	4	(BF)					
9264		HOLL	12	20	1558	S25	W58	12	16.2		B	DSO	60	9	10	2
9264		VORO	12	20	2336	S26	W58	12	16.5			HAX	148	3		2
9264		LEAR	12	21	0050	S23	W60	12	16.4		BG	CSO	60	3	9	3
9264		KAND	12	21	1040	S26	W68	12	16.2			ESO		4	12	2
9264		HOLL	12	21	1538	S25	W70	12	16.2		B	CSO	40	7	11	3
9264		LEAR	12	22	0018	S26	W70	12	16.6		A	AXX	30	1	1	4
9264		TACH	12	22	0539	S25	W72	12	16.6			HSX	20	1	1	3
9264	30210	MWIL	12	22	1600	S26	W82	12	16.3	4	AP					
9272	30214	MWIL	12	13	2230	N12	E32	12	16.3	4	(AP)					
9272		KAND	12	14	0800	N12	E26	12	16.3			CSO		4	5	3
9272		SVTO	12	14	0815	N12	E27	12	16.4		B	CAO	20	3	4	2
9272	30214	MWIL	12	14	1545	N12	E23	12	16.4	4	(B)					
9272		SVTO	12	15	0810	N14	E13	12	16.3		B	BXO	30	5	6	2
9272		KAND	12	15	0925	N13	E13	12	16.4			BXO		10	6	2
9272	30214	MWIL	12	15	1545	N14	E11	12	16.5	4	(BF)					
9272		KAND	12	16	0635	N12	E03	12	16.5			BXO		9	2	1
9272		SVTO	12	16	0945	N15	E03	12	16.6		B	BXI	50	18	15	3
9272	30214	MWIL	12	16	1545	N14	W03	12	16.4	4	(B)					
9272		HOLL	12	16	1630	N18	W04	12	16.4		B	BXO	10	5	4	3
9272		LEAR	12	17	0110	N12	W09	12	16.4			BXX	10	3	3	3
9272		SVTO	12	17	0900	N13	W13	12	16.4		B	BXO	10	2	4	3
9272		KAND	12	17	0940	N12	W15	12	16.3			BXO		2	5	2
9272	30214	MWIL	12	17	1530	N15	W16	12	16.4	4	(BF)					
9272		SVTO	12	20	1123	N14	W54	12	16.4		A	HRX	10	1	1	2
9269A	30215	MWIL	12	13	2230	N11	E57	12	18.2	4	(AP)					
9269A		KAND	12	14	0800	N11	E51	12	18.2			AX		1	1	3
9269A	30215	MWIL	12	14	1545	N10	E47	12	18.2	4	(AP)					
9269A		KAND	12	15	0925	N11	E37	12	18.2			AX		1		2
9269A	30215	MWIL	12	15	1545	N10	E34	12	18.2	3	(AP)					
9269		SVTO	12	13	0757	N13	E70	12	18.6		B	BXO	20	2	7	3
9269		HOLL	12	13	1615	N15	E68	12	18.8		B	CSO	90	3	3	2
9269		RAMY	12	13	1820	N15	E62	12	18.4		B	CSO	20	3	3	3
9269	30216	MWIL	12	13	2230	N15	E63	12	18.7	4	(BF)					
9269		LEAR	12	14	0210	N15	E59	12	18.5		B	CSO	40	3	1	3
9269		KAND	12	14	0800	N15	E59	12	18.8			CSI		6	5	3
9269		SVTO	12	14	0815	N16	E58	12	18.7		B	CAO	50	3	3	2
9269		RAMY	12	14	1210	N13	E53	12	18.5		B	CSO	40	3	6	2
9269	30216	MWIL	12	14	1545	N15	E54	12	18.7	5	(BF)					
9269		LEAR	12	15	0033	N13	E46	12	18.5		B	CAO	110	7	7	2
9269		SVTO	12	15	0810	N16	E47	12	18.9		B	FSO	170	8	18	2
9269		KAND	12	15	0925	N15	E43	12	18.6			DAO		15	6	2
9269	30216	MWIL	12	15	1545	N15	E41	12	18.8	4	(B)					
9269		HOLL	12	15	1940	N16	E38	12	18.7		B	CAO	80	11	7	2
9269		VORO	12	16	0003	N14	E37	12	18.8			HAX	131	4		2
9269		LEAR	12	16	0053	N17	E35	12	18.7		B	CSO	80	13	6	4
9269		KAND	12	16	0635	N15	E32	12	18.7			CAO		9	6	1
9269		SVTO	12	16	0945	N16	E31	12	18.7		B	DAO	70	14	7	3
9269	30216	MWIL	12	16	1545	N15	E27	12	18.7	4	(B)					
9269		HOLL	12	16	1630	N14	E25	12	18.6		B	DAO	70	12	5	3
9269		VORO	12	16	2342	N15	E22	12	18.6			HSX	97	4	4	3

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

DECEMBER 2000

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9269		LEAR	12	17	0110	N14	E22	12	18.7		B	CSO	120	17	9	3
9269		SVTO	12	17	0900	N14	E16	12	18.6		B	EAO	800	17	11	3
9269		KAND	12	17	0940	N15	E16	12	18.6			CAO		11	10	2
9269		RAMY	12	17	1245	N14	E13	12	18.5		B	DSO	60	21	10	3
9269	30216	MWIL	12	17	1530	N15	E13	12	18.6	5	(BG)					
9269		HOLL	12	17	1555	N15	E13	12	18.6		B	DAO	50	12	10	3
9269		LEAR	12	18	0120	N14	E06	12	18.5		B	ESO	40	5	11	3
9269		TACH	12	18	0507	N14	E04	12	18.5			BRO	32	4	9	2
9269		SVTO	12	18	0803	N14	E03	12	18.6		B	ESO	30	6	11	2
9269		KAND	12	18	0925	N14	E02	12	18.5			BXO		6	11	2
9269		RAMY	12	18	1232	N14	W01	12	18.4		B	DSO	30	6	9	3
9269		HOLL	12	18	1544	N13	W02	12	18.5		B	CSO	40	5	9	2
9269	30216	MWIL	12	18	1600	N14	W02	12	18.5	4	(B)					
9269		LEAR	12	19	0045	N14	W08	12	18.4		B	DSO	20	5	10	3
9269		VORO	12	19	0329	N15	W07	12	18.6			AXX	43	4	5	2
9269		TACH	12	19	0736	N15	W08	12	18.7			BRO	60	2	5	3
9269		SVTO	12	19	0851	N13	W09	12	18.7		B	DSO	20	7	6	2
9269		RAMY	12	19	1330	N12	W13	12	18.6		B	CSO	30	8	4	3
9269	30216	MWIL	12	19	1700	N15	W13	12	18.7	4	(D)					
9269		HOLL	12	19	1710	N13	W14	12	18.6		B	CAO	30	9	5	3
9269		LEAR	12	20	0025	N14	W16	12	18.8		B	CRO	20	6	5	3
9269		SVTO	12	20	1123	N14	W25	12	18.6		B	DAO	60	9	5	2
9269	30216	MWIL	12	20	1545	N14	W26	12	18.7	4	(AP)					
9269		HOLL	12	20	1558	N14	W26	12	18.7		B	CAO	20	3	4	2
9269		LEAR	12	21	0050	N15	W32	12	18.6		A	AXX		1		3
9269		HOLL	12	21	1538	N15	W37	12	18.8		B	BXO	20	7	4	3
9269		LEAR	12	22	0018	N15	W40	12	19.0		A	AXX	10	4	3	4
9269		TACH	12	22	0539	N15	W45	12	18.8			AXX	10	1	1	3
9269		LEAR	12	24	0030	N12	W68	12	18.9		A	AXX		1		4
9268A		KAND	12	15	0925	N17	E56	12	19.6			BXO		2	3	2
9268A	30221	MWIL	12	15	1545	N17	E50	12	19.4	4	(AP)					
9268A	30226	MWIL	12	18	1600	N16	E09	12	19.3	4	(AP)					
9268		SVTO	12	13	0757	S17	E80	12	19.4		A	HSX	60	1	2	3
9268		HOLL	12	13	1615	S17	E82	12	19.9		A	HAX	100	1	2	2
9268		RAMY	12	13	1820	S15	E79	12	19.7		A	HSX	60	1	2	3
9268	30217	MWIL	12	13	2230	S17	E75	12	19.6	4	(AP)					
9268		LEAR	12	14	0210	S18	E70	12	19.4		A	HSX	60	1	1	3
9268		KAND	12	14	0800	S17	E71	12	19.7			HS		1	2	3
9268		SVTO	12	14	0815	S18	E68	12	19.5		A	HAX	50	1	1	2
9268		RAMY	12	14	1210	S19	E69	12	19.8		A	HSX	60	1	2	2
9268	30217	MWIL	12	14	1545	S18	E66	12	19.7	4	(AP)					
9268		LEAR	12	15	0033	S18	E60	12	19.6		A	HSX	120	1	1	2
9268		SVTO	12	15	0810	S18	E57	12	19.7		A	HSX	40	1	2	2
9268		KAND	12	15	0925	S17	E58	12	19.8			HS		1	2	2
9268	30217	MWIL	12	15	1545	S18	E53	12	19.7	4	(AP)					
9268		HOLL	12	15	1940	S17	E51	12	19.7		A	HSX	130	1	2	2
9268		VORO	12	16	0003	S18	E49	12	19.7			HSX	165	1		2
9268		LEAR	12	16	0053	S18	E48	12	19.7		A	HSX	110	1	2	4
9268		KAND	12	16	0635	S17	E46	12	19.8			HS		1	2	1
9268		SVTO	12	16	0945	S18	E43	12	19.7		A	HSX	100	1	2	3
9268	30217	MWIL	12	16	1545	S18	E39	12	19.6	5	(AP)					
9268		HOLL	12	16	1630	S19	E39	12	19.7		A	HAX	110	1	2	3
9268		VORO	12	16	2342	S18	E35	12	19.6			HSX	222	1		3
9268		LEAR	12	17	0110	S18	E35	12	19.7		A	HSX	120	1	2	3
9268		SVTO	12	17	0900	S18	E31	12	19.7		A	HAX	120	1	2	3
9268		KAND	12	17	0940	S17	E31	12	19.7			HS		1	2	2
9268		RAMY	12	17	1245	S18	E28	12	19.7		A	HSX	70	1	2	3
9268	30217	MWIL	12	17	1530	S18	E27	12	19.7	5	(AP)					
9268		HOLL	12	17	1555	S17	E27	12	19.7		A	HSX	120	1	2	3
9268		LEAR	12	18	0120	S17	E21	12	19.6		A	HSX	70	1	2	3
9268		TACH	12	18	0507	S18	E20	12	19.7			HSX	75	1	1	2
9268		SVTO	12	18	0803	S18	E18	12	19.7		A	HSX	100	1	2	2
9268		KAND	12	18	0925	S18	E18	12	19.8			HS		1	2	2
9268		RAMY	12	18	1232	S18	E15	12	19.7		A	HSX	90	1	2	3
9268		HOLL	12	18	1544	S18	E13	12	19.6		A	HSX	80	1	2	2
9268	30217	MWIL	12	18	1600	S17	E14	12	19.7	5	(AP)					
9268		LEAR	12	19	0045	S18	E09	12	19.7		A	HSX	90	1	2	3

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

DECEMBER 2000

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9268		VORO	12	19	0329	S19	E08	12	19.7			HSX	199	1		2
9268		TACH	12	19	0736	S17	E05	12	19.7			HSX	100	1	1	3
9268		SVTO	12	19	0851	S18	E05	12	19.7		A	HSX	140	1	2	2
9268		RAMY	12	19	1330	S18	E01	12	19.6		A	HSX	80	1	2	3
9268	30217	MWIL	12	19	1700	S17	W00	12	19.7	5	(AP)					
9268		HOLL	12	19	1710	S18	W01	12	19.6		A	HSX	80	1	2	3
9268		LEAR	12	20	0025	S18	W04	12	19.7		A	HSX	100	1	2	3
9268		SVTO	12	20	1123	S18	W10	12	19.7		A	HAX	90	1	2	2
9268	30217	MWIL	12	20	1545	S18	W12	12	19.7	5	(AP)					
9268		HOLL	12	20	1558	S18	W13	12	19.7		A	HSX	90	2	3	2
9268		VORO	12	20	2336	S18	W17	12	19.7			HSX	159	1		2
9268		LEAR	12	21	0050	S18	W17	12	19.7		A	HSO	60	2	3	3
9268		KAND	12	21	1040	S19	W23	12	19.7			HA		1	2	2
9268		HOLL	12	21	1538	S18	W26	12	19.7		A	HSX	80	1	2	3
9268		LEAR	12	22	0018	S18	W30	12	19.7		B	CSO	80	4	4	4
9268		TACH	12	22	0539	S17	W32	12	19.8			HSX	95	1	1	3
9268	30217	MWIL	12	22	1600	S18	W40	12	19.6	5	(AP)					
9268		HOLL	12	22	1645	S18	W41	12	19.6		A	HSX	90	2	2	3
9268		LEAR	12	23	0010	S17	W43	12	19.7		B	CSO	100	2	2	4
9268		SVTO	12	23	0755	S18	W48	12	19.7		A	HSX	60	1	1	2
9268		HOLL	12	23	1545	S18	W52	12	19.7		A	HAX	60	1	2	2
9268		LEAR	12	24	0030	S18	W57	12	19.7		A	HSX	100	1	2	4
9268		SVTO	12	24	0753	S18	W62	12	19.6		A	HSX	40	1	2	2
9268		KAND	12	24	0835	S18	W62	12	19.6			HS		1	1	3
9268		RAMY	12	24	1509	S17	W68	12	19.5		B	HSX	80	1	2	1
9268	30217	MWIL	12	24	1600	S17	W66	12	19.6	5	(AP)					
9268		LEAR	12	25	0120	S16	W69	12	19.8		A	HSX	50	1	2	4
9268		KAND	12	25	1235	S18	W78	12	19.6			HS		1	2	3
9268		RAMY	12	25	1242	S17	W79	12	19.5		A	HSX	60	1	2	4
9268		LEAR	12	26	0020	S16	W79	12	20.0		A	HSX	60	1	1	4
9286		LEAR	12	24	0030	N30	W34	12	21.3		A	AXX		1		4
9286		SVTO	12	24	0753	N30	W40	12	21.2		B	CSO	30	2	4	2
9286		KAND	12	24	0835	N30	W40	12	21.2			BXO		2	4	3
9286	30233	MWIL	12	24	1600	N31	W45	12	21.1	4	(B)					
9286		LEAR	12	25	0120	N32	W49	12	21.2		B	BXO	10	2	2	4
9286		KAND	12	25	1235	N29	W58	12	21.0			AX		1	1	3
9286		RAMY	12	25	1242	N30	W58	12	21.0		A	HRX		1	1	4
9286		SVTO	12	26	1205	N31	W69	12	21.0		A	AXX	10	2	1	2
9286		RAMY	12	26	1242	N31	W69	12	21.1		A	HRX	10	1	1	3
9273		LEAR	12	15	0033	N19	E77	12	20.9		A	HAX	120	1	1	2
9273		SVTO	12	15	0810	N20	E79	12	21.4		A	HAX	90	2	1	2
9273		KAND	12	15	0925	N20	E77	12	21.3			HA		2	2	2
9273	30222	MWIL	12	15	1545	N20	E74	12	21.3	4	(AP)					
9273		HOLL	12	15	1940	N20	E70	12	21.2		B	DAO	140	3	5	2
9273		VORO	12	16	0003	N19	E69	12	21.3			HAX	67	1		2
9273		LEAR	12	16	0053	N19	E68	12	21.2		B	CAO	80	4	2	4
9273		KAND	12	16	0635	N20	E66	12	21.3			BXO		5	5	1
9273		SVTO	12	16	0945	N20	E65	12	21.4		B	CAO	50	5	7	3
9273	30222	MWIL	12	16	1545	N20	E60	12	21.2	4	(AP)					
9273		HOLL	12	16	1630	N19	E59	12	21.2		B	CAO	50	5	3	3
9273		VORO	12	16	2342	N19	E56	12	21.3			HRX	41	1		3
9273		LEAR	12	17	0110	N19	E55	12	21.2		A	HSX	50	2	1	3
9273		SVTO	12	17	0900	N19	E52	12	21.3		A	HAX	30	1	1	3
9273		KAND	12	17	0940	N20	E51	12	21.3			HS		1	2	2
9273		RAMY	12	17	1245	N20	E49	12	21.3		A	HSX	10	2	1	3
9273	30222	MWIL	12	17	1530	N19	E47	12	21.2	5	(AP)					
9273		HOLL	12	17	1555	N19	E47	12	21.2		A	HSX	30	1	2	3
9273		LEAR	12	18	0120	N19	E41	12	21.2		A	HSX	10	1	1	3
9273		TACH	12	18	0507	N18	E40	12	21.2			AXX	3	1	1	2
9273		SVTO	12	18	0803	N20	E39	12	21.3		A	HSX	10	1	1	2
9273		KAND	12	18	0925	N20	E37	12	21.2			AX		2	1	2
9273		RAMY	12	18	1232	N21	E38	12	21.4		B	BXO	10	4	4	3
9273		HOLL	12	18	1544	N21	E38	12	21.6		A	AXX	10	1	1	2
9273	30222	MWIL	12	18	1600	N21	E36	12	21.4	4	(AP)					
9273		TACH	12	19	0736	N20	E30	12	21.6			AXX	5	1	1	3
9273		RAMY	12	19	1330	N20	E25	12	21.5		B	BXO	10	5	1	3
9273	30222	MWIL	12	19	1700	N21	E25	12	21.6	4	(AP)					

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

DECEMBER 2000

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
9273		HOLL	12	19	1710	N20	E23	12	21.5		A	AXX	10	1	2	3
9273		LEAR	12	20	0025	N20	E20	12	21.5		A	AXX	10	4	1	3
9273		SVTO	12	20	1123	N21	E12	12	21.4		B	BXO	10	6	5	2
9273	30222	MWIL	12	20	1545	N21	E11	12	21.5	4	(AP)					
9273		HOLL	12	20	1558	N20	E11	12	21.5		B	BXO	10	6	3	2
9273		LEAR	12	21	0050	N20	E07	12	21.6		A	AXX		1		3
9273		HOLL	12	21	1538	N19	W02	12	21.5		B	BXO	10	5	4	3
9273		LEAR	12	22	0018	N20	W07	12	21.5		A	AXX		2	2	4
9273	30222	MWIL	12	22	1600	N20	W17	12	21.4	3	(AP)					
9278A	30234	MWIL	12	24	1600	S25	W30	12	22.3	3	(B)					
9278A		RAMY	12	25	1242	S25	W35	12	22.8		A	AXX		1		4
9278		LEAR	12	17	0110	N08	E79	12	23.0		A	AXX	30	1		3
9278		SVTO	12	17	0900	N09	E77	12	23.1		B	CRO	50	3	8	3
9278		KAND	12	17	0940	N09	E77	12	23.2			CRO		3	8	2
9278		RAMY	12	17	1245	N09	E69	12	22.7		A	AXX	10	3	2	3
9278	30224	MWIL	12	17	1530	N09	E70	12	22.9	4	(BG)					
9278		HOLL	12	17	1555	N08	E71	12	23.0		B	CAO	70	6	11	3
9278		LEAR	12	18	0120	N08	E62	12	22.7		B	DAO	80	7	9	3
9278		SVTO	12	18	0803	N09	E60	12	22.8		B	DAO	110	4	8	2
9278		KAND	12	18	0925	N09	E60	12	22.9			DAO		8	9	2
9278		RAMY	12	18	1232	N09	E57	12	22.8		B	DAO	90	11	9	3
9278		HOLL	12	18	1544	N09	E55	12	22.8		B	CAO	80	10	9	2
9278	30224	MWIL	12	18	1600	N09	E55	12	22.8	5	(B)					
9278		LEAR	12	19	0045	N09	E50	12	22.8		B	ESO	110	9	11	3
9278		VORO	12	19	0329	N08	E48	12	22.7			HRX	128	2	9	2
9278		TACH	12	19	0736	N09	E47	12	22.8			DAI	142	6	10	3
9278		SVTO	12	19	0851	N09	E45	12	22.7		B	DAO	110	15	10	2
9278		RAMY	12	19	1330	N09	E42	12	22.7		B	DAI	70	19	9	3
9278	30224	MWIL	12	19	1700	N09	E39	12	22.6	4	(BG)					
9278		HOLL	12	19	1710	N09	E38	12	22.6		BG	DAI	80	24	9	3
9278		LEAR	12	20	0025	N08	E36	12	22.7		B	CAI	60	25	10	3
9278		SVTO	12	20	1123	N09	E28	12	22.6		B	DAO	120	21	8	2
9278	30224	MWIL	12	20	1545	N09	E27	12	22.7	4	(BG)					
9278		HOLL	12	20	1558	N09	E26	12	22.6		B	DAI	90	20	8	2
9278		VORO	12	20	2336	N10	E21	12	22.6			HRX	119	4	6	2
9278		LEAR	12	21	0050	N09	E21	12	22.6		B	DAO	50	13	8	3
9278		KAND	12	21	1040	N09	E15	12	22.6			DAO		15	9	2
9278		HOLL	12	21	1538	N09	E13	12	22.6		B	EAO	110	16	8	3
9278		LEAR	12	22	0018	N09	E08	12	22.6		B	DAO	90	12	9	4
9278		TACH	12	22	0539	N09	E04	12	22.5			CAI	81	6	7	3
9278	30224	MWIL	12	22	1600	N09	W04	12	22.4	4	(B)					
9278		HOLL	12	22	1645	N09	W03	12	22.5		BG	DAO	50	12	8	3
9278		LEAR	12	23	0010	N08	W06	12	22.5		B	DAO	70	10	7	4
9278		SVTO	12	23	0755	N09	W12	12	22.4		B	DAO	30	5	8	2
9278		HOLL	12	23	1545	N10	W15	12	22.5		B	CAO	30	7	8	2
9278		LEAR	12	24	0030	N10	W19	12	22.6		B	CSO	40	5	10	4
9278		SVTO	12	24	0753	N07	W24	12	22.5		A	AXX	10	3	2	2
9278		KAND	12	24	0835	N10	W28	12	22.2			AX		1	1	3
9278	30224	MWIL	12	24	1600	N10	W32	12	22.3	3	(AP)					
9279A		HOLL	12	27	1710	S10	W61	12	23.1		A	HSX	80	1	1	2
9279A		HOLL	12	28	1550	S11	W75	12	23.0		A	HSX	120	1	2	3
9284		RAMY	12	17	1245	N09	E75	12	23.2		A	HSX	20	1	1	3
9284		TACH	12	18	0507	N08	E62	12	22.9			CAI	50	6	7	2
9284		LEAR	12	22	0018	N06	E17	12	23.3		B	BXO	10	5	2	4
9284		TACH	12	22	0539	N05	E15	12	23.3			AXX	6	4	1	3
9284		LEAR	12	23	0010	N06	E05	12	23.4		B	CAO	30	6	6	4
9284		SVTO	12	23	0755	N04	E01	12	23.4		B	CSO	20	3	1	2
9284		LEAR	12	24	0030	N06	W08	12	23.4		B	CSO	20	4	3	4
9281		RAMY	12	18	1232	N11	E68	12	23.6		A	HSX	70	2	2	3
9281	30227	MWIL	12	19	1700	N07	E54	12	23.7	4	(B)					
9281		SVTO	12	20	1123	N07	E45	12	23.8		B	CRO	20	3	9	2
9281	30227	MWIL	12	20	1545	N07	E42	12	23.8	4	(BP)					
9281		HOLL	12	20	1558	N06	E38	12	23.5		A	AXX	10	3	2	2
9281		HOLL	12	21	1538	N06	E24	12	23.4		B	BXO		4	3	3

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

DECEMBER 2000

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
9281	30227	MWIL	12	22	1600	N06	E13	12	23.6	4	(B)					
9281		HOLL	12	22	1645	N05	E11	12	23.5		B	CSO	30	5	9	3
9281		LEAR	12	23	0010	N07	E12	12	23.9		B	CAO	10	2	2	4
9281		LEAR	12	23	0010	N14	E08	12	23.6		A	AXX		1		4
9281		SVTO	12	23	0755	N08	E08	12	23.9		A	AXX	10	3	2	2
9281		HOLL	12	23	1545	N05	W02	12	23.5		A	AXX	10	3	1	2
9279	30225	MWIL	12	17	1530	S11	E80	12	23.7	4	AP					
9279		HOLL	12	17	1555	S12	E80	12	23.7		A	HSX	60	1	2	3
9279		LEAR	12	18	0120	S12	E72	12	23.5		A	HAX	60	1	2	3
9279		TACH	12	18	0507	S11	E78	12	24.1			HSX	40	1	1	2
9279		SVTO	12	18	0803	S11	E73	12	23.8		A	HAX	80	1	3	2
9279		KAND	12	18	0925	S11	E75	12	24.0			CSO		5	8	2
9279		HOLL	12	18	1544	S11	E67	12	23.7		A	HAX	50	3	2	2
9279	30225	MWIL	12	18	1600	S11	E66	12	23.6	4	(AP)					
9279		LEAR	12	19	0045	S12	E63	12	23.8		B	DSO	200	5	8	3
9279		VORO	12	19	0329	S11	E60	12	23.6			HAX	125	1		2
9279		TACH	12	19	0736	S12	E57	12	23.6			HSX	120	2	1	3
9279		SVTO	12	19	0851	S11	E64	12	24.2		B	CAO	160	8	14	2
9279		RAMY	12	19	1330	S11	E61	12	24.1		B	ESI	200	17	12	3
9279	30225	MWIL	12	19	1700	S12	E55	12	23.8	5	(BG)					
9279		HOLL	12	19	1710	S12	E54	12	23.8		B	CAO	110	6	10	3
9279		LEAR	12	20	0025	S13	E52	12	23.9		B	CSO	140	6	11	3
9279		SVTO	12	20	1123	S12	E48	12	24.1		B	FAO	220	11	17	2
9279	30225	MWIL	12	20	1545	S12	E43	12	23.9	5	(BG)					
9279		HOLL	12	20	1558	S13	E45	12	24.1		B	FSO	170	9	16	2
9279		VORO	12	20	2336	S11	E44	12	24.3			HAX	156	1		2
9279		LEAR	12	21	0050	S13	E40	12	24.0		B	ESO	90	5	15	3
9279		KAND	12	21	1040	S10	E34	12	24.0			CSO		7	15	2
9279		HOLL	12	21	1538	S13	E32	12	24.1		B	CSO	160	7	16	3
9279		LEAR	12	22	0018	S13	E25	12	23.9		B	ESO	120	10	15	4
9279		TACH	12	22	0539	S12	E18	12	23.6			HAX	205	4	2	3
9279	30225	MWIL	12	22	1600	S12	E15	12	23.8	5	(BG)					
9279		HOLL	12	22	1645	S14	E13	12	23.7		B	ESO	100	7	11	3
9279		LEAR	12	23	0010	S12	E10	12	23.8		B	CSO	100	10	12	4
9279		SVTO	12	23	0755	S12	E03	12	23.5		B	CSO	120	4	5	2
9279		HOLL	12	23	1545	S12	E02	12	23.8		B	FSO	110	8	17	2
9279		LEAR	12	24	0030	S11	W07	12	23.5		B	CSO	110	5	8	4
9279		SVTO	12	24	0753	S11	W13	12	23.3		B	CSO	100	3	3	2
9279		KAND	12	24	0835	S09	W13	12	23.4			HA		2	2	3
9279		RAMY	12	24	1509	S09	W18	12	23.3		B	HSX	60	1	2	1
9279	30225	MWIL	12	24	1600	S09	W18	12	23.3	5	(AP)					
9279		LEAR	12	25	0120	S09	W22	12	23.4		A	HSX	60	1	2	4
9279		KAND	12	25	1235	S10	W29	12	23.3			HS		1	2	3
9279		RAMY	12	25	1242	S09	W30	12	23.3		A	HSX	90	1	2	4
9279		LEAR	12	26	0020	S09	W35	12	23.4		A	HSX	90	1	2	4
9279		SVTO	12	26	1205	S10	W44	12	23.2		A	HSX	70	1	2	2
9279		RAMY	12	26	1242	S09	W44	12	23.2		A	HSX	80	1	1	3
9279	30225	MWIL	12	26	1700	S09	W46	12	23.2	5	(AP)					
9279		LEAR	12	27	0050	S09	W51	12	23.2		A	HSX	90	1	1	3
9279		KAND	12	27	1025	S10	W56	12	23.2			HS		1	1	2
9279		RAMY	12	27	1252	S10	W58	12	23.2		A	HSX	70	1	2	3
9279	30225	MWIL	12	27	1545	S10	W59	12	23.2	5	(AP)					
9279		RAMY	12	28	1230	S12	W70	12	23.2		A	HSX	50	1	1	3
9279	30225	MWIL	12	28	1545	S10	W73	12	23.2	5	(AP)					
9279		LEAR	12	29	0120	S10	W80	12	23.0		A	HSX	60	1	2	3
9279B	30238	MWIL	12	27	1545	S11	W36	12	24.9	4	(AF)					
9279B		HOLL	12	27	1710	S10	W38	12	24.9		A	AXX	10	1	1	2
9279B	30238	MWIL	12	28	1545	S11	W49	12	25.0	4	(AF)					
9280		TACH	12	19	0736	N10	E78	12	25.2			HR	45	1	2	3
9280		SVTO	12	19	0851	N10	E80	12	25.4		B	DAO	150	2	10	2
9280		RAMY	12	19	1330	N10	E77	12	25.3		BG	DAO	220	7	8	3
9280	30228	MWIL	12	19	1700	N09	E79	12	25.6	5	(BP)					
9280		HOLL	12	19	1710	N09	E75	12	25.3		B	EAO	360	6	15	3
9280		LEAR	12	20	0025	N08	E72	12	25.4		BG	DKO	330	11	9	3
9280		SVTO	12	20	1123	N08	E68	12	25.6		B	EKO	620	13	14	2
9280	30230	MWIL	12	20	1545	N04	E68	12	25.7	4	(B)					

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

DECEMBER 2000

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9280	30228	MWIL	12	20	1545	N09	E65	12	25.5	5	(BP)					
9280		HOLL	12	20	1558	N08	E65	12	25.5		BG	DKO	680	18	8	2
9280		LEAR	12	21	0050	N08	E59	12	25.4		B	EKO	330	11	13	3
9280		KAND	12	21	1040	N04	E58	12	25.8			CRO		2	2	2
9280		KAND	12	21	1040	N10	E55	12	25.6			EKO		16	12	2
9280		HOLL	12	21	1538	N08	E52	12	25.5		BG	FKI	570	19	16	3
9280		LEAR	12	22	0018	N09	E47	12	25.5		B	EKI	500	18	10	4
9280		TACH	12	22	0539	N06	E45	12	25.6			DAI	698	16	10	3
9280	30228	MWIL	12	22	1600	N08	E39	12	25.6	5	(BG)					
9280		HOLL	12	22	1645	N06	E39	12	25.6		BG	FKI	600	34	19	3
9280		LEAR	12	23	0010	N08	E36	12	25.7		B	EKI	560	20	11	4
9280		SVTO	12	23	0755	N10	E29	12	25.5		B	EKI	460	9	12	2
9280		HOLL	12	23	1545	N08	E25	12	25.5		BG	FKI	590	34	18	2
9280		LEAR	12	24	0030	N08	E23	12	25.7		B	EKI	560	32	12	4
9280		SVTO	12	24	0753	N09	E17	12	25.6		B	EKI	530	24	12	2
9280		KAND	12	24	0835	N10	E16	12	25.5			EAC		24	12	3
9280		RAMY	12	24	1509	N10	E12	12	25.5		B	EKI	590	29	11	1
9280	30228	MWIL	12	24	1600	N09	E13	12	25.6	5	(D)					
9280		LEAR	12	25	0120	N08	E08	12	25.6		B	EAO	260	36	12	4
9280		KAND	12	25	1235	N09	E02	12	25.7			FAC		45	16	3
9280		RAMY	12	25	1242	N09	E02	12	25.7		B	EAI	420	60	15	4
9280		LEAR	12	26	0020	N10	W05	12	25.6		B	EAI	400	38	13	4
9280		SVTO	12	26	1205	N09	W13	12	25.5		B	EAI	430	33	14	2
9280		RAMY	12	26	1242	N08	W10	12	25.8		B	FSO	350	54	18	3
9280	30228	MWIL	12	26	1700	N09	W15	12	25.6	5	(BG)					
9280		LEAR	12	27	0050	N11	W18	12	25.7		B	DAO	250	28	1	3
9280		KAND	12	27	1035	N09	W24	12	25.6			EAC		17	14	2
9280		RAMY	12	27	1252	N09	W26	12	25.6		B	EAI	300	24	13	3
9280	30228	MWIL	12	27	1545	N09	W27	12	25.6	5	(BG)					
9280		HOLL	12	27	1710	N09	W29	12	25.5		BG	EAI	350	21	14	2
9280		RAMY	12	28	1230	N09	W39	12	25.6		B	EAI	300	22	12	3
9280	30228	MWIL	12	28	1545	N09	W40	12	25.6	5	(BG)					
9280		HOLL	12	28	1550	N08	W41	12	25.6		BG	EAI	360	25	13	3
9280		LEAR	12	29	0120	N08	W46	12	25.6		B	ESO	160	8	12	3
9280		SVTO	12	29	0920	N08	W51	12	25.6		B	EAO	160	4	13	2
9280		KAND	12	29	1225	N09	W53	12	25.5			ESO		7	11	1
9280		RAMY	12	29	1415	N07	W53	12	25.6		B	EAO	160	6	12	3
9280	30228	MWIL	12	29	1545	N08	W54	12	25.6	5	(BG)					
9280		HOLL	12	29	1624	N08	W55	12	25.5		B	EAO	360	7	13	3
9280		LEAR	12	30	0115	N09	W57	12	25.8		B	ESO	110	4	10	3
9280		SVTO	12	30	0736	N09	W63	12	25.6		B	EAO	180	5	12	2
9280		TACH	12	30	0738	N09	W63	12	25.6			DAO	170	4	9	3
9280		KAND	12	30	0835	N08	W64	12	25.5			ESO		5	12	5
9280		RAMY	12	30	1315	N09	W65	12	25.7		B	EAO	120	4	11	3
9280	30228	MWIL	12	30	1545	N08	W67	12	25.6	5	(B)					
9280		HOLL	12	30	1546	N09	W66	12	25.7		B	DAO	180	6	10	4
9280		LEAR	12	31	0155	N09	W70	12	25.8		B	EAO	150	4	12	4
9280		TACH	12	31	0705	N07	W72	12	25.9			BRO	20	3	7	2
9280		KAND	12	31	0900	N09	W80	12	25.4			EAO		5	14	3
9280		RAMY	12	31	1310	N09	W78	12	25.7		B	ESO	110	4	11	3
9280	30228	MWIL	12	31	1600	N07	W79	12	25.7	4	(B)					
9280A		KAND	12	25	1225	S07	E07	12	26.0			BXO		2	2	3
9280A		RAMY	12	25	1242	S07	E07	12	26.0		A	AXX		2	2	4
9282		LEAR	12	21	0050	N19	E79	12	27.1		A	HSX	30	1	2	3
9282		KAND	12	21	1040	N21	E73	12	27.0			HA		1	2	2
9282		HOLL	12	21	1538	N19	E72	12	27.1		A	HAX	60	1	2	3
9282		LEAR	12	22	0018	N19	E66	12	27.0		A	HSX	40	1	1	4
9282		TACH	12	22	0539	N19	E64	12	27.1			HSX	40	1	1	3
9282	30231	MWIL	12	22	1600	N20	E59	12	27.2	5	(AP)					
9282		HOLL	12	22	1645	N19	E59	12	27.2		A	HSX	40	1	1	3
9282		LEAR	12	23	0010	N20	E55	12	27.2		A	HSX	40	1	1	4
9282		SVTO	12	23	0755	N20	E50	12	27.1		A	HSX	30	1	1	2
9282		HOLL	12	23	1545	N20	E48	12	27.3		A	HSX	30	1	1	2
9282		LEAR	12	24	0030	N20	E42	12	27.2		A	HSX	40	1	2	4
9282		SVTO	12	24	0753	N20	E38	12	27.2		A	HSX	30	1	1	2
9282		KAND	12	24	0835	N22	E38	12	27.3			HS		1	1	3
9282		RAMY	12	24	1509	N21	E34	12	27.2		B	HSX	30	1	1	1

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

DECEMBER 2000

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
9282	30231	MWIL	12	24	1600	N20	E35	12	27.3	5	(AP)					
9282		LEAR	12	25	0120	N20	E29	12	27.3		A	HSX	20	1	1	4
9282		KAND	12	25	1235	N21	E23	12	27.3			HS		1	1	3
9282		RAMY	12	25	1242	N21	E23	12	27.3		A	HSX	40	1	1	4
9282		LEAR	12	26	0020	N20	E17	12	27.3		A	HSX	40	1	1	4
9282		SVTO	12	26	1205	N21	E11	12	27.3		A	HSX	20	1	1	2
9282		RAMY	12	26	1242	N21	E10	12	27.3		A	HSX	40	1	1	3
9282	30231	MWIL	12	26	1700	N21	E09	12	27.4	4	(AP)					
9282		LEAR	12	27	0050	N21	E04	12	27.3		A	HSX	40	1	11	3
9282		KAND	12	27	1025	N21	W01	12	27.3			HS		1	1	2
9282		RAMY	12	27	1252	N20	W04	12	27.2		A	HSX	20	1	1	3
9282	30231	MWIL	12	27	1545	N20	W04	12	27.3	5	(AP)					
9282		HOLL	12	27	1710	N21	W05	12	27.3		A	HSX	20	1	1	2
9282		RAMY	12	28	1230	N20	W17	12	27.2		A	HSX	10	1	1	3
9282	30231	MWIL	12	28	1545	N20	W17	12	27.3	5	(AP)					
9282		HOLL	12	28	1550	N20	W17	12	27.3		A	HSX	20	1	2	3
9282		LEAR	12	29	0120	N21	W22	12	27.4		A	HSX	20	1	1	3
9282		SVTO	12	29	0920	N19	W27	12	27.3		A	HSX	20	1	1	2
9282		KAND	12	29	1225	N21	W29	12	27.3			HS		1	1	1
9282		RAMY	12	29	1415	N19	W28	12	27.4		A	HSX	20	1	1	3
9282	30231	MWIL	12	29	1545	N20	W30	12	27.4	4	(AP)					
9282		HOLL	12	29	1624	N21	W32	12	27.2		A	HSX	20	1	2	3
9282		LEAR	12	30	0115	N22	W35	12	27.4		A	HSX	10	1	1	3
9282		SVTO	12	30	0736	N21	W38	12	27.4		A	HSX	10	1	1	2
9282		TACH	12	30	0738	N21	W38	12	27.4			AXX	30	1	1	3
9282		KAND	12	30	0835	N20	W39	12	27.4			AX		1		5
9282		RAMY	12	30	1315	N22	W41	12	27.4		A	HSX	20	1	1	3
9282	30231	MWIL	12	30	1545	N21	W43	12	27.3	4	(AP)					
9282		HOLL	12	30	1546	N21	W43	12	27.4		A	AXX	10	1	1	4
9282		LEAR	12	31	0155	N21	W49	12	27.3		A	HSX	10	1	1	4
9283A	30243	MWIL	12	29	1545	N32	W13	12	28.6	4	(BP)					
9283A		LEAR	12	30	0115	N33	W16	12	28.8		A	AXX		1		3
9283	30232	MWIL	12	22	1600	S14	E84	12	29.0	4	G					
9283		HOLL	12	22	1645	S15	E82	12	28.9		A	HAX	120	1	2	3
9283		LEAR	12	23	0010	S13	E76	12	28.7		B	CAO	120	4	4	4
9283		SVTO	12	23	0755	S13	E75	12	29.0		B	DAO	120	4	5	2
9283		HOLL	12	23	1545	S15	E72	12	29.1		B	DAO	190	5	6	2
9283		LEAR	12	24	0030	S12	E65	12	28.9		B	DSO	180	10	6	4
9283		SVTO	12	24	0753	S13	E61	12	28.9		B	DAO	230	5	7	2
9283		KAND	12	24	0835	S11	E60	12	28.9			DAO		5	6	3
9283		RAMY	12	24	1509	S12	E57	12	28.9		B	DAO	230	9	8	1
9283	30232	MWIL	12	24	1600	S13	E56	12	28.9	4	(D)					
9283		LEAR	12	25	0120	S12	E50	12	28.8		BG	DAO	150	15	5	4
9283		KAND	12	25	1235	S11	E45	12	28.9			DAI		30	8	3
9283		RAMY	12	25	1242	S12	E45	12	28.9		B	DAI	280	20	8	4
9283		LEAR	12	26	0020	S12	E36	12	28.7		GD	DAI	240	28	8	4
9283		SVTO	12	26	1205	S11	E32	12	28.9		B	DAO	240	17	10	2
9283		RAMY	12	26	1242	S11	E31	12	28.9		B	DSO	200	19	9	3
9283	30232	MWIL	12	26	1700	S13	E28	12	28.8	5	(D)					
9283		LEAR	12	27	0050	S11	E25	12	28.9		GD	DKO	320	13	9	3
9283		KAND	12	27	1015	S12	E20	12	28.9			DAC		11	5	2
9283		RAMY	12	27	1252	S11	E16	12	28.7		B	DAI	200	26	10	3
9283	30239	MWIL	12	27	1545	S09	E13	12	28.6	4	(BG)					
9283	30232	MWIL	12	27	1545	S14	E16	12	28.9	5	(BG)					
9283		HOLL	12	27	1710	S10	E14	12	28.8		B	DAO	190	25	10	2
9283		RAMY	12	28	1230	S10	E02	12	28.7		B	DAI	150	24	10	3
9283	30239	MWIL	12	28	1545	S07	W02	12	28.5	4	(B)					
9283	30232	MWIL	12	28	1545	S13	E03	12	28.9	5	(BG)					
9283		HOLL	12	28	1550	S12	E01	12	28.7		B	EAI	200	21	11	3
9283		LEAR	12	29	0120	S11	W05	12	28.7		BG	DAO	110	12	9	3
9283		SVTO	12	29	0920	S14	W07	12	28.8		B	DAO	80	7	5	2
9283		KAND	12	29	1225	S13	W09	12	28.8			DAO		10	6	1
9283		RAMY	12	29	1415	S13	W10	12	28.8		B	DAI	160	8	10	3
9283	30239	MWIL	12	29	1545	S09	W14	12	28.6	5	(BG)					
9283	30232	MWIL	12	29	1545	S13	W10	12	28.9	5	(BG)					
9283		HOLL	12	29	1624	S12	W12	12	28.8		B	DAI	150	21	8	3
9283		LEAR	12	30	0115	S11	W18	12	28.7		BG	DAO	80	11	9	3

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

DECEMBER 2000

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
9283		SVTO	12	30	0736	S11	W20	12	28.8		BG	EAO	110	8	11	2
9283		TACH	12	30	0738	S07	W25	12	28.4			AXX	20	1	1	3
9283		TACH	12	30	0738	S13	W20	12	28.8			DAI	147	6	3	3
9283		KAND	12	30	0835	S14	W20	12	28.8			DSO		5	6	5
9283		RAMY	12	30	1315	S10	W22	12	28.9		B	DAI	90	10	9	3
9283	30239	MWIL	12	30	1545	S09	W26	12	28.7	4	(B)					
9283	30232	MWIL	12	30	1545	S13	W24	12	28.8	5	(BG)					
9283		HOLL	12	30	1546	S12	W24	12	28.8		B	CSO	110	11	9	4
9283		LEAR	12	31	0155	S10	W30	12	28.8		B	DAO	90	6	8	4
9283		TACH	12	31	0705	S07	W39	12	28.4			AXX	30	1	1	2
9283		TACH	12	31	0705	S13	W34	12	28.7			BAO	60	2	3	2
9283		KAND	12	31	0900	S10	W33	12	28.9			DSO		3	3	3
9283		RAMY	12	31	1310	S10	W38	12	28.7		B	DSO	60	5	9	3
9283	30239	MWIL	12	31	1600	S07	W43	12	28.4	4	(AP)					
9283	30232	MWIL	12	31	1600	S14	W37	12	28.9	5	(B)					
9283		LEAR	01	01	0110	S10	W45	12	28.8		B	DAO	80	7	8	3
9283		TACH	01	01	0705	S12	W45	12	29.0			AXX	25	1	1	2
9283		SVTO	01	01	0750	S09	W49	12	28.7		B	DSO	50	5	9	3
9283		RAMY	01	01	1306	S11	W52	12	28.7		B	DSO	60	8	7	2
9283	30239	MWIL	01	01	1600	S07	W57	12	28.5	4	(AP)					
9283	30232	MWIL	01	01	1600	S13	W51	12	28.9	5	(B)					
9283		HOLL	01	01	1725	S11	W54	12	28.8		B	CAO	70	7	7	2
9283		LEAR	01	02	0135	S10	W59	12	28.7		B	DAO	70	5	8	3
9283		SVTO	01	02	0730	S13	W64	12	28.6		B	EAO	60	6	13	3
9283		RAMY	01	02	1515	S11	W65	12	28.8		B	DSO	60	7	9	1
9283	30232	MWIL	01	02	1545	S13	W64	12	28.9	4	(B)					
9283		HOLL	01	02	1733	S13	W68	12	28.7		B	CAO	50	7	7	2
9283		LEAR	01	03	0104	S12	W68	12	29.0		A	HSX	50	2	3	3
9283		SVTO	01	03	0915	S12	W75	12	28.8		A	AXX	20	1	11	3
9283	30232	MWIL	01	03	1545	S12	W79	12	28.8	4	(B)					
9283		RAMY	01	03	1610	S10	W77	12	29.0		A	HSX	10	1	1	3
9283		HOLL	01	03	1630	S12	W79	12	28.8		A	AXX	20	1	1	2
9283B		KAND	12	27	1015	S07	E15	12	28.5			CRO		3	2	2
9283B		KAND	12	29	1225	S08	W11	12	28.7			CSO		5	8	1
9283B		KAND	12	30	0835	S08	W26	12	28.4			AX		1		5
9283B		KAND	12	31	0900	S07	W38	12	28.5			AX		1	1	3
9283B		TACH	01	01	0705	S06	W52	12	28.5			AXX	10	1	1	2
9288	30235	MWIL	12	24	1600	S21	E57	12	29.0	3	(B)					
9288		LEAR	12	26	0020	S21	E38	12	28.9		B	BXO	10	2	2	4
9288		SVTO	12	26	1205	S21	E34	12	29.1		B	DSO	30	2	4	2
9288		RAMY	12	26	1242	S21	E33	12	29.0		B	DRO	10	2	3	3
9288	30235	MWIL	12	26	1700	S21	E32	12	29.2	4	(B)					
9288		LEAR	12	27	0050	S21	E25	12	28.9		B	BXO		2	3	3
9288		RAMY	12	27	1252	S21	E19	12	29.0		A	AXX		1	1	3
9288	30235	MWIL	12	27	1545	S21	E16	12	28.9	4	(AP)					
9285		HOLL	12	23	1545	N06	E77	12	29.4		A	AXX		1	1	2
9285		LEAR	12	24	0030	N06	E70	12	29.3		B	CSO	50	2	5	4
9285		SVTO	12	24	0753	N06	E68	12	29.4		B	CAO	50	3	7	2
9285		KAND	12	24	0835	N07	E69	12	29.5			BXI		4	6	3
9285	30236	MWIL	12	24	1600	N06	E63	12	29.4	4	(B)					
9285		LEAR	12	25	0120	N06	E59	12	29.5		B	CSO	30	6	5	4
9285		KAND	12	25	1235	N07	E54	12	29.6			BXO		12	5	3
9285		RAMY	12	25	1242	N06	E52	12	29.4		B	DRO	30	13	5	4
9285		LEAR	12	26	0020	N06	E45	12	29.4		B	DAO	30	10	4	4
9285		SVTO	12	26	1205	N06	E40	12	29.5		B	DAO	90	12	6	2
9285		RAMY	12	26	1242	N07	E38	12	29.4		B	DSO	30	18	5	3
9285	30236	MWIL	12	26	1700	N06	E37	12	29.5	4	(B)					
9285		LEAR	12	27	0050	N07	E32	12	29.4		B	DAO	30	9	4	3
9285		KAND	12	27	1015	N07	E27	12	29.4			BXO		6	4	2
9285		RAMY	12	27	1252	N08	E27	12	29.6		B	CSO	30	15	7	3
9285	30236	MWIL	12	27	1545	N06	E24	12	29.4	4	(B)					
9285		HOLL	12	27	1710	N08	E23	12	29.4		B	CSO	60	10	6	2
9285		RAMY	12	28	1230	N08	E12	12	29.4		B	CSO	30	7	4	3
9285	30236	MWIL	12	28	1545	N06	E09	12	29.3	4	(BP)					
9285		HOLL	12	28	1550	N04	E11	12	29.5		B	BXO	10	4	4	3
9285		LEAR	12	29	0120	N06	E05	12	29.4		B	CSO	10	3	3	3

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

DECEMBER 2000

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
9285		KAND	12	29	1225	N05	W02	12	29.4			BXO		2	3	1
9285	30236	MWIL	12	29	1545	N06	W02	12	29.5	4	(B)					
9285		HOLL	12	29	1624	N07	W03	12	29.4		A	AXX	10	3	3	3
9285		LEAR	12	30	0115	N07	W07	12	29.5		B	CSO	10	3	2	3
9285		SVTO	12	30	0736	N06	W11	12	29.5		B	CSO	20	3	3	2
9285		TACH	12	30	0738	N07	W11	12	29.5			AXX	9	3	1	3
9285		KAND	12	30	0835	N06	W12	12	29.4			AX		3	3	5
9285		RAMY	12	30	1315	N07	W15	12	29.4		B	DAO	20	3	4	3
9285	30236	MWIL	12	30	1545	N06	W16	12	29.4	4	(BF)					
9285		HOLL	12	30	1546	N08	W15	12	29.5		B	CSO	30	5	3	4
9285		LEAR	12	31	0155	N07	W20	12	29.6		A	HSX	10	1	1	4
9287	30237	MWIL	12	24	1600	S16	E78	12	30.6	3	(AF)					
9287		LEAR	12	25	0120	S17	E68	12	30.2		A	AXX		1		4
9287		KAND	12	25	1235	S15	E66	12	30.5			BXO		4	5	3
9287		RAMY	12	25	1242	S16	E66	12	30.5		B	DRO	20	7	6	4
9287		LEAR	12	26	0020	S16	E57	12	30.3		B	DRO	20	2	3	4
9287		SVTO	12	26	1205	S16	E52	12	30.4		B	DRO	30	3	5	2
9287		RAMY	12	26	1242	S17	E51	12	30.4		B	DRO	20	4	5	3
9287	30237	MWIL	12	26	1700	S16	E47	12	30.3	4	(B)					
9287		LEAR	12	27	0050	S16	E42	12	30.2		A	AXX		1		3
9287	30242	MWIL	12	28	1545	S17	E21	12	30.2	3	(AP)					
9290		LEAR	12	27	0050	N31	E46	12	30.7		B	BXO	10	3	2	3
9290		RAMY	12	27	1252	N30	E36	12	30.4		B	CSO	20	6	5	3
9290	30240	MWIL	12	27	1545	N30	E36	12	30.5	4	(B)					
9290		HOLL	12	27	1710	N31	E35	12	30.5		B	CSO	60	6	5	2
9290		RAMY	12	28	1230	N31	E24	12	30.4		B	DSO	60	11	5	3
9290	30240	MWIL	12	28	1545	N30	E23	12	30.5	5	(BP)					
9290		HOLL	12	28	1550	N30	E23	12	30.5		B	CAO	50	16	6	3
9290		LEAR	12	29	0120	N30	E18	12	30.5		B	DAO	110	15	6	3
9290		SVTO	12	29	0920	N27	E12	12	30.3		A	AXX	10	3	2	2
9290		KAND	12	29	1225	N31	E12	12	30.5			CSI		16	6	1
9290		RAMY	12	29	1415	N30	E11	12	30.4		B	DSO	70	6	5	3
9290	30240	MWIL	12	29	1545	N30	E10	12	30.4	4	(B)					
9290		HOLL	12	29	1624	N30	E10	12	30.5		B	CAO	70	23	7	3
9290		LEAR	12	30	0115	N30	E05	12	30.4		B	DAO	30	6	4	3
9290		SVTO	12	30	0736	N30	E03	12	30.5		B	DAO	80	6	7	2
9290		TACH	12	30	0738	N29	E02	12	30.5			CAO	63	4	4	3
9290		KAND	12	30	0835	N30	E01	12	30.4			CSO		9	5	5
9290		RAMY	12	30	1315	N29	E01	12	30.6		B	DSO	60	8	6	3
9290	30240	MWIL	12	30	1545	N30	W03	12	30.4	5	(BP)					
9290		HOLL	12	30	1546	N30	W03	12	30.4		B	CSO	90	11	7	4
9290		LEAR	12	31	0155	N30	W07	12	30.5		B	DSO	60	8	8	4
9290		TACH	12	31	0705	N30	W12	12	30.3			CRO	60	2	5	2
9290		KAND	12	31	0900	N29	W11	12	30.5			CSO		5	7	3
9290		RAMY	12	31	1310	N30	W13	12	30.5		B	DSO	70	9	7	3
9290	30240	MWIL	12	31	1600	N30	W15	12	30.5	5	(B)					
9290		LEAR	01	01	0110	N30	W19	12	30.6		B	DSO	50	2	8	3
9290		TACH	01	01	0705	N31	W23	12	30.6			BRO	35	2	6	2
9290		SVTO	01	01	0750	N29	W23	12	30.6		B	DAO	60	3	8	3
9290		RAMY	01	01	1306	N30	W27	12	30.5		B	DSO	30	6	8	2
9290	30240	MWIL	01	01	1600	N30	W28	12	30.6	5	(BP)					
9290		HOLL	01	01	1725	N29	W28	12	30.6		B	CAO	30	3	6	2
9290		LEAR	01	02	0135	N29	W36	12	30.3		A	HAX	30	1	2	3
9290		SVTO	01	02	0730	N28	W38	12	30.4		A	AXX	20	1	1	3
9290		RAMY	01	02	1515	N29	W42	12	30.4		A	HSX	10	1	1	1
9290	30240	MWIL	01	02	1545	N28	W42	12	30.5	4	(AP)					
9290		HOLL	01	02	1733	N27	W46	12	30.2		A	HSX	20	1	1	2
9290		LEAR	01	03	0104	N29	W48	12	30.4		A	HRX	20	1		3
9290		SVTO	01	03	0915	N28	W52	12	30.4		A	AXX	10	2	1	3
9290	30240	MWIL	01	03	1545	N28	W55	12	30.4	4	(AP)					
9290		RAMY	01	03	1610	N29	W57	12	30.3		A	HSX	10	1	1	3
9290		HOLL	01	03	1630	N28	W57	12	30.3		A	AXX	20	1	1	2
9290		LEAR	01	04	0145	N28	W60	12	30.5		A	AXX		1		3

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

DECEMBER 2000

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0801	0906	0941	1+	1					1	0900E		9242
01	1328	1336	1357	1	1		1				No flare		
02	1025	1030	1035	1-	1					1	No flare		
05	0444	0453U	0507	1	1					1	0442		9248
05	1350	1355	1400	1-	1					1	No flare		
06	0812	0812	0820	1-	1					1	No flare		
06	1039	1046	1103	1	5					4	*		
06	1515	1519	1544	1+	5					5	No flare		
06	1753	1759	1837	1+	3					2	1814		9246
06	2034	2037	2052	1-	1					1	No flare		
07	0336	0338	0352	1-	1					1	0336		9246
07	0538	0543	0555D	1-	1					1	*		
07	0555E	0558	0630	2	1					1	0602		9246
07	0727	0734	0804	2-	3					2	No flare		
07	1918	1921	1928D	1-	1					1	No flare		
08	1130	1135	1140	1-	1					1	*		
08	1450	1455	1500	1-	1					1	No flare		
08	1513	1515	1528	1-	3					5	No flare		
08	1621	1624	1647	1+	3					5	No flare		
08	1852	1855	1925	2	1					1	No flare		
09	0406	0407	0422D	1-	1					1	No flare		
09	0422E	0425	0445	1	1					1	0420		
09	0512	0514	0530	1-	1					1	No flare		
09	0537	0543	0615	2	1					1	No flare		
10	1926	1931	1952	1	3					2	1917	C2.8	
11	0950	0955	1000	1-	1					1	0954	C1.3	
11	1500	1515	1535	2	1					1	1501	C1.9	9267
12	0857	0911	0928	1	3		1			1	0849	C1.6	
12	1442	1455	1549	2+	5		1			6	1437	M1.3	9267
13	0811	0818	0844	1+	5					4	0816	C4.6	9267
13	1108	1119	1137	1+	3					2	1100	C2.7	9264
14	0913	0916	0928	1-	1					1	0910	C2.7	
14	0935	1000	1100	2+	1					1	0936	C3.4	9264
14	1102	1111	1127	1+	5		2	1		3	1101	C5.7	
14	1523	1526	1549	1+	3					4	1518	C6.4	9267
14	2045	2047	2107	1	1					1	2045	C4.5	
15	1114	1137	1222	1	1					1	1112	C2.7	9267
15	1946	1949	2007	1	1					1	1935	C5.3	9262
17	0900	0905	0915	1-	1					1	0902	C2.1	9276
17	1044	1048	1056	2	5			1		1	No flare		
17	1203	1208	1217	2	5		1	1		3	1201	C4.0	9276
17	1620	1622	1645	1	1					1	1619	C3.7	9276
17	1840	1843	1900	1	3					3	1835	C5.8	9276
17	1853	1856	1908	1-	1					1	No flare		
18	0806	0814	0928	3	1		1				No flare		
18	0854	0859	0929	2-	3					2	0852	C5.2	9276
18	1103	1111	1134	1+	3					2	1103	C7.0	9269
18	1315	1320	1325	1-	1					1	1318	C3.0	
18	1338	1351	1408	1+	3		1			1	1340	C3.8	
18	2043	2045	2100	1-	1					1	2041	C3.1	
19	0842	0853	0934	1	1		1				No flare		
19	0955	1006	1058	1	1		1				1003	C9.5	9278
19	1007	1020	1035	1+	5					5	1003	C9.5	9278

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES
DECEMBER 2000

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
19	1413	1416	1424	1-	5					3	1411	C3.0	9269
19	1812	1815	1840	1+	3					4	1810	C3.3	
19	1859	1900	1915	1-	3					3	1856	C4.1	9278
20	1141	1148	1212	2	5	1		1		1	1138	C2.4	
20	1546	1551U	1558	1-	1					1	1545	C2.7	9279
21	0942	1010	1128	1	1		1				0938	C1.6	
23	0453	0454	0515	1-	1					1	0452	C3.4	9283
23	0825	0829	0847	1+	3		1			1	0831	C3.4	
23	1040	1056	1206	1	1		1				No flare		
23	1108	1113	1125	1-	1					1	1108	C3.0	9283
23	1644	1649	1713	1+	3					4	1642	C4.0	9283
23	1722	1724	1739	1-	3					3	1720	C2.8	9283
23	1953	1957	2013	1-	1					1	1952	C2.6	
23	2019	2022	2041	1	1					1	No flare		
24	0854	0915	0940	1	1		1				No flare		
24	1107	1111	1115	2	5		2	1		3	1103	M1.1	9283
24	1335	1339	1350	2	5		2	1		4	1332	C9.4	9283
24	1718	1721	1735	1-	3					4	1716	C3.8	
24	2009	2011	2022	1-	1					1	2007	C2.6	
24	2057	2059	2120	1	1					1	2054	C5.4	
25	0557	0600	0625	1+	1					1	0556	C2.9	9283
25	0630	0632	0645	1-	1					1	0630	C2.1	9280
25	1215	1219	1228	1-	1					1	1214	C1.8	9283
25	1559	1601	1628	1+	3					4	1555	C5.4	9283
25	1633	1638	1714	2-	3					4	1630	C3.2	9283
25	1719	1723	1730	1-	1					1	*		
26	0430	0435	0500	1+	1					1	0431	C3.4	
26	0523	0530	0550	1+	1					1	0523	C2.4	
26	0611	0614	0645	2	1					1	0609	C5.0	
26	1033	1057	1113	2-	3		1			2	1043	C5.4	
26	1120	1127	1221	2	3		1			2	1118	C6.8	
26	1136	1145	1215	2	1					1	No flare		
26	1250	1320U	1421	1	1		1				No flare		
26	1605	1612	1709	2	3					5	1602	M1.3	9289
26	1741	1744	1800	1	1					1	1741	C1.5	
26	1930	1933	1953	1	3					3	1928	C2.9	
27	0804	0815	0845	2	1					1	0804	C3.2	9289
27	1056	1109	1145	1	3		1			1	1056	C2.5	
27	1534	1543	1629	2	3					6	1530	M4.3	9289
27	1738	1739	1751	1-	3					4	1735	C3.3	9283
27	1818	1820	1848	2-	3					4	1816	C4.1	9289
27	1857	1858	1930	2	1					1	1857	C2.0	9289
28	0245	0248	0315	1+	1					1	0244	C4.5	9289
28	0410	0415	0445	2	1					1	0406	C5.1	9289
28	1423	1425	1450	1+	1					1	1421	C2.3	9279
29	1055	1101	1124	1+	1					1	1053	C2.5	9289
29	1845	1847	1915	1+	1					1	1842	M1.2	9289
30	1038	1056	1124	1	1		1				1021	C5.4	9283
30	1128	1135U	1149	1	1		1				No flare		

* = no flare patrol.

OBSERVATORIES REPORTING FOR DECEMBER 2000

Bedford, Massachusetts, USA	SES	Marlboro, Massachusetts, USA	SES
Cambridge, England, UK	SES	Nerja, Spain	SES
Edenvale, Rep of S. Africa	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Houston, Texas, USA	SES	Parma, Ohio, USA	SES
Hudson, Ohio, USA	SES	Sofia, Bulgaria	SES
Isola del Gran Sasso, Italy	SES	Upice, Czech Republic	SEA
Koniz, Switzerland	SES	Vlasim, Czech Republic	SEA

Observations are not necessarily continuous.

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

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
01	0000	0800	CULG	0127.0	0128.0	III	G	1	57X	110	
			CULG	0150.0	0150.0	III	B	1	57X	150	
			LEAR	0150.0	0156.0	III		1	28	136	
			CULG	0155.0	0156.0	III	G	2	57X	150	
	0000	0723	HIRA	0156.0	0156.5	III	B	1	50	130	
			LEAR	0344.0	0347.0	III		1	25	111	
			CULG	0345.0	0347.0	III	G	1	57X	150	
			HIRA	0347.0	0347.5	III	B	1	30	130	
			CULG	0536.0	0536.0	III	B	1	57X	180	
			CULG	0539.0	0800.0D	I	S,C	1	57X	180	
			CULG	0643.0	0643.0	III	B	1	57X	180	
			LEAR	0650.0	1036.0	CONT		1	38U	180U	
			IZMI	0652.0E	1200.0D	III	N	1	45	100	
	0652	1200	IZMI	0652.0E	1200.0D	I	S,C	2	45	270X	
			IZMI	0731.0	0731.2	III	G	2	40	100	
	0752	1402	POTS	0800 E	1402 U	I	S,C,DC	3	40X	400	
	0811	1329	ONDR								
			IZMI	0812.3	0812.6	III	G	2	45	180	
	0815	1445	BLEN								
			IZMI	0825.3	0828.4	III	GG,C	3	40	270X	
			LEAR	0827.0	0828.0	III		1	29	180	
			SVTO	0827.0	0828.0	III		2	53	180	
			POTS	0827.3	0828.4	III	G	3	40X	375	
			IZMI	0922.4	0925.0	III	GG	2	35	215	
			IZMI	1013.4	1014.0	III	G	2	40	90	
			IZMI	1024.1	1025.7	III	GG	2	30	100	
			POTS	1025.0	1025.5	III	G	2	40X	75	
			IZMI	1027.2	1027.6	III	G,FS	2	40	70	
			IZMI	1036.1	1039.4	III	GG	2	30	240	
			POTS	1036.3	1042.6	III	GG	3	40X	350	
			IZMI	1042.3	1043.0	III	G	1	45	270X	
			IZMI	1128.7	1129.3	III	G,C	2	30	90	
			POTS	1128.7	1133.9	III	G	2	40X	90U	
			POTS	1202.6	1203.9	III	G	3	40X	170U	
			POTS	1304.8	1306.2	III	G	3	40X	90U	
			POTS	1316.4	1317.0	III	G	2	40X	90U	
			POTS	1351.9	1352.1	III	B	2	40X	90U	
			HOLL	1717.0	1718.0	III		1	113	180	
	2000	2400	CULG	2000.0E	2400.0D	I	S,C	1	100	180	
			CULG	2040.0	2041.0	III	G	1	57X	90	
			PALE	2110.0	2111.0	III		1	25	45	
			CULG	2111.0	2400.0D	III	N	1	57X	150	
			HOLL	2122.0	2122.0	III		1	25	180	
	2130	2400	HIRA								
			LEAR	2149.0	0915.0	CONT		2	25	180	
02	0000	0723	HIRA								
			CULG	0000.0E	0404.0	III	N	1	57X	180	
	0000	0800	CULG	0000.0E	0124.0	I	S,C	2	57X	180	
			CULG	0124.0	0406.0	I	S,C	1	100	250	
			CULG	0406.0	0800.0D	I	S,C	1	100	180	
			CULG	0558.0	0558.0	III	B	1	57X	90	
			SVTO	0617.0	1458.0	CONT		1	25	180	
			IZMI	0700.0E	1026.0U	III	N	1	45	95	
	0700	1200	IZMI	0700.0E	1200.0D	I	S	1	45U	270X	
			IZMI	0716.0	0719.1	III	GG	2	40	100	
			CULG	0735.0	0737.0	III	G	1	57X	90	
			IZMI	0735.5	0737.4	III	G	2	50	100	
	0812	1327	ONDR								
	0752	1400	POTS	0820 E	1400 U	I	S,C,DC	2	40X	400	
	0825	1445	BLEN								
			IZMI	0847.5	0847.6	III	B	1	35	65	
			IZMI	1025.5	1025.6	III	B	1	45	165	
			POTS	1025.5	1025.6	III	B	2	110U	170U	
			IZMI	1042.7	1042.7	III	B	2	45	95	
	2000	2400	CULG	2014.0	2025.0	III	GG	1	57X	180	
			CULG	2027.0	2400.0D	I	S	2	57X	180	
			HOLL	2100.0	2343.0	CONT		1	75	180	
			LEAR	2149.0	0248.0	CONT		1	25	180	

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

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
03	0000	0755	CULG	0000.0E	0246.0	I	S	1	70	180	
			CULG	0512.0	0512.0	III	G	1	57X	180	
			CULG	0558.0	0630.0	I	S	1	57X	140	
			LEAR	0648.0	0650.0	III		1	25	87	
			CULG	0649.0	0650.0	III	G	1	57X	90	
			LEAR	0712.0	0713.0	III		1	25	180	
	0700	1200	IZMI	0712.9	0713.2	III	G	2	45	270X	
			CULG	0713.0	0713.0	III	B	1	57X	180	
			CULG	0731.0	0733.0	III	G	1	57X	90	
			IZMI	0731.3	0734.4	III	GG	2	45	270X	
			CULG	0739.0	0739.0	III	B	1	57X	90	
			IZMI	0739.0	0739.2	III	B	2	40	100	
			IZMI	0748.7	0748.9	III	B	1	45	95	
			IZMI	0803.1	0803.5	III	G	2	40	160	
	0752	1400	POTS	0803.2	0803.3	III	G	2	40X	90U	
	0814	1326	ONDR								
			POTS	0823 E	1350 U	I	S	1	110U	400	
			POTS	0845.2	0845.3	III	B	1	110U	145	
			IZMI	0912.7	0913.1	III	G	1	40	120	
			POTS	0912.7	0913.4	III	G	2	40X	170U	
			IZMI	0925.4	0925.5	III	G	2	40	70	
			IZMI	0958.5	0958.7	III	B	1	45	90	
			IZMI	1043.0	1200.0D	I	S	2	145	270X	
			POTS	1048.4	1053.0	III	GG	2	40X	400	
	0825	1445	BLEN	1049.7	1050.0	DCIM	C	1	1415	4000X	
			IZMI	1052.6	1056.8	III	GG	2	45	100	
	2000	2400	CULG								
04	0000	0755	CULG	0031.0	0033.0	III	G	1	57X	100	
	0419	0723	HIRA								
	0700	1200	IZMI	0756.0U	0955.0U	I	N	1	110	200	
	0816	1326	ONDR								
	0752	1350	POTS	0822 E	1349 U	I	S,C,DC	1	110U	350	
	0825	1445	BLEN								
			SGMR	1327.0	1814.0	III	N	1	30	80	
	2000	2400	CULG								
	2132	2400	HIRA								
05			LEAR	0150.0	0150.0	III		1	25	74	
			PALE	0150.0	0150.0	III		1	25	84	
	0000	0200	CULG	0150.0	0150.0	III	B	1	57X	80	
			LEAR	0158.0	0529.0	CONT		1	25	99	
			LEAR	0245.0	0246.0	III		1	25	109	
	0400	0755	CULG								
	0000	0723	HIRA	0452.0	0452.5	III	B	1	50	520	
			LEAR	0621.0	0622.0	III		1	25	87	
	0818	1325	ONDR								
	0752	1350	POTS	0823 E	1349 U	I	S	1	110U	350	
	0825	1445	BLEN								
	0650	1200	IZMI	0826.7	0827.0	III	B	1	45	70	
			IZMI	0828.0U	1200.0D	I	N	2	70	270X	
			LEAR	0847.0	0848.0	III		1	25	143	
			SVTO	0847.0	0847.0	III		1	30U	151U	
			IZMI	0847.5	0848.7	III	GG	2	30	230	
			POTS	0847.5	0848.1	III	G,U	3	40X	170U	
			IZMI	0917.5	1126.0U	III	N	1	45	100	
			SVTO	0938.0	1457.0	CONT		1	28U	156U	
			IZMI	1055.8	1056.0	III	B	1	40	100	
			IZMI	1136.8	1137.0	III	B	2	45	115	
			IZMI	1140.6	1140.8	III	G	1	45	60	
			SGMR	1224.0	1233.0	III		1	30	70	
			SGMR	1341.0	1348.0	III		1	30	80	
	2133	2400	HIRA								
			HOLL	2239.0	2240.0	III		1	25	84	
			LEAR	2239.0	2240.0	III		1	25	132	
			PALE	2239.0	2240.0	III		1	25	81	
	2000	2400	CULG	2239.0	2240.0	III	G	1	57X	120	
06	0000	0723	HIRA								

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

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
06			LEAR	0112.0	0113.0	III		1	25	64	
	0130	0200	CULG								
			PALE	0246.0	0246.0	III		1	25	95	
	0650	0755	CULG								
	0700	1200	IZMI	0700.0E	1200.0D	I	S	1	190	270X	
			IZMI	0710.4	0710.7	III	B	1	45	95	
			IZMI	0714.0	0714.4	III	G	2	40	135	
			IZMI	0729.5	0730.1	III	G	2	45	140	
	0819	1324	ONDR								
	0752	1350	POTS	0823 E	1346 U	I	S	1	110U	350	40-90 MHz no obs
	0825	1445	BLEN								
			SVTO	1003.0	1322.0	CONT		1	29U	82U	
			POTS	1110.4	1110.6	III	B	2	110U	170U	
			POTS	1148.1	1148.5	III	G	2	110U	160	
			SVTO	1211.0	1211.0	III		1	28U	170U	
			POTS	1211.2	1212.0	III	G,U	3	50U	170U	
			POTS	1216.3	1216.5	III	G	2	110U	140	
			POTS	1225.0	1227.1	III	GG	2	110U	170U	
			HOLL	1516.0	1517.0	III		1	25	135	
			SGMR	1516.0	1517.0	III		2	30	80	
	2000	2050	CULG								
	2115	2215	CULG	2143.0	2215.0D	III	S	1	57X	90	
	2134	2400	HIRA	2226.0	2255.0	II		1	100	800	
07			LEAR	0331.0	0332.0	III		1	25	103	
	0000	0723	HIRA	0332.0	0332.5	III	B	2	30	110	
			HIRA	0553.0	0553.5	III	B	3	40	110	
			LEAR	0553.0	0555.0	III		2	25	160	
			LEAR	0603.0	0604.0	III		1	25	121	
			HIRA	0604.0	0604.5	III	B	2	50	110	
			LEAR	0624.0	0625.0	III		1	35	93	
			LEAR	0721.0	0721.0	III		1	109	180	
			SVTO	0721.0	0721.0	III		1	114	180	
	0703	1200	IZMI	0721.7	0721.8	III	G,C	2	80	270X	
			IZMI	0732.0U	1018.0U	I	N	1	215	270X	
	0821	1324	ONDR								
			IZMI	0821.6	0821.8	III	G	2	45	90	
	0752	1346	POTS	0825 E	1346 U	I	S	1	110U	250	40-90 MHz no obs
	0825	1445	BLEN								
			IZMI	0848.0	0848.2	III	G	1	45	270X	
			POTS	0848.0	0848.1	III	B	2	110U	300	
			IZMI	0935.6	0938.1	III	G	2	45	100	
			POTS	0935.6	0936.2	III	G	2	110U	170U	
			POTS	1029.6	1036.3	III	G	2	110U	170U	
			IZMI	1035.9	1036.4	III	G	2	45	160	
	2130	2400	CULG								
	2135	2400	HIRA								
08	0000	0723	HIRA								
			LEAR	0019.0	0026.0	III		1	25	91	
	0000	0755	CULG	0022.0	0026.0	III	G	1	57X	90	
			LEAR	0135.0	0135.0	III		1	25	58	
	0659	1200	IZMI								
	0752	1345	POTS								40-90 MHz no obs
	0822	1323	ONDR								
	0825	1445	BLEN								
	2000	2400	CULG	2006.0	2006.0	III	B	1	20	35	
	2136	2400	HIRA								
09	0000	0612	HIRA								
	0000	0755	CULG								
	0650	1200	IZMI								
	0824	1323	ONDR								
	0825	1445	BLEN								
	0752	1345	POTS	1302.1	1307.6	III	GG	2	110U	170U	40-90 MHz no obs
	2000	2400	CULG	2204.0	2204.0	III	B	1	20	90	
10	0000	0755	CULG	0112.0	0112.0	III	B	1	35	90	
			LEAR	0215.0	0216.0	III		2	25	95	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
10			CULG	0216.0	0216.0	III	B	1	23	150	
			CULG	0322.0	0322.0	III	B	1	60	90	
			LEAR	0327.0	0341.0	III	N	1	25	89	
			CULG	0332.0	0332.0	III	B	1	23	90	
			LEAR	0343.0	0349.0	III		3	25	180	
			CULG	0344.0	0345.0	III	G	3	18	180	
			CULG	0514.0	0517.0	III	G	2	20	180	
			LEAR	0514.0	0517.0	III		3	25	180	
			CULG	0559.0	0602.0	III	G	2	20	180	
			LEAR	0600.0	0602.0	III		3	25	180	
			CULG	0648.0	0650.0	III	G	1	20	130	
			LEAR	0648.0	0652.0	III		1	25	123	
			SVTO	0648.0	0651.0	III		1	59	138	
			CULG	0717.0	0718.0	III	G	1	28	120	
			LEAR	0717.0	0717.0	III		1	25	109	
	0702	1200	IZMI	0717.0	0717.6	III	G	2	45	135	
	0825	1322	ONDR								
	0825	1445	BLEN								
			SVTO	1149.0	1150.0	III		1	25	142	
	0752	1343	POTS	1150.0	1150.4	III	G	2	110U	270	40-90 MHz no obs
			IZMI	1150.1	1150.8	III	G,C	2	40	270X	
			SVTO	1204.0	1457.0	CONT		1	32U	158U	
			POTS	1217.3	1217.7	III	G	2	110U	225	
			SGMR	1343.0	1724.0	III	N	1	30	80	
			HOLL	1818.0	1818.0	III		1	25	104	
			PALE	1818.0	1827.0	III		1	25	90	
			HOLL	1826.0	1827.0	III		1	25	180	
	2000	2400	CULG	2045.0	2047.0	III	G	1	23	90	
			CULG	2138.0	2138.0	III	G	1	23	90	
	2350	2400	HIRA								
11			LEAR	0108.0	0110.0	III		3	25	154	
			PALE	0108.0	0109.0	III		1	25	95	
	0000	0755	CULG	0108.0	0111.0	III	G	2	18	160	
	0000	0723	HIRA	0108.5	0109.0	III	B	2	30	300	
			HIRA	0652.5	0653.5	III	G	2	40	400	
			CULG	0735.0	0736.0	III	G	1	30	90	
	0655	1200	IZMI	0735.6	0735.8	III	B	1	45	70	
			CULG	0752.0	0752.0	III	B	1	30	70	
			IZMI	0752.2	0752.6	III	G	1	45	90	
	0825	1445	BLEN								
	0826	1322	ONDR								
			LEAR	0901.0	0905.0	III		1	29	180	
	0800	1342	POTS	0901.6	0906.0	III	GG	3	40X	400	40-90 MHz no obs
			IZMI	0901.7	0906.3	III	G,FS	2	25	270	
			SVTO	0903.0	0905.0	III		1	25	180	
			IZMI	0939.5	0939.9	III	G	1	45	90	
			IZMI	1143.0	1143.5	UNCLF		1	145	190	
			SGMR	1307.0	1308.0	III		1	30	80	
	2000	2400	CULG								
	2139	2400	HIRA								
12	0000	0723	HIRA								
	0000	0755	CULG	0229.0	0230.0	III	G	1	110	180	
			LEAR	0419.0	0420.0	III		1	38	111	
			CULG	0420.0	0420.0	III	B	1	30	130	
			CULG	0556.0	0556.0	III	B	1	120	180	
	0827	1321	ONDR								
	0840	1445	BLEN								
	0800	1342	POTS	0851.3	0853.0	III	G	2	110U	450	40-90 MHz no obs
	0657	1200	IZMI	0851.6	0852.5	III	G	1	90	270	
			IZMI	0902.2	0902.9	III	G,FS	2	45	135	
			POTS	0902.3	0910.7	III	G,U,RS	2	110U	400	
			SVTO	0906.0	0908.0	III		1	64U	155U	
			IZMI	0906.8	0907.0	III	G,C	2	90	270	
			IZMI	0908.5	0908.8	III	G	2	45	255	
			IZMI	0918.1	0924.1	III	N	1	45	95	
			POTS	0947.5	0947.7	III	G	2	110U	170U	
			IZMI	0947.6	0947.9	III	B	2	45	160	

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

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
12			POTS	1323.7	1324.3	III	G	2	110U	170U	
	2000	2400	CULG	2019.0	2019.0	III	B	1	25	90	
			CULG	2037.0	2037.0	III	B	1	28	110	
			LEAR	2230.0	2232.0	III		1	25	109	
			LEAR	2301.0	2301.0	III		1	69	100	
13			LEAR	0009.0	0010.0	III		1	36	180	
	0000	0755	CULG	0009.0	0010.0	III	G	1	40	180	
			CULG	0345.0	0346.0	III	G	3	18X	180	
			LEAR	0345.0	0346.0	III		3	25	180	
	0021	0723	HIRA	0345.0	0346.0	III	B	3	25X	210	
	0650	1200	IZMI	0800.4	0800.8	III	G	1	45	140	
			IZMI	0840.3	0840.5	III	B	1	45	95	
	0845	1445	BLEN								
			IZMI	0915.0	0915.2	III	B	2	30	160	
			LEAR	0915.0	0915.0	III		1	25	104	
			SVTO	0915.0	0915.0	III		1	48U	83U	
	0800	1342	POTS	0915.0	0915.1	III	B	2	110U	170U	40-90 MHz no obs
	0829	1321	ONDR	1052.4	1102.5	DCIM	GG	1	800X	2000X	
			IZMI	1054.3	1057.2	III	G,C,FS	2	35	100	
			POTS	1055.6	1103.0	III	G,RS	2	110U	170U	
			SVTO	1056.0	1057.0	III		1	58	114	
			IZMI	1100.2	1100.5	III	G	1	80	270X	
			POTS	1109.8	1110.7	III	G	2	110U	170U	
			POTS	1249.0	1255.7	III	G,U	2	110U	170U	
			SVTO	1249.0	1256.0	III		1	28	152	
			POTS	1307.0	1307.2	III	G	1	140	325	
	2000	2400	CULG	2005.0	2005.0	III	B	1	28	130	
			CULG	2214.0	2215.0	III	G	3	18X	250	
			HOLL	2214.0	2215.0	III		1	25	180	
			LEAR	2214.0	2215.0	V		2	25	180	
			PALE	2214.0	2215.0	V		2	25	180	
	2140	2400	HIRA	2214.0	2215.0	III	B	2	30	290	
14	0000	0724	HIRA								
			LEAR	0220.0	0221.0	III		1	25	105	
	0000	0755	CULG	0221.0	0222.0	III	G	1	30	150	
			LEAR	0315.0	0316.0	III		1	25	80	
			CULG	0400.0	0400.0	III	B	1	60	250	
			LEAR	0400.0	0400.0	III		1	44	180	
	0800	1342	POTS	0828 E	1324 U	I	S	1	110U	250	40-90 MHz no obs
			POTS	0901.7	0902.0	III	G	2	120	320	40-800 MHz:
	0845	1445	BLEN	0912.2	0945.0	DCIM	C	2	2000	4000X	
			ONDR	0925.0	1001.3	DCIM	GG,SP,FS	2	800X	2000X	
	0830	1321	ONDR	0930.3	1022.3	DCIM	GG	3	2000X	4500X	
			BLEN	0930.7	1012.7	DCIM	P	3	1415X	3300	
			BLEN	0933.6	0950.2	III	GG	3	2600	3830X	
			POTS	0937.8	1025 U	DCIM		2	200U	800X	1124-1140
	0700	1200	IZMI	0942.0	0954.3	III	S,FS,C	2	45	270	
			LEAR	0943.0	1005.0	III	N	1	25	180	
			POTS	0943.9	1000.6	III	GG	3	40X	250	
			IZMI	0947.9	0948.2	III	G,C	2	30	245	
			SVTO	0948.0	0948.0	III		1	48U	159U	
			IZMI	0952.0	1037.0U	I	N,DS	2	45	270X	
			IZMI	0957.0	1037.0U	III	N	2	45	160	
			ONDR	1003.2	1020.1	DCIM	GG,SP	2	800X	2000X	
			IZMI	1007.8	1008.4	III	G	2	35	80	
			POTS	1040.0	1040.3	III	G	2	110U	275	
			IZMI	1053.4	1053.5	III	B	2	140	215	
			POTS	1053.4	1053.5	III	G	2	140	225	
			ONDR	1101.2	1108.0	DCIM	G	1	2000X	4500X	
			BLEN	1101.9	1106.4	DCIM	C	2	1415X	4000X	
			ONDR	1102.3	1109.4	DCIM	G	1	959	2000X	
			POTS	1142.4	1142.5	III	B	1	110U	225	
			POTS	1340.8	1340.9	III	B	2	135	170U	
	2000	2400	CULG	2116.0	2120.0	III	G	1	20	130	
			CULG	2207.0	2209.0	III	G	1	30	90	
			CULG	2320.0	2322.0	III	G	1	20	90	
			LEAR	2320.0	2322.0	III		1	25	99	

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

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
14			LEAR	2326.0	2332.0	III		3	25	180	
			CULG	2327.0	2330.0	III	G	2	18	130	
			CULG	2332.0	2333.0	III	G	3	20	260	
	2140	2400	HIRA	2332.5	2333.0	III	B	2	30	220	
15	0000	0755	CULG	0010.0	0010.0	III	B	1	23	140	
			LEAR	0109.0	0110.0	III		1	25	104	
	0000	0725	HIRA	0109.5	0110.0	III	B	2	30	100	
			LEAR	0202.0	0220.0	III	N	2	25	99	
			CULG	0215.0	0217.0	III	G	1	25	90	
			CULG	0220.0	0220.0	III	B	1	18	120	
			LEAR	0326.0	0330.0	III		3	25	156	
			CULG	0327.0	0328.0	III	G	1	25	90	
			CULG	0330.0	0330.0	III	B	3	18	150	
			HIRA	0330.5	0331.0	III	B	3	25X	130	
			CULG	0418.0	0418.0	III	B	1	20	90	
			LEAR	0418.0	0431.0	III	N	1	25	110	
			CULG	0430.0	0431.0	III	G	1	20	140	
			CULG	0557.0	0557.0	III	B	1	20	75	
			CULG	0656.0	0656.0	III	B	1	20	40	
			CULG	0712.0	0712.0	III	B	2	20	80	
			LEAR	0712.0	0712.0	III		1	25	65	
	0657	1200	IZMI	0712.0	0712.2	III	B	1	45	70	
			LEAR	0817.0	0818.0	III		1	25	99	
	0800	1342	POTS	0817.6	0818.4	III	G	2	40X	90U	
			IZMI	0817.7	0818.4	III	G	1	45	270U	
			LEAR	0826.0	0826.0	III		1	25	77	
			IZMI	0826.5	0827.4	III	G	1	45	100	
			POTS	0826.5	0827.1	III	G	2	40X	90U	
			ONDR	0929.0	0929.5	DCIM	G	1	1498	2000X	
	0831	1321	ONDR	0929.0	0929.5	DCIM	G	2	2000X	3426	
	0845	1445	BLEN	0929.1	0930.2	III	GG,RS	3	1415X	3700	
			IZMI	1015.5	1015.6	III	B	1	45	70	
			IZMI	1019.1	1020.5	III	G	1	45	80	
			BLEN	1109.3	1117.5	DCIM	C	2	1415X	4000X	
	2000	2400	CULG								
	2140	2400	HIRA								
16	0000	0725	HIRA								
	0000	0755	CULG	0326.0	0327.0	III	G	1	20	40	
	0700	1200	IZMI								
	0800	1342	POTS								
	0832	1321	ONDR								
	0845	1445	BLEN								
	2000	2400	CULG								
	2141	2400	HIRA								
17	0000	0725	HIRA								
	0000	0755	CULG	0111.0	0111.0	UNCLF		1	560	700	
	0651	1200	IZMI	0714.4	0714.5	III	B	2	45	70	
	0833	1321	ONDR								
	0845	1445	BLEN								
			IZMI	0902.0	0903.2	III	G	1	85	215	
	0800	1342	POTS	0903.0	0903.2	III	G,RS	2	110U	170U	
			IZMI	0951.1	0952.6	III	G	2	45	90	
			POTS	0951.5	0951.6	III	B	2	55	90U	
			IZMI	1002.0	1002.2	III	B	1	45	145	
			POTS	1002.0	1002.1	III	G	2	110U	170U	
			IZMI	1017.0	1019.1	III	G	1	45	95	
			POTS	1051.2	1051.3	III	B	2	40X	90U	
			IZMI	1053.4	1053.5	III	G	2	45	70	
			SVTO	1141.0	1142.0	III		1	38	81	
			SVTO	1313.0	1344.0	III	N	1	32U	167U	
			SGMR	1319.0	1320.0	III		1	30	65	
			SGMR	1400.0	1827.0	III	N	1	30	80	
			HOLL	1910.0	1910.0	III		1	25	144	
			PALE	1910.0	1911.0	III		1	25	180	
			SGMR	1910.0	1911.0	III		1	30	60	
	2000	2400	CULG	2004.0	2004.0	III	B	1	50	90	

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

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
17			LEAR	2357.0	2358.0	III		2	25	180	
			CULG	2358.0	2358.0	III	B	3	30	180	
	2142	2400	HIRA	2358.0	2358.0	III	B	2	30	260	
18			LEAR	0116.0	0128.0	III	N	1	25	180	
	0000	0755	CULG	0117.0	0126.0	III	GG	1	25	160	
			CULG	0156.0	0159.0	III	G	1	30	160	
			CULG	0215.0	0215.0	III	B	1	20	90	
			CULG	0239.0	0243.0	III	G	2	18X	250	
			LEAR	0239.0	0242.0	III		3	25	180	
			PALE	0239.0	0240.0	III		1	25	180	
	0000	0726	HIRA	0239.0	0240.0	III	B	3	90	220	
			CULG	0321.0	0337.0	III	N	1	20	140	
			LEAR	0325.0	0337.0	III	N	1	25	101	
			CULG	0452.0	0453.0	III	G	2	20	650	
			LEAR	0452.0	0457.0	III		2	25	180	
			HIRA	0452.5	0453.0	III	B	3	80	450	
			CULG	0456.0	0458.0	III	G	2	20	180	
			HIRA	0456.0	0457.5	III	G	2	50	250	
			CULG	0528.0	0528.0	III	G	1	100	550	
			HIRA	0528.0	0528.5	III	B	2	100	600	
			LEAR	0528.0	0528.0	III		1	118	165	
			CULG	0705.0	0713.0	III	G	2	20	180	
	0704	1200	IZMI	0705.5	0706.9	III	GG	1	45	270X	
			SVTO	0707.0	0712.0	III		1	35	151	
			IZMI	0707.9	0708.5	III	GG,C	2	40	270X	
			LEAR	0708.0	0712.0	III		3	25	180	
			IZMI	0710.7	0712.9	III	GG	2	35	270X	
			IZMI	0801.2	0802.3	III	G	2	40	95	
	0800	1342	POTS	0841.6	0843.0	III	G	3	60	170U	
			IZMI	0841.7	0843.1	III	GG	2	45	270X	
			IZMI	0900.9	0901.1	III	B	2	40	95	
			POTS	0925.2	0925.3	DCIM		1	325	450	
			IZMI	1003.1	1003.6	III	G	1	45	65	
			IZMI	1007.6	1007.8	III	B	1	45	90	
			POTS	1034.4	1034.5	DCIM		1	325	400	
			POTS	1045.8	1045.9	DCIM		1	325	400	
			ONDR	1103.3	1115.4	DCIM	GG	2	800X	2000X	
	0845	1445	BLEN	1103.4	1120.0	DCIM	P	3	1415X	4000X	
	0833	1322	ONDR	1105.5	1110.2	DCIM	G	1	2000X	4500X	
			BLEN	1105.9	1106.0	III	G,RS	2	2025X	2500	
			POTS	1106.8	1125	IV	P	2	110U	800X	
			POTS	1108.0	1109.8	III	G	2	110U	500	
			IZMI	1108.1	1112.4	III	N	2	100	270X	
			IZMI	1109.0U	1125.0U	CONT		2	110	270X	
			IZMI	1110.9	1123.8	II	G,HARM	2	35	175	
			POTS	1110.9	1129 U	II	SH,H	3	40X	170U	
			POTS	1111.0	1119.7U	II	F,H	3	40X	90U	
			SVTO	1111.0	1122.0	II		2	29U	171U	ESS 2785
			IZMI	1112.7	1116.0U	III	S,C	3	25	160U	
			SVTO	1116.0	1122.0	II		2	49	127	ESS 0460
			IZMI	1116.4	1125.0U	III	N	2	40	135	
			POTS	1230.2	1230.3	DCIM		2	380	620	
	2000	2400	CULG	2214.0	2218.0	III	G	1	28	180	
			LEAR	2233.0	2242.0	III		1	25	157	
			CULG	2236.0	2239.0	III	G	2	18	170	
			CULG	2302.0	2303.0	III	G	2	60	180	
			LEAR	2302.0	2302.0	III		1	74	180	
			LEAR	2334.0	2341.0	III		1	25	180	
			CULG	2335.0	2337.0	III	G	2	35	180	
			PALE	2340.0	2341.0	III		1	25	180	
			CULG	2341.0	2341.0	III	B	2	18	180	
			CULG	2356.0	2356.0	III	G	1	50	180	
			PALE	2358.0	2358.0	III		1	25	75	
			PALE	2358.0	2358.0	III		1	25	180	
19	0000	0755	CULG	0042.0	0144.0	III	N	1	20	180	
			LEAR	0137.0	0144.0	III		1	25	100	
			CULG	0231.0	0234.0	III	G	1	23	90	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
19			LEAR	0231.0	0234.0	III		1	25	64	
			CULG	0334.0	0356.0	III	N	1	23	160	
			LEAR	0347.0	0355.0	III		1	25	180	
			CULG	0541.0	0541.0	III	B	1	70	260	
			CULG	0752.0	0754.0	III	G	2	20	160	
			LEAR	0752.0	0754.0	III		2	25	123	
			SVTO	0752.0	0859.0	III	N	2	25	180	
	0700	1200	IZMI	0752.0	0754.3	III	GG	2	35	270X	
			IZMI	0755.6	0756.3	III	G,FS	2	45	95	
			IZMI	0801.9U	0858.0	III	N,FS	1	45	190	
			LEAR	0802.0	0809.0	V		3	25	180	
			SVTO	0802.0	0809.0	V		2	25	180	
			IZMI	0802.9	0805.5	III	GG,C	2	35	270	
	0800	1342	POTS	0803.8	0804.8	UNCLF		3	40X	90U	
			LEAR	0812.0	0901.0	III	N	1	27	101	
			IZMI	0814.0	0816.0	III	G	2	45	230	
			POTS	0834.9	0843.1	III	GG	3	110U	170U	
			IZMI	0835.0	0837.1	III	GG	2	45	95	
			IZMI	0839.0	0841.0	III	GG,FS	2	45	180	
			IZMI	0842.4	0842.8	III	G	2	45	175	
			IZMI	0859.0	0859.4	III	G	2	45	200	
			POTS	0859.0	0859.2	III	G	2	110U	370	
			IZMI	0901.1	0901.7	III	G	2	45	95	
	0845	1445	BLEN	0906.4	0909.9	DCIM	C	2	2000	4000X	
			POTS	0959.6	0959.8	DCIM		1	400	600	
			IZMI	1000.3	1005.7	III	GG	2	45	95	
			POTS	1000.3	1000.5	III	B	2	110U	170	
	0850	1322	ONDR	1018.1	1132.2	DCIM	G	1	800X	2000X	
			BLEN	1018.2	1026.2	DCIM	C	3	1415	4000X	
			IZMI	1018.3	1018.6	III	G	2	50	270	
			POTS	1018.3	1024.9	III	GG	3	110U	500	
			IZMI	1020.4	1027.0U	III	N	2	45	270X	
			BLEN	1023.2	1023.4	III	GG,RS	3	2025X	2700	
			POTS	1059.4	1059.6	III	B	2	110U	170U	
			IZMI	1128.9	1130.3	III	G	2	90	270X	
			POTS	1128.9	1138.6	III	GG	3	50	750	
			SVTO	1129.0	1138.0	III		1	48	180	
			IZMI	1135.3	1136.2	III	G	2	50	270X	
			IZMI	1138.0	1138.7	III	G,C	2	45	270	
			POTS	1144.5	1144.7	III	G	3	40X	170U	
			IZMI	1144.6	1144.7	III	B,FS	2	45	60	
			IZMI	1155.4	1155.7	III	G	1	105	190	
			POTS	1155.4	1155.6	III	G	2	110U	250	
			POTS	1256.6	1257.9	III	G	3	110U	375	
			SVTO	1317.0	1317.0	III		1	75	180	
			POTS	1317.7	1324.1	III	G	3	55	170U	
			BLEN	1414.0	1422.0	DCIM	C	1	2000	4000X	
			SVTO	1414.0	1416.0	III		2	25	169	
	2143	2400	HIRA								
	2000	2400	CULG	2206.0	2206.0	III	B	1	30	140	
			CULG	2230.0	2232.0	III	G	1	70	180	
			LEAR	2249.0	2306.0	III	N	1	25	158	
			CULG	2258.0	2307.0	III	G	2	18	180	
			HOLL	2258.0	2300.0	III		1	25	180	
			PALE	2258.0	2259.0	III		1	25U	85U	
			HOLL	2306.0	2306.0	III		1	25	122	
			CULG	2354.0	2354.0	III	B	1	35	90	
20	0000	0755	CULG	0031.0	0031.0	III	B	1	50	150	
			CULG	0321.0	0321.0	III	B	1	180	400	
	0000	0727	HIRA	0321.0	0321.0	III	B	1	150	270	
			CULG	0628.0	0628.0	III	B	1	35	80	
			CULG	0651.0	0653.0	III	G	1	23	140	
			LEAR	0651.0	0651.0	III		1	25	180	
	0659	1200	IZMI	0735.2	0735.5	III	B	1	45	95	
			IZMI	0745.6	0745.7	III	B	2	45	65	
			LEAR	0753.0	0753.0	III		1	25	117	
			SVTO	0753.0	0753.0	III		1	58U	84U	
			IZMI	0753.6	0753.9	III	B	2	40	145	

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

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
20			CULG	0754.0	0754.0	III	B	1	25	110	
	0835	1322	ONDR								
	0800	1342	POTS	0859.2	0859.3	III	B	1	110U	140	
			IZMI	0927.8	0927.9	III	B	1	45	95	
			SVTO	0946.0	1500.0	CONT		1	25U	158U	
			POTS	1026.2	1028.4	III	GG	2	40X	275	
			IZMI	1026.3	1027.1	III	G	2	40	215	
			IZMI	1028.1	1028.7	III	G	2	200	270X	
			POTS	1148.5	1151.7	III	G	3	40X	400	
			IZMI	1149.0	1150.0	III	G,C	2	35	190	
			SVTO	1149.0	1151.0	III		1	25	147	
	0850	1440	BLEN	1149.2	1149.4	III	G,RS	1	2280	3350	
			IZMI	1151.1	1152.1	III	G,C	2	30	215	
			POTS	1151.3	1151.8	V		3	60	75	
			POTS	1316.7	1317.7	III	G	1	50	170U	
	2143	2400	HIRA								
	2000	2400	CULG	2154.0	2154.0	III	B	1	50	180	
			CULG	2353.0	2353.0	III	B	1	60	180	
			LEAR	2353.0	2353.0	III		1	73	164	
21	0000	0755	CULG	0024.0	0025.0	III	G	1	50	140	
			LEAR	0146.0	0148.0	III		1	25	180	
			PALE	0146.0	0147.0	III		1	25	180	
			CULG	0147.0	0148.0	III	G	2	18	180	
	0000	0728	HIRA	0147.0	0147.5	III	B	2		200	
			CULG	0352.0	0352.0	III	B	1	50	90	
			CULG	0358.0	0400.0	III	G	1	60	150	
			CULG	0444.0	0452.0	III	G	1	18	170	
			LEAR	0445.0	0452.0	III		1	25	105	
			CULG	0516.0	0516.0	III	B	1	60	170	
			CULG	0646.0	0646.0	III	B	1	20	150	
			LEAR	0646.0	0646.0	III		1	25	130	
			SVTO	0646.0	0646.0	III		1	66	83	
	0650	1200	IZMI	0708.0U	0950.0U	III	N	1	45	95	
			CULG	0709.0	0711.0	III	G	1	23	100	
			IZMI	0710.7	0710.9	III	G	2	45	145	
			CULG	0733.0	0734.0	III	G	2	23	150	
			LEAR	0733.0	0733.0	III		1	25	111	
			SVTO	0733.0	0733.0	III		1	65	147	
			IZMI	0733.2	0734.3	III	G	2	40	270	
			IZMI	0759.1	0759.3	III	B	2	45	200	
	0835	1323	ONDR								
			IZMI	0909.6	0910.6	III	GG	2	45	160	
	0800	1342	POTS	0910.2	0910.5	III	G	2	110U	170U	
			POTS	0923.6	0927.8	III	G	2	110U	275	
	0850	1440	BLEN	0940.5	0950.5	DCIM	C	1	2200	4000X	
			POTS	0940.8	0941.0	III	B	2	40X	160	
			POTS	0957.4	0957.6	III	G	1	110U	150	
			IZMI	1018.4	1018.7	III	B	2	45	95	
			POTS	1018.5	1018.6	III	B	1	110U	160	
			SVTO	1038.0	1038.0	III		1	33U	38U	
			IZMI	1102.0U	1200.0D	III	N	2	30	250	
			POTS	1102.2	1129.1	III	GG	3	40X	250	
			SVTO	1109.0	1209.0	III	N	1	50U	157U	
			POTS	1124	1342 U	I	S,C,DC	3	40X	250	
			POTS	1203.0	1206.0	III	GG	3	40X	170U	
			SVTO	1414.0	1414.0	III		1	48U	174U	
	2000	2400	CULG	2001.0	2001.0	III	B	1	50	140	
	2144	2400	HIRA								
			CULG	2313.0	2318.0	III	G	1	35	170	
			LEAR	2316.0	2318.0	III		1	25	109	
22			LEAR	0206.0	0206.0	III		2	25	153	
	0000	0755	CULG	0206.0	0206.0	III	B	2	23	180	
	0000	0728	HIRA	0206.5	0207.0	III	B	2	50	140	
			CULG	0211.0	0211.0	III	B	1	55	120	
			CULG	0447.0	0449.0	III	G	1	25	100	
			LEAR	0447.0	0449.0	III		1	29	67	
			CULG	0605.0	0606.0	III	G	2	18	420	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
22			LEAR	0605.0	0606.0	III		1	25	107	
			HIRA	0605.5	0606.5	III	B	3		400	
			LEAR	0636.0	0637.0	III		1	25	99	
			CULG	0637.0	0638.0	III	G	1	25	100	
	0800	1342	POTS	0830 E	1342 U	I	S	2	170U	350	
	0836	1323	ONDR								
			POTS	0838.2	0838.3	III	B	2	135	170U	
			POTS	0845.7	0846.2	III	G	1	150	400	
	0658	1200	IZMI	0845.7	0847.2	III	G	1	190	270X	
			POTS	0919.9	0920.6	III	G	1	110U	170U	
			IZMI	0926.7	0926.8	III	B,U	2	225	270X	
			POTS	0926.7	0926.8	III	G,U	2	225	320	
			IZMI	0942.0	0942.1	III	B	2	220	270X	
			POTS	0942.1	0942.2	III	B	2	200U	375	
	0850	1440	BLEN	1007.4	1024.2	DCIM	C	2	2000	4000X	
			POTS	1218.9	1221.3	III	G	3	40X	375	
			SVTO	1219.0	1219.0	III		1	54U	156U	
			POTS	1248.1	1251.2	III	G	2	40X	170U	
	2000	2400	CULG	2007.0	2007.0	III	B	1	45	90	
			CULG	2014.0	2014.0	III	B	2	23	600	
			HOLL	2014.0	2015.0	III		1	25	180	
			PALE	2014.0	2015.0	III		1	25	180	
			CULG	2128.0	2128.0	III	B	1	60	130	
	2145	2400	HIRA								
23			LEAR	0355.0	0356.0	III		1	25	110	
	0000	0755	CULG	0355.0	0356.0	III	G	1	25	180	
			LEAR	0453.0	1049.0	CONT		1	75	180	
			CULG	0535.0	0536.0	III	G	2	18X	140	
			LEAR	0535.0	0535.0	III		1	25	125	
	0000	0729	HIRA	0535.0	0535.5	III	B	2		120	
			CULG	0540.0	0620.0	III	N	1	18	130	
			LEAR	0620.0	0620.0	III		1	25	100	
			SVTO	0645.0	1501.0	CONT		1	37U	170U	
	0655	1200	IZMI	0655.0E	1200.0D	I	S	1	50	180	
			IZMI	0715.0U	0838.0U	III	N	1	45	95	
			IZMI	0717.6	0718.0	III	G	2	75	250	
	0800	1342	POTS	0830 E	1342 U	I	S,C,DC	3	110U	400	
	0836	1324	ONDR								
			IZMI	1043.1	1043.4	III	G	2	45	140	
	0850	1440	BLEN	1109.3	1111.1	DCIM	C	1	1415	4000X	
			POTS	1213.6	1213.8	III	B	2	40X	170U	
			POTS	1243.2	1244.4	III	GG	3	40X	375	
	2000	2400	CULG	2048.0	2049.0	III	G	1	40U	120	
			CULG	2115.0	2119.0	III	G	1	18	100	
	2145	2400	HIRA								
			CULG	2202.0	2202.0	III	B	1	30	130	
24			LEAR	0101.0	0106.0	III		2	25	147	
	0000	0755	CULG	0101.0	0109.0	III	G	2	20	650	
			PALE	0102.0	0102.0	III		1	25	180	
	0000	0729	HIRA	0102.0	0102.5	III	B	2		500	
			LEAR	0106.0	0109.0	III		3	25	134	
			PALE	0107.0	0107.0	III		1	25	180	
			HIRA	0107.5	0108.0	III	B	2		210	
			LEAR	0341.0	0342.0	III		1	25	59	
			LEAR	0358.0	0358.0	III		1	28	70	
			CULG	0359.0	0359.0	III	B	1	30	80	
			CULG	0609.0	0610.0	III	G	1	18	260	
			HIRA	0609.0	0610.0	III	B	2		270	
			LEAR	0609.0	0610.0	III		1	25	180	
			CULG	0619.0	0619.0	III	G	1	30	80	
	0658	1200	IZMI	0658.0E	1200.0D	I	N	2	50	270X	
	0800	1342	POTS	0830 E	1342 U	I	S	2	110U	400	
			IZMI	0830.0U	1145.0U	III	N	1	45	95	
			LEAR	0915.0	1005.0	CONT		1	75	119	
			POTS	0958.8	0958.9	III	B	2	110U	170U	
	0836	1324	ONDR	1109.0	1114.3	DCIM	G,W	1	800X	2000X	
			BLEN	1110.5	1112.6	DCIM	C	3	1415X	4000X	

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

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
24	0850	1440	BLEN	1110.5	1111.8	III	GG	2	3000	3900X	
			POTS	1154.7	1156.8	III	G	2	110U	275	
			POTS	1252.0	1252.2	III	B	2	40X	90U	
	2000	2400	CULG	2106.0	2107.0	III	G	1	23	90	
	2145	2400	HIRA								
25			LEAR	0119.0	0119.0	III		1	27	44	
	0000	0730	HIRA	0157.5	0158.0	III	B	1	230	600	
			LEAR	0257.0	0257.0	III		1	27	44	
			LEAR	0328.0	0329.0	III		1	28	40	
			LEAR	0551.0	0551.0	III		1	27	40	
			SVTO	0636.0	0636.0	III		1	135	165	
	0000	0755	CULG	0713.0	0713.0	III	B	1	23	45	
			SVTO	0824.0	0909.0	CONT		1	42U	138U	
	0837	1325	ONDR								
	0850	1440	BLEN								
	0651	1200	IZMI	0918.5	0918.7	III	B	1	45	85	
	0800	1342	POTS	0936.8	0938.2	III	G	2	135	300	
			IZMI	1012.3	1012.3	III	B	1	45	60	
			SVTO	1148.0	1333.0	CONT		1	37U	167U	
	2146	2400	HIRA								
	2000	2400	CULG	2155.0	2155.0	III	B	1	25	90	
			CULG	2226.0	2239.0	I	S	1	60	160	
			LEAR	2258.0	2258.0	III		1	26	96	
			CULG	2259.0	2259.0	III	B	1	60U	90	
			CULG	2308.0	2359.0	I	S	1	60	130	
26	0000	0730	HIRA								
	0000	0755	CULG	0511.0	0511.0	III	B	1	28	80	
			CULG	0539.0	0539.0	III	B	1	20	90	
	0800	1342	POTS	0835	1233	I	S	1	110U	350	
	0837	1326	ONDR								
	0850	1440	BLEN								
			LEAR	0929.0	0930.0	III		1	30	117	
			SVTO	0929.0	0929.0	III		1	53	83	
			POTS	0929.6	0930.0	III	G	3	40X	140	
	0700	1200	IZMI	0929.6	0930.1	III	G,U	2	40	215	
			LEAR	0944.0	0945.0	III		2	25	180	
			SVTO	0944.0	0944.0	III		2	25	170	
			IZMI	0944.5	0945.0	III	GG,FS,C	2	25X	270X	
			POTS	0944.5	0944.9	III	G	3	40X	350	
			IZMI	0952.8	0953.1	III	B	1	45	95	
			POTS	0952.8	0953.0	III	B	2	110U	170U	
			IZMI	1036.0U	1128.0U	I	S	1	200	270X	
			POTS	1058.3	1058.4	III	B	1	225	360	
			POTS	1302.3	1302.5	III	G	2	40X	120	
			SVTO	1347.0	1350.0	III		2	32	180	
			SGMR	1349.0	1349.0	III		3	30	80	
			HOLL	1844.0	1844.0	III		1	25	149	
	2000	2400	CULG	2020.0	2023.0	III	G	1	50U	180	
			CULG	2120.0	2120.0	III	B	1	25	50	
	2146	2400	HIRA								
			CULG	2150.0	2151.0	III	G	1	18	170	
			CULG	2158.0	2158.0	III	B	1	25	80	
			CULG	2340.0	2349.0	III	G	1	45	100	
27			LEAR	0011.0	0013.0	III		1	25	155	
	0000	0730	HIRA	0012.0	0012.5	III	B	1	30	200	
	0000	0755	CULG	0012.0	0013.0	III	G	1	30	180	
			LEAR	0033.0	0034.0	III		1	30	150	
			CULG	0034.0	0034.0	III	B	2	50	150	
			HIRA	0034.0	0034.5	III	B	1	30	180	
			CULG	0140.0	0140.0	III	B	1	20	70	
			CULG	0205.0	0205.0	III	B	1	20	150	
			HIRA	0205.0	0205.5	III	B	1	30	150	
			LEAR	0205.0	0205.0	III		1	25	100	
			LEAR	0219.0	0219.0	III		1	25	85	
			CULG	0220.0	0220.0	III	B	1	20	80	
			CULG	0240.0	0240.0	III	B	1	25	90	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
27			LEAR	0301.0	0302.0	III		1	25	100	
			LEAR	0328.0	0331.0	III		1	25	180	
			CULG	0331.0	0331.0	III	B	2	20	170	
			HIRA	0331.0	0331.5	III	B	2	30	180	
			CULG	0347.0	0351.0	II	UE	2	55	90	
			LEAR	0347.0	0353.0	II		1	48	96	ESS 0433
			CULG	0438.0	0440.0	III	G	2	20	150	
			LEAR	0438.0	0441.0	III		2	25	180	
			HIRA	0438.5	0440.0	III	G	2	40	190	
			CULG	0551.0	0552.0	III	G	1	20	160	
			SVTO	0637.0	0905.0	CONT		1	28	65	
			CULG	0642.0	0643.0	III	G	1	40	160	
			LEAR	0719.0	0720.0	III		3	25	180	
			SVTO	0719.0	0720.0	III		2	33	164	
			HIRA	0719.5	0720.0	III	B	2	40	110	
	0650	1200	IZMI	0719.7	0720.7	III	GG,C	2	35	210	
			CULG	0720.0	0720.0	III	B	3	18	180	
			IZMI	0722.4	0735.1	III	N	1	45	95	
			CULG	0735.0	0735.0	III	B	1	20	75	
	0800	1342	POTS	0837	1342 U	I	S	1	110U	170U	
	0837	1327	ONDR								
	0855	1445	BLEN								
			IZMI	0901.0U	0947.5	III	N	1	45	95	
			LEAR	0924.0	0927.0	III		1	25	97	
			IZMI	0924.1	0924.5	III	G	2	40	140	
			POTS	0924.1	0934.9	III	G	3	40X	170U	
			IZMI	0927.2	0927.9	III	G	2	45	95	
			IZMI	0934.0	0934.8	III	G	2	45	205	
			IZMI	1010.9	1011.0	III	B	2	45	90	
			POTS	1027.0	1027.7	III	G	3	40X	170U	
			IZMI	1027.1	1027.6	III	G	2	45	95	
			IZMI	1031.7	1032.3	III	G	2	45	270X	
			POTS	1032.0	1032.3	III	G	2	110U	320	
			SVTO	1047.0	1047.0	III		1	42	83	
			IZMI	1047.6	1048.1	III	G	2	35	165	
			POTS	1047.7	1048.1	III	B	3	40X	170U	
			IZMI	1049.0	1049.3	III	B	1	45	70	
			POTS	1049.0	1049.1	III	B	1	110U	150	
			SVTO	1059.0	1100.0	III		1	38	86	
			POTS	1059.9	1100.2	III	B	3	40X	130	
			IZMI	1129.5	1129.8	III	G	2	45	95	
			POTS	1129.6	1133.5	III	G	2	40X	170U	
			IZMI	1133.3	1133.5	III	B	1	45	95	
			IZMI	1145.0	1145.3	III	G	2	40	160	
			POTS	1145.2	1145.4	III	B	2	40X	170U	
			SGMR	1258.0	1304.0	III		2	30	80	
			SVTO	1311.0	1314.0	III		1	31	136	
			POTS	1311.5	1315.0	III	G	3	40X	170U	
			SGMR	1347.0	1348.0	III		2	30	80	
			HOLL	1545.0	1546.0	III		1	25	164	
	2000	2400	CULG	2017.0	2019.0	III	G	1	30	90	
			CULG	2040.0	2045.0	III	G	1	25	90	
			CULG	2124.0	2135.0	III	G	1	18	180	
			PALE	2132.0	2132.0	III		1	25	90	
			CULG	2133.0	2133.0	III	B	2	20	130	
			LEAR	2210.0	2212.0	III		1	25	71	
			CULG	2211.0	2213.0	III	G	1	20	90	
			CULG	2246.0	2246.0	III	B	1	50U	130	
			CULG	2306.0	2323.0	III	N	1	50U	100	
			CULG	2339.0	2342.0	III	G	2	18	150	
			LEAR	2339.0	2341.0	III		1	25	115	
			PALE	2339.0	2340.0	III		1	25	95	
	2147	2400	HIRA	2339.5	2340.0	III	B	2	40	100	
28	0000	0755	CULG	0012.0	0016.0	III	G	1	40	160	
			CULG	0046.0	0048.0	III	G	1	25	130	
			LEAR	0046.0	0047.0	III		1	25	111	
			CULG	0129.0	0129.0	III	B	1	23	50	
			LEAR	0129.0	0129.0	III		1	25	49	

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

DECEMBER 2000

Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
28			CULG	0204.0	0209.0	III	G	3	18X	160	
			LEAR	0206.0	0211.0	III		3	25	173	
			LEAR	0206.0	0211.0	V		3	25	173	
			PALE	0206.0	0208.0	V		2	25	180	
	0000	0731	HIRA	0206.5	0209.0	III	G	3	40	120	
			CULG	0209.0	0214.0	III	G	1	25	160	
			CULG	0301.0	0353.0	III	N	1	20	90	
			LEAR	0334.0	0335.0	III		1	25	61	
			LEAR	0442.0	0443.0	III		1	25	58	
			CULG	0443.0	0443.0	III	B	1	28	180	
			LEAR	0507.0	0508.0	III		2	25	92	
			CULG	0508.0	0508.0	III	B	1	18	80	
	0656	1149	IZMI	0709.5	0709.6	III	B	1	80	120	
			IZMI	0743.6	0743.9	III	G	2	70	100	
			CULG	0744.0	0744.0	III	B	1	60	100	
	0800	1342	POTS	0800 E	1342 U	I	S	1	110U	300	
			IZMI	0807.4	0807.7	III	B	1	45	70	
			IZMI	0816.5	0816.7	III	B	1	45	60	
			IZMI	0835.2	0835.3	III	B	1	45	70	
			IZMI	0839.6	0848.3	III	N	1	45	95	
	0840	1327	ONDR								
	0855	1445	BLEN								
			IZMI	0855.2	0858.1	III	N	1	45	95	
			IZMI	0910.2	0913.5	III	GG	2	25	160	
			LEAR	0912.0	0913.0	III		2	25	140	
			SVTO	0912.0	0912.0	III		2	25	137	
			POTS	0912.7	0913.1	III	G	3	40X	170U	
			POTS	0959.3	1011.3	III	G	2	110U	170U	
			IZMI	0959.4	1013.0	III	N	1	45	95	
			IZMI	1027.7	1028.0	III	G	2	185	270X	
			POTS	1027.9	1028.1	III	G	2	110U	350	
			SVTO	1030.0	1037.0	III		1	48	123	
			LEAR	1036.0	1037.0	III		1	25	117	
			IZMI	1036.3	1038.3	III	GG	2	35	170	
			POTS	1036.3	1037.5	III	G	3	40X	170U	
			IZMI	1045.7	1045.8	III	B	2	40	90	
			IZMI	1117.3	1117.6	III	B	1	45	95	
			POTS	1117.4	1117.6	III	B	2	40X	65	
			IZMI	1125.6	1125.8	III	G	2	30	95	
			POTS	1125.6	1125.8	III	G	3	40X	75	
			SVTO	1258.0	1258.0	III		1	25	83	
			POTS	1258.7	1259.1	III	G	3	40X	120	
			HOLL	1414.0	1420.0	III		1	25	79	
			SVTO	1418.0	1423.0	III		1	63	151	
			HOLL	1435.0	1439.0	II		1	66	86	ESS 0443
			SVTO	1435.0	1439.0	II		1	75	84	ESS 0468
	2000	2400	CULG	2014.0	2015.0	III	G	1	23	90	
			CULG	2108.0	2108.0	III	B	1	60	90	
			CULG	2133.0	2133.0	III	B	1	60	160	
	2147	2400	HIRA								
			CULG	2212.0	2357.0	I	S	1	100	150	
			CULG	2303.0	2305.0	III	G	2	18	180	
			LEAR	2303.0	2305.0	III		1	25	180	
29	0000	0732	HIRA								
			LEAR	0115.0	0115.0	III		1	25	88	
	0000	0755	CULG	0116.0	0116.0	III	B	1	30	150	
			LEAR	0142.0	0151.0	III		1	25	180	
			CULG	0143.0	0155.0	III	G	1	20	180	
			CULG	0615.0	0615.0	III	B	1	20	90	
	0650	1200	IZMI	0650.0E	1200.0D	I	N	1	45	270	
			IZMI	0702.0U	1100.0U	III	N	1	45	95	
			LEAR	0731.0	0731.0	III		1	34	168	
			SVTO	0731.0	0731.0	III		1	68	150	
			IZMI	0731.3	0731.8	III	G	2	45	190	
			CULG	0732.0	0732.0	III	B	1	25	180	
	0800	1342	POTS	0800 E	1342 U	I	S,C,DC	1	110U	400	
	0837	1329	ONDR								
	0855	1445	BLEN								

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2000

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
29			POTS	0959.9	1000.0	III	B	1	250	360	
			POTS	1140.7	1140.8	III	B	1	110U	145	
			IZMI	1155.9	1156.6	III	G	1	200	270X	
			HOLL	1839.0	1843.0	III		1	25	70	
			HOLL	1852.0	1859.0	III		1	25	69	
	2000	2400	CULG	2029.0	2400.0D	I	S	1	80	160	
			CULG	2110.0	2131.0	III	N	1	50U	140	
	2148	2400	HIRA								
30	0000	0755	CULG	0000.0E	0755.0D	I	S	1	100	170	
			CULG	0510.0	0510.0	III	B	1	200	420	
	0000	0721	HIRA	0510.0	0510.5	III	B	2	180	320	
			CULG	0639.0	0641.0	III	G	1	23	400	
			HIRA	0639.0	0639.5	III	B	1	60	400	
			LEAR	0639.0	0639.0	III		1	73	131	
	0658	1200	IZMI	0658.0E	1200.0D	I	S,C	2	80	270X	
			IZMI	0700.9	0701.3	III	G	2	45	90	
			IZMI	0723.0	1127.0	III	N	1	45	90	
			IZMI	0732.7	0732.9	III	G	2	40	90	
			CULG	0733.0	0755.0D	III	N	1	20	90	
	0800	1344	POTS	0826 E	1344 U	I	S,C,DC	2	110U	300	
	0837	1330	ONDR								
	0855	1445	BLEN								
			POTS	0937.3	0937.4	III	B	1	40X	90U	
			POTS	0953.3	0953.7	III	G	2	110U	170U	
			POTS	1245.9	1246.0	III	B	2	40X	90U	
			POTS	1255.5	1255.7	III	B	2	40X	120	
			POTS	1332.4	1332.5	III	B	3	110U	170U	
			POTS	1341.4	1341.5	III	B	1	40X	120	
			SVTO	1355.0	1355.0	III		1	59	84	
	2000	2400	CULG	2103.0	2144.0	III	N	1	35	90	
			CULG	2244.0	2315.0	III	N	1	50U	90	
31			LEAR	0039.0	0039.0	III		1	26	115	
	0000	0755	CULG	0039.0	0039.0	III	B	1	60	160	
			LEAR	0207.0	0207.0	III		1	28	38	
			CULG	0240.0	0240.0	III	B	1	20	160	
			LEAR	0240.0	0240.0	III		1	26	99	
			CULG	0325.0	0534.0	III	N	1	28	180	
			LEAR	0325.0	0352.0	III	N	1	25	138	
			LEAR	0402.0	0412.0	III		1	25	59	
			LEAR	0415.0	0419.0	III		1	26	100	
			LEAR	0452.0	0452.0	III		1	25	58	
			LEAR	0519.0	0522.0	III		1	25	89	
			CULG	0617.0	0649.0	III	N	1	30	90	
			CULG	0637.0	0706.0	I	S	1	120	180	
	0700	1200	IZMI	0700.0E	1200.0D	I	S,C	2	145	270X	
			IZMI	0706.0	1200.0D	III	N	2	45	90	
			CULG	0715.0	0755.0D	III	N	1	23	90	
			LEAR	0718.0	0746.0	III	N	1	25	101	
			IZMI	0731.4	0737.9	III	GG	2	35	135	
			SVTO	0802.0	0809.0	III		1	31U	154U	
	0800	1344	POTS	0826 E	1344 U	I	S	1	110U	350	
			SVTO	0829.0	1204.0	III	N	1	25	180	
	0836	1331	ONDR								
			IZMI	0841.2	0844.9	III	G	2	35	90	
	0855	1445	BLEN								
			POTS	0901.0	0909.5	III	G	3	40X	120	
			LEAR	0903.0	1052.0	III	N	1	25	105	
			LEAR	0903.0	1052.0	III	N	1	25	1052	
			IZMI	0903.2	0903.3	III	B,FS	2	45	90	
			IZMI	0916.8	0920.1	III	G	2	30	145	
			POTS	0917.1	0918.5	III	G	3	40X	155	
			POTS	0926	1339	III	N	1	40X	90U	
			POTS	0929.4	0929.5	III	B	2	40X	120	
			POTS	0941.7	0949.7	III	G	3	40X	140	
			IZMI	0941.9	0949.7	III	GG	2	30	90	
			POTS	1006.1	1006.2	III	B	2	55	120	
			POTS	1041.2	1041.3	III	B	2	40X	170U	

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

DECEMBER 2000

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
31			POTS	1043.7	1043.9	III	B	3	40X	150	
			IZMI	1043.8	1043.9	III	B	2	30	120	
			POTS	1048.0	1048.2	III	G	2	40X	150	
			POTS	1123.3	1131.2	III	G	3	40X	170U	
			POTS	1135.6	1145.8	III	G	3	40X	120	
			IZMI	1141.7	1141.8	III	B	2	30	90	
			POTS	1204.4	1204.5	III	B	2	40X	90U	
			SVTO	1232.0	1250.0	III	N	1	34	76	
			POTS	1232.5	1232.8	III	G	3	40X	90U	
			POTS	1242.2	1250.9	III	GG	3	40X	90U	
			POTS	1319.0	1319.1	III	B	2	40X	65	
			SVTO	1401.0	1401.0	III		1	38U	83U	
			SVTO	1425.0	1426.0	III		1	35U	83U	
			HOLL	1927.0	1928.0	III		1	25	140	
			PALE	1927.0	1928.0	III		2	25	148	
			SGMR	1927.0	1928.0	III		1	30	60	
			HOLL	1940.0	1944.0	III		2	25	179	
			PALE	1941.0	1944.0	III		2	25	180	
			SGMR	1941.0	1942.0	III		1	30	80	
	2000	2400	CULG	2006.0	2320.0	III	N	1	20	170	
			LEAR	2257.0	2330.0	III	N	1	25	90	
			CULG	2340.0	2345.0	III	GG	1	18	180	
			LEAR	2340.0	2341.0	III		1	25	102	
			LEAR	2343.0	2346.0	III		2	25	113	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range
U = Uncertain frequency

Remarks:

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

Stations Reporting:

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

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANCAY RADIOHELIOGRAPH

DECEMBER 2000

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/12/00*	+0.16	+0.16	IV	8H09 E	15H20 D
01/12/00*	+0.31	+0.05	III	8H09 E	15H20 D
02/12/00*	+0.20	-0.34	I	8H09 E	11H17
02/12/00*	+0.81	+0.56	I	8H09 E	15H20 D
02/12/00*	+1.46	+0.05	I	9H30	13H00
03/12/00	+0.81	+0.53	II	8H09 E	15H20 D
04/12/00	+1.47	+0.51	II	8H10 E	11H50
05/12/00*	+1.53	+0.50	III	8H10 E	15H21 D
06/12/00*	+1.36	+0.62	I	8H11 E	15H22 D
07/12/00	+1.63	+0.67	I	8H11 E	15H13 D
20/12/00	-0.84	+0.22	I	12H20	15H18 D
21/12/00	-0.98	+0.73	I	8H17 E	12H00
21//12/00	-0.82	-0.54	II	11H10	15H19 D
22/12/00	+0.91	-0.29	II	10H03	15H19 D
23/12/00*	-0.14	+0.79	I	8H19 E	10H45
23/12/00*	-0.06	-0.05	III	8H19 E	15H19 D
24/12/00	-0.28	+0.36	II	8H19 E	15H13 D
24/12/00	+0.54	+0.09	I	8H19 E	15H13 D
26/12/00	+1.10	+0.29	I	8H28 E	13H10
27/12/00	-1.19	-0.14	I	8H21 E	15H22 D
27/12/00	+0.79	+0.39	I	8H21 E	15H22 D
28/12/00	-1.10	+0.02	I	8H21 E	15H22 D
28/12/00	-0.57	+0.70	I	12H20	15H22 D
29/12/00*	-1.04	-0.09	III	8H22 E	15H02 D
29/12/00*	-0.4	-0.11	II	8H22 E	15H02 D
30/12/00*	-0.40	-0.59	III	8H22 E	15H23 D
31/12/00*	-0.05	+0.14	II	8H23 E	15H24 D

[1] POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT
[2] IMP1: FLUX< 5 SFU IMP2: 5< FLUX < 20 SFU IMP3: 20< FLUX <100 SFU
IMP4: 100< FLUX <300 SFU IMP5> 300 SFU
[3] E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANCAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

SOLAR RADIO NOISE STORM AT 327 MHZ FROM NANCAY RADIOHELIOGRAPH

DECEMBER 2000

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/12/00*	-0.28	-0.23	II	8H09 E	11H53
01/12/00*	+0.57	+0.37	II	8H09 E	11H53
01/12/00*	+0.34	+0.39	III	8H09 E	15H20 D
02/12/00*	-0.17	-0.25	I	8H09 E	15H20 D
02/12/00*	+0.82	+0.26	II	8H09 E	15H20 D
02/12/00*	+1.10	-0.36	I	8H09 E	15H20 D
03/12/00	+0.78	+0.54	I	10H50	15H20 D
04/12/00*	+0.91	+0.57	I	12H15	13H30
04/12/00*	+1.16	+0.45	II	8H10 E	15H21 D
05/12/00*	-0.74	+0.19	I	8H10 E	15H21 D
05/12/00*	+1.10	+0.48	I	8H10 E	15H21 D
06/12/00*	-0.56	+0.25	I	8H11 E	15H22 D
06/12/00*	+1.24	+0.53	I	8H11 E	15H22 D
07/12/00	-.0.29	+0.20	I	8H11 E	15H13 D
07/12/00	+1.41	+0.54	I	8H11 E	15H13 D
15/12/00	-0.78	+0.29	I	8H39 E	15H17 D
15/12/00	+0.09	-0.05	I	11H50	15H17 D
22/12/00	+0.78	-0.29	I	9H30	15H19 D
23/12/00*	-0.33	+0.40	I	8H19 E	15H19 D
23/12/00*	+0.09	-0.17	II	8H19 E	15H19 D
24/12/00	-0.17	+0.34	II	8H19 E	15H13 D
24/12/00	+0.39	-0.11	II	8H19 E	15H13 D
26/12/00	+0.39	+0.36	I	8H28 E	15H22 D
26/12/00	+0.98	+0.06	I	8H28 E	15H22 D
27/12/00	-1.15	-0.09	I	9H50	15H22 D
27/12/00	+0.64	+0.29	I	8H21 E	15H22 D
28/12/00	-1.07	+0.11	I	8H21 E	15H22 D
28/12/00	-0.82	-0.11	I	8H21 E	15H22 D
28/12/00	+0.82	+0.34	I	8H21 E	15H22 D
29/12/00*	-0.93	-0.06	II	8H22 E	15H02 D
29/12/00*	-0.62	-0.09	I	8H22 E	15H02 D
30/12/00*	-0.79	-0.19	II	8H22 E	15H23 D
30/12/00*	-0.36	-0.22	III	8H22 E	15H23 D
31/12/00*	-0.56	-0.22	III	8H23 E	15H24 D
31/12/00*	-0.14	-0.14	III	8H23 E	15H24 D

09, 10, 25 DECEMBER : NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

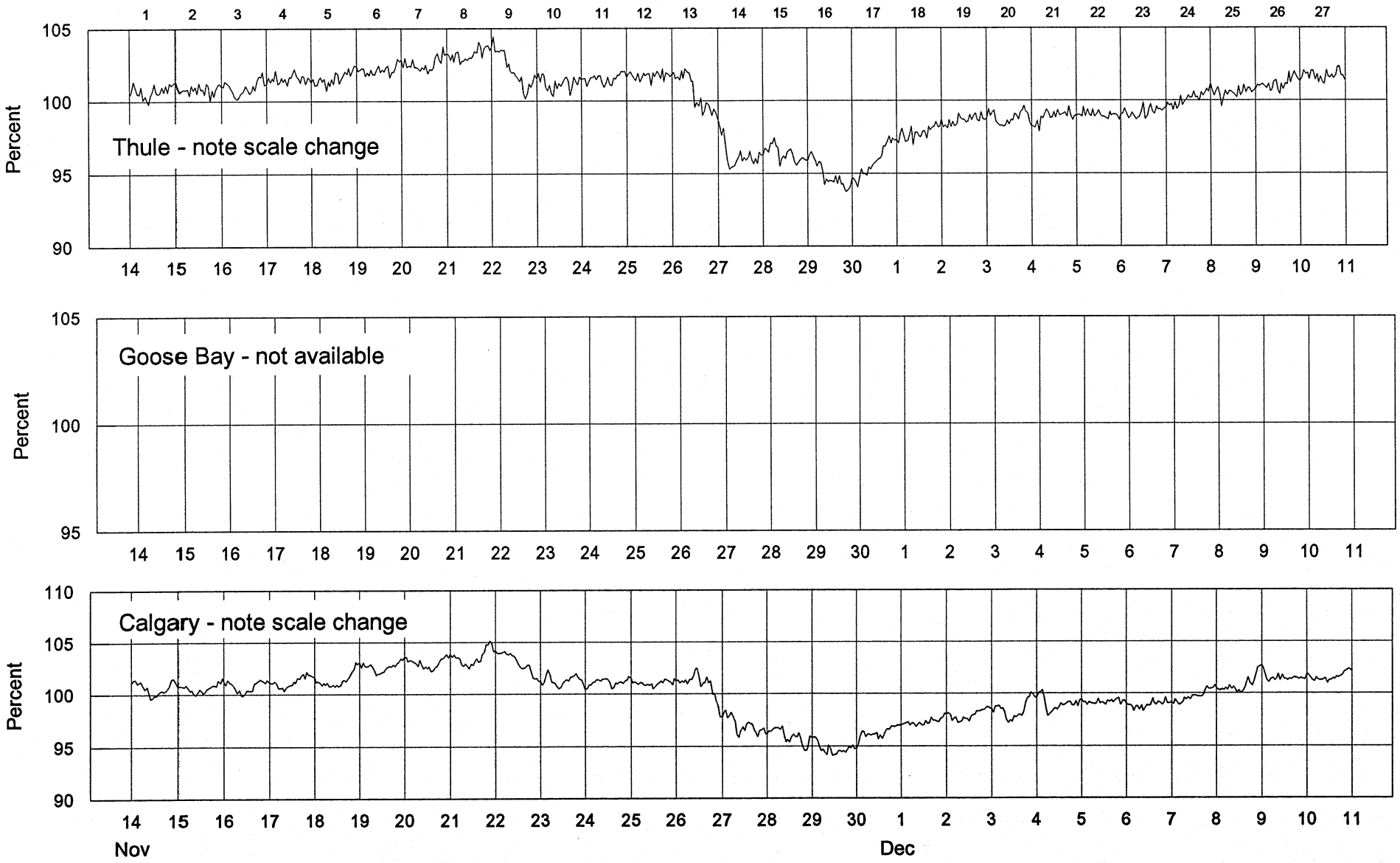
** Due to the onset of the strongest storm at 13H15, the end time cannot be determined.

COSMIC RAY INDICES
(Neutron Monitor)
December 2000

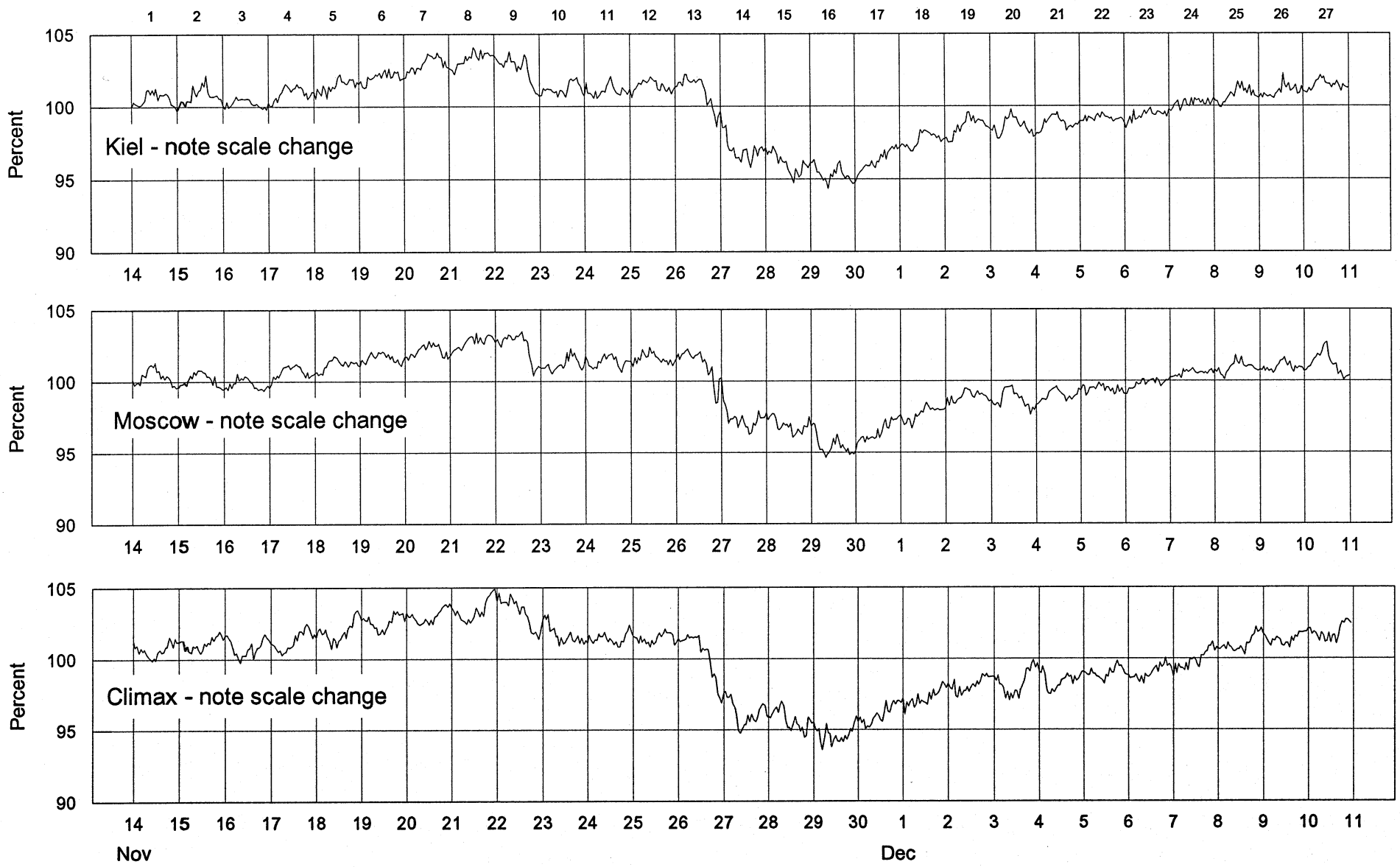
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	3853.5	not	3315.2	5339.8	7953.8	3499.2	1889.1	3439.8
2	3887.7	available	3338.0	5390.4	8051.8	3531.8	1904.7	3459.0
3	3895.0		3356.2	5392.2	8037.3	3538.7	1898.8	3452.2
4	3896.5		3374.5	5401.2	8056.0	3542.5	1903.5	3458.2
5	3902.7		3380.5	5421.2	8094.6	3561.9	1900.6	3463.2
6	3908.6		3370.8	5430.6	8123.5	3563.7	1900.6	3466.1
7	3943.9		3399.0	5476.6	8184.8	3595.2	1911.8	3481.6
8	3964.1		3434.3	5509.5	8216.5	3636.0	1912.4	3484.4
9	3986.0		3459.5	5523.2	8219.3	3647.7	1923.8	3492.1
10	4008.4		3461.3	5545.5	8242.0	3665.4	1935.6	3494.0
11	3998.8		3468.0	5538.6	8196.9	3669.0	1943.2	3500.6
12	4014.2		3474.7	5550.7	8265.6	3684.4	1944.8	3506.3
13	4027.3		3486.7	5573.5	8318.2	3700.8	1948.8	3505.6
14	4017.0		3483.2	5599.3	8334.7	3693.5	1939.9	3509.6
15	4010.1		3499.2	5610.5	8346.6	3704.6	1946.6	3523.1
16	4034.3		3527.8	5631.9	8359.2	3724.4	1949.9	3527.3
17	4040.7		3503.2	5630.5	8321.2	3711.6	1950.5	3529.5
18	4043.7		3507.5	5610.3	8320.3	3708.6	1942.8	3518.8
19	4023.1		3485.0	5589.6	8284.4	3684.6	1939.8	3514.5
20	4026.8		3487.8	5580.3	8281.8	3680.3	1932.0	3501.9
21	4015.2		3483.3	5585.8	8270.8	3684.8	1926.0	3496.2
22	3992.2		3465.8	5554.3	8232.7	3663.9	1927.5	3495.8
23	3980.8		3465.5	5553.6	8202.0	3667.5	1937.7	3509.5
24	3979.5		3464.7	5568.4	8193.0	3670.2	1933.0	3506.8
25	3944.2		3451.2	5549.9	8165.8	3651.0	1929.3	3495.4
26	3958.0		3438.3	5576.0	8182.7	3646.2	1928.5	3492.6
27	3980.4		3426.3	5549.2	8146.1	3636.0	1933.3	3485.7
28	3999.2		3448.0	5595.3	8210.8	3678.8	1947.0	3514.7
29	4031.6		3473.2	5641.8	8276.5	3708.5	1946.9	3525.4
30	4027.3		3467.5	5642.4	8282.0	3699.0	1947.3	3519.7
31	4026.9		3470.3	5636.2	8298.4	3708.0	1946.5	3520.7
Mean	3981.0		3447.3	5541.9	8215.1	3650.5	1929.7	3496.5

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.

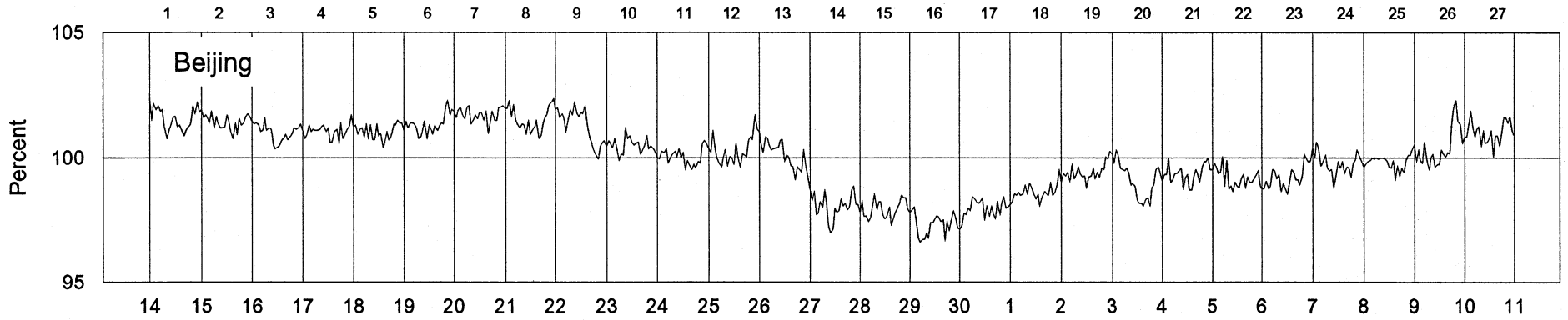
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2284 - Beginning 14 Nov 2000

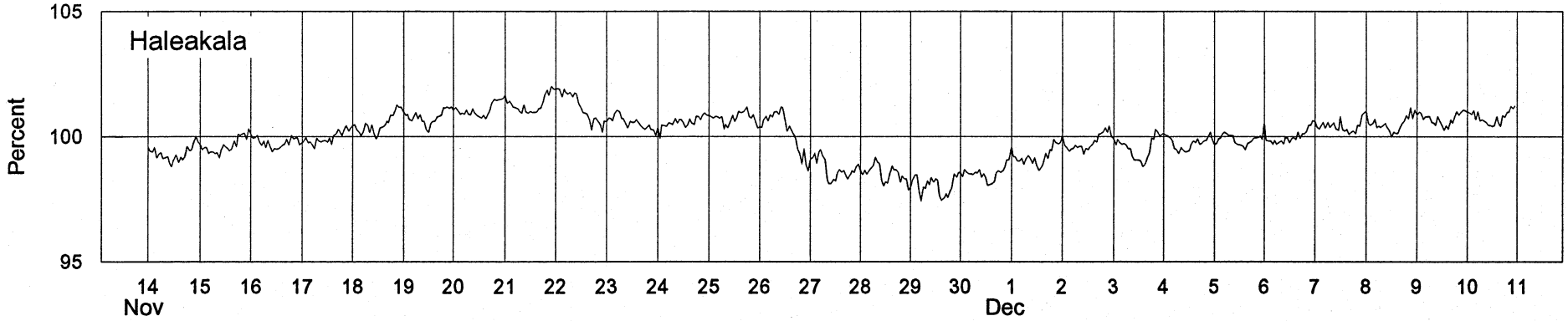


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2284 - Beginning 14 Nov 2000

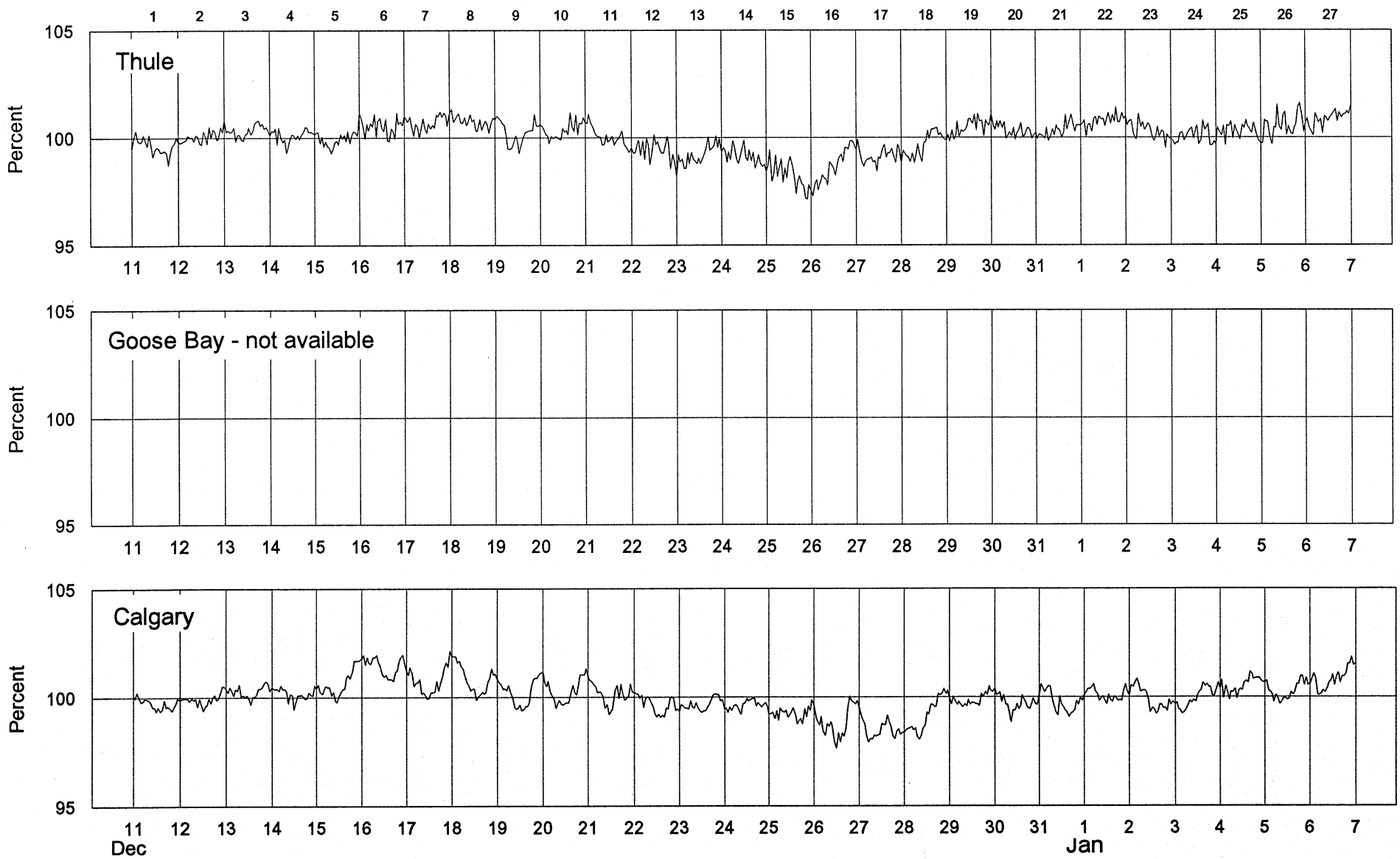


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2284 - Beginning 14 Nov 2000

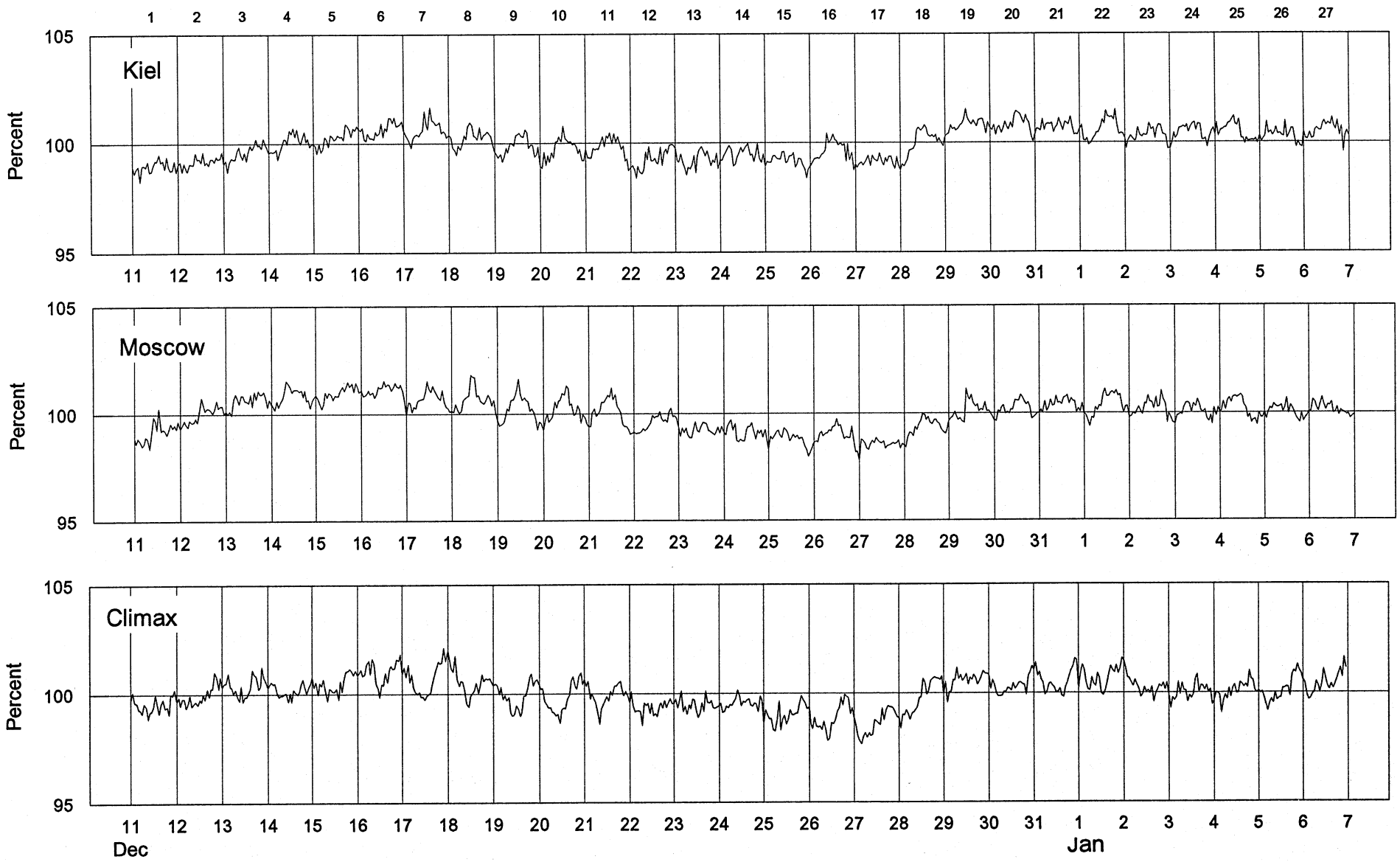




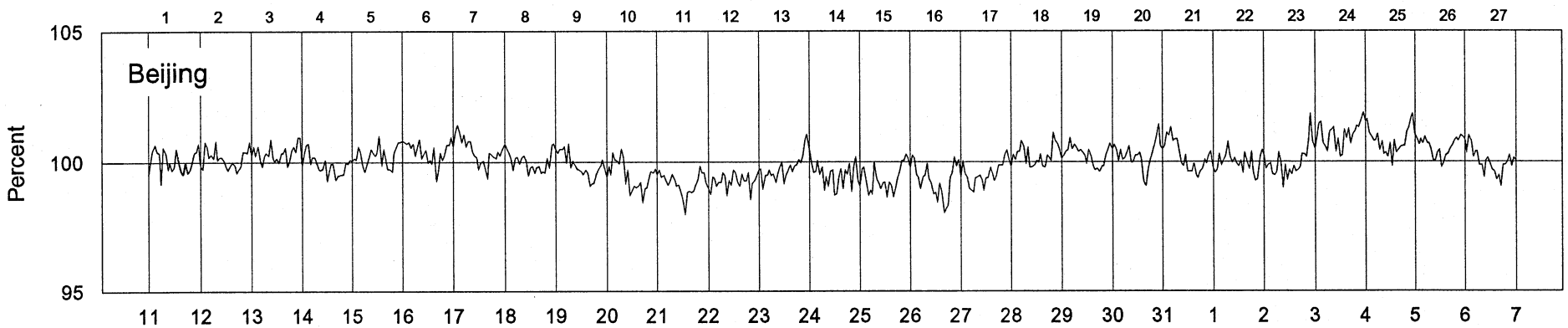
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2285 - Beginning 11 Dec 2000

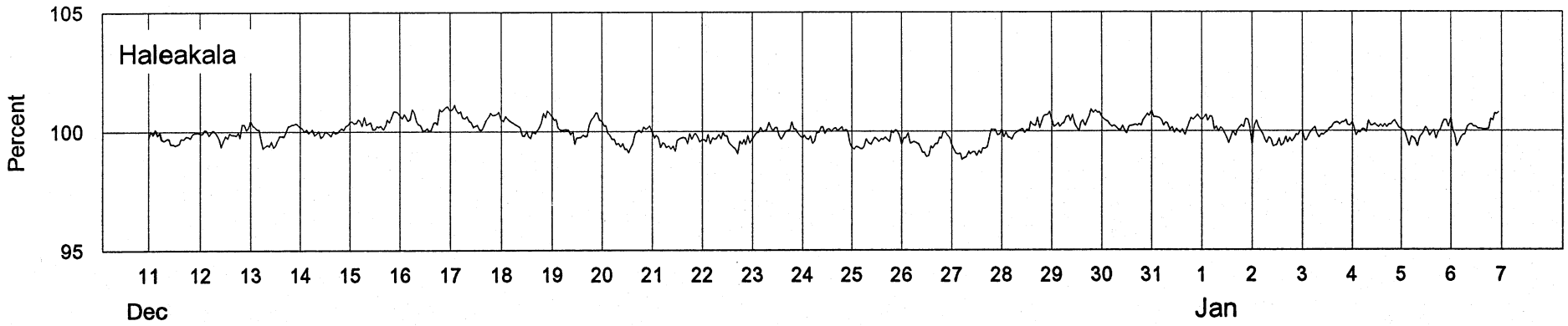


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2285 - Beginning 11 Dec 2000

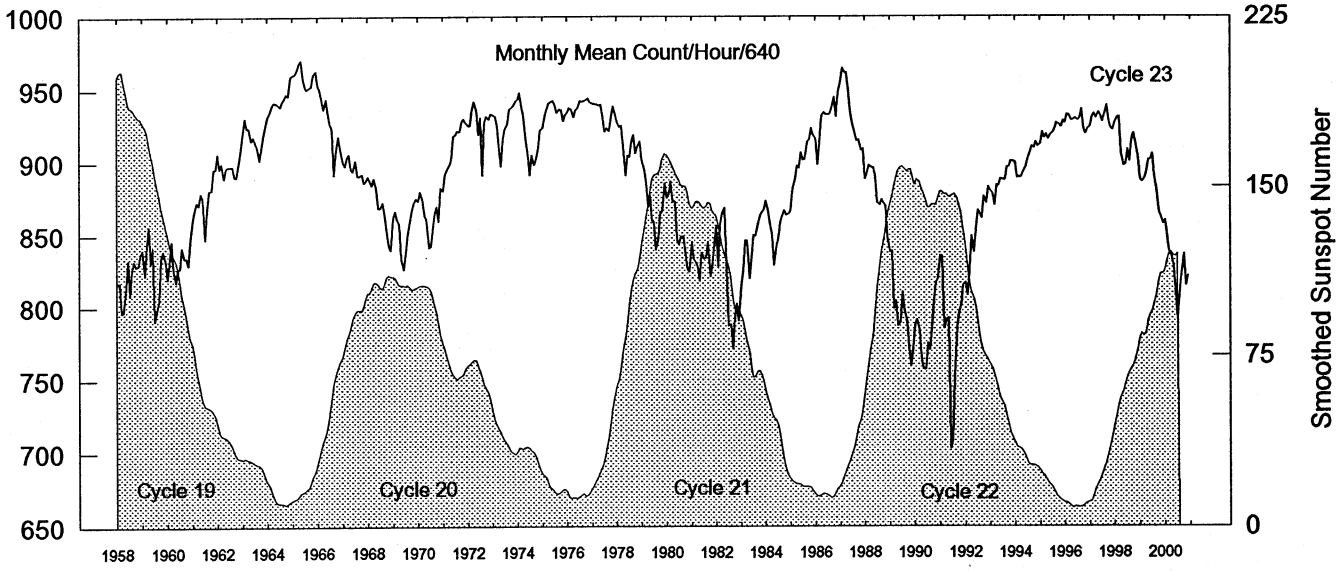


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2285 - Beginning 11 Dec 2000





Moscow Neutron Monitor Pressure-Corrected Values
Jan 1958 - Dec 2000



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

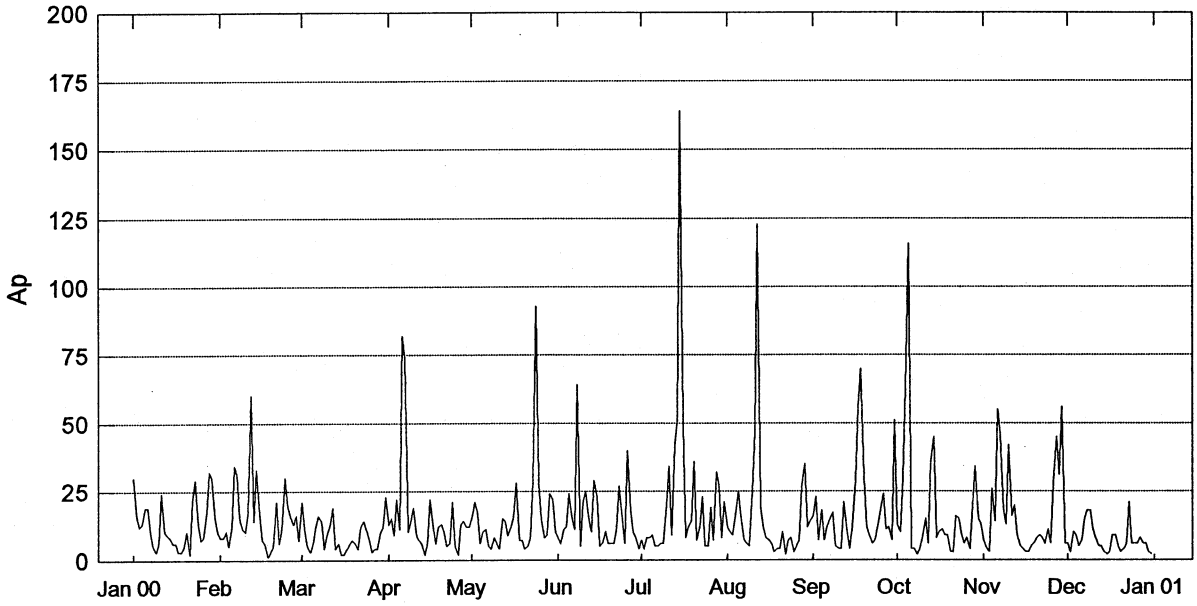
Multiply table entries by 64 to obtain hourly counting rate. Moscow, Russia: N55, E37, Alt= 200 m, Cutoff Rigidity= 2.42GV.
NOTE: * Indicates data have been restored using the corresponding data of other cosmic ray stations.

Geomagnetic Activity Indices
December 2000

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		2	2+	1-	2-	2	2+	1-	0+	12	6	0.3	2o	1+	1-	2o	2+	2+	1o	0+	11	9	19	12	16	C
2	Q6	0	0	1-	1-	1+	2-	1	1	6+	3	0.1	0o	0o	1-	1o	2-	2o	1+	1+	8	9	11	5	15	C
3		1	2	3	2	3	3	3	1+	18+	10	0.6	1+	2o	3o	2+	3+	3o	3+	1+	22	18	30	21	27	
4		3-	3	3-	2	2-	1	1+	3-	17	9	0.5	2+	2+	2+	2+	2o	1o	2o	3-	17	17	21	21	17	
5	Q9	1+	2	1	2-	2	1	0+	0+	10-	5	0.2	1+	1+	1o	2-	2o	2-	1-	1o	10	10	12	14	9	CK
6		0+	1	2-	2-	1+	3	2+	3-	14	7	0.4	1-	1o	2+	2o	2-	3-	3-	3o	17	14	29	14	29	
7	D4*	3	3	3+	3-	3+	2	2+	4	24-	15	0.9	2o	3-	3o	3o	3+	2-	3-	4-	27	34	30	30	35	
8	D2*	4-	3+	3	3	4	3+	3	3+	27-	18	1.0	4-	3o	3o	3o	4-	4-	3+	3o	37	34	39	32	42	
9	D3*	3	4-	3+	3-	2+	3+	3+	4+	26	18	1.0	3o	3o	3-	3-	3-	4-	3+	4-	32	40	26	28	38	
10	D5*	3+	3	2+	2	2	2	3-	3-	20	11	0.6	3-	3-	2+	2+	1+	2+	3-	3-	20	23	19	24	18	
11		3	3-	2+	2-	2-	1-	1+	3-	16	8	0.5	2+	2o	2+	2-	1+	1+	1+	2o	13	18	14	17	15	
12		1	1+	1-	1	2-	1+	2+	1+	11-	5	0.2	1o	1o	1o	1+	1+	2+	2o	1o	10	12	10	9	13	CC
13	Q10	3-	2-	1-	1	1-	0+	1-	1+	9	5	0.2	2+	1o	1+	1+	1o	0+	1o	2-	9	12	8	11	9	CC
14	Q3	0+	0+	1-	1-	1-	0+	0+	1+	5-	3	0.0	1o	0+	1o	1+	1-	1o	1-	2-	7	6	7	7	6	CC
15	Q1	1-	0	0+	1-	1-	0+	1-	0+	4-	2	0.0	1o	0+	0+	1o	1o	1-	1-	1-	5	5	5	5	5	CC
16	Q7	0	0	0+	0+	1	1+	2-	1+	6	3	0.1	0+	0+	1o	0+	2-	2-	1+	2-	7	6	13	7	12	CC
17		2	2+	1	1+	3	2+	3+	1	16+	9	0.5	2-	2-	2-	2-	3o	3-	3+	1+	18	20	17	11	26	
18		2-	3-	2	2+	2-	3-	3-	2	18-	9	0.5	2-	2o	2+	3-	2o	3o	3o	3-	20	20	17	14	23	
19		2	2-	1-	2	1+	1+	1+	0+	11-	5	0.2	1+	1-	1o	2o	1o	1+	2-	1-	8	11	9	11	9	CK
20	Q4	0	0	1-	1+	1-	1-	1+	1-	5+	3	0.0	1o	0+	1-	2-	0+	1o	1+	1o	6	7	6	4	8	CC
21	Q8	0+	0	0+	2-	2-	2-	1-	1+	8-	4	0.1	0+	0+	0o	2o	2o	2o	1o	2-	9	8	11	7	13	CC
22		0+	1+	1	1-	1-	1	2-	4-	10+	6	0.3	1+	1+	1+	1-	1+	1+	2o	4+	17	14	24	9	29	
23	D1	4+	6-	4	2+	3-	2+	2	2	25+	21	1.1	4-	5-	3+	3-	3-	2o	3-	2o	32	32	28	44	17	
24		2-	3	1	1-	1-	1-	1+	1+	10+	6	0.2	2+	2o	1+	1+	1o	1o	2o	2o	12	12	16	17	11	
25		2	1	1-	1-	3	2+	0+	2+	12+	6	0.3	2+	2-	1+	1+	3+	3-	1-	3-	17	15	25	13	27	
26		2-	1+	1	1	0+	1	2	3-	11	6	0.2	2o	2-	1+	1+	1o	1+	3o	3-	14	13	13	12	14	C
27		2	1+	1	1	2+	3+	2+	2-	15	8	0.4	2o	1o	2-	1o	3-	3o	3-	2o	16	20	16	11	25	
28		2+	1	1+	1	3	1+	1	0+	11+	6	0.3	2+	1+	2o	2-	3-	2-	2-	1+	14	11	17	13	15	
29		1	3+	2-	1	0+	1	1+	2	12-	6	0.3	2-	3o	2-	1+	1-	2-	2o	2o	14	11	15	13	12	CC
30	Q5	1+	1-	1-	1	1	1-	0	1	6+	3	0.1	1o	1-	1o	2-	2-	1o	0+	1+	7	6	11	9	8	CC
31	Q2	1+	0	0+	1	1-	0	0	0+	4-	2	0.0	1o	0+	1-	1o	0+	0+	0o	1-	4	5	5	5	4	CC
Mean											7	0.36									14.8	15.3	17.0	16.1		

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	1+	1+	0+	2+	3-	2+	1o	0+	11	3-	1+	1o	2-	2o	2o	1+	0o	12	179.3	124	106	132	
2	0o	0o	1o	1o	2o	2+	1o	1o	8	0+	0+	1-	1o	1+	2-	1+	2-	7	162.3	109	101	113	
3	1-	1+	3-	3-	4-	3o	4-	1+	23	2-	2+	3o	2o	3o	3-	3o	2-	22	158.9	128	95	110	
4	2o	2o	2+	3-	2+	1+	2o	3-	17	2+	2+	2+	2-	2o	1o	2o	3-	16	147.6	66	72	97	
5	1o	1+	1-	1+	2o	1+	0+	0+	8	2-	2-	1+	2o	2o	2-	1o	1+	11	142.7	65	60	92	
6	0+	1o	2o	2-	2o	3-	2o	2+	13	1o	1+	2+	2+	2-	3-	3+	4-	21	136.9	63	52	86	
7	2-	3-	3o	3o	3+	2-	2+	3o	23	2+	3o	3+	3o	3+	2o	3-	4o	31	139.9	68	68	89	
8	3o	3o	3o	3o	4o	4-	3o	3o	34	4o	3o	3o	3o	4-	3+	4-	3+	40	134.1	61	57	83	
9	3o	3o	3-	3-	3-	4-	3+	4-	33	3o	3o	3-	3-	3-	3+	3+	4-	32	130.7	58	58	79	
10	3-	3-	2+	2+	2-	2o	2+	2+	19	3o	2+	3-	2+	1o	2+	3-	3-	21	142.1	62	54	91	
11	3-	2o	2+	2-	2-	1o	1+	2+	14	2+	2o	2o	2o	1+	1+	1+	2o	13	139.2	72	73	88	
12	1-	1-	1-	2-	2-	2-	2o	1-	9	1+	1+	1+	1+	1+	2+	2o	1+	11	145.2	89	79	95	
13	2+	1o	1+	1o	1o	0+	1-	1+	8	2o	1o	1+	1+	1o	0+	1+	2o	9	159.5	114	111	110	
14	0+	0+	0+	1+	1-	1o	1-	2-	6	1+	0+	1+	1+	1-	1o	1-	2-	8	176.5	135	136	129	
15	0+	0o	0o	1-	1o	1o	0+	0o	3	1+	0+	1o	1o	1o	1-	1o	1o	6	181.9	153	162	134	
16	0o	0o	0+	0o	2-	2-	1+	1+	6	1-	1o	1+	1o	1+	1+	1+	2o	8	184.4	145	142	137	
17	1o	1+	1+	2o	3+	3-	3+	1o	18	2o	2-	2o	2-	3o	3-	3+	2-	19	190.4	151	136	144	
18	1+	2+	2+	3-	2-	3+	3-	2-	19	2-	2o	2o	3-	2o	2+	3+	3o	20	191.6	138	117	145	
19	2-	1-	1-	2o	1o	1+	2-	0o	8	1+	1-	1+	2o	1-	1o	2-	1o	8	192.2	118	113	146	
20	0+	0o	1o	2-	1o	1o	1+	1-	6	1+	0+	1-	2-	0o	1o	1o	1+	6	194.8	120	118	148	
21	0+	0o	0o	2-	2o	2-	1o	1+	7	1-	1-	0o	2+	2-	2o	1+	2+	10	188.2	116	117	141	
22	1-	1o	1+	1-	2-	2-	1+	4-	12	2-	1+	2-	1-	1-	1+	3-	5o	21	183.8	107	111	137	
23	3+	5o	3+	3-	3-	2+	3-	1+	33	4o	4o	4-	3-	2+	2o	3-	3-	32	184.7	102	102	137	
24	1+	2+	1o	1-	1-	1-	1+	1+	8	3-	2o	2-	2-	1+	1+	2+	2+	15	186.7	115	106	140	
25	2-	1+	1-	1o	3+	3-	0+	2o	13	3-	2o	2-	2-	3+	3-	1o	3+	20	180.9	108	106	133	
26	1+	1-	1+	1o	1-	1o	2+	2+	10	2+	2o	2-	2-	1o	2-	3+	3-	18	182.6	121	115	135	
27	1+	1-	1+	1+	3-	3o	2+	1+	14	2+	1+	2o	1o	3-	3o	3-	2+	18	181.4	118	124	134	
28	2-	1-	1+	1+	2+	1+	1+	0+	9	3-	2-	3-	2-	3o	2o	2o	2o	18	179.3	118	117	132	
29	1o	3o	2-	2-	1o	2-	1+	2-	12	2+	3+	2-	1o	0+	2o	2+	2+	17	175.5	99	119	128	
30	1-	0+	0+	1o	2-	1o	0o	1o	5	1+	1-	2-	2o	2-	1-	1-	1+	9	176.1	111	118	128	
31	1-	0o	0o	1-	0+	0o	0o	0o	2	1o	1-	1+	1+	1-	0+	0o	1o	5	163.9	87	93	115	
Mean									13.3									16.3	168.2	104.5	101.2	119.7	

Daily Average Indices Ap
Jan 2000 - Dec 2000

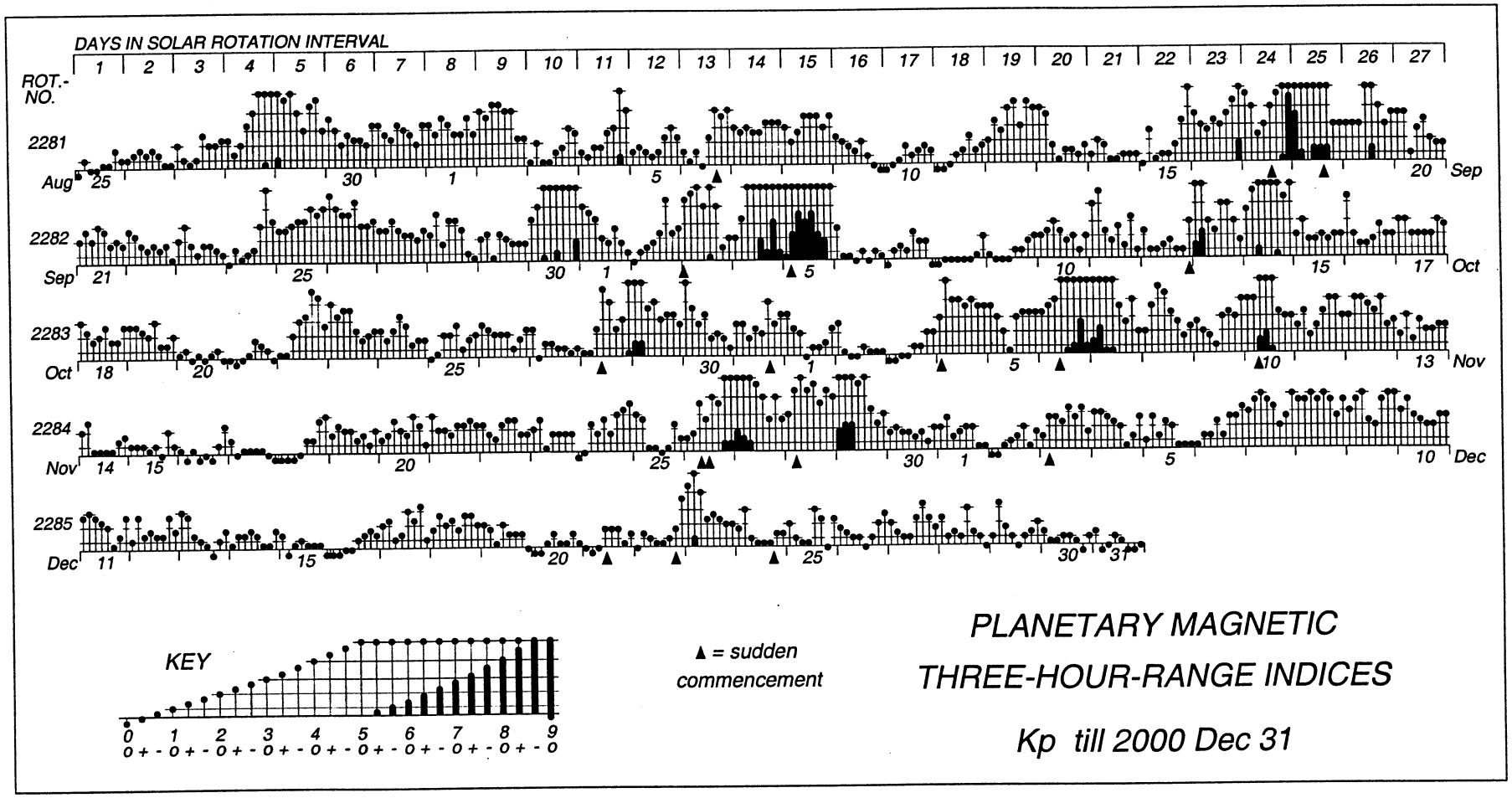


Day	Jan 00	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	30	8	21	13	15	8	7	12	16	13	7	6
2	16	8	11	15	21	6	4	10	23	10	4	3
3	12	10	5	9	17	11	8	9	7	30	3	10
4	13	5	3	22	6	12	8	17	18	63	26	9
5	19	12	6	11	10	24	9	25	7	116	14	5
6	19	34	12	82	11	15	5	16	12	4	55	7
7	10	31	16	74	5	11	5	7	15	4	46	15
8	5	15	14	10	4	64	6	6	17	2	18	18
9	3	11	4	14	8	5	6	5	5	4	13	18
10	6	10	9	19	6	21	20	25	4	8	42	11
11	24	17	13	9	4	25	34	47	4	15	16	8
12	10	60	19	7	15	15	9	123	21	6	20	5
13	9	14	4	6	14	10	42	19	10	36	9	5
14	8	33	6	2	9	29	51	12	4	45	5	3
15	6	17	2	6	12	23	164	8	12	8	4	2
16	6	7	2	22	16	5	50	7	29	10	3	3
17	3	6	4	12	28	6	8	6	56	11	3	9
18	3	1	6	6	7	10	12	3	70	9	5	9
19	5	3	7	12	7	6	14	4	30	9	6	5
20	10	5	6	13	4	6	36	4	12	3	8	3
21	2	21	4	10	5	6	7	10	9	3	9	4
22	22	6	12	5	8	11	12	2	6	16	8	6
23	29	11	14	6	29	27	23	7	7	15	6	21
24	13	30	11	21	93	15	5	8	12	9	11	6
25	7	20	8	5	28	6	5	3	19	6	6	6
26	8	16	3	2	15	40	19	5	24	8	28	6
27	17	13	4	13	8	18	7	7	11	4	45	8
28	32	16	4	14	9	10	32	27	12	20	31	6
29	30	7	10	12	24	8	27	35	7	34	56	6
30	15		12	12	22	4	8	12	51	15	6	3
31	10		23		10		21	14		13		2
Mean	13	16	9	15	15	15	21	16	18	18	17	7

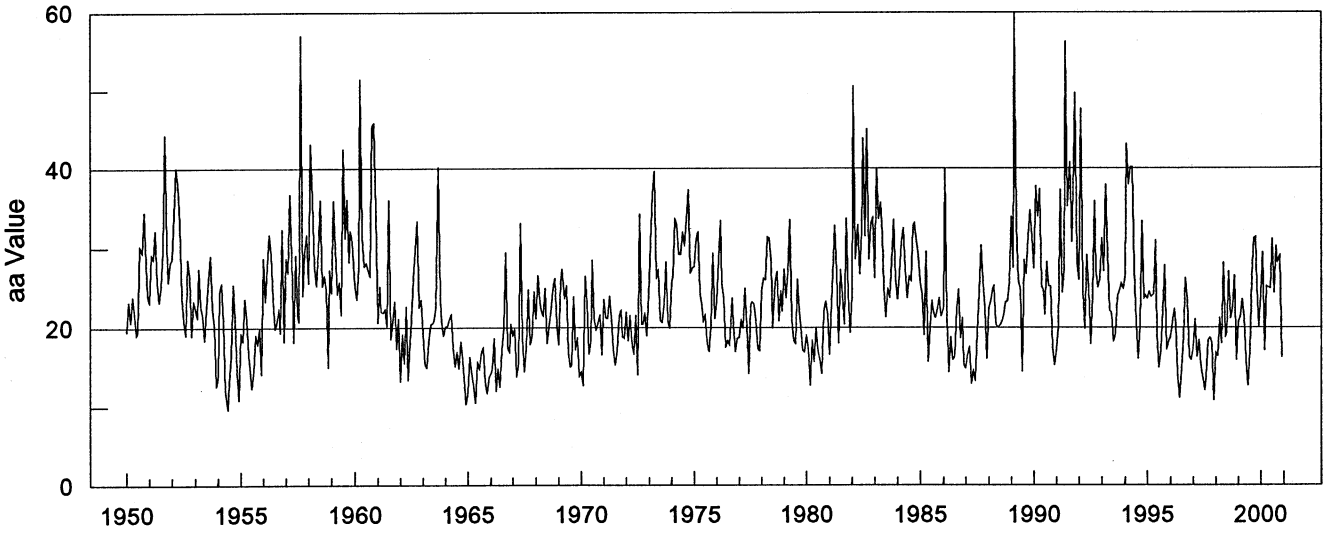
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through December 31, 2000



Monthly Mean aa Index Jan 1950 - Dec 2000

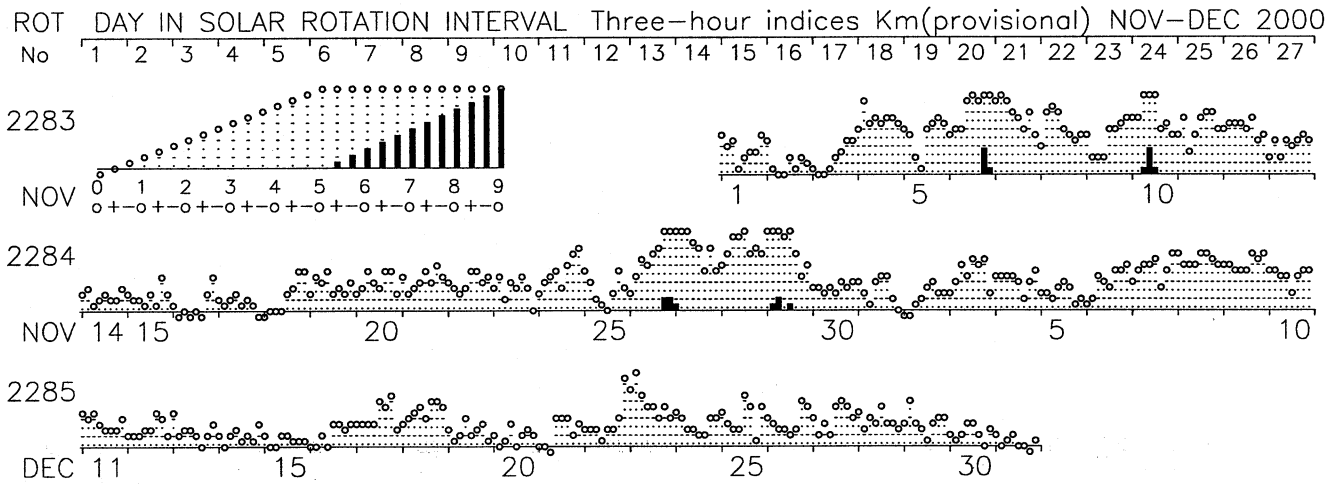


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4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

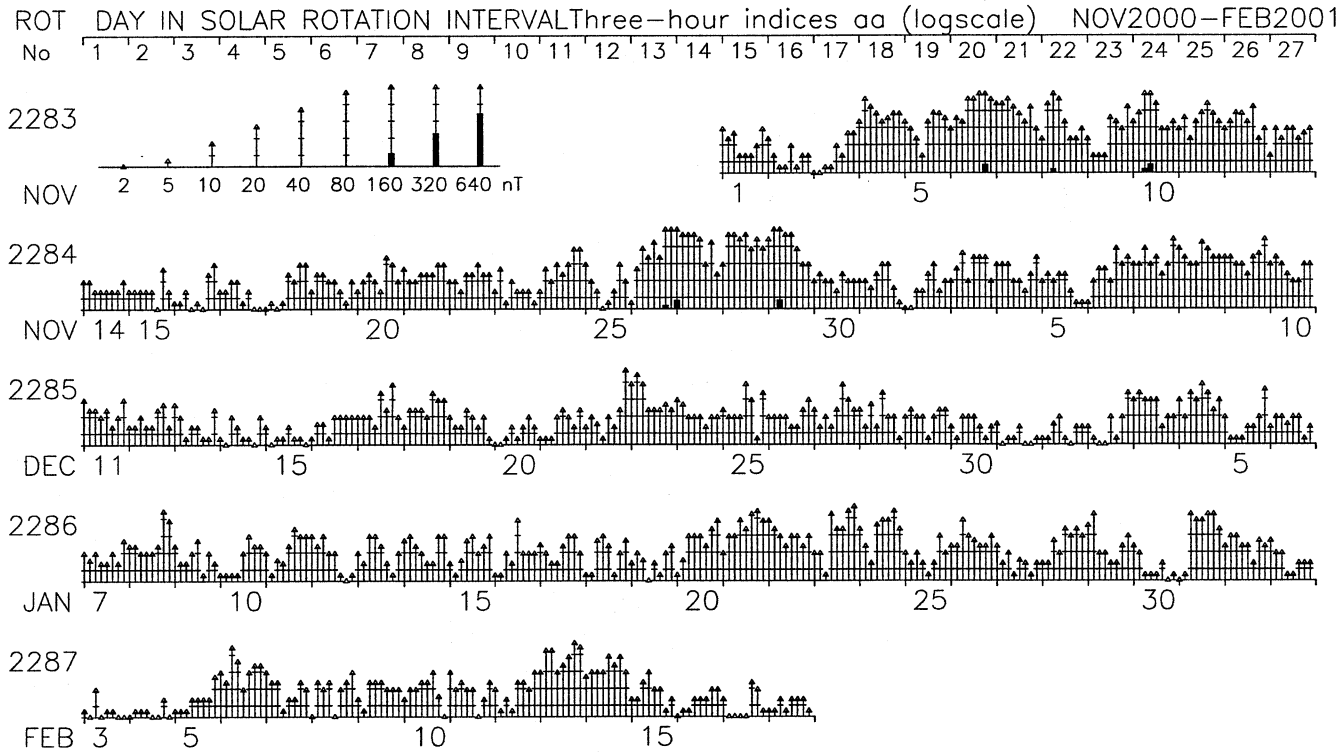
PLANETARY GEOMAGNETIC ACTIVITY

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

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



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



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

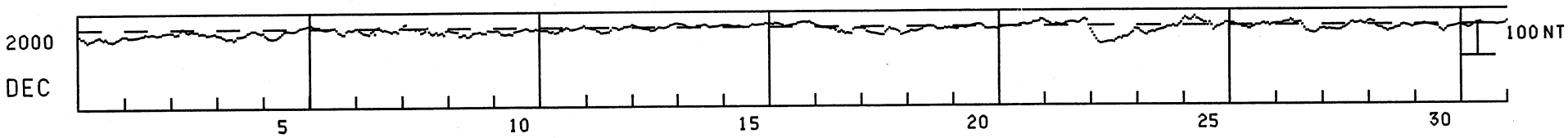
WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

DECEMBER 2000

UNIT=NT U.T.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-21	-26	-27	-33	-39	-35	-32	-31	-26	-24	-23	-27	-30	-26	-30	-35	-36	-37	-34	-30	-28	-24	-21	-19
2	-21	-24	-25	-25	-25	-22	-23	-20	-18	-17	-14	-15	-15	-13	-14	-15	-18	-16	-15	-11	-11	-9	-9	-9
3	-10	-15	-16	-14	-3	3	-2	-8	-10	-7	-5	-8	-8	-7	-13	-12	-11	-13	-17	-17	-16	-13	-14	-18
4	-20	-19	-25	-27	-30	-28	-28	-29	-36	-31	-22	-22	-22	-19	-17	-11	-9	-6	-6	-5	-10	-12	-14	-12
5	-20	-25	-28	-29	-31	-28	-29	-25	-21	-14	-7	-6	-6	-8	-8	-7	-5	-1	3	5	5	7	10	10
6	11	7	6	5	5	0	-2	-3	-3	-1	0	3	3	-4	-12	-13	-17	-17	-7	-3	-4	-5	-3	1
7	1	-6	-9	-14	-15	-16	-18	-9	-5	-15	3	5	-2	-5	-3	-5	-8	-10	-11	-7	-8	-11	0	3
8	12	14	0	-1	1	0	-4	1	-4	-14	-11	-8	3	-10	-15	-18	-15	-12	-17	-16	-14	-19	-8	-6
9	-7	-9	-9	-11	-11	-24	-24	-21	-21	-26	-26	-23	-15	-14	-13	-14	-12	-16	-16	-15	-7	-8	-9	-9
10	-8	-7	-11	-17	-20	-21	-20	-17	-19	-20	-12	-10	-10	-7	-6	-4	-2	-3	-7	-8	-7	-4	-5	-6
11	-7	-8	-8	-8	-12	-14	-12	-15	-16	-13	-8	-7	-3	0	-1	-5	-6	-6	-4	-1	1	4	7	2
12	0	-2	-3	-3	-4	-9	-12	-16	-16	-16	-13	-13	-7	0	2	-2	-5	-4	-2	3	4	4	6	9
13	8	5	3	1	-2	-3	-3	-5	-6	-9	-9	-7	-3	1	2	-1	-2	0	3	8	10	12	13	13
14	11	11	10	8	3	-2	-1	1	2	5	6	5	7	10	7	3	2	4	3	3	4	6	8	7
15	7	8	7	6	3	3	4	6	4	1	1	1	2	6	10	8	7	8	10	9	9	13	12	11
16	11	10	13	14	12	10	8	4	4	5	7	8	9	10	13	16	16	17	18	16	19	13	11	7
17	5	4	-1	-2	-1	-1	-4	-6	-4	-5	-10	-16	-16	-11	-15	-20	-17	-20	-21	-8	-4	-4	-4	-4
18	-4	-6	-14	-16	-18	-19	-21	-19	-23	-24	-24	-24	-15	-9	-4	-7	-8	-10	-12	-15	-24	-22	-20	-18
19	-15	-12	-13	-13	-14	-12	-10	-7	-2	1	3	4	2	1	-3	-8	-8	-8	-7	-3	-6	-4	-5	-5
20	-6	-8	-6	-2	-1	-2	-3	-2	1	3	5	6	7	8	5	0	-5	-7	-7	-6	-6	-5	-7	-5
21	-3	-2	-1	0	1	1	2	1	-1	-1	5	7	8	7	5	7	8	13	14	14	16	22	23	18
22	14	11	7	4	3	7	6	5	3	5	9	11	13	14	13	12	9	11	15	21	23	17	2	-11
23	-23	-32	-43	-52	-57	-55	-54	-52	-51	-50	-49	-51	-46	-41	-39	-41	-36	-36	-34	-30	-24	-19	-10	-10
24	-12	-17	-23	-26	-28	-23	-19	-17	-19	-15	-14	-11	-11	-10	-7	-4	-4	-3	0	-4	-3	3	10	21
25	27	22	18	18	25	30	23	21	15	13	10	9	2	9	0	-13	-8	-4	-3	1	4	9	9	7
26	8	7	4	2	0	-2	-5	-5	-6	-10	-9	-6	-3	0	0	2	5	8	3	5	-2	4	5	5
27	5	6	6	10	9	12	11	17	13	8	7	10	9	2	-9	-17	-18	-22	-22	-24	-22	-17	-11	-11
28	-10	-12	-14	-12	-13	-13	-14	-16	-16	-13	-10	-7	-3	2	8	9	6	6	8	9	5	3	6	12
29	13	11	10	-3	-7	-7	-10	-14	-16	-19	-15	-15	-14	-10	-10	-8	-1	0	-1	-2	-4	-6	-7	-4
30	-3	-2	-2	0	3	2	0	-1	-2	-4	-5	-5	-13	-18	-22	-16	-9	-7	-7	-6	-5	-3	-2	-4
31	-4	-5	-8	-10	-8	-4	2	6	6	7	4	2	2	2	1	1	0	0	-1	1	0	1	4	10

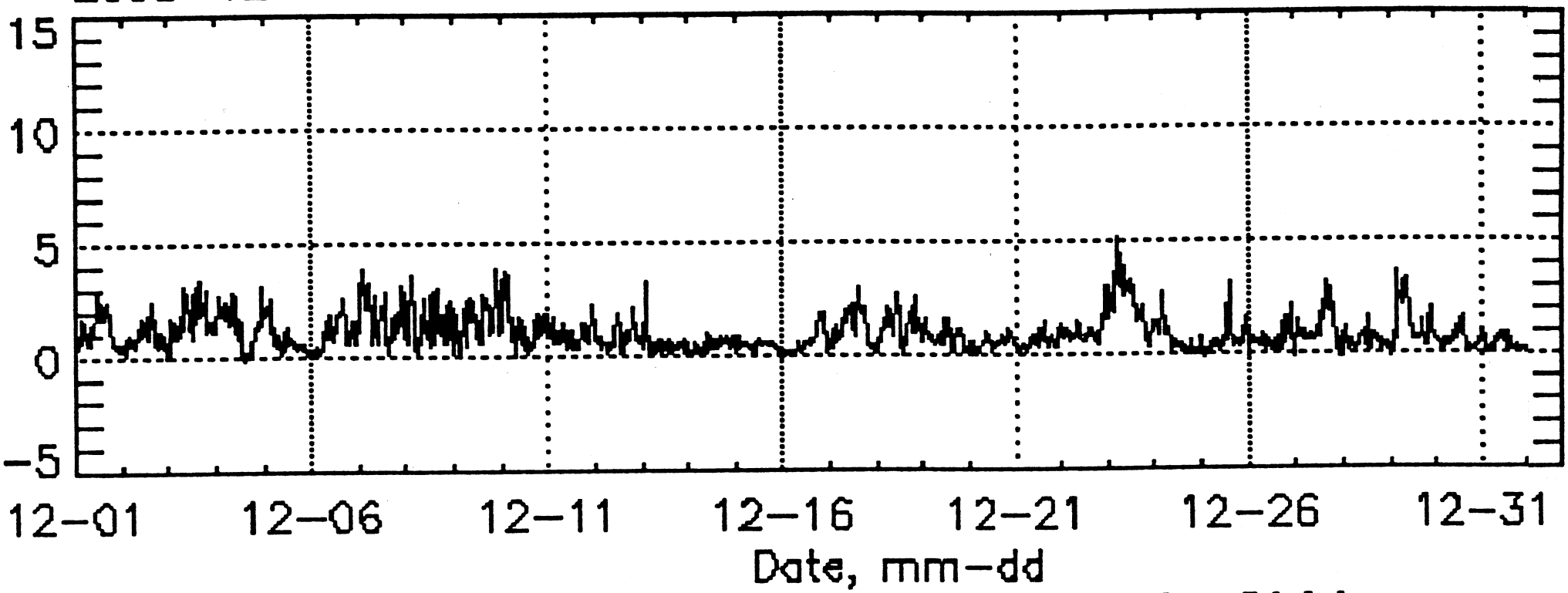


Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for December 2000.

WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Thule(Qaanaaq), THL

2000-12-01

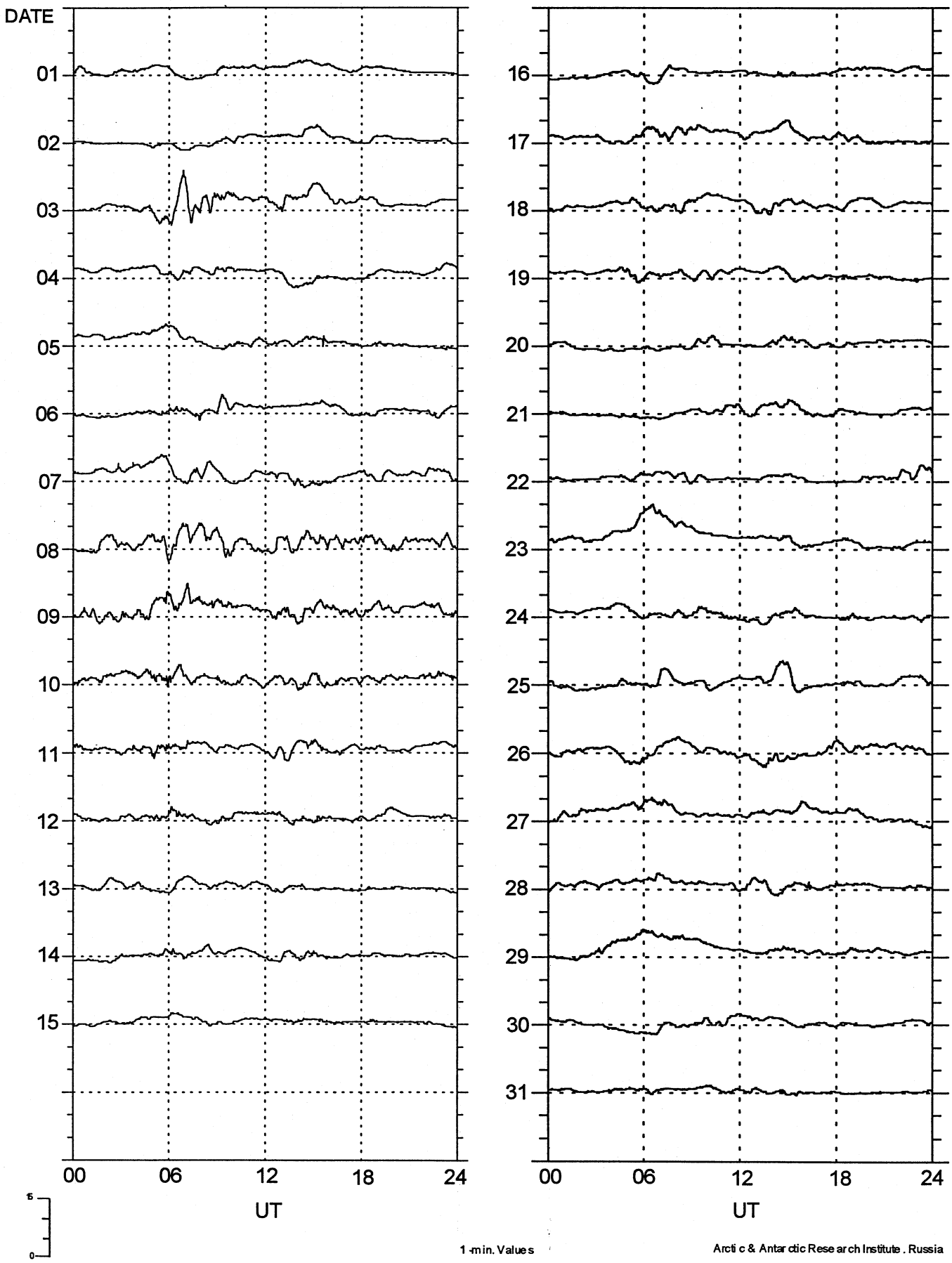


Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

PC-INDEX

Vostok

December, 2000



1-min. Values

Arctic & Antarctic Research Institute, Russia

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

DECEMBER 2000

Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Day	End Hour (UT)
UJJ	13.6N	06	0900	..	..	..	..		-	3	90	18	08	17
NGP	11.3N	06	0900	..	..	..	..		-	4	111	15	08	17
ABG	09.4N	06	0900	..	..	..	..	08(5)	5	4	100	21	08	17
PND	02.0N	06	0900	..	..	..	..		-	3	100	43	08	17
TIR	00.6S	06	0900	..	..	..	..		-	4	129	46	08	17
KRC	16.4N	07	1823	..	..	..	..	08(5)	5	6	95	41	09	04
HYB	07.6N	07	0700	..	..	..	..	08(5)	5	3	98	14	09	23
HER	33.6S	07	20--	..	..	..	..	07(8)	5	9	44	47	07	24
UJJ	13.6N	09	0400	..	..	..	..		-	2	36	17	10	09
NGP	11.3N	09	0400	..	..	..	..		-	2	58	15	10	09
ABG	09.4N	09	0400	..	..	..	..	09(6,7) 17(5,7)	4	3	45	24	10	09
PND	02.0N	09	0400	..	..	..	..		-	2	50	38	10	09
TIR	00.6S	09	0400	..	..	..	..		-	2	99	47	10	09
UJJ	13.6N	22	1921	..	..	..	..		-	3	75	17	23	22
NGP	11.3N	22	1921	..	..	..	..		-	3	75	17	23	22
ABG	09.4N	22	1921	..	..	..	..	25(5)	5	3	82	20	23	22
HYB	07.6N	22	1924	SC	- 0.2	7	- 1		-	--	--	--	--	--
PND	02.0N	22	1921	..	..	..	..		-	3	79	48	23	22
TIR	00.6S	22	1921	..	..	..	..		-	3	115	38	23	22
ETT	00.7S	22	1924	SC	0	7	10		-	--	57	31	23	23
HYB	07.6N	24	1700	..	..	..	..	25(5)	5	3	125	14	26	10
ETT	00.7S	24	0100	..	..	..	..		-	--	175	46	26	23
ETT	00.7S	27	0500	..	..	..	..		-	--	132	47	29	10

Stations:

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

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

DECEMBER 2000

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
03	0409	C: WNG* NGK* GCK EBR	19	1207-1218	NAG
22	1925	B: WNG CLF HRB SPT	20	0512-0526	HTY+
		C: NGK BDV GCK EBR LNP HYB ETT	28	1324-1335	GUI

REPORTING OBSERVATORIES (up to the 1st of February 2001):
SOD NUR WNG NGK VAL BDV CLF HRB HRB NAG GCK MMB EBR SPT KAK HTY KNY GUI LNP HYB ETT GNA CNB

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