MARCH 2002 NUMBER 691 - Part I

Solar-Geophysical Data prompt reports

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

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MARCH 2002 NUMBER 691 - Part I

Solar-Geophysical Data prompt reports

Data for January and February 2002

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SOLAR-GEOPHYSICAL DATA

Number 691

(Issued in Two Parts)

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CONTENTS

PART I (PROMPT REPORTS)

PART II (COMPREHENSIVE REPORTS)

DETAILED INDEX OF OBSERVATIONS PUBLISHED IN SOLAR-GEOPHYSICAL DATA

CODE	KIND OF OBSERVATION	JUL 01	AUG	SEP	OCT	NOV	DEC	JAN 02	FEB
A.	SOLAR AND INTERPLANETARY								
A.1	Sunspot Drawings	685A 54	686A 56	687A 58	688A 54	689A 56	690A 54	691A 50	
A.2aa	International Provisional Sunspot Numbers	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29	690A 30	691A 27
A.2c	American Sunspot Numbers	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29	690A 30	691A 27
A.3a	Mt. Wilson Magnetograms	685A 54	686A 56	687A 58	688A 54	689A 56	690A 54	691A 50	
A.3b	Sunspot Mag Class and Regions	685A101	686A105	687A105	688A102	689A103	690A 98	691A 90	
A.3c	Kitt Peak Magnetograms	685A 54	686A 56	687A 58	688A 54	689A 56	690A 54	691A 50	
A.3d	Mean Solar Magnetic Field (Stanford)	684A 37	685A 45	686A 49	687A 45	688A 45	689A 45	690A 43	691A 41
A.3e	Stanford Magnetograms	685A 54	686A 56	687A 58	688A 54	689A 56	690A 54	691A 50	
A.4	H-alpha Filtergrams	685A 54	686A 56	687A 58	688A 54	689A 56	690A 54	691A 50	
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	685A 48	686A 52	687A 48	688A 48	689A 50	690A 48	691A 44	
A.6d	Kitt Peak Solar Mag Field Synoptic Maps	685A 53	686A 55	687A 56					
A.6f	Active Prominences and Filaments	689B 29	690B 52	691B 74					
A.6g	Sac Peak Coronal Line Synoptic Maps	685A 50	686A 54	687A 52	688A 50	689A 56	690A 50	691A 46	
A.6h	Photometric White Light (San Fernando)	Jul-Dec 96 630B 32; 1997-1998 in 663B 51							
A.7h	Coronal Line Emission (Sac Peak)	685A 54	686A 56	687A 58	688A 54	689A 56	690A 54	691A 50	
A.7j	Coronal Hole Daily Maps (NSO/KP)	685A 93	686A 95	687A 96	688A 93	689A 94	690A 89	691A 81	
A.7k	Coronal Index (Slovak Academy)	1939-1996 in 644B 28							
A.8aa	2800 MHz- Solar Flux (Penticton)	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29	690A 30	691A 27
A.8ac	2800 MHz- Adj. Solar Flux (Penticton)	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29	690A 30	691A 27
A.8g	Adjusted Daily Solar Fluxes (Learmonth)	684A 27	685A 27	686A 27	687A 28	688A 26	689A 29	690A 30	691A 27
A.10g	Nancay Radioheliograph - 164&327 MHz	685A134	686A154	687A171	688A159	689A144	690A145	691A130	
A.10h	Nobeyama Radioheliograph Maps - 17 GHz	685A 95	686A 99	687A100	688A 96	689A 98	690A 92	691A 84	
A.11g	Solar X-ray GOES (graphs/event table)	689B 20	690B 42	691B 65					
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	685A 85	686A 87	687A 88	688A 85	689A 86	690A 85	----------	
A.11o	Solar UV SUSIM (UARS)	Oct 91-Jan 97 in 629B 30							
A.12g	Solar Particles (GOES-7)	684A 4	685A 4	686A 4	687A 4	688A 4	689A 4	690A 4	691A 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)	689B 31	690B 54	691B 75					
A.16c	ERBS, NOAA-9 & -10 Solar Irradiance	ERBS Oct 84-Jun 00 in 671B 36							
A.16d	UARS Solar Irradiance	Oct 91-May 2001 684B 26 – Complete Mission							
A.16e	VIRGO/SOHO Solar Irradiance	Jan 96-Sep 00 in 678B 46							
A.17c	Inferred Interplanetary Mag Field	1984-1988 data in 542A168; 1989-Jan 94 in 611A118							
A.17	IMP-8 Interplanetary Mag Field	----------	----------	----------					
C.	SOLAR FLARE-ASSOCIATED EVENTS								
C.1a	H-alpha Flares	684A 30	685A 30	686A 30	687A 31	688A 29	689A 32	690A 33	691A 30
C.1ba	H-alpha Flare Groups	689B 4	690B 4	691B 4					
C.1d	Flare Patrol Obsevations	689B 11	690B 21	691B 26					
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	689A 13	690B 23	691B 28					
C.3	Radio Bursts Fixed Frequency Selected	684A 35	685A 42	686A 43	687A 41	688A 40	689A 43	690A 42	691A 38
C.4	Radio Bursts Spectral	685A127	686A137	687A143	688A134	689A126	690A128	691A118	
C.6	Sudden Ionospheric Disturbances	685A126	686A133	687A140	688A131	689A123	690A125	691A116	
D.	GEOMAGNETIC EVENTS								
D.1a	Geomagnetic Indices	685A144	686A164	687A182	688A166	689A151	690A155	691A139	
D.1ba	27-day Chart of Kp Indices	685A146	686A166	687A184	688A168	689A153	690A157	691A141	
D.1cb	Monthly Mean aa Indices	685A147	686A167	687A185	688A169	689A154	690A159	691A142	
D.1d	Principal Magnetic Storms	685A152	686A172	687A190	688A174	689A159	690A166	691A147	
D.1f	Sudden Commencements/Flare Effects	685A153	686A173	687A191	688A175	689A160	690A167	691A148	
D.1g	Equatorial Indices Dst	685A149	686A169	687A187	688A171	689A156	690A163	691A144	
D.1l	Polar Cap (PC) Index	685A150	686A170	687A188	688A172	689A157	690A164	691A145	
F.	COSMIC RAYS								
F.1b	Cosmic Ray Neutron Cts (Climax)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1h	Cosmic Ray Neutron Cts (Thule)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1l	Cosmic Ray Neutron Cts (Kiel)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1n	Cosmic Ray Neutron Cts (Beijing)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1m	Cosmic Ray Neutron Cts (Haleakala)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1o	Cosmic Ray Neutron Cts (Moscow)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1p	Cosmic Ray Neutron Cts (Calgary)	685A136	686A156	687A174	688A161	689A146	690A147	691A131	
F.1r	Cosmic Ray Neutron Cts (Goose Bay)								
H.	MISCELLANEOUS								
H.60	ISES Alert Periods	684A 20	685A 20	686A 19	687A 20	688A 19	689A 20	690A 20	691A 18

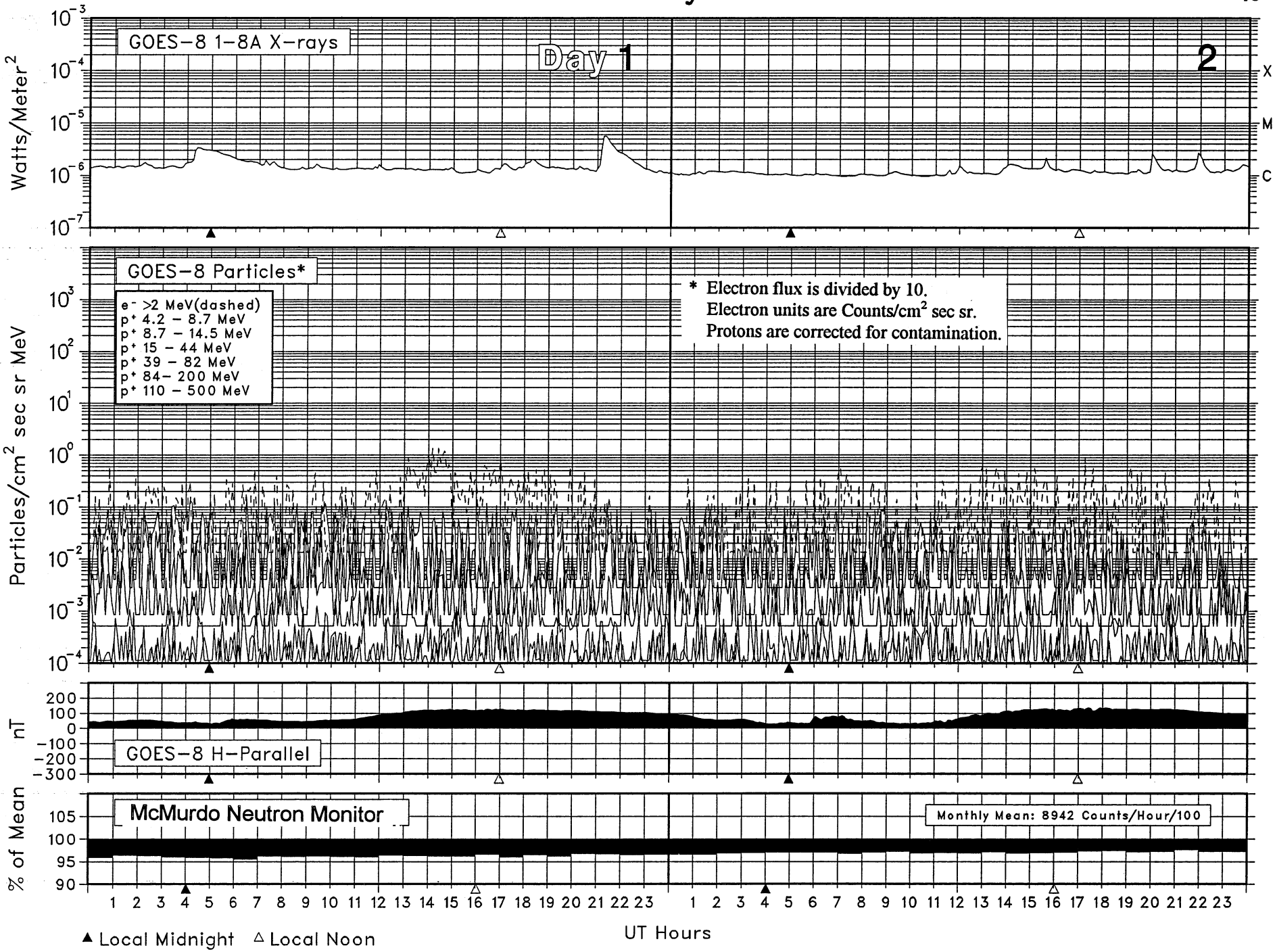
The entry "685A 54" under Jul 01, for example, means that the sunspot drawings for Jul 01 appear in SOLAR-GEOPHYSICAL DATA No. 685, Part I, and that they begin on page 54. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

CONTENTS

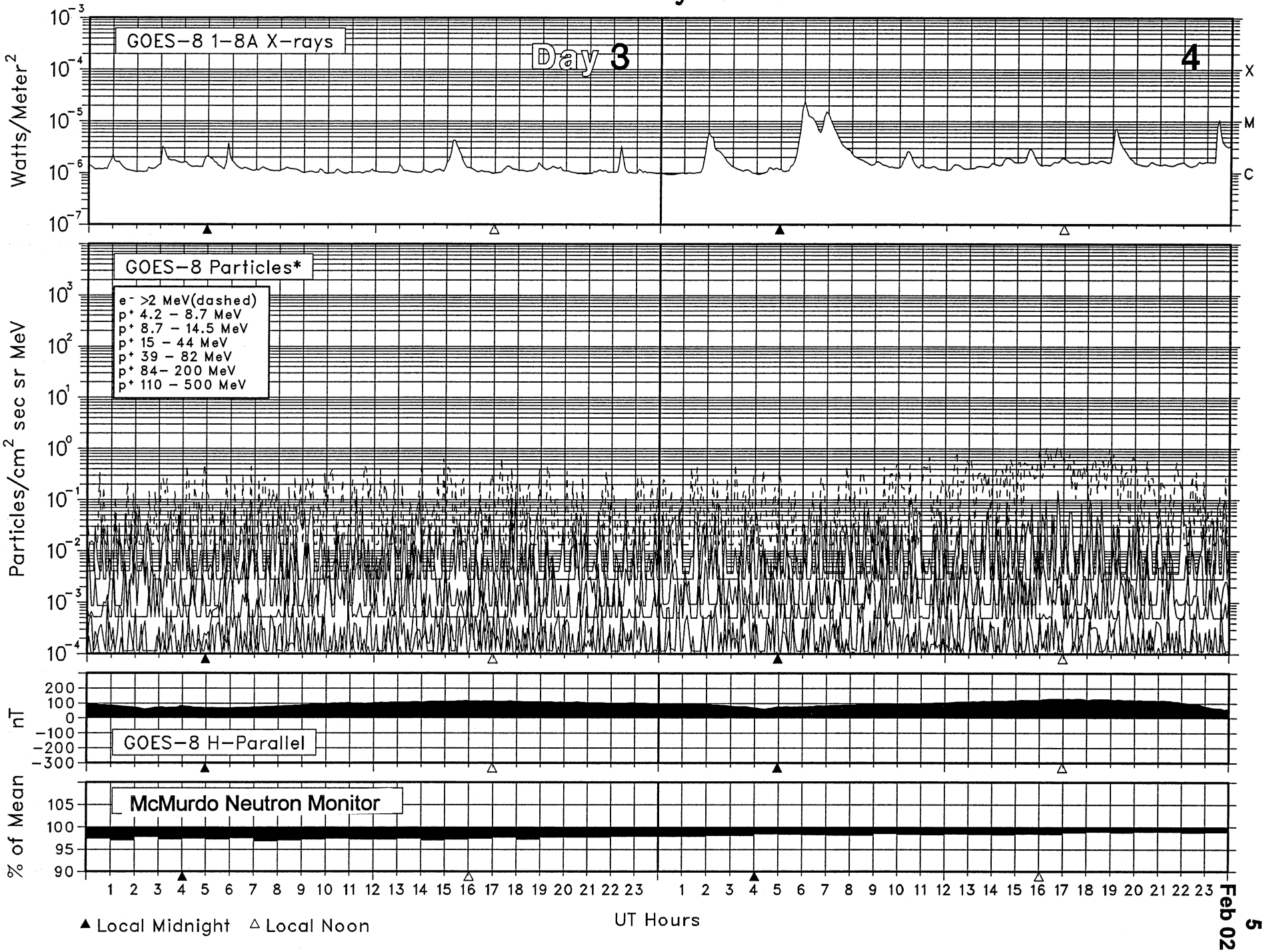
Prompt Reports Number 691 Part I

DATA FOR **FEBRUARY 2002**

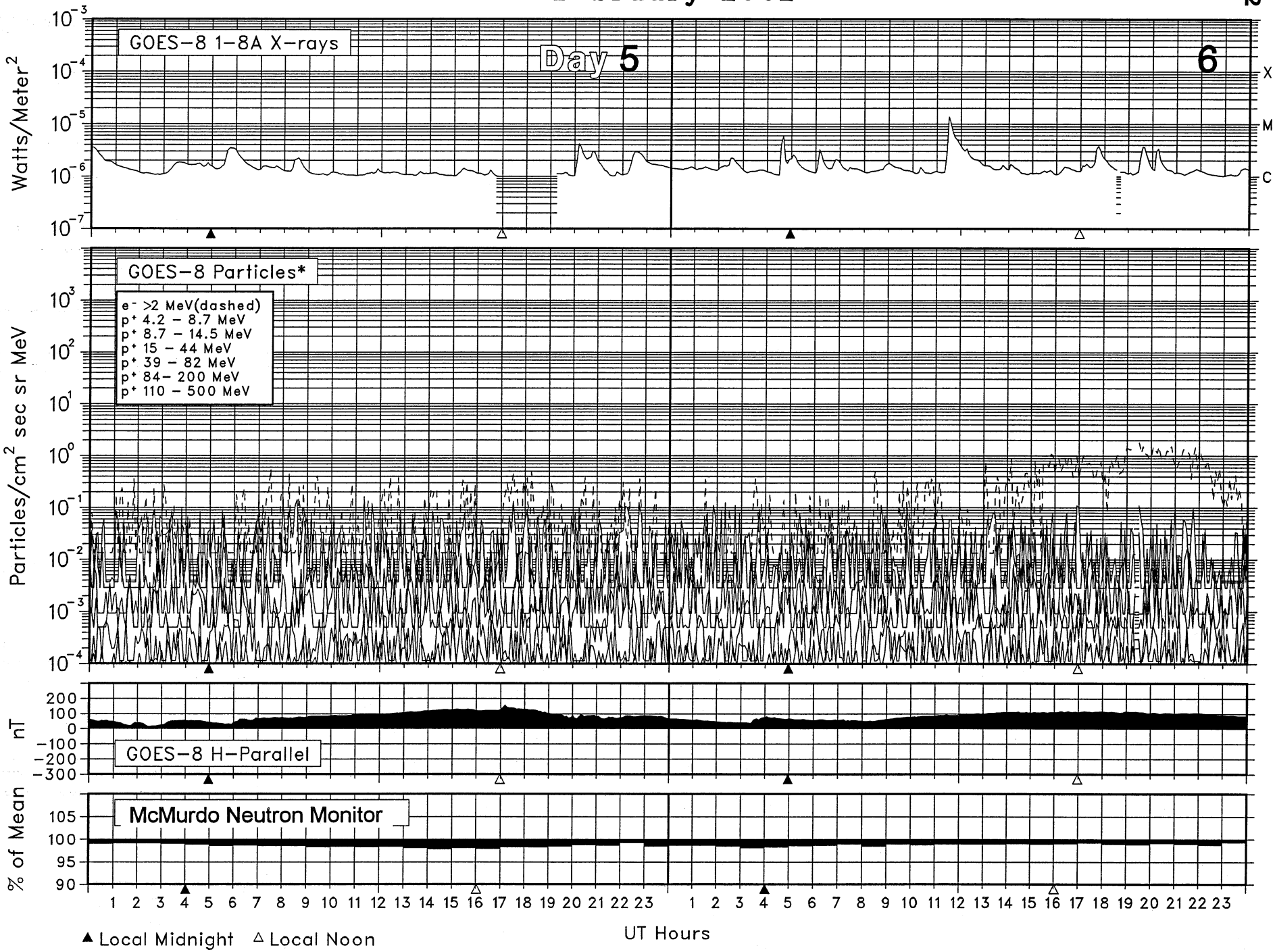
SOLAR-TERRESTRIAL ENVIRONMENT
February 2002



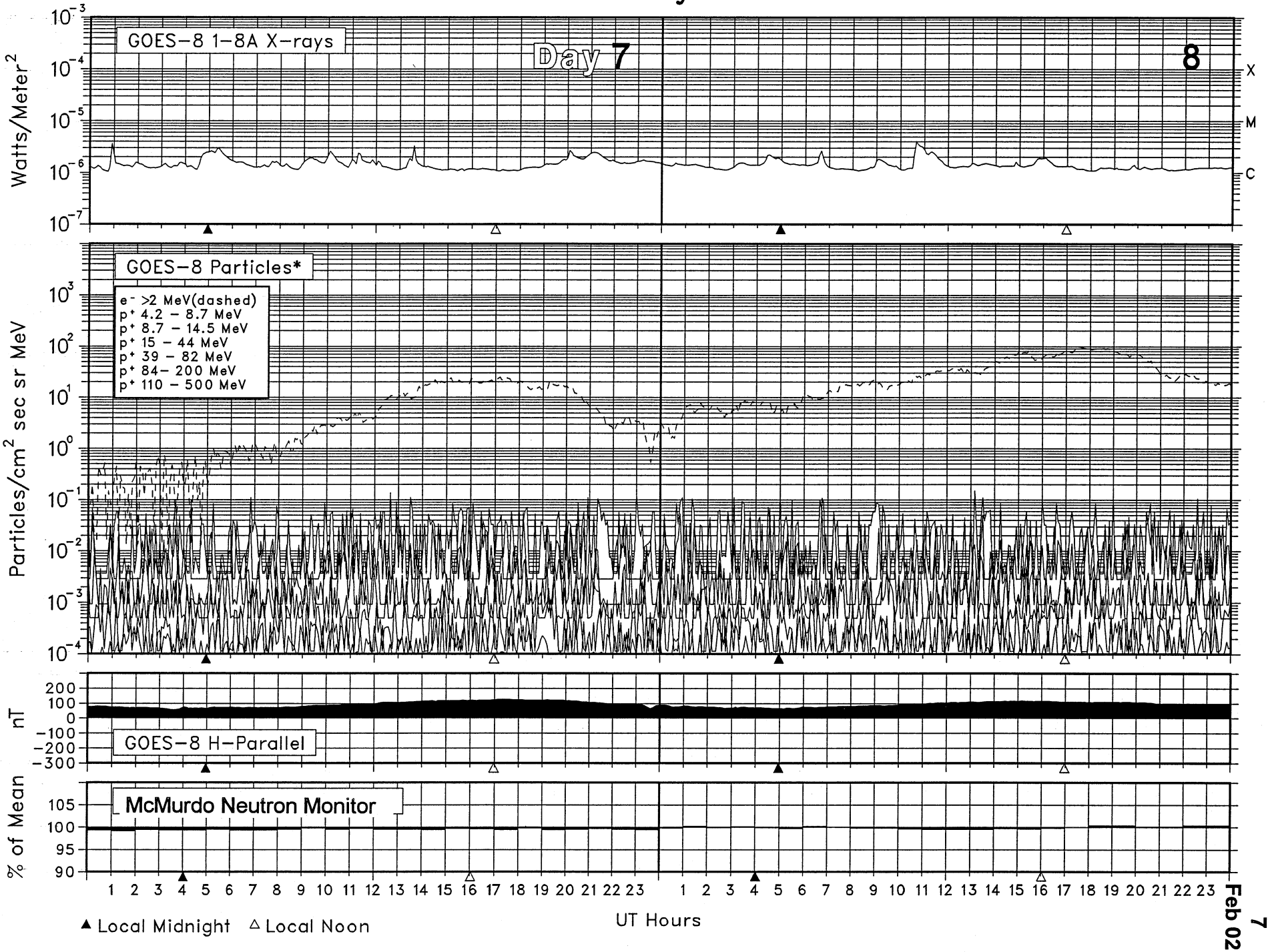
SOLAR-TERRESTRIAL ENVIRONMENT
February 2002



SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

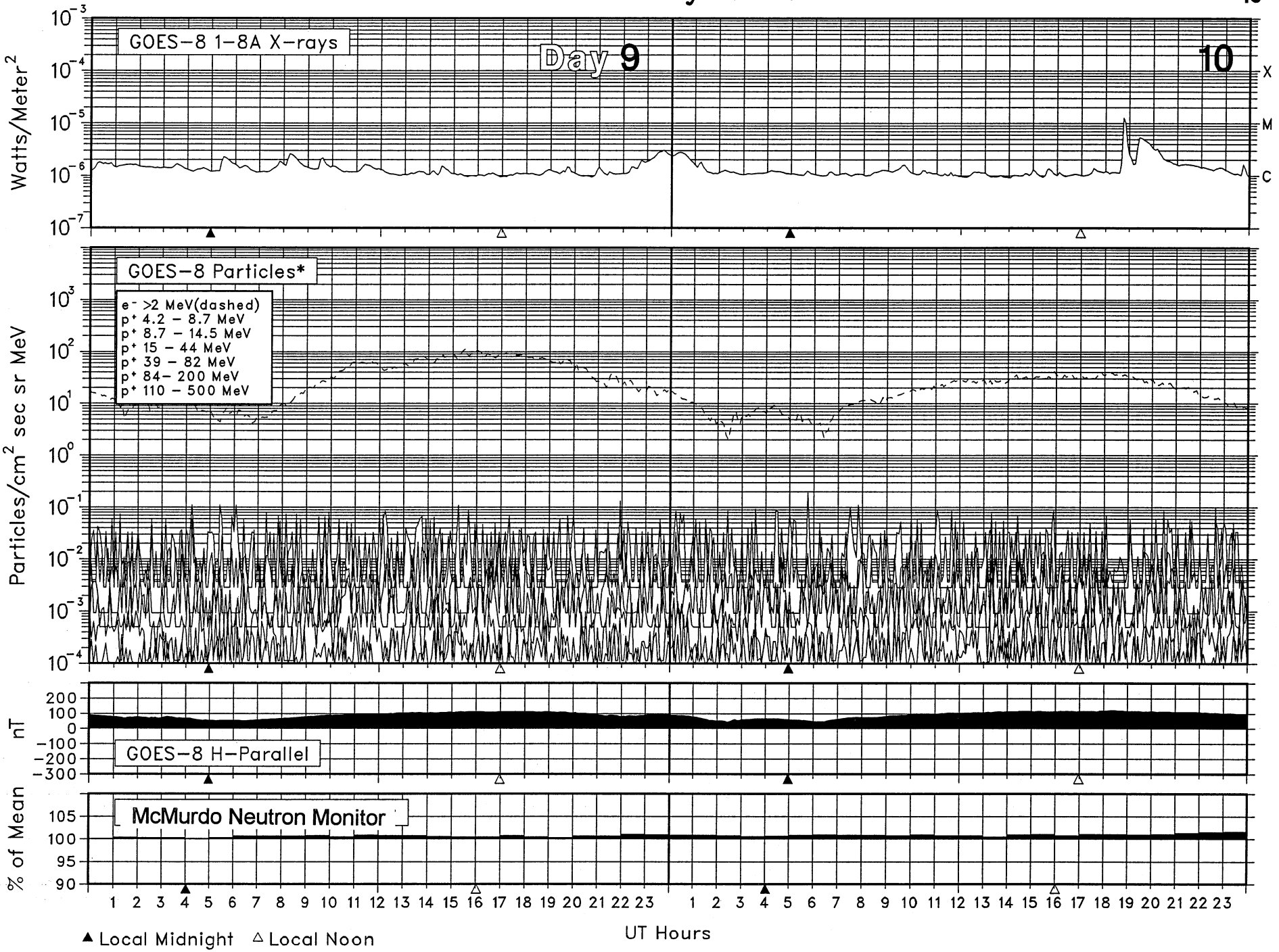


SOLAR-TERRESTRIAL ENVIRONMENT
February 2002



SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

Feb 02 8



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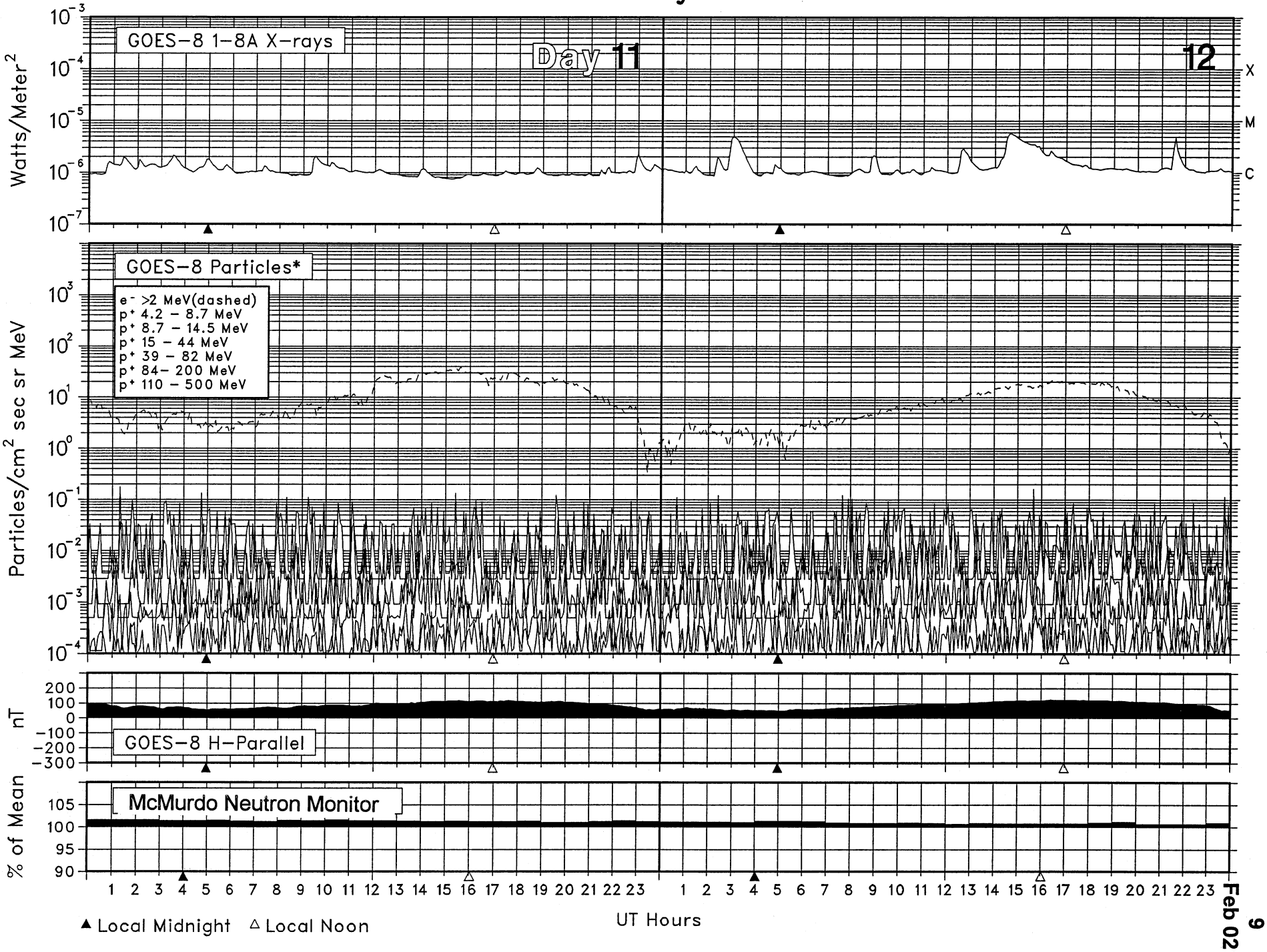
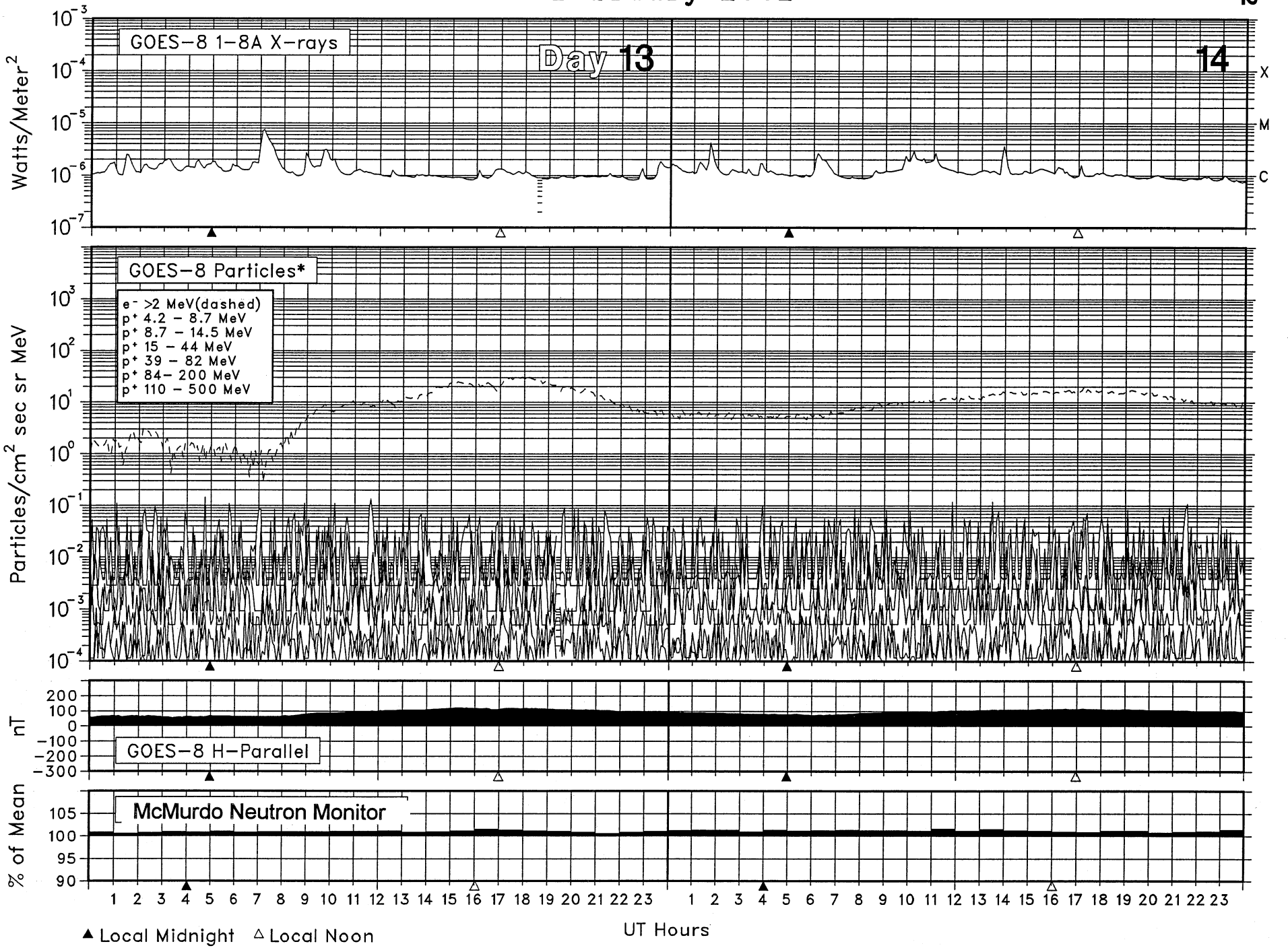
February 2002

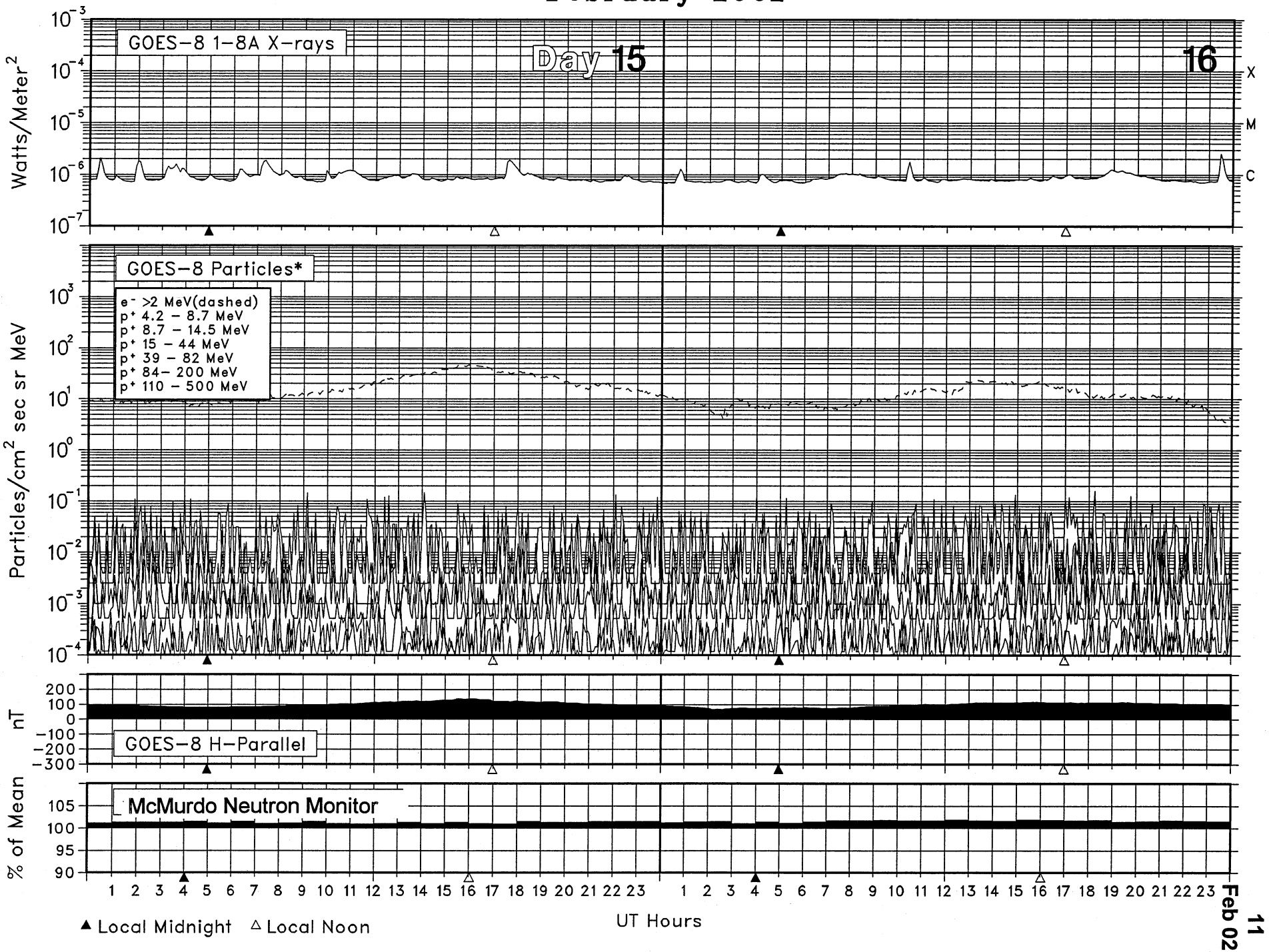


SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

10 Feb 02

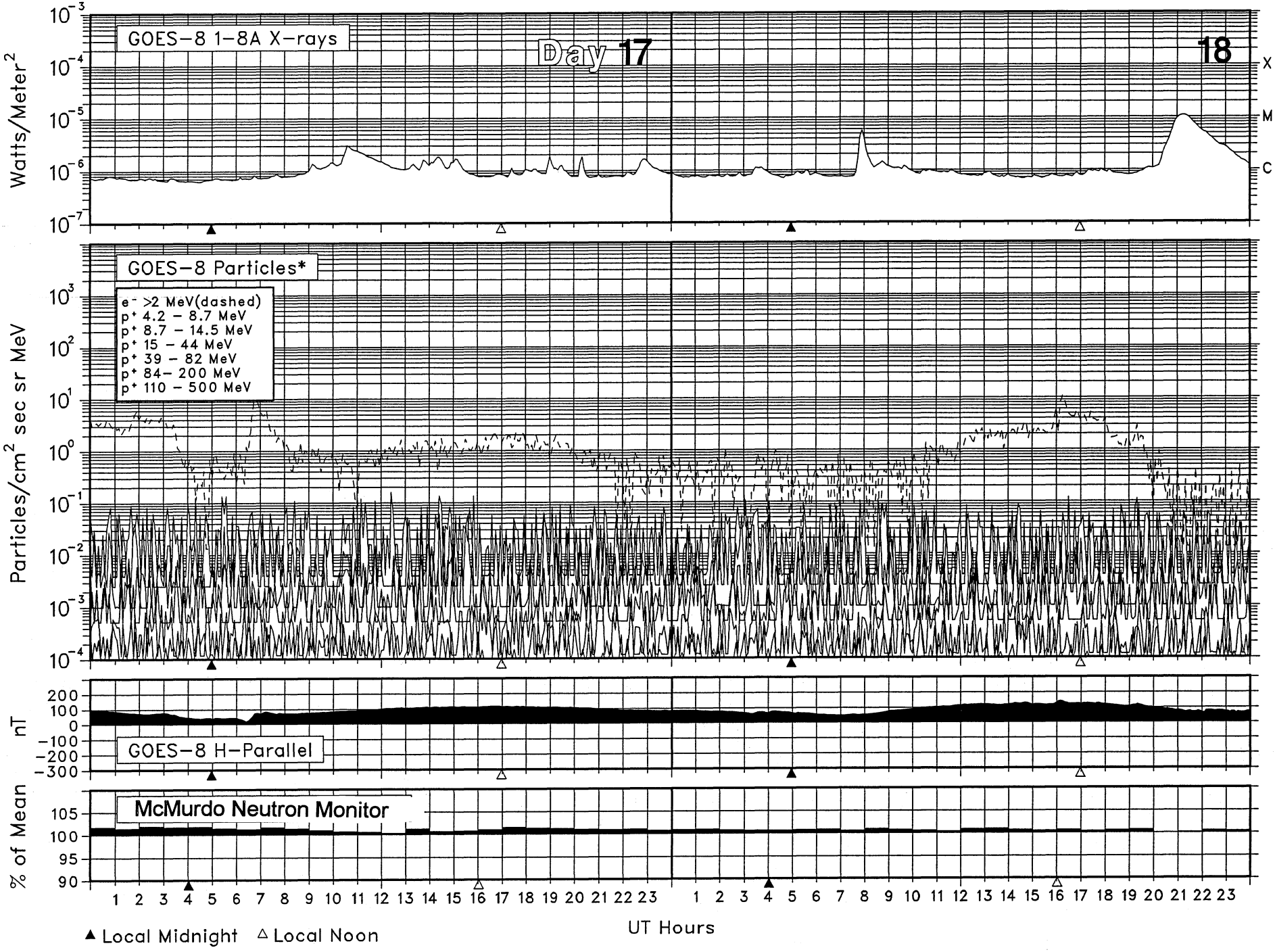


SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

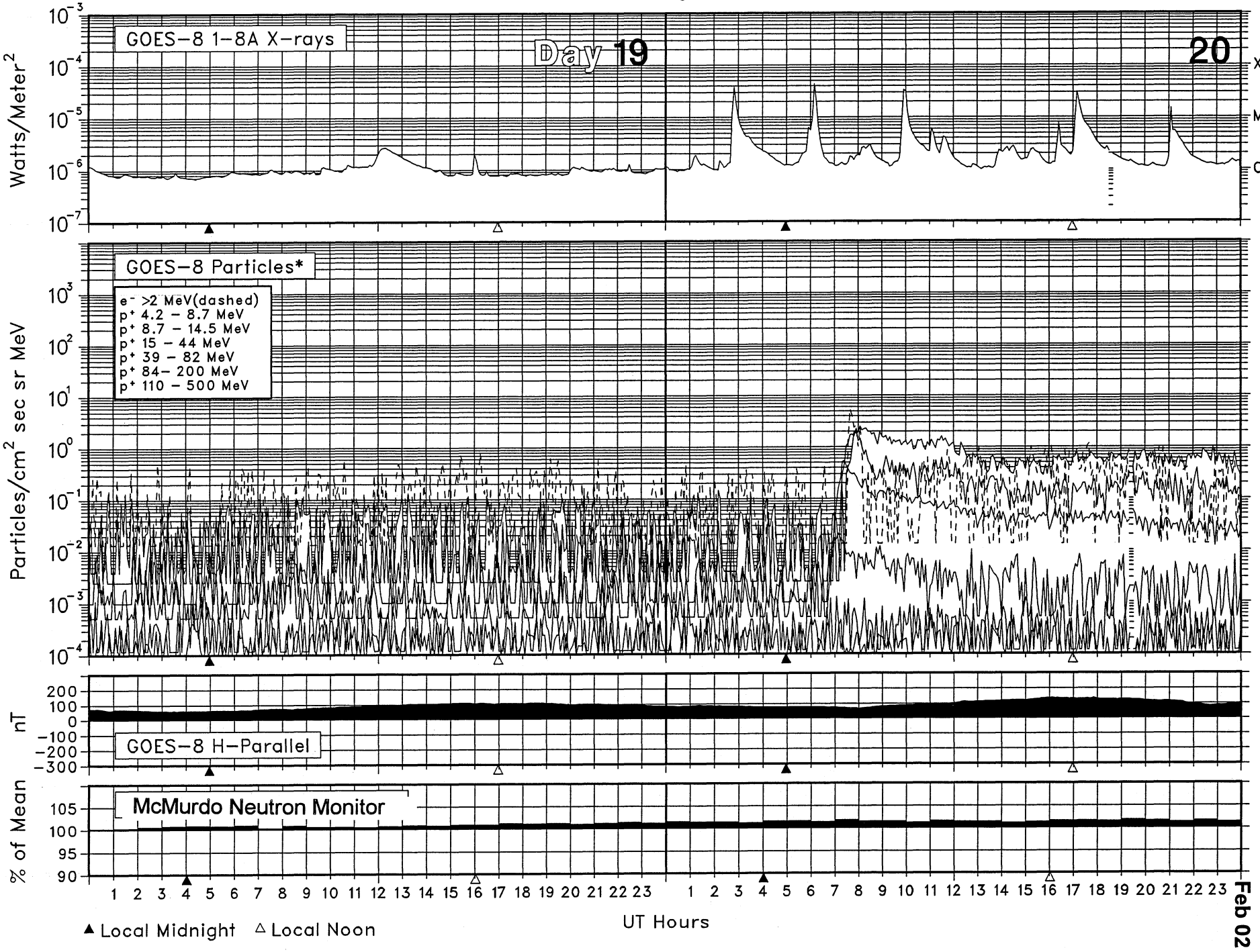


SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

12 Feb 02

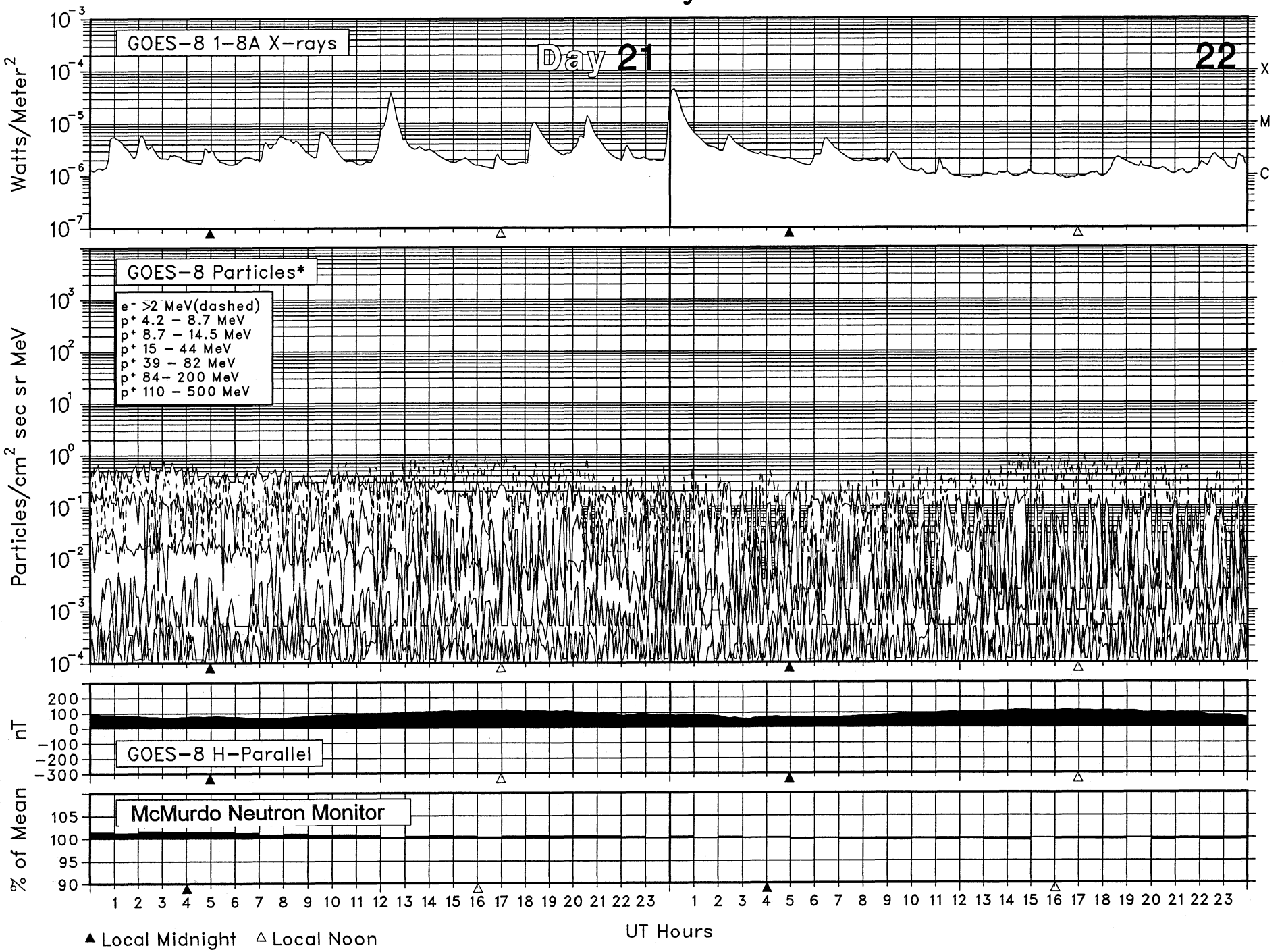


SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

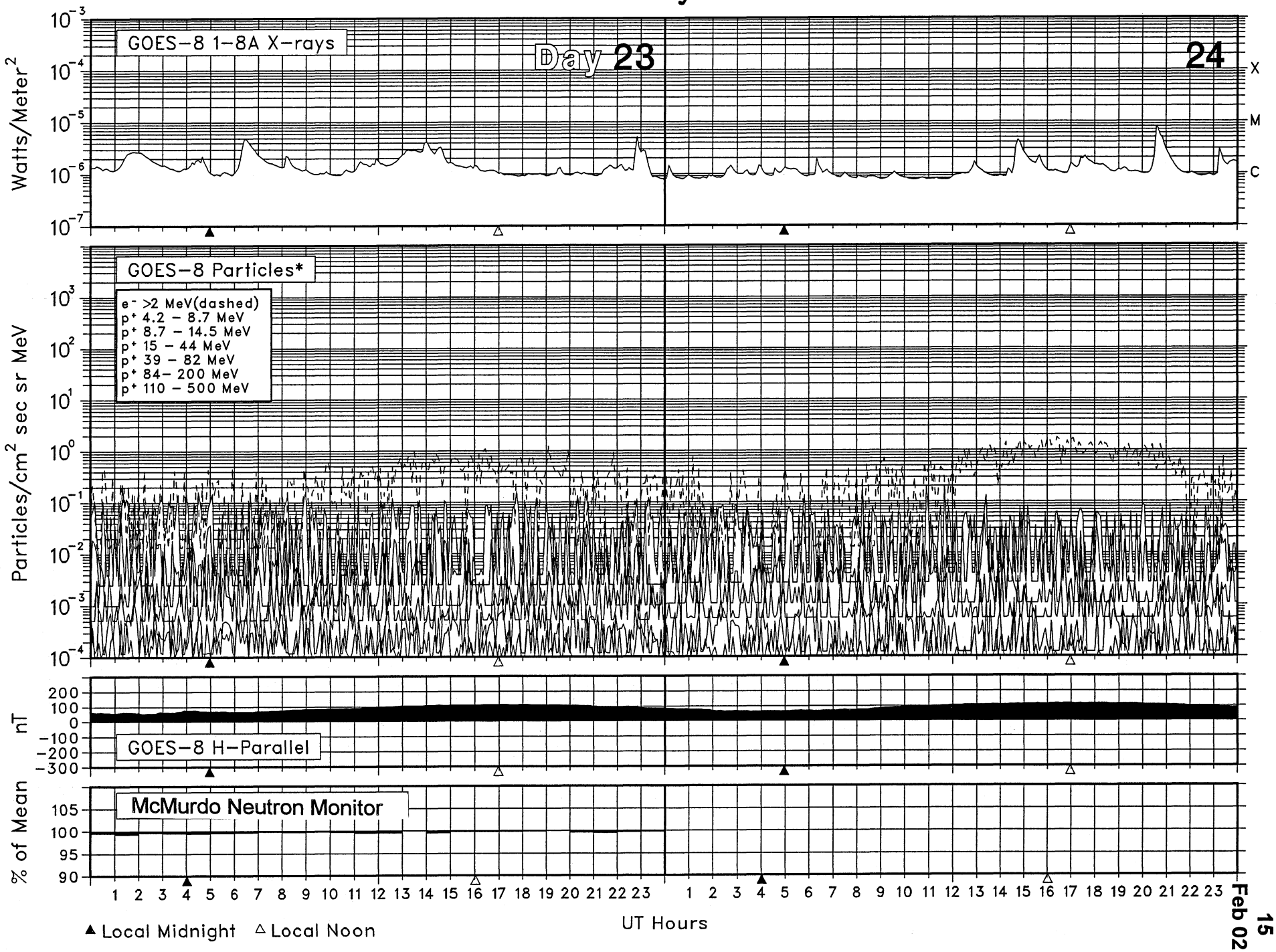


SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

14 Feb 02



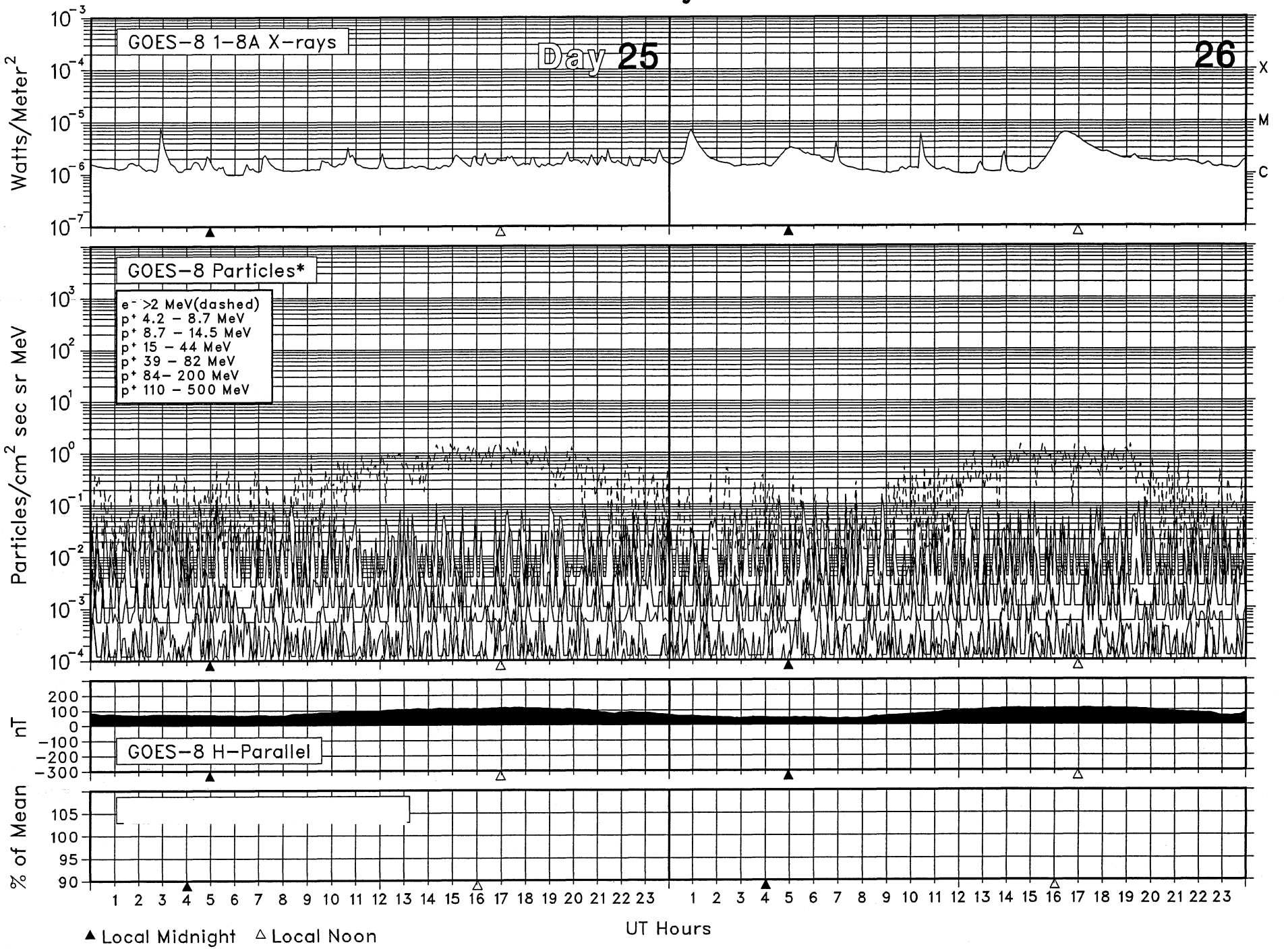
SOLAR-TERRESTRIAL ENVIRONMENT
February 2002



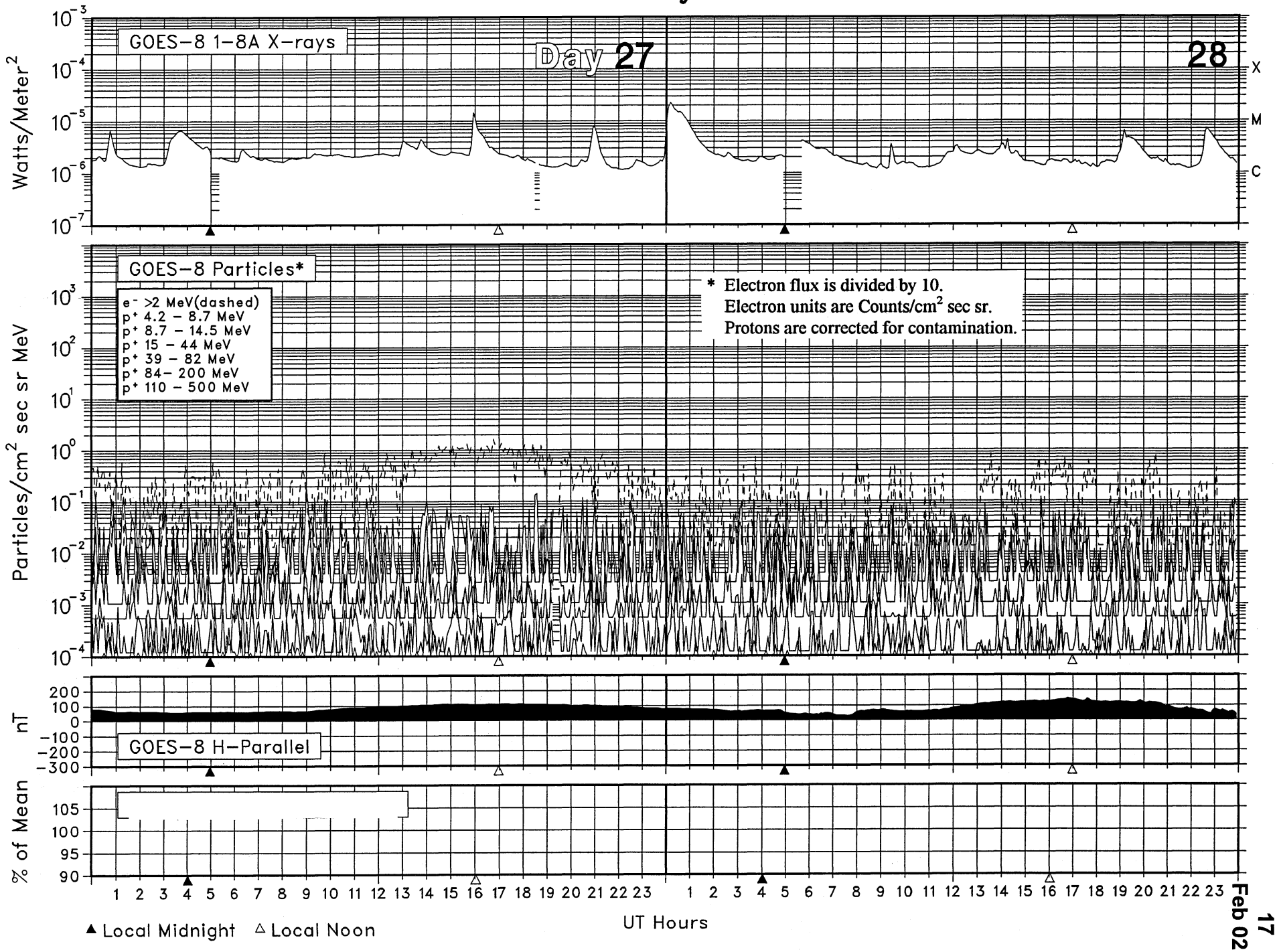
15 Feb 02

SOLAR-TERRESTRIAL ENVIRONMENT
February 2002

16 Feb 02



SOLAR-TERRESTRIAL ENVIRONMENT
February 2002



17 Feb 02

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

FEBRUARY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
032	01	31	238	243	7	9799	S23	W49	0	0	0	01	Q	SOL: Active
						9800	N07	W18	2	0	0	01	E	MAG: Quiet
						9801	S04	W02	0	0	0	01	Q	PRO: Quiet
						9802	S16	E09	2	0	0	01	E	
						9804	S19	W13	0	0	0	01	Q	
						9805	N12	E30	0	0	0	01	Q	
						9806	N12	E31	0	0	0	01	Q	
						9807	S26	E64	0	0	0	01	Q	
						9808	N15	E54	0	0	0	01	Q	
						9809	S06	E68	0	0	0	01	Q	
033	02	01	256	246	12	9799	S24	W62	0	0	0	02	Q	SOL: Active
						9800	N08	W31	2	0	0	02	E	MAG: Quiet
						9801	S03	W16	0	0	0	02	Q	PRO: Quiet
						9802	S15	W05	2	0	0	02	E	
						9804	S17	W26	0	0	0	02	Q	
						9806	N11	E17	0	0	0	02	Q	
						9807	S27	E51	0	0	0	02	Q	
						9808	N16	E41	0	0	0	02	Q	
						9809	S06	E55	0	0	0	02	Q	
						9810	N10	E81	0	0	0	02	Q	
034	03	02	222	241	18	9800	N10	W44	0	0	0	03	E	SOL: Active
						9801	S04	W29	0	0	0	03	Q	MAG: Quiet
						9802	S14	W18	2	0	0	03	E	PRO: Quiet
						9806	N11	E03	0	0	0	03	Q	
						9807	S27	E38	0	0	0	03	Q	
						9808	N16	E28	0	0	0	03	Q	
						9809	S06	E42	0	0	0	03	Q	
						9810	N09	E68	0	0	0	03	Q	
						9811	S27	E83	0	0	0	03	Q	
						9812	N12	W16	0	0	0	03	Q	
035	04	03	273	233	5	9800	N10	W58	0	0	0	04	E	SOL: Active
						9801	S04	W41	0	0	0	04	Q	MAG: Quiet
						9802	S14	W31	2	0	0	04	E	PRO: Quiet
						9806	N11	W08	0	0	0	04	Q	
						9807	S27	E26	3	0	0	04	E	
						9808	N17	E15	1	0	0	04	Q	
						9809	S06	E29	0	0	0	04	Q	
						9810	N09	E55	0	0	0	04	Q	
						9811	S27	E70	0	0	0	04	Q	
						9812	N12	W29	0	0	0	04	Q	
						9813	S24	W13	0	0	0	04	Q	
						9814	N07	E15	0	0	0	04	Q	
						9815	N12	E70	0	0	0	04	Q	
036	05	04	274	235	8	9800	N10	W73	0	0	0	05	Q	SOL: Active
						9801	S04	W54	0	0	0	05	Q	MAG: Quiet
						9802	S14	W44	3	1	0	05	E	PRO: Quiet
						9806	N12	W21	0	0	0	05	Q	
						9807	S27	E13	0	0	0	05	Q	
						9808	N17	E02	0	0	0	05	Q	
						9809	S06	E16	1	2	0	05	Q	
						9810	N09	E42	0	0	0	05	Q	
						9811	S28	E57	0	0	0	05	Q	
						9812	N12	W42	0	0	0	05	Q	
						9813	S24	W26	0	0	0	05	Q	
						9814	N07	E02	0	0	0	05	Q	
						9815	N10	E57	0	0	0	05	Q	
						9816	S13	W33	0	0	0	05	Q	
037	06	05	286	221	17	9800	N06	W89	0	0	0	06	Q	SOL: Active
						9801	S04	W71	0	0	0	06	Q	MAG: Active
						9802	S15	W56	0	0	0	06	E	PRO: Quiet
						9806	N11	W36	0	0	0	06	Q	
						9807	S25	E01	0	0	0	06	Q	

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

FEBRUARY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9808	N17	W13	1	0	0	06	Q	
						9809	S06	E03	2	0	0	06	Q	
						9810	N10	E26	0	0	0	06	Q	
						9811	S25	E45	0	0	0	06	Q	
						9812	N13	W57	0	0	0	06	Q	
						9814	N07	W13	0	0	0	06	Q	
						9815	N12	E43	0	0	0	06	Q	
						9816	S12	W46	2	0	0	06	Q	
						9817	S07	E23	0	0	0	06	Q	
						9818	N06	E54	0	0	0	06	Q	
						9819	S29	E68	0	0	0	06	Q	
038	07	06	226	203	16	9801	S02	W86	0	0	0	07	Q	SOL: Active
						9802	S13	W68	0	0	0	07	E	MAG: Quiet
						9806	N12	W49	0	0	0	07	Q	PRO: Quiet
						9807	S27	W11	0	0	0	07	Q	
						9808	N17	W26	0	0	0	07	Q	
						9809	S04	W11	1	0	0	07	Q	
						9810	N11	E13	0	0	0	07	Q	
						9811	S25	E32	2	0	0	07	Q	
						9812	N11	W69	0	0	0	07	Q	
						9815	N12	E30	1	0	0	07	Q	
						9816	S11	W58	3	0	0	07	Q	
						9817	S06	E07	0	0	0	07	Q	
						9818	N07	E40	0	0	0	07	Q	
						9819	S30	E57	0	0	0	07	Q	
039	08	07	178	192	17	9802	S14	W80	1	0	0	08	Q	SOL: Eruptive
						9806	N13	W63	0	0	0	08	Q	MAG: Quiet
						9807	S27	W22	0	0	0	08	Q	PRO: Quiet
						9808	N18	W40	0	0	0	08	Q	
						9809	S05	W24	0	0	0	08	Q	
						9810	N10	E01	0	0	0	08	Q	
						9811	S26	E20	0	0	0	08	Q	
						9815	N12	E17	0	0	0	08	Q	
						9816	S11	W70	2	0	0	08	Q	
						9819	S31	E43	0	0	0	08	Q	
						9820	N15	E46	0	0	0	08	Q	
040	09	08	229	192	12	9802	S15	W92	0	0	0	09	Q	SOL: Eruptive
						9806	N14	W78	0	0	0	09	Q	MAG: Quiet
						9807	S27	W34	0	0	0	09	Q	PRO: Quiet
						9808	N18	W54	0	0	0	09	Q	
						9809	S04	W38	0	0	0	09	Q	
						9810	N11	W14	0	0	0	09	Q	
						9811	S26	E06	0	0	0	09	Q	
						9814	N08	W51	0	0	0	09	Q	
						9815	N11	E02	0	0	0	09	Q	
						9816	S13	W85	0	0	0	09	Q	
						9819	S30	E33	0	0	0	09	Q	
						9820	N15	E30	0	0	0	09	Q	
						9821	S14	E16	0	0	0	09	Q	
						9822	N18	E69	0	0	0	09	Q	
041	10	09	225	199	10	9808	N17	W67	0	0	0	10	Q	SOL: Eruptive
						9809	S05	W50	0	0	0	10	Q	MAG: Quiet
						9810	N10	W27	0	0	0	10	Q	PRO: Quiet
						9811	S27	W05	1	0	0	10	Q	
						9814	N06	W63	0	0	0	10	Q	
						9815	N11	W09	0	0	0	10	Q	
						9818	N06	E01	0	0	0	10	Q	
						9819	S31	E19	0	0	0	10	Q	
						9820	N14	E15	0	0	0	10	Q	
						9821	S14	E03	3	0	0	10	Q	
						9822	N17	E56	1	0	0	10	Q	
						9823	S05	E24	0	0	0	10	Q	
						9824	N21	E67	0	0	0	10	Q	

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

FEBRUARY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9825	N12	E69	1	0	0	10	E	
042	11	10	205	217	9	9809	S05	W63	0	0	0	11	Q	SOL: Eruptive
						9810	N10	W41	0	0	0	11	Q	MAG: Quiet
						9811	S26	W20	3	1	0	11	E	PRO: Quiet
						9815	N11	W24	0	0	0	11	Q	
						9819	S30	E04	0	0	0	11	Q	
						9820	N14	E01	0	0	0	11	Q	
						9821	S14	W11	4	0	0	11	E	
						9822	N17	E40	0	0	0	11	Q	
						9823	S05	E09	0	0	0	11	Q	
						9824	N21	E54	0	0	0	11	Q	
						9825	N12	E57	1	0	0	11	E	
						9826	S23	E39	0	0	0	11	Q	
043	12	11	206	202	12	9809	S06	W76	0	0	0	12	Q	SOL: Active
						9810	N10	W54	0	0	0	12	Q	MAG: Quiet
						9811	S26	W32	0	0	0	12	Q	PRO: Quiet
						9819	S30	W06	0	0	0	12	Q	
						9821	S13	W25	5	0	0	12	E	
						9822	N18	E26	0	0	0	12	Q	
						9823	S04	W05	0	0	0	12	Q	
						9824	N21	E41	0	0	0	12	Q	
						9825	N12	E43	3	0	0	12	E	
						9826	S23	E25	0	0	0	12	Q	
						9827	S25	W43	0	0	0	12	Q	
						9828	S15	E50	0	0	0	12	Q	
044	13	12	182	208	6	9809	S06	W91	0	0	0	13	Q	SOL: Eruptive
						9810	N10	W68	0	0	0	13	Q	MAG: Quiet
						9811	S26	W45	4	0	0	13	Q	PRO: Quiet
						9821	S13	W38	4	0	0	13	E	
						9822	N18	E12	0	0	0	13	Q	
						9823	S04	W19	0	0	0	13	Q	
						9824	N22	E30	0	0	0	13	Q	
						9825	N13	E30	5	0	0	13	E	
						9826	S22	E12	0	0	0	13	Q	
						9828	S16	E38	0	0	0	13	Q	
045	14	13	158	204	12	9810	N10	W84	0	0	0	14	Q	SOL: Eruptive
						9811	S25	W60	0	0	0	14	Q	MAG: Quiet
						9819	S29	W33	0	0	0	14	Q	PRO: Quiet
						9821	S13	W53	0	0	0	14	E	
						9822	N17	W05	2	0	0	14	Q	
						9823	S04	W36	0	0	0	14	Q	
						9824	N22	E16	0	0	0	14	Q	
						9825	N14	E16	9	0	0	14	E	
						9826	S23	W02	0	0	0	14	Q	
046	15	14	209	196	3	9810	N10	W95	0	0	0	15	Q	SOL: Eruptive
						9811	S24	W71	0	0	0	15	Q	MAG: Quiet
						9819	S29	W44	0	0	0	15	Q	PRO: Quiet
						9821	S12	W66	0	0	0	15	Q	
						9822	N17	W18	2	0	0	15	Q	
						9823	S02	W50	0	0	0	15	Q	
						9824	N22	E04	0	0	0	15	Q	
						9825	N13	E01	6	0	0	15	E	
						9826	S22	W15	1	0	0	15	Q	
						9828	S16	E10	0	0	0	15	Q	
						9829	S07	E74	0	0	0	15	Q	
						9830	S22	E73	0	0	0	15	Q	
047	16	15	156	195	3	9819	S29	W57	0	0	0	16	Q	SOL: Eruptive
						9821	S11	W81	1	0	0	16	E	MAG: Quiet
						9823	S03	W62	0	0	0	16	Q	PRO: Quiet
						9824	N23	W09	0	0	0	16	Q	
						9825	N14	W13	3	0	0	16	E	

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

FEBRUARY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9828	S16	W04	0	0	0	16	Q	
						9829	S06	E62	1	0	0	16	Q	
						9830	S21	E58	0	0	0	16	Q	
048	17	16	134	194	7	9819	S28	W72	1	0	0	17	Q	SOL: Eruptive
						9824	N23	W22	0	0	0	17	Q	MAG: Quiet
						9825	N13	W24	0	0	0	17	E	PRO: Quiet
						9828	S15	W18	0	0	0	17	Q	
						9829	S06	E52	0	0	0	17	Q	
						9830	S20	E44	1	0	0	17	E	
						9831	S11	W41	0	0	0	17	Q	
049	18	17	121	197	11	9819	S31	W83	0	0	0	18	Q	SOL: Eruptive
						9824	N23	W35	0	0	0	18	Q	MAG: Quiet
						9825	N12	W36	0	0	0	18	E	PRO: Quiet
						9829	S05	E36	0	0	0	18	Q	
						9830	S18	E32	8	0	0	18	E	
						9831	S11	W52	0	0	0	18	Q	
050	19	18	103	193	11	9824	N23	W48	0	0	0	19	Q	SOL: Eruptive
						9825	N14	W51	0	0	0	19	E	MAG: Quiet
						9830	S18	E20	2	1	0	19	E	PRO: Quiet
						9832	S13	E25	0	0	0	19	Q	
051	20	19	130	189	8	9824	N23	W60	0	0	0	20	Q	SOL: Active
						9825	N16	W66	1	0	0	20	E	MAG: Quiet
						9830	S20	E07	5	0	0	20	E	PRO: Quiet
						9832	S14	E10	0	0	0	20	Q	
						9833	N11	W16	0	0	0	20	Q	
						9834	N03	E55	0	0	0	20	Q	
052	21	20	157	193	10	9824	N24	W74	0	0	0	21	Q	SOL: Active
						9825	N16	W81	8	3	0	21	E	MAG: Quiet
						9828	S14	W71	1	0	0	21	Q	PRO: Quiet
						9829	S06	W01	0	0	0	21	Q	
						9830	S20	W07	6	1	0	21	E	
						9832	S15	W03	0	0	0	21	Q	
						9835	S09	W61	2	0	0	21	Q	
						9836	S02	W26	0	0	0	21	Q	
						9837	N07	E69	0	0	0	21	Q	
053	22	21	148	201	9	9824	N24	W86	0	0	0	22	Q	SOL: Active
						9825	N13	W92	1	2	0	22	E	MAG: Quiet
						9830	S19	W22	2	1	0	22	E	PRO: Quiet
						9832	S13	W15	1	1	0	22	Q	
						9834	N03	E27	0	0	0	22	Q	
						9835	S09	W75	6	0	0	22	E	
						9837	N08	E57	0	0	0	22	Q	
						9838	N05	W18	0	0	0	22	Q	
						9839	S16	E06	0	0	0	22	Q	
						9840	S12	E72	0	0	0	22	Q	
054	23	22	161	192	8	9830	S19	W34	4	0	0	23	E	SOL: Active
						9834	N03	E13	0	0	0	23	Q	MAG: Active
						9835	S08	W87	0	0	0	23	Q	PRO: Quiet
						9837	N09	E44	2	0	0	23	Q	
						9838	N05	W31	0	0	0	23	Q	
						9839	S17	W06	0	0	0	23	Q	
						9840	S12	E58	0	0	0	23	Q	
						9841	S21	W20	0	0	0	23	Q	
						9842	S18	E03	0	0	0	23	Q	
						9843	S26	E58	0	0	0	23	Q	
055	24	23	176	188	5	9830	S19	W49	5	0	0	24	E	SOL: Active
						9837	N09	E32	0	0	0	24	Q	MAG: Active
						9838	N05	W45	0	0	0	24	Q	PRO: Quiet
						9839	S18	W20	2	0	0	24	Q	

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

FEBRUARY 2002

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
						9840	S11	E46	0	0	0	24	Q	
						9841	S20	W33	2	0	0	24	Q	
						9842	S18	W11	0	0	0	24	Q	
						9843	S26	E46	0	0	0	24	Q	
						9844	N22	E33	0	0	0	24	Q	
						9845	N15	E71	0	0	0	24	Q	
056	25	24	191	193	6	9830	S17	W64	3	0	0	25	E	SOL: Active
						9837	N10	E18	0	0	0	25	Q	MAG: Quiet
						9839	S17	W35	1	0	0	25	Q	PRO: Quiet
						9840	S11	E33	0	0	0	25	Q	
						9841	S20	W47	1	0	0	25	Q	
						9842	S19	W23	0	0	0	25	Q	
						9843	S25	E33	0	0	0	25	Q	
						9844	N22	E18	6	0	0	25	Q	
						9845	N15	E58	1	0	0	25	Q	
						9846	S04	W37	0	0	0	25	Q	
						9847	S14	E50	0	0	0	25	Q	
057	26	25	237	211	8	9830	S18	W79	7	0	0	26	E	SOL: Active
						9837	N09	E03	0	0	0	26	Q	MAG: Quiet
						9839	S17	W48	0	0	0	26	Q	PRO: Quiet
						9840	S11	E20	0	0	0	26	Q	
						9841	S21	W60	0	0	0	26	Q	
						9842	S19	W36	0	0	0	26	Q	
						9843	S26	E18	0	0	0	26	Q	
						9844	N22	E05	2	0	0	26	Q	
						9845	N17	E47	0	0	0	26	Q	
						9846	S04	W53	19	0	0	26	E	
						9847	S14	E37	0	0	0	26	Q	
						9848	S20	E33	0	0	0	26	Q	
						9849	N23	E69	0	0	0	26	Q	
058	27	26	223	208	9	9830	S17	W92	1	0	0	27	E	SOL: Active
						9837	N09	W09	1	0	0	27	Q	MAG: Quiet
						9839	S17	W62	2	0	0	27	Q	PRO: Quiet
						9841	S22	W70	0	0	0	27	Q	
						9842	S19	W49	1	0	0	27	E	
						9843	S26	E06	0	0	0	27	Q	
						9844	N22	W08	0	0	0	27	Q	
						9845	N17	E35	2	0	0	27	Q	
						9846	S03	W68	0	0	0	27	E	
						9847	S14	E24	0	0	0	27	Q	
						9848	S20	E20	0	0	0	27	Q	
						9849	N23	E55	0	0	0	27	Q	
059	28	27	192	199	6	9837	N10	W23	0	0	0	28	Q	SOL: Eruptive
						9839	S18	W75	5	1	0	28	E	MAG: Quiet
						9842	S19	W63	0	0	0	28	Q	PRO: Quiet
						9843	S26	W08	0	0	0	28	Q	
						9844	N22	W21	2	0	0	28	Q	
						9845	N17	E21	1	0	0	28	Q	
						9846	S03	W82	0	0	0	28	Q	
						9847	S14	E10	0	0	0	28	Q	
						9848	S20	E05	0	0	0	28	Q	
						9850	N27	W51	0	0	0	28	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

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

FEBRUARY 2002

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

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

STRATWARM ALERTS

STRATALERT BERLIN 10 FEBRUARY 2002 1400 UTC STRATALERT EXISTS.
THE TEMPERATURE HAS BEEN INCREASED AT 10 HPA FROM -52 TO -24 DEGREE CELSIUS EAST OF THE LAKE BAYKAL WITHIN THE LAST 5 DAYS. THE WARMING OVER ASIA FUTHER INTENSIFIES AT THE MIDDLE AND UPPER LEVELS.

STRATALERT BERLIN 11 FEBRUARY 2002 1400 UTC STRATALERT EXISTS.
THE WARMING IN THE UPPER STRATOSPHERE CONTINUES, PROPAGATING DOWNWARD.

STRATALERT BERLIN 12 FEBRUARY 2002 1400 UTC STRATALERT EXISTS.
THE WARMING IN THE UPPER STRATOSPHERE CONTINUES, PROPAGATING DOWNWARD. REVERSED TEMPERATURE GRADIENT AT 1 HPA.

02/13/02 03:30:00 GEOALERT WWA044 STRATWARM ALERT EXISTS STRATWARM TUESDAY
TEMPERATURE INCREASE FROM -55 TO -17 DEGREE CELSIUS OVER EASTERN SIBERIA AT 10 HPA AND A TEMPERATURE INCREASE OF 50 K OVER WESTERN SIBERIA AT 3 AND 2 HPA WITHIN ONE WEEK. THE WARMING OVER NORTHERN ASIA CONTINUES, PROPAGATING DOWNWARD. REVERSED TEMPERATURE GRADIENT BETWEEN 60 N AND THE POLE AT 1 HPA.

02/14/02 03:30:00 GEOALERT WWA045 STRATWARM ALERT EXISTS STRATWARM WEDNESDAY
INTENSIFYING WARMING OVER NORTHEN ASIA, PENETRATING DOWNWARD. TEMPERATURE GRADIENT REVERSED BETWEEN 60N AND THE POLE FROM 3 HPA UPWARD.

02/15/02 03:30:00 GEOALERT WWA046 STRATWARM ALERT EXISTS STRATWARM THURSDAY
INTENSIFYING WARMING OVER NORTHERN ASIA, PENETRATING DOWNWARDS. TEMPERATURE GRADIENT REVERSED BETWEEN 60N AND THE POLE FROM 30 HPA UPWARDS.

02/16/02 03:30:00 GEOALERT WWA047 STRATWARM ALERT EXISTS STRATWARM FRIDAY
INTENSIFYING WARMING OVER THE CANADIAN ARCTIC AND NORTHERN ASIA, PENETRATING DOWNWARDS. TEMPERATURE GRADIENT REVERSED BETWEEN 60 N AND THE POLE FROM 30 HPA UPWARDS.

02/17/02 03:30:00 GEOALERT WWA048 STRATWARM ALERT EXISTS STRATWARM SATURDAY
INTENSIFYING WARMING OVER THE CANADIAN ARCTIC AND NORTHERN ASIA, PENETRATING DOWNWARDS. TEMPERATURE GRADIENT BETWEEN 60 N AND THE POLE FROM 20 HPA UPWARDS.

02/18/02 03:30:00 GEOALERT WWA049 STRATWARM ALERT EXISTS STRATWARM SUNDAY
INTENSIFYING WARMING OVER THE CANADIAN ARCTIC AND NORTHERN ASIA, PENETRATING DOWNWARDS, TEMPERATURE GRADIENT BETWEEN 60 N AND THE POLE FROM 50 HPA UPWARD.

02/19/02 03:30:00 GEOALERT WWA050 STRATWARM ALERT EXISTS STRATWARM MONDAY
THE CRITERIA FOR A MAJOR WARMING ARE FULLFILLED, THERE ARE MEAN ZONAL EASTERLY WINDS AT 60 N FROM THE 10 HPA LEVEL UPWARDS AND A REVERSED TEMPERATURE GRADIENT BETWEEN 60 N AND THE POLE FROM 50 HPA UP TO 1 HPA.

02/20/02 03:30:00 GEOALERT WWA051 STRATWARM ALERT EXISTS STRATWARM TUESDAY
THE CIRCULATION REMAINS VERY DISTRUBED AFTER THE RECENT MAJOR WARMING ARE NOW NO LONGER FULFILLED, BUT ONLY NARROWLY SO. THERE EXISTS A REVERSAL IN ZONAL MEAN WIND FROM 5 HPA UPWARDS AND IN ZONAL MEAN TEMPERATURE FROM 50HPA UPWARDS.

02/21/02 03:30:00 GEOALERT WWA052 STRATWARM ALERT EXISTS STRATWARM WEDNESDAY
THE CIRCULATION IS RELAXING AFTER THE MAJOR WARMING. THERE EXISTS A REVERSED TEMPERATURE GRADIENT AT

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

FEBRUARY 2002

60 N FROM 50HPA TO2HPA AND EASTERLY WINDS FROM 5HPA TO 1HPA.

02/22/02 03:30:00 GEOALERT WWA053 STRATWARM ALERT EXISTS STRATWARM THURSDAY
THE CIRCULATION IS STILL RELAXING AFTER THE MAJOR WARMING. THERE EXISTS A REVERSED TEMPERATURE GRADIENT FROM 50 HPA AT 60N AND ZONAL MEAN EASTERLY WINDS FROM 5 HPA TO 1 HPA.

02/23/02 03:30:00 GEOALERT WWA054 STRATWARM ALERT EXISTS STRATWARM FRIDAY
THROUGHOUT THE STRATOSPHERE, STILL DISTURBED CIRCULATION PATTERN AFTER THE MAJOR WARMING WITH A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE FROM 50HPA UP TO 2HPA AND MEAN ZONAL EASTERLY WINDS AT 60N FROM 5HPA TO 1HPA.

02/24/02 03:30:00 GEOALERT WWA055 STRATWARM ALERT EXISTS STRATWARM SATURDAY
THROUGHOUT THE STRATOSPHERE, STILL DISTURBED CIRCULATION PATTERN AFTER THE MAJOR WARMING WITH THE WARM AIR REGION OVER THE POLAR REGION AND ASIA AND A DISPLACED VORTEX OVER NORTHERN SIBERIA, LEADING TO A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE FROM 30HPA UP TO 1HPA AND MEAN ZONAL EASTERLY WINDS AT 60N FROM 3 UP TO 1 HPA.

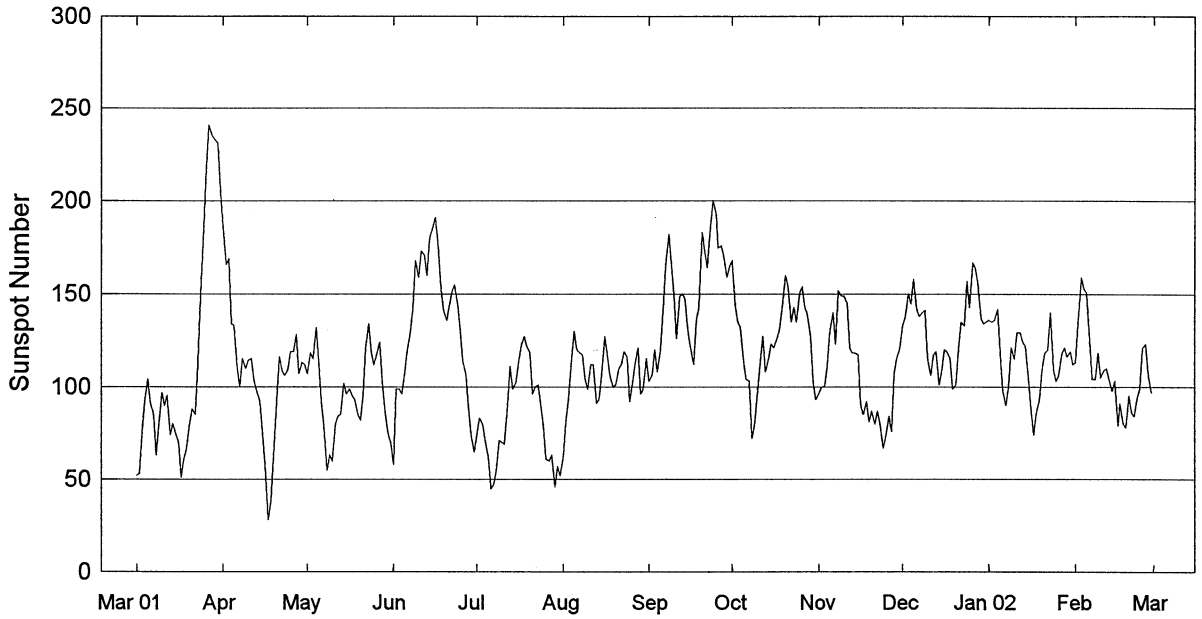
02/25/02 03:30:00 GEOALERT WWA056 STRATWARM ALERT EXISTS STRATWARM SUNDAY
STILL DISTURBED CIRCULATION AND TEMPERATURE PATTERN THROUGHOUT THE STRATOSPHERE WITH AN ANTICYCLONE OVER GREENLAND AND A DISPLACED VORTEX OVER NORTHERN SIBERIA. THE WARM AIR COVERS THE POLAR REGION AND ASIA. THIS LEADS TO A REVERSED TEMPERATURE GRADIENT BETWEEN 60N AND THE POLE FROM 10HPA UP TO 2HPA AND MEAN ZONAL EASTERLY WINDS AT 60N FROM 3HPA UP TO 1HPA.

02/26/02 03:30:00 GEOALERT WWA057 STRATWARM ALERT EXISTS STRATWARM MONDAY
THROUGHOUT THE STRATOSPHERE STILL DISTURBED CIRCULATION PATTERN AFTER THE MAJOR WARMING WITH THE WARM AIR REGION OVER THE POLAR REGION AND ASIA AND A DISPLACED VORTEX OVER NORTHERN SIBERIA, LEADING TO A REVERSED TEMPERATURE GRADIENT BETWEEN THE POLE AND 60 N FROM 30 HPA UP TO 1HPA AND MEAN ZONAL EASTERLY WINDS AT 60 N FROM 3 HPA UP TO 1 HPA.

02/27/02 03:30:00 GEOALERT WWA058 STRATWARM ALERT EXISTS STRATWARM TUESDAY
THROUGHOUT THE STRATOSPHERE STILL DISTURBED CIRCULATION PATTERN WITH THE WARM AIR REGION OVER THE POLAR REGION AND EASTERN ASIA AND A DISPLACES VORTEX OVER NORTHERN SIBERIA, LEADING TO A REVERSED TEMPERATURE GRADIENT BETWEEN THE POLE AND 60 N FROM 50 TO 2 HPA AND MEAN ZONAL EASTERLY WINDS AT 60 N FROM 3 TO 1 HPA.

02/28/02 03:30:00 GEOALERT WWA059 STRATWARM ALERT/ WEDNSDAY/ STRATWARM EXISTS
THROUGHOUT THE STRATOSPHERE DISTURBED CIRCULATION PATTERN WITH THE WARM AIR REGION OVER THE POLAR REGION AND EASTERN ASIA AND A DISPLACED VORTEX OVER NORTHERN SIBERIA, LEADING TO A REVERSED TEMPERATURE GRADIENT BETWEEN THE POLE AND 60 N FROM 50 TO 3 HPA AND WEAK MEAN ZONAL EASTERLY WINDS AT 60 N FROM 5 TO 2 HPA.

International Relative Sunspot Numbers
Mar 2001 - Feb 2002

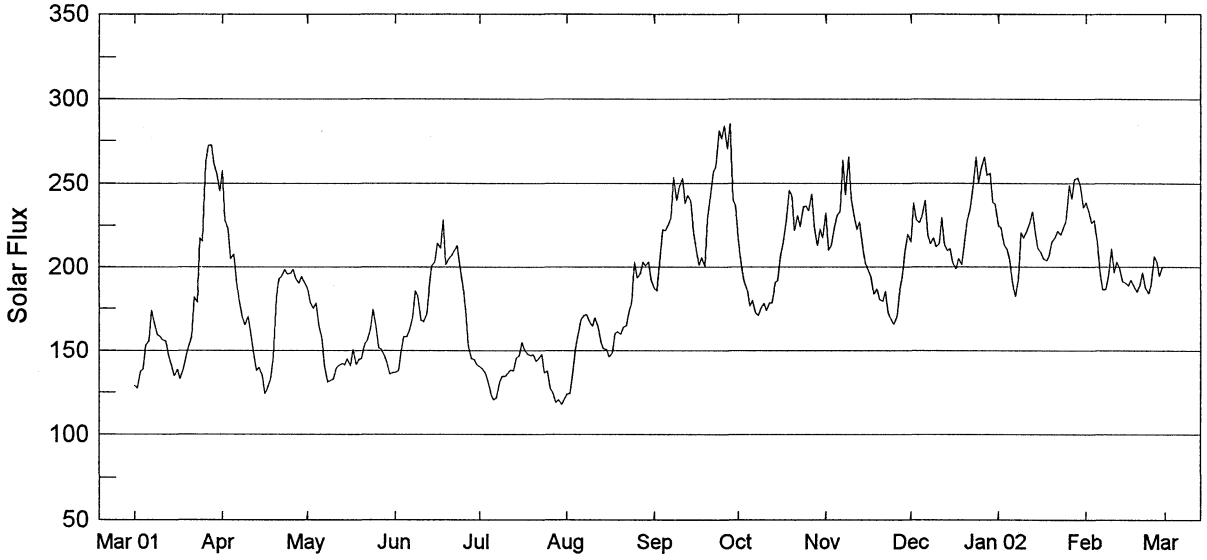


Day	Mar 01	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 02*	Feb *
1	52	186	107	58	74	62	103	168	96	133	136	113
2	53	166	118	99	83	81	106	144	100	137	135	135
3	75	169	115	99	80	93	120	135	100	150	136	159
4	92	134	132	96	71	115	108	132	111	145	142	153
5	104	133	118	106	62	130	120	114	130	158	118	151
6	91	110	92	119	45	120	141	104	140	142	98	125
7	85	100	79	129	47	118	166	103	123	138	90	104
8	63	115	55	142	54	117	182	72	152	140	100	104
9	79	110	63	168	71	104	166	79	149	141	121	118
10	97	114	60	159	70	99	150	98	149	115	115	105
11	90	115	80	173	69	112	126	113	145	106	129	109
12	95	103	84	171	90	112	149	127	121	117	129	110
13	74	98	85	160	111	91	150	108	118	119	124	104
14	80	92	102	180	99	93	148	115	118	101	122	98
15	75	75	96	186	102	106	130	123	117	108	104	103
16	70	58	99	191	113	127	121	121	90	120	87	79
17	51	28	95	178	123	117	112	126	85	119	74	91
18	61	38	93	153	127	106	136	131	92	115	86	80
19	66	62	85	141	122	100	143	143	81	99	93	78
20	80	86	82	136	118	101	183	160	87	101	109	95
21	88	116	95	144	96	110	173	154	80	120	118	86
22	85	109	121	151	100	112	164	135	87	135	120	84
23	113	106	134	155	101	119	186	143	80	133	140	94
24	149	109	118	145	90	116	200	135	67	157	109	99
25	186	119	112	131	79	92	193	151	73	143	103	121
26	218	119	118	114	61	101	175	154	84	167	106	123
27	241	128	124	107	60	112	176	143	76	164	118	107
28	235	107	103	89	63	121	170	139	107	156	121	97
29	233	113	85	74	46	96	159	127	115	137	116	
30	231	112	75	65	57	99	165	103	121	134	119	
31	205		69		52	115		93		135	112	
Mean	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.6	106.5	131.8	113.9	108.0

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux
Mar 2001 - Feb 2002

Adjusted to 1 AU



Day	Mar 01	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb
1	129.0	257.2	187.4~	136.8	119.0	123.8	187.4	216.9	232.0	215.1	224.5	238.5
2	127.4	227.9	179.0	137.8	120.5	124.3	185.7	201.1	210.1	238.1	223.5	233.7
3	137.3	223.1	175.1	149.5	118.0	135.5	202.1	191.8	212.5	228.3	213.0	226.3
4	138.7	205.0	178.6	158.3	120.3	152.7	222.1	186.5	223.5	226.6	211.0	228.1
5	153.4	207.8*	163.5	158.0	135.6	160.5	221.8	176.8	230.6	230.1	205.2	214.5
6	155.4	192.0~	157.8	162.4	120.3	168.3	225.6	180.2	233.2	239.5	190.1	196.9
7	174.0	180.0	140.9	169.8	121.8	171.0	229.5	172.4	263.9	219.3	182.4	186.6
8	164.8	169.7	131.1	185.7	130.5	171.5	253.1	170.8	243.1	213.9	192.6	186.4
9	159.2	165.4	131.9	182.4	134.4	167.8	239.5	175.9	265.6	217.5	220.9	194.1
10	158.0	170.4	133.0	168.0	134.3	164.7	247.8	178.1	241.0	212.3	217.3	210.9
11	155.8	160.3	139.4	167.4	136.3	169.5	252.9	174.1	229.3	213.9	221.4	196.6
12	155.7	149.8	141.0	171.6	138.3	164.0	238.1	178.5	222.6	229.4	225.7	203.1
13	145.6	137.8	141.9	187.1	137.7	155.5	242.6	178.6	226.8	213.4	232.9	198.5
14	140.7	139.6	141.2	200.9	145.4	151.1	239.3	190.8	212.6	209.9#	221.6	191.3
15	134.7	135.1	145.2	203.2	146.8	150.5	221.7	191.7	202.4	211.0	211.2	190.3
16	138.5	124.3	140.9	214.3	154.7	146.2	209.3	205.8	197.6	202.5	209.1	188.9
17	132.9	127.1	150.8	211.2	150.4	148.4	201.1	215.8	194.0	199.0	205.0	192.0
18	138.5	133.0	141.5	228.5	147.7	159.9	205.7	226.9	183.8	205.0	203.8	188.4
19	145.7	145.8	144.6	201.7	146.9	161.3	200.6	245.6	186.8	201.6	206.9	185.1
20	152.1	182.2	144.9	205.0	147.2	159.8	228.7	242.5	180.6	214.0	215.2	189.1
21	158.2	193.0	153.8	206.9	143.5	163.9	240.5	222.0	179.7	226.7	217.5	196.7
22	181.8	194.6	155.8	210.3	144.9	165.2	257.0	230.4	185.3#	234.9	221.5	187.9
23	178.9	198.6	162.8	213.0	147.8	173.4	260.2	224.1	172.9	246.3	219.4	184.2
24	217.5	195.8	174.7	201.3	136.7	178.7	281.0	236.0	168.6	265.5	223.6	188.9
25	215.7	196.3	166.1	188.4	137.5	203.2	276.6	236.1	165.6	250.3	227.6	206.4
26	262.6	198.7	151.3	173.5	127.2	193.8	284.0	233.6	170.3	259.0	248.7	203.5
27	272.4	193.3	150.8	152.8	125.1	195.9	270.6	243.4	185.3	265.6	240.5	194.9
28	272.6	190.4	146.9	144.9	119.0	203.1	285.5	224.2	193.1	254.6#	252.0	200.4
29	261.0	194.5	142.3	144.6	120.5	200.9	240.2	212.8	210.5	255.7	253.2	
30	256.3	190.7	136.0	141.2	118.0	203.0	236.3	222.7	219.6	238.5	248.8	
31	245.3		136.6		120.3	192.2		217.8		237.5	235.5	
Mean	176.1	179.3	152.0	179.2	135.6	167.1	236.2	206.6	208.1	228.2	220.1	200.1

NOT : #1800UT reading - burst IP at 2000UT;
~ 1700UT reading - burst IP at 2000UT; * 2300UT reading - burst IP at 2000UT.

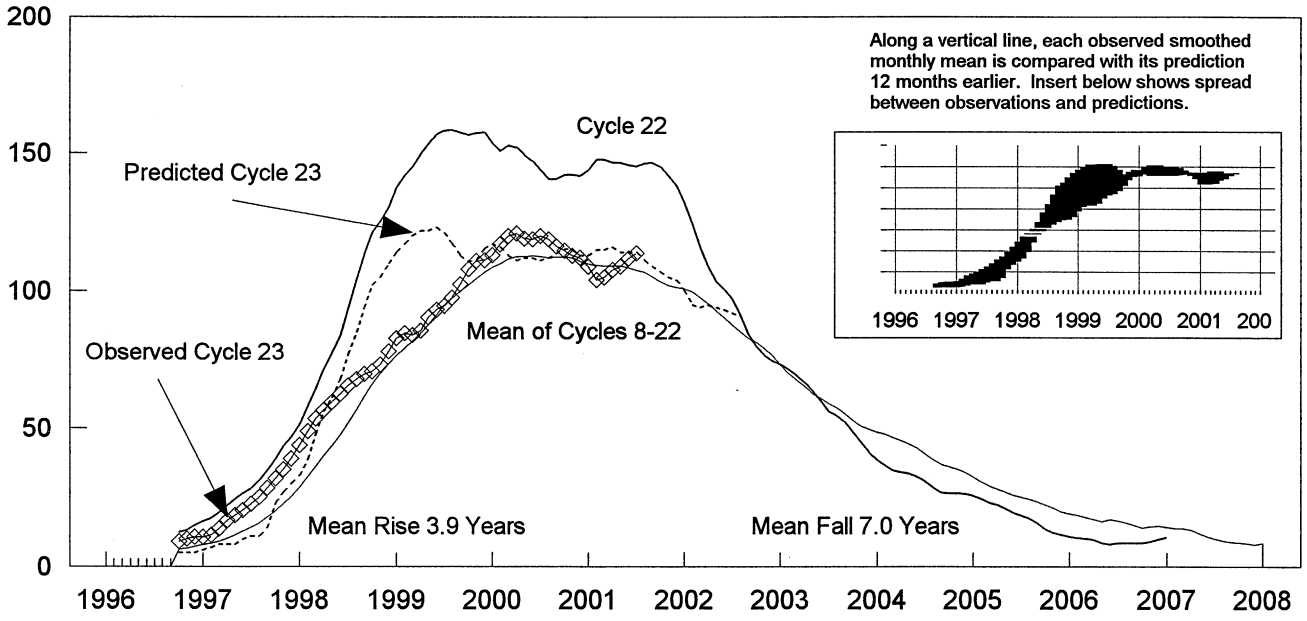
DAILY SOLAR INDICES

February 2002

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	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	32	13	113	128	245.6	440	319	270	238.5	223	163	80	51	19
2	33	14	135	143	240.6	584	374	280	233.7	222	162	79	47	20
3	34	15	159	170	232.9	576	370	278	226.3	219	161	76	46	24
4	35	16	153	165	234.6	578	359	270	228.1	209	159	62	42	22
5	36	17	151	159	220.6	577	378	259	214.5	207	152	73	46	22
6	37	18	125	128	202.5	582	362	250	196.9	192	142	70	42	21
7	38	19	104	109	191.7	559	352	233	186.6	174	135	69	45	20
8	39	20	104	113	191.5	581	344	229	186.4	176	136	71	47	22
9	40	21	118	118	199.4	585	355	243	194.1	182	138	67	43	19
10	41	22	105	117	216.5	580	359	244	210.9	189	140	71	49	24
11	42	23	109	125	201.7	540	370	245	196.6	192	142	73	64	78
12	43	24	110	115	208.3	580	378	259	203.1	195	146	72	47	28
13	44	25	104	114	203.5	584	374	248	198.5	190	141	71	47	20
14	45	26	98	98	196.1	580	372	250	191.3	186	140	65	42	20
15	46	27	103	95	195.0	574	349	238	190.3	180	138	67	43	18
16	47	1	79	85	193.5	568	338	225	188.9	184	141	66	42	21
17	48	2	91	90	196.6	534	339	238	192.0	181	138	55	43	19
18	49	3	80	80	192.8	580	356	236	188.4	175	139	64	40	19
19	50	4	78	79	189.4	582	343	234	185.1	173	135	71	46	79
20	51	5	95	91	193.4	587	364	251	189.1	181	140	71	48	25
21	52	6	86	81	201.1	562	322	243	196.7	176	139	68	45	22
22	53	7	84	86	191.9	635	339	237	187.9	173	137	70	46	21
23	54	8	94	95	188.2	642	342	233	184.2	173	138	70	45	30
24	55	9	99	115	192.8	646	359	238	188.9	179	141	70	47	22
25	56	10	121	143	210.6	654	357	246	206.4	188	143	71	48	31
26	57	11	123	126	207.5	652	343	248	203.5	195	147	71	50	23
27	58	12	107	115	198.6	611	343	243	194.9	189	140	64	44	24
28	59	13	97	109	204.2	656	363	245	200.4	189	134	69	46	40
MEAN			108.0	114.0	205.0	586	354	246	200.1	189	143	69	46	26

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	121+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	113	112	110	109	110
									(4)	(7)	(8)	(10)	(3)
2002	108	107	104	102	99	97	94	91	88	86	83	80	95
	(12)	(15)	(17)	(19)	(19)	(19)	(18)	(19)	(19)	(19)	(18)	(16)	(18)

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

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

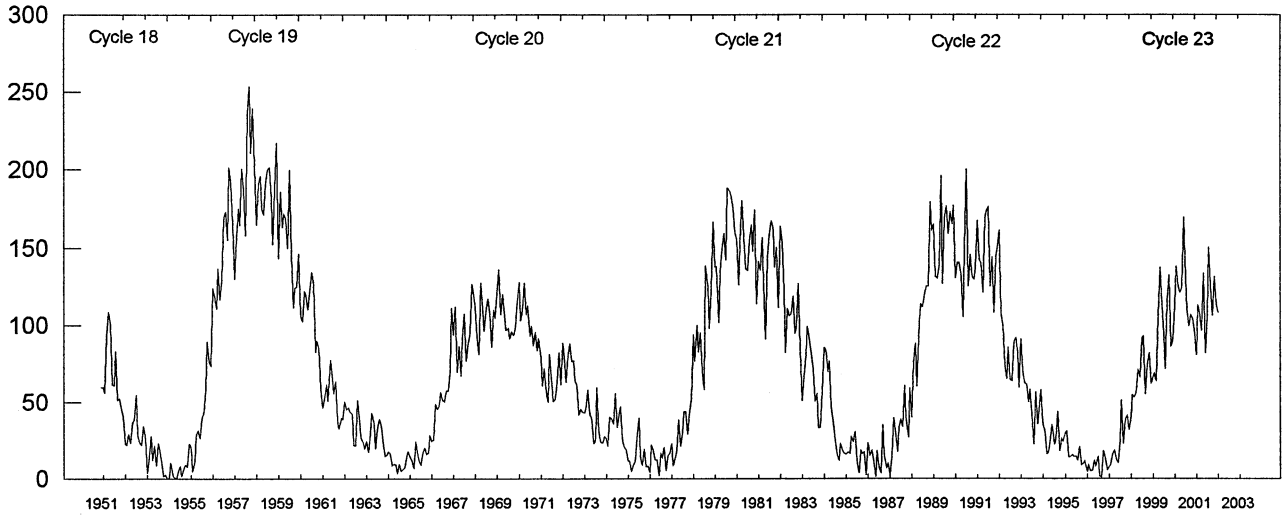
+ April 2000 marks Cycle 23 maximum.

Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Sep 2001 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data.*) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the August 2002 prediction. There exists a 90% chance that in August 2002, the actual smoothed number will fall somewhere between 72 and 110.

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

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

Mean Monthly Sunspot Numbers
Jan 1951 - Feb 2002



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4	
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5	
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9	
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4	m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0	
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7	
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2	M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8	
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0	
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	122.3	
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9	
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6	
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9	
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2	m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1	
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0	
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8	
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9	M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5	
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5	
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6	
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9	
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0	
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5	
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5	
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6	m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5	
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5	
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4	M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6	
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4	
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9	
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6	
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9	
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9	
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4	m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4	
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2	
1989	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6	M
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.5	131.4	129.7	142.6	
1991	136.9	167.5	141.9	140.0	121.3	169.7	173.7	176.3	125.3	144.1	108.2	144.4	145.7	
1992	150.0	161.1	106.7	99.8	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	94.3	
1993	59.3	91.0	69.8	62.2	61.3	49.8	57.9	42.2	22.4	56.4	35.6	48.9	54.6	
1994	57.8	35.5	31.7	16.1	17.8	28.0	35.1	22.5	25.7	44.0	18.0	26.2	29.9	
1995	24.2	29.9	31.1	14.0	14.5	15.6	14.5	14.3	11.8	21.1	9.0	10.0	17.5	
1996	11.5	4.4	9.2	4.8	5.5	11.8	8.2	14.4	1.6	0.9	17.9	13.3	8.6	m
1997	5.7	7.6	8.7	15.5	18.5	12.7	10.4	24.4	51.3	22.8	39.0	41.2	21.5	
1998	31.9	40.3	54.8	53.4	56.3	70.7	66.6	92.2	92.9	55.5	74.0	81.9	64.3	
1999	62.0	66.3	68.8	63.7	106.4	137.7	113.5	93.7	71.5	116.7	133.2	84.6	93.2	
2000	90.1	112.9	138.5	125.5	121.6	124.9	170.1	130.5	109.7	99.4	106.8	104.4	119.6	M
2001	95.6	80.6	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.6	106.5	131.8	110.9	
2002	113.9	108.0											111.0	

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

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	01	0149	0150	0154	S14	E05	9802	02	1.4	5	SF		3	E		16		F
GOES		0418	0427	0523			9797			65		C 3.4						1.2E-02
RAMY		1453	1453	1456	N06	W28	9800	01	30.6	3	SF		3	E		14		F
HOLL		1818	1818	1821	N03	W32	9800	01	30.5	3	SF		3	E		23		F
HOLL		1818	1818	1821	S15	W04	9802	02	1.4	3	SF		3	E		14		F
GOES		2108	2120	2139	N05	W31	9800			31	SF	C 5.8						8.4E-03
RAMY		2112E	2112U	2118D	N05	W31	9800	01	30.7	6D	SF		3	E		11		
HOLL		2112	2114	2130	N05	W31	9800	01	30.7	18	SF		3	E		69		F
GOES	02	1132	1135	1137						5		C 1.4						3.9E-04
GOES		1157	1203	1209						12		C 1.5						1.0E-03
GOES		1532	1536	1541	S18	W13	9802			9	SF	C 2.2						1.1E-03
RAMY		1535	1535	1541	S18	W13	9802	02	1.6	6	SF		3	E		23		F
GOES		1957	2003	2010	S19	W16	9802			13	SF	C 2.9						1.7E-03
RAMY		2000	2004	2018	S19	W16	9802	02	1.6	18	SF		3	E		40		F
GOES		2154	2158	2201						7		C 2.9						1.1E-03
GOES	03	0050	0101	0107						17		C 2.3						1.8E-03
LEAR		0231	0232	0234	S27	E34	9807	02	5.7	3	SF		3	E		14		
GOES		0303	0307	0314	S19	W17	9802			11	SF	C 3.7						1.9E-03
LEAR		0306	0306	0308	S19	W17	9802	02	1.8	2	SF		3	E		11		F
GOES		0450	0454	0514						24		C 2.3						2.9E-03
GOES		0545	0553	0555	S27	E32	9807			10	SF	C 4.7						1.7E-03
LEAR		0548	0552	0559	S27	E32	9807	02	5.7	11	SF		3	E		42		F
GOES		1259	1303	1307	N15	E20	9808			8	SF	C 1.4						6.7E-04
RAMY		1300	1301	1306	N15	E20	9808	02	5.0	6	SF		3	E		13		
GOES		1457	1519	1532	S17	W27	9802			35	SF	C 4.4						6.0E-03
RAMY		1509	1514	1543	S17	W27	9802	02	1.6	34	SF		3	E		88		F
GOES		1718	1738	1744						26		C 1.3						2.0E-03
GOES		1847	1852	1858	S26	E25	9807			11	SF	C 1.7						9.6E-04
RAMY		1851	1852	1858	S26	E25	9807	02	5.7	7	SF		3	E		22		
GOES		2216	2221	2225						9		C 3.7						1.4E-03
GOES	04	0148	0211	0213	S03	W42	9801			25	1F	C 7.3						6.8E-03
LEAR		0152	0200	0214	S03	W42	9801	01	31.9	22	1F		3	E		177		F
LEAR		0211	0211	0213	S18	W36	9802	02	1.3	2	SF		3	E		26		FH
LEAR		0435	0438	0443	S13	W20		02	2.7	8	SF		3	E		10		F
LEAR		0529	0530	0535	S14	W22		02	2.6	6	SF		3	E		11		F
GOES		0542	0602	0611						29		M 2.3						2.3E-02
GOES		0641	0658	0709						28		M 1.5						1.9E-02
LEAR		0738E	0738U	0742D	S08	E18	9809	02	5.7	4D	1F		2	E		249		
GOES		1006	1024	1032	S13	W25	9802			26	SF	C 2.7						3.3E-03
SVTO		1029E	1029U	1046D	S13	W25	9802	02	2.5	17D	SF		2	E		23		
GOES		1522	1531	1542						20		C 3.0						3.0E-03
GOES		1858	1909	1918	S13	W31	9802			20	SF	C 7.8						6.5E-03
RAMY		1900	1903	1946	S13	W31	9802	02	2.4	46	SF		3	E		33		F
GOES		2323	2330	2334	S13	W42	9802			11	SF	M 1.3						5.5E-03
LEAR		2329E	2334U	2337	S13	W42	9802	02	1.8	8D	SF		2	E		56		F
GOES	05	0535	0549	0607						32		C 3.6						6.3E-03
GOES		0819	0837	0845	S16	W37	9816			26	SF	C 2.2						3.0E-03
LEAR		0826	0829	0835	S16	W37	9816	02	2.5	9	SF		3	E		16		F
SVTO		1150	1150	1154	S07	E15	9809	02	6.6	4	SF		3	E		12		F
SVTO		1158	1158	1203	S11	W37	9816	02	2.7	5	SF		3	E		13		H
GOES		2004	2013	2022	S10	E07	9809			18	1F	C 4.4						3.5E-03
RAMY		2006	2008	2102	S10	E08	9809	02	6.4	56	1F		3	E		102		FH
HOLL		2006	2017	2116	S10	E07	9809	02	6.4	70	1F		3	E		231		FH
HOLL		2045	2048	2052	S23	W74	9804	01	31.2	7	SF		3	E		32		F
GOES		2216	2233	2257	N17	W09	9808			41	SF	C 3.0						6.0E-03
HOLL		2218	2236	2308	N17	W09	9808	02	5.2	50	SF		3	E		33		
GOES	06	0433	0440	0443	S17	W48	9816			10	SF	C 8.2						2.9E-03
LEAR		0437	0440	0451	S17	W48	9816	02	2.5	14	SF		3	E		66		F
GOES		0451	0509	0513	S17	W50	9816			22	SF	C 2.9						3.0E-03
LEAR		0451	0509	0514	S17	W50	9816	02	2.4	23	SF		3	E		48		F
GOES		0606	0611	0619	S22	E44	9811			13	SF	C 3.3						2.0E-03
LEAR		0608	0609	0633	S22	E44	9811	02	9.6	25	SF		3	E		96		F
GOES		0640	0651	0703						23		C 2.1						2.6E-03

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	06	1126	1132	1141						15		M 1.4						9.0E-03
GOES		1704	1707	1711	S11	W54	9816			7	SF	C 1.7						6.6E-04
RAMY		1706	1713	1726	S11	W54	9816	02	2.6	20	SF		3	E		15		F
HOLL		1709	1710	1723	S11	W53	9816	02	2.7	14	SF		3	E		16		
GOES		1738	1745	1752						14		C 4.1						2.8E-03
GOES		1928	1939	1947	S25	E34	9811			19	SF	C 4.0						3.5E-03
RAMY		1930	1933	2002	S27	E34	9811	02	9.5	32	SF		3	E		87		F
HOLL		1930	1937	2002	S25	E34	9811	02	9.4	32	SF		3	E		88		F
GOES		2010	2014	2017	N12	E31	9815			7	SF	C 5.3						1.5E-03
HOLL		2012	2013	2030	N12	E31	9815	02	9.2	18	SF		3	E		80		F
RAMY		2013	2014	2025	N11	E30	9815	02	9.1	12	SF		3	E		57		
HOLL		2024	2024	2035	S09	W03	9809	02	6.6	11	SF		3	E		11		
GOES	07	0051	0056	0101	S14	W60	9816			10	SF	C 4.1						1.7E-03
LEAR		0054	0056	0102	S14	W60	9816	02	2.5	8	SF		3	E		32		F
GOES		0435	0524	0540						65		C 3.2						9.5E-03
GOES		0849	0919	0941						52		C 1.9						5.3E-03
GOES		0954	1007	1025						31		C 2.6						3.9E-03
GOES		1113	1118	1123						10		C 2.7						1.4E-03
RAMY		1206	1207	1214	S12	W79	9802	02	1.5	8	SF		3	E		14		F
GOES		1333	1337	1339						6		C 4.7						1.1E-03
GOES		2002	2007	2015	S10	W69	9816			13	SF	C 2.7						1.9E-03
HOLL		2005	2006	2008	S10	W69	9816	02	2.6	3	SF		3	E		18		F
GOES		2047	2112	2124						37		C 2.5						5.2E-03
GOES	08	0411	0431	0449						38		C 2.2						4.3E-03
GOES		0635	0640	0645						10		C 2.8						1.5E-03
GOES		0857	0908	0924						27		C 1.8						2.7E-03
GOES		1034	1043	1104						30		C 4.0						5.7E-03
GOES		1533	1605	1616						43		C 1.9						4.6E-03
GOES	09	0524	0535	0553						29		C 2.2						3.5E-03
GOES		0811	0817	0834	N15	E72	9822			23	SF	C 2.6						3.3E-03
SVTO		0813	0813	0824	N15	E72	9822	02	14.8	11	SF		3	E		41		F
GOES		0928	0936	0944	S14	E13	9821			16	SF	C 2.2						1.9E-03
LEAR		0930	0930	0946	S14	E13	9821	02	10.4	16	SF		3	E		24		F
SVTO		0935E	0937U	0948D	S15	E10	9821	02	10.1	13D	SF		3	E		35		F
GOES		1109	1122	1141						32		C 1.6						2.9E-03
GOES		1427	1431	1446	N10	E67				19	SF	C 1.5						1.6E-03
SVTO		1430	1434U	1441	N10	E67		02	14.6	11	SF		3	E		74		
GOES		1940	1944	1947	S25	W07	9811			7	SF	C 1.7						6.4E-04
HOLL		1942	1943	1949	S25	W07	9811	02	9.3	7	SF		3	E		20		
HOLL		2058	2058	2103	S14	E04	9821	02	10.2	5	SF		3	E		13		F
GOES		2058	2100	2103	S14	E04	9821			5	SF	C 1.5						4.4E-04
GOES		2221	2223	2227						6		C 1.7						5.4E-04
GOES		2238	2247	2252						14		C 2.0						1.5E-03
GOES		2255	2341	2404			9821			69		C 3.1						1.0E-02
HOLL		2335	2337	2341	N12	E65	9825	02	14.9	6	SF		3	E		11		
HOLL		2341	2342	2342D	S14	E01	9821	02	10.1	1D	SF		3	E		17		
GOES	10	0009	0025	0036						27		C 2.8						4.4E-03
GOES		0108	0115	0119	S14	E01	9821			11	SF	C 1.9						1.1E-03
LEAR		0113	0115	0118	S14	E01	9821	02	10.1	5	SF		3	E		28		F
GOES		0200	0217	0224						24		C 1.3						1.8E-03
GOES		0533	0542	0549						16		C 1.2						1.1E-03
SVTO		1247	1249	1255	S25	W12	9811	02	9.6	8	SF		3	E		13		F
RAMY		1605	1605	1610	S28	W14	9811	02	9.6	5	SF		3	E		13		F
HOLL		1605	1606	1610	S28	W14	9811	02	9.6	5	SF		3	E		11		
HOLL		1729	1732	1739	S12	W08	9821	02	10.1	10	SF		3	E		33		F
RAMY		1731	1732	1735	S13	W08	9821	02	10.1	4	SF		3	E		19		F
GOES		1840	1848	1853	S25	W15	9811			13	2F	M 1.6						6.9E-03
RAMY		1844	1844	1957	S25	W16	9811	02	9.5	73	1F		3	E		107		F
HOLL		1844	1848	1956	S25	W15	9811	02	9.6	72	2F		3	E		251		F
GOES		1918	1928	1959	N08	E52	9825			41	1F	C 5.5						1.1E-02
HOLL		1919	1923	1952	N08	E52	9825	02	14.7	33	1F		3	E		117		
RAMY		1920	1923	1957	N07	E52	9825	02	14.7	37	SF		3	E		93		
HOLL		2008	2011	2019	S13	W10	9821	02	10.1	11	SF		3	E		38		
RAMY		2009	2010	2019	S13	W08	9821	02	10.2	10	SF		3	E		20		F

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	10	2343	2347	2351	S14	W12	9821			8	SF	C 1.8						7.3E-04
LEAR		2346	2347	2349	S14	W12	9821	02	10.1	3	SF		3	E		23		
HOLL		2346	2347	2352	S14	W12	9821	02	10.1	6	SF		3	E		33		F
GOES	11	0044	0049	0118	S12	W11	9821			34	SF	C 1.6						3.0E-03
LEAR		0049	0051	0057	S12	W11	9821	02	10.2	8	SF		3	E		15		F
GOES		0122	0128	0135						13		C 2.0						1.4E-03
GOES		0202	0208	0214						12		C 1.8						1.2E-03
LEAR		0303	0303	0312	S13	W13	9821	02	10.1	9	SF		3	E		19		F
LEAR		0313	0330	0352	S14	W12	9821	02	10.2	39	SF		3	E		51		FH
GOES		0318	0333	0340	S14	W12	9821			22	SF	C 2.1						2.4E-03
LEAR		0453	0453	0506	S13	W15	9821	02	10.1	13	SF		3	E		10		
LEAR		0720	0722	0728	N16	E45	9825	02	14.7	8	SF		3	E		25		F
GOES		0922	0929	0947	N17	E34	9822			25	SF	C 2.0						2.6E-03
LEAR		0924	0925	0940	N17	E34	9822	02	14.0	16	SF		3	E		18		F
SVTO		0931	0932	0934D	N15	E36	9822	02	14.1	3D	SF		3	E		15		F
SVTO		1352	1354	1408	S13	W22	9821	02	9.9	16	SF		3	E		13		F
RAMY		1353	1356	1407	S13	W19	9821	02	10.1	14	SF		3	E		16		F
GOES		1353	1402	1406	S13	W19	9821			13	SF	C 1.2						8.8E-04
GOES		2140	2144	2147	N10	E48	9825			7	SF	C 1.5						5.4E-04
HOLL		2143	2143	2149	N10	E48	9825	02	15.5	6	SF		3	E		15		
GOES		2253	2300	2308	N14	E37	9825			15	SF	C 2.3						1.7E-03
HOLL		2255	2258	2306	N14	E37	9825	02	14.7	11	SF		3	E		26		UF
GOES	12	0214	0221	0231						17		C 2.0						1.7E-03
GOES		0249	0259	0322	S13	W30	9821			33	SF	C 5.2						8.0E-03
LEAR		0252	0259	0335	S13	W30	9821	02	9.8	43	SF		3	E		55		F
GOES		0442	0447	0504						22		C 1.4						1.7E-03
GOES		0848	0853	0906	N11	E40	9825			18	SF	C 2.3						2.1E-03
SVTO		0852	0853	0909	N11	E40	9825	02	15.4	17	SF		3	E		16		F
LEAR		0852	0858	0900	N09	E28	9825	02	14.5	8	SF		2	E		28		F
SVTO		0951	0953	1004	S27	W38	9811	02	9.4	13	SF		3	E		23		F
SVTO		1031	1031	1043	S13	W33	9821	02	9.9	12	SF		3	E		10		F
SVTO		1119	1123	1132	N15	E32	9825	02	14.9	13	SF		3	E		12		
GOES		1230	1240	1256	N13	E27	9825			26	SF	C 3.0						3.8E-03
SVTO		1232	1240	1256	N13	E27	9825	02	14.5	24	SF		3	E		82		F
RAMY		1235	1235	1258	N13	E28	9825	02	14.6	23	SF		3	E		13		F
SVTO		1236	1238	1247	S26	W38	9811	02	9.6	11	SF		3	E		12		
SVTO		1316	1316	1322	N17	E29	9825	02	14.7	6	SF		3	E		11		
SVTO		1424	1438	1543	N13	E36	9825	02	15.3	79	1F		3	E		143		F
GOES		1427	1442	1514	N13	E36	9825			47	1F	C 5.8						1.4E-02
RAMY		1431	1438	1545	N13	E36	9825	02	15.3	74	SF		3	E		43		F
HOLL		1440	1443	1557	N14	E41	9825	02	15.7	77	SF		3	E		61		FH
RAMY		1550	1552	1601	S12	W35	9821	02	10.0	11	SF		3	E		13		
HOLL		1551	1551	1558	S13	W36	9821	02	9.9	7	SF		3	E		11		
RAMY		1620	1622	1629	S25	W41	9811	02	9.5	9	SF		3	E		10		F
HOLL		1621	1621	1628	S25	W40	9811	02	9.6	7	SF		3	E		17		F
RAMY		1642	1645	1650	S13	W35	9821	02	10.0	8	SF		3	E		10		F
GOES		2129	2136	2141	S25	W42	9811			12	SF	C 5.0						2.6E-03
HOLL		2132	2136	2151	S25	W42	9811	02	9.6	19	SF		3	E		71		F
GOES	13	0036	0055	0058	N17	E22	9825			22	SF	C 1.9						2.1E-03
LEAR		0041	0047	0106	N17	E22	9825	02	14.7	25	SF		1	E		16		F
GOES		0121	0125	0139	N15	E20	9825			18	SF	C 2.6						2.4E-03
LEAR		0124	0125U	0137	N17	E18	9822	02	14.4	13	SF		1	E		59		F
LEAR		0125	0133	0147	N15	E20	9825	02	14.6	22	SF		2	E		43		F
LEAR		0249	0315	0339	N11	E24	9825	02	14.9	50	SF		2	E		51		F
GOES		0548	0551	0554						6		C 1.7						5.7E-04
LEAR		0640	0642	0646	N16	E18	9825	02	14.6	6	SF		2	E		14		
GOES		0657	0712	0725	N17	E18	9825			28	1N	C 7.8						9.3E-03
LEAR		0658	0712	0801	N17	E18	9825	02	14.6	63	1N		2	E		101		FH
LEAR		0701	0712	0727	N16	E16	9822	02	14.5	26	SF		2	E		50		F
SVTO		0705	0713	0754	N17	E17	9825	02	14.6	49	SF		2	E		50		F
GOES		0851	0857	0905	N11	E23	9825			14	SF	C 2.8						1.8E-03
SVTO		0854	0855	0916	N11	E23	9825	02	15.1	22	SF		3	E		43		F
SVTO		0934	0948	0955	N18	E11	9822	02	14.2	21	SF		3	E		30		FH
LEAR		0935	0947	0952	N17	E13	9822	02	14.4	17	SF		2	E		14		F
GOES		0936	0948	0953	N17	E13	9822			17	SF	C 3.2						2.9E-03

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	13	0942	0952	1015	N16	E17	9825	02	14.7	33	SF		3	E		27		
SVTO		1001	1004	1014	N17	E13	9822	02	14.4	13	SF		3	E		24		
GOES		1228	1231	1236						8		C 1.3						5.7E-04
SVTO		1330	1330	1335	N11	E20	9825	02	15.1	5	SF		3	E		13		
GOES		1603	1607	1610						7		C 1.4						5.0E-04
GOES		2245	2251	2254						9		C 1.4						6.7E-04
GOES		2331	2335	2339	N12	E14	9825			8	SF	C 2.0						8.6E-04
LEAR		2333	2335	2340	N12	E14	9825	02	15.0	7	SF		2	E		19		F
GOES	14	0105	0118	0127			9826			22		C 1.8						2.0E-03
LEAR		0110	0110	0116	N15	W05	9822	02	13.7	6	SF		2	E		10		
LEAR		0117	0118	0123	S21	W02	9826	02	13.9	6	SF		2	E		21		
GOES		0135	0142	0148	N18	E04	9822			13	1F	C 4.5						2.5E-03
LEAR		0138	0141	0153	N18	E04	9822	02	14.4	15	1F		2	E		104		F
GOES		0344	0349	0352	N12	E11	9825			8	SF	C 2.4						8.4E-04
LEAR		0347	0347	0355	N12	E11	9825	02	15.0	8	SF		2	E		53		F
GOES		0604	0612	0622						18		C 2.6						2.5E-03
LEAR		0629	0629	0633	N16	E06	9825	02	14.7	4	SF		3	E		15		
GOES		0831	0834	0837	N11	E13	9825			6	SF	C 1.5						4.6E-04
SVTO		0834	0834	0839	N11	E13	9825	02	15.3	5	SF		3	E		15		F
GOES		0946	0950	0955						9		C 2.6						1.2E-03
GOES		1006	1010	1014	N12	E08	9825			8	SF	C 3.1						1.3E-03
SVTO		1008	1010	1023	N12	E08	9825	02	15.0	15	SF		2	E		29		F
GOES		1033	1035	1037						4		C 2.5						5.3E-04
GOES		1102	1106	1109						7		C 2.9						1.1E-03
GOES		1349	1355	1402	N12	E05	9825			13	SF	C 3.9						2.2E-03
RAMY		1351	1354	1409	N11	E07	9825	02	15.1	18	SF		3	E		70		F
SVTO		1352	1354	1409	N12	E05	9825	02	14.9	17	SF		3	E		81		F
GOES		1606	1609	1612						6		C 1.8						5.4E-04
GOES		1703	1707	1711	N11	E04	9825			8	SF	C 1.7						7.0E-04
RAMY		1706	1708	1713	N11	E04	9825	02	15.0	7	SF		3	E		19		F
GOES	15	0020	0026	0032	S03	E76	9829			12	SF	C 2.1						1.2E-03
LEAR		0024	0025	0028	S03	E76	9829	02	20.7	4	SF		2	E		32		F
GOES		0153	0207	0211	N20	W12	9822			18	SF	C 1.9						1.7E-03
LEAR		0156	0207	0216	N20	W12	9822	02	14.2	20	SF		2	E		35		F
LEAR		0210	0210	0215	N09	W09	9825	02	14.4	5	SF		2	E		19		F
GOES		0310	0336	0344	N21	W09	9825			34	SF	C 1.6						2.8E-03
LEAR		0311	0312	0415	N21	W09	9825	02	14.4	64	SF		3	E		28		F
GOES		0612	0619	0628						16		C 1.3						1.1E-03
GOES		0709	0720	0731	N21	W11	9825			22	SF	C 1.9						2.2E-03
LEAR		0713	0714	0730	N21	W11	9825	02	14.4	17	SF		3	E		31		F
GOES		0758	0813	0821						23		C 1.2						1.5E-03
GOES		0953	0958	1002						9		C 1.3						5.9E-04
GOES		1726	1736	1753	S09	W77	9821			27	SF	C 1.9						2.7E-03
RAMY		1731	1733	1742	S09	W77	9821	02	9.9	11	SF		3	E		17		
HOLL		1732	1733	1739	S13	W74	9821	02	10.1	7	SF		3	E		16		
GOES	16	0036	0048	0051						15		C 1.7						1.0E-03
GOES		1019	1025	1031						12		C 2.0						1.1E-03
HOLL		2227	2228	2231	S17	E45	9830	02	20.3	4	SF		3	E		14		
HOLL		2241	2242	2313D	S29	W68	9819	02	11.6	32D	SF		3	E		17		
GOES		2326	2332	2338						12		C 2.7						1.4E-03
LEAR	17	0240	0240	0243	S18	E39	9830	02	20.1	3	SF		3	E		22		FH
LEAR		0318	0318	0326	S18	E38	9830	02	20.0	8	SF		3	E		11		F
LEAR		0620	0624	0627	S16	E39	9830	02	20.2	7	SF		3	E		10		
LEAR		0728	0743	0801	S17	E36	9830	02	20.0	33	SF		3	E		26		F
GOES		1020	1037	1109						49		C 3.1						7.1E-03
GOES		1341	1349	1356						15		C 1.8						1.3E-03
GOES		1403	1422	1434						31		C 1.8						3.0E-03
RAMY		1452	1457	1515	S20	E34	9830	02	20.2	23	SF		3	E		27		
GOES		1453	1507	1517	S20	E34	9830			24	SF	C 1.7						2.2E-03
GOES		1721	1725	1730						9		C 1.1						5.7E-04
GOES		1855	1901	1906	S19	E30	9830			11	SF	C 1.9						1.1E-03
RAMY		1901	1933	1948	S19	E30	9830	02	20.1	47	SF		3	E		39		F
HOLL		1906	1921	1946	S18	E32	9830	02	20.2	40	SF		3	E		46		FH
GOES		2014	2019	2024	S18	E30	9830			10	SF	C 2.3						9.7E-04

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	17	2017	2032	2035	S19	E29	9830	02	20.0	18	SF		3	E		45		F
HOLL		2018	2021	2029	S18	E30	9830	02	20.1	11	SF		3	E		47		F
HOLL		2214	2216	2220	S17	E28	9830	02	20.0	6	SF		3	E		20		
GOES		2231	2253	2318						47		C 1.6						3.7E-03
GOES	18	0744	0757	0804	S06	E34	9829			20	1F	C 5.9						4.7E-03
LEAR		0747	0757	0822	S06	E34	9829	02	20.9	35	1F		3	E		140		F
LEAR		0834	0846	0905	S19	E21	9830	02	19.9	31	SF		3	E		42		F
RAMY		1345	1345	1349	N22	W56	9822	02	14.3	4	SF		3	E		26		
RAMY		1448	1449	1451	N20	W58	9822	02	14.2	3	SF		3	E		12		
GOES		2018	2115	2158	S20	E16	9830			100	SF	M 1.0						4.2E-02
RAMY		2046	2052	2137	S20	E16	9830	02	20.1	51	SF		3	E		39		F
HOLL		2319E	2332U	2334D	S17	E14	9830	02	20.0	15D	SF		3	E		31		F
LEAR	19	0046	0047	0053	S18	E13	9830	02	20.0	7	SF		3	E		11		
LEAR		0526	0529	0532	S17	E10	9830	02	20.0	6	SF		3	E		10		F
LEAR		0557	0557	0600	S20	E16	9830	02	20.5	3	SF		3	E		17		
LEAR		0625	0625	0633	S20	E16	9830	02	20.5	8	SF		3	E		24		F
LEAR		0734	0735	0738	S20	E15	9830	02	20.5	4	SF		3	E		14		F
GOES		1152	1219	1249						57		C 2.7						7.8E-03
GOES		1559	1603	1606	N18	W66	9825			7	1F	C 2.9						8.0E-04
HOLL		1601	1602	1607	N18	W66	9825	02	14.6	6	1F		3	E		141		
GOES		2227	2231	2233						6		C 1.3						4.3E-04
HOLL		2317	2319	2323	S13	W59	9828	02	15.5	6	SF		3	E		12		
HOLL	20	0001	0004	0009	S13	W59	9828	02	15.5	8	SF		3	E		44		
GOES		0110	0114	0119	S16	W02	9830			9	SF	C 2.1						9.9E-04
LEAR		0111	0116	0131	S16	W02	9830	02	19.9	20	SF		3	E		80		F
GOES		0214	0218	0221						7		C 1.7						6.1E-04
GOES		0244	0251	0256	N15	W58	9825			12	SF	M 4.2						1.7E-02
LEAR		0247	0254	0307	N15	W58	9825	02	15.7	20	SF		3	E		82		F
GOES		0552	0612	0616	N12	W72	9825			24	1N	M 5.1						2.2E-02
LEAR		0555	0611	0628	N12	W72	9825	02	14.8	33	1N		3	E		114		FE
LEAR		0632	0632	0637	S21	E02	9830	02	20.4	5	SF		3	E		19		
LEAR		0643	0644	0647	N17	W79	9825	02	14.3	4	SF		3	E		25		F
GOES		0741	0744	0746	N17	W81	9825			5	SF	C 2.5						6.0E-04
SVTO		0743	0745	0752	N21	W83	9825	02	13.9	9	SF		3	E		38		
LEAR		0743	0745	0753	N17	W81	9825	02	14.2	10	SF		3	E		47		
SVTO		0755	0757	0759	N21	W82	9825	02	14.0	4	SF		3	E		22		
LEAR		0755	0757	0801	N18	W80	9825	02	14.2	6	SF		3	E		29		H
GOES		0946	0959	1004	N18	W83	9825			18	SF	M 4.3						2.2E-02
LEAR		1001	1001	1007	N18	W83	9825	02	14.1	6	SF		3	E		20		
GOES		1102	1107	1112	N15	W77	9825			10	SF	C 7.5						3.1E-03
SVTO		1106	1107	1111	N15	W77	9825	02	14.6	5	SF		3	E		19		F
GOES		1129	1139	1147	N21	W87	9825			18	SF	C 4.5						4.0E-03
SVTO		1136	1139	1144	N21	W87	9825	02	13.8	8	SF		3	E		35		
SVTO		1410	1411	1419	S18	W08	9830	02	20.0	9	SF		3	E		26		F
GOES		1426	1429	1433						7		C 3.1						1.2E-03
GOES		1618	1626	1629	S16	W12	9830			11	1N	C 9.7						3.4E-03
HOLL		1620	1627U	1647	S16	W12	9830	02	19.8	27	1N		3	E		203		F
GOES		1703	1711	1718	S09	W62				15	SF	M 3.5						1.7E-02
RAMY		1712	1712	1714	S09	W62	9831	02	16.1	2	SF		3	E		14		
GOES		2100	2107	2109	S18	W11	9830			9	1B	M 2.4						4.8E-03
HOLL		2103	2108	2156	S18	W11	9830	02	20.0	53	1B		3	E		247		F
HOLL		2118	2125	2129	S08	W60	9831	02	16.4	11	SF		3	E		11		
HOLL		2152	2159	2228	S10	W61	9835	02	16.3	36	SF		3	E		15		
HOLL		2338	2342	2348	S16	W12	9830	02	20.1	10	SF		3	E		23		
GOES	21	0045	0054	0127						42		C 5.7						1.2E-02
GOES		0441	0448	0510			9825			29		C 3.6						5.3E-03
GOES		0706	0757	0846						100		C 5.6						2.7E-02
SVTO		0828	0839	0843	S07	W71	9835	02	16.0	15	SF		3	E		11		
GOES		0925	0932	0957	N12	W83	9825			32	SF	C 7.0						1.1E-02
SVTO		0931E	0931U	0939D	N12	W83	9825	02	15.1	8D	SF		2	E		40		
GOES		1156	1226	1236						40		M 3.9						4.4E-02
RAMY		1205	1207	1214	S09	W70	9835	02	16.2	9	1F		3	E		111		
RAMY		1346	1347	1351	S08	W71	9835	02	16.2	5	SF		3	E		20		
HOLL		1400E	1415U	1422D	S12	W71	9835	02	16.2	22D	SF		2	E		90		

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	21	1413	1416	1424	S08	W72	9835	02	16.2	11	SF		3	E		22		
GOES		1645	1648	1650	S17	W23	9830			5	SF	C 3.5						7.4E-04
HOLL		1648	1649U	1656	S18	W22	9830	02	20.0	8	SF		3	E		50		FH
RAMY		1648	1649	1656	S17	W23	9830	02	19.9	8	SF		3	E		35		FH
GOES		1807	1823	1844						37		M 1.0						1.7E-02
GOES		2028	2037	2047						19		M 1.4						1.3E-02
HOLL		2101	2102	2114	S08	W71	9835	02	16.5	13	SF		3	E		33		
RAMY		2102	2103	2108	S07	W75	9835	02	16.2	6	SF		3	E		21		
HOLL		2133	2134	2138	S08	W72	9835	02	16.5	5	SF		3	E		22		
GOES		2205	2215	2224						19		C 3.9						3.7E-03
HOLL		2349	2356	2402	S08	W73	9835	02	16.5	13	SF		3	E		59		
GOES		2349	2410	2427			9830			38		M 4.4						6.5E-02
HOLL		2351	2414U	2427D	S16	W27	9830	02	19.9	36D	2N		3	E		292		F
HOLL		2353	2353	2406	S06	W12	9829	02	21.1	13	SF		3	E		12		
HOLL		2354	2358	2425	S12	W15	9832	02	20.9	31	SF		3	E		48		F
LEAR		2354	2358	2505	S20	W20	9830	02	20.5	71	1F		3	E		102		UF
LEAR		2356	2358	2401	S14	W17	9832	02	20.7	5	SF		3	E		33		F
GOES	22	0213	0229	0240						27		C 6.0						7.8E-03
GOES		0620	0630	0646						26		C 5.0						6.9E-03
LEAR		0801	0805	0817	S18	W30	9830	02	20.0	16	SF		3	E		13		H
GOES		0906	0918	0925						19		C 2.7						2.8E-03
GOES		1107	1112	1117						10		C 2.2						1.1E-03
HOLL		1457	1457	1502	S20	W34	9830	02	20.0	5	SF		3	E		27		
GOES		1810	1839	1919						69		C 2.2						7.1E-03
HOLL		1935	1936	1946	N10	E49	9837	02	26.5	11	SF		3	E		34		F
RAMY		1936	1936	1944	N07	E48	9837	02	26.4	8	SF		3	E		29		F
HOLL		2205	2208	2217	S17	W40	9830	02	19.9	12	SF		3	E		48		F
GOES		2223	2241	2250	S21	W33	9830			27	SF	C 2.7						3.5E-03
HOLL		2231	2235	2251	S21	W33	9830	02	20.4	20	SF		3	E		26		F
HOLL		2240	2240	2248	N11	E47	9837	02	26.5	8	SF		3	E		22		F
GOES		2334	2339	2345	N11	E47	9837			11	SF	C 2.9						1.5E-03
GOES	23	0105	0147	0230						85		C 2.8						1.2E-02
GOES		0438	0443	0446	S16	W10	9839			8	SF	C 2.2						1.0E-03
LEAR		0439	0440	0446	S16	W10	9839	02	22.4	7	SF		3	E		11		
GOES		0617	0630	0646	S18	W26	9841			29	SF	C 4.9						7.0E-03
LEAR		0619	0625	0701	S18	W26	9841	02	21.3	42	SF		2	E		26		F
SVTO		0649E	0649U	0710D	S19	W27	9841	02	21.2	21D	SF		2	E		20		
GOES		0808	0812	0819	S20	W36	9830			11	SF	C 2.6						1.4E-03
SVTO		0810	0811	0823	S20	W36	9830	02	20.6	13	SF		3	E		26		
SVTO		0825	0825	0830	S20	W37	9830	02	20.5	5	SF		3	E		12		
RAMY		1116E	1121U	1138D	S20	W27	9835	02	21.4	22D	SF		3	E		80		F
RAMY		1153	1157	1212	S19	W43	9830	02	20.2	19	SF		3	E		26		F
GOES		1155	1158	1201	S19	W43	9830			6	SF	C 2.1						7.2E-04
GOES		1243	1315	1325						42		C 2.9						6.0E-03
GOES		1352	1400	1409	S21	W43	9830			17	SF	C 4.3						3.9E-03
RAMY		1356	1356	1413	S21	W43	9830	02	20.3	17	SF		3	E		15		
SVTO		1357E	1358U	1416D	S20	W45	9830	02	20.1	19D	SF		2	E		21		
GOES		1425	1437	1442						17		C 3.4						3.2E-03
HOLL		1559	1600	1603	S16	W16	9839	02	22.4	4	SF		3	E		17		
GOES		2246	2250	2254	S15	W47	9830			8	SF	C 7.0						2.2E-03
HOLL		2249	2249	2318	S15	W47	9830	02	20.4	29	SF		3	E		64		
GOES	24	0007	0012	0017						10		C 1.5						7.7E-04
LEAR		0236	0237	0247	N22	E27	9844	02	26.2	11	SF		3	E		11		FH
GOES		0433	0438	0442	S19	W52	9830			9	SF	C 1.3						6.4E-04
LEAR		0435	0437	0441	S19	W52	9830	02	20.2	6	SF		3	E		16		F
GOES		0618	0622	0626	N23	E24	9844			8	SF	C 2.2						8.2E-04
LEAR		0620	0621	0632	N23	E24	9844	02	26.1	12	SF		3	E		20		
SVTO		0755	0755	0759	N21	E27	9844	02	26.4	4	SF		3	E		12		
GOES		1253	1256	1300						7		C 1.7						6.7E-04
GOES		1435	1447	1500	S18	W44	9841			25	SF	C 4.4						5.0E-03
HOLL		1440	1448	1515	S18	W44	9841	02	21.3	35	SF		3	E		74		F
GOES		1535	1540	1544	S19	W62	9830			9	SF	C 2.4						1.1E-03
HOLL		1539	1541	1547	S19	W62	9830	02	19.9	8	SF		3	E		17		
HOLL		1659	1659	1716	N18	E65	9845	03	1.6	17	SF		3	E		17		
HOLL		1727	1730	1742	S14	W59	9830	02	20.3	15	SF		3	E		22		F

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	24	1733	1747	1759	N22	E19	9844	02	26.2	26	SF		3	E		11		
HOLL		1808	1808	1823	S18	W33	9839	02	22.2	15	SF		3	E		10		
HOLL		1908	1912	1916	N22	E18	9844	02	26.2	8	SF		3	E		21		
HOLL		2030	2030U	2120D	S19	W65	9830	02	19.9	50D	SF		3	E		12		F
GOES		2031	2038	2048	S16	W68	9830			17	SF	C 9.0						6.3E-03
RAMY		2032	2043	2103	S16	W68	9830	02	19.7	31	SF		3	E		58		F
GOES		2050	2052	2059	N21	E21	9844			9	SF	C 5.2						2.4E-03
RAMY		2052	2054	2059	N21	E21	9844	02	26.5	7	SF		3	E		13		F
GOES		2314	2317	2322						8		C 3.7						1.3E-03
LEAR	25	0124	0124	0127	N21	E19	9844	02	26.5	3	SF		3	E		14		
GOES		0247	0257	0300						13		M 1.0						3.5E-03
LEAR		0427	0430	0435	N21	E13	9844	02	26.2	8	SF		3	E		39		F
GOES		0446	0451	0501						15		C 2.2						1.8E-03
LEAR		0523	0530	0533	S04	W47	9846	02	21.7	10	SF		3	E		27		FH
GOES		0626	0631	0636						10		C 1.6						8.7E-04
GOES		0708	0717	0725	S13	W67	9830			17	SF	C 2.4						2.1E-03
LEAR		0710	0711	0721	S20	W63	9830	02	20.5	11	SF		3	E		25		F
SVTO		0718	0719	0724	S13	W67	9830	02	20.2	6	SF		3	E		21		F
SVTO		0739	0740	0742	S03	W49	9846	02	21.6	3	SF		3	E		16		
SVTO		0753	0759	0818	S02	W48	9846	02	21.7	25	SF		3	E		17		F
SVTO		0821	0837	0841	S02	W47	9846	02	21.8	20	SF		3	E		14		F
SVTO		0841	0857	0915	S02	W48	9846	02	21.8	34	SF		3	E		20		
SVTO		0931	0939	1017	S04	W40	9846	02	22.4	46	SF		3	E		76		F
GOES		0934	0937	0943	S04	W40	9846			9	SF	C 2.2						9.9E-04
LEAR		0937	0939	0943	S04	W49	9846	02	21.7	6	SF		2	E		23		F
SVTO		1026	1028	1031	S02	W49	9846	02	21.8	5	SF		3	E		14		F
GOES		1035	1041	1045	S02	W51	9846			10	SF	C 3.5						1.6E-03
SVTO		1037	1039	1042	S02	W51	9846	02	21.6	5	SF		3	E		26		F
SVTO		1051	1053	1058	S14	W71	9830	02	20.1	7	SF		3	E		26		F
GOES		1200	1205	1211	S01	W51	9846			11	SF	C 2.7						1.4E-03
RAMY		1203	1203	1215	S01	W51	9846	02	21.7	12	SF		2	E		13		F
SVTO		1308	1309	1320	S02	W51	9846	02	21.7	12	SF		3	E		16		F
HOLL		1444	1444	1447	S03	W50	9846	02	21.9	3	SF		3	E		15		
GOES		1550	1554	1557	S16	W72	9830			7	SF	C 3.3						9.9E-04
RAMY		1554	1554	1557	S16	W72	9830	02	20.2	3	SF		3	E		35		
GOES		1616	1619	1623	S04	W44	9846			7	SF	C 3.0						1.0E-03
RAMY		1618	1620	1646	S02	W51	9846	02	21.9	28	SF		3	E		63		
HOLL		1619	1620	1629	S04	W44	9846	02	22.4	10	SF		3	E		30		H
RAMY		1709	1729	1743	S02	W51	9846	02	21.9	34	SF		3	E		65		FH
HOLL		1725	1727	1738	S01	W51	9846	02	21.9	13	SF		3	E		32		FH
HOLL		1758	1802	1827	S02	W51	9846	02	21.9	29	SF		3	E		24		
RAMY		1801	1816	1825	S02	W52	9846	02	21.9	24	SF		3	E		37		H
HOLL		1900	1902	1907	S02	W52	9846	02	21.9	7	SF		3	E		12		
HOLL		1936	1938	1957	S02	W53	9846	02	21.8	21	SF		3	E		16		F
RAMY		1937	1938	1953	S02	W55	9846	02	21.7	16	SF		3	E		16		FH
GOES		1943	1946	1948	S15	W71	9830			5	SF	C 3.2						7.8E-04
RAMY		1945	1946	1950	S15	W76	9830	02	20.1	5	SF		3	E		42		
HOLL		1945	1947	1950	S15	W71	9830	02	20.4	5	SF		3	E		41		
RAMY		2010	2012	2014	S14	W74	9830	02	20.2	4	SF		3	E		29		
HOLL		2044	2044	2051	S07	W58	9829	02	21.5	7	SF		3	E		26		
GOES		2124	2127	2130	S14	W75	9830			6	SF	C 4.1						1.1E-03
RAMY		2126	2127	2131	S14	W75	9830	02	20.2	5	SF		3	E		38		FH
GOES		2218	2222	2225	S02	W54	9846			7	SF	C 2.3						8.5E-04
HOLL		2221	2221	2224	S02	W54	9846	02	21.9	3	SF		3	E		16		
GOES		2248	2254	2308	S18	W78	9830			20	SF	C 2.0						2.2E-03
HOLL		2249	2250	2253	S18	W78	9830	02	20.0	4	SF		3	E		16		H
GOES		2330	2335	2340	S04	W48	9846			10	SF	C 3.0						1.6E-03
HOLL		2334	2336	2340	S04	W48	9846	02	22.4	6	SF		3	E		14		
GOES	26	0039	0056	0108						29		C 7.0						9.1E-03
SVTO		0652	0652	0658	N13	E40	9845	03	1.3	6	SF		3	E		12		
GOES		0652	0656	0700			9839			8		C 4.4						1.6E-03
SVTO		0654	0656	0702	S18	W53	9839	02	22.2	8	SF		3	E		54		
GOES		1025	1027	1029	S13	W89	9830			4	SF	C 9.6						1.4E-03
SVTO		1027	1027	1030	S13	W89	9830	02	19.7	3	SF		3	E		84		
GOES		1249	1254	1301						12		C 1.7						1.1E-03
GOES		1349	1355	1358	N13	E36	9845			9	SF	C 3.5						1.3E-03

Hα SOLAR FLARES

FEBRUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	26	1354E	1400U	1415	N13	E29	9845	02	28.8	21D	SF		1	E		70		
SVTO		1355E	1356U	1407	N13	E36	9845	03	1.3	12D	SF		3	E		52		F
HOLL		1458	1459	1504	S20	W55	9839	02	22.4	6	SF		3	E		38		
GOES		1512	1632	1721						129		C 6.1						3.1E-02
HOLL		1526	1527	1537	S19	W46	9842	02	23.1	11	SF		3	E		13		
HOLL		1917	1917	1921	N11	W03	9837	02	26.6	4	SF		3	E		18		F
RAMY		1917	1917	1927	N11	W06	9837	02	26.3	10	SF		3	E		28		F
GOES		1917	1919	1921	N11	W06	9837			4	SF	C 2.3						5.5E-04
GOES	27	0039	0047	0053	S19	W61	9839			14	SF	C 7.1						4.3E-03
LEAR		0048	0048	0057	S19	W61	9839	02	22.4	9	SF		3	E		11		
GOES		0311	0346	0413						62		C 6.8						2.0E-02
LEAR		0446	0452	0505	N13	E26	9845	03	1.2	19	SF		3	E		22		F
GOES		0614	0620	0631						17		C 3.1						2.8E-03
SVTO		1153	1153	1158	N23	W15	9844	02	26.3	5	SF		3	E		13		
GOES		1255	1302	1323						28		C 4.3						6.2E-03
SVTO		1327	1328	1334	S17	W68	9839	02	22.4	7	SF		3	E		12		
SVTO		1341	1345	1357	S17	W68	9839	02	22.4	16	SF		3	E		21		
SVTO		1405	1405	1410	N23	W14	9844	02	26.5	5	SF		3	E		13		
GOES		1550	1558	1604	S18	W69	9839			14	SF	M 1.6						8.8E-03
RAMY		1556	1603	1611	S18	W69	9839	02	22.4	15	SF		3	E		53		FH
GOES		2049	2058	2108	S18	W73	9839			19	SF	C 7.9						7.2E-03
RAMY		2052	2053	2109	S18	W73	9839	02	22.3	17	SF		3	E		41		FH
GOES		2356	2412	2448						52		M 2.2						4.7E-02
LEAR	28	0238	0238	0245	N22	W24	9844	02	26.3	7	SF		3	E		14		F
LEAR		0523	0532	0557	N22	W25	9844	02	26.3	34	SF		3	E		34		F
LEAR		0711	0711	0721	S19	E02	9848	02	28.4	10	SF		3	E		13		F
GOES		0922	0927	0932	S21	E02	9848			10	SF	C 4.0						1.7E-03
SVTO		0925	0927	0938	S21	E02	9848	02	28.5	13	SF		3	E		37		F
GOES		1206	1209	1212						6		C 4.2						1.3E-03
GOES		1413	1416	1418						5		C 5.5						1.3E-03
RAMY		1656	1656	1700	N19	W84		02	22.3	4	SF		3	E		12		
RAMY		1704	1706	1710	N19	W84		02	22.3	6	SF		3	E		45		
RAMY		1714	1715	1718	N19	W85		02	22.2	4	SF		3	E		19		
RAMY		1901	1911	1942	N23	W33	9844	02	26.2	41	SF		3	E		90		F
GOES		1905	1910	1915	N22	W30	9844			10	SF	C 7.6						3.3E-03
HOLL		1908	1910	1921	N22	W30	9844	02	26.5	13	SF		3	E		44		F
GOES		2230	2240	2300						30		C 7.4						9.9E-03

"Remarks"

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

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

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

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

FEBRUARY 2002

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
03	8800	LEAR	8	S	0304.0	0305.0	2.0	39.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0304.0	0305.0	2.0	14.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	0305.0	0305.0	U	36.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0452.0	0452.0	U	22.0			QL=4 ST=2 TYP=3
04	8800	LEAR	46	C	0552.0	0558.0	22.0	43.0			QL=4 ST=2 TYP=8
	2695	SGMR	4	S/F	1905.0	1908.0	5.0	29.0			QL=4 ST=2 TYP=3
	8800	LEAR	48	C	2326.0	2326.0	2.0	140.0			QL=2 ST=2 TYP=8
	2695	PALE	48	C	2326.0	2327.0	2.0	84.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	2326.0	2327.0	7.0	180.0			QL=4 ST=2 TYP=8
	2695	LEAR	46	C	2331.0	2332.0	1.0	22.0			QL=2 ST=2 TYP=8
06	2695	LEAR	46	C	0436.0	0436.0	1.0	25.0			QL=4 ST=2 TYP=8
	8800	LEAR	46	C	0436.0	0436.0	U	21.0			QL=4 ST=2 TYP=8
	2695	LEAR	8	S	0608.0	0608.0	1.0	43.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0608.0	0608.0	1.0	63.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1128.0	1129.0	4.0	130.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	1128.0	1128.0	1.0	79.0			QL=4 ST=2 TYP=3
08	8800	LEAR	8	S	0425.0	0425.0	U	57.0			QL=4 ST=2 TYP=3
	2695	LEAR	46	C	0425.0	0425.0	U	27.0			QL=4 ST=2 TYP=8
10	2695	PALE	46	C	1843.0	1843.0	1.0	48.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	1843.0	1843.0	2.0	70.0			QL=4 ST=2 TYP=8
	2695	SGMR	8	S	1843.0	1843.0	2.0	64.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1843.0	1843.0	2.0	100.0			QL=4 ST=2 TYP=3
13	8800	LEAR	20	GRF	0705.0	0710.0	16.0	29.0			QL=4 ST=2 TYP=2
20	2695	LEAR	4	S/F	0242.0	0247.0	6.0	28.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0246.0	0249.0	4.0	240.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0247.0	0249.0	6.0	230.0			QL=4 ST=3 TYP=3
	2695	LEAR	8	S	0247.0	0247.0	U	23.0			QL=4 ST=3 TYP=3
	8800	PALE	8	S	0249.0	0250.0	1.0	75.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0555.0	0555.0	1.0	49.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	0606.0	0610.0	5.0	100.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	0608.0	0610.0	3.0	49.0			QL=4 ST=2 TYP=3
	8800	LEAR	49	GB	0608.0	0609.0	4.0	770.0			QL=4 ST=2 TYP=6
	8800	SVTO	4	S/F	0608.0	0609.0	3.0	230.0			QL=2 ST=2 TYP=3
	8800	SVTO	48	C	0952.0	0958.0	8.0	230.0			QL=4 ST=2 TYP=8
	2695	LEAR	8	S	0957.0	0958.0	1.0	31.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0957.0	0958.0	2.0	180.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	0957.0	0958.0	1.0	40.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	1106.0	1106.0	U	35.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1106.0	1106.0	U	150.0			QL=4 ST=2 TYP=3
	8800	SGMR	48	C	1621.0	1622.0	7.0	90.0			QL=4 ST=3 TYP=8
	2695	SGMR	46	C	1621.0	1622.0	2.0	33.0			QL=4 ST=3 TYP=8
	2695	SGMR	4	S/F	1709.0	1711.0	3.0	56.0			QL=4 ST=3 TYP=3
	8800	SGMR	8	S	1710.0	1711.0	1.0	43.0			QL=4 ST=3 TYP=3
	8800	PALE	4	S/F	2105.0	2106.0	3.0	81.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	2105.0	2106.0	2.0	80.0			QL=4 ST=3 TYP=3
	2695	SGMR	8	S	2105.0	2106.0	1.0	88.0			QL=4 ST=3 TYP=3
	2695	PALE	8	S	2106.0	2106.0	1.0	85.0			QL=4 ST=2 TYP=3
21	8800	SGMR	8	S	2029.0	2029.0	1.0	95.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	2029.0	2030.0	1.0	28.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2030.0	2030.0	U	86.0			QL=4 ST=2 TYP=3
	8800	LEAR	20	GRF	2353.0	2408.0	61.0	83.0			QL=4 ST=2 TYP=2
	2695	LEAR	4	S/F	2354.0	2356.0	23.0	89.0			QL=4 ST=2 TYP=3
22	2695	PALE	48	C	2355.0	2356.0	5.0	86.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	2358.0	2410.0	27.0	71.0			QL=4 ST=2 TYP=8
24	8800	SGMR	8	S	1536.0	1537.0	2.0	54.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1536.0	1537.0	2.0	39.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	2315.0	2316.0	2.0	100.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	2315.0	2316.0	3.0	53.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2315.0	2315.0	1.0	100.0			QL=4 ST=2 TYP=3

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

FEBRUARY 2002

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
25	8800	LEAR	8 S	0255.0	0256.0	2.0	62.0			QL=4 ST=2 TYP=3
	2695	PALE	8 S	2126.0	2126.0	1.0	110.0			QL=4 ST=2 TYP=3
	8800	PALE	48 C	2126.0	2126.0	U	77.0			QL=4 ST=2 TYP=8
	2695	SGMR	8 S	2126.0	2126.C	1.0	160.0			QL=2 ST=2 TYP=3
	8800	SGMR	8 S	2126.0	2126.0	U	49.0			QL=2 ST=2 TYP=3
26	8800	LEAR	8 S	1026.0	1026.0	U	110.0			QL=2 ST=2 TYP=3
	2695	LEAR	8 S	1026.0	1026.0	1.0	300.0			QL=2 ST=2 TYP=3
	8800	SVTO	8 S	1026.0	1026.0	1.0	190.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	1026.0	1026.0	1.0	220.0			QL=4 ST=2 TYP=3
27	8800	SVTO	8 S	1553.0	1553.0	2.0	47.0			QL=4 ST=2 TYP=3
28	8800	SVTO	8 S	0925.0	0925.0	U	25.0			QL=4 ST=2 TYP=3

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

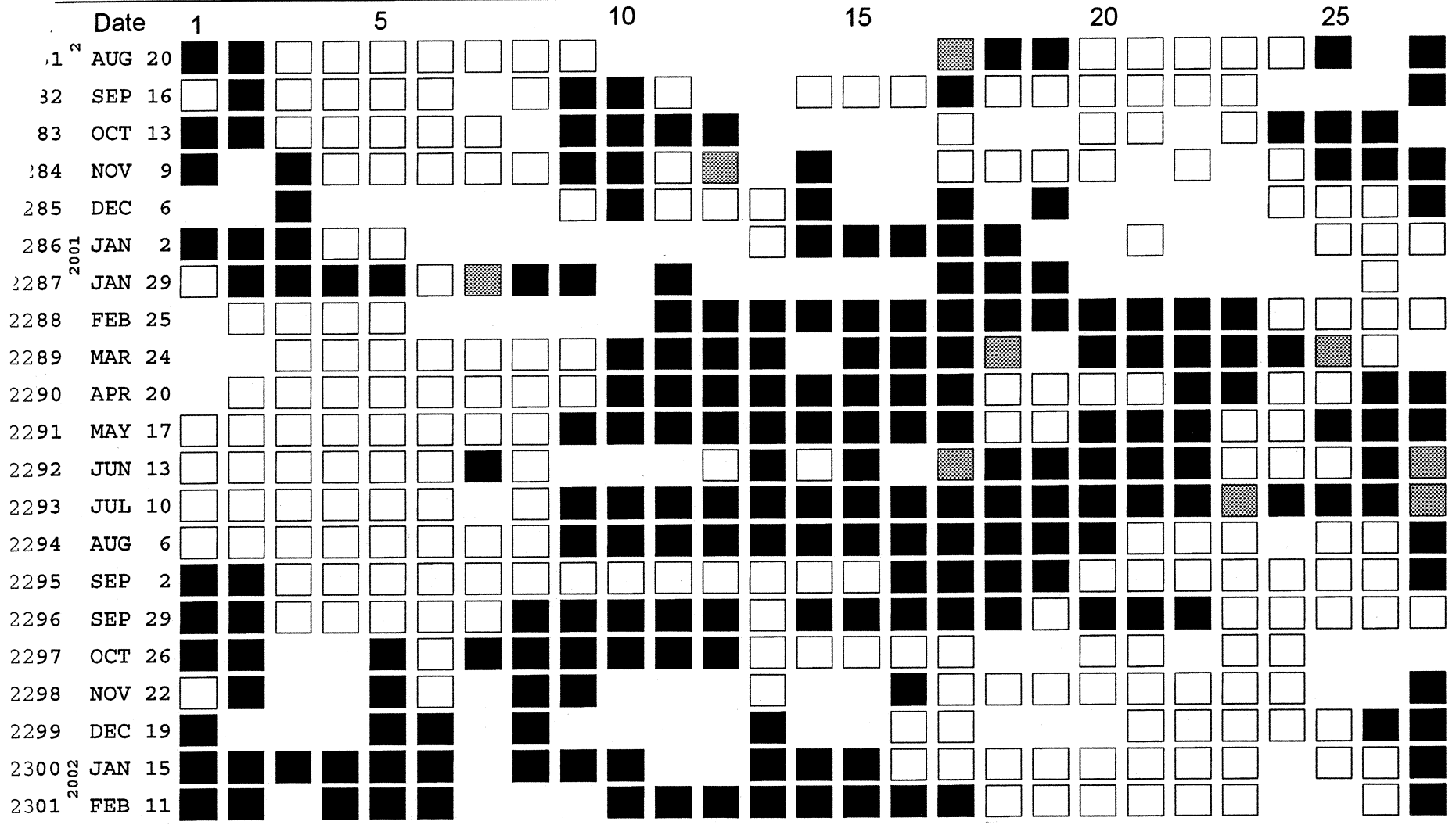
Explanation of Type Code:

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

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD

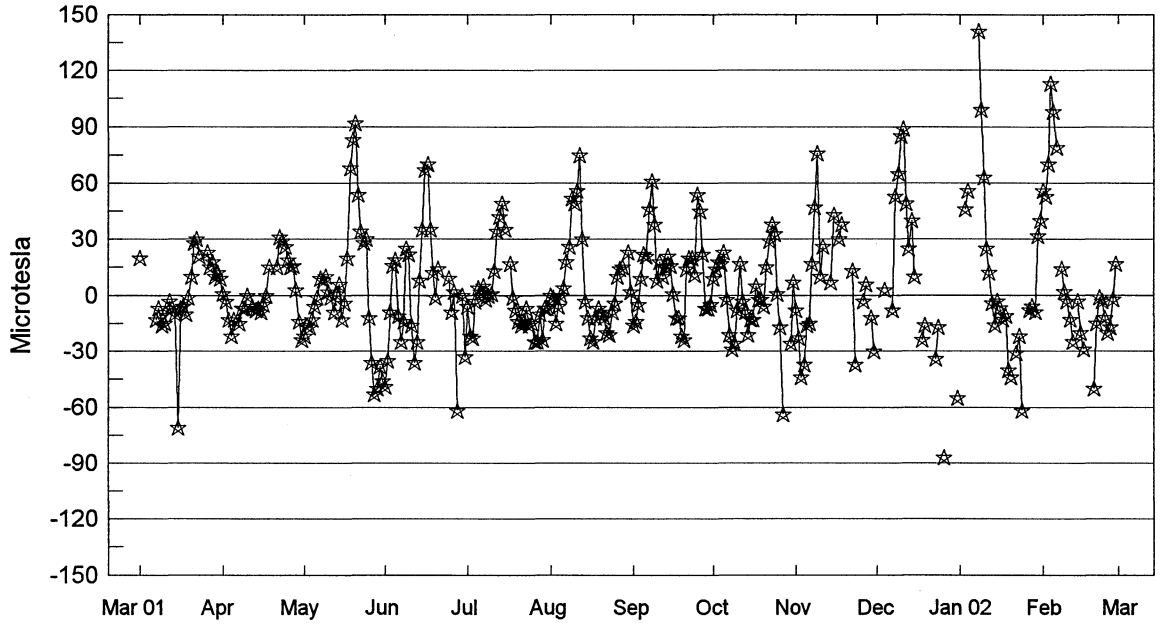


Mean Solar Magnetic Field Polarity: = field > 2 microT; = -2 microT ≤ field ≤ 2 microT

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

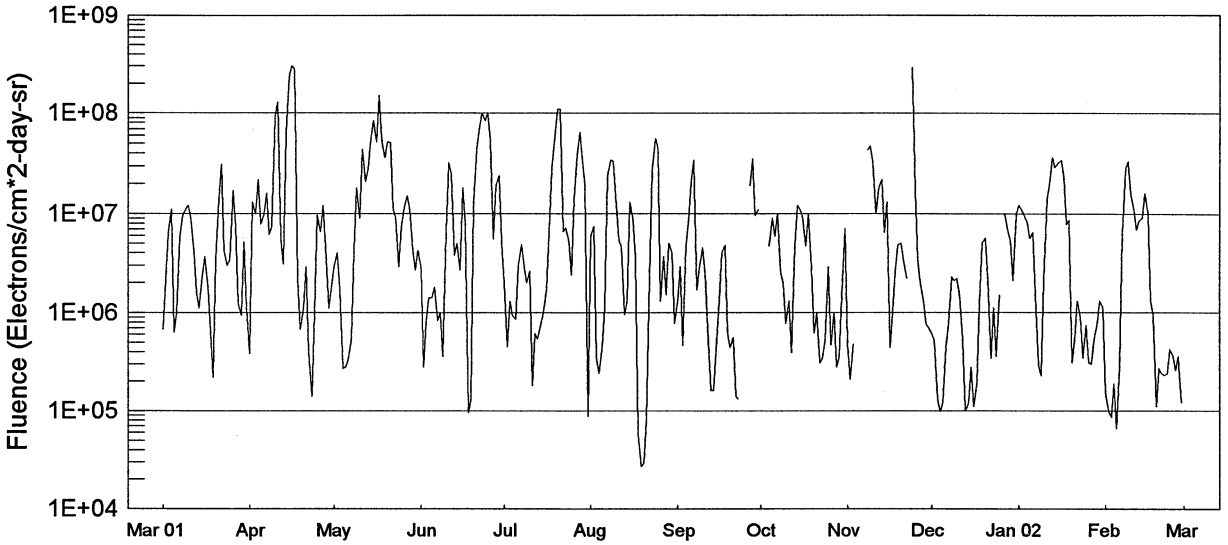
...ers given are the Bartels series, but the dates are not; these dates are five ...that affect the Earth during the given Bartels Rotation.

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



Day	Mar 01	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb
1	20	1	-22	-35	-6	0	-16	9	-8	---	---	56
2	---	-3	-16	-9	-22	-1	-14	14	-23	---	---	53
3	---	-13	-17	16	-23	-15	-5	18	-44	---	46	70
4	---	-22	-13	19	-3	-6	9	17	-37	3	56	113
5	---	-13	-6	-11	4	0	22	23	-16	---	---	98
6	---	---	-1	-25	2	4	21	-2	-15	---	---	79
7	-13	-15	9	-14	5	18	46	-21	17	-8	---	---
8	-7	-7	8	25	-2	26	61	-29	47	53	141	14
9	-16	-7	10	22	0	52	38	-26	76	65	99	2
10	-15	0	2	-16	1	49	8	-8	10	85	63	-3
11	-7	---	-1	-36	13	56	18	17	26	89	25	-13
12	-3	-6	-9	-25	34	75	10	-3	---	49	12	-25
13	-7	-8	1	8	42	30	15	-9	---	25	-4	---
14	-10	-7	6	35	49	-3	21	-21	7	40	-16	-3
15	-71	-9	-13	67	35	-12	16	-13	43	10	-3	-20
16	-7	-5	-4	70	---	-23	1	-13	---	---	-7	-29
17	-6	0	20	35	17	-25	-12	5	30	---	-13	---
18	-10	15	68	12	-1	-12	-12	-2	38	-24	-11	---
19	-1	---	83	-1	-8	-7	-22	-2	---	-16	-40	---
20	10	---	92	14	-14	-10	-24	-6	---	---	-44	-50
21	28	15	54	---	-16	-12	14	15	---	---	---	-15
22	30	31	34	---	-14	-20	20	29	13	---	-31	-1
23	21	29	28	---	-7	-21	20	38	-37	-34	-22	-3
24	---	26	30	9	-16	-9	11	33	---	-17	-62	-12
25	---	19	-12	-9	-15	-4	54	1	---	---	---	-20
26	23	15	-36	2	-25	10	45	-17	-3	-87	---	-17
27	15	16	-53	-62	-25	14	22	-64	6	---	-8	-2
28	18	3	-50	---	-10	15	-7	---	---	---	-6	17
29	10	-14	-38	0	-24	---	-7	---	-12	---	-9	
30	12	-24	-46	-33	-7	23	-5	-26	-30	---	32	
31	9		-49		-7	2		7		-55	40	

GOES Daily Electron Fluence
Mar 2001 - Feb 2002



Day	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb
1	6.8E+05	3.8E+05	2.9E+06	2.8E+06	2.0E+06	5.9E+06	1.3E+06	-999	4.8E+05	6.1E+05	1.2E+07	1.5E+05
2	2.1E+06	1.3E+07	4.0E+06	2.8E+05	4.5E+05	7.4E+06	2.9E+06	-999	2.1E+05	5.2E+05	1.1E+07	9.8E+04
3	6.4E+06	1.0E+07	1.7E+06	8.1E+05	1.3E+06	3.5E+05	4.6E+05	-999	4.8E+05	1.3E+05	9.3E+06	8.6E+04
4	1.1E+07	2.2E+07	2.7E+05	1.4E+06	9.3E+05	2.4E+05	4.8E+06	4.7E+06	-999	9.9E+04	8.3E+06	1.9E+05
5	6.3E+05	7.8E+06	2.8E+05	1.4E+06	8.6E+05	4.5E+05	8.6E+06	9.0E+06	-999	1.2E+05	5.7E+06	6.6E+04
6	1.0E+06	9.8E+06	3.3E+05	1.8E+06	3.0E+06	1.1E+06	2.1E+07	5.9E+06	-999	4.4E+05	6.5E+06	2.9E+05
7	5.8E+06	1.6E+07	5.3E+05	8.4E+05	4.9E+06	2.4E+07	3.4E+07	1.0E+07	-999	7.6E+05	1.5E+06	6.2E+06
8	9.3E+06	6.2E+06	4.2E+06	1.0E+06	3.0E+06	3.4E+07	1.7E+06	2.5E+06	4.3E+07	2.3E+06	2.9E+05	2.8E+07
9	1.1E+07	7.4E+06	1.8E+07	3.6E+05	2.0E+06	3.3E+07	2.8E+06	2.0E+06	4.7E+07	2.1E+06	2.3E+05	3.3E+07
10	1.2E+07	9.5E+07	9.0E+06	6.5E+06	2.6E+06	1.2E+07	4.5E+06	7.7E+05	3.2E+07	2.2E+06	2.1E+06	1.6E+07
11	9.1E+06	1.3E+08	4.4E+07	3.2E+07	1.8E+05	5.4E+06	2.5E+06	1.3E+06	1.0E+07	1.5E+06	1.4E+07	1.1E+07
12	4.2E+06	5.6E+06	2.1E+07	2.5E+07	6.1E+05	4.6E+06	6.9E+05	3.9E+05	1.8E+07	5.4E+05	2.1E+07	7.0E+06
13	1.6E+06	3.1E+06	2.8E+07	3.8E+06	5.4E+05	9.6E+05	1.6E+05	4.7E+06	2.2E+07	1.0E+05	3.6E+07	8.6E+06
14	1.1E+06	6.5E+07	5.5E+07	5.0E+06	7.5E+05	1.3E+06	1.6E+05	1.2E+07	6.5E+06	1.2E+05	2.9E+07	9.1E+06
15	2.3E+06	2.4E+08	8.4E+07	2.7E+06	1.0E+06	1.3E+07	4.1E+05	1.1E+07	1.3E+07	2.8E+05	3.2E+07	1.6E+07
16	3.7E+06	3.0E+08	5.2E+07	1.8E+07	1.7E+06	9.0E+06	1.3E+06	9.2E+06	4.4E+05	1.1E+05	3.4E+07	1.0E+07
17	1.8E+06	2.8E+08	1.5E+08	7.9E+06	6.6E+06	3.6E+06	4.0E+06	4.7E+06	1.0E+06	1.9E+05	2.3E+07	1.3E+06
18	6.5E+05	2.2E+06	5.4E+07	9.5E+04	2.8E+07	5.9E+04	4.8E+06	1.0E+07	2.6E+06	1.2E+06	7.8E+06	9.5E+05
19	2.2E+05	6.8E+05	3.6E+07	1.3E+05	6.2E+07	2.7E+04	6.3E+05	2.8E+06	4.9E+06	5.1E+06	8.5E+06	1.1E+05
20	3.4E+06	1.1E+06	5.2E+07	1.3E+07	1.1E+08	2.9E+04	4.4E+05	6.2E+05	5.0E+06	5.7E+06	3.1E+05	2.7E+05
21	1.4E+07	2.9E+06	5.1E+07	4.5E+07	1.1E+08	8.0E+04	5.6E+05	1.0E+06	3.3E+06	2.2E+06	5.3E+05	2.4E+05
22	3.1E+07	3.9E+05	1.1E+07	7.2E+07	6.6E+06	2.2E+06	1.4E+05	3.1E+05	2.2E+06	3.4E+05	1.3E+06	2.3E+05
23	4.2E+06	1.4E+05	9.1E+06	1.0E+08	7.2E+06	2.8E+07	1.3E+05	3.5E+05	-999	1.1E+06	9.1E+05	2.4E+05
24	3.0E+06	1.0E+06	2.9E+06	8.4E+07	5.3E+06	5.6E+07	-999	5.2E+05	2.9E+08	3.6E+05	3.5E+05	4.2E+05
25	3.4E+06	9.6E+06	7.5E+06	1.0E+08	2.4E+06	4.5E+07	-999	2.9E+06	1.7E+07	1.5E+06	7.4E+05	3.6E+05
26	1.7E+07	6.6E+06	1.1E+07	5.4E+07	1.4E+07	1.3E+06	-999	4.7E+05	3.4E+06	-999	3.1E+05	2.6E+05
27	7.6E+06	1.2E+07	1.5E+07	5.6E+06	3.9E+07	3.7E+06	1.9E+07	1.0E+06	2.0E+06	9.9E+06	3.0E+05	3.6E+05
28	1.2E+06	4.5E+06	1.1E+07	1.9E+07	6.5E+07	1.5E+06	3.5E+07	2.8E+05	1.3E+06	7.2E+06	5.7E+05	1.2E+05
29	9.4E+05	1.1E+06	4.2E+06	2.4E+07	3.4E+07	5.0E+06	9.5E+06	3.6E+05	7.6E+05	5.3E+06	7.5E+05	
30	5.2E+06	1.8E+06	2.7E+06	5.2E+06	1.9E+07	4.0E+06	1.1E+07	2.1E+06	6.9E+05	2.1E+06	1.3E+06	
31	1.1E+06		4.3E+06		8.7E+04	7.8E+05		7.1E+06		1.0E+07	1.1E+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 691 Part I

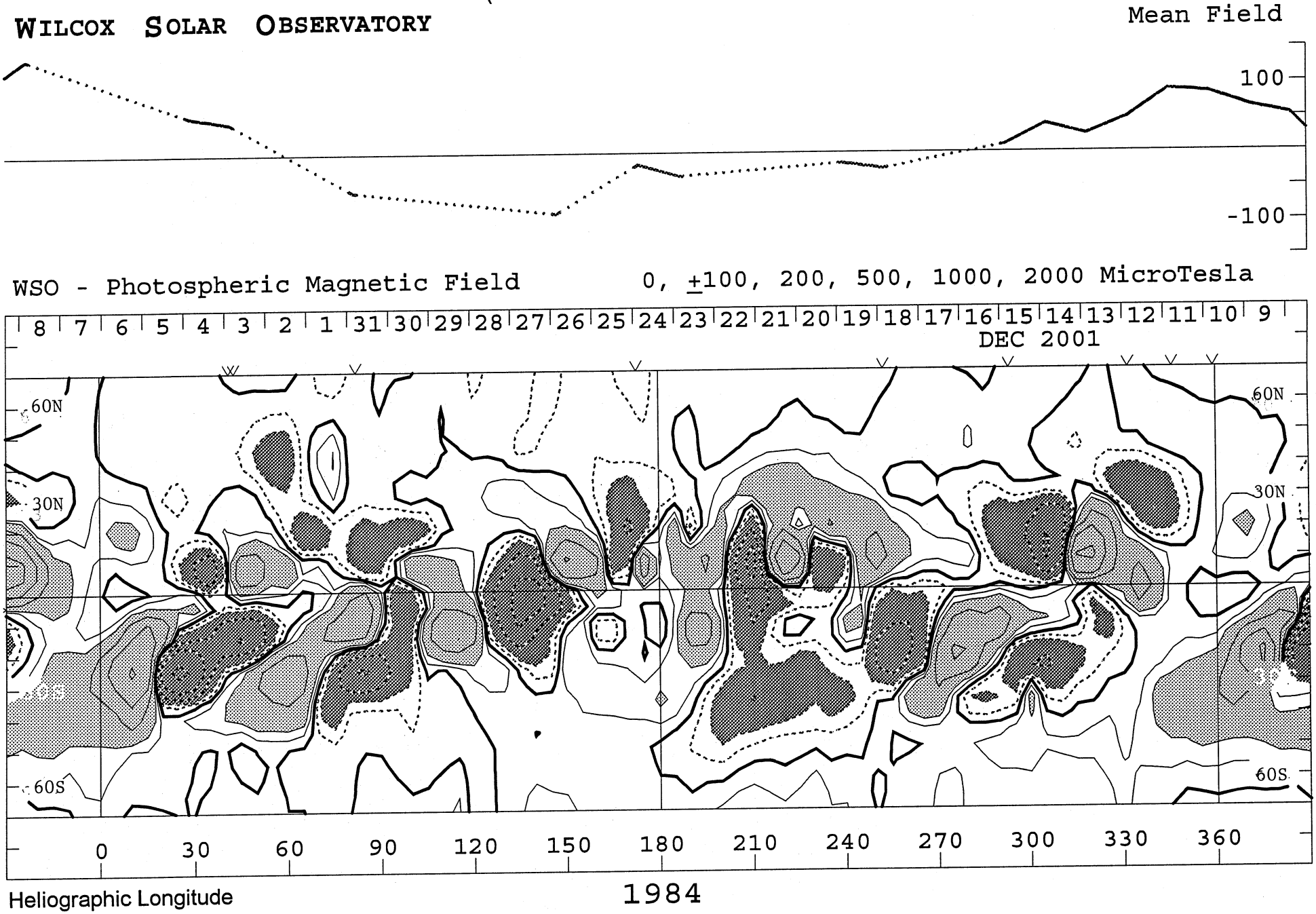
DATA FOR **JANUARY 2002**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1984

(10 December 2001 to 7 January 2002)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

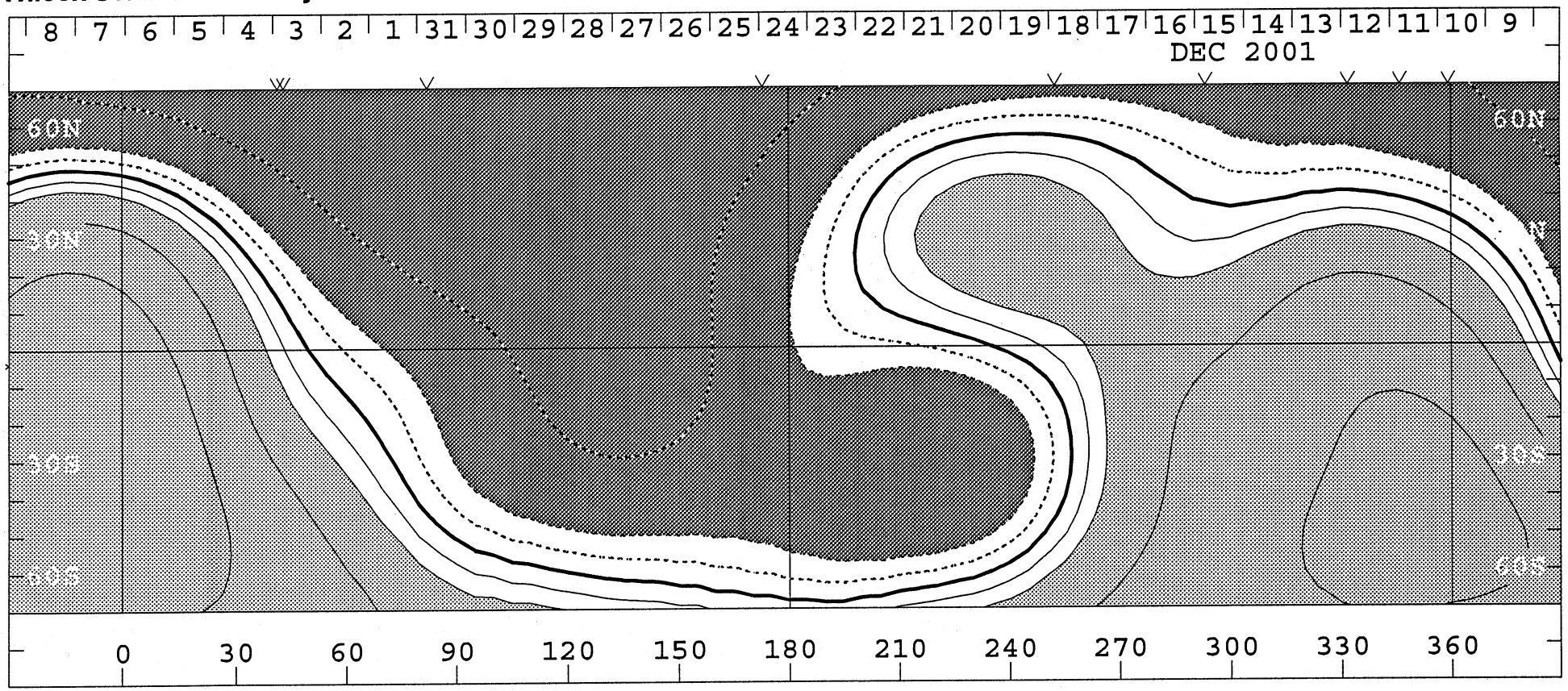
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1984

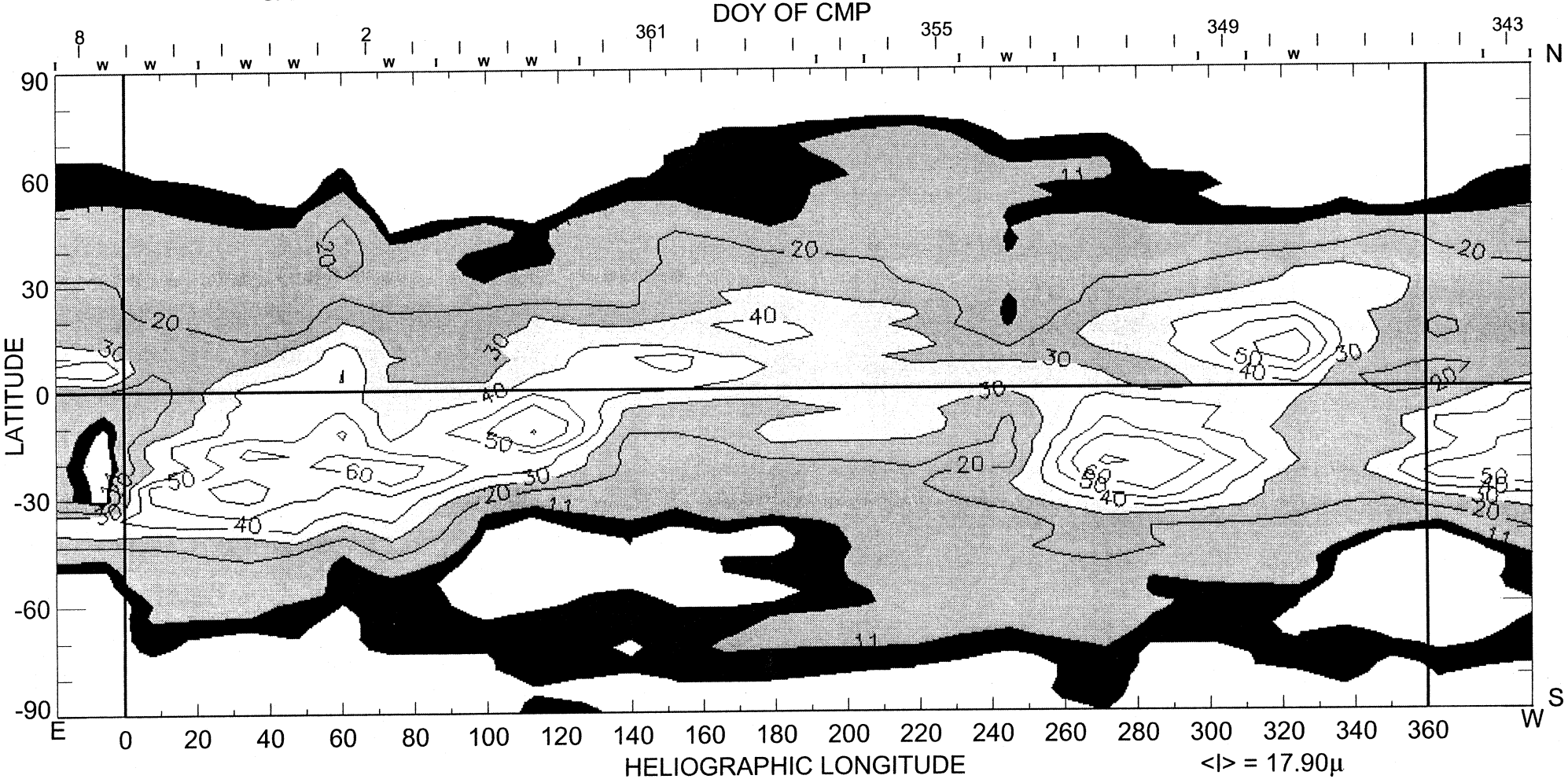
(10 December 2001 to 7 January 2002)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



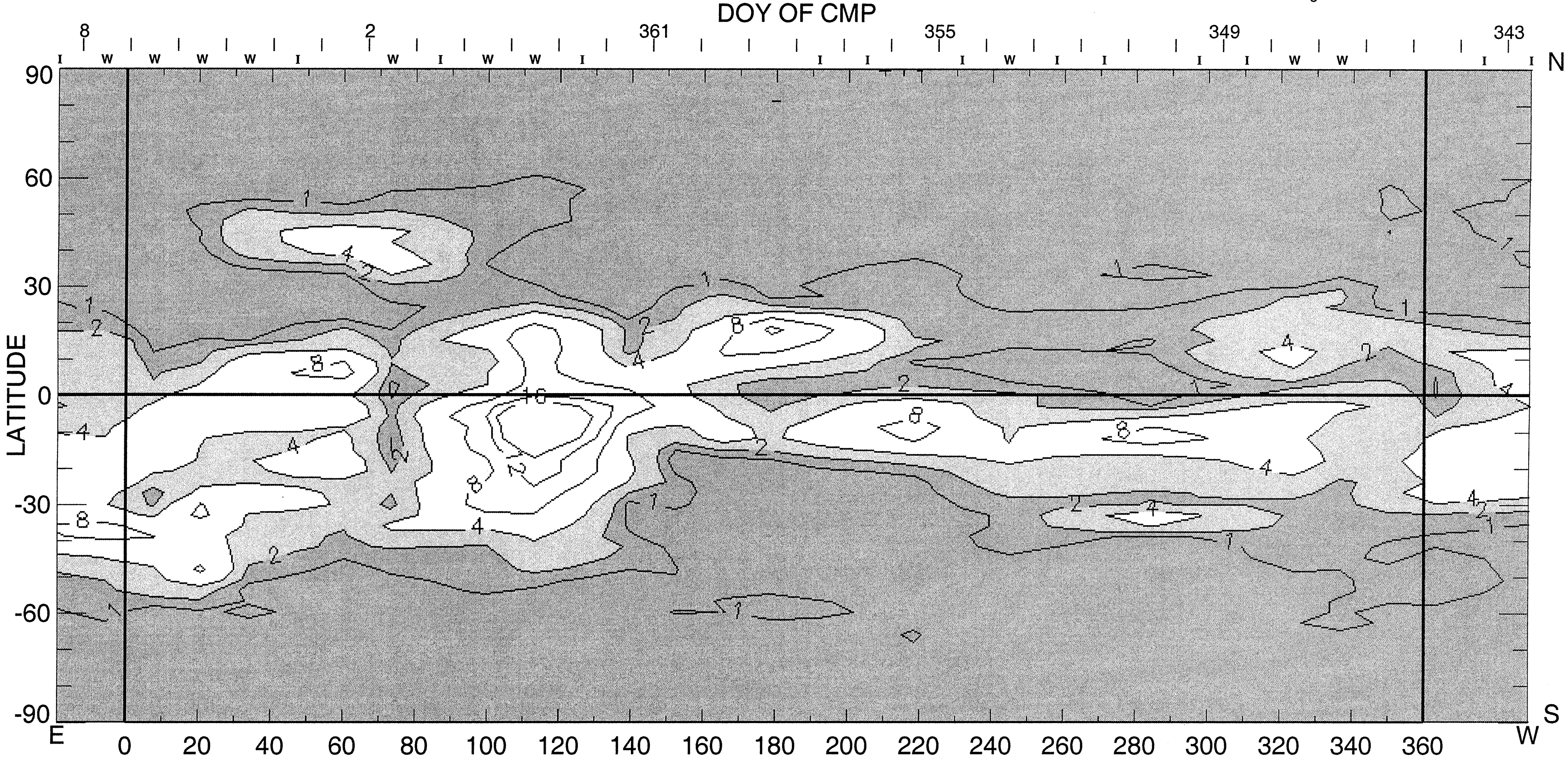
CARRINGTON ROTATION NUMBER 1984 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



<I> = 17.90μ

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

CARRINGTON ROTATION NUMBER 1984 ; NSO/SACRAMENTO PEAK FE X @ $R = 1.15R_o$

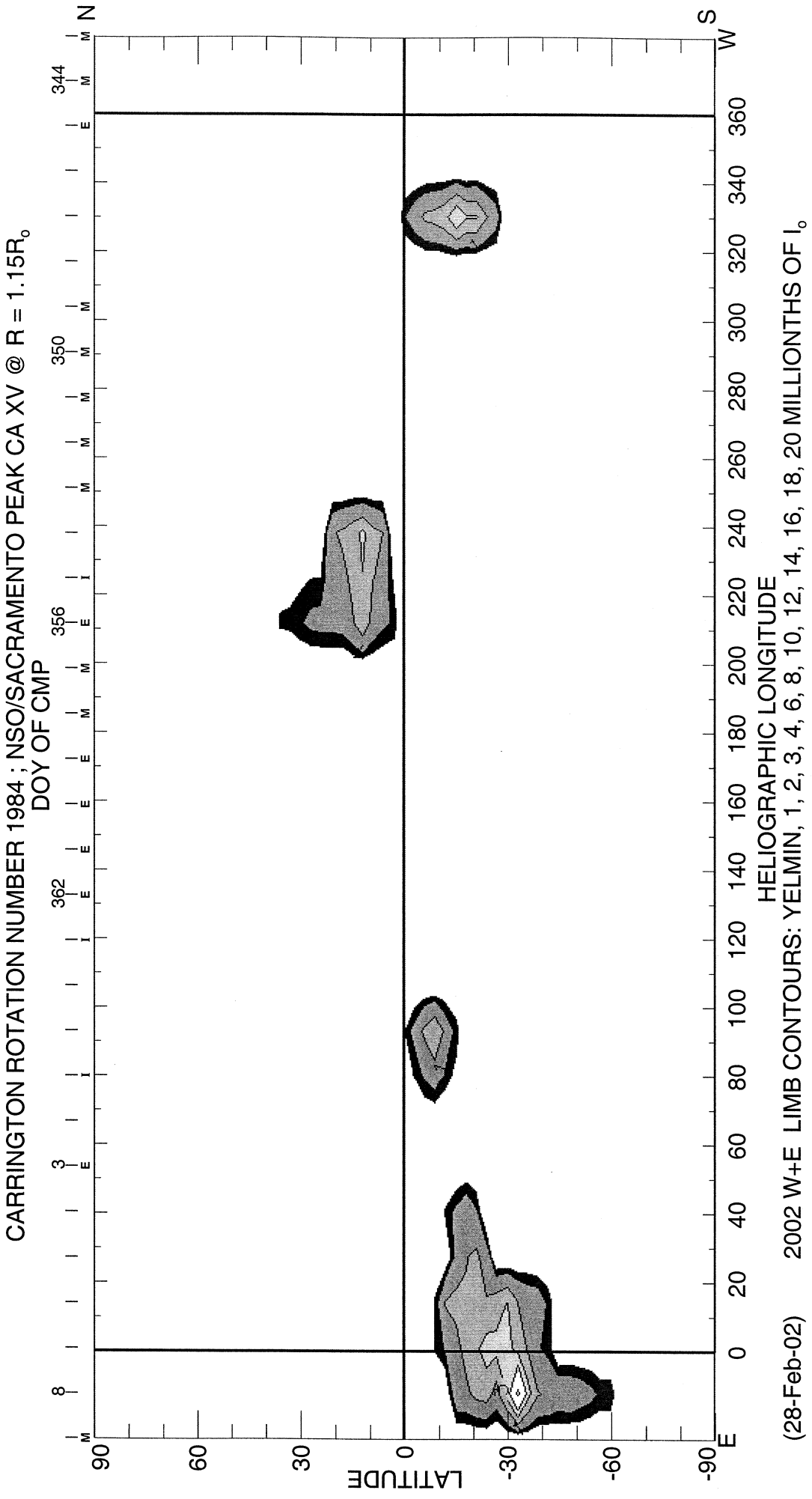


$\langle I \rangle = 1.79\mu$

(28-Feb-02)

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

τεξ Τηυ Φεβ 28 11:12:10 2002



SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1984

(10 December 2001 to 7 January 2002)

National Solar Observatory/Kitt Peak

Dates of Observation

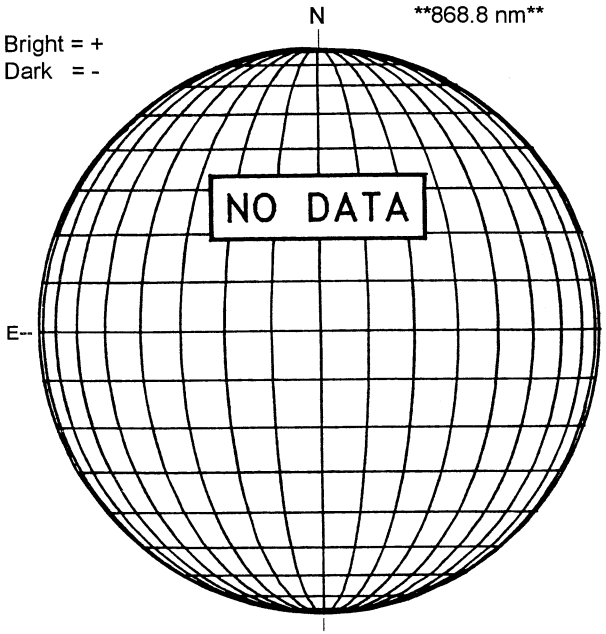
PHOTOGRAPHIC DATA UNAVAILABLE AT TIME OF PUBLICATION.

Heliographic Longitude

JANUARY 1, 2002 (P= 2.13, Bo = -3.01, Lo = 79.71)

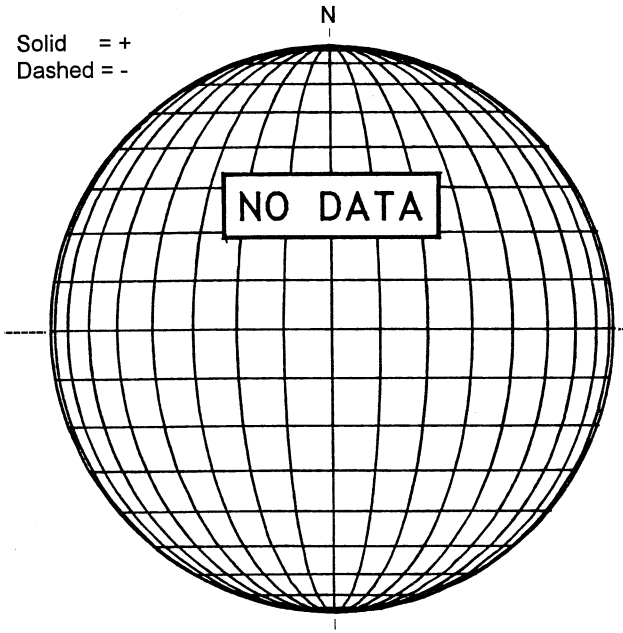
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



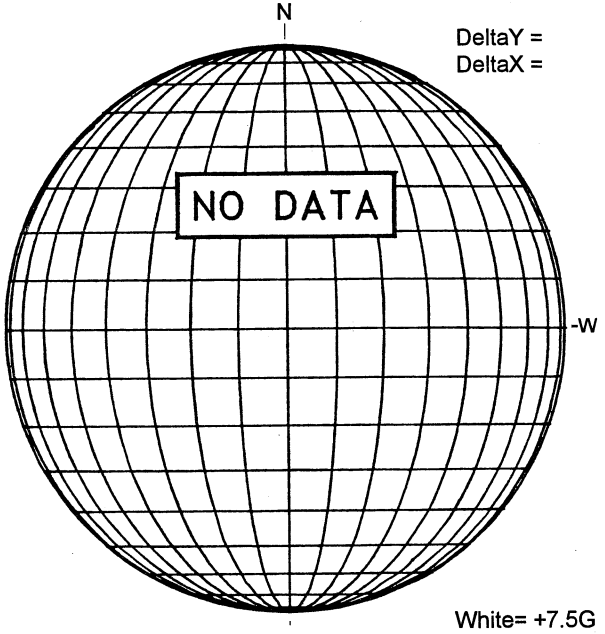
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



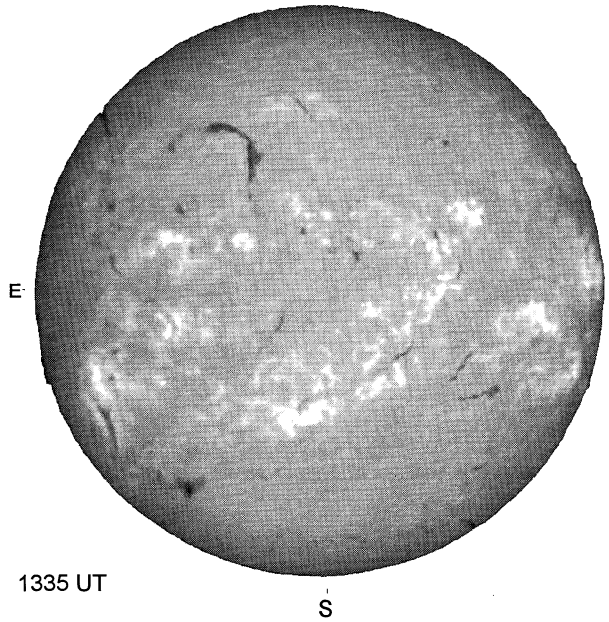
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

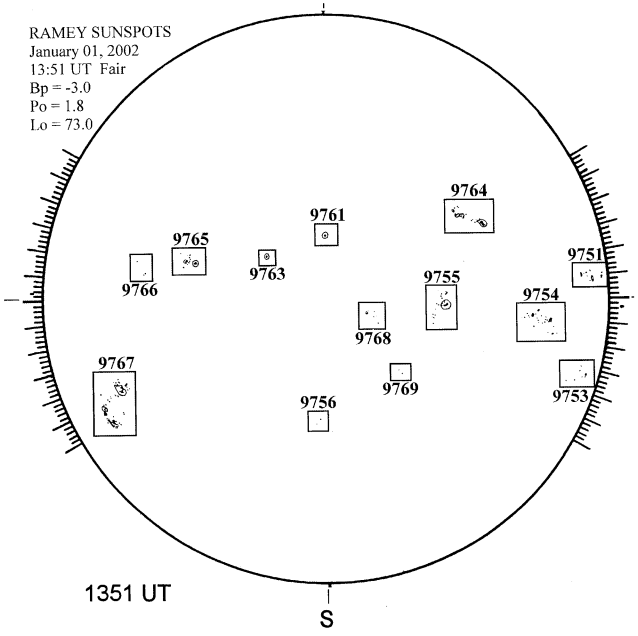


White= +7.5G
Black = -7.5G

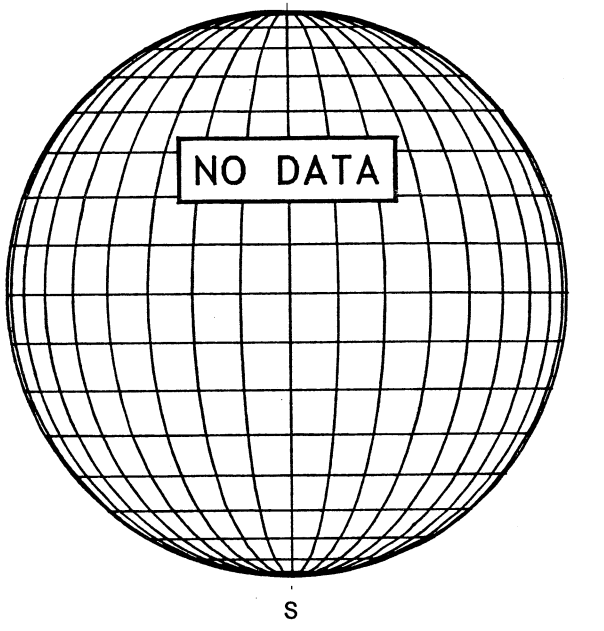
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



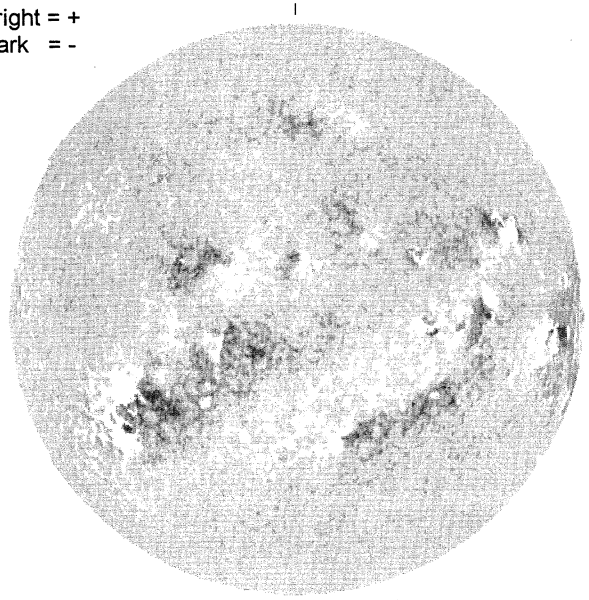
JANUARY 2, 2002 (P= 1.64, Bo = -3.13, Lo = 66.54)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E·

1812 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

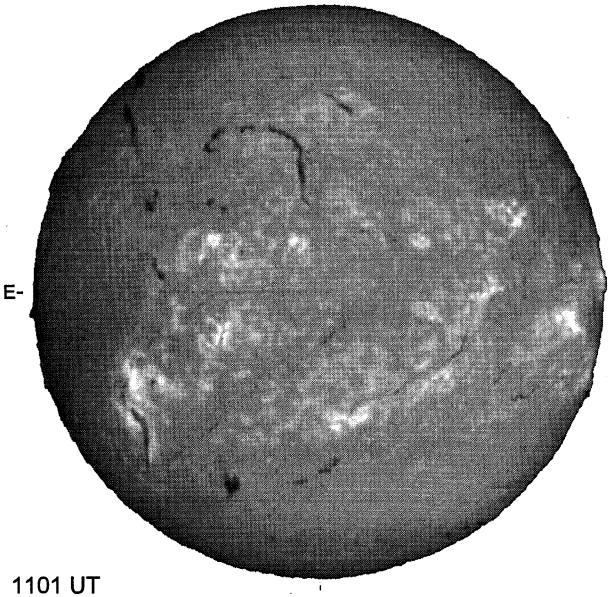
DeltaY =
DeltaX =

NO DATA

-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



E-

1101 UT

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
January 02, 2002
17:45 UT Fair
Bp = -3.2
Po = 1.2
Lo = 57.1

9766
9765
9763
9761
9770
9764
9755
9754
9768
Ramey
006
9771
9769
9767

1745 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----

NO DATA

S

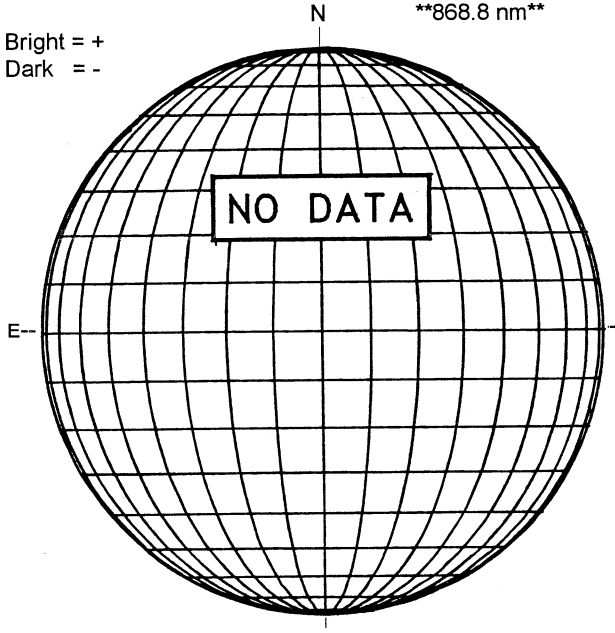
51
Jan 02

JANUARY 3, 2002 (P= 1.16, Bo = -3.24, Lo = 53.37)

KITT PEAK MAGNETOGRAM

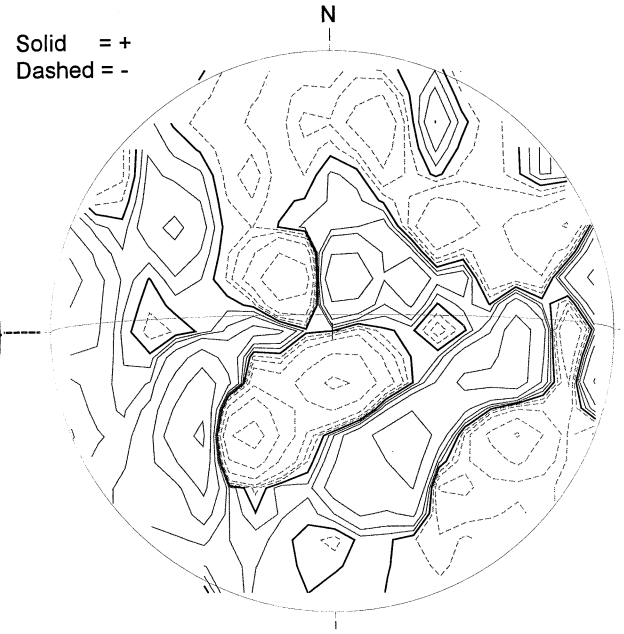
868.8 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

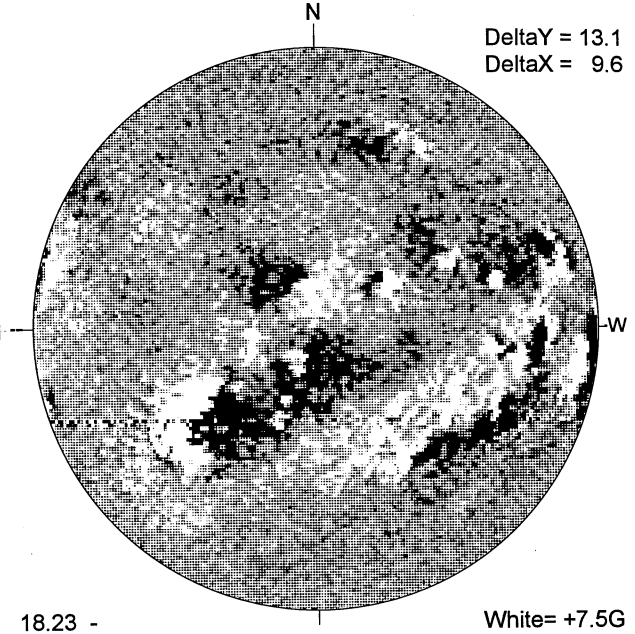
Solid = +
Dashed = -



1848 UT

MT. WILSON MAGNETOGRAM

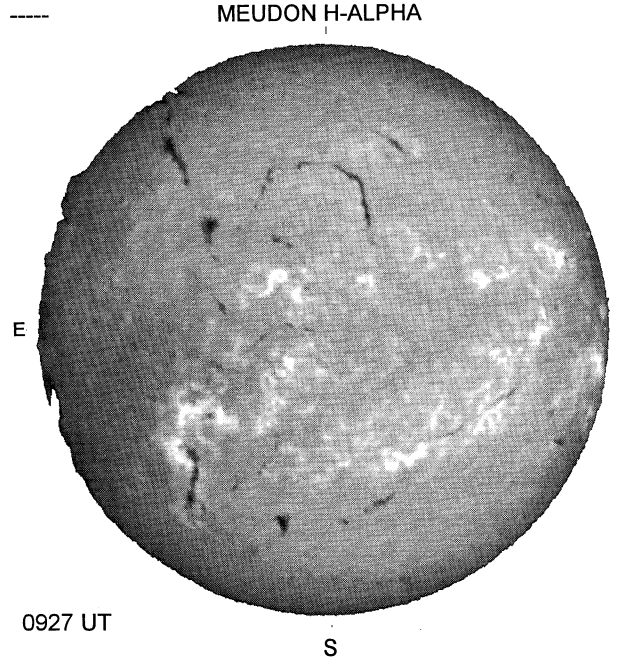
DeltaY = 13.1
DeltaX = 9.6



18.23 -
19.23 UT

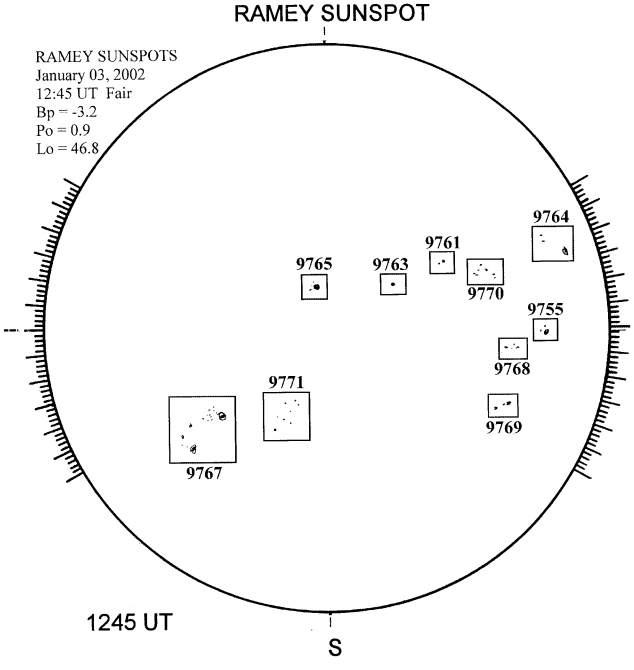
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



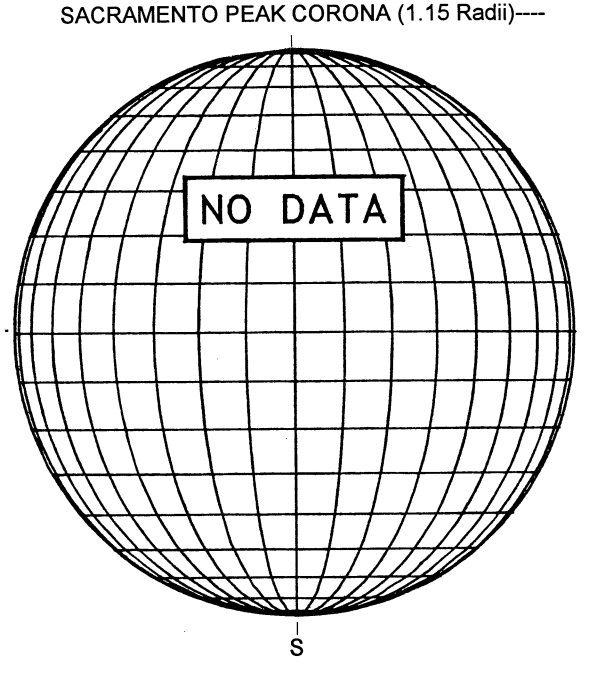
0927 UT

RAMEY SUNSPOT



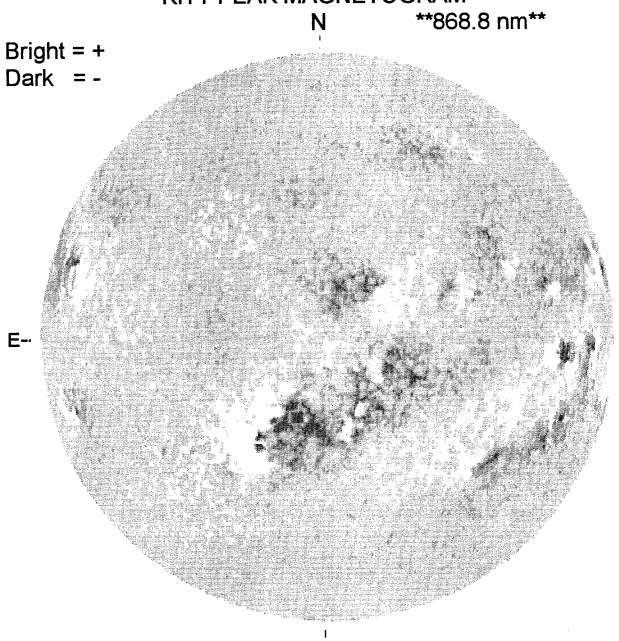
1245 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

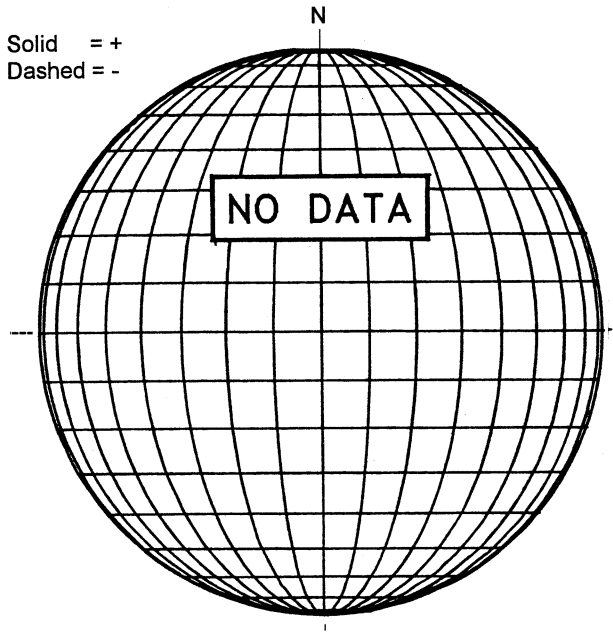


JANUARY 4, 2002 (P= 0.67, Bo = -3.36, Lo = 40.20)

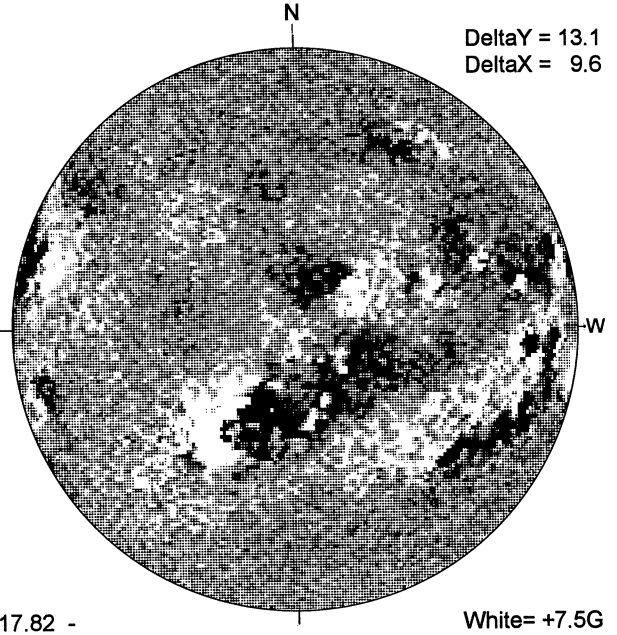
KITT PEAK MAGNETOGRAM



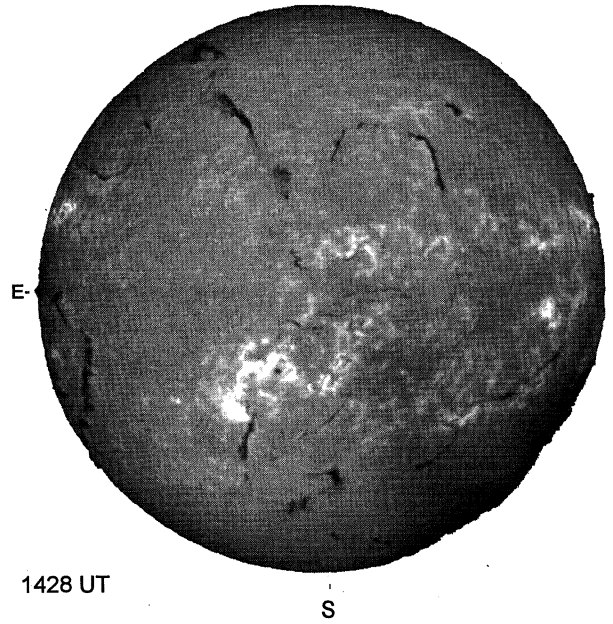
STANFORD MAGNETOGRAM



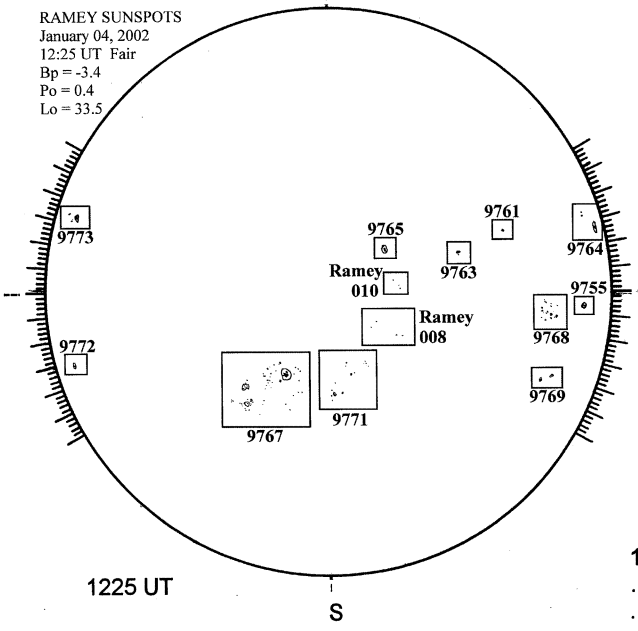
MT. WILSON MAGNETOGRAM



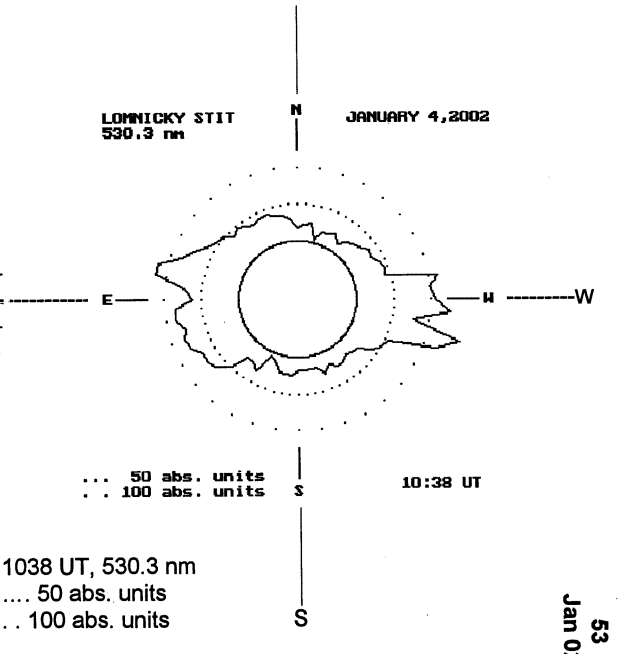
MEUDON H-ALPHA



RAMEY SUNSPOT

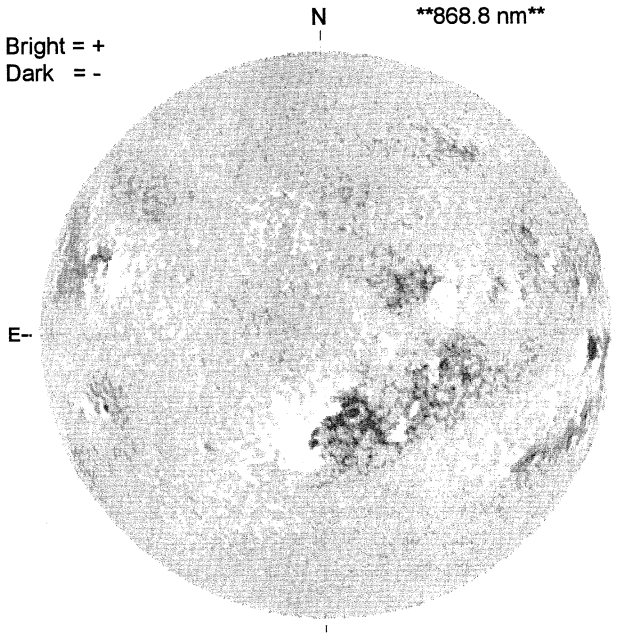


LOMNICKY PEAK CORONA (1.04 Radii)----



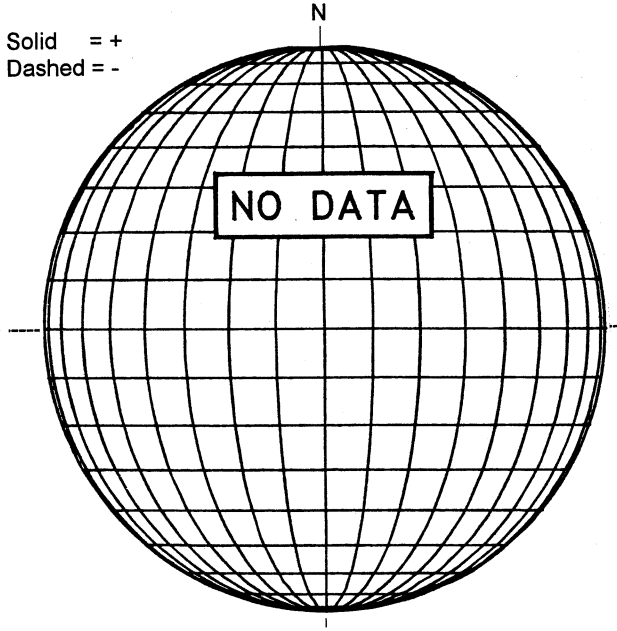
JANUARY 5, 2002 (P= 0.19, Bo = -3.47, Lo = 27.03)

KITT PEAK MAGNETOGRAM

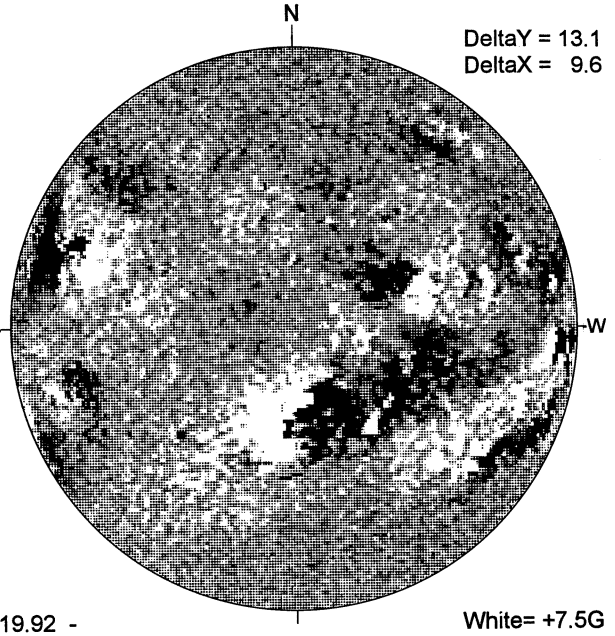


1603 UT

STANFORD MAGNETOGRAM



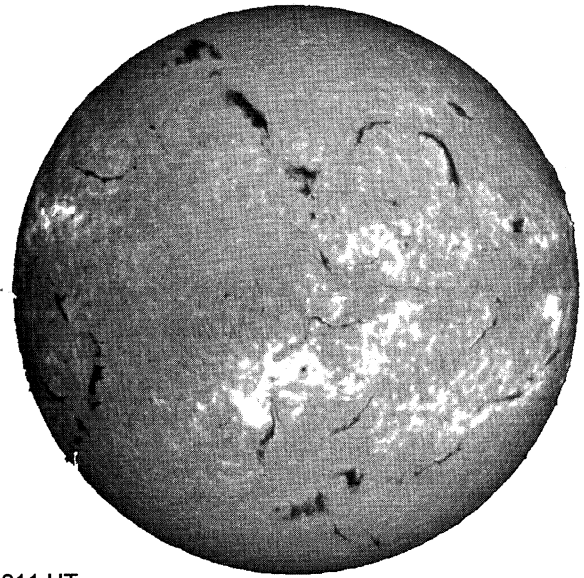
MT. WILSON MAGNETOGRAM



19.92 -
20.90 UT

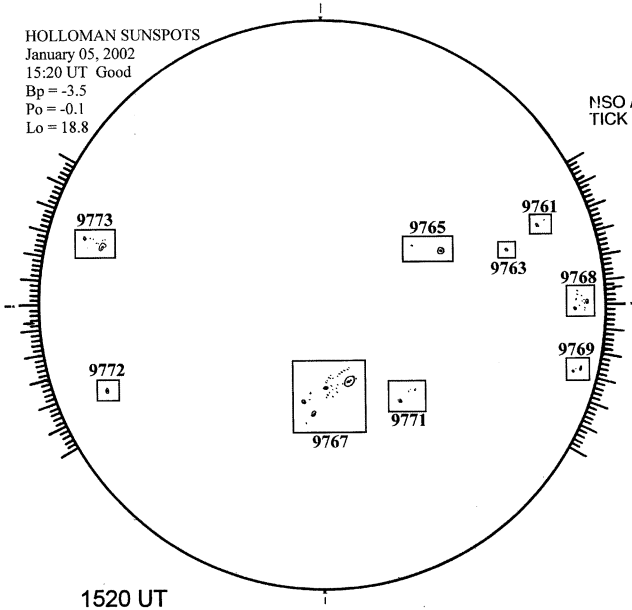
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



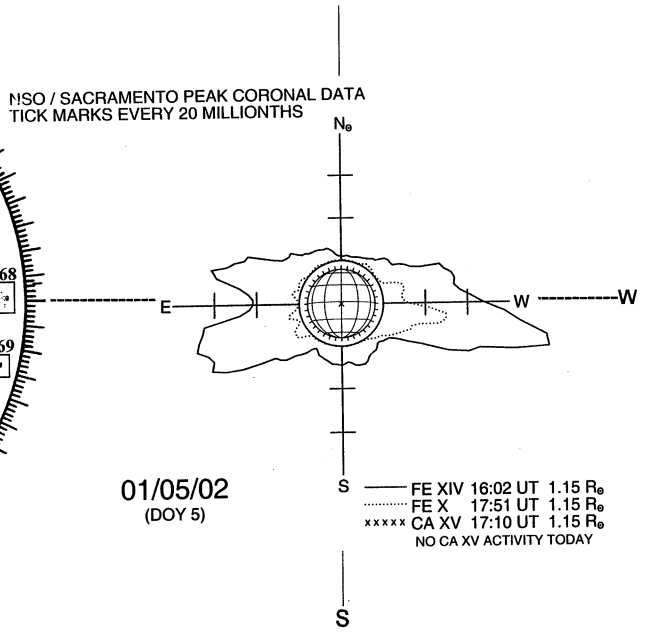
1011 UT

HOLLOMAN SUNSPOT



1520 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



01/05/02
(DOY 5)

FE XIV 16:02 UT 1.15 R_e
FE X 17:51 UT 1.15 R_e
xxxxx CA XV 17:10 UT 1.15 R_e
NO CA XV ACTIVITY TODAY

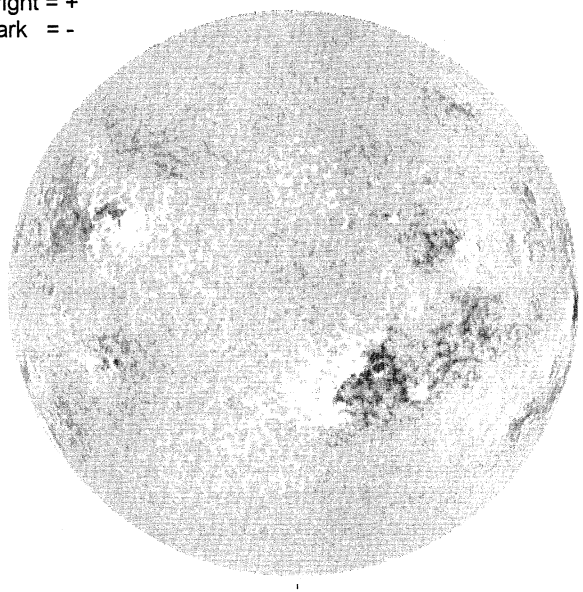
JANUARY 6, 2002 (P= -0.29, Bo = -3.59, Lo = 13.86)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E

1526 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

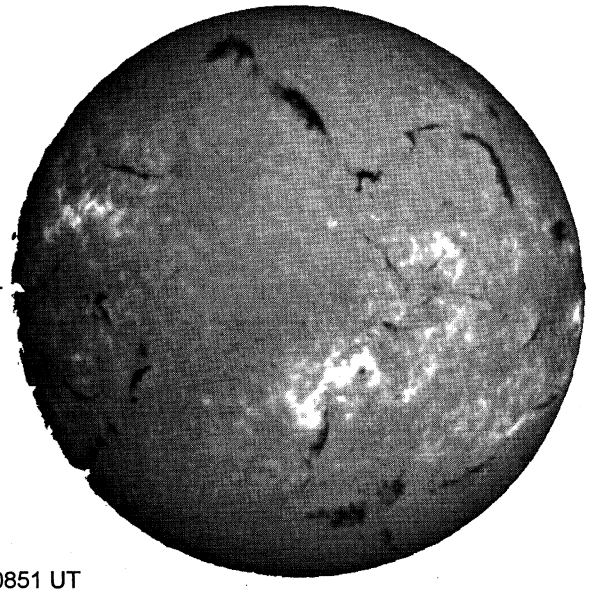
DeltaY =
DeltaX =

NO DATA

W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



E

0851 UT

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
January 06, 2002
13:15 UT Poor
Bp = -3.6
Po = -0.5
Lo = 6.8

9773
9765
9761
9763
9768
9772
9767

1315 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS

N_e

E

W

W

S

01/06/02
(DOY 6)

FE XIV 16:17 UT 1.15 R_e
FE X 18:12 UT 1.15 R_e
xxxxx CA XV 17:47 UT 1.15 R_e

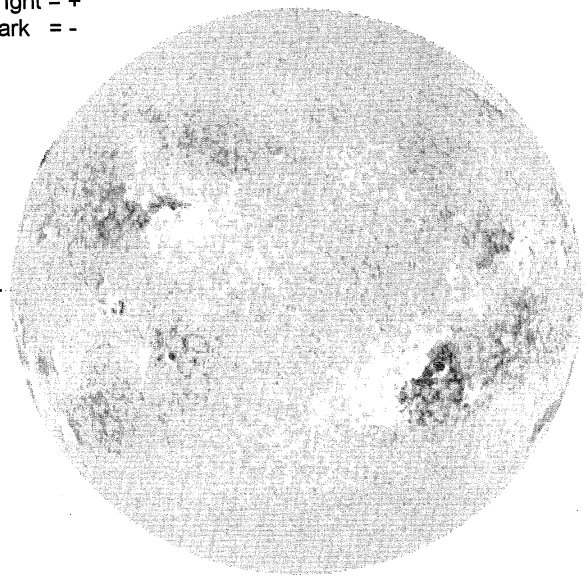
S

JANUARY 7, 2002 (P= -0.78, Bo = -3.70, Lo = 0.69)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



E-

1641 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY =
DeltaX =

NO DATA

-W

White= +7.5G
Black = -7.5G

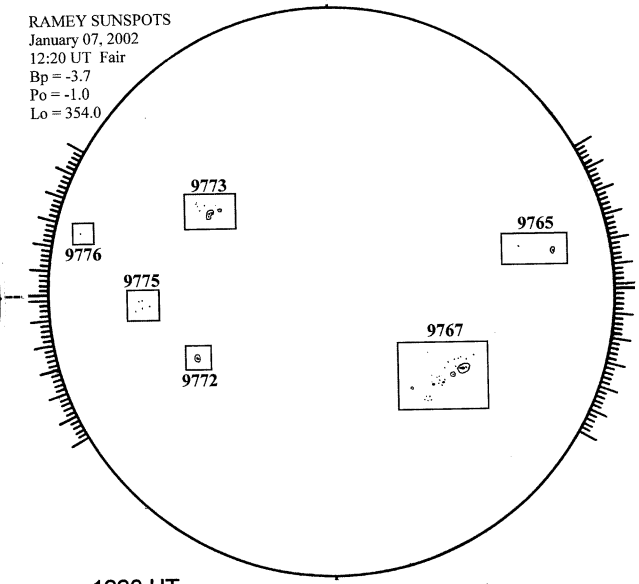
MEUDON H-ALPHA

NO DATA

E

S

RAMEY SUNSPOTS



1220 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NO DATA

S

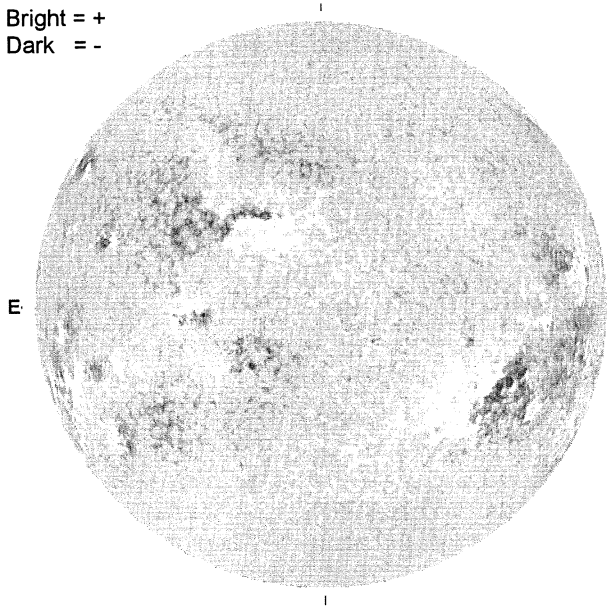
JANUARY 8, 2002 (P= -1.26, Bo = -3.81, Lo = 347.52)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E

1612 UT

STANFORD MAGNETOGRAM

N

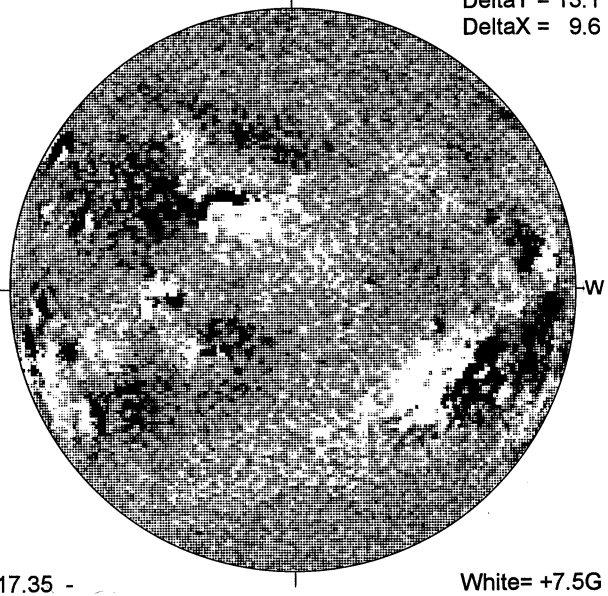
Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

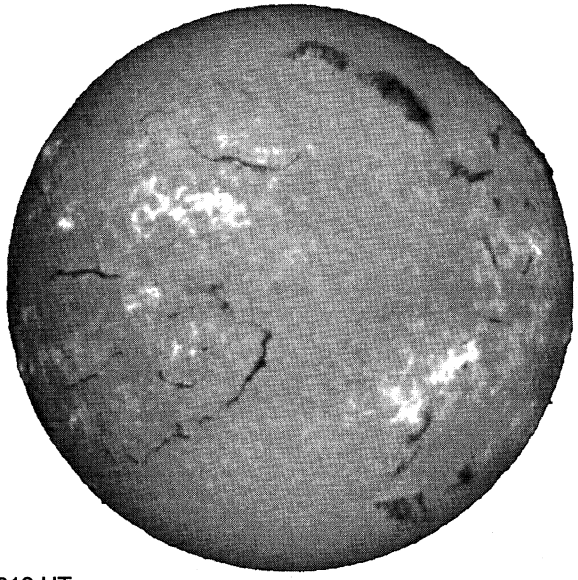


W

17.35 -
18.32 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



E

1013 UT

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
January 08, 2002
12:48 UT Fair
Bp = -3.8
Po = -1.5
Lo = 340.9

9779
9773
9776
9775
Ramey
013
9765
9772
9767
9778

1248 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS

N

E

W

W

S

01/08/02
(DOY 8)

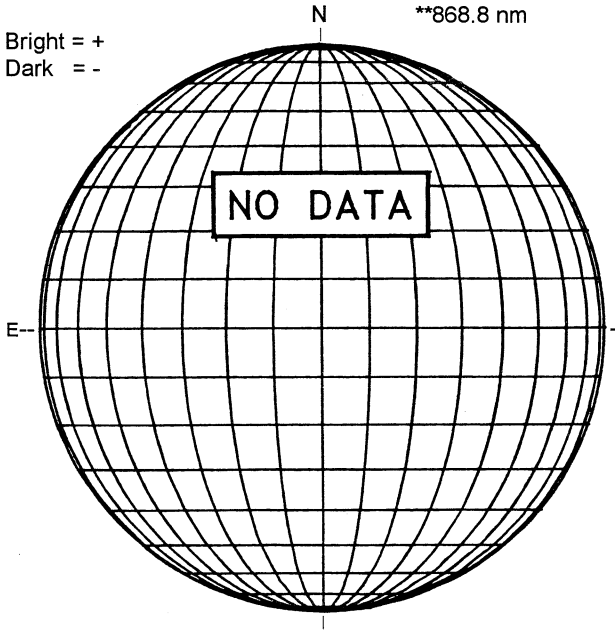
FE XIV 20:15 UT 1.15 R
FE X 21:37 UT 1.15 R
CA XV 21:12 UT 1.15 R

S

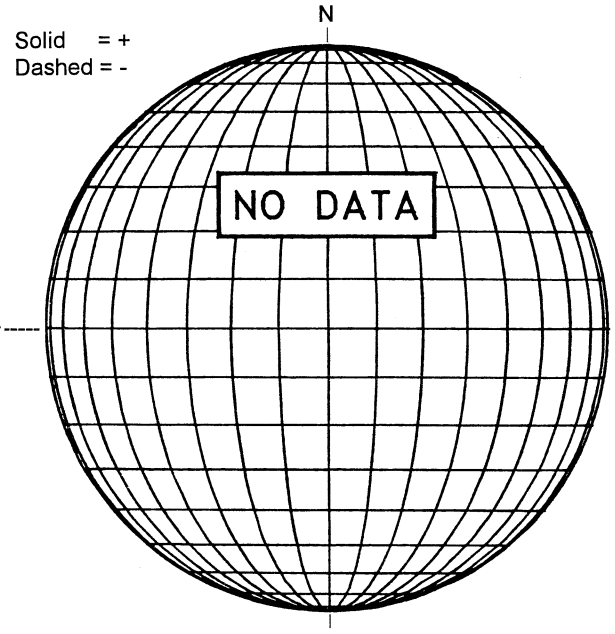
57
Jan 02

JANUARY 9, 2002 (P= -1.74, Bo = -3.92, Lo = 334.35)

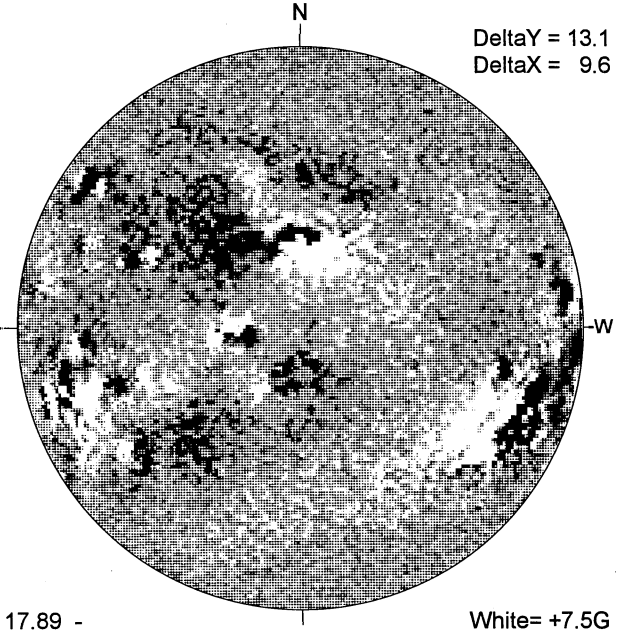
KITT PEAK MAGNETOGRAM



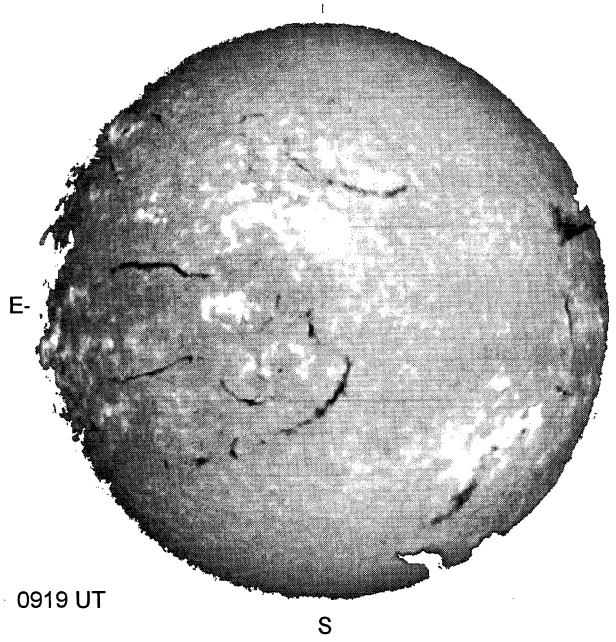
STANFORD MAGNETOGRAM



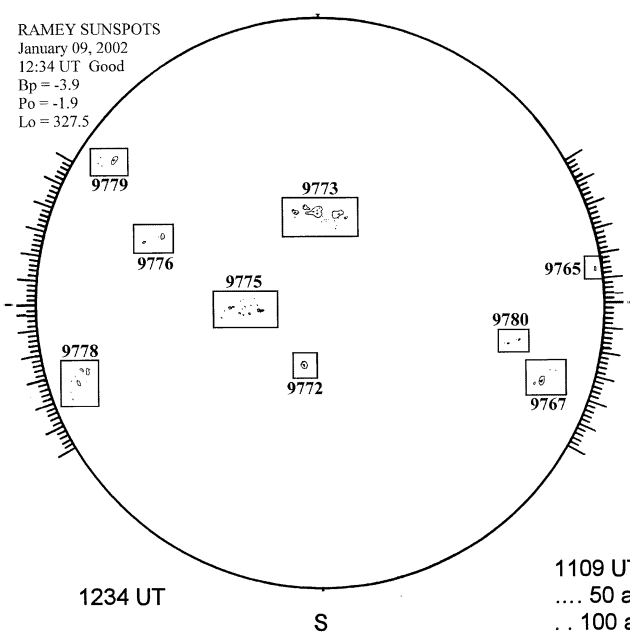
MT. WILSON MAGNETOGRAM



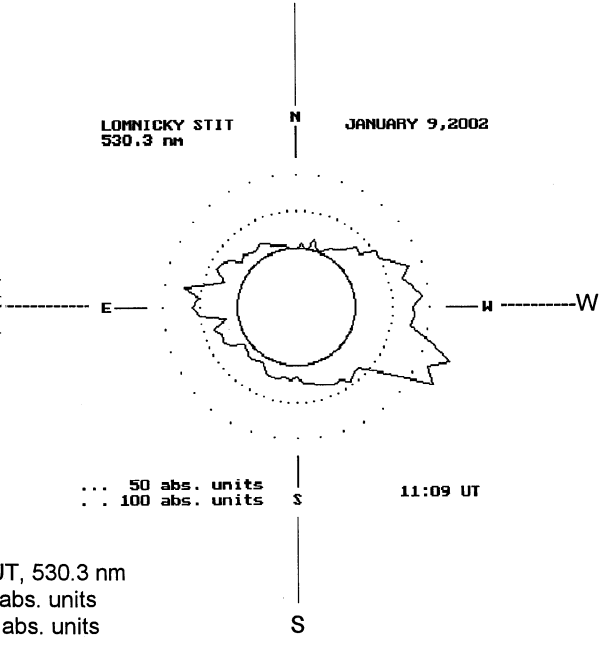
MEUDON H-ALPHA



RAMEY SUNSPOT

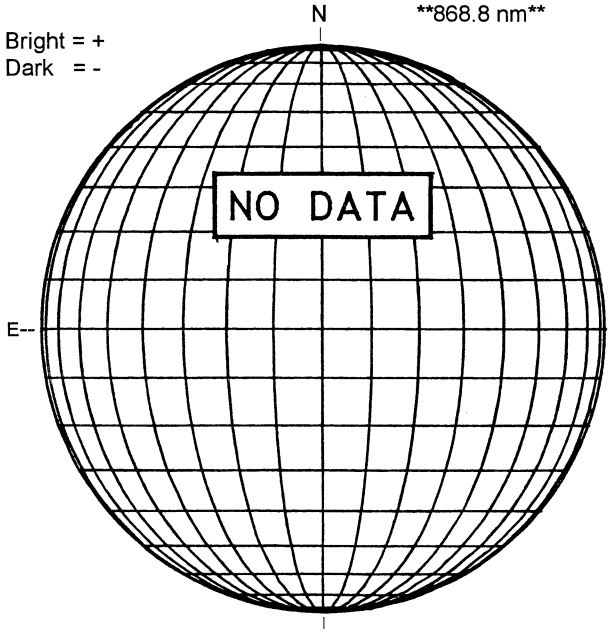


LOMNICKY PEAK CORONA (1.04 Radii)----

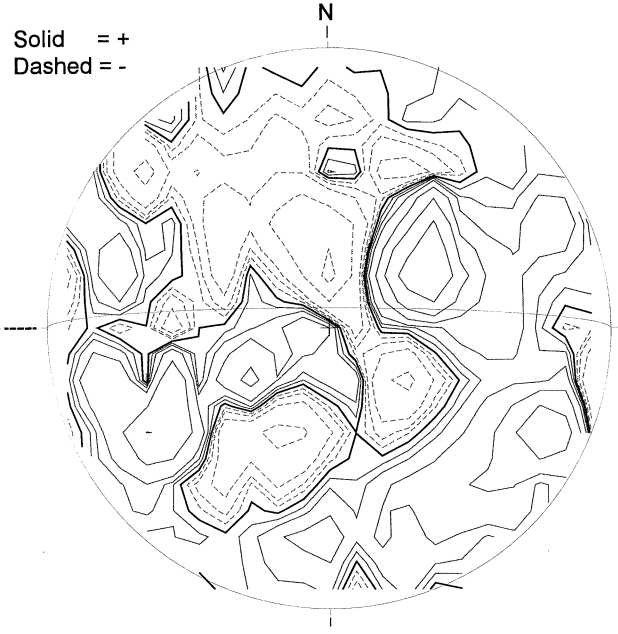


JANUARY 10, 2002 (P= -2.22, Bo = -4.02 Lo = 321.19)

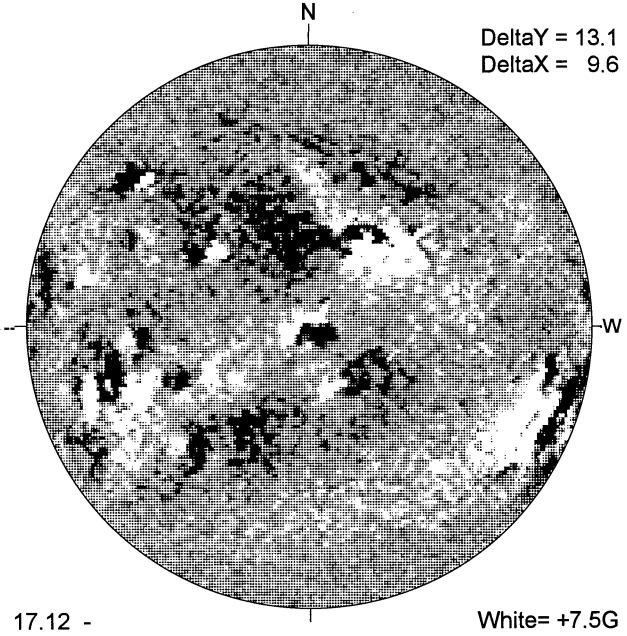
KITT PEAK MAGNETOGRAM



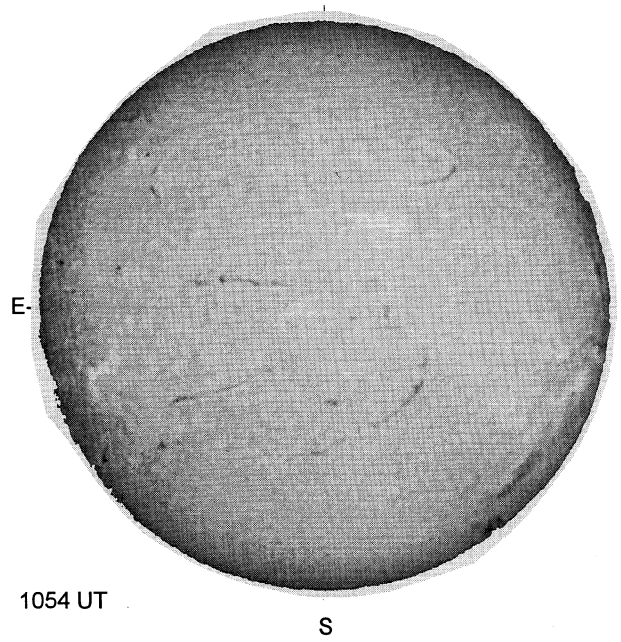
STANFORD MAGNETOGRAM



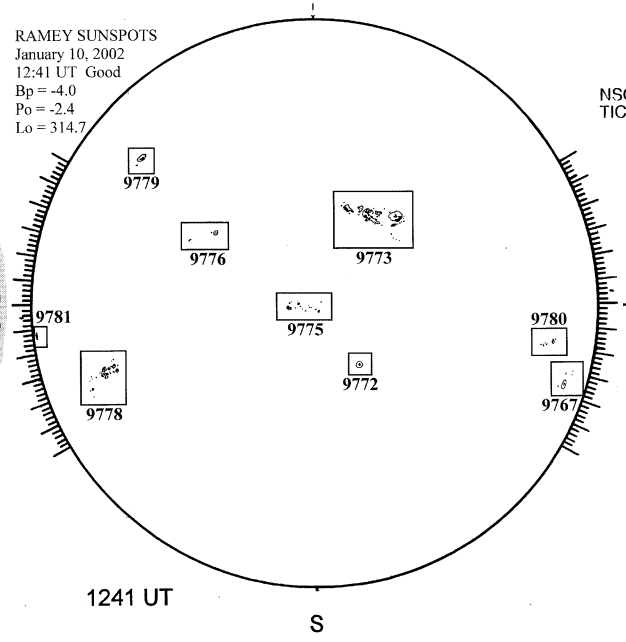
MT. WILSON MAGNETOGRAM



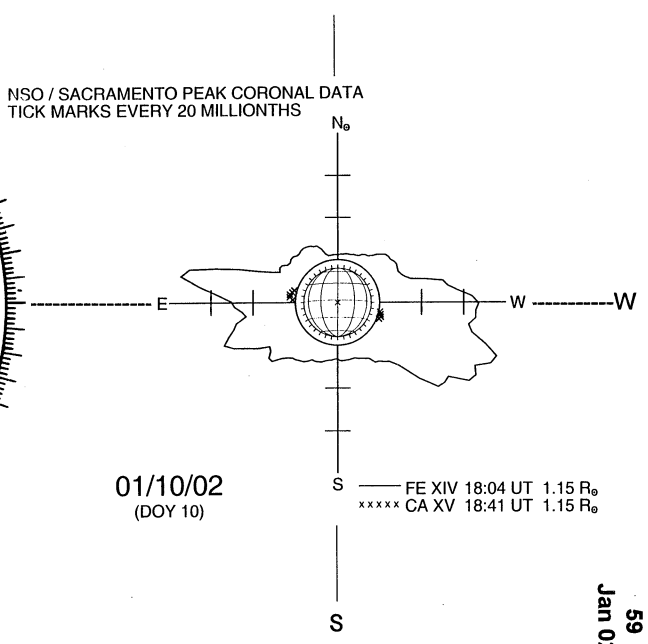
MEUDON H-ALPHA



RAMEY SUNSPOTS

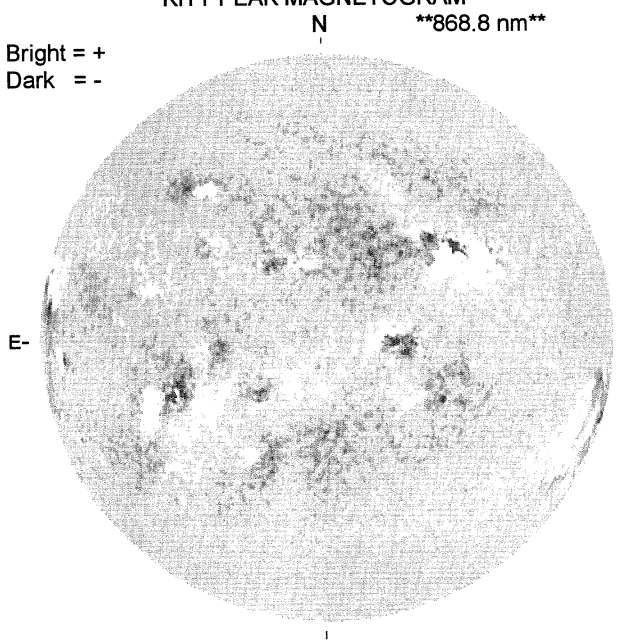


SACRAMENTO PEAK CORONA (1.15 Radii)----



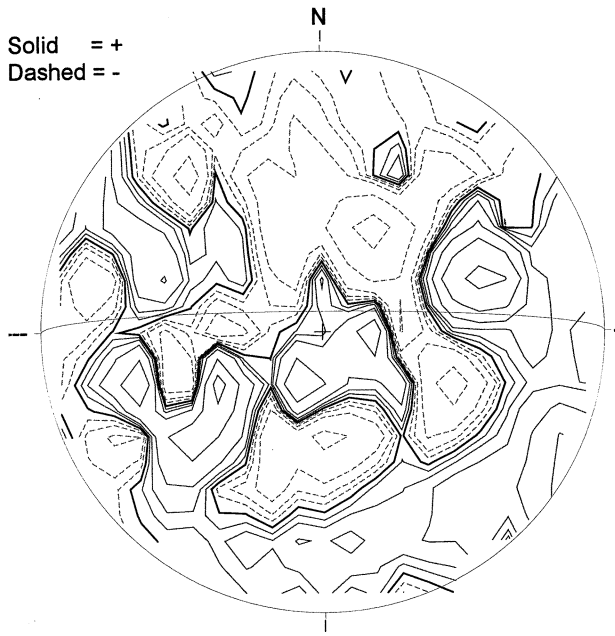
JANUARY 11, 2002 (P= -2.70, Bo = -4.13, Lo = 308.02)

KITT PEAK MAGNETOGRAM



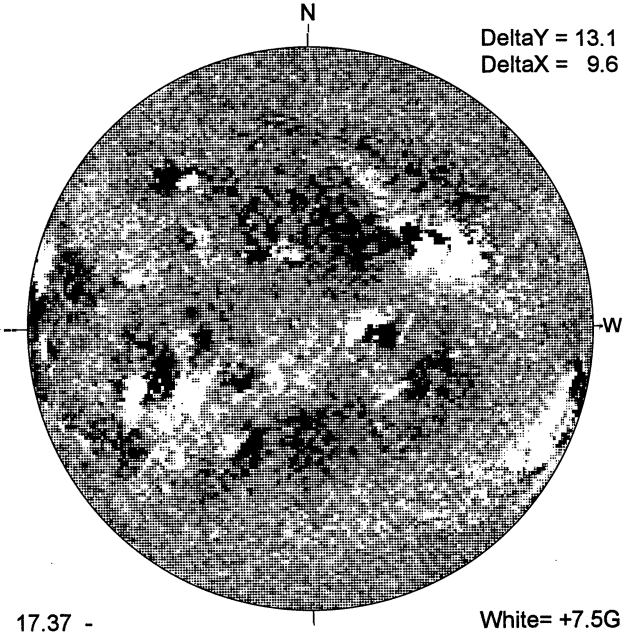
1709 UT

STANFORD MAGNETOGRAM



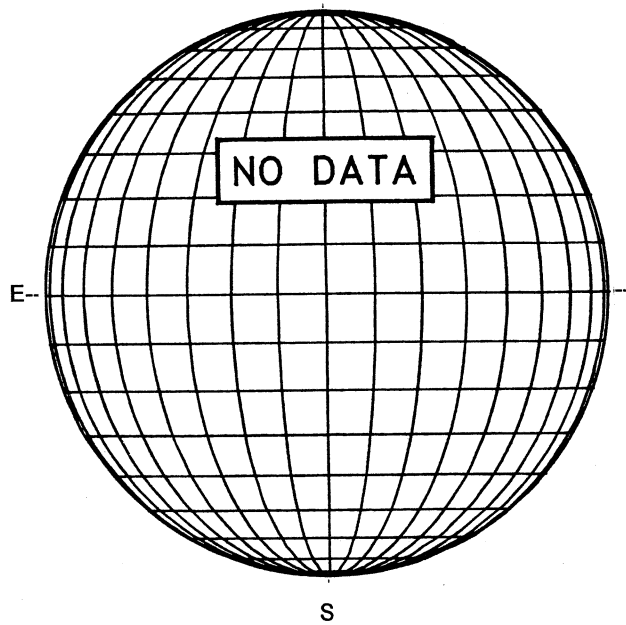
2112 UT

MT. WILSON MAGNETOGRAM

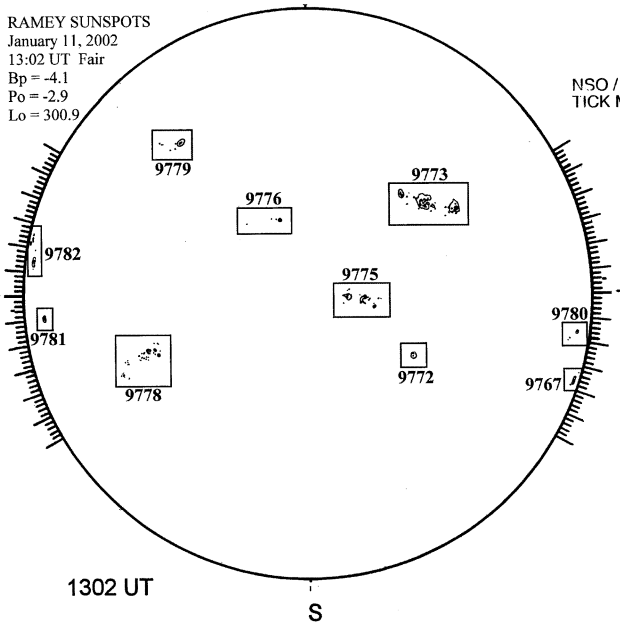


17.37 -
18.35 UT

MEUDON H-ALPHA

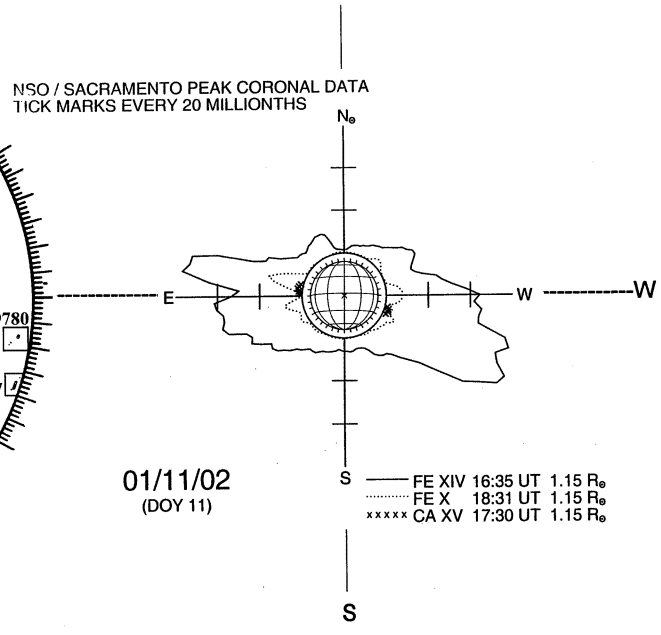


RAMEY SUNSPOTS



1302 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



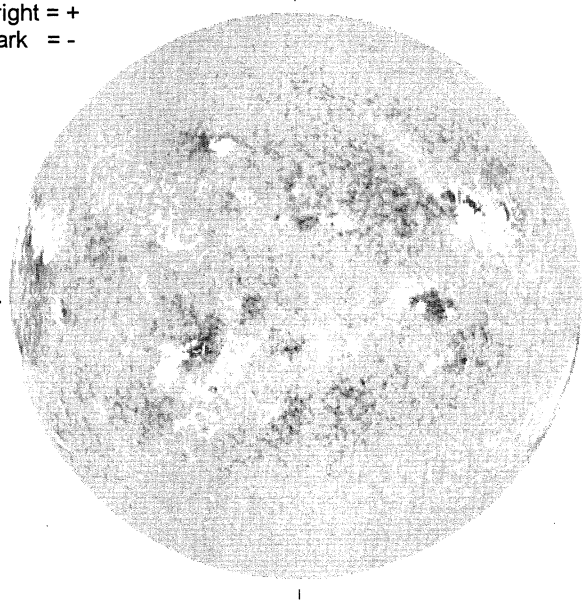
01/11/02
(DOY 11)

JANUARY 12, 2002 (P= -3.18, Bo = -4.24 Lo = 294.85)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



E-

1631 UT

STANFORD MAGNETOGRAM

N

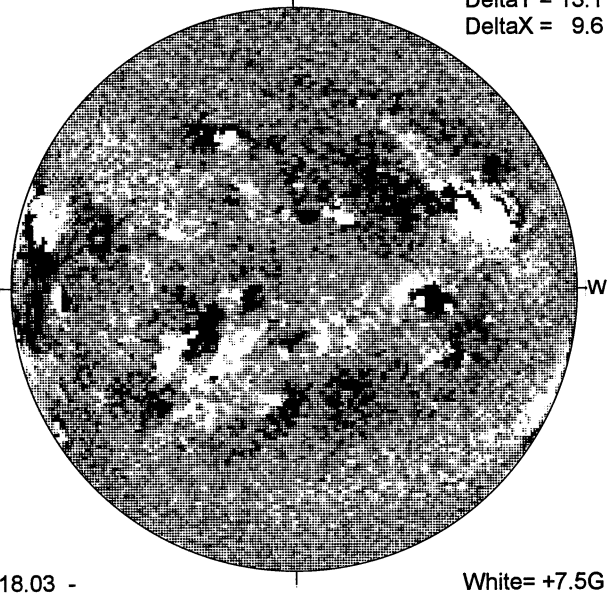
Solid = +
Dashed = -

2219 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

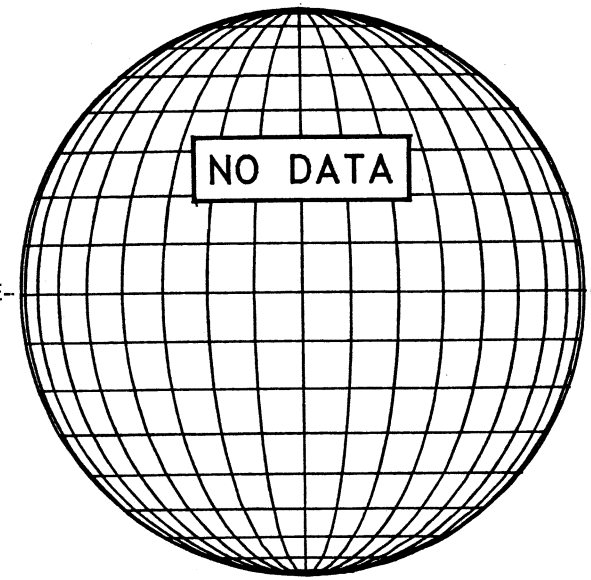


-W

18.03 -
19.01 UT

White= +7.5G
Black = -7.5G

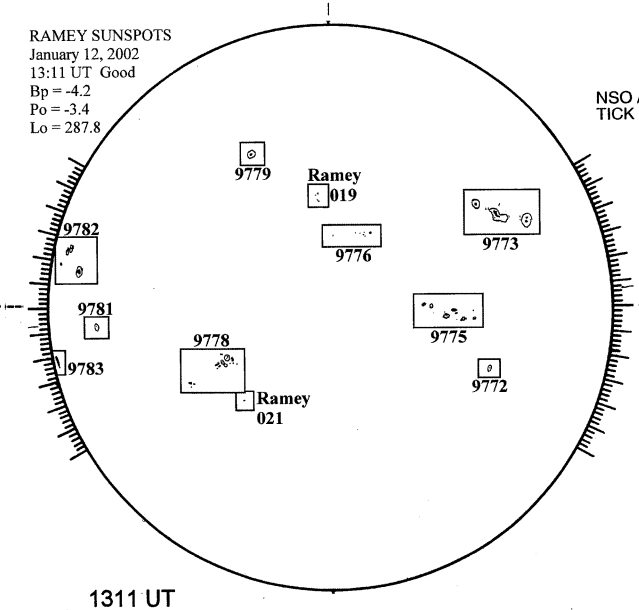
---- MEUDON H-ALPHA



E--

S

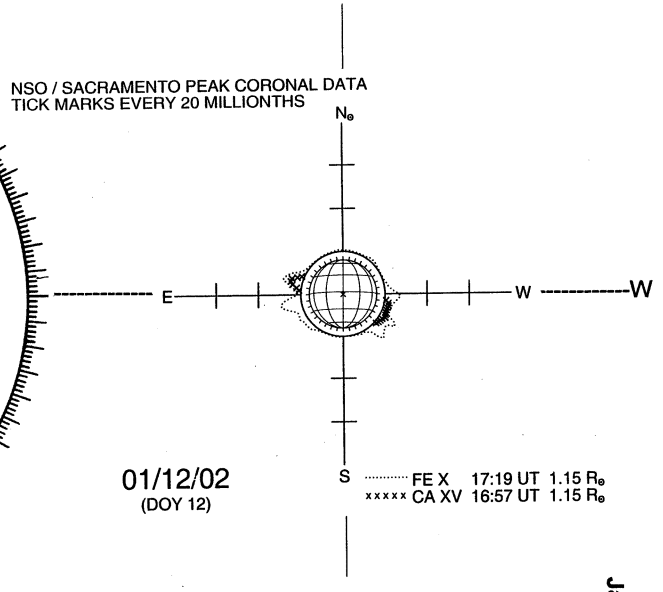
RAMEY SUNSPOTS



1311 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



01/12/02
(DOY 12)

S

61
Jan 02

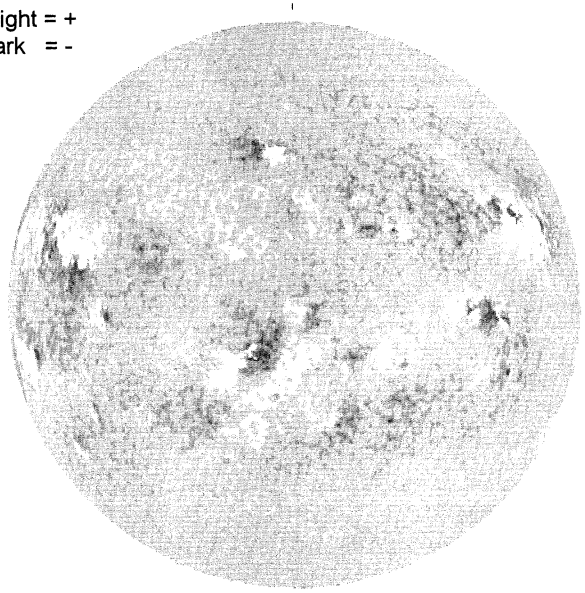
JANUARY 13, 2002 (P= -3.65, Bo = -4.34, Lo = 281.68)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E-

1622 UT

STANFORD MAGNETOGRAM

N

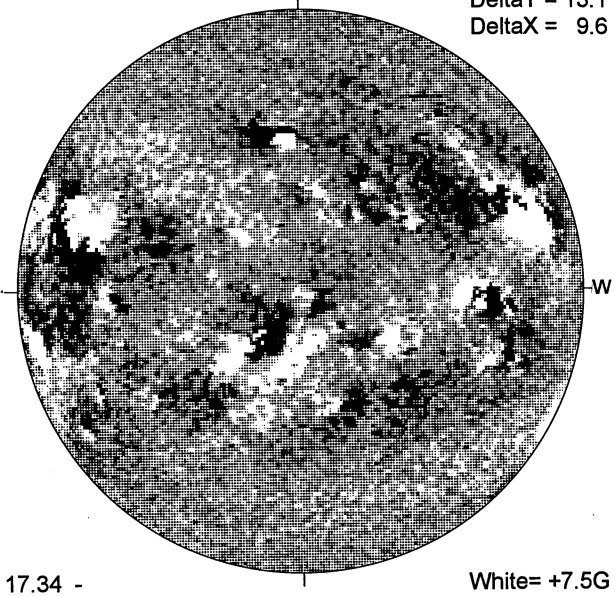
Solid = +
Dashed = -

1845 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

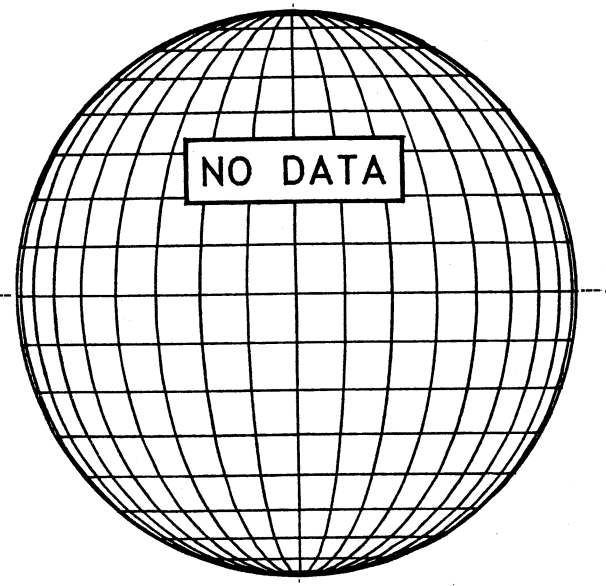


-W

17.34 -
18.32 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

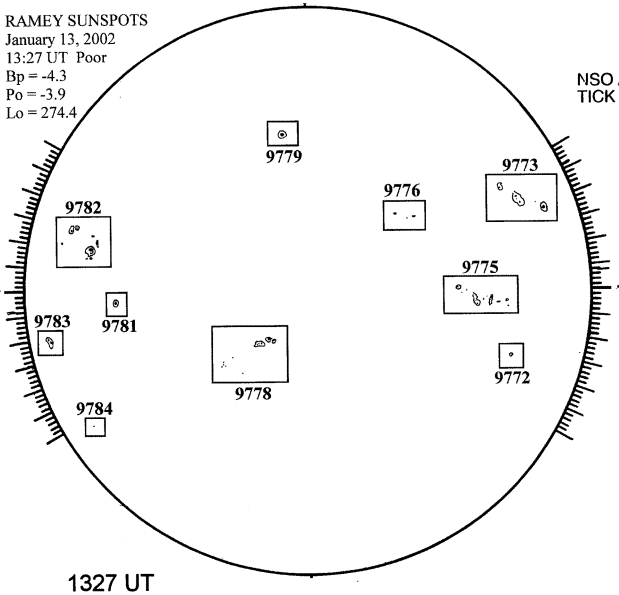


E--

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
January 13, 2002
13:27 UT Poor
Bp = -4.3
Po = -3.9
Lo = 274.4

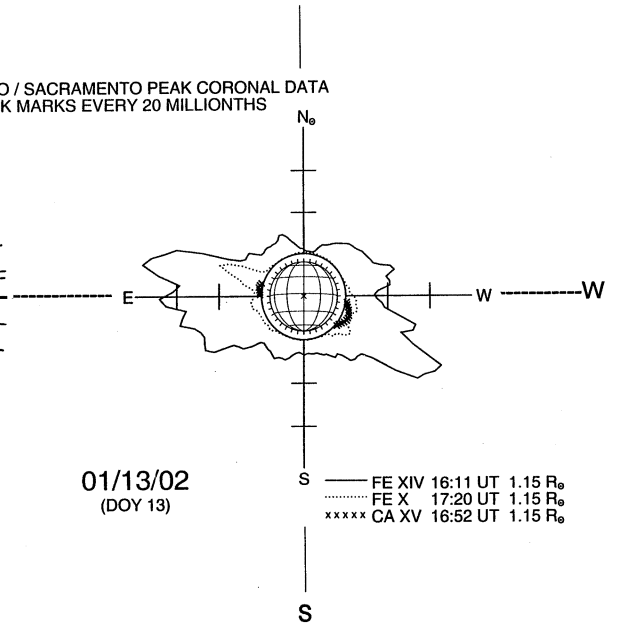


1327 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



01/13/02
(DOY 13)

S

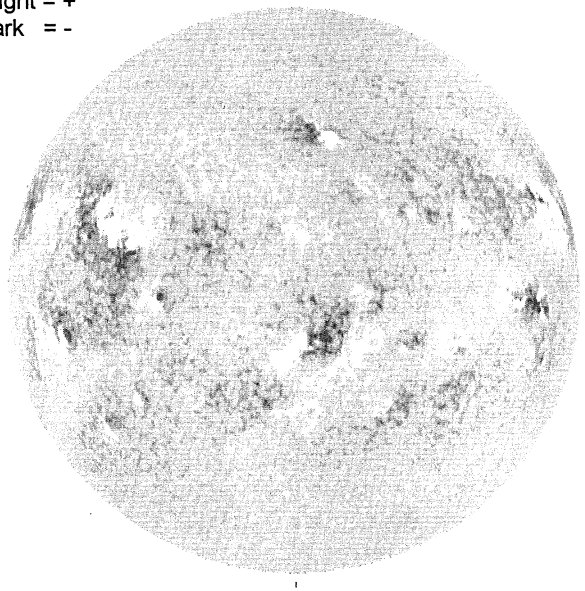
JANUARY 14, 2002 (P= -4.12, Bo = -4.44, Lo = 268.51)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



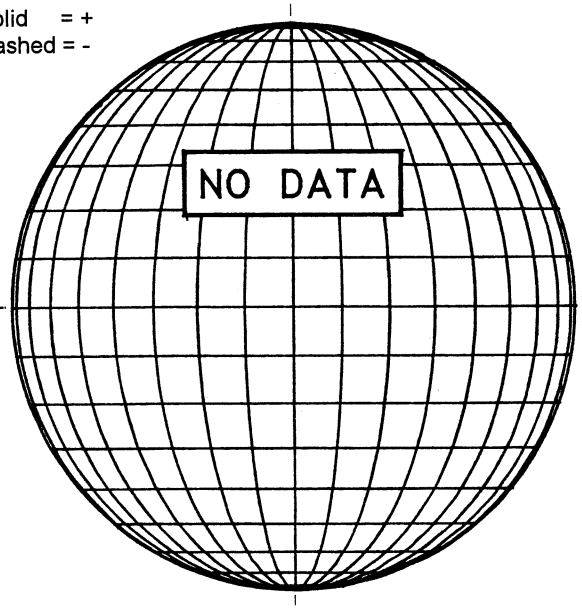
E-

1613 UT

STANFORD MAGNETOGRAM

N

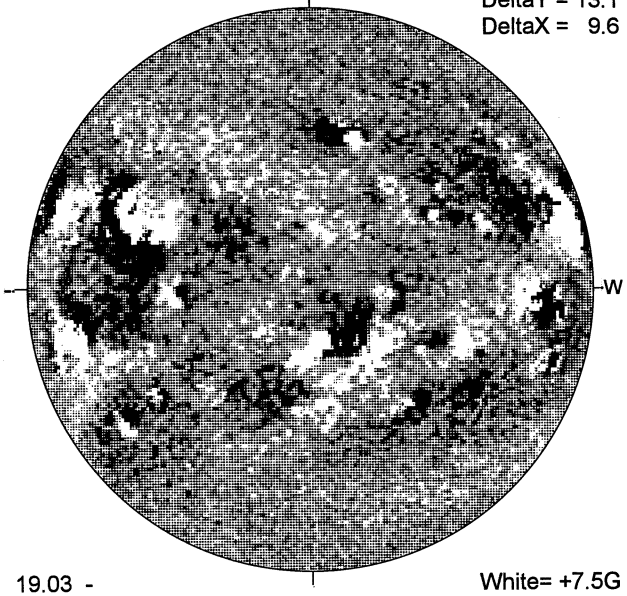
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

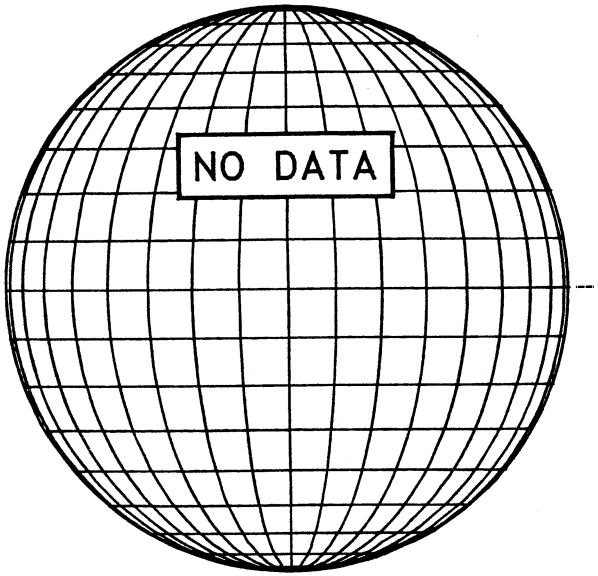


-W

19.03 -
20.01 UT

White= +7.5G
Black = -7.5G

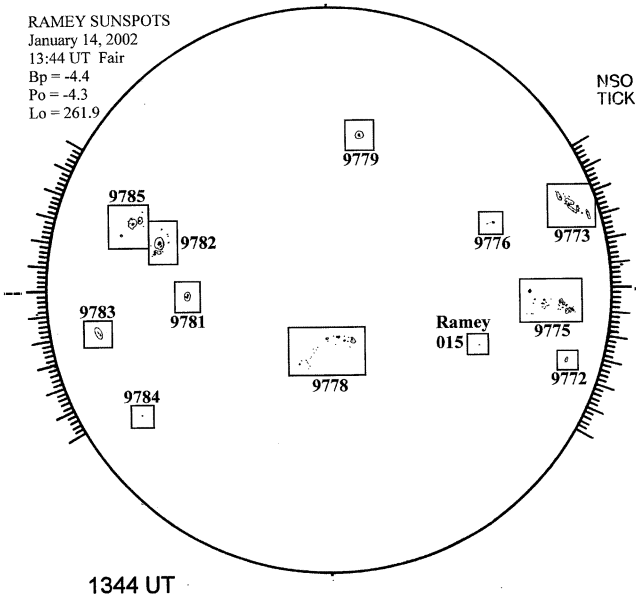
MEUDON H-ALPHA



E-

S

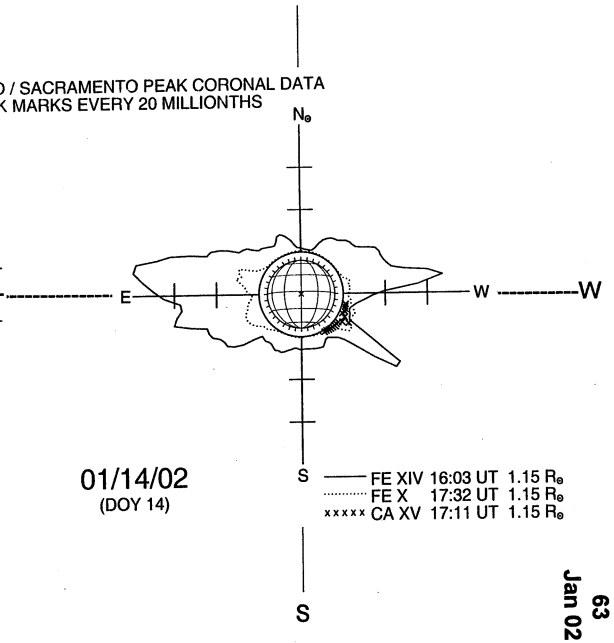
RAMEY SUNSPOT



1344 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



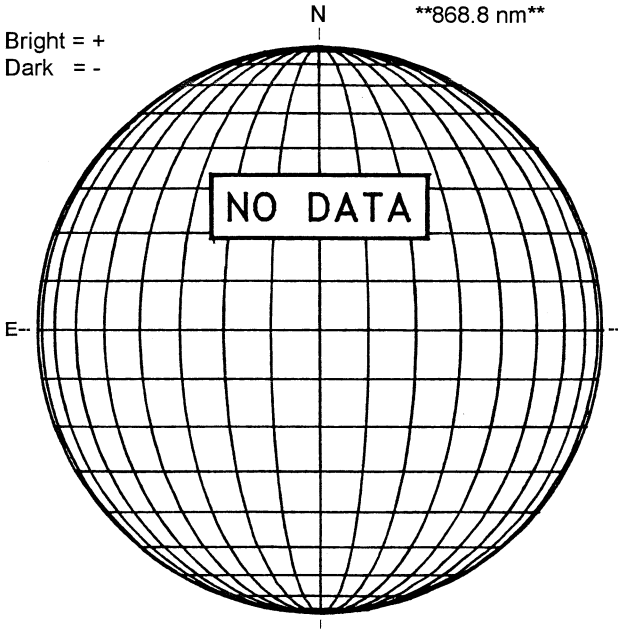
01/14/02
(DOY 14)

S

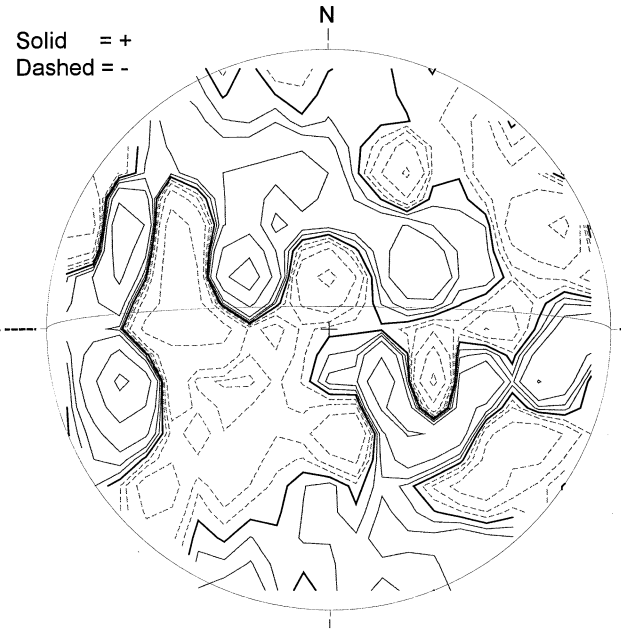
63
Jan 02

JANUARY 15, 2002 (P= -4.59, Bo = -4.54, Lo = 255.35)

KITT PEAK MAGNETOGRAM

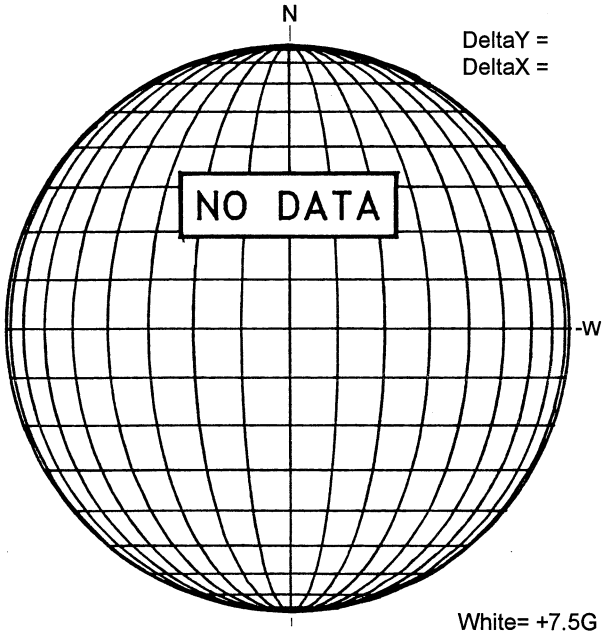


STANFORD MAGNETOGRAM



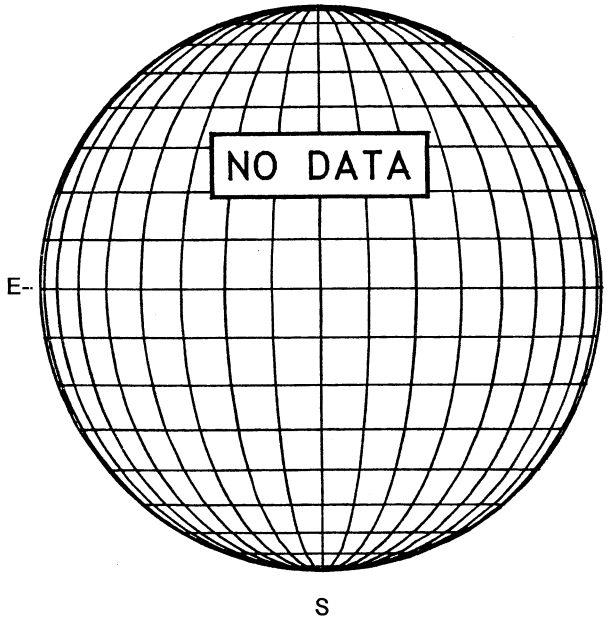
2212 UT

MT. WILSON MAGNETOGRAM

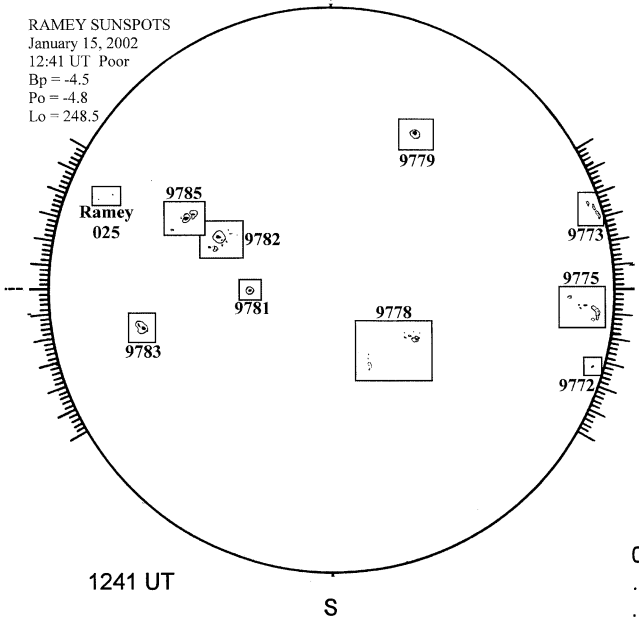


White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

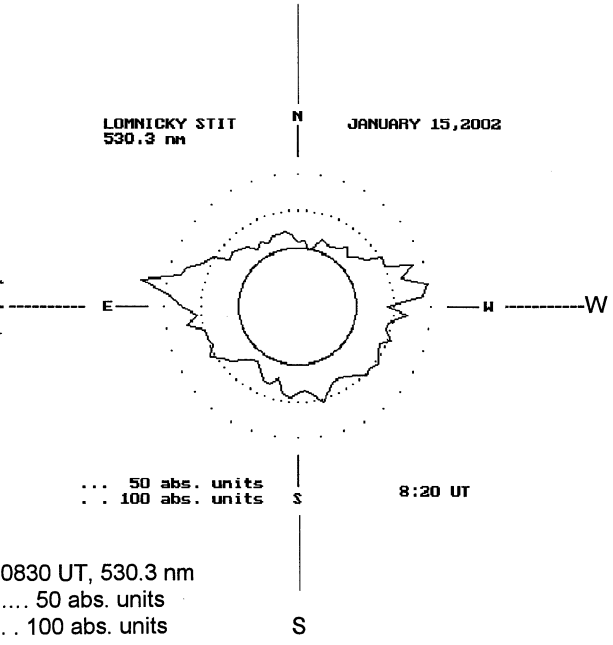


RAMEY SUNSPOT



1241 UT

LOMNICKY PEAK CORONA (1.04 Radii)

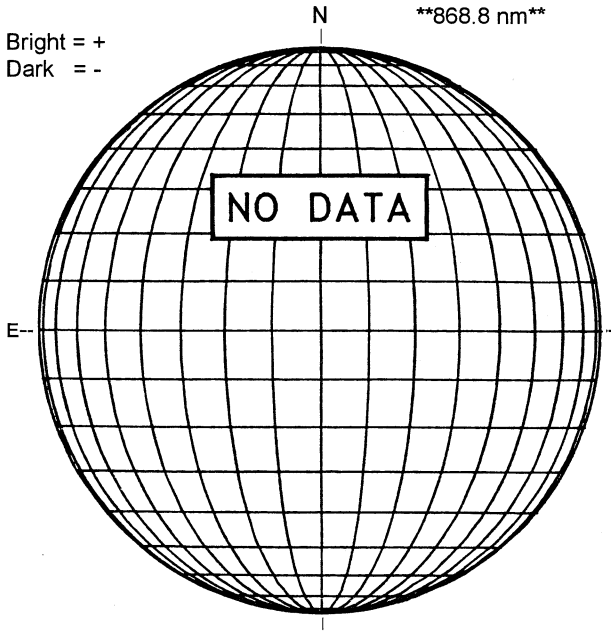


0830 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

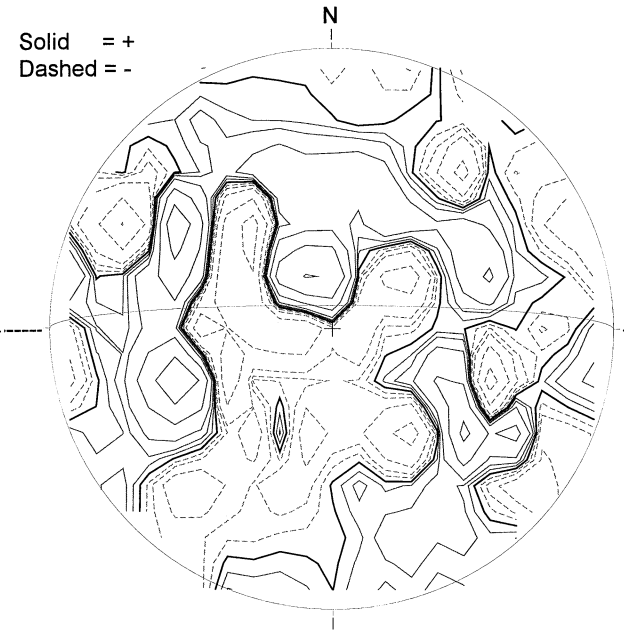
S

JANUARY 16, 2002 (P= -5.06, Bo = -4.64, Lo = 242.18)

KITT PEAK MAGNETOGRAM

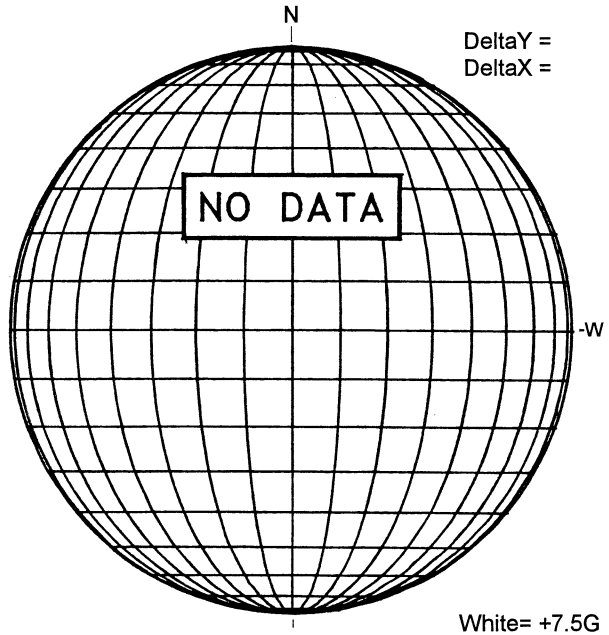


STANFORD MAGNETOGRAM



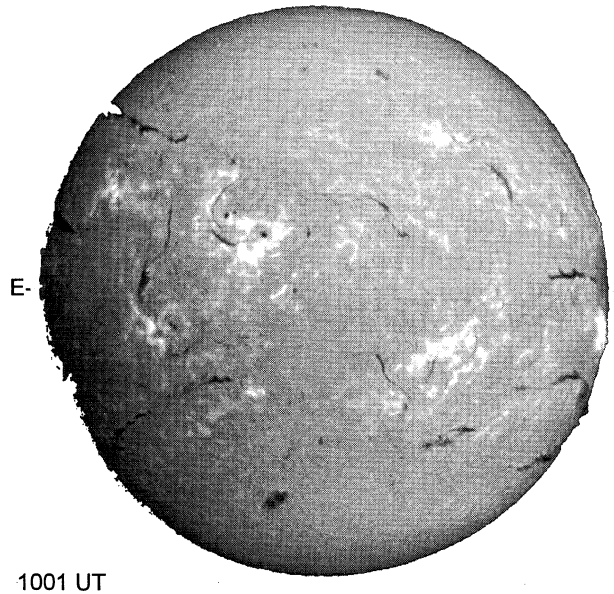
2327 UT

MT. WILSON MAGNETOGRAM



White= +7.5G
Black = -7.5G

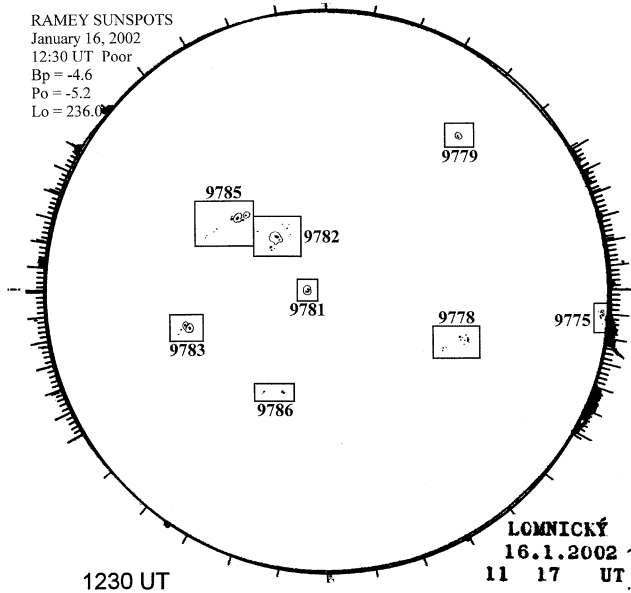
----- MEUDON H-ALPHA



1001 UT

S

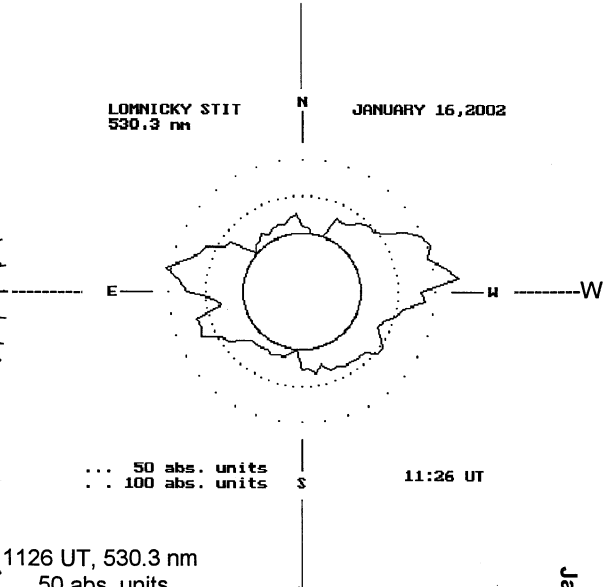
RAMEY SUNSPOT



1230 UT

1117 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



LOMNICKÝ
16.1.2002 1126 UT, 530.3 nm
11 17 UT.... 50 abs. units
. . 100 abs. units

S

65
Jan 02

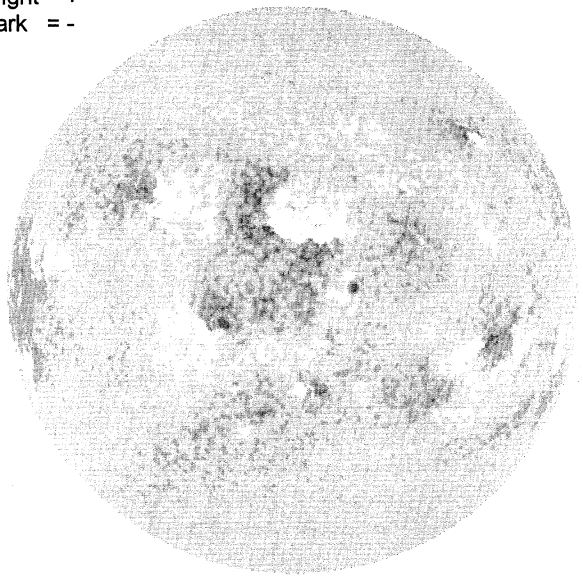
JANUARY 17, 2002 (P= -5.53, Bo = -4.74, Lo = 229.01)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



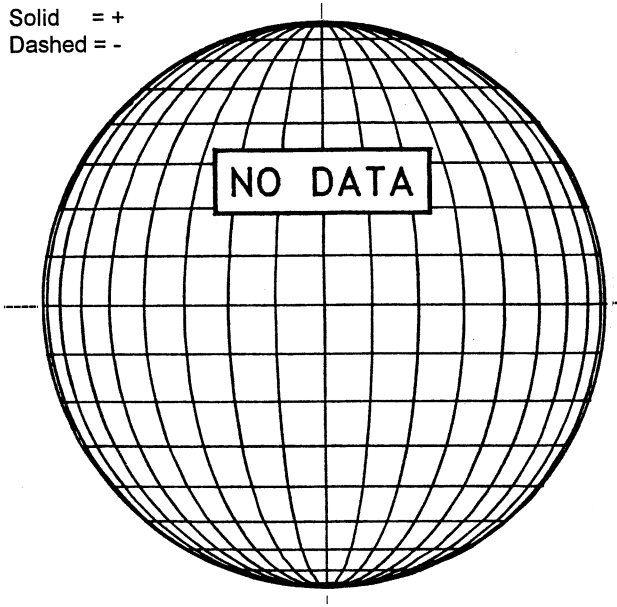
E

1816 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

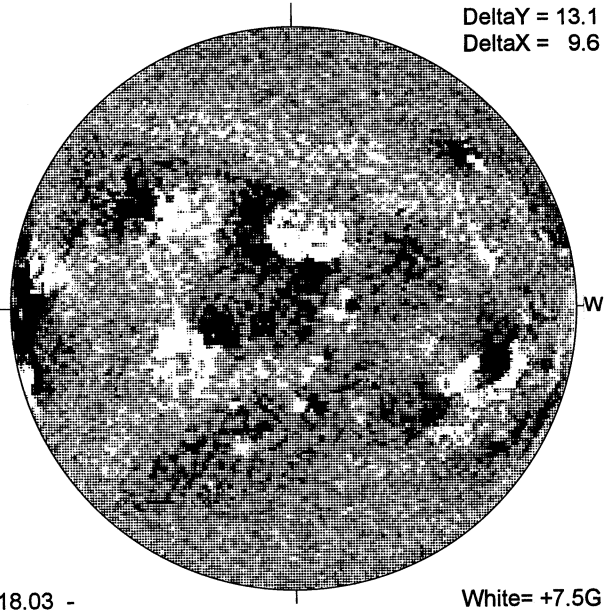


18.03 -
19.01 UT

MT. WILSON MAGNETOGRAM

N

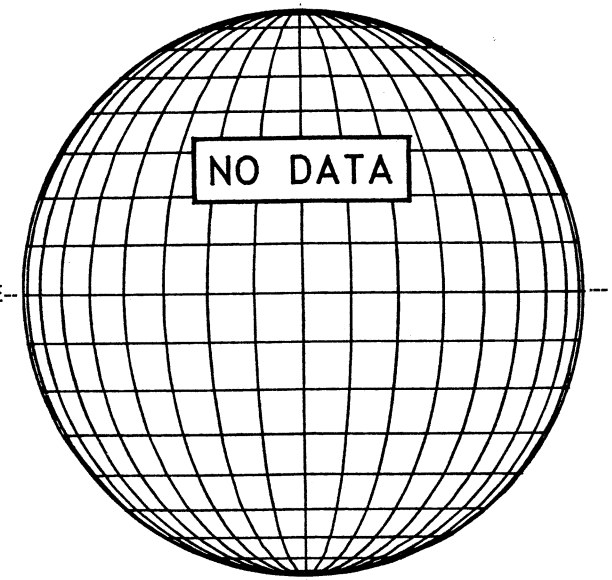
DeltaY = 13.1
DeltaX = 9.6



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

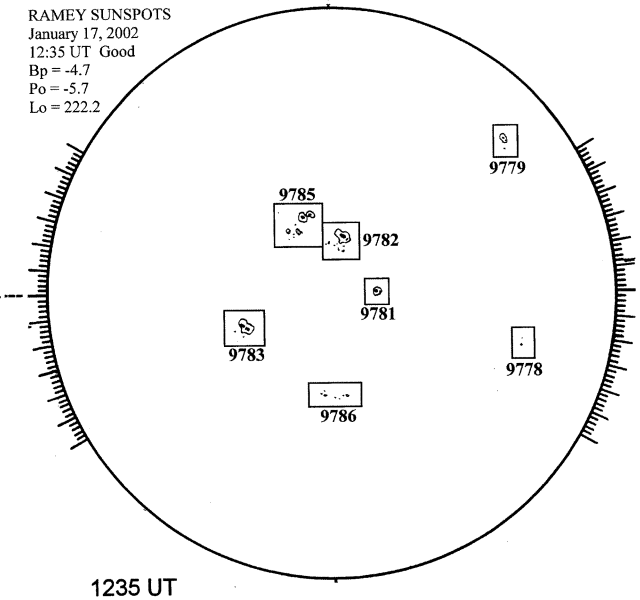


E--

S

RAMEY SUNSPOT

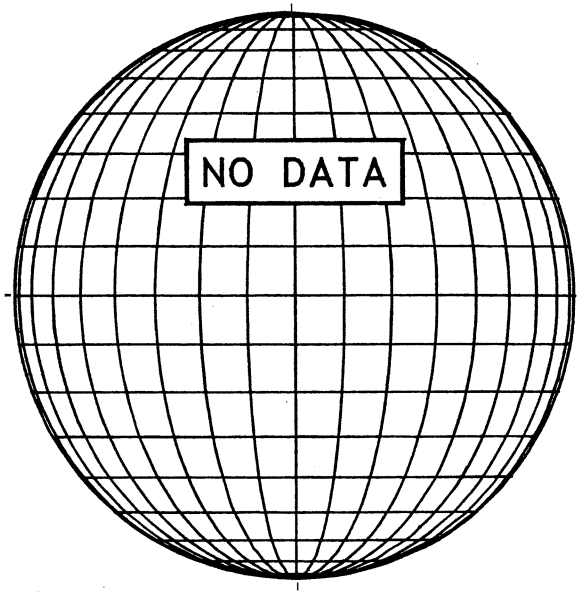
RAMEY SUNSPOTS
January 17, 2002
12:35 UT Good
Bp = -4.7
Po = -5.7
Lo = 222.2



1235 UT

S

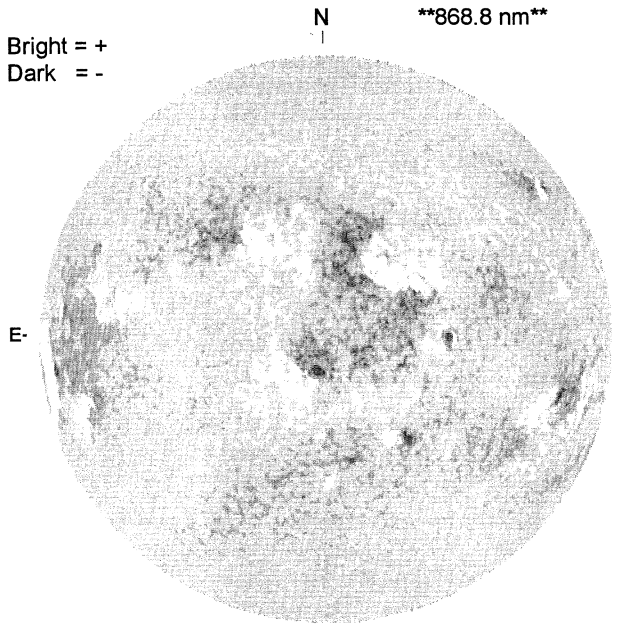
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

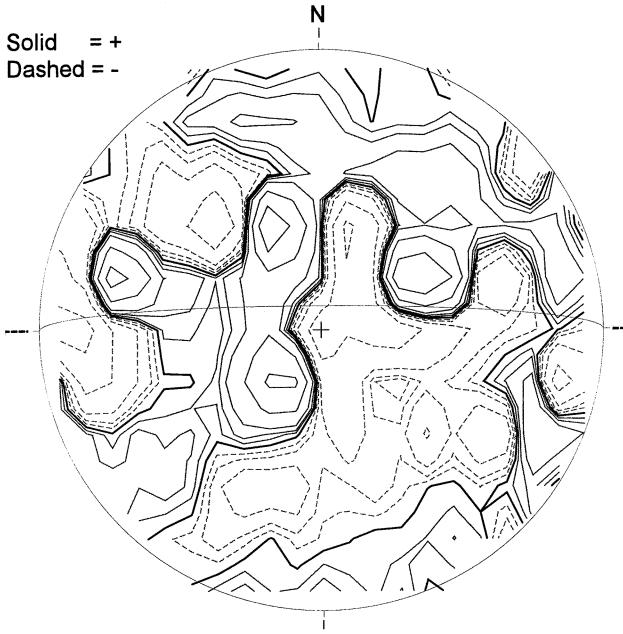
JANUARY 18, 2002 (P= -5.99, Bo = -4.84, Lo = 215.85)

KITT PEAK MAGNETOGRAM



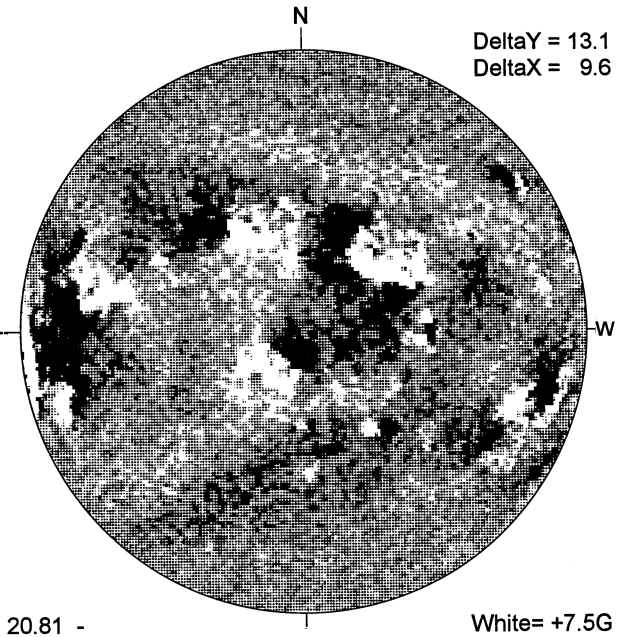
1748 UT

STANFORD MAGNETOGRAM



2216 UT

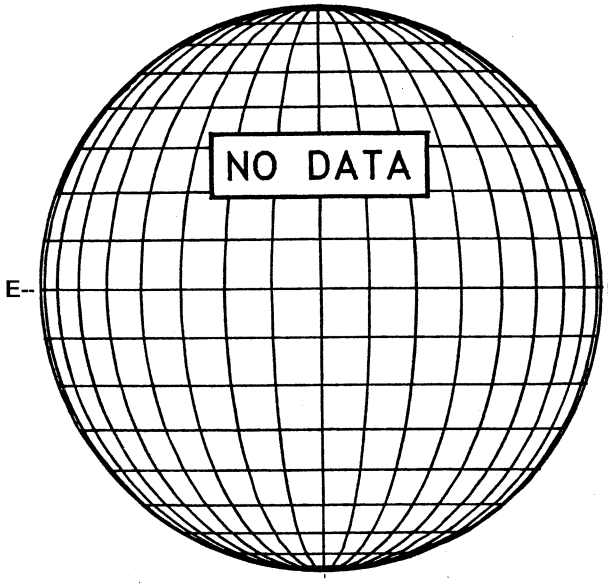
MT. WILSON MAGNETOGRAM



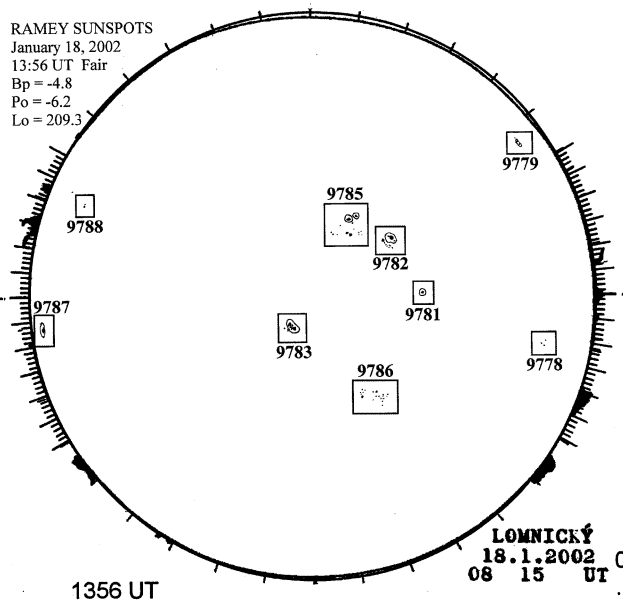
20.81 -
21.78 UT

White= +7.5G
Black = -7.5G

----- MEUDON H-ALPHA

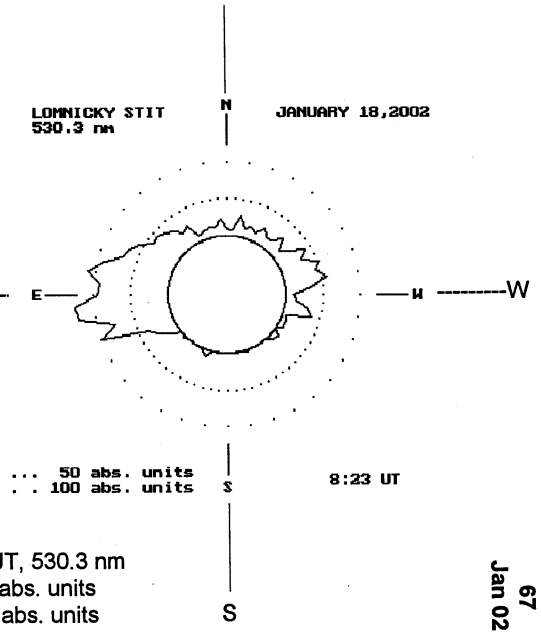


RAMEY SUNSPOT



1356 UT
0815 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



0833 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

67
Jan 02

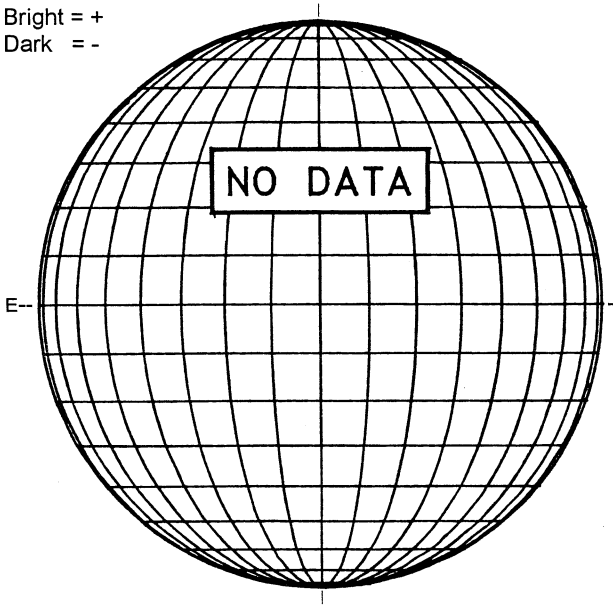
JANUARY 19, 2002 (P= -6.45, Bo = -4.93, Lo = 202.68)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E--

STANFORD MAGNETOGRAM

N

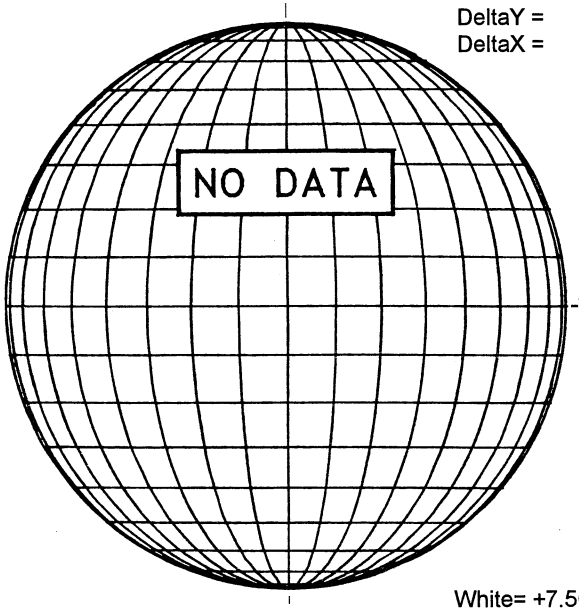
Solid = +
Dashed = -

2153 UT

MT. WILSON MAGNETOGRAM

N

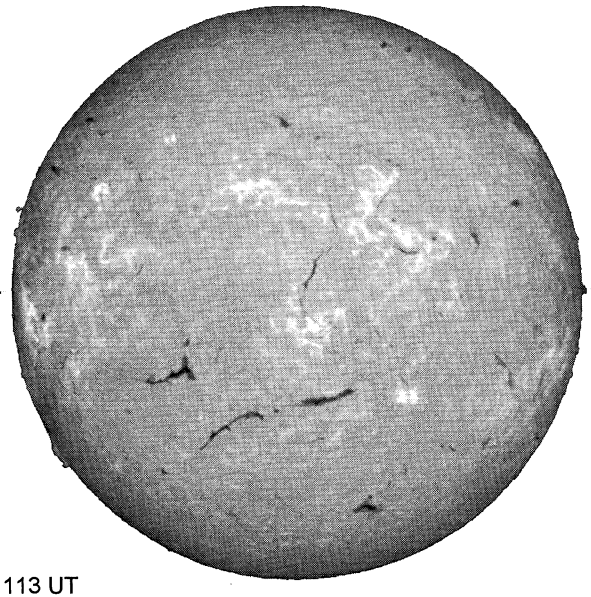
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

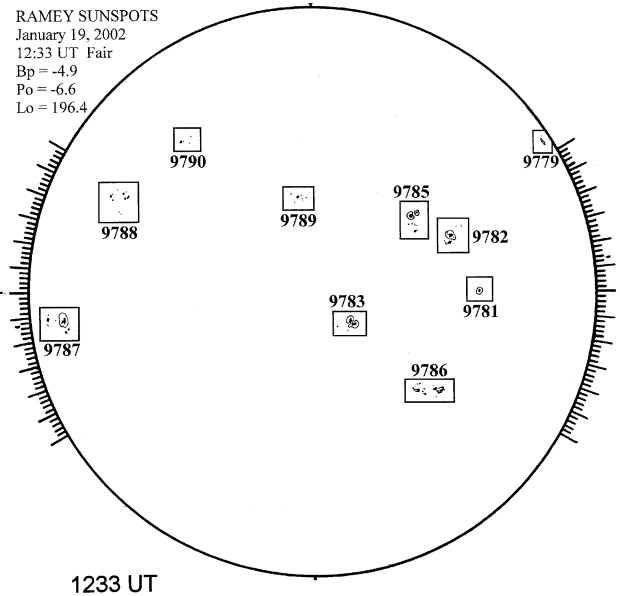


E-

1113 UT

S

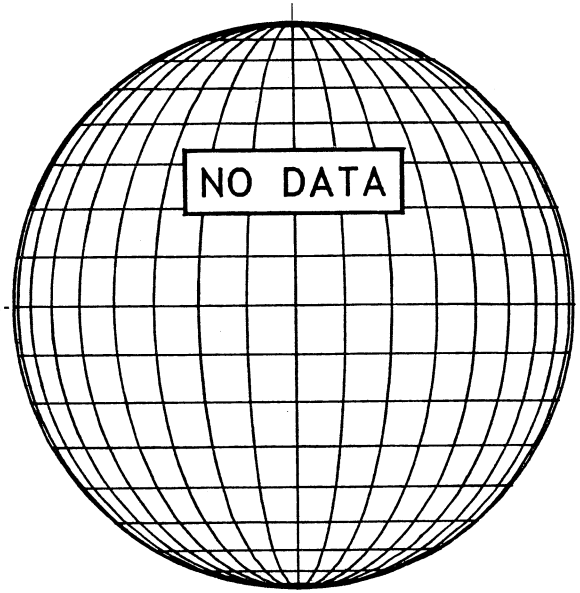
RAMEY SUNSPOT



1233 UT

S

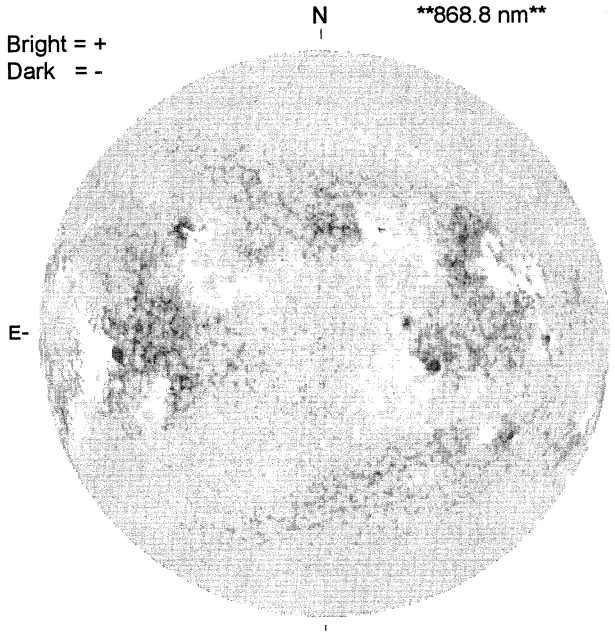
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

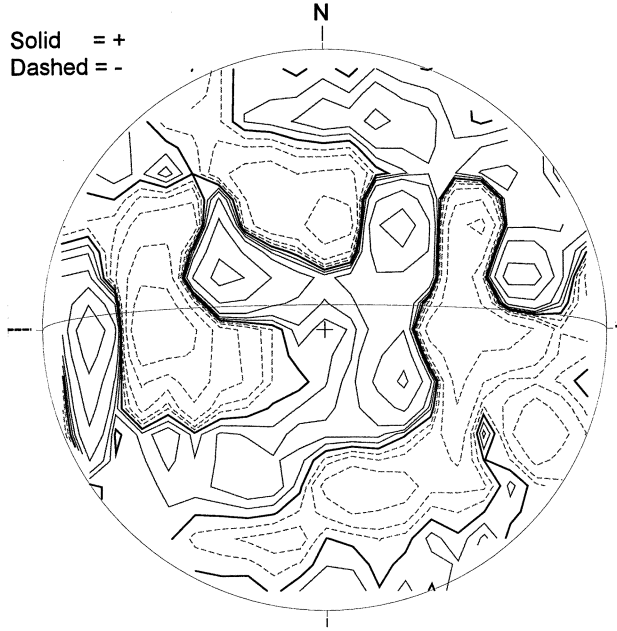
JANUARY 20, 2002 (P= -6.91, Bo = -5.03, Lo = 189.51)

KITT PEAK MAGNETOGRAM



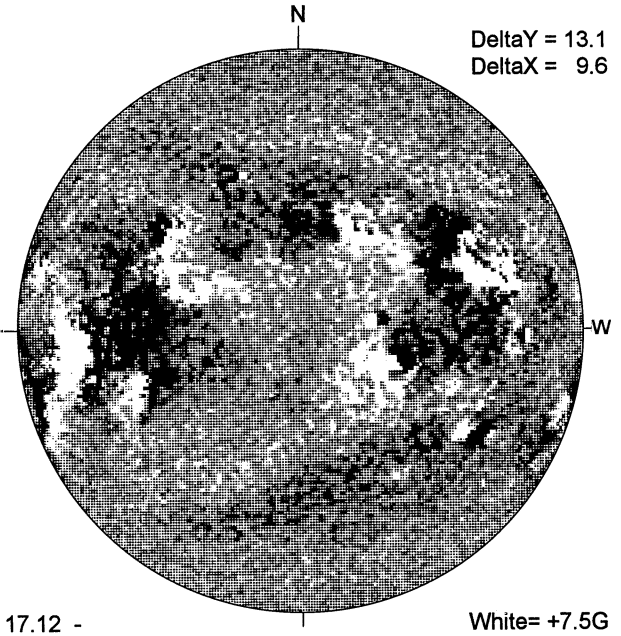
1614 UT

STANFORD MAGNETOGRAM



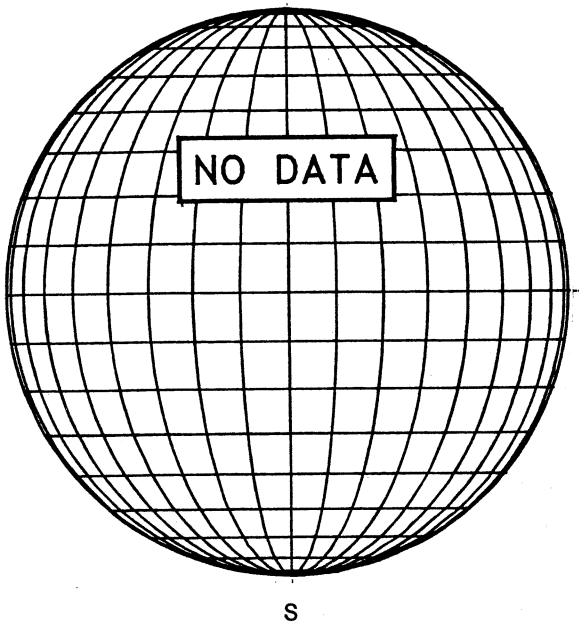
1851 UT

MT. WILSON MAGNETOGRAM

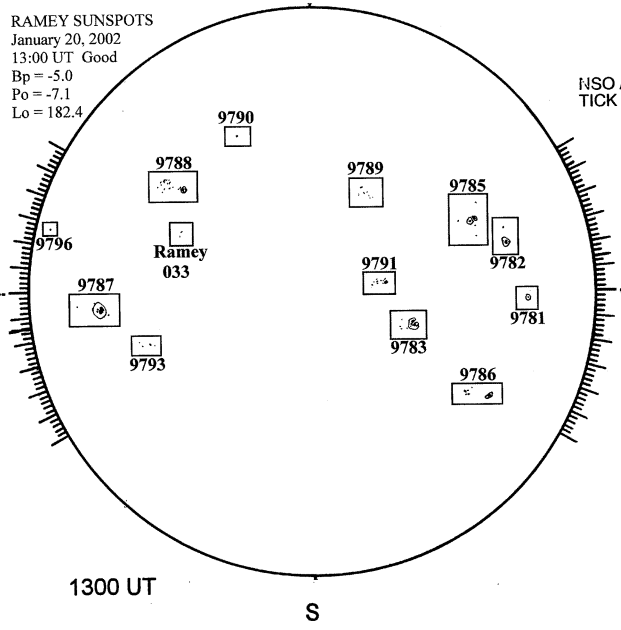


17.12 - 18.09 UT

MEUDON H-ALPHA

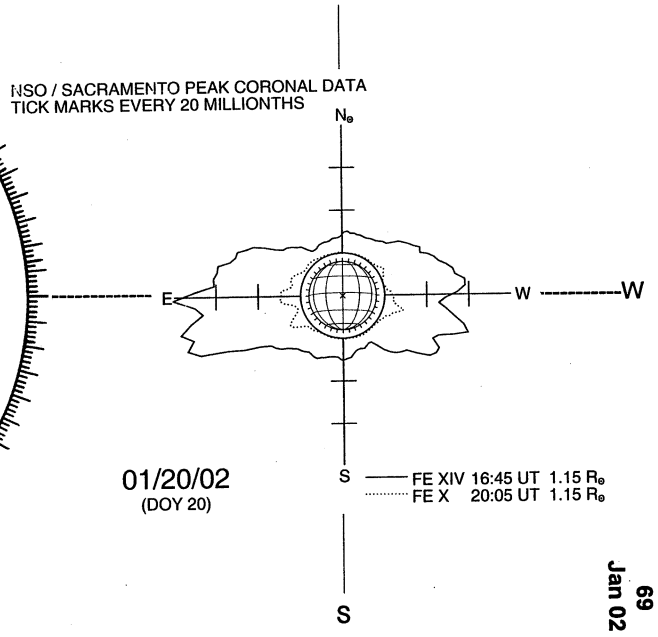


RAMEY SUNSPOT



1300 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



01/20/02
(DOY 20)

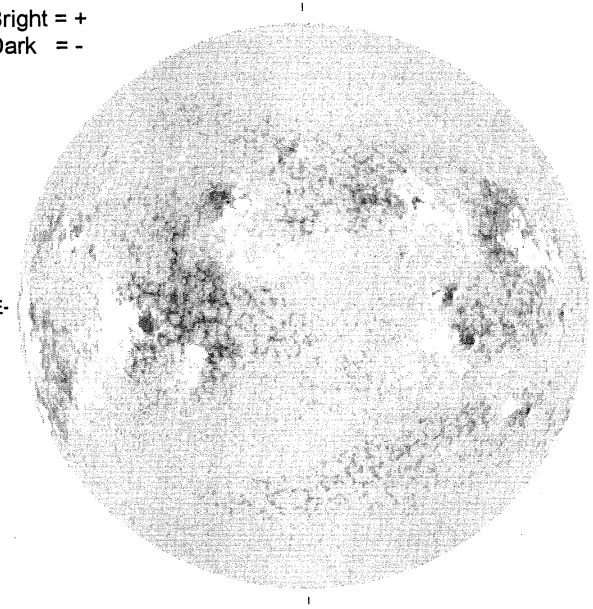
JANUARY 21, 2002 (P= -7.36, Bo = -5.12, Lo = 176.34)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



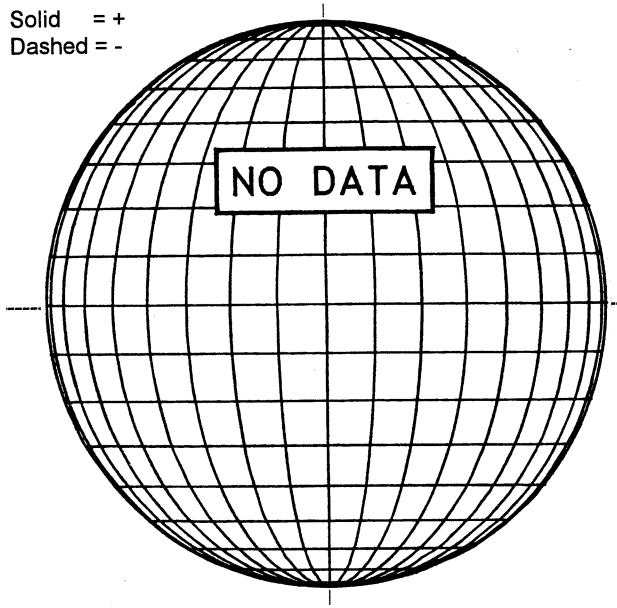
E-

1623 UT

STANFORD MAGNETOGRAM

N

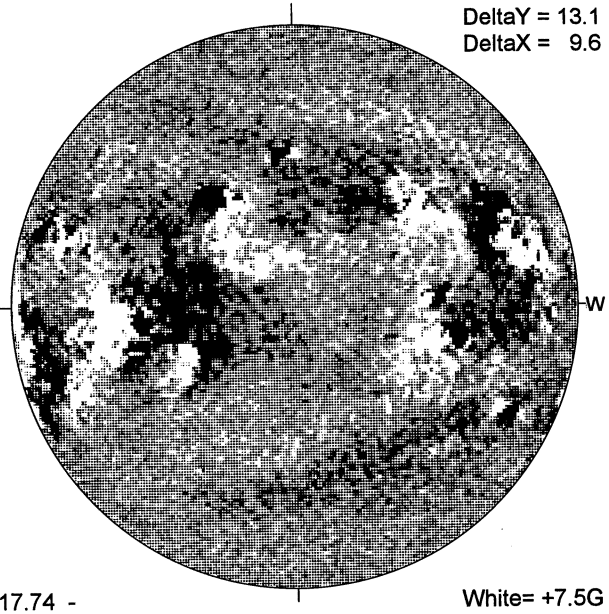
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

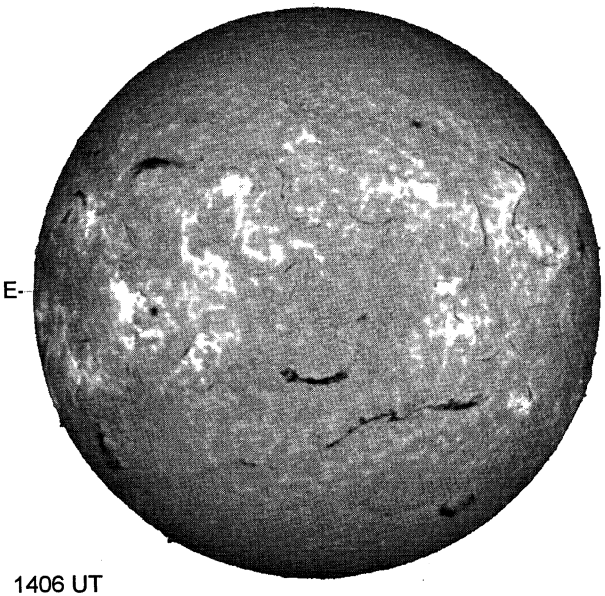


W

17.74 -
18.72 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

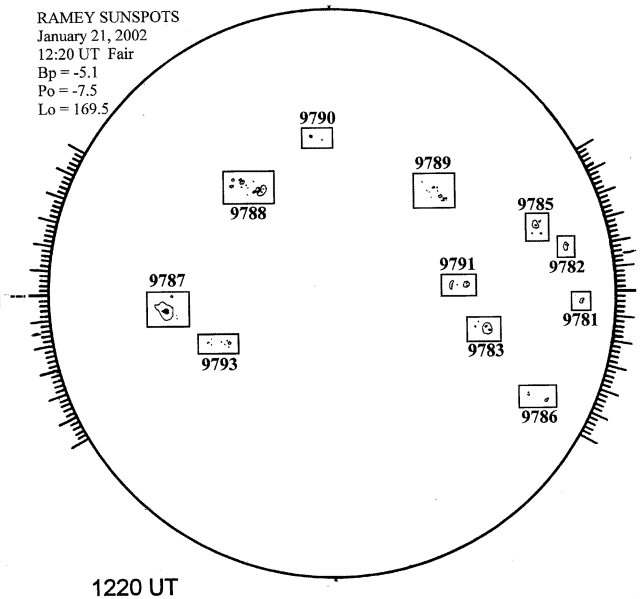


E-

1406 UT

S

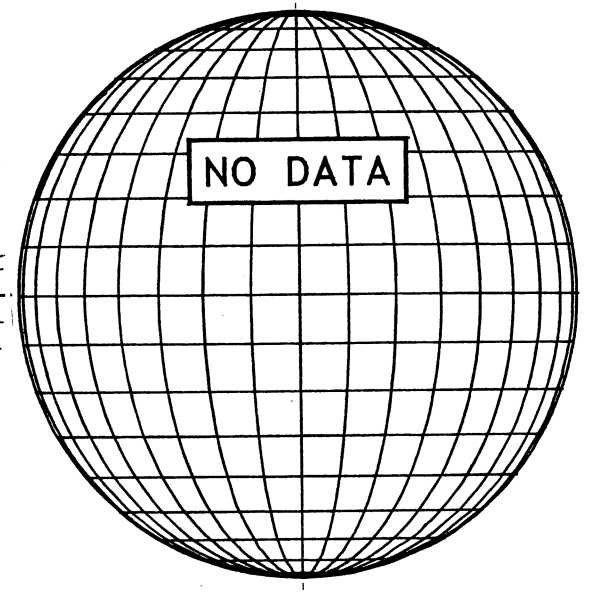
RAMEY SUNSPOT



1220 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

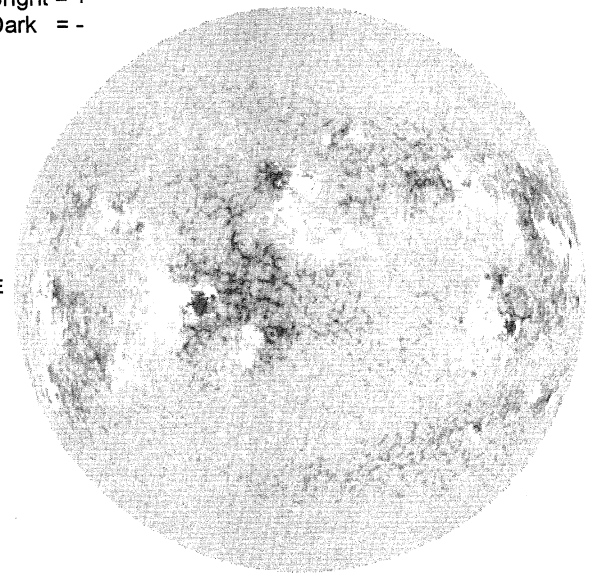
JANUARY 22, 2002 (P= -7.81, Bo = -5.21, Lo = 163.18)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



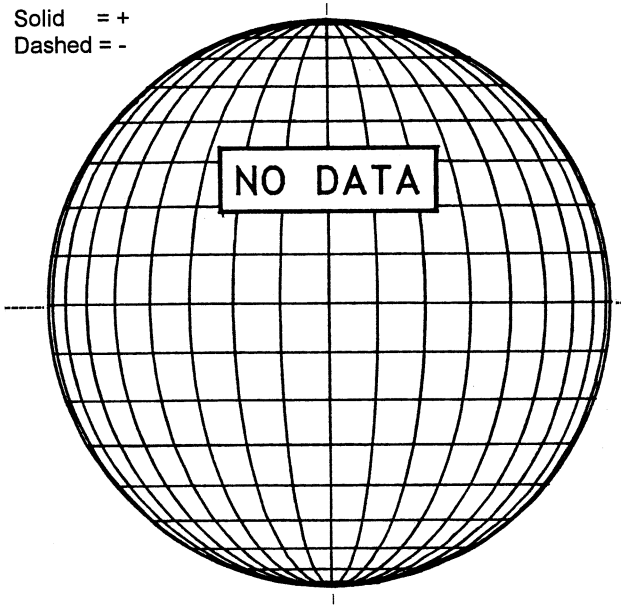
E

1620 UT

STANFORD MAGNETOGRAM

N

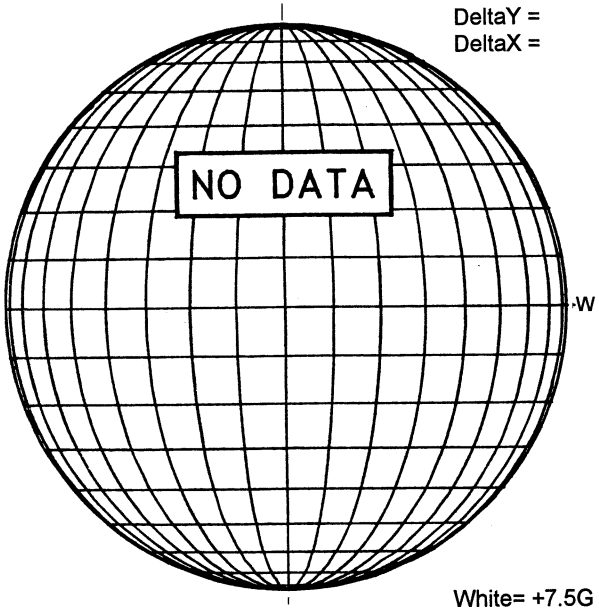
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

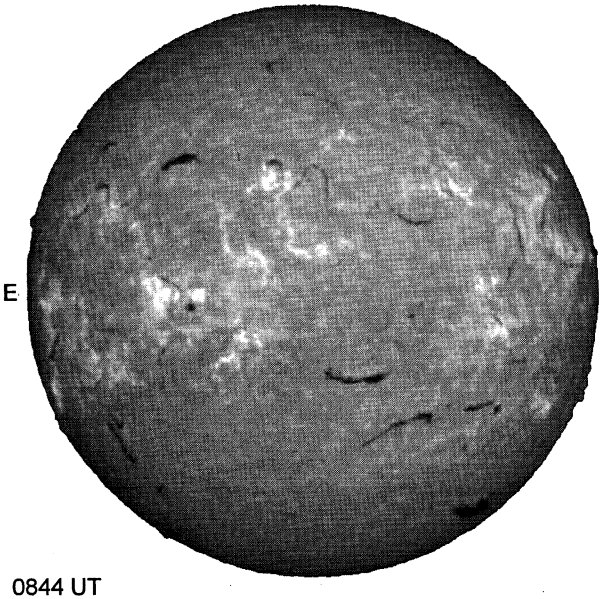
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

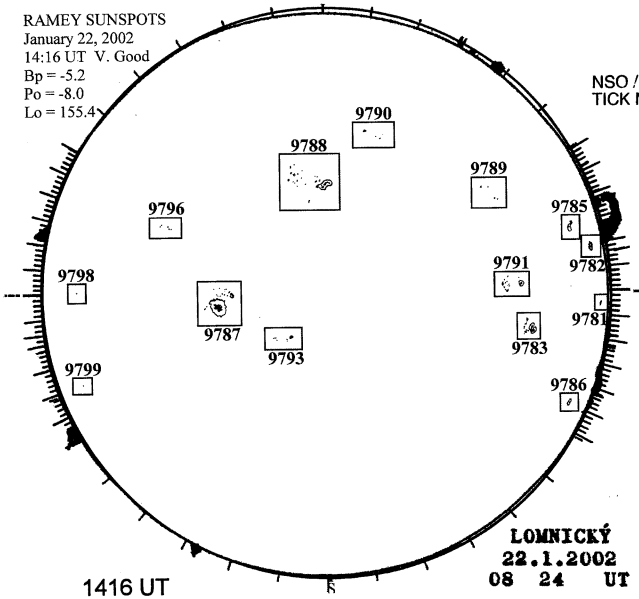


E

0844 UT

S

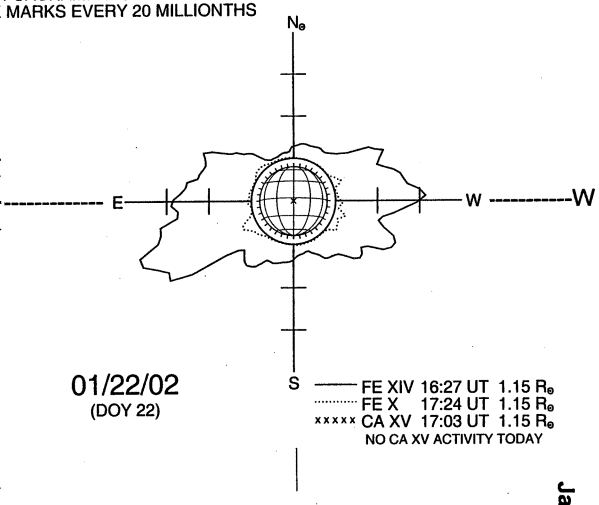
RAMEY SUNSPOT



1416 UT
0824 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



01/22/02
(DOY 22)

FE XIV 16:27 UT 1.15 $R_\odot$
FE X 17:24 UT 1.15 $R_\odot$
xxxxx CA XV 17:03 UT 1.15 $R_\odot$
NO CA XV ACTIVITY TODAY

71
Jan 02

JANUARY 23, 2002 (P= -8.26, Bo = -5.30, Lo = 150.01)

72
Jan 02

KITT PEAK MAGNETOGRAM

N
868.8 nm
Bright = +
Dark = -
NO DATA
E--

STANFORD MAGNETOGRAM

N
Solid = +
Dashed = -
2134 UT

MT. WILSON MAGNETOGRAM

N
DeltaY = 13.0
DeltaX = 9.6
-W
17.31 -
18.29 UT
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

NO DATA
E--
S

RAMEY SUNSPOT

RAMEY SUNSPOTS
January 23, 2002
13:22 UT Fair
Bp = -5.3
Po = -8.5
Lo = 142.8
9790
9795
9796
9788
9785
9798
9787
9791
Ramey
038
9793
9783
9799
9784
1322 UT
S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS
N⊙
E
W
----------W
01/23/02
(DOY 23)
S
FE XIV 17:57 UT 1.15 R⊙
FE X 19:22 UT 1.15 R⊙
xxxxx CA XV 18:44 UT 1.15 R⊙
S

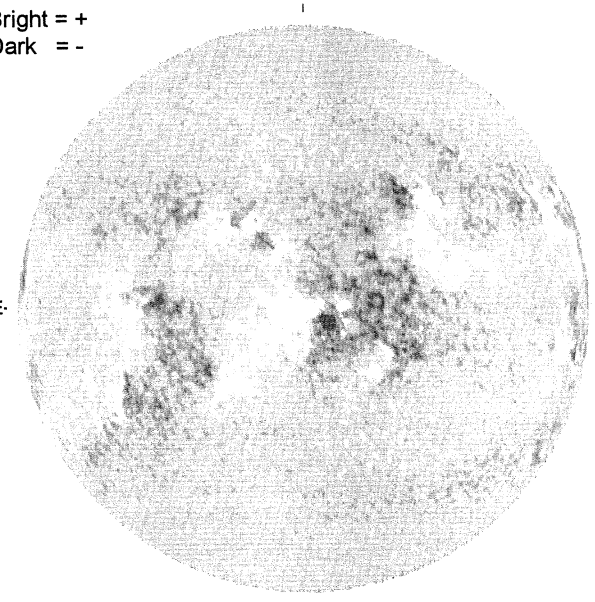
JANUARY 24, 2002 (P= -8.70, Bo = -5.39, Lo = 136.84)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

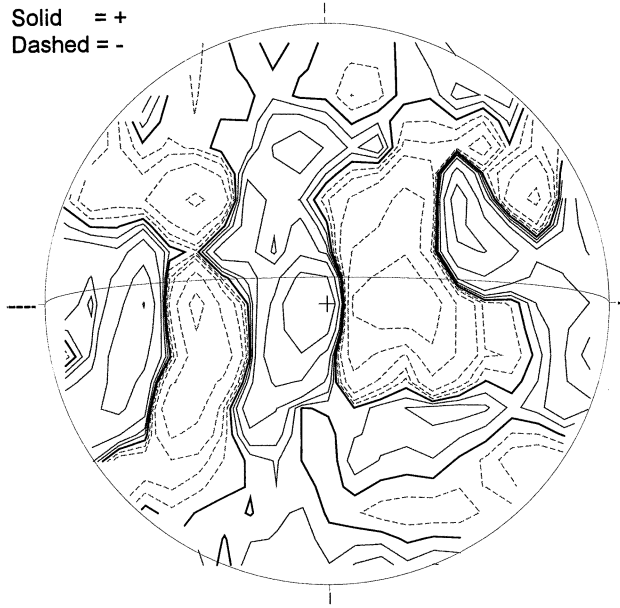


1633 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

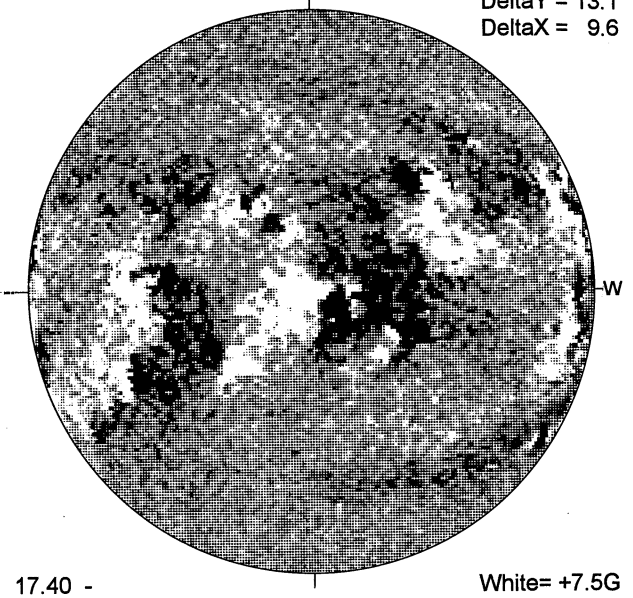


1910 UT

MT. WILSON MAGNETOGRAM

N

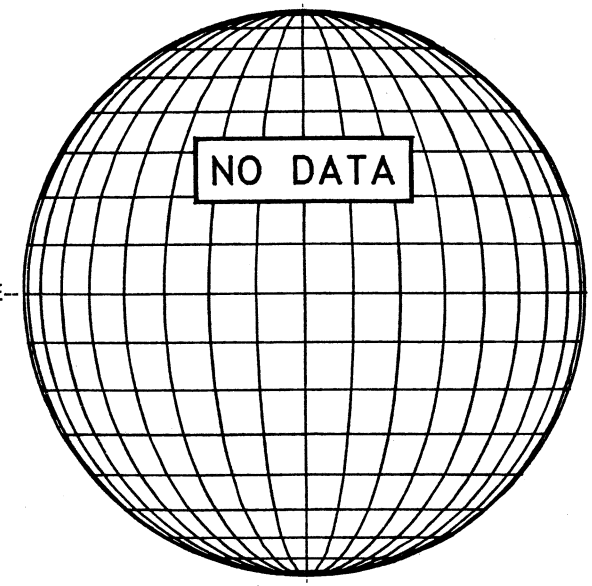
DeltaY = 13.1
DeltaX = 9.6



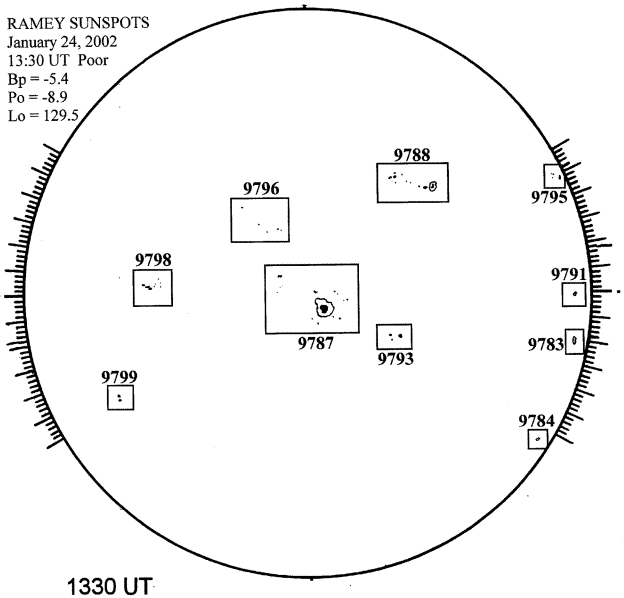
17.40 -
18.37 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

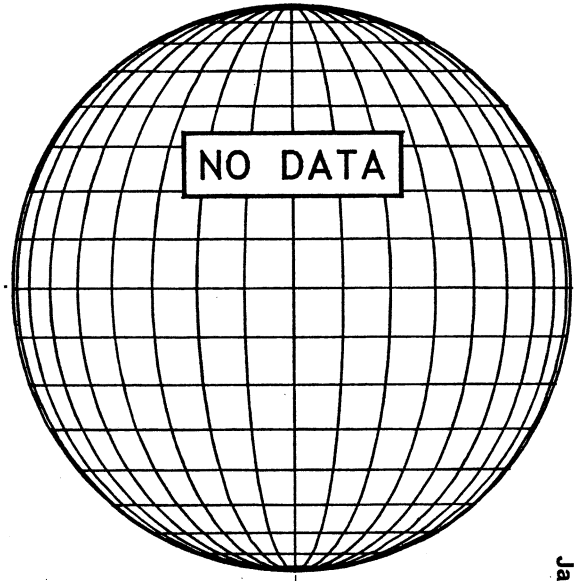


RAMEY SUNSPOT



1330 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



73
Jan 02

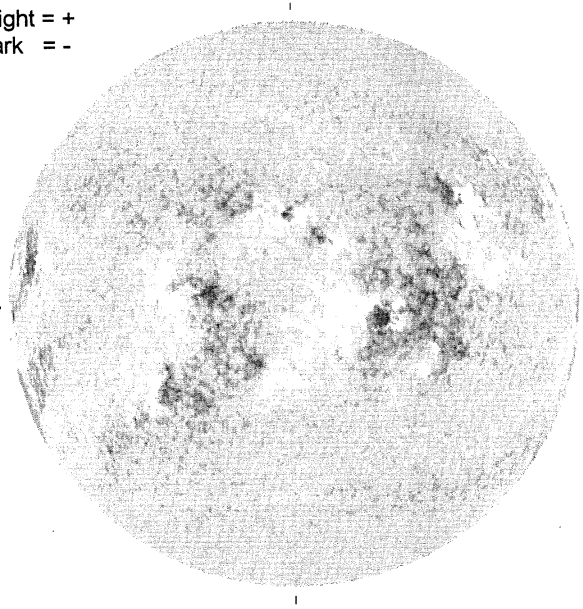
JANUARY 25, 2002 (P= -9.14, Bo = -5.47, Lo = 123.68)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



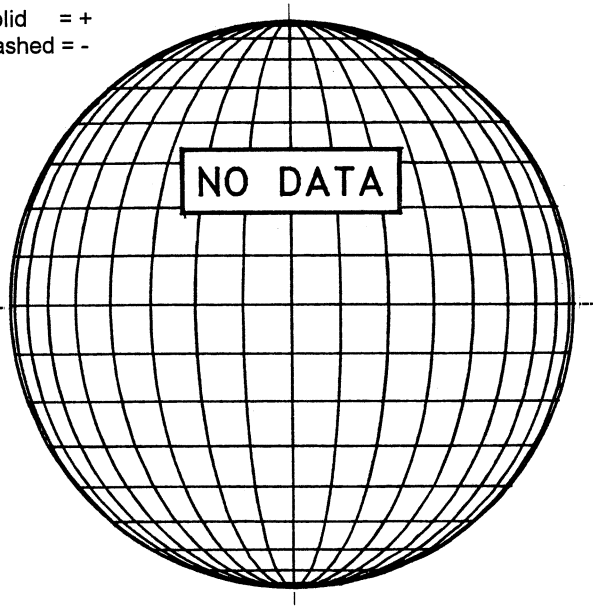
E--

1631 UT

STANFORD MAGNETOGRAM

N

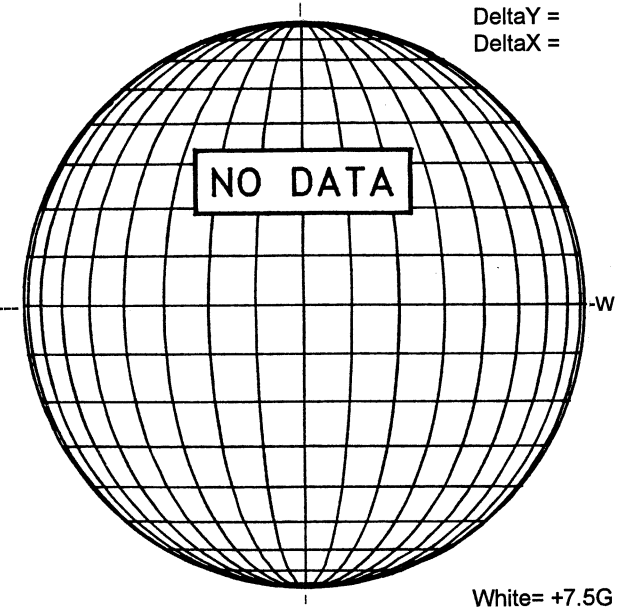
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

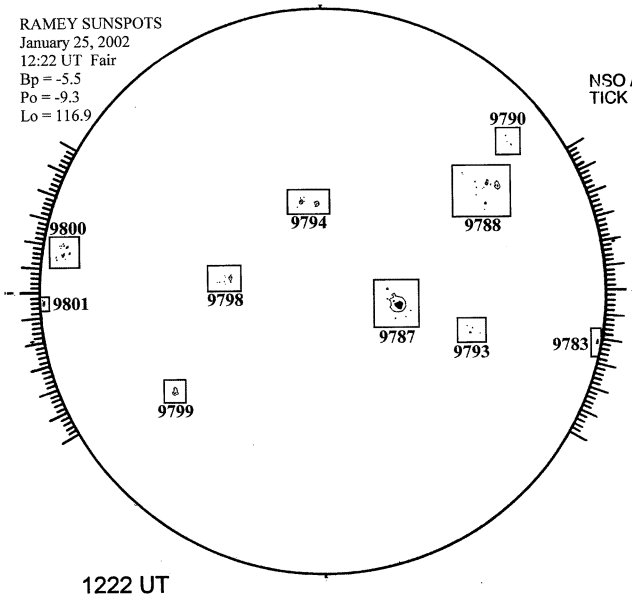
MEUDON H-ALPHA

E

1056 UT

S

RAMEY SUNSPOT

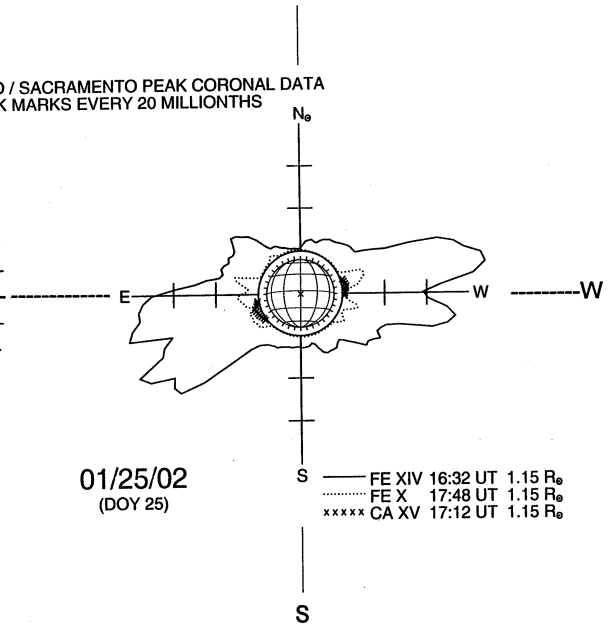


1222 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



01/25/02
(DOY 25)

S

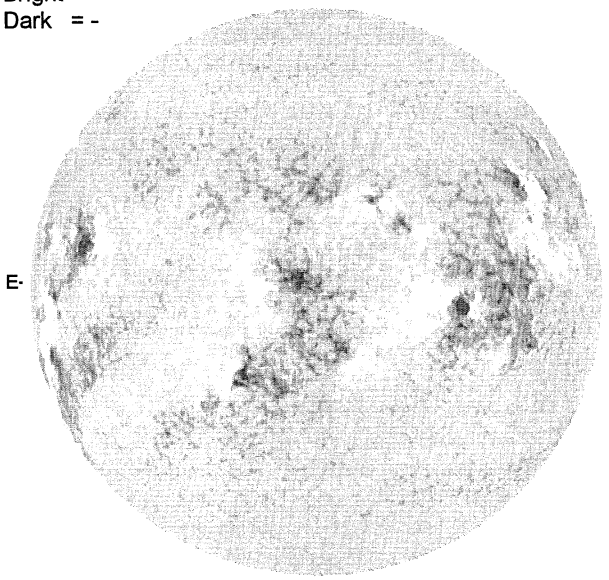
JANUARY 26, 2002 (P= -9.58, Bo = -5.55, Lo = 110.51)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E-

1650 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY =
DeltaX =

NO DATA

-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

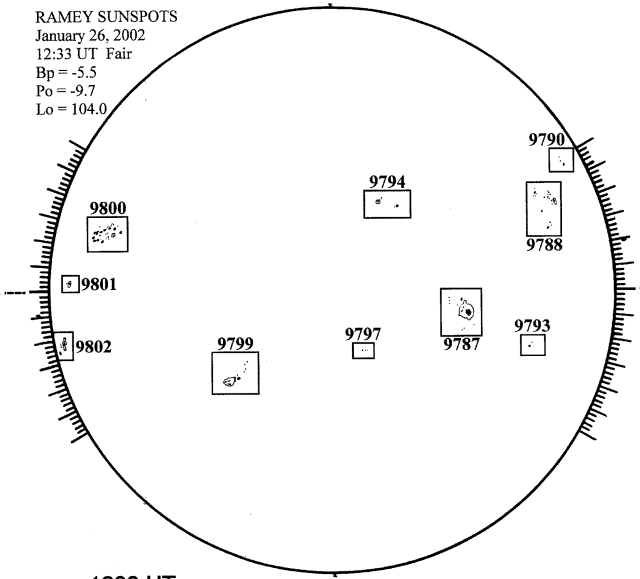
NO DATA

E--

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
January 26, 2002
12:33 UT Fair
Bp = -5.5
Po = -9.7
Lo = 104.0



1233 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

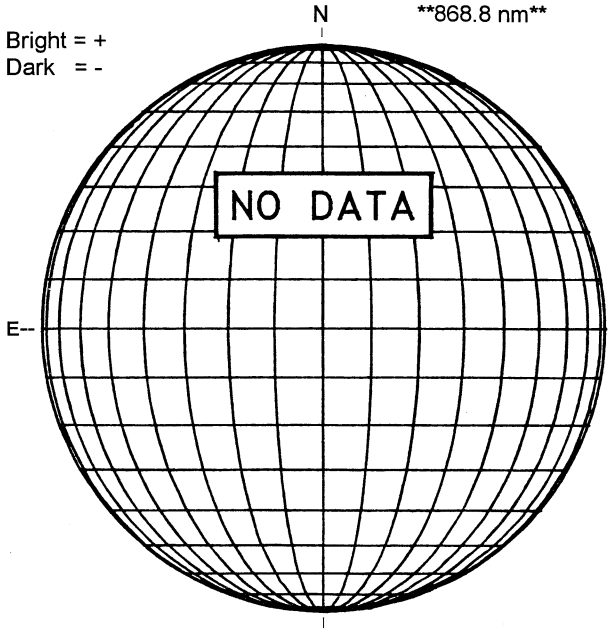
NO DATA

S

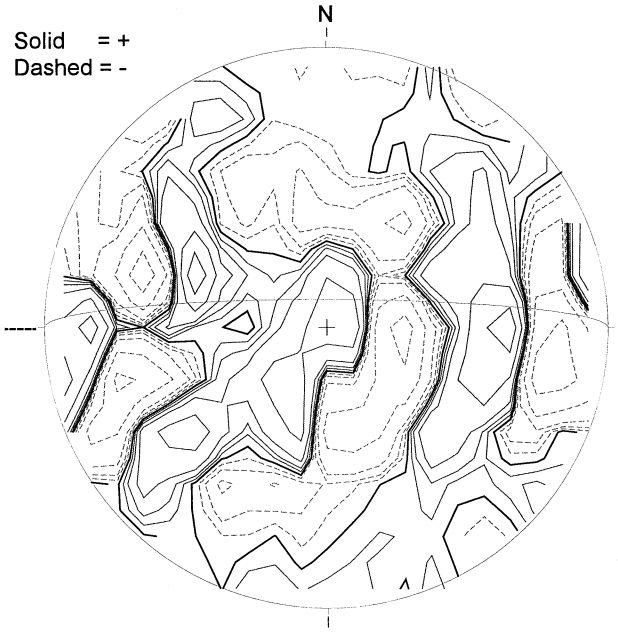
75
Jan 02

JANUARY 27, 2002 (P= -10.01, Bo = -5.64, Lo = 97.34)

KITT PEAK MAGNETOGRAM

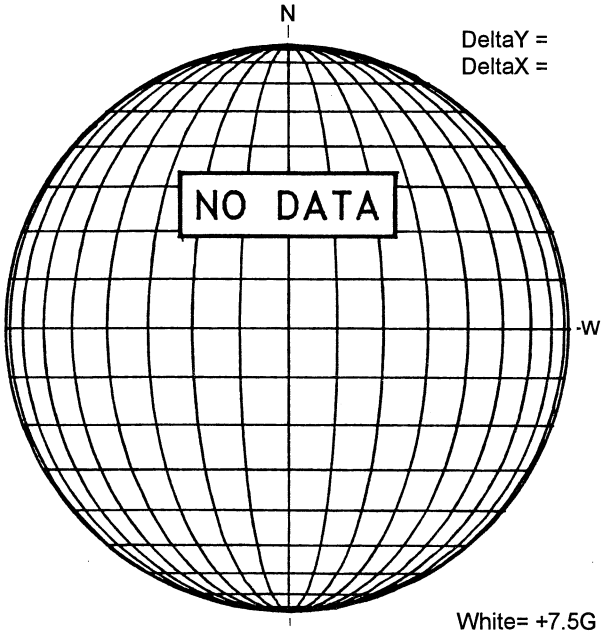


STANFORD MAGNETOGRAM



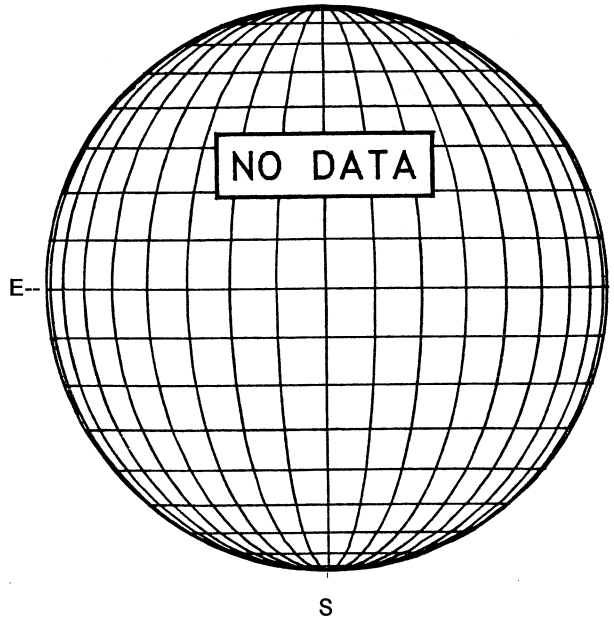
2249 UT

MT. WILSON MAGNETOGRAM

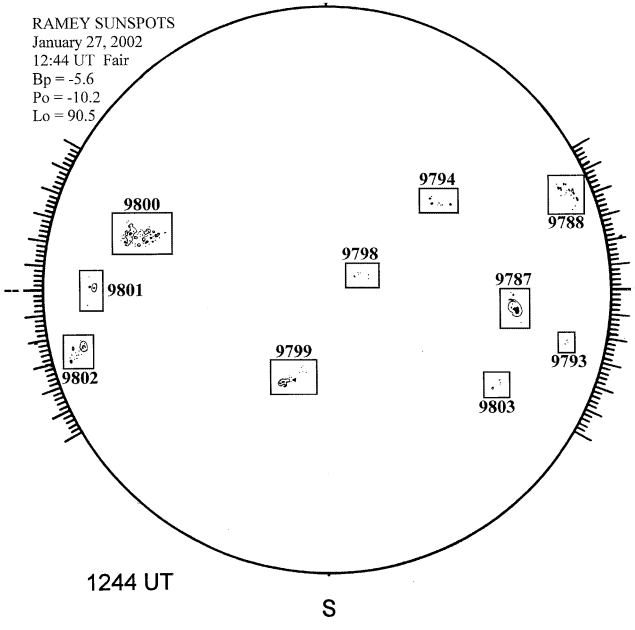


White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

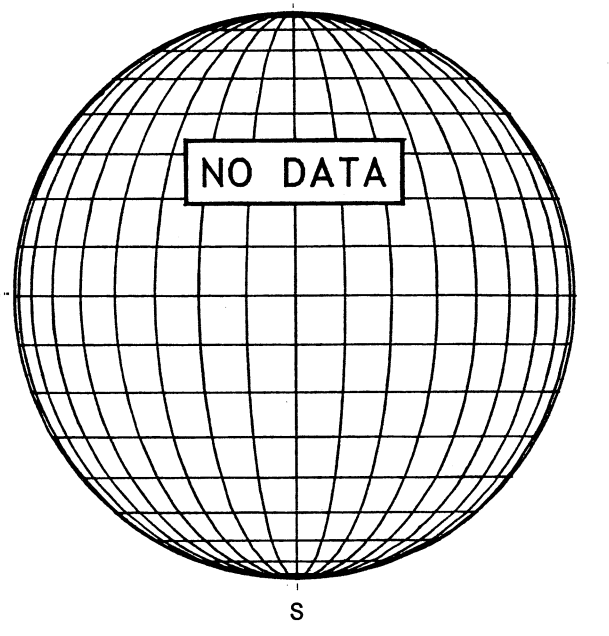


RAMEY SUNSPOT



1244 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



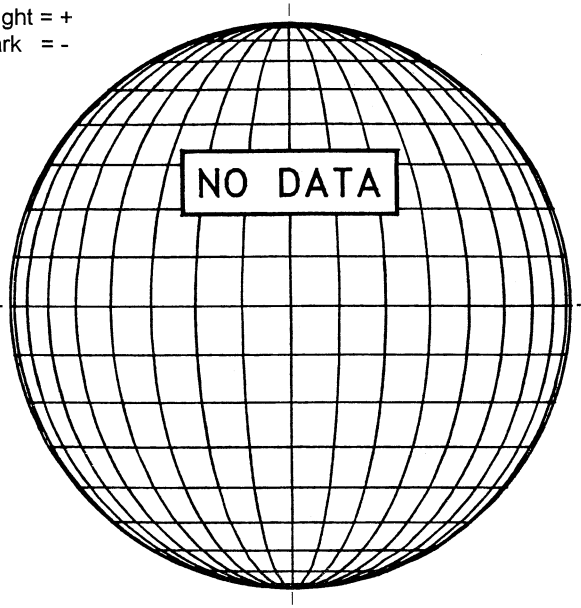
JANUARY 28, 2002 (P= -10.44, Bo = -5.72, Lo = 84.18)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

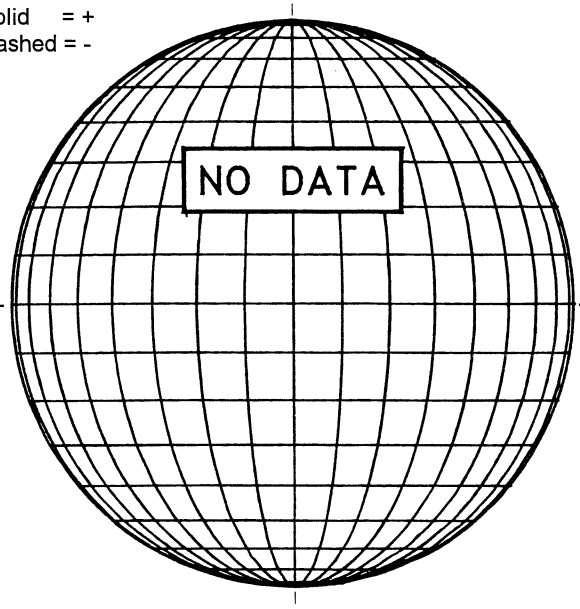


E--

STANFORD MAGNETOGRAM

N

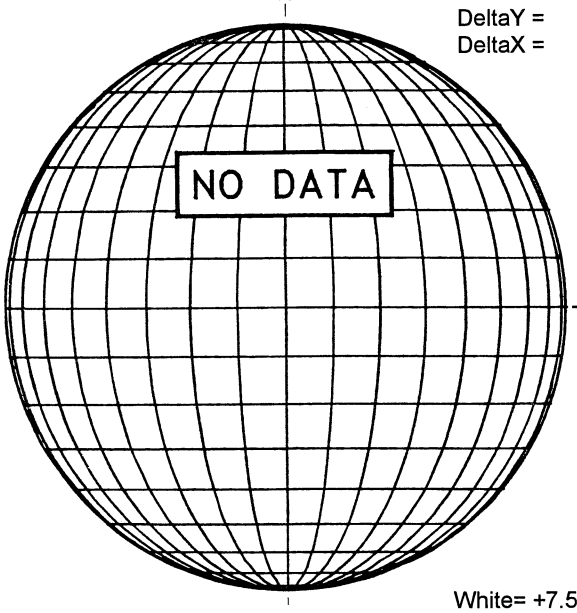
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

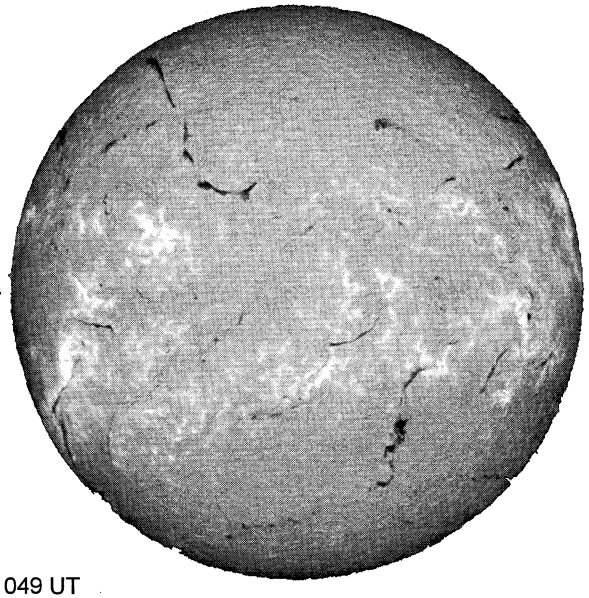
DeltaY =
DeltaX =



-W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

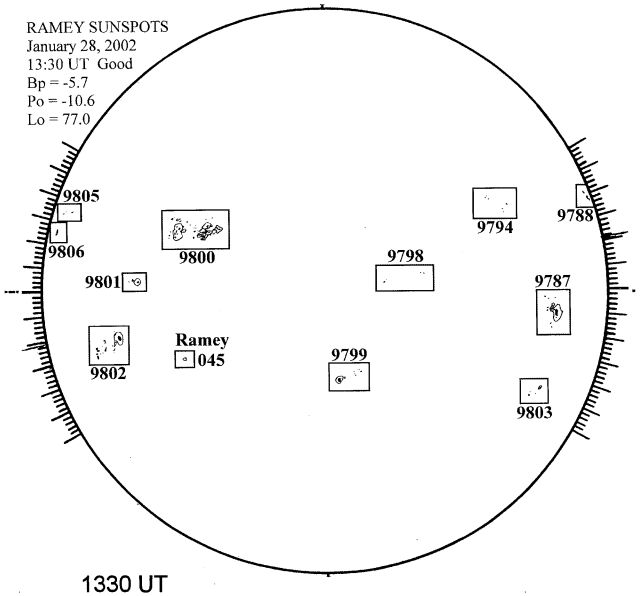


E-

1049 UT

S

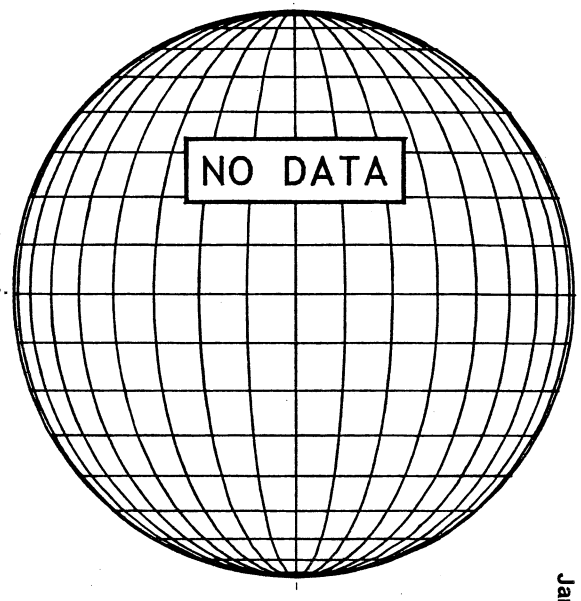
RAMEY SUNSPOT



1330 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

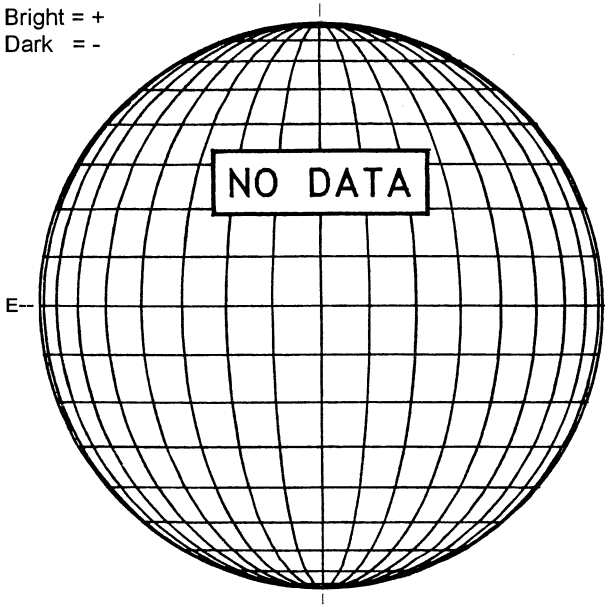
77
Jan 02

JANUARY 29, 2002 (P= -10.86 Bo = -5.79, Lo = 71.01)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

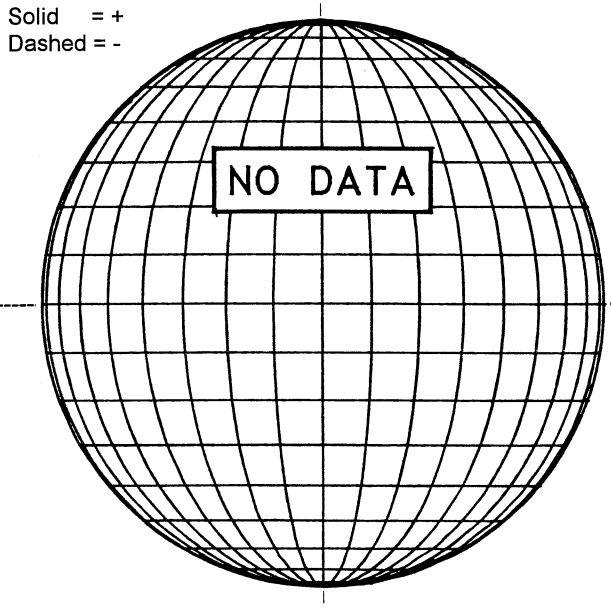
Bright = +
Dark = -



STANFORD MAGNETOGRAM

N

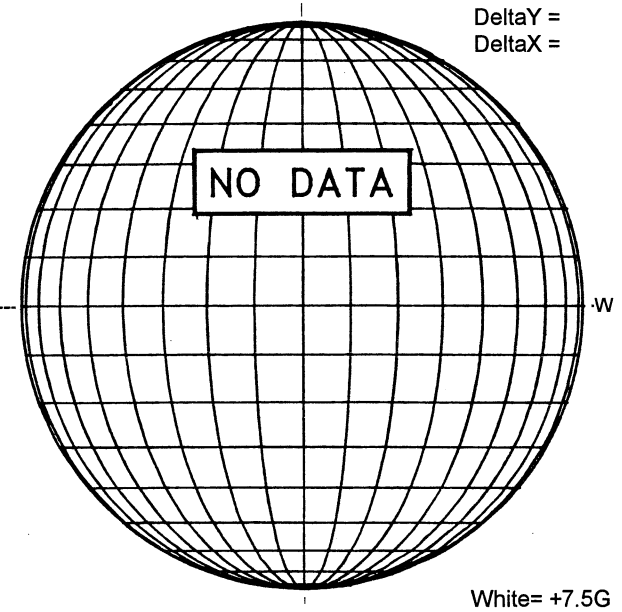
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

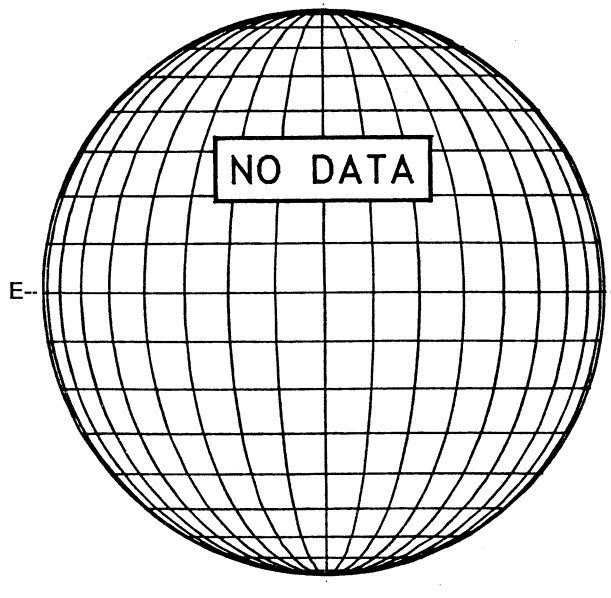
N

DeltaY =
DeltaX =

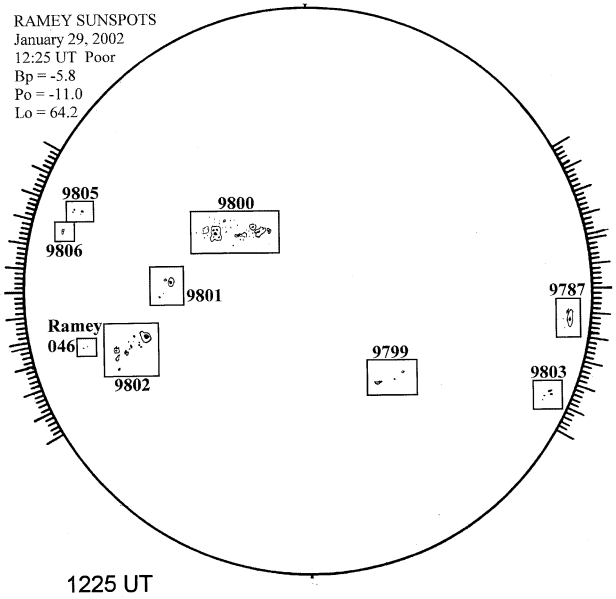


White= +7.5G
Black = -7.5G

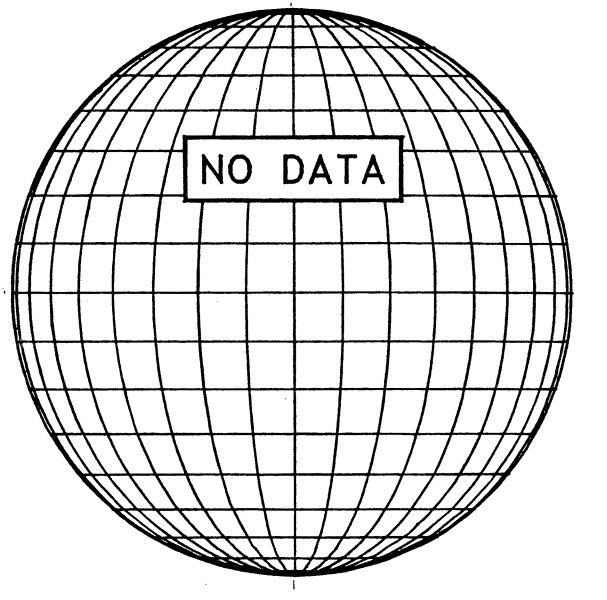
----- MEUDON H-ALPHA



RAMEY SUNSPOT

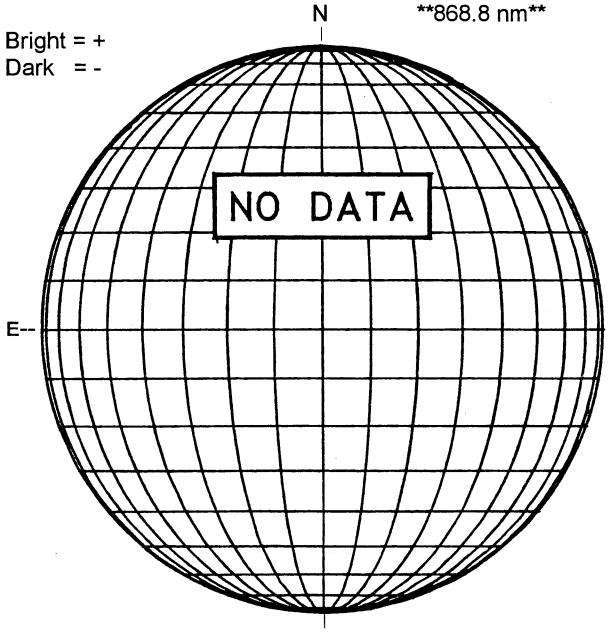


SACRAMENTO PEAK CORONA (1.15 Radii)----

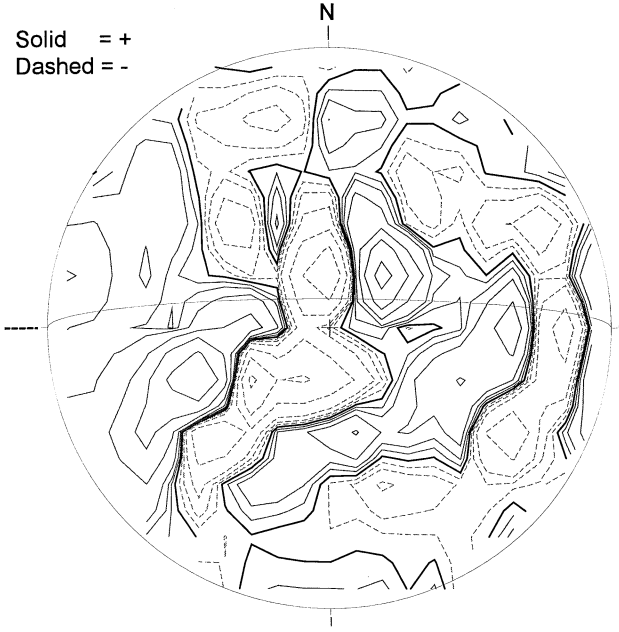


JANUARY 30, 2002 (P= -11.28, Bo = -5.87, Lo = 57.84)

KITT PEAK MAGNETOGRAM

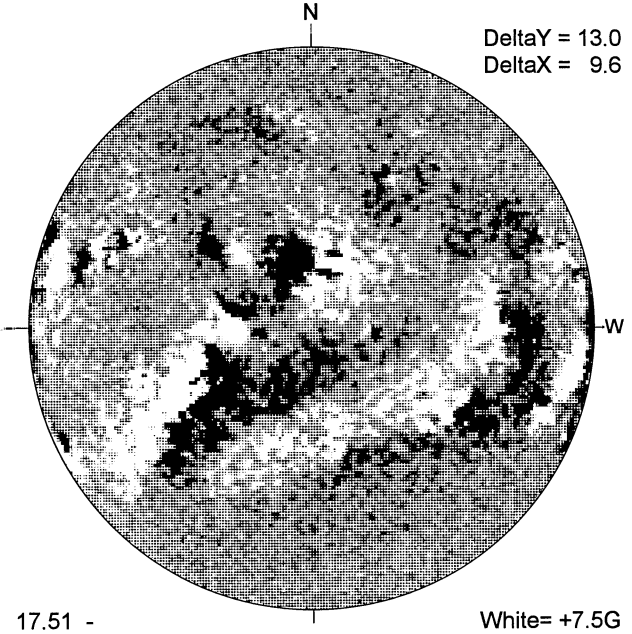


STANFORD MAGNETOGRAM



2124 UT

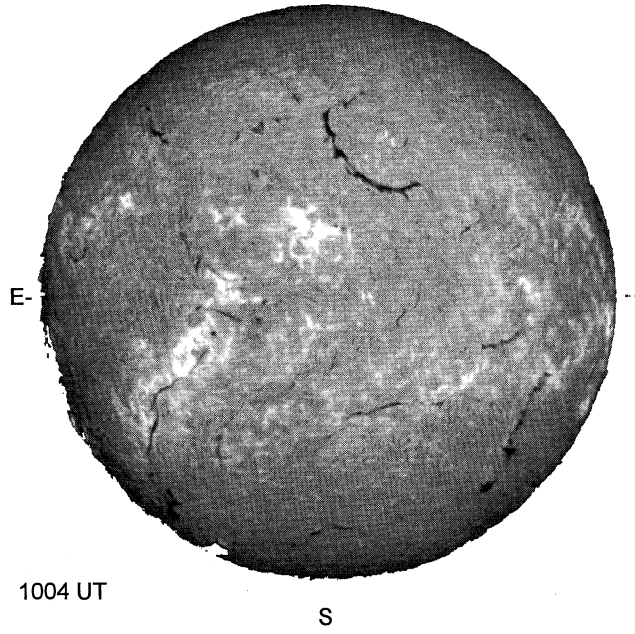
MT. WILSON MAGNETOGRAM



17.51 -
18.48 UT

White= +7.5G
Black = -7.5G

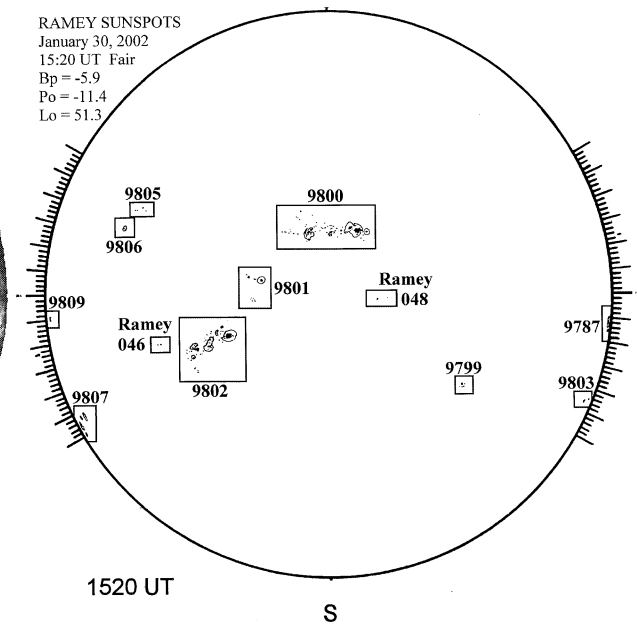
----- MEUDON H-ALPHA



1004 UT

S

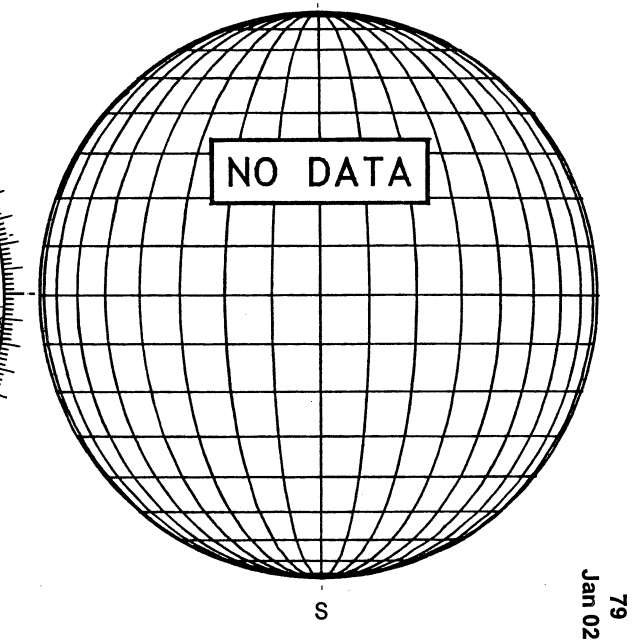
RAMEY SUNSPOT



1520 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



S

79
Jan 02

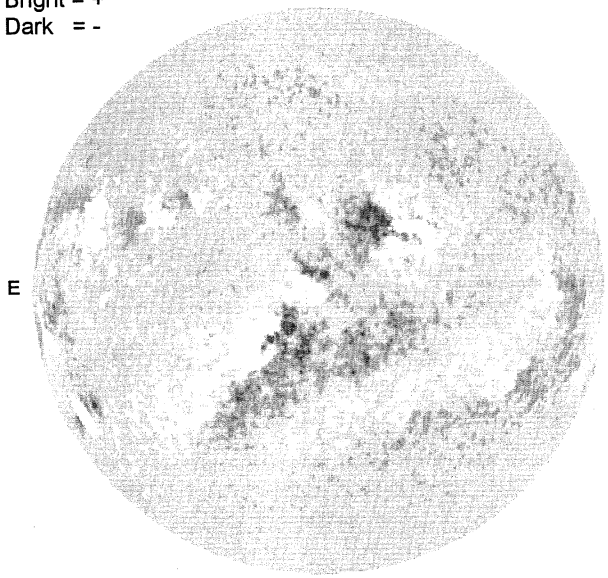
JANUARY 31, 2002 (P= -11.70, Bo = -5.95, Lo = 44.68)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



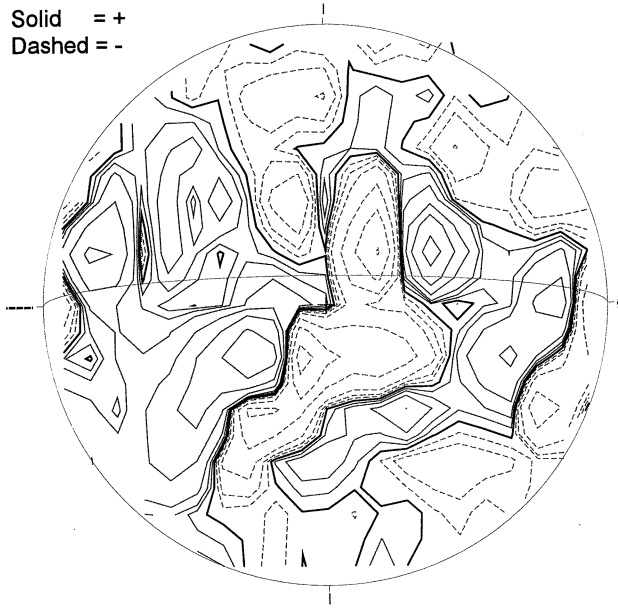
E

1854 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

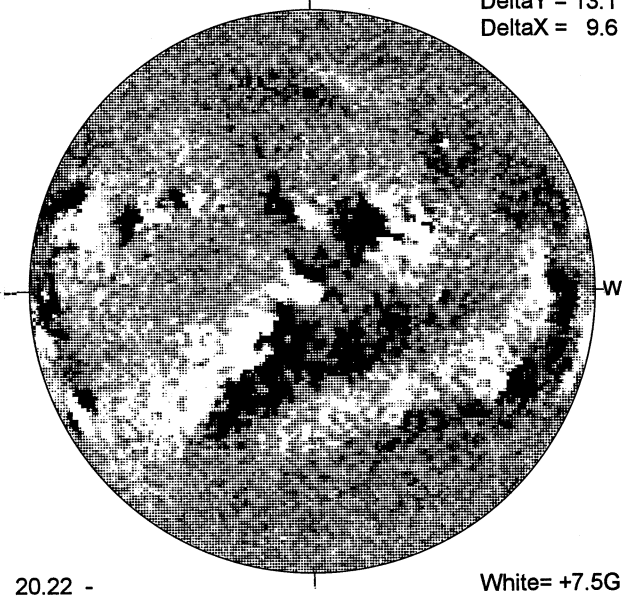


1856 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

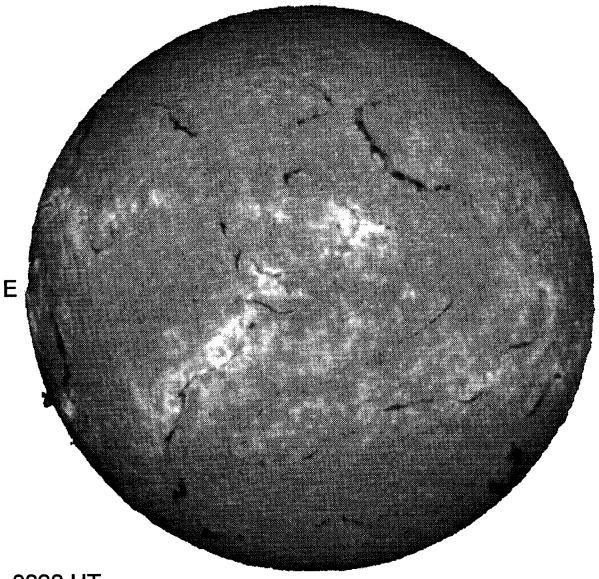


W

20.22 -
21.18 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

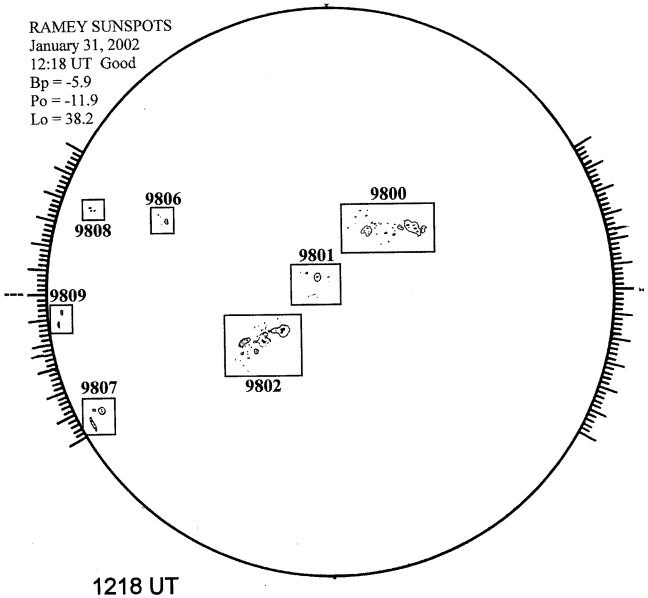


E

0828 UT

S

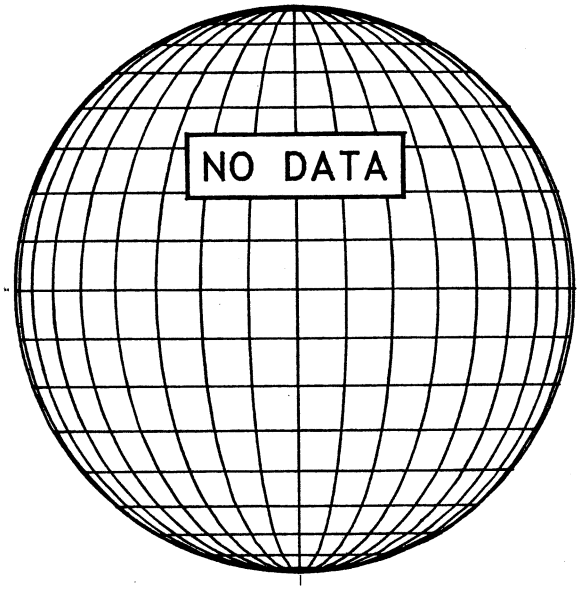
RAMEY SUNSPOT



1218 UT

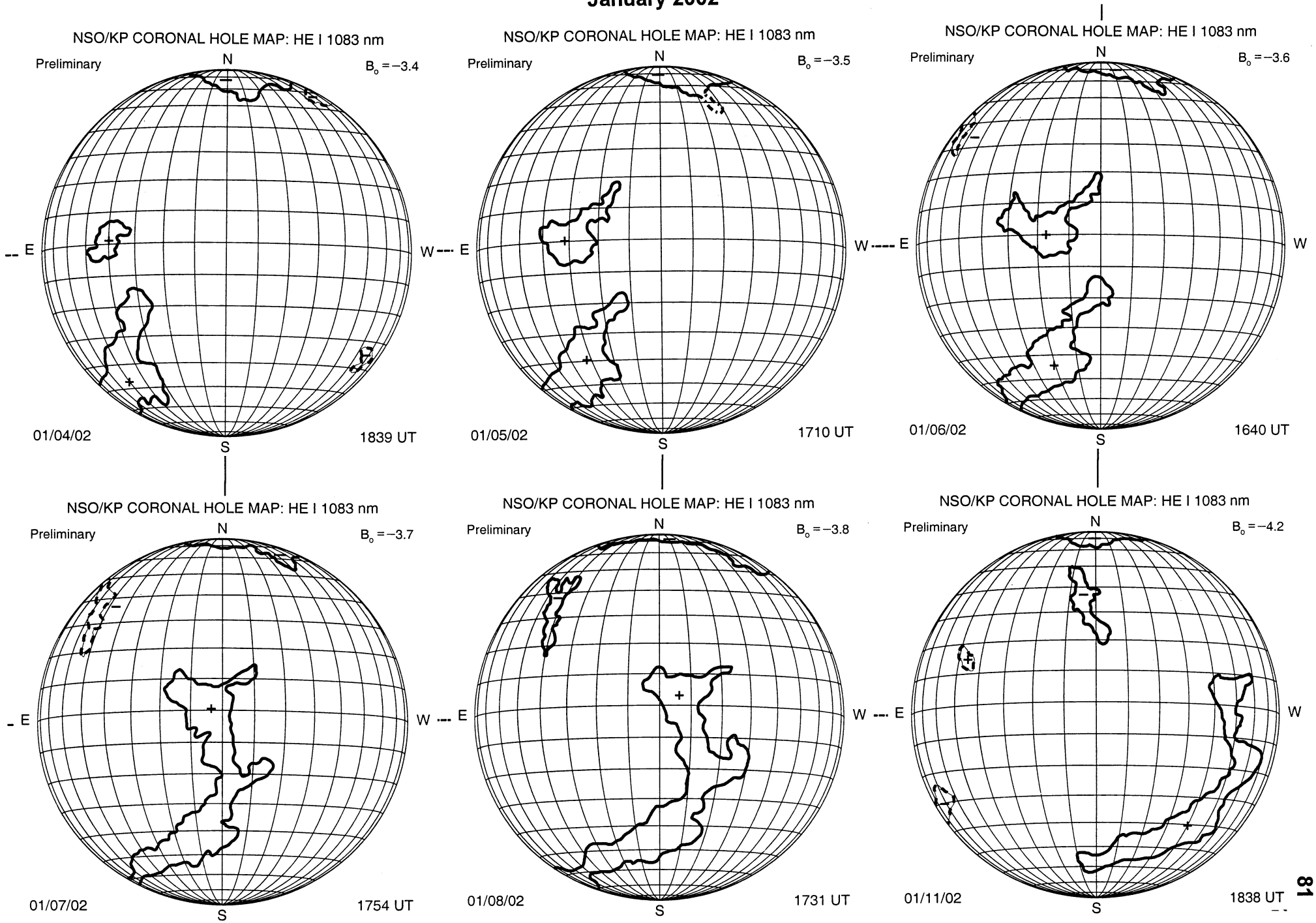
S

SACRAMENTO PEAK CORONA (1.15 Radii)----

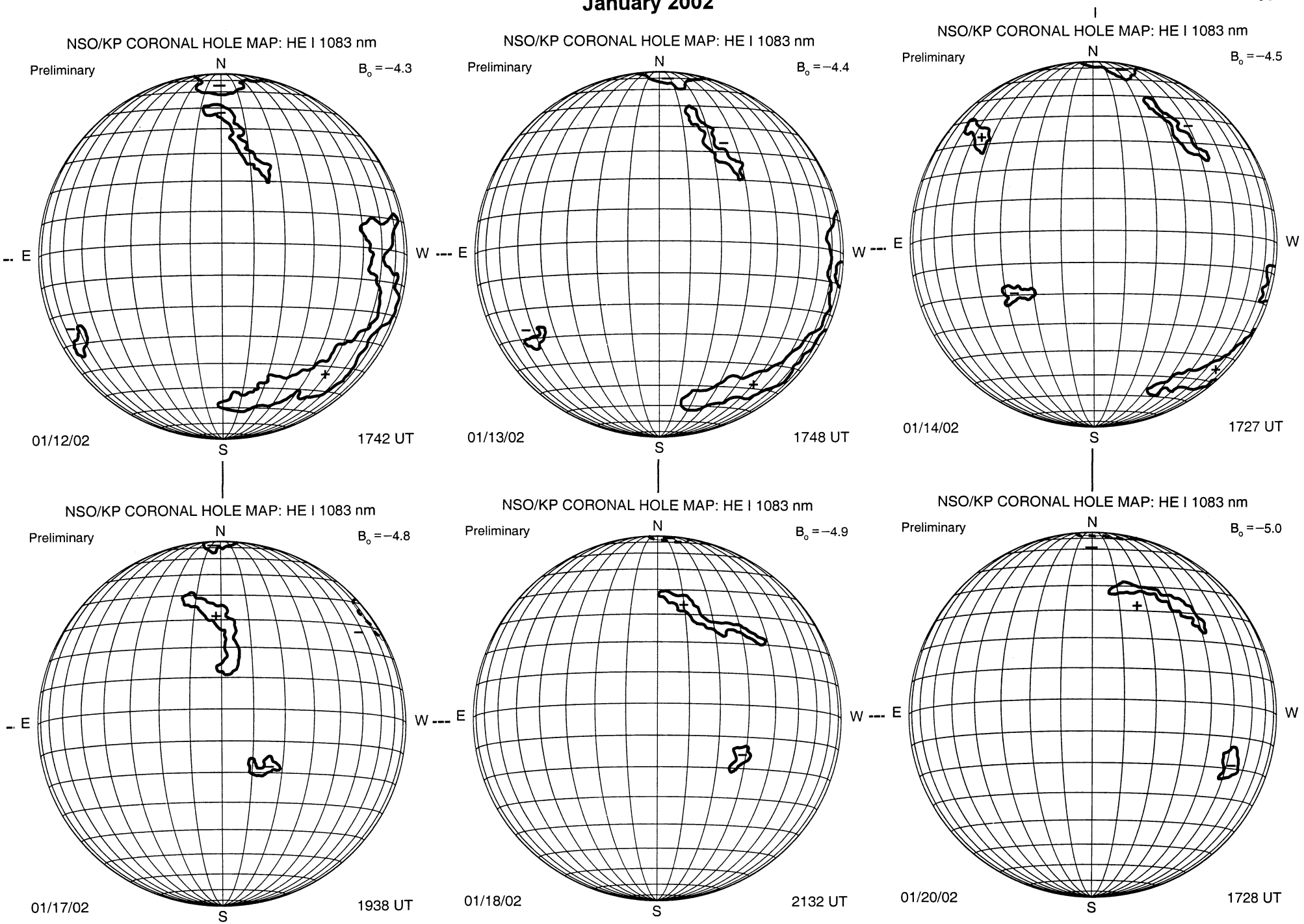


S

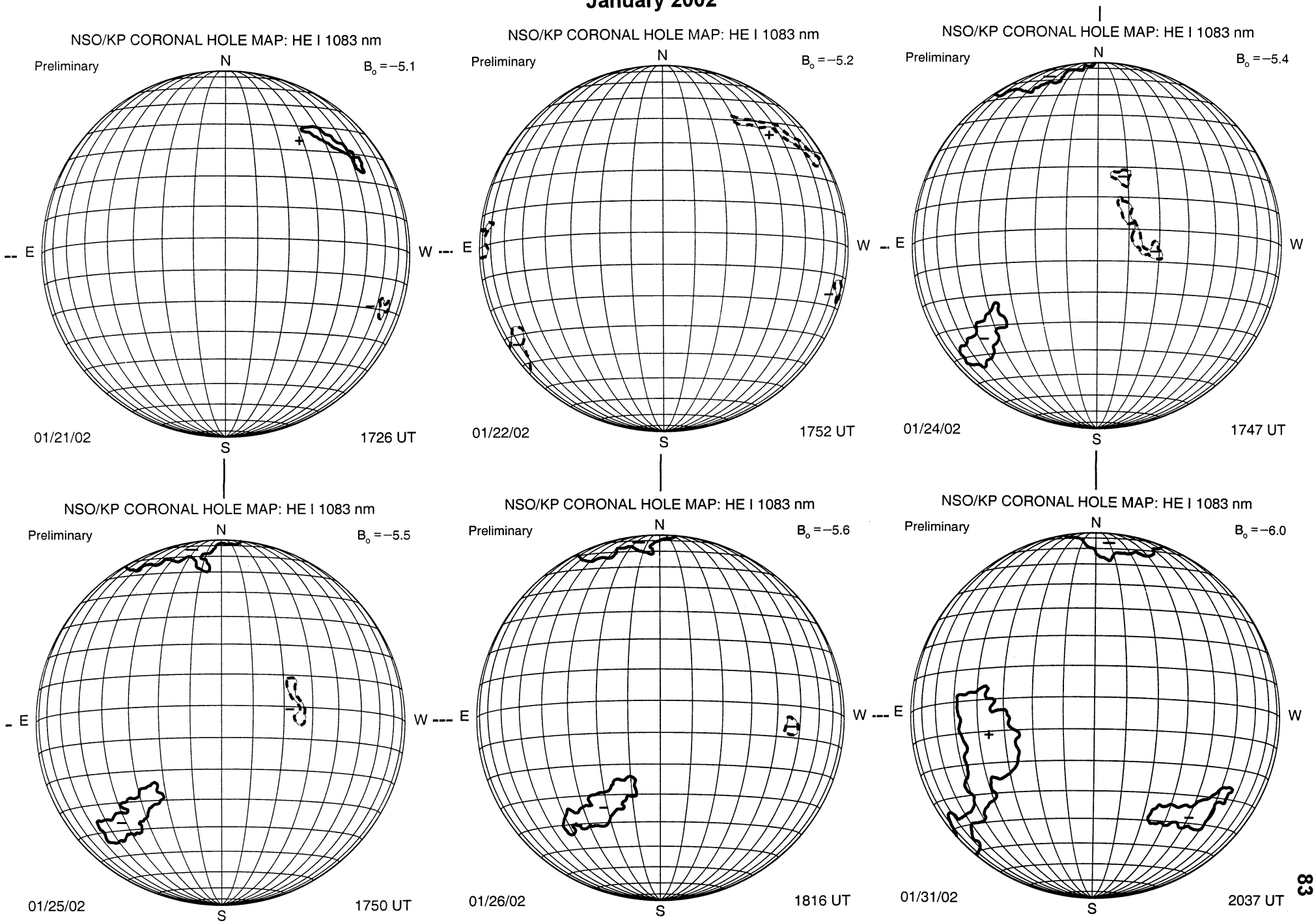
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
January 2002



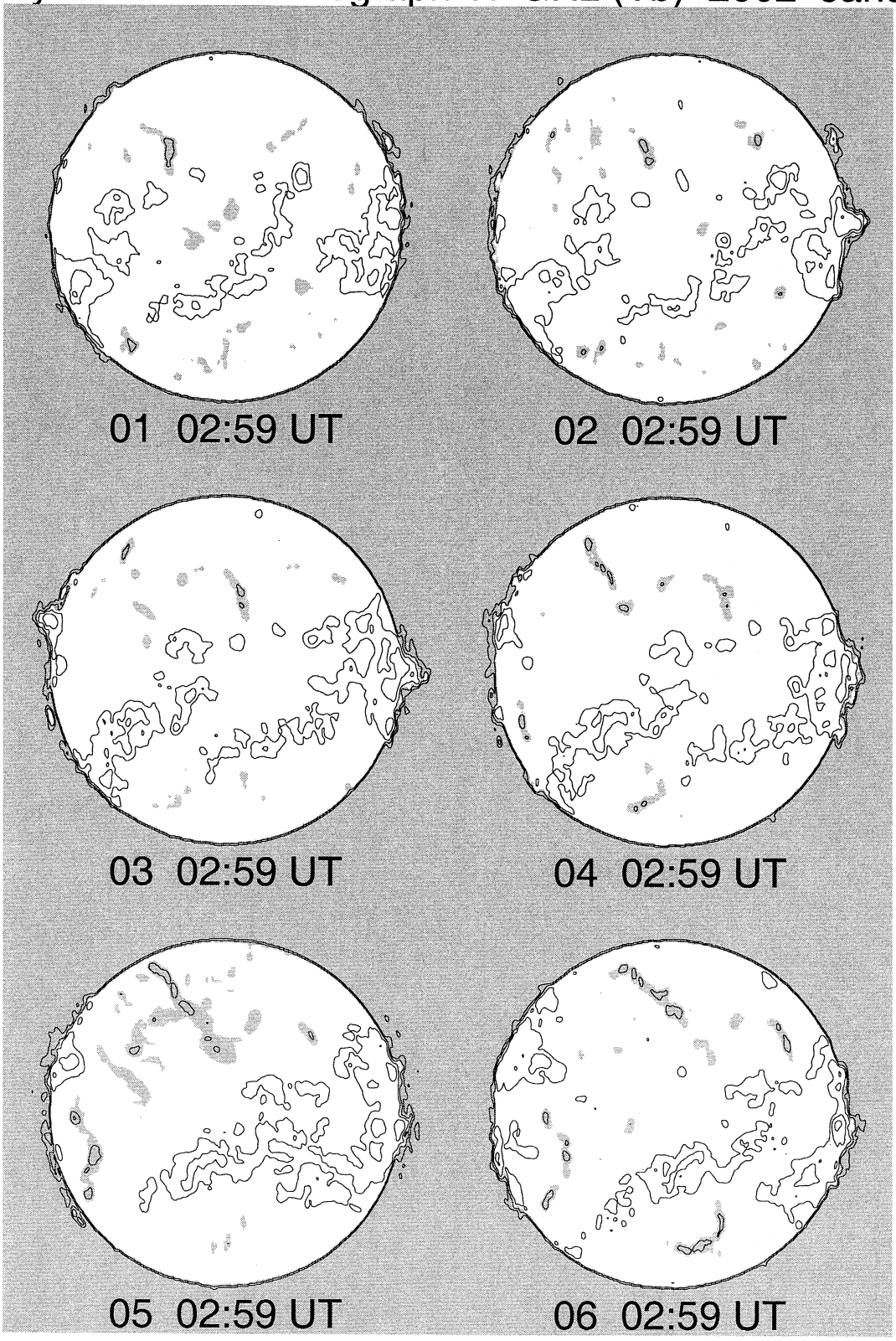
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
January 2002



KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
January 2002

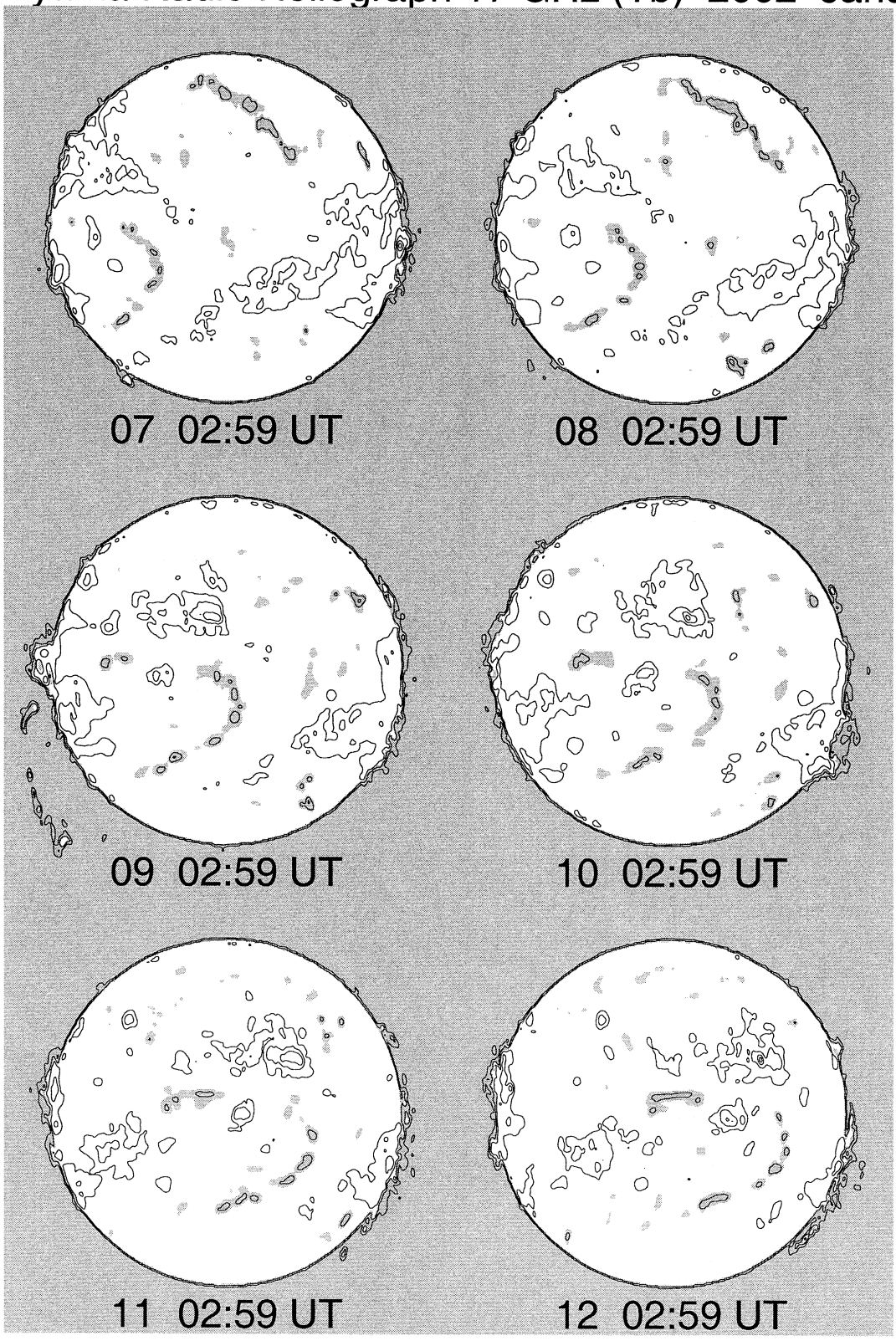


Nobeyama Radio Heliograph 17 GHz (Tb) 2002 January



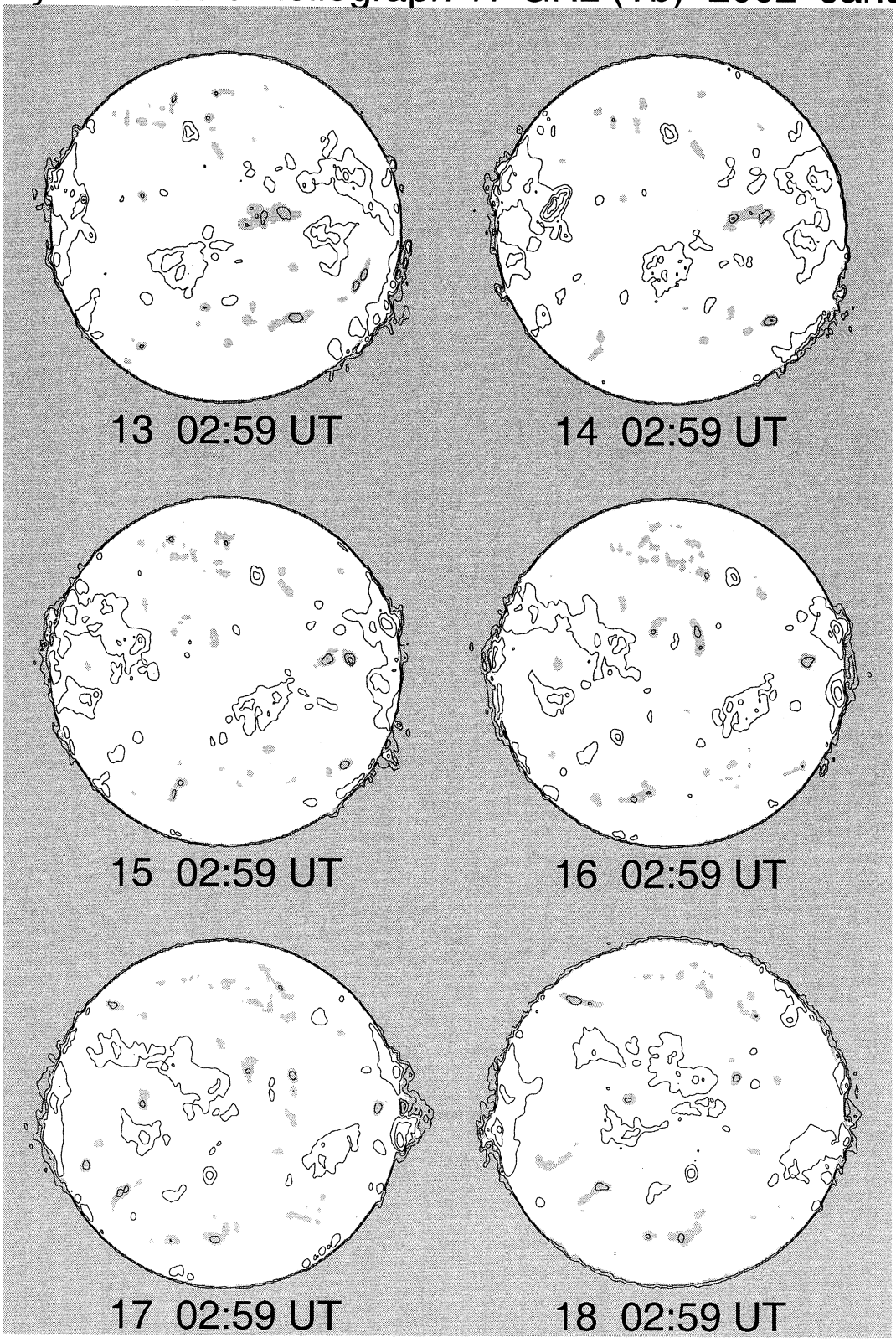
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 January



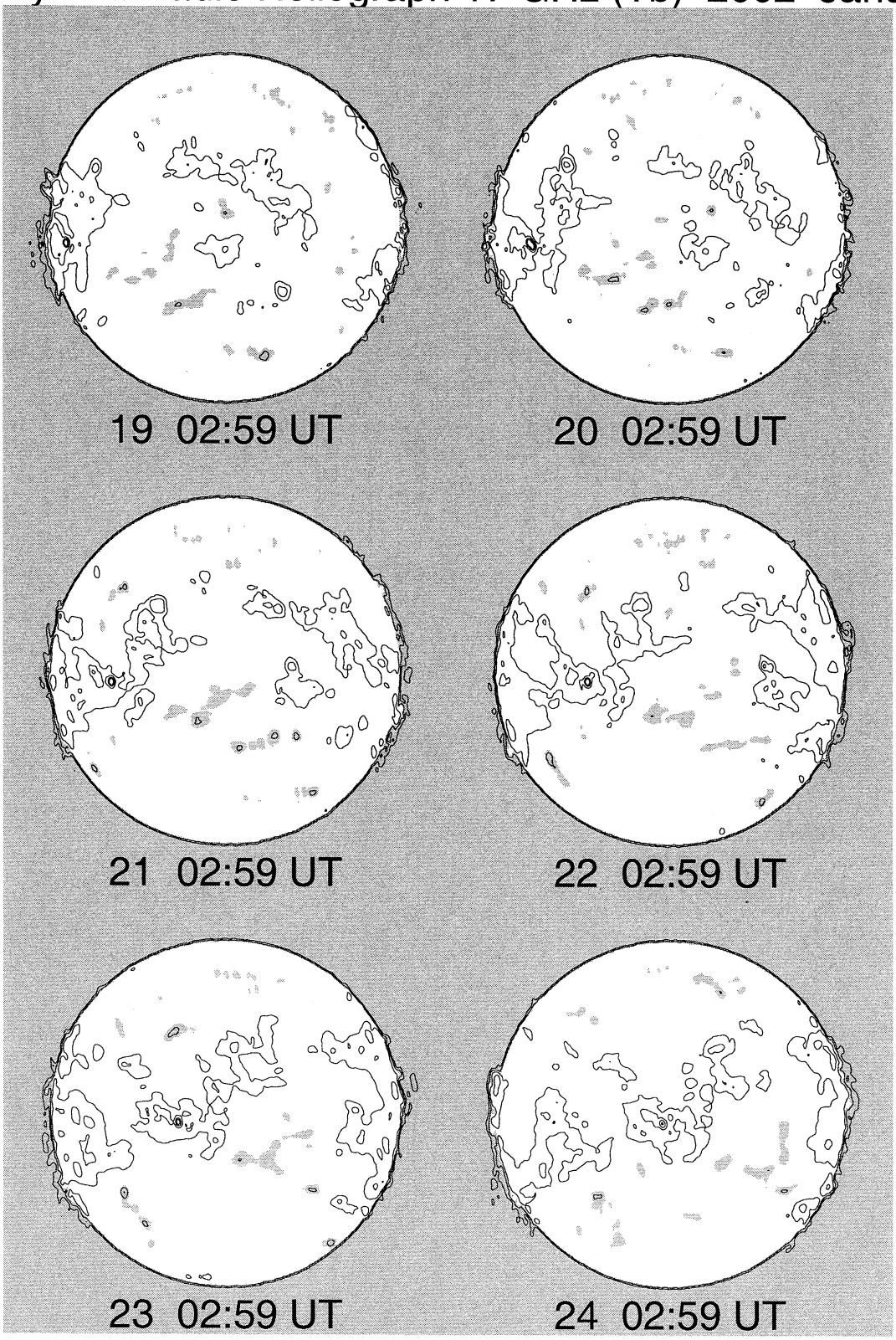
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 January



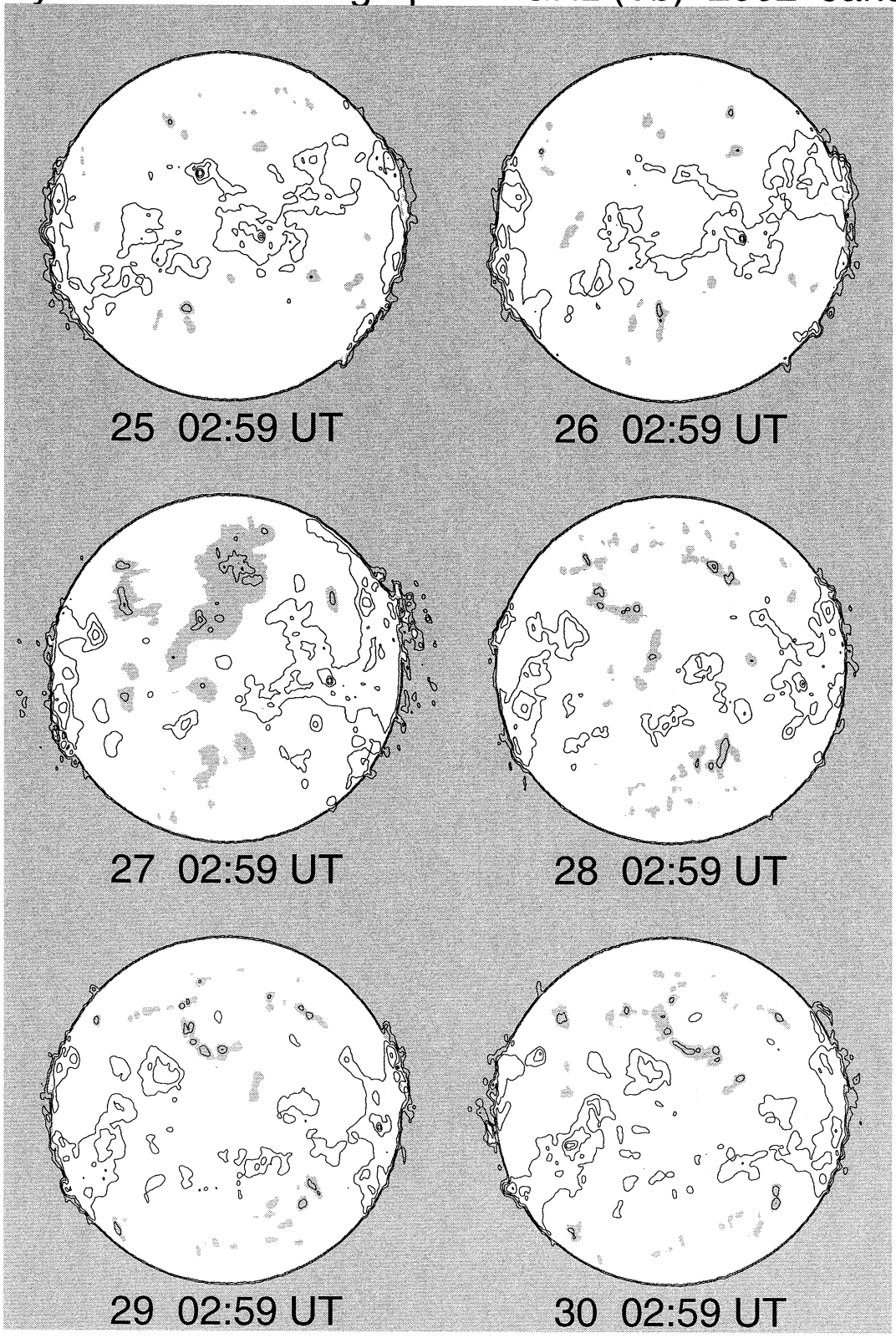
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 January



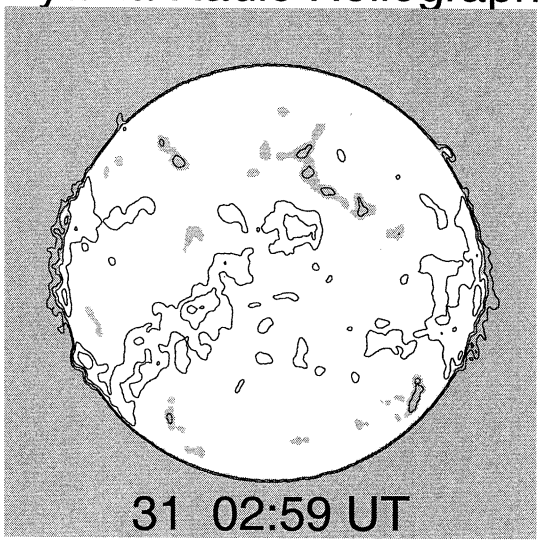
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 January



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

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 January



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

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9756		LEAR	12	26	0028	S27	E85	01	1.6		A	HAX	20	1	2	3
9756		TACH	12	26	0515	S25	E79	01	1.3			HSX	20	1	1	3
9756		RAMY	12	26	1440	S30	E80	01	1.9		B	DSO	30	2	2	4
9756		HOLL	12	26	1510	S28	E76	01	1.6		A	HSX	60	1	2	3
9756	30918	MWIL	12	26	1600	S28	E77	01	1.7	4	(AP)					
9756		VORO	12	26	2338	S28	E73	01	1.7			HAX	151	1		3
9756		LEAR	12	27	0120	S27	E70	01	1.5		A	HSX	60	1	3	2
9756		TACH	12	27	0629	S26	E66	01	1.4			HSX	70	1	2	4
9756		SVTO	12	27	1031	S28	E68	01	1.7		A	HSX	50	1	2	3
9756		RAMY	12	27	1254	S31	E66	01	1.7		B	CSO	100	5	6	3
9756	30918	MWIL	12	27	2300	S28	E64	01	2.0	4	AP					
9756		VORO	12	27	2339	S28	E60	01	1.7			HAX	124	5		3
9756		RAMY	12	28	1247	S30	E52	01	1.6		B	CAO	90	6	3	3
9756		LEAR	12	28	1300	S28	E59	01	2.1		B	CAO	100	4	2	3
9756		SVTO	12	28	1355	S28	E52	01	1.6		A	HAX	180	3	5	3
9756		HOLL	12	28	1738	S28	E50	01	1.6		B	CAO	110	2	4	1
9756		VORO	12	29	0003	S28	E47	01	1.7			HAX	151	2		2
9756		LEAR	12	29	0020	S28	E46	01	1.6		B	CAO	120	4	3	3
9756		TACH	12	29	0639	S26	E39	01	1.3			HSX	80	1	2	3
9756		KAND	12	29	0805	S29	E42	01	1.6			HA		3	4	3
9756		SVTO	12	29	0915	S28	E43	01	1.7		A	HAX	70	3	3	2
9756		RAMY	12	29	1420	S30	E38	01	1.6		B	CSO	50	4	2	1
9756		HOLL	12	29	1600	S28	E38	01	1.6		B	CAO	60	3	3	2
9756		VORO	12	29	2348	S28	E34	01	1.6			HAX	53	2		2
9756		LEAR	12	30	0045	S28	E34	01	1.7		B	CAO	80	3	3	3
9756		TACH	12	30	0810	S23	E26	01	1.3			AR	56	3	2	2
9756		RAMY	12	30	1305	S30	E25	01	1.5		B	CSO	30	3	4	2
9756		HOLL	12	30	1600	S28	E25	01	1.6		B	CSO	50	4	3	1
9756	30918	MWIL	12	30	1600	S28	E25	01	1.6	5	(AP)					
9756		VORO	12	30	2338	S28	E21	01	1.6			HAX	77	3		2
9756		LEAR	12	31	0030	S28	E21	01	1.7		B	CAO	40	3	4	2
9756		RAMY	12	31	1232	S29	E14	01	1.6		B	CAO	20	4	3	3
9756	30918	MWIL	12	31	1545	S28	E12	01	1.6	4	(AP)					
9756		VORO	01	01	0006	S28	E09	01	1.7			AXX	24	3		2
9756		LEAR	01	01	0050	S28	E09	01	1.7		B	CAO	20	2	2	3
9756		SVTO	01	01	0749	S28	E04	01	1.6		A	HSX	20	1	1	3
9756		RAMY	01	01	1351	S29	E01	01	1.6		B	BXO	10	2	2	3
9761		KAND	12	26	0850	N11	E85	01	1.8			HS		1	1	3
9761		RAMY	12	26	1440	N08	E80	01	1.6		B	DSO	40	2	2	4
9761		HOLL	12	26	1510	N10	E79	01	1.6		A	HSX	60	1	2	3
9761	30919	MWIL	12	26	1600	N10	E78	01	1.5	4	(AP)					
9761		VORO	12	26	2338	N11	E75	01	1.6			HAX	82	1		3
9761		LEAR	12	27	0120	N10	E72	01	1.5		A	HSX	30	1	2	2
9761		TACH	12	27	0629	N11	E68	01	1.4			HSX	30	1	1	4
9761		SVTO	12	27	1031	N11	E68	01	1.5		A	HSX	50	1	1	3
9761		RAMY	12	27	1254	N09	E67	01	1.6		A	HSX	70	1	2	3
9761	30919	MWIL	12	27	2300	N10	E62	01	1.6	4	AP					
9761		VORO	12	27	2339	N11	E61	01	1.6			HAX	108	1		3
9761		RAMY	12	28	1247	N09	E53	01	1.5		A	HSX	50	1	2	3
9761		LEAR	12	28	1300	N10	E59	01	2.0		A	HSX	80	1	2	3
9761		SVTO	12	28	1355	N10	E52	01	1.5		A	HSX	60	1	2	3
9761		HOLL	12	28	1738	N10	E50	01	1.5		A	HAX	80	1	2	1
9761		VORO	12	29	0003	N11	E47	01	1.5			HAX	70	1		2
9761		LEAR	12	29	0020	N10	E46	01	1.5		A	HSX	90	1	2	3
9761		TACH	12	29	0639	N11	E40	01	1.3			HSX	100	1	1	3
9761		KAND	12	29	0805	N10	E43	01	1.6			HS		1	1	3
9761		SVTO	12	29	0915	N10	E42	01	1.5		A	HSX	70	1	2	2
9761		RAMY	12	29	1420	N09	E39	01	1.5		A	HSX	80	1	1	1
9761		HOLL	12	29	1600	N09	E38	01	1.5		A	HAX	50	1	2	2
9761		VORO	12	29	2348	N10	E35	01	1.6			HAX	108	1		2
9761		LEAR	12	30	0045	N10	E33	01	1.5		A	HSX	80	1	2	3
9761		TACH	12	30	0810	N12	E26	01	1.3			HSX	100	1	1	2
9761		RAMY	12	30	1305	N09	E28	01	1.6		A	HSX	40	1	2	2
9761		HOLL	12	30	1600	N10	E25	01	1.5		A	HSX	90	2	2	1
9761	30919	MWIL	12	30	1600	N10	E25	01	1.5	5	(AP)					
9761		VORO	12	30	2338	N10	E22	01	1.6			HSX	70	1		2
9761		LEAR	12	31	0030	N11	E20	01	1.5		A	HSX	30	2	3	2
9761		RAMY	12	31	1232	N11	E13	01	1.5		A	HSX	40	1	2	3

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9761	30919	MWIL	12 31 1545	N10 E12	01 1.5	5	(AP)					
9761		VORO	01 01 0006	N11 E08	01 1.6			HAX	82	2		2
9761		LEAR	01 01 0050	N10 E07	01 1.6		A	HSX	40	1	2	3
9761		SVTO	01 01 0749	N09 E03	01 1.5		A	HSX	80	1	2	3
9761		TACH	01 01 0954	N11 E02	01 1.6			HSX	90	1	2	3
9761		RAMY	01 01 1351	N10 E00	01 1.6		A	HSX	30	1	2	3
9761		HOLL	01 01 2150	N11 W04	01 1.6		B	CAO	50	2	4	3
9761	30919	MWIL	01 01 2230	N11 W04	01 1.6	4	(B)					
9761		LEAR	01 02 0130	N11 W06	01 1.6		B	CSO	40	3	4	2
9761		VORO	01 02 0157	N10 W07	01 1.5			HSX	54	1		2
9761		KAND	01 02 0920	N12 W10	01 1.6			CSO		2	4	3
9761		SVTO	01 02 1015	N12 W12	01 1.5		B	DSO	50	2	4	2
9761		RAMY	01 02 1745	N11 W15	01 1.6		B	CSO	20	2	3	3
9761		VORO	01 02 2358	N11 W19	01 1.6			HSX	39	1		2
9761		LEAR	01 03 0010	N11 W20	01 1.5		A	HSX	30	4	2	4
9761		TACH	01 03 0544	N11 W22	01 1.6			AXX	45	1	1	3
9761		KAND	01 03 0835	N10 W23	01 1.6			HS		2	1	2
9761		SVTO	01 03 0845	N11 W24	01 1.5		A	HSX	20	2	1	2
9761		RAMY	01 03 1245	N11 W25	01 1.6		B	CSO	10	2	2	3
9761		HOLL	01 03 1910	N11 W29	01 1.6		A	HAX	20	1	2	2
9761		LEAR	01 04 0045	N11 W33	01 1.5		A	HSX	20	2	2	3
9761		TACH	01 04 0459	N10 W34	01 1.6			AXX	10	1	1	3
9761		RAMY	01 04 1225	N10 W39	01 1.6		A	HSX	10	1	1	3
9761		HOLL	01 04 1805	N11 W41	01 1.7		A	HSX	10	1	1	3
9761		VORO	01 05 0032	N10 W45	01 1.6			AXX	12	1		2
9761		SVTO	01 05 0900	N08 W51	01 1.5		A	HSX	30	1	1	3
9761		LEAR	01 05 1253	N10 W46	01 2.1		A	HSX	10	1	1	2
9761		HOLL	01 05 1520	N15 W53	01 1.6		B	CSO	20	2	3	4
9761	30919	MWIL	01 05 1600	N10 W54	01 1.6	4	(AP)					
9761		LEAR	01 06 0030	N09 W58	01 1.7		A	AXX	10	1	1	4
9761		VORO	01 06 0138	N10 W59	01 1.6			AXX	20	1		2
9761		SVTO	01 06 0736	N12 W62	01 1.6		A	AXX		1		3
9761		RAMY	01 06 1315	N11 W66	01 1.6		A	AXX	10	1		2
9761		HOLL	01 06 1521	N11 W67	01 1.6		A	AXX	10	1	1	2
9761	30919	MWIL	01 06 1800	N11 W69	01 1.5	3	(AP)					
9761		LEAR	01 07 0007	N09 W70	01 1.7		A	AXX	10	1	1	3
9763		SVTO	12 27 1031	N07 E85	01 2.8		A	HSX	60	1	3	3
9763		RAMY	12 27 1254	N06 E80	01 2.5		A	HSX	50	1	2	3
9763	30923	MWIL	12 27 2300	N07 E77	01 2.7	5	AP					
9763		VORO	12 27 2339	N06 E75	01 2.6			HAX	96	1		3
9763		RAMY	12 28 1247	N06 E67	01 2.5		B	CSO	60	6	7	3
9763		LEAR	12 28 1300	N07 E74	01 3.1		A	HSX	90	3	7	3
9763		SVTO	12 28 1355	N06 E66	01 2.5		B	CSO	100	2	7	3
9763		HOLL	12 28 1738	N07 E63	01 2.4		A	HAX	80	1	2	1
9763		VORO	12 29 0003	N07 E63	01 2.7			CAO	69	3	6	2
9763		LEAR	12 29 0020	N07 E62	01 2.6		B	DAO	100	6	9	3
9763		TACH	12 29 0639	N08 E55	01 2.4			DSO	105	2	6	3
9763		KAND	12 29 0805	N06 E56	01 2.5			CAO		6	10	3
9763		SVTO	12 29 0915	N06 E58	01 2.7		B	CSO	90	5	8	2
9763		RAMY	12 29 1420	N05 E54	01 2.6		B	DSO	80	7	8	1
9763		HOLL	12 29 1600	N06 E53	01 2.6		B	CAO	90	5	8	2
9763		VORO	12 29 2348	N07 E47	01 2.5			HAX	112	1		2
9763		LEAR	12 30 0045	N07 E48	01 2.6		B	CSO	80	4	7	3
9763		TACH	12 30 0810	N08 E38	01 2.2			HSX	45	1	1	2
9763		RAMY	12 30 1305	N03 E39	01 2.4		B	DSI	40	4	3	2
9763		HOLL	12 30 1600	N06 E38	01 2.5		B	CAO	60	4	6	1
9763	30923	MWIL	12 30 1600	N06 E39	01 2.6	5	(AP)					
9763		VORO	12 30 2338	N07 E33	01 2.4			HSX	47	1		2
9763		LEAR	12 31 0030	N06 E32	01 2.4		B	CSO	50	2	2	2
9763		RAMY	12 31 1232	N07 E25	01 2.4		A	HSX	40	1	2	3
9763	30923	MWIL	12 31 1545	N06 E24	01 2.4	4	(AP)					
9763		VORO	01 01 0006	N06 E20	01 2.5			HAX	71	1		2
9763		LEAR	01 01 0050	N07 E18	01 2.4		A	HSX	40	1	2	3
9763		SVTO	01 01 0749	N06 E15	01 2.4		A	HSX	40	1	1	3
9763		TACH	01 01 0954	N07 E13	01 2.4			HSX	80	1	1	3
9763		RAMY	01 01 1351	N06 E12	01 2.5		A	HSX	30	1	2	3
9763		HOLL	01 01 2150	N06 E07	01 2.4		A	HAX	40	1	2	3
9763	30923	MWIL	01 01 2230	N06 E07	01 2.5	5	(AP)					

SUNSPOT GROUPS
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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
9763		LEAR	01	02	0130	N06	E05	01	2.4		A	HSX	50	1	2	2
9763		VORO	01	02	0157	N06	E06	01	2.5			HSX	61	1		2
9763		KAND	01	02	0920	N06	E01	01	2.5			HS		1	1	3
9763		SVTO	01	02	1015	N06	E01	01	2.5		A	HSX	40	1	1	2
9763		RAMY	01	02	1745	N06	W04	01	2.4		A	HSX	40	1	2	3
9763		LEAR	01	03	0010	N07	W06	01	2.5		A	HSX	60	2	3	4
9763		TACH	01	03	0544	N07	W11	01	2.4			HSX	50	1	1	3
9763		KAND	01	03	0835	N05	W12	01	2.5			HS		1	1	2
9763		SVTO	01	03	0845	N07	W13	01	2.4		A	HSX	60	1	2	2
9763		RAMY	01	03	1245	N06	W14	01	2.5		A	HSX	20	1	1	3
9763		HOLL	01	03	1910	N07	W17	01	2.5		A	HSX	40	1	2	2
9763		LEAR	01	04	0045	N06	W22	01	2.4		A	HSX	20	3	2	3
9763		TACH	01	04	0459	N06	W22	01	2.6			HSX	45	1	1	3
9763		RAMY	01	04	1225	N06	W28	01	2.4		A	HSX	10	2	1	3
9763		HOLL	01	04	1805	N05	W31	01	2.4		A	HSX	40	3	2	3
9763		VORO	01	05	0032	N05	W34	01	2.5			HSX	33	1		2
9763		SVTO	01	05	0900	N04	W38	01	2.5		A	HSX	10	1	1	3
9763		LEAR	01	05	1253	N05	W34	01	3.0		A	HSX	10	1	1	2
9763		HOLL	01	05	1520	N08	W42	01	2.5		A	HSX	20	1	1	4
9763	30923	MWIL	01	05	1600	N06	W43	01	2.4	4	(AP)					
9763		VORO	01	05	2358	N06	W48	01	2.4			AXX	13	1		2
9763		LEAR	01	06	0030	N05	W46	01	2.6		A	HAX	30	1	1	4
9763		SVTO	01	06	0736	N07	W51	01	2.5		A	HRX	10	1	1	3
9763		RAMY	01	06	1315	N06	W54	01	2.5		A	AXX	10	1		2
9763		HOLL	01	06	1521	N07	W57	01	2.4		A	AXX	10	1	1	2
9763	30923	MWIL	01	06	1800	N06	W58	01	2.4	3	(AP)					
9763		LEAR	01	07	0007	N05	W60	01	2.5		A	AXX	10	1	1	3
9763B		VORO	01	02	2358	S12	E05	01	3.4			AXX	7	1		2
9763B		RAMY	01	04	1225	S11	W13	01	3.5		B	BXO		4	8	3
9763A		RAMY	01	04	1225	S01	W14	01	3.5		B	BXO		3	2	3
9765		RAMY	12	28	1247	N05	E81	01	3.6		B	CSO	70	4	6	3
9765		SVTO	12	28	1355	N06	E85	01	3.9		B	DSO	60	2	10	3
9765		HOLL	12	28	1738	N05	E80	01	3.7		B	DSO	120	2	3	1
9765		VORO	12	29	0003	N06	E78	01	3.8			HAX	162	2	4	2
9765		LEAR	12	29	0020	N06	E75	01	3.6		B	DAO	120	4	5	3
9765		TACH	12	29	0639	N07	E75	01	3.9			DSO	50	2	6	3
9765		KAND	12	29	0805	N06	E73	01	3.8			DAO		3	5	3
9765		SVTO	12	29	0915	N06	E74	01	3.9		B	DSO	130	3	6	2
9765		RAMY	12	29	1420	N05	E68	01	3.7		B	DSO	220	4	5	1
9765		HOLL	12	29	1600	N06	E67	01	3.7		B	DAO	170	3	6	2
9765		VORO	12	29	2348	N06	E65	01	3.8			HAX	190	3	3	2
9765		LEAR	12	30	0045	N07	E62	01	3.7		B	DAO	120	5	6	3
9765		TACH	12	30	0810	N08	E56	01	3.5			DSO	105	2	4	2
9765		RAMY	12	30	1305	N05	E58	01	3.9		B	DSI	140	4	5	2
9765		HOLL	12	30	1600	N06	E54	01	3.7		B	DAO	20	6	5	1
9765	30924	MWIL	12	30	1600	N06	E54	01	3.7	5	(BG)					
9765		VORO	12	30	2338	N06	E50	01	3.7			HAX	166	4	3	2
9765		LEAR	12	31	0030	N06	E49	01	3.7		B	DAO	150	5	5	2
9765		RAMY	12	31	1232	N06	E42	01	3.7		B	DSO	100	7	7	3
9765	30924	MWIL	12	31	1545	N06	E41	01	3.7	5	(AP)					
9765		VORO	01	01	0006	N06	E37	01	3.8			HSX	150	4	3	2
9765		LEAR	01	01	0050	N06	E36	01	3.7		B	DSO	70	4	4	3
9765		SVTO	01	01	0749	N05	E32	01	3.7		B	DSO	80	4	5	3
9765		TACH	01	01	0954	N06	E28	01	3.5			CSI	113	4	3	3
9765		RAMY	01	01	1351	N06	E29	01	3.7		B	DSO	80	12	4	3
9765		HOLL	01	01	2150	N06	E24	01	3.7		B	DSO	90	5	4	3
9765	30924	MWIL	01	01	2230	N06	E24	01	3.7	5	(AP)					
9765		LEAR	01	02	0130	N05	E22	01	3.7		B	DAO	100	6	3	2
9765		VORO	01	02	0157	N05	E22	01	3.7			HSX	130	2	2	2
9765		KAND	01	02	0920	N06	E18	01	3.7			HS		3	3	3
9765		SVTO	01	02	1015	N07	E17	01	3.7		B	DSO	80	5	4	2
9765		RAMY	01	02	1745	N06	E12	01	3.6		B	CSO	60	5	3	3
9765		LEAR	01	03	0010	N06	E09	01	3.7		B	CSO	90	4	3	4
9765		TACH	01	03	0544	N07	E03	01	3.5			HSX	60	1	2	3
9765		KAND	01	03	0835	N05	E04	01	3.6			HS		2	2	2
9765		SVTO	01	03	0845	N07	E03	01	3.6		A	HSX	60	2	3	2

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

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9765		RAMY	01	03	1245	N06	E03	01	3.7		B	CSO	60	3	3	3
9765		HOLL	01	03	1910	N06	W01	01	3.7		A	HAX	80	1	2	2
9765		LEAR	01	04	0045	N06	W02	01	3.9		B	CSO	100	9	8	3
9765		TACH	01	04	0459	N06	W08	01	3.6			HSX	50	1	2	3
9765		RAMY	01	04	1225	N06	W12	01	3.6		A	HSX	60	1	2	3
9765		HOLL	01	04	1805	N06	W12	01	3.8		B	CAO	60	8	6	3
9765		VORO	01	05	0032	N06	W17	01	3.7			HSX	111	3		2
9765		SVTO	01	05	0900	N05	W19	01	3.9		A	DSO	80	5	7	3
9765		LEAR	01	05	1253	N06	W15	01	4.4		B	CSO	70	4	7	2
9765		HOLL	01	05	1520	N08	W22	01	4.0		B	CSO	70	2	7	4
9765	30924	MWIL	01	05	1600	N06	W25	01	3.8	5	(BP)					
9765		VORO	01	05	2358	N06	W32	01	3.6			HSX	95	1		2
9765		LEAR	01	06	0030	N07	W26	01	4.1		B	CSO	70	3	8	4
9765		SVTO	01	06	0736	N06	W35	01	3.7		A	HSX	50	1	2	3
9765		RAMY	01	06	1315	N06	W37	01	3.8		A	HSX	70	1	1	2
9765		HOLL	01	06	1521	N06	W40	01	3.6		A	HSX	80	1	1	2
9765	30924	MWIL	01	06	1800	N06	W42	01	3.6	5	(AP)					
9765		LEAR	01	07	0007	N05	W45	01	3.6		A	HSX	80	1	2	3
9765		TACH	01	07	0600	N08	W47	01	3.7			HSX	100	1	2	4
9765		SVTO	01	07	0742	N09	W43	01	4.1		B	CSO	60	2	13	3
9765		RAMY	01	07	1220	N05	W46	01	4.1		B	CSO	70	2	11	3
9765	30925	MWIL	01	07	1600	N06	W54	01	3.6	5	(AP)					
9765		HOLL	01	07	1629	N07	W54	01	3.6		B	CSO	100	2	3	1
9765		LEAR	01	08	0020	N06	W57	01	3.7		A	HSX	70	1	2	2
9765		SVTO	01	08	0806	N05	W63	01	3.6		A	HSX	60	1	2	3
9765		RAMY	01	08	1248	N06	W65	01	3.7		A	HSX	40	1	2	3
9765		HOLL	01	08	1545	N07	W68	01	3.6		A	HSX	100	1	2	2
9765	30925	MWIL	01	08	1600	N06	W67	01	3.6	5	(AP)					
9765		VORO	01	09	0019	N06	W73	01	3.5			HSX	196	1		2
9765		LEAR	01	09	0025	N06	W73	01	3.5		A	HSX	60	1	2	2
9765		RAMY	01	09	1234	N07	W80	01	3.5		A	HSX	30	1	2	4
9765	30925	MWIL	01	09	1600	N06	W81	01	3.6	4	AP					
9765A		HOLL	12	29	1600	S09	E71	01	4.0		A	AXX	30	3	2	2
9765A		LEAR	01	03	0010	S09	E13	01	4.0		B	BXO	10	6	3	4
9765A		KAND	01	03	0835	S12	E09	01	4.0			AX		2	1	2
9765A		TACH	01	04	0459	S14	W02	01	4.0			BRO	9	3	4	3
9765A		HOLL	01	04	1805	S10	W04	01	4.4		A	AXX		1		3
9765A		SVTO	01	07	0742	S14	W44	01	4.0		A	AXX	10	2	3	3
9771		HOLL	01	01	2150	S21	E32	01	4.4		B	BXO	10	2	3	3
9771	30928	MWIL	01	01	2230	S21	E31	01	4.3	4	(B)					
9771		LEAR	01	02	0130	S20	E28	01	4.2		A	AXX		1		2
9771		KAND	01	02	0920	S19	E25	01	4.3			AX		2	2	3
9771		SVTO	01	02	1015	S19	E25	01	4.3		B	CSO	20	5	8	2
9771		RAMY	01	02	1745	S21	E19	01	4.2		B	BXO	10	5	3	3
9771		VORO	01	02	2358	S19	E12	01	3.9			AXX	9	1		2
9771		VORO	01	02	2358	S21	E17	01	4.3			BXI	17	3	3	2
9771		LEAR	01	03	0010	S20	E16	01	4.2		B	CRO	20	10	6	4
9771		TACH	01	03	0544	S18	E13	01	4.2			AXX	25	1	1	3
9771		KAND	01	03	0835	S20	E11	01	4.2			CRO		6	6	2
9771		SVTO	01	03	0845	S20	E11	01	4.2		B	DRO	70	8	7	2
9771		RAMY	01	03	1245	S20	E09	01	4.2		B	DRO	50	9	6	3
9771		HOLL	01	03	1910	S21	E07	01	4.3		B	CSO	50	9	8	2
9771		LEAR	01	04	0045	S20	E03	01	4.3		B	CRO	90	14	7	3
9771		TACH	01	04	0459	S20	E02	01	4.4			AXX	5	1	1	3
9771		RAMY	01	04	1225	S21	W05	01	4.1		B	ESO	30	15	12	3
9771		HOLL	01	04	1805	S20	W06	01	4.3		B	CAO	50	10	9	3
9771		VORO	01	05	0032	S19	W19	01	3.6			AXX	8	1		2
9771		VORO	01	05	0032	S24	W08	01	4.4			BXO	21	3	2	2
9771		SVTO	01	05	0900	S25	W15	01	4.2		B	DSO	30	4	5	3
9771		LEAR	01	05	1253	S24	W18	01	4.1		B	CSO	30	4	4	2
9771		HOLL	01	05	1520	S22	W18	01	4.2		B	DSO	40	4	4	4
9771	30930	MWIL	01	05	1600	S21	W19	01	4.2	4	(B)					
9771		LEAR	01	06	0030	S23	W22	01	4.3		B	BXO	10	5	9	4
9771		VORO	01	06	0138	S17	W25	01	4.2			BXI	22	3	4	2
9771		VORO	01	06	0138	S25	W22	01	4.4			AXX	6	1		2
9771		SVTO	01	06	0736	S24	W26	01	4.3		A	AXX		1		3
9771	30930	MWIL	01	06	1800	S17	W37	01	3.9	3	(B)					

SUNSPOT GROUPS
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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
9771		LEAR	01	07	0007	S21	W36	01	4.2		B	BXO	10	6	7	3
9766		RAMY	12	29	1420	N03	E81	01	4.6		A	HSX	20	1	1	1
9766		VORO	12	29	2348	N04	E76	01	4.7			HAX	38	1		2
9766		LEAR	12	30	0045	N05	E74	01	4.6		A	HSX	30	3	3	3
9766	30925	MWIL	12	30	1600	N04	E66	01	4.6	4	(B)					
9766		HOLL	12	30	1600	N05	E66	01	4.6		B	CSO	50	2	3	1
9766		VORO	12	30	2338	N04	E62	01	4.6			AXX	15	1		2
9766		LEAR	12	31	0030	N05	E60	01	4.5		B	CSO	20	2	2	2
9766		RAMY	12	31	1232	N06	E54	01	4.6		B	BXO	10	2	2	3
9766	30925	MWIL	12	31	1545	N04	E52	01	4.5	4	(B)					
9766		VORO	01	01	0006	N04	E48	01	4.6			AXX	8	1		2
9766		LEAR	01	01	0050	N06	E47	01	4.5		B	CSO	10	2	2	3
9766		SVTO	01	01	0749	N03	E44	01	4.6		A	HSX	30	1	1	3
9766		TACH	01	01	0954	N04	E39	01	4.3			AXX	10	1	1	3
9766		RAMY	01	01	1351	N04	E41	01	4.6		B	BXO	10	3	3	3
9766		LEAR	01	02	0130	N04	E33	01	4.5		A	AXX		1		2
9766		VORO	01	02	0157	N04	E33	01	4.5			AXX	3	1		2
9766		RAMY	01	02	1745	N08	E25	01	4.6		B	BXO	10	3	1	3
9766		LEAR	01	03	0010	N08	E21	01	4.6		B	BXO	10	2	2	4
9766		HOLL	01	03	1910	N05	E11	01	4.6		A	AXX	10	1	1	2
9766		HOLL	01	06	1521	N12	W20	01	5.1		A	AXX	10	2	2	2
9766	30933	MWIL	01	06	1800	N12	W22	01	5.1	3	(B)					
9766		LEAR	01	07	0007	N11	W25	01	5.1		B	BXO	10	2	3	3
9766		TACH	01	07	0600	N08	W35	01	4.6			AXX	3	1	1	4
9766		SVTO	01	07	0742	N14	W28	01	5.2		B	BXO	10	2	4	3
9766A		HOLL	12	30	1600	S08	E67	01	4.7		A	AXX	20	2	1	1
9767		LEAR	12	30	0045	S19	E85	01	5.5		B	DAO	90	3	8	3
9767		TACH	12	30	0810	S18	E78	01	5.3			HA	60	2	2	2
9767	30926	MWIL	12	30	1600	S23	E78	01	5.7	5	BP					
9767		HOLL	12	30	1600	S24	E80	01	5.8		BG	EKC	570	6	12	1
9767		VORO	12	30	2338	S23	E77	01	5.9			KI	571	6	6	2
9767		LEAR	12	31	0030	S22	E74	01	5.7		BG	EKI	480	4	12	2
9767		RAMY	12	31	1232	S23	E67	01	5.7		B	EAO	540	17	14	3
9767	30926	MWIL	12	31	1545	S23	E66	01	5.7	5	(BP)					
9767		VORO	01	01	0006	S23	E63	01	5.8			DKI	709	18	7	2
9767		LEAR	01	01	0050	S22	E61	01	5.7		BG	EKI	510	19	14	3
9767		SVTO	01	01	0749	S24	E58	01	5.8		BG	FHI	520	12	17	3
9767		TACH	01	01	0954	S22	E56	01	5.7			DAI	298	10	10	3
9767		RAMY	01	01	1351	S23	E55	01	5.8		B	EAI	460	36	13	3
9767		HOLL	01	01	2150	S24	E50	01	5.8		B	FKI	540	27	17	3
9767	30926	MWIL	01	01	2230	S23	E51	01	5.9	5	(BP)					
9767		LEAR	01	02	0130	S23	E48	01	5.8		BG	EKI	400	29	13	2
9767		VORO	01	02	0157	S24	E49	01	5.9			DKI	503	16	9	2
9767		KAND	01	02	0920	S21	E45	01	5.8			EAO		15	14	3
9767		SVTO	01	02	1015	S23	E46	01	6.0		BG	FSI	350	30	17	2
9767		RAMY	01	02	1745	S22	E39	01	5.7		BG	EAC	410	46	13	3
9767		LEAR	01	03	0010	S23	E35	01	5.7		BG	EAI	400	49	14	4
9767		TACH	01	03	0544	S19	E29	01	5.4			DAI	287	12	10	3
9767		KAND	01	03	0835	S22	E30	01	5.7			EAO		29	13	2
9767		SVTO	01	03	0845	S22	E31	01	5.7		B	FSI	250	57	16	2
9767		RAMY	01	03	1245	S23	E29	01	5.8		BG	EAI	220	19	12	3
9767		HOLL	01	03	1910	S22	E24	01	5.6		BG	EKI	300	30	13	2
9767		LEAR	01	04	0045	S22	E21	01	5.6		BG	EAI	330	39	15	3
9767		TACH	01	04	0459	S19	E16	01	5.4			CAI	125	23	9	3
9767		RAMY	01	04	1225	S22	E14	01	5.6		BG	FAI	310	58	17	3
9767		HOLL	01	04	1805	S23	E11	01	5.6		B	FKI	380	55	19	3
9767		VORO	01	05	0032	S23	E11	01	5.9			DHI	468	30	10	2
9767		SVTO	01	05	0900	S22	E03	01	5.6		BG	FSI	380	36	19	3
9767		LEAR	01	05	1253	S22	E08	01	6.1		BG	FKI	370	37	16	2
9767		HOLL	01	05	1520	S22	W01	01	5.6		BG	FKI	260	31	16	4
9767	30926	MWIL	01	05	1600	S21	E00	01	5.7	5	(BG)					
9767		LEAR	01	06	0030	S22	W05	01	5.6		BG	EAI	340	33	13	4
9767		VORO	01	06	0138	S23	W03	01	5.8			DAI	347	11	11	2
9767		SVTO	01	06	0736	S22	W08	01	5.7		BG	FAI	270	22	16	3
9767		RAMY	01	06	1315	S23	W08	01	5.9		BG	FSI	300	30	20	2
9767		HOLL	01	06	1521	S22	W15	01	5.5		BG	FAI	170	32	16	2

SUNSPOT GROUPS
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JANUARY 2002

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9767	30926	MWIL	01	06	1800	S21	W14	01	5.7	5	(BG)					
9767		LEAR	01	07	0007	S23	W15	01	5.8		BG	FAI	240	40	16	3
9767		TACH	01	07	0600	S15	W24	01	5.4			DAI	345	19	3	4
9767		SVTO	01	07	0742	S19	W23	01	5.6		BG	EAI	230	19	15	3
9767		RAMY	01	07	1220	S23	W24	01	5.7		BG	FSI	310	29	16	3
9767	30926	MWIL	01	07	1600	S21	W27	01	5.6	5	(BG)					
9767		HOLL	01	07	1629	S21	W28	01	5.5		BG	EAI	190	16	14	1
9767		LEAR	01	08	0020	S22	W28	01	5.9		BG	FAO	190	22	17	2
9767		SVTO	01	08	0806	S20	W35	01	5.7		BG	ESO	180	17	15	3
9767		RAMY	01	08	1248	S20	W39	01	5.5		B	ESO	180	14	11	3
9767		HOLL	01	08	1545	S21	W40	01	5.6		B	DAO	110	10	9	2
9767	30926	MWIL	01	08	1600	S21	W41	01	5.5	5	(BG)					
9767		VORO	01	09	0019	S20	W45	01	5.6			DAI	285	4	6	2
9767		LEAR	01	09	0025	S22	W45	01	5.5		BG	EAO	170	8	15	2
9767		RAMY	01	09	1234	S17	W56	01	5.3		B	DSO	180	4	8	4
9767		HOLL	01	09	1600	S16	W58	01	5.3		B	DAO	160	7	8	2
9767	30926	MWIL	01	09	1600	S20	W55	01	5.4	5	(BP)					
9767		VORO	01	10	0002	S19	W59	01	5.5			DAI	345	3	2	3
9767		LEAR	01	10	1238	S18	W61	01	5.9		B	DAO	120	5	5	2
9767		RAMY	01	10	1241	S17	W69	01	5.3		B	CSO	110	5	7	4
9767		HOLL	01	10	1530	S17	W69	01	5.4		B	CHO	130	3	3	4
9767	30926	MWIL	01	10	1600	S19	W70	01	5.3	4	(AP)					
9767		LEAR	01	11	0010	S18	W74	01	5.4		B	DAO	140	3	8	3
9767		VORO	01	11	0054	S19	W76	01	5.2			HAX	317	1		3
9767		SVTO	01	11	1215	S18	W80	01	5.4		A	HSX	60	1	2	2
9767		RAMY	01	11	1302	S17	W82	01	5.3		B	CSO	70	3	9	3
9767	30926	MWIL	01	11	1600	S19	W84	01	5.2	4	(AP)					
9767		HOLL	01	11	1605	S18	W83	01	5.3		A	HAX	90	1	2	3
9767		LEAR	01	12	0020	S19	W88	01	5.3		A	HAX	60	1	2	2
9767		VORO	01	12	0022	S16	W87	01	5.4			HAX	103	1		3
9767A		LEAR	01	06	0030	N10	W04	01	5.7		A	AXX	10	1	1	4
9780		LEAR	01	09	0025	S11	W37	01	6.2		B	BXO	10	2	2	2
9780		RAMY	01	09	1234	S11	W43	01	6.3		B	DSO	30	4	5	4
9780		HOLL	01	09	1600	S10	W46	01	6.2		B	DAO	50	3	5	2
9780	30939	MWIL	01	09	1600	S12	W45	01	6.3	4	(B)					
9780		VORO	01	10	0002	S11	W50	01	6.2			BXO	82	7	5	3
9780		LEAR	01	10	1238	S11	W60	01	6.0		B	DSO	50	4	4	2
9780		RAMY	01	10	1241	S11	W57	01	6.2		B	CSO	30	7	6	4
9780		HOLL	01	10	1530	S10	W59	01	6.2		B	DSO	60	5	5	4
9780	30939	MWIL	01	10	1600	S11	W60	01	6.1	4	(B)					
9780		LEAR	01	11	0010	S11	W64	01	6.2		B	DAO	50	3	6	3
9780		VORO	01	11	0054	S11	W66	01	6.1			DSO	147	4	4	3
9780		SVTO	01	11	1215	S09	W74	01	5.9		A	HRX	30	1	1	2
9780		RAMY	01	11	1302	S11	W71	01	6.2		B	CSO	30	3	6	3
9780	30939	MWIL	01	11	1600	S10	W74	01	6.1	4	(B)					
9780		HOLL	01	11	1605	S10	W76	01	5.9		A	HSX	50	1	1	3
9780		LEAR	01	12	0020	S10	W80	01	6.0		A	HSX	30	1	1	2
9780		VORO	01	12	0022	S09	W82	01	5.9			HSX	62	1		3
9780C		TACH	01	07	0600	S22	W12	01	6.3			BRI	41	8	7	4
9780B		VORO	01	06	0138	S30	E08	01	6.7			BXI	19	2	3	2
9780A		TACH	01	04	0459	S08	E69	01	9.4			HSX	20	1	1	3
9780A		LEAR	01	11	0010	S09	W21	01	9.4		A	AXX		1		3
9773		LEAR	01	04	0045	N15	E76	01	9.8		B	BXO	20	5	8	3
9773		TACH	01	04	0459	N12	E69	01	9.4			HSX	25	1	1	3
9773		RAMY	01	04	1225	N14	E69	01	9.7		B	DAO	120	4	6	3
9773		HOLL	01	04	1805	N14	E68	01	9.9		B	CSO	100	8	8	3
9773		VORO	01	05	0032	N15	E63	01	9.8			DAI	181	4	4	2
9773		SVTO	01	05	0900	N15	E55	01	9.5		B	DSO	110	7	6	3
9773		LEAR	01	05	1253	N15	E55	01	9.7		B	CSO	140	6	11	2
9773		HOLL	01	05	1520	N11	E56	01	9.8		B	DAO	150	9	9	4
9773	30931	MWIL	01	05	1600	N14	E52	01	9.6	5	(BP)					
9773		LEAR	01	06	0030	N14	E49	01	9.7		B	CAO	190	9	8	4
9773		VORO	01	06	0138	N14	E44	01	9.4			HAX	176	3		2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9773		SVTO	01	06	0736	N13	E46	01	9.8		BG	DAO	130	9	9	3
9773		RAMY	01	06	1315	N13	E41	01	9.6		B	DAO	90	3	4	2
9773		HOLL	01	06	1521	N13	E39	01	9.6		B	DAO	80	10	6	2
9773	30931	MWIL	01	06	1800	N13	E37	01	9.5	4	(BP)					
9773		LEAR	01	07	0007	N13	E33	01	9.5		BG	DAO	130	12	7	3
9773		TACH	01	07	0600	N15	E26	01	9.2			CAI	157	9	5	4
9773		SVTO	01	07	0742	N11	E32	01	9.7		B	EAO	120	16	11	3
9773		RAMY	01	07	1220	N13	E27	01	9.5		B	DAO	120	11	6	3
9773	30931	MWIL	01	07	1600	N13	E24	01	9.5	4	(BP)					
9773		HOLL	01	07	1629	N13	E25	01	9.6		B	DSO	80	10	6	1
9773		LEAR	01	08	0020	N12	E18	01	9.4		B	DAO	70	9	5	2
9773		SVTO	01	08	0806	N15	E15	01	9.5		B	DAO	100	18	8	3
9773		RAMY	01	08	1248	N13	E12	01	9.4		B	DAI	80	24	8	3
9773		HOLL	01	08	1545	N12	E12	01	9.6		BG	DAI	90	24	12	2
9773	30931	MWIL	01	08	1600	N13	E11	01	9.5	4	(BG)					
9773		VORO	01	09	0019	N15	E07	01	9.5			DAI	482	21	7	2
9773		LEAR	01	09	0025	N13	E06	01	9.5		BG	DAC	160	28	9	2
9773		RAMY	01	09	1234	N14	E01	01	9.6		BG	EAI	400	20	11	4
9773		HOLL	01	09	1600	N14	W01	01	9.6		BG	EAI	230	41	14	2
9773	30931	MWIL	01	09	1600	N14	W02	01	9.5	5	(D)					
9773		VORO	01	10	0002	N15	W13	01	9.0			DAI	905	45	5	3
9773		LEAR	01	10	1238	N12	W07	01	10.0		BGD	EAI	390	37	14	2
9773		RAMY	01	10	1241	N13	W13	01	9.5		BGD	EAC	520	44	14	4
9773		HOLL	01	10	1530	N15	W14	01	9.6		BGD	EKC	570	47	14	4
9773	30931	MWIL	01	10	1600	N14	W15	01	9.5	5	(B)					
9773		LEAR	01	11	0010	N14	W19	01	9.6		BGD	EKI	680	36	14	3
9773		VORO	01	11	0054	N16	W20	01	9.5			DAI	1032	39	12	3
9773		SVTO	01	11	1215	N16	W26	01	9.5		BG	FKI	580	17	16	2
9773		RAMY	01	11	1302	N15	W27	01	9.5		BGD	EAI	530	29	15	3
9773	30931	MWIL	01	11	1600	N15	W28	01	9.5	5	(D)					
9773		HOLL	01	11	1605	N13	W27	01	9.6		BG	EKC	500	28	14	3
9773		LEAR	01	12	0020	N15	W33	01	9.5		BGD	EKI	640	32	14	2
9773		VORO	01	12	0022	N16	W33	01	9.5			DKI	1416	31	13	3
9773		SVTO	01	12	0936	N15	W38	01	9.5		B	FKI	530	15	16	2
9773		HOLL	01	12	1532	N16	W42	01	9.5		BG	FKC	340	2	16	2
9773	30931	MWIL	01	12	1545	N15	W41	01	9.5	5	(D)					
9773		VORO	01	13	0014	N15	W46	01	9.5			DKI	1377	29	14	3
9773		LEAR	01	13	0045	N15	W44	01	9.7		BGD	FKI	560	20	16	3
9773		SVTO	01	13	0753	N16	W49	01	9.6		BGD	FKI	500	8	17	2
9773		RAMY	01	13	1327	N17	W52	01	9.6		BG	FKO	590	7	16	2
9773		HOLL	01	13	1519	N17	W56	01	9.4		BG	FKC	440	21	17	2
9773	30931	MWIL	01	13	1545	N16	W54	01	9.6	5	(D)					
9773		LEAR	01	14	0103	N16	W59	01	9.6		BGD	FKI	520	11	16	3
9773		RAMY	01	14	1344	N16	W64	01	9.7		BG	FKI	460	18	17	3
9773	30931	MWIL	01	14	1545	N15	W68	01	9.5	5	(BD)					
9773		HOLL	01	14	1710	N15	W67	01	9.6		BG	FKO	380	5	17	2
9773		LEAR	01	15	0035	N15	W72	01	9.6		BGD	FKI	410	10	16	2
9773		VORO	01	15	0103	N15	W74	01	9.4			DAI	581	4	15	2
9773		RAMY	01	15	1241	N17	W76	01	9.7		B	EAO	210	3	14	2
9773		HOLL	01	15	1835	N17	W78	01	9.8		BG	DAO	150	7	9	2
9772		HOLL	01	03	1910	S18	E85	01	10.3		A	HAX	120	1	2	2
9772		LEAR	01	04	0045	S15	E76	01	9.8		A	HAX	30	1	2	3
9772		RAMY	01	04	1225	S16	E70	01	9.8		A	HSX	50	1	1	3
9772		HOLL	01	04	1805	S18	E69	01	10.0		A	HAX	100	1	2	3
9772		VORO	01	05	0032	S16	E65	01	9.9			HAX	60	1		2
9772		SVTO	01	05	0900	S15	E58	01	9.8		A	HSX	80	1	2	3
9772		LEAR	01	05	1253	S15	E63	01	10.3		A	HAX	40	1	2	2
9772		HOLL	01	05	1520	S20	E55	01	9.8		A	HSX	40	1	1	4
9772	30932	MWIL	01	05	1600	S16	E54	01	9.8	5	(AP)					
9772		LEAR	01	06	0030	S15	E50	01	9.8		A	HSX	90	1	2	4
9772		VORO	01	06	0138	S16	E50	01	9.9			HAX	84	1		2
9772		SVTO	01	06	0736	S18	E46	01	9.8		A	HSX	60	1	2	3
9772		RAMY	01	06	1315	S17	E44	01	9.9		A	HSX	50	1	1	2
9772		HOLL	01	06	1521	S17	E42	01	9.8		A	HSX	70	1	1	2
9772	30932	MWIL	01	06	1800	S16	E40	01	9.8	5	(AP)					
9772		LEAR	01	07	0007	S15	E37	01	9.8		A	HSX	60	1	2	3
9772		TACH	01	07	0600	S13	E28	01	9.4			HSX	100	1	2	4
9772		SVTO	01	07	0742	S19	E32	01	9.8		A	HSX	50	1	1	3

SUNSPOT GROUPS
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JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9772		RAMY	01	07	1220	S17	E30	01	9.8		A	HSX	70	1	1	3
9772	30932	MWIL	01	07	1600	S16	E28	01	9.8	5	(AP)					
9772		HOLL	01	07	1629	S17	E28	01	9.8		A	HSX	40	1	2	1
9772		LEAR	01	08	0020	S15	E24	01	9.8		A	HSX	500	1	1	2
9772		SVTO	01	08	0806	S15	E19	01	9.8		A	HSX	60	1	2	3
9772		RAMY	01	08	1248	S16	E17	01	9.8		A	HSX	40	1	2	3
9772		HOLL	01	08	1545	S17	E16	01	9.9		A	HAX	70	1	2	2
9772	30932	MWIL	01	08	1600	S16	E15	01	9.8	5	(AP)					
9772		VORO	01	09	0019	S16	E11	01	9.8			HAX	115	1		2
9772		LEAR	01	09	0025	S16	E11	01	9.8		A	HSX	40	1	1	2
9772		RAMY	01	09	1234	S16	E03	01	9.7		A	HSX	60	1	1	4
9772	30932	MWIL	01	09	1600	S16	E02	01	9.8	5	(AP)					
9772		HOLL	01	09	1600	S17	E02	01	9.8		A	HSX	60	1	1	2
9772		VORO	01	10	0002	S16	W02	01	9.8			HAX	128	1		3
9772		LEAR	01	10	1238	S16	W03	01	10.3		A	HSX	40	1	2	2
9772		RAMY	01	10	1241	S16	W09	01	9.8		A	HSX	40	1	2	4
9772		HOLL	01	10	1530	S17	W11	01	9.8		A	HSX	40	2	2	4
9772	30932	MWIL	01	10	1600	S16	W12	01	9.7	5	(AP)					
9772		LEAR	01	11	0010	S16	W15	01	9.9		A	HSX	80	2	2	3
9772		VORO	01	11	0054	S16	W16	01	9.8			HAX	116	1		3
9772		SVTO	01	11	1215	S16	W22	01	9.8		A	HSX	40	1	2	2
9772		RAMY	01	11	1302	S16	W22	01	9.9		A	HSX	40	2	2	3
9772	30932	MWIL	01	11	1600	S16	W24	01	9.8	5	(AP)					
9772		HOLL	01	11	1605	S17	W23	01	9.9		A	HAX	70	2	2	3
9772		LEAR	01	12	0020	S16	W28	01	9.9		A	HSX	70	2	2	2
9772		VORO	01	12	0022	S18	W29	01	9.8			HAX	88	1		3
9772		SVTO	01	12	0936	S17	W34	01	9.8		A	HSX	60	2	2	2
9772		HOLL	01	12	1532	S16	W37	01	9.8		A	HAX	50	2	1	2
9772	30932	MWIL	01	12	1545	S17	W36	01	9.9	5	(AP)					
9772		VORO	01	13	0014	S17	W42	01	9.8			HAX	100	3		3
9772		LEAR	01	13	0045	S17	W42	01	9.8		A	HSX	20	1	2	3
9772		SVTO	01	13	0753	S17	W46	01	9.8		A	HSX	30	1	1	2
9772		RAMY	01	13	1327	S16	W48	01	9.9		A	HSX	30	1	1	2
9772		HOLL	01	13	1519	S17	W50	01	9.8		A	HSX	30	1	1	2
9772	30932	MWIL	01	13	1545	S17	W50	01	9.8	5	(AP)					
9772		LEAR	01	14	0103	S18	W55	01	9.8		A	HSX	20	1	2	3
9772		RAMY	01	14	1344	S17	W61	01	9.9		A	HSX	40	2	1	3
9772	30932	MWIL	01	14	1545	S17	W63	01	9.9	4	(AP)					
9772		HOLL	01	14	1710	S17	W65	01	9.8		A	HSX	40	1	2	2
9772		LEAR	01	15	1235	S17	W67	01	10.4		A	HSX	30	1	2	2
9772		RAMY	01	15	1241	S17	W75	01	9.8		A	HSX	30	1	1	2
9775	30934	MWIL	01	06	1800	S04	E54	01	10.8	4	(AP)					
9775		LEAR	01	07	0007	S04	E49	01	10.7		B	BXO	10	2	2	3
9775		TACH	01	07	0600	S02	E40	01	10.2			AXX	3	1	1	4
9775		SVTO	01	07	0742	S08	E46	01	10.8		B	CRO	10	2	2	3
9775		RAMY	01	07	1220	S05	E43	01	10.7		B	BXO	20	5	5	3
9775	30934	MWIL	01	07	1600	S04	E42	01	10.8	4	(B)					
9775		HOLL	01	07	1629	S05	E41	01	10.7		B	CSO	40	5	5	1
9775		LEAR	01	08	0020	S05	E37	01	10.8		B	CAO	50	9	5	2
9775		SVTO	01	08	0806	S04	E33	01	10.8		B	CSO	30	7	8	3
9775		RAMY	01	08	1248	S05	E29	01	10.7		B	CSO	40	15	8	3
9775		HOLL	01	08	1545	S05	E28	01	10.7		B	DAO	60	9	8	2
9775	30934	MWIL	01	08	1600	S05	E28	01	10.8	5	(BG)					
9775		VORO	01	08	2358	S05	E23	01	10.7			BXO	46	2	3	2
9775		LEAR	01	09	0025	S05	E24	01	10.8		B	CAO	40	7	7	2
9775		RAMY	01	09	1234	S05	E16	01	10.7		B	DSO	90	16	10	4
9775	30934	MWIL	01	09	1600	S05	E14	01	10.7	4	(BG)					
9775		HOLL	01	09	1600	S05	E16	01	10.9		B	DSO	90	19	9	2
9775		VORO	01	10	0002	S05	E10	01	10.7			CSO	74	7	6	3
9775		LEAR	01	10	1238	S05	E09	01	11.2		B	DSO	60	10	8	2
9775		RAMY	01	10	1241	S05	E02	01	10.7		B	DSO	50	16	7	4
9775		HOLL	01	10	1530	S04	E01	01	10.7		B	DSO	130	22	7	4
9775	30934	MWIL	01	10	1600	S04	E01	01	10.7	4	(B)					
9775		LEAR	01	11	0010	S05	W04	01	10.7		B	DAO	120	16	7	3
9775		VORO	01	11	0054	S04	W03	01	10.8			DSO	135	13	3	3
9775		SVTO	01	11	1215	S05	W11	01	10.7		B	DAO	200	10	7	2
9775		RAMY	01	11	1302	S05	W10	01	10.8		B	DAO	100	16	9	3
9775	30934	MWIL	01	11	1600	S05	W13	01	10.7	5	(D)					

SUNSPOT GROUPS
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JANUARY 2002

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9775		HOLL	01	11	1605	S04	W12	01	10.8		B	DAI	150	19	10	3
9775		LEAR	01	12	0020	S05	W17	01	10.7		BG	EAO	150	21	11	2
9775		VORO	01	12	0022	S05	W18	01	10.7			DSO	199	17	10	3
9775		SVTO	01	12	0936	S05	W23	01	10.7		B	ESO	130	16	13	2
9775		HOLL	01	12	1532	S05	W26	01	10.7		B	EAI	130	19	12	2
9775	30934	MWIL	01	12	1545	S06	W26	01	10.7	5	(BG)					
9775		VORO	01	13	0014	S06	W31	01	10.7			DSO	250	19	12	3
9775		LEAR	01	13	0045	S05	W31	01	10.7		BG	EAO	160	25	12	3
9775		SVTO	01	13	0753	S05	W35	01	10.7		BG	EAO	200	23	13	2
9775		RAMY	01	13	1327	S05	W38	01	10.7		B	EAO	200	13	13	2
9775		HOLL	01	13	1519	S06	W39	01	10.7		BG	FAI	190	26	18	2
9775	30934	MWIL	01	13	1545	S05	W39	01	10.7	5	(BG)					
9775		LEAR	01	14	0103	S06	W45	01	10.7		BG	FAI	180	22	16	3
9775		RAMY	01	14	1344	S06	W51	01	10.7		BG	EAI	190	27	12	3
9775	30934	MWIL	01	14	1545	S06	W53	01	10.7	5	(D)					
9775		HOLL	01	14	1710	S06	W54	01	10.7		BGD	FKC	340	12	16	2
9775		LEAR	01	15	0035	S07	W57	01	10.7		BG	FAI	320	22	16	2
9775		VORO	01	15	0103	S05	W59	01	10.6			DAI	309	9	14	2
9775		VORO	01	15	0103	S10	W63	01	10.3			AXX	13	1		2
9775		RAMY	01	15	1241	S06	W65	01	10.7		B	EKO	280	8	15	2
9775		HOLL	01	15	1835	S06	W70	01	10.5		BG	FKI	240	11	17	2
9775		LEAR	01	16	0125	S06	W71	01	10.7		BGD	EAI	310	11	15	1
9775		RAMY	01	16	1230	S06	W80	01	10.5		BG	EAO	190	9	13	2
9775		HOLL	01	16	1605	S05	W83	01	10.5		B	DAO	90	2	4	3
9775		LEAR	01	17	0043	S07	W88	01	10.4		B	DAI	220	3	7	2
9775B		LEAR	01	14	0103	S15	W27	01	12.0		A	HSX	10	1	1	3
9775B		RAMY	01	14	1344	S15	W33	01	12.1		A	AXX		1		3
9776	30935	MWIL	01	06	1800	N12	E75	01	12.4	4	AP					
9776		LEAR	01	07	0007	N12	E72	01	12.4		B	BXO	10	2	2	3
9776		TACH	01	07	0600	N12	E64	01	12.1			AXX	10	1	1	4
9776		SVTO	01	07	0742	N16	E68	01	12.5		A	AXX		1		3
9776		RAMY	01	07	1220	N12	E65	01	12.4		A	AXX	10	1		3
9776	30935	MWIL	01	07	1600	N12	E64	01	12.5	4	(AP)					
9776		HOLL	01	07	1629	N11	E63	01	12.4		A	AXX	10	1		1
9776		LEAR	01	08	0020	N11	E58	01	12.4		A	AXX	40	1	1	2
9776		SVTO	01	08	0806	N12	E54	01	12.4		B	CSO	30	3	3	3
9776		RAMY	01	08	1248	N11	E51	01	12.4		B	CAO	40	4	4	3
9776		HOLL	01	08	1545	N09	E50	01	12.4		B	CSO	40	2	3	2
9776	30935	MWIL	01	08	1600	N12	E49	01	12.3	4	(B)					
9776		VORO	01	09	0019	N11	E46	01	12.5			DSO	97	6	4	2
9776		LEAR	01	09	0025	N12	E44	01	12.3		B	DAO	90	6	5	2
9776		RAMY	01	09	1234	N10	E37	01	12.3		B	DSO	60	3	6	4
9776		HOLL	01	09	1600	N11	E36	01	12.4		B	DSO	80	5	6	2
9776	30935	MWIL	01	09	1600	N12	E36	01	12.4	4	(BP)					
9776		VORO	01	10	0002	N11	E31	01	12.3			DSO	108	3	6	3
9776		LEAR	01	10	1238	N11	E30	01	12.8		B	DSO	40	3	7	2
9776		RAMY	01	10	1241	N10	E24	01	12.3		B	CSO	30	4	7	4
9776		HOLL	01	10	1530	N10	E22	01	12.3		B	CSO	40	4	7	4
9776	30935	MWIL	01	10	1600	N12	E23	01	12.4	5	(BP)					
9776		LEAR	01	11	0010	N11	E17	01	12.3		B	DSO	50	3	7	3
9776		VORO	01	11	0054	N11	E17	01	12.3			DSO	79	4	7	3
9776		SVTO	01	11	1215	N12	E09	01	12.2		B	CAO	40	3	8	2
9776		RAMY	01	11	1302	N11	E09	01	12.2		B	CSO	20	4	7	3
9776	30935	MWIL	01	11	1600	N12	E07	01	12.2	5	(BP)					
9776		HOLL	01	11	1605	N11	E08	01	12.3		B	CSO	30	5	8	3
9776		LEAR	01	12	0020	N11	E03	01	12.2		B	DSO	40	7	8	2
9776		VORO	01	12	0022	N11	E03	01	12.2			DSO	76	6	8	3
9776		SVTO	01	12	0936	N11	W07	01	11.9		A	HSX	10	1	1	2
9776		HOLL	01	12	1532	N11	W10	01	11.9		B	CSO	10	2	3	2
9776	30935	MWIL	01	12	1545	N11	W08	01	12.0	4	(B)					
9776		VORO	01	13	0014	N11	W15	01	11.9			HAX	62	3		3
9776		LEAR	01	13	0045	N11	W15	01	11.9		B	CSO	20	2	2	3
9776		SVTO	01	13	0753	N10	W18	01	12.0		B	CSO	10	2	4	2
9776		RAMY	01	13	1327	N11	W20	01	12.0		B	DSO	20	3	4	2
9776		HOLL	01	13	1519	N11	W22	01	12.0		B	CSO	30	4	5	2
9776	30935	MWIL	01	13	1545	N11	W22	01	12.0	4	(B)					
9776		LEAR	01	14	0103	N11	W27	01	12.0		B	CSO	10	4	5	3

SUNSPOT GROUPS
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JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9776		RAMY	01	14	1344	N10	W35	01	11.9		B	CSO	10	3	2	3
9776	30935	MWIL	01	14	1545	N10	W37	01	11.9	4	(AP)					
9776		HOLL	01	14	1710	N10	W38	01	11.8		B	CSO	20	2	2	2
9776		LEAR	01	15	0035	N08	W41	01	11.9		B	CSO	10	2	2	2
9776		VORO	01	15	0103	N10	W42	01	11.9			AXX	19	2		2
9775A	30943	MWIL	01	12	1545	S14	W01	01	12.6	4	(B)					
9776A		LEAR	01	12	0020	N19	E09	01	12.7		B	BXO	10	2	3	2
9776A	30944	MWIL	01	12	1545	N18	E01	01	12.7	4	(B)					
9777		SVTO	01	08	0806	S06	E73	01	13.8		A	AXX		1		3
9777		RAMY	01	08	1248	S07	E69	01	13.7		B	BXO	10	2	2	3
9777		HOLL	01	08	1545	S07	E68	01	13.7		A	AXX	10	1	1	2
9777	30937	MWIL	01	08	1600	S06	E68	01	13.7	4	(AF)					
9777A		HOLL	01	12	1532	S23	E17	01	13.9		A	AXX	10	1	1	2
9777A	30945	MWIL	01	12	1545	S23	E19	01	14.1	4	(AP)					
9777B		LEAR	01	08	0020	S15	E79	01	14.0		A	HSX	60	1	2	2
9779		LEAR	01	08	0020	N29	E79	01	14.2		A	HSX	120	1	3	2
9779		SVTO	01	08	0806	N29	E72	01	14.0		A	HSX	120	1	4	3
9779		RAMY	01	08	1248	N28	E70	01	14.0		B	CSO	210	3	10	3
9779		HOLL	01	08	1545	N28	E69	01	14.0		A	HSX	120	1	2	2
9779	30936	MWIL	01	08	1600	N28	E68	01	14.0	4	(AP)					
9779		VORO	01	09	0019	N30	E69	01	14.4			HAX	271	1		2
9779		LEAR	01	09	0025	N29	E65	01	14.1		B	DAO	200	4	6	2
9779		RAMY	01	09	1234	N28	E59	01	14.1		B	CAO	150	3	10	4
9779	30936	MWIL	01	09	1600	N28	E57	01	14.1	4	(BP)					
9779		HOLL	01	09	1600	N28	E58	01	14.2		B	CAO	160	3	8	2
9779		VORO	01	10	0002	N30	E51	01	14.0			HAX	296	3		3
9779		LEAR	01	10	1238	N28	E49	01	14.3		B	CAO	80	2	4	2
9779		RAMY	01	10	1241	N28	E45	01	14.0		B	CSO	100	2	3	4
9779		HOLL	01	10	1530	N28	E44	01	14.1		B	CAO	120	3	6	4
9779	30936	MWIL	01	10	1600	N28	E43	01	14.0	5	(AP)					
9779		LEAR	01	11	0010	N29	E40	01	14.1		B	CSO	140	3	7	3
9779		VORO	01	11	0054	N30	E38	01	14.0			HAX	256	3		3
9779		SVTO	01	11	1215	N29	E33	01	14.1		B	DSO	130	3	6	2
9779		RAMY	01	11	1302	N28	E33	01	14.1		B	CSO	80	7	8	3
9779	30936	MWIL	01	11	1600	N29	E32	01	14.2	5	(BP)					
9779		HOLL	01	11	1605	N28	E32	01	14.2		B	CAO	150	6	7	3
9779		LEAR	01	12	0020	N29	E26	01	14.0		B	DSO	130	4	7	2
9779		VORO	01	12	0022	N29	E28	01	14.2			HAX	227	5	5	3
9779		SVTO	01	12	0936	N29	E19	01	13.9		B	CSO	130	2	4	2
9779		HOLL	01	12	1532	N29	E18	01	14.0		A	HSX	100	1	1	2
9779	30936	MWIL	01	12	1545	N29	E19	01	14.1	5	(BP)					
9779		VORO	01	13	0014	N29	E13	01	14.0			HAX	81	3		3
9779		LEAR	01	13	0045	N30	E15	01	14.2		B	CSO	170	9	8	3
9779		SVTO	01	13	0753	N29	E08	01	13.9		A	HSX	110	1	3	2
9779		RAMY	01	13	1327	N30	E06	01	14.0		A	HSX	120	1	2	2
9779		HOLL	01	13	1519	N30	E05	01	14.0		A	HSX	120	1	1	2
9779	30936	MWIL	01	13	1545	N30	E06	01	14.1	5	(BP)					
9779		LEAR	01	14	0103	N29	W01	01	14.0		A	HSX	100	1	2	3
9779		RAMY	01	14	1344	N30	W07	01	14.0		A	HSX	100	1	2	3
9779	30936	MWIL	01	14	1545	N30	W08	01	14.0	5	(AP)					
9779		HOLL	01	14	1710	N28	W08	01	14.1		A	HHX	110	1	2	2
9779		LEAR	01	15	0035	N28	W13	01	14.0		A	HSX	100	1	2	2
9779		VORO	01	15	0103	N29	W13	01	14.0			HHX	217	1		2
9779		RAMY	01	15	1241	N30	W20	01	13.9		A	HSX	150	1	2	2
9779		HOLL	01	15	1835	N29	W22	01	14.0		A	HSX	80	1	1	2
9779		LEAR	01	16	0125	N28	W27	01	13.9		A	HSX	100	1	2	1
9779		RAMY	01	16	1230	N30	W33	01	13.9		A	HSX	80	2	2	2
9779		HOLL	01	16	1605	N29	W34	01	14.0		A	HKX	130	2	3	3
9779		LEAR	01	17	0043	N29	W38	01	14.0		B	CSO	140	2	5	2
9779		RAMY	01	17	1235	N29	W50	01	13.6		B	CSO	130	3	3	4
9779	30936	MWIL	01	17	1600	N30	W46	01	14.0	5	(BP)					
9779		HOLL	01	17	1805	N29	W48	01	14.0		A	HSX	70	2	2	2
9779		LEAR	01	18	0100	N27	W52	01	14.0		A	HAX	100	2	2	3

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9779		TACH	01	18	0508	N29	W50	01	14.3			HA	120	2	2	4
9779		SVTO	01	18	1102	N28	W59	01	13.8		A	HAX	80	2	2	4
9779		RAMY	01	18	1256	N30	W60	01	13.8		B	CSO	90	3	2	3
9779	30936	MWIL	01	18	1600	N30	W60	01	13.9	5	(AP)					
9779		HOLL	01	18	1958	N31	W60	01	14.1		A	HAX	100	1	2	3
9779		VORO	01	18	2358	N29	W64	01	14.0			HAX	119	1		2
9779		TACH	01	19	0637	N27	W63	01	14.4			HSX	50	1	2	3
9779		RAMY	01	19	1233	N30	W64	01	14.5		B	CSO	60	4	4	3
9779		LEAR	01	19	1320	N27	W66	01	14.4		A	HAX	50	1	2	2
9779		SVTO	01	19	1410	N27	W69	01	14.2		A	HSX	120	1	3	2
9779		HOLL	01	19	1508	N29	W69	01	14.2		A	HAX	60	1	1	2
9779	30936	MWIL	01	19	2300	N30	W73	01	14.2	5	AP					
9779		LEAR	01	20	0055	N27	W75	01	14.2		A	HSX	30	2	2	1
9779A		SVTO	01	12	0936	S23	E23	01	14.2		A	HSX	10	1	1	2
9778		LEAR	01	08	0020	S15	E75	01	13.7		A	AXX	40	1	1	2
9778		SVTO	01	08	0806	S14	E76	01	14.1		A	HSX	60	1	1	3
9778		RAMY	01	08	1248	S16	E72	01	14.0		A	HSX	60	1	2	3
9778		HOLL	01	08	1545	S16	E72	01	14.1		A	HSX	60	1	2	2
9778	30938	MWIL	01	08	1600	S14	E70	01	13.9	4	(AP)					
9778		VORO	01	09	0019	S15	E70	01	14.3			DSO	235	4	4	2
9778		LEAR	01	09	0025	S16	E69	01	14.2		B	DAO	160	3	8	2
9778		RAMY	01	09	1234	S16	E63	01	14.3		B	EAO	190	11	11	4
9778	30938	MWIL	01	09	1600	S17	E64	01	14.5	4	(BG)					
9778		HOLL	01	09	1600	S17	E65	01	14.6		B	EAI	150	12	11	2
9778		VORO	01	10	0002	S16	E61	01	14.6			DSO	447	16	9	3
9778		LEAR	01	10	1238	S16	E50	01	14.3		B	EAO	140	11	11	2
9778		RAMY	01	10	1241	S17	E51	01	14.4		B	EAI	150	24	13	4
9778		HOLL	01	10	1530	S17	E51	01	14.5		B	FAI	320	24	18	4
9778	30938	MWIL	01	10	1600	S17	E51	01	14.5	5	(BP)					
9778		LEAR	01	11	0010	S16	E46	01	14.5		BG	EAI	210	26	11	3
9778		VORO	01	11	0054	S16	E46	01	14.5			DSO	288	24	9	3
9778		SVTO	01	11	1215	S16	E40	01	14.5		B	EAO	280	13	13	2
9778		RAMY	01	11	1302	S17	E38	01	14.4		B	EAI	80	33	12	3
9778	30938	MWIL	01	11	1600	S16	E37	01	14.5	4	(D)					
9778		HOLL	01	11	1605	S16	E37	01	14.5		B	FAI	190	27	16	3
9778		LEAR	01	12	0020	S16	E33	01	14.5		BG	EAI	160	25	12	2
9778		VORO	01	12	0022	S17	E34	01	14.6			DSO	366	24	10	3
9778		SVTO	01	12	0936	S16	E28	01	14.5		B	EAI	130	19	13	2
9778		HOLL	01	12	1532	S17	E25	01	14.5		B	EAI	140	15	11	2
9778	30938	MWIL	01	12	1545	S16	E24	01	14.5	5	(D)					
9778		VORO	01	13	0014	S17	E21	01	14.6			DSO	319	20	10	3
9778		LEAR	01	13	0045	S16	E21	01	14.6		BGD	EAI	170	26	12	3
9778		SVTO	01	13	0753	S16	E16	01	14.5		BGD	EAI	140	9	14	2
9778		RAMY	01	13	1327	S18	E13	01	14.5		B	EAO	130	11	12	2
9778		HOLL	01	13	1519	S16	E13	01	14.6		B	EAO	120	23	13	2
9778	30938	MWIL	01	13	1545	S16	E12	01	14.6	5	(D)					
9778		LEAR	01	14	0103	S15	E08	01	14.6		BGD	EAI	130	32	12	3
9778		RAMY	01	14	1344	S17	E00	01	14.6		B	EAI	100	25	12	3
9778	30938	MWIL	01	14	1545	S16	W02	01	14.5	5	(BP)					
9778		HOLL	01	14	1710	S17	W02	01	14.6		B	EAI	130	10	12	2
9778		LEAR	01	15	0035	S16	W06	01	14.6		BG	DAI	80	12	12	2
9778		VORO	01	15	0103	S17	W06	01	14.6			CAI	102	6	10	2
9778		RAMY	01	15	1241	S15	W13	01	14.5		B	EAO	120	12	13	2
9778		HOLL	01	15	1835	S15	W19	01	14.3		B	DAO	70	8	6	2
9778		LEAR	01	16	0125	S15	W24	01	14.2		B	DAO	40	8	4	1
9778		RAMY	01	16	1230	S15	W27	01	14.5		B	DSO	30	11	7	2
9778		HOLL	01	16	1605	S14	W32	01	14.2		B	DAO	40	8	5	3
9778		LEAR	01	17	0043	S15	W37	01	14.2		B	CAO	60	4	3	2
9778		RAMY	01	17	1235	S14	W44	01	14.2		B	CSO	10	2	3	4
9778	30938	MWIL	01	17	1600	S14	W45	01	14.3	4	(AP)					
9778		HOLL	01	17	1805	S13	W47	01	14.2		A	HRX	10	1	1	2
9778		LEAR	01	18	0100	S15	W50	01	14.2		A	HSX	10	1	1	3
9778		TACH	01	18	0508	S12	W48	01	14.6			AXX	10	1	1	4
9778		RAMY	01	18	1256	S12	W57	01	14.2		B	BXO	10	3	3	3
9778A	30948	MWIL	01	17	1600	N07	W20	01	16.2	3	(AF)					
9781		RAMY	01	10	1241	S06	E84	01	16.8		A	HSX	60	1	4	4

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9781		HOLL	01	10	1530	S07	E81	01	16.7		A	HSX	60	1	2	4
9781		LEAR	01	11	0010	S05	E76	01	16.7		A	HAX	60	1	2	3
9781		VORO	01	11	0054	S06	E78	01	16.9			HAX	242	1		3
9781		SVTO	01	11	1215	S06	E70	01	16.7		A	HSX	90	1	2	2
9781		RAMY	01	11	1302	S06	E70	01	16.8		A	HSX	50	2	2	3
9781	30940	MWIL	01	11	1600	S06	E69	01	16.8	4	(AP)					
9781		HOLL	01	11	1605	S06	E69	01	16.8		A	HSX	160	1	2	3
9781		LEAR	01	12	0020	S05	E64	01	16.8		A	HSX	90	1	2	2
9781		VORO	01	12	0022	S05	E65	01	16.9			HAX	386	3		3
9781		SVTO	01	12	0936	S05	E58	01	16.7		A	HSX	70	1	2	2
9781		HOLL	01	12	1532	S05	E57	01	16.9		A	HSX	70	1	1	2
9781	30940	MWIL	01	12	1545	S05	E56	01	16.8	5	(AP)					
9781		VORO	01	13	0014	S05	E51	01	16.8			HAX	191	1		3
9781		LEAR	01	13	0045	S05	E51	01	16.8		A	HAX	60	1	2	3
9781		SVTO	01	13	0753	S06	E47	01	16.8		A	HSX	80	1	2	2
9781		RAMY	01	13	1327	S05	E43	01	16.8		A	HSX	50	1	2	2
9781		HOLL	01	13	1519	S03	E43	01	16.8		A	HSX	60	2	2	2
9781	30940	MWIL	01	13	1545	S04	E43	01	16.9	5	(BP)					
9781		LEAR	01	14	0103	S04	E37	01	16.8		A	HSX	60	1	2	3
9781		RAMY	01	14	1344	S04	E30	01	16.8		A	HSX	70	1	2	3
9781	30940	MWIL	01	14	1545	S04	E29	01	16.8	5	(AP)					
9781		HOLL	01	14	1710	S06	E28	01	16.8		A	HHX	60	1	2	2
9781		LEAR	01	15	0035	S05	E24	01	16.8		A	HSX	60	1	2	2
9781		VORO	01	15	0103	S04	E24	01	16.8			HSX	90	1		2
9781		RAMY	01	15	1241	S04	E17	01	16.8		A	HSX	80	1	2	2
9781		HOLL	01	15	1835	S06	E15	01	16.9		A	HSX	40	1	1	2
9781		VORO	01	15	2358	S04	E12	01	16.9			HSX	122	1		2
9781		LEAR	01	16	0125	S04	E10	01	16.8		A	HSX	70	1	2	1
9781		RAMY	01	16	1230	S04	E04	01	16.8		A	HSX	90	1	2	2
9781		HOLL	01	16	1605	S06	E03	01	16.9		A	HAX	80	2	2	3
9781		VORO	01	16	2353	S05	W02	01	16.8			HSX	129	1		2
9781		LEAR	01	17	0043	S05	W01	01	16.9		B	CAO	130	4	6	2
9781		RAMY	01	17	1235	S04	W09	01	16.8		A	HSX	90	1	1	4
9781	30940	MWIL	01	17	1600	S04	W11	01	16.8	5	(AP)					
9781		HOLL	01	17	1805	S04	W12	01	16.8		A	HSX	70	2	2	2
9781		VORO	01	17	2355	S03	W15	01	16.9			HSX	116	1		2
9781		LEAR	01	18	0100	S05	W16	01	16.8		A	HSX	100	1	2	3
9781		TACH	01	18	0508	S02	W16	01	17.0			HSX	160	1	2	4
9781		SVTO	01	18	1102	S05	W22	01	16.8		A	HSX	80	1	3	4
9781		RAMY	01	18	1256	S04	W22	01	16.9		A	HSX	60	1	2	3
9781	30940	MWIL	01	18	1600	S04	W25	01	16.8	5	(AP)					
9781		HOLL	01	18	1958	S04	W28	01	16.7		A	HSX	60	1	2	3
9781		VORO	01	18	2355	S05	W29	01	16.8			HAX	119	2		3
9781		TACH	01	19	0637	S03	W29	01	17.1			HSX	55	1	1	3
9781		RAMY	01	19	1233	S04	W36	01	16.8		A	HSX	70	1	2	3
9781		LEAR	01	19	1320	S06	W39	01	16.6		A	HSX	80	1	2	2
9781		SVTO	01	19	1410	S05	W38	01	16.7		A	HSX	100	1	2	2
9781		HOLL	01	19	1508	S04	W37	01	16.9		A	HSX	80	1	1	2
9781	30940	MWIL	01	19	2300	S03	W42	01	16.8	4	(AP)					
9781		LEAR	01	20	0055	S05	W43	01	16.8		A	HSX	50	1	2	1
9781		TACH	01	20	0658	S03	W43	01	17.1			HSX	100	1	2	4
9781		RAMY	01	20	1300	S04	W50	01	16.8		A	HSX	60	1	1	4
9781		SVTO	01	20	1400	S04	W51	01	16.8		A	HSX	60	1	2	2
9781	30940	MWIL	01	20	1600	S04	W51	01	16.8	4	(AP)					
9781		HOLL	01	20	1720	S04	W52	01	16.8		A	HSX	60	4	2	2
9781		LEAR	01	21	0037	S05	W56	01	16.8		A	HSX	50	3	2	3
9781		TACH	01	21	0620	S04	W57	01	17.0			HSX	80	1	2	2
9781		SVTO	01	21	0900	S04	W62	01	16.7		A	HSX	60	1	3	3
9781		KAND	01	21	0950	S04	W63	01	16.7			HS		1	1	3
9781		RAMY	01	21	1220	S04	W63	01	16.8		A	HSX	40	1	2	3
9781		HOLL	01	21	1515	S03	W65	01	16.8		A	HSX	90	1	1	4
9781	30940	MWIL	01	21	1545	S04	W64	01	16.9	4	(AP)					
9781		LEAR	01	22	0010	S06	W68	01	16.9		A	HSX	50	1	1	3
9781		SVTO	01	22	0735	S05	W75	01	16.7		A	HSX	60	1	2	3
9781		KAND	01	22	0905	S04	W76	01	16.7			HS		1	2	3
9781		RAMY	01	22	1416	S07	W77	01	16.8		A	HSX	30	1	1	5
9781		HOLL	01	22	1703	S03	W79	01	16.8		A	HSX	60	1	2	2
9781		LEAR	01	23	0010	S03	W80	01	17.0		A	HAX	30	1	2	4
9781A		VORO	01	16	2358	S16	E03	01	17.2			AXX	6	3		2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9781A		LEAR	01	17	0043	S15	E03	01	17.2		B	BXO	20	2	2	2
9782		LEAR	01	11	0010	N07	E85	01	17.4		A	HAX	30	1	2	3
9782		SVTO	01	11	1215	N07	E78	01	17.3		A	HSX	120	1	3	2
9782	30941	MWIL	01	11	1600	N07	E76	01	17.3	4	(B)					
9782		HOLL	01	11	1605	N11	E79	01	17.6		B	DKO	290	5	8	3
9782		LEAR	01	12	0020	N09	E74	01	17.6		B	DAO	390	6	11	2
9782		SVTO	01	12	0936	N09	E71	01	17.7		B	ESO	310	5	12	2
9782		HOLL	01	12	1532	N10	E66	01	17.6		B	DAO	250	8	9	2
9782	30941	MWIL	01	12	1545	N08	E65	01	17.5	5	(BP)					
9782		LEAR	01	13	0045	N09	E62	01	17.7		BG	EKO	410	9	14	3
9782		SVTO	01	13	0753	N08	E58	01	17.7		B	FHO	420	10	17	2
9782		RAMY	01	13	1327	N08	E56	01	17.7		B	EAO	390	10	15	2
9782		HOLL	01	13	1519	N08	E53	01	17.6		B	EAO	330	16	13	2
9782	30941	MWIL	01	13	1545	N07	E52	01	17.5	5	(BG)					
9782		LEAR	01	14	0103	N07	E43	01	17.3		B	DSO	230	7	5	3
9782		RAMY	01	14	1344	N09	E37	01	17.3		B	DAO	240	11	5	3
9782	30941	MWIL	01	14	1545	N07	E39	01	17.6	5	(D)					
9782		HOLL	01	14	1710	N05	E36	01	17.4		BD	DKC	240	10	6	2
9782		LEAR	01	15	0035	N06	E30	01	17.3		BD	DAO	210	12	5	2
9782		RAMY	01	15	1241	N07	E24	01	17.3		B	DSO	290	12	5	2
9782		HOLL	01	15	1835	N06	E21	01	17.3		B	DKO	170	8	6	2
9782		LEAR	01	16	0125	N07	E17	01	17.3		B	DAO	230	16	5	1
9782		RAMY	01	16	1230	N07	E11	01	17.3		B	DAO	240	13	5	2
9782		HOLL	01	16	1605	N06	E09	01	17.3		B	DKO	290	18	10	3
9782		LEAR	01	17	0043	N07	E03	01	17.2		B	DAO	280	11	7	2
9782		RAMY	01	17	1235	N06	W03	01	17.3		B	DKO	270	10	4	4
9782	30941	MWIL	01	17	1600	N06	W04	01	17.4	5	(BP)					
9782		HOLL	01	17	1805	N05	W04	01	17.4		B	DKO	240	10	7	2
9782		LEAR	01	18	0100	N07	W09	01	17.4		B	DAO	220	16	4	3
9782		TACH	01	18	0508	N08	W10	01	17.5			HH	325	4	3	4
9782		SVTO	01	18	1102	N06	W16	01	17.3		B	DAO	200	4	4	4
9782		RAMY	01	18	1256	N06	W16	01	17.3		B	DAO	180	9	4	3
9782	30941	MWIL	01	18	1600	N07	W18	01	17.3	5	(AP)					
9782		HOLL	01	18	1958	N06	W20	01	17.3		B	CKO	200	12	5	3
9782		TACH	01	19	0637	N06	W23	01	17.5			HA	170	2	2	3
9782		RAMY	01	19	1233	N08	W30	01	17.3		B	DAO	140	11	5	3
9782		LEAR	01	19	1320	N06	W24	01	17.7		B	DAO	150	6	2	2
9782		SVTO	01	19	1410	N06	W32	01	17.2		B	DSO	140	4	5	2
9782		HOLL	01	19	1508	N08	W29	01	17.4		B	CAO	470	7	6	2
9782	30941	MWIL	01	19	2300	N07	W36	01	17.3	5	(AP)					
9782		LEAR	01	20	0055	N06	W36	01	17.3		B	DAO	130	2	3	1
9782		TACH	01	20	0658	N08	W37	01	17.5			HSX	200	1	2	4
9782		RAMY	01	20	1300	N08	W43	01	17.3		B	CAO	150	3	4	4
9782		SVTO	01	20	1400	N08	W45	01	17.2		A	HSX	140	1	2	2
9782	30941	MWIL	01	20	1600	N07	W45	01	17.3	5	(AP)					
9782		HOLL	01	20	1720	N08	W46	01	17.3		A	HAX	110	1	2	2
9782		LEAR	01	21	0037	N06	W49	01	17.3		B	CAO	120	3	2	3
9782		TACH	01	21	0620	N06	W51	01	17.4			HSX	150	1	2	2
9782		SVTO	01	21	0900	N07	W57	01	17.1		A	HSX	80	1	3	3
9782		KAND	01	21	0950	N07	W56	01	17.2			HS		1	2	3
9782		RAMY	01	21	1220	N06	W57	01	17.2		A	HAX	90	1	2	3
9782		HOLL	01	21	1515	N07	W58	01	17.3		A	HAX	80	1	1	4
9782	30941	MWIL	01	21	1545	N07	W58	01	17.3	5	(AP)					
9782		LEAR	01	22	0010	N06	W62	01	17.4		A	HSX	40	1	2	3
9782		SVTO	01	22	0735	N06	W68	01	17.2		A	HSX	70	1	2	3
9782		KAND	01	22	0905	N07	W70	01	17.1			HS		1	2	3
9782		RAMY	01	22	1416	N06	W72	01	17.2		A	HSX	110	1	3	5
9782		HOLL	01	22	1703	N07	W73	01	17.2		A	HSX	120	1	2	2
9782		LEAR	01	23	0010	N08	W75	01	17.4		A	HAX	60	1	2	4
9786		LEAR	01	16	0125	S25	E18	01	17.4		A	HAX	20	1	1	1
9786		RAMY	01	16	1230	S26	E12	01	17.4		B	DSO	30	4	6	2
9786		HOLL	01	16	1605	S26	E11	01	17.5		B	DSO	30	2	6	3
9786		VORO	01	16	2358	S26	E07	01	17.5			BXO	29	3	5	2
9786		LEAR	01	17	0043	S25	E07	01	17.6		B	CAO	50	5	6	2
9786		RAMY	01	17	1235	S26	W01	01	17.4		B	DSO	40	7	6	4
9786	30949	MWIL	01	17	1600	S25	W02	01	17.5	4	(B)					
9786		HOLL	01	17	1805	S26	W04	01	17.4		B	DSO	50	8	6	2

S U N S P O T G R O U P S
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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
9786		VORO	01	17	2353	S26	W07	01	17.4			BXI	26	6	5	2
9786		LEAR	01	18	0100	S26	W07	01	17.5		B	DSO	30	11	7	3
9786		TACH	01	18	0508	S21	W07	01	17.7			BRI	20	10	4	4
9786		SVTO	01	18	1102	S26	W12	01	17.5		B	CSO	40	12	6	4
9786		RAMY	01	18	1256	S26	W14	01	17.4		B	DSO	40	21	7	3
9786	30949	MWIL	01	18	1600	S25	W15	01	17.5	4	(B)					
9786		HOLL	01	18	1958	S25	W18	01	17.4		B	CSO	20	19	6	3
9786		VORO	01	18	2355	S25	W19	01	17.5			CRI	78	12	5	2
9786		TACH	01	19	0637	S22	W19	01	17.8			BRI	40	5	6	3
9786		RAMY	01	19	1233	S25	W26	01	17.5		B	DAO	90	16	8	3
9786		LEAR	01	19	1320	S26	W28	01	17.4		B	CSO	100	12	7	2
9786		SVTO	01	19	1410	S26	W27	01	17.5		B	DSO	100	13	10	2
9786		HOLL	01	19	1508	S25	W27	01	17.5		B	DAO	90	7	8	2
9786	30949	MWIL	01	19	2300	S25	W33	01	17.4	4	(B)					
9786		LEAR	01	20	0055	S25	W34	01	17.4		B	DAO	120	6	7	1
9786		TACH	01	20	0658	S22	W34	01	17.7			CAO	113	4	6	4
9786		RAMY	01	20	1300	S25	W40	01	17.4		B	DAO	70	6	8	4
9786		SVTO	01	20	1400	S24	W42	01	17.3		B	DSO	90	5	8	2
9786	30949	MWIL	01	20	1600	S25	W41	01	17.5	4	(B)					
9786		HOLL	01	20	1720	S24	W45	01	17.2		B	DAO	90	6	9	2
9786		LEAR	01	21	0037	S25	W46	01	17.5		B	DAO	80	5	8	3
9786		TACH	01	21	0620	S23	W47	01	17.6			DSO	150	2	7	2
9786		SVTO	01	21	0900	S26	W52	01	17.3		B	DSO	70	3	10	3
9786		KAND	01	21	0950	S25	W53	01	17.3			CSO		3	8	3
9786		RAMY	01	21	1220	S25	W53	01	17.4		B	DSO	50	3	8	3
9786		HOLL	01	21	1515	S24	W54	01	17.5		B	DAO	90	5	8	4
9786	30949	MWIL	01	21	1545	S25	W54	01	17.5	4	(B)					
9786		LEAR	01	22	0010	S27	W61	01	17.2		A	HSX	40	1	1	3
9786		SVTO	01	22	0735	S26	W67	01	17.1		A	HSX	40	1	2	3
9786		KAND	01	22	0905	S25	W70	01	16.9			HA		1	2	3
9786		RAMY	01	22	1416	S25	W69	01	17.2		A	HSX	50	1	1	5
9786		HOLL	01	22	1703	S24	W73	01	17.1		A	HSX	60	1	2	2
9786		LEAR	01	23	0010	S24	W75	01	17.2		A	HAX	60	1	2	4
9786		KAND	01	23	0900	S26	W78	01	17.3			HA		1	2	4
9785		RAMY	01	11	1302	N09	E80	01	17.5		B	EAO	190	8	12	3
9785	30942	MWIL	01	11	1600	N12	E80	01	17.7	5	AP					
9785		VORO	01	12	0022	N10	E75	01	17.6			DSO	1264	5	7	3
9785	30942	MWIL	01	12	1545	N12	E69	01	17.8	5	(AP)					
9785		VORO	01	13	0014	N09	E62	01	17.7			DSO	922	7	8	3
9785	30942	MWIL	01	13	1545	N12	E56	01	17.9	5	(AP)					
9785		LEAR	01	14	0103	N12	E53	01	18.0		B	DSO	200	6	8	3
9785		RAMY	01	14	1344	N12	E46	01	18.0		B	DAO	200	6	7	3
9785	30942	MWIL	01	14	1545	N12	E43	01	17.9	5	(BG)					
9785		HOLL	01	14	1710	N09	E44	01	18.0		B	DKO	180	5	7	2
9785		LEAR	01	15	0035	N11	E39	01	17.9		BG	DAO	170	5	5	2
9785		VORO	01	15	0103	N09	E35	01	17.7			DHI	703	7	2	2
9785		RAMY	01	15	1241	N11	E33	01	18.0		B	DAO	210	4	6	2
9785		HOLL	01	15	1835	N10	E28	01	17.9		B	DAO	130	5	5	2
9785		VORO	01	15	2358	N09	E25	01	17.9			DAI	598	13	11	2
9785		LEAR	01	16	0125	N11	E24	01	17.9		B	DAO	180	5	6	1
9785		RAMY	01	16	1230	N11	E21	01	18.1		B	DAO	200	9	10	2
9785		HOLL	01	16	1605	N10	E17	01	17.9		B	DAO	160	7	8	3
9785		VORO	01	16	2353	N09	E12	01	17.9			DAI	559	14	14	2
9785		LEAR	01	17	0043	N09	E12	01	17.9		B	DAO	240	12	6	2
9785		RAMY	01	17	1235	N10	E07	01	18.0		B	DSO	260	10	6	4
9785	30950	MWIL	01	17	1600	N08	E05	01	18.0	4	(B)					
9785	30942	MWIL	01	17	1600	N13	E03	01	17.9	5	(BP)					
9785		HOLL	01	17	1805	N09	E04	01	18.0		B	DAO	220	16	8	2
9785		VORO	01	17	2355	N08	E00	01	18.0			DAI	539	15	12	2
9785		LEAR	01	18	0100	N09	W01	01	18.0		B	DAO	220	13	6	3
9785		TACH	01	18	0508	N11	W02	01	18.1			CAI	316	5	3	4
9785		SVTO	01	18	1102	N10	W07	01	17.9		B	DSO	190	8	8	4
9785		RAMY	01	18	1256	N10	W08	01	17.9		B	DSO	150	14	7	3
9785	30950	MWIL	01	18	1600	N08	W10	01	17.9	3	(BP)					
9785	30942	MWIL	01	18	1600	N11	W10	01	17.9	5	(AP)					
9785		HOLL	01	18	1958	N08	W12	01	17.9		B	DAO	150	11	5	3
9785		VORO	01	18	2355	N09	W18	01	17.6			DAI	479	18	9	3
9785		TACH	01	19	0637	N09	W16	01	18.1			CAO	104	4	1	3

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9785		RAMY	01 19 1233	N10 W21	01 17.9		B	DAO	110	8	4	3
9785		LEAR	01 19 1320	N09 W16	01 18.3		B	DSO	130	6	3	2
9785		SVTO	01 19 1410	N08 W25	01 17.7		B	DSO	140	6	7	2
9785		HOLL	01 19 1508	N09 W22	01 18.0		B	DAO	100	6	5	2
9785	30942	MWIL	01 19 2300	N11 W28	01 17.8	5	(AP)					
9785		LEAR	01 20 0055	N11 W28	01 17.9		B	DAO	110	2	3	1
9785		TACH	01 20 0658	N11 W29	01 18.1			CAO	201	3	2	4
9785		RAMY	01 20 1300	N11 W34	01 18.0		B	DAO	120	6	8	4
9785		SVTO	01 20 1400	N10 W33	01 18.1		B	CAO	90	10	9	2
9785	30950	MWIL	01 20 1600	N07 W37	01 17.9	3	AP					
9785	30942	MWIL	01 20 1600	N11 W36	01 17.9	5	(AP)					
9785		HOLL	01 20 1720	N11 W38	01 17.9		B	DAO	100	6	5	2
9785		LEAR	01 21 0037	N09 W41	01 17.9		B	DAO	140	8	4	3
9785		TACH	01 21 0620	N12 W42	01 18.1			HA	214	7	2	2
9785		SVTO	01 21 0900	N09 W48	01 17.8		B	CAO	70	7	5	3
9785		KAND	01 21 0950	N10 W47	01 17.9			HX		6	3	3
9785		RAMY	01 21 1220	N10 W48	01 17.9		B	DSO	140	4	4	3
9785		HOLL	01 21 1515	N10 W49	01 17.9		B	DSO	100	6	3	4
9785	30942	MWIL	01 21 1545	N11 W49	01 18.0	5	(AP)					
9785		LEAR	01 22 0010	N08 W54	01 17.9		B	CSO	30	3	2	3
9785		SVTO	01 22 0735	N11 W59	01 17.9		B	DSO	70	2	3	3
9785		KAND	01 22 0905	N11 W59	01 17.9			HA		2	2	3
9785		RAMY	01 22 1416	N11 W62	01 17.9		B	DSO	90	2	3	5
9785		HOLL	01 22 1703	N12 W64	01 17.9		B	CAO	110	3	3	2
9785		LEAR	01 23 0010	N12 W66	01 18.0		B	DSO	120	3	4	4
9785		VORO	01 23 0252	N06 W77	01 17.3			HAX	225	4		2
9785		KAND	01 23 0900	N11 W73	01 17.9			HS		1	1	3
9785		SVTO	01 23 1033	N11 W76	01 17.7		A	HSX	60	1	3	2
9785		RAMY	01 23 1322	N10 W74	01 18.0		A	HSX	30	1	2	3
9785	30942	MWIL	01 23 1600	N11 W78	01 17.8	5	AP					
9785		HOLL	01 23 1650	N12 W79	01 17.7		A	HAX	90	1	2	2
9785		VORO	01 24 0058	N10 W90	01 17.3			HAX	61	1		3
9785		LEAR	01 24 0213	N08 W82	01 17.9		A	HAX	60	2	3	1
9784		SVTO	01 13 0753	S29 E66	01 18.5		A	AXX		1		2
9784		RAMY	01 13 1327	S30 E64	01 18.6		A	AXX	20	1	1	2
9784		HOLL	01 13 1519	S29 E61	01 18.4		A	AXX	10	1	1	2
9784	30947	MWIL	01 13 1545	S29 E61	01 18.4	4	(AP)					
9784		LEAR	01 14 0103	S27 E55	01 18.3		A	AXX		1		3
9784		RAMY	01 14 1344	S29 E50	01 18.5		A	AXX		1		3
9784		LEAR	01 23 0010	S33 W50	01 19.0		B	CRO	20	4	5	4
9784		KAND	01 23 0900	S33 W58	01 18.8			HA		1	1	4
9784		RAMY	01 23 1322	S33 W60	01 18.8		A	HSX	20	1	1	3
9784	30963	MWIL	01 23 1600	S33 W62	01 18.7	4	(AP)					
9784		HOLL	01 23 1650	S32 W63	01 18.7		B	CAO	40	3	2	2
9784		VORO	01 23 2358	S34 W66	01 18.7			HRX	34	1		2
9784		LEAR	01 24 0213	S36 W66	01 18.8		B	CAO	100	3	7	1
9784		KAND	01 24 0840	S33 W72	01 18.6			AX		1		3
9784		SVTO	01 24 0915	S34 W73	01 18.6		A	HSX	30	1	1	3
9784		RAMY	01 24 1330	S33 W75	01 18.6		A	HSX	60	1	3	2
9784	30963	MWIL	01 24 1600	S33 W77	01 18.5	4	AP					
9784		VORO	01 24 2355	S33 W81	01 18.6			HRX	52	1		3
9784		LEAR	01 25 0225	S36 W79	01 18.7		B	BXO	50	2	1	3
9783		SVTO	01 12 0936	S11 E82	01 18.6		A	HSX	60	1	4	2
9783		HOLL	01 12 1532	S10 E81	01 18.7		A	HAX	120	1	1	2
9783	30946	MWIL	01 12 1545	S10 E80	01 18.7	4	(AP)					
9783		VORO	01 13 0014	S11 E78	01 18.9			HAX	335	1		3
9783		LEAR	01 13 0045	S11 E76	01 18.7		A	HKX	180	1	4	3
9783		SVTO	01 13 0753	S11 E74	01 18.9		A	HSX	140	2	4	2
9783		RAMY	01 13 1327	S12 E70	01 18.8		A	HAX	120	2	3	2
9783		HOLL	01 13 1519	S11 E69	01 18.8		A	HAX	170	2	1	2
9783	30946	MWIL	01 13 1545	S11 E67	01 18.7	5	(AP)					
9783		LEAR	01 14 0103	S10 E63	01 18.8		B	DSO	120	2	3	3
9783		RAMY	01 14 1344	S11 E57	01 18.9		A	HSX	150	2	3	3
9783	30946	MWIL	01 14 1545	S10 E55	01 18.8	5	(AP)					
9783		HOLL	01 14 1710	S12 E55	01 18.8		A	HKX	140	2	3	2
9783		LEAR	01 15 0035	S10 E51	01 18.8		A	HSX	150	2	2	2
9783		VORO	01 15 0103	S11 E51	01 18.9			HKX	338	2		2

SUNSPOT GROUPS
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JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9783		RAMY	01	15	1241	S10	E43	01	18.7		A	HKX	260	2	3	2
9783		HOLL	01	15	1835	S12	E42	01	18.9		A	HKX	200	2	2	2
9783		VORO	01	15	2358	S11	E38	01	18.8			HAX	290	2		2
9783		LEAR	01	16	0125	S11	E37	01	18.8		A	HKX	250	2	3	1
9783		RAMY	01	16	1230	S12	E31	01	18.8		B	CAO	130	5	4	2
9783		HOLL	01	16	1605	S12	E29	01	18.8		B	DKO	170	7	5	3
9783		VORO	01	16	2353	S11	E25	01	18.9			HAX	266	4		2
9783		LEAR	01	17	0043	S11	E24	01	18.8		B	CAO	210	7	6	2
9783		RAMY	01	17	1235	S12	E18	01	18.9		B	CKO	260	4	3	4
9783	30946	MWIL	01	17	1600	S10	E16	01	18.9	5	(BP)					
9783		HOLL	01	17	1805	S12	E15	01	18.9		A	HKX	120	3	3	2
9783		VORO	01	17	2355	S12	E12	01	18.9			HAX	279	5		2
9783		LEAR	01	18	0100	S11	E13	01	19.0		B	CAO	210	6	6	3
9783		TACH	01	18	0508	S09	E08	01	18.8			HA	408	4	2	4
9783		SVTO	01	18	1102	S11	E09	01	19.1		B	CAO	170	6	9	4
9783		RAMY	01	18	1256	S11	E04	01	18.8		B	CAO	200	4	4	3
9783	30946	MWIL	01	18	1600	S11	E03	01	18.9	5	(AP)					
9783		HOLL	01	18	1958	S12	E02	01	19.0		B	DKO	150	10	7	3
9783		VORO	01	18	2355	S12	W01	01	18.9			HAX	261	8		3
9783		TACH	01	19	0637	S08	W04	01	19.0			HH	200	2	2	3
9783		RAMY	01	19	1233	S11	W08	01	18.9		B	DAO	140	4	5	3
9783		LEAR	01	19	1320	S12	W11	01	18.7		B	CAO	140	6	5	2
9783		SVTO	01	19	1410	S12	W08	01	19.0		B	DAO	140	4	3	2
9783		HOLL	01	19	1508	S11	W10	01	18.9		B	DAO	130	5	5	2
9783	30946	MWIL	01	19	2300	S11	W14	01	18.9	5	(AP)					
9783		LEAR	01	20	0055	S12	W14	01	19.0		B	DAO	150	4	4	1
9783		TACH	01	20	0658	S08	W16	01	19.1			HHX	351	3	4	4
9783		RAMY	01	20	1300	S11	W20	01	19.0		B	CAO	130	8	4	4
9783		SVTO	01	20	1400	S11	W22	01	18.9		B	CAO	110	5	4	2
9783	30946	MWIL	01	20	1600	S11	W23	01	18.9	5	(AP)					
9783		HOLL	01	20	1720	S11	W25	01	18.8		B	CKO	160	6	3	2
9783		LEAR	01	21	0037	S12	W26	01	19.1		B	CAO	150	6	4	3
9783		TACH	01	21	0620	S07	W28	01	19.2			CAO	258	5	4	2
9783		TACH	01	21	0620	S15	W22	01	19.6			BRI	76	9	2	2
9783		SVTO	01	21	0900	S12	W32	01	19.0		B	CAO	120	7	6	3
9783		KAND	01	21	0950	S11	W32	01	19.0			CAO		8	4	3
9783		RAMY	01	21	1220	S12	W33	01	19.0		B	DSO	170	4	4	3
9783		HOLL	01	21	1515	S10	W34	01	19.1		B	CHO	100	5	5	4
9783	30946	MWIL	01	21	1545	S11	W35	01	19.0	5	(BP)					
9783		LEAR	01	22	0010	S11	W38	01	19.1		B	CSO	50	5	3	3
9783		SVTO	01	22	0735	S11	W44	01	19.0		B	DAO	130	6	5	3
9783		KAND	01	22	0905	S11	W44	01	19.1			CAO		3	3	3
9783		RAMY	01	22	1416	S10	W48	01	19.0		B	DAI	130	16	4	5
9783		HOLL	01	22	1703	S10	W48	01	19.1		B	DAO	170	6	4	2
9783		LEAR	01	23	0010	S10	W51	01	19.2		B	CAO	150	13	5	4
9783		VORO	01	23	0252	S11	W54	01	19.0			DSO	187	6	3	2
9783		KAND	01	23	0900	S11	W57	01	19.1			HA		3	4	4
9783		SVTO	01	23	1033	S11	W59	01	19.0		B	CSO	70	3	4	2
9783		RAMY	01	23	1322	S12	W58	01	19.2		B	DAO	120	7	8	3
9783	30946	MWIL	01	23	1600	S11	W63	01	18.9	4	(AP)					
9783		HOLL	01	23	1650	S12	W63	01	18.9		B	DAO	240	6	4	2
9783		VORO	01	24	0058	S12	W66	01	19.1			DSO	187	9	2	3
9783		LEAR	01	24	0213	S15	W67	01	19.0		B	CAO	230	4	3	1
9783		KAND	01	24	0840	S11	W72	01	18.9			HA		2	2	3
9783		SVTO	01	24	0915	S12	W71	01	19.0		B	DSO	200	6	7	3
9783		RAMY	01	24	1330	S11	W74	01	19.0		A	HAX	90	1	3	2
9783	30946	MWIL	01	24	1600	S11	W76	01	18.9	4	(AP)					
9783		LEAR	01	25	0225	S15	W78	01	19.2		A	HAX	80	1	2	3
9783		RAMY	01	25	1222	S11	W85	01	19.1		A	HSX	30	1	3	3
9795		LEAR	01	23	0010	N24	W50	01	19.1		A	HSX	20	2	2	4
9795		KAND	01	23	0900	N23	W55	01	19.1			AX		2	2	4
9795		RAMY	01	23	1322	N23	W59	01	19.0		B	DSO	40	3	3	3
9795	30964	MWIL	01	23	1600	N23	W60	01	19.0	4	B					
9795		HOLL	01	23	1650	N23	W60	01	19.1		B	DSO	70	3	3	2
9795		VORO	01	23	2358	N22	W67	01	18.8			HAX	65	1		2
9795		LEAR	01	24	0213	N19	W67	01	19.0		B	DAO	110	3	4	1
9795		KAND	01	24	0840	N23	W70	01	19.0			BXO		5	9	3
9795		SVTO	01	24	0915	N21	W72	01	18.9		B	DRO	130	5	10	3

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9795		RAMY	01	24	1330	N23	W75	01	18.8		B	CSO	60	4	10	2
9795	30964	MWIL	01	24	1600	N23	W79	01	18.6	4	AP					
9795		VORO	01	24	2353	N22	W74	01	19.3			HAX	32	1		2
9795		LEAR	01	25	0225	N18	W75	01	19.4		A	HAX	30	1	1	3
9795		KAND	01	25	0835	N22	W80	01	19.2			AX		1		4
9791	30953	MWIL	01	19	2300	S03	W05	01	19.6	3	(B)					
9791		LEAR	01	20	0055	S04	W07	01	19.5		B	CRO	20	2	3	1
9791		TACH	01	20	0658	S01	W09	01	19.6			BRO	8	4	3	4
9791		RAMY	01	20	1300	S02	W13	01	19.6		B	CSO	20	11	4	4
9791		SVTO	01	20	1400	S03	W15	01	19.5		B	DAO	40	11	4	2
9791	30953	MWIL	01	20	1600	S03	W15	01	19.5	4	(B)					
9791		HOLL	01	20	1720	S04	W17	01	19.4		B	DAO	60	7	3	2
9791		LEAR	01	21	0037	S04	W20	01	19.5		B	CSO	120	15	4	3
9791		TACH	01	21	0620	S02	W22	01	19.6			CAI	177	8	3	2
9791		SVTO	01	21	0900	S03	W26	01	19.4		B	DSO	100	7	4	3
9791		KAND	01	21	0950	S03	W26	01	19.5			DAO		8	5	3
9791		RAMY	01	21	1220	S03	W27	01	19.5		B	DSO	110	4	4	3
9791		HOLL	01	21	1515	S02	W28	01	19.5		B	DAO	140	7	5	4
9791	30953	MWIL	01	21	1545	S03	W28	01	19.6	4	(B)					
9791		LEAR	01	22	0010	S03	W33	01	19.5		B	DAO	60	6	5	3
9791		KAND	01	22	0905	S03	W38	01	19.5			DSO		5	6	3
9791		RAMY	01	22	1416	S02	W42	01	19.4		B	DSO	70	14	6	5
9791		HOLL	01	22	1703	S03	W43	01	19.5		B	DAO	100	5	7	2
9791		LEAR	01	23	0010	S02	W46	01	19.6		B	DSO	80	9	6	4
9791		KAND	01	23	0900	S02	W54	01	19.3			HA		1	1	4
9791		SVTO	01	23	1033	S03	W53	01	19.5		B	CSO	50	5	7	2
9791		RAMY	01	23	1322	S02	W54	01	19.5		B	DAO	40	2	7	3
9791	30953	MWIL	01	23	1600	S03	W57	01	19.4	4	(B)					
9791		HOLL	01	23	1650	S03	W57	01	19.4		B	CSO	70	4	9	2
9791		VORO	01	23	2355	S03	W63	01	19.3			HAX	54	1		2
9791		LEAR	01	24	0213	S06	W64	01	19.3		A	HSX	60	2	2	1
9791		KAND	01	24	0840	S02	W68	01	19.3			HS		1	1	3
9791		SVTO	01	24	0915	S04	W71	01	19.1		A	HSX	20	1	1	3
9791		RAMY	01	24	1330	S02	W72	01	19.2		A	HSX	60	1	3	2
9789		RAMY	01	15	1241	N18	E57	01	19.9		B	BXO	20	2	5	2
9789		HOLL	01	16	1605	N12	E43	01	19.9		A	AXX		1		3
9789		VORO	01	16	2358	N15	E36	01	19.7			AXX	11	1		2
9789	30951	MWIL	01	17	1600	N18	E37	01	20.5	3	(AF)					
9789		SVTO	01	18	1102	N15	E16	01	19.7		B	BXO	20	7	4	4
9789		HOLL	01	18	1958	N14	E13	01	19.8		B	BXO	20	1	4	3
9789		VORO	01	18	2353	N15	E10	01	19.7			BXI	19	4	2	2
9789		RAMY	01	19	1233	N15	E03	01	19.8		B	CSO	20	7	4	3
9789		LEAR	01	19	1320	N15	E07	01	20.1		B	BXO	30	6	2	2
9789		SVTO	01	19	1410	N15	E03	01	19.8		B	BXO	20	4	3	2
9789		HOLL	01	19	1508	N16	E03	01	19.8		B	BXO	20	4	3	2
9789		LEAR	01	20	0055	N14	W05	01	19.7		B	BXO	20	3	2	1
9789		RAMY	01	20	1300	N16	W11	01	19.7		B	CSO	10	8	3	4
9789		SVTO	01	20	1400	N15	W12	01	19.7		B	DSO	30	7	4	2
9789	30956	MWIL	01	20	1600	N16	W12	01	19.7	4	(B)					
9789		HOLL	01	20	1720	N15	W12	01	19.8		B	CSO	20	5	3	2
9789		LEAR	01	21	0037	N16	W16	01	19.8		BG	CSO	60	12	5	3
9789		SVTO	01	21	0900	N18	W22	01	19.7		B	DSO	60	10	5	3
9789		KAND	01	21	0950	N16	W23	01	19.7			CRO		8	4	3
9789		RAMY	01	21	1220	N16	W23	01	19.8		B	DSO	80	10	6	3
9789		HOLL	01	21	1515	N17	W24	01	19.8		B	CSO	60	11	5	4
9789	30956	MWIL	01	21	1545	N16	W25	01	19.8	4	(B)					
9789		LEAR	01	22	0010	N15	W30	01	19.7		B	CSO	10	4	4	3
9789		SVTO	01	22	0735	N16	W35	01	19.7		B	BXO	10	3	4	3
9789		KAND	01	22	0905	N16	W35	01	19.7			BXO		4	5	3
9789		RAMY	01	22	1416	N17	W38	01	19.7		B	CSO	10	4	4	5
9789		HOLL	01	22	1703	N15	W40	01	19.7		A	AXX	10	1	1	2
9789		LEAR	01	23	0010	N16	W44	01	19.7		A	HRX	10	1	1	4
9790		TACH	01	19	0637	N29	E31	01	21.7			AXX	2	1	1	3
9790		RAMY	01	19	1233	N29	E30	01	21.9		B	CSO	20	4	3	3
9790		SVTO	01	19	1410	N28	E28	01	21.8		A	HSX	10	1	1	2
9790		HOLL	01	19	1508	N28	E31	01	22.0		A	AXX	10	1	1	2

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JANUARY 2002

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9790	30954	MWIL	01 19 2300	N30 E24	01 21.8	3	(B)					
9790		RAMY	01 20 1300	N29 E18	01 21.9		A	HSX		1		4
9790		SVTO	01 20 1400	N28 E17	01 21.9		A	AXX		1		2
9790	30954	MWIL	01 20 1600	N29 E17	01 22.0	3	(AF)					
9790		HOLL	01 20 1720	N28 E17	01 22.0		A	AXX		1	1	2
9790		LEAR	01 21 0037	N28 E10	01 21.8		B	BXO	10	2	2	3
9790		TACH	01 21 0620	N27 E03	01 21.5			BRO	31	3	4	2
9790		SVTO	01 21 0900	N28 E06	01 21.8		B	CRO	300	5	6	3
9790		KAND	01 21 0950	N27 E09	01 22.1			AX		1		3
9790		KAND	01 21 0950	N29 E07	01 21.9			CSO		2	1	3
9790		RAMY	01 21 1220	N29 E03	01 21.7		B	CSO	20	2	3	3
9790		HOLL	01 21 1515	N28 E03	01 21.9		B	BXO	20	2	3	4
9790	30960	MWIL	01 21 1545	N27 E07	01 22.2	4	(AP)					
9790	30954	MWIL	01 21 1545	N29 E02	01 21.8	4	(B)					
9790		LEAR	01 22 0010	N28 W04	01 21.7		B	CSO	10	2	3	3
9790		KAND	01 22 0905	N29 W06	01 21.9			AX		1	1	3
9790		RAMY	01 22 1416	N29 W13	01 21.6		B	CSO	10	3	2	5
9790		HOLL	01 22 1703	N29 W10	01 21.9		A	HSX	20	1	1	2
9790		LEAR	01 23 0010	N29 W14	01 21.9		A	AXX		1		4
9790		RAMY	01 23 1322	N29 W21	01 21.9		A	HSX	10	1	1	3
9790		HOLL	01 23 1650	N29 W23	01 21.9		A	AXX		1		2
9790		RAMY	01 25 1222	N28 W49	01 21.7		B	CSO	10	3	3	3
9790		HOLL	01 25 1523	N27 W51	01 21.7		B	BXO	10	2	2	3
9790	30967	MWIL	01 25 1600	N29 W47	01 22.0	4	(B)					
9790		LEAR	01 26 0127	N23 W58	01 21.6		A	AXX	20	1	1	3
9790		TACH	01 26 0552	N27 W59	01 21.6			AXX	60	1	1	3
9790		RAMY	01 26 1233	N27 W63	01 21.6		B	CSO	30	3	3	3
9790	30967	MWIL	01 26 1545	N28 W66	01 21.5	4	(AP)					
9790A		RAMY	01 20 1300	N08 E28	01 22.6		B	BXO		2	1	4
9790A		SVTO	01 20 1400	N05 E28	01 22.7		B	BXO	10	3	4	2
9790A	30957	MWIL	01 20 1600	N05 E26	01 22.6	3	(AP)					
9790A		HOLL	01 20 1720	N08 E26	01 22.7		A	AXX	10	2	2	2
9792		LEAR	01 23 0010	S03 W02	01 22.8		B	BXO	10	5	3	4
9792		LEAR	01 25 0225	S03 W31	01 22.8		A	AXX	20	2	1	3
9793		RAMY	01 20 1300	S15 E38	01 23.4		B	CRO	10	4	4	4
9793		SVTO	01 20 1400	S15 E37	01 23.4		B	DRO	20	3	4	2
9793	30958	MWIL	01 20 1600	S15 E36	01 23.4	4	(B)					
9793		HOLL	01 20 1720	S15 E36	01 23.4		B	DSO	50	7	8	2
9793		LEAR	01 21 0037	S14 E32	01 23.4		B	CRO	40	5	5	3
9793		TACH	01 21 0620	S14 E23	01 23.0			BRO	41	4	4	2
9793		SVTO	01 21 0900	S14 E27	01 23.4		B	CSO	30	5	6	3
9793		KAND	01 21 0950	S14 E26	01 23.4			CSO		6	6	3
9793		RAMY	01 21 1220	S14 E25	01 23.4		B	DSO	30	8	6	3
9793		HOLL	01 21 1515	S16 E23	01 23.4		B	DSO	90	9	7	4
9793	30958	MWIL	01 21 1545	S15 E23	01 23.4	4	(B)					
9793		LEAR	01 22 0010	S14 E17	01 23.3		B	CSO	20	3	1	3
9793		SVTO	01 22 0735	S12 E12	01 23.2		B	CSO	30	6	5	3
9793		KAND	01 22 0905	S14 E12	01 23.3			CSO		4	3	3
9793		RAMY	01 22 1416	S14 E08	01 23.2		B	CSO	10	6	4	5
9793		HOLL	01 22 1703	S15 E07	01 23.2		B	CSO	30	4	4	2
9793		LEAR	01 23 0010	S14 W02	01 22.8		B	CSO	30	12	7	4
9793		KAND	01 23 0900	S13 W02	01 23.2			HR		1		4
9793		SVTO	01 23 1033	S14 W04	01 23.1		A	HSX	20	1	1	2
9793		RAMY	01 23 1322	S14 W05	01 23.2		B	CSO	10	2	2	3
9793	30958	MWIL	01 23 1600	S14 W07	01 23.1	4	(AP)					
9793		HOLL	01 23 1650	S13 W08	01 23.1		A	HAX	20	1	2	2
9793		LEAR	01 24 0213	S14 W12	01 23.2		B	CAO	40	4	6	1
9793		KAND	01 24 0840	S13 W13	01 23.4			BXO		8	6	3
9793		SVTO	01 24 0915	S14 W16	01 23.2		B	DSO	40	5	4	3
9793		RAMY	01 24 1330	S13 W18	01 23.2		B	DSO	20	3	3	2
9793	30958	MWIL	01 24 1600	S14 W20	01 23.1	4	(BP)					
9793		LEAR	01 25 0225	S15 W25	01 23.2		B	CAO	20	2	3	3
9793		KAND	01 25 0835	S13 W29	01 23.2			AX		1		4
9793		RAMY	01 25 1222	S13 W32	01 23.1		B	CSO	10	4	4	3
9793		HOLL	01 25 1523	S14 W34	01 23.1		A	AXX	10	1	1	3
9793	30958	MWIL	01 25 1600	S14 W35	01 23.0	4	(AP)					

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9793		LEAR	01	26	0127	S16	W39	01	23.1		A	AXX	20	1	1	3
9793		SVTO	01	26	0846	S14	W45	01	23.0		A	HSX	10	1	1	3
9793		KAND	01	26	1010	S13	W45	01	23.0			AX		1		4
9793		RAMY	01	26	1233	S15	W46	01	23.0		B	CSO	20	3	3	3
9793	30958	MWIL	01	26	1545	S14	W48	01	23.0	4	(AP)					
9793		HOLL	01	26	1600	S14	W48	01	23.0		A	HSX	20	1	1	4
9793		SVTO	01	27	0720	S14	W57	01	23.0		A	AXX		1		3
9793		RAMY	01	27	1244	S14	W61	01	22.9		B	BXO	10	3	2	3
9788		RAMY	01	18	1256	N16	E58	01	22.9		B	CRO	10	2	1	3
9788		HOLL	01	18	1958	N16	E53	01	22.8		A	HSX	40	1	1	3
9788		VORO	01	18	2353	N17	E53	01	23.0			CRO	35	3	3	2
9788		TACH	01	19	0637	N17	E46	01	22.8			BRO	35	5	5	3
9788		RAMY	01	19	1233	N16	E45	01	22.9		B	DSO	70	10	6	3
9788		LEAR	01	19	1320	N18	E50	01	23.4		B	CRO	30	3	4	2
9788		SVTO	01	19	1410	N17	E45	01	23.0		B	DAO	100	10	8	2
9788		HOLL	01	19	1508	N17	E45	01	23.0		B	DAO	110	6	9	2
9788	30955	MWIL	01	19	2300	N18	E38	01	22.8	4	(B)					
9788		LEAR	01	20	0055	N17	E38	01	22.9		B	DSO	60	5	6	1
9788		TACH	01	20	0658	N18	E31	01	22.6			BRO	53	6	5	4
9788		RAMY	01	20	1300	N19	E32	01	23.0		B	DSO	70	19	7	4
9788		SVTO	01	20	1400	N17	E32	01	23.0		B	DSO	120	19	7	2
9788	30955	MWIL	01	20	1600	N17	E30	01	22.9	4	(B)					
9788		HOLL	01	20	1720	N15	E28	01	22.8		B	DAO	120	11	8	2
9788		LEAR	01	21	0037	N17	E25	01	22.9		B	DSO	220	28	7	3
9788		TACH	01	21	0620	N16	E17	01	22.5			DAI	294	11	6	2
9788		SVTO	01	21	0900	N19	E20	01	22.9		BG	DAO	100	15	8	3
9788		KAND	01	21	0950	N17	E19	01	22.8			DAO		15	8	3
9788		RAMY	01	21	1220	N18	E18	01	22.9		B	DSI	210	14	8	3
9788		HOLL	01	21	1515	N18	E17	01	22.9		B	DAI	160	14	9	4
9788	30955	MWIL	01	21	1545	N17	E16	01	22.9	5	(B)					
9788		LEAR	01	22	0010	N17	E12	01	22.9		B	DKO	150	14	9	3
9788		SVTO	01	22	0735	N18	E07	01	22.8		B	EAI	230	11	11	3
9788		KAND	01	22	0905	N18	E06	01	22.8			DAO		10	9	3
9788		RAMY	01	22	1416	N18	E05	01	23.0		B	DAO	180	26	10	5
9788		HOLL	01	22	1703	N17	E03	01	22.9		BG	DAI	210	16	10	2
9788		LEAR	01	23	0010	N16	W01	01	22.9		BG	DAI	200	29	10	4
9788		VORO	01	23	0252	N18	W03	01	22.9			DSO	180	9	9	2
9788		KAND	01	23	0900	N18	W08	01	22.8			DAO		13	10	4
9788		SVTO	01	23	1033	N18	W08	01	22.8		B	EAI	140	16	11	2
9788		RAMY	01	23	1322	N18	W09	01	22.9		B	EAO	140	13	11	3
9788	30955	MWIL	01	23	1600	N17	W10	01	22.9	5	(B)					
9788		HOLL	01	23	1650	N18	W11	01	22.9		BG	EAI	170	19	12	2
9788		VORO	01	24	0058	N18	W16	01	22.8			DSO	191	11	9	3
9788		LEAR	01	24	0213	N17	W18	01	22.7		B	CAO	200	11	11	1
9788		KAND	01	24	0840	N18	W20	01	22.8			DAO		11	10	3
9788		SVTO	01	24	0915	N18	W23	01	22.6		B	ESO	130	9	12	3
9788		RAMY	01	24	1330	N19	W23	01	22.8		B	EAO	160	11	11	2
9788	30955	MWIL	01	24	1600	N18	W24	01	22.8	5	(B)					
9788		LEAR	01	25	0225	N16	W34	01	22.5		B	DAO	120	4	3	3
9788		KAND	01	25	0835	N13	W34	01	22.8			AX		1		4
9788		KAND	01	25	0835	N17	W36	01	22.6			CAO		6	9	4
9788		RAMY	01	25	1222	N17	W35	01	22.8		B	DAO	120	15	8	3
9788		HOLL	01	25	1523	N15	W39	01	22.7		B	DAO	110	13	7	3
9788	30968	MWIL	01	25	1600	N14	W40	01	22.6	4	(AP)					
9788	30955	MWIL	01	25	1600	N18	W41	01	22.5	5	(B)					
9788		VORO	01	25	2354	N18	W43	01	22.7			DSO	215	6	10	3
9788		LEAR	01	26	0127	N13	W45	01	22.7		B	DAO	250	15	9	3
9788		TACH	01	26	0552	N15	W45	01	22.8			CAI	281	19	6	3
9788		SVTO	01	26	0846	N16	W48	01	22.7		B	EAO	120	11	11	3
9788		KAND	01	26	1010	N13	W49	01	22.7			AX		3	3	4
9788		KAND	01	26	1010	N18	W51	01	22.5			CAO		8	7	4
9788		RAMY	01	26	1233	N14	W51	01	22.7		B	DSO	80	20	8	3
9788	30968	MWIL	01	26	1545	N14	W53	01	22.6	4	(AP)					
9788	30955	MWIL	01	26	1545	N18	W53	01	22.6	4	(B)					
9788		HOLL	01	26	1600	N14	W55	01	22.5		B	DAO	280	21	10	4
9788		VORO	01	27	0308	N18	W59	01	22.6			DSO	178	9	8	3
9788		LEAR	01	27	0415	N15	W59	01	22.7		B	DAO	120	12	8	1
9788		SVTO	01	27	0720	N19	W62	01	22.6		B	DAO	150	7	10	3

SUNSPOT GROUPS
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JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9788		TACH	01	27	0734	N18	W61	01	22.7			BRI	16	8	7	3
9788		KAND	01	27	0910	N14	W65	01	22.5			DAI		9	10	2
9788		KAND	01	27	0910	N14	W67	01	22.3			BXO		4	5	2
9788		RAMY	01	27	1244	N16	W64	01	22.7		B	DAO	140	17	9	3
9788		HOLL	01	27	1753	N18	W68	01	22.6		A	AXX	30	2	2	2
9788		LEAR	01	28	0110	N18	W69	01	22.8		B	DAO	100	4	8	2
9788		TACH	01	28	0529	N19	W71	01	22.8			CAO	36	3	5	3
9788		RAMY	01	28	1330	N19	W82	01	22.3		B	DSO	60	3	7	4
9788		HOLL	01	28	1530	N18	W81	01	22.5		A	AXX	30	3	2	2
9788A		VORO	01	18	2355	N13	E54	01	23.1			BXO	13	2	3	3
9788C		KAND	01	24	0840	S02	W17	01	23.1			AX		1		3
9788B		VORO	01	23	0252	S14	E01	01	23.2			AXX	17	1		2
9788B		VORO	01	24	0058	S14	W12	01	23.1			AXX	21	1		3
9788B		VORO	01	25	2354	S14	W39	01	23.0			HAX	23	1		3
9788B		TACH	01	26	0552	S12	W40	01	23.2			AXX	20	1	1	3
9788D		KAND	01	24	0840	S01	W09	01	23.7			BXO		5	4	3
9787		HOLL	01	17	1805	S08	E88	01	24.3		A	HHX	120	1	5	2
9787		VORO	01	17	2355	S07	E85	01	24.4			HAX	247	1		2
9787		LEAR	01	18	0100	S06	E82	01	24.2		A	HKX	120	1	3	3
9787		TACH	01	18	0508	S05	E77	01	24.0			HSX	150	1	4	4
9787		SVTO	01	18	1102	S06	E79	01	24.4		A	HKX	240	1	5	4
9787		RAMY	01	18	1256	S08	E75	01	24.2		B	CSO	180	2	6	3
9787	30952	MWIL	01	18	1600	S07	E75	01	24.3	5	(AP)					
9787		HOLL	01	18	1958	S08	E72	01	24.2		A	HAX	280	3	3	3
9787		VORO	01	18	2355	S07	E75	01	24.6			DAI	652	5	9	3
9787		TACH	01	19	0637	S05	E69	01	24.4			CSO	255	2	11	3
9787		RAMY	01	19	1233	S08	E64	01	24.3		B	CKO	360	9	10	3
9787		LEAR	01	19	1320	S05	E61	01	24.1		B	CKO	300	5	11	2
9787		SVTO	01	19	1410	S07	E65	01	24.4		B	ESO	440	4	11	2
9787		HOLL	01	19	1508	S07	E64	01	24.4		B	CHO	320	6	10	2
9787	30952	MWIL	01	19	2300	S07	E59	01	24.4	5	(BP)					
9787		LEAR	01	20	0055	S07	E59	01	24.4		B	CKO	200	3	9	1
9787		TACH	01	20	0658	S05	E53	01	24.2			CAO	417	3	7	4
9787		RAMY	01	20	1300	S06	E53	01	24.5		B	CKO	480	6	11	4
9787		SVTO	01	20	1400	S08	E52	01	24.5		BG	CHO	400	3	10	2
9787	30952	MWIL	01	20	1600	S07	E49	01	24.3	6	(BG)					
9787		HOLL	01	20	1720	S07	E48	01	24.3		B	CKO	420	11	10	2
9787		LEAR	01	21	0037	S06	E47	01	24.5		B	CKO	490	11	14	3
9787		TACH	01	21	0620	S06	E35	01	23.9			CKO	904	5	6	2
9787		SVTO	01	21	0900	S06	E40	01	24.4		BG	EKO	400	7	14	3
9787		KAND	01	21	0950	S07	E38	01	24.2			CKO		9	6	3
9787		RAMY	01	21	1220	S07	E36	01	24.2		B	DKO	520	4	5	3
9787		HOLL	01	21	1515	S07	E35	01	24.2		B	EHO	390	8	11	4
9787	30952	MWIL	01	21	1545	S07	E36	01	24.3	5	(BG)					
9787		LEAR	01	22	0010	S06	E30	01	24.2		B	CKO	370	10	5	3
9787		SVTO	01	22	0735	S05	E28	01	24.4		B	EKO	440	8	11	3
9787		KAND	01	22	0902	S08	E27	01	24.4			DKO		6	10	3
9787		RAMY	01	22	1416	S07	E23	01	24.3		B	DKO	380	18	7	5
9787		HOLL	01	22	1703	S06	E21	01	24.3		BG	DKO	460	14	7	2
9787		LEAR	01	23	0010	S07	E17	01	24.3		BG	DKI	440	14	7	4
9787		VORO	01	23	0252	S07	E15	01	24.2			HKX	636	3	4	2
9787		KAND	01	23	0900	S07	E13	01	24.3			CKO		5	6	4
9787		SVTO	01	23	1033	S06	E12	01	24.3		B	DKO	420	4	8	2
9787		RAMY	01	23	1322	S08	E13	01	24.5		B	EKO	460	10	11	3
9787	30952	MWIL	01	23	1600	S07	E10	01	24.4	5	(BG)					
9787		HOLL	01	23	1650	S09	E08	01	24.3		BG	DKI	440	7	6	2
9787		VORO	01	24	0058	S08	E05	01	24.4			HKX	657	4	2	3
9787		LEAR	01	24	0213	S06	E07	01	24.6		BG	CKI	340	12	13	1
9787		KAND	01	24	0840	S07	E00	01	24.4			CKO		6	6	3
9787		SVTO	01	24	0915	S07	W01	01	24.3		B	DKX	500	5	5	3
9787		RAMY	01	24	1330	S06	E01	01	24.6		B	EKO	500	15	15	2
9787	30952	MWIL	01	24	1600	S07	W03	01	24.4	6	(BG)					
9787		VORO	01	24	2354	S09	W09	01	24.3			HKX	561	4		3
9787		LEAR	01	25	0225	S09	W10	01	24.3		BG	CKO	480	11	8	3

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9787		KAND	01	25	0835	S08	W14	01	24.3			CKO		5	5	4
9787		RAMY	01	25	1222	S09	W15	01	24.4		B	DKO	350	7	6	3
9787		HOLL	01	25	1523	S08	W18	01	24.3		B	DKO	370	5	5	3
9787	30952	MWIL	01	25	1600	S07	W17	01	24.4	6	(BP)					
9787		VORO	01	26	0028	S08	W23	01	24.3			HKX	598	3		3
9787		LEAR	01	26	0127	S08	W19	01	24.6		B	CKO	390	8	10	3
9787		TACH	01	26	0552	S04	W20	01	24.7			CHI	917	11	8	3
9787		SVTO	01	26	0846	S09	W26	01	24.4		B	CKO	390	6	7	3
9787		KAND	01	26	1010	S07	W28	01	24.3			CKO		6	4	4
9787		RAMY	01	26	1233	S10	W28	01	24.4		B	DKO	390	11	6	3
9787	30952	MWIL	01	26	1545	S06	W28	01	24.6	6	(BP)					
9787		HOLL	01	26	1600	S10	W28	01	24.6		B	EKO	440	19	14	4
9787		VORO	01	27	0308	S08	W37	01	24.3			HKX	631	3		3
9787		LEAR	01	27	0415	S08	W37	01	24.4		B	DKO	410	4	4	1
9787		SVTO	01	27	0720	S07	W39	01	24.4		B	CKO	400	3	6	3
9787		TACH	01	27	0734	S07	W38	01	24.5			HHX	550	1	3	3
9787		KAND	01	27	0910	S08	W42	01	24.2			CKO		5	4	2
9787		RAMY	01	27	1244	S09	W42	01	24.4		B	DKO	450	6	4	3
9787		HOLL	01	27	1753	S07	W45	01	24.4		B	CKO	550	5	5	2
9787		LEAR	01	28	0110	S08	W48	01	24.4		B	DKO	370	3	5	2
9787		TACH	01	28	0529	S06	W47	01	24.7			CHO	503	4	4	3
9787		KAND	01	28	1200	S07	W58	01	24.1			CKO		5	5	3
9787		RAMY	01	28	1330	S08	W55	01	24.4		B	DKO	460	11	6	4
9787		HOLL	01	28	1530	S07	W56	01	24.4		BGD	DKC	370	8	7	2
9787		LEAR	01	29	0035	S07	W61	01	24.4		B	DKO	410	6	5	2
9787		TACH	01	29	0543	S08	W64	01	24.4			HA	500	3	4	3
9787		SVTO	01	29	0820	S07	W67	01	24.3		B	DHO	340	6	6	3
9787		KAND	01	29	0855	S09	W69	01	24.2			CHO		3	4	4
9787		RAMY	01	29	1225	S08	W69	01	24.3		B	DHO	410	4	5	2
9787		LEAR	01	30	0115	S07	W75	01	24.4		A	HHX	300	2	3	2
9787		KAND	01	30	0920	S08	W83	01	24.2			HK		1	2	3
9787		RAMY	01	30	1520	S07	W87	01	24.1		B	DSO	120	2	5	3
9803		RAMY	01	27	1244	S24	W41	01	24.4		B	CSO	20	5	3	3
9803		HOLL	01	27	1753	S24	W44	01	24.3		B	CAO	40	2	3	2
9803		VORO	01	28	0038	S25	W48	01	24.3			BXO	28	3	2	3
9803		LEAR	01	28	0110	S23	W47	01	24.4		B	DSO	30	2	5	2
9803		TACH	01	28	0529	S23	W47	01	24.6			BRO	36	3	3	3
9803		KAND	01	28	1200	S24	W55	01	24.2			DSO		5	5	3
9803		RAMY	01	28	1330	S25	W55	01	24.3		B	DSO	20	4	4	4
9803		HOLL	01	28	1530	S26	W57	01	24.2		B	CAO	40	3	5	2
9803		VORO	01	29	0025	S25	W61	01	24.3			CRI	51	3	4	3
9803		LEAR	01	29	0035	S23	W59	01	24.5		B	DSO	60	7	7	2
9803		TACH	01	29	0543	S25	W62	01	24.4			BRO	43	3	4	3
9803		SVTO	01	29	0820	S23	W65	01	24.3		B	DRO	50	5	6	3
9803		KAND	01	29	0855	S25	W68	01	24.1			BXO		3	5	4
9803		RAMY	01	29	1225	S25	W68	01	24.2		B	DSO	70	4	5	2
9803		VORO	01	30	0100	S24	W75	01	24.2			HAX	33	2		3
9803		LEAR	01	30	0115	S23	W72	01	24.5		B	CSO	60	3	5	2
9803		KAND	01	30	0920	S24	W80	01	24.2			AX		3	4	3
9803		RAMY	01	30	1520	S24	W81	01	24.4		B	CSO	30	2	6	3
9796	30961	MWIL	01	21	1545	N10	E49	01	25.3	3	(B)					
9796		LEAR	01	22	0010	N10	E42	01	25.2		A	AXX		1		3
9796		SVTO	01	22	0735	N10	E38	01	25.2		A	AXX		1		3
9796		RAMY	01	22	1416	N10	E36	01	25.3		B	BXO	10	5	3	5
9796		LEAR	01	23	0010	N09	E29	01	25.2		B	CRO	10	3	4	4
9796		KAND	01	23	0900	N09	E25	01	25.2			CRO		3	4	4
9796	30961	MWIL	01	23	1600	N09	E20	01	25.2	4	(B)					
9796		LEAR	01	24	0213	N09	E13	01	25.1		B	CAO	40	4	4	1
9796		KAND	01	24	0840	N09	E11	01	25.2			BXO		4	6	3
9796		SVTO	01	24	0915	N09	E09	01	25.1		B	DRO	20	4	6	3
9796		RAMY	01	24	1330	N10	E10	01	25.3		B	BXO	20	6	9	2
9796	30961	MWIL	01	24	1600	N08	E04	01	25.0	4	(AP)					
9796		LEAR	01	25	0225	N08	W01	01	25.0		B	CAO	30	3	4	3
9796		KAND	01	25	0835	N09	W01	01	25.3			AX		2	1	4
9796A		KAND	01	24	0840	S02	E09	01	25.0			AX		3	1	3
9794		RAMY	01	20	1300	N12	E71	01	25.9		A	HSX	10	1	1	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9794		SVTO	01	20	1400	N10	E70	01	25.8		A	AXX		1		2
9794	30959	MWIL	01	20	1600	N10	E69	01	25.8	3	(AP)					
9794		HOLL	01	20	1720	N09	E68	01	25.8		A	AXX	10	1	1	2
9794		LEAR	01	21	0037	N12	E64	01	25.8		A	AXX	10	1	1	3
9794		SVTO	01	21	0900	N13	E59	01	25.8		B	CRO	30	2	4	3
9794		KAND	01	21	0950	N12	E57	01	25.7			AX		1		3
9794		HOLL	01	21	1515	N09	E51	01	25.5		B	BXO	20	2	4	4
9794	30959	MWIL	01	21	1545	N11	E55	01	25.8	3	(AP)					
9794		LEAR	01	23	0010	N12	E34	01	25.6		A	HSX	10	2	1	4
9794		KAND	01	23	0900	N12	E29	01	25.5			AX		2	1	4
9794		RAMY	01	23	1322	N11	E25	01	25.4		B	CSO	30	5	7	3
9794	30959	MWIL	01	23	1600	N12	E25	01	25.5	4	AP					
9794		HOLL	01	23	1650	N07	E20	01	25.2		B	DSO	50	3	5	2
9794		LEAR	01	24	0213	N13	E19	01	25.5		B	BXO	30	4	4	1
9794		KAND	01	24	0840	N13	E17	01	25.6			BXO		2	4	3
9794		SVTO	01	24	0915	N13	E18	01	25.7		A	HSX		1		3
9794		VORO	01	24	2353	N13	E09	01	25.7			DSO	83	4	3	2
9794		LEAR	01	25	0225	N13	E07	01	25.6		B	DAO	20	5	4	3
9794		KAND	01	25	0835	N13	E04	01	25.6			DAO		4	4	4
9794		RAMY	01	25	1222	N12	E02	01	25.7		B	DSO	50	8	5	3
9794		HOLL	01	25	1523	N13	E02	01	25.8		B	DAO	60	3	4	3
9794	30969	MWIL	01	25	1600	N14	W00	01	25.7	4	(B)					
9794		VORO	01	25	2355	N13	W04	01	25.7			DSO	81	2	4	2
9794		LEAR	01	26	0127	N12	W07	01	25.5		B	DAO	80	6	4	3
9794		TACH	01	26	0552	N13	W08	01	25.6			CSO	86	3	4	3
9794		SVTO	01	26	0846	N13	W08	01	25.8		B	CSO	40	5	5	3
9794		KAND	01	26	1010	N13	W09	01	25.7			CSO		2	4	4
9794		RAMY	01	26	1233	N12	W12	01	25.6		B	DSO	30	4	5	3
9794	30969	MWIL	01	26	1545	N14	W13	01	25.7	4	(B)					
9794		HOLL	01	26	1600	N11	W12	01	25.8		B	DSO	40	4	5	4
9794		VORO	01	27	0308	N13	W20	01	25.6			DSO	72	2	4	3
9794		LEAR	01	27	0415	N13	W20	01	25.7		B	CSO	30	2	4	1
9794		SVTO	01	27	0720	N13	W21	01	25.7		B	CSO	30	4	5	3
9794		TACH	01	27	0734	N13	W22	01	25.6			BRO	12	3	5	3
9794		KAND	01	27	0910	N13	W22	01	25.7			CSO		7	5	2
9794		RAMY	01	27	1244	N12	W25	01	25.6		B	DSO	40	8	6	3
9794		HOLL	01	27	1753	N13	W27	01	25.7		B	CSO	40	4	5	2
9794		LEAR	01	28	0110	N13	W32	01	25.6		B	DSO	50	5	7	2
9794		TACH	01	28	0529	N13	W31	01	25.9			BRO	8	4	5	3
9794		KAND	01	28	1200	N14	W39	01	25.5			BXO		3	6	4
9794		RAMY	01	28	1330	N14	W39	01	25.6		B	CSO	10	6	5	4
9794		HOLL	01	28	1530	N13	W40	01	25.6		B	BXO	10	4	7	2
9794		LEAR	01	29	0035	N14	W47	01	25.5		A	HSX	20	2	2	2
9794		TACH	01	29	0543	N12	W48	01	25.6			AXX	5	1	1	3
9797		LEAR	01	23	0010	S18	E44	01	26.3		A	HAX	30	2	1	4
9797		VORO	01	23	0252	S17	E44	01	26.5			AXX	24	1		2
9797		KAND	01	23	0900	S11	E42	01	26.5			AX		1		4
9797		SVTO	01	23	1033	S16	E38	01	26.3		A	HAX	20	1	1	2
9797		RAMY	01	23	1322	S13	E37	01	26.3		A	HRX		1		3
9797	30965	MWIL	01	23	1600	S17	E36	01	26.4	4	AP					
9797		HOLL	01	23	1650	S18	E35	01	26.4		A	HSX	20	2	2	2
9797		VORO	01	24	0058	S17	E31	01	26.4			AXX	10	1		3
9797		KAND	01	24	0840	S16	E27	01	26.4			AX		1		3
9797		LEAR	01	25	0225	S20	E16	01	26.3		B	BXO	20	2	4	3
9797		LEAR	01	26	0127	S17	E01	01	26.1		B	BXO	20	2	4	3
9797		RAMY	01	26	1233	S19	W08	01	25.9		B	BXO		3	2	3
9797C		KAND	01	21	0950	N16	E70	01	26.7			AX		2		3
9798		RAMY	01	22	1416	S01	E62	01	27.2		A	AXX		1		5
9798		LEAR	01	23	0010	S04	E57	01	27.3		B	CSO	20	4	6	4
9798		KAND	01	23	0900	S02	E53	01	27.3			BXO		3	7	4
9798		SVTO	01	23	1033	S02	E49	01	27.1		A	AXX		1		2
9798		RAMY	01	23	1322	S01	E41	01	26.6		B	CSO	20	5	7	3
9798	30966	MWIL	01	23	1600	S03	E46	01	27.1	4	(AP)					
9798		HOLL	01	23	1650	S03	E41	01	26.8		B	CSO	50	2	5	2
9798		VORO	01	24	0058	S02	E41	01	27.1			BXO	56	8	1	3
9798		LEAR	01	24	0213	S01	E41	01	27.1		B	BXO	80	7	7	1

SUNSPOT GROUPS
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9798		KAND	01	24	0840	S02	E38	01	27.2			BXO		7	6	3
9798		SVTO	01	24	0915	S02	E38	01	27.2		B	CRO	30	7	7	3
9798		RAMY	01	24	1330	S03	E34	01	27.1		B	DSO	50	8	5	2
9798	30966	MWIL	01	24	1600	S03	E33	01	27.1	4	(BP)					
9798		LEAR	01	25	0225	S01	E27	01	27.1		B	CAO	100	8	4	3
9798		KAND	01	25	0835	S02	E22	01	27.0			CAO		4	4	4
9798		RAMY	01	25	1222	S02	E21	01	27.1		B	CAO	30	12	5	3
9798		HOLL	01	25	1523	S03	E18	01	27.0		B	CAO	40	6	3	3
9798	30966	MWIL	01	25	1600	S02	E16	01	26.9	4	(BP)					
9798		LEAR	01	26	0127	S01	E13	01	27.0		B	BXO	20	2	3	3
9798		SVTO	01	27	0720	S02	W04	01	27.0		B	CRO	20	3	4	3
9798		KAND	01	27	0910	S03	W05	01	27.0			BXO		6	5	2
9798		RAMY	01	27	1244	S03	W08	01	26.9		B	CSO	10	7	4	3
9798		KAND	01	28	1200	S02	W18	01	27.1			AX		2	1	3
9798		RAMY	01	28	1330	S03	W17	01	27.3		B	CSO	10	4	9	4
9798		LEAR	01	29	0035	S02	W27	01	27.0		A	AXX	10	2	1	2
9799	30962	MWIL	01	21	1545	S22	E81	01	27.9	2	AP					
9799		KAND	01	22	0905	S21	E73	01	28.0			AX		1		3
9799		RAMY	01	22	1416	S21	E67	01	27.7		A	AXX		1		5
9799		LEAR	01	23	0010	S25	E66	01	28.1		A	AXX		1		4
9799		KAND	01	23	0900	S23	E65	01	28.4			AX		1		4
9799		RAMY	01	23	1322	S24	E60	01	28.2		B	BXO		2	3	3
9799	30962	MWIL	01	23	1600	S24	E57	01	28.1	4	B					
9799		HOLL	01	23	1650	S25	E58	01	28.2		B	DAO	90	2	6	2
9799		VORO	01	24	0058	S25	E56	01	28.4			AXX	26	1		3
9799		LEAR	01	24	0213	S19	E51	01	28.0		B	CAO	60	3	7	1
9799		KAND	01	24	0840	S23	E51	01	28.3			BXO		3	5	3
9799		SVTO	01	24	0915	S23	E51	01	28.3		A	HSX	20	1	1	3
9799		RAMY	01	24	1330	S25	E48	01	28.3		B	DSO	30	2	3	2
9799	30962	MWIL	01	24	1600	S25	E46	01	28.2	4	(B)					
9799		LEAR	01	25	0225	S22	E41	01	28.2		B	DAO	70	3	3	3
9799		KAND	01	25	0835	S22	E36	01	28.1			CAO		5	6	4
9799		RAMY	01	25	1222	S25	E35	01	28.2		B	CAO	60	4	3	3
9799		HOLL	01	25	1523	S23	E32	01	28.1		B	CAO	70	9	6	3
9799	30971	MWIL	01	25	1600	S17	E28	01	27.8	4	(AP)					
9799	30970	MWIL	01	25	1600	S20	E29	01	27.9	4	(AP)					
9799	30962	MWIL	01	25	1600	S25	E33	01	28.2	5	(BF)					
9799		VORO	01	26	0028	S24	E29	01	28.3			DSO	170	6	2	3
9799		LEAR	01	26	0127	S22	E29	01	28.3		B	CAO	140	4	3	3
9799		TACH	01	26	0552	S22	E23	01	28.0			HA	250	5	2	3
9799		SVTO	01	26	0846	S24	E24	01	28.2		B	DAO	170	7	8	3
9799		KAND	01	26	1010	S24	E24	01	28.3			CAO		7	5	4
9799		RAMY	01	26	1233	S23	E21	01	28.1		B	DAO	150	9	7	3
9799	30962	MWIL	01	26	1545	S22	E19	01	28.1	4	(D)					
9799		HOLL	01	26	1600	S25	E18	01	28.1		B	CKO	150	13	6	4
9799		VORO	01	27	0308	S25	E14	01	28.2			DSO	147	6	3	3
9799		LEAR	01	27	0415	S25	E13	01	28.2		B	DAO	110	5	4	1
9799		SVTO	01	27	0720	S25	E13	01	28.3		B	DAO	130	2	4	3
9799		TACH	01	27	0734	S21	E08	01	27.9			CAO	60	4	3	3
9799		KAND	01	27	0910	S24	E11	01	28.2			DAO		12	7	2
9799		RAMY	01	27	1244	S23	E08	01	28.1		B	DAO	100	14	7	3
9799		HOLL	01	27	1753	S24	E07	01	28.3		B	CSO	50	3	3	2
9799		VORO	01	27	2354	S24	E01	01	28.1			CAI	121	9	5	3
9799		LEAR	01	28	0110	S24	E02	01	28.2		B	DSO	100	7	5	2
9799		TACH	01	28	0529	S20	E02	01	28.4			CSI	56	5	4	3
9799		KAND	01	28	1200	S23	W04	01	28.2			CAO		6	5	3
9799		RAMY	01	28	1330	S23	W06	01	28.1		B	DAO	90	9	7	4
9799		HOLL	01	28	1530	S24	W06	01	28.2		B	DAO	70	7	6	2
9799		LEAR	01	29	0035	S23	W12	01	28.1		B	DAO	90	9	7	2
9799		TACH	01	29	0543	S21	W14	01	28.2			CAI	242	6	4	3
9799		SVTO	01	29	0820	S23	W18	01	28.0		B	DSO	60	6	7	3
9799		KAND	01	29	0855	S24	W15	01	28.2			CAO		7	7	4
9799		RAMY	01	29	1225	S24	W18	01	28.1		B	DSO	50	4	7	2
9799		LEAR	01	30	0115	S23	W24	01	28.2		B	DAO	60	7	7	2
9799		KAND	01	30	0920	S24	W27	01	28.3			CSO		4	4	3
9799		RAMY	01	30	1520	S23	W31	01	28.2		B	CSO	20	5	3	3
9799		LEAR	01	31	0015	S23	W36	01	28.2		B	BXO	20	3	3	2
9799		HOLL	02	01	1530	S24	W58	01	28.3		A	AXX	20	1	1	3

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9799C		VORO	01 30	0100	N21 W19	01 28.6			AXX	3	1		3
9799A		LEAR	01 29	0035	N26 E05	01 29.4		B	CSO	10	2	3	2
9799A		TACH	01 29	0543	N24 W02	01 29.1			AR	28	2	1	3
9799A		SVTO	01 29	0820	N28 E01	01 29.4		B	DRO	30	3	5	3
9799A		KAND	01 29	0855	N26 E00	01 29.4			BXO		2	2	4
9799D		VORO	01 29	0025	N14 E05	01 29.4			BXI	8	3	1	3
9799B		KAND	01 30	0920	S06 W07	01 29.9			AX		2	2	3
9799B		RAMY	01 30	1520	S07 W11	01 29.8		B	BXO		2	2	3
9800		VORO	01 24	2354	N08 E71	01 30.3			HAX	30	1		3
9800		LEAR	01 25	0225	N09 E73	01 30.6		B	DAI	270	7	7	3
9800		KAND	01 25	0835	N08 E70	01 30.6			BXO		4	6	4
9800		RAMY	01 25	1222	N06 E70	01 30.7		B	DAO	30	11	7	3
9800		HOLL	01 25	1523	N07 E67	01 30.6		B	CSO	100	11	11	3
9800	30972	MWIL	01 25	1600	N07 E66	01 30.6	4	(BP)					
9800		VORO	01 26	0028	N07 E62	01 30.7			DSO	179	6	9	3
9800		LEAR	01 26	0127	N11 E60	01 30.6		B	DAI	320	13	9	3
9800		TACH	01 26	0552	N08 E54	01 30.3			BRI	91	16	9	3
9800		SVTO	01 26	0846	N07 E57	01 30.6		B	DAI	220	15	8	3
9800		KAND	01 26	1010	N07 E59	01 30.8			CRI		14	12	4
9800		RAMY	01 26	1233	N09 E53	01 30.5		B	DSI	250	33	10	3
9800	30972	MWIL	01 26	1545	N07 E54	01 30.7	4	(B)					
9800		HOLL	01 26	1600	N06 E55	01 30.8		B	ESI	170	42	12	4
9800		VORO	01 27	0308	N07 E46	01 30.6			DSO	463	24	10	3
9800		LEAR	01 27	0415	N06 E45	01 30.5		B	DAI	220	28	10	1
9800		SVTO	01 27	0720	N06 E44	01 30.6		B	EAI	330	21	13	3
9800		TACH	01 27	0734	N08 E40	01 30.3			CAI	71	17	7	3
9800		KAND	01 27	0910	N07 E45	01 30.7			EAI		27	11	2
9800		RAMY	01 27	1244	N08 E40	01 30.5		B	EAC	450	56	12	3
9800		HOLL	01 27	1753	N08 E38	01 30.6		BG	EKI	210	27	13	2
9800		VORO	01 28	0038	N07 E35	01 30.6			DKO	695	40	9	3
9800		LEAR	01 28	0110	N07 E35	01 30.7		B	EKI	400	20	11	2
9800		TACH	01 28	0529	N08 E34	01 30.8			DAI	405	16	6	3
9800		KAND	01 28	1200	N07 E30	01 30.7			EKO		19	12	3
9800		RAMY	01 28	1330	N07 E28	01 30.6		B	EKC	660	47	12	4
9800		HOLL	01 28	1530	N08 E27	01 30.7		BG	EKC	470	29	12	2
9800		VORO	01 29	0025	N08 E21	01 30.6			DAI	739	55	11	3
9800		LEAR	01 29	0035	N07 E22	01 30.7		BG	EKI	560	40	14	2
9800		TACH	01 29	0543	N06 E15	01 30.4			DAI	795	30	8	3
9800		SVTO	01 29	0820	N08 E18	01 30.7		BG	FKI	540	68	16	3
9800		KAND	01 29	0855	N07 E18	01 30.7			FKO		41	16	4
9800		RAMY	01 29	1225	N07 E15	01 30.6		BG	FKI	620	39	17	2
9800		VORO	01 30	0100	N07 E08	01 30.6			DAI	668	47	10	3
9800		LEAR	01 30	0115	N07 E09	01 30.7		BG	EKC	620	39	15	2
9800		KAND	01 30	0820	N08 E03	01 30.6			FAI		27	18	3
9800		RAMY	01 30	1520	N08 E01	01 30.7		BG	FKC	580	60	17	3
9800		LEAR	01 31	0015	N08 W05	01 30.6		BG	FKC	620	46	16	2
9800		VORO	01 31	0052	N06 W07	01 30.5			EKI	747	30	13	3
9800		KAND	01 31	0800	N07 W10	01 30.6			EAO		50	15	3
9800		RAMY	01 31	1218	N07 W12	01 30.6		BG	FKC	570	35	16	4
9800		HOLL	01 31	1543	N07 W14	01 30.6		BG	FKC	540	72	17	4
9800	30972	MWIL	01 31	1630	N07 W15	01 30.6	5	BG					
9800		VORO	02 01	0020	N07 W20	01 30.6			DAI	736	28	11	3
9800		LEAR	02 01	0104	N08 W19	01 30.7		BG	FKC	740	56	17	3
9800		KAND	02 01	0850	N08 W25	01 30.6			FAI		28	17	4
9800		RAMY	02 01	1315	N09 W26	01 30.7		BG	FKC	580	49	18	3
9800		HOLL	02 01	1530	N07 W26	01 30.8		BG	FAI	390	45	16	3
9800	30972	MWIL	02 01	1600	N07 W33	01 30.3	5	BG					
9800		LEAR	02 02	0105	N08 W33	01 30.7		BG	EAC	500	32	15	2
9800		VORO	02 02	0403	N08 W34	01 30.7			DAI	537	23	13	3
9800		SVTO	02 02	1045	N09 W38	01 30.7		B	EAI	570	30	15	2
9800		RAMY	02 02	1335	N11 W41	01 30.6		BG	FKI	430	25	18	3
9800	30972	MWIL	02 02	1600	N07 W43	01 30.5	5	(BG)					
9800		LEAR	02 03	0030	N08 W48	01 30.5		BG	FAI	390	37	16	3
9800		VORO	02 03	0108	N09 W47	01 30.6			DAI	419	24	12	3
9800		SVTO	02 03	0830	N10 W53	01 30.5		B	FSO	200	22	18	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9800		RAMY	02	03	1305	N10	W55	01	30.5		BG	FKI	320	11	16	3
9800	30972	MWIL	02	03	1600	N07	W58	01	30.4	5	(D)					
9800		VORO	02	04	0021	N07	W65	01	30.2			DAI	894	4	3	3
9800		LEAR	02	04	0042	N08	W61	01	30.5		BG	EAI	290	9	13	3
9800		SVTO	02	04	1115	N09	W72	01	30.2		B	DAO	220	3	5	2
9800		RAMY	02	04	1215	N08	W71	01	30.3		B	DKO	230	2	6	3
9800	30972	MWIL	02	04	1545	N07	W72	01	30.4	5	(AP)					
9800		LEAR	02	05	0110	N04	W77	01	30.4		B	DAO	180	3	4	4
9800		VORO	02	05	0132	N07	W75	01	30.5			DAI	490	1	3	3
9800		TACH	02	05	0535	N07	W77	01	30.6			HR	73	2	4	3
9800		SVTO	02	05	0749	N09	W84	01	30.1		B	DAO	60	3	4	2
9804		VORO	01	27	2354	S19	E40	01	31.0			AXX	5	1		3
9804		KAND	01	28	1200	S19	E34	01	31.1			AX		1	1	3
9804		RAMY	01	28	1330	S19	E32	01	31.0		A	HSX	20	1	1	4
9804		HOLL	01	28	1530	S18	E31	01	31.0		A	AXX	10	2	1	2
9804		VORO	01	29	0025	S19	E26	01	31.0			AXX	5	1		3
9804		LEAR	01	29	0035	S19	E25	01	30.9		A	AXX	10	2	2	2
9804		LEAR	01	31	0015	S19	E00	01	31.0		B	BXO	20	4	2	2
9804		LEAR	02	01	0104	S17	W13	01	31.0		B	CAO	30	3	6	3
9801		RAMY	01	25	1222	S03	E83	01	31.7		B	CSO	30	3	6	3
9801		HOLL	01	25	1523	S03	E80	01	31.6		A	HSX	60	1	2	3
9801	30973	MWIL	01	25	1600	S02	E83	01	31.9	5	AP					
9801		VORO	01	26	0028	S02	E76	01	31.7			HAX	168	1		3
9801		LEAR	01	26	0127	S01	E75	01	31.7		B	CAO	150	2	3	3
9801		TACH	01	26	0552	S02	E71	01	31.5			CSO	84	3	3	3
9801		SVTO	01	26	0846	S04	E73	01	31.8		B	CSO	80	3	6	3
9801		KAND	01	26	1010	S03	E70	01	31.6			HS		1	2	4
9801		KAND	01	26	1010	S03	E70	01	31.6			HSX		1	2	4
9801		RAMY	01	26	1233	S01	E69	01	31.7		B	CSO	50	2	3	3
9801	30973	MWIL	01	26	1545	S02	E68	01	31.7	5	(BP)					
9801	30974	MWIL	01	26	1545	S06	E67	01	31.7	4	(B)					
9801		HOLL	01	26	1600	S05	E68	01	31.7		A	HAX	120	2	2	4
9801		VORO	01	27	0308	S02	E61	01	31.7			HAX	172	4		3
9801		LEAR	01	27	0415	S05	E62	01	31.8		B	CSO	100	3	2	1
9801		SVTO	01	27	0720	S03	E59	01	31.7		B	DAO	100	2	4	3
9801		TACH	01	27	0734	S02	E55	01	31.4			HR	52	2	3	3
9801		KAND	01	27	0910	S03	E58	01	31.7			CSO		3	3	2
9801		KAND	01	27	0910	S06	E62	02	1.0			AX		1		2
9801		KAND	01	27	0910	S06	E62	02	1.0			AXX		1		2
9801		RAMY	01	27	1244	S03	E56	01	31.7		B	DSO	130	4	4	3
9801		HOLL	01	27	1753	S02	E53	01	31.7		B	CAO	90	3	3	2
9801		VORO	01	28	0038	S03	E50	01	31.8			HAX	131	3		3
9801		LEAR	01	28	0110	S04	E50	01	31.8		B	DSO	90	2	3	2
9801		TACH	01	28	0529	S01	E43	01	31.4			HR	56	3	2	3
9801		KAND	01	28	1200	S02	E44	01	31.8			CSO		2	3	3
9801		RAMY	01	28	1330	S02	E42	01	31.7		B	DSO	90	4	3	4
9801		HOLL	01	28	1530	S03	E42	01	31.8		B	CAO	100	3	3	2
9801		VORO	01	29	0025	S02	E36	01	31.7			HAX	130	5		3
9801		LEAR	01	29	0035	S04	E36	01	31.7		B	DAO	140	4	4	2
9801		TACH	01	29	0543	S02	E30	01	31.5			HA	180	2	2	3
9801		SVTO	01	29	0820	S02	E33	01	31.8		B	DSO	100	7	4	3
9801		KAND	01	29	0855	S03	E32	01	31.8			DAO		2	2	4
9801		RAMY	01	29	1225	S05	E30	01	31.8		B	DSO	100	4	4	2
9801		VORO	01	30	0100	S03	E23	01	31.8			HSX	131	4		3
9801		LEAR	01	30	0115	S03	E23	01	31.8		B	DAO	90	2	3	2
9801		KAND	01	30	0920	S03	E18	01	31.7			CSO		3	4	3
9801		RAMY	01	30	1520	S04	E16	01	31.8		B	DSO	80	11	5	3
9801		LEAR	01	31	0015	S05	E11	01	31.8		B	DSO	120	8	5	2
9801		VORO	01	31	0052	S03	E09	01	31.7			HSX	133	2		3
9801		VORO	01	31	0052	S07	E11	01	31.9			BXI	14	4	2	3
9801		KAND	01	31	0800	S03	E08	01	31.9			CSO		16	4	3
9801		KAND	01	31	0800	S06	E09	02	1.0			BXO		7	6	3
9801		RAMY	01	31	1218	S04	E03	01	31.7		B	DSO	100	9	6	4
9801		HOLL	01	31	1543	S04	E02	01	31.8		B	CAO	90	7	3	4
9801	30973	MWIL	01	31	1630	S02	E02	01	31.8	5	(BP)					
9801	30974	MWIL	01	31	1630	S06	E02	01	31.8	3	AP					
9801		VORO	02	01	0020	S03	W04	01	31.7			HAX	147	2		3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JANUARY 2002

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9801		LEAR	02 01 0104	S04 W04	01 31.7		B	CSO	150	6	5	3
9801		KAND	02 01 0850	S03 W08	01 31.8			CSO		2	3	4
9801		KAND	02 01 0850	S07 W07	01 31.8			AXX		2	1	4
9801		RAMY	02 01 1315	S03 W10	01 31.8		B	CSO	90	14	4	3
9801		HOLL	02 01 1530	S03 W12	01 31.7		A	HAX	100	12	6	3
9801	30973	MWIL	02 01 1600	S03 W16	01 31.5	5	AP					
9801		LEAR	02 02 0105	S04 W17	01 31.8		B	CSO	130	6	4	2
9801		VORO	02 02 0403	S03 W20	01 31.7			HSX	131	4		3
9801		SVTO	02 02 1045	S05 W24	01 31.6		B	CAO	110	6	5	2
9801		RAMY	02 02 1335	S04 W24	01 31.8		B	CSO	90	4	5	3
9801	30973	MWIL	02 02 1600	S04 W26	01 31.7	5	(BP)					
9801		LEAR	02 03 0030	S03 W31	01 31.7		A	HSX	70	1	2	3
9801		SVTO	02 03 0830	S02 W37	01 31.6		A	HSX	80	2	3	2
9801		RAMY	02 03 1305	S03 W37	01 31.8		B	CSO	100	4	4	3
9801	30973	MWIL	02 03 1600	S03 W40	01 31.7	5	(AP)					
9801		VORO	02 04 0021	S03 W45	01 31.6			HAX	188	1		3
9801		LEAR	02 04 0042	S03 W45	01 31.7		A	HSX	110	1	2	3
9801		SVTO	02 04 1115	S02 W52	01 31.6		A	HSX	60	1	2	2
9801		RAMY	02 04 1215	S02 W51	01 31.7		A	HAX	70	1	1	3
9801	30973	MWIL	02 04 1545	S03 W53	01 31.7	5	(AP)					
9801		LEAR	02 05 0110	S06 W58	01 31.7		A	HSX	90	1	1	4
9801		VORO	02 05 0132	S03 W58	01 31.7			HAX	94	1		3
9801		TACH	02 05 0535	S02 W58	01 31.9			HSX	100	1	2	3
9801		SVTO	02 05 0749	S02 W64	01 31.5		A	HSX	60	1	2	2
9801	30973	MWIL	02 05 1545	S03 W67	01 31.6	4	(AP)					
9801		HOLL	02 05 1620	S02 W68	01 31.6		A	HAX	50	1	1	4
9801		VORO	02 06 0027	S03 W73	01 31.6			HAX	220	1		3
9801		LEAR	02 06 0325	S05 W74	01 31.6		A	HSX	90	1	2	2
9801		RAMY	02 06 1253	N00 W81	01 31.5		A	HSX	60	1	3	2
9801		HOLL	02 06 1504	S02 W83	01 31.4		A	HSX	60	1	2	3
9801	30973	MWIL	02 06 1600	S03 W80	01 31.7	4	AP					

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES

JANUARY 2002

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
02	0912	0915	0936	1-	3		1			1	0909	C6.7	9754
02	1028	1042	1210	1	1		1				No flare		
02	1252	1255	1313	2+	5	1	2	1		2	1248	M2.4	9754
02	1753	1758	1834	1+	3					4	1751	C5.1	
03	1225	1240	1317	1	1		1				No flare		
03	1327	1346	1426	1	1		1				1343		9758
03	1707	1712	1741	1	3					3	1709	C4.4	9767
04	0817	0820	0840	1	1					1	0817	C3.6	
04	1654	1702	1733	2	1					1	No flare		
04	1715	1721	1819	2+	1					1	No flare		
04	1744	1748	1805	1+	3					4	1743	M1.0	
04	1824	1829	1850	1+	3					2	1825	C5.6	9773
04	1953	2015	2137	3	1					1	1951	C8.7	9773
05	1026	1043	1111	2-	5		1			2	1027	C7.4	9773
05	1705	1714	1800	2+	1					1	1707	C3.1	9773
05	1812	1814	2015	3	1					1	1819	M1.9	9773
05	1822	1831	1921	2	3					5	1819	M1.9	9773
06	1137	1141	1153	1-	1					1	1136	C3.1	9767
06	1236	1247	1312	1	5		1			1	1234	C3.2	
06	1306	1311	1318	1-	1					1	1307	C2.7	9767
06	1350	1357	1406	1-	1					1	1348	C3.1	9773
06	1442	1446	1459	1-	5		1			4	1438	C6.2	9767
06	1936	1946	2015	2	1					1	No flare		
07	1413	1419	1430	1-	1					1	1414	C3.8	9767
08	1713	1723	1803	2	3					5	1713	C7.2	9767
08	1808	1830	2030D	3+	1					1	1814	C9.6	
09	0948	0955	1010	1	1					1	0952	C4.3	
09	1101	1112	1124	3-	5	1	2	1		2	1101	M1.6	9773
09	1452	1459	1518	1+	1					1	No flare		
09	1741	1750	1922	3-	3					6	1742	M9.5	9773
10	0745	0800	0840	1	1		1				0715	C4.3	9773
10	1007	1020	1057	2-	3		1			1	1030E		9773
10	1509	1516	1536	1+	1					1	1512	C3.2	9773
10	1552	1603	1630D	2	1					1	1553	C3.6	9773
10	1630	1632	1705	2	1					1	No flare		
11	0755	0805	0915	2+	1					1	0753	M1.0	9767
11	1235	1240	1314	1	1		1				1222	C4.2	9773
11	1319	1337	1420	1	1		1				1319	C6.1	9773
11	1800	1804	1827	1+	1					1	No flare		
11	1844	1847	1907	1	3					3	1844	C3.7	9775
11	1957	2006	2041	2	1					1	1955	C7.3	9773
12	1220	1230	1322	1	1		1				1215	C5.4	
12	1510	1518	1619	2+	5		1			5	1505	M1.7	9775
12	1830	1839	1945	2+	3					5	1832	M3.4	
12	1926	1931	1936	1-	1					1	1925	M1.3	9775
13	1307	1312	1336	1+	5					2	1306	C7.8	9775
13	1326	1334	1404	1-	5		1			2	1336	C0.8	9775
13	1511	1524	1616	2	3					4	1512	C7.4	9773
13	1708	1710	1729	1	3					4	1707	C5.4	9775
13	1852	1904	1937	2	1					1	No flare		
13	1941	1946	2025	2-	3					3	1935	M2.2	9775
14	0822	0846	0916	1	1		1				No flare		
15	1650	1703	1718D	1+	1					1	No flare		
15	1720	1728	1743	1	3					2	No flare		
15	1749	1752	1801	1-	3					2	1748	C4.6	9775
15	1806	1808	1830	1	1					1	1804	C3.4	9775

* = no flare patrol.

JANUARY 2002

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
16	0800	0808	0825	1	5					2	0800	C7.1	9775
16	0904	0908	0925	1-	5					3	0903	C4.3	9775
16	0928	0931	0949	1-	5					3	0927	C6.6	
16	1006	1010	1036	3-	5	1	1	1		3	1005	M1.5	9775
16	1159	1206	1214	2	5	1	1	1			*		
16	1353	1400	1423	2+	5		1	1		4	1351	C9.5	
16	1503	1508	1521	1-	3					3	1502	C4.6	
16	1524	1530	1542D	1-	1					1	1525	C4.1	9775
16	1546	1552	1610	1+	1					1	1542	C5.0	
16	1649	1657	1716	1+	3					2	1652	C4.3	9775
16	1752	1758	1816	1	3					3	1750	C6.2	9773
16	2002	2009	2021D	1	1					1	2000	C5.8	9773
16	2021	2028	2130	2+	1					1	2019	C9.2	
17	1143	1149	1151	1-	1					1	1142	C2.5	
19	1003	1013	1054	2+	5		2	1		3	1000	M1.2	9787
20	1544	1551	1613	1+	3					4	1543	C3.8	9788
22	0849	0900	0930	2-	5		1			2	0852	M1.3	9791
22	1200	1240	1300	1	1		1				No flare		
22	1307	1316	1335	1-	5		1			2	1308	C5.0	9789
22	1421	1428	1434	1-	1					1	1420	C2.6	
23	0830	0941	1035	1	1		1				0906	C1.4	9787
23	1414	1426	1453	1	1		1				No flare		
24	1503	1508	1517	1-	3					4	1503	C3.7	
25	1031	1036	1044	2	5	1		1			1030	C3.5	
25	1816	1819	1844	1+	3					2	1815	C2.5	
25	1903	1909	1928	1	3					5	1902	C4.6	
25	2212	2218	2307	2+	1					1	2214	C7.5	
26	1446	1450	1455	1-	1					1	1447	C2.7	
26	1923	1930	1943D	1	1					1	1926	M1.3	9802
26	1939	1953	2031	2	3					3	1926	M1.3	9802
28	1103	1139U	1310	1	1		1				1105	C4.6	
29	0423	0425	0455	1+	1					1	0420	C3.6	9800
29	0555	0600	0630	2	1					1	No flare		
29	0846	0851	0922	2-	3					2	0842	C7.3	9800
29	0954	1018	1048	1	3		1			1	1013	C4.0	9800
29	1251	1300	1342	1	1		1				1249	C5.8	9800
30	1215	1228	1245	1+	1					1	1159	C3.3	
30	1331	1337	1406	1+	3					2	1333	C2.4	
30	1635	1639	1652	1-	3					3	1637	C7.4	
30	1738	1741	1746	1-	3					2	1738	C3.3	
31	1010	1012	1026	2+	5	1		1		3	1007	C3.3	9802
31	1421	1426	1429	1-	3					2	1420	C4.3	9800
31	1439	1445	1517	3-	5	1	2	1		8	1436	M3.6	
31	1523	1526	1537	1-	3					4	1520	C4.6	9802
31	1640	1645	1658	1+	3					4	1640	C4.9	9800

* = no flare patrol.

OBSERVATORIES REPORTING FOR JANUARY 2002

Bedford, Massachusetts, USA	SES	Milan, Italy	SES
Bern, Switzerland	SES	Nerja, Spain	SES
Brookline, Massachusetts, USA	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Edenvale, Rep of S. Africa	SES	Torrington, Connecticut, USA	SES
Houston, Texas, USA	SES	Upice, Czech Republic	SEA
Marlboro, Massachusetts, USA	SES		

Observations are not necessarily continuous.

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
01	0000	0734	HIRA								
	0000	0810	CULG								
	0651	1200	IZMI	0721.4	0722.0	III	G	1	240	270X	
	0735	1445	POTS	0824 E	1405 U	I	C	1	120	360	
			IZMI	0903.8	0906.0	I	N	1	230	265	
			IZMI	0908.2	0909.2	III	G	1	230	270X	
	0839	1332	ONDR	0951.4	0952.2	DCIM	G	1	800X	1812	
			POTS	0951.9	0952.3	DCIM		1	320	400	
			IZMI	1120.2	1121.8D	III	GG	2	95	270X	
			POTS	1120.3	1121.8	III	G	1	110U	320	
			POTS	1209.7	1210.0	DCIM		1	320	460	
			HOLL	1917.0	1918.0	III		1	25U	180U	
	1920	2400	CULG								
			HOLL	1958.0	2002.0	III		1	25U	180U	
			HOLL	1958.0	2312.0	III	N	1	25	180	
	2148	2400	HIRA								
02			PALE	0221.0	0226.0	II		1	72	127	ESS 0640
			LEAR	0323.0	0323.0	III		1	84	180	
	0000	0735	HIRA	0323.0	0323.5	III	B	1	100	250	
	0000	0810	CULG	0323.0	0330.0	III	G	1	80	180	
			LEAR	0609.0	0609.0	III		1	25	91	
			LEAR	0751.0	0754.0	III		2	25	116	
			SVTO	0751.0	0754.0	III		1	56	123	
	0657	1200	IZMI	0751.7	0752.0	III	B	2	40	140	
	0735	1445	POTS	0751.7	0752.0	UNCLF		1	40X	70U	
			IZMI	0754.6	0754.9	III	B	1	60	115	
			POTS	0825 E	1405 U	I	C,N	1	120	300	
			SVTO	0838.0	0839.0	III		1	49U	83U	
			IZMI	0838.9	0839.2	III	B,FS	2	50	95	
			LEAR	0839.0	0839.0	III		1	25	119	
			LEAR	0909.0	0910.0	III		1	25	109	
			SVTO	0909.0	0910.0	III		1	46	139	
			IZMI	0909.7	0910.1	III	G,HARM	2	45	130	
			LEAR	0917.0	0918.0	III		1	89	180	
			SVTO	0917.0	0918.0	III		1	112U	147U	
			POTS	0917.8	0918.1	III	B	2	110U	300	
			IZMI	0917.9	0918.0	III	G	3	110	230	
			LEAR	1002.0	1003.0	III		1	70	180	
			SVTO	1002.0	1003.0	III		1	114	171	
			IZMI	1002.9	1003.3	III	G	1	110	160	
			POTS	1002.9	1003.5	III	G	1	110U	250	
	0838	1334	ONDR	1112.5	1116.1	DCIM	G	1	2166	4471	
			SVTO	1129.0	1133.0	III		2	42	180	
			IZMI	1129.8	1130.3	V		2	100	160	
			IZMI	1129.8	1131.2	III	GG,C	2	45	270X	
			POTS	1129.8	1131.2	III	GG	2	40X	220	
			IZMI	1133.3	1133.4	III	B	1	105	160	
			ONDR	1228.5	1236.0	DCIM	G	1	2000X	4500X	
			ONDR	1247.4	1254.3	DCIM	G	1	2000X	4500X	
			ONDR	1250.3	1251.0	DCIM	GG,SP	2	800X	1283	
			SGMR	1818.0	1818.0	III		2	35	68	
			HOLL	1847.0	1848.0	III		1	25	163	
			PALE	1848.0	1848.0	III		1	25	162	
			HOLL	1940.0	1941.0	III		1	25	142	
	1920	2400	CULG	1941.0	1941.0	III	B	1	57X	90	
			CULG	2026.0	2026.0	III	B	1	57X	180U	
			CULG	2123.0	2137.0	III	N	1	57X	120	
			CULG	2300.0	2300.0	III	B	1	57X	130	
			CULG	2332.0	2332.0	III	B	1	57X	90	
			CULG	2343.0	2343.0	III	B	1	57X	180	
	2148	2400	HIRA	2343.0	2343.5	III	B	1	100	270	
			CULG	2354.0	2354.0	III	B	1	57X	90	
03	0000	0810	CULG	0004.0	0307.0	III	N	1	57X	180	
			LEAR	0211.0	0218.0	III		1	25	117	
			CULG	0219.0	0225.0	II	FN	2	57X	75	
			CULG	0219.0	0230.0	II	SH	2	57X	150	ESS 520
			LEAR	0221.0	0229.0	II		1	31	137	ESS 0410

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

JANUARY 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
03	0000	0735	HIRA	0221.0	0228.0	II		2	60	120	
			CULG	0341.0	0519.0	I	S	1	100	150	
			CULG	0508.0	0508.0	III	B	1	57X	180	
			HIRA	0508.0	0508.5	III	B	1	110	220	
	0656	1200	IZMI	0656.0E	1005.0U	I	N	1	120	190	
	0735	1450	POTS	0825 E	1407 U	I	C	1	120	350	
	0838	1335	ONDR								
			IZMI	1004.9	1005.1	III	B	1	120	185	
			POTS	1004.9	1005.1	III	B	1	150	250	
			POTS	1339.3	1340.3	III	G	1	110U	220	
			HOLL	1445.0	1445.0	III		1	54	180	
			SVTO	1445.0	1445.0	III		1	61U	180U	
			POTS	1445.2	1445.4	III	B	1	110U	160	
			HOLL	1857.0	1858.0	III		1	25	140	
	1920	2400	CULG	2051.0	2051.0	III	B	1	57X	180	
			CULG	2111.0	2112.0	III	G	2	57X	180	
			HOLL	2111.0	2111.0	III		1	75	180	
			CULG	2124.0	2124.0	III	B	1	57X	150	
			CULG	2135.0	2136.0	III	G	3	57X	180	
			HOLL	2135.0	2136.0	III		2	25	180	
			PALE	2135.0	2135.0	III		2	25	180	
			CULG	2136.0	2146.0	III	G	1	57X	180	
			CULG	2311.0	2313.0	III	G	1	75	180	
	2148	2400	HIRA	2313.0	2313.5	III	B	1	100	200	
			CULG	2336.0	2353.0	III	N	1	57X	180	
			HIRA	2341.5	2343.0	III	G	3	30	270	
			CULG	2342.0	2342.0	III	G	2	57X	200U	
			HOLL	2342.0	2342.0	III		1	25	180	
			HIRA	2347.0	2347.5	III	B	1	80	280	
04	0000	0736	HIRA	0146.0	0204.0	III	G	1	90	300	
	0000	0810	CULG	0146.0	0200.0	III	N	1	70	180	
			CULG	0327.0	0328.0	III	G	1	130	180U	
			HIRA	0327.0	0327.5	III	B	2	130	300	
			CULG	0508.0	0508.0	III	G	3	57X	180U	
			LEAR	0508.0	0508.0	III		1	25	180	
			HIRA	0508.5	0509.0	III	B	3	40	500	
			CULG	0600.0	0600.0	III	B	1	100	180	
	0702	1200	IZMI	0702.0E	1200.0D	I	N	1	110	270X	
	0735	1450	POTS	0812 E	1407 U	I	C,N	1	120	350	
			IZMI	0814.3	0815.3	III	G	1	125	270X	
			IZMI	0820.1	0820.6	III	G	1	125	270	
			IZMI	0827.8	0827.9	III	G	1	180	270X	
	0837	1337	ONDR								
			IZMI	0921.7	0922.5	CONT		1	230	270X	
			IZMI	0927.0	0940.0U	I	S	2	110	270X	
			LEAR	0934.0	0943.0	II		1	25	115	ESS 0537
			IZMI	0934.1	0942.6U	II	HARM	2	35	215	
			SVTO	0935.0	0940.0	II		1	46U	70U	ESS 0427
			POTS	0936.3	0941.2	II		1	40X	140	
	1920	2400	CULG								
			HOLL	2140.0	2311.0	CONT		1	54	78	
	2148	2400	HIRA								
			LEAR	2340.0	2343.0	III		1	25	180	
05			LEAR	0304.0	0305.0	III		1	25	180	
	0000	0737	HIRA	0304.0	0306.0	III	G	1	100	300	
			LEAR	0409.0	0417.0	III		1	25	158	
			HIRA	0410.0	0411.0	III	B	1	50	140	
	0000	0810	CULG	0410.0	0412.0	III	G	1	57X	170	
			CULG	0415.0	0417.0	III	G	1	57X	180	
			HIRA	0415.0	0416.5	III	G	1	40	280	
			CULG	0555.0	0555.0	III	B	2	57X	180	
			HIRA	0555.0	0555.5	III	B	1	50	170	
			LEAR	0555.0	0555.0	III		1	25	138	
	0655	1200	IZMI								
	0735	1450	POTS	0810 E	1407 U	I	C,N	1	120	360	
	0837	1338	ONDR								
			POTS	1321.3	1321.5	DCIM		1	220	380	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
05	1920	2400	CULG								
	2148	2400	HIRA								
06	0000	0738	HIRA	0042.5	0043.0	III	B	1	210	410	
			HIRA	0135.0	0135.5	III	B	3	60	310	
			LEAR	0135.0	0135.0	III		1	61	180	
	0000	0810	CULG	0135.0	0135.0	III	B	2	60	200U	
			LEAR	0148.0	0201.0	III	N	1	28	68	
			CULG	0155.0	0156.0	III	G	1	57X	150	
			HIRA	0201.0	0201.5	III	B	1	30	120	
			LEAR	0704.0	0710.0	III		3	25	180	
			CULG	0705.0	0708.0	III	G	1	57X	130	
			SVTO	0706.0	0710.0	III		2	29U	151U	
			HIRA	0706.5	0710.0	III	G	3	50	180	
	0704	1200	IZMI	0706.5	0707.5	III	G	2	45	150	
			IZMI	0709.3	0710.4	III	GG,C	2	35	180	
			CULG	0710.0	0710.0	III	G	2	57X	180	
			IZMI	0712.1	0712.1	III	B	1	105	150	
	0735	1450	POTS	0822 U	1408 U	I	C,N	1	110U	300	
			IZMI	0915.7	0916.1	III	G	1	160X	220	
	0836	1340	ONDR	1137.4	1142.2	DCIM	G	1	2127	4500X	
			POTS	1151.3	1152.3	III/V	G	1	40X	140	
			IZMI	1151.4	1152.3	III	G	2	40	145	
			ONDR	1308.5	1310.4	DCIM	G	1	2000X	4451	
			POTS	1344.5	1344.7	III	B	1	110U	150	
	1920	2400	CULG								
	2148	2400	HIRA								
07	0000	0024	HIRA								
	0000	0810	CULG								
	0554	0739	HIRA								
	0735	1450	POTS	0821 U	1040	I	C,N	1	110U	280	
	0835	1342	ONDR								
	0700	1200	IZMI	1025.4	1025.5	III	B	1	220	270X	
			IZMI	1026.5	1026.7	III	G,C	1	180	270	
			POTS	1200	1359 U	I	C	1	200U	280	
	1200	1440	BLEN								
	1920	2400	CULG	2113.0	2114.0	III	G	1	57X	140	
08	0000	0810	CULG								
	0655	1200	IZMI								
	0834	1343	ONDR								
	0850	1440	BLEN								
	0730	1455	POTS	0854 U	1408 U	I	C	1	200U	280	
			HOLL	1806.0	1813.0	III		1	25	84	
			SGMR	1810.0	1814.0	III		1	30	50	
	1920	2400	CULG								
09			LEAR	0712.0	0713.0	III		1	25	90	
	0655	1201	IZMI	0712.7	0713.7	III	G	2	40	160	
			SVTO	0713.0	0713.0	III		1	25	82	
	0000	0820	CULG	0713.0	0714.0	III	G	1	57X	90	
	0730	1455	POTS	0821 E	1408 U	I	C,N	1	200U	300	
	0834	1345	ONDR								
	0850	1440	BLEN								
			IZMI	1033.9	1034.0	III	B	1	45	70	
			HOLL	1805.0	1806.0	III		1	25	90	
	1920	2400	CULG	1941.0	1942.0	III	G	1	57X	90	
			CULG	2227.0	2227.0	III	G	1	57X	90	
			CULG	2303.0	2303.0	III	B	2	57X	160	
			LEAR	2303.0	2303.0	III		1	25	116	
10	0000	0810	CULG	0001.0	0001.0	III	B	1	57X	90	
			CULG	0007.0	0007.0	III	B	1	57X	140	
			LEAR	0007.0	0007.0	III		1	25	89	
	0240	0742	HIRA								
			CULG	0424.0	0424.0	III	B	1	57X	80	
			LEAR	0424.0	0424.0	III		1	36	63	
			CULG	0457.0	0459.0	UNCLF		1	57X	70	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
10	0730	1500	POTS	0821 E	1412 U	I	C,N	1	200U	300	
	0833	1347	ONDR								
	0850	1440	BLEN								
			LEAR	0915.0	0916.0	III		1	25	111	
			SVTO	0915.0	0916.0	III		1	25U	83U	
			POTS	0915.4	0915.7	III	B	1	40X	150	
	0700	1200	IZMI	0915.4	0917.1	III	GG	2	25X	160	
			LEAR	1002.0	1004.0	III		1	58	180	
	1910	2400	CULG								
	2148	2400	HIRA								
11			LEAR	0138.0	0139.0	III		1	25	180	
	0000	0743	HIRA	0139.0	0140.0	III	B	1	100	270	
	0000	0810	CULG	0139.0	0140.0	III	G	1	57X	130	
			CULG	0155.0	0155.0	III	B	2	57X	90	
			LEAR	0155.0	0155.0	III		1	25	89	
			HIRA	0155.5	0156.0	III	B	1	50	70	
			CULG	0417.0	0417.0	III	B	1	57X	90	
	0700	1200	IZMI								
	0730	1500	POTS	0820 U	1413 U	I	C,N	1	200U	350	
	0832	1349	ONDR								
	0850	1440	BLEN	1223.0	1224.8	DCIM	C	2	1600	4000X	
			BLEN	1321.0	1323.6	DCIM	C	2	800	4000X	
	2148	2400	HIRA	2312.5	2313.0	III	B	1	200	450	
			HIRA	2314.0	2315.0	III	G	1	40	420	
	1920	2400	CULG	2314.0	2315.0	III	G	1	57X	420	
12	0000	0810	CULG	0008.0	0008.0	III	B	1	57X	90	
			LEAR	0155.0	0156.0	III		1	25	86	
	0000	0744	HIRA	0155.5	0156.0	III	B	1	40	560	
			CULG	0156.0	0156.0	III	B	1	57X	550	
	0700	1200	IZMI	0826.7	0827.0	III	G	2	190	270X	
	0730	1500	POTS	0826.7	0827.1	DCIM		1	200U	330	
			POTS	0849	1020 U	I	C	1	200U	300	
	0830	1351	ONDR	0855.0	0858.3	DCIM	G	1	2000X	4500X	
	0850	1440	BLEN	0855.2	0857.8	DCIM	C	2	1400	4000X	
			LEAR	0926.0	0926.0	III		2	25	102	
			SVTO	0926.0	0926.0	III		1	32U	83U	
			IZMI	0926.2	0926.7	III	G,HARM	2	30	160	
			POTS	0926.2	0926.6	III	B	2	40X	150	
			IZMI	0937.2	0937.6	III	B	1	40	75	
			IZMI	1033.3	1033.5	III	B	1	50	160	
			POTS	1033.3	1033.5	III	B	1	40X	150	
			POTS	1052.4	1052.8	DCIM		1	210	400	
			IZMI	1052.5	1052.7	III	G	2	230	270X	
			BLEN	1135.1	1135.5	III	U	1	180	310	
			IZMI	1135.1	1135.4	III	G	2	120	270X	
			POTS	1135.1	1135.4	III	U	1	110U	300	
			POTS	1146.9	1147.3	III	U	1	110U	290	
			BLEN	1147.0	1147.3	III	U	1	200	600	
			IZMI	1147.0	1147.2	III	G	2	180	270X	
			POTS	1155 U	1414 U	I	C	1	200U	280	
			BLEN	1305.1	1306.0	III	GG,RS	2	680	880	
			BLEN	1319.3	1326.7	III	GG,RS,S	2	300	1000	
			POTS	1319.3	1319.5	DCIM		1	260	360	
			POTS	1357.9	1358.4	III	G	1	110U	360	
			HOLL	1457.0	1457.0	III		1	25	180	
			SGMR	1457.0	1457.0	III		1	55	80	
			SVTO	1457.0	1458.0	III		1	58	180	
			BLEN	1457.1	1458.7	III	G	1	100X	530	
			POTS	1457.2	1457.4	III	B	1	40X	160	
	1920	2400	CULG								
	2148	2400	HIRA								
13	0000	0745	HIRA	0110.5	0111.0	III	B	1	100	300	
	0000	0810	CULG	0111.0	0111.0	III	B	1	100	300	
			CULG	0307.0	0308.0	III	G	2	60	300	
			HIRA	0307.0	0308.0	III	B	3	80	320	
			LEAR	0307.0	0307.0	III		1	77	180	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
13			PALE	0307.0	0307.0	III		1	73	180	
	0700	1200	IZMI	0729.3	0729.7	III	G	1	185	260	
			IZMI	0745.1	0745.2	III	G	1	130	190	
			CULG	0751.0	0752.0	III	G	1	120	180	
			IZMI	0751.3	0752.0	III	G	2	120	270X	
	0730	1500	POTS	0817 U	1415 U	I	C,N	1	120	300	
			POTS	0912.3	0919.5	II		2	110U	350	
	0840	1500	BLEN	0912.4	0915.5	II	H	1	130	380	
			IZMI	0912.5	0914.2	II	HARM	2	120	270X	
			IZMI	0917.3	0919.5	II	HARM	1	120	160	
			POTS	0925.2	0925.3	DCIM		1	250	450	
			ONDR	0951.2	0951.5	DCIM	GG	2	1130	2000X	
	0829	1352	ONDR	0951.2	0951.5	DCIM	GG	2	2000X	2928	
			BLEN	0951.3	0952.1	DCIM	P	3	1200	3100	
			IZMI	1037.5	1039.4	III	G	1	230	270	
			POTS	1101.3	1101.4	DCIM		1	250	320	
			POTS	1309.4	1309.6	III	B	1	40X	150	
			BLEN	1336.4	1337.9	III	GG,RS,U	3	130	1050	
			ONDR	1337.0	1338.3	DCIM	G	1	2000X	4500X	
			ONDR	1337.0	1339.1	DCIM	G	1	800X	2000X	
			POTS	1337.0	1338.1	DCIM		2	150	800X	
			POTS	1339.2	1340.6	II		1	130	400	
			BLEN	1339.3	1340.9	II	H	3	160	420	
			POTS	1357.4	1357.5	UNCLF		1	220	300	
			BLEN	1438.6	1440.0	III	GG,U	2	300	700	
	1920	2400	CULG	2138.0	2138.0	III	B	1	57X	180	
			CULG	2155.0	2155.0	III	B	1	57X	180	
	2148	2400	HIRA	2155.5	2156.0	III	B	1	90	370	
14	0000	0746	HIRA								
	0000	0810	CULG	0521.0	0521.0	III	B	1	240	740	
			CULG	0524.0	0618.0	III	N	1	57X	260	
			LEAR	0536.0	0643.0	III	N	1	30	170	
			CULG	0608.0	0611.0	II	SH	1	85	180	ESS 1000
	0700	1200	IZMI								
	0828	1354	ONDR								
	0730	1505	POTS	0845 U	1417 U	I	C,N	1	120	300	
			POTS	1210.9	1212.3	III	G	1	40X	230	
			POTS	1337.2	1338.4	III	G	1	40X	220	
	0840	1500	BLEN	1422.0	1422.8	III	GG	3	340	920	
			HIRA	2242.0	2243.0	II		1	100	130	
	1920	2400	CULG	2242.0	2242.0	III	B	1	100	260	
	2147	2400	HIRA	2242.0	2243.0	II		1	160	210	
			LEAR	2339.0	2340.0	III		1	36	93	
			CULG	2340.0	2341.0	III	G	1	57X	100	
			HIRA	2340.0	2340.5	III	B	1	50	110	
15			LEAR	0511.0	0514.0	III		1	25	180	
	0000	0747	HIRA	0511.5	0514.0	III	G	1	40	250	
	0000	0810	CULG	0512.0	0514.0	III	G	2	57X	180	
	0701	1200	IZMI								
	0725	1505	POTS	0811 E	1420 U	I	C,N	1	120	300	
	0827	1356	ONDR								
	0845	1510	BLEN	1408.2	1409.5	III	GG,S	2	340	780	
			POTS	1408.5	1409.0	DCIM		1	320	400	
	1920	2400	CULG	2122.0	2123.0	III	G	1	100	150	
			CULG	2209.0	2210.0	III	G	1	57X	230	
	2147	2400	HIRA	2209.0	2210.5	III	G	1	80	240	
16	0000	0810	CULG	0242.0	0242.0	III	B	1	120	750	
	0000	0435	HIRA	0243.0	0243.5	III	B	2	110	600	
			HIRA	0250.5	0251.0	III	B	1	100	550	
			CULG	0251.0	0251.0	III	B	1	100	450	
			CULG	0518.0	0519.0	III	G	1	120	420	
			LEAR	0543.0	0544.0	III		1	25	66	
			CULG	0544.0	0544.0	III	B	1	57X	100	
			CULG	0550.0	0550.0	III	B	1	120	380	
			CULG	0605.0	0606.0	III	G	1	57X	180	
	0700	1200	IZMI								

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
16			CULG	0719.0	0736.0	III	G	1	57X	180	
	0725	1505	POTS	0812 U	1420 U	I	C,N	1	120	300	
	0826	1358	ONDR	1008.5	1011.4	DCIM	GG	2	1030	2000X	
	0845	1510	BLEN	1009.0	1011.9	DCIM	S	1	1050	2180	
			POTS	1045.4	1045.5	III	B	1	110U	220	
			ONDR	1253.4	1254.1	DCIM	GG,SP	2	1119	1447	
			ONDR	1319.4	1320.1	DCIM	G	1	2000X	4500X	
			ONDR	1319.4	1320.4	DCIM	G	1	800X	2000X	
			BLEN	1319.7	1320.4	III	GG,RS,C	3	200	4000X	
			POTS	1319.8	1320.2	DCIM		1	200U	400	
			POTS	1337.4	1337.6	III	G	1	110U	300	
			POTS	1433.7	1433.9	UNCLF		1	40X	70	
	1930	2400	CULG								
	2146	2400	HIRA								
17	0000	0748	HIRA	0159.5	0200.0	III	B	1	80	280	
	0000	0810	CULG	0200.0	0200.0	III	B	1	57X	180	
			CULG	0323.0	0323.0	III	B	1	57X	90	
			LEAR	0543.0	0544.0	III		1	30	68	
			CULG	0755.0	0756.0	III	G	1	65	90	
	0824	1400	ONDR								
	0725	1510	POTS	0840	1421 U	I	C,N	1	120	280	
	0845	1510	BLEN								
			POTS	0915.9	0916.2	III	B	1	110U	220	
	0652	1200	IZMI	0916.0	0916.1	III	B	1	110	220	
			LEAR	0935.0	0938.0	III		1	68	180	
			POTS	0935.6	0935.9	III	G	1	110U	150	
			IZMI	0937.7	0938.1	III	G	2	85	180	
			POTS	0937.7	0938.3	III	G	1	110U	220	
	1930	2400	CULG								
	2146	2400	HIRA								
18	0000	0810	CULG	0401.0	0444.0	III	N	1	57X	120	
			LEAR	0406.0	0408.0	III		1	25	104	
	0000	0749	HIRA	0406.5	0407.0	III	B	1	30	110	
			CULG	0602.0	0620.0	III	N	1	57X	80	
	0658	1200	IZMI								
			CULG	0701.0	0701.0	III	B	1	57X	70	
			CULG	0723.0	0724.0	III	G	1	57X	90	
	0725	1510	POTS	0809 U	1422 U	I	C,N	1	120	300	
	0823	1402	ONDR								
	0845	1510	BLEN								
	1930	2400	CULG								
			HOLL	1953.0	1953.0	III		1	54	151	
	2145	2400	HIRA								
19	0000	0750	HIRA	0023.0	0023.5	III	B	1	120	340	
	0000	0810	CULG	0023.0	0023.0	III	B	1	120	460	
			HIRA	0559.0	0559.5	III	B	1	120	230	
			LEAR	0559.0	0559.0	III		1	114	155	
	0700	1200	IZMI	0737.9	0738.9	III	GG	2	10	225	
			CULG	0738.0	0739.0	III	G	1	57X	180	
			HIRA	0738.0	0738.5	III	B	1	40	130	
			LEAR	0738.0	0742.0	III		1	35	133	
			IZMI	0738.5	0739.1	V		2	45	90	
			IZMI	0742.0	0743.8	III	GG	2	10	160	
	0725	1510	POTS	0809 U	1424 U	I	C,N	1	120	320	
	0821	1405	ONDR	1003.2	1007.1	DCIM	G	2	2000X	4500X	
			ONDR	1003.3	1008.0	DCIM	G	1	800X	2000X	
	0840	1520	BLEN	1003.4	1007.2	III	GG,S,C	1	400	4000X	
			IZMI	1126.4	1126.4	III	B	2	150	210	
			POTS	1408.3	1408.6	UNCLF		1	200U	300	
			BLEN	1522.3	1523.3	III	GG	3	170	440	
			SGMR	1818.0	1821.0	III		1	30	54	
			HOLL	1848.0	1849.0	III		1	25	140	
			PALE	1848.0	1850.0	III		1	28	58	
	2145	2400	HIRA								
	1930	2400	CULG	2320.0	2323.0	III	G	1	57X	130	
			CULG	2332.0	2333.0	III	G	1	57X	80	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
20			LEAR	0004.0	0020.0	III	N	1	28	97	
	0000	0810	CULG	0004.0	0004.0	III	B	1	57X	90	
			CULG	0018.0	0020.0	III	G	1	57X	100	
			LEAR	0055.0	0116.0	III	N	1	32	87	
			CULG	0116.0	0116.0	III	B	1	57X	90	
			CULG	0245.0	0300.0	III	GG	1	57X	180	
			LEAR	0245.0	0300.0	III	N	1	25	180	
	0000	0751	HIRA	0245.5	0246.5	III	G	1	30	200	
			CULG	0432.0	0433.0	III	G	1	57X	90	
			HIRA	0432.0	0432.5	III	B	1	25X	100	
			LEAR	0432.0	0433.0	III		1	25	96	
			LEAR	0610.0	0611.0	III		1	25	66	
	0700	1200	IZMI								
			CULG	0804.0	0806.0	III	G	1	57X	140	
	0725	1510	POTS	0805.0	0805.6	UNCLF		1	40X	140	
	0820	1407	ONDR								
	0840	1520	BLEN								
			POTS	0858	1020 U	I	C	1	150	280	
			POTS	1120 U	1425 U	I	C,N	1	120	300	
	1930	2400	CULG	2021.0	2021.0	III	B	1	57X	80	
	2144	2400	HIRA								
21	0000	0752	HIRA								
	0000	0810	CULG	0044.0	0044.0	III	B	1	60	90	
			CULG	0208.0	0208.0	III	B	1	57X	90	
			LEAR	0654.0	0655.0	III		1	41	180	
			CULG	0755.0	0755.0	III	B	1	57X	180	
			LEAR	0755.0	0755.0	III		1	25	180	
	0655	1200	IZMI	0755.3	0755.6	III	G	1	50	270X	
	0819	1409	ONDR								
	0840	1520	BLEN								
			IZMI	0840.3	0841.3	III	G	1	45	90	
	0725	1515	POTS	0856	1400 U	I	C	1	200U	280	
			POTS	1006.6	1006.8	DCIM		1	270	340	
			LEAR	1021.0	1022.0	III		1	49	180	
			POTS	1253.2	1254.2	III/V	G	1	40X	140	
	1930	2030	CULG								
	2144	2400	HIRA	2147.5	2148.0	III	B	1	210	600	
	2130	2400	CULG	2148.0	2148.0	III	B	1	150	750	
			CULG	2153.0	2155.0	III	G	1	57X	160	
22			LEAR	0526.0	0527.0	III		1	41	163	
	0000	0753	HIRA	0526.5	0527.5	III	B	1	60	120	
	0000	0800	CULG	0527.0	0528.0	III	G	1	57X	130	
			CULG	0747.0	0756.0	III	GG	1	57X	130	
			LEAR	0748.0	0824.0	III	N	1	29	131	
	0700	1200	IZMI	0748.9	0751.3	III	GG	1	45	140	
	0725	1515	POTS	0750.3	0751.4	UNCLF		1	40X	70	
			IZMI	0755.2	0756.2	III	G	1	55	75	
			IZMI	0757.5	0759.7	II		2	55	70	
			CULG	0758.0	0800.0	II	SH	3	57X	65	
			LEAR	0758.0	0759.0	II		2	50	62	ESS 1017
			SVTO	0758.0	0759.0	II		1	54	56	ESS 0648
			POTS	0758.4	0759.7	II		1	40X	70	
			POTS	0803	1429 U	I	C,N	1	200	280	
			IZMI	0805.9	0807.3	III	G	1	45	75	
			POTS	0806.2	0806.3	UNCLF		1	40X	70	
			IZMI	0814.0	0816.5	III	GG	1	60	75	
	0835	1520	BLEN	0856.8	0857.9	III	G	1	480	1120	
			POTS	1226.7	1226.9	DCIM	U	1	250	350	
			BLEN	1310.2	1313.4	DCIM	C	1	1400	4000X	
	0817	1411	ONDR	1310.3	1311.3	DCIM	G,W	1	2000X	4500X	
			BLEN	1421.3	1422.3	III	G	1	540	880	
	1930	2400	CULG								
	2144	2400	HIRA								
23			LEAR	0329.0	0330.0	III		1	25	180	
	0000	0754	HIRA	0329.0	0330.0	III	B	1	30	130	
	0000	0800	CULG	0329.0	0330.0	III	G	1	57X	120	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
23		LEAR	0339.0	0347.0	II		1	46	157	ESS 0384
		CULG	0340.0	0346.0	II	SH	1	100	150	ESS 500
		HIRA	0340.0	0346.5	II		1	80	150	
		LEAR	0509.0	0510.0	III		1	39	180	
		HIRA	0509.5	0510.5	III	G	2	80	170	
		CULG	0510.0	0511.0	III	G	2	57X	170	
		CULG	0637.0	0637.0	III	B	1	57X	230	
		HIRA	0637.0	0637.5	III	B	1	40	270	
		LEAR	0637.0	0637.0	III		1	25	180	
		HIRA	0703.0	0703.5	III	B	2	80	120	
		LEAR	0703.0	0703.0	III		1	44	132	
		SVTO	0703.0	0703.0	III		1	111U	139U	
0700	1200	IZMI	0703.4	0703.7	III	G,U	2	55	150	
		CULG	0704.0	0704.0	III	B	1	57X	180	
0720	1515	POTS	0857 U	0952 U	I	C	1	120	280	
		LEAR	0904.0	0907.0	V		2	25	180	
		SVTO	0904.0	0906.0	III		2	54	168	
		POTS	0904.2	0906.5	III/V	GG	2	40X	330	
		IZMI	0904.3	0906.2	III	GG,C	2	50	270X	
0755	1520	BLEN	0904.6	0907.0	III	GG,C	1	100X	4000X	
		IZMI	0905.0	0907.5	V	G	2	40	70	
		IZMI	0908.5	0908.6	III	G	1	120	160	
		POTS	1200 U	1433 U	I	C	1	120	260	
		SVTO	1330.0	1330.0	III		1	75	160	
0815	1413	ONDR	1334.2	1335.4	DCIM	G	1	2000X	4500X	
		ONDR	1334.3	1355.3	DCIM	GG	2	964	2000X	
		BLEN	1334.5	1336.0	III	GG,RS,C	1	270	4000X	
		POTS	1340.3	1346.0	II		2	40X	160	
		SVTO	1341.0	1345.0	II		2	111U	167U	ESS 0562
1940	2400	CULG	2026.0	2026.0	III	B	1	57X	180	
		CULG	2158.0	2158.0	III	B	1	80	160	
		CULG	2226.0	2228.0	III	G	1	60	400	
		LEAR	2226.0	2227.0	III		1	25	180	
2143	2400	HIRA	2227.0	2228.0	III	B	1	100	420	
24		LEAR	0149.0	0149.0	III		1	46	153	
0000	0755	HIRA	0149.5	0150.0	III	B	1	80	180	
0000	0800	CULG	0150.0	0150.0	III	B	1	57X	150	
		CULG	0358.0	0404.0	UNCLF		1	57X	70	
		LEAR	0401.0	0404.0	II		1	40	62	ESS 0824
		LEAR	0506.0	0508.0	III		1	25	180	
		CULG	0507.0	0509.0	III	G	1	57X	180	
		HIRA	0507.0	0508.5	III	G	1	40	210	
		HIRA	0614.0	0614.5	III	B	1	280	380	
		CULG	0721.0	0721.0	III	B	1	57X	90	
		LEAR	0721.0	0721.0	III		1	25	67	
0650	1200	IZMI	0721.4	0721.7	III	B	1	45	70	
0813	1415	ONDR								
0720	1520	POTS	0900 U	1028 U	I	C	1	120	300	
		IZMI	0930.7	0930.8	III	B,U	2	130	250	
		POTS	0930.7	0930.8	UNCLF	RS	1	150	220	
0755	1520	BLEN	1504.3	1510.3	III	GG	2	380	4000X	
		HOLL	1514.0	1515.0	III		1	25	180	
		SVTO	1514.0	1515.0	III		1	32U	174U	
		POTS	1514.8	1515.1	III	B	1	40X	160	
		HOLL	1659.0	2128.0	III	N	1	25	116	
1940	2400	CULG								
2143	2400	HIRA								
25		LEAR	0225.0	0245.0	II		2	29	172	ESS 0541
0000	0756	HIRA	0225.5	0246.0	II		2	50	170	
		CULG	0226.0	0233.0	II	FN	3	57X	85	
0000	0800	CULG	0226.0	0246.0	II	SH	3	57X	170	ESS 350
		HIRA	0227.0	0241.0	II		2	30	80	
		CULG	0229.0	0231.0	III	G	1	60	150	
		CULG	0617.0	0619.0	III	G	1	57X	180	
		HIRA	0617.0	0618.5	III	G	1	50	200	
		LEAR	0617.0	0618.0	III		1	39	165	
0755	1530	BLEN								

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
25	0700	1200	IZMI	0756.1	0756.7	III	G	1	130	270	
	0720	1520	POTS	0756.3	0756.6	UNCLF		1	200U	230	
	0812	1417	ONDR								
			POTS	0900	1010 U	I	C	1	200U	300	
			LEAR	1009.0	1009.0	III		1	75	180	
			SVTO	1009.0	1009.0	III		1	116	167	
			POTS	1009.2	1009.6	III	G	1	110U	220	
			IZMI	1009.3	1009.6	III	G	2	90	215	
			POTS	1125.5	1126.2	UNCLF		1	130	220	
			IZMI	1126.1	1126.2	III	B	2	180	260	
			IZMI	1130.8	1130.9	III	B	1	120	190	
			POTS	1130.8	1130.9	III	B	1	110U	170U	
			POTS	1139.5	1415 U	I	C,N	1	110U	250	
			IZMI	1141.5	1141.5	III	B	1	135	165	
			IZMI	1145.2	1145.2	III	B	1	130	160	
	1940	2400	CULG	2151.0	2155.0	III	GG	1	57X	180	
	2143	2400	HIRA	2151.5	2154.5	III	G	1	40	150	
26			LEAR	0019.0	0022.0	III		1	35	180	
	0000	0757	HIRA	0020.0	0022.0	III	G	2	50	230	
	0000	0800	CULG	0020.0	0022.0	III	G	1	57X	260	
			CULG	0028.0	0028.0	III	B	1	65	90	
	0755	1530	BLEN								
	0715	1520	POTS	0801.9	0802.7	III	G	1	110U	350	
			LEAR	0802.0	0802.0	III		1	54	180	
			SVTO	0802.0	0802.0	III		1	127U	180U	
	0655	1200	IZMI	0802.0	0802.7	III	GG	2	60	270X	
	0810	1420	ONDR								
			POTS	0829.4	0830.3	III	G	1	40X	220	
			LEAR	0830.0	0831.0	III		1	42	180	
			IZMI	0830.8	0831.2	III	G	2	60	215	
			SVTO	0858.0	0859.0	III		1	25	180	
			IZMI	0858.9	0900.3	III	GG,C	2	40	240	
			POTS	0858.9	0900.1	III/V	G	1	40X	400	
			LEAR	0859.0	0900.0	III		1	25	180	
			POTS	0907	1010 U	I	C	1	200U	250	
			IZMI	1123.1	1123.2	III	B	1	130	165	
			POTS	1123.1	1123.3	III	B	1	110U	220	
			SVTO	1308.0	1309.0	III		1	129U	180U	
			POTS	1308.7	1308.9	III	G	1	110U	220	
			POTS	1435.0	1436.5	UNCLF		1	200U	370	
			HOLL	1824.0	1825.0	III		1	25	117	
			SGMR	1824.0	1824.0	III		2	30	63	
			HOLL	1916.0	1917.0	III		1	25	147	
			HOLL	2118.0	2120.0	III		1	25	180	
			PALE	2119.0	2119.0	III		1	25	72	
	1940	2400	CULG	2119.0	2120.0	III	G	1	57X	180	
	2142	2400	HIRA								
			CULG	2147.0	2147.0	III	B	1	57X	70	
			CULG	2233.0	2233.0	III	B	1	57X	90	
27	0000	0758	HIRA								
	0000	0800	CULG								
	0658	1200	IZMI	0727.4	0727.7	III	G	1	180	250	
			IZMI	0735.8	0735.8	III	B	2	120	160	
	0715	1525	POTS	0742	1447 U	I	N	1	200U	400	
			IZMI	0742.7	0743.9	I	GG	2	230	270X	
			IZMI	0748.0U	0954.0U	I	N	1	230	270X	
	0808	1422	ONDR								
			LEAR	0828.0	0828.0	III		1	48	180	
			IZMI	0828.4	0828.9	III	G	1	125	215	
			POTS	0828.4	0828.7	III	G	1	110U	170U	
	0815	1530	BLEN	0933.0	1420.0	I		2	100X	380	
			IZMI	0944.0	0946.1	III	GG	2	110	200	
			LEAR	0944.0	0945.0	III		1	38	180	
			POTS	0944.0	0945.8	III	G	2	110U	170U	
			SVTO	0944.0	0945.0	III		1	132U	161U	
			IZMI	0954.0U	1200.0D	I	N	2	210	270X	
			POTS	1027.9	1028.0	III	B	1	110U	300	

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

JANUARY 2002

OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
27			IZMI	1031.8	1034.7	III	GG,FS	2	40	240	
			POTS	1031.8	1033.4	III	GG	2	40X	350	
			LEAR	1032.0	1033.0	III		1	45	180	
			SVTO	1032.0	1033.0	III		1	53U	180U	
			IZMI	1044.7	1045.5	III	G	1	120	175	
			POTS	1045.0	1049.9	III	G	1	110U	170U	
			HOLL	1720.0	1723.0	III		1	25	177	
			SGMR	1721.0	1723.0	III		2	30	80	
	1940	2400	CULG	2205.0	2206.0	III	G	1	57X	320	
	2141	2400	HIRA	2205.0	2208.0	III	G	1	80	330	
			CULG	2208.0	2208.0	III	B	1	130	350	
			CULG	2244.0	2244.0	III	B	1	57X	110	
			CULG	2250.0	2251.0	III	G	1	57X	90	
28	0000	0800	CULG	0001.0	0001.0	III	B	1	65	90	
			CULG	0447.0	0451.0	III	G	2	57X	180	
			LEAR	0447.0	0451.0	III		1	36	180	
	0000	0759	HIRA	0447.0	0451.5	III	G	2	80	210	
			LEAR	0542.0	0543.0	III		1	25	180	
			HIRA	0542.5	0544.0	III	G	1	25X	210	
			CULG	0543.0	0544.0	III	G	1	57X	200	
			LEAR	0608.0	0608.0	III		1	34	57	
			LEAR	0653.0	0707.0	III	N	2	25	180	
			CULG	0656.0	0701.0	III	GG	2	57X	280	
			HIRA	0656.0	0701.0	III	G	3	25X	400	
			SVTO	0656.0	0659.0	III		1	25	180	
	0700	1200	IZMI	0700.0E	0701.4	III	G,C	2	50	190	
			HIRA	0706.5	0707.5	III	B	1	50	190	
			IZMI	0706.7	0708.0	III	G	2	50	185	
			CULG	0707.0	0708.0	III	G	1	57X	180	
	0806	1424	ONDR								
	0715	1525	POTS	0845.5	1218 U	I	N	1	120U	280	
	0820	1525	BLEN	0853.6	0854.0	III	G	1	230	450	
			IZMI	0930.0	0930.5	III	G	1	120	270X	
			IZMI	1119.0	1145.0	I	S	1	120	170X	
			IZMI	1121.8	1121.8	III	B	2	135	175	
			BLEN	1210.3	1210.8	III	G	1	180	360	
			POTS	1450.7	1450.9	DCIM		1	250	400	
			HOLL	1912.0	1915.0	III		1	25	172	
			HOLL	1947.0	1950.0	III		1	25	175	
	1940	2400	CULG	1948.0	1951.0	III	GG	1	57X	160	
			PALE	1949.0	1950.0	III		1	25	180	
			SGMR	2005.0	2005.0	III		1	41	48	
			CULG	2029.0	2030.0	III	G	1	57X	150	
			CULG	2144.0	2146.0	III	G	1	57X	150	
			HOLL	2144.0	2145.0	III		1	25U	121U	
			LEAR	2248.0	2340.0	III	N	1	25	180	
			CULG	2256.0	2257.0	III	G	1	57X	200	
			HOLL	2256.0	2257.0	III		1	25	180	
			CULG	2301.0	2301.0	III	B	1	57X	90	
29			LEAR	0140.0	0144.0	III		1	25	64	
			LEAR	0243.0	0244.0	III		1	25	180	
	0000	0800	CULG	0244.0	0244.0	III	B	1	57X	160	
	0007	0800	HIRA	0244.0	0244.5	III	B	1	80	240	
			CULG	0606.0	0606.0	III	B	3	57X	180	
			LEAR	0606.0	0606.0	III		3	25	180	
			HIRA	0606.5	0607.0	III	B	3	30	300	
	0715	1525	POTS								
	0805	1426	ONDR								
	0825	1525	BLEN								
	0702	1200	IZMI	0947.3	0947.8	I	GG	2	195	215	
			HOLL	1839.0	1841.0	III		2	25	180	
			PALE	1839.0	1841.0	III		1	25	180	
			SGMR	1840.0	1841.0	III		2	30	80	
			HOLL	1847.0	1848.0	III		1	25	180	
	1940	2400	CULG	2013.0	2013.0	III	B	1	57X	75	
			CULG	2043.0	2043.0	III	G	1	57X	120	
			CULG	2136.0	2137.0	III	G	1	57X	90	

SOLAR RADIO EMISSION
Spectral Observations

JANUARY 2002

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
29		HOLL	2136.0	2137.0	III		1	25	89	
		PALE	2136.0	2137.0	III		1	25	70	
		CULG	2211.0	2212.0	III	G	1	57X	90	
		CULG	2346.0	2346.0	III	B	1	75	180	
2140	2400	HIRA	2346.0	2346.5	III	B	1	140	200	
30		LEAR	0022.0	0023.0	III		1	25	180	
0000	0800	CULG	0022.0	0024.0	III	G	1	57X	180	
		LEAR	0036.0	0039.0	III		1	25	180	
0000	0802	HIRA	0036.5	0037.0	III	B	1	25X	220	
		CULG	0037.0	0039.0	III	G	1	57X	150	
		CULG	0115.0	0118.0	III	G	1	57X	180	
		LEAR	0115.0	0118.0	III		1	25	180	
		HIRA	0117.0	0118.0	III	B	2	40	270	
		PALE	0117.0	0118.0	III		1	25	180	
		LEAR	0144.0	0145.0	III		1	25	60	
		CULG	0239.0	0239.0	III	B	1	110	180	
		HIRA	0252.5	0253.0	III	B	1	80	140	
		CULG	0253.0	0254.0	III	G	1	57X	90	
		CULG	0316.0	0317.0	III	G	1	57X	160	
		HIRA	0316.0	0316.5	III	B	1	40	150	
		LEAR	0316.0	0317.0	III		1	25	180	
		CULG	0335.0	0336.0	III	G	2	57X	170	
		HIRA	0335.0	0336.0	III	B	2	25X	230	
		PALE	0335.0	0335.0	III		1	25	100	
		LEAR	0336.0	0346.0	III		3	25	180	
		CULG	0419.0	0419.0	III	B	1	57X	90	
		HIRA	0419.0	0419.5	III	B	1	30	110	
		LEAR	0419.0	0419.0	III		1	25	61	
		LEAR	0445.0	0446.0	III		1	25	55	
		CULG	0446.0	0446.0	III	B	1	57X	85	
		LEAR	0615.0	0621.0	III		1	25	145	
		HIRA	0615.5	0618.5	III	G	1	30	200	
		CULG	0616.0	0621.0	III	G	1	57X	150	
		LEAR	0705.0	0819.0	III	N	2	25	180	
		CULG	0706.0	0800.0D	III	N	1	57X	180	
0655	1200	IZMI	0711.6	0711.8	III	B	1	50	150	
		IZMI	0721.5	0721.6	III	B	1	90	100	
		IZMI	0722.2	0722.5	III	G	2	40	145	
		IZMI	0729.1	0729.4	III	G	2	50	140	
		IZMI	0735.9	0736.7	III	G	1	45	75	
		IZMI	0753.1	0755.0	III	G	1	55	270X	
0710	1525	POTS	0753.3	0810	I	N	1	200U	280	
0803	1428	ONDR								
		SVTO	0806.0	0806.0	III		1	25U	136U	
		IZMI	0806.4	0806.8	III	G	2	40	155	
		POTS	0806.4	0806.9	III/V	G	1	40X	220	
		SVTO	0916.0	0932.0	III	N	1	49U	73U	
		LEAR	0917.0	0933.0	III		1	25	110	
		LEAR	0917.0	0933.0	III	N	1	25	110	
		IZMI	0917.9	0918.3	III	G	1	45	150	
		POTS	0918.2	0918.3	III	B	1	40X	170U	
		LEAR	1047.0	1047.0	III		1	25	140	
		SVTO	1049.0	1050.0	III		1	47	142	
		IZMI	1049.8	1050.1	III	B	2	40	200	
		POTS	1049.8	1050.1	III	B	1	40X	170U	
		POTS	1122.8	1124.8	III/V	GG	2	40X	300	
		SVTO	1123.0	1124.0	III		1	29U	166U	
		IZMI	1123.2	1124.4	III	GG	2	30	270X	
		IZMI	1124.0	1124.3	V	HARM	2	38	50	
		SVTO	1140.0	1146.0	III		2	25U	141U	
		POTS	1207	1210 U	UNCLF		1	120	170U	
		POTS	1217.8	1220.7	III/V	GG	2	40X	300	
		SVTO	1218.0	1305.0	III	N	1	25U	159U	
		POTS	1226.3	1226.7	UNCLF		1	120	170U	
		POTS	1229.9	1230.1	III	B	1	110U	220	
		POTS	1234.5	1234.8	DCIM		1	220	320	
0825	1525	BLEN	1234.5	1235.0	III	G,S	1	220	490	
		POTS	1238.3	1238.5	UNCLF		1	40X	70	

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

JANUARY 2002

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
30		HOLL	1624.0	1624.0	III		1	25	135	
1940	2400	CULG	2118.0	2118.0	III	B	1	57X	150	
		CULG	2326.0	2326.0	III	B	1	57X	90	
2139	2400	HIRA	2329.0	2329.5	III	B	1	70	120	
		CULG	2339.0	2339.0	III	B	1	70	140	
31 0000	0802	HIRA	0058.5	0059.0	III	B	1	100	180	
0000	0800	CULG	0059.0	0100.0	III	G	1	60	180	
		CULG	0150.0	0150.0	III	B	1	57X	140	
		HIRA	0150.0	0150.5	III	B	1	90	150	
		CULG	0635.0	0635.0	III	B	1	57X	90	
		LEAR	0635.0	0635.0	III		1	25	61	
		HIRA	0637.0	0637.5	III	B	1	280	380	
		CULG	0731.0	0733.0	III	G	1	100	200	
		LEAR	0731.0	0732.0	III		1	115	180	
		HIRA	0731.5	0732.0	III	B	1	120	220	
0700	1200	IZMI	0731.5	0732.1	III	G	2	120	210	
0801	1431	ONDR								
0710	1047	POTS	0843.3	0843.4	UNCLF		1	120	150	
0810	1530	BLEN	1019.7	1022.9	III	G,S	1	180	620	
		IZMI	1021.3	1022.8	III	GG	2	120	270X	
		POTS	1021.5	1030	I	N	1	120	320	
		IZMI	1119.8	1120.1	III	G	2	120	270X	
		BLEN	1125.8	1132.3	DCIM	P	1	500	1050	
		IZMI	1158.7	1159.2	III	G,C	2	165	250	
1257	1525	POTS	1417	1428 U	I	N,C	1	120	170U	
		BLEN	1439.3	1441.4	DCIM	C	3	2300	4000X	
		HOLL	1908.0	2115.0	CONT		1	65	136	
1940	2400	CULG	1940.0E	2228.0	I	S	1	57X	130	
		CULG	2147.0	2149.0	III	G	1	57X	180	
		PALE	2147.0	2201.0	III	N	1	25	180	
2138	2400	HIRA	2147.5	2148.0	III	B	1	30	120	
		CULG	2158.0	2203.0	III	GG	1	57X	180	
		HOLL	2159.0	2201.0	III		1	25	180	
		HIRA	2159.5	2202.0	III	G	1	40	210	
		LEAR	2220.0	0506.0	III	N	1	25	180	
		HOLL	2241.0	2242.0	III		1	25	138	
		HIRA	2241.5	2244.0	III	G	1	30	300	
		CULG	2242.0	2244.0	III	G	1	57X	180	
		CULG	2249.0	2249.0	III	B	1	57X	90	
		HIRA	2249.0	2249.5	III	B	1	40	100	
		CULG	2312.0	2312.0	III	B	1	57X	120	
		HIRA	2312.0	2312.5	III	B	1	40	140	

Event Remarks:
- B = Single burst
- C = Underlying 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 NANÇAY RADIOHELIOGRAPH
JANUARY 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/01/02	+0.68	+0.36	I	8H24 E	15H24 D
02/01/02	+0.91	+0.05	II	12H58	15H25 D
03/01/02*	-0.40	-0.39	I	8H25 E	11H13
03/01/02*	+1.15	+0.70	I	8H25 E	15H26 D
04/01/02*	+1.29	+0.50	II	8H26 E	15H26 D
10/01/02	-1.09	+0.26	I	12H17	15H28 D
16/01/02	-0.25	+0.53	I	8H40 E	12H26 D
28/01/02	-0.73	-0.39	I	11H20	13H10

NOISE STORM AT 327 MHZ
FROM NANÇAY RADIOHELIOGRAPH
JANUARY 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/01/02	+0.59	+0.43	I	8H24 E	15H24 D
02/01/02	+0.85	+0.17	I	8H25 E	15H25 D
04/01/02*	+1.27	+1.31	I	8H26 E	15H26 D
09/01/02	-0.74	+0.50	I	8H28 E	15H28 D
09/01/02	-0.03	-0.34	I	8H28 E	14H00
11/01/02	-0.48	+0.53	I	8H30 E	15H29 D
13/01/02	-0.11	+0.73	I	12H20	15H29 D
15/01/02	-0.28	-0.09	I	11H20	15H30 D
15/01/02	+1.24	-0.16	I	8H30 E	15H30 D
22/01/02	+1.02	-0.33	I	8H32 E	15H32 D
23/01/02	+1.26	-0.45	I	12H46	15H32 D
27/01/02	+0.95	+0.05	II	8H33 E	15H33 D
28/01/02	-0.70	+0.37	I	8H55 E	15H34 D
29/01/02	-0.48	+0.28	I	8H34 E	15H34 D
30/01/02	-0.22	+0.28	I	8H34 E	15H34 D

20 JANUARY : 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.

** Following a large burst

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

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

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

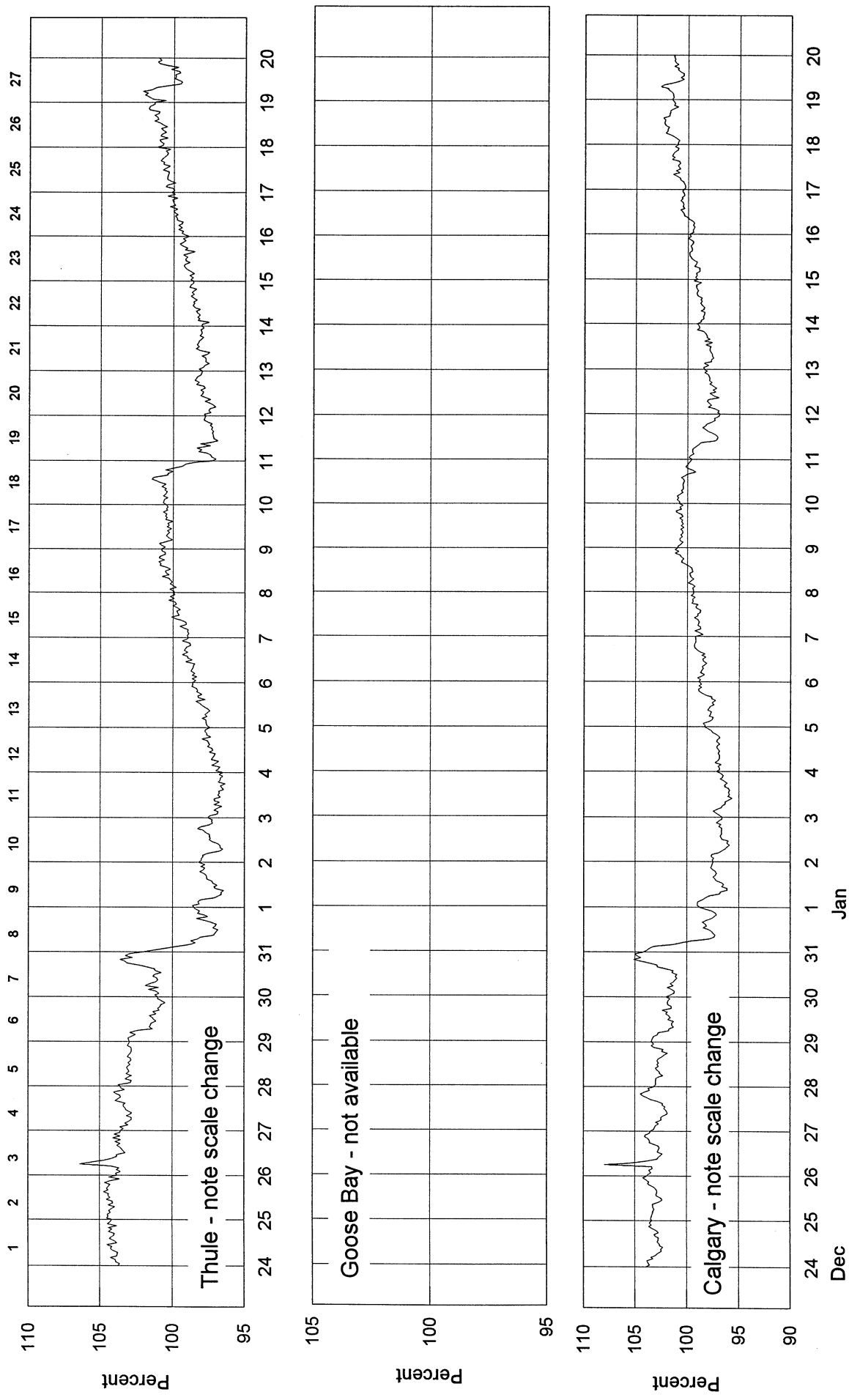
[3] E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANÇAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

COSMIC RAY INDICES
(Neutron Monitor)
January 2002

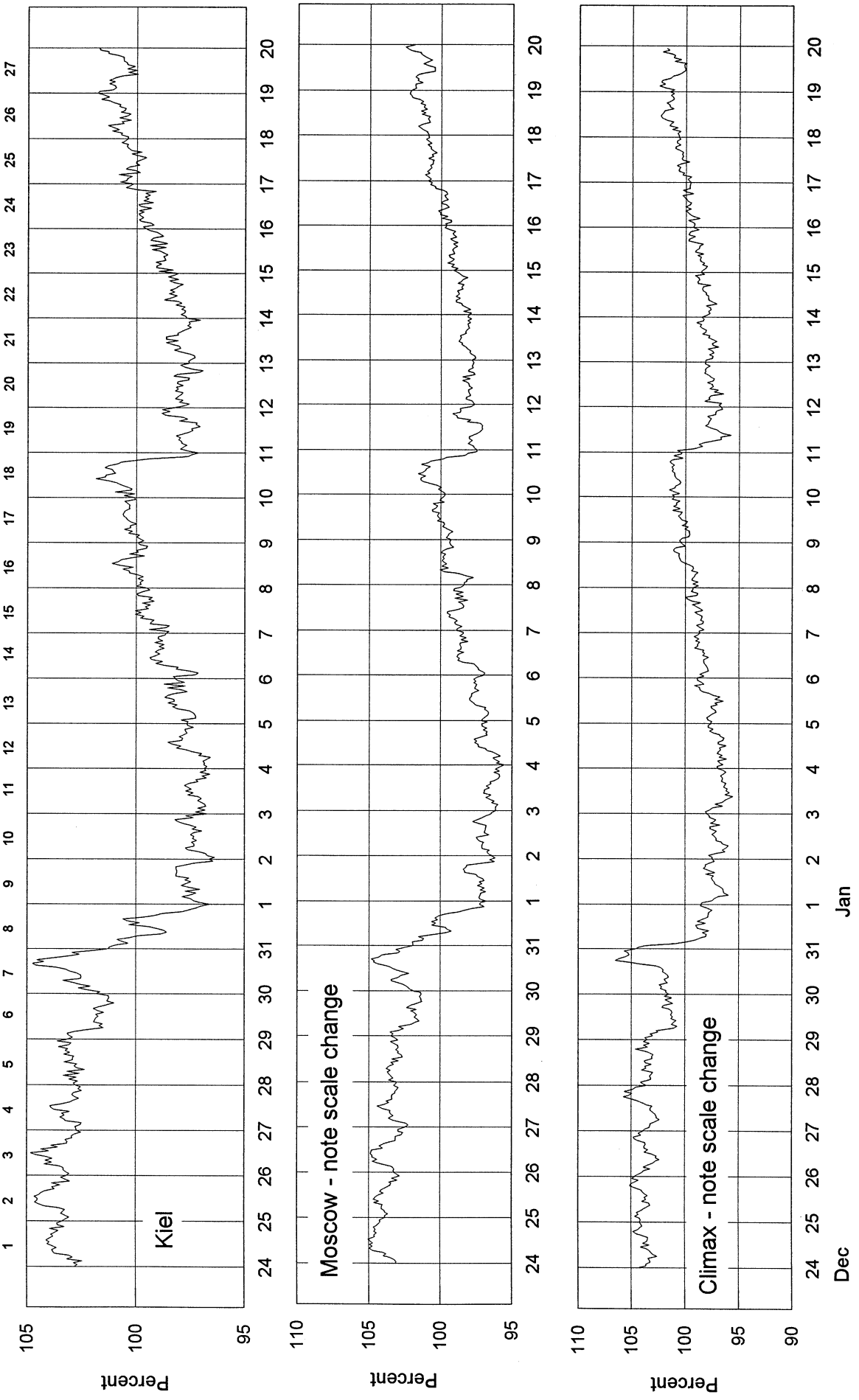
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	3853.5	not	3397.8	5442.7	8087.5	3592.3	1877.3	3332.6
2	3850.4	available	3373.0	5428.9	8061.4	3584.8	1880.2	3348.0
3	3825.8		3360.8	5418.0	8009.3	3565.0	1874.6	3354.0
4	3843.7		3383.5	5436.2	8041.6	3576.8	1877.9	3376.6
5	3870.0		3417.0	5464.5	8096.5	3608.5	1887.7	3409.2
6	3904.1		3441.7	5500.5	8162.4	3635.0	1907.0	3428.0
7	3932.9		3453.5	5543.7	8217.9	3650.4	1921.8	3437.4
8	3967.7		3485.7	5581.5	8252.2	3685.3	1930.1	3458.5
9	3967.7		3507.5	5590.9	8307.2	3705.0	1927.5	3462.8
10	3967.1		3497.2	5605.1	8341.6	3728.2	1927.1	3452.0
11	3851.9		3428.7	5457.8	8142.4	3608.8	1893.0	3398.5
12	3866.0		3403.7	5459.5	8145.9	3602.5	1894.9	3398.8
13	3871.5		3419.8	5458.3	8162.2	3615.1	1891.9	3406.0
14	3888.1		3443.5	5473.0	8193.3	3623.4	1892.9	3409.3
15	3912.8		3466.2	5515.9	8246.4	3649.5	1903.0	3421.3
16	3940.4		3490.3	5559.7	8303.6	3679.5	1918.2	3442.8
17	3967.6		3518.5	5590.1	8377.7	3705.6	1929.2	3460.1
18	3990.9		3543.7	5623.0	8424.6	3744.4	1941.2	3465.0
19	3975.7		3531.0	5624.5	8432.0	3736.1	1937.4	3440.4(57)
20	3986.8		3533.7	5620.8	8428.4	3750.0	1943.9	3452.6
21	3952.3		3505.8	5570.2	8387.0	3701.8	1937.0	3451.7
22	3967.1		3530.7	5592.0	8397.7	3718.8	1940.0	3449.2
23	3978.6		3535.8	5617.0	8424.9	3736.9	1939.6	3454.8
24	3987.5		3531.2	5618.0	8406.7	3719.8	1942.5	3456.3
25	4003.3		3521.3	5630.7	8445.7	3717.6	1939.8	3458.8
26	4003.9		3520.7	5633.0	8480.4	3740.1	1942.6	3462.3
27	4010.8		3515.7	5637.6	8455.0	3734.4	1944.3	3460.5
28	3955.5		3468.3	5534.5	8337.5	3677.3	1924.8	3422.4
29	3915.0		3439.3	5498.3	8279.8	3649.1	1907.2	3375.8
30	3906.6		3436.7	5496.4	8279.9	3650.5	1905.2	3393.2
31	3920.6		3439.0	5508.4	8271.4	3662.0	1904.3	3394.0
Mean	3930.0		3469.1	5539.7	8277.4	3669.6	1915.6	3423.7

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

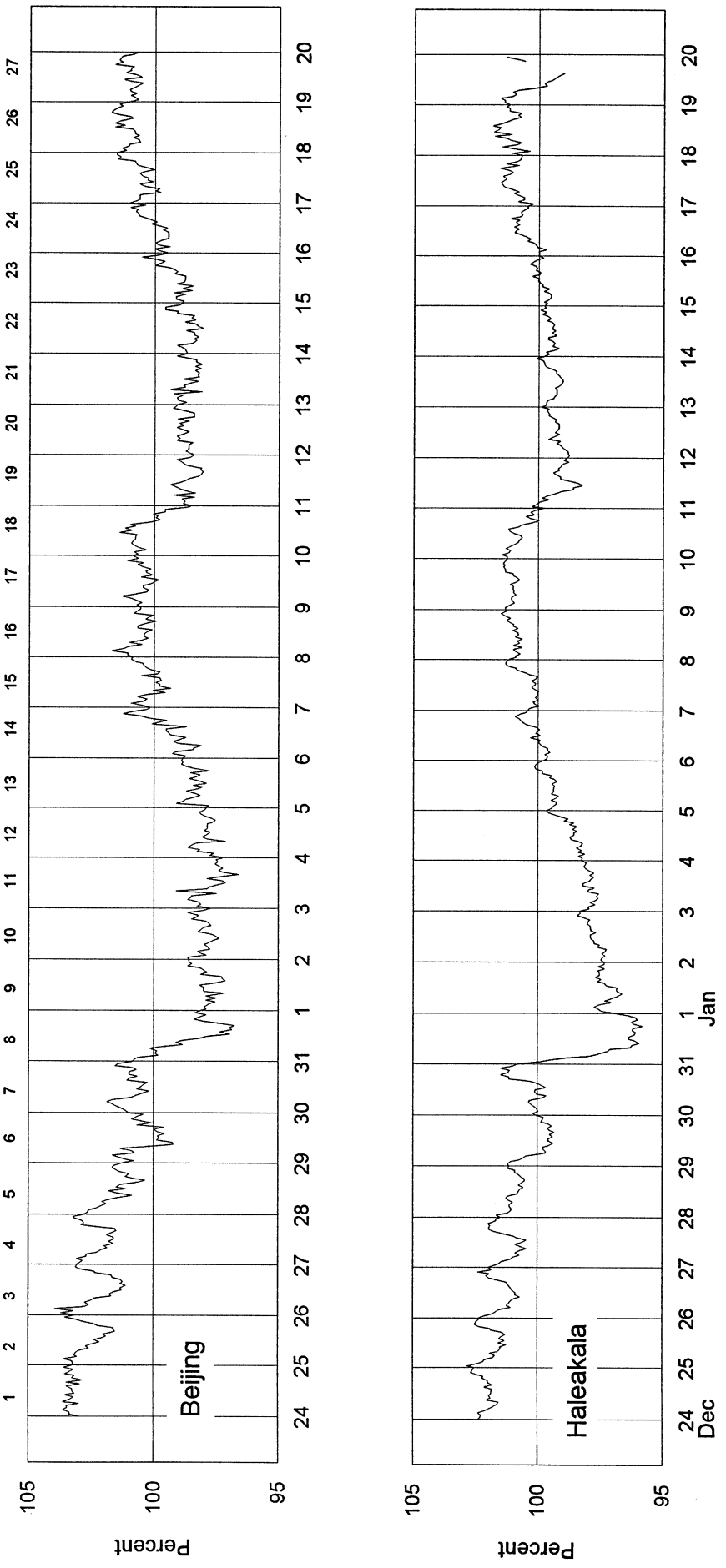
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2299 - Beginning 24 Dec 2001



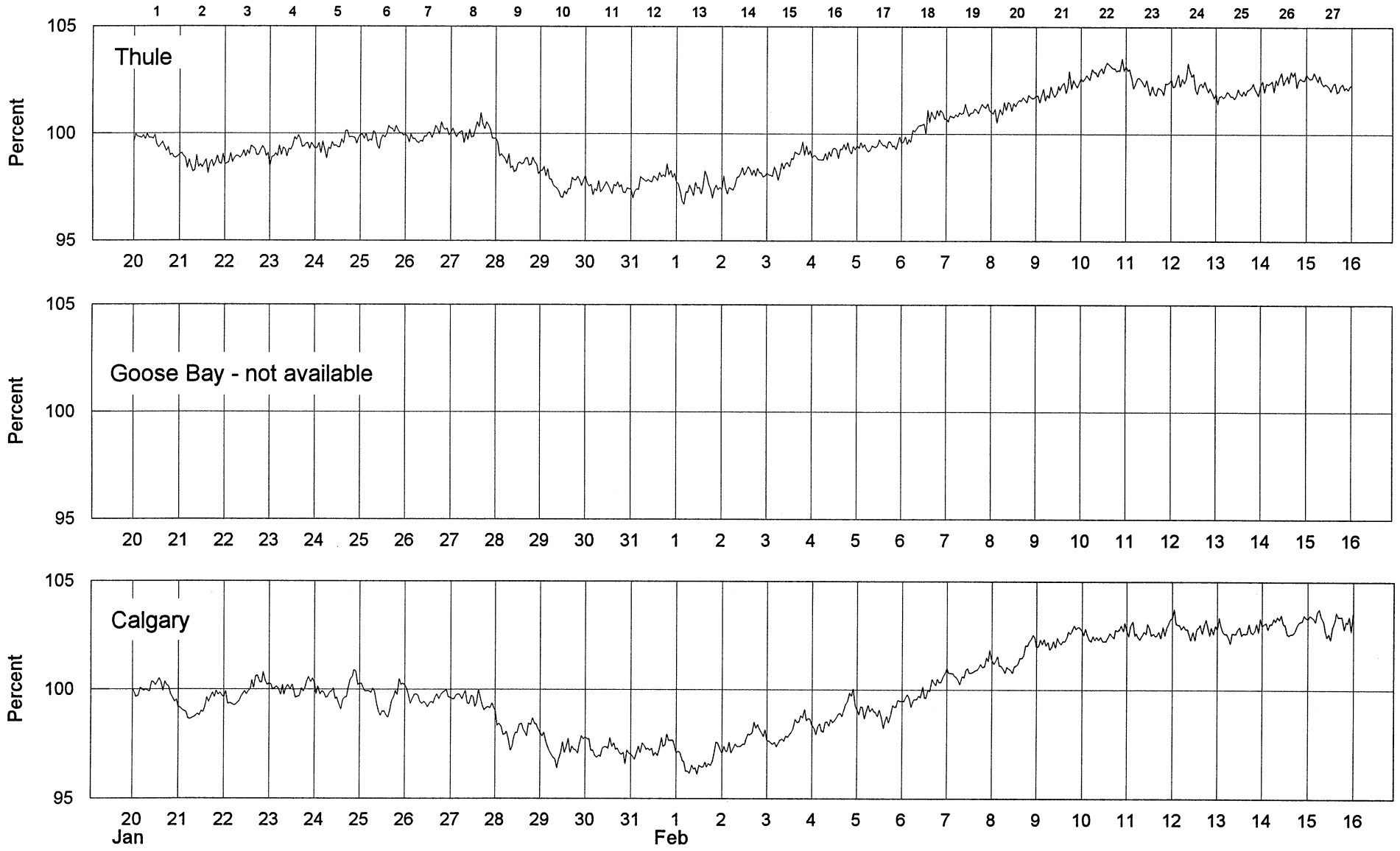
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2299 - Beginning 24 Dec 2001



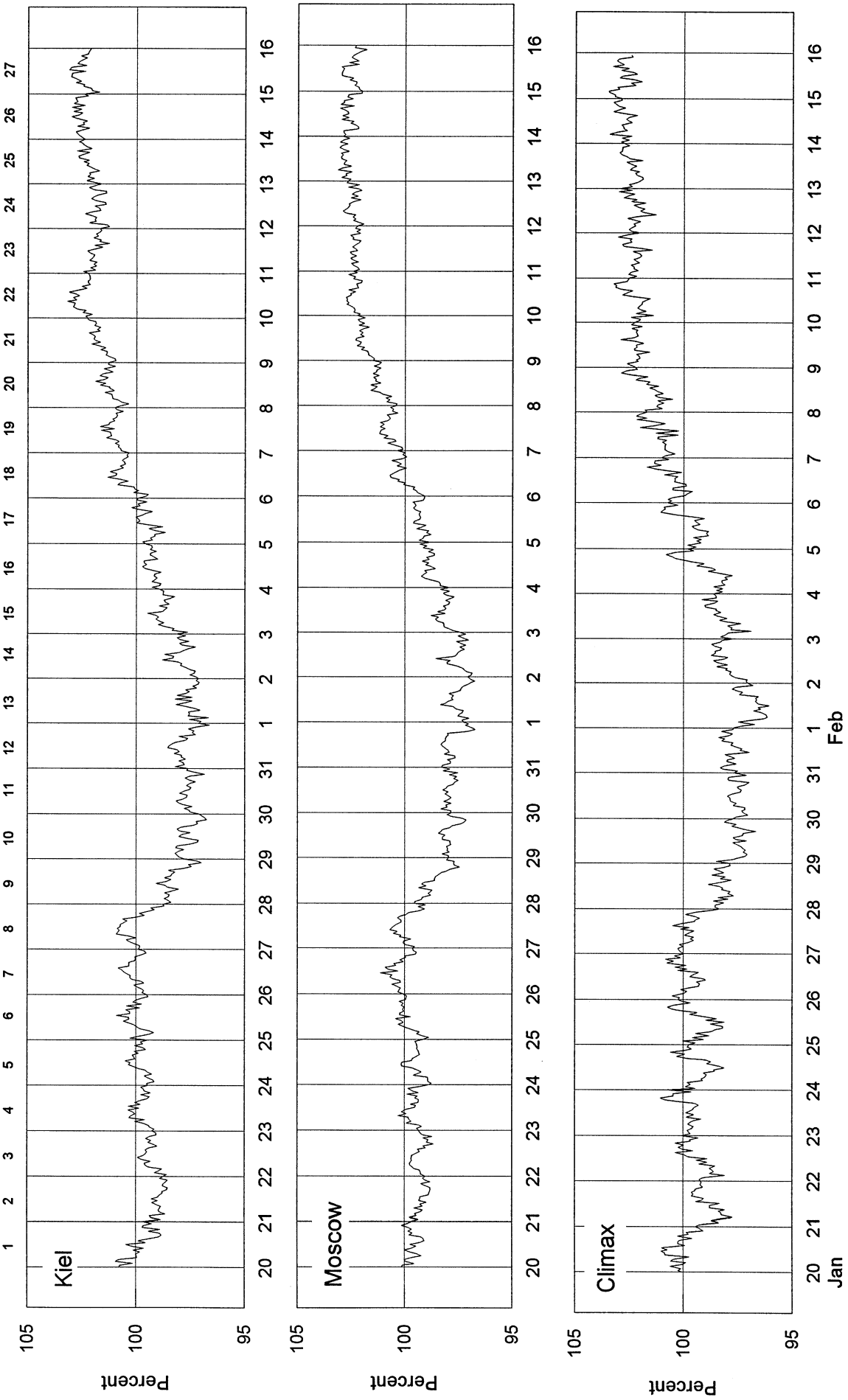
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2299 - Beginning 24 Dec 2001



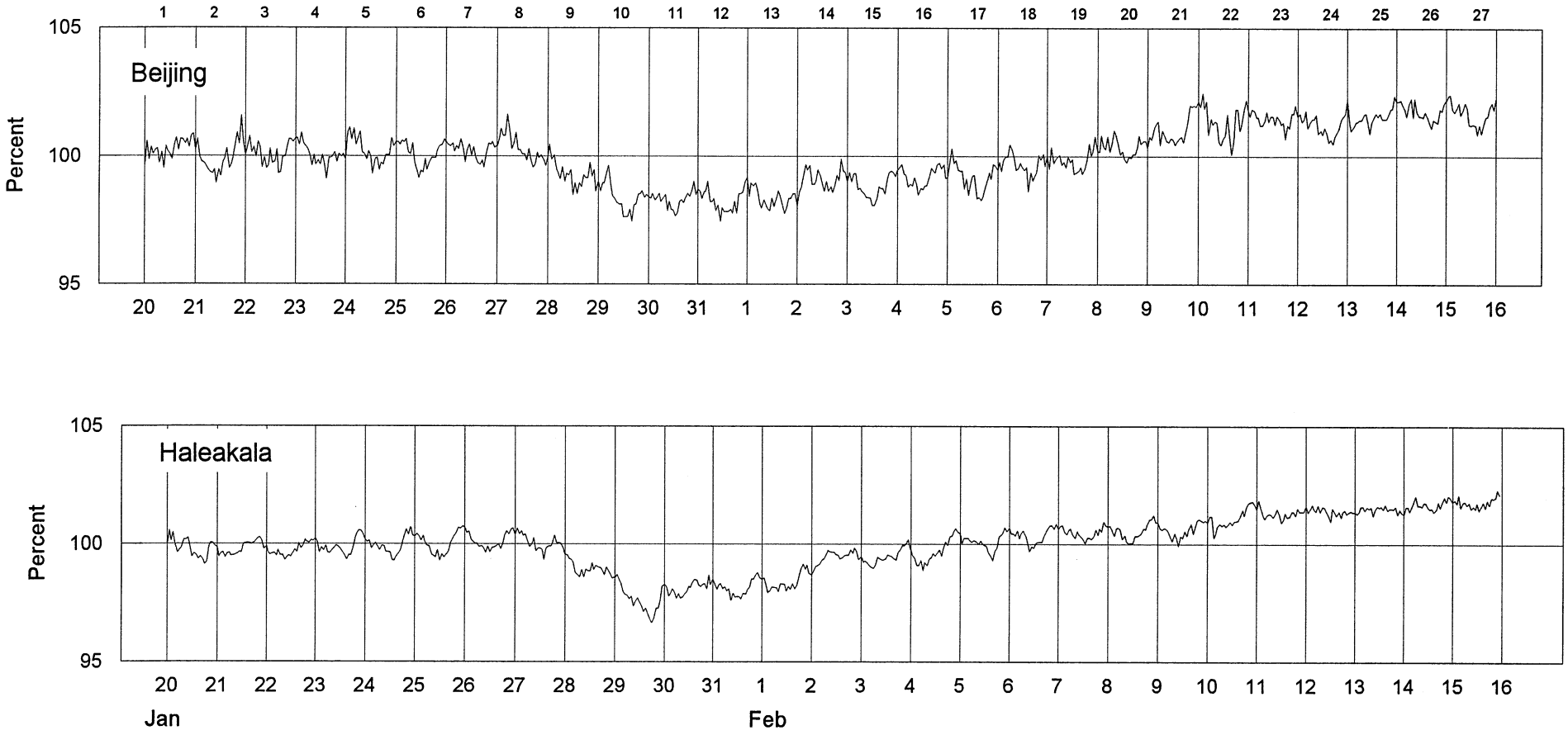
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2300 - Beginning 20 January 2002



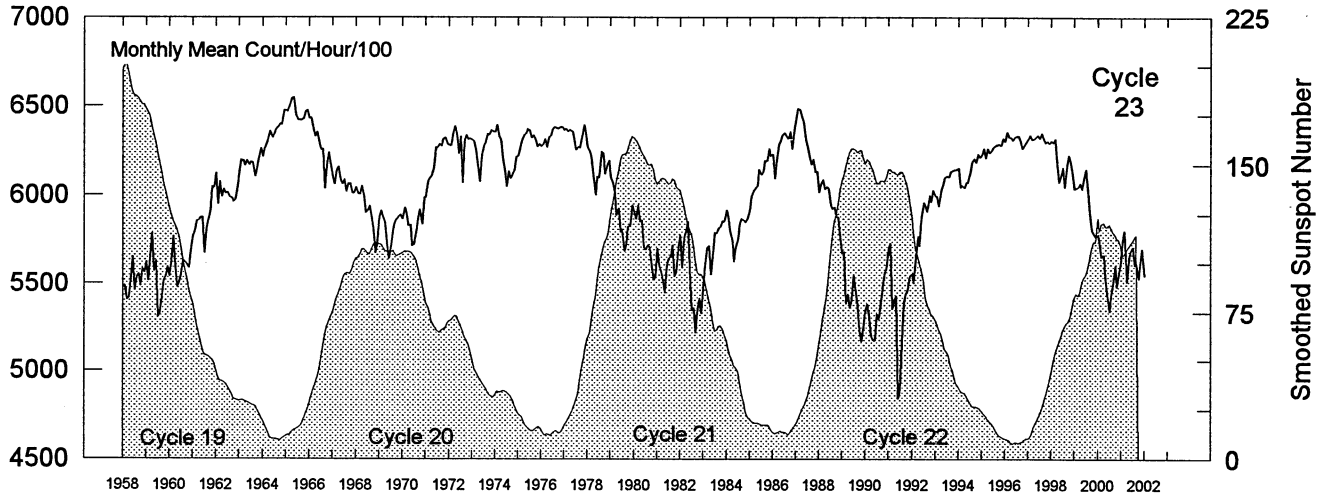
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2300 - Beginning 20 January 2002



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2300 - Beginning 20 January 2002



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



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

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

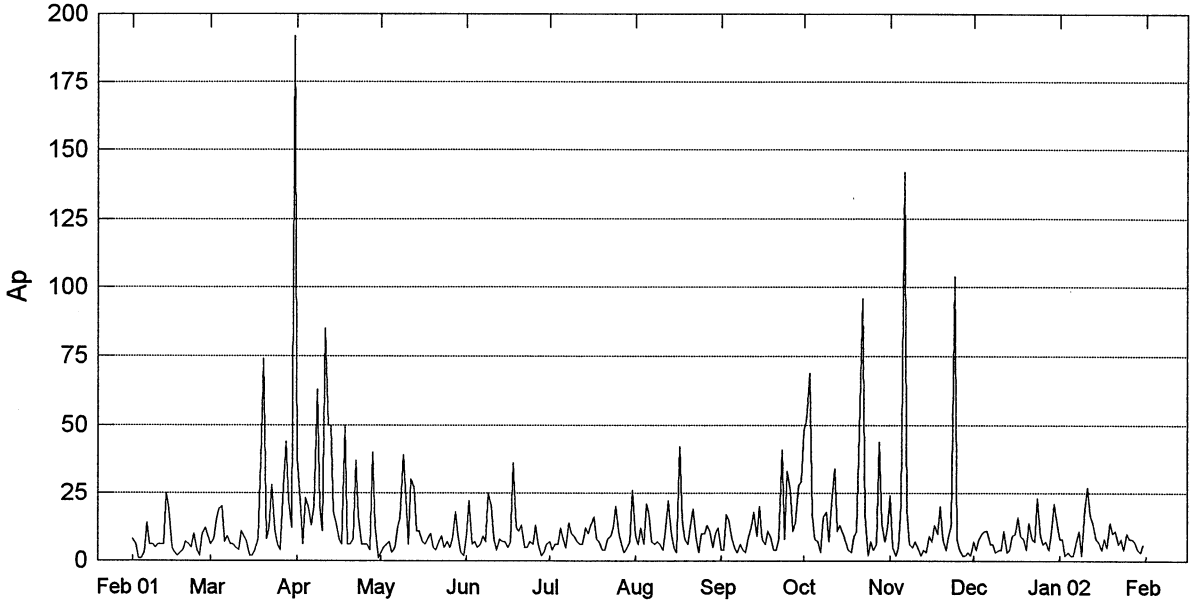
Geomagnetic Activity Indices

January 2002

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1		2+	3-	2+	1+	1+	1	3-	2-	15+	8	0.4	2o	2+	3-	2o	2-	1+	3o	2+	17	15	21	23	13	
2		2	1-	1	2	3-	3-	2+	2	15+	8	0.4	2o	1o	1o	2o	3-	3o	2+	2o	16	17	17	10	24	
3	Q1	1	1-	1-	1-	0+	1-	0	0	4	2	0.0	1+	1+	2-	1+	1-	0+	0o	0+	6	6	6	8	4	CK
4	Q4	1-	1	0+	1-	1-	1-	1-	1-	5+	3	0.1	1-	1-	0+	1o	1+	1o	1+	1-	6	6	7	7	7	CC
5	Q2	1	1+	0+	0+	0+	0+	0+	0	4	2	0.0	1-	1-	0+	0o	1-	0+	0+	0+	3	5	2	5	3	CC
6	Q5	0+	0	0	0	1	1+	0+	1	4	2	0.0	1o	0o	0+	0+	1o	1+	1o	2-	6	5	7	4	9	CC
7		0	1+	1+	2+	1+	3-	3-	2	14-	7	0.3	0+	1+	1+	2+	2-	3-	3o	2+	16	15	21	11	25	
8		3	3	4-	2-	3	2-	1	0+	17+	11	0.6	3o	3-	3+	2+	3-	2-	1o	1-	19	18	24	29	13	
9	Q6	0	0	0	0+	1-	2-	1+	1-	5-	2	0.0	0o	1-	0+	1-	1+	2o	1+	1-	6	7	7	4	9	CC
10	D2*	1+	2-	2+	2+	4	5	4	3+	24	19	1.0	1+	2o	2+	3o	4o	5o	5-	3+	44	32	40	17	54	
11	D1	4+	5	4+	4-	3+	4+	3+	3	31+	27	1.2	4-	4o	4-	4-	3o	4o	3+	3o	42	38	39	42	35	
12	D3*	4-	3+	4-	4-	3-	4-	3	1+	25	17	0.9	3+	3-	3-	3+	3-	4-	3o	2-	29	39	20	29	30	
13	D5*	2+	3-	3	3+	3	2+	2	3+	22	13	0.7	2-	2o	3o	3o	3o	3-	2o	3o	23	25	24	22	27	
14		3-	2+	2-	1+	2+	2	2-	2	16	8	0.4	2+	2o	2-	2-	2+	3-	2+	2o	16	16	16	14	18	
15		1+	2-	2	2+	2	2	1+	2	15-	7	0.3	1+	1+	2-	2+	2o	2+	2-	2-	13	16	12	12	16	
16	Q7	1+	1	2	1-	1-	1-	1-	0	7	4	0.1	2-	1+	2o	1o	1+	1+	1-	1-	9	7	9	8	8	CC
17		3-	2+	1+	2+	2	3-	1+	2+	17	8	0.5	2+	2-	2-	3-	2+	3o	2-	2o	18	20	20	18	21	
18		3	2	1-	1+	1	1+	0+	0	10-	5	0.2	2o	1+	1-	1+	1+	2-	0+	0+	8	10	9	11	7	C
19	D4*	0	1	2-	3	4-	4	3+	4-	20+	14	0.8	0o	2-	2+	3o	4o	4+	3+	4-	33	33	40	16	58	
20		4-	3	2-	2-	2-	2	2	2+	18	10	0.5	3o	3-	2-	2o	2o	2+	2+	3-	19	22	22	26	18	
21		4-	3	2	2	2+	3-	3-	2	20+	11	0.7	3+	3-	2o	3-	2+	2+	3-	2o	23	23	24	25	22	
22	Q10	1	1+	2	2-	2	2-	1+	2-	13-	6	0.3	1+	1+	2-	2o	2-	2o	1+	2o	12	12	12	13	11	C
23		3-	1+	2-	2	2-	2	3	2+	17-	8	0.5	2o	1o	2-	3o	2o	2-	3+	2+	17	18	19	17	20	
24	Q9K	2-	3	0	0+	0+	1	0+	0+	7	4	0.1	2-	2+	1-	1-	1-	1+	1-	1o	8	9	9	14	4	KK
25		1	1-	1	2-	3	4-	4-	2	17-	10	0.6	1o	1+	1+	2o	3o	4-	4-	2o	22	25	23	10	38	
26		3	2+	2	2	1+	2	2	1	16-	8	0.4	2+	2+	2+	2-	2o	2+	2+	1o	16	16	17	21	11	
27		3	2+	2-	2	2	2-	1+	2-	16-	8	0.4	2+	2o	2-	2+	2o	2+	2-	2o	15	15	15	15	15	C
28		2+	1	1	2+	3-	2	2-	2	15	7	0.4	2+	1+	2-	2o	3-	2+	2o	2+	16	16	12	11	17	
29	Q8	2	2	1	2-	1-	1-	0+	1-	9	4	0.2	2o	2-	1+	2o	1o	1+	1o	1+	10	11	8	12	7	CC
30	Q3	1-	0	0+	0+	1-	1-	1	1	5-	3	0.0	1-	0+	1-	1-	1o	1o	1o	1o	5	7	4	4	7	CC
31		2+	2-	0+	0+	0+	1	1	4-	11-	6	0.3	2o	2-	1-	1-	1-	2-	2-	3+	13	16	16	11	21	
Mean											8	0.40									16.3	16.8	16.9		16.8	

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	2o	2o	2+	2-	1+	1o	3o	2-	15	2+	3-	3o	2o	2-	2-	3-	3-	20	224.5	136	136	180	
2	1+	1-	1o	2-	2+	3o	3-	2-	14	2+	1o	1+	2o	3o	3o	2+	3-	18	223.5	135	145	179	
3	1o	1-	1+	1o	1-	0+	0o	0o	4	2-	2-	2o	2-	1-	1-	0o	1-	8	213.0	136	147	168	
4	1-	1-	0o	1-	1-	1-	1o	0+	4	1o	1-	1-	1o	1+	1+	1+	1-	7	211.0	142	147	166	
5	1-	1-	0o	0o	0+	0o	0+	0o	2	1-	1o	1o	0+	1-	1-	1-	1-	5	205.2	118	119	160	
6	0+	0o	0o	0o	1-	1+	1o	1-	4	2-	0+	1o	1o	1+	2-	1+	2+	9	190.1	98	92	143	
7	0o	1-	1-	2+	1+	3o	3o	2-	13	1o	2-	2o	2+	2-	3-	3+	3-	19	182.4	90	76	135	
8	3-	2o	3o	2o	3-	2o	1-	0o	16	3+	3o	3+	3-	3-	2-	1o	1+	22	192.6	100	105	146	
9	0o	0o	0o	0o	1o	2o	1+	1-	4	0+	1+	1-	1+	1+	2+	1+	1o	8	220.9	121	121	177	
10	1o	1+	2o	3o	4o	5+	4o	3o	40	2o	3-	3-	3o	4+	5o	5o	4-	48	217.3	115	126	173	
11	4-	4o	3+	3+	3+	4o	3o	3-	41	4o	4-	4-	4-	3-	4o	3+	3o	42	221.4	129	142	177	
12	3+	3o	3-	4-	2+	4o	3+	1+	31	3o	2o	3o	3o	3-	3+	3o	2o	26	225.7	129	141	182	
13	2o	2-	3+	3o	3o	3-	2-	3+	25	2-	2+	2+	3o	3o	3-	2+	3o	21	232.9	124	144	190	
14	2o	2-	2-	1o	2+	3-	2o	2-	15	3-	2o	2o	2o	2o	2+	2+	2o	17	221.6	122	135	177	
15	1+	1o	2-	2o	2-	2+	1+	1+	12	1+	1+	2o	2+	2o	2o	2o	2o	14	211.2	104	111	166	
16	1+	1o	2o	1o	1+	1o	0+	0o	7	2o	2-	2-	1o	2-	1+	1o	1+	10	209.1	87	85	164	
17	2+	2-	2-	2+	2o	3+	2-	2o	17	2+	2-	2o	3o	2+	3-	2o	2o	18	205.0	74	87	159	
18	2o	1+	0+	1+	1+	2+	0o	0o	8	2o	1+	1+	1+	1+	1+	1-	1-	9	203.8	86	92	158	
19	0o	1+	2+	3o	4+	4o	3o	3+	32	0+	2-	2o	3o	4-	5-	4-	4o	35	206.9	93	104	161	
20	3o	2+	1+	2-	2-	2+	2-	2+	17	3o	3-	2o	2o	2+	2+	3-	3o	22	215.2	109	118	170	
21	3+	3-	2-	2+	2+	3-	3-	2-	21	3+	3o	2o	3-	3-	2o	3o	3-	24	217.5	118	132	173	
22	1-	1o	2-	2o	1+	2-	1+	1+	10	2-	1+	2-	2+	2-	2o	1+	2+	13	221.5	120	134	177	
23	2o	1-	1+	3o	2-	2-	3+	3-	18	2o	1o	2o	3-	2o	2-	3o	2+	17	219.4	140	128	175	
24	1+	2o	0+	1-	1-	1+	0+	0+	6	2o	3-	1o	1o	1-	2-	1o	1+	11	223.6	109	114	179	
25	1-	1-	1o	2-	3+	4o	4o	2o	23	1o	1+	2-	2o	3o	3+	4-	2o	20	227.6	103	102	184	
26	2o	1+	2-	2-	1+	2+	2-	1o	12	2+	3-	3-	2o	2+	2+	3-	1o	19	248.7	106	115	207	
27	2o	2o	1+	2o	2-	2o	2-	2-	13	3-	2o	2-	2+	2+	2+	2-	2+	18	240.5	118	120	198	
28	2o	1-	1+	2-	3-	2o	2-	2o	13	2+	2-	2-	2+	2+	2+	2+	3-	17	252.0	121	126	210	
29	2-	1+	0+	2-	1-	1o	0+	1-	7	2+	2o	2o	2o	1+	1+	2-	2o	14	253.2	116	122	211	
30	0o	0o	0o	1-	1-	1-	1-	1-	3	1o	1-	1+	1o	1o	1o	1o	2-	7	248.8	119	122	207	
31	1+	1o	0o	0o	0o	1+	1-	3+	9	2+	2+	1+	1o	1o	2+	2+	3+	17	235.5	112	129	192	
Mean									14.7									17.9	220.1	113.9	120.0	175.7	

Daily Average Indices Ap
Feb 2001 -Jan 2002

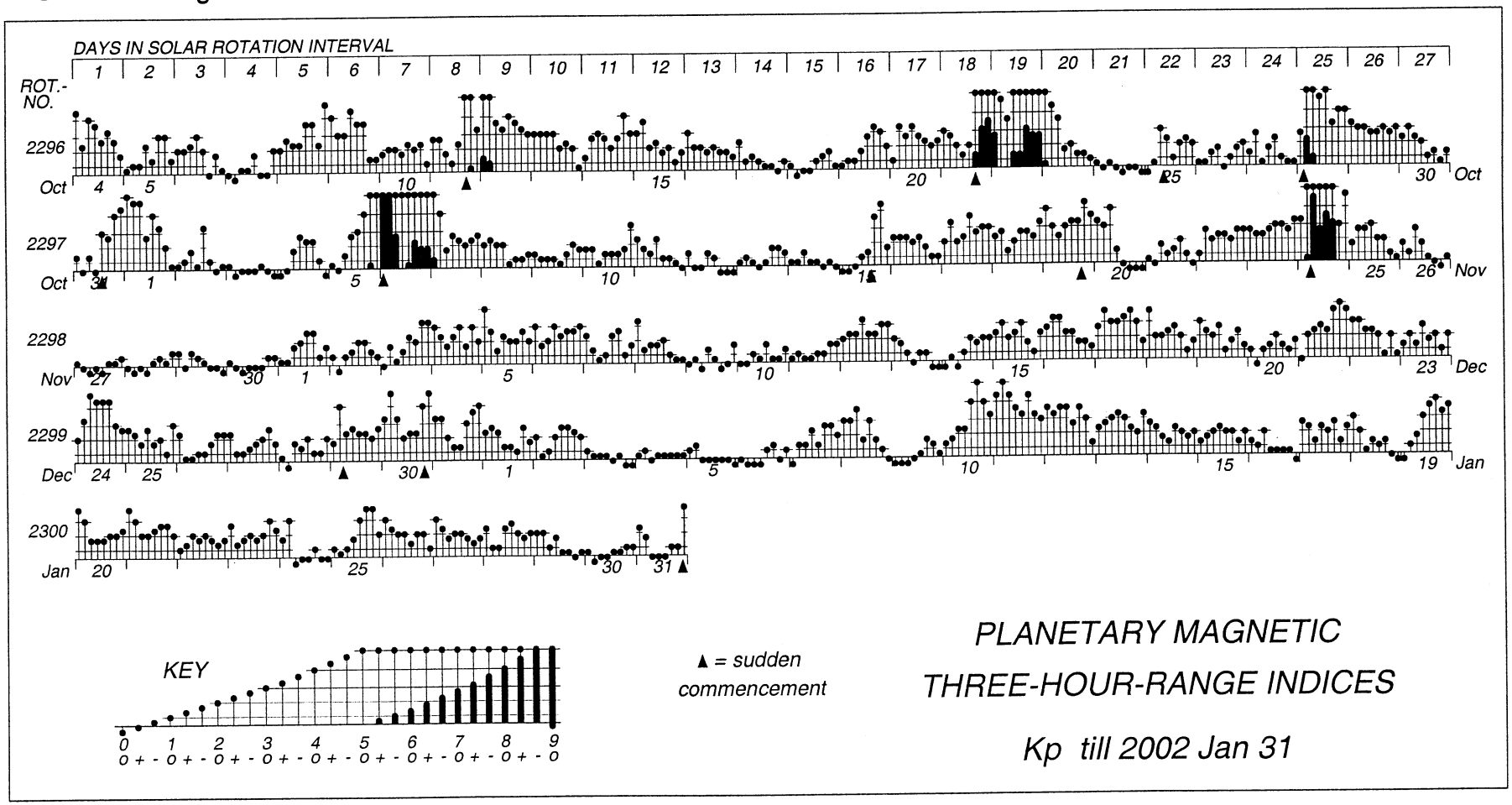


Day	Feb 01	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02
1	8	6	38	3	9	7	9	4	48	24	7	8
2	6	8	22	5	22	4	6	4	52	5	4	8
3	1	15	6	6	6	6	12	17	69	2	8	2
4	1	19	23	7	7	6	6	15	17	5	10	3
5	3	20	19	3	5	12	21	8	8	21	11	2
6	14	7	13	5	6	8	17	5	7	142	11	2
7	6	9	20	12	9	5	7	3	3	19	6	7
8	6	6	63	16	7	14	6	6	16	6	6	11
9	5	6	20	39	25	10	7	4	18	5	3	2
10	6	5	11	23	20	9	6	3	7	7	4	19
11	6	4	85	6	8	7	4	9	21	5	4	27
12	6	11	50	30	4	6	12	12	34	2	11	17
13	25	9	50	27	8	6	22	18	11	4	3	13
14	19	7	18	11	7	12	10	9	13	3	4	8
15	5	2	13	11	7	10	5	20	10	9	9	7
16	3	2	8	7	5	13	3	8	7	7	10	4
17	2	4	6	6	7	16	42	6	4	13	16	8
18	3	8	50	8	36	8	15	11	3	10	9	5
19	4	37	6	10	12	7	8	9	9	20	8	14
20	7	74	6	5	11	4	6	4	11	8	4	10
21	6	8	8	4	13	4	13	4	57	4	14	11
22	5	12	37	7	5	8	19	8	96	9	8	6
23	10	28	16	9	5	9	8	41	17	13	7	8
24	4	11	6	5	7	12	3	8	2	104	23	4
25	2	6	6	7	6	20	10	33	7	8	9	10
26	10	4	6	5	13	10	10	26	4	4	6	8
27	12	27	4	8	6	6	13	11	6	2	7	8
28	9	44	40	18	2	3	11	14	44	2	4	7
29		22	13	9	3	5	5	28	14	3	11	4
30		12	1	3	6	7	10	29	7	2	21	3
31		192		2		26	12		12		15	6
Mean	7	20	22	10	10	9	11	13	20	16	9	8

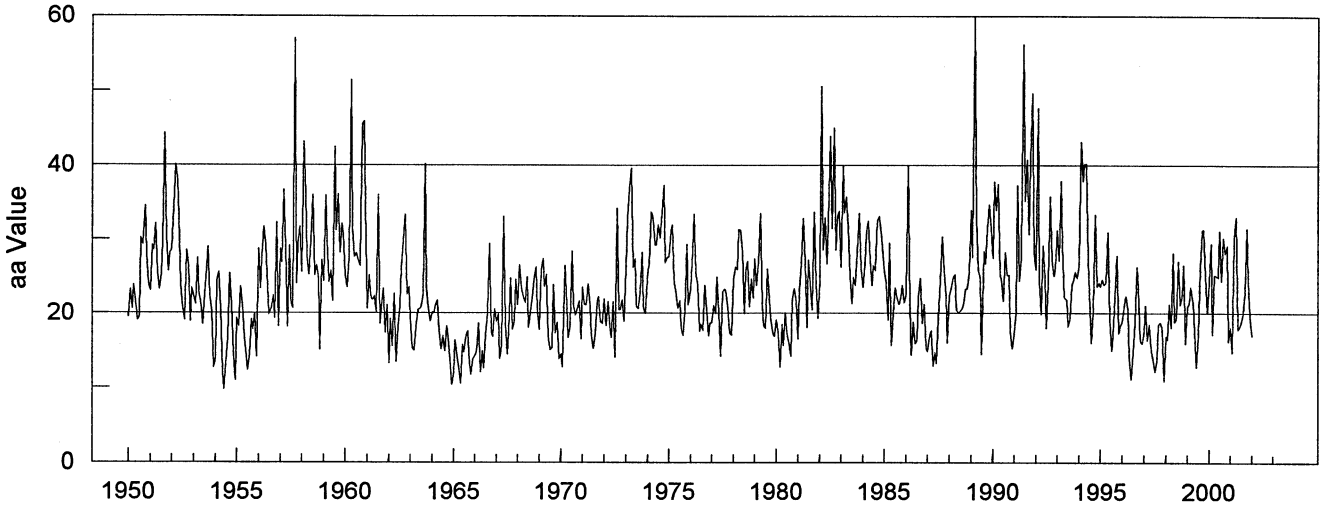
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through January 31, 2002



Monthly Mean aa Index Jan 1950 - Jan 2002

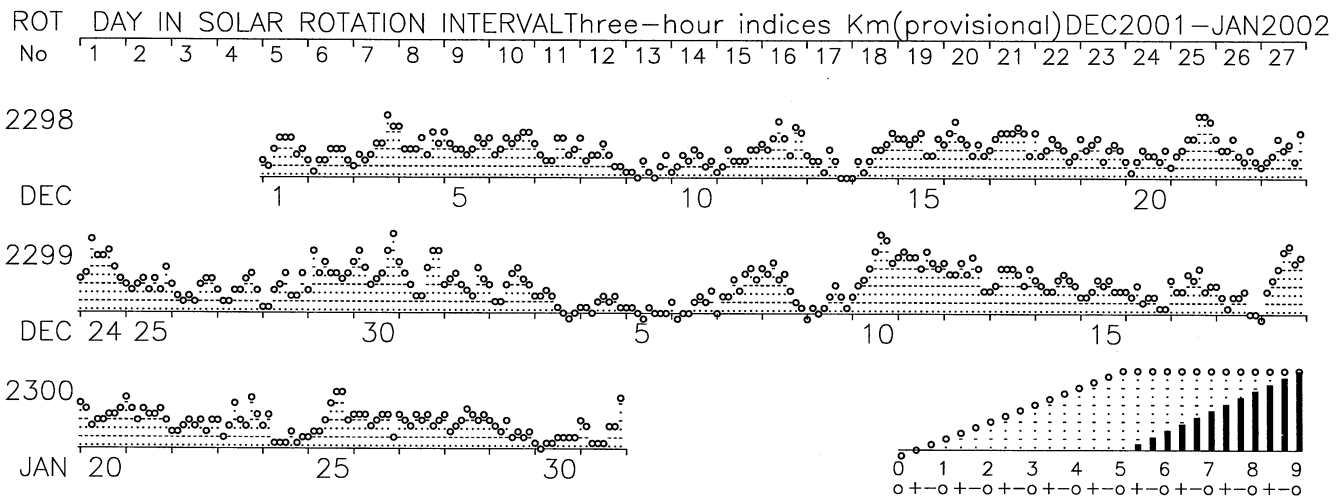


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4	15.1	13.7	12.1	13.7	18.4	18.7	18.0	10.8	16.1
1998	16.8	16.4	21.2	18.0	28.1	18.8	19.3	27.0	21.1	22.4	26.5	15.9	21.0
1999	20.8	21.3	23.5	21.3	15.8	12.7	16.9	26.2	31.2	31.3	25.1	20.1	22.2
2000	24.2	29.4	17.1	25.1	25.0	24.9	31.1	24.3	30.2	28.1	29.1	16.1	25.4
2001	18.0	14.7	30.2	33.0	17.8	18.2	18.7	19.9	22.7	31.4	24.4	19.5	22.4
2002	16.8												16.8

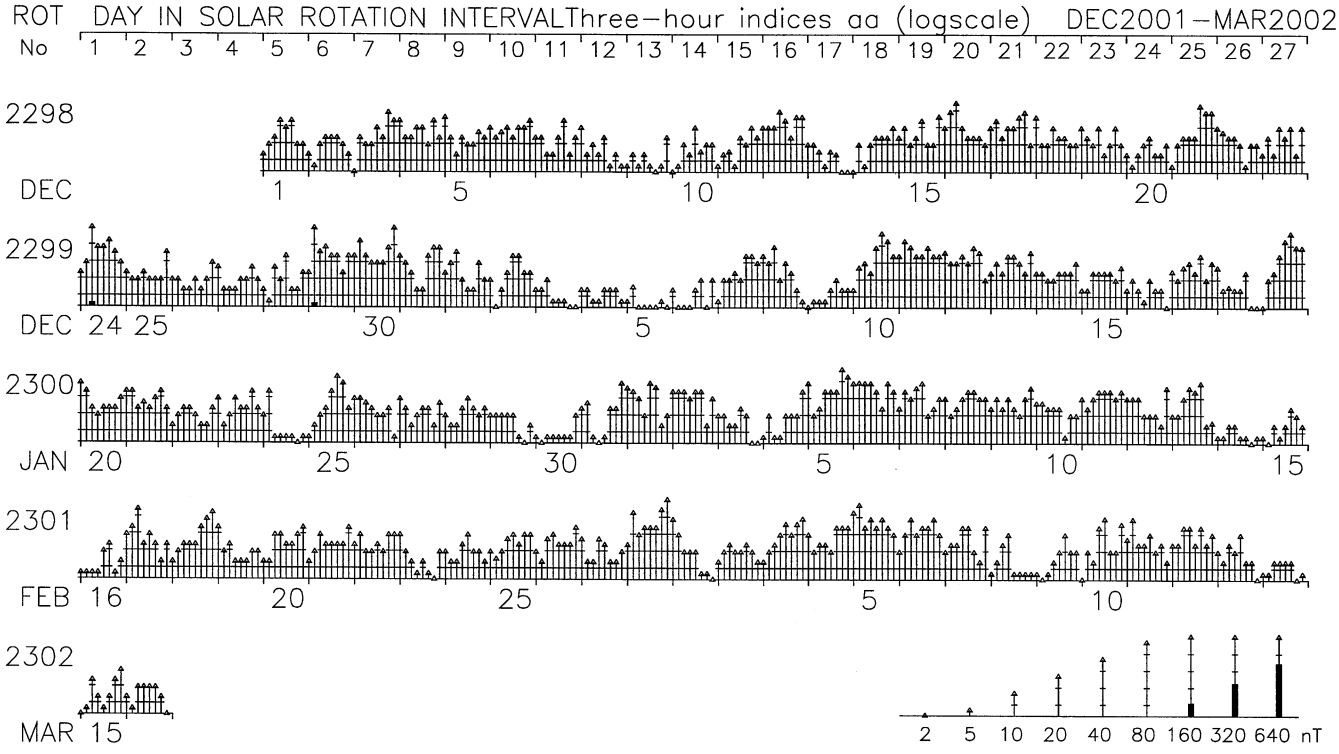
PLANETARY GEOMAGNETIC ACTIVITY

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

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



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



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

WDC FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

JANUARY 2002

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-36	-35	-32	-32	-31	-29	-32	-37	-41	-37	-35	-32	-28	-22	-21	-23	-25	-25	-26	-26	-29	-23	-15	-15
2	-13	-11	-8	-7	-9	-11	-11	-10	-8	-3	-5	-8	-11	-15	-11	-8	-12	-14	-16	-15	-16	-17	-17	-16
3	-16	-16	-17	-15	-12	-10	-7	-7	-8	-10	-14	-17	-17	-15	-13	-13	-13	-10	-8	-7	-7	-6	-5	-5
4	-3	-2	0	-2	-5	-6	-6	-3	-3	-3	-3	-1	0	2	2	0	-1	-1	-1	0	0	0	-1	-2
5	-3	-5	-5	-7	-6	-7	-6	-5	-3	-2	-3	-3	-6	-11	-9	-8	-7	-2	2	4	5	6	7	6
6	7	10	6	3	4	4	3	4	6	9	14	16	15	16	16	21	20	13	12	11	10	9	5	3
7	8	10	11	14	9	8	9	13	14	13	11	18	23	18	15	11	6	-13	-31	-20	-16	-15	-13	-12
8	-10	-13	2	-3	-16	-23	-13	-27	-15	-7	-11	-13	-15	-19	-22	-15	-12	-11	-9	-7	-6	-3	-1	1
9	3	1	0	0	-1	-1	-1	0	4	5	7	7	8	4	-2	-6	-6	-10	-8	-6	-3	-1	2	6
10	10	11	7	6	8	7	10	14	10	3	2	-8	-26	-33	-23	-35	-21	-28	-42	-51	-46	-48	-37	-26
11	-17	-25	-31	-34	-48	-61	-65	-54	-56	-43	-44	-40	-36	-35	-36	-36	-37	-35	-35	-36	-33	-33	-30	-26
12	-23	-21	-18	-21	-28	-31	-36	-41	-41	-44	-39	-28	-21	-23	-24	-24	-22	-23	-27	-28	-23	-24	-22	-22
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16	1	0	-1	-1	-4	-7	-10	-10	-8	-9	-10	-8	-1	3	1	3	4	3	3	1	1	3	5	7
17	10	6	2	2	-3	-4	-1	4	7	9	7	5	5	-2	-3	-10	-4	4	6	3	4	5	2	-2
18	1	0	3	2	-2	-4	-3	-4	-5	-5	-6	-7	-5	-7	-5	-3	2	3	6	8	7	9	11	13
19	16	14	14	15	14	23	25	26	43	41	29	29	22	3	-16	-26	-25	-28	-18	-17	-18	-19	-5	0
20	1	-1	-3	-13	-17	-14	-12	-13	-17	-22	-23	-17	-8	-9	-12	-11	-8	-7	-6	-5	-6	5	7	1
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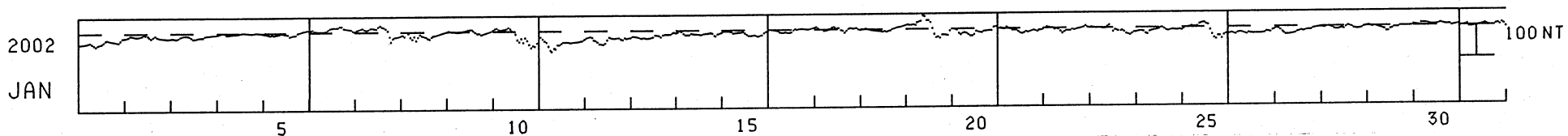
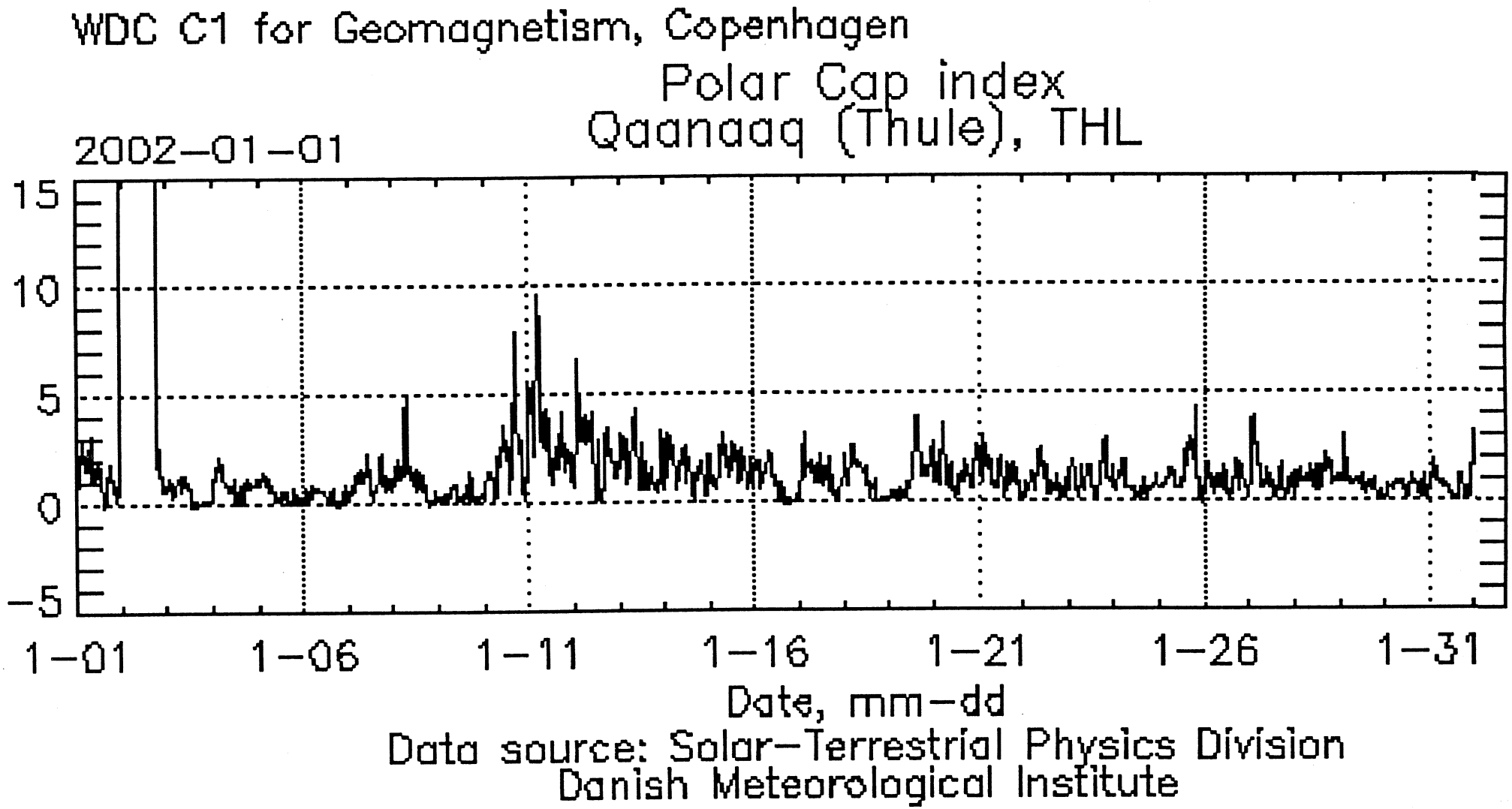
27	-4	-5	-10	-15	-21	-25	-24	-24	-22	-22	-19	-16	-14	-12	-13	-12	-9	-10	-10	-5	-3	-4	-1	-1
28	-2	-3	-2	0	-1	-4	-7	-9	-9	-8	-5	-8	-1	3	0	-1	-6	-8	-7	-8	-6	-1	1	2
29	3	0	-1	0	-2	-4	-6	-8	-9	-15	-15	-10	-7	-4	-4	-4	0	2	2	1	1	1	2	5
30	6	4	4	9	10	10	9	7	5	5	5	5	8	10	7	5	6	6	5	2	3	4	5	5
31	0	0	3	5	-3	-3	-3	-2	-1	1	3	5	8	6	3	1	0	0	5	7	3	9	5	-3



Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for January 2002.

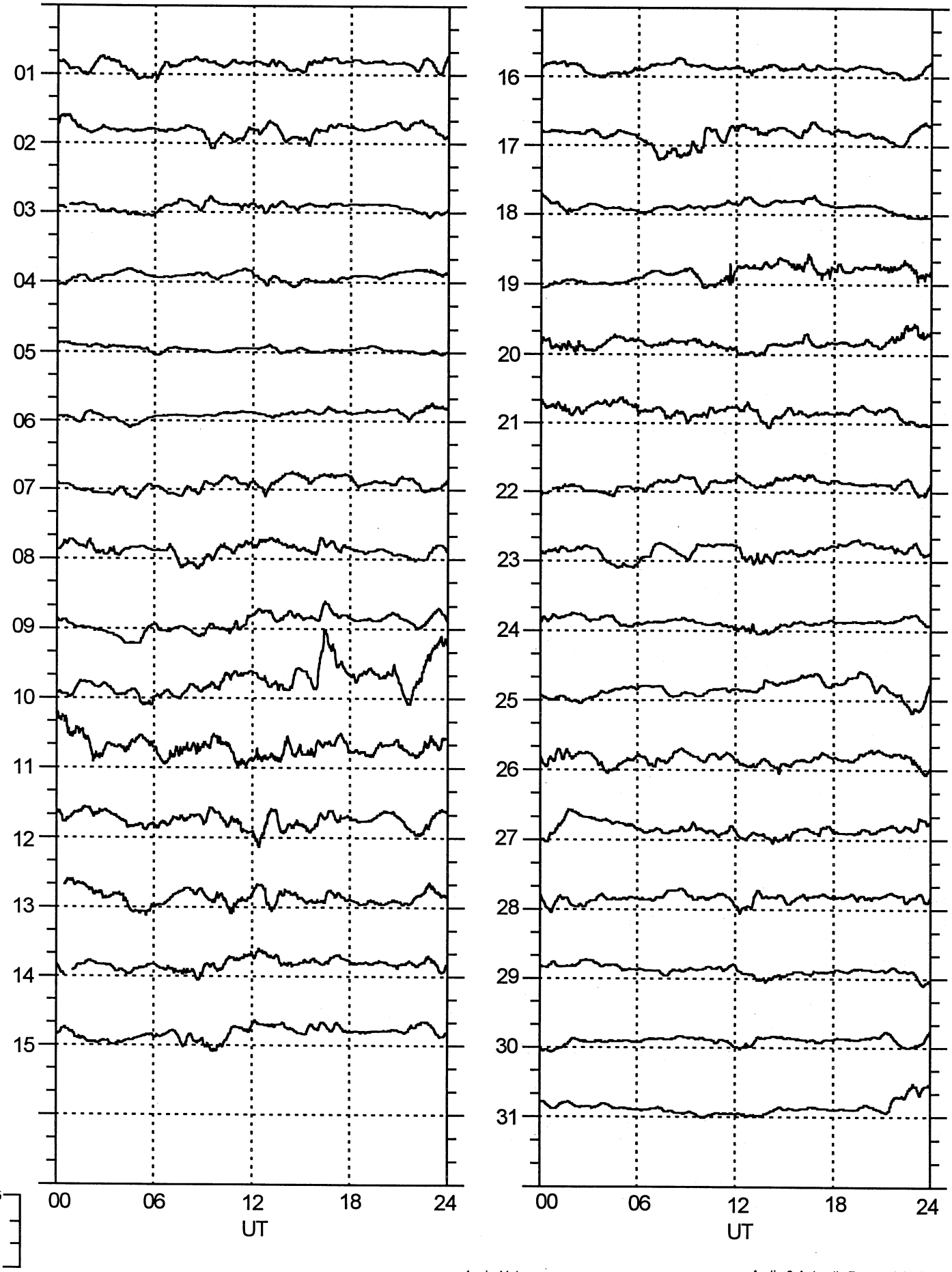

WDC C1 for Geomagnetism, Copenhagen
Polar Cap index
Qaanaaq (Thule), THL
2002-01-01
15
10
5
0
-5
1-01
1-06
1-11
1-16
1-21
1-26
1-31
Date, mm-dd
Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

146
Jan 02

PC-INDEX

Vostok

January, 2002



1-min. Values

Arctic & Antarctic Research Institute

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

JANUARY 2002

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
HYB	07.6N	06	1100	..	..	..	..	07(6)	5	4	94	34	08	21
ETT	00.7S	06	1300	..	..	..	..		-	3	202	59	08	21
KRC	16.4N	10	0304	..	..	..	..	10(6,8)	5	7	141	42	11	07
UJJ	13.6N	10	0700	..	..	..	..		-	5	123	20	11	18
NGP	11.3N	10	0700	..	..	..	..		-	6	155	25	11	18
ABG	09.4N	10	0700	..	..	..	..	07(6) 10(4,6,8) 11(6)	5	5	156	38	11	18
HYB	07.6N	10	0000	..	..	..	..	10(6)	5	5	142	32	12	23
HYB	07.6N	10	1620	SC	- 0.4	28	- 2		-	--	--	--	--	--
PND	02.0N	10	0700	..	..	..	..		-	6	145	64	11	18
TIR	00.6S	10	0700	..	..	..	..		-	5	169	83	11	18
ETT	00.7S	10	0000	..	..	..	..		-	6	163	73	12	22
ETT	00.7S	13	0100	..	..	..	..		-	3	143	39	15	22
KRC	16.4N	19	0435	..	..	..	..	19(5)	6	7	152	45	20	09
UJJ	13.6N	19	0500	..	..	..	..		-	4	149	23	20	04
NGP	11.3N	19	0500	..	..	..	..		-	3	183	17	20	04
ABG	09.4N	19	0500	..	..	..	..	19(4)	6	4	166	27	20	04
HYB	07.6N	19	0500	..	..	..	..	19(5,6)	6	4	170	19	21	23
PND	02.0N	19	0500	..	..	..	..		-	3	172	53	20	04
TIR	00.6S	19	0500	..	..	..	..		-	4	192	75	20	04
ETT	00.7S	19	0400	..	..	..	..		-	3	188	68	21	23
HYB	07.6N	25	0200	..	..	..	..	25(6)	5	4	125	41	26	22
ETT	00.7S	25	0100	..	..	..	..		-	3	170	45	26	21
UJJ	13.6N	31	2100	..	..	..	..		-	4	106	38	02	21
NGP	11.3N	31	2100	..	..	..	..		-	4	137	48	02	21
ABG	09.4N	31	2100	..	..	..	..	01(1,5) 02(2,4)	4	5	133	58	02	21
HYB	07.6N	31	2127	SC	- 0.2	14	- 1	01(5)	5	4	141	37	03	18
PND	02.0N	31	2100	..	..	..	..		-	3	155	62	02	21
TIR	00.6S	31	2100	..	..	..	..		-	5	226	88	02	21
ETT	00.7S	31	2126	SC	- 0.3	14	13		-	-	--	--	--	--
HER	33.6S	31	2126	SC	1	18	15	31(3)	3	28	86	83	01	15

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)

January 2002

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
31	2127	B: CLF EBR SPT HYB	12	1425-1457	NAG
		C: NGK BDV HRB GCK HTY	31	1443-1503	GUI

REPORTING OBSERVATORIES (up to the 1st of March 2002):
SOD NUR NGK VAL BDV CLF HRB NAG GCK MMB EBR SPT KAK HTY KNY GUI HYB GNA HER CNB

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