JULY 2002 NUMBER 695 - Part I

Solar-Geophysical Data prompt reports

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

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JULY 2002 NUMBER 695 - Part I

Solar-Geophysical Data prompt reports

Data for May and June 2002

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SOLAR-GEOPHYSICAL DATA

Number 695

(Issued in Two Parts)

Editor: Helen E. Coffey

Chief: Herbert W. Kroehl
Solar-Terrestrial Physics Division

Staff: Edward H. Erwin

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-- MONTHLY PLOTS

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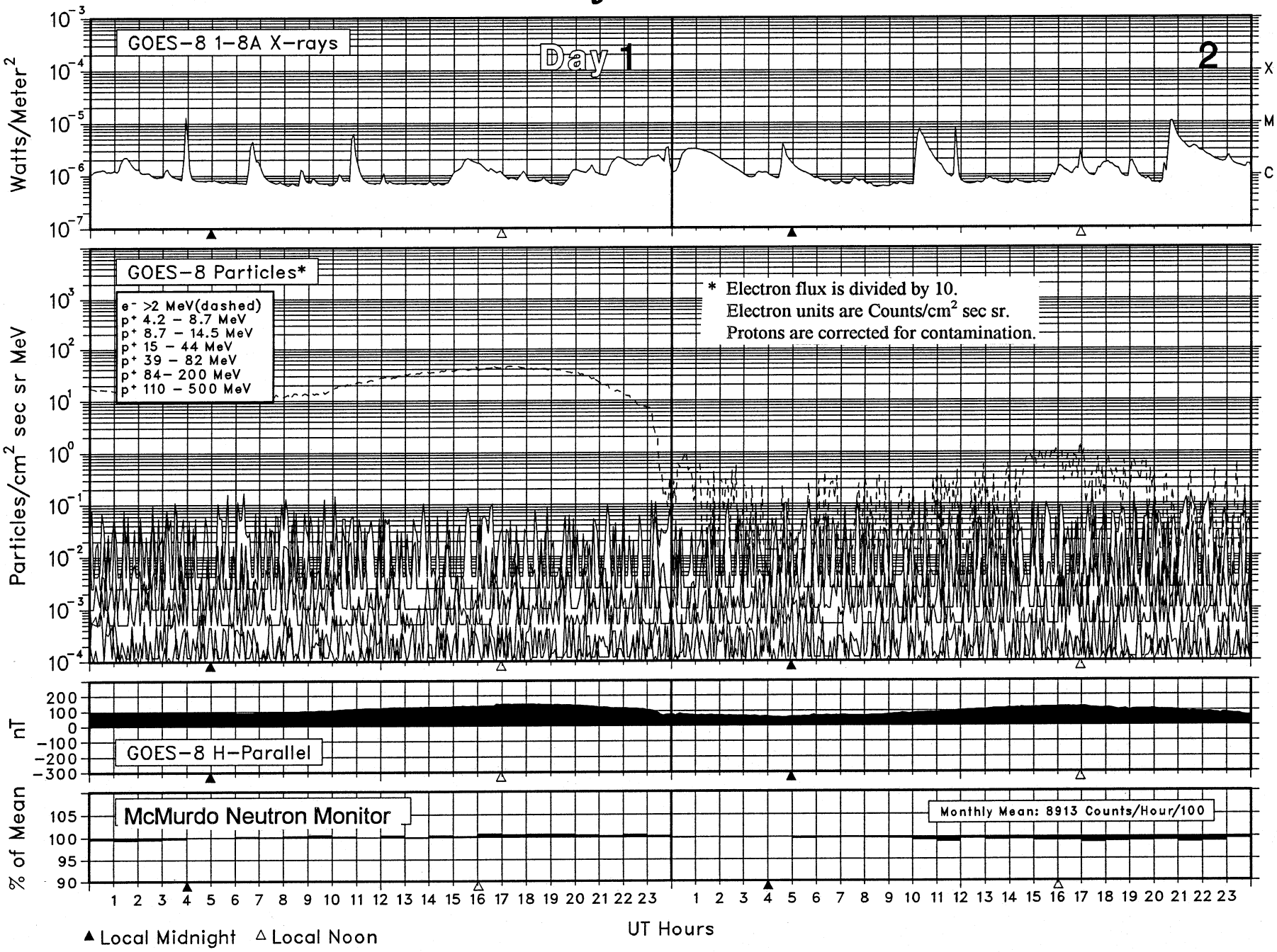

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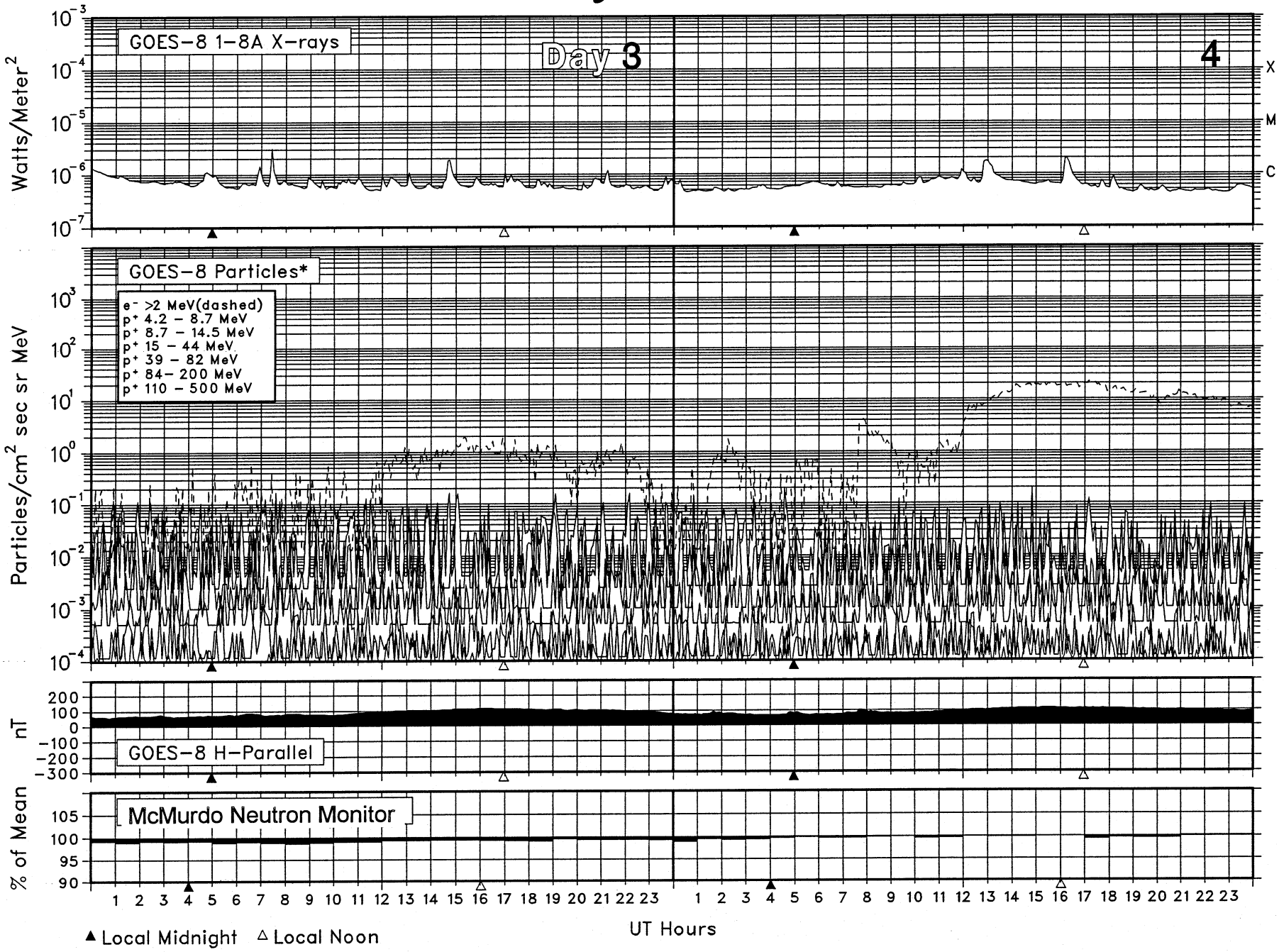

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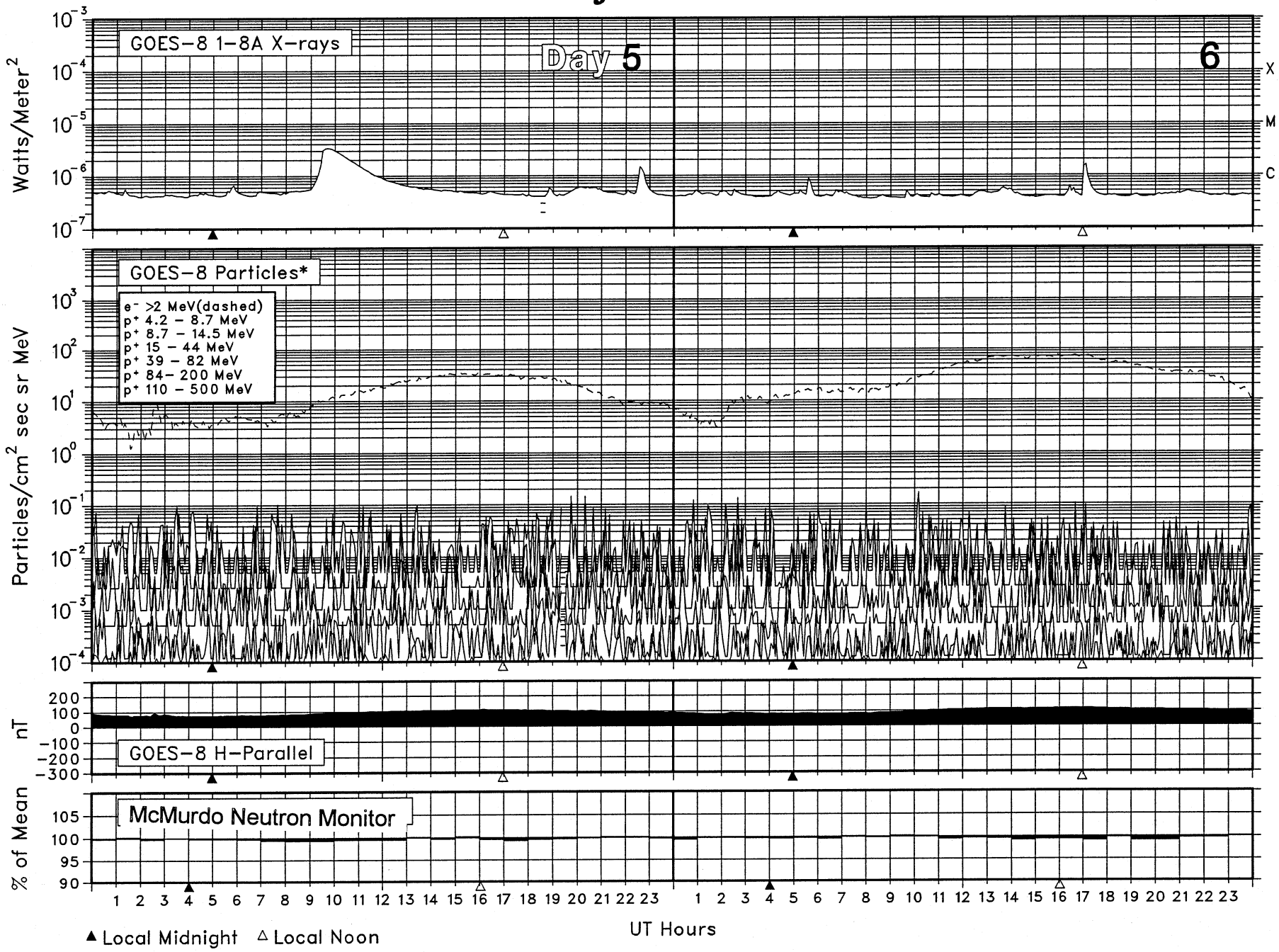

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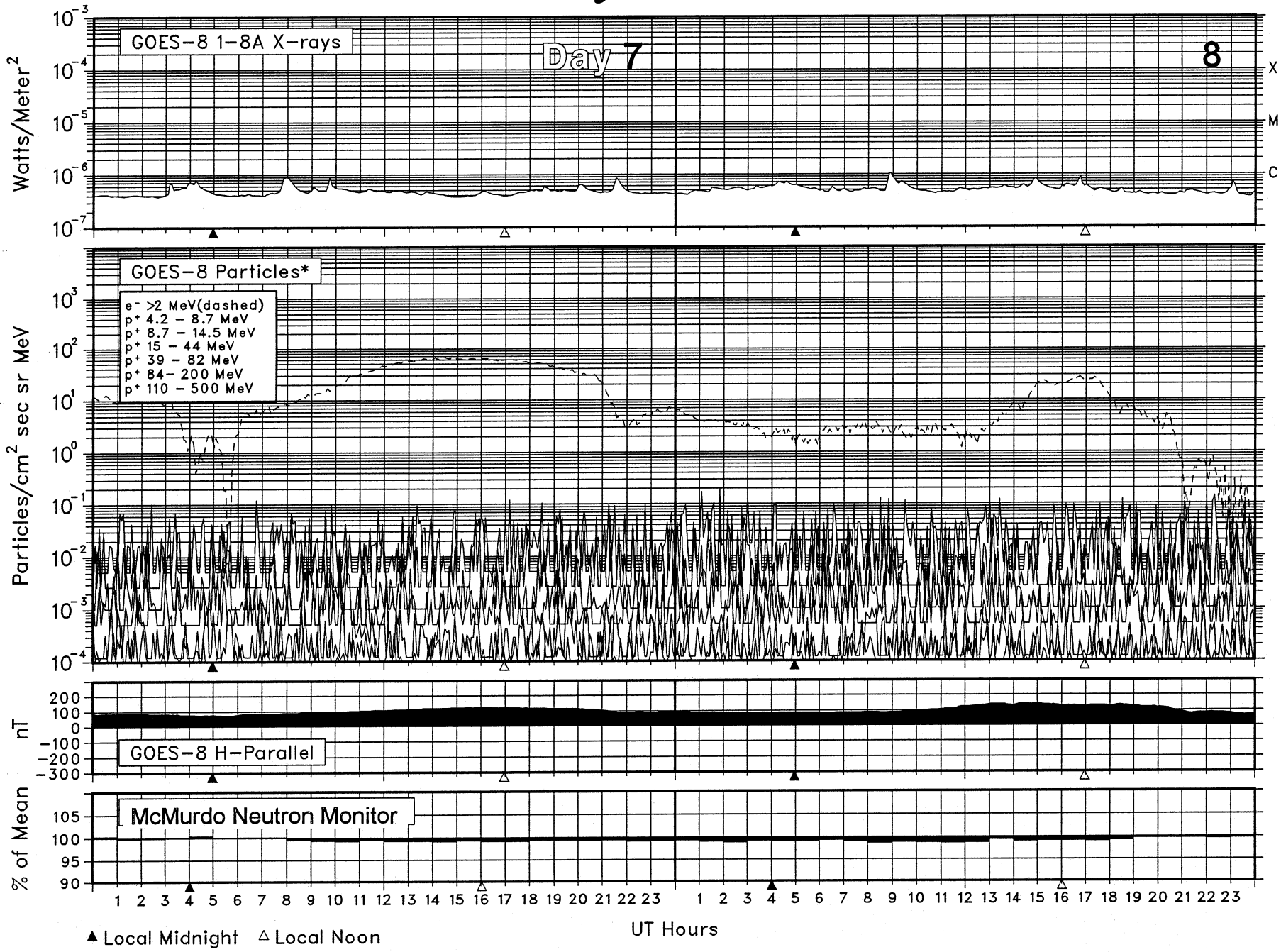

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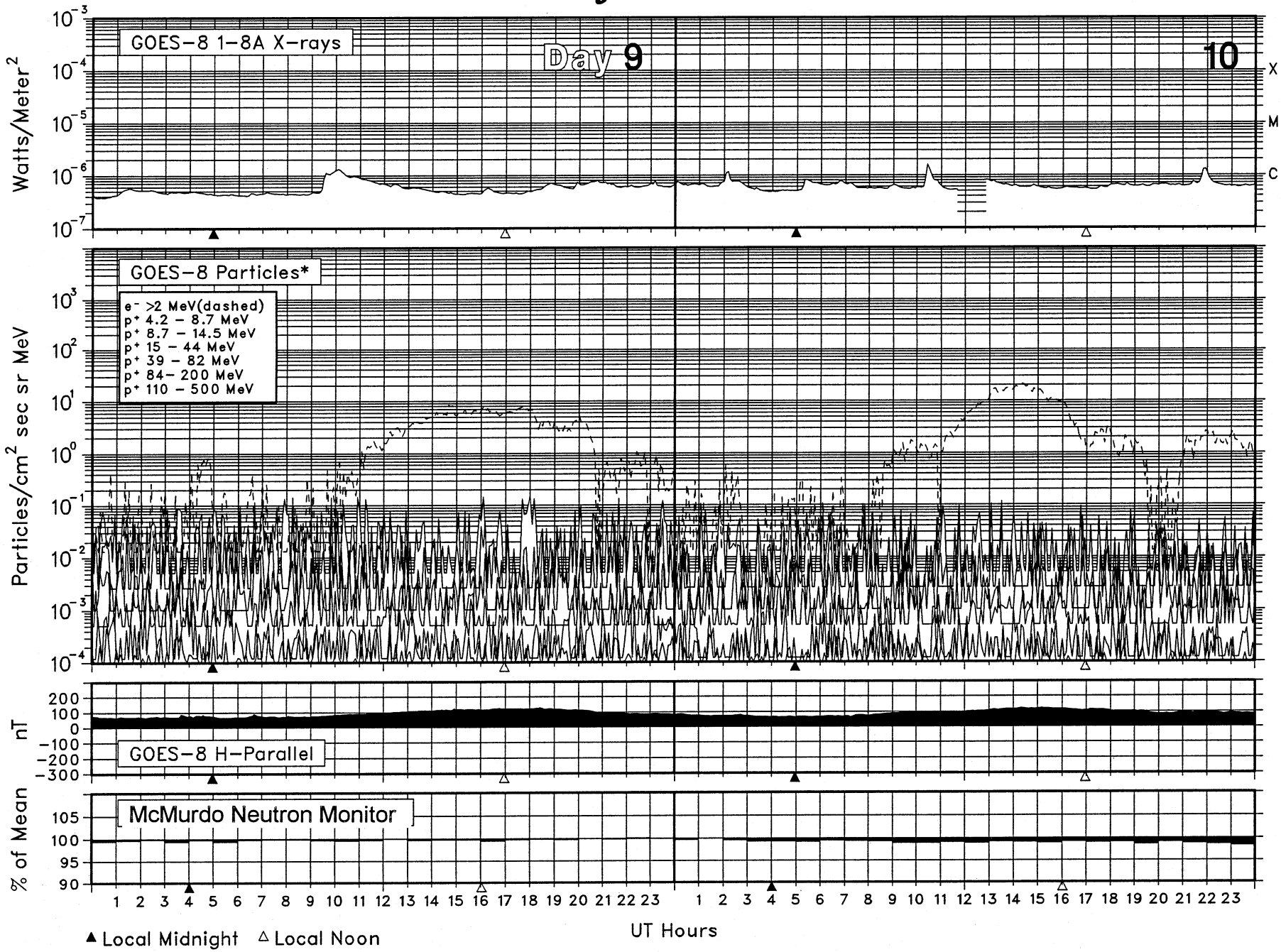

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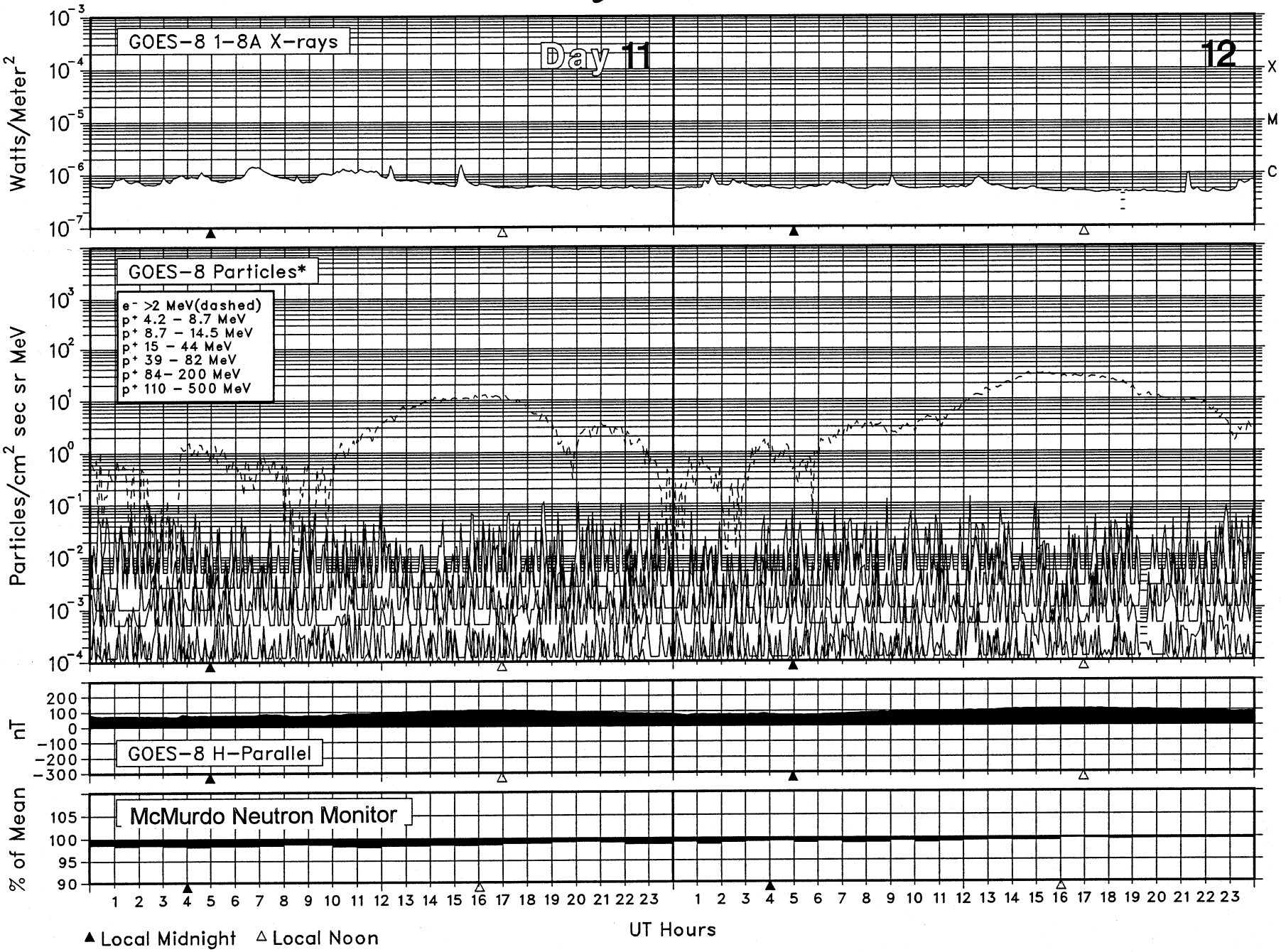

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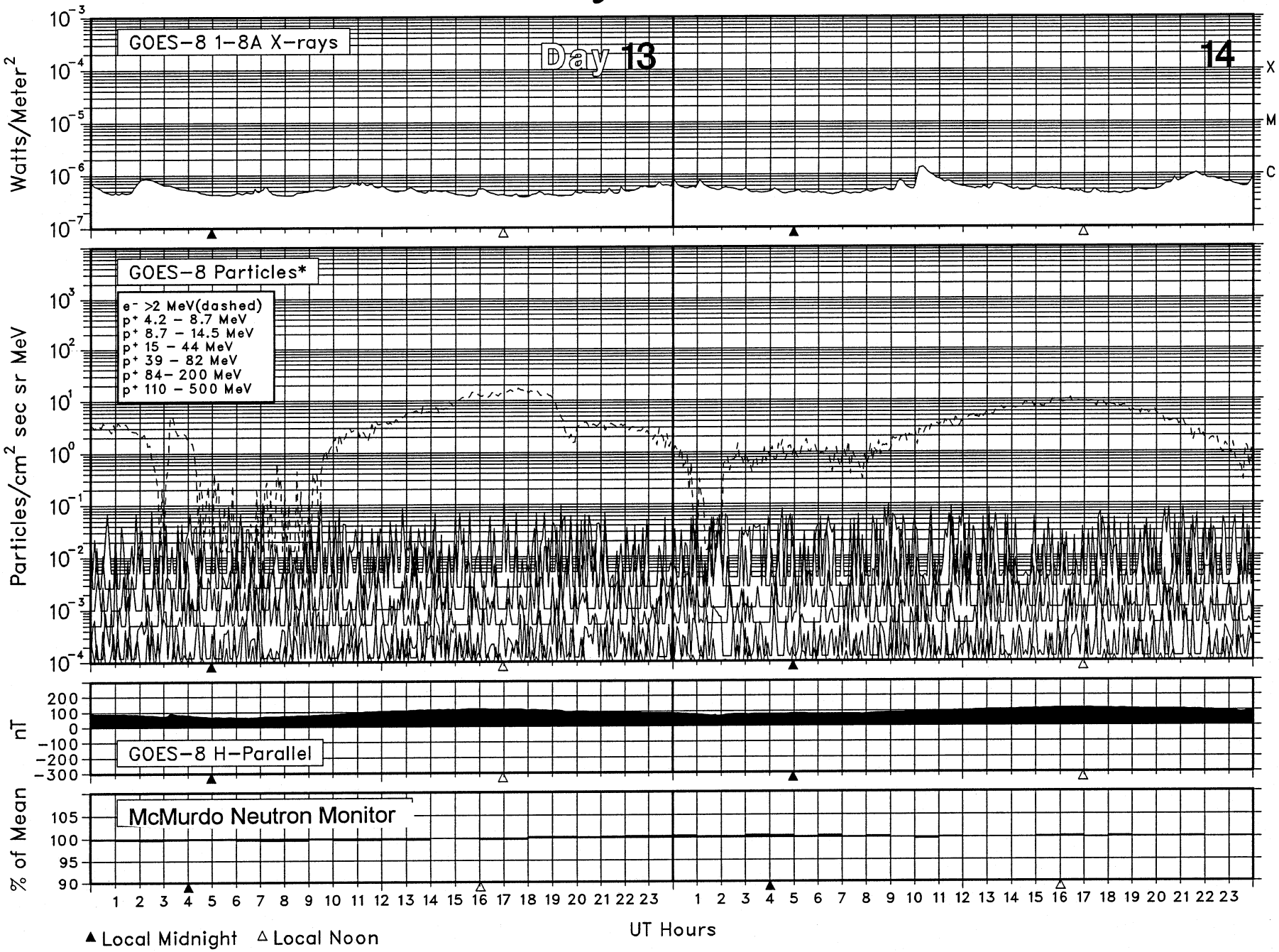

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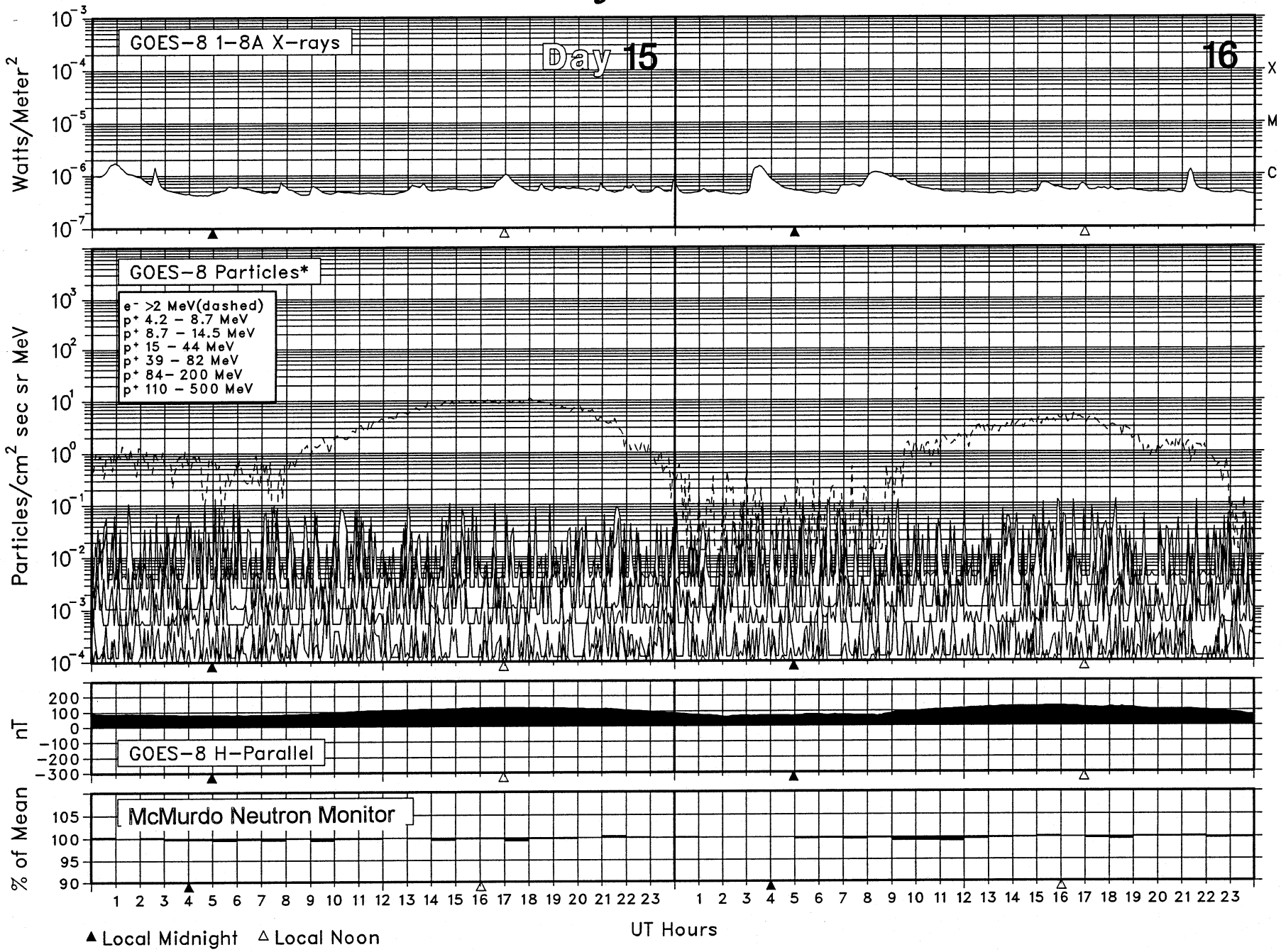

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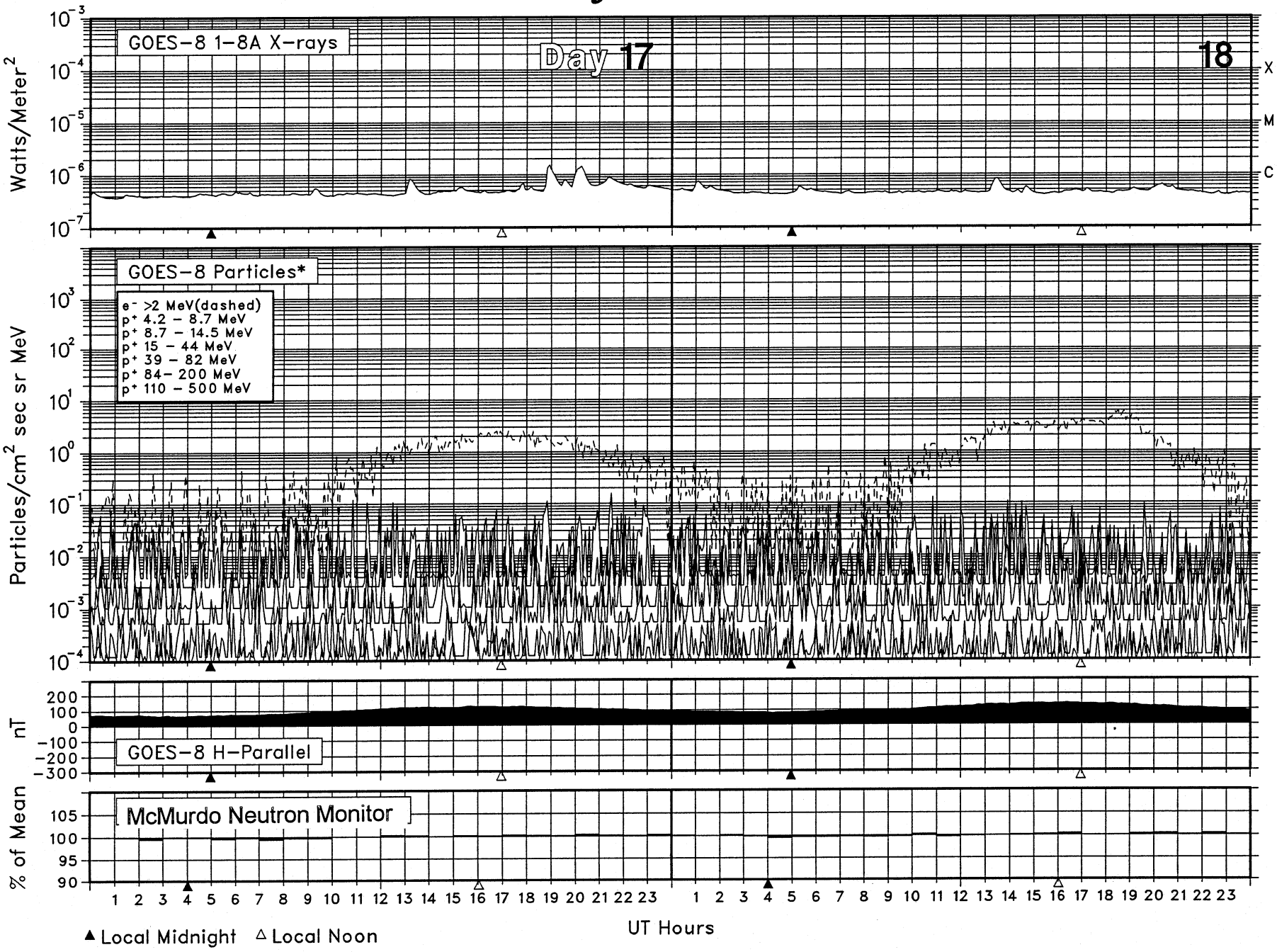

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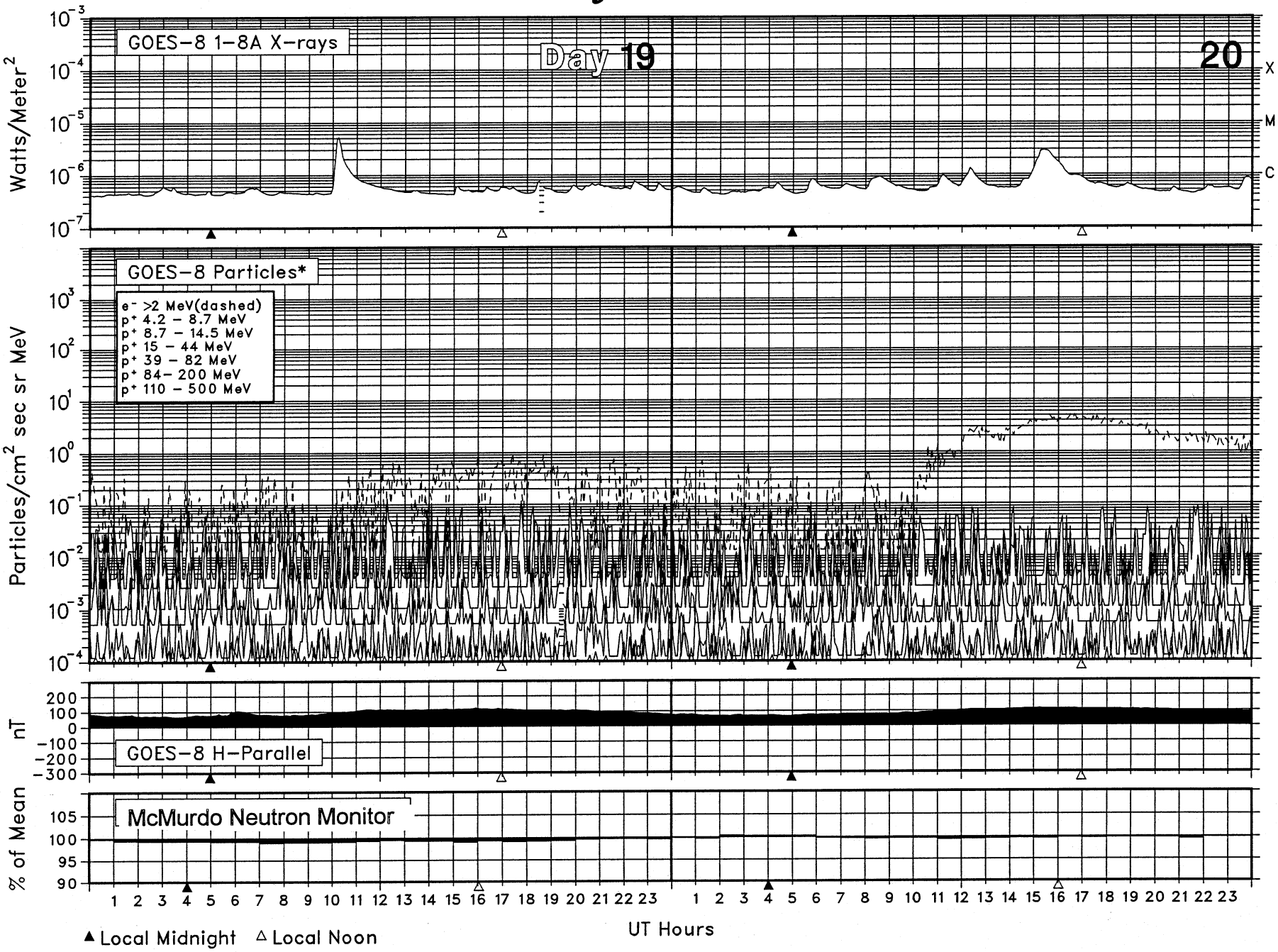

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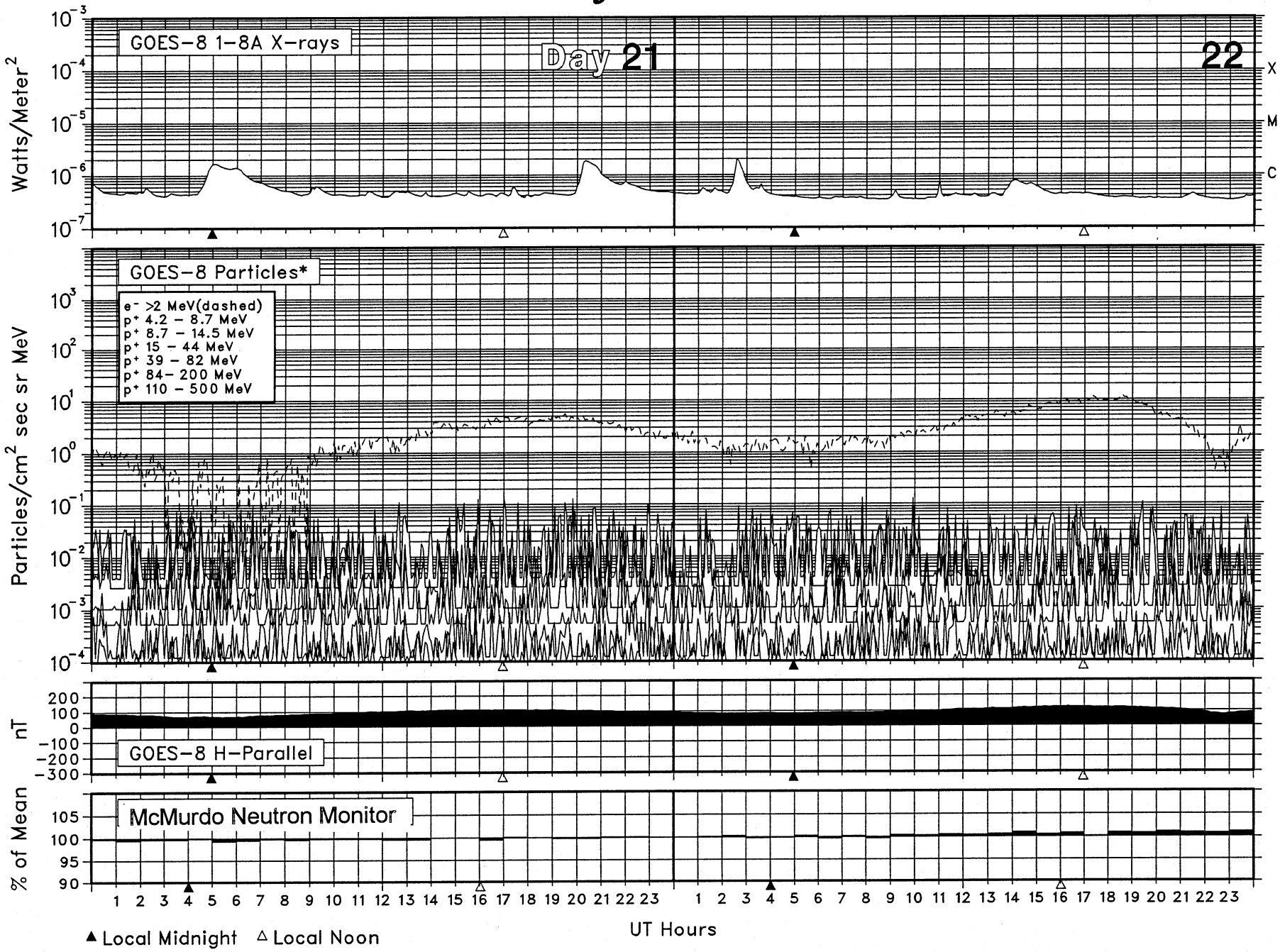

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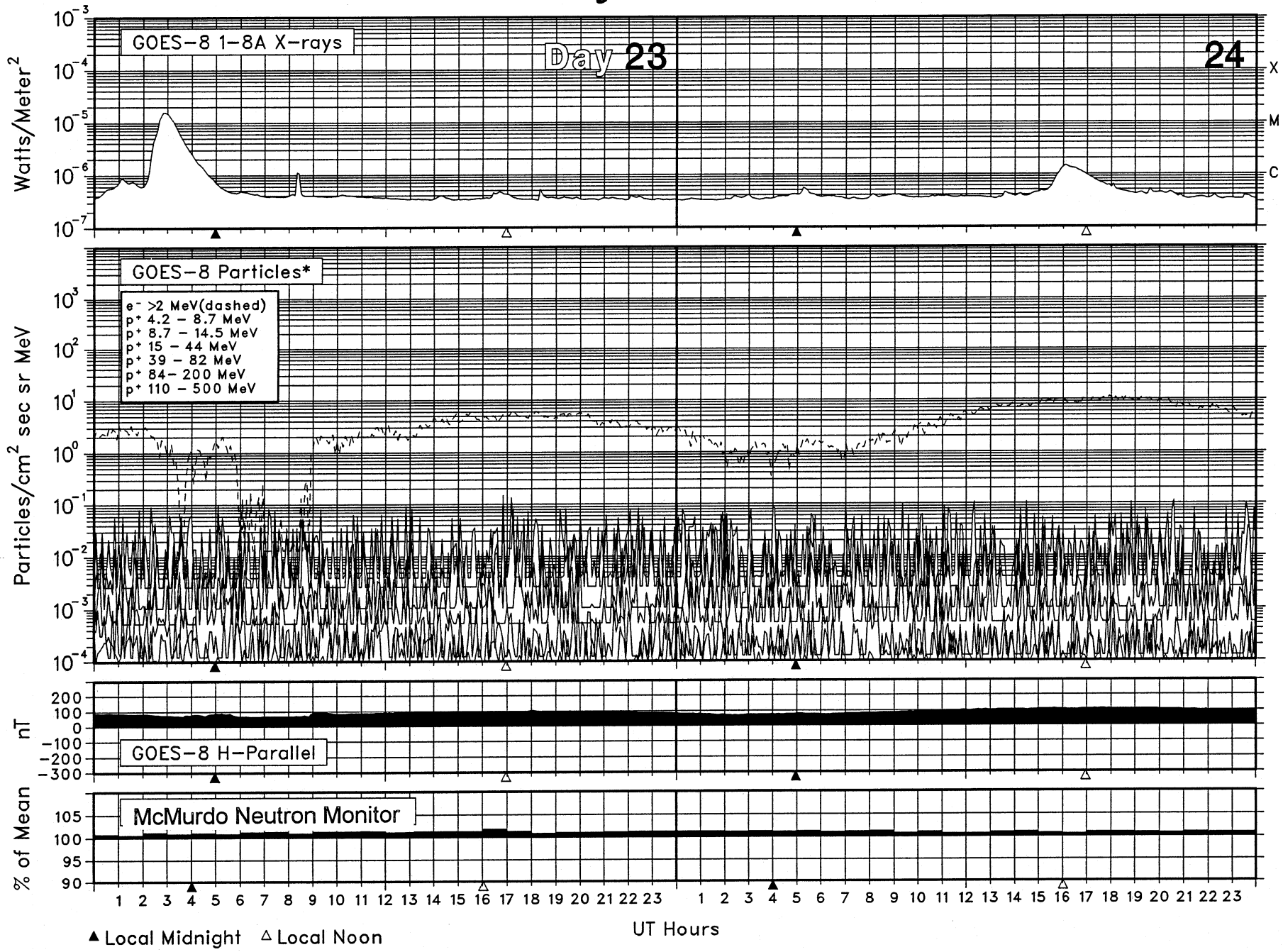

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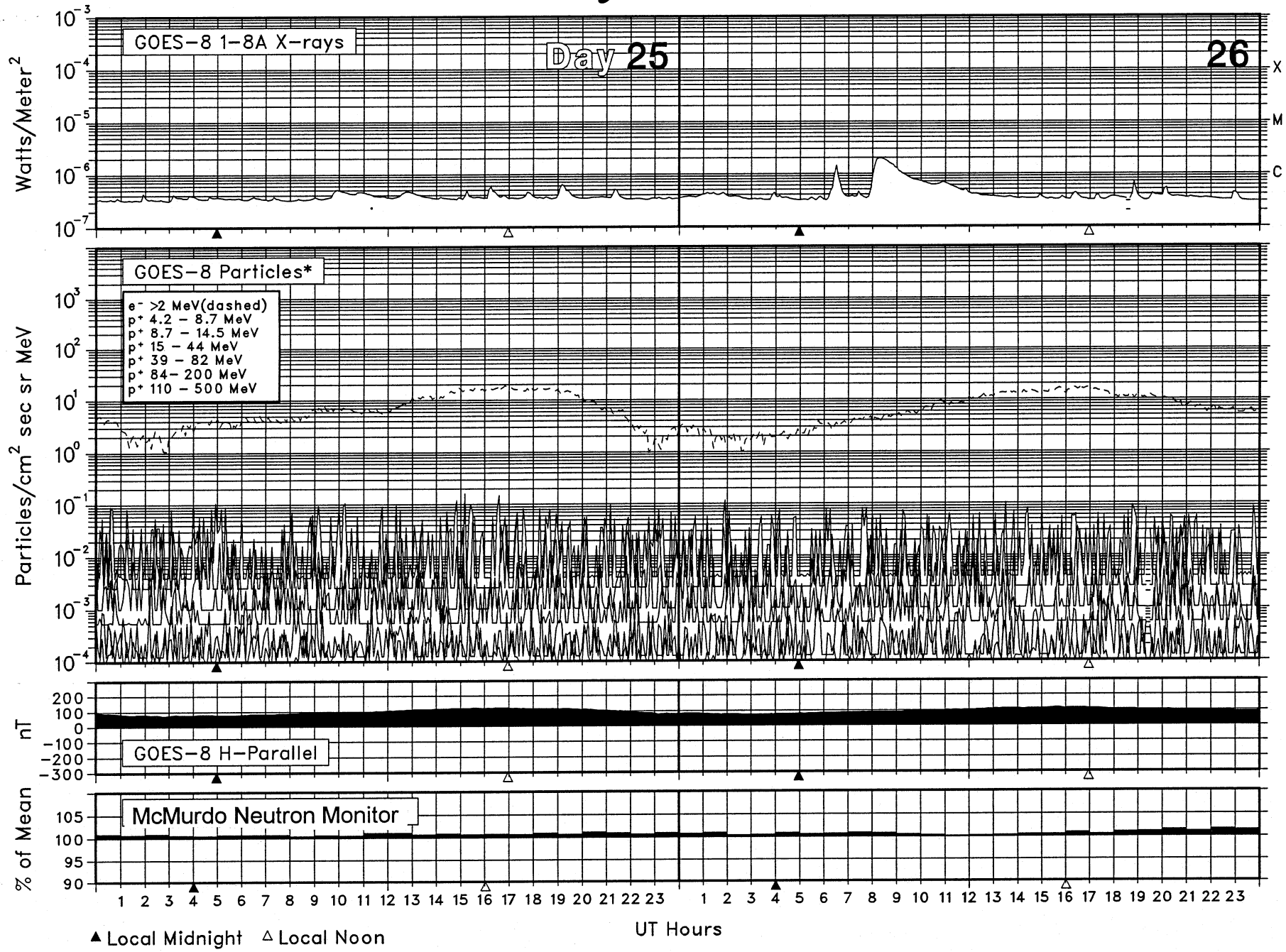

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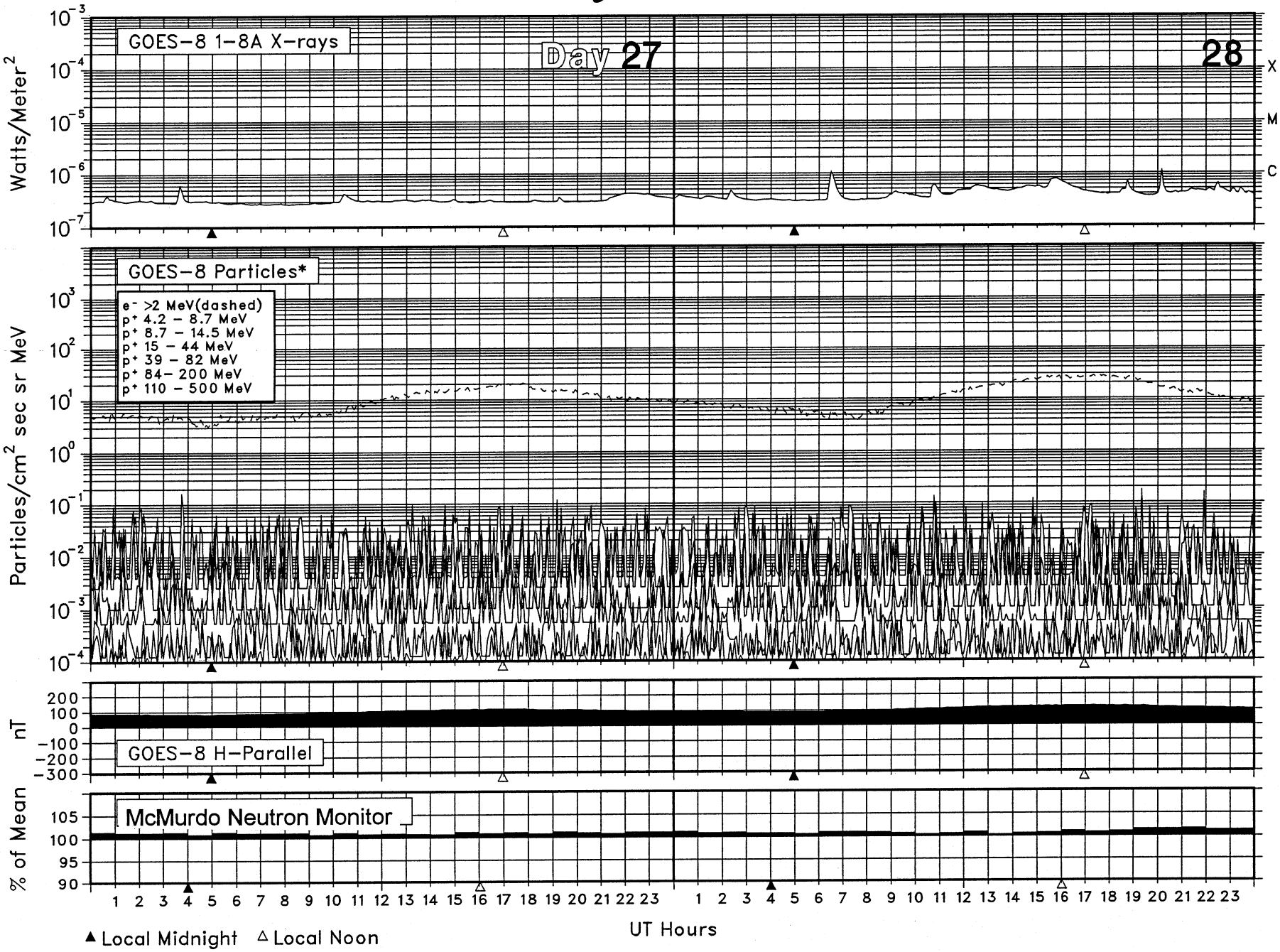

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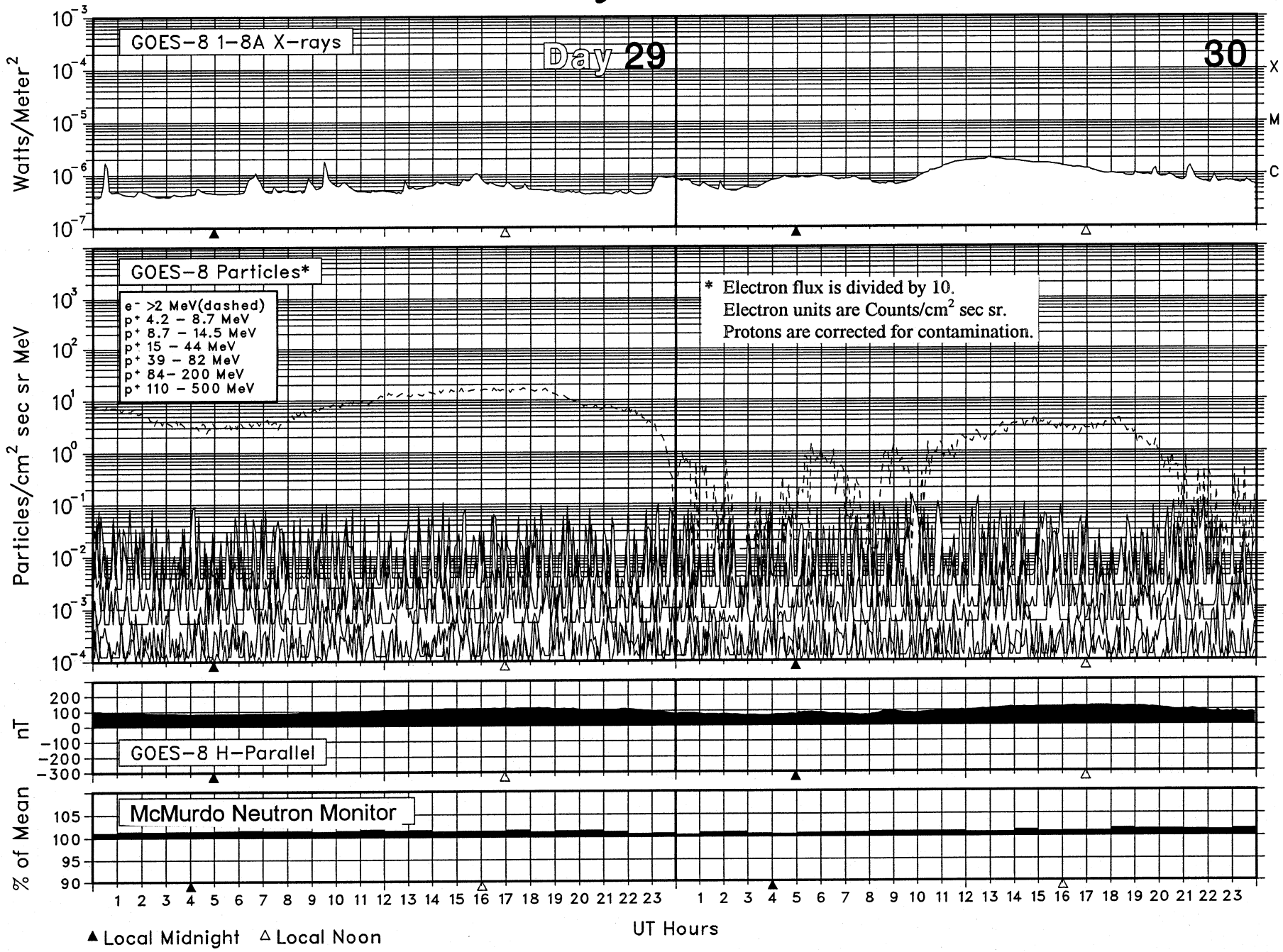
June 2002



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

JUNE 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)
152	01	31	202	182	3	9961	S21	W85	0	0	0	01	Q	SOL: Active
						9963	N16	W70	0	0	0	01	E	MAG: Quiet
						9965	S08	W61	0	0	0	01	Q	PRO: Quiet
						9967	N12	W65	0	0	0	01	Q	
						9970	N06	W13	0	0	0	01	Q	
						9972	S21	E17	0	0	0	01	Q	
						9973	S16	E34	2	0	0	01	E	
						9974	N18	E31	0	0	0	01	Q	
						9975	N23	E36	0	0	0	01	Q	
						9976	S10	W13	0	0	0	01	Q	
						9977	S20	W41	0	0	0	01	Q	
						9978	S20	E62	0	0	0	01	Q	
						9979	S31	E77	0	0	0	01	Q	
153	02	01	192	179	5	9963	N17	W84	0	0	0	02	Q	SOL: Active
						9965	S07	W75	0	0	0	02	Q	MAG: Quiet
						9970	N05	W26	1	0	0	02	Q	PRO: Quiet
						9972	S21	E04	0	0	0	02	Q	
						9973	S17	E23	2	1	0	02	E	
						9974	N19	E19	0	0	0	02	Q	
						9975	N22	E19	0	0	0	02	Q	
						9976	S10	W27	0	0	0	02	Q	
						9977	S20	W54	2	0	0	02	Q	
						9978	S20	E47	2	0	0	02	Q	
						9979	S30	E63	3	1	0	02	E	
						9980	S29	E08	0	0	0	02	Q	
154	03	02	189	175	17	9970	N06	W40	0	0	0	03	Q	SOL: Active
						9972	S20	W11	0	0	0	03	Q	MAG: Active
						9973	S17	E10	2	0	0	03	E	PRO: Quiet
						9974	N18	E06	0	0	0	03	Q	
						9975	N22	E06	1	0	0	03	Q	
						9977	S21	W67	3	0	0	03	E	
						9978	S19	E34	0	0	0	03	Q	
						9979	S30	E50	1	1	0	03	E	
						9980	S29	W05	0	0	0	03	Q	
						9981	S22	E70	0	0	0	03	Q	
						9982	S03	E74	0	0	0	03	Q	
						9983	N24	E72	1	0	0	03	Q	
155	04	03	208	170	11	9970	N06	W53	0	0	0	04	Q	SOL: Active
						9972	S21	W23	0	0	0	04	Q	MAG: Active
						9973	S16	W03	1	0	0	04	E	PRO: Quiet
						9974	N15	W09	1	0	0	04	Q	
						9975	N21	W07	0	0	0	04	Q	
						9977	S20	W79	2	0	0	04	E	
						9978	S20	E21	2	0	0	04	E	
						9979	S28	E36	0	0	0	04	E	
						9980	S20	W21	0	0	0	04	Q	
						9981	S22	E56	0	0	0	04	Q	
						9982	S02	E62	0	0	0	04	Q	
						9983	N24	E57	0	0	0	04	Q	
						9984	N19	E13	0	0	0	04	Q	
156	05	04	217	170	16	9970	N06	W67	0	0	0	05	Q	SOL: Eruptive
						9972	S21	W36	0	0	0	05	Q	MAG: Active
						9973	S16	W16	1	0	0	05	E	PRO: Quiet
						9974	N14	W23	0	0	0	05	Q	
						9975	N21	W20	2	0	0	05	Q	
						9978	S20	E07	1	0	0	05	E	
						9979	S29	E24	0	0	0	05	Q	
						9980	S26	W33	0	0	0	05	Q	
						9981	S22	E43	0	0	0	05	Q	
						9982	S04	E49	0	0	0	05	Q	
						9983	N23	E43	0	0	0	05	Q	
						9985	N17	E29	0	0	0	05	Q	
						9986	N03	E72	0	0	0	05	Q	

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

JUNE 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)
157	06	05	218	159	8	9970	N06	W80	0	0	0	06	Q	SOL: Eruptive
						9973	S16	W29	0	0	0	06	E	MAG: Quiet
						9974	N14	W35	0	0	0	06	Q	PRO: Quiet
						9975	N22	W32	0	0	0	06	Q	
						9978	S20	W06	1	0	0	06	E	
						9979	S30	E11	0	0	0	06	Q	
						9980	S26	W44	0	0	0	06	Q	
						9981	S22	E30	0	0	0	06	Q	
						9982	S04	E37	0	0	0	06	Q	
						9983	N24	E30	0	0	0	06	Q	
						9984	N20	W11	0	0	0	06	Q	
						9985	N18	E17	0	0	0	06	Q	
						9986	N04	E58	0	0	0	06	Q	
158	07	06	190	155	6	9973	S15	W43	0	0	0	07	E	SOL: Eruptive
						9975	N22	W45	1	0	0	07	Q	MAG: Quiet
						9978	S21	W20	0	0	0	07	Q	PRO: Quiet
						9979	S29	W02	0	0	0	07	Q	
						9981	S22	E17	0	0	0	07	Q	
						9982	S04	E21	0	0	0	07	Q	
						9983	N24	E17	0	0	0	07	Q	
						9985	N17	E02	0	0	0	07	Q	
						9986	N03	E44	0	0	0	07	Q	
						9987	S16	E24	1	0	0	07	Q	
						9988	S14	E04	0	0	0	07	Q	
159	08	07	190	158	6	9973	S15	W56	0	0	0	08	E	SOL: Eruptive
						9975	N23	W58	0	0	0	08	Q	MAG: Quiet
						9978	S21	W33	0	0	0	08	Q	PRO: Quiet
						9981	S22	E03	0	0	0	08	Q	
						9983	N24	E03	0	0	0	08	Q	
						9985	N18	W11	0	0	0	08	Q	
						9986	N03	E31	0	0	0	08	Q	
						9987	S16	E11	0	0	0	08	Q	
						9989	S33	W31	0	0	0	08	Q	
						9990	S23	E19	0	0	0	08	Q	
						9991	S22	E69	0	0	0	08	Q	
160	09	08	181	155	13	9973	S15	W69	0	0	0	09	Q	SOL: Eruptive
						9975	N22	W71	2	0	0	09	Q	MAG: Quiet
						9978	S21	W47	0	0	0	09	Q	PRO: Quiet
						9981	S21	W11	0	0	0	09	Q	
						9983	N25	W10	0	0	0	09	Q	
						9985	N18	W24	0	0	0	09	Q	
						9986	N03	E18	0	0	0	09	Q	
						9987	S15	W02	0	0	0	09	E	
						9989	S35	W44	0	0	0	09	Q	
						9990	S23	E06	0	0	0	09	Q	
						9991	S21	E57	1	0	0	09	Q	
						9992	S20	E74	0	0	0	09	Q	
161	10	09	180	157	16	9973	S15	W83	0	0	0	10	Q	SOL: Eruptive
						9975	N22	W85	0	0	0	10	Q	MAG: Quiet
						9978	S21	W61	0	0	0	10	Q	PRO: Quiet
						9981	S20	W25	0	0	0	10	Q	
						9985	N18	W38	0	0	0	10	Q	
						9986	N03	E07	0	0	0	10	Q	
						9987	S15	W16	0	0	0	10	E	
						9990	S23	W08	0	0	0	10	Q	
						9991	S22	E43	0	0	0	10	Q	
						9992	S20	E60	0	0	0	10	Q	
						9993	N06	W20	0	0	0	10	Q	
						9994	N10	E59	0	0	0	10	Q	
162	11	10	177	152	16	9973	S15	W90	0	0	0	11	Q	SOL: Eruptive
						9978	S21	W74	0	0	0	11	Q	MAG: Quiet

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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)
						9981	S20	W38	0	0	0	11	Q	PRO: Quiet
						9982	S04	W32	0	0	0	11	Q	
						9985	N18	W51	0	0	0	11	Q	
						9987	S15	W29	0	0	0	11	E	
						9990	S23	W21	0	0	0	11	Q	
						9991	S22	E30	0	0	0	11	Q	
						9992	S20	E47	0	0	0	11	Q	
						9993	N06	W33	0	0	0	11	Q	
						9994	N10	E46	0	0	0	11	Q	
						9995	N10	W01	0	0	0	11	Q	
163	12	11	131	148	11	9978	S21	W87	0	0	0	12	Q	SOL: Eruptive
						9981	S20	W52	0	0	0	12	Q	MAG: Quiet
						9985	N18	W65	0	0	0	12	Q	PRO: Quiet
						9987	S15	W43	6	0	0	12	E	
						9991	S22	E17	0	0	0	12	Q	
						9992	S20	E34	0	0	0	12	Q	
						9993	N06	W46	0	0	0	12	Q	
						9994	N10	E33	0	0	0	12	Q	
						9995	N10	W14	0	0	0	12	Q	
164	13	12	134	142	8	9985	N18	W78	1	0	0	13	Q	SOL: Eruptive
						9987	S15	W56	0	0	0	13	E	MAG: Quiet
						9991	S22	E04	1	0	0	13	Q	PRO: Quiet
						9992	S20	E21	0	0	0	13	Q	
						9993	N06	W59	0	0	0	13	Q	
						9995	N10	W27	0	0	0	13	Q	
						9996	S27	E46	0	0	0	13	Q	
						9997	N08	E73	0	0	0	13	Q	
						9998	N15	E74	0	0	0	13	Q	
165	14	13	126	133	8	9985	N18	W95	0	0	0	14	Q	SOL: Eruptive
						9987	S15	W71	1	0	0	14	E	MAG: Quiet
						9991	S20	W09	1	0	0	14	Q	PRO: Quiet
						9992	S18	E08	0	0	0	14	Q	
						9993	N06	W74	0	0	0	14	Q	
						9995	N12	W41	0	0	0	14	Q	
						9996	S28	E35	0	0	0	14	Q	
						9997	N09	E59	0	0	0	14	Q	
						9998	N14	E59	0	0	0	14	Q	
166	15	14	102	131	5	9987	S16	W86	0	0	0	15	E	SOL: Eruptive
						9991	S21	W21	0	0	0	15	Q	MAG: Quiet
						9992	S18	W03	0	0	0	15	Q	PRO: Quiet
						9997	N09	E46	0	0	0	15	Q	
						9998	N14	E47	0	0	0	15	Q	
						9999	S05	W61	0	0	0	15	Q	
						0	N18	E50	0	0	0	15	Q	
						1	N20	E70	3	0	0	15	Q	
167	16	15	137	135	5	9991	S21	W34	0	0	0	16	Q	SOL: Eruptive
						9992	S17	W18	0	0	0	16	Q	MAG: Quiet
						9997	N12	E31	0	0	0	16	Q	PRO: Quiet
						9999	S05	W75	0	0	0	16	Q	
						0	N18	E36	1	0	0	16	Q	
						1	N20	E58	0	0	0	16	E	
						2	S24	W08	0	0	0	16	Q	
						3	N00	E63	2	0	0	16	Q	
						4	S16	E10	0	0	0	16	Q	
168	17	16	132	137	9	9991	S21	W47	2	0	0	17	Q	SOL: Eruptive
						9992	S18	W32	0	0	0	17	Q	MAG: Quiet
						9997	N13	E16	0	0	0	17	Q	PRO: Quiet
						9999	S05	W87	0	0	0	17	Q	
						0	N18	E24	0	0	0	17	E	
						1	N20	E46	0	0	0	17	E	
						3	N00	E49	0	0	0	17	Q	

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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)
						4	S15	W04	0	0	0	17	Q	
						5	N13	E74	0	0	0	17	Q	
169	18	17	116	143	5	9991	S22	W61	2	0	0	18	Q	SOL: Eruptive
						9992	S18	W45	0	0	0	18	Q	MAG: Quiet
						9997	N10	E05	0	0	0	18	Q	PRO: Quiet
						0	N18	E12	0	0	0	18	Q	
						1	N20	E33	0	0	0	18	Q	
						3	S02	E35	0	0	0	18	Q	
						4	S15	W20	0	0	0	18	Q	
						5	N13	E62	0	0	0	18	Q	
170	19	18	174	143	8	9991	S21	W72	0	0	0	19	Q	SOL: Eruptive
						9992	S17	W64	0	0	0	19	Q	MAG: Quiet
						9997	N10	W06	0	0	0	19	Q	PRO: Quiet
						0	N16	W01	1	0	0	19	Q	
						1	N20	E20	0	0	0	19	Q	
						3	S01	E20	0	0	0	19	Q	
						4	S15	W31	0	0	0	19	Q	
						5	N12	E53	0	0	0	19	Q	
						6	S08	W23	0	0	0	19	Q	
						7	N12	E17	0	0	0	19	Q	
						8	S11	E75	0	0	0	19	Q	
171	20	19	127	146	13	9991	S22	W85	0	0	0	20	Q	SOL: Eruptive
						9992	S18	W80	0	0	0	20	Q	MAG: Quiet
						0	N18	W15	0	0	0	20	Q	PRO: Quiet
						1	N20	E06	0	0	0	20	Q	
						4	S16	W44	0	0	0	20	Q	
						5	N12	E37	0	0	0	20	Q	
						6	S07	W38	0	0	0	20	Q	
						7	N13	E04	0	0	0	20	Q	
						8	S10	E65	0	0	0	20	E	
172	21	20	122	145	7	9992	S17	W92	0	0	0	21	Q	SOL: Eruptive
						0	N18	W30	0	0	0	21	Q	MAG: Quiet
						1	N21	W11	0	0	0	21	Q	PRO: Quiet
						4	S15	W58	0	0	0	21	Q	
						5	N13	E24	0	0	0	21	Q	
						6	S07	W48	0	0	0	21	Q	
						7	N14	W09	0	0	0	21	Q	
						8	S09	E52	0	0	0	21	Q	
						9	S19	W66	0	0	0	21	Q	
173	22	21	113	140	7	1	N21	W22	0	0	0	22	Q	SOL: Eruptive
						4	S16	W72	0	0	0	22	Q	MAG: Quiet
						5	N13	E11	0	0	0	22	Q	PRO: Quiet
						6	S07	W60	0	0	0	22	Q	
						7	N14	W24	0	0	0	22	Q	
						8	S08	E39	0	0	0	22	E	
						9	S18	W79	0	0	0	22	Q	
174	23	22	102	142	7	1	N21	W35	0	0	0	23	Q	SOL: Eruptive
						5	N13	E00	1	0	0	23	Q	MAG: Quiet
						8	S09	E26	0	0	0	23	E	PRO: Quiet
						10	S12	E00	0	0	0	23	Q	
						11	S12	E62	0	0	0	23	Q	
175	24	23	144	143	10	1	N21	W48	0	0	0	24	Q	SOL: Eruptive
						5	N13	W13	2	0	0	24	E	MAG: Quiet
						8	S09	E13	0	0	0	24	E	PRO: Quiet
						10	S12	W13	0	0	0	24	Q	
						11	S12	E49	0	0	0	24	Q	
						12	N19	E20	0	0	0	24	Q	
						13	N04	E07	0	0	0	24	Q	
						14	S18	E50	0	0	0	24	Q	

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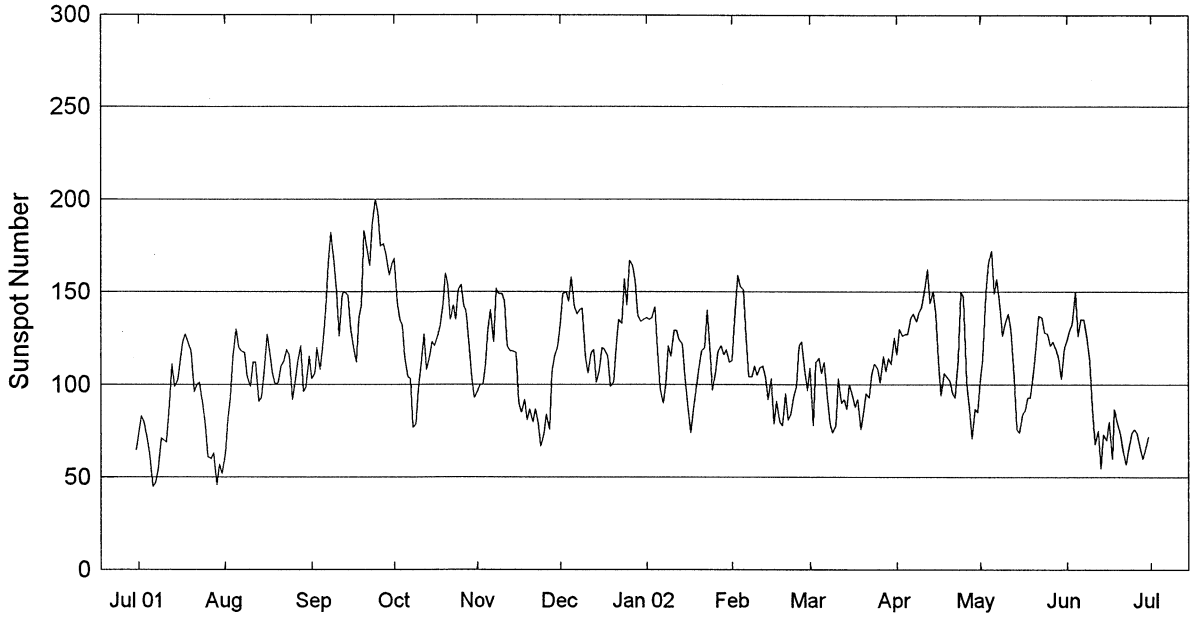
Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location Lat	Location Lon	Flares Opt	Flares M	Flares X	Date of Fcst	Region Fcst(1)	Geoadvice(1)
176	25	24	133	150	6	1	N20	W61	0	0	0	25	Q	SOL: Eruptive
						5	N14	W29	0	0	0	25	Q	MAG: Quiet
						8	S10	W01	1	0	0	25	E	PRO: Quiet
						10	S13	W27	0	0	0	25	Q	
						11	S12	E35	0	0	0	25	Q	
						12	N19	E08	0	0	0	25	Q	
						13	N04	W06	0	0	0	25	Q	
						14	S17	E37	0	0	0	25	Q	
						15	S27	E39	0	0	0	25	Q	
177	26	25	127	145	11	1	N20	W75	0	0	0	26	Q	SOL: Eruptive
						5	N11	W44	0	0	0	26	Q	MAG: Quiet
						8	S11	W15	1	0	0	26	E	PRO: Quiet
						11	S12	E23	0	0	0	26	Q	
						12	N21	W09	0	0	0	26	Q	
						13	N04	W20	0	0	0	26	Q	
						15	S27	E26	0	0	0	26	Q	
						16	S15	E71	0	0	0	26	Q	
178	27	26	102	144	7	1	N20	W92	1	0	0	27	Q	SOL: Eruptive
						5	N12	W59	0	0	0	27	Q	MAG: Quiet
						8	S12	W29	0	0	0	27	E	PRO: Quiet
						11	S11	E08	0	0	0	27	Q	
						15	S26	E12	0	0	0	27	Q	
						16	S15	E57	0	0	0	27	Q	
179	28	27	106	139	4	5	N12	W72	1	0	0	28	Q	SOL: Eruptive
						8	S12	W41	0	0	0	28	E	MAG: Quiet
						11	S11	W05	0	0	0	28	Q	PRO: Quiet
						15	S28	W01	0	0	0	28	Q	
						16	S15	E43	0	0	0	28	Q	
						17	S19	E14	0	0	0	28	Q	
180	29	28	94	137	6	5	N13	W84	0	0	0	29	Q	SOL: Eruptive
						8	S10	W56	1	0	0	29	E	MAG: Quiet
						11	S11	W19	0	0	0	29	Q	PRO: Quiet
						15	S26	W16	0	0	0	29	Q	
						16	S16	E31	0	0	0	29	Q	
						17	S19	E02	0	0	0	29	Q	
181	30	29	105	143	7	5	N13	W95	0	0	0	30	Q	SOL: Eruptive
						8	S10	W69	0	0	0	30	E	MAG: Quiet
						11	S11	W32	0	0	0	30	Q	PRO: Quiet
						16	S16	E18	0	0	0	30	Q	
						17	S19	W11	0	0	0	30	Q	
						18	N15	W73	1	0	0	30	Q	
						19	S17	E72	0	0	0	30	Q	

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers
Jul 2001 - Jun 2002

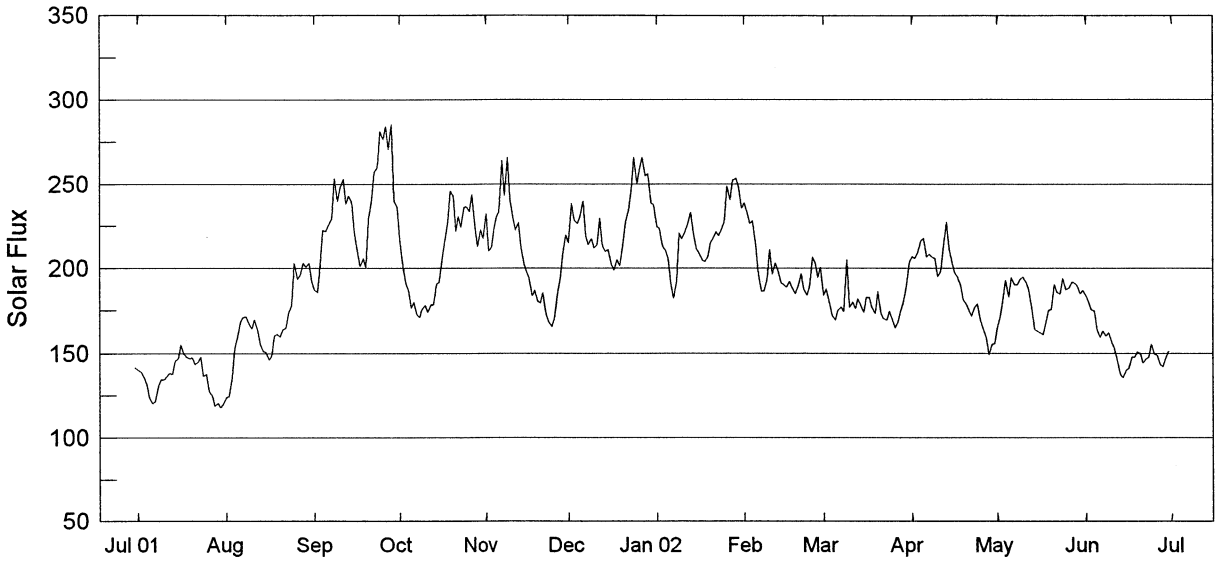


Day	Jul 01	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr*	May*	Jun*
1	74	62	103	168	96	133	136	113	109	116	102	124
2	83	81	106	144	100	149	135	135	78	130	114	129
3	80	93	120	135	100	150	136	159	112	126	149	133
4	71	115	108	132	111	145	142	153	114	127	166	150
5	62	130	120	114	130	158	118	151	106	127	172	126
6	45	120	141	104	140	142	98	125	112	136	149	135
7	47	118	166	103	123	138	90	104	93	138	157	135
8	54	117	182	77	152	140	100	104	79	134	142	127
9	71	104	166	79	149	141	121	110	74	139	126	113
10	70	99	150	98	149	115	115	105	78	142	133	88
11	69	112	126	113	145	106	129	109	103	152	138	68
12	90	112	149	127	121	117	129	110	90	162	130	75
13	111	91	150	108	118	119	124	104	92	144	104	55
14	99	93	148	115	118	101	122	92	87	150	76	73
15	102	106	130	123	117	108	104	103	100	138	74	70
16	113	127	121	121	90	120	87	79	94	113	84	80
17	123	117	112	126	85	119	74	91	88	94	86	60
18	127	106	136	131	92	115	86	80	92	106	93	87
19	122	100	143	143	81	99	99	78	76	104	93	79
20	118	101	183	160	87	101	109	95	85	102	107	74
21	96	110	173	154	80	120	118	81	95	95	121	63
22	100	112	164	135	87	135	120	84	93	93	137	57
23	101	119	186	143	80	133	140	94	106	114	136	65
24	90	116	200	135	67	157	115	99	111	150	128	74
25	79	92	193	151	73	143	97	121	109	147	127	76
26	61	101	175	154	84	167	106	123	101	101	121	74
27	60	112	176	143	76	164	118	107	115	88	123	66
28	63	121	170	139	107	156	121	97	107	71	119	60
29	46	96	159	120	115	137	116		114	87	114	66
30	57	99	165	103	121	134	119		111	85	103	72
31	52	115		93		135	112		125		120	
Mean	81.8	106.4	150.7	125.5	106.5	132.2	114.1	107.4	98.4	120.4	120.8	88.5

* = Provisional.

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

Adjusted to 1 AU



Day	Jul 01	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May	Jun
1	119.0	123.8	187.4	216.9	232.0	215.1	224.5	238.5	184.3	206.7	164.9	183.9
2	120.5	124.3	185.7	201.1	210.1	238.1	223.5	233.7	187.6	205.9	171.7	180.0
3	118.0	135.5	202.1	191.8	212.5	228.3	213.0	226.3	179.6	209.4	182.0	175.4
4	120.3	152.7	222.1	186.5	223.5	226.6	211.0	228.1	172.0	216.3	192.7	174.7
5	135.6	160.5	221.8	176.8	230.6	230.1	205.2	214.5	169.4	217.6	183.2	163.7
6	120.3	168.3	225.6	180.2	233.2	239.5	190.1	196.9	175.0	206.7	194.3	159.1
7	121.8	171.0	229.5	172.4	263.9	219.3	182.4	186.6	177.0	208.4	190.3	163.1
8	130.5	171.5	253.1	170.8	243.1	213.9	192.6	186.4	174.2	206.8	190.2	159.9
9	134.4	167.8	239.5	175.9	265.6	217.5	220.9	194.1	204.8x	205.8	193.7	161.9
10	134.3	164.7	247.8	178.1	241.0	212.3	217.3	210.9	176.9	195.1	194.8	156.2
11	136.3	169.5	252.9	174.1	229.3	213.9	221.4	196.6	180.0	198.3	191.8	152.4
12	138.3	164.0	238.1	178.5	222.6	229.4	225.7	203.1	176.2	213.0	187.1	146.2
13	137.7	155.5	242.6	178.6	226.8	213.4	232.9	198.5	182.1	227.3	175.6	137.6
14	145.4	151.1	239.3	190.8	212.6	209.9#	221.6	191.3	178.6	211.6	164.2	135.6
15	146.8	150.5	221.7	191.7	202.4	211.0	211.2	190.3	174.0	204.7	162.7	139.7
16	154.7	146.2	209.3	205.8	197.6	202.5	209.1	188.9	182.7	197.2	162.0	141.0
17	150.4	148.4	201.1	215.8	194.0	199.0	205.0	192.0	182.7	195.0	160.7	147.5
18	147.7	159.9	205.7	226.9	183.8	205.0	203.8	188.4	176.5	189.8	166.8	147.5
19	146.9	161.3	200.6	245.6	186.8	201.6	206.9	185.1	173.3	181.4	175.0	150.5
20	147.2	159.8	228.7	242.5	180.6	214.0	215.2	189.1	186.3	179.0	175.4	149.8
21	143.5	163.9	240.5	222.0	179.7	226.7	217.5	196.7	172.8	175.1	190.4	144.2
22	144.9	165.2	257.0	230.4	185.3#	234.9	221.5	187.9	170.4	171.7	185.6	146.6
23	147.8	173.4	260.2	224.1	172.9	246.3	219.4	184.2	169.4	177.2	184.8	147.5
24	136.7	178.7	281.0	236.0	168.6	265.5	223.6	188.9	174.3	178.9	193.9	155.3
25	137.5	203.2	276.6	236.1	165.6	250.3	227.6	206.4	169.1	169.3	187.4	149.5
26	127.2	193.8	284.0	233.6	170.3	259.0	248.7	203.5	164.9	164.7	188.0	148.6
27	125.1	195.9	270.6	243.4	185.3	265.6	240.5	194.9	168.4	159.0	191.6	143.2
28	119.0	203.1	285.5	224.2	193.1	254.6#	252.0	200.4	175.6	149.2	191.4	141.9
29	120.5	200.9	240.2	212.8	210.5	255.7	253.2		180.8	155.2	189.8	147.5
30	118.0	203.0	236.3	222.7	219.6	238.5	248.8		188.2	155.6	185.1	151.4
31	120.3	192.2		217.8		237.5	235.5		204.0		187.0	
Mean	135.6	167.1	236.2	206.6	208.1	228.2	220.1	200.1	178.4	191.1	182.4	153.4

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

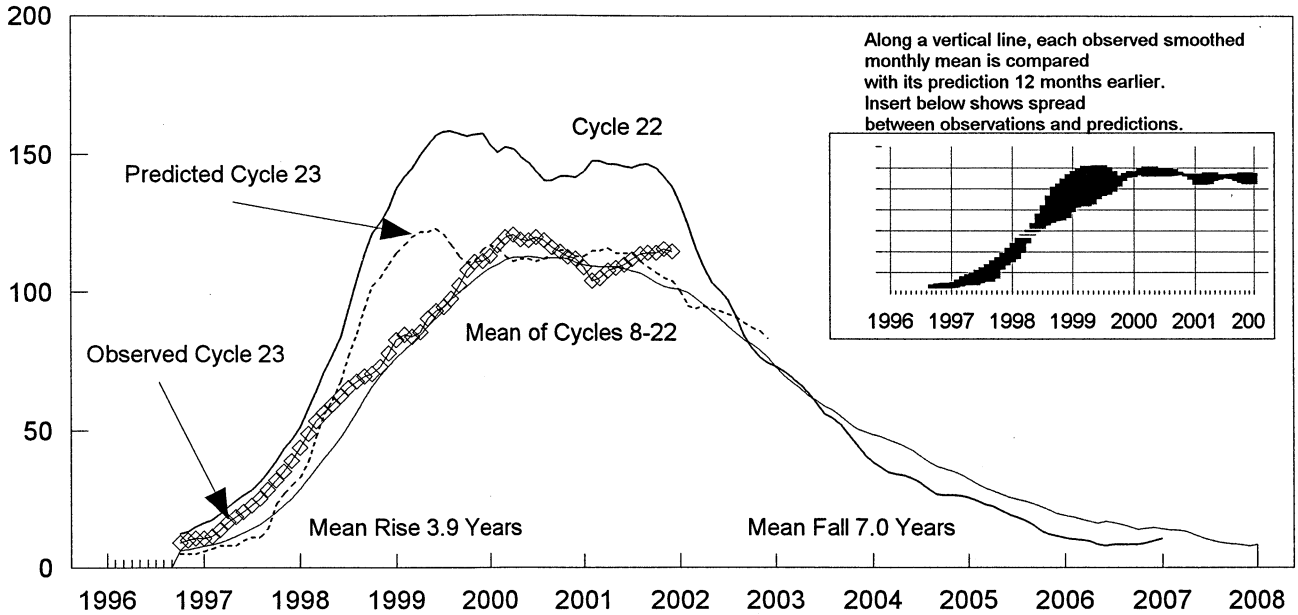
DAILY SOLAR INDICES

June 2002

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	152	25	124	118	178.8	603	349	299	183.9	178	131	60	43	26
2	153	26	129	125	174.9	487	333	264	180.0	176	131	60	42	25
3	154	27	133	132	170.4	566	339	249	175.4	169	129	61	44	30
4	155	1	150	145	169.8	565	339	248	174.7	169	134	61	43	34
5	156	2	126	126	159.0	543	314	224	163.7	159	125	58	42	24
6	157	3	135	131	154.5	451	323	225	159.1	157	123	53	40	21
7	158	4	135	137	158.3	501	325	223	163.1	158	122	57	41	22
8	159	5	127	119	155.2	559	329	229	159.9	157	118	56	42	103
9	160	6	113	112	157.1	572	330	230	161.9	153	115	57	47	21
10	161	7	88	90	151.6	594	320	223	156.2	150	111	52	47	26
11	162	8	68	71	147.8	584	317	210	152.4	146	108	53	48	49
12	163	9	75	70	141.7	509	301	219	146.2	142	101	48	62	57
13	164	10	55	54	133.4	545	312	222	137.6	130	99	50	43	51
14	165	11	73	62	131.4	--	--	--	135.6	--	--	--	--	--
15	166	12	70	67	135.3	429	234	159	139.7	115	93	46	37	21
16	167	13	80	72	136.7	543	300	225	141.0	133	106	50	37	22
17	168	14	60	63	142.9	568	310	207	147.5	136	106	51	37	20
18	169	15	87	88	142.9	580	306	225	147.5	148	110	50	38	22
19	170	16	79	82	145.8	577	322	246	150.5	146	114	54	34	17
20	171	17	74	67	145.1	585	331	248	149.8	145	118	52	36	18
21	172	18	63	48	139.6	582	322	234	144.2	138	109	52	38	20
22	173	19	57	60	142.0	567	316	237	146.6	142	109	55	35	20
23	174	20	65	63	142.8	570	315	240	147.5	144	106	55	41	22
24	175	21	74	74	150.3	591	327	241	155.3	151	115	60	40	22
25	176	22	76	79	144.7	584	311	201	149.5	148	108	57	40	25
26	177	23	74	79	143.8	541	319	203	148.6	142	108	58	45	76
27	178	24	66	67	138.6	543	309	--	143.2	137	107	59	43	25
28	179	25	60	63	137.3	547	311	168	141.9	136	107	51	35	19
29	180	26	66	70	142.7	604	318	180	147.5	146	111	51	36	21
30	181	27	72	66	146.5	567	325	191	151.4	144	112	59	39	20
MEAN			88.5	86.7	148.7	553	317	223	153.4	148	113	54	41	30

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

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	85	84	85	90	93	94	98	102	108	111	111	95
2000	113	117	120	121+	119	119	120	119	116	115	113	112	107
2001	109	104	105	108	109	110	112	114	114	114	115	115	111
2002	113	112	109	106	104	101	98	95	92	89	86	83	99
	(5)	(9)	(11)	(14)	(15)	(16)	(16)	(17)	(18)	(18)	(18)	(15)	(14)

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

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

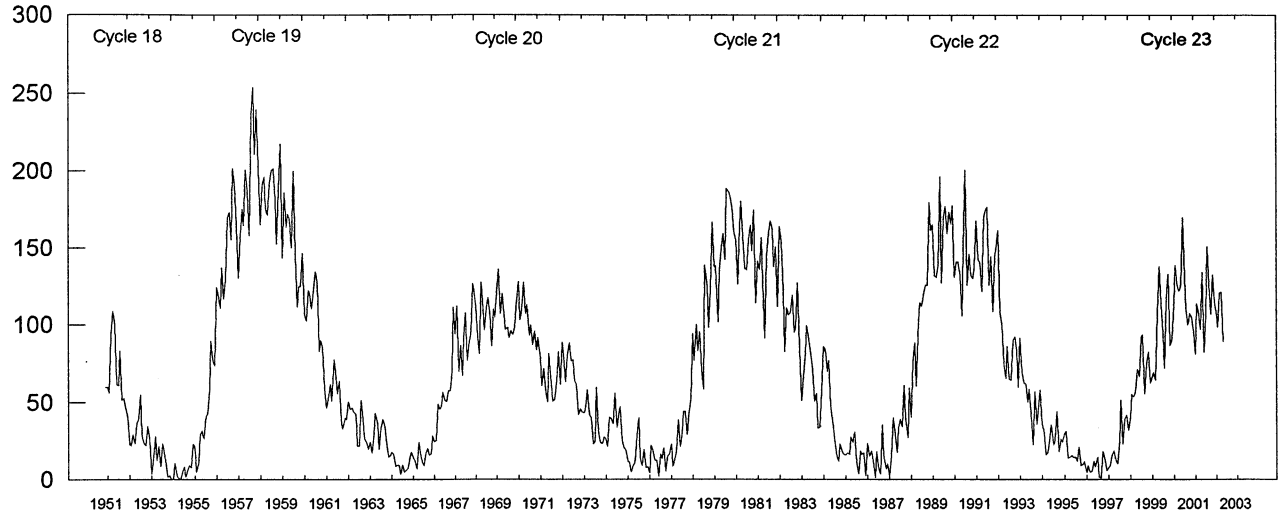
+ April 2000 marks Cycle 23 maximum.

Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Dec 2001 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data.*) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the December 2002 prediction. There exists a 90% chance that in December 2002, the actual smoothed number will fall somewhere between 68 and 98.

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 - Jun 2002



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4	
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5	
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9	
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4	m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0	
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7	
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2	M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8	
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0	
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	122.3	
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9	
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6	
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9	
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2	m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1	
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0	
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8	
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9	M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5	
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5	
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6	
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9	
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0	
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5	
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5	
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6	m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5	
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5	
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4	M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6	
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4	
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9	
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6	
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9	
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9	
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4	m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4	
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2	
1989	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6	M
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.5	131.4	129.7	142.6	
1991	136.9	167.5	141.9	140.0	121.3	169.7	173.7	176.3	125.3	144.1	108.2	144.4	145.7	
1992	150.0	161.1	106.7	99.8	73.8	65.2	85.7	64.5	63.9	88.7	91.8	82.6	94.3	
1993	59.3	91.0	69.8	62.2	61.3	49.8	57.9	42.2	22.4	56.4	35.6	48.9	54.6	
1994	57.8	35.5	31.7	16.1	17.8	28.0	35.1	22.5	25.7	44.0	18.0	26.2	29.9	
1995	24.2	29.9	31.1	14.0	14.5	15.6	14.5	14.3	11.8	21.1	9.0	10.0	17.5	
1996	11.5	4.4	9.2	4.8	5.5	11.8	8.2	14.4	1.6	0.9	17.9	13.3	8.6	m
1997	5.7	7.6	8.7	15.5	18.5	12.7	10.4	24.4	51.3	22.8	39.0	41.2	21.5	
1998	31.9	40.3	54.8	53.4	56.3	70.7	66.6	92.2	92.9	55.5	74.0	81.9	64.3	
1999	62.0	66.3	68.8	63.7	106.4	137.7	113.5	93.7	71.5	116.7	133.2	84.6	93.2	
2000	90.1	112.9	138.5	125.5	121.6	124.9	170.1	130.5	109.7	99.4	106.8	104.4	119.6	M
2001	95.6	80.6	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.5	106.5	132.2	111.0	
2002	114.1	107.4	98.4	120.4	120.8	88.5							108.3	

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

Hα SOLAR FLARES

JUNE 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	01	0308	0308	0316	S22	W44	9977	05	28.8	8	SF		3	E		10		FH
GOES		0350	0357	0401	S19	E29	9973			11	1N	M 1.5						5.3E-03
LEAR		0353	0356	0407	S19	E29	9973	06	3.4	14	1N		3	E		109		F
SVTO		0354E	0356U	0404D	S18	E27	9973	06	3.2	10D	SF		2	E		91		FH
GOES		0629	0641	0647	S32	E75	9979			18	SF	C 4.8						3.3E-03
LEAR		0633	0637	0652	S32	E75	9979	06	7.2	19	SF		3	E		19		F
SVTO		0633	0638	0645	S31	E73	9979	06	7.0	12	SF		3	E		25		FH
LEAR		0654	0655	0716	N05	W18	9970	05	31.0	22	SF		3	E		16		F
SVTO		0655	0657	0710	N06	W17	9970	05	31.0	15	SF		3	E		20		F
SVTO		0658	0658	0703	S29	E62	9979	06	6.1	5	SF		3	E		15		
LEAR		0658	0658	0706	S30	E70	9979	06	6.8	8	SF		3	E		20		
GOES		0838	0843	0848	S21	W47	9977			10	SF	C 1.5						7.3E-04
SVTO		0841	0844	0851	S21	W47	9977	05	28.8	10	SF		3	E		16		
GOES		1044	1049	1052	S32	E71	9979			8	SF	M 1.1						2.9E-03
SVTO		1048	1049	1059	S32	E71	9979	06	7.1	11	SF		3	E		57		H
GOES		1202	1205	1208			10000			6		C 1.2						4.0E-04
HOLL		1953	1957	2002	S19	E51	9978	06	5.7	9	SF		3	E		19		
RAMY		1954	1954	2001	S20	E51	9978	06	5.7	7	SF		3	E		20		
HOLL		2012	2012	2019	S19	E51	9978	06	5.7	7	SF		3	E		12		
GOES		2345	2349	2352	S20	E17	9973			7	SF	C 5.1						1.6E-03
HOLL		2348	2351	2359	S20	E17	9973	06	3.3	11	SF		3	E		67		F
GOES	02	0010	0050	0155			10000			105		C 3.5						1.7E-02
SVTO		0431E	0431U	0445	S20	W58	9977	05	28.8	14D	SF		2	E		13		
GOES		0431	0437	0445	S20	W58	9977			14	SF	C 4.1						2.5E-03
SVTO		0813	0816	0818	S21	W60	9977	05	28.8	5	SF		3	E		10		
GOES		1002	1015	1033	S20	W61	9977			31	SF	C 8.0						9.2E-03
SVTO		1007	1014	1029	S20	W61	9977	05	28.8	22	SF		3	E		48		
GOES		1141	1147	1150	S20	E09	9973			9	SF	C 9.4						2.8E-03
SVTO		1144	1145	1155	S20	E09	9973	06	3.2	11	SF		3	E		53		F
GOES		1554	1605	1621	N25	E16	9975			27	SF	C 1.4						2.1E-03
SVTO		1557	1601	1620	N25	E16	9975	06	3.9	23	SF		3	E		90		F
HOLL		1559	1606	1618	N25	E16	9975	06	3.9	19	SF		3	E		31		F
RAMY		1600	1604	1614	N25	E17	9974	06	4.0	14	SF		3	E		22		F
GOES		1654	1657	1701	S19	E06	9973			7	SN	C 3.3						1.1E-03
RAMY		1658	1659	1708	S19	E06	9973	06	3.2	10	SN		3	E		82		FH
SVTO		1658E	1700U	1708D	S20	E08	9973	06	3.3	10D	SF		2	E		33		F
GOES		1858	1904	1911			10000			13		C 2.3						1.3E-03
GOES		2021	2028	2031			10000			10		C 1.7						7.7E-04
GOES		2033	2044	2058	S30	E50	9979			25	1F	M 1.1						1.1E-02
HOLL		2036	2054	2155	S30	E50	9979	06	6.8	79	1F		3	E		194		F
HOLL		2200	2207	2209	N24	E68	9983	06	8.2	9	SF		3	E		15		
GOES		2301	2304	2309			10000			8		C 2.5						1.1E-03
GOES	03	0506	0509	0511			10000			5		C 1.2						3.1E-04
GOES		0649	0658	0702			10000			13		C 1.5						9.1E-04
GOES		0721	0726	0728	N20	E01	9974			7	1F	C 4.4						9.9E-04
SVTO		0725	0727	0735	N20	E01	9974	06	3.4	10	1F		3	E		105		
GOES		0853	0857	0902			10000			9		C 1.0						4.5E-04
SVTO		1036E	1036U	1048D	S34	W72	9977	05	28.8	12D	SF		2	E		26		
GOES		1157	1202	1205			10000			8		C 1.0						3.9E-04
GOES		1302	1305	1308			10000			6		C 1.4						3.5E-04
GOES		1430	1434	1438			10000			8		B 9.3						3.8E-04
GOES		1441	1444	1446	S19	W81	9977			5	SF	C 3.7						7.6E-04
SVTO		1443	1443	1505	S19	W81	9977	05	28.5	22	SF		3	E		27		
HOLL		1445E	1445U	1449	S20	W80	9977	05	28.6	4D	SF		3	E		29		
HOLL		1548	1548U	1615D	S13	E06	9973	06	4.1	27D	SF		3	E		18		
GOES		1657	1701	1703			10000			6		C 1.3						3.3E-04
GOES		1711	1714	1717	S21	E21	9978			6	SF	C 1.2						3.6E-04
HOLL		1713	1714	1721	S21	E21	9978	06	5.3	8	SF		3	E		46		
GOES		1818	1825	1829			10000			11		B 8.2						4.9E-04
GOES		2013	2016	2021			10000			8		B 7.1						3.0E-04
GOES		2110	2115	2120			10000			10		C 1.2						6.4E-04
GOES		2335	2339	2344			10000			9		B 9.9						4.3E-04
HOLL		2357	2359	2408	S19	E22	9978	06	5.7	11	SF		3	E		14		FH
GOES	04	0014	0017	0019			10000			5		B 8.4						2.3E-04
GOES		1006	1009	1011			10000			5		C 1.2						2.7E-04

Hα SOLAR FLARES

JUNE 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	04	1149	1158	1203			10000			14		C 1.2						8.6E-04
GOES		1246	1254	1313	N24	W09	9975			27	SF	C 1.9						2.5E-03
HOLL		1253	1253	1309	N24	W09	9975	06	3.8	16	SF		3	E		34		F
SVTO		1253E	1253U	1309D	N25	W09	9974	06	3.8	16D	SF		2	E		25		
HOLL		1302	1303	1310	S18	W09	9973	06	3.8	8	SF		3	E		25		F
GOES		1606	1614	1625	S21	E07	9978			19	SF	C 2.1						1.9E-03
HOLL		1613	1618	1628	S21	E07	9978	06	5.2	15	SF		3	E		25		F
GOES		1806	1810	1815	N22	W17	9975			9	SF	C 1.0						4.6E-04
HOLL		1808	1808	1814	N22	W17	9975	06	3.4	6	SF		3	E		21		
GOES	05	0120	0124	0126			10000			6		B 7.1						2.0E-04
GOES		0926	0945	1023			10000			57		C 3.4						1.0E-02
GOES		2230	2238	2248	S21	W06	9978			18	SF	C 1.4						1.3E-03
HOLL		2234	2235	2241	S21	W06	9978	06	5.5	7	SF		3	E		24		
GOES	06	0228	0232	0235			10000			7		B 5.8						2.1E-04
GOES		0533	0538	0543			10000			10		B 9.9						4.7E-04
GOES		0938	0942	0945			10000			7		B 5.5						2.0E-04
GOES		1623	1626	1629	S17	E29	9987			6	SF	B 6.4						2.2E-04
HOLL		1625	1626	1628	S17	E29	9987	06	8.9	3	SF		3	E		17		F
GOES		1635	1638	1640			10000			5		B 6.6						1.7E-04
GOES		1658	1703	1710	N22	W44	9975			12	1F	C 2.0						9.9E-04
HOLL		1701	1702	1721	N22	W44	9975	06	3.3	20	1F		3	E		107		FH
RAMY		1702E	1703U	1725	N21	W45	9975	06	3.2	23D	1N		3	E		177		FH
GOES	07	0308	0314	0319			10000			11		B 7.8						4.3E-04
GOES		0744	0756	0814			10000			30		B 9.1						1.4E-03
GOES		0941	0946	0949			10000			8		C 1.0						4.0E-04
GOES	08	0845	0855	0905	N25	W61	9975			20	SF	C 1.1						1.1E-03
SVTO		0848E	0848	0854	N25	W61	9975	06	3.6	6D	SF		3	E		22		
HOLL		1454	1457	1507	S18	E64	9991	06	13.5	13	SF		3	E		23		
SVTO		1456	1458	1503	S18	E64	9991	06	13.5	7	SF		3	E		16		
GOES		1642	1645	1647			10000			5		C 1.1						2.9E-04
HOLL		2307	2309	2317	N25	W71	9975	06	3.5	10	SF		3	E		34		F
GOES	09	0927	1009	1058			10000			91		C 1.3						5.8E-03
GOES	10	0205	0209	0213			10000			8		C 1.4						5.6E-04
GOES		1020	1027	1035			10000			15		C 1.6						1.1E-03
GOES		2144	2155	2206			10000			22		C 1.3						1.5E-03
GOES	11	0615	0643	0714			10000			59		C 1.4						4.4E-03
GOES		1004	1005	1007	S13	W38	9987			3	SF	C 1.1						2.0E-04
SVTO		1005	1007	1013	S13	W38	9987	06	8.5	8	SF		3	E		19		H
GOES		1101	1106	1111	S15	W38	9987			10	SF	C 1.2						7.4E-04
RAMY		1104	1106	1111	S15	W38	9987	06	8.6	7	SF		3	E		13		F
GOES		1145	1149	1151	S16	W38	9987			6	SF	C 1.2						4.2E-04
RAMY		1147	1149	1154	S16	W38	9987	06	8.6	7	SF		3	E		31		F
RAMY		1217	1218	1232	S15	W38	9987	06	8.6	15	SF		3	E		19		F
SVTO		1218	1219	1221	S14	W38	9987	06	8.6	3	SF		3	E		13		
GOES		1220	1223	1226	S15	W38	9987			6	SF	C 1.6						5.4E-04
SVTO		1222	1225	1230	S14	W38	9987	06	8.6	8	SF		3	E		22		
GOES		1400	1404	1407	S16	W40	9987			7	SF	B 7.6						3.1E-04
RAMY		1403	1405	1411	S16	W40	9987	06	8.5	8	SF		3	E		13		F
GOES		1508	1515	1521	S14	W38	9987			13	SF	C 1.5						1.0E-03
SVTO		1510	1512	1532	S12	W39	9987	06	8.7	22	SF		3	E		43		F
RAMY		1510	1514	1529	S14	W38	9987	06	8.8	19	SF		3	E		41		F
GOES		1910	1912	1913	N19	W64	9984			3	SF	B 5.8						1.0E-04
RAMY		1911	1911	1915	N19	W64	9984	06	6.9	4	SF		3	E		38		
GOES	12	0115	0119	0122						7		B 8.6						3.2E-04
GOES		0854	0903	0914						20		C 1.0						9.2E-04
GOES		1219	1237	1251						32		B 4.2						1.5E-03
RAMY		1439	1440	1442	N16	W70	9985	06	7.3	3	SF		3	E		17		
GOES		1449	1456	1503	N16	W70	9985			14	SF	B 5.5						4.5E-04
GOES		2114	2119	2122	S24	E05	9991			8	SF	C 1.5						5.1E-04
HOLL		2117	2122	2126	S24	E05	9991	06	13.3	9	SF		3	E		18		

Hα SOLAR FLARES

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	13	0135	0223	0302						87		B 8.6						3.8E-03
GOES		0707	0715	0717	S25	E01	9991			10	SF	B 6.7						3.6E-04
LEAR		0715	0716	0719	S25	E01	9991	06	13.4	4	SF		3	E		30		F
SVTO		1128	1137	1143	S13	W69	9987	06	8.3	15	SF		3	E		20		
RAMY		1131	1131	1137	S15	W67	9987	06	8.4	6	SF		3	E		10		
GOES		1550	1557	1621						31		B 5.7						9.5E-04
GOES		2116	2120	2126	N19	E82				10	SF	B 5.8						3.1E-04
HOLL		2117	2125	2128	N19	E82		06	20.1	11	SF		4	E		16		
GOES		2147	2150	2157						10		B 6.2						3.3E-04
HOLL		2206	2211	2225	N19	E81		06	20.1	19	SF		3	E		20		
GOES		2359	2402	2407	N19	E81				8	SF	B 9.0						3.8E-04
HOLL	14	0004E	0004	0018	N19	E81		06	20.2	14D	SF		3	E		37		
GOES		0058	0107	0116						18		B 7.9						7.4E-04
GOES		0908	0923	0937						29		B 7.6						1.2E-03
GOES		1004	1020	1038						34		C 1.3						2.5E-03
RAMY		1135	1201	1259	N21	E75		06	20.2	84	SF		3	E		10		H
GOES		2018	2140	2208	N21	E71	10001			110	SF	C 1.0						5.4E-03
RAMY		2137	2137	2143	N21	E71	10001	06	20.3	6	SF		3	E		19		
GOES		2348	2458	2525						97		C 1.7						7.0E-03T
GOES	15	0230	0236	0241						11		C 1.5						7.8E-04
GOES		0741	0746	0750						9		B 8.1						3.7E-04
GOES		0900	0904	0917						17		B 6.7						6.2E-04
GOES		1622	1702	1717			10000			55		C 1.0						2.7E-03
GOES		1822	1829	1834	N18	E40	10000			12	SF	B 7.5						4.5E-04
RAMY		1829	1830	1841	N18	E40		06	18.8	12	SF		3	E		16		
GOES		2054	2058	2100	N01	E66	10003			6	SF	B 8.5						2.5E-04
HOLL		2057E	2057U	2105D	S01	E67	10003	06	20.9	8D	SF		3	E		17		
RAMY		2057	2057	2116	N01	E66	10003	06	20.8	19	SF		3	E		27		
GOES		2353	2358	2403	S01	E65	10003			10	SF	B 8.9						4.4E-04
LEAR		2357	2359	2401	S01	E65	10003	06	20.8	4	SF		1	E		24		
GOES	16	0309	0332	0351						42		C 1.4						3.1E-03
GOES		0746	0814	0909						83		C 1.0						4.8E-03
GOES		1642	1654	1702	S23	W46	9991			20	SF	B 6.7						7.4E-04
RAMY		1651	1653	1656	S23	W46	9991	06	13.1	5	SF		3	E		20		FH
GOES		2112	2124	2128	S23	W49	9991			16	SF	C 1.2						1.0E-03
HOLL		2120	2125	2132	S23	W49	9991	06	13.1	12	SF		3	E		27		FH
RAMY	17	1519	1521	1525	S25	W55	9991	06	13.4	6	SF		3	E		20		F
GOES		1846	1854	1906						20		C 1.6						1.5E-03
GOES		1932	1934	1936			10000			4		B 9.1						2.0E-04
GOES		1954	2016	2026	S22	W59	9991			32	SF	C 1.4						2.2E-03
HOLL		2001	2005	2019	S22	W59	9991	06	13.3	18	SF		3	E		14		FH
GOES	18	1301	1329	1341			10000			40		B 8.4						1.5E-03
GOES		1435	1440	1446	N18	E03	10000			11	SF	B 5.9						3.6E-04
RAMY		1438	1438	1447	N18	E03		06	18.8	9	SF		3	E		12		FH
GOES	19	1001	1015	1024						23		C 5.5						4.7E-03
GOES		1504	1508	1512						8		B 7.5						2.9E-04
GOES		1820	1829	1838			10000			18		B 7.9						5.9E-04
GOES	20	1155	1222	1235						40		C 1.3						2.3E-03
GOES		1414	1519	1559			9992			105		C 2.9						1.0E-02
GOES	21	0424	0506	0622						118		C 1.6						8.8E-03
GOES		0902	0905	0908						6		B 6.9						2.1E-04
GOES		1717	1726	1732						15		B 5.9						4.9E-04
GOES		1959	2020	2058						59		C 1.8						5.0E-03
GOES	22	0229	0236	0248	N14	E12	10005			19	SF	C 2.0						1.8E-03
LEAR		0234	0236	0246	N14	E12	10005	06	23.0	12	SF		3	E		22		F
GOES		0334	0337	0339						5		B 7.6						1.9E-04
GOES		1057	1102	1105						8		B 8.4						3.1E-04
GOES	23	0215	0255	0324	N13	W70	9997			69	2F	M 1.6						4.1E-02

Hα SOLAR FLARES

JUNE 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	23	0223	0245	0348	N13	W70	9997	06 17.8	85	2F		3	E		454		FH
GOES		0819	0824	0827	N14	W08	10005		8	1N	C 1.9						5.9E-04
SVTO		0821	0823	0834	N14	W08	10005	06 22.7	13	1N		3	E		109		FH
GOES		1818	1822	1825	N12	W11	10005		7	SF	B 6.7						2.1E-04
HOLL		1821	1821	1824	N12	W11	10005	06 22.9	3	SF		3	E		36		F
RAMY		1823	1823	1828	N12	W12	10005	06 22.9	5	SF		3	E		37		F
SVTO	24	0514	0514	0549	S06	E08	10008	06 24.8	35	SF		3	E		13		
LEAR		0514	0516	0535	S07	E07	10008	06 24.7	21	SF		3	E		11		
GOES		1525	1606	1659					94		C 1.4						6.2E-03
HOLL		1806	1807	1810	S13	E04	10008	06 25.0	4	SF		3	E		13		
GOES	25	0155	0159	0201					6		B 6.1						1.6E-04
GOES		1511	1515	1519	S11	W09	10008		8	SF	B 5.6						2.3E-04
RAMY		1514	1515	1522	S11	W09	10008	06 24.9	8	SF		3	E		25		F
GOES		1609	1614	1621					12		B 6.5						3.9E-04
GOES		1902	1914	1919					17		B 6.7						6.0E-04
SVTO	26	0623	0630	0647	N24	E61		07 1.0	24	SF		3	E		66		
GOES		0624	0631	0636	N24	E61	10000		12	SF	C 1.5						8.2E-04
LEAR		0626	0629	0649	N22	E59		06 30.8	23	SF		3	E		62		F
GOES		0757	0820	0904			10000		67		C 1.9						6.3E-03
GOES		1614	1626	1632	N22	W86	10001		18	SF	B 4.4						4.3E-04
RAMY		1623	1624	1626	N22	W86	10001	06 20.1	3	SF		3	E		23		
GOES		1715	1719	1723					8		B 4.3						1.9E-04
GOES		1846	1851	1856					10		B 7.4						3.4E-04
GOES		2005	2009	2013					8		B 6.1						2.6E-04
GOES		2255	2259	2302					7		B 5.6						1.9E-04
GOES	27	0033	0040	0044					11		B 4.1						2.4E-04
GOES		0336	0344	0347	N11	W65	10005		11	SF	B 6.6						3.6E-04
LEAR		0340	0342	0349	N11	W65	10005	06 22.3	9	SF		3	E		20		
GOES		1017	1029	1041					24		B 4.2						5.5E-04
GOES		1914	1917	1921					7		B 3.8						1.5E-04
GOES	28	0213	0222	0229					16		B 4.8						4.0E-04
GOES		0624	0633	0640	S11	W45	10008		16	SF	C 1.1						8.1E-04
LEAR		0628	0630	0646	S11	W45	10008	06 24.9	18	SF		3	E		23		F
SVTO		0631	0631	0642	S11	W44	10008	06 25.0	11	SF		3	E		13		F
GOES		1038	1044	1057					19		B 6.1						6.2E-04
GOES		1523	1547	1611					48		B 7.6						2.0E-03
GOES		1844	1848	1850					6		B 8.4						2.5E-04
GOES		2002	2011	2014					12		C 1.3						5.1E-04
GOES		2224	2231	2234					10		B 6.8						3.5E-04
GOES	29	0022	0034	0037					15		C 2.6						1.1E-03
GOES		0414	0419	0424					10		B 6.1						3.2E-04
GOES		0637	0640	0643					6		C 1.2						3.9E-04
GOES		0724	0728	0732					8		B 7.0						2.9E-04
GOES		0846	0851	0859					13		B 9.0						6.0E-04
GOES		0927	0933	0937					10		C 2.0						8.7E-04
GOES		1247	1253	1257					10		B 8.4						4.2E-04
GOES		1540	1550	1559					19		C 1.1						1.1E-03
RAMY		1731	1732	1745	N15	W70	10018	06 24.4	14	SF		3	E		10		
GOES		1745	1748	1751					6		B 7.5						2.4E-04
GOES	30	0149	0152	0155					6		B 9.2						2.6E-04
GOES		0915	1257	1625					430		C 2.1						3.8E-02T
RAMY		1903	1903	1907	S15	E62	10019	07 5.5	4	SF		3	E		17		
GOES		1946	1949	1952	S19	W22	10017		6	SF	C 1.7						4.9E-04
HOLL		1948	1949	2000	S19	W22	10017	06 29.1	12	SF		3	E		24		
RAMY		1949	1950	2008	S18	W23	10017	06 29.1	19	SF		3	E		30		
GOES		2107	2115	2124					17		C 1.4						1.2E-03
GOES		2211	2215	2221					10		B 9.6						5.3E-04

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

JUNE 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	Int	Remarks
01	2695	SVTO	4	S/F	0352.0	0353.0	5.0	230.0			QL=4 ST=2 TYP=3
	8800	LEAR	48	C	0353.0	0353.0	5.0	330.0			QL=4 ST=2 TYP=8
	2695	LEAR	4	S/F	0353.0	0354.0	4.0	260.0			QL=4 ST=2 TYP=3
	2695	PALE	48	C	0353.0	0354.0	3.0	180.0			QL=4 ST=2 TYP=8
	8800	SVTO	48	C	0353.0	0353.0	8.0	360.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	0355.0	0356.0	3.0	150.0			QL=4 ST=2 TYP=8
	8800	PALE	48	C	2346.0	2346.0	1.0	220.0			QL=4 ST=2 TYP=8
	2695	PALE	8	S	2346.0	2347.0	1.0	210.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	2347.0	2347.0	1.0	220.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	2347.0	2347.0	2.0	250.0			QL=4 ST=2 TYP=3
02	8800	LEAR	8	S	0434.0	0435.0	1.0	48.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0435.0	0435.0	U	36.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	1011.0	1014.0	6.0	44.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1011.0	1014.0	5.0	89.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1012.0	1014.0	2.0	66.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1013.0	1014.0	4.0	61.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1144.0	1144.0	1.0	120.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1144.0	1144.0	1.0	200.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	1144.0	1144.0	1.0	110.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1144.0	1144.0	1.0	240.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	1653.0	1653.0	2.0	83.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1655.0	1655.0	U	29.0			QL=4 ST=3 TYP=3
	2695	SVTO	8	S	1655.0	1655.0	1.0	40.0			QL=4 ST=2 TYP=3
	2695	PALE	49	GB	2034.0	2039.0	13.0	530.0			QL=4 ST=2 TYP=6
	8800	PALE	4	S/F	2036.0	2039.0	7.0	240.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	2036.0	2041.0	14.0	450.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	2036.0	2041.0	28.0	440.0			QL=4 ST=2 TYP=3
03	8800	SGMR	8	S	1442.0	1442.0	1.0	39.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1443.0	1443.0	U	56.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	1443.0	1443.0	U	57.0			QL=4 ST=2 TYP=3
04	2695	SVTO	8	S	0845.0	0845.0	U	57.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1608.0	1609.0	1.0	41.0			QL=4 ST=2 TYP=3
12	8800	PALE	48	C	2115.0	2115.0	U	67.0			QL=4 ST=3 TYP=8
	2695	SGMR	8	S	2116.0	2116.0	1.0	51.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	2116.0	2116.0	1.0	85.0			QL=4 ST=2 TYP=3
13	8800	SGMR	49	GB	1245.0	1245.0	U	540.0			QL=4 ST=2 TYP=6
19	8800	SVTO	4	S/F	1007.0	1009.0	3.0	55.0			QL=4 ST=2 TYP=3
23	8800	LEAR	20	GRF	0246.0	0313.0	76.0	38.0			QL=4 ST=2 TYP=2
	2695	LEAR	20	GRF	0256.0	0311.0	42.0	24.0			QL=4 ST=2 TYP=2
	2695	SVTO	8	S	0822.0	0822.0	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

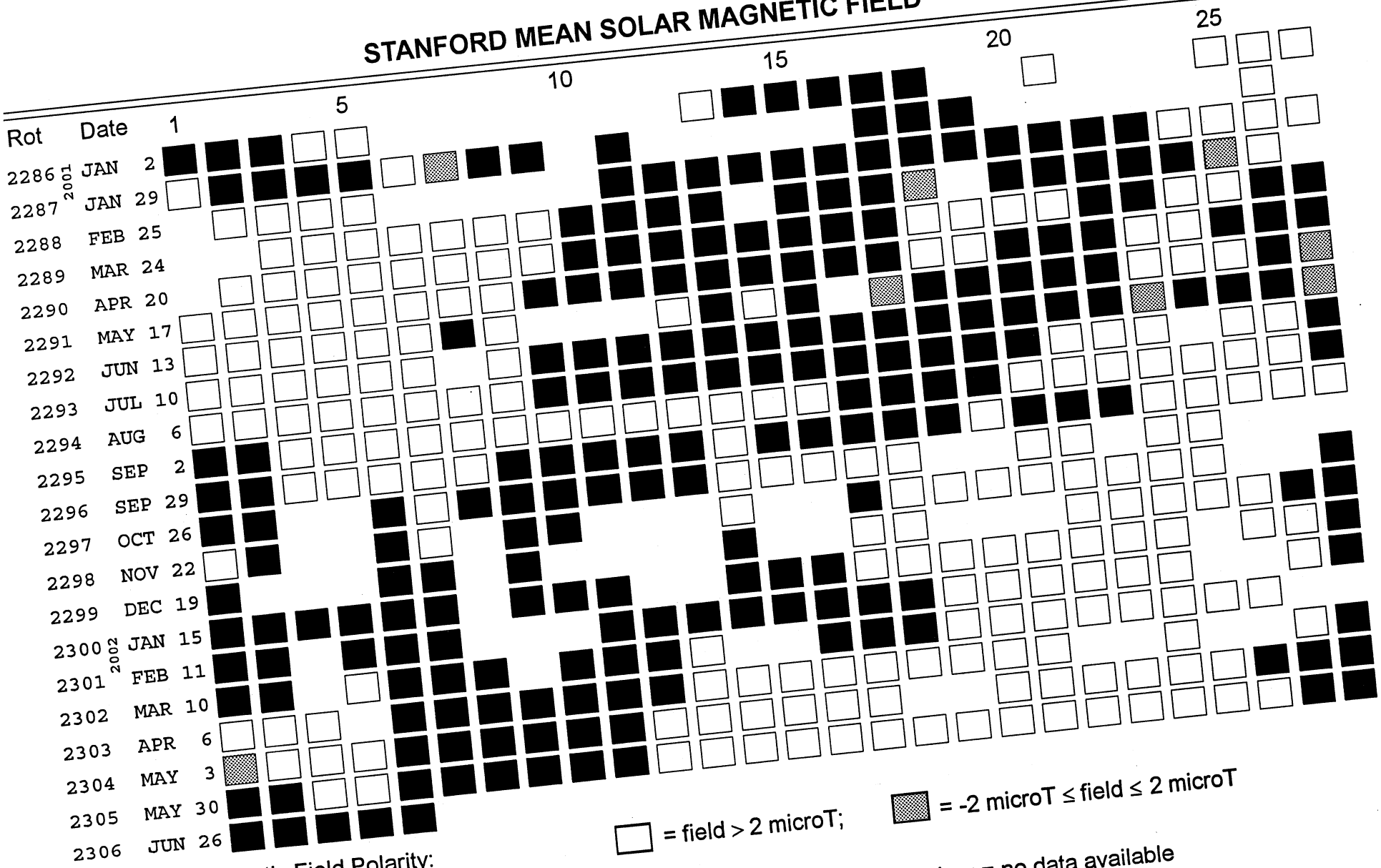
Explanation of Type Code:

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;

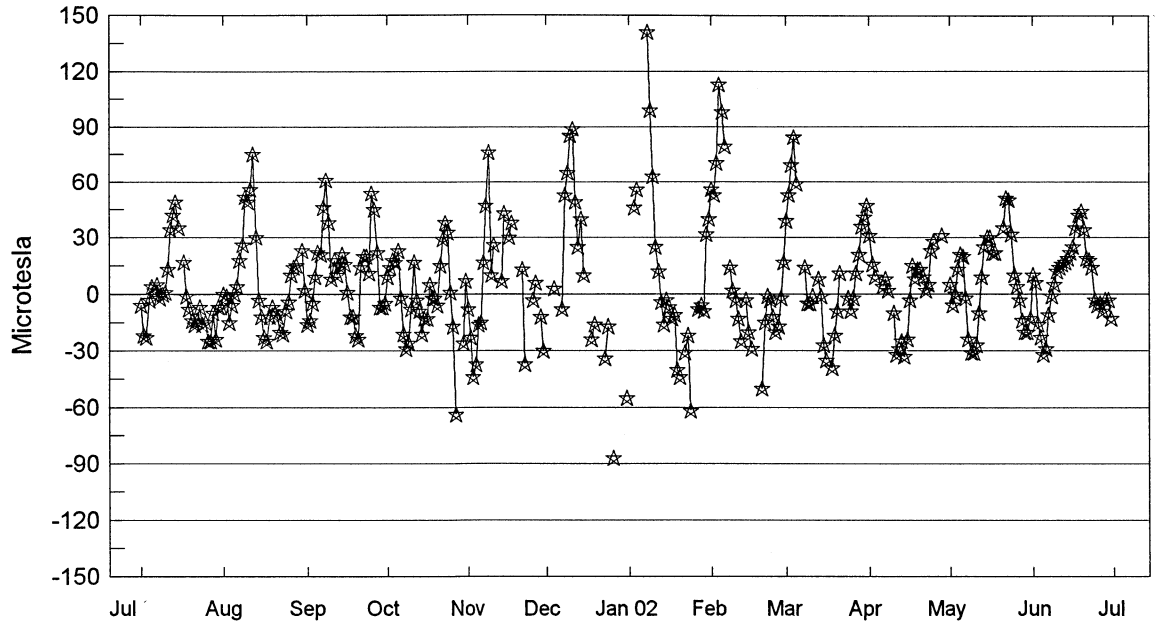
= -2 microT ≤ field ≤ 2 microT

= field < -2 microT;

No box = no data available

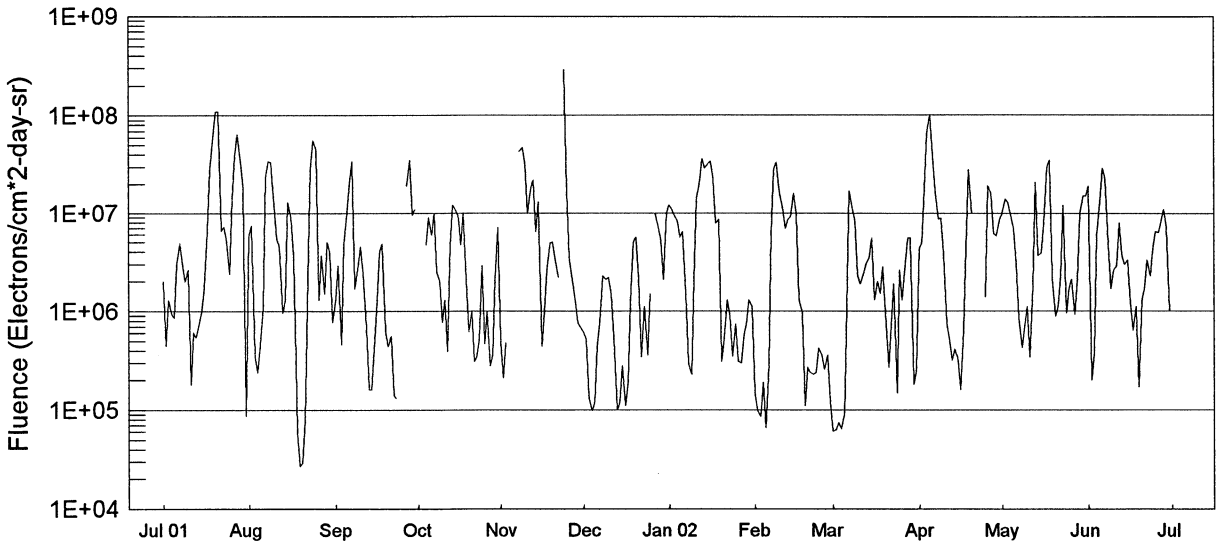
...taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates are five ...of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

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



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

GOES Daily Electron Fluence
Jul 2001 - Jun 2002



Day	Jul 02	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May	Jun
1	2.0E+06	5.9E+06	1.3E+06	-999	4.8E+05	6.1E+05	1.2E+07	1.5E+05	6.1E+04	4.4E+06	9.9E+06	1.9E+07
2	4.5E+05	7.4E+06	2.9E+06	-999	2.1E+05	5.2E+05	1.1E+07	9.8E+04	6.3E+04	4.9E+06	1.4E+07	2.0E+05
3	1.3E+06	3.5E+05	4.6E+05	-999	4.8E+05	1.3E+05	9.3E+06	8.6E+04	7.4E+04	1.8E+07	1.3E+07	3.8E+05
4	9.3E+05	2.4E+05	4.8E+06	4.7E+06	-999	9.9E+04	8.3E+06	1.9E+05	6.5E+04	6.7E+07	1.0E+07	5.9E+06
5	8.6E+05	4.5E+05	8.6E+06	9.0E+06	-999	1.2E+05	5.7E+06	6.6E+04	9.2E+04	1.0E+08	6.9E+06	1.3E+07
6	3.0E+06	1.1E+06	2.1E+07	5.9E+06	-999	4.4E+05	6.5E+06	2.9E+05	1.1E+06	3.9E+07	3.1E+06	2.9E+07
7	4.9E+06	2.4E+07	3.4E+07	1.0E+07	-999	7.6E+05	1.5E+06	6.2E+06	1.7E+07	1.7E+07	8.3E+05	2.3E+07
8	3.0E+06	3.4E+07	1.7E+06	2.5E+06	4.3E+07	2.3E+06	2.9E+05	2.8E+07	1.2E+07	8.7E+06	4.3E+05	4.8E+06
9	2.0E+06	3.3E+07	2.8E+06	2.0E+06	4.7E+07	2.1E+06	2.3E+05	3.3E+07	8.3E+06	8.9E+06	7.1E+05	1.7E+06
10	2.6E+06	1.2E+07	4.5E+06	7.7E+05	3.2E+07	2.2E+06	2.1E+06	1.6E+07	2.3E+06	3.8E+06	1.1E+06	2.6E+06
11	1.8E+05	5.4E+06	2.5E+06	1.3E+06	1.0E+07	1.5E+06	1.4E+07	1.1E+07	1.9E+06	7.4E+05	3.4E+05	2.9E+06
12	6.1E+05	4.6E+06	6.9E+05	3.9E+05	1.8E+07	5.4E+05	2.1E+07	7.0E+06	2.4E+06	5.1E+05	1.8E+06	8.0E+06
13	5.4E+05	9.6E+05	1.6E+05	4.7E+06	2.2E+07	1.0E+05	3.6E+07	8.6E+06	3.0E+06	3.2E+05	2.1E+07	3.7E+06
14	7.5E+05	1.3E+06	1.6E+05	1.2E+07	6.5E+06	1.2E+05	2.9E+07	9.1E+06	3.5E+06	4.1E+05	3.7E+06	3.0E+06
15	1.0E+06	1.3E+07	4.1E+05	1.1E+07	1.3E+07	2.8E+05	3.2E+07	1.6E+07	5.6E+06	3.3E+05	3.9E+06	3.3E+06
16	1.7E+06	9.0E+06	1.3E+06	9.2E+06	4.4E+05	1.1E+05	3.4E+07	1.0E+07	1.3E+06	1.6E+05	7.9E+06	1.2E+06
17	6.6E+06	3.6E+06	4.0E+06	4.7E+06	1.0E+06	1.9E+05	2.3E+07	1.3E+06	2.0E+06	6.5E+05	3.0E+07	6.4E+05
18	2.8E+07	5.9E+04	4.8E+06	1.0E+07	2.6E+06	1.2E+06	7.8E+06	9.5E+05	1.5E+06	4.4E+06	3.5E+07	1.1E+06
19	6.2E+07	2.7E+04	6.3E+05	2.8E+06	4.9E+06	5.1E+06	8.5E+06	1.1E+05	2.8E+06	2.8E+07	2.2E+06	1.7E+05
20	1.1E+08	2.9E+04	4.4E+05	6.2E+05	5.0E+06	5.7E+06	3.1E+05	2.7E+05	9.7E+05	9.9E+06	8.9E+05	1.3E+06
21	1.1E+08	8.0E+04	5.6E+05	1.0E+06	3.3E+06	2.2E+06	5.3E+05	2.4E+05	2.7E+05	-999	1.1E+06	1.7E+06
22	6.6E+06	2.2E+06	1.4E+05	3.1E+05	2.2E+06	3.4E+05	1.3E+06	2.3E+05	7.3E+05	-999	2.3E+06	3.3E+06
23	7.2E+06	2.8E+07	1.3E+05	3.5E+05	-999	1.1E+06	9.1E+05	2.4E+05	1.9E+06	-999	1.2E+07	2.3E+06
24	5.3E+06	5.6E+07	-999	5.2E+05	2.9E+08	3.6E+05	3.5E+05	4.2E+05	1.5E+05	-999	9.5E+05	4.3E+06
25	2.4E+06	4.5E+07	-999	2.9E+06	1.7E+07	1.5E+06	7.4E+05	3.6E+05	2.6E+06	1.4E+06	1.7E+06	6.5E+06
26	1.4E+07	1.3E+06	-999	4.7E+05	3.4E+06	-999	3.1E+05	2.6E+05	1.3E+06	1.9E+07	2.1E+06	6.4E+06
27	3.9E+07	3.7E+06	1.9E+07	1.0E+06	2.0E+06	9.9E+06	3.0E+05	3.6E+05	3.0E+06	1.6E+07	9.3E+05	8.3E+06
28	6.5E+07	1.5E+06	3.5E+07	2.8E+05	1.3E+06	7.2E+06	5.7E+05	1.2E+05	5.6E+06	6.2E+06	2.1E+06	1.1E+07
29	3.4E+07	5.0E+06	9.5E+06	3.6E+05	7.6E+05	5.3E+06	7.5E+05		5.6E+06	5.8E+06	1.0E+07	7.3E+06
30	1.9E+07	4.0E+06	1.1E+07	2.1E+06	6.9E+05	2.1E+06	1.3E+06		1.8E+05	8.4E+06	1.5E+07	1.0E+06
31	8.7E+04	7.8E+05		7.1E+06		1.0E+07	1.1E+06		2.5E+05		1.5E+07	

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

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

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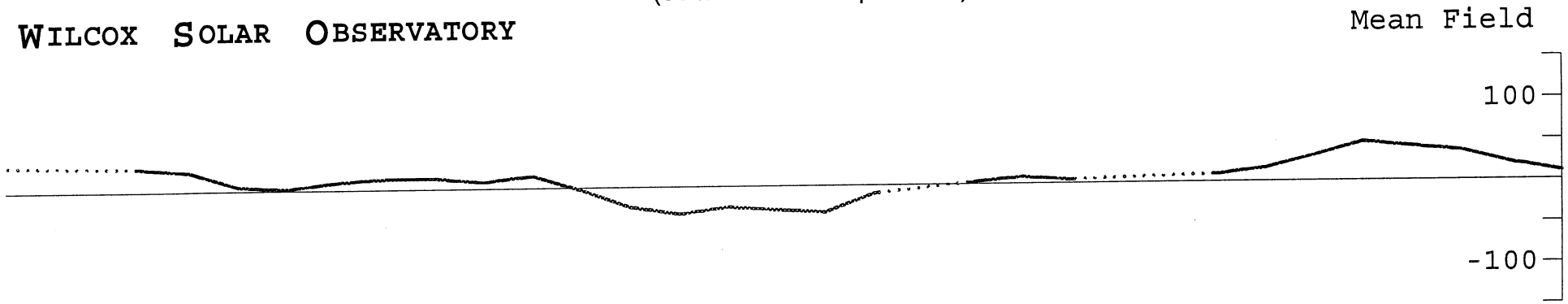
SOLAR MAGNETIC FIELD SYNOPTIC CHART

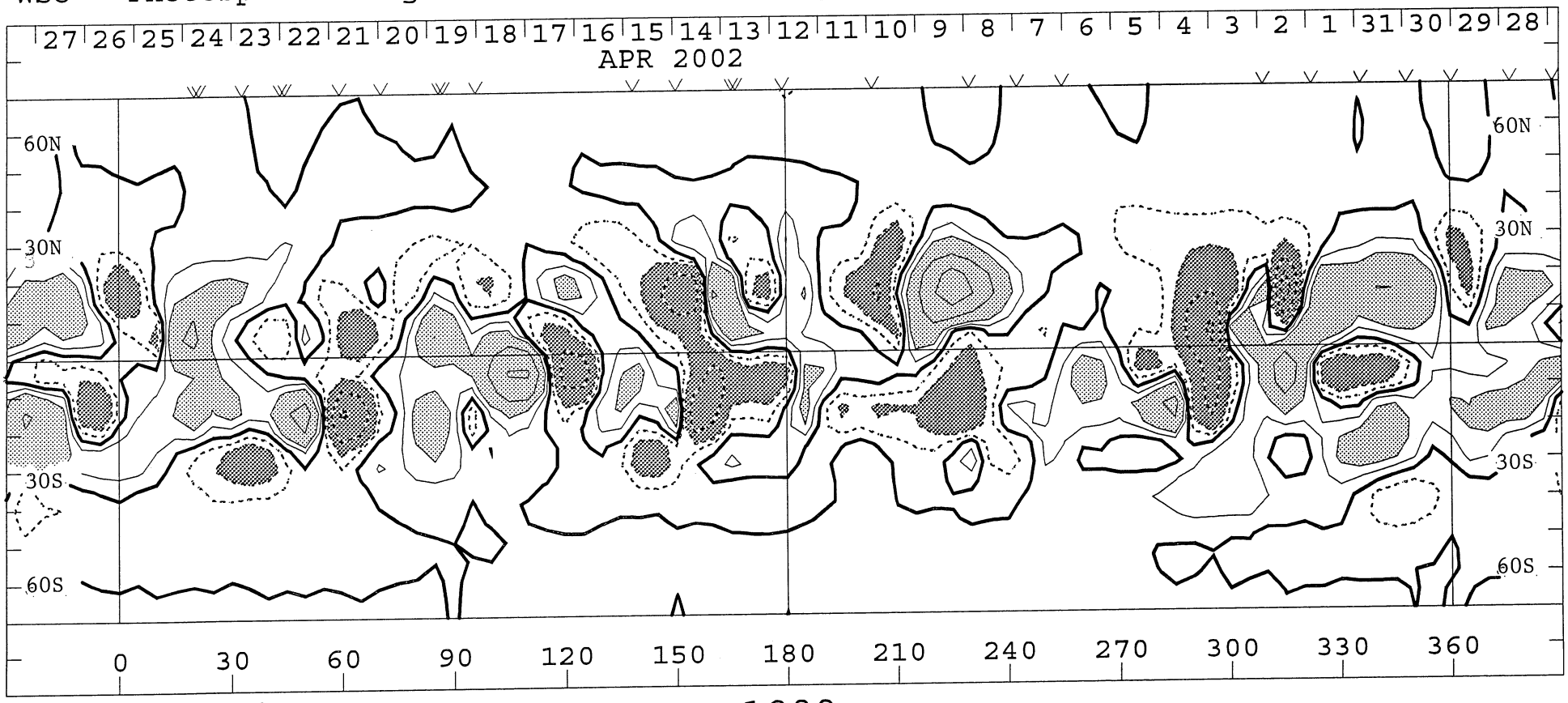
CARRINGTON ROTATION NUMBER 1988

(30 March to 26 April 2002)

WILCOX SOLAR OBSERVATORY



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



SOLAR MAGNETIC FIELD SYNOPTIC CHART

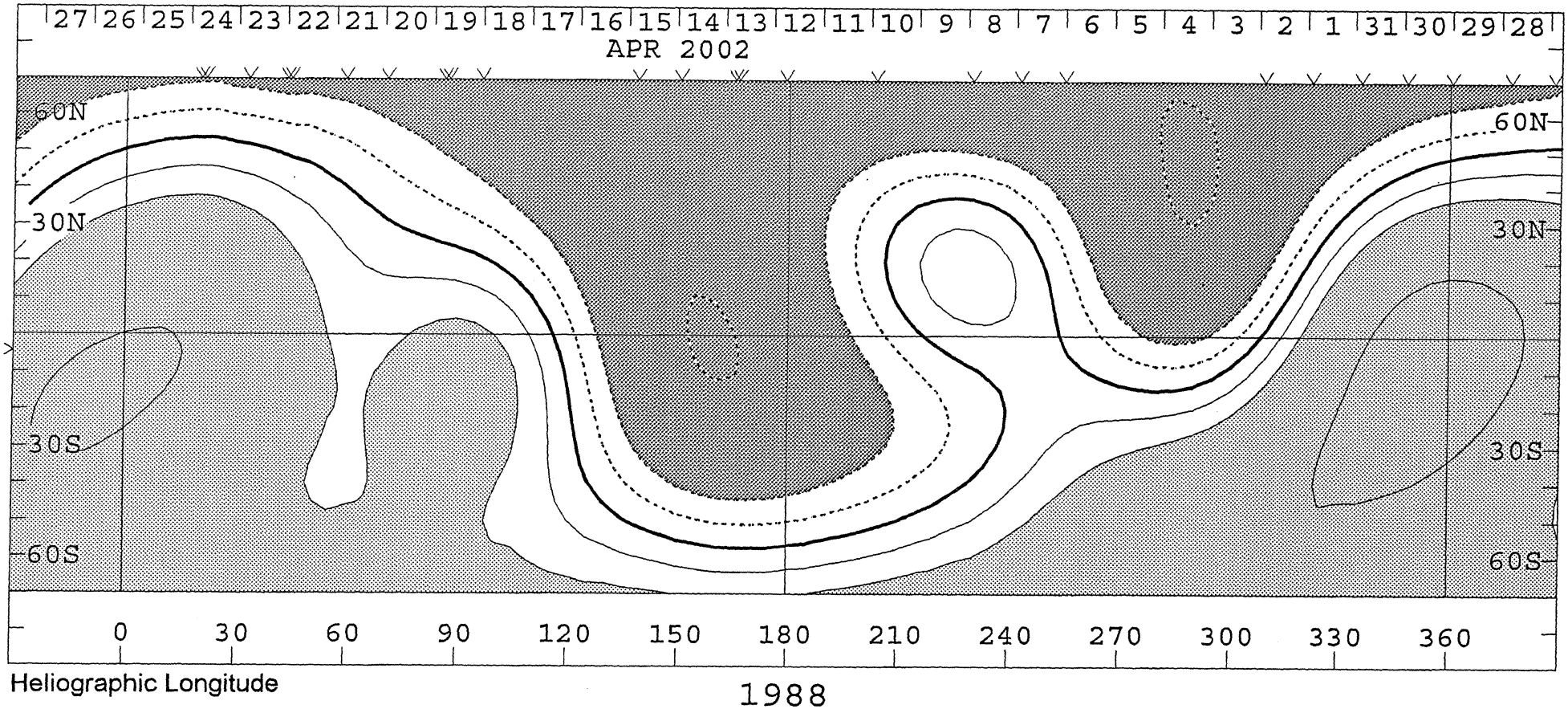
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1988

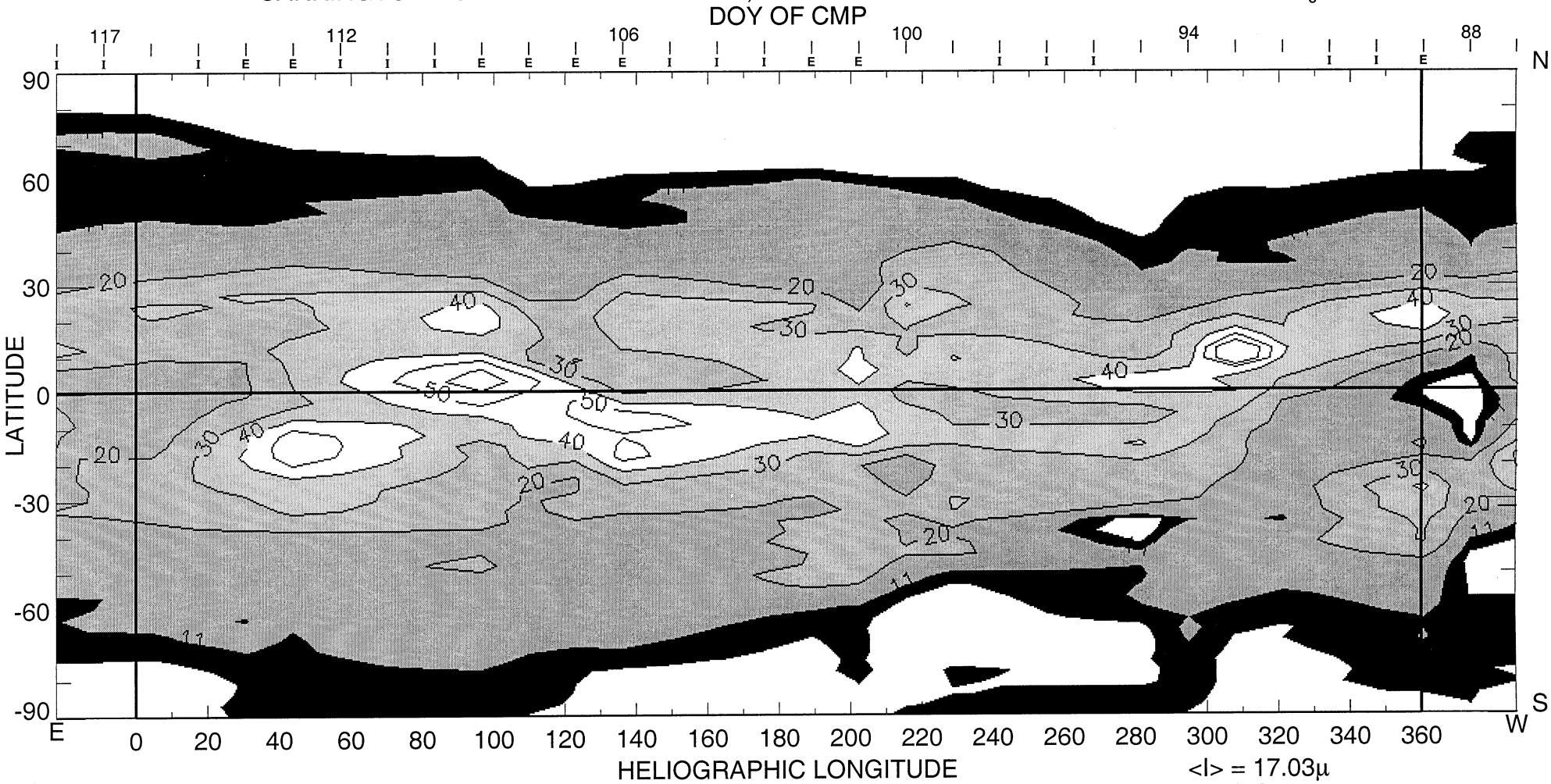
(30 March to 26 April 2002)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



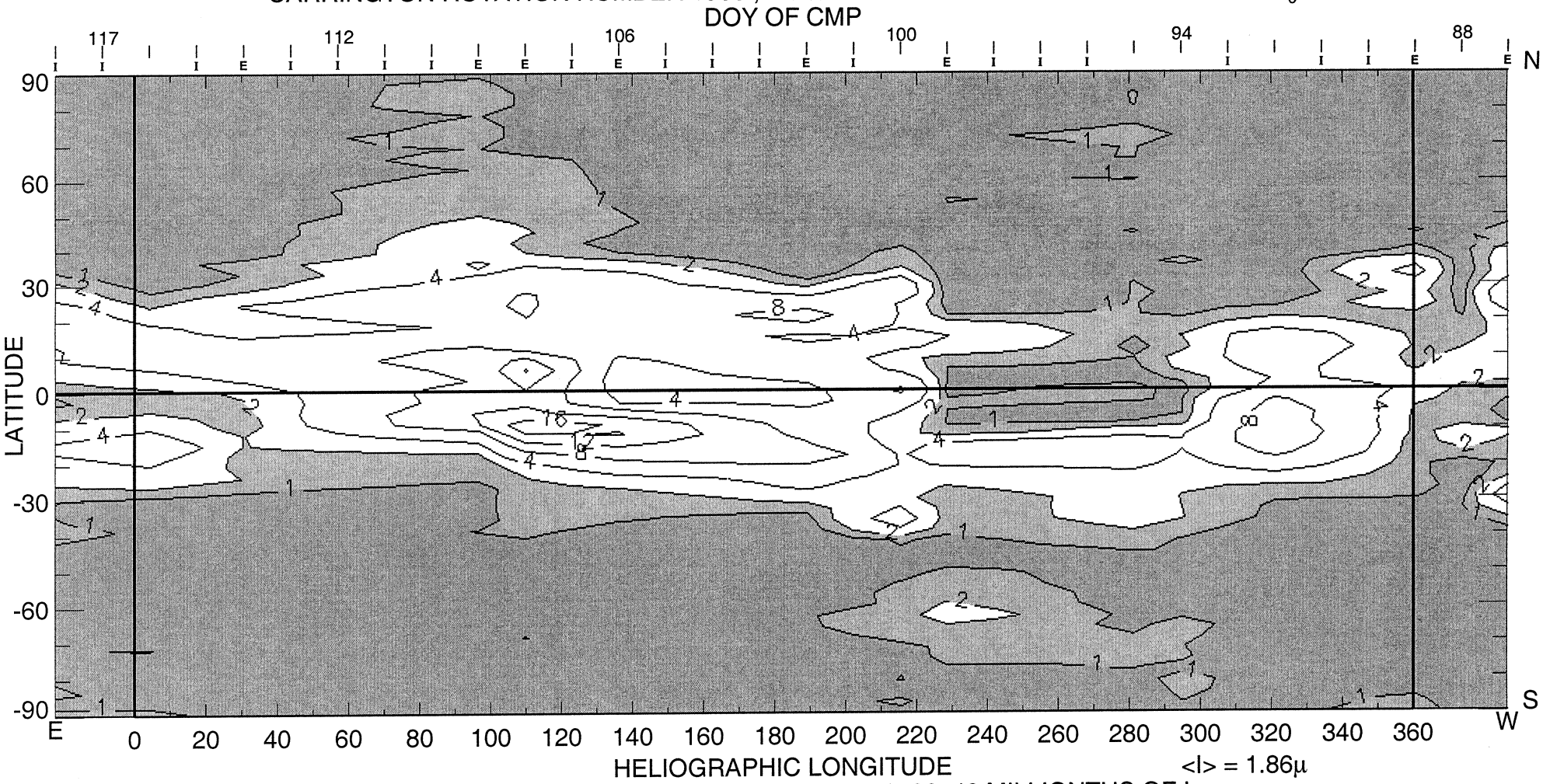
CARRINGTON ROTATION NUMBER 1988 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



(05-Aug-02) 2002 W+E LIMB CONTOURS: 8, 11, 20, 30, 40, 50, 60, 80, 120, 140, 160 MILLIONTHS OF I_o
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

αλτρογκ Μον Αυγ 5 11:32:53 2002

CARRINGTON ROTATION NUMBER 1988 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o

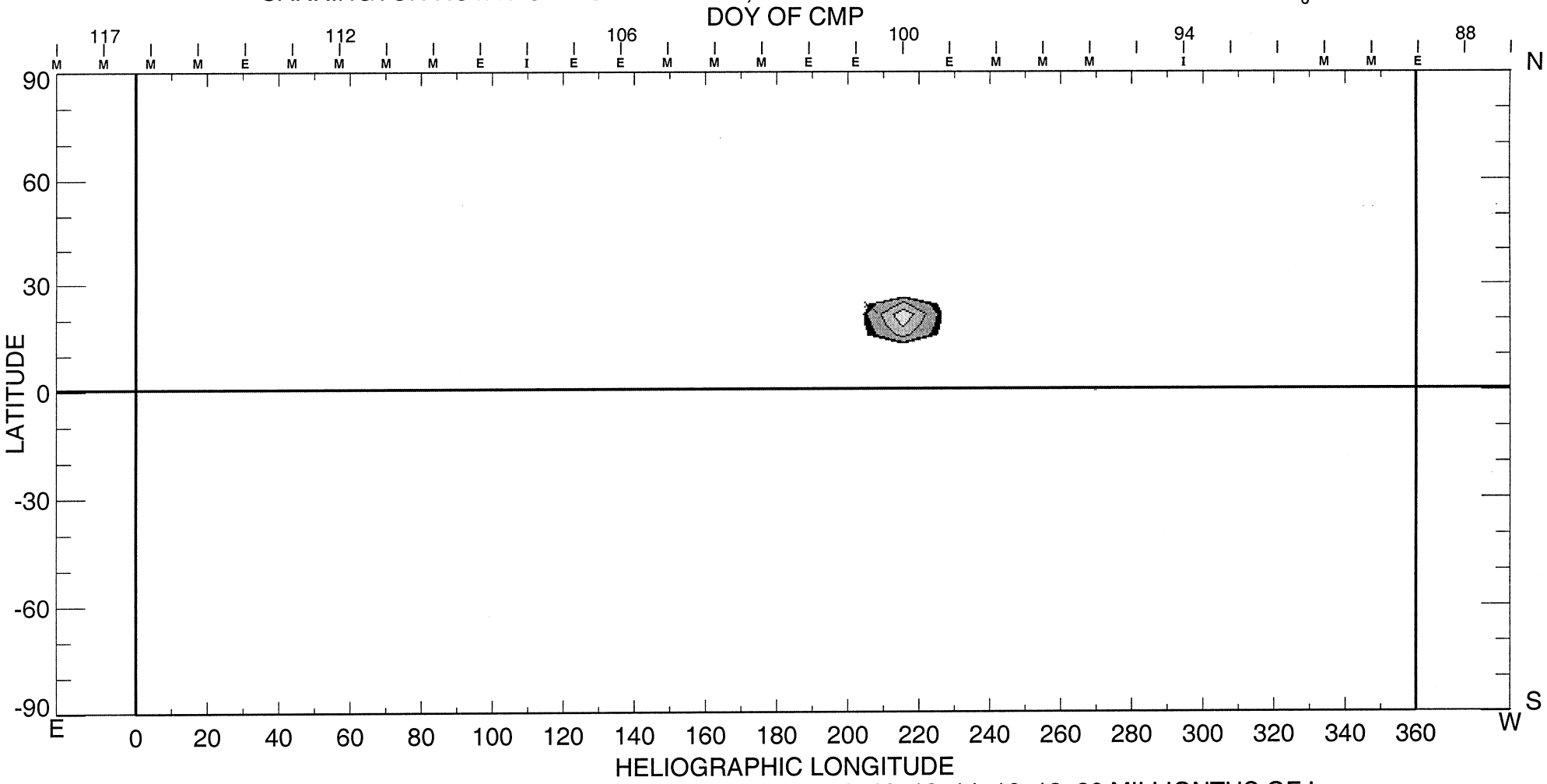


(05-Aug-02)

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

αλτροχκ Μον Αυγ 5 11:33:09 2002

CARRINGTON ROTATION NUMBER 1988 ; NSO/SACRAMENTO PEAK CA XV @ R = 1.15R_o



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

tex Thu Jul 18 12:04:38 2002

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1988

(30 March to 26 April 2002)

National Solar Observatory/Kitt Peak

Dates of Observation

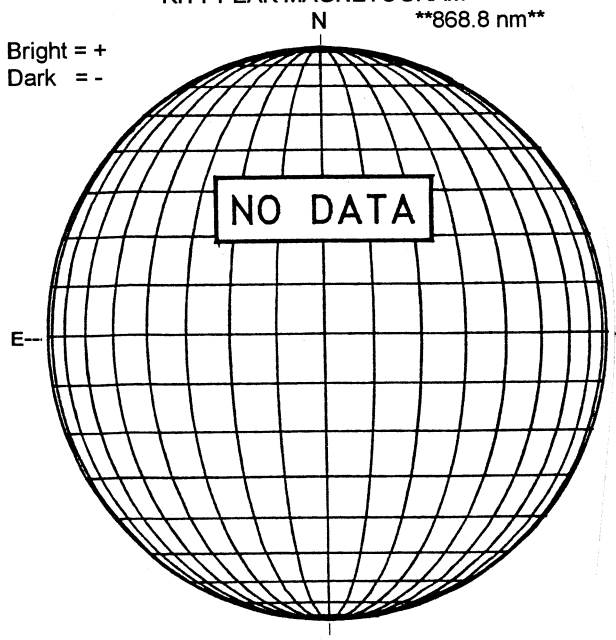
PHOTOGRAPHIC DATA UNAVAILABLE AT TIME OF PUBLICATION.

Heliographic Longitude

MAY 1, 2002 (P= -24.18, Bo = -4.19, Lo = 298.04)

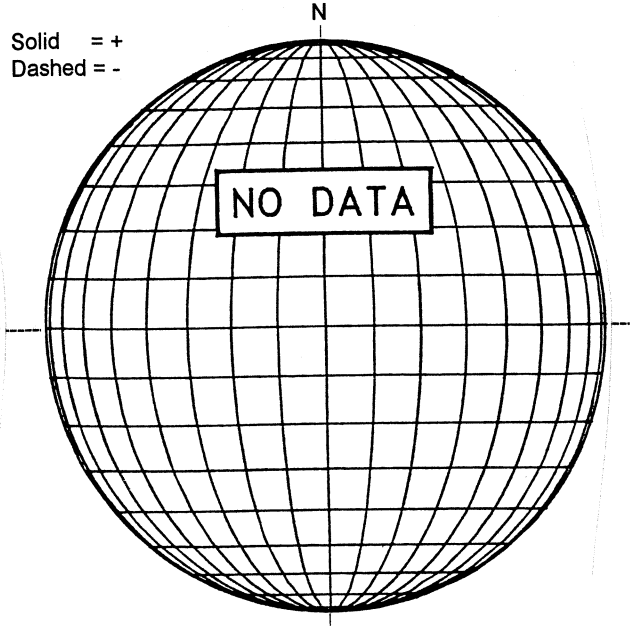
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



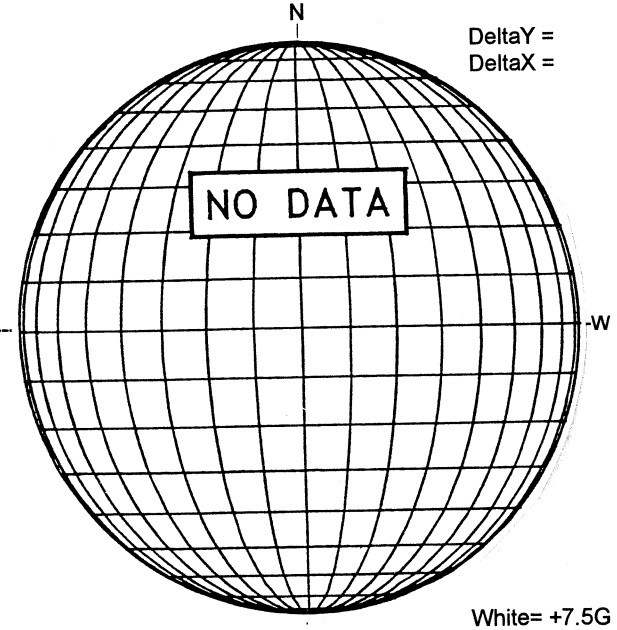
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



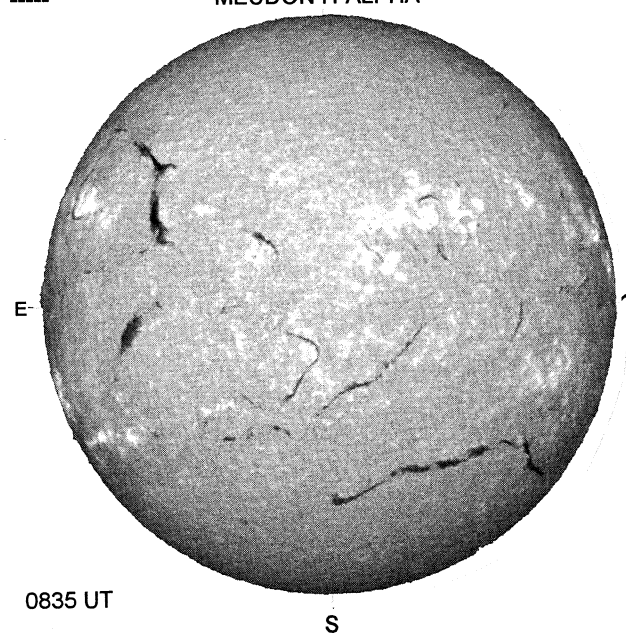
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



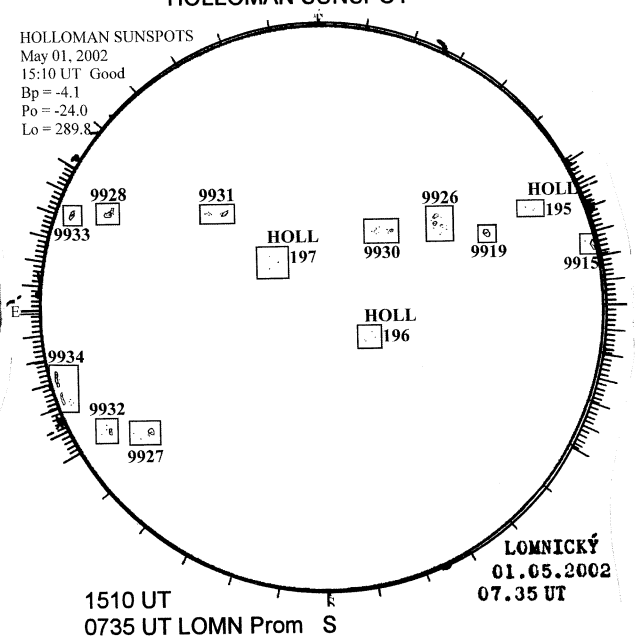
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



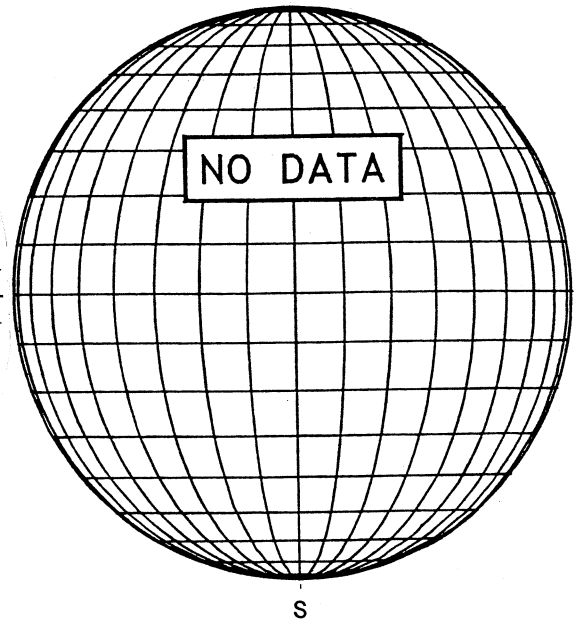
0835 UT

HOLLOMAN SUNSPOT



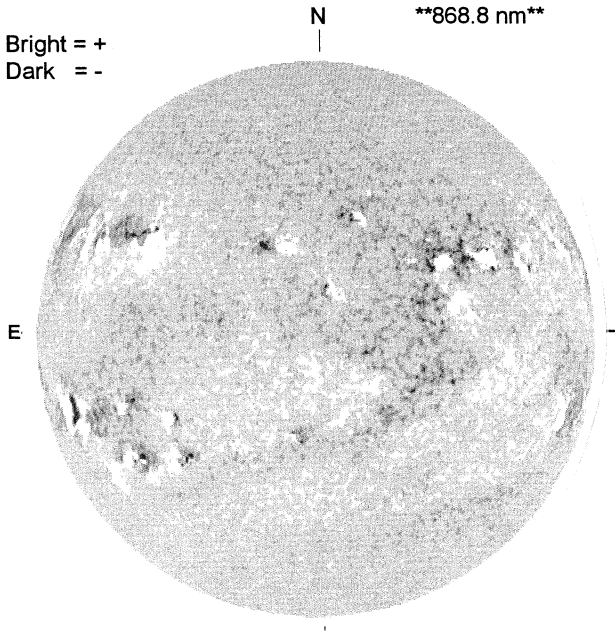
1510 UT
0735 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----

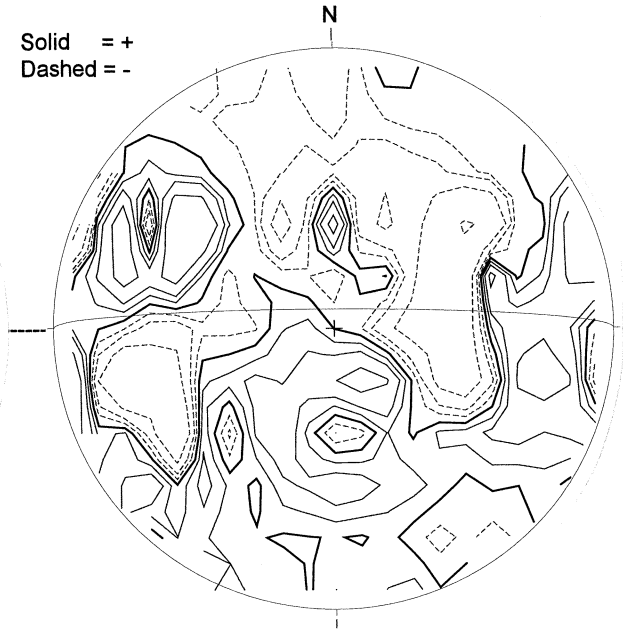


MAY 2, 2002 (P= -24.00, Bo = -4.09, Lo = 284.82)

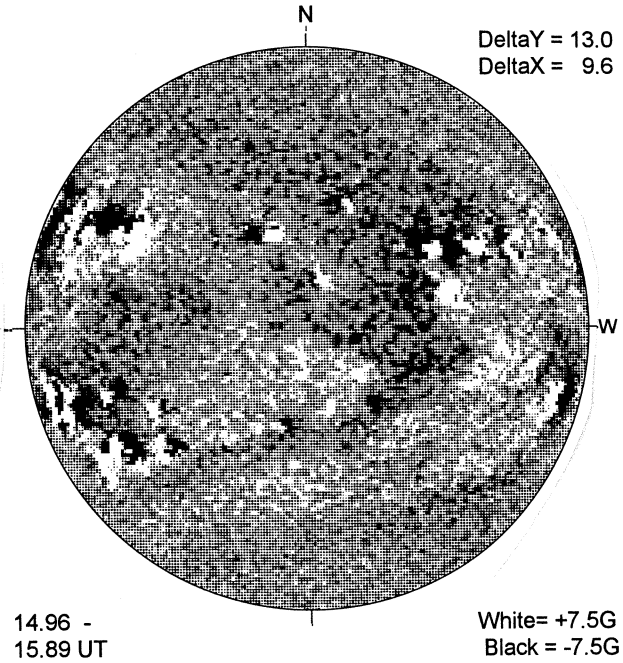
KITT PEAK MAGNETOGRAM



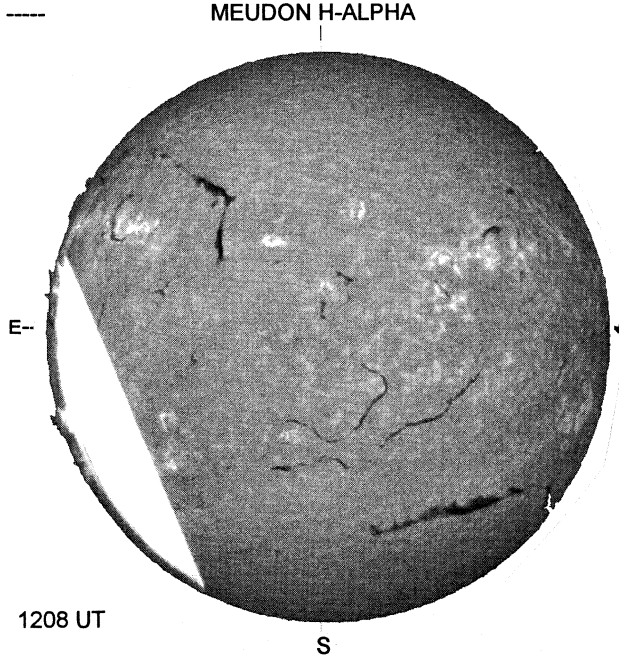
STANFORD MAGNETOGRAM



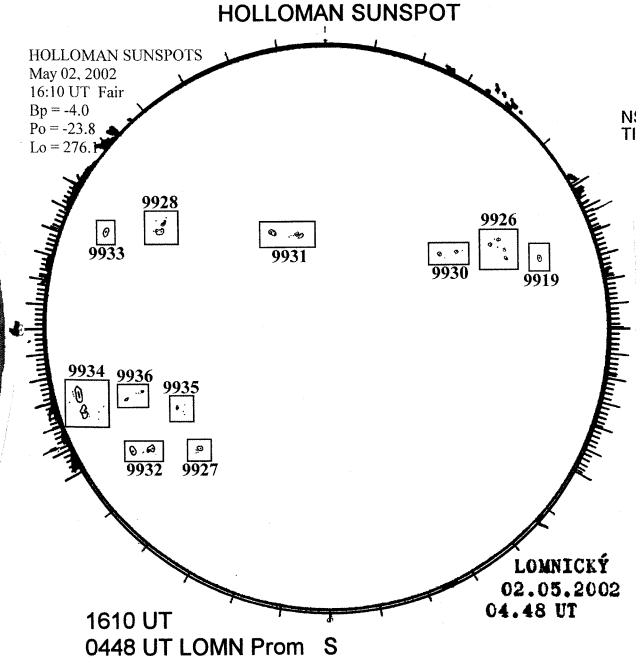
MT. WILSON MAGNETOGRAM



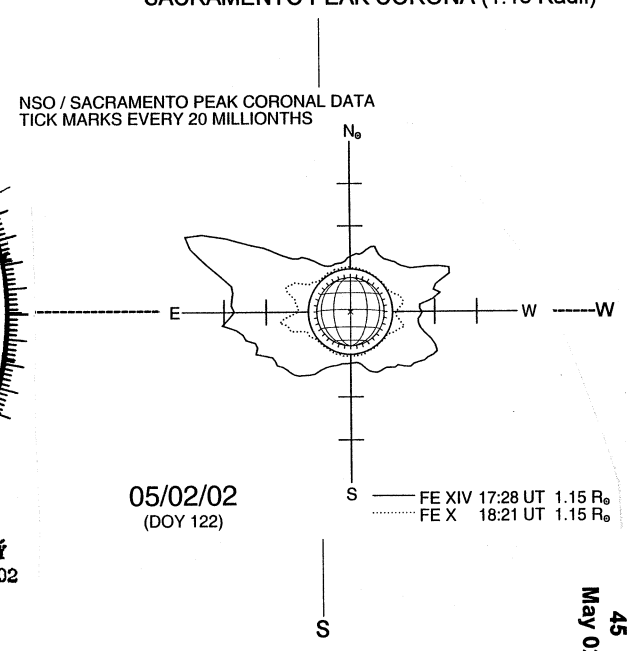
MEUDON H-ALPHA



HOLLOMAN SUNSPOT

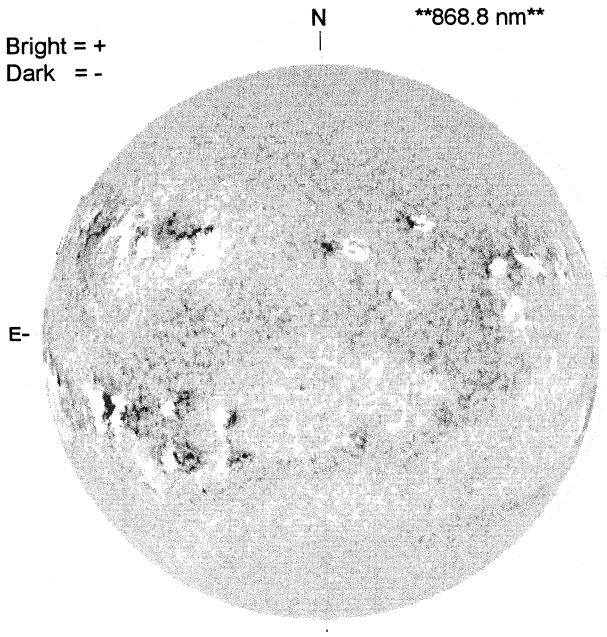


SACRAMENTO PEAK CORONA (1.15 Radii)----

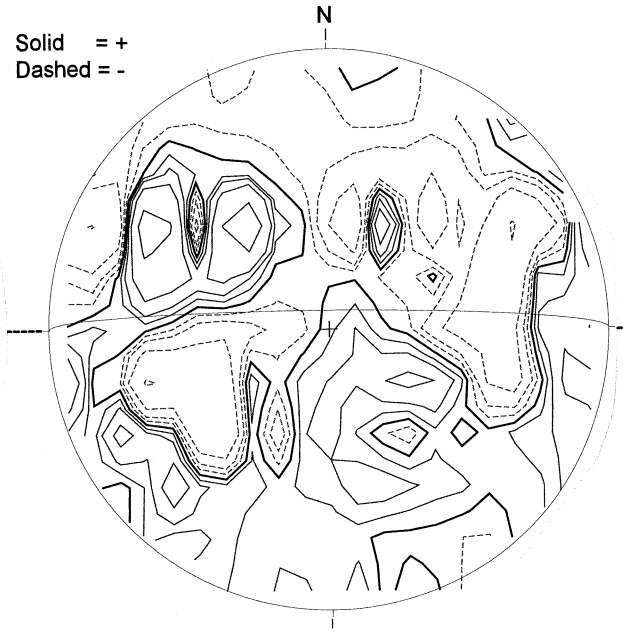


MAY 3, 2002 (P= -23.82, Bo = -3.98, Lo = 271.60)

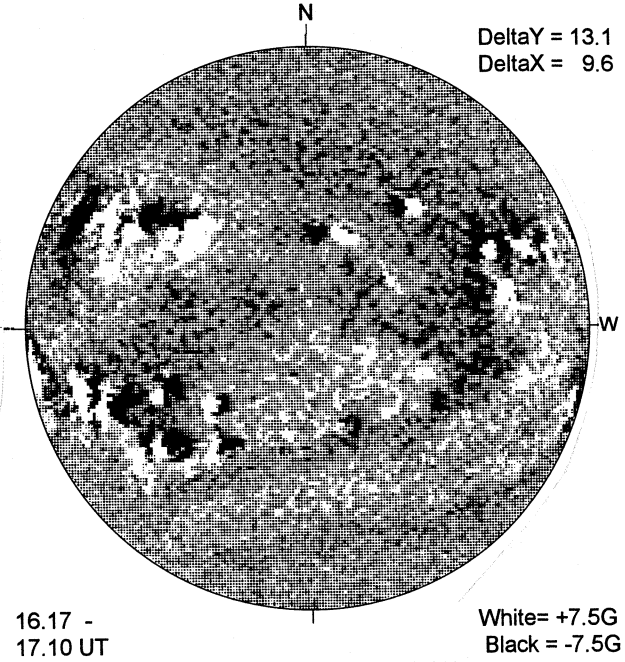
KITT PEAK MAGNETOGRAM



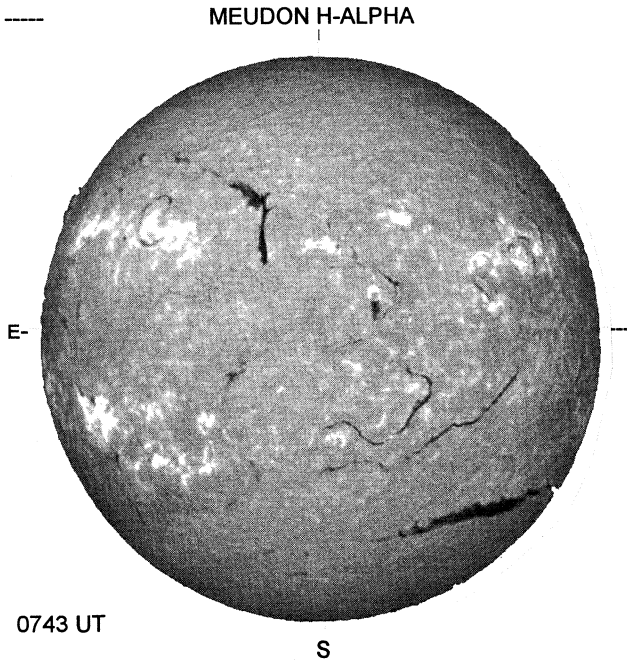
STANFORD MAGNETOGRAM



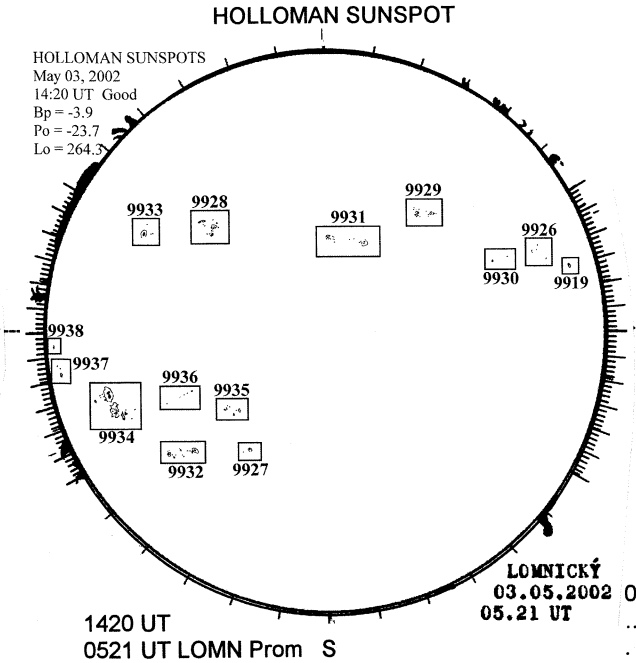
MT. WILSON MAGNETOGRAM



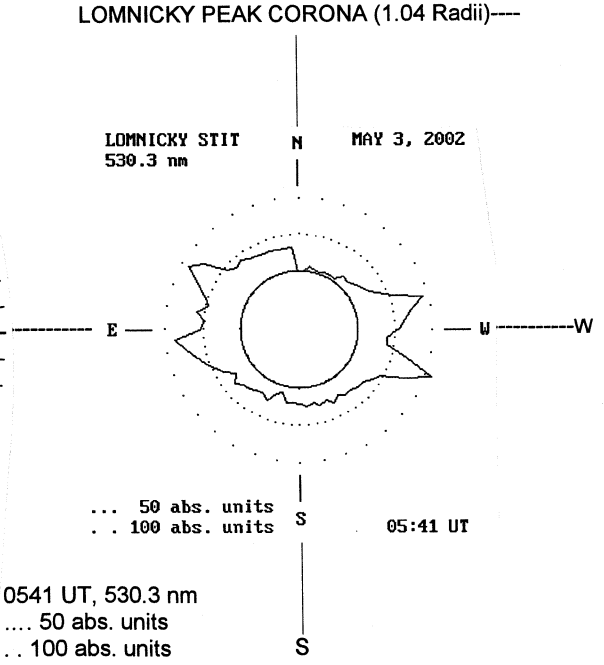
MEUDON H-ALPHA



HOLLOMAN SUNSPOT



LOMNICKY PEAK CORONA (1.04 Radii)----



MAY 4, 2002 (P= -23.62, Bo = -3.88, Lo = 258.38)

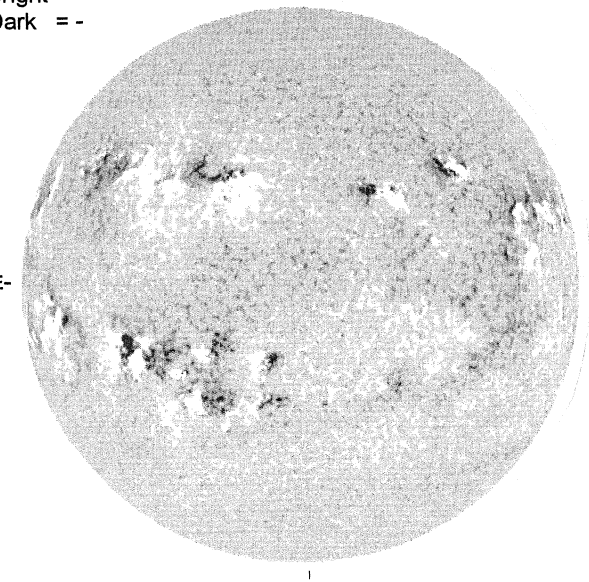
KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

E-

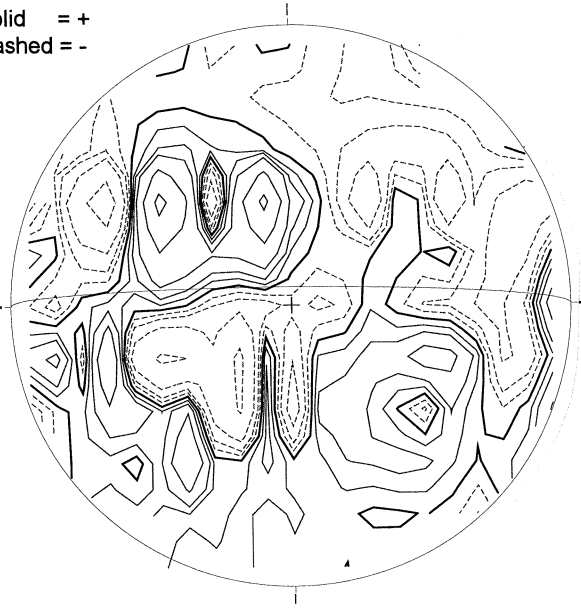


1432 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -



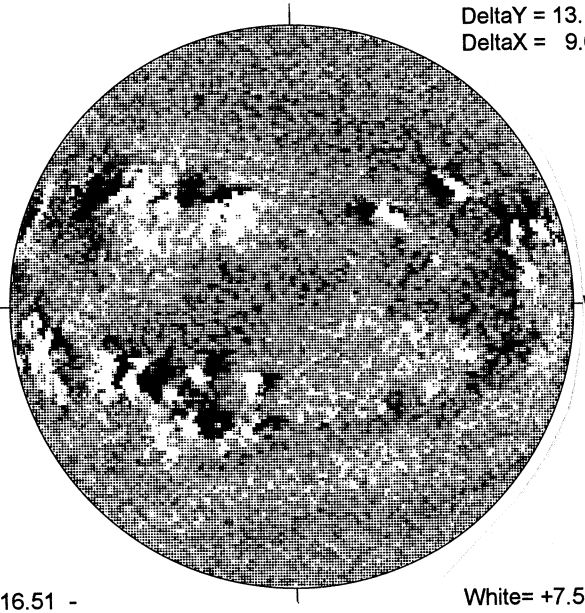
2221 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

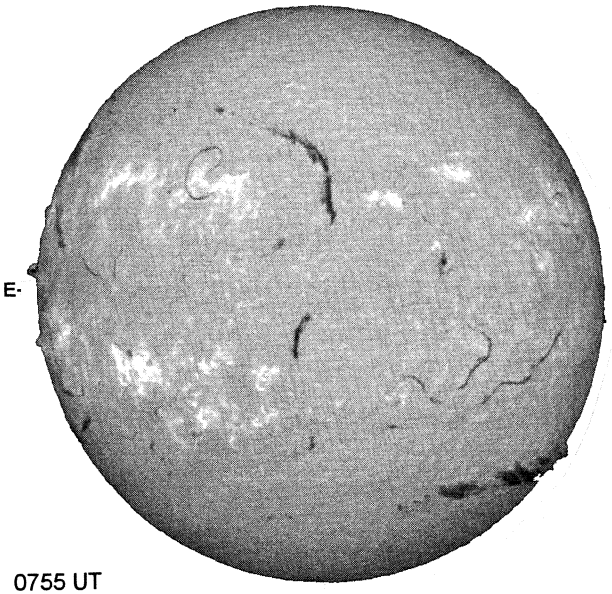
-W



16.51 -
17.45 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

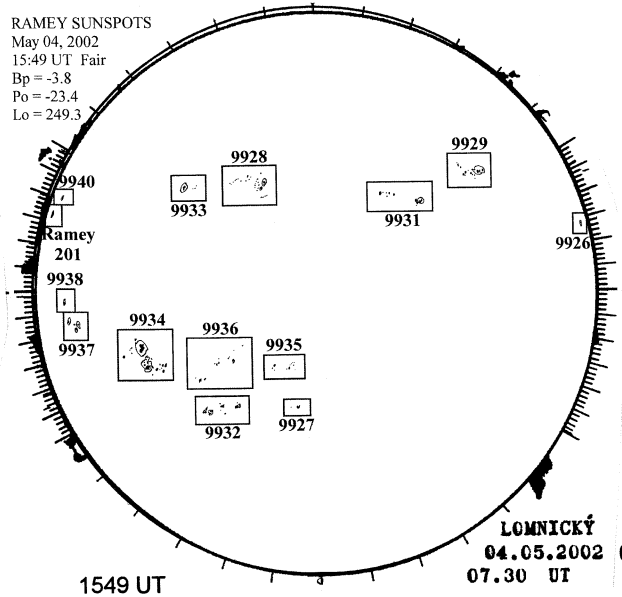


0755 UT

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
May 04, 2002
15:49 UT Fair
Bp = -3.8
Po = -23.4
Lo = 249.3



LOMNICKY
04.05.2002
07.30 UT

1549 UT
0730 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

LOMNICKY STIT
530.3 nm

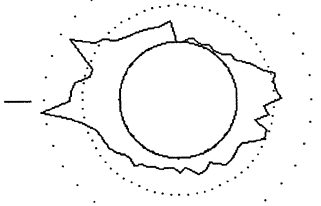
N

MAY 4, 2002

E

W

W



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

S

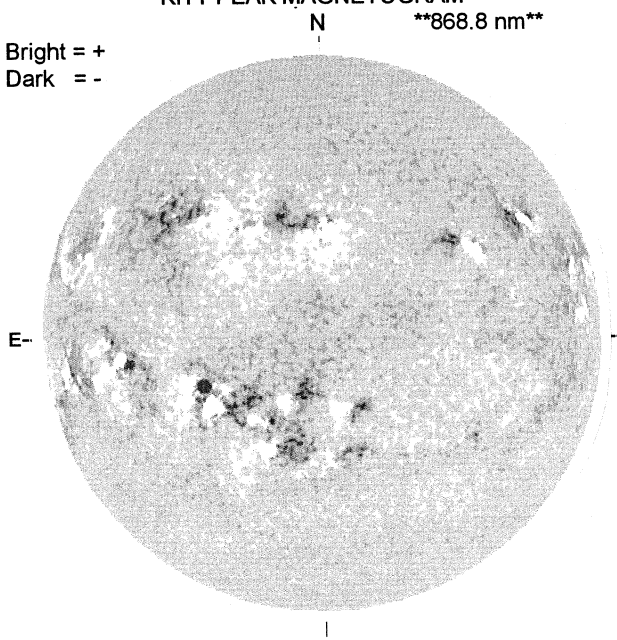
07:40 UT

0740 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

S

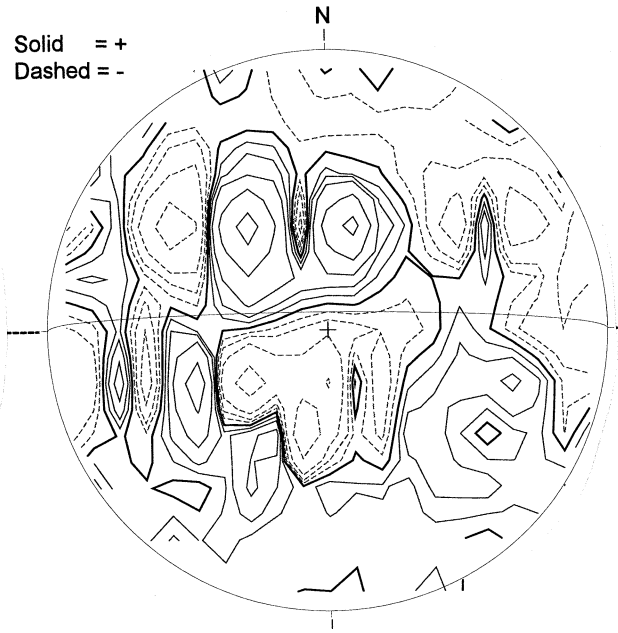
MAY 5, 2002 (P= -23.42, Bo = -3.78, Lo = 245.17)

KITT PEAK MAGNETOGRAM



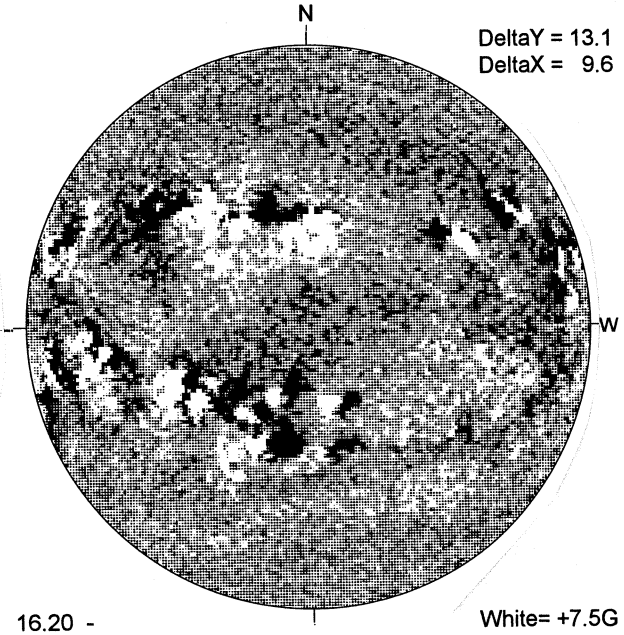
1554 UT

STANFORD MAGNETOGRAM



1819 UT

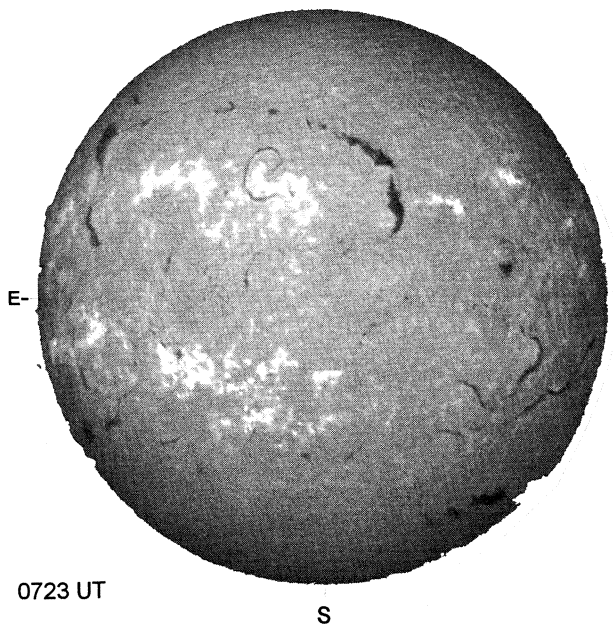
MT. WILSON MAGNETOGRAM



16.20 -
17.13 UT

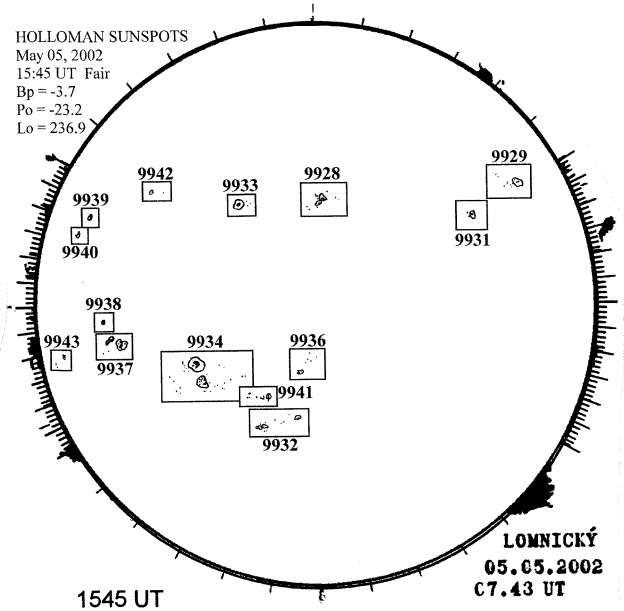
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



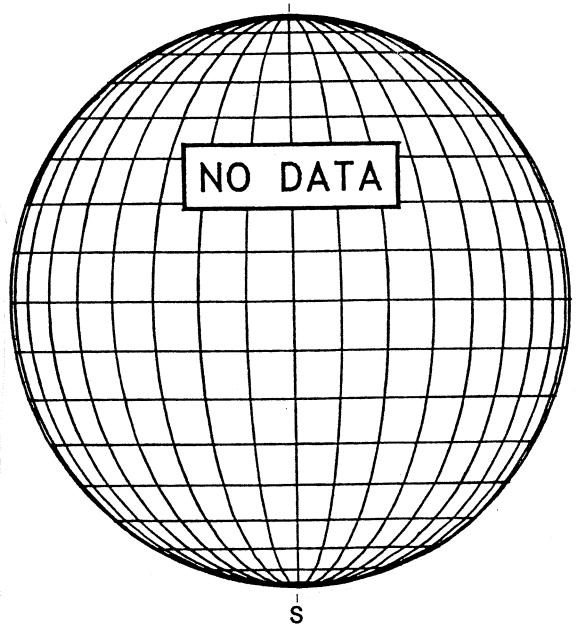
0723 UT

HOLLOMAN SUNSPOT



1545 UT
0743 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

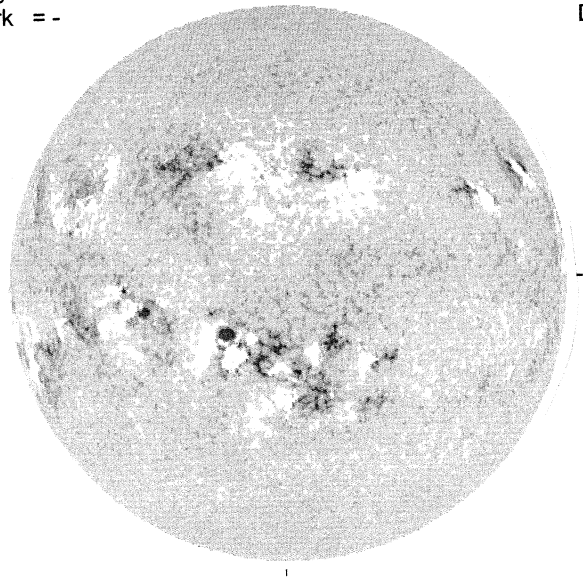


MAY 6, 2002 (P= -23.22, Bo = -3.67, Lo = 231.95)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



E--

1600 UT

STANFORD MAGNETOGRAM

N

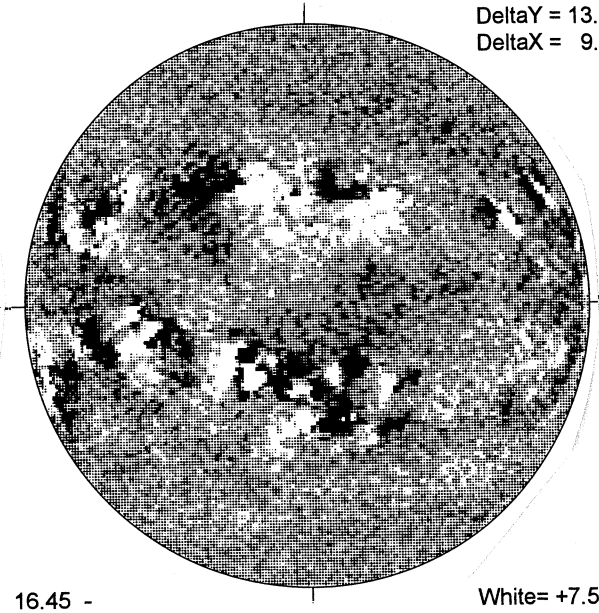
Solid = +
Dashed = -

1839 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

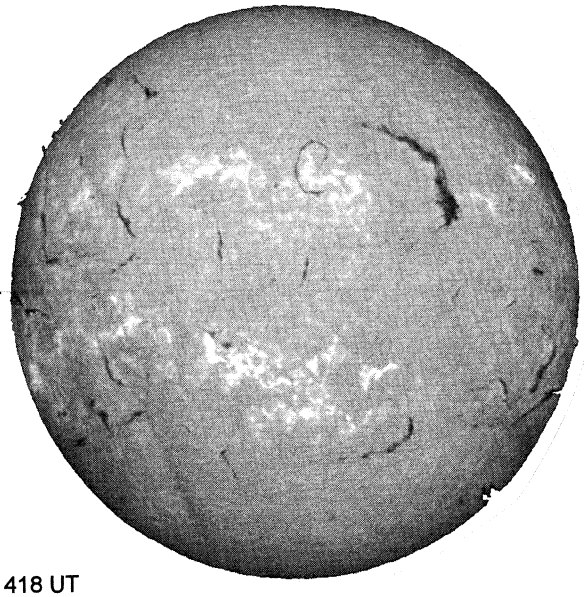


W

16.45 -
17.38 UT

White= +7.5G
Black = -7.5G

----- MEUDON H-ALPHA



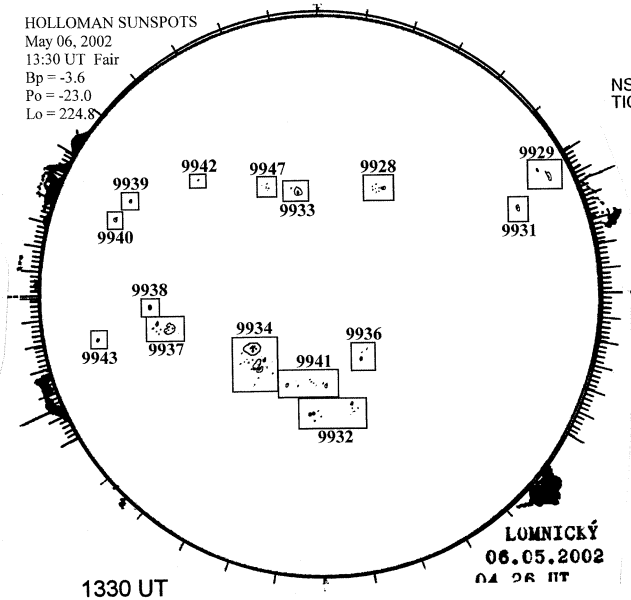
E-

1418 UT

S

HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
May 06, 2002
13:30 UT Fair
Bp = -3.6
Po = -23.0
Lo = 224.8

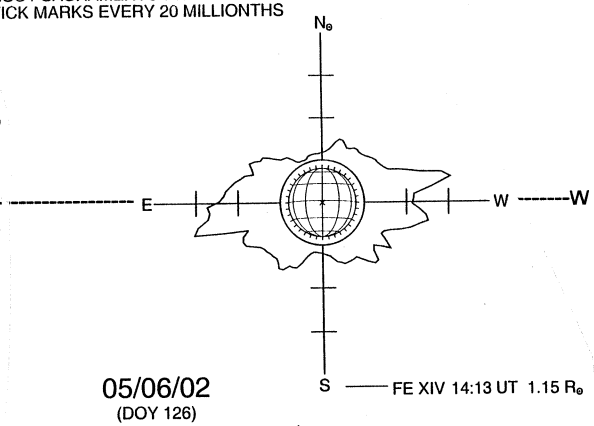


LOMNICKÝ
06.05.2002
04:26 UT

1330 UT
0426 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



FE XIV 14:13 UT 1.15 $R_\odot$

05/06/02
(DOY 126)

S

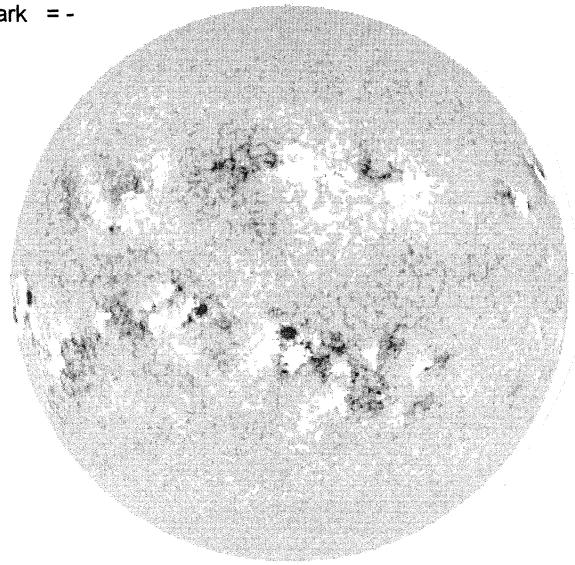
MAY 7, 2002 (P= -23.00, Bo = -3.57, Lo = 218.73)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E

1523 UT

STANFORD MAGNETOGRAM

N

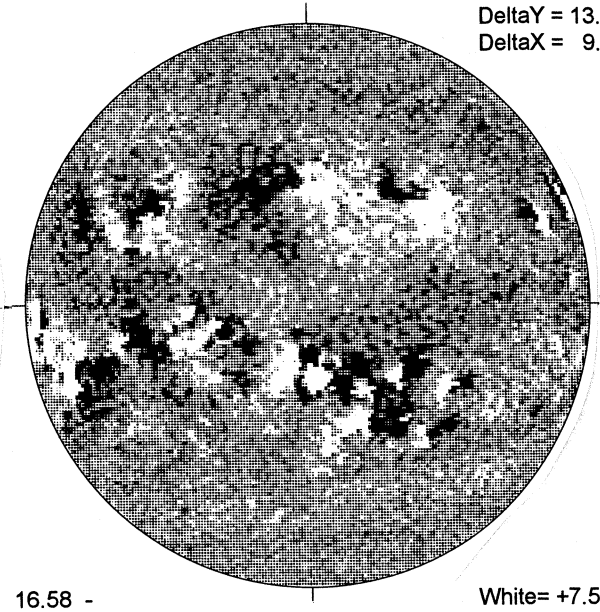
Solid = +
Dashed = -

1745 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

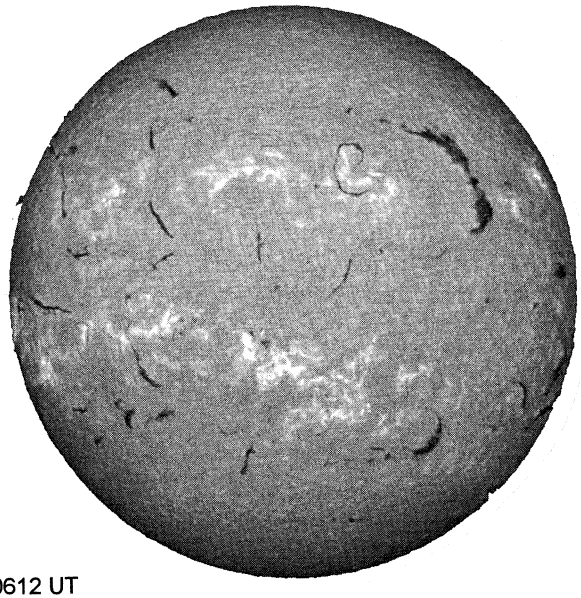


W

16.58 -
17.50 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



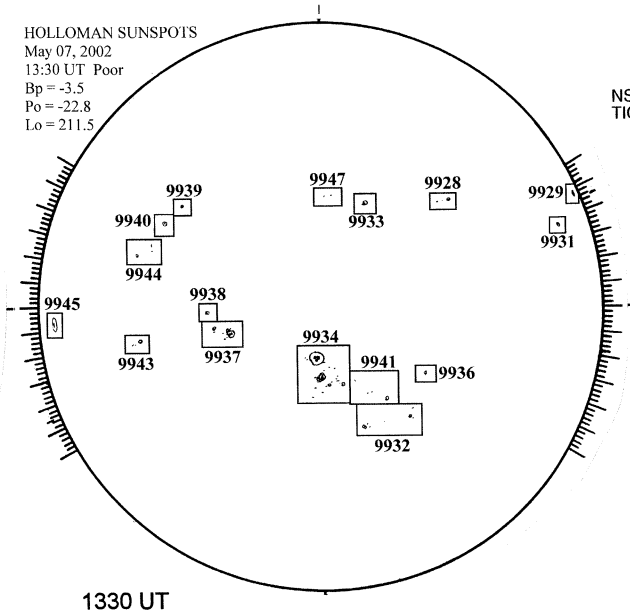
E

0612 UT

S

HOLLOMAN SUNSPOTS

HOLLOMAN SUNSPOTS
May 07, 2002
13:30 UT Poor
Bp = -3.5
Po = -22.8
Lo = 211.5

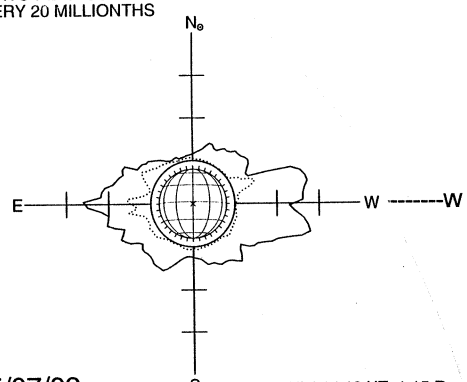


1330 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



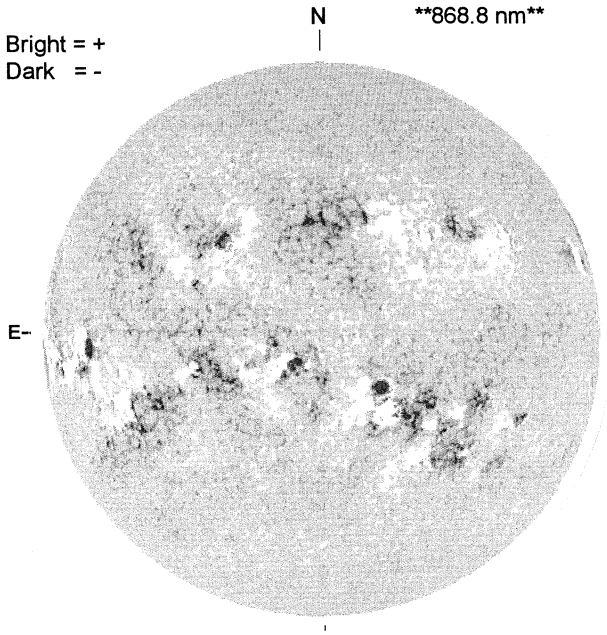
05/07/02
(DOY 127)

FE XIV 14:13 UT 1.15 R⊙
FE X 15:42 UT 1.15 R⊙

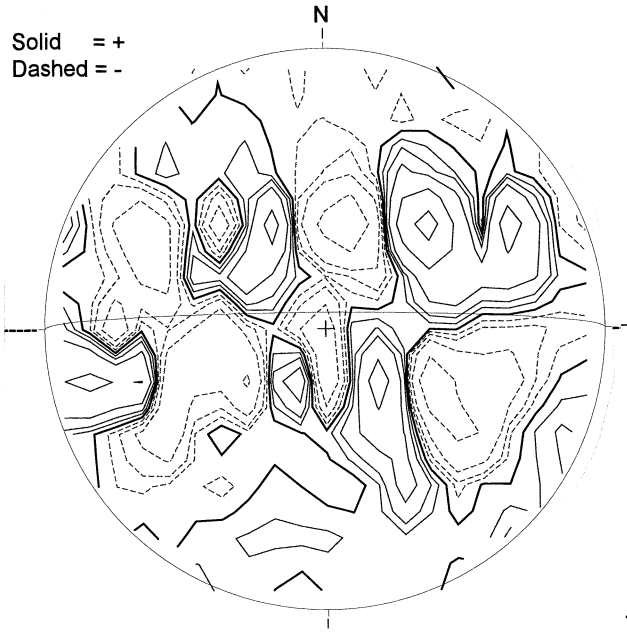
S

MAY 8, 2002 (P= -22.78, Bo = -3.46, Lo = 205.51)

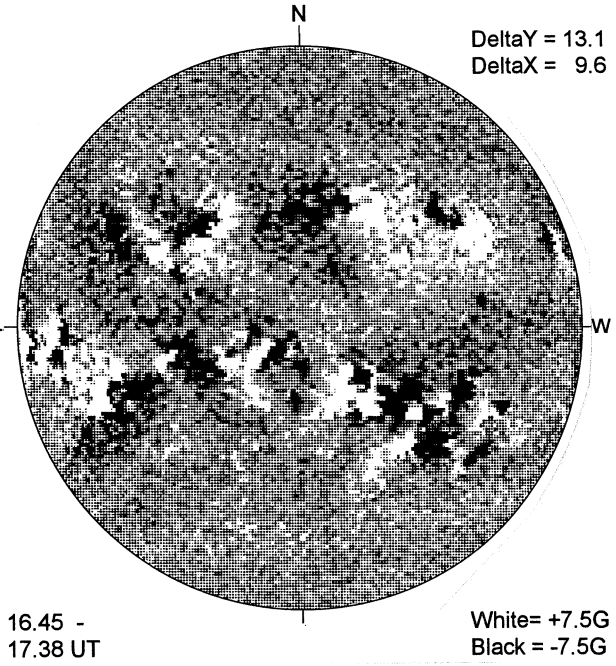
KITT PEAK MAGNETOGRAM



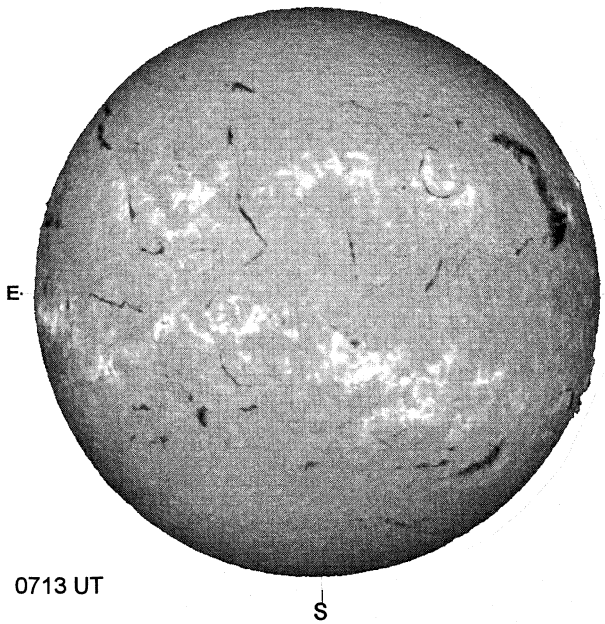
STANFORD MAGNETOGRAM



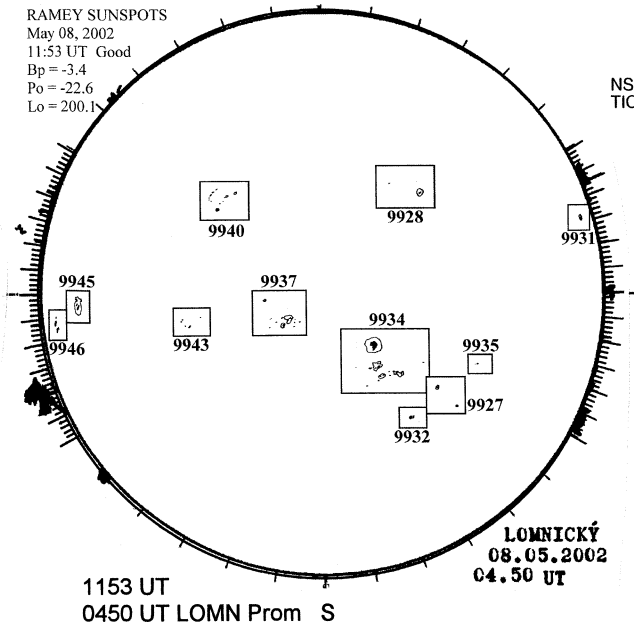
MT. WILSON MAGNETOGRAM



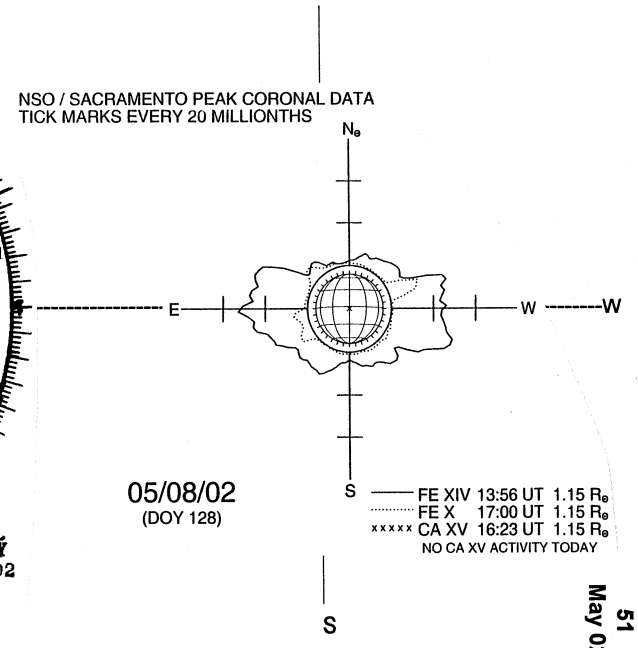
MEUDON H-ALPHA



RAMEY SUNSPOT

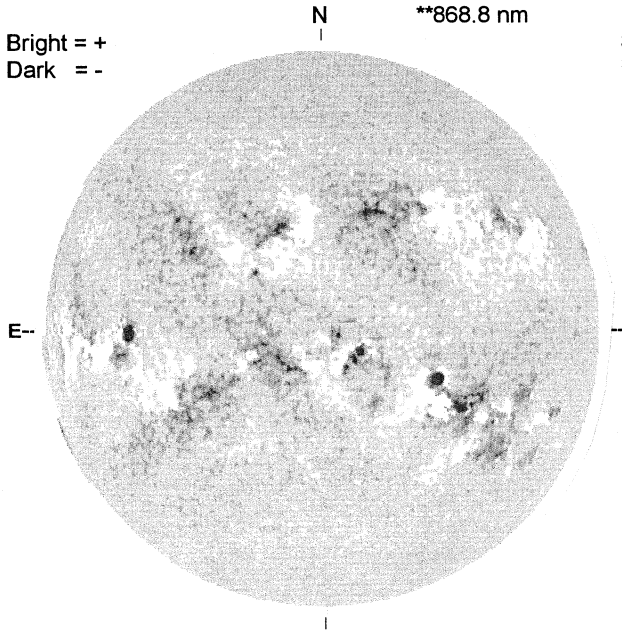


SACRAMENTO PEAK CORONA (1.15 Radii)----

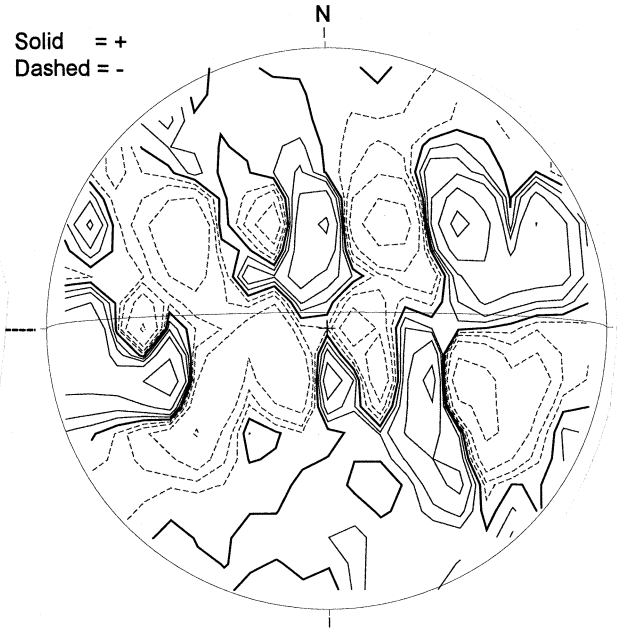


MAY 9, 2002 (P= -22.55, Bo = -3.35, Lo = 192.28)

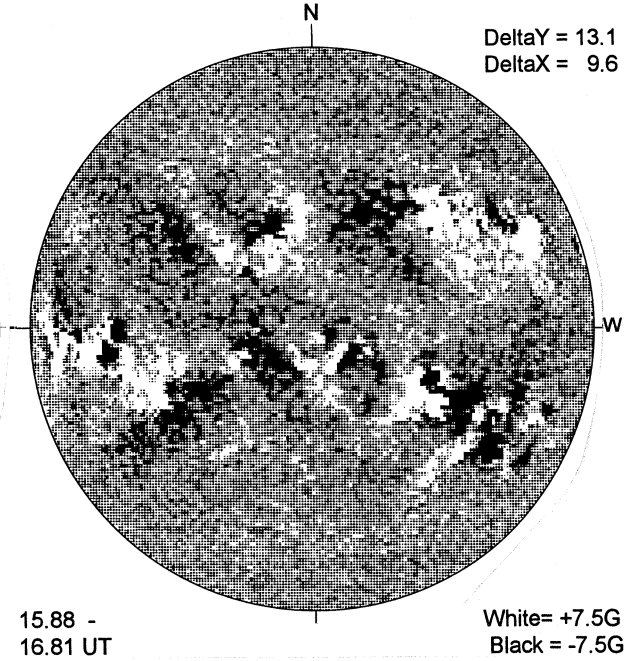
KITT PEAK MAGNETOGRAM



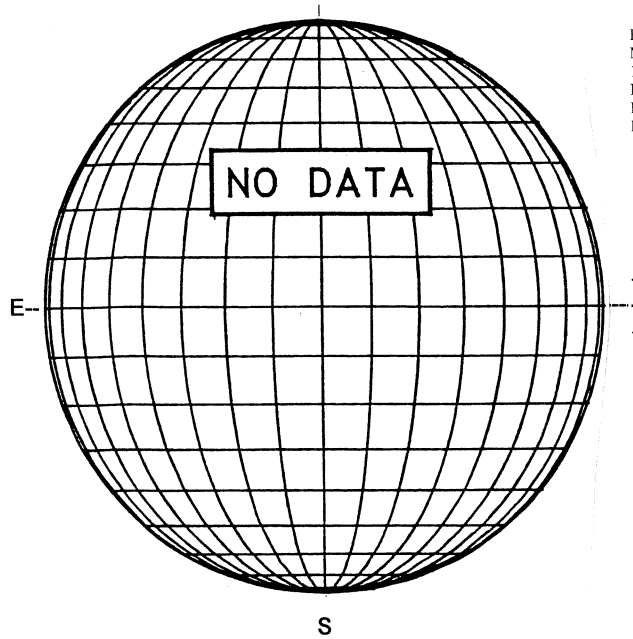
STANFORD MAGNETOGRAM



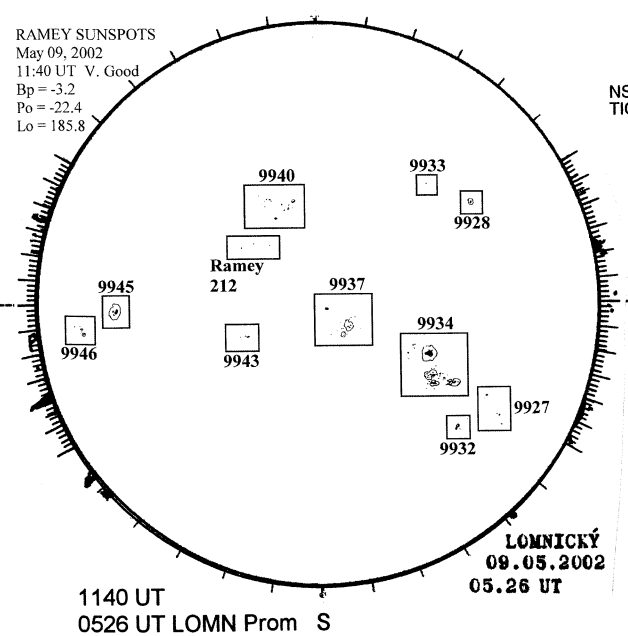
MT. WILSON MAGNETOGRAM



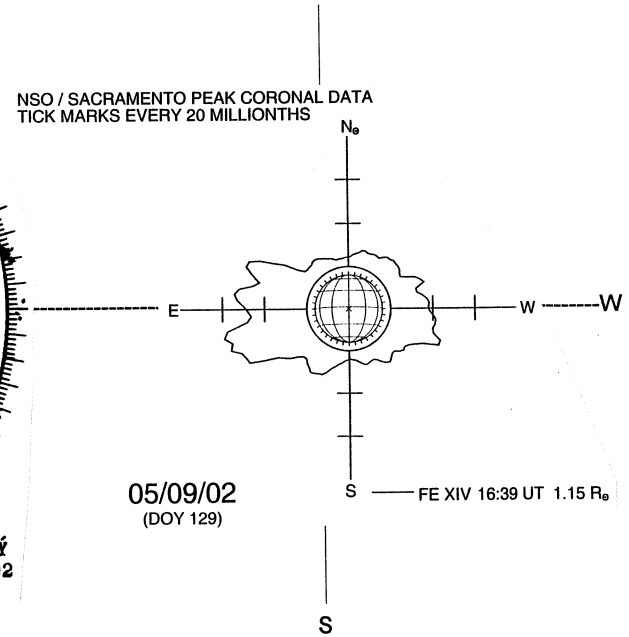
MEUDON H-ALPHA



RAMEY SUNSPOT

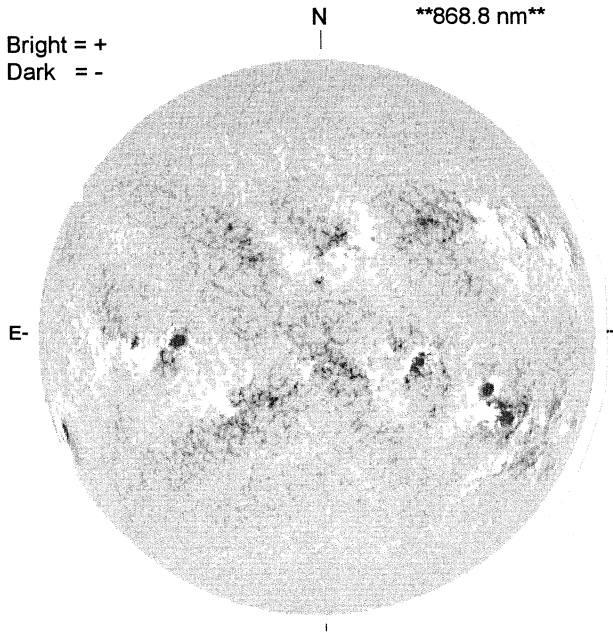


SACRAMENTO PEAK CORONA (1.15 Radii)----

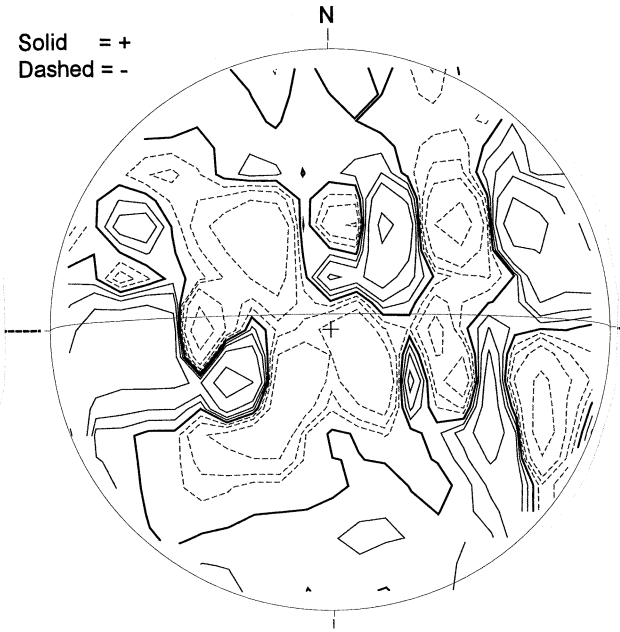


MAY 10, 2002 (P= -22.32, Bo = -3.24 Lo = 179.06)

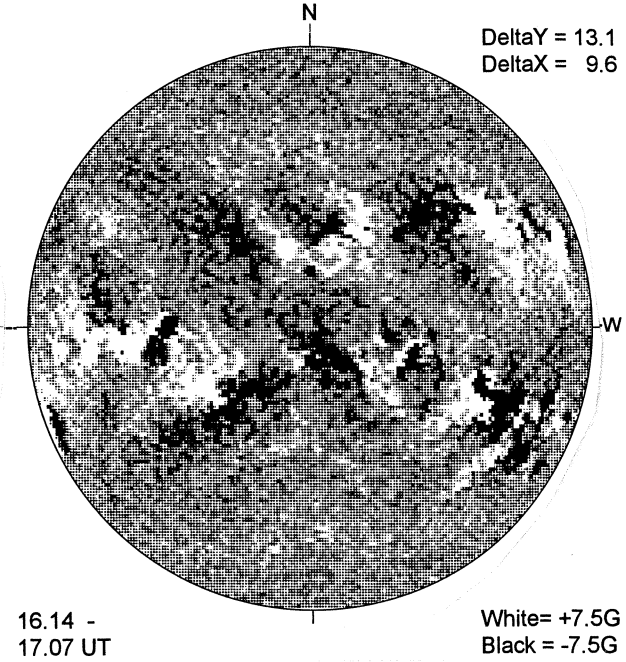
KITT PEAK MAGNETOGRAM



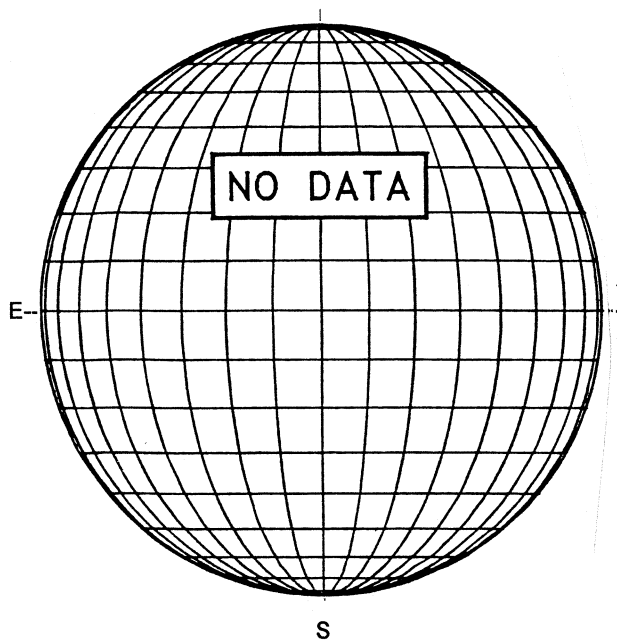
STANFORD MAGNETOGRAM



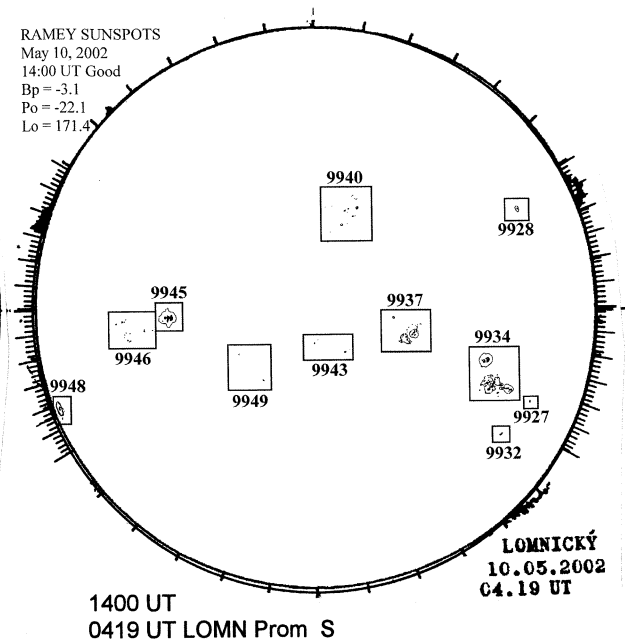
MT. WILSON MAGNETOGRAM



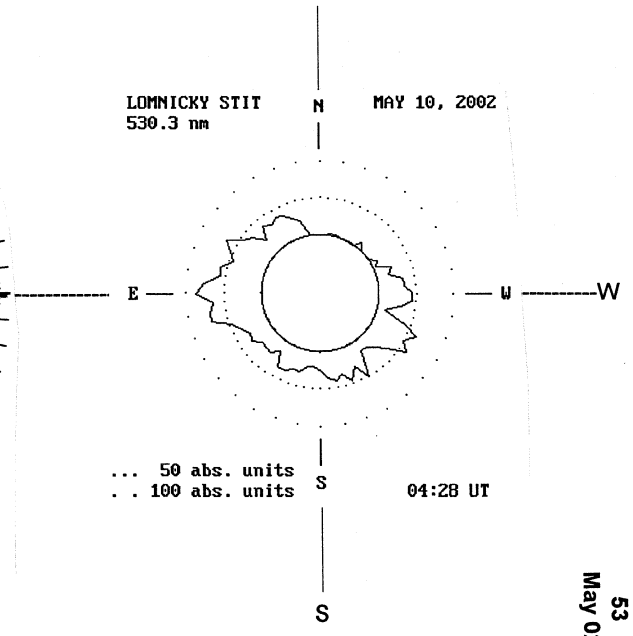
MEUDON H-ALPHA



RAMEY SUNSPOTS

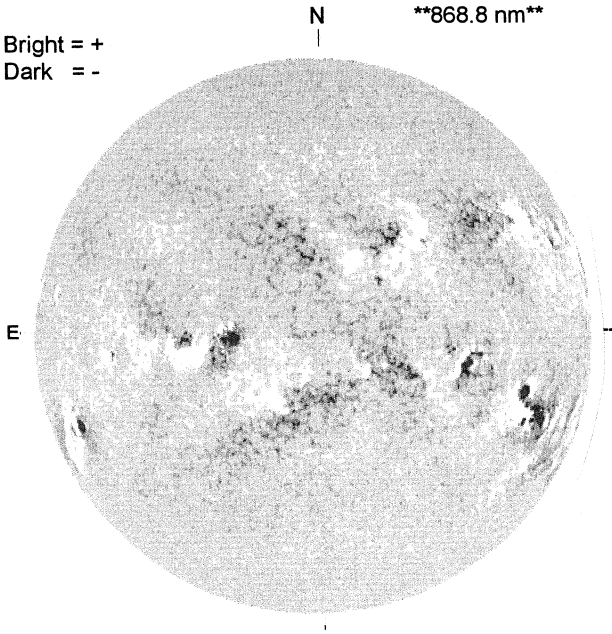


LOMNICKY PEAK CORONA (1.04 Radii)----

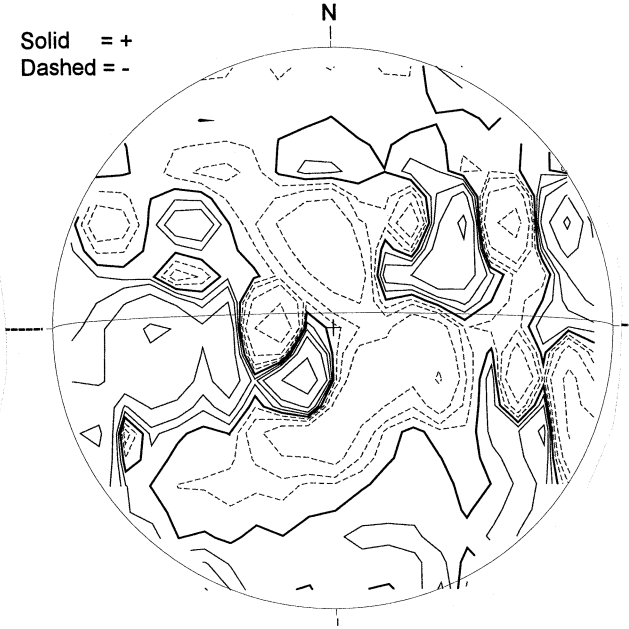


MAY 11, 2002 (P= -22.07, Bo = -3.13, Lo = 165.84)

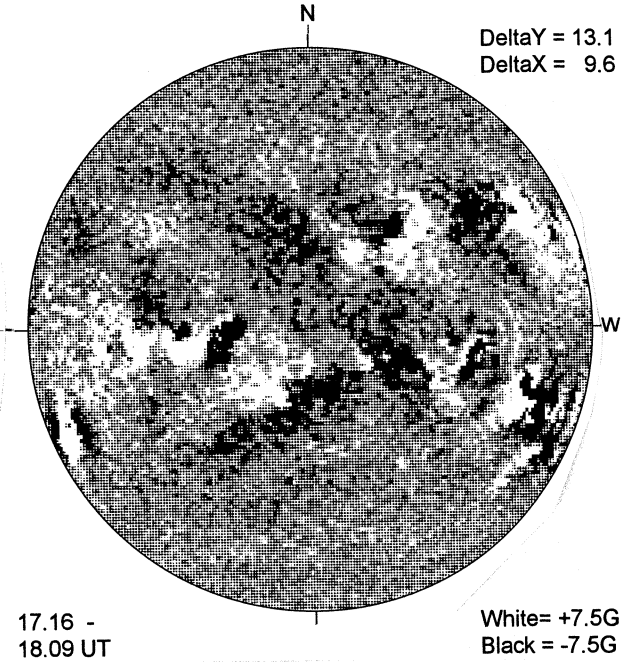
KITT PEAK MAGNETOGRAM



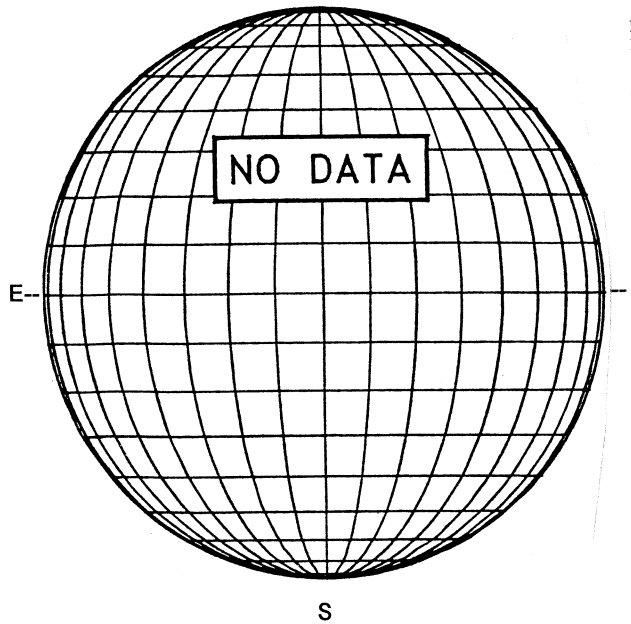
STANFORD MAGNETOGRAM



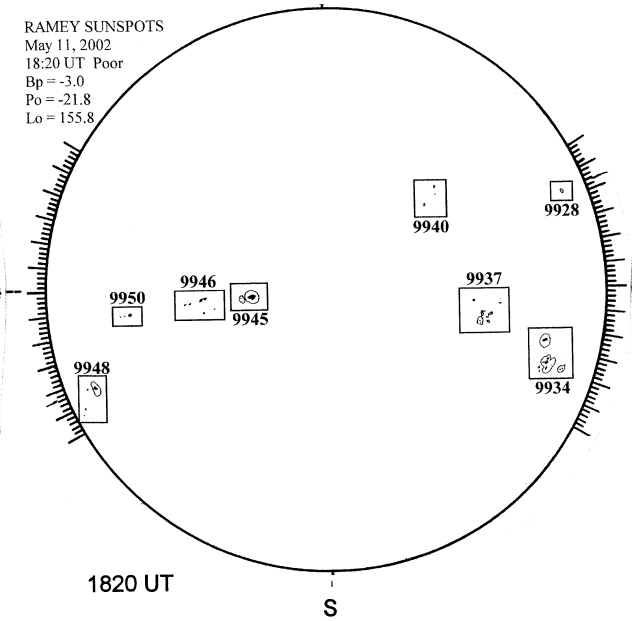
MT. WILSON MAGNETOGRAM



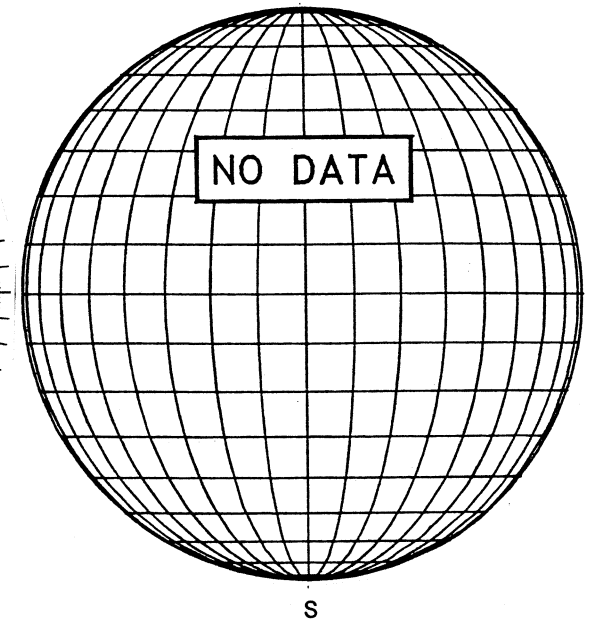
MEUDON H-ALPHA



RAMEY SUNSPOTS

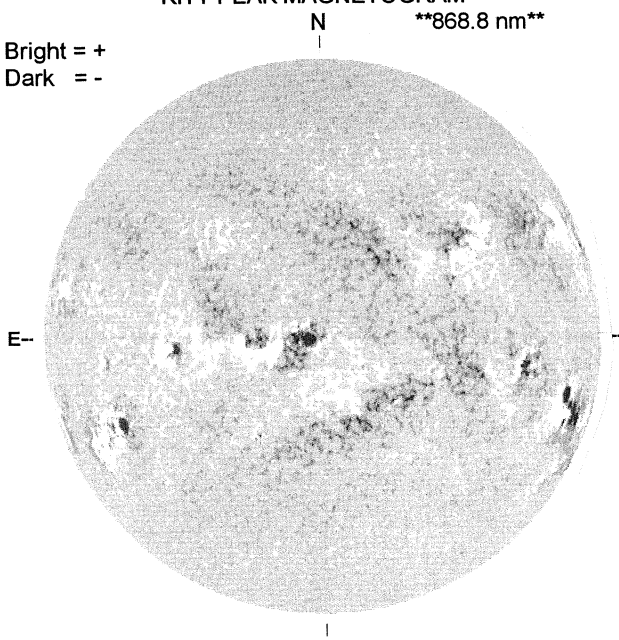


SACRAMENTO PEAK CORONA (1.15 Radii)

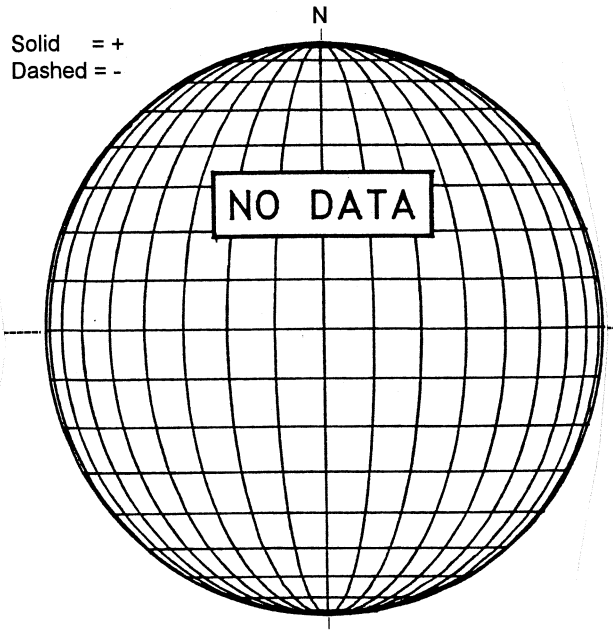


MAY 12, 2002 (P= -21.82, Bo = -3.02 Lo = 152.62)

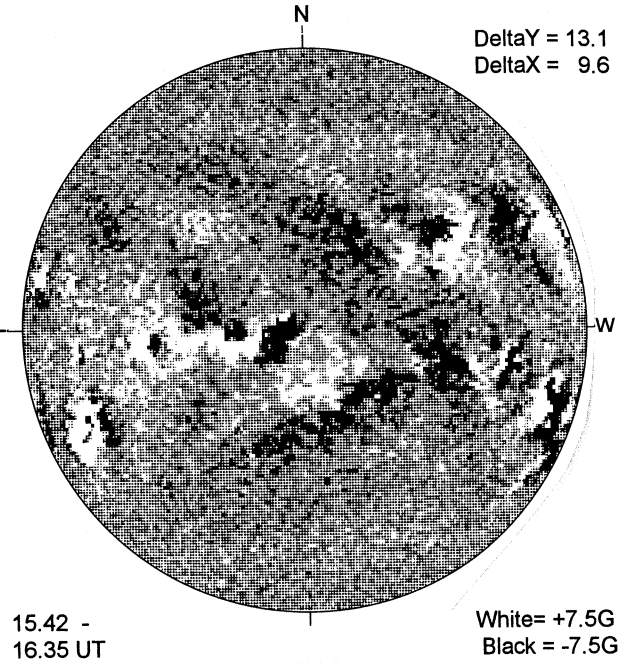
KITT PEAK MAGNETOGRAM



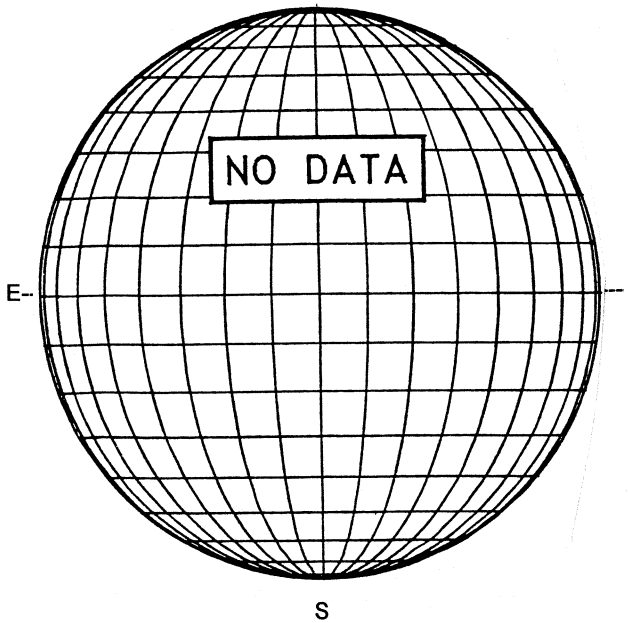
STANFORD MAGNETOGRAM



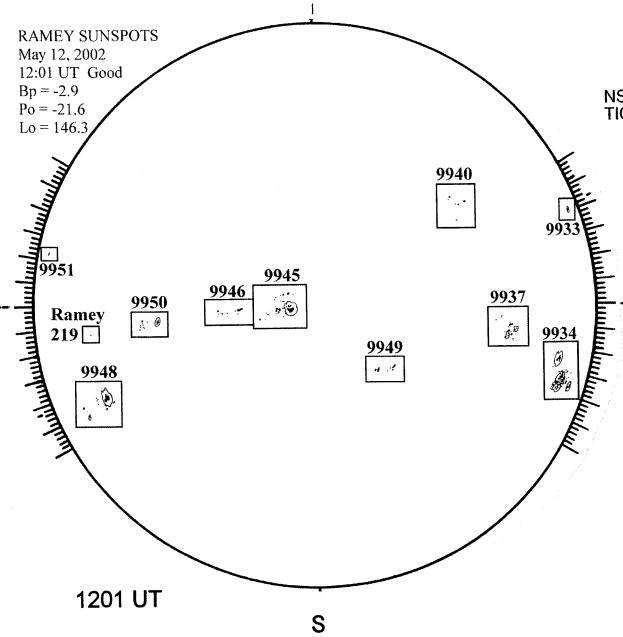
MT. WILSON MAGNETOGRAM



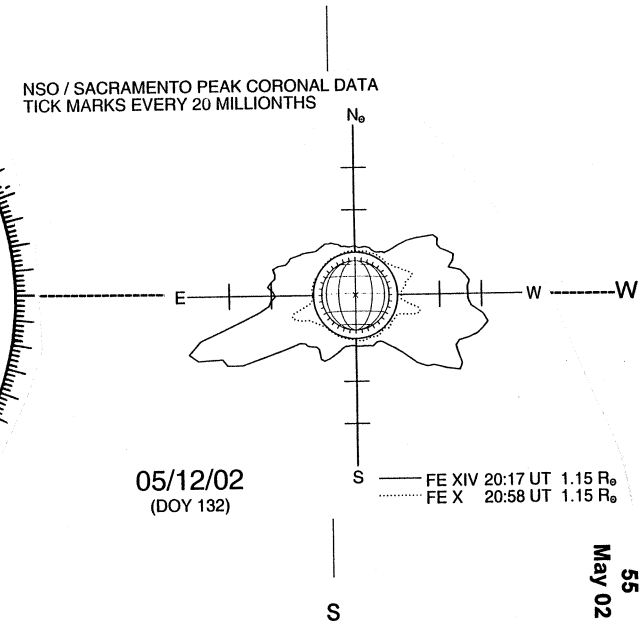
MEUDON H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)----

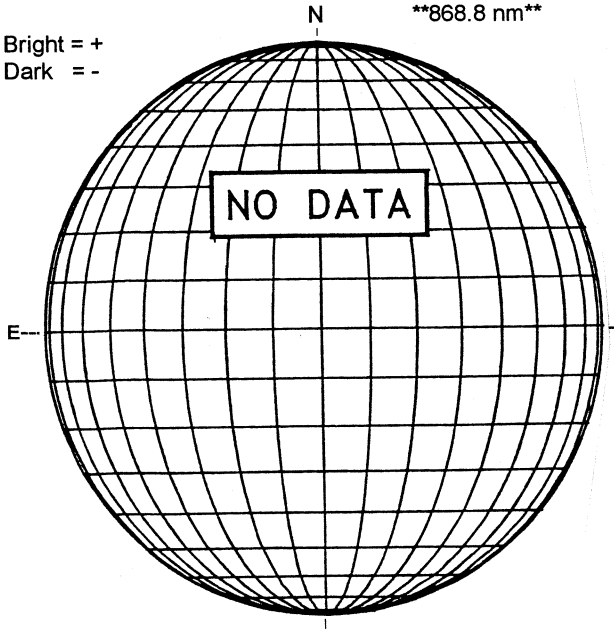


MAY 13, 2002 (P= -21.57, Bo = -2.91, Lo = 139.39)

KITT PEAK MAGNETOGRAM

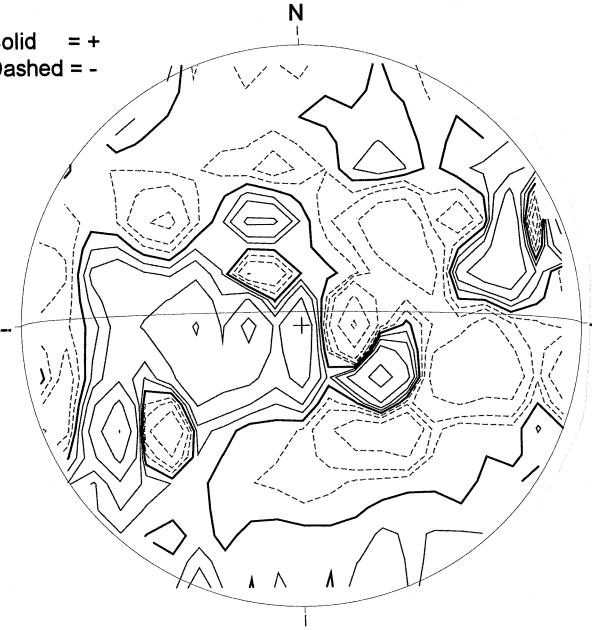
868.8 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

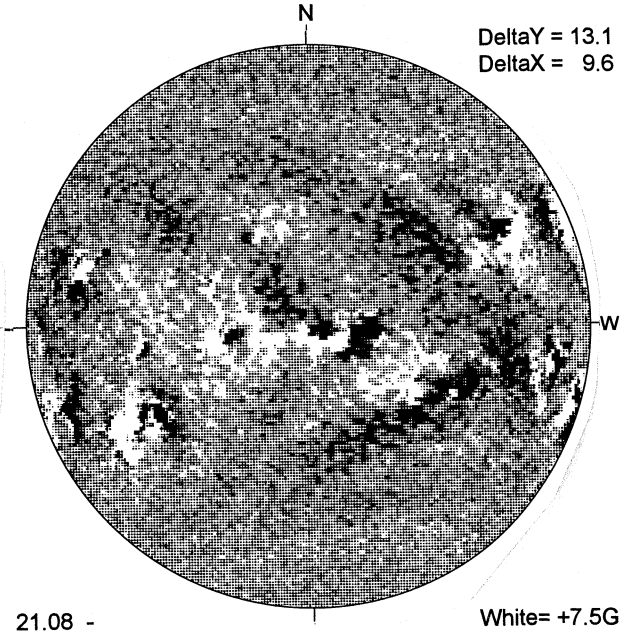
Solid = +
Dashed = -



1818 UT

MT. WILSON MAGNETOGRAM

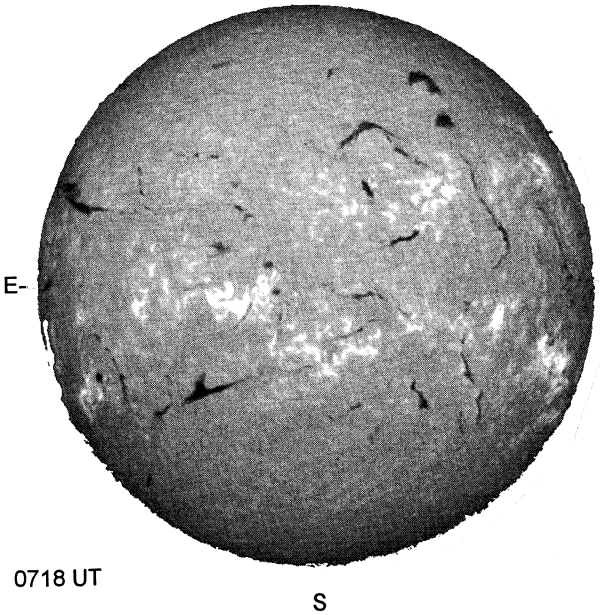
DeltaY = 13.1
DeltaX = 9.6



21.08 -
22.01 UT

White= +7.5G
Black = -7.5G

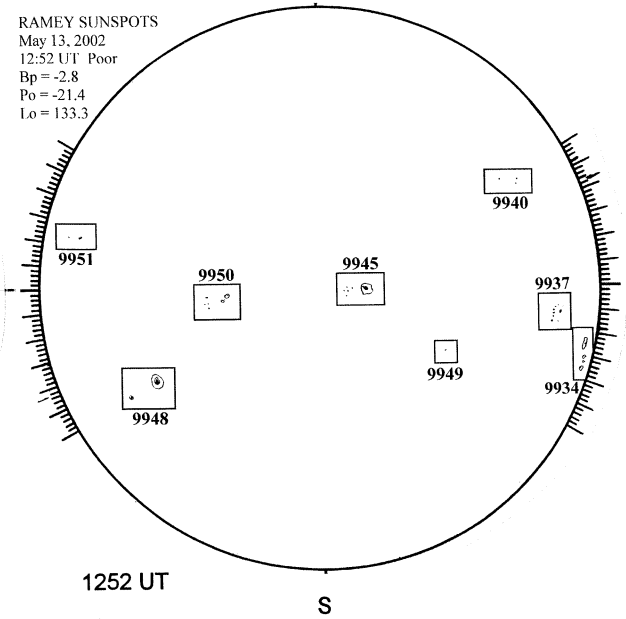
MEUDON H-ALPHA



0718 UT

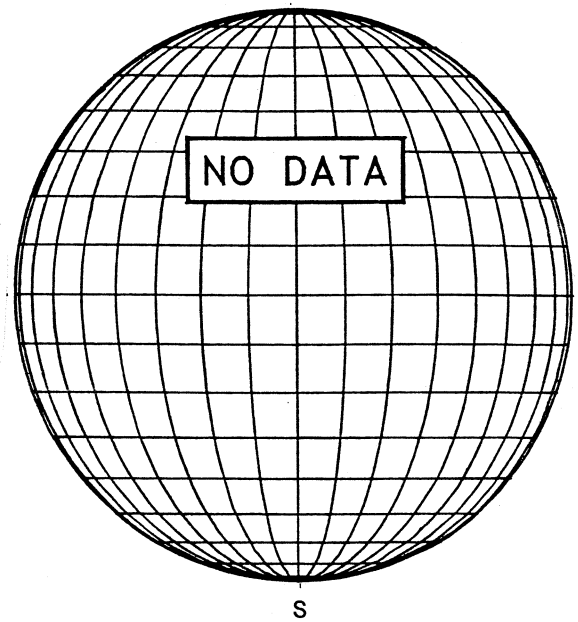
RAMEY SUNSPOT

RAMEY SUNSPOTS
May 13, 2002
12:52 UT Poor
Bp = -2.8
Po = -21.4
Lo = 133.3



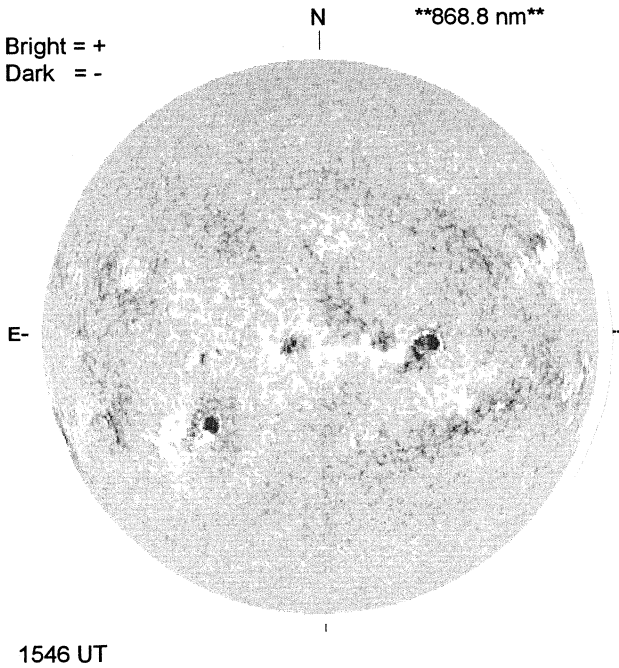
1252 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

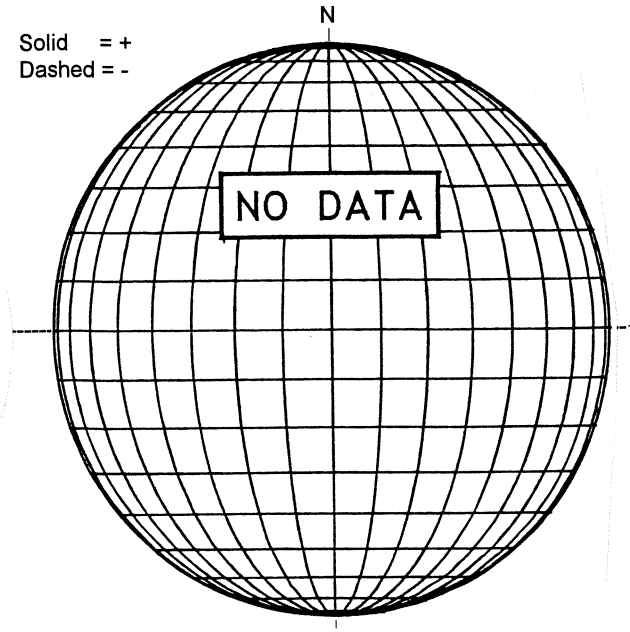


MAY 14, 2002 (P= -21.30, Bo = -2.80, Lo = 126.17)

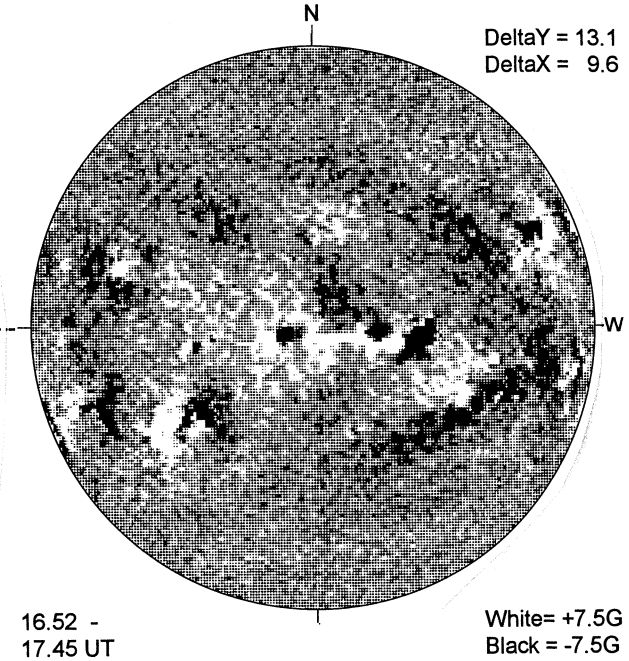
KITT PEAK MAGNETOGRAM



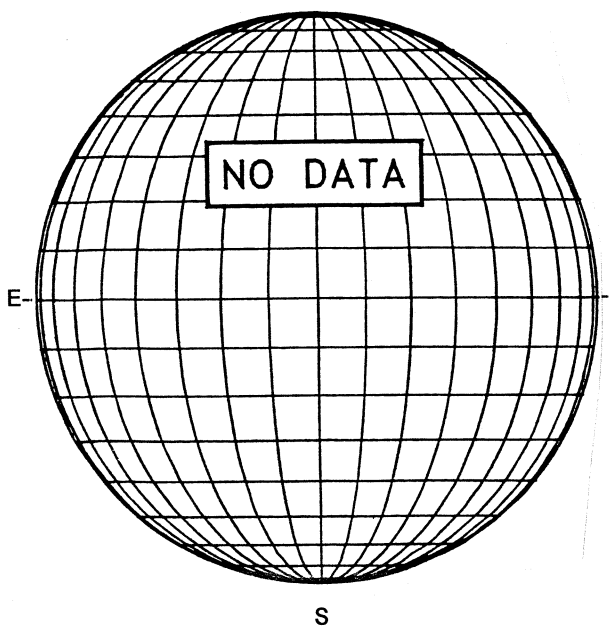
STANFORD MAGNETOGRAM



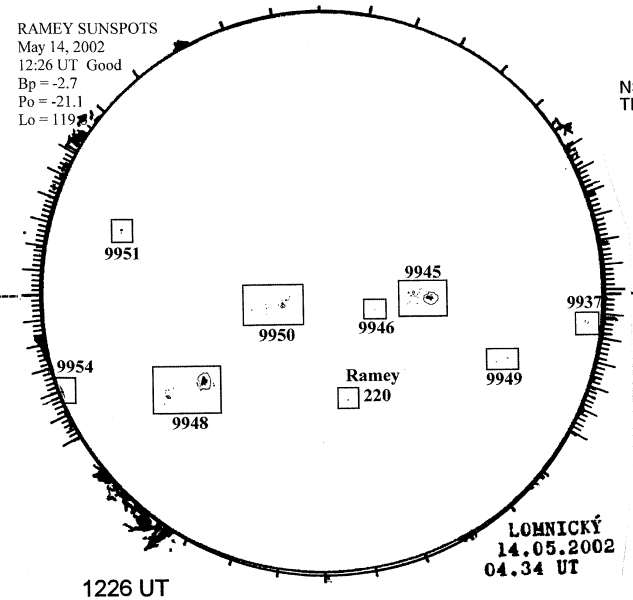
MT. WILSON MAGNETOGRAM



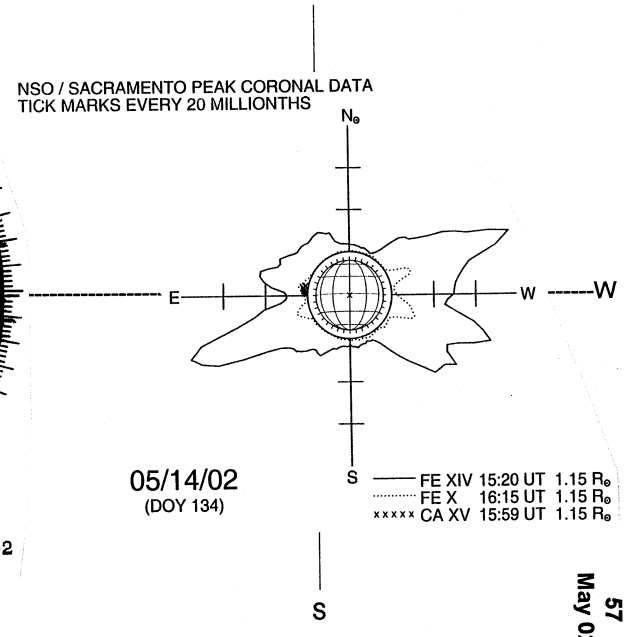
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



MAY 15, 2002 (P= -21.03, Bo = -2.69, Lo = 112.94)

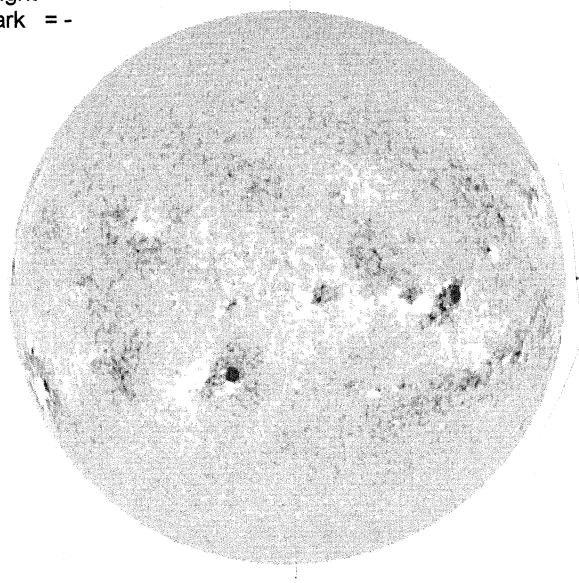
KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

E-

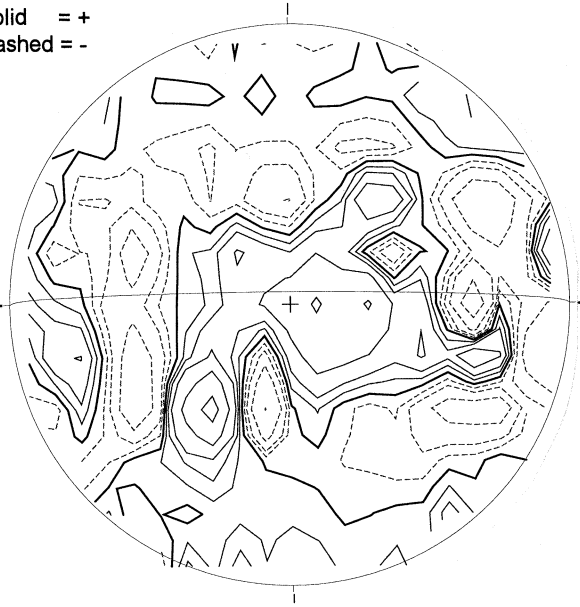


1526 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -



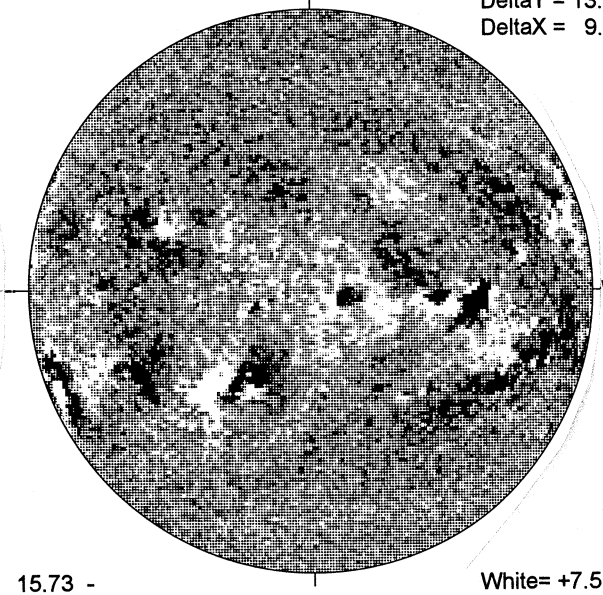
2243 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

-W

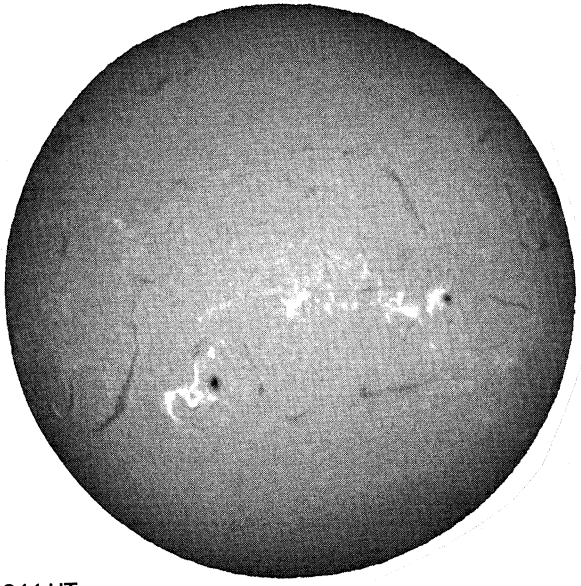


15.73 -
16.65 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

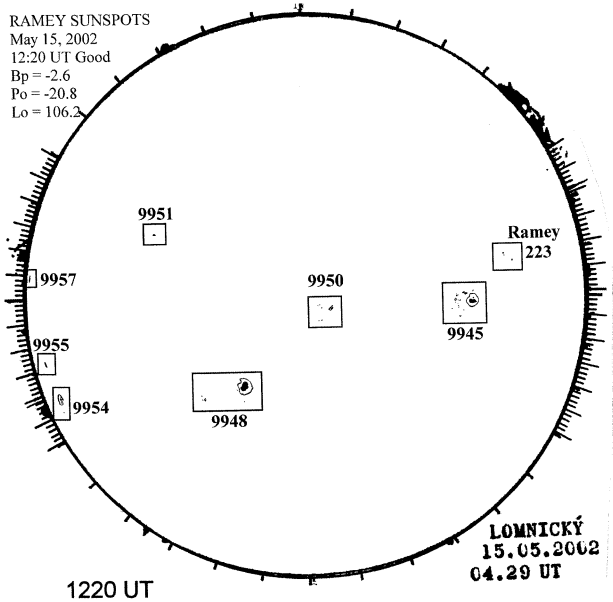
E



0844 UT

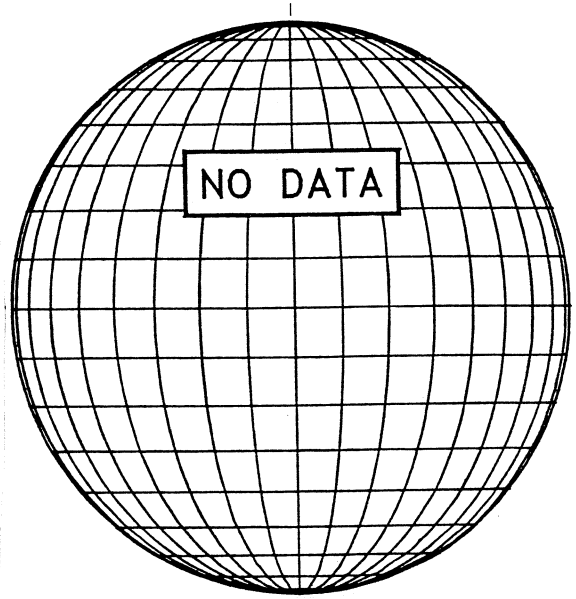
S

RAMEY SUNSPOT



1220 UT
0429 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

MAY 16, 2002 (P= -20.76, Bo = -2.57, Lo = 99.72)

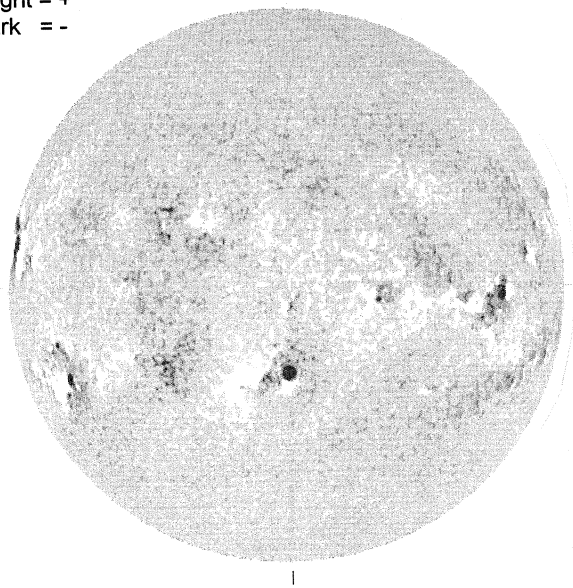
KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

E-

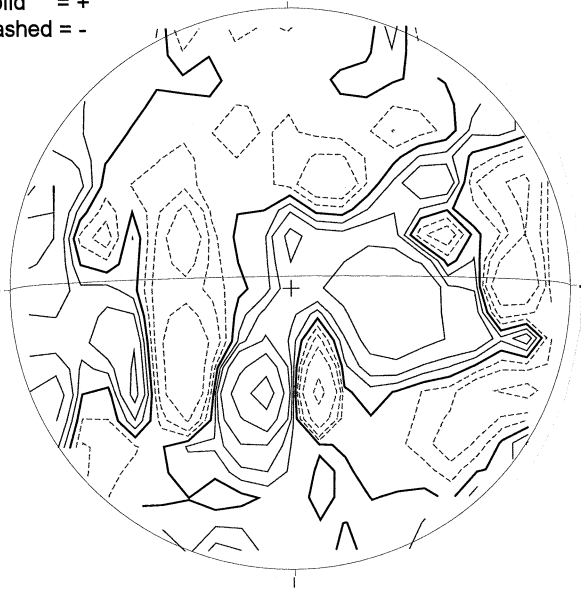


1529 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -



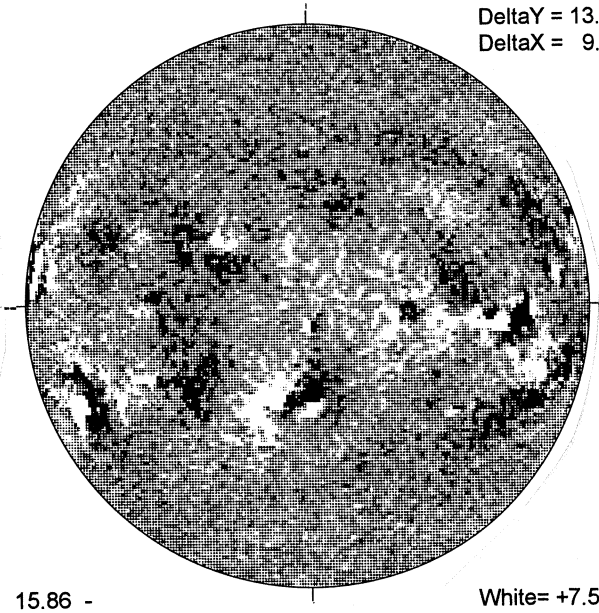
2015 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

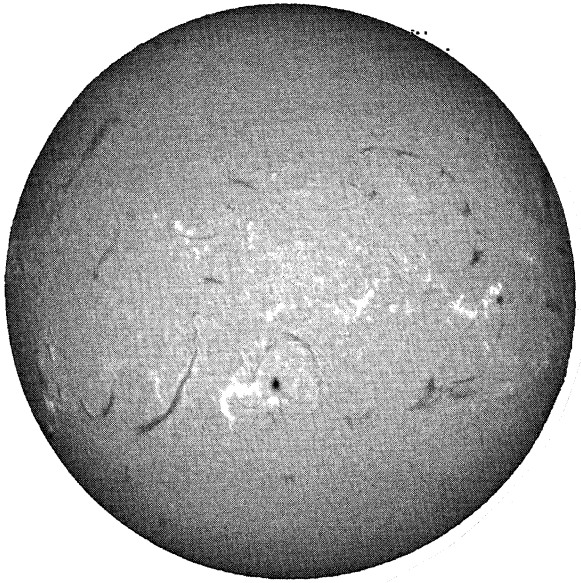
W



15.86 -
16.79 UT

White= +7.5G
Black = -7.5G

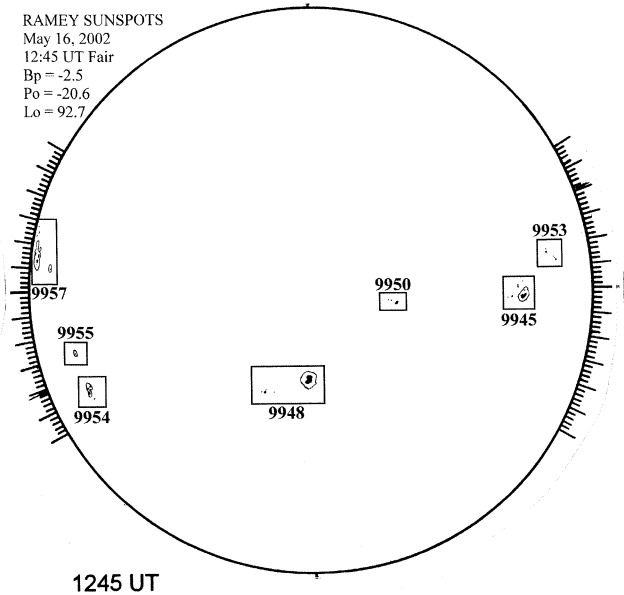
MEUDON H-ALPHA



0846 UT

S

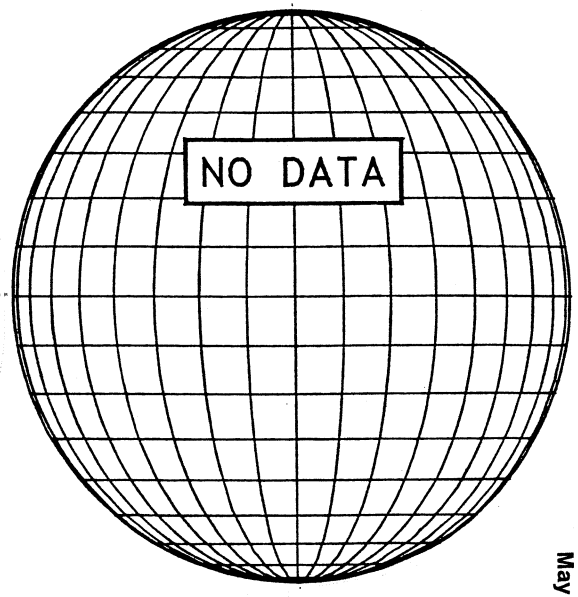
RAMEY SUNSPOT



1245 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



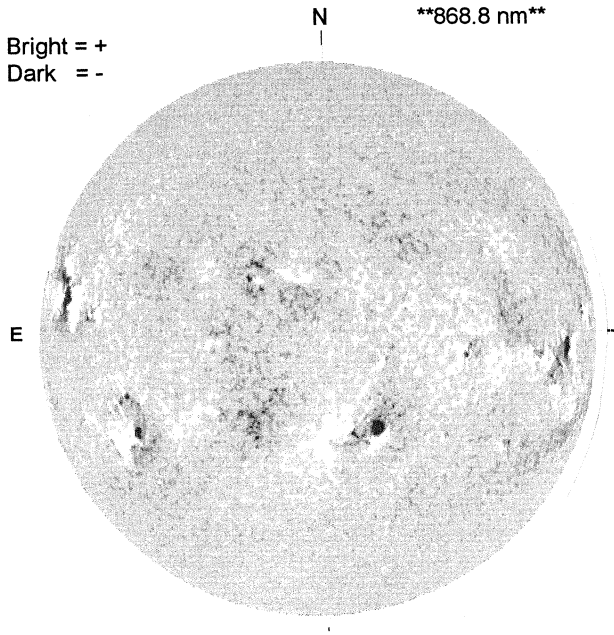
S

MAY 17, 2002 (P= -20.48, Bo = -2.46, Lo = 86.49)

KITT PEAK MAGNETOGRAM

868.8 nm

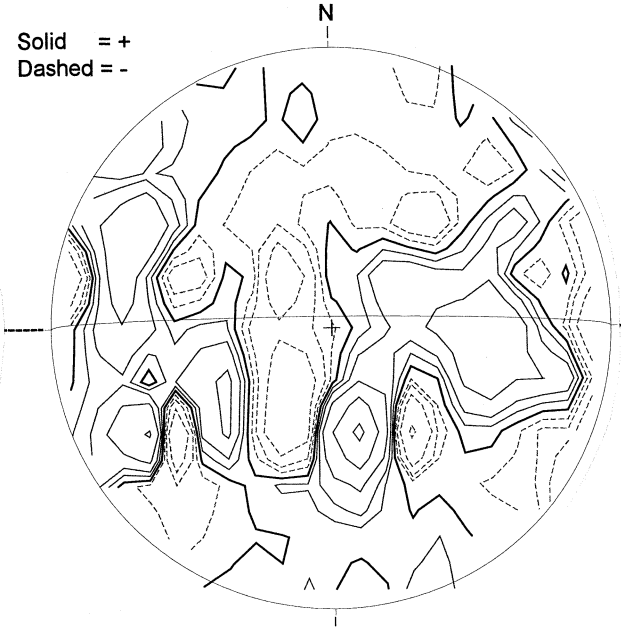
Bright = +
Dark = -



1458 UT

STANFORD MAGNETOGRAM

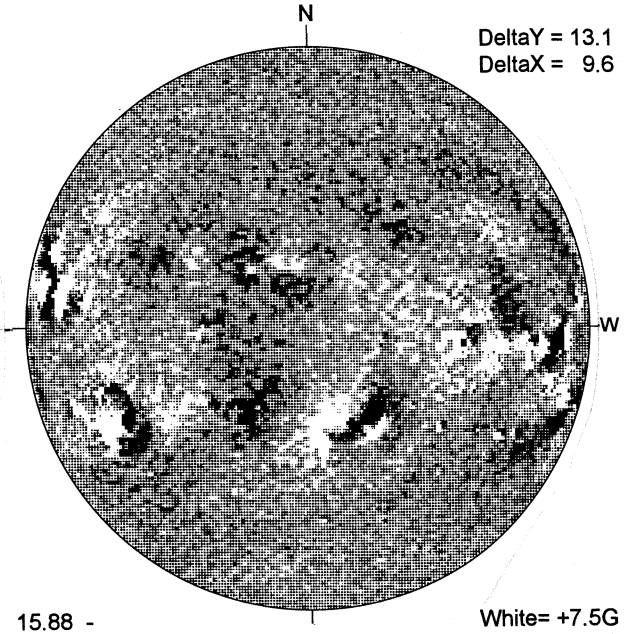
Solid = +
Dashed = -



2106 UT

MT. WILSON MAGNETOGRAM

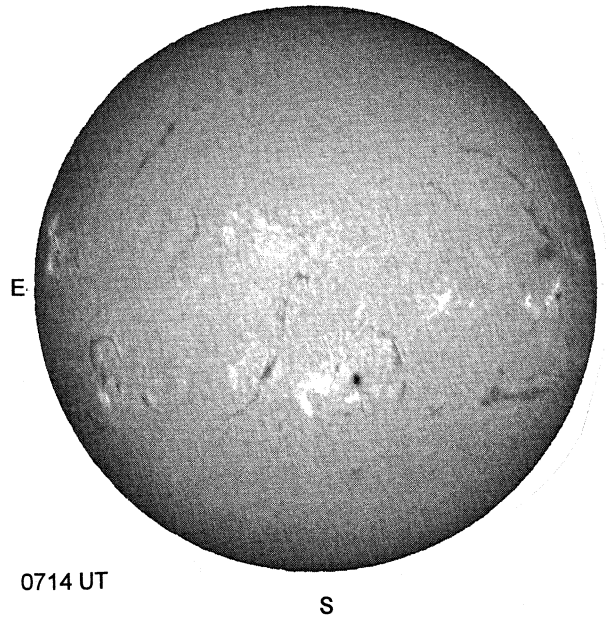
DeltaY = 13.1
DeltaX = 9.6



15.88 -
16.80 UT

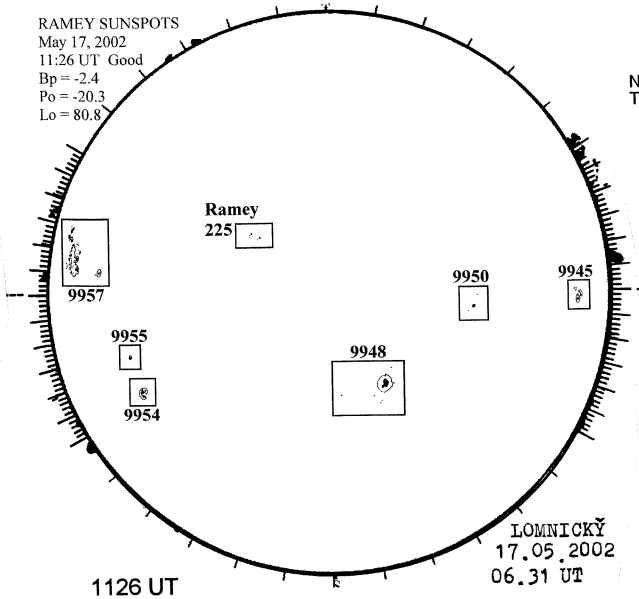
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



0714 UT

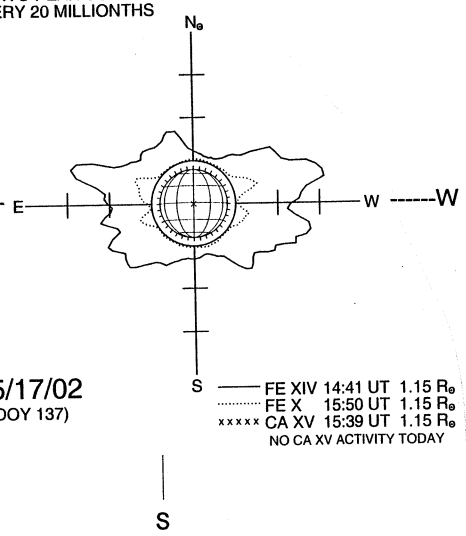
RAMEY SUNSPOT



1126 UT
0631 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



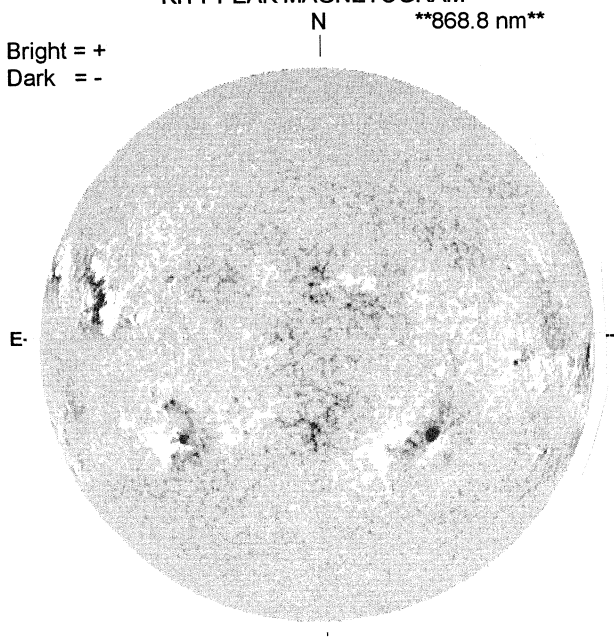
05/17/02
(DOY 137)

FE XIV 14:41 UT 1.15 Re
FE X 15:50 UT 1.15 Re
CA XV 15:39 UT 1.15 Re
NO CA XV ACTIVITY TODAY

MAY 18, 2002 (P= -20.19, Bo = -2.34, Lo = 73.27)

KITT PEAK MAGNETOGRAM

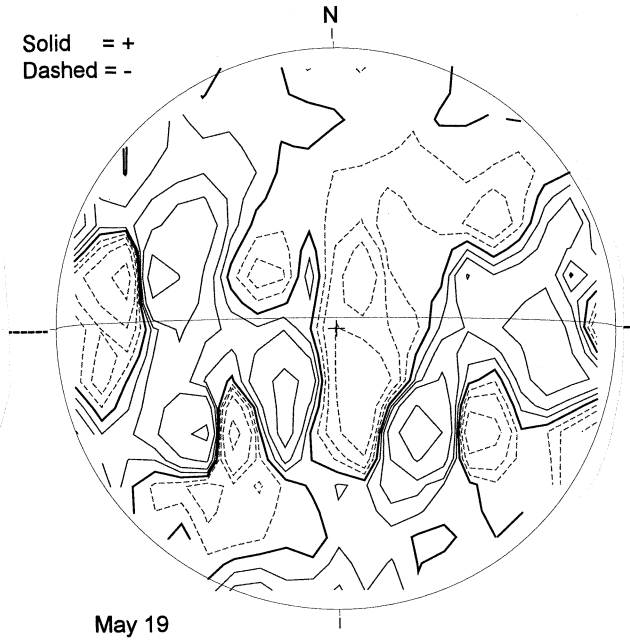
Bright = +
Dark = -



1449 UT

STANFORD MAGNETOGRAM

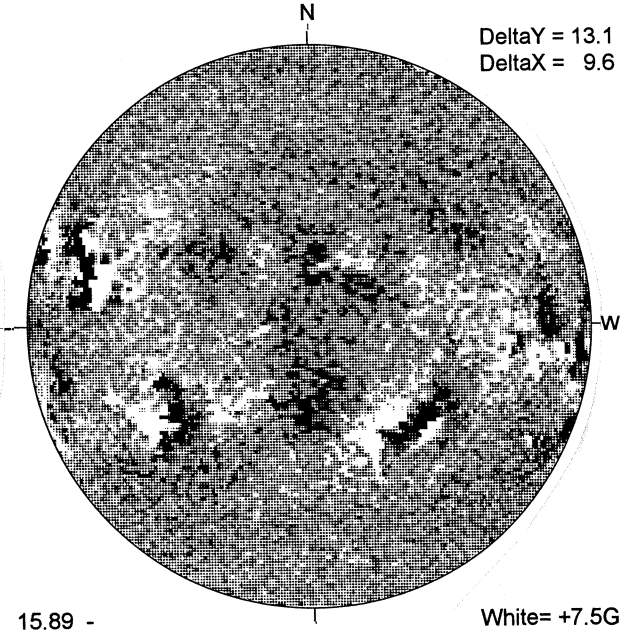
Solid = +
Dashed = -



May 19
0019 UT

MT. WILSON MAGNETOGRAM

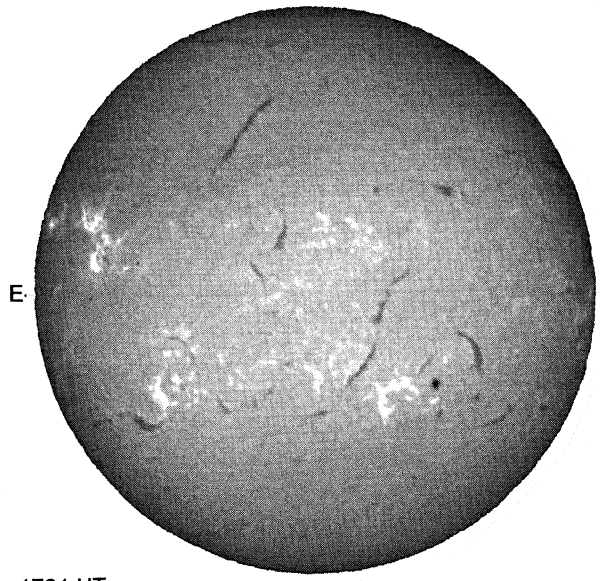
DeltaY = 13.1
DeltaX = 9.6



15.89 -
16.81 UT

White= +7.5G
Black = -7.5G

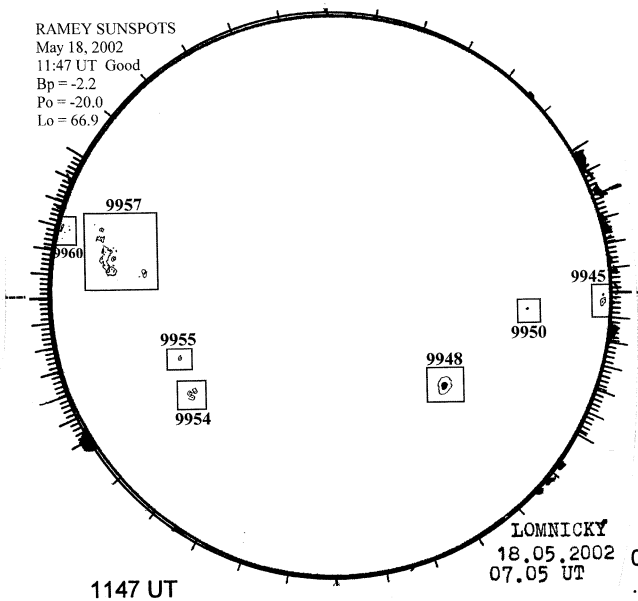
MEUDON H-ALPHA



1731 UT

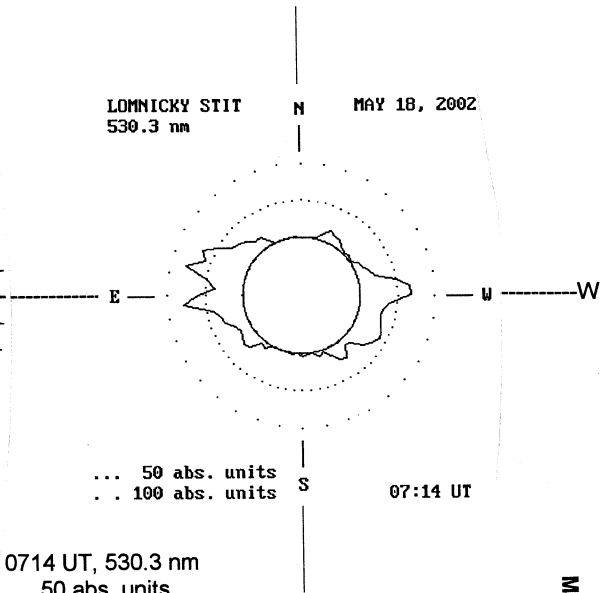
S

RAMEY SUNSPOT



1147 UT
0705 UT LOMN Prom S

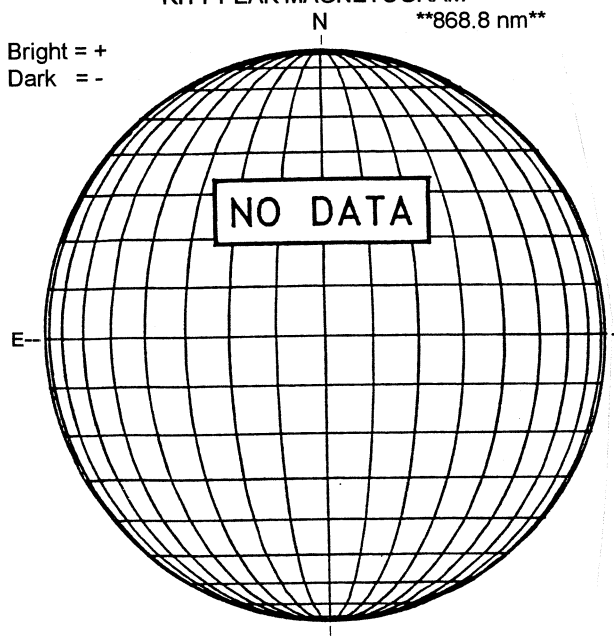
LOMNICKY PEAK CORONA (1.04 Radii)----



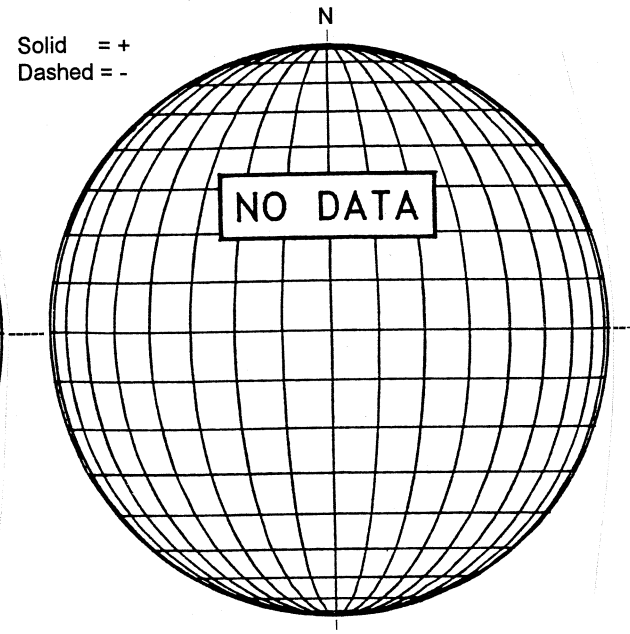
0714 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

MAY 19, 2002 (P= -19.89, Bo = -2.23, Lo = 60.04)

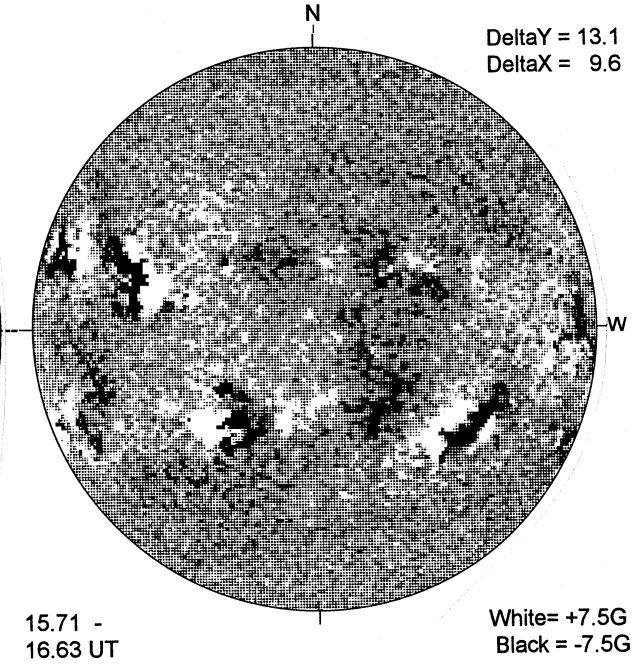
KITT PEAK MAGNETOGRAM



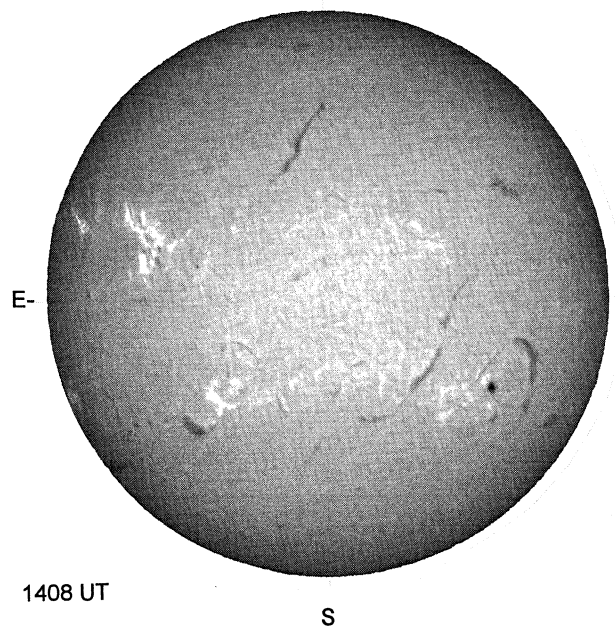
STANFORD MAGNETOGRAM



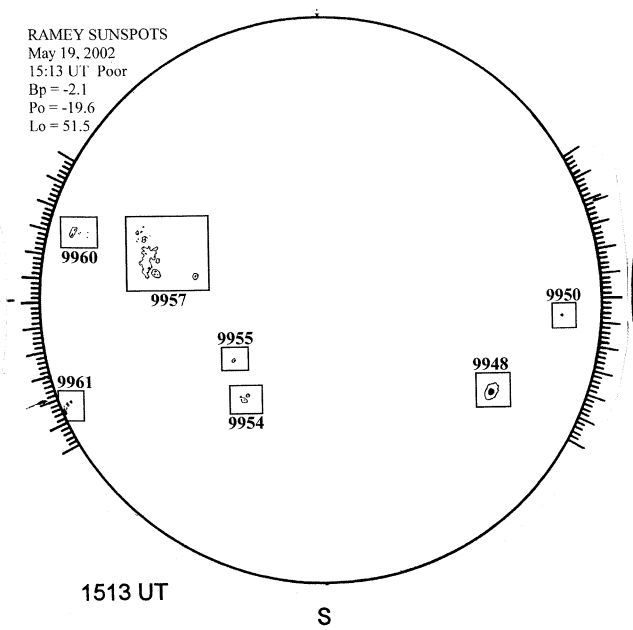
MT. WILSON MAGNETOGRAM



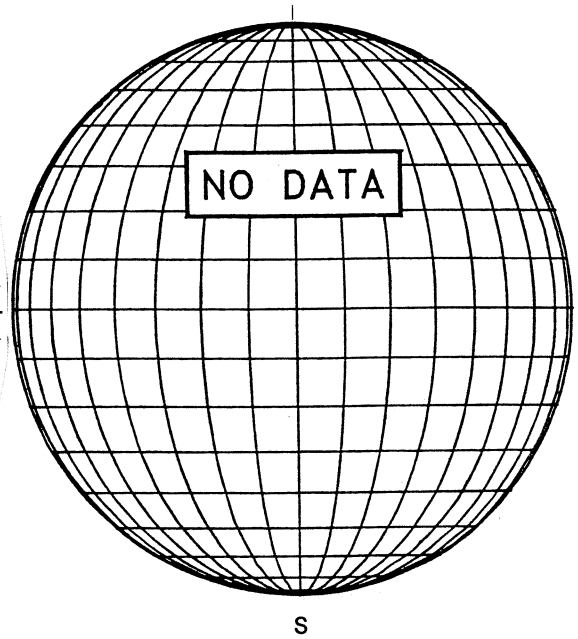
MEUDON H-ALPHA



RAMEY SUNSPOT

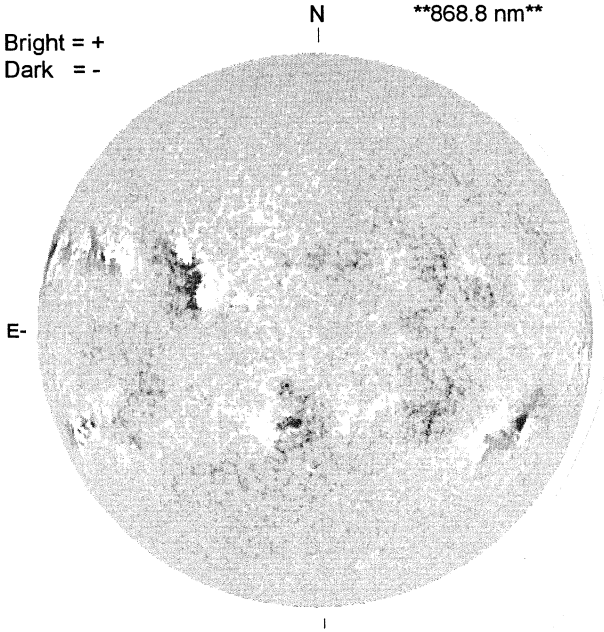


SACRAMENTO PEAK CORONA (1.15 Radii)----

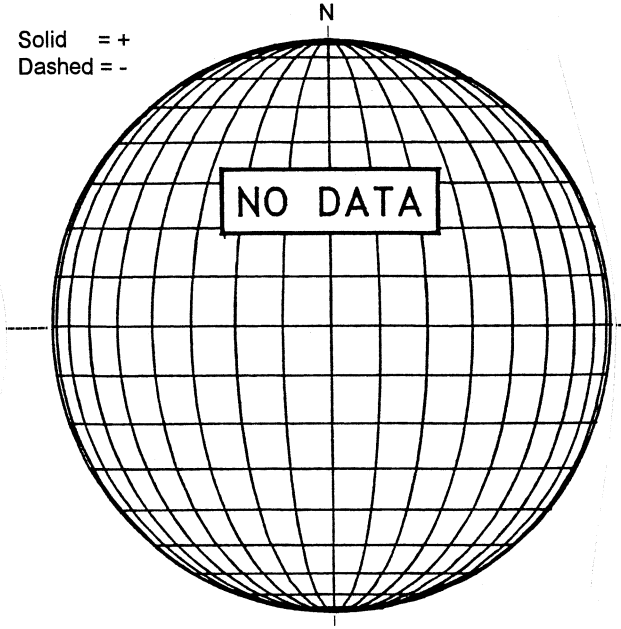


MAY 20, 2002 (P= -19.59, Bo = -2.11, Lo = 46.81)

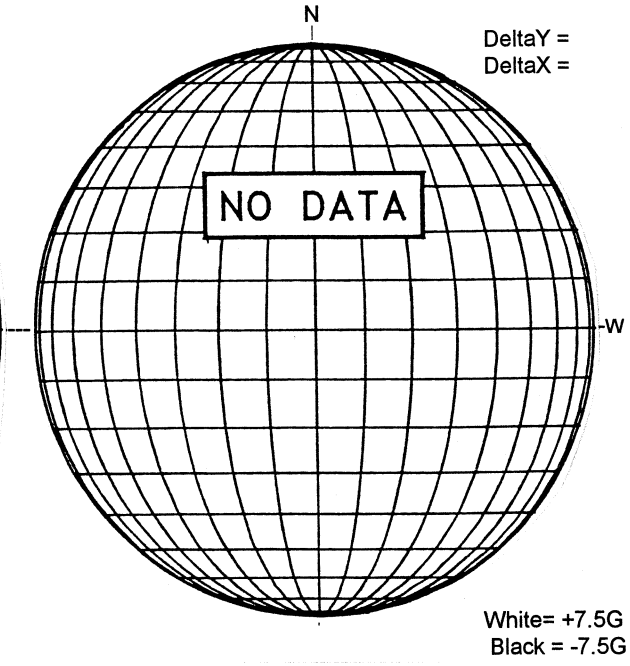
KITT PEAK MAGNETOGRAM



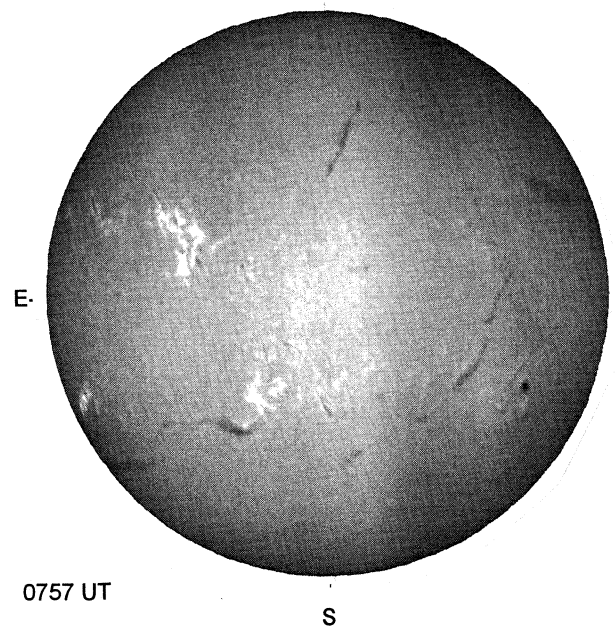
STANFORD MAGNETOGRAM



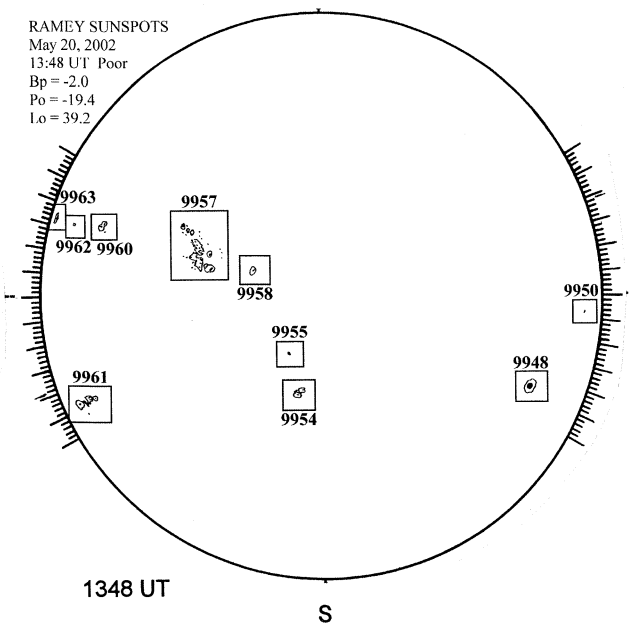
MT. WILSON MAGNETOGRAM



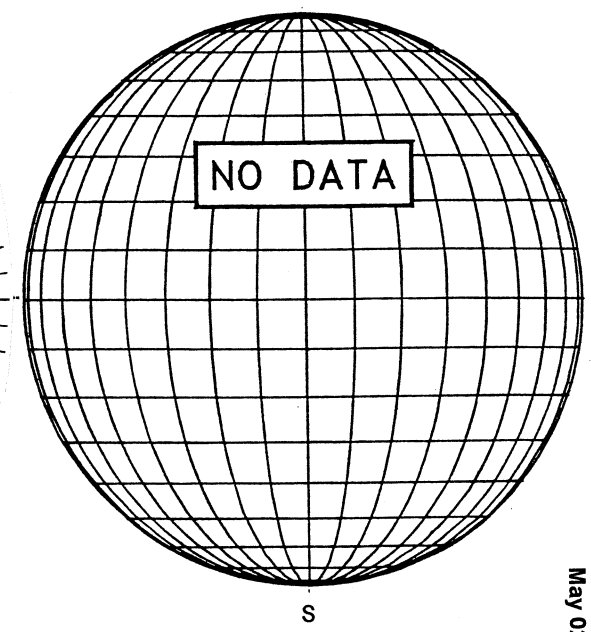
---- MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



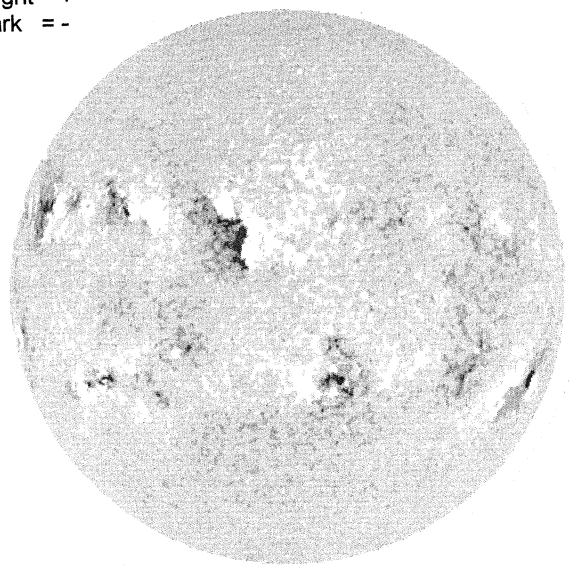
MAY 21, 2002 (P= -19.28, Bo = -1.99, Lo = 33.58)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



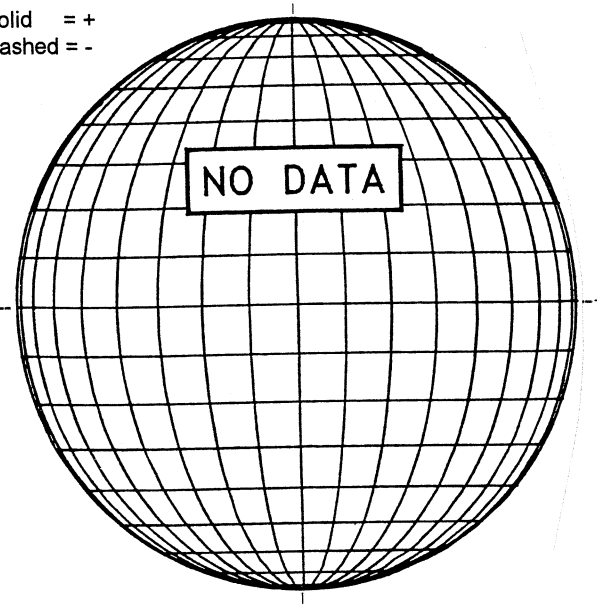
E-

2025 UT

STANFORD MAGNETOGRAM

N

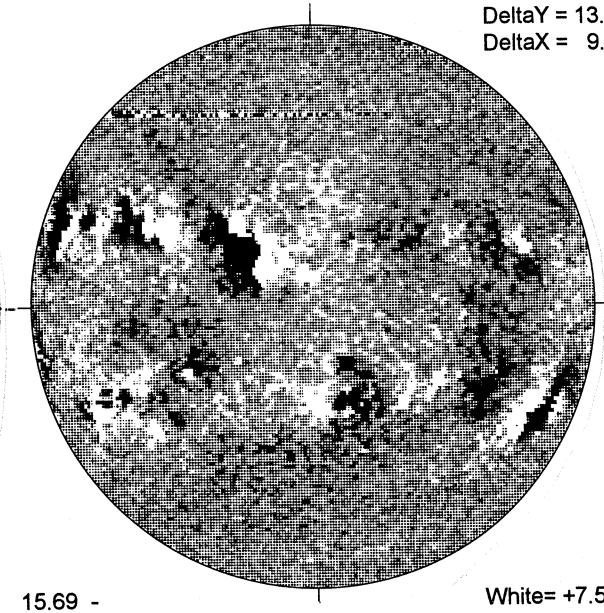
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

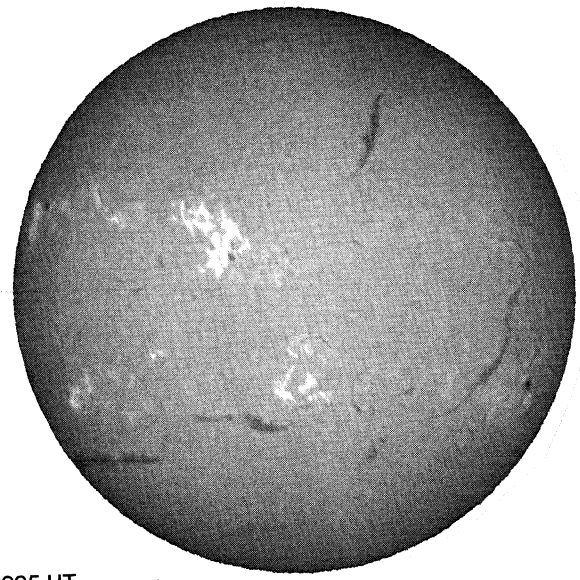


W

15.69 -
16.62 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

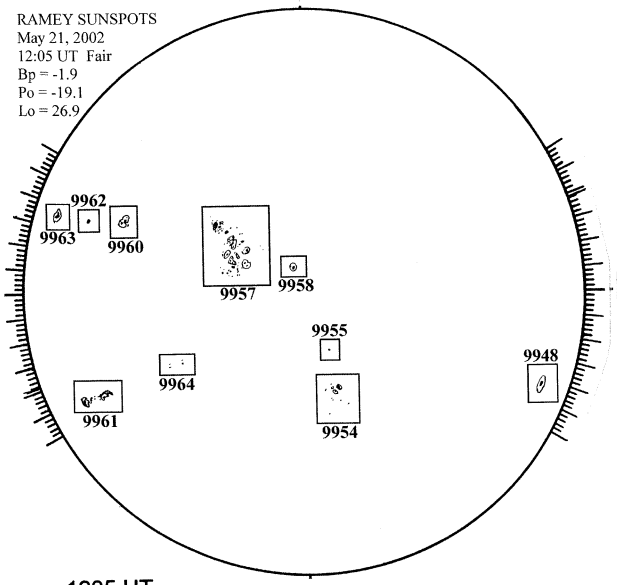


E-

0925 UT

S

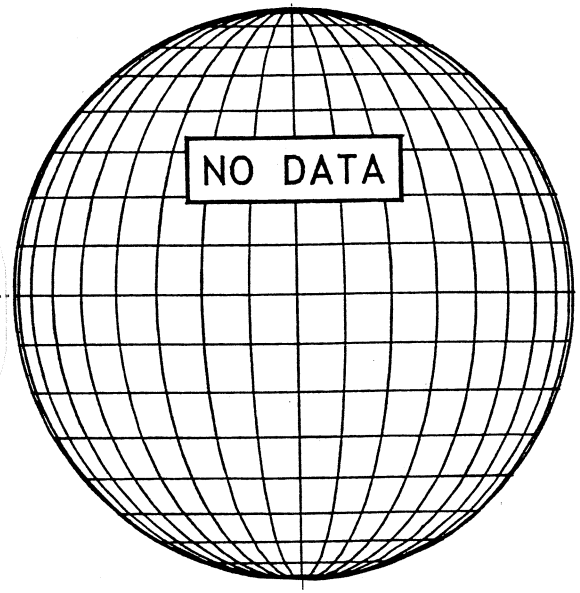
RAMEY SUNSPOT



1205 UT

S

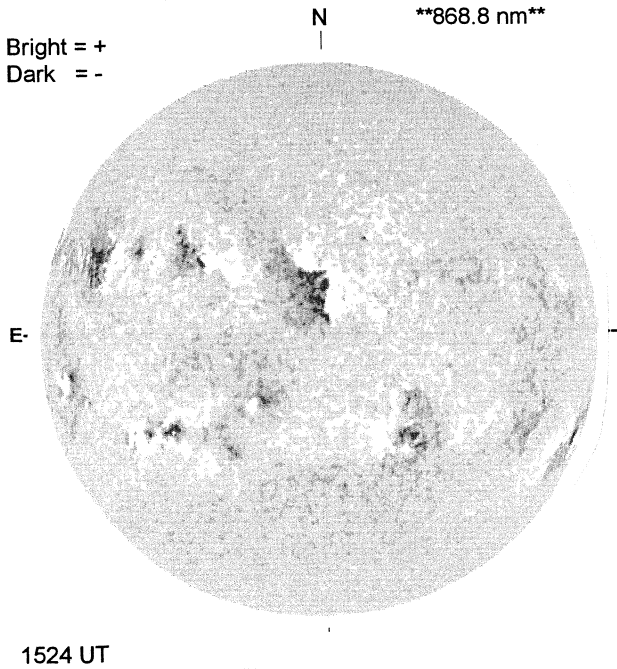
SACRAMENTO PEAK CORONA (1.15 Radii)----



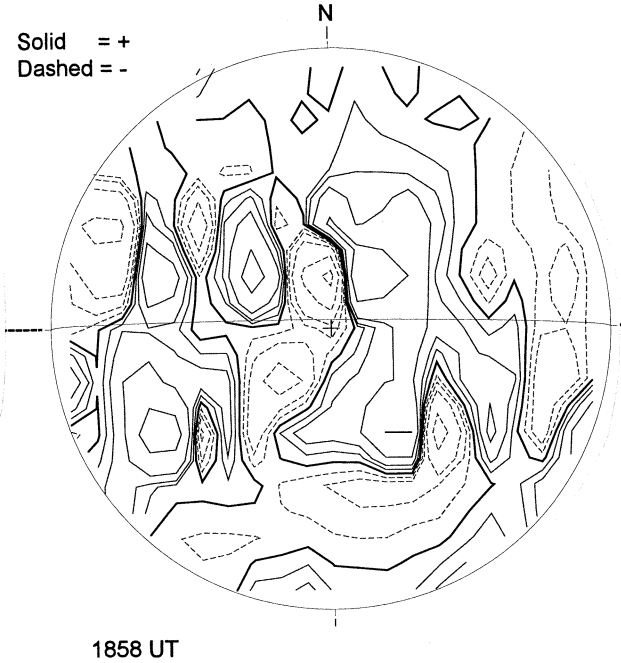
S

MAY 22, 2002 (P= -18.97, Bo = -1.88, Lo = 20.35)

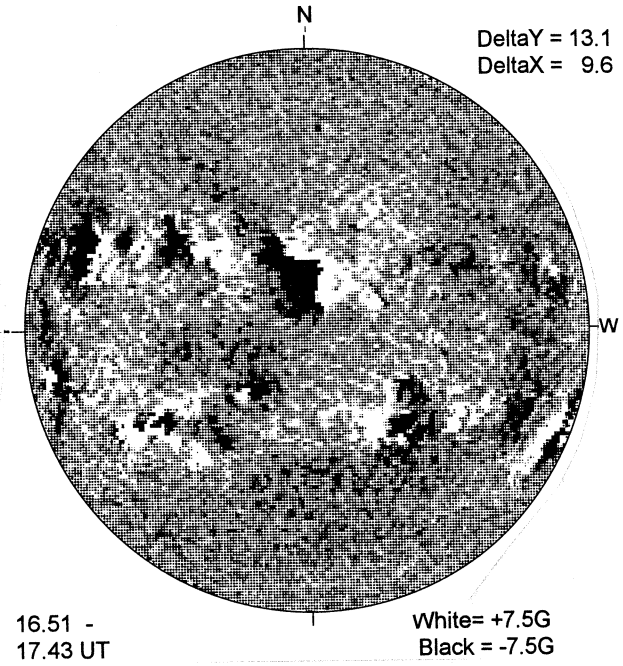
KITT PEAK MAGNETOGRAM



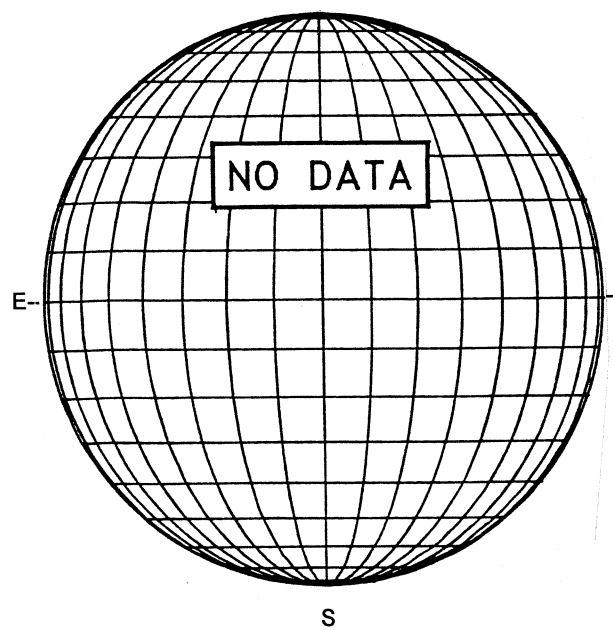
STANFORD MAGNETOGRAM



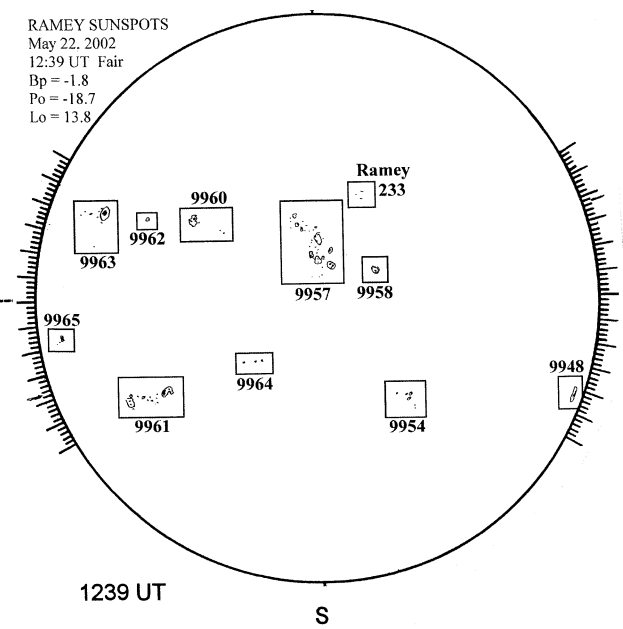
MT. WILSON MAGNETOGRAM



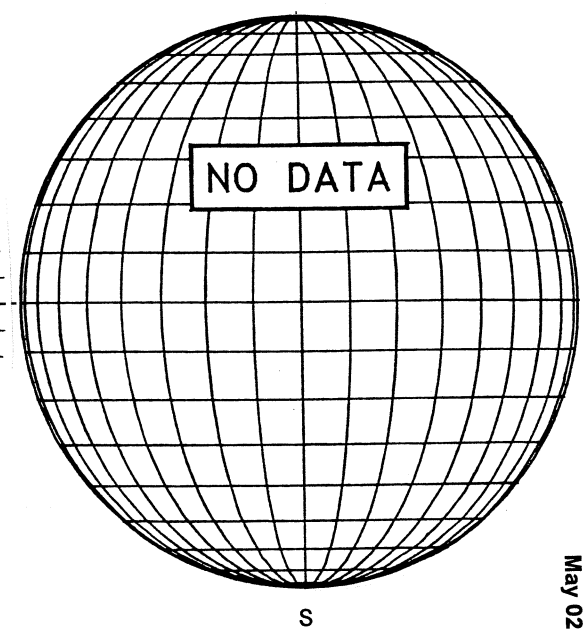
MEUDON H-ALPHA



RAMEY SUNSPOT

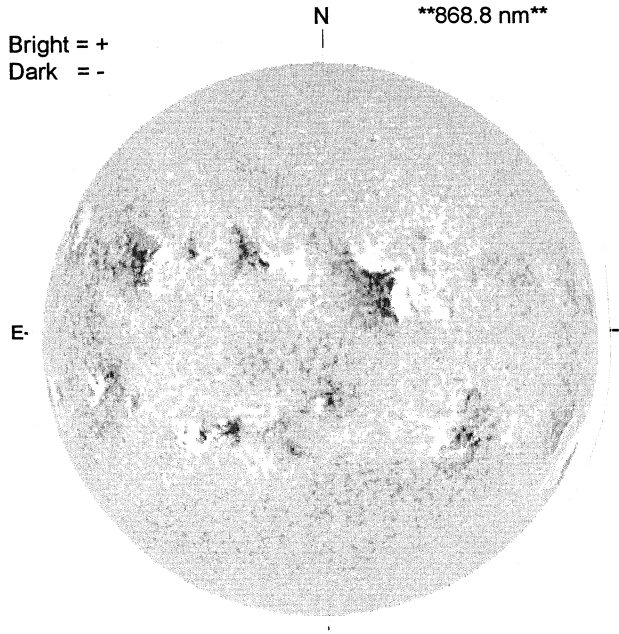


SACRAMENTO PEAK CORONA (1.15 Radii)----



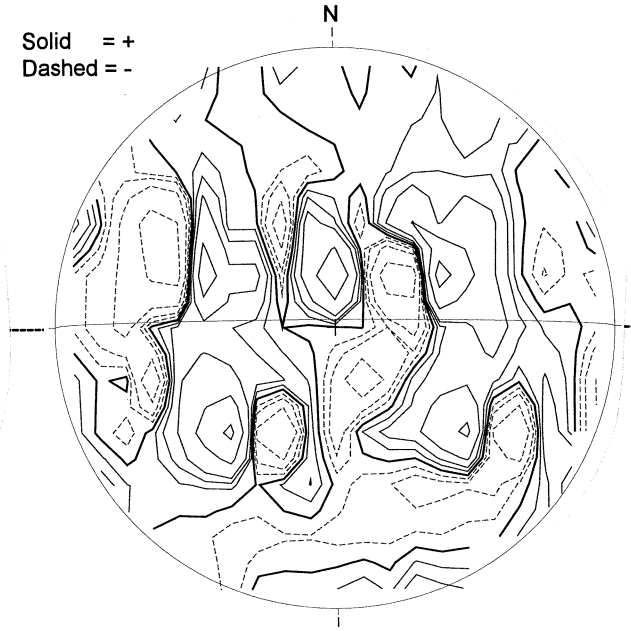
MAY 23, 2002 (P= -18.65, Bo = -1.76, Lo = 7.12)

KITT PEAK MAGNETOGRAM



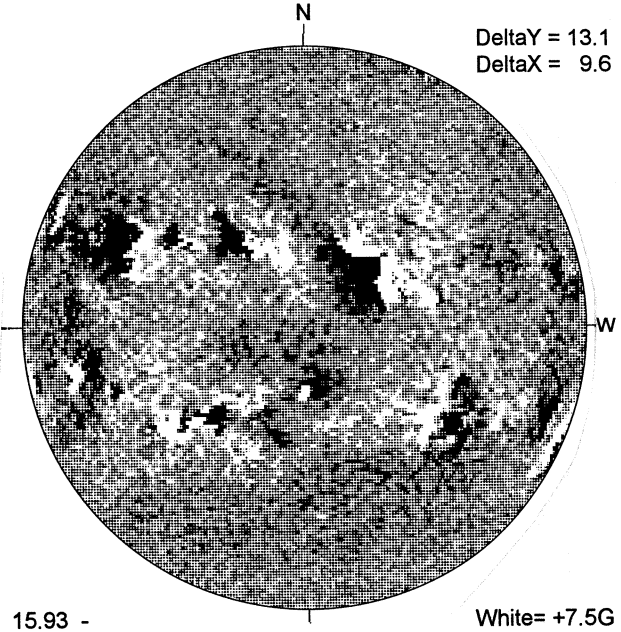
1601 UT

STANFORD MAGNETOGRAM



2344 UT

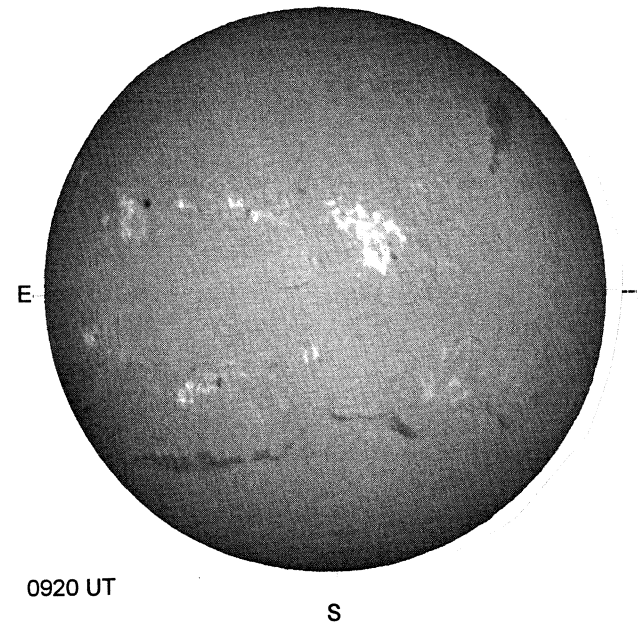
MT. WILSON MAGNETOGRAM



15.93 -
16.85 UT

White= +7.5G
Black = -7.5G

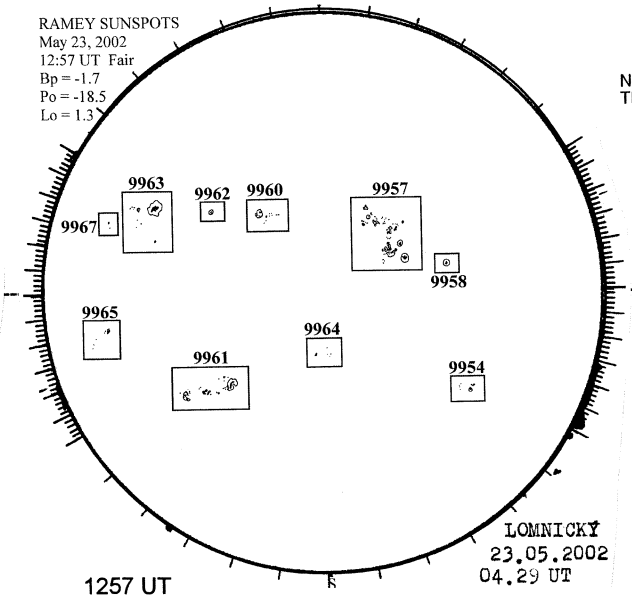
MEUDON H-ALPHA



0920 UT

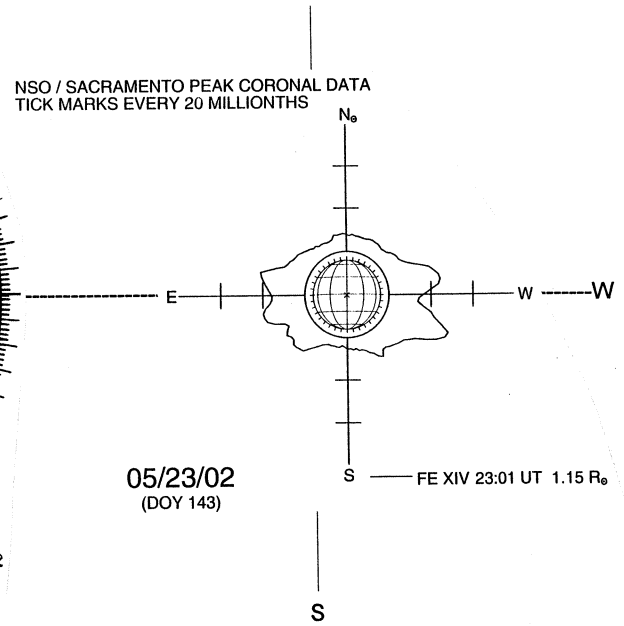
S

RAMEY SUNSPOT



1257 UT
0429 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)

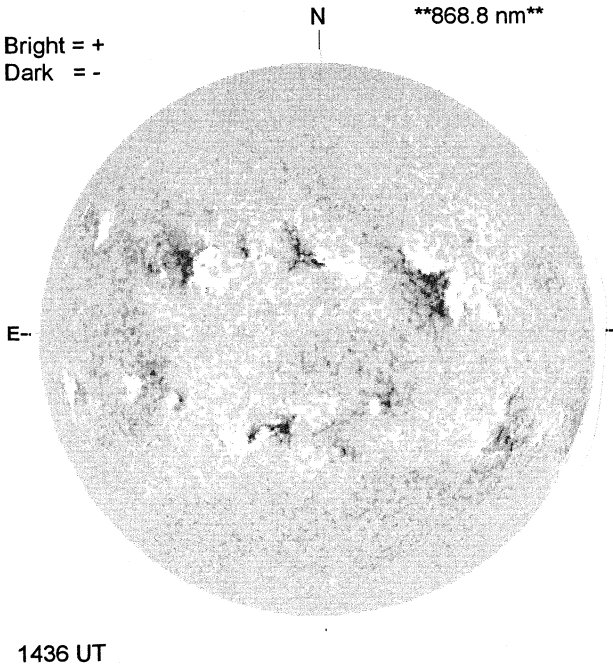


05/23/02
(DOY 143)

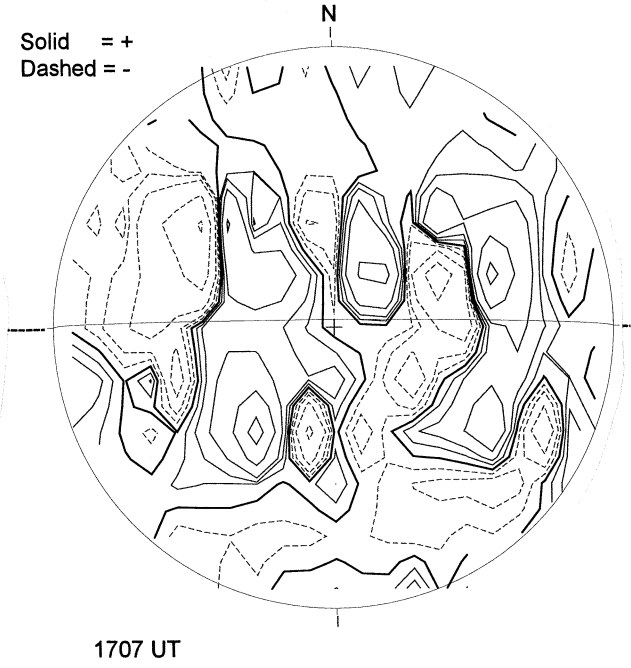
S

MAY 24, 2002 (P= -18.32, Bo = -1.64, Lo = 353.89)

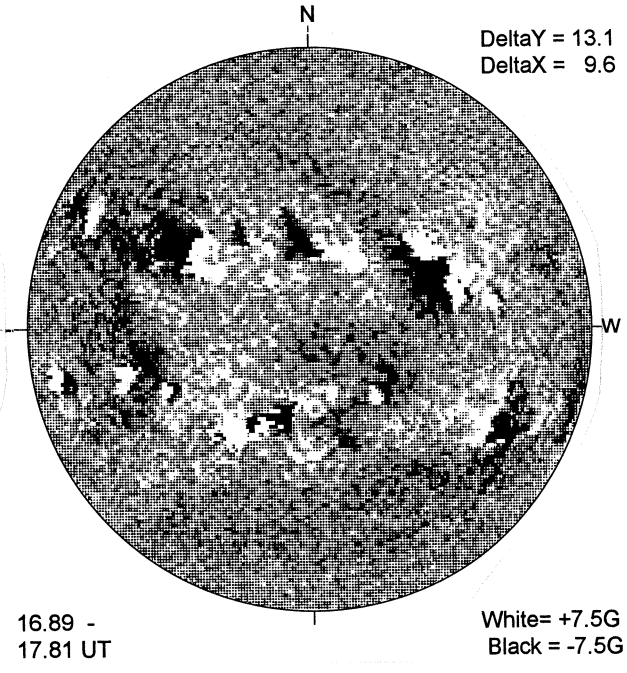
KITT PEAK MAGNETOGRAM



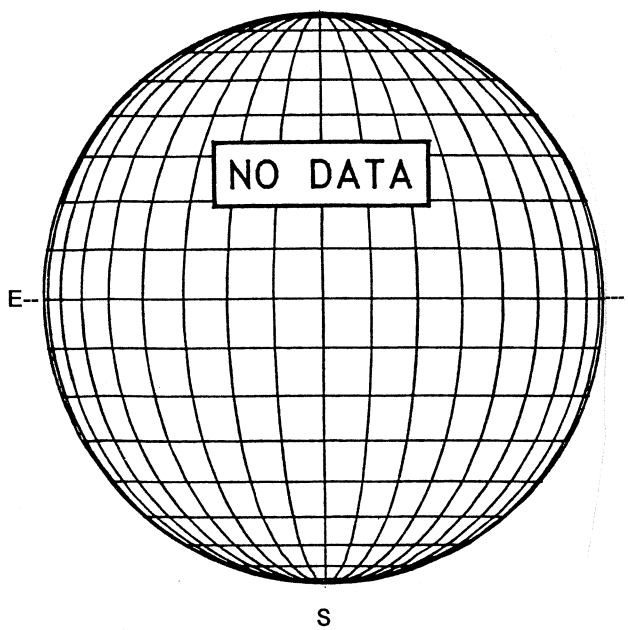
STANFORD MAGNETOGRAM



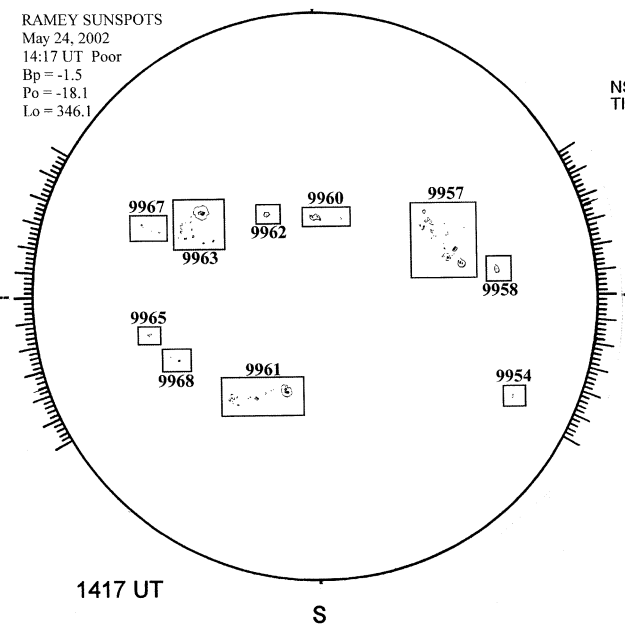
MT. WILSON MAGNETOGRAM



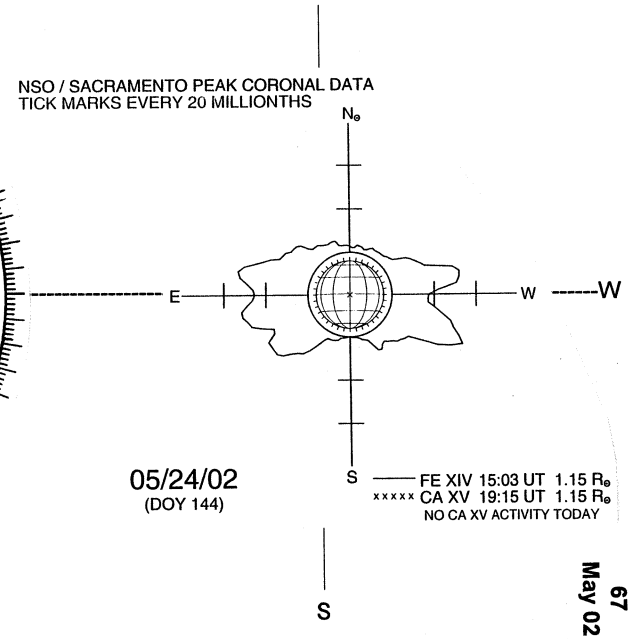
MEUDON H-ALPHA



RAMEY SUNSPOT

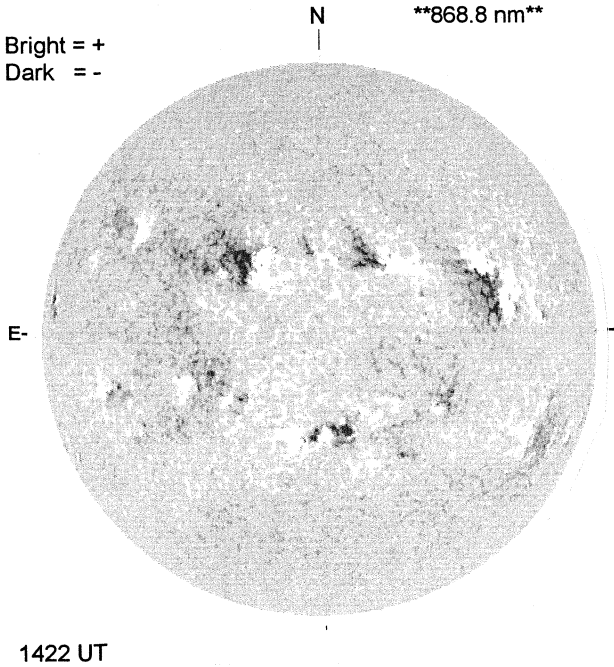


SACRAMENTO PEAK CORONA (1.15 Radii)----

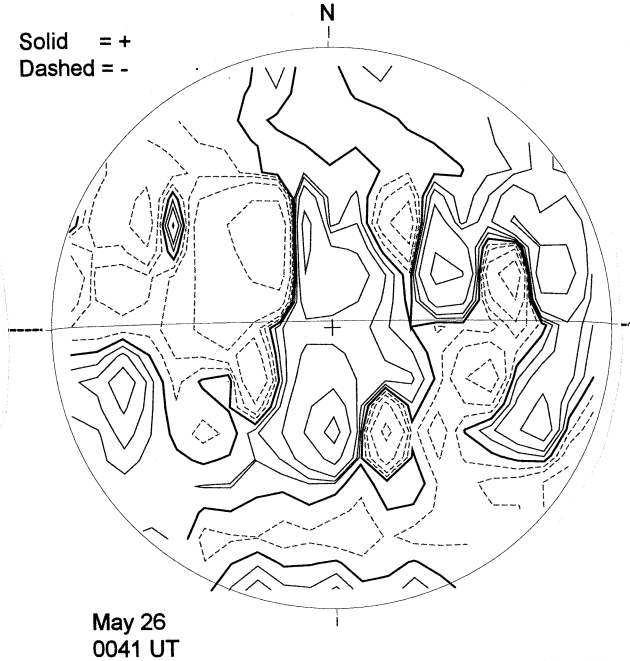


MAY 25, 2002 (P= -17.99, Bo = -1.52, Lo = 340.66)

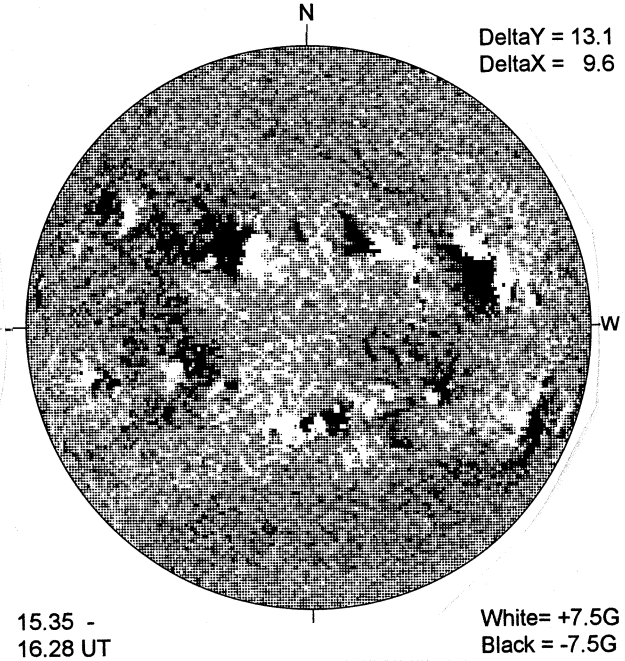
KITT PEAK MAGNETOGRAM



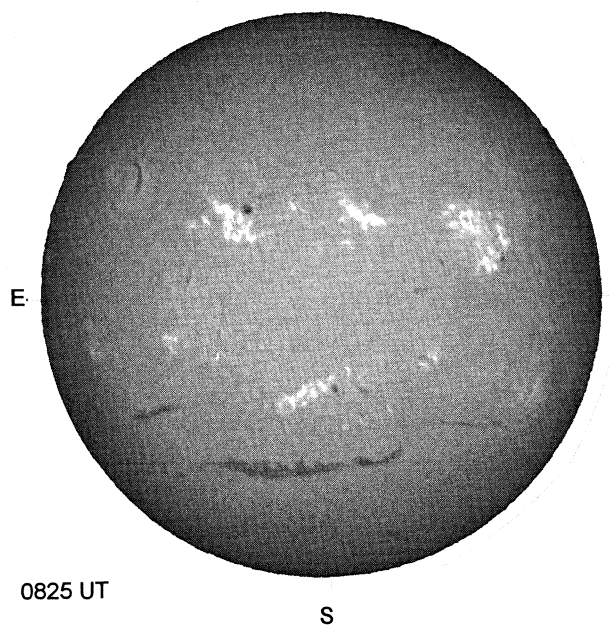
STANFORD MAGNETOGRAM



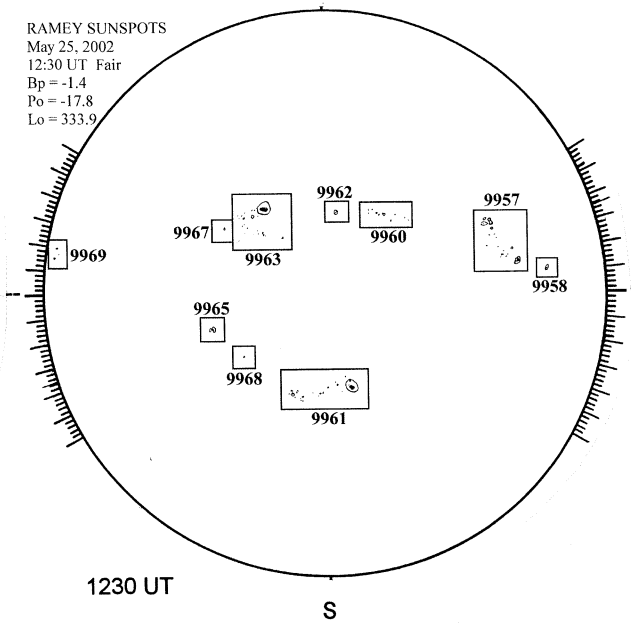
MT. WILSON MAGNETOGRAM



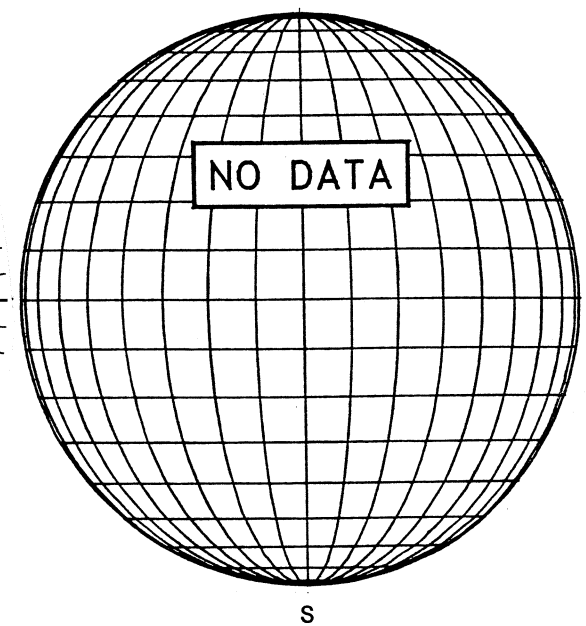
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----

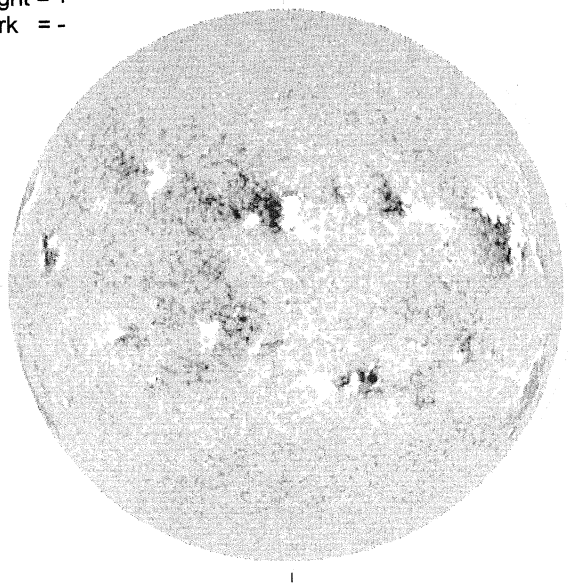


MAY 26, 2002 (P= -17.65, Bo = -1.41, Lo = 327.43)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



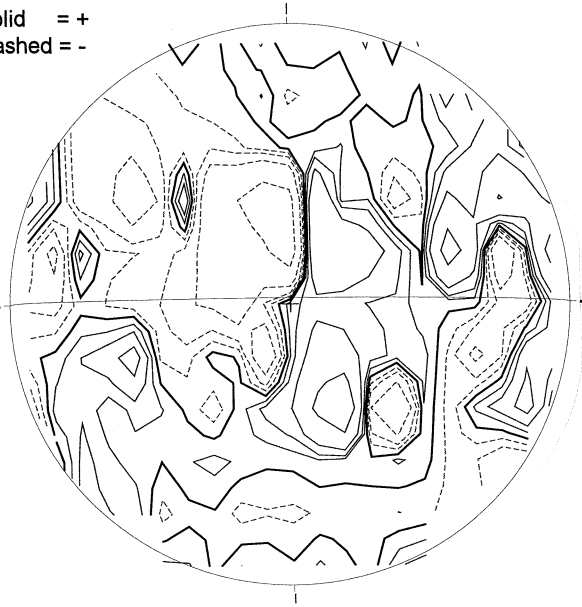
E--

1503 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

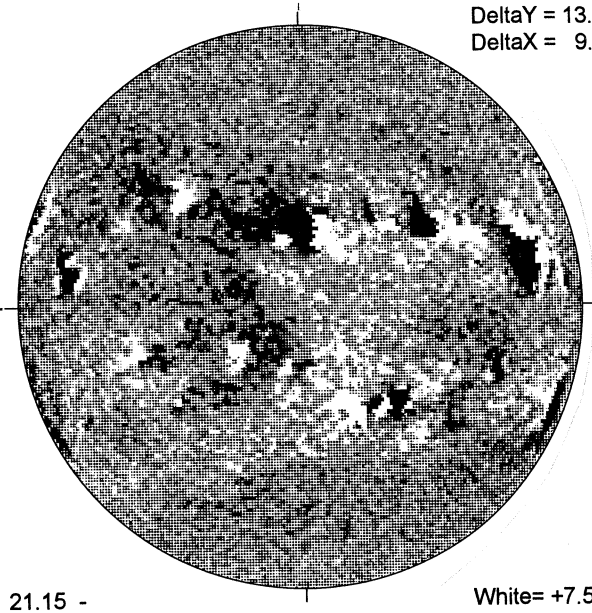


2016 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

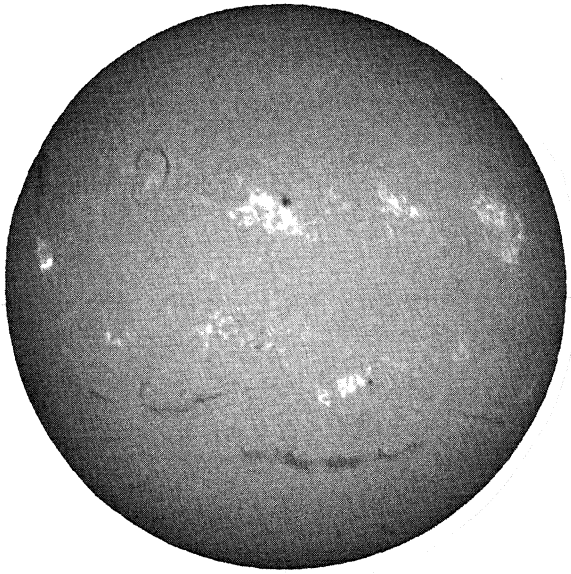


W

21.15 -
22.08 UT

White= +7.5G
Black = -7.5G

----- MEUDON H-ALPHA



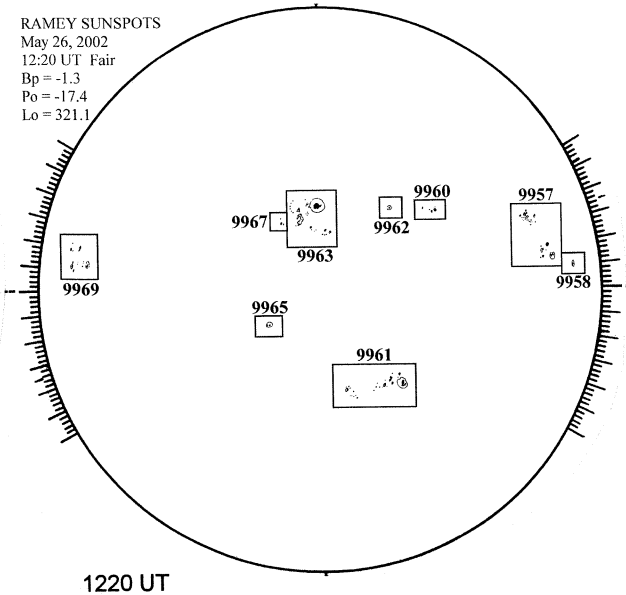
E-

1358 UT

S

RAMEY SUNSPOT

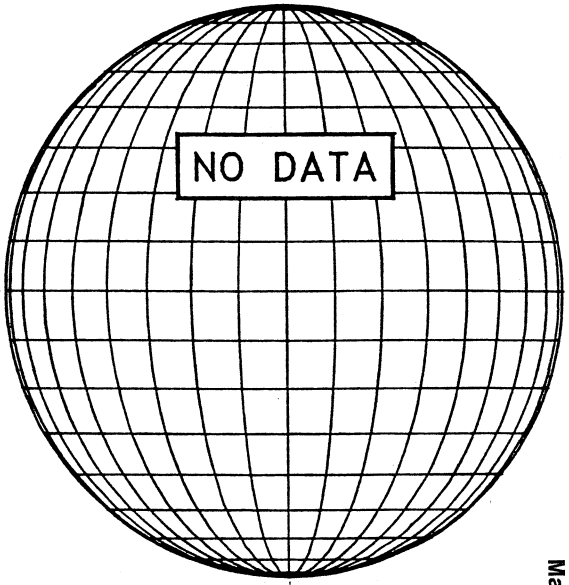
RAMEY SUNSPOTS
May 26, 2002
12:20 UT Fair
Bp = -1.3
Po = -17.4
Lo = 321.1



1220 UT

S

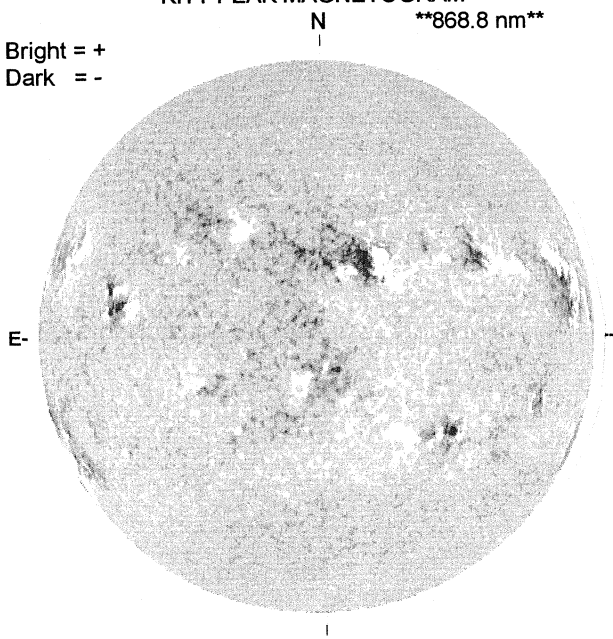
SACRAMENTO PEAK CORONA (1.15 Radii)----



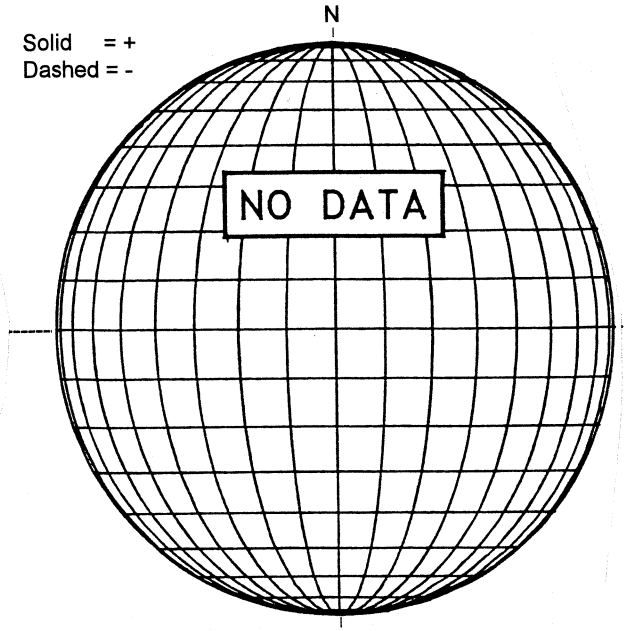
S

MAY 27, 2002 (P= -17.31, Bo = -1.29, Lo = 314.20)

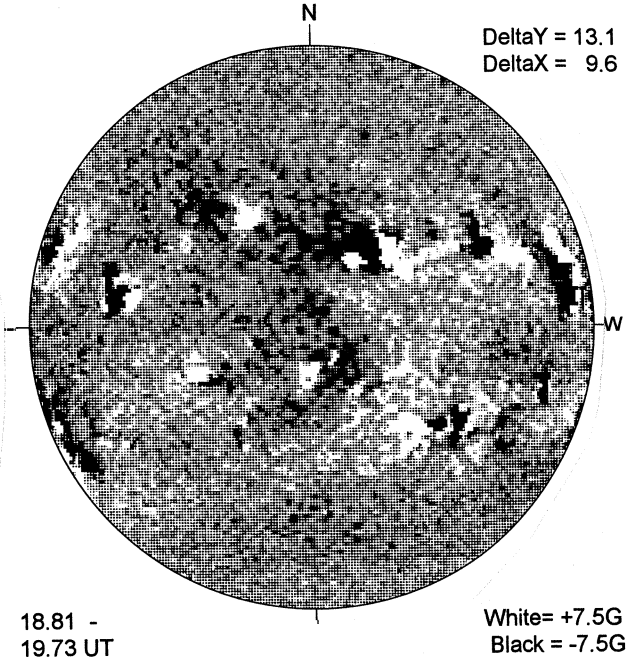
KITT PEAK MAGNETOGRAM



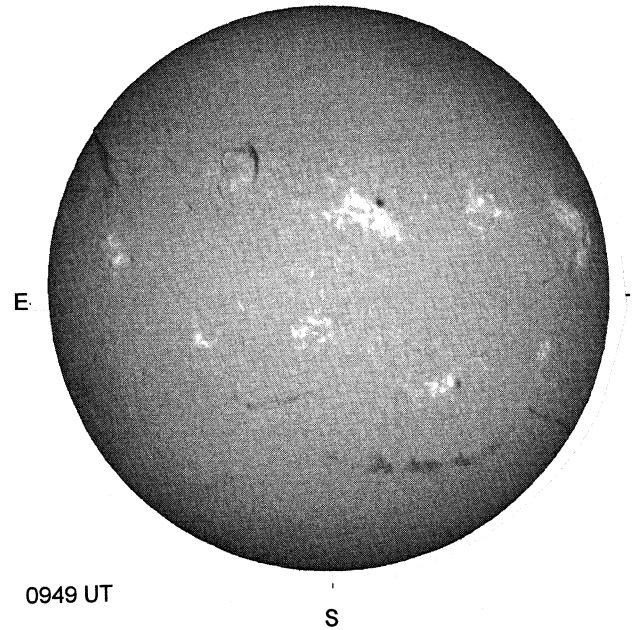
STANFORD MAGNETOGRAM



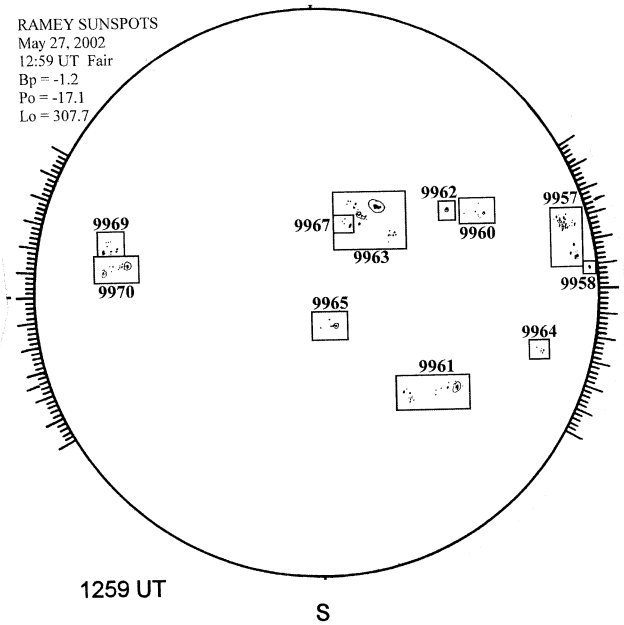
MT. WILSON MAGNETOGRAM



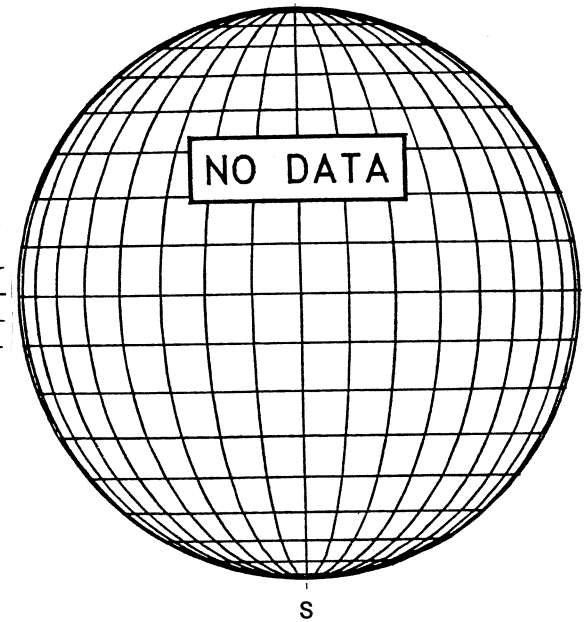
MEUDON H-ALPHA



RAMEY SUNSPOT

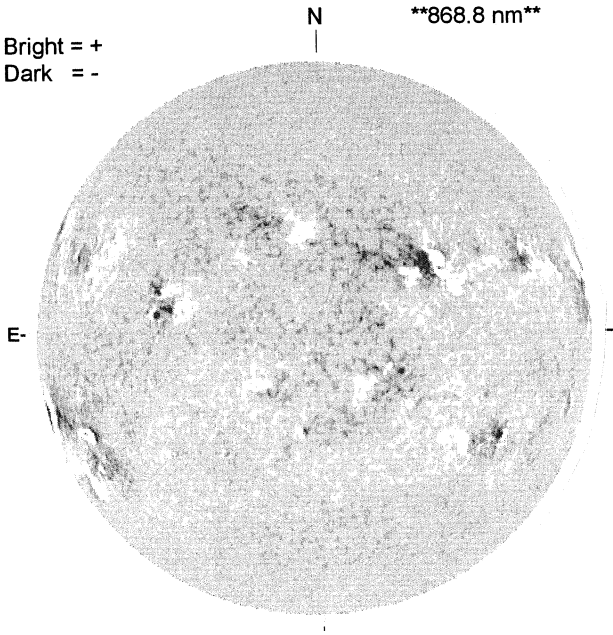


LOMNICKY PEAK CORONA (1.04 Radii)----

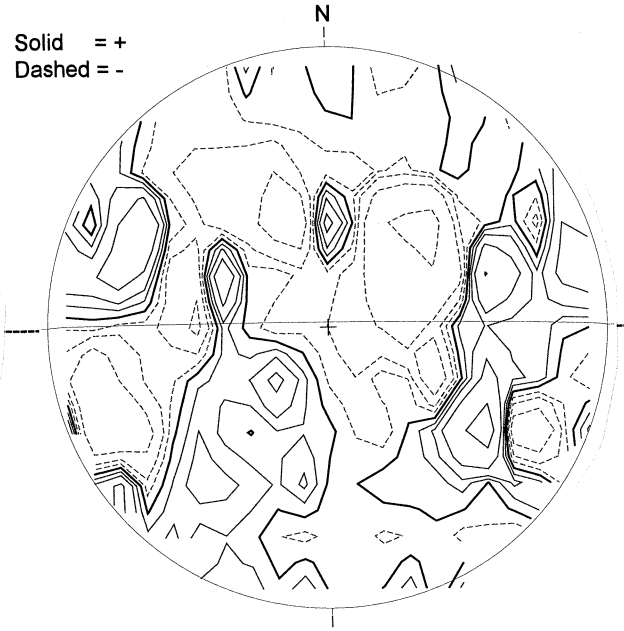


MAY 28, 2002 (P= -16.96, Bo = -1.17, Lo = 300.97)

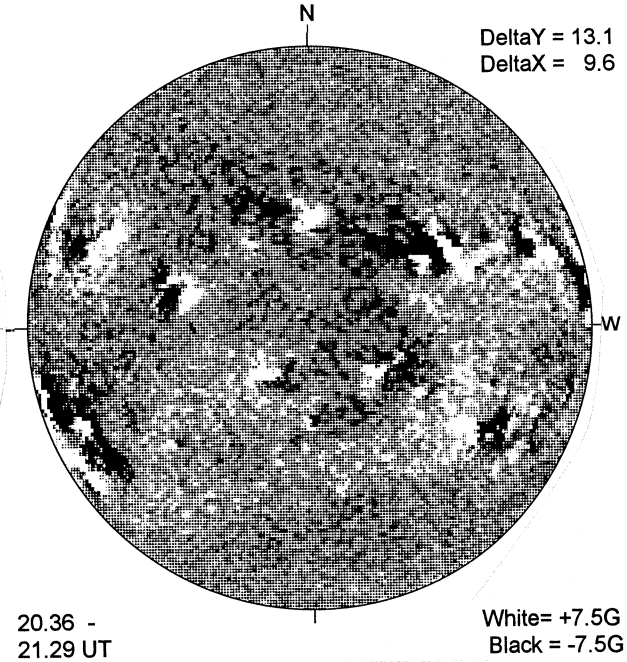
KITT PEAK MAGNETOGRAM



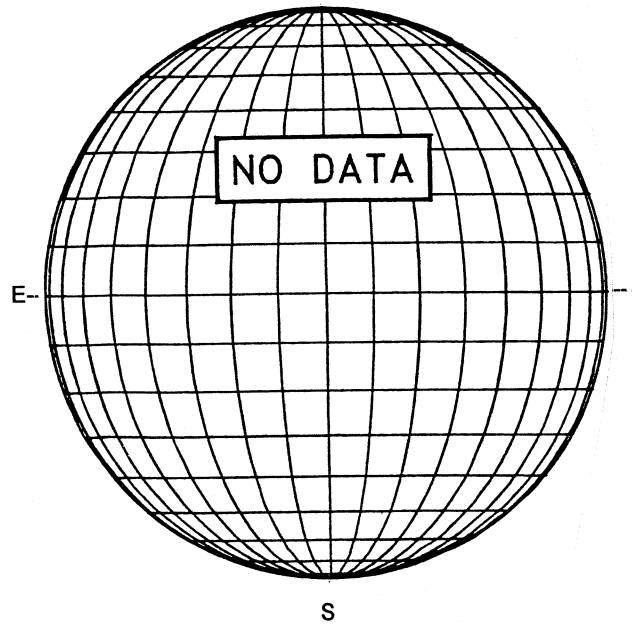
STANFORD MAGNETOGRAM



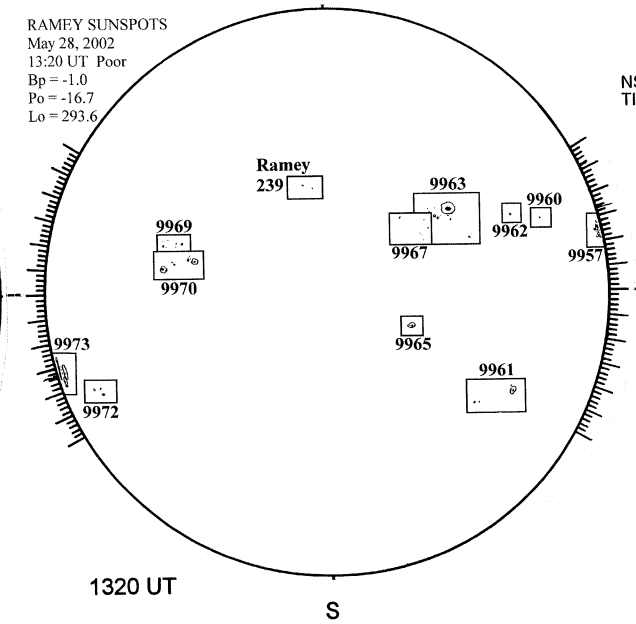
MT. WILSON MAGNETOGRAM



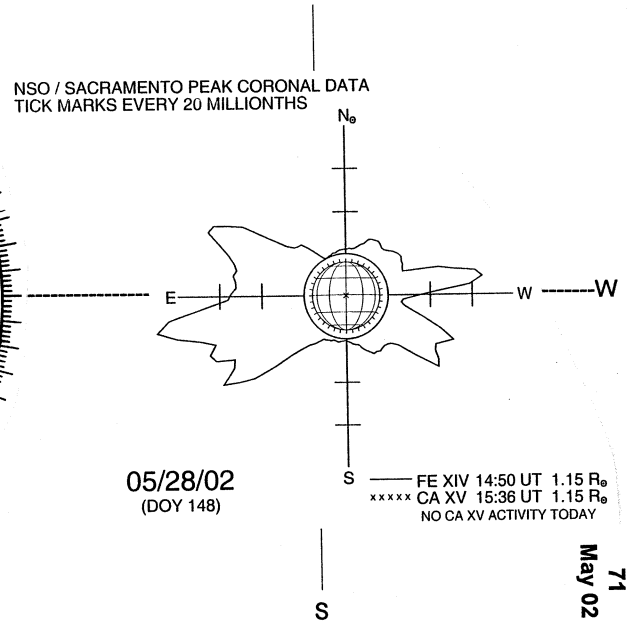
MEUDON H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)----



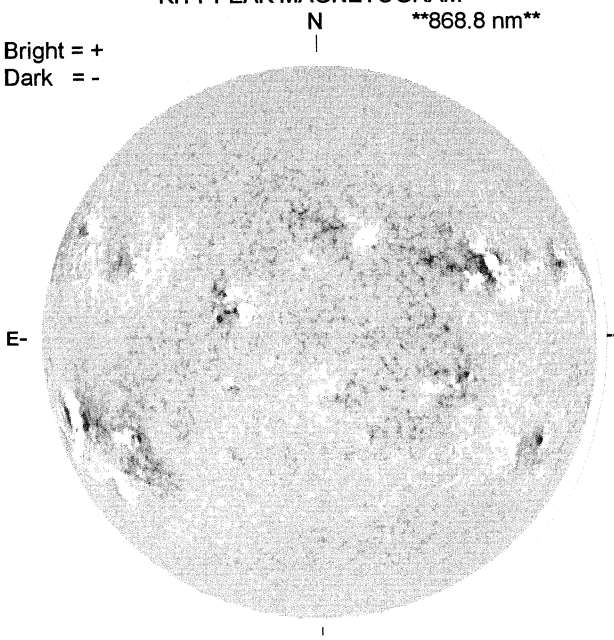
71
May 02

MAY 29, 2002 (P= -16.61 Bo = -1.05, Lo = 287.73)

KITT PEAK MAGNETOGRAM

868.8 nm

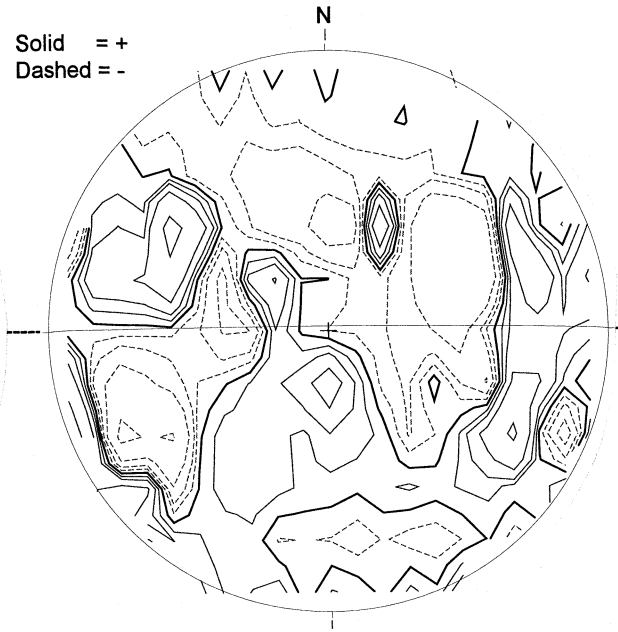
Bright = +
Dark = -



1534 UT

STANFORD MAGNETOGRAM

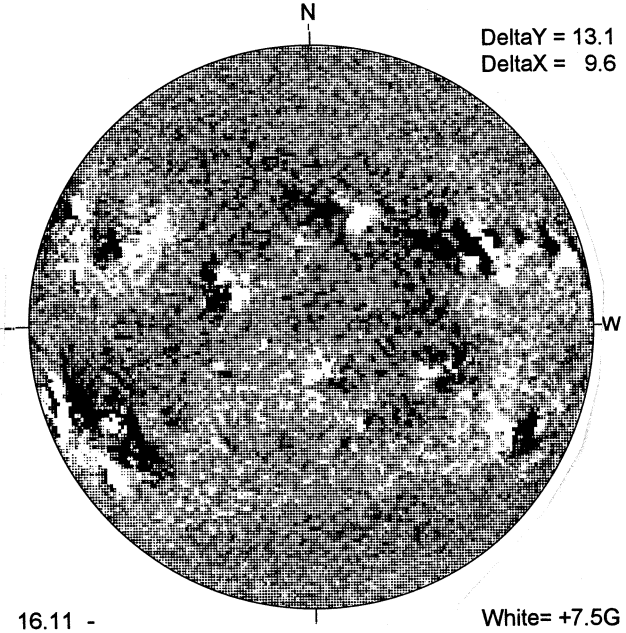
Solid = +
Dashed = -



1805 UT

MT. WILSON MAGNETOGRAM

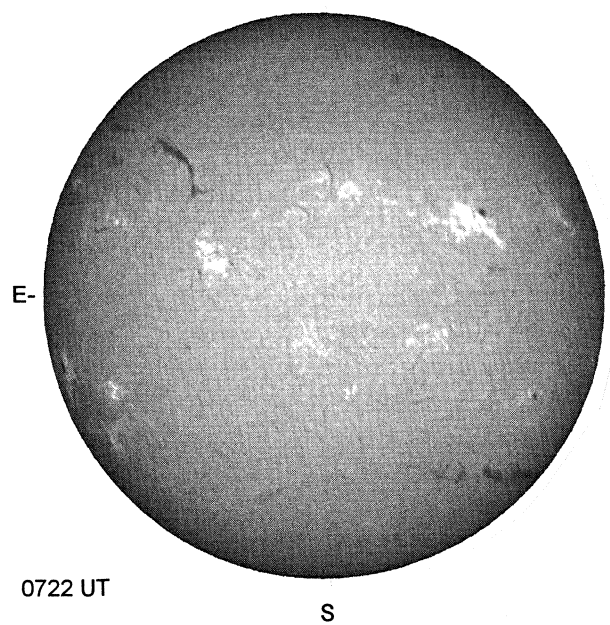
DeltaY = 13.1
DeltaX = 9.6



16.11 -
17.04 UT

White= +7.5G
Black = -7.5G

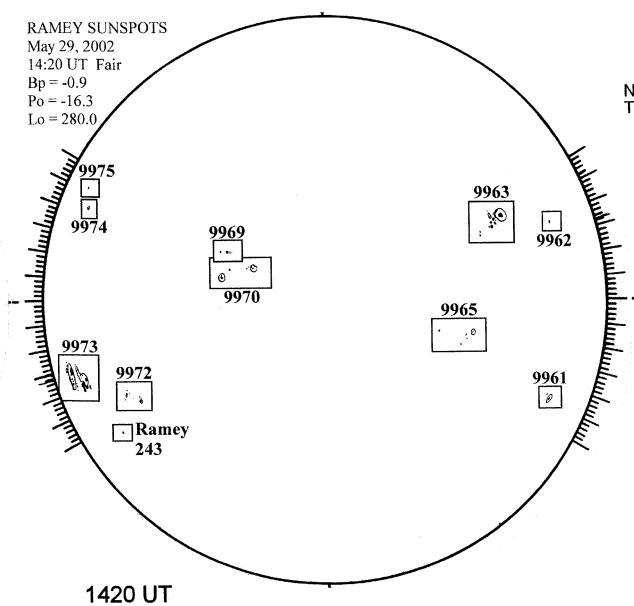
MEUDON H-ALPHA



0722 UT

RAMEY SUNSPOT

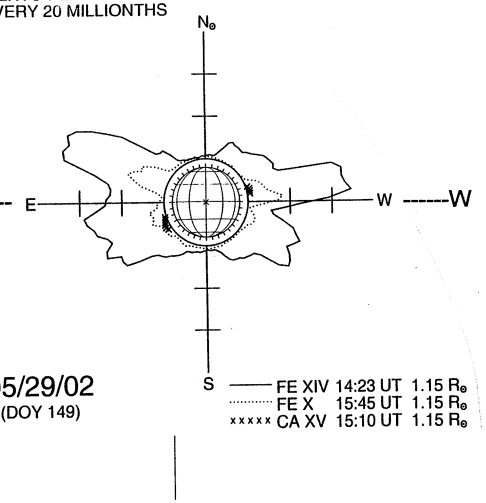
RAMEY SUNSPOTS
May 29, 2002
14:20 UT Fair
Bp = -0.9
Po = -16.3
Lo = 280.0



1420 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS

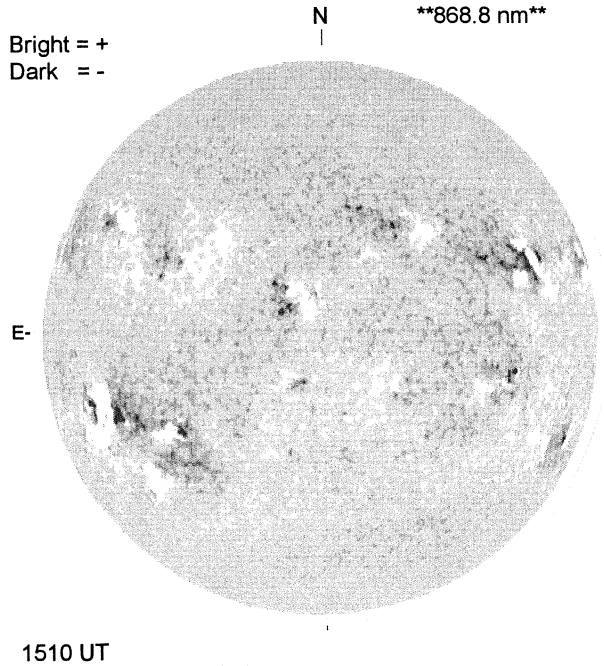


05/29/02
(DOY 149)

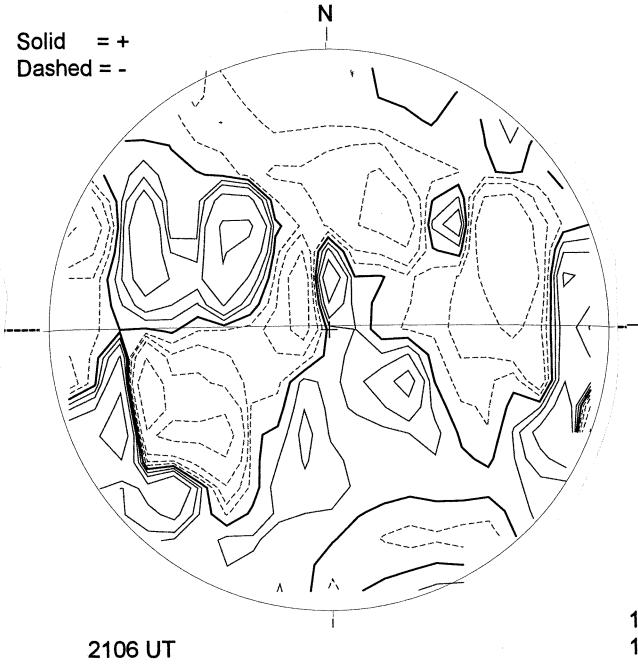
FE XIV 14:23 UT 1.15 R⊙
FE X 15:45 UT 1.15 R⊙
xxxxx CA XV 15:10 UT 1.15 R⊙

MAY 30, 2002 (P= -16.25, Bo = -0.93, Lo = 274.50)

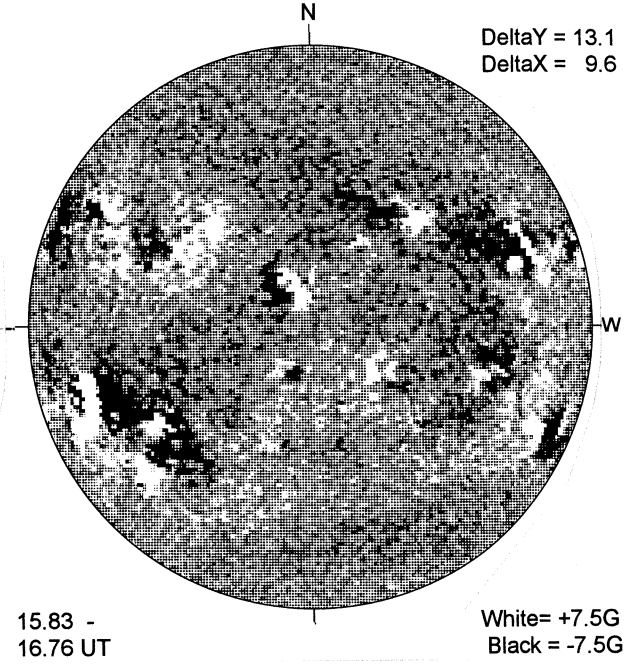
KITT PEAK MAGNETOGRAM



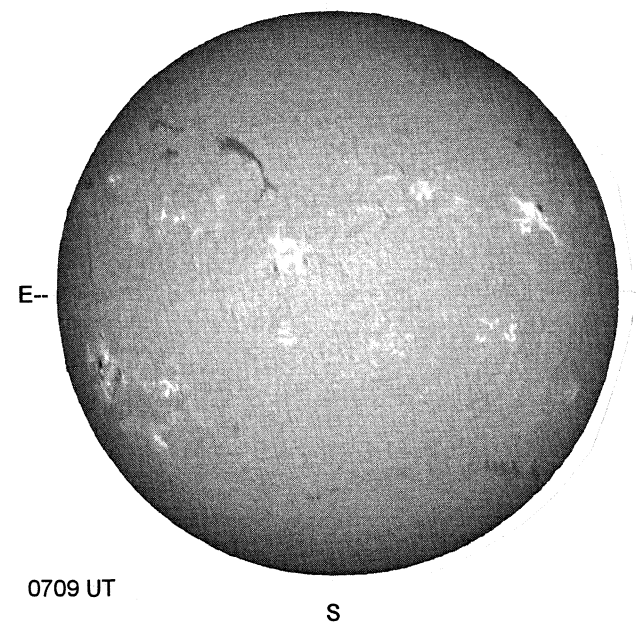
STANFORD MAGNETOGRAM



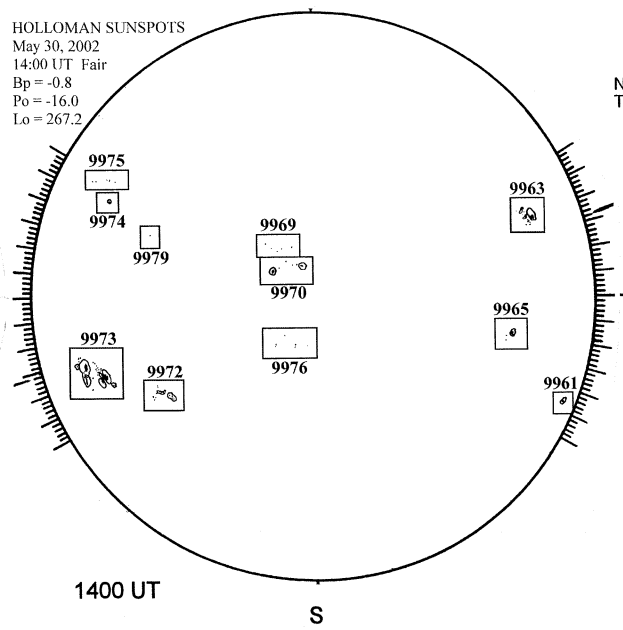
MT. WILSON MAGNETOGRAM



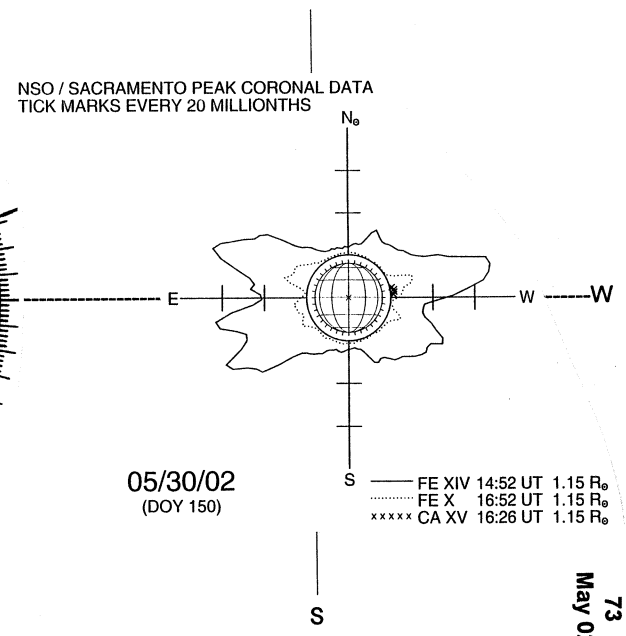
MEUDON H-ALPHA



HOLLOMAN SUNSPOT



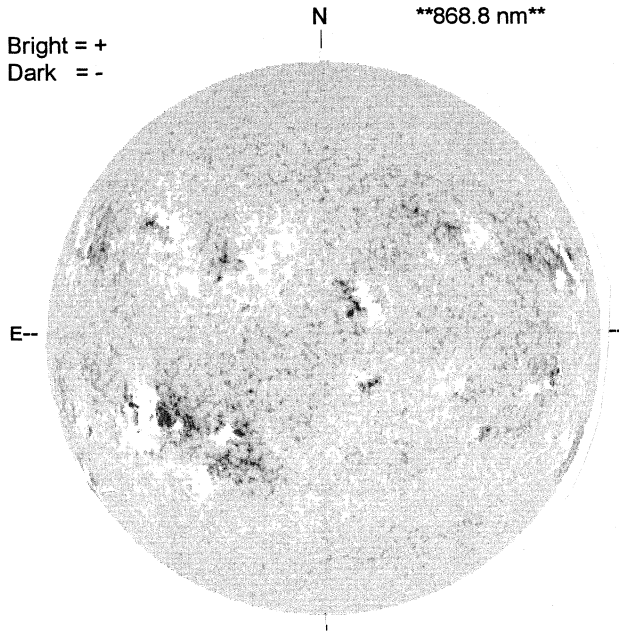
SACRAMENTO PEAK CORONA (1.15 Radii)----



MAY 31, 2002 (P= -15.89, Bo = -0.81, Lo = 261.27)

KITT PEAK MAGNETOGRAM

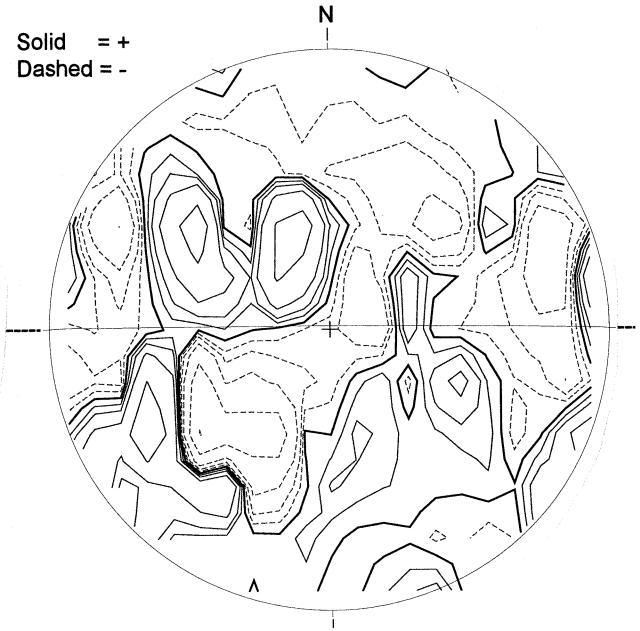
Bright = +
Dark = -



1510 UT

STANFORD MAGNETOGRAM

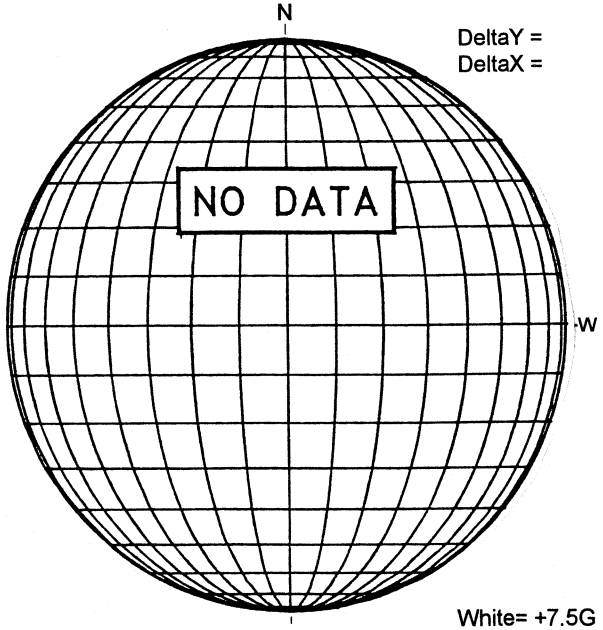
Solid = +
Dashed = -



2032 UT

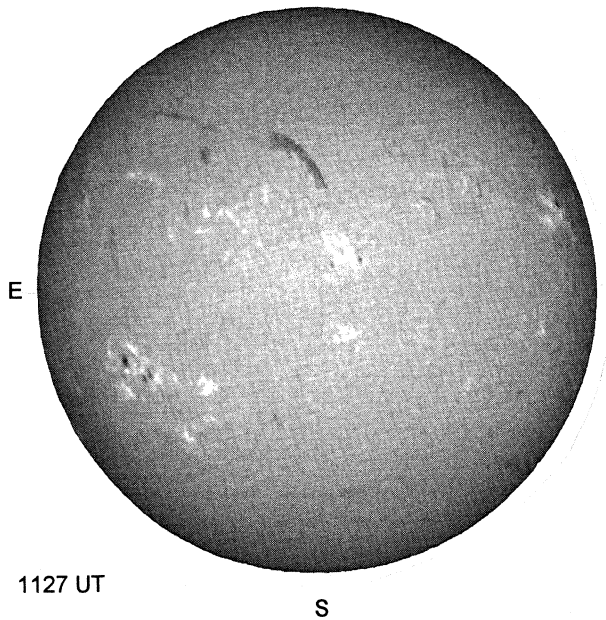
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



White= +7.5G
Black = -7.5G

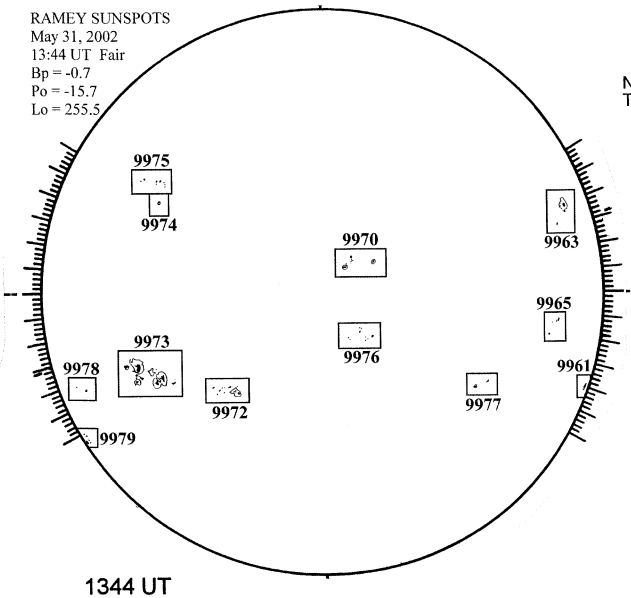
MEUDON H-ALPHA



1127 UT

RAMEY SUNSPOT

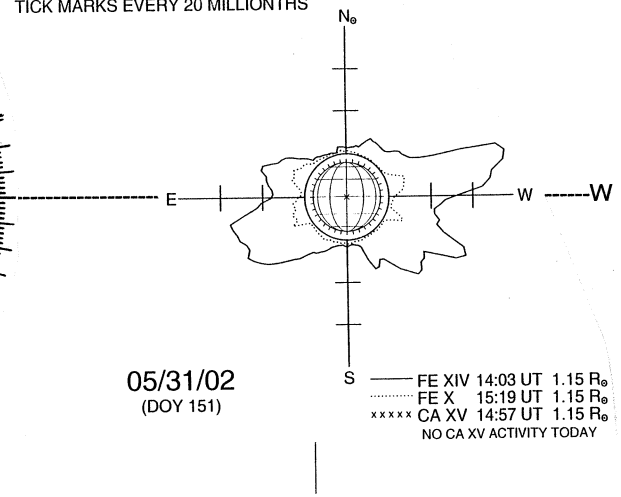
RAMEY SUNSPOTS
May 31, 2002
13:44 UT Fair
Bp = -0.7
Po = -15.7
Lo = 255.5



1344 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

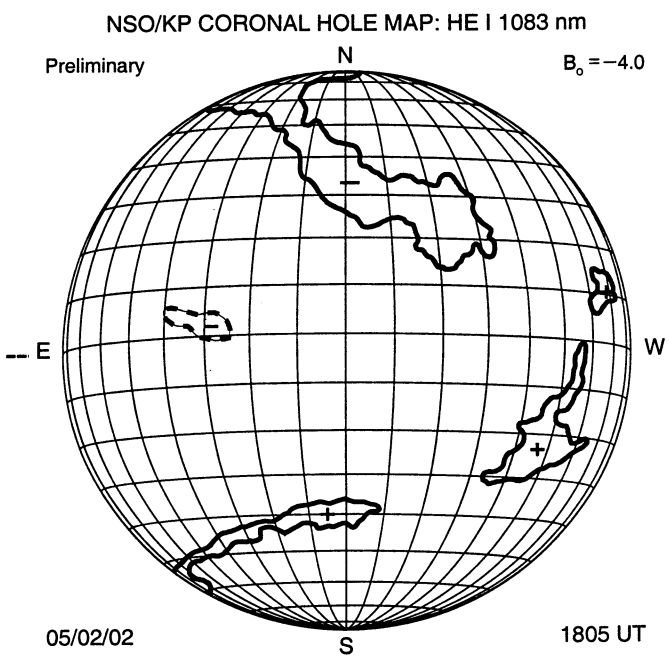
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS

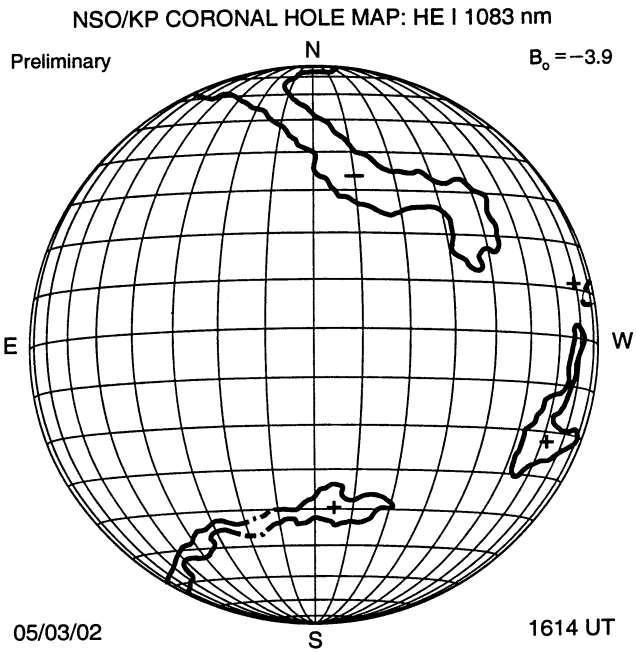


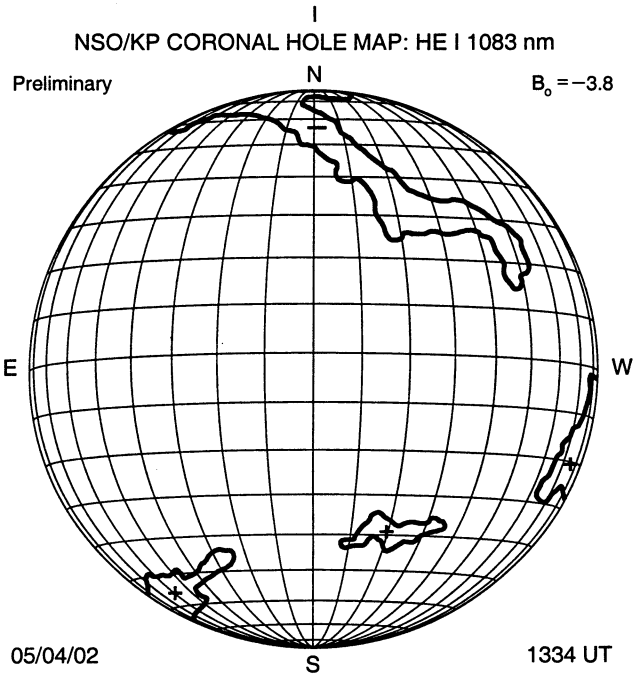
05/31/02
(DOY 151)

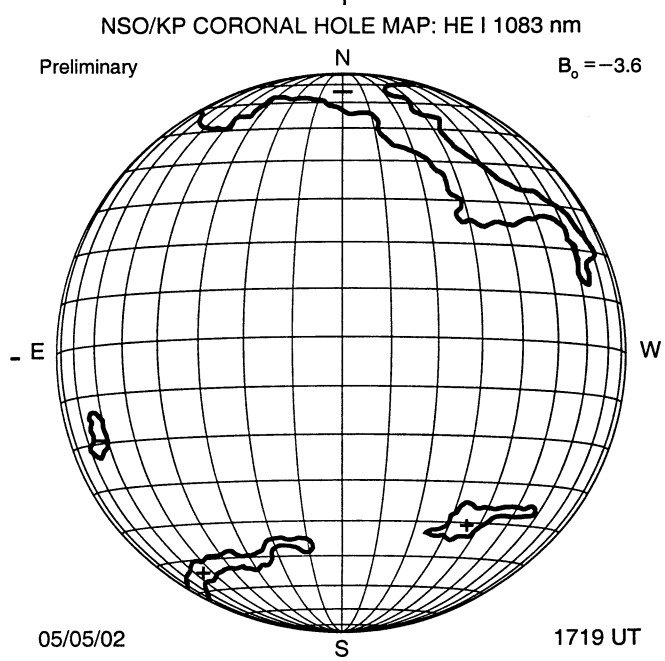
FE XIV 14:03 UT 1.15 R⊙
FE X 15:19 UT 1.15 R⊙
xxxxx CA XV 14:57 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

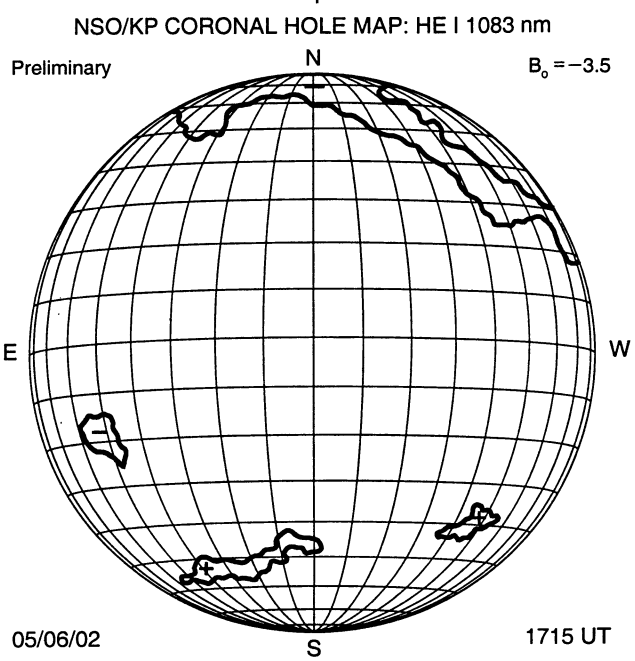
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 2002

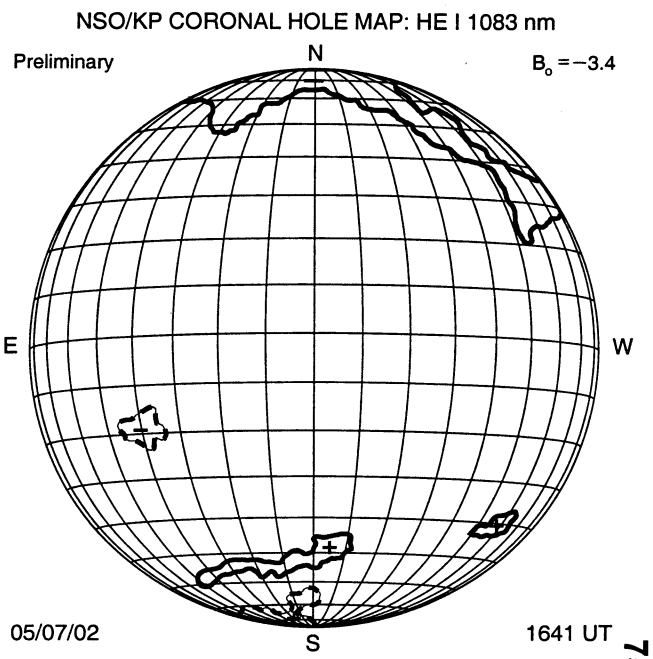




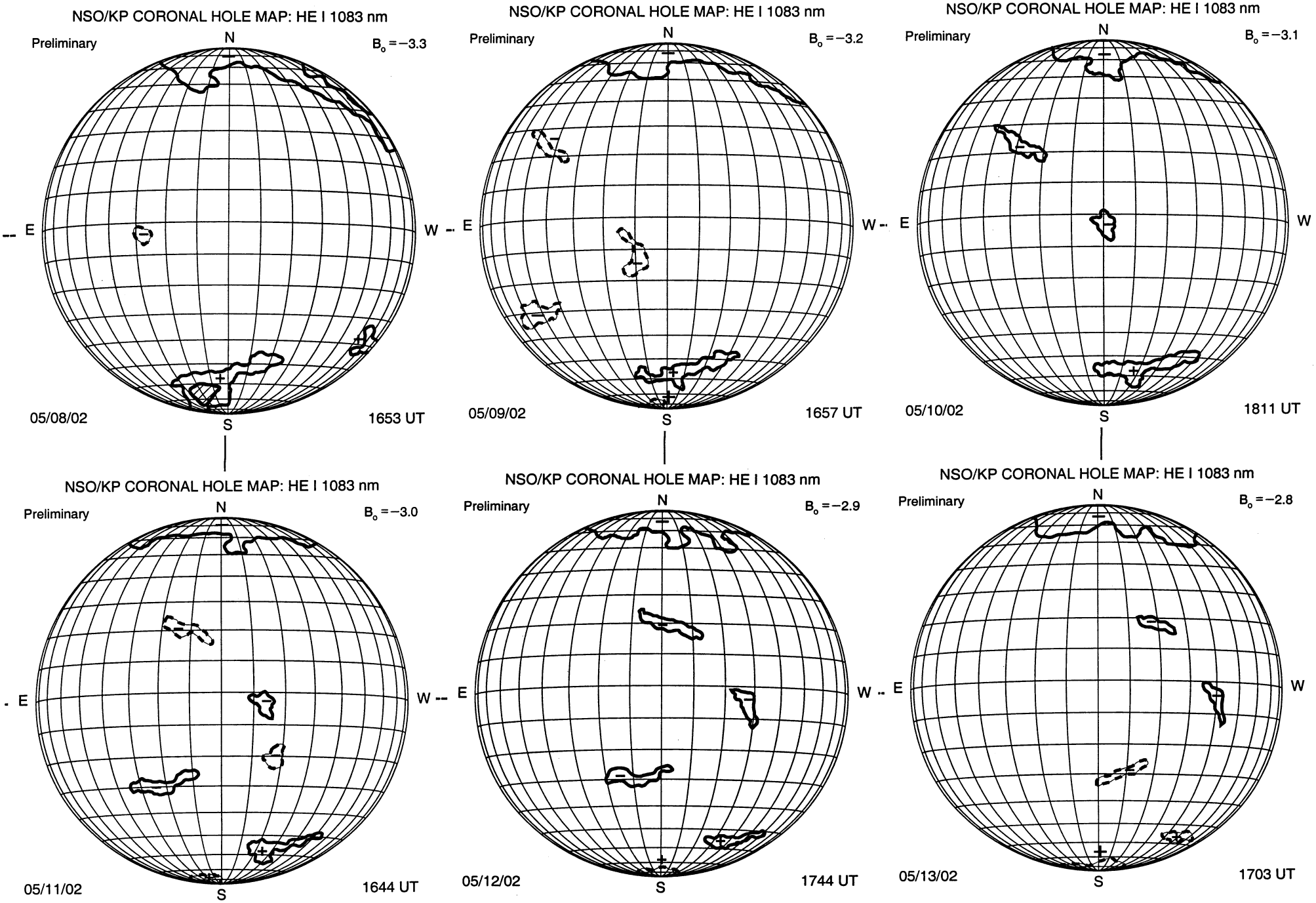




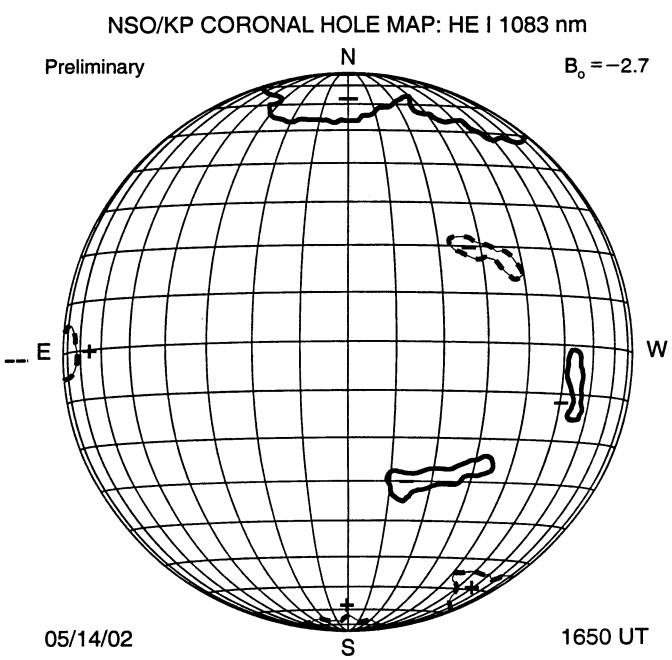


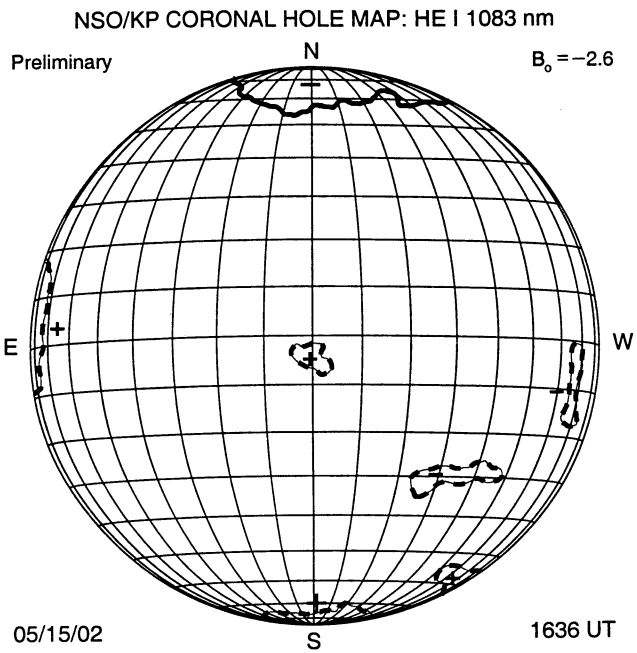


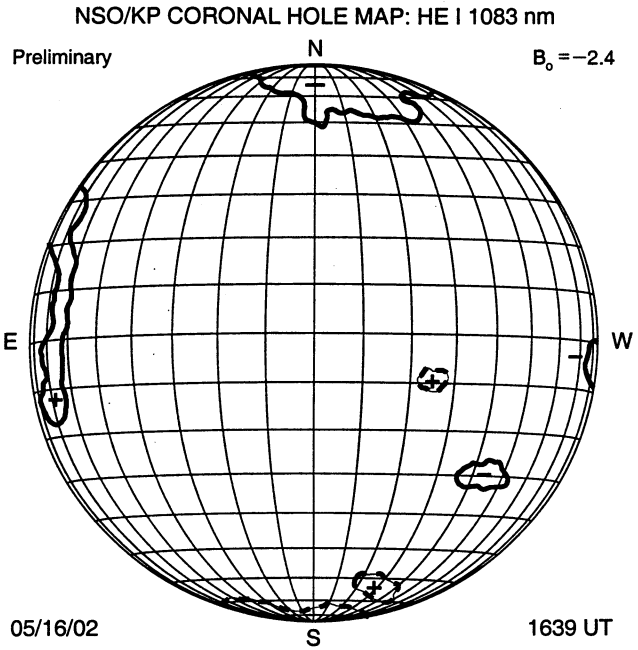
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 2002

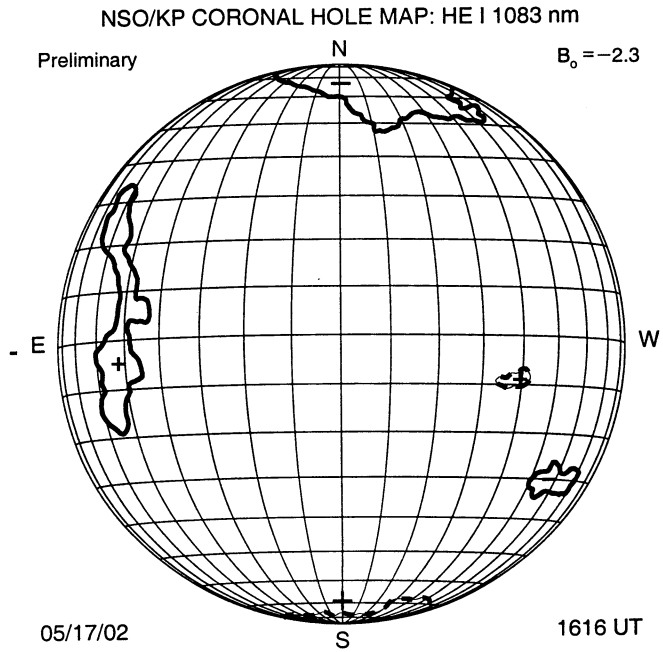


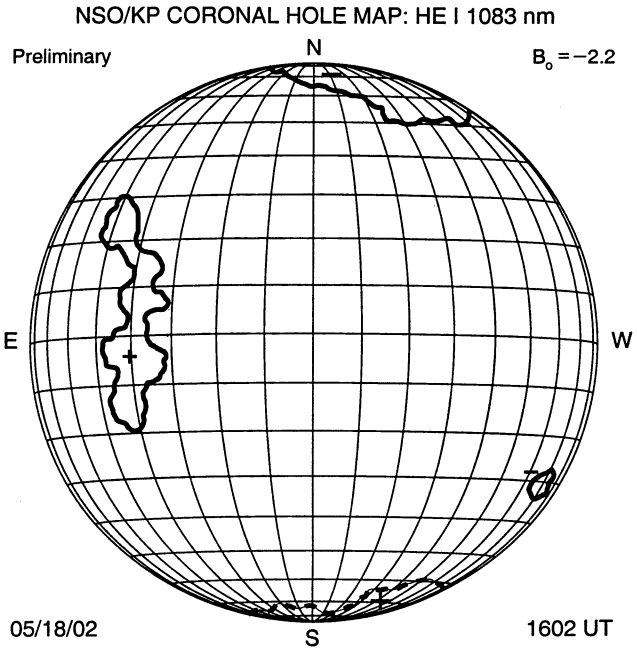
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 2002

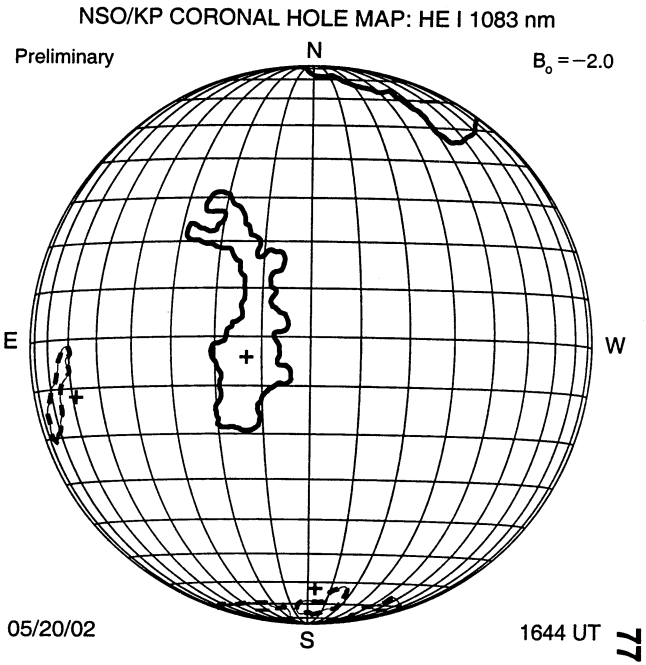




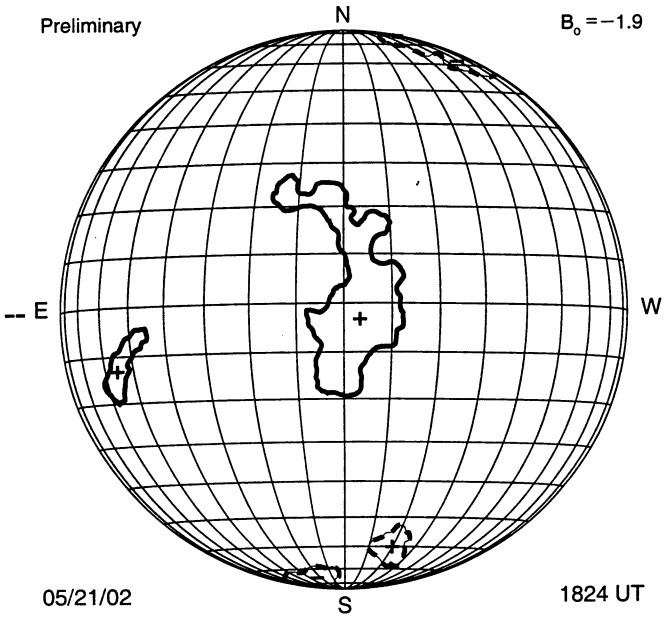


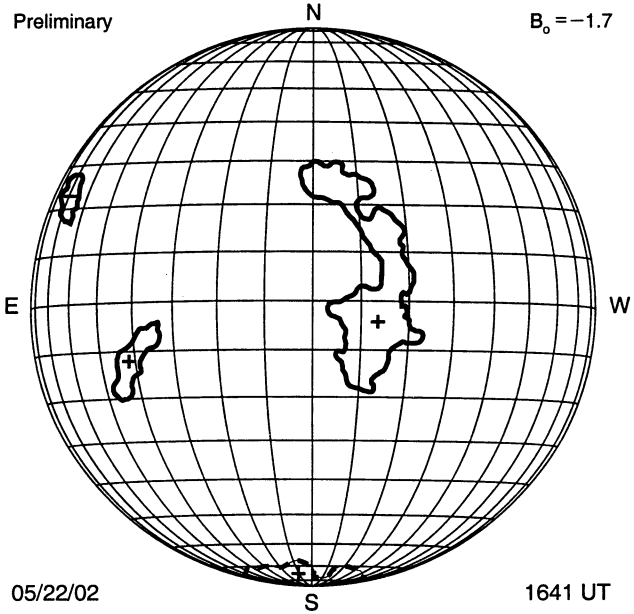


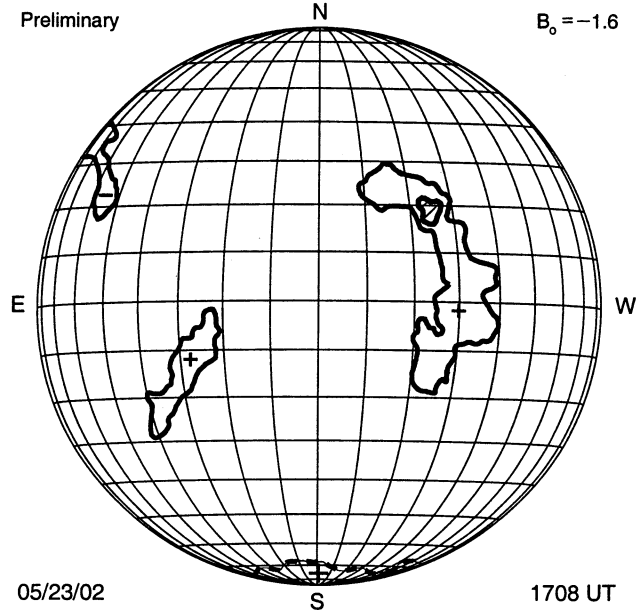


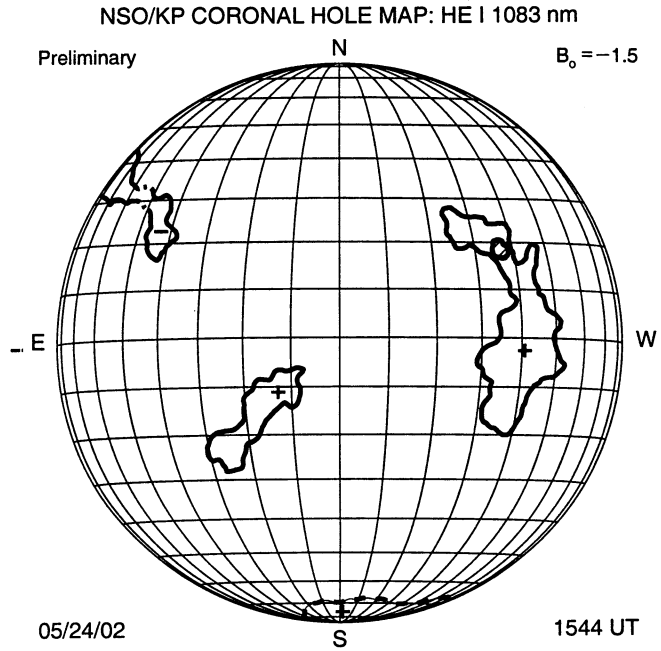


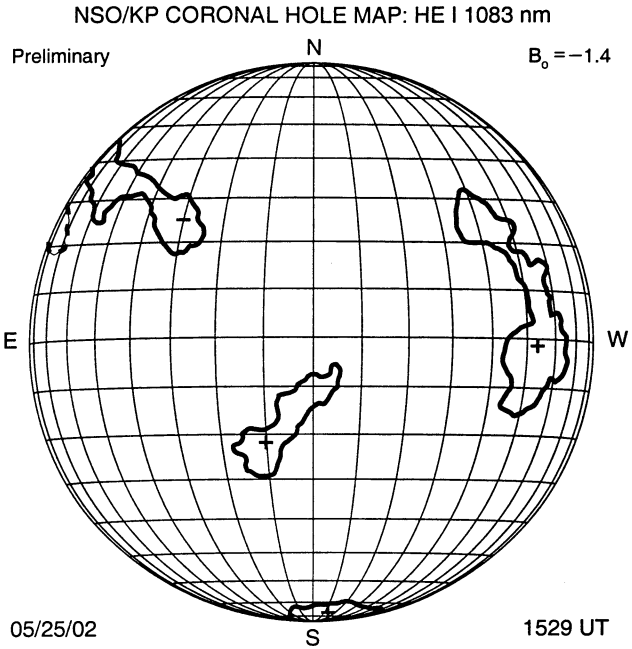
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 2002

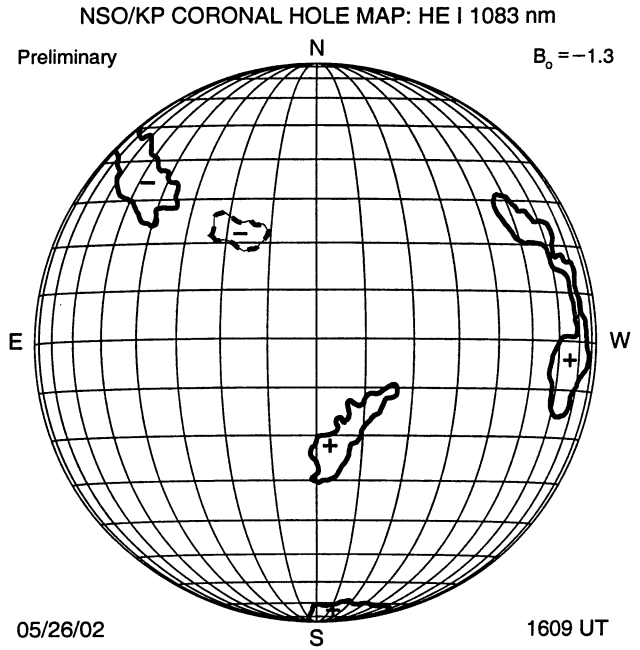




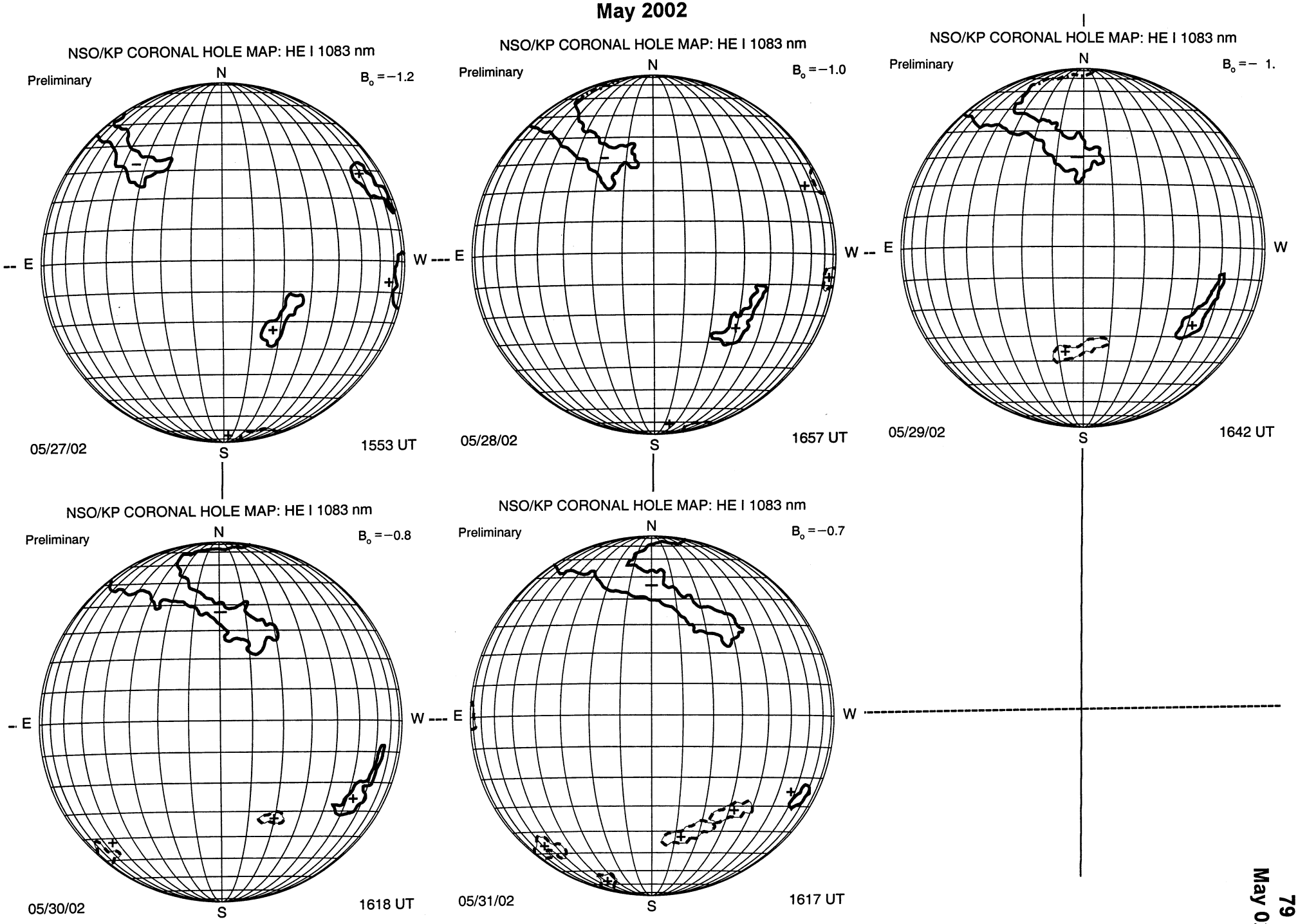




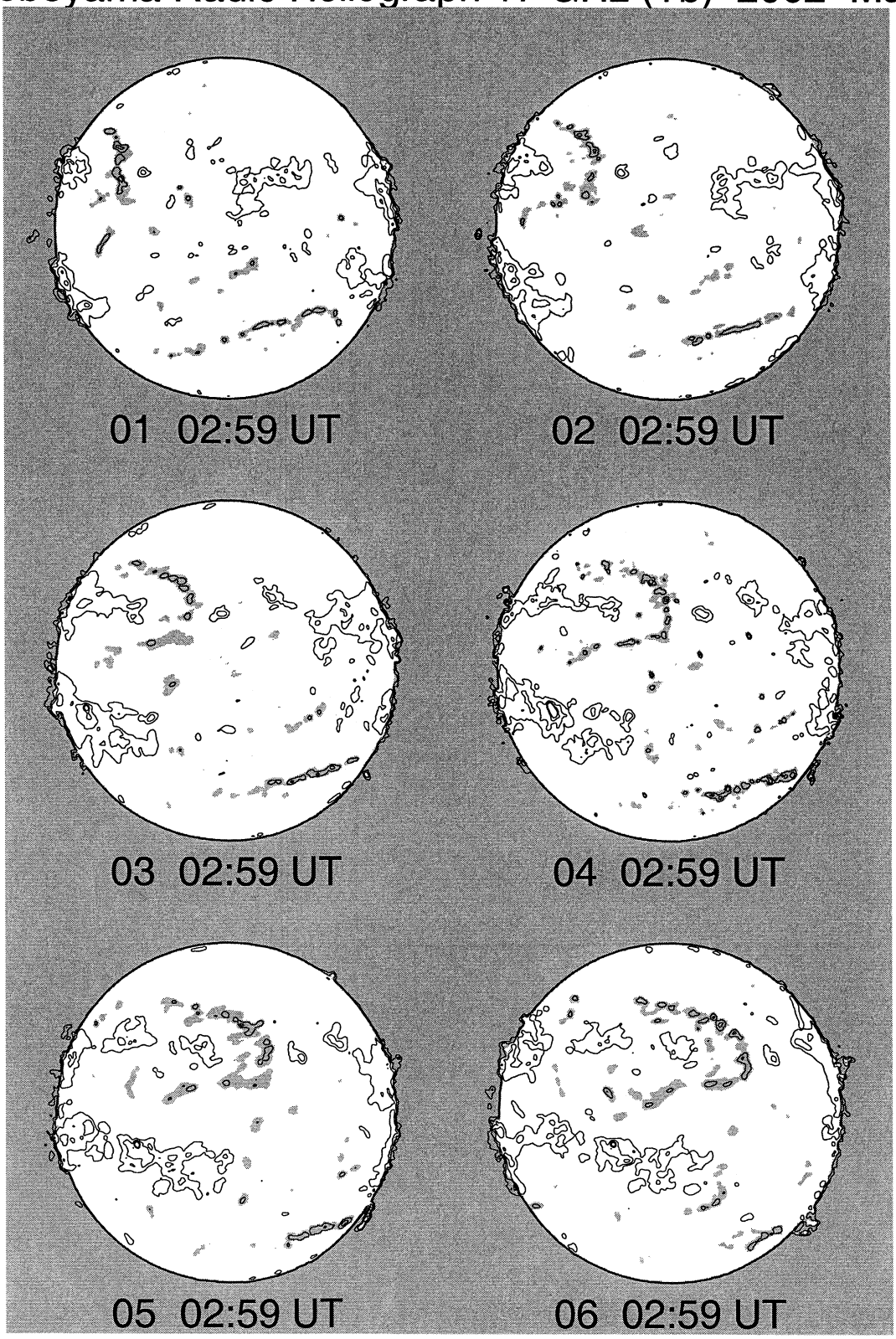




KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
May 2002

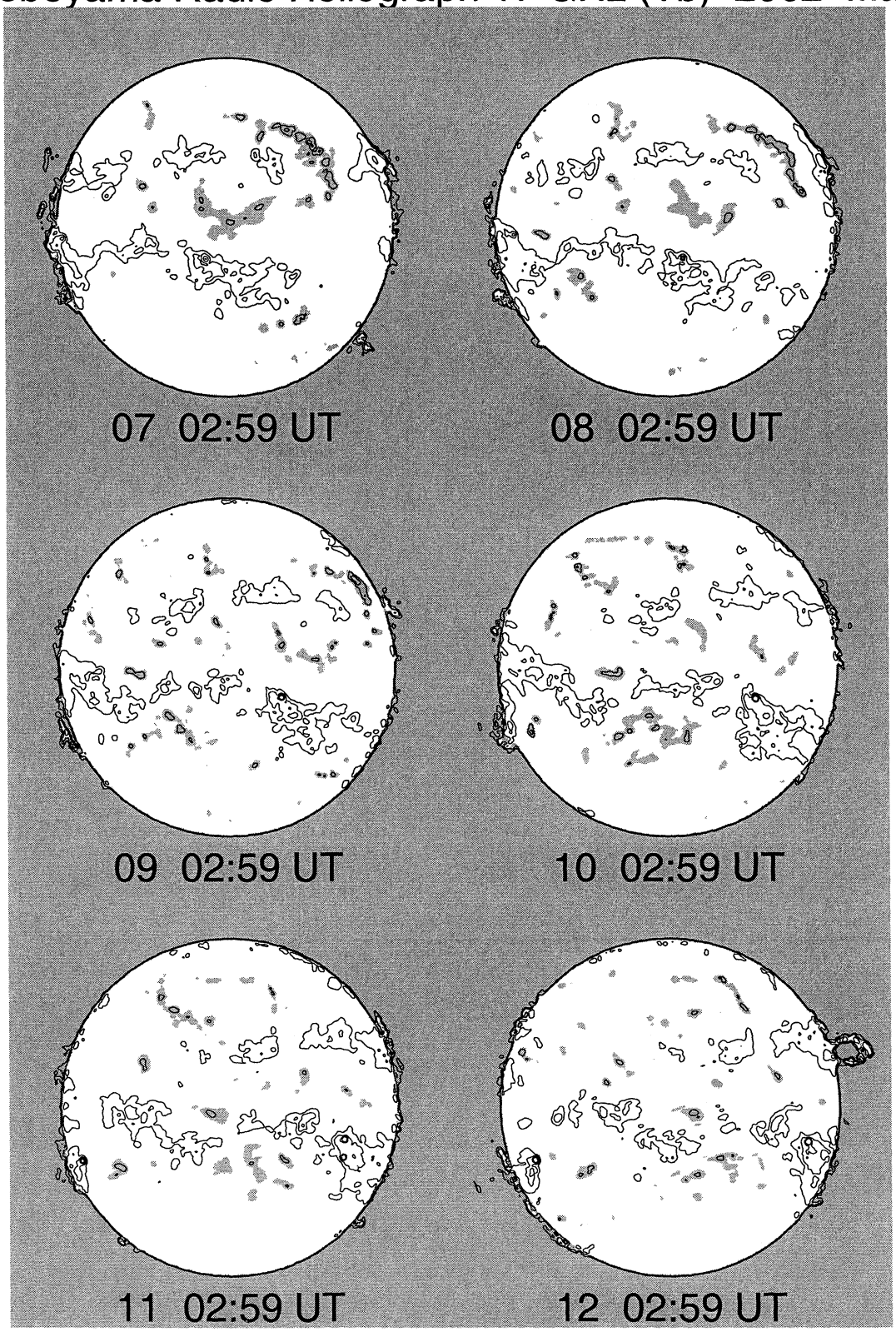


Nobeyama Radio Heliograph 17 GHz (Tb) 2002 May



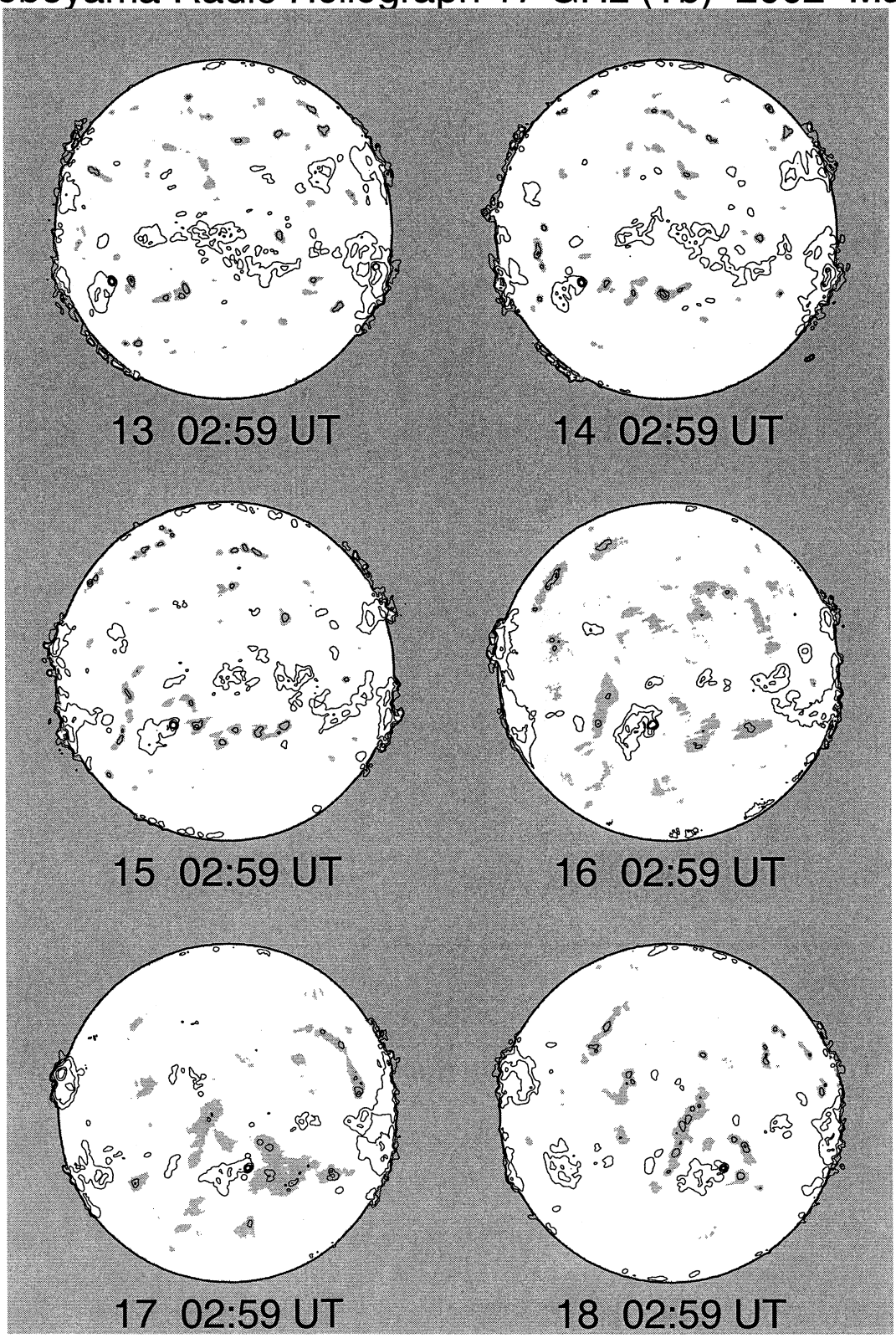
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 May



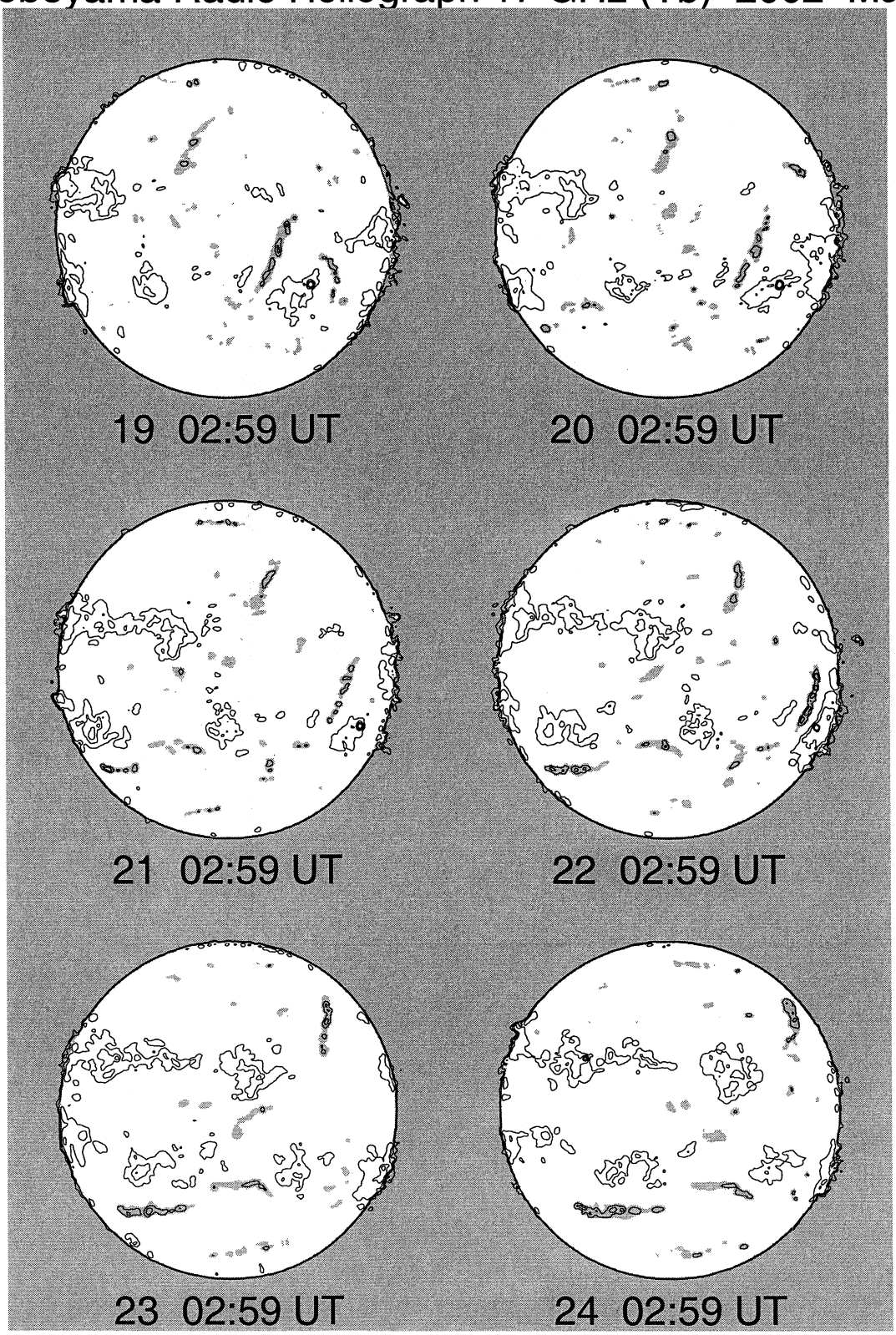
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 May



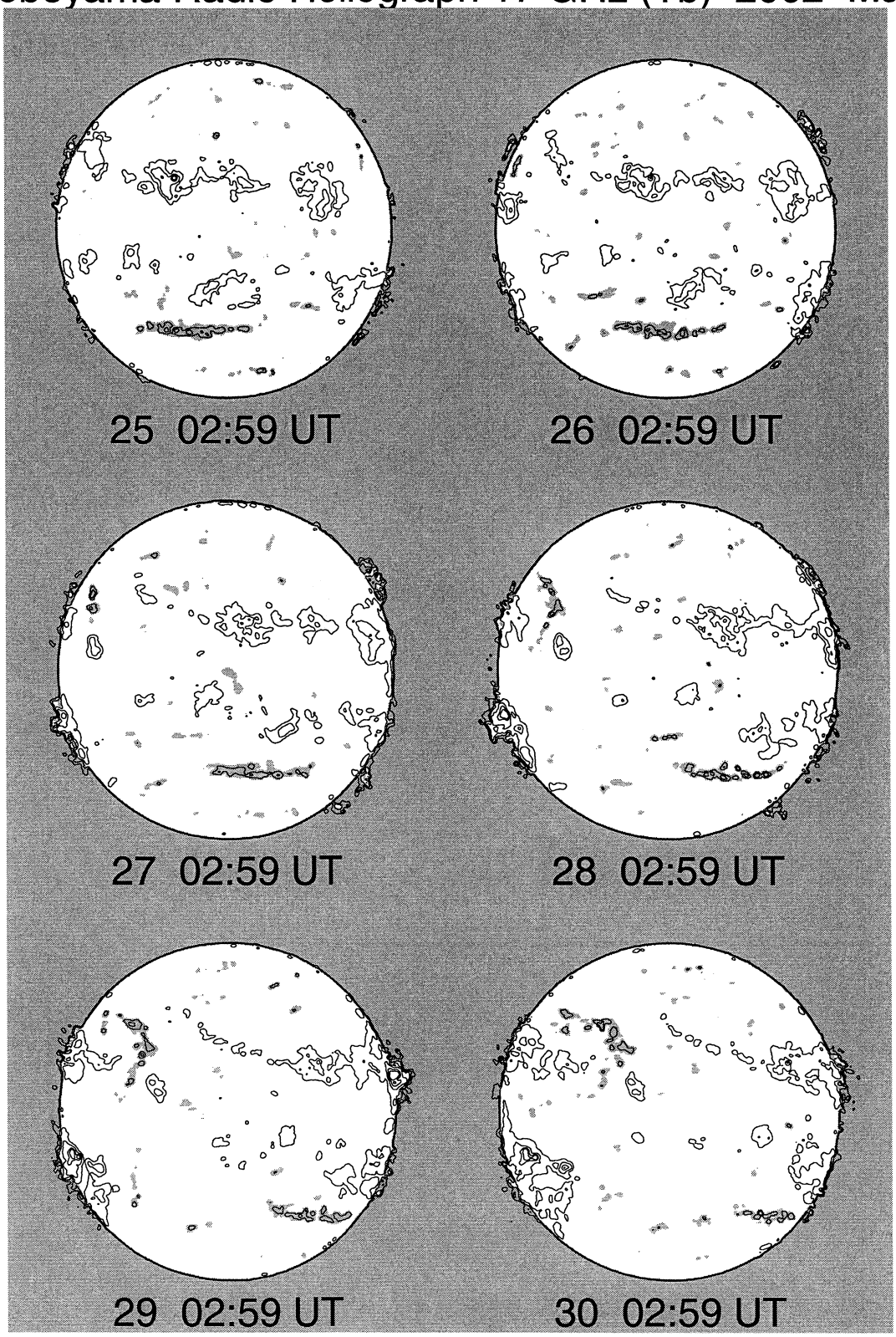
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 May



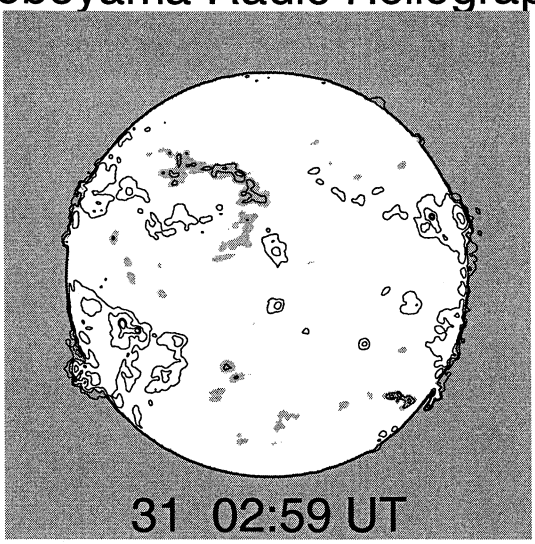
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2002 May



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 May



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

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

MAY 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
9929		LEAR	04	30	0116	N22	E28	05	2.2		B	CRO	10	3	3	4
9929		SVTO	04	30	0732	N22	E25	05	2.2		B	BXO	10	2	2	3
9929		HOLL	04	30	1908	N22	E17	05	2.1		A	AXX	10	1	1	2
9929		LEAR	05	02	0109	N21	E01	05	2.1		A	AXX	10	1		3
9929		SVTO	05	02	0632	N21	W02	05	2.1		A	AXX		1		3
9929		KAND	05	02	1150	N22	W05	05	2.1			BXO		4	4	3
9929		LEAR	05	03	0020	N22	W14	05	1.9		B	CAO	50	8	4	2
9929		VORO	05	03	0045	N21	W16	05	1.8			AXX	43	8		1
9929		TACH	05	03	0523	N19	W16	05	2.0			BRI	77	9	4	3
9929		SVTO	05	03	0606	N23	W16	05	2.0		B	DSO	80	8	5	2
9929		KAND	05	03	0750	N23	W17	05	2.0			CSO		9	5	3
9929		HOLL	05	03	1420	N22	W22	05	1.9		B	DSI	90	15	5	4
9929	31177	MWIL	05	03	1445	N22	W22	05	1.9	5	(B)					
9929		VORO	05	03	2242	N22	W26	05	1.9			CRI	100	7	5	1
9929		LEAR	05	04	0140	N22	W27	05	2.0		B	DSO	100	10	6	3
9929		TACH	05	04	0528	N20	W29	05	2.0			CAI	217	10	5	2
9929		SVTO	05	04	0720	N22	W33	05	1.8		B	DSO	100	11	8	2
9929		KAND	05	04	0825	N23	W31	05	2.0			CAO		13	8	4
9929	31177	MWIL	05	04	1445	N22	W36	05	1.8	5	(B)					
9929		HOLL	05	04	1520	N20	W38	05	1.7		B	DAI	190	19	8	4
9929		VORO	05	04	2218	N23	W40	05	1.8			CAI	289	3	6	1
9929		LEAR	05	05	0010	N22	W40	05	1.9		B	DAO	240	17	7	3
9929		KAND	05	05	0955	N24	W45	05	1.9			CAO		6	9	5
9929		SVTO	05	05	1346	N22	W48	05	1.9		B	DAO	210	12	9	3
9929	31177	MWIL	05	05	1445	N22	W49	05	1.8	5	(BP)					
9929		HOLL	05	05	1545	N22	W48	05	2.0		B	CAO	190	11	8	3
9929		VORO	05	05	2302	N23	W54	05	1.8			CAO	191	2	6	2
9929		LEAR	05	06	0011	N23	W53	05	1.9		B	DAO	180	7	7	2
9929		TACH	05	06	0439	N22	W56	05	1.9			CSO	255	2	6	4
9929		SVTO	05	06	0530	N22	W57	05	1.8		B	CAO	220	7	7	2
9929		HOLL	05	06	1330	N23	W60	05	1.9		B	DAO	140	3	5	3
9929	31177	MWIL	05	06	1430	N23	W61	05	1.9	5	(BP)					
9929		VORO	05	06	2143	N23	W66	05	1.8			CAO	236	3	5	3
9929		LEAR	05	07	0135	N24	W66	05	2.0		B	DAO	120	2	6	2
9929		KAND	05	07	0750	N25	W73	05	1.7			DAO		3	7	5
9929		HOLL	05	07	1330	N23	W77	05	1.6		A	HAX	60	1	1	2
9929	31177	MWIL	05	07	1445	N23	W75	05	1.8	5	(BP)					
9929		SVTO	05	07	1544	N23	W79	05	1.6		A	HAX	90	1	11	2
9929		VORO	05	07	2125	N23	W79	05	1.8			CAO	153	2	5	3
9929A		HOLL	05	01	1510	N07	E09	05	2.3		A	AXX	10	3	2	4
9929A		SVTO	04	30	0732	N05	E28	05	2.4		A	AXX		1		3
9931		LEAR	05	01	0027	N16	E31	05	3.4		B	BXO	20	6	4	3
9931		SVTO	05	01	0549	N15	E29	05	3.4		B	CAO	30	5	4	3
9931		KAND	05	01	0820	N17	E28	05	3.5			BXO		7	5	4
9931	31170	MWIL	05	01	1445	N16	E23	05	3.3	5	(B)					
9931		HOLL	05	01	1510	N15	E22	05	3.3		B	CAO	40	12	7	4
9931		VORO	05	01	2141	N16	E20	05	3.4			CRO	62	4	5	1
9931		LEAR	05	02	0109	N16	E18	05	3.4		B	DAO	50	13	6	3
9931		SVTO	05	02	0632	N16	E15	05	3.4		B	DSO	50	3	6	3
9931		KAND	05	02	1150	N16	E12	05	3.4			DSO		4	6	3
9931	31170	MWIL	05	02	1600	N16	E09	05	3.3	5	(B)					
9931		HOLL	05	02	1610	N15	E09	05	3.3		B	DAO	80	10	8	3
9931		LEAR	05	03	0020	N16	E04	05	3.3		B	DAO	90	9	7	2
9931		VORO	05	03	0045	N16	E04	05	3.3			CAI	164	5	7	1
9931		TACH	05	03	0523	N13	W01	05	3.1			DAI	259	9	6	3
9931		SVTO	05	03	0606	N17	E02	05	3.4		B	DSO	120	13	8	2
9931		HOLL	05	03	1420	N16	W05	05	3.2		B	DSO	130	15	9	4
9931	31170	MWIL	05	03	1445	N16	W04	05	3.3	5	(B)					
9931		VORO	05	03	2242	N15	W09	05	3.3			CAI	143	8	8	1
9931		LEAR	05	04	0140	N16	W10	05	3.3		B	DSO	110	14	10	3
9931		TACH	05	04	0528	N14	W12	05	3.3			CAI	172	8	8	2
9931		SVTO	05	04	0720	N15	W14	05	3.2		B	ESO	110	14	11	2
9931		KAND	05	04	0825	N16	W14	05	3.3			DSO		10	9	4
9931	31170	MWIL	05	04	1445	N16	W18	05	3.2	5	(B)					
9931		HOLL	05	04	1520	N15	W19	05	3.2		B	ESO	60	15	11	4
9931		VORO	05	04	2218	N16	W22	05	3.3			CAI	144	2	9	1
9931		LEAR	05	05	0010	N16	W23	05	3.3		B	DSO	110	13	10	3

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9931		KAND	05	05	0955	N16	W28	05	3.3			CSO		5	10	5
9931		SVTO	05	05	1346	N16	W31	05	3.2		B	CAO	60	7	8	3
9931	31170	MWIL	05	05	1445	N15	W32	05	3.2	5	(BP)					
9931		HOLL	05	05	1545	N15	W35	05	3.0		A	HAX	50	3	3	3
9931		VORO	05	05	2302	N14	W40	05	2.9			HAX	38	1		2
9931		LEAR	05	06	0011	N16	W36	05	3.3		B	CSO	70	4	7	2
9931		TACH	05	06	0439	N15	W42	05	3.0			HR	62	2	1	4
9931		SVTO	05	06	0530	N15	W43	05	3.0		B	CSO	60	2	3	2
9931		HOLL	05	06	1330	N15	W47	05	3.0		A	HAX	40	1	2	3
9931	31170	MWIL	05	06	1430	N15	W47	05	3.0	5	(AP)					
9931		VORO	05	06	2143	N14	W52	05	3.0			HAX	48	1		3
9931		LEAR	05	07	0135	N16	W54	05	3.0		B	CSO	40	2	2	2
9931		KAND	05	07	0750	N17	W57	05	3.0			HS		1	2	5
9931		HOLL	05	07	1330	N15	W60	05	3.0		A	HSX	40	1	1	2
9931	31170	MWIL	05	07	1445	N15	W60	05	3.1	4	(AP)					
9931		SVTO	05	07	1544	N15	W62	05	3.0		A	HRX	20	1	1	2
9931		VORO	05	07	2125	N15	W65	05	3.0			HAX	59	1		3
9931		LEAR	05	08	0125	N16	W66	05	3.0		A	HSX	50	1	2	2
9931		TACH	05	08	0445	N15	W69	05	3.0			HSX	70	1	2	3
9931		KAND	05	08	1140	N19	W73	05	2.9			HS		1	2	4
9931		RAMY	05	08	1308	N14	W73	05	3.0		A	HSX	60	1	3	4
9931	31170	MWIL	05	08	1430	N15	W74	05	3.0	4	(AP)					
9931		VORO	05	08	2128	N15	W77	05	3.1			HAX	39	1		2
9931		LEAR	05	09	0130	N16	W79	05	3.1		A	HAX	60	1	2	3
9931A		KAND	05	02	1150	S24	E08	05	3.1			AX		1		3
9931	31170	MWIL	04	30	1445	N16	E37	05	3.4	5	AP					
9931		HOLL	04	30	1908	N17	E33	05	3.3		A	AXX		1		2
9931A		KAND	04	29	1300	S25	E49	05	3.3			BXO		2	3	4
9931A		HOLL	04	29	1338	S24	E48	05	3.3		B	BXO	20	2	3	3
9931A	31167	MWIL	04	29	1445	S24	E48	05	3.3	4	(B)					
9931B		KAND	05	03	0750	S14	E09	05	4.0			AX		1		3
9927		KAND	04	29	1300	S30	E78	05	5.7			HS		1	2	4
9927		VORO	04	29	2324	S29	E68	05	5.3			HRX	59	3		1
9927		VORO	04	30	2228	S29	E58	05	5.5			CAI	84	7	8	1
9927		LEAR	05	01	0027	S29	E56	05	5.4		B	CAO	90	7	7	3
9927		SVTO	05	01	0549	S31	E51	05	5.3		B	DSO	100	4	7	3
9927		KAND	05	01	0820	S29	E52	05	5.4			CSO		6	6	4
9927	31168	MWIL	05	01	1445	S28	E44	05	5.0	4	(AP)					
9927		HOLL	05	01	1510	S29	E48	05	5.4		B	CSO	60	7	8	4
9927		VORO	05	01	2141	S29	E41	05	5.1			HRX	58	2		1
9927		LEAR	05	02	0109	S29	E39	05	5.1		B	DAO	50	4	2	3
9927		SVTO	05	02	0632	S29	E36	05	5.1		B	DSO	50	2	4	3
9927		KAND	05	02	1150	S28	E34	05	5.1			HS		2	2	3
9927	31168	MWIL	05	02	1600	S28	E31	05	5.1	5	(AP)					
9927		HOLL	05	02	1610	S28	E31	05	5.1		A	HSX	40	4	2	3
9927		LEAR	05	03	0020	S28	E27	05	5.1		B	CAO	20	2	2	2
9927		VORO	05	03	0045	S28	E27	05	5.1			HAX	64	2		1
9927		TACH	05	03	0523	S26	E20	05	4.8			AR	50	2	2	3
9927		SVTO	05	03	0606	S29	E23	05	5.0		B	DSO	30	2	3	2
9927		KAND	05	03	0750	S29	E22	05	5.0			HS		2	2	3
9927		HOLL	05	03	1420	S28	E18	05	5.0		B	CSO	30	2	2	4
9927	31168	MWIL	05	03	1445	S28	E19	05	5.1	4	(AP)					
9927		VORO	05	03	2242	S28	E14	05	5.0			HRX	25	1		1
9927		LEAR	05	04	0140	S28	E13	05	5.1		A	HSX	30	2	1	3
9927		TACH	05	04	0528	S25	E09	05	4.9			BRI	31	4	2	2
9927		SVTO	05	04	0720	S27	E09	05	5.0		B	DSO	20	5	4	2
9927		KAND	05	04	0825	S28	E07	05	4.9			CSO		3	3	4
9927	31168	MWIL	05	04	1445	S28	E06	05	5.1	4	(BG)					
9927		HOLL	05	04	1520	S28	E07	05	5.2		B	BXO	20	8	4	4
9927		VORO	05	04	2218	S28	E01	05	5.0			HRX	27	1		1
9927		LEAR	05	05	0010	S28	W01	05	4.9		B	BXO	20	4	1	3
9927		KAND	05	05	0955	S28	W07	05	4.9			AX		1		5
9927		SVTO	05	05	1346	S29	W08	05	4.9		A	AXX	10	3	2	3
9927	31168	MWIL	05	05	1445	S29	W08	05	5.0	4	(AP)					

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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
9935	31175	MWIL	05	02	1600	S19	E33	05	5.2	4	(BP)					
9935		HOLL	05	02	1610	S20	E33	05	5.2		A	HAX	20	4	3	3
9935		LEAR	05	03	0020	S19	E28	05	5.1		B	CAO	20	4	3	2
9935		TACH	05	03	0523	S17	E23	05	5.0			BRI	59	5	4	3
9935		SVTO	05	03	0606	S20	E25	05	5.2		B	DSO	40	4	3	2
9935		KAND	05	03	0750	S20	E25	05	5.2			DSO		4	4	3
9935		HOLL	05	03	1420	S19	E21	05	5.2		B	DSO	60	7	4	4
9935	31175	MWIL	05	03	1445	S19	E21	05	5.2	5	(B)					
9935		VORO	05	03	2242	S19	E17	05	5.2			BXI	54	6	3	1
9935		LEAR	05	04	0140	S19	E15	05	5.2		B	DSO	50	4	4	3
9935		TACH	05	04	0528	S17	E11	05	5.1			BRI	97	6	4	2
9935		SVTO	05	04	0720	S19	E12	05	5.2		B	DAO	40	8	5	2
9935		KAND	05	04	0825	S20	E11	05	5.2			DSO		4	4	4
9935	31175	MWIL	05	04	1445	S19	E08	05	5.2	4	(B)					
9935		HOLL	05	04	1520	S20	E08	05	5.2		B	DSO	40	9	5	4
9935		VORO	05	04	2218	S20	E02	05	5.1			AXX	28	3		1
9935		LEAR	05	05	0010	S19	E02	05	5.1		B	CRO	30	8	5	3
9935		KAND	05	05	0955	S18	W03	05	5.2			BXO		4	3	5
9935		SVTO	05	05	1346	S19	W06	05	5.1		B	BXO	10	6	5	3
9935	31175	MWIL	05	05	1445	S19	W06	05	5.1	4	(B)					
9935		VORO	05	05	2302	S20	W09	05	5.3			AXX	5	1		2
9935		LEAR	05	06	0011	S19	W10	05	5.2		A	AXX		1		2
9935		SVTO	05	06	0530	S19	W13	05	5.2		A	AXX		1		2
9935	31175	MWIL	05	06	1430	S21	W16	05	5.4	4	(BF)					
9935		SVTO	05	07	1544	S17	W34	05	5.1		A	HRX	10	1	1	2
9935		RAMY	05	08	1308	S17	W45	05	5.1		A	AXX	10	1		4
9935	31175	MWIL	05	08	1430	S19	W47	05	5.0	4	(B)					
9935		LEAR	05	09	0130	S19	W52	05	5.1		B	CSO	30	2	3	3
9927		KAND	04	29	1300	S30	E78	05	5.7			HS		1	2	4
9927		HOLL	04	29	1338	S28	E73	05	5.3		A	HSX	70	2	2	3
9927	31168	MWIL	04	29	1445	S29	E74	05	5.4	4	(BP)					
9927		LEAR	04	30	0116	S28	E65	05	5.1		A	HSX	40	2	2	4
9927		SVTO	04	30	0732	S31	E65	05	5.4		B	CSO	110	4	7	3
9927	31168	MWIL	04	30	1445	S29	E61	05	5.4	4	BP					
9927		HOLL	04	30	1908	S29	E59	05	5.4		B	CSO	90	4	6	2
9928		KAND	04	29	1300	N18	E80	05	5.6			HA		1	2	4
9928		VORO	04	29	2324	N17	E75	05	5.7			HRX	138	3		1
9928		VORO	04	30	2228	N18	E60	05	5.5			DAI	504	3	16	1
9928		LEAR	05	01	0027	N18	E60	05	5.6		B	DAO	150	5	3	3
9928		SVTO	05	01	0549	N17	E58	05	5.6		B	DSO	110	2	3	3
9928		KAND	05	01	0820	N19	E58	05	5.8			CSO		6	4	4
9928	31169	MWIL	05	01	1445	N18	E52	05	5.6	5	(BP)					
9928		HOLL	05	01	1510	N17	E52	05	5.6		B	DAO	100	7	3	4
9928		VORO	05	01	2141	N18	E49	05	5.6			HRX	72	2		1
9928		LEAR	05	02	0109	N17	E47	05	5.6		B	DAO	80	6	3	3
9928		SVTO	05	02	0632	N17	E45	05	5.7		B	CAO	70	4	3	3
9928		KAND	05	02	1150	N18	E41	05	5.6			DSO		5	2	3
9928	31169	MWIL	05	02	1600	N19	E39	05	5.6	4	(BG)					
9928		HOLL	05	02	1610	N17	E39	05	5.6		B	DAO	80	8	3	3
9928		LEAR	05	03	0020	N18	E33	05	5.5		BG	DAO	100	15	5	2
9928		VORO	05	03	0045	N18	E33	05	5.5			CRI	147	11	1	1
9928		TACH	05	03	0523	N16	E27	05	5.3			DAI	169	11	3	3
9928		SVTO	05	03	0606	N18	E32	05	5.7		B	DAO	120	12	5	2
9928		HOLL	05	03	1420	N19	E28	05	5.7		B	DAO	150	21	5	4
9928	31169	MWIL	05	03	1445	N19	E26	05	5.6	5	(BG)					
9928		VORO	05	03	2242	N19	E23	05	5.7			CRI	146	9	4	1
9928		LEAR	05	04	0140	N18	E21	05	5.7		B	DAO	100	13	6	3
9928		TACH	05	04	0528	N17	E15	05	5.4			CAI	248	11	4	2
9928		SVTO	05	04	0720	N17	E18	05	5.7		B	DAO	100	13	6	2
9928		KAND	05	04	0825	N19	E17	05	5.6			CAO		18	5	4
9928	31169	MWIL	05	04	1445	N19	E14	05	5.7	5	(BG)					
9928		HOLL	05	04	1520	N17	E15	05	5.8		B	DSO	100	28	9	4
9928		VORO	05	04	2218	N18	E08	05	5.5			CRI	128	5	2	1
9928		LEAR	05	05	0010	N18	E10	05	5.8		B	CAO	130	24	9	3
9928		KAND	05	05	0955	N19	E04	05	5.7			HA		6	3	5
9928		SVTO	05	05	1346	N19	W01	05	5.5		B	DSO	50	10	3	3
9928	31169	MWIL	05	05	1445	N18	E01	05	5.7	5	(BP)					

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9928		HOLL	05	05	1545	N18	W01	05	5.6		B	DAO	100	12	7	3
9928		VORO	05	05	2302	N19	W06	05	5.5			HAX	42	3		2
9928		LEAR	05	06	0011	N18	W04	05	5.7		B	CAO	70	8	4	2
9928		TACH	05	06	0439	N17	W11	05	5.3			AR	35	6	2	4
9928		SVTO	05	06	0530	N19	W08	05	5.6		B	CSO	60	8	30	2
9928		HOLL	05	06	1330	N18	W13	05	5.6		B	CSO	40	8	5	3
9928	31169	MWIL	05	06	1430	N18	W14	05	5.5	4	(AP)					
9928		VORO	05	06	2143	N19	W18	05	5.5			BXI	26	9	3	3
9928		LEAR	05	07	0135	N19	W19	05	5.6		B	CSO	30	4	4	2
9928		KAND	05	07	0750	N19	W23	05	5.6			CAO		5	4	5
9928		HOLL	05	07	1330	N18	W27	05	5.5		B	CSO	30	3	4	2
9928	31169	MWIL	05	07	1445	N19	W29	05	5.4	4	(AP)					
9928		SVTO	05	07	1544	N19	W30	05	5.4		A	HSX	20	1	1	2
9928		VORO	05	07	2125	N20	W33	05	5.4			AXX	9	1		3
9928		LEAR	05	08	0125	N20	W35	05	5.4		A	HRX	10	1	1	2
9928		TACH	05	08	0445	N19	W36	05	5.4			AXX	10	1	1	3
9928		KAND	04	29	1300	N18	E80	05	5.6			HA		1	2	4
9928		HOLL	04	29	1338	N18	E80	05	5.6		A	HAX	130	2	2	3
9928	31169	MWIL	04	29	1445	N17	E80	05	5.7	4	(AP)					
9928		LEAR	04	30	0116	N18	E74	05	5.7		B	CSO	60	4	2	4
9928		SVTO	04	30	0732	N18	E69	05	5.6		B	CSO	90	3	2	3
9928	31169	MWIL	04	30	1445	N18	E68	05	5.8	5	AP					
9928		HOLL	04	30	1908	N18	E64	05	5.7		B	CAO	60	4	3	2
9936		VORO	05	01	2141	S16	E55	05	6.1			AXX	16	1		1
9936		LEAR	05	02	0109	S17	E54	05	6.1		B	CAO	30	7	4	3
9936		SVTO	05	02	0632	S18	E52	05	6.2		B	CSO	50	4	4	3
9936		KAND	05	02	1150	S16	E50	05	6.3			CSO		4	6	3
9936	31176	MWIL	05	02	1600	S16	E46	05	6.1	4	(B)					
9936		HOLL	05	02	1610	S15	E43	05	5.9		B	DSO	50	6	5	3
9936		LEAR	05	03	0020	S15	E38	05	5.9		B	DSO	20	2	1	2
9936		VORO	05	03	0045	S15	E39	05	6.0			AXX	22	3		1
9936		TACH	05	03	0523	S15	E34	05	5.8			BXO	28	2	7	3
9936		SVTO	05	03	0606	S15	E34	05	5.8		A	HSX		1		2
9936		KAND	05	03	0750	S18	E37	05	6.1			BXO		2	7	3
9936		HOLL	05	03	1420	S16	E33	05	6.1		B	CRO	40	6	7	4
9936	31176	MWIL	05	03	1445	S16	E33	05	6.1	4	(BP)					
9936		VORO	05	03	2242	S18	E31	05	6.3			BXI	10	2	4	1
9936		LEAR	05	04	0140	S16	E26	05	6.0		B	CRO	40	3	3	3
9936		TACH	05	04	0528	S15	E21	05	5.8			BXI	48	4	5	2
9936		SVTO	05	04	0720	S17	E23	05	6.0		B	CSO	30	9	9	2
9936		KAND	05	04	0825	S17	E21	05	5.9			BXO		8	5	4
9936	31176	MWIL	05	04	1445	S17	E20	05	6.1	4	(B)					
9936		HOLL	05	04	1520	S18	E20	05	6.2		B	CSO	50	12	8	4
9936		VORO	05	04	2218	S19	E18	05	6.3			CRI	89	7	8	1
9936		LEAR	05	05	0010	S17	E15	05	6.1		B	DAO	50	11	8	3
9936		KAND	05	05	0955	S17	E09	05	6.1			CAO		6	6	5
9936		SVTO	05	05	1346	S17	E07	05	6.1		B	CSO	40	10	8	3
9936	31176	MWIL	05	05	1445	S17	E08	05	6.2	4	(BP)					
9936		HOLL	05	05	1545	S16	E02	05	5.8		B	CAO	40	8	5	3
9936		VORO	05	05	2302	S20	E04	05	6.3			CAO	40	3	8	2
9936		LEAR	05	06	0011	S17	W01	05	5.9		B	CAO	20	4	3	2
9936		TACH	05	06	0439	S14	W06	05	5.7			BRO	38	4	3	4
9936		TACH	05	06	0439	S24	W04	05	5.9			AR	12	2	2	4
9936		SVTO	05	06	0530	S16	W02	05	6.1		B	CSO	30	8	8	2
9936		HOLL	05	06	1330	S16	W08	05	5.9		B	CSO	20	3	4	3
9936	31176	MWIL	05	06	1430	S16	W09	05	5.9	4	(B)					
9936		VORO	05	06	2143	S20	W09	05	6.2			CSO	33	5	8	3
9936		LEAR	05	07	0135	S16	W16	05	5.8		B	CSO	20	2	2	2
9936		KAND	05	07	0750	S16	W18	05	6.0			CSO		3	5	5
9936		HOLL	05	07	1330	S16	W23	05	5.8		A	HSX	20	1	1	2
9936	31176	MWIL	05	07	1445	S18	W21	05	6.0	4	(B)					
9936		VORO	05	07	2125	S20	W20	05	6.4			BXI	17	3	12	3
9936		LEAR	05	08	0125	S16	W28	05	5.9		A	AXX	10	1	1	2
9936		TACH	05	08	0445	S14	W29	05	6.0			AXX	10	1	1	3
9936		KAND	05	08	1140	S15	W35	05	5.8			AX		2	2	4
9936	31176	MWIL	05	08	1430	S16	W36	05	5.9	4	(AP)					
9936		VORO	05	08	2128	S21	W31	05	6.5			BXI	15	3	19	2
9936		LEAR	05	09	0130	S16	W42	05	5.9		A	AXX		1		3

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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
9936		TACH	05	09	0600	S19	W49	05	5.5			AXX	5	1	1	3
9936		VORO	05	09	2130	S22	W45	05	6.4			AXX	12	1		3
9936		VORO	05	10	2135	S22	W58	05	6.4			AXX	3	1		2
9941	31181	MWIL	05	04	1445	S17	E29	05	6.8	4	(AP)					
9941	31180	MWIL	05	04	1445	S22	E27	05	6.7	4	(BP)					
9941		HOLL	05	04	1520	S23	E27	05	6.7		B	CSO	20	7	3	4
9941		LEAR	05	05	0010	S23	E22	05	6.7		B	DAO	50	12	5	3
9941		KAND	05	05	0955	S22	E16	05	6.6			CAO		4	6	5
9941		SVTO	05	05	1346	S22	E14	05	6.6		B	DAO	40	7	6	3
9941	31180	MWIL	05	05	1445	S22	E15	05	6.8	5	(BP)					
9941		HOLL	05	05	1545	S21	E12	05	6.6		B	CSO	50	11	5	3
9941		LEAR	05	06	0011	S23	E08	05	6.6		B	DAO	30	5	3	2
9941		TACH	05	06	0439	S20	E02	05	6.3			AR	62	2	2	4
9941		TACH	05	06	0439	S20	E09	05	6.9			AR	23	2	2	4
9941		SVTO	05	06	0530	S22	E08	05	6.8		B	CSO	40	6	9	2
9941		HOLL	05	06	1330	S22	E02	05	6.7		B	DSO	50	7	9	3
9941	31180	MWIL	05	06	1430	S22	E03	05	6.8	5	(BG)					
9941		LEAR	05	07	0135	S21	W07	05	6.5		B	DSO	20	3	2	2
9941		KAND	05	07	0750	S22	W09	05	6.6			CAO		6	6	5
9941		HOLL	05	07	1330	S22	W12	05	6.6		B	CSO	30	3	6	2
9941	31180	MWIL	05	07	1445	S22	W12	05	6.7	4	(B)					
9941		SVTO	05	07	1544	S22	W14	05	6.6		B	CRO	20	4	4	2
9941		LEAR	05	08	0125	S21	W18	05	6.7		B	DAO	30	4	4	2
9941		TACH	05	08	0445	S18	W20	05	6.7			BXO	43	2	3	3
9941		TACH	05	08	0445	S23	W26	05	6.2			AXX	20	1	1	3
9941		KAND	05	08	1140	S20	W26	05	6.5			HS		1	1	4
9941		RAMY	05	08	1308	S23	W29	05	6.3		B	DSO	30	2	7	4
9941	31180	MWIL	05	08	1430	S21	W26	05	6.6	5	(BP)					
9941		LEAR	05	09	0130	S21	W33	05	6.5		A	HSX	30	1	1	3
9941		TACH	05	09	0600	S19	W35	05	6.6			AXX	15	1	1	3
9941		TACH	05	09	0600	S24	W39	05	6.2			AXX	15	1	1	3
9941		SVTO	05	09	1230	S23	W39	05	6.5		A	HSX	10	1	1	2
9941		KAND	05	09	1250	S20	W41	05	6.4			HR		1		3
9941		HOLL	05	09	1350	S22	W40	05	6.5		A	AXX	10	1	1	3
9941		LEAR	05	10	0117	S21	W47	05	6.4		A	HRX	20	1	1	3
9941		SVTO	05	10	0630	S22	W50	05	6.4		A	AXX	10	1	1	3
9941		KAND	05	10	0705	S19	W49	05	6.5			AX		1		4
9941		RAMY	05	10	1400	S22	W54	05	6.4		A	HSX	10	1	1	4
9941	31180	MWIL	05	10	1500	S22	W54	05	6.5	4	(AP)					
9941		TACH	05	11	0520	S21	W61	05	6.5			AXX	10	1	1	2
9941		KAND	05	11	1020	S19	W63	05	6.6			AX		1		3
9932		LEAR	05	01	0027	S28	E68	05	6.3		A	AXX	20	1		3
9932		SVTO	05	01	0549	S29	E64	05	6.2		A	HSX	50	1	1	3
9932		KAND	05	01	0820	S28	E66	05	6.5			BXO		5	5	4
9932	31172	MWIL	05	01	1445	S27	E59	05	6.2	4	(AP)					
9932		HOLL	05	01	1510	S27	E60	05	6.3		B	CAO	40	4	3	4
9932		VORO	05	01	2141	S28	E58	05	6.4			HAX	44	2	5	1
9932		LEAR	05	02	0109	S28	E56	05	6.4		B	DAO	90	4	6	3
9932		SVTO	05	02	0632	S29	E53	05	6.4		B	DSO	70	4	7	3
9932		KAND	05	02	1150	S28	E51	05	6.5			DSO		3	6	3
9932	31172	MWIL	05	02	1600	S28	E48	05	6.4	5	(B)					
9932		HOLL	05	02	1610	S27	E48	05	6.4		B	DAO	180	5	7	3
9932		LEAR	05	03	0020	S28	E45	05	6.5		B	DAO	140	5	10	2
9932		VORO	05	03	0045	S28	E44	05	6.5			DAO	231	3	7	1
9932		TACH	05	03	0523	S27	E37	05	6.1			DAI	280	4	9	3
9932		SVTO	05	03	0606	S29	E39	05	6.3		BG	DSO	150	5	9	2
9932		KAND	05	03	0750	S30	E40	05	6.5			DAO		7	10	3
9932		HOLL	05	03	1420	S28	E36	05	6.4		B	DAI	170	14	9	4
9932	31172	MWIL	05	03	1445	S28	E36	05	6.4	5	(B)					
9932		VORO	05	03	2242	S28	E32	05	6.4			DAI	214	8	8	1
9932		LEAR	05	04	0140	S28	E31	05	6.5		B	DAO	120	12	9	3
9932		TACH	05	04	0528	S26	E24	05	6.1			DAI	562	13	8	2
9932		SVTO	05	04	0720	S29	E26	05	6.3		BG	DAO	140	14	9	2
9932		KAND	05	04	0825	S29	E25	05	6.3			DAO		16	10	4
9932	31172	MWIL	05	04	1445	S28	E24	05	6.5	4	(B)					
9932		HOLL	05	04	1520	S28	E23	05	6.4		B	DAI	110	21	10	4
9932		VORO	05	04	2218	S28	E20	05	6.5			CRI	158	8	9	1

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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
9932		LEAR	05	05	0010	S29	E18	05	6.4		B	DAI	110	15	9	3
9932		KAND	05	05	0955	S29	E12	05	6.3			EAO		11	11	5
9932		SVTO	05	05	1346	S28	E11	05	6.4		B	EAO	90	15	11	3
9932	31172	MWIL	05	05	1445	S28	E11	05	6.5	5	(BF)					
9932		HOLL	05	05	1545	S28	E09	05	6.3		B	EAI	90	17	11	3
9932		VORO	05	05	2302	S28	E07	05	6.5			DAO	60	6	10	2
9932		LEAR	05	06	0011	S28	E05	05	6.4		B	DAO	90	16	10	2
9932		TACH	05	06	0439	S26	E05	05	6.6			AR	10	6	1	4
9932		SVTO	05	06	0530	S28	E03	05	6.5		B	ESO	60	6	11	2
9932		HOLL	05	06	1330	S28	W03	05	6.3		B	ESO	70	9	11	3
9932	31172	MWIL	05	06	1430	S28	W02	05	6.4	4	(BG)					
9932		VORO	05	06	2143	S28	W06	05	6.4			CAO	65	7	10	3
9932		LEAR	05	07	0135	S26	W08	05	6.4		B	ESO	50	6	12	2
9932		KAND	05	07	0750	S27	W12	05	6.4			EAO		12	13	5
9932		HOLL	05	07	1330	S27	W16	05	6.3		B	ESO	70	6	13	2
9932	31172	MWIL	05	07	1445	S28	W15	05	6.4	4	(BG)					
9932		SVTO	05	07	1544	S28	W16	05	6.4		B	ESO	40	3	12	2
9932		VORO	05	07	2125	S28	W19	05	6.4			CAO	36	4	11	3
9932		LEAR	05	08	0125	S26	W22	05	6.3		B	CAO	40	5	10	2
9932		TACH	05	08	0445	S25	W16	05	6.9			AXX	30	1	1	3
9932		KAND	05	08	1140	S25	W26	05	6.5			EAO		3	11	4
9932		RAMY	05	08	1308	S28	W21	05	6.9		A	HAX	20	2	2	4
9932	31172	MWIL	05	08	1430	S27	W27	05	6.5	4	(BF)					
9932		VORO	05	08	2128	S28	W31	05	6.5			CAI	45	5	11	2
9932		LEAR	05	09	0130	S27	W33	05	6.5		B	EAO	50	5	11	3
9932		TACH	05	09	0600	S26	W29	05	7.0			AXX	40	1	1	3
9932		SVTO	05	09	1230	S27	W33	05	6.9		B	CSO	50	5	16	2
9932		KAND	05	09	1250	S27	W40	05	6.4			CSO		3	10	3
9932		HOLL	05	09	1350	S29	W34	05	6.9		A	HAX	30	1	2	3
9932		VORO	05	09	2130	S29	W39	05	6.8			HAX	29	2		3
9932		LEAR	05	10	0117	S28	W41	05	6.8		B	CAO	40	2	2	3
9932		SVTO	05	10	0630	S29	W44	05	6.8		A	HSX	30	1	1	3
9932		KAND	05	10	0705	S26	W44	05	6.9			HS		1	1	4
9932		RAMY	05	10	1400	S29	W48	05	6.8		A	HAX	10	1	1	4
9932	31172	MWIL	05	10	1500	S27	W53	05	6.5	4	(B)					
9932		HOLL	05	10	1515	S29	W48	05	6.9		A	AXX	20	2	1	2
9932		VORO	05	10	2135	S27	W48	05	7.1			AXX	15	1		2
9932		TACH	05	11	0520	S28	W54	05	7.0			AXX	15	1	1	2
9932		KAND	05	11	1020	S27	W56	05	7.1			AX		1		3
9932		SVTO	05	11	1320	S30	W58	05	7.0		A	AXX		1		1
9932	31172	MWIL	05	11	1500	S29	W60	05	6.9	3	(AP)					
9932		HOLL	05	11	1505	S29	W60	05	6.9		A	AXX	20	1	1	3
9933		HOLL	04	30	1908	N18	E80	05	6.9		A	HSX	30	1	1	2
9933		LEAR	05	01	0027	N18	E76	05	6.8		A	HSX	90	1	1	3
9933		SVTO	05	01	0549	N12	E73	05	6.7		A	HSX	60	1	3	3
9933		KAND	05	01	0820	N19	E75	05	7.1			HS		1	2	4
9933	31173	MWIL	05	01	1445	N19	E69	05	6.9	4	(AP)					
9933		HOLL	05	01	1510	N18	E68	05	6.8		A	HAX	100	1	2	4
9933		VORO	05	01	2141	N18	E65	05	6.8			HAX	113	1		1
9933		LEAR	05	02	0109	N18	E64	05	6.9		A	HSX	110	1	2	3
9933		SVTO	05	02	0632	N17	E62	05	7.0		A	HSX	80	1	2	3
9933		KAND	05	02	1150	N19	E59	05	7.0			HS		1	2	3
9933	31173	MWIL	05	02	1600	N19	E55	05	6.9	5	(AP)					
9933		HOLL	05	02	1610	N18	E55	05	6.9		A	HAX	70	1	2	3
9933		LEAR	05	03	0020	N18	E50	05	6.8		B	CAO	90	3	4	2
9933		VORO	05	03	0045	N18	E51	05	6.9			HAX	169	1		1
9933		TACH	05	03	0523	N18	E44	05	6.6			CAO	170	3	2	3
9933		SVTO	05	03	0606	N18	E47	05	6.8		B	CSO	90	3	5	2
9933		KAND	05	03	0750	N16	E49	05	7.0			CSO		4	3	3
9933		HOLL	05	03	1420	N19	E42	05	6.8		B	CSO	110	4	4	4
9933	31173	MWIL	05	03	1445	N19	E43	05	6.9	5	(BP)					
9933		VORO	05	03	2242	N18	E39	05	6.9			HAX	140	2		1
9933		LEAR	05	04	0140	N18	E37	05	6.9		B	CSO	60	2	2	3
9933		TACH	05	04	0528	N18	E31	05	6.6			HSX	200	1	1	2
9933		SVTO	05	04	0720	N16	E35	05	7.0		B	CSO	80	2	4	2
9933		KAND	05	04	0825	N17	E33	05	6.8			CSO		4	4	4
9933	31173	MWIL	05	04	1445	N18	E30	05	6.9	5	(AP)					
9933		HOLL	05	04	1520	N16	E29	05	6.8		A	HSX	70	6	3	4

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9933		VORO	05	04	2218	N18	E26	05	6.9			HAX	148	1		1
9933		LEAR	05	05	0010	N18	E26	05	7.0		A	HSX	120	5	7	3
9933		KAND	05	05	0955	N17	E20	05	6.9			HS		1	2	5
9933		SVTO	05	05	1346	N18	E17	05	6.9		A	HSX	90	1	2	3
9933	31173	MWIL	05	05	1445	N18	E17	05	6.9	5	(AP)					
9933		HOLL	05	05	1545	N17	E16	05	6.9		A	HAX	100	4	4	3
9933		VORO	05	05	2302	N18	E12	05	6.9			HSX	109	1		2
9933		LEAR	05	06	0011	N18	E12	05	6.9		A	HSX	120	1	2	2
9933		TACH	05	06	0439	N14	E04	05	6.5			HSX	200	1	1	4
9933		SVTO	05	06	0530	N18	E08	05	6.8		A	HSX	100	1	3	2
9933		HOLL	05	06	1330	N17	E07	05	7.1		B	CAO	80	2	4	3
9933	31173	MWIL	05	06	1430	N18	E04	05	6.9	5	(AP)					
9933		VORO	05	06	2143	N18	W00	05	6.9			HSX	110	1		3
9933		LEAR	05	07	0135	N18	W03	05	6.8		A	HSX	60	1	2	2
9933		KAND	05	07	0750	N18	W05	05	6.9			HS		1	2	5
9933		HOLL	05	07	1330	N17	W09	05	6.9		A	HSX	40	2	2	2
9933	31173	MWIL	05	07	1445	N18	W10	05	6.8	5	(AP)					
9933		SVTO	05	07	1544	N18	W11	05	6.8		A	HSX	100	1	3	2
9933		VORO	05	07	2125	N18	W13	05	6.9			HSX	111	1		3
9933		LEAR	05	08	0125	N18	W15	05	6.9		A	HSX	80	1	2	2
9933		TACH	05	08	0445	N18	W14	05	7.1			CSO	203	2	6	3
9933		KAND	05	08	1150	N20	W21	05	6.9			HA		1	2	4
9933		RAMY	05	08	1308	N18	W22	05	6.9		B	CSO	60	2	10	4
9933	31173	MWIL	05	08	1430	N18	W23	05	6.8	5	(AP)					
9933		VORO	05	08	2128	N18	W27	05	6.8			HAX	95	1		2
9933		LEAR	05	09	0130	N20	W29	05	6.8		A	HSX	80	4	5	3
9933		TACH	05	09	0600	N17	W30	05	7.0			HSX	120	1	1	3
9933		SVTO	05	09	1230	N18	W36	05	6.8		A	HSX	80	1	2	2
9933		KAND	05	09	1250	N20	W34	05	6.9			HS		1	1	3
9933		HOLL	05	09	1350	N18	W36	05	6.8		A	HAX	50	1	2	3
9933		VORO	05	09	2130	N20	W36	05	7.1			CAI	89	7	10	3
9933		LEAR	05	10	0117	N18	W42	05	6.8		A	HSX	50	1	1	3
9933		SVTO	05	10	0630	N18	W46	05	6.8		A	HSX	90	1	1	3
9933		KAND	05	10	0705	N22	W44	05	6.9			HS		1	2	4
9933		RAMY	05	10	1400	N19	W49	05	6.8		A	HSX	60	1	10	4
9933	31173	MWIL	05	10	1500	N18	W50	05	6.8	5	(AP)					
9933		HOLL	05	10	1515	N19	W49	05	6.9		A	HAX	30	1	2	2
9933		VORO	05	10	2135	N20	W50	05	7.1			CSO	98	2	8	2
9933		TACH	05	11	0520	N17	W55	05	7.0			HSX	60	1	1	2
9933		KAND	05	11	1020	N21	W58	05	7.0			HS		1	1	3
9933		SVTO	05	11	1320	N18	W62	05	6.8		A	HSX	40	1	2	1
9933	31173	MWIL	05	11	1500	N18	W62	05	6.9	4	(AP)					
9933		HOLL	05	11	1505	N18	W62	05	6.9		A	HAX	100	1	2	3
9933		RAMY	05	11	1820	N18	W63	05	7.0		A	HSX	40	1	2	2
9933		VORO	05	11	2238	N18	W67	05	6.8			HRX	24	1		1
9933		LEAR	05	12	0343	N18	W67	05	7.0		A	HSX	50	1	2	2
9933		SVTO	05	12	0602	N17	W73	05	6.7		A	HSX	40	1	2	3
9933		KAND	05	12	0930	N22	W74	05	6.7			HS		1	3	5
9933		RAMY	05	12	1201	N18	W75	05	6.8		A	HSX	60	1	3	4
9933	31173	MWIL	05	12	1430	N18	W75	05	6.9	4	(AP)					
9933		HOLL	05	12	1430	N19	W78	05	6.6		A	HAX	60	1	2	3
9933		LEAR	05	13	0035	N18	W80	05	6.9		A	HSX	40	1	2	4
9932A		KAND	05	01	0820	S34	E76	05	7.4			AX		2		4
9947	31184	MWIL	05	05	1445	N23	E37	05	8.5	4	(BF)					
9947		HOLL	05	06	1330	N18	E12	05	7.5		B	BXO	10	5	3	3
9947	31184	MWIL	05	06	1430	N20	E19	05	8.0	4	(B)					
9947		KAND	05	07	0750	N19	E01	05	7.4			AX		3	2	5
9947		HOLL	05	07	1330	N19	W02	05	7.4		B	BXO	10	2	3	2
9947	31184	MWIL	05	07	1445	N20	W01	05	7.5	4	(AP)					
9947		VORO	05	07	2125	N21	W05	05	7.5			BXO	9	4	4	3
9947		LEAR	05	08	0125	N21	W07	05	7.5		B	CRO	20	3	3	2
9947		KAND	05	08	1140	N22	W14	05	7.4			AX		1		4
9947	31184	MWIL	05	08	1430	N20	W08	05	8.0	4	(B)					
9947		LEAR	05	09	0130	N23	W15	05	7.9		A	AXX		1		3
9947		SVTO	05	09	1230	N24	W24	05	7.7		B	BXO	30	3	4	2
9947		HOLL	05	09	1350	N22	W27	05	7.5		A	AXX	10	1	1	3
9947		LEAR	05	10	0117	N24	W35	05	7.3		B	BXO	10	2	2	3

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

MAY 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
9947	31184	MWIL	05	10	1500	N22	W41	05	7.5	3	(AP)					
9947		HOLL	05	10	1515	N22	W41	05	7.5		B	BXO	20	5	3	2
9947	31184	MWIL	05	11	1500	N23	W56	05	7.3	3	(AP)					
9947		HOLL	05	11	1505	N22	W57	05	7.2		A	AXX	20	1	1	3
9934		SVTO	05	01	0549	S20	E80	05	7.4		B	CAO	150	3	12	3
9934		KAND	05	01	0820	S17	E85	05	7.8			DAO		8	4	4
9934	31174	MWIL	05	01	1445	S17	E80	05	7.7	5	BG					
9934		HOLL	05	01	1510	S16	E78	05	7.5		B	DAO	300	9	8	4
9934		VORO	05	01	2141	S17	E77	05	7.7			DAO	432	2	1	1
9934		LEAR	05	02	0109	S18	E74	05	7.7		BG	EAO	530	13	13	3
9934		SVTO	05	02	0632	S19	E72	05	7.8		B	EAO	290	8	12	3
9934		KAND	05	02	1150	S16	E69	05	7.7			ESO		5	12	3
9934	31174	MWIL	05	02	1600	S16	E65	05	7.6	5	(D)					
9934		HOLL	05	02	1610	S16	E65	05	7.6		BG	EAI	440	12	13	3
9934		LEAR	05	03	0020	S17	E61	05	7.6		BG	EAO	440	15	15	2
9934		VORO	05	03	0045	S17	E61	05	7.7			DAO	493	5	1	1
9934		TACH	05	03	0523	S15	E58	05	7.6			CAO	370	5	5	3
9934		TACH	05	03	0523	S19	E52	05	7.2			CAI	355	11	6	3
9934		SVTO	05	03	0606	S17	E56	05	7.5		BG	EKI	610	14	14	2
9934		KAND	05	03	0750	S19	E58	05	7.7			EKO		18	14	3
9934		HOLL	05	03	1420	S17	E53	05	7.6		BGD	EKC	640	27	13	4
9934	31174	MWIL	05	03	1445	S16	E53	05	7.6	5	(D)					
9934		VORO	05	03	2242	S17	E49	05	7.7			DKI	801	12	1	1
9934		LEAR	05	04	0140	S17	E48	05	7.7		BGD	EKI	530	17	11	3
9934		TACH	05	04	0528	S14	E44	05	7.5			CAO	407	5	5	2
9934		TACH	05	04	0528	S17	E39	05	7.2			CAI	412	10	5	2
9934		SVTO	05	04	0720	S17	E44	05	7.6		BG	EKI	560	22	15	2
9934		KAND	05	04	0825	S17	E44	05	7.7			EKO		17	11	4
9934	31174	MWIL	05	04	1445	S16	E40	05	7.6	5	(D)					
9934		HOLL	05	04	1520	S18	E39	05	7.6		BGD	EKI	500	38	11	4
9934		VORO	05	04	2218	S13	E37	05	7.7			DKI	749	7	1	1
9934		LEAR	05	05	0010	S17	E32	05	7.4		BGD	EKI	550	40	15	3
9934		KAND	05	05	0955	S17	E29	05	7.6			DKO		16	9	5
9934		SVTO	05	05	1346	S17	E27	05	7.6		BGD	EKI	580	28	12	3
9934	31174	MWIL	05	05	1445	S16	E27	05	7.7	5	(D)					
9934		HOLL	05	05	1545	S17	E25	05	7.5		BGD	FKC	490	40	18	3
9934		VORO	05	05	2302	S17	E22	05	7.6			HHX	655	9	1	2
9934		LEAR	05	06	0011	S17	E20	05	7.5		BG	EHI	560	32	11	2
9934		TACH	05	06	0439	S15	E15	05	7.3			DAI	1076	15	4	4
9934		SVTO	05	06	0530	S16	E18	05	7.6		BG	EKI	500	21	11	2
9934		HOLL	05	06	1330	S17	E14	05	7.6		B	DKC	460	18	10	3
9934	31174	MWIL	05	06	1430	S16	E14	05	7.7	5	(BG)					
9934		VORO	05	06	2143	S17	E09	05	7.6			HHX	694	31	4	3
9934		LEAR	05	07	0135	S16	E06	05	7.5		BGD	EKI	580	22	11	2
9934		KAND	05	07	0750	S16	E04	05	7.6			DKI		27	9	5
9934		HOLL	05	07	1330	S17	W01	05	7.5		BG	EHC	380	27	12	2
9934	31174	MWIL	05	07	1445	S16	E01	05	7.7	5	(BG)					
9934		SVTO	05	07	1544	S17	W02	05	7.5		BG	EKI	570	13	11	2
9934		VORO	05	07	2125	S17	W05	05	7.5			DHI	685	28	6	3
9934		LEAR	05	08	0125	S17	W07	05	7.5		BG	EKI	540	21	11	2
9934		TACH	05	08	0445	S11	W07	05	7.7			HSX	700	1	1	3
9934		TACH	05	08	0445	S15	W10	05	7.4			CAI	203	15	5	3
9934		KAND	05	08	1140	S15	W12	05	7.6			DKC		17	10	4
9934		RAMY	05	08	1308	S16	W15	05	7.4		BG	EKI	90	16	15	4
9934	31174	MWIL	05	08	1430	S16	W13	05	7.6	5	(BG)					
9934		VORO	05	08	2128	S17	W19	05	7.4			DHI	783	13	6	2
9934		LEAR	05	09	0130	S16	W22	05	7.4		BG	EKI	630	48	15	3
9934		TACH	05	09	0600	S11	W18	05	7.9			HHX	400	1	1	3
9934		TACH	05	09	0600	S17	W24	05	7.4			DAI	594	12	5	3
9934		SVTO	05	09	1230	S16	W25	05	7.6		BG	EKI	610	35	15	2
9934		KAND	05	09	1250	S15	W28	05	7.4			EKO		26	11	3
9934		HOLL	05	09	1350	S16	W28	05	7.4		BGD	DKC	580	27	10	3
9934		VORO	05	09	2130	S17	W33	05	7.4			DHI	985	46	7	3
9934		LEAR	05	10	0117	S16	W34	05	7.5		BGD	EHI	830	36	11	3
9934		SVTO	05	10	0630	S17	W37	05	7.4		BG	EHC	900	35	14	3
9934		KAND	05	10	0705	S14	W36	05	7.6			DKO		11	10	4
9934		RAMY	05	10	1400	S16	W42	05	7.4		BG	EKI	940	29	13	4
9934	31174	MWIL	05	10	1500	S16	W40	05	7.6	5	(D)					

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 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
9934		HOLL	05	10	1515	S16	W40	05	7.6		BGD	EKC	1190	29	14	2
9934		VORO	05	10	2135	S17	W45	05	7.5			DHI	1190	25	8	2
9934		TACH	05	11	0520	S13	W44	05	7.9			CAO	311	3	2	2
9934		TACH	05	11	0520	S18	W50	05	7.4			DAI	1195	10	4	2
9934		KAND	05	11	1020	S14	W51	05	7.6			EKO		27	13	3
9934		SVTO	05	11	1320	S17	W54	05	7.4		B	FHO	540	22	16	1
9934	31174	MWIL	05	11	1500	S16	W53	05	7.6	5	(D)					
9934		HOLL	05	11	1505	S18	W52	05	7.7		BGD	FKC	1060	39	18	3
9934		RAMY	05	11	1820	S16	W57	05	7.4		BG	EKO	1170	10	12	2
9934		VORO	05	11	2238	S17	W59	05	7.4			DKI	1412	10	9	1
9934		LEAR	05	12	0343	S16	W59	05	7.7		BGD	FKI	910	13	20	2
9934		SVTO	05	12	0602	S17	W62	05	7.5		BGD	FKI	1080	19	17	3
9934		KAND	05	12	0930	S13	W65	05	7.5			FKC		12	16	5
9934		RAMY	05	12	1201	S16	W65	05	7.6		BGD	EKI	1010	35	12	4
9934		HOLL	05	12	1430	S16	W69	05	7.4		BGD	EKI	800	27	11	3
9934	31174	MWIL	05	12	1430	S17	W66	05	7.6	5	(D)					
9934		LEAR	05	13	0035	S16	W71	05	7.6		BGD	FKI	750	16	18	4
9934		KAND	05	13	0755	S14	W75	05	7.7			EKO		11	13	3
9934		SVTO	05	13	0853	S16	W79	05	7.4		BD	FSI	540	6	17	2
9934		RAMY	05	13	1252	S16	W77	05	7.7		BG	DKO	300	4	5	2
9934		HOLL	05	13	1415	S15	W80	05	7.5		BG	DKO	750	3	7	3
9934	31174	MWIL	05	13	1430	S17	W78	05	7.7	5	(BG)					
9934		LEAR	05	14	0130	S16	W85	05	7.6		B	CSO	60	2	2	3
9934		VORO	05	14	0312	S14	W81	05	8.0			HAX	315	1		3
9934		SVTO	05	14	0520	S14	W89	05	7.5		A	HSX	60	1	5	3
9942		KAND	05	05	0955	N21	E40	05	8.5			CAO		2	4	5
9942		SVTO	05	05	1346	N23	E37	05	8.4		B	CSO	20	4	4	3
9942		HOLL	05	05	1545	N21	E39	05	8.6		A	HSX	20	2	2	3
9942		VORO	05	05	2302	N22	E35	05	8.6			AXX	5	1		2
9942		LEAR	05	06	0011	N21	E33	05	8.5		A	HAX	10	1	1	2
9942		TACH	05	06	0439	N22	E28	05	8.3			AXX	20	1	1	4
9942		SVTO	05	06	0530	N22	E31	05	8.6		A	HRX	10	1	1	2
9942		HOLL	05	06	1330	N21	E27	05	8.6		A	AXX	10	1	1	3
9942		LEAR	05	07	0135	N21	E22	05	8.7		A	AXX	10	2	4	2
9942		LEAR	05	08	0125	N22	E09	05	8.7		B	BXO	10	2	2	2
9942		KAND	05	08	1140	N23	E06	05	8.9			AX		3	2	4
9942		VORO	05	08	2128	N21	W01	05	8.8			BXO	5	2	4	2
9937		SVTO	05	03	0606	S12	E76	05	9.0		A	HAX	60	1	2	2
9937		KAND	05	03	0750	S11	E79	05	9.3			AX		1	1	3
9937		HOLL	05	03	1420	S08	E74	05	9.1		B	CSO	70	3	3	4
9937	31179	MWIL	05	03	1445	S09	E74	05	9.2	4	(BP)					
9937		VORO	05	03	2242	S08	E70	05	9.2			CRI	128	3	3	1
9937		LEAR	05	04	0140	S08	E68	05	9.2		B	CSO	90	3	4	3
9937		TACH	05	04	0528	S08	E62	05	8.9			DAO	200	4	3	2
9937		SVTO	05	04	0720	S12	E65	05	9.2		B	DAO	130	3	6	2
9937		KAND	05	04	0825	S11	E66	05	9.3			ESO		8	11	4
9937	31179	MWIL	05	04	1445	S09	E60	05	9.1	5	(B)					
9937		HOLL	05	04	1520	S10	E61	05	9.2		BG	DAO	90	3	4	4
9937		VORO	05	04	2218	S08	E56	05	9.1			CAI	251	4	4	1
9937		LEAR	05	05	0010	S09	E53	05	9.0		B	DAI	210	7	5	3
9937		KAND	05	05	0955	S10	E49	05	9.1			DAO		7	6	5
9937		SVTO	05	05	1346	S07	E48	05	9.2		B	DAO	160	9	7	3
9937	31179	MWIL	05	05	1445	S09	E47	05	9.1	5	(BP)					
9937		HOLL	05	05	1545	S12	E48	05	9.3		B	DAI	260	13	8	3
9937		VORO	05	05	2302	S08	E43	05	9.2			DAI	228	12	4	2
9937		LEAR	05	06	0011	S10	E41	05	9.1		B	DAI	160	11	5	2
9937		TACH	05	06	0439	S07	E36	05	8.9			DAO	360	5	3	4
9937		SVTO	05	06	0530	S08	E39	05	9.1		B	DAO	160	7	8	2
9937		HOLL	05	06	1330	S11	E36	05	9.3		B	DKO	200	9	6	3
9937	31179	MWIL	05	06	1430	S09	E34	05	9.1	5	(BP)					
9937		VORO	05	06	2143	S08	E30	05	9.1			HAX	212	11	3	3
9937		LEAR	05	07	0135	S09	E28	05	9.2		B	DAO	120	7	4	2
9937		KAND	05	07	0750	S09	E25	05	9.2			DAO		8	5	5
9937		HOLL	05	07	1330	S08	E21	05	9.1		B	DAO	100	11	5	2
9937	31179	MWIL	05	07	1445	S09	E20	05	9.1	5	(BP)					
9937		SVTO	05	07	1544	S09	E18	05	9.0		B	DAO	130	5	5	2
9937		VORO	05	07	2125	S09	E17	05	9.2			HAX	194	9	5	3

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9937		LEAR	05	08	0125	S08	E13	05	9.0		B	DAO	110	4	3	2
9937		TACH	05	08	0445	S06	E10	05	8.9			AR	148	6	2	3
9937		KAND	05	08	1140	S08	E08	05	9.1			DAO		7	4	4
9937		RAMY	05	08	1308	S08	E09	05	9.2		B	DAO	170	11	8	4
9937	31179	MWIL	05	08	1430	S08	E06	05	9.0	5	(BG)					
9937		VORO	05	08	2128	S09	E03	05	9.1			DAI	177	7	1	2
9937		LEAR	05	09	0130	S08	E00	05	9.1		BG	CAO	150	10	5	3
9937		TACH	05	09	0600	S07	W03	05	9.0			HA	125	3	2	3
9937		SVTO	05	09	1230	S08	W04	05	9.2		B	DAO	170	18	10	2
9937		KAND	05	09	1250	S07	W07	05	9.0			DAO		6	3	3
9937		HOLL	05	09	1350	S08	W07	05	9.0		B	DAI	130	11	4	3
9937		VORO	05	09	2130	S08	W10	05	9.1			DAI	143	10	2	3
9937		LEAR	05	10	0117	S08	W13	05	9.1		B	DSO	170	17	4	3
9937		SVTO	05	10	0630	S07	W14	05	9.2		B	DSO	110	20	7	3
9937		KAND	05	10	0705	S06	W15	05	9.2			DSO		5	4	4
9937		RAMY	05	10	1400	S07	W19	05	9.2		B	DAO	240	24	8	4
9937	31179	MWIL	05	10	1500	S08	W20	05	9.1	4	(D)					
9937		HOLL	05	10	1515	S07	W19	05	9.2		B	DAI	240	18	6	2
9937		VORO	05	10	2135	S08	W24	05	9.1			DAI	301	17	3	2
9937		TACH	05	11	0520	S08	W27	05	9.2			CAI	275	10	4	2
9937		KAND	05	11	1020	S07	W30	05	9.2			DAO		15	5	3
9937		SVTO	05	11	1320	S08	W33	05	9.1		B	DAI	230	17	7	1
9937	31179	MWIL	05	11	1500	S08	W33	05	9.1	4	(BD)					
9937		HOLL	05	11	1505	S09	W33	05	9.1		B	DAI	240	18	8	3
9937		RAMY	05	11	1820	S07	W35	05	9.1		B	DAO	180	10	7	2
9937		VORO	05	11	2238	S09	W37	05	9.2			DAI	168	8	2	1
9937		LEAR	05	12	0343	S07	W38	05	9.3		B	DAI	230	11	6	2
9937		SVTO	05	12	0602	S09	W41	05	9.2		B	DAI	210	7	6	3
9937		KAND	05	12	0930	S06	W44	05	9.1			DAC		9	4	5
9937		RAMY	05	12	1201	S07	W44	05	9.2		B	DAI	110	22	6	4
9937	31179	MWIL	05	12	1430	S08	W45	05	9.2	4	(D)					
9937		HOLL	05	12	1430	S09	W47	05	9.1		B	DAI	90	12	5	3
9937		LEAR	05	13	0035	S07	W51	05	9.2		B	DAI	120	11	7	4
9937		KAND	05	13	0755	S06	W53	05	9.4			DAO		8	3	3
9937		SVTO	05	13	0853	S08	W56	05	9.2		B	DAO	100	8	6	2
9937		RAMY	05	13	1252	S07	W58	05	9.2		B	DSO	60	8	4	2
9937		HOLL	05	13	1415	S08	W60	05	9.1		B	BXO	70	8	5	3
9937	31179	MWIL	05	13	1430	S08	W58	05	9.2	4	(BG)					
9937		LEAR	05	14	0130	S08	W65	05	9.2		B	BXO	20	3	3	3
9937		VORO	05	14	0312	S08	W65	05	9.2			AXX	15	1		3
9937		SVTO	05	14	0520	S07	W67	05	9.2		B	DSO	70	5	6	3
9937		RAMY	05	14	1226	S07	W71	05	9.2		B	DSO	10	4	3	4
9937		HOLL	05	14	1335	S06	W74	05	9.0		B	BXO	10	2	5	2
9937	31179	MWIL	05	14	1500	S09	W74	05	9.1	4	(B)					
9937		SVTO	05	15	0550	S08	W80	05	9.2		A	AXX	30	2	2	3
9938		SVTO	05	03	0606	S05	E80	05	9.2		A	HSX	30	1	2	2
9938		HOLL	05	03	1420	S03	E77	05	9.3		A	HSX	30	1	1	4
9938	31178	MWIL	05	03	1445	S04	E78	05	9.4	4	(AP)					
9938		VORO	05	03	2242	S04	E73	05	9.4			AXX	40	1		1
9938		LEAR	05	04	0140	S04	E72	05	9.4		A	HSX	30	1	2	3
9938		TACH	05	04	0528	S03	E65	05	9.1			HSX	50	1	1	2
9938		SVTO	05	04	0720	S05	E68	05	9.4		A	HSX	40	1	1	2
9938		KAND	05	04	0825	S06	E69	05	9.5			HA		4	4	4
9938	31178	MWIL	05	04	1445	S04	E63	05	9.3	4	(AP)					
9938		HOLL	05	04	1520	S06	E63	05	9.3		A	HAX	40	1	1	4
9938		VORO	05	04	2218	S04	E60	05	9.4			HRX	37	1		1
9938		LEAR	05	05	0010	S05	E58	05	9.3		A	HSX	40	1	1	3
9938		KAND	05	05	0955	S06	E53	05	9.4			HS		1	2	5
9938		SVTO	05	05	1346	S05	E51	05	9.4		A	HSX	20	1	1	3
9938	31178	MWIL	05	05	1445	S04	E50	05	9.3	5	(AP)					
9938		HOLL	05	05	1545	S05	E50	05	9.4		A	HSX	30	1	1	3
9938		VORO	05	05	2302	S04	E46	05	9.4			HAX	33	1		2
9938		LEAR	05	06	0011	S05	E45	05	9.4		A	HAX	40	1	1	2
9938		TACH	05	06	0439	S03	E39	05	9.1			HSX	60	1	1	4
9938		SVTO	05	06	0530	S04	E42	05	9.4		A	HSX	30	1	1	2
9938		HOLL	05	06	1330	S05	E38	05	9.4		A	HAX	20	1	2	3
9938	31178	MWIL	05	06	1430	S04	E37	05	9.4	5	(AP)					
9938		VORO	05	06	2143	S04	E33	05	9.4			HSX	24	1		3

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9938		LEAR	05	07	0135	S05	E30	05	9.3		A	HAX	20	1	1	2
9938		KAND	05	07	0750	S05	E28	05	9.4			HS		1	1	5
9938		HOLL	05	07	1330	S04	E24	05	9.3		A	HSX	20	1	2	2
9938	31178	MWIL	05	07	1445	S04	E24	05	9.4	4	(AP)					
9938		SVTO	05	07	1544	S05	E22	05	9.3		A	HSX	10	1	1	2
9938		VORO	05	07	2125	S04	E20	05	9.4			HAX	26	1		3
9938		LEAR	05	08	0125	S04	E17	05	9.3		A	HAX	20	1	1	2
9938		TACH	05	08	0445	S02	E14	05	9.2			AXX	50	1	1	3
9938		KAND	05	08	1140	S04	E13	05	9.4			HS		1	1	4
9938	31178	MWIL	05	08	1430	S04	E10	05	9.3	5	(BP)					
9938		VORO	05	08	2128	S04	E07	05	9.4			HAX	20	1		2
9938		LEAR	05	09	0130	S04	E05	05	9.4		A	HSX	20	1	1	3
9938		TACH	05	09	0600	S03	E01	05	9.3			HSX	60	1	1	3
9938		KAND	05	09	1250	S03	W03	05	9.3			HS		1	1	3
9938		HOLL	05	09	1350	S04	W02	05	9.4		A	HSX	20	1	1	3
9938		VORO	05	09	2130	S05	W07	05	9.4			AXX	9	1		3
9938		LEAR	05	10	0117	S04	W09	05	9.4		A	HSX	40	2	1	3
9938		SVTO	05	10	0630	S04	W12	05	9.4		A	HSX	20	1	1	3
9938		KAND	05	10	0705	S03	W12	05	9.4			HS		1	1	4
9938	31178	MWIL	05	10	1500	S05	W17	05	9.3	4	(AP)					
9938		HOLL	05	10	1515	S05	W16	05	9.4		A	HSX	10	1	1	2
9938		VORO	05	10	2135	S05	W20	05	9.4			AXX	9	1		2
9938		TACH	05	11	0520	S05	W23	05	9.5			AXX	25	1	1	2
9938		KAND	05	11	1020	S04	W26	05	9.5			AX		1		3
9938		SVTO	05	11	1320	S05	W29	05	9.4		A	HSX	10	1	1	1
9938	31178	MWIL	05	11	1500	S05	W30	05	9.4	4	(AP)					
9938		VORO	05	11	2238	S05	W34	05	9.4			AXX	3	1		1
9938		SVTO	05	12	0602	S06	W38	05	9.4		A	AXX		1		3
9938		KAND	05	12	0930	S03	W40	05	9.4			AX		1		5
9938	31178	MWIL	05	12	1430	S06	W43	05	9.4	3	(AP)					
9939A	31188	MWIL	05	07	1445	S08	E32	05	10.0	4	(BF)					
9939A		KAND	05	12	0930	S07	W30	05	10.1			AX		1		5
9939		LEAR	05	04	0140	N18	E79	05	10.1		A	HAX	40	1	5	3
9939		TACH	05	04	0528	N17	E74	05	9.8			DSO	120	2	4	2
9939		SVTO	05	04	0720	N13	E76	05	10.0		A	HSX	40	1	1	2
9939		KAND	05	04	0825	N16	E77	05	10.2			HS		1	2	4
9939	31182	MWIL	05	04	1445	N18	E70	05	9.9	4	(AP)					
9939		HOLL	05	04	1520	N16	E70	05	9.9		A	HAX	60	1	1	4
9939		VORO	05	04	2218	N17	E69	05	10.2			CRI	99	2	4	1
9939		LEAR	05	05	0010	N17	E64	05	9.9		A	HSX	40	1	1	3
9939		KAND	05	05	0955	N16	E59	05	9.9			HS		1	1	5
9939		SVTO	05	05	1346	N18	E57	05	9.9		A	HSX	40	1	2	3
9939	31182	MWIL	05	05	1445	N18	E57	05	9.9	5	(AP)					
9939		HOLL	05	05	1545	N16	E58	05	10.0		A	HAX	60	1	2	3
9939		VORO	05	05	2302	N17	E55	05	10.1			DAO	56	3	3	2
9939		LEAR	05	06	0011	N17	E52	05	9.9		A	HSX	50	1	1	2
9939		TACH	05	06	0439	N17	E47	05	9.8			DSO	120	2	4	4
9939		SVTO	05	06	0530	N18	E48	05	9.9		A	HSX	20	1	1	2
9939		HOLL	05	06	1330	N17	E45	05	10.0		A	HSX	30	1	1	3
9939	31182	MWIL	05	06	1430	N18	E44	05	9.9	5	(AP)					
9939		VORO	05	06	2143	N17	E42	05	10.1			DAO	55	2	4	3
9939		LEAR	05	07	0135	N18	E38	05	9.9		A	HSX	10	1	1	2
9939		KAND	05	07	0750	N18	E36	05	10.1			HS		1	1	5
9939		HOLL	05	07	1330	N14	E35	05	10.2		A	HSX	40	1	1	2
9939	31182	MWIL	05	07	1445	N18	E31	05	10.0	5	(AP)					
9939		SVTO	05	07	1544	N17	E29	05	9.8		A	HSX	20	1	2	2
9939		VORO	05	07	2125	N16	E29	05	10.1			DAI	75	11	3	3
9939		LEAR	05	08	0125	N18	E24	05	9.9		A	HAX	20	1	1	2
9939		TACH	05	08	0445	N18	E22	05	9.9			BRI	76	8	5	3
9939		KAND	05	08	1140	N17	E22	05	10.1			CSO		4	5	4
9939	31182	MWIL	05	08	1430	N18	E20	05	10.1	5	(B)					
9939		VORO	05	08	2128	N17	E17	05	10.2			CAI	75	16	5	2
9939		LEAR	05	09	0130	N19	E11	05	9.9		A	HSX	30	1	1	3
9939		TACH	05	09	0600	N16	E08	05	9.8			BRI	86	8	6	3
9939		KAND	05	09	1250	N18	E08	05	10.1			CSO		8	6	3
9939		VORO	05	09	2130	N17	E03	05	10.1			BXI	36	9	6	3
9939		LEAR	05	10	0117	N19	W01	05	10.0		B	CSO	60	17	8	3

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9939		KAND	05	10	0705	N19	E00	05	10.3			CSO		6	8	4
9939	31182	MWIL	05	10	1500	N17	W07	05	10.1	5	(BP)					
9939		VORO	05	10	2135	N17	W12	05	10.0			BXO	24	2	3	2
9939		TACH	05	11	0520	N14	W15	05	10.1			BXO	50	2	3	2
9939		KAND	05	11	1020	N19	W15	05	10.3			CRO		3	6	3
9939	31182	MWIL	05	11	1500	N17	W22	05	9.9	4	(AP)					
9939		VORO	05	11	2238	N17	W26	05	10.0			BXO	17	2	3	1
9939		KAND	05	12	0930	N21	W30	05	10.1			CAO		2	4	5
9939	31182	MWIL	05	12	1430	N18	W35	05	9.9	4	(BP)					
9939		KAND	05	13	0755	N22	W44	05	9.9			BXO		8	9	3
9939	31182	MWIL	05	13	1430	N19	W47	05	10.0	4	(B)					
9939		VORO	05	14	0312	N19	W55	05	9.9			BXO	29	2	1	3
9940		LEAR	05	04	0140	N15	E85	05	10.5		A	HAX	60	1	2	3
9940		SVTO	05	04	0720	N15	E79	05	10.3		A	HSX	40	1	1	2
9940		KAND	05	04	0825	N13	E84	05	10.7			HS		1	3	4
9940	31183	MWIL	05	04	1445	N15	E74	05	10.2	4	(AP)					
9940		HOLL	05	04	1520	N13	E75	05	10.3		A	HAX	90	1	2	4
9940		LEAR	05	05	0010	N13	E68	05	10.1		A	HSX	50	2	1	3
9940		KAND	05	05	0955	N12	E62	05	10.1			HA		1	2	5
9940		SVTO	05	05	1346	N14	E61	05	10.2		A	HSX	20	2	2	3
9940	31183	MWIL	05	05	1445	N15	E61	05	10.2	5	(AP)					
9940		HOLL	05	05	1545	N13	E59	05	10.1		A	HAX	60	2	2	3
9940		LEAR	05	06	0011	N13	E55	05	10.1		B	DAO	70	2	2	2
9940		SVTO	05	06	0530	N15	E53	05	10.2		A	HAX	30	1	1	2
9940		HOLL	05	06	1330	N13	E47	05	10.1		A	HAX	30	1	2	3
9940	31183	MWIL	05	06	1430	N15	E47	05	10.2	4	(AP)					
9940		LEAR	05	07	0135	N14	E41	05	10.2		A	HAX	20	1	1	2
9940		KAND	05	07	0750	N14	E39	05	10.3			HS		1	2	5
9940		HOLL	05	07	1330	N18	E31	05	9.9		A	HSX	30	1	1	2
9940	31183	MWIL	05	07	1445	N15	E34	05	10.2	5	(AP)					
9940		SVTO	05	07	1544	N14	E33	05	10.1		A	HSX	20	1	1	2
9940		LEAR	05	08	0125	N17	E28	05	10.2		B	DAO	40	10	4	2
9940		KAND	05	08	1140	N16	E24	05	10.3			CSO		6	5	4
9940		RAMY	05	08	1308	N17	E22	05	10.2		B	DSO	50	12	6	4
9940		LEAR	05	09	0130	N18	E15	05	10.2		B	DSO	90	21	5	3
9940		SVTO	05	09	1230	N16	E08	05	10.1		B	DSO	70	11	8	2
9940		KAND	05	09	1250	N14	E09	05	10.2			HR		1	1	3
9940		HOLL	05	09	1350	N17	E08	05	10.2		B	DSO	70	8	6	3
9940		SVTO	05	10	0630	N17	W04	05	10.0		B	DSO	50	6	7	3
9940		KAND	05	10	0705	N16	E00	05	10.3			HS		1	1	4
9940		RAMY	05	10	1400	N17	W06	05	10.1		B	DSO	30	17	8	4
9940		HOLL	05	10	1515	N18	W07	05	10.1		B	BXO	60	17	8	2
9940		KAND	05	11	1020	N16	W15	05	10.3			AX		1		3
9940		SVTO	05	11	1320	N16	W21	05	10.0		B	DSO	20	2	5	1
9940		HOLL	05	11	1505	N14	W19	05	10.2		B	ESO	40	12	11	3
9940		RAMY	05	11	1820	N17	W23	05	10.0		B	DSO	20	3	4	2
9940		LEAR	05	12	0343	N17	W28	05	10.0		B	CAO	30	8	4	2
9940		SVTO	05	12	0602	N17	W29	05	10.0		B	CRO	20	5	7	3
9940		KAND	05	12	0930	N17	W29	05	10.2			AX		1		5
9940		RAMY	05	12	1201	N17	W32	05	10.1		B	DSO	30	6	5	4
9940		HOLL	05	12	1430	N19	W35	05	9.9		B	CSO	30	6	5	3
9940		LEAR	05	13	0035	N18	W38	05	10.1		B	CAO	20	5	5	4
9940		SVTO	05	13	0853	N19	W44	05	10.0		B	BXO	10	3	6	2
9940		RAMY	05	13	1252	N20	W46	05	10.0		B	BXO	10	3	5	2
9940		HOLL	05	13	1415	N19	W47	05	10.0		B	BXO	10	2	5	3
9940		LEAR	05	14	0130	N19	W55	05	9.9		A	AXX	10	1	1	3
9940		SVTO	05	14	0520	N19	W58	05	9.8		A	AXX		1		3
9943		HOLL	05	04	1520	S11	E78	05	10.5		A	AXX	30	4	2	4
9943		LEAR	05	05	0010	S11	E74	05	10.6		A	HAX	60	2	2	3
9943		KAND	05	05	0955	S12	E70	05	10.7			AX		2	1	5
9943		SVTO	05	05	1346	S11	E70	05	10.8		B	CSO	40	4	6	3
9943	31185	MWIL	05	05	1445	S11	E69	05	10.8	4	(BP)					
9943		HOLL	05	05	1545	S12	E68	05	10.8		B	CAO	40	3	7	3
9943		VORO	05	05	2302	S11	E66	05	10.9			BXO	26	2	5	2
9943		LEAR	05	06	0011	S11	E63	05	10.7		B	CSO	40	3	7	2
9943		TACH	05	06	0439	S09	E57	05	10.5			HSX	65	1	1	3
9943		SVTO	05	06	0530	S11	E61	05	10.8		B	BXO	10	2	5	2

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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
9943		HOLL	05	06	1330	S12	E55	05	10.7		A	HSX	20	1	1	3
9943	31185	MWIL	05	06	1430	S10	E56	05	10.8	4	(B)					
9943		HOLL	05	07	1330	S10	E42	05	10.7		B	CSO	30	3	3	2
9943	31185	MWIL	05	07	1445	S10	E41	05	10.7	4	(B)					
9943		VORO	05	07	2125	S09	E37	05	10.7			AXX	3	3		3
9943		KAND	05	08	1140	S09	E29	05	10.7			BXO		4	3	4
9943		RAMY	05	08	1308	S08	E28	05	10.6		B	BXO	20	5	6	4
9943	31185	MWIL	05	08	1430	S08	E28	05	10.7	4	(B)					
9943		VORO	05	08	2128	S09	E25	05	10.8			BXO	14	3	1	2
9943		LEAR	05	09	0130	S08	E21	05	10.6		B	CAO	10	4	2	3
9943		SVTO	05	09	1230	S09	E15	05	10.6		B	CSO	20	2	2	2
9943		HOLL	05	09	1350	S09	E14	05	10.6		A	AXX	10	2	2	3
9943		VORO	05	09	2130	S10	E10	05	10.6			AXX	4	2		3
9943		LEAR	05	10	0117	S10	E07	05	10.6		A	HRX	10	2	1	3
9943		SVTO	05	10	0630	S10	E05	05	10.6		A	HSX	10	2	2	3
9943		KAND	05	10	0705	S10	E02	05	10.4			BXO		2	7	4
9943		RAMY	05	10	1400	S10	E03	05	10.8		B	BXO	10	3	7	4
9943	31185	MWIL	05	10	1500	S10	W00	05	10.6	2	(AP)					
9943		HOLL	05	10	1515	S09	E00	05	10.6		A	AXX	10	1	1	2
9943		TACH	05	11	0520	S10	W10	05	10.5			AXX	20	1	1	2
9943		SVTO	05	11	1320	S10	W14	05	10.5		A	AXX		1		1
9943	31185	MWIL	05	11	1500	S10	W15	05	10.5	4	(AP)					
9943	31185	MWIL	05	12	1430	S10	W34	05	10.0	4	(AP)					
9944	31186	MWIL	05	06	1430	N09	E51	05	10.4	4	(AP)					
9944		VORO	05	06	2143	N09	E50	05	10.6			AXX	6	1		3
9944		KAND	05	07	0750	N07	E40	05	10.3			HR		1	1	5
9944		HOLL	05	07	1330	N08	E39	05	10.5		B	CSO	50	3	6	2
9944	31186	MWIL	05	07	1445	N09	E39	05	10.5	4	(B)					
9944		SVTO	05	07	1544	N07	E39	05	10.6		B	CRO	20	3	5	2
9944		VORO	05	07	2125	N09	E35	05	10.5			BXI	9	4	5	3
9944		LEAR	05	08	0125	N08	E35	05	10.7		A	AXX	10	1	1	2
9944		TACH	05	08	0445	N10	E30	05	10.4			AXX	15	1	1	3
9944		KAND	05	08	1140	N08	E29	05	10.7			BXO		3	5	4
9944	31186	MWIL	05	08	1430	N10	E26	05	10.5	4	(B)					
9944		VORO	05	08	2128	N09	E22	05	10.5			BXI	10	4	6	2
9944		LEAR	05	09	0130	N09	E19	05	10.5		B	BXO	20	7	6	3
9944		SVTO	05	09	1230	N09	E13	05	10.5		B	CSO	20	5	12	2
9944		HOLL	05	09	1350	N09	E12	05	10.5		B	BXO	10	3	8	3
9944		VORO	05	09	2130	N09	E11	05	10.7			AXX	1	1		3
9943A		KAND	05	12	0930	N17	W18	05	11.0			AX		1		5
9943B	31195	MWIL	05	13	1430	S09	W33	05	11.1	3	(AF)					
9949		RAMY	05	10	1400	S15	E13	05	11.6		B	BXO	10	2	8	4
9949	31190	MWIL	05	10	1500	S12	E15	05	11.7	3	(AF)					
9949	31189	MWIL	05	10	1500	S17	E11	05	11.5	3	(AP)					
9949		VORO	05	10	2135	S17	E07	05	11.4			AXX	4	1		2
9949		TACH	05	11	0520	S16	E01	05	11.3			CAO	820	4	4	2
9949		KAND	05	11	1020	S16	E00	05	11.4			AX		3	2	3
9949		SVTO	05	11	1320	S17	W03	05	11.3		A	HSX	10	4	2	1
9949	31189	MWIL	05	11	1500	S16	W04	05	11.3	4	(AP)					
9949		HOLL	05	11	1505	S15	W02	05	11.5		A	AXX	10	3	2	3
9949		VORO	05	11	2238	S17	W08	05	11.3			AXX	2	1		1
9949		LEAR	05	12	0343	S17	W08	05	11.5		B	DAO	30	6	3	2
9949		SVTO	05	12	0602	S17	W10	05	11.5		B	DSO	30	4	6	3
9949		KAND	05	12	0930	S15	W12	05	11.5			DSO		4	4	5
9949		RAMY	05	12	1201	S16	W15	05	11.4		B	DSO	40	8	6	4
9949		HOLL	05	12	1430	S15	W17	05	11.3		B	CAO	40	7	5	3
9949	31189	MWIL	05	12	1430	S16	W16	05	11.4	4	(B)					
9949		LEAR	05	13	0035	S16	W21	05	11.4		B	CSO	30	6	5	4
9949		KAND	05	13	0755	S14	W26	05	11.4			BXO		4	5	3
9949		SVTO	05	13	0853	S16	W27	05	11.3		B	CSO	30	4	5	2
9949		RAMY	05	13	1252	S16	W27	05	11.5		A	HXX		1		2
9949		HOLL	05	13	1415	S16	W29	05	11.4		B	BXO	10	2	3	3
9949	31189	MWIL	05	13	1430	S16	W30	05	11.3	4	(B)					
9949		LEAR	05	14	0130	S16	W35	05	11.4		B	BXO	20	2	3	3
9949		RAMY	05	14	1226	S17	W41	05	11.4		B	BXO		2	3	4

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9949		HOLL	05	14	1335	S15	W44	05	11.2		B	BXO	20	2	5	2
9949	31189	MWIL	05	14	1500	S17	W48	05	11.0	4	(B)					
9949		SVTO	05	15	0550	S16	W55	05	11.1		A	AXX		1		3
9953		SVTO	05	15	0550	N05	W43	05	12.0		B	CSO	10	2	3	3
9953		KAND	05	15	0750	N07	W43	05	12.1			BXO		2	3	4
9953		RAMY	05	15	1220	N06	W46	05	12.1		B	DRO	10	3	3	4
9953	31197	MWIL	05	15	1430	N05	W47	05	12.1	5	(B)					
9953		HOLL	05	15	1450	N06	W48	05	12.0		B	BXO	20	3	3	2
9953		VORO	05	15	2144	N05	W51	05	12.1			BXO	40	4	3	3
9953		SVTO	05	16	0459	N05	W55	05	12.1		B	CRO	30	3	5	3
9953		KAND	05	16	1210	N08	W60	05	12.0			BXO		3	5	5
9953		HOLL	05	16	1410	N06	W60	05	12.1		B	BXO	60	6	5	3
9953	31197	MWIL	05	16	1445	N05	W60	05	12.1	4	(B)					
9953		VORO	05	16	2211	N07	W63	05	12.2			AXX	8	1		3
9953A	31192	MWIL	05	11	1500	S16	E07	05	12.1	3	(B)					
9953A		HOLL	05	11	1505	S15	E08	05	12.2		B	BXO	10	4	6	3
9953A		KAND	05	12	0930	S14	W02	05	12.2			AX		2	1	5
9953A	31192	MWIL	05	12	1430	S15	W04	05	12.3	3	(AF)					
9953A		LEAR	05	13	0035	S15	W10	05	12.3		A	AXX		3	1	4
9953A		KAND	05	13	0755	S14	W12	05	12.4			AX		5	2	3
9953A		HOLL	05	13	1415	S15	W17	05	12.3		B	BXO	10	2	1	3
9953A	31192	MWIL	05	13	1430	S15	W16	05	12.4	4	(AF)					
9953B		KAND	05	10	0705	S37	E28	05	12.5			AX		1		4
9945	31187	MWIL	05	06	1430	S04	E87	05	13.1	5	AP					
9945		VORO	05	06	2143	S04	E82	05	13.0			HAX	328	1		3
9945		LEAR	05	07	0135	S04	E76	05	12.7		A	HKX	90	1	4	2
9945		KAND	05	07	0750	S05	E76	05	13.0			HK		1	4	5
9945		HOLL	05	07	1330	S03	E72	05	12.9		A	HKX	290	1	2	2
9945	31187	MWIL	05	07	1445	S06	E74	05	13.1	5	(B)					
9945		SVTO	05	07	1544	S07	E72	05	13.0		B	ESO	340	2	11	2
9945		VORO	05	07	2125	S04	E68	05	13.0			HKX	375	1		3
9945		LEAR	05	08	0125	S04	E66	05	13.0		A	HKX	260	2	3	2
9945		TACH	05	08	0445	S01	E63	05	12.9			HHX	600	1	2	3
9945		KAND	05	08	1140	S07	E65	05	13.3			EKO		6	14	4
9945		RAMY	05	08	1308	S04	E59	05	12.9		A	HKX	300	2	2	4
9945	31187	MWIL	05	08	1430	S06	E63	05	13.3	5	(D)					
9945		VORO	05	08	2128	S04	E55	05	13.0			HKX	428	3		2
9945		LEAR	05	09	0130	S03	E52	05	12.9		A	HKX	350	5	3	3
9945		TACH	05	09	0600	S02	E46	05	12.7			HSX	380	1	2	3
9945		SVTO	05	09	1230	S04	E47	05	13.0		B	CHO	420	5	5	2
9945		KAND	05	09	1250	S06	E51	05	13.3			EKO		5	14	3
9945		HOLL	05	09	1350	S03	E46	05	13.0		B	CKO	350	4	3	3
9945		VORO	05	09	2130	S03	E41	05	12.9			HKX	608	9		3
9945		LEAR	05	10	0117	S04	E41	05	13.1		B	CKO	420	7	8	3
9945		SVTO	05	10	0630	S04	E39	05	13.2		B	CHO	420	5	9	3
9945		KAND	05	10	0705	S06	E41	05	13.4			EKO		7	13	4
9945		RAMY	05	10	1400	S04	E31	05	12.9		A	HKX	410	3	4	4
9945	31187	MWIL	05	10	1500	S05	E37	05	13.4	5	(BG)					
9945		HOLL	05	10	1515	S04	E32	05	13.0		A	HKX	330	6	5	2
9945		VORO	05	10	2135	S03	E28	05	13.0			HKX	462	9		2
9945		TACH	05	11	0520	S04	E20	05	12.7			AXX	30	1	1	2
9945		KAND	05	11	1020	S05	E25	05	13.3			FKO		29	18	3
9945		SVTO	05	11	1320	S04	E19	05	13.0		A	HHX	360	5	5	1
9945	31187	MWIL	05	11	1500	S03	E24	05	13.4	5	(BG)					
9945		HOLL	05	11	1505	S04	E19	05	13.0		B	DKO	260	13	5	3
9945		RAMY	05	11	1820	S04	E17	05	13.0		B	DHO	360	3	4	2
9945		VORO	05	11	2238	S03	E14	05	13.0			HHX	402	3	3	1
9945		LEAR	05	12	0343	S04	E12	05	13.0		B	CKO	280	17	10	2
9945		SVTO	05	12	0602	S04	E12	05	13.1		B	DAO	360	14	8	3
9945		KAND	05	12	0930	S04	E13	05	13.4			FKI		23	18	5
9945		RAMY	05	12	1201	S04	E08	05	13.1		B	DKI	350	31	8	4
9945	31187	MWIL	05	12	1430	S04	E08	05	13.2	5	(BG)					
9945		HOLL	05	12	1430	S05	E06	05	13.0		B	DKI	260	12	5	3
9945		LEAR	05	13	0035	S05	E02	05	13.2		B	EKO	330	17	11	4
9945		KAND	05	13	0755	S04	E00	05	13.3			CKO		21	16	3

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9945		SVTO	05	13	0853	S04	W03	05	13.1		B	ESO	250	8	13	2
9945		RAMY	05	13	1252	S03	W07	05	13.0		B	CAO	180	5	6	2
9945		HOLL	05	13	1415	S03	W08	05	13.0		B	CHO	240	10	6	3
9945	31187	MWIL	05	13	1430	S04	W06	05	13.1	5	(BG)					
9945		LEAR	05	14	0130	S04	W14	05	13.0		B	DSO	190	10	6	3
9945		VORO	05	14	0312	S04	W15	05	13.0			HHX	450	7	5	3
9945		SVTO	05	14	0520	S04	W16	05	13.0		BG	DAI	350	10	9	3
9945		RAMY	05	14	1226	S05	W21	05	12.9		B	DAO	270	16	6	4
9945		HOLL	05	14	1335	S04	W21	05	13.0		BG	DSI	260	13	7	2
9945	31187	MWIL	05	14	1500	S04	W20	05	13.1	5	(D)					
9945		VORO	05	14	2345	S03	W26	05	13.0			HHX	517	12	4	3
9945		TACH	05	15	0530	S06	W29	05	13.0			DAI	512	11	4	3
9945		SVTO	05	15	0550	S05	W28	05	13.1		BG	DKI	300	20	10	3
9945		KAND	05	15	0750	S02	W31	05	13.0			DAO		11	6	4
9945		RAMY	05	15	1220	S05	W35	05	12.9		BG	DAO	270	17	8	4
9945	31187	MWIL	05	15	1430	S04	W35	05	13.0	5	(D)					
9945		HOLL	05	15	1450	S02	W36	05	12.9		BG	DAO	300	10	7	2
9945		VORO	05	15	2144	S03	W39	05	13.0			HHX	503	12	5	3
9945		SVTO	05	16	0459	S03	W43	05	13.0		B	CSO	260	8	6	3
9945		KAND	05	16	1210	S01	W49	05	12.8			CAO		6	6	5
9945		HOLL	05	16	1410	S03	W51	05	12.8		B	DAO	240	3	4	3
9945	31187	MWIL	05	16	1445	S04	W49	05	12.9	5	(D)					
9945		VORO	05	16	2211	S02	W54	05	12.9			HHX	375	3	2	3
9945		SVTO	05	17	0455	S03	W59	05	12.8		B	DSO	200	3	5	3
9945		KAND	05	17	0740	N00	W59	05	12.9			CAO		5	5	4
9945		RAMY	05	17	1126	S02	W61	05	12.9		B	DAO	160	8	5	4
9945		HOLL	05	17	1410	S02	W64	05	12.8		B	DAO	180	4	6	3
9945	31187	MWIL	05	17	1445	S03	W64	05	12.8	5	(AP)					
9945		TACH	05	18	0449	S02	W71	05	12.9			HA	90	2	2	4
9945		SVTO	05	18	0520	S02	W75	05	12.6		B	DSO	240	4	5	3
9945		KAND	05	18	0850	N01	W75	05	12.8			HA		2	4	4
9945		RAMY	05	18	1147	S02	W78	05	12.7		B	DAO	150	3	5	4
9945	31187	MWIL	05	18	1430	S03	W78	05	12.8	5	(AP)					
9945		HOLL	05	18	1530	S02	W80	05	12.7		A	HSX	120	2	3	3
9945		VORO	05	19	0042	S03	W81	05	13.0			HAX	216	1		3
9945		LEAR	05	19	0240	S01	W84	05	12.8		B	CAO	50	3	3	3
9946		VORO	05	07	2125	S07	E80	05	13.9			DAO	131	2	1	3
9946		LEAR	05	08	0125	S08	E77	05	13.8		B	DAO	120	4	5	2
9946		TACH	05	08	0445	S05	E77	05	13.9			HSX	60	1	1	3
9946		RAMY	05	08	1308	S08	E70	05	13.8		B	DAO	40	3	3	4
9946		VORO	05	08	2128	S07	E66	05	13.8			DAO	99	2	0	2
9946		LEAR	05	09	0130	S07	E63	05	13.8		B	DSO	120	5	3	3
9946		TACH	05	09	0600	S06	E58	05	13.6			HR	95	2	1	3
9946		SVTO	05	09	1230	S07	E58	05	13.9		B	DSO	60	2	2	2
9946		HOLL	05	09	1350	S06	E57	05	13.8		B	DAO	70	2	3	3
9946		VORO	05	09	2130	S07	E53	05	13.9			CAI	56	7	1	3
9946		LEAR	05	10	0117	S06	E49	05	13.7		B	CAO	80	11	4	3
9946		SVTO	05	10	0630	S06	E48	05	13.9		B	CRO	60	12	4	3
9946		RAMY	05	10	1400	S06	E40	05	13.6		B	DSO	20	15	10	4
9946		HOLL	05	10	1515	S05	E41	05	13.7		B	BXO	50	18	6	2
9946		VORO	05	10	2135	S05	E38	05	13.7			BXO	31	5	1	2
9946		TACH	05	11	0520	S06	E30	05	13.5			CSO	80	2	3	2
9946		SVTO	05	11	1320	S05	E30	05	13.8		B	DSO	60	11	7	1
9946		HOLL	05	11	1505	S07	E29	05	13.8		B	DAO	60	25	7	3
9946		RAMY	05	11	1820	S06	E28	05	13.8		B	DSO	60	6	7	2
9946		VORO	05	11	2238	S04	E26	05	13.9			BXO	21	3	3	1
9946		LEAR	05	12	0343	S05	E24	05	14.0		B	CAO	60	10	6	2
9946		SVTO	05	12	0602	S03	E22	05	13.9		B	BXO	20	7	5	3
9946		RAMY	05	12	1201	S05	E17	05	13.8		B	DAO	50	11	6	4
9946		HOLL	05	12	1430	S06	E15	05	13.7		B	EAO	20	10	11	3
9946		LEAR	05	13	0035	S05	E10	05	13.8		B	CSO	30	4	4	4
9946		HOLL	05	13	1415	S06	W03	05	13.4		B	BXO	20	3	3	3
9946		LEAR	05	14	0130	S05	W05	05	13.7		A	AXX	10	5	6	3
9946		RAMY	05	14	1226	S07	W11	05	13.7		A	AXX		1		4
9946		HOLL	05	14	1335	S06	W12	05	13.7		A	AXX	10	1	1	2
9946A		KAND	05	13	0755	S24	E06	05	13.8			AX		1		3
9946A		RAMY	05	14	1226	S26	W06	05	14.0		A	AXX		1		4

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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
9946A		HOLL	05	17	1410	S23	W48	05	13.9		A	AXX	20	1	1	3
9946A	31202	MWIL	05	17	1445	S24	W48	05	13.9	4	(AP)					
9946A		TACH	05	18	0449	S21	W55	05	14.0			AXX	25	1	1	4
9946A		SVTO	05	18	0520	S23	W58	05	13.7		A	AXX		1		3
9946A		KAND	05	18	0850	S20	W60	05	13.8			AX		1		4
9946A	31202	MWIL	05	18	1430	S24	W63	05	13.7	4	(AP)					
9946A		HOLL	05	18	1530	S23	W65	05	13.6		A	AXX	20	1	1	3
9950		SVTO	05	11	1320	S07	E50	05	15.3		B	BXO	10	2	3	1
9950	31193	MWIL	05	11	1500	S05	E47	05	15.1	3	(B)					
9950		HOLL	05	11	1505	S06	E48	05	15.2		B	BXO	20	6	4	3
9950		RAMY	05	11	1820	S07	E47	05	15.3		B	DSO	40	3	4	2
9950		VORO	05	11	2238	S03	E46	05	15.4			CAI	53	3	3	1
9950		LEAR	05	12	0343	S07	E42	05	15.3		B	CAO	50	8	5	2
9950		SVTO	05	12	0602	S06	E41	05	15.3		B	CAO	70	7	6	3
9950		KAND	05	12	0930	S06	E39	05	15.3			CAO		6	6	5
9950		RAMY	05	12	1201	S06	E36	05	15.2		B	CSO	90	10	5	4
9950	31193	MWIL	05	12	1430	S05	E35	05	15.2	5	(BP)					
9950		HOLL	05	12	1430	S06	E35	05	15.2		B	DSO	130	8	6	3
9950		LEAR	05	13	0035	S06	E30	05	15.3		B	DAO	110	8	6	4
9950		KAND	05	13	0755	S06	E26	05	15.3			CAO		8	6	3
9950		SVTO	05	13	0853	S05	E25	05	15.2		B	DAO	90	8	8	2
9950		RAMY	05	13	1252	S06	E22	05	15.2		B	DSO	50	6	6	2
9950		HOLL	05	13	1415	S05	E23	05	15.3		B	DSO	140	13	7	3
9950	31193	MWIL	05	13	1430	S05	E22	05	15.2	4	(B)					
9950		LEAR	05	14	0130	S05	E16	05	15.2		B	DSO	40	8	6	3
9950		VORO	05	14	0312	S05	E13	05	15.1			BXI	69	7	2	3
9950		SVTO	05	14	0520	S05	E13	05	15.2		B	DSO	110	11	6	3
9950		RAMY	05	14	1226	S05	E11	05	15.3		B	DSO	40	14	8	4
9950		HOLL	05	14	1335	S05	E08	05	15.2		B	DSO	60	14	5	2
9950	31193	MWIL	05	14	1500	S05	E09	05	15.3	5	(BP)					
9950		VORO	05	14	2345	S05	E02	05	15.1			AXX	28	2		3
9950		TACH	05	15	0530	S05	W02	05	15.1			CAO	89	5	3	3
9950		SVTO	05	15	0550	S05	E02	05	15.4		B	DSO	80	16	8	3
9950		KAND	05	15	0750	S05	W01	05	15.2			CAO		3	3	4
9950		KAND	05	15	1210	S07	E01	05	15.6			AX		1		5
9950		RAMY	05	15	1220	S07	W04	05	15.2		B	CSO	20	8	3	4
9950	31193	MWIL	05	15	1430	S05	W04	05	15.3	5	(B)					
9950		HOLL	05	15	1450	S05	W05	05	15.2		B	DAO	90	5	5	2
9950		VORO	05	15	2144	S05	W10	05	15.1			HAX	28	1		3
9950		SVTO	05	16	0459	S06	W13	05	15.2		B	CSO	30	5	4	3
9950		KAND	05	16	1210	S05	W18	05	15.2			HS		1	1	5
9950		HOLL	05	16	1410	S04	W18	05	15.2		A	HSX	20	1	1	3
9950	31193	MWIL	05	16	1445	S06	W18	05	15.3	5	(B)					
9950		VORO	05	16	2211	S05	W23	05	15.2			AXX	19	1		3
9950		SVTO	05	17	0455	S05	W27	05	15.2		A	HRX	10	1		3
9950		KAND	05	17	0740	S03	W28	05	15.2			HS		1	1	4
9950		RAMY	05	17	1126	S05	W30	05	15.2		B	CSO	20	3	3	4
9950		HOLL	05	17	1410	S04	W32	05	15.2		B	CSO	60	5	4	3
9950	31193	MWIL	05	17	1445	S05	W32	05	15.2	5	(BP)					
9950		TACH	05	18	0449	S04	W39	05	15.3			AXX	30	1	1	4
9950		SVTO	05	18	0520	S05	W41	05	15.1		A	HSX	30	1	1	3
9950		KAND	05	18	0850	S02	W42	05	15.2			HS		1	1	4
9950		RAMY	05	18	1147	S05	W44	05	15.2		A	HSX	10	1	1	4
9950	31193	MWIL	05	18	1430	S05	W45	05	15.2	4	(AP)					
9950		HOLL	05	18	1530	S04	W47	05	15.1		A	HSX	20	1	2	3
9950		VORO	05	19	0042	S05	W51	05	15.2			AXX	13	1		3
9950		LEAR	05	19	0240	S04	W52	05	15.2		A	HSX	20	1	1	3
9950		TACH	05	19	0539	S04	W52	05	15.3			AXX	10	1	1	3
9950		SVTO	05	19	0925	S04	W56	05	15.2		A	HSX	100	1	1	3
9950		KAND	05	19	1315	S02	W58	05	15.2			AX		1		3
9950	31193	MWIL	05	19	1430	S05	W59	05	15.2	4	(AP)					
9950		RAMY	05	19	1513	S04	W60	05	15.1		A	HSX	10	1	1	2
9950		HOLL	05	19	1630	S05	W60	05	15.2		A	HSX	40	1	1	3
9950		VORO	05	19	2148	S05	W62	05	15.3			AXX	8	1		3
9950		LEAR	05	20	0025	S04	W63	05	15.3		A	HSX	20	1	1	4
9950		TACH	05	20	0537	S05	W64	05	15.4			AXX	15	1	1	3
9950		KAND	05	20	0730	S02	W68	05	15.2			AX		1	1	4
9950		SVTO	05	20	0738	S04	W69	05	15.1		A	AXX		1		3

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9950		RAMY	05	20	1348	S04	W70	05	15.3		A	HSX	10	1	1	2
9950		HOLL	05	20	1441	S04	W74	05	15.1		A	AXX	30	1	1	3
9950A		RAMY	05	12	1201	S07	E54	05	16.5		A	AXX		1		4
9950A		SVTO	05	16	0459	S08	E06	05	16.6		A	AXX		1		3
9950A	31200	MWIL	05	16	1445	S08	W00	05	16.6	4	(B)					
9948		VORO	05	09	2130	S20	E86	05	16.5			HAX	102	1		3
9948		LEAR	05	10	0117	S21	E81	05	16.3		A	HSX	150	1	2	3
9948		SVTO	05	10	0630	S21	E81	05	16.5		A	HHX	250	2	5	3
9948		KAND	05	10	0705	S23	E86	05	16.9			HS		1	2	4
9948		RAMY	05	10	1400	S21	E77	05	16.5		B	DHO	310	3	4	4
9948	31191	MWIL	05	10	1500	S20	E78	05	16.6	5	(AP)					
9948		HOLL	05	10	1515	S22	E83	05	17.0		B	CHO	270	4	4	2
9948		VORO	05	10	2135	S20	E74	05	16.5			HKX	255	1		2
9948		TACH	05	11	0520	S21	E67	05	16.3			HSX	300	1	1	2
9948		TACH	05	11	0520	S25	E79	05	17.3			HSX	50	1	1	2
9948		KAND	05	11	1020	S23	E72	05	17.0			CKO		7	16	3
9948		SVTO	05	11	1320	S22	E72	05	17.1		B	EHO	460	5	13	1
9948	31191	MWIL	05	11	1500	S21	E68	05	16.8	5	(BP)					
9948		HOLL	05	11	1505	S22	E70	05	17.0		B	EKO	370	7	12	3
9948		RAMY	05	11	1820	S23	E69	05	17.1		B	FHO	460	5	18	2
9948		VORO	05	11	2238	S20	E61	05	16.6			HKX	374	2		1
9948		LEAR	05	12	0343	S23	E60	05	16.8		B	FKO	320	5	18	2
9948		SVTO	05	12	0602	S22	E62	05	17.0		B	EAO	500	7	13	3
9948		KAND	05	12	0930	S23	E61	05	17.1			EKO		10	13	5
9948		RAMY	05	12	1201	S22	E56	05	16.8		B	EKO	460	11	15	4
9948	31191	MWIL	05	12	1430	S21	E55	05	16.8	6	(BG)					
9948		HOLL	05	12	1430	S21	E58	05	17.0		BG	EKO	380	7	12	3
9948		LEAR	05	13	0035	S22	E50	05	16.9		B	EKO	400	9	15	4
9948		KAND	05	13	0755	S23	E47	05	16.9			DKO		5	9	3
9948		SVTO	05	13	0853	S23	E45	05	16.8		B	ESO	320	6	15	2
9948		RAMY	05	13	1252	S23	E44	05	16.9		B	EKO	390	2	11	2
9948		HOLL	05	13	1415	S22	E44	05	17.0		B	EKO	330	2	12	3
9948	31191	MWIL	05	13	1430	S22	E44	05	17.0	6	(BP)					
9948		LEAR	05	14	0130	S23	E37	05	16.9		B	EHO	380	5	12	3
9948		VORO	05	14	0312	S21	E32	05	16.6			HKX	568	1		3
9948		SVTO	05	14	0520	S23	E36	05	17.0		B	EKO	500	5	14	3
9948		RAMY	05	14	1226	S22	E32	05	17.0		BG	EKO	400	9	13	4
9948		HOLL	05	14	1335	S22	E30	05	16.9		BG	DKO	350	4	10	2
9948	31191	MWIL	05	14	1500	S21	E30	05	16.9	6	(BP)					
9948		VORO	05	14	2345	S21	E21	05	16.6			HKX	549	1		3
9948		TACH	05	15	0530	S20	E19	05	16.7			CSO	906	4	10	3
9948		SVTO	05	15	0550	S23	E25	05	17.2		B	EKO	480	9	17	3
9948		KAND	05	15	0750	S23	E21	05	16.9			EKO		7	14	4
9948		RAMY	05	15	1220	S22	E18	05	16.9		B	EKO	380	6	12	4
9948	31191	MWIL	05	15	1430	S22	E17	05	16.9	6	(BG)					
9948		HOLL	05	15	1450	S21	E16	05	16.8		B	EKO	320	3	12	2
9948		VORO	05	15	2144	S21	E09	05	16.6			HKX	580	1		3
9948		SVTO	05	16	0459	S23	E10	05	17.0		B	CHO	420	4	13	3
9948		KAND	05	16	1210	S23	E03	05	16.7			CKO		4	12	5
9948		HOLL	05	16	1410	S21	E06	05	17.0		B	EKO	320	4	14	3
9948	31191	MWIL	05	16	1445	S22	E03	05	16.8	6	(BP)					
9948		VORO	05	16	2211	S21	W04	05	16.6			HKX	617	1		3
9948		SVTO	05	17	0455	S21	W03	05	17.0		B	CHO	380	2	13	3
9948		KAND	05	17	0740	S20	W07	05	16.8			CHO		2	12	4
9948		RAMY	05	17	1126	S21	W09	05	16.8		B	CKO	390	6	11	4
9948		HOLL	05	17	1410	S21	W13	05	16.6		B	CHO	400	6	5	3
9948	31191	MWIL	05	17	1445	S22	W10	05	16.8	6	(BP)					
9948		TACH	05	18	0449	S19	W21	05	16.6			HSX	500	1	2	4
9948		SVTO	05	18	0520	S21	W22	05	16.5		A	HHX	440	1	4	3
9948		KAND	05	18	0850	S19	W20	05	16.8			CHO		9	14	4
9948		RAMY	05	18	1147	S21	W25	05	16.6		A	HKX	370	1	3	4
9948	31191	MWIL	05	18	1430	S21	W23	05	16.8	6	(BP)					
9948		HOLL	05	18	1530	S20	W25	05	16.7		A	HHX	330	2	10	3
9948		VORO	05	19	0042	S21	W31	05	16.6			HKX	591	1		3
9948		LEAR	05	19	0240	S20	W32	05	16.7		B	CKO	360	3	5	3
9948		TACH	05	19	0539	S18	W34	05	16.6			HSX	400	1	1	3
9948		SVTO	05	19	0925	S22	W36	05	16.6		A	HHX	330	1	5	3

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9948		KAND	05	19	1315	S19	W40	05	16.5			HH		2	4	3
9948	31191	MWIL	05	19	1430	S21	W37	05	16.8	6	(BP)					
9948		RAMY	05	19	1513	S21	W40	05	16.6		A	HKX	410	1	3	2
9948		HOLL	05	19	1630	S20	W40	05	16.6		A	HKX	260	1	4	3
9948		VORO	05	19	2148	S21	W43	05	16.6			HHX	456	1		3
9948		LEAR	05	20	0025	S20	W45	05	16.6		A	HKX	310	5	5	4
9948		TACH	05	20	0537	S20	W45	05	16.8			HH	900	1	2	3
9948		KAND	05	20	0730	S19	W48	05	16.6			HH		1	4	4
9948		SVTO	05	20	0738	S21	W48	05	16.6		A	HHX	300	1	5	3
9948		RAMY	05	20	1348	S20	W52	05	16.6		A	HKX	350	1	4	2
9948		HOLL	05	20	1441	S22	W53	05	16.5		A	HKX	320	1	4	3
9948		VORO	05	20	2253	S21	W57	05	16.6			HHX	480	1		3
9948		LEAR	05	21	0141	S20	W58	05	16.6		A	HKX	300	4	3	4
9948		SVTO	05	21	0615	S20	W63	05	16.4		A	HHX	400	1	6	3
9948		KAND	05	21	1055	S18	W63	05	16.6			HH		1	4	3
9948		RAMY	05	21	1205	S20	W63	05	16.7		A	HHX	330	1	4	3
9948		HOLL	05	21	1320	S21	W65	05	16.6		A	HHX	330	1	5	3
9948		LEAR	05	22	0120	S19	W68	05	16.9		A	HKX	260	2	3	2
9948		TACH	05	22	0537	S20	W73	05	16.6			HA	300	3	3	4
9948		VORO	05	22	0550	S21	W74	05	16.6			HAX	458	1		3
9948		SVTO	05	22	0605	S20	W77	05	16.4		B	CHO	310	2	5	3
9948		RAMY	05	22	1239	S22	W78	05	16.5		A	HHX	300	1	3	3
9948		HOLL	05	22	1345	S21	W78	05	16.6		A	HHX	300	1	3	2
9948	31191	MWIL	05	22	1445	S21	W79	05	16.5	5	(AP)					
9948		VORO	05	22	2150	S21	W81	05	16.7			HAX	447	1		3
9948A		VORO	05	11	2238	S23	E70	05	17.3			HRX	28	1		1
9948A		VORO	05	14	0312	S24	E42	05	17.4			AXX	21	3		3
9948A		VORO	05	14	2345	S24	E32	05	17.5			HRX	23	1		3
9948A		VORO	05	15	2144	S23	E18	05	17.3			BXO	18	3	2	3
9948A		VORO	05	16	2211	S24	E06	05	17.4			AXX	10	1		3
9951		RAMY	05	12	1201	N10	E74	05	18.1		A	HSX	30	1	1	4
9951		HOLL	05	12	1430	N10	E73	05	18.1		A	AXX		1	1	3
9951	31194	MWIL	05	12	1430	N12	E71	05	17.9	4	(AP)					
9951		LEAR	05	13	0035	N10	E68	05	18.1		A	AXX	20	1	1	4
9951		KAND	05	13	0755	N09	E64	05	18.1			AX		1		3
9951		SVTO	05	13	0853	N11	E62	05	18.0		A	HRX	20	1	1	2
9951		RAMY	05	13	1252	N09	E63	05	18.3		B	CSO	20	2	6	2
9951		HOLL	05	13	1415	N11	E58	05	17.9		A	AXX	10	1	1	3
9951	31194	MWIL	05	13	1430	N11	E58	05	18.0	4	(AP)					
9951		LEAR	05	14	0130	N11	E53	05	18.0		A	HSX	10	1	1	3
9951		VORO	05	14	0312	N11	E52	05	18.0			BXO	33	3	1	3
9951		SVTO	05	14	0520	N11	E51	05	18.0		A	HSX	30	2	2	3
9951		RAMY	05	14	1226	N11	E46	05	18.0		A	HSX	10	2	1	4
9951		HOLL	05	14	1335	N10	E45	05	17.9		A	HSX	10	1	1	2
9951	31194	MWIL	05	14	1500	N11	E45	05	18.0	5	(AP)					
9951		VORO	05	14	2345	N11	E41	05	18.1			HSX	22	1		3
9951		TACH	05	15	0530	N11	E33	05	17.7			AR	30	2	1	3
9951		SVTO	05	15	0550	N12	E38	05	18.1		B	CSO	20	3	2	3
9951		KAND	05	15	0750	N10	E38	05	18.2			HR		1	1	4
9951		RAMY	05	15	1220	N10	E33	05	18.0		A	HSX	10	1	1	4
9951	31194	MWIL	05	15	1430	N11	E32	05	18.0	4	(AP)					
9951		HOLL	05	15	1450	N10	E31	05	17.9		A	HSX	10	1	1	2
9951		VORO	05	15	2144	N11	E28	05	18.0			AXX	4	1		3
9951		SVTO	05	16	0459	N11	E24	05	18.0		A	AXX		1		3
9951		KAND	05	17	0740	N11	E18	05	18.7			BXO		3	2	4
9951		HOLL	05	17	1410	N11	E12	05	18.5		B	BXO	20	3	3	3
9951	31203	MWIL	05	17	1445	N10	E14	05	18.7	4	(B)					
9951		KAND	05	18	0850	N13	W02	05	18.2			AX		1		4
9951	31204	MWIL	05	18	1430	N10	W05	05	18.2	4	(B)					
9951		HOLL	05	18	1530	N12	W08	05	18.0		B	BXO	10	3	3	3
9954		RAMY	05	14	1226	S20	E82	05	20.8		A	HSX	60	1	2	4
9954		HOLL	05	14	1335	S23	E82	05	20.9		A	HAX	60	1	2	2
9954	31196	MWIL	05	14	1500	S21	E82	05	20.9	5	(AP)					
9954		VORO	05	14	2345	S20	E78	05	20.9			HAX	209	1		3
9954		TACH	05	15	0530	S20	E74	05	20.9			HR	150	3	2	3
9954		SVTO	05	15	0550	S22	E75	05	21.0		A	HSX	120	2	3	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 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
9954		KAND	05	15	0750	S23	E76	05	21.2			HA		2	3	4
9954		RAMY	05	15	1220	S22	E72	05	21.0		B	CAO	180	3	4	4
9954	31196	MWIL	05	15	1430	S21	E70	05	21.0	5	(AP)					
9954		HOLL	05	15	1450	S22	E69	05	20.9		A	HAX	30	2	2	2
9954		VORO	05	15	2144	S21	E66	05	21.0			HAX	91	1		3
9954		SVTO	05	16	0459	S22	E64	05	21.1		A	HAX	100	2	4	3
9954		KAND	05	16	1210	S24	E59	05	21.1			HA		3	2	5
9954		HOLL	05	16	1410	S21	E58	05	21.0		A	HAX	160	3	3	3
9954	31196	MWIL	05	16	1445	S21	E58	05	21.1	5	(AP)					
9954		VORO	05	16	2211	S22	E54	05	21.1			DSO	177	6	1	3
9954		SVTO	05	17	0455	S21	E51	05	21.1		A	HAX	160	3	4	3
9954		KAND	05	17	0740	S23	E47	05	20.9			HA		3	3	4
9954		RAMY	05	17	1126	S22	E46	05	21.0		B	DSO	120	4	3	4
9954		HOLL	05	17	1410	S22	E45	05	21.0		B	DKO	230	3	3	3
9954	31196	MWIL	05	17	1445	S22	E45	05	21.1	5	(AP)					
9954		TACH	05	18	0449	S20	E33	05	20.7			HA	270	3	2	4
9954		SVTO	05	18	0520	S22	E38	05	21.1		B	DAO	130	4	3	3
9954		KAND	05	18	0850	S23	E34	05	21.0			HA		6	3	4
9954		RAMY	05	18	1147	S22	E32	05	20.9		B	DAO	110	3	3	4
9954	31196	MWIL	05	18	1430	S21	E32	05	21.0	5	(BG)					
9954		HOLL	05	18	1530	S21	E32	05	21.1		B	DAO	140	5	4	3
9954		VORO	05	19	0042	S22	E26	05	21.0			DSO	185	6	1	3
9954		LEAR	05	19	0240	S22	E25	05	21.0		B	DAO	130	7	4	3
9954		TACH	05	19	0539	S19	E18	05	20.6			HA	200	3	2	3
9954		SVTO	05	19	0925	S22	E23	05	21.2		B	DAO	100	5	4	3
9954		KAND	05	19	1315	S22	E19	05	21.0			CAO		12	8	3
9954	31196	MWIL	05	19	1430	S21	E20	05	21.1	5	(BP)					
9954		RAMY	05	19	1513	S22	E17	05	20.9		B	DAO	70	3	3	2
9954		HOLL	05	19	1630	S21	E18	05	21.1		B	DAO	100	9	7	3
9954		VORO	05	19	2148	S21	E14	05	21.0			HAX	135	3		3
9954		LEAR	05	20	0025	S22	E13	05	21.0		B	DAO	110	13	3	4
9954		TACH	05	20	0537	S22	E08	05	20.8			HA	240	4	2	3
9954		KAND	05	20	0730	S22	E09	05	21.0			HA		3	2	4
9954		SVTO	05	20	0738	S22	E09	05	21.0		B	DAO	100	3	4	3
9954		RAMY	05	20	1348	S22	E06	05	21.0		B	DAO	110	3	3	2
9954		HOLL	05	20	1441	S22	E05	05	21.0		A	AXX	20	2	3	3
9954		VORO	05	20	2253	S22	E01	05	21.0			CRI	132	3	0	3
9954		LEAR	05	21	0141	S21	W01	05	21.0		B	DAO	90	6	3	4
9954		SVTO	05	21	0615	S21	W04	05	20.9		B	DSO	80	8	5	3
9954		KAND	05	21	1055	S21	W09	05	20.8			CAO		9	4	3
9954		RAMY	05	21	1205	S24	W07	05	21.0		B	DSO	80	11	6	3
9954		HOLL	05	21	1320	S23	W08	05	20.9		B	DSO	90	8	4	3
9954		LEAR	05	22	0120	S22	W14	05	21.0		B	DAO	70	11	5	2
9954		TACH	05	22	0537	S23	W16	05	21.0			CAI	225	7	5	4
9954		VORO	05	22	0550	S22	W16	05	21.0			DRI	78	3	1	3
9954		SVTO	05	22	0605	S22	W17	05	20.9		B	CSO	70	9	6	3
9954		RAMY	05	22	1239	S22	W20	05	21.0		B	DSO	30	6	4	3
9954		HOLL	05	22	1345	S22	W21	05	20.9		B	DAO	70	7	4	2
9954	31196	MWIL	05	22	1445	S22	W21	05	21.0	4	(AP)					
9954		VORO	05	22	2150	S22	W25	05	21.0			DAO	70	2	1	3
9954		TACH	05	23	0617	S20	W27	05	21.2			CAO	123	5	4	4
9954		SVTO	05	23	0900	S22	W31	05	21.0		B	DSO	40	4	5	2
9954		KAND	05	23	1105	S19	W33	05	20.9			HA		2	2	4
9954		RAMY	05	23	1257	S22	W32	05	21.1		B	DAO	40	9	5	3
9954		HOLL	05	23	1400	S22	W33	05	21.0		B	DSO	50	2	3	3
9954		VORO	05	24	0211	S22	W40	05	21.0			CRO	41	2	0	3
9954		LEAR	05	24	0345	S21	W37	05	21.3		B	DSO	30	5	9	3
9954		TACH	05	24	0512	S20	W37	05	21.4			BRO	37	3	9	4
9954		KAND	05	24	0820	S19	W44	05	21.0			HS		1	1	4
9954		HOLL	05	24	1304	S22	W46	05	21.0		A	HSX	10	1	1	2
9954	31196	MWIL	05	24	1430	S23	W47	05	21.0	4	(AP)					
9954		LEAR	05	25	0135	S22	W52	05	21.1		A	HSX	10	1	1	2
9955		VORO	05	14	2345	S13	E80	05	21.0			AXX	21	1		3
9955		TACH	05	15	0530	S13	E76	05	21.0			HSX	35	1	1	3
9955		SVTO	05	15	0550	S14	E75	05	20.9		A	HSX	50	1	2	3
9955		KAND	05	15	0750	S16	E77	05	21.2			HS		1	3	4
9955		RAMY	05	15	1220	S14	E73	05	21.0		A	HSX	30	1	1	4
9955	31198	MWIL	05	15	1430	S13	E72	05	21.0	5	(AP)					

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9955		HOLL	05	15	1450	S15	E70	05	20.9		A	HSX	20	1	1	2
9955		VORO	05	15	2144	S13	E69	05	21.1			HSX	50	2		3
9955		SVTO	05	16	0459	S15	E65	05	21.1		A	HSX	40	1	1	3
9955		KAND	05	16	1210	S17	E61	05	21.1			HS		1	1	5
9955		HOLL	05	16	1410	S13	E59	05	21.0		A	HSX	40	1	1	3
9955	31198	MWIL	05	16	1445	S14	E59	05	21.1	4	(AP)					
9955		VORO	05	16	2211	S14	E55	05	21.1			HSX	49	3		3
9955		SVTO	05	17	0455	S13	E51	05	21.0		A	HSX	50	1	2	3
9955		KAND	05	17	0740	S15	E49	05	21.0			HS		1	1	4
9955		RAMY	05	17	1126	S14	E48	05	21.1		A	HSX	30	1	2	4
9955		HOLL	05	17	1410	S14	E48	05	21.2		A	HAX	60	1	2	3
9955	31198	MWIL	05	17	1445	S14	E46	05	21.1	5	(AP)					
9955		TACH	05	18	0449	S13	E33	05	20.7			HSX	70	1	1	4
9955		SVTO	05	18	0520	S14	E38	05	21.1		A	HSX	20	1	2	3
9955		KAND	05	18	0850	S15	E36	05	21.1			HS		2	1	4
9955		RAMY	05	18	1147	S14	E34	05	21.1		A	HSX	20	1	1	4
9955	31198	MWIL	05	18	1430	S13	E33	05	21.1	5	(AP)					
9955		HOLL	05	18	1530	S14	E32	05	21.1		A	HSX	40	1	2	3
9955		VORO	05	19	0042	S14	E28	05	21.1			AXX	19	1		3
9955		LEAR	05	19	0240	S14	E26	05	21.1		A	HSX	30	1	1	3
9955		TACH	05	19	0539	S12	E20	05	20.7			HSX	60	1	2	3
9955		SVTO	05	19	0925	S15	E24	05	21.2		B	CSO	20	2	2	3
9955		KAND	05	19	1315	S14	E20	05	21.1			HA		4	2	3
9955	31198	MWIL	05	19	1430	S13	E20	05	21.1	5	(AP)					
9955		RAMY	05	19	1513	S14	E19	05	21.1		A	HSX	20	1	1	2
9955		HOLL	05	19	1630	S15	E19	05	21.1		A	HSX	40	3	2	3
9955		VORO	05	19	2148	S13	E16	05	21.1			AXX	11	1		3
9955		LEAR	05	20	0025	S13	E14	05	21.1		A	HSX	30	1	1	4
9955		TACH	05	20	0537	S14	E09	05	20.9			AXX	20	1	1	3
9955		KAND	05	20	0730	S15	E11	05	21.1			CSO		2	2	4
9955		SVTO	05	20	0738	S13	E11	05	21.1		A	HRX	10	1	1	3
9955		RAMY	05	20	1348	S14	E07	05	21.1		A	HSX	10	1	1	2
9955		HOLL	05	20	1441	S13	E07	05	21.1		B	DSO	100	3	1	3
9955		VORO	05	20	2253	S13	E03	05	21.2			AXX	17	1		3
9955		LEAR	05	21	0141	S13	E01	05	21.1		A	HSX	20	1	1	4
9955		SVTO	05	21	0615	S13	W03	05	21.0		A	HRX	10	1	1	3
9955		KAND	05	21	1055	S12	W04	05	21.1			HS		1	1	3
9955		RAMY	05	21	1205	S13	W05	05	21.1		A	HSX		1		3
9955		HOLL	05	21	1320	S13	W05	05	21.2		B	BXO	20	3	3	3
9955		LEAR	05	22	0120	S13	W12	05	21.1		B	CAO	10	2	2	2
9955		TACH	05	22	0537	S12	W15	05	21.1			AR	17	3	2	4
9955		VORO	05	22	0550	S13	W15	05	21.1			AXX	7	1		3
9955		SVTO	05	22	0605	S13	W15	05	21.1		B	CRO	10	2	3	3
9958		KAND	05	15	1210	N04	E78	05	21.3			HK		5	5	5
9958	31199	MWIL	05	15	1430	N05	E81	05	21.7	5	(AP)					
9958		VORO	05	15	2144	N04	E76	05	21.6			HAX	136	3		3
9958		KAND	05	16	1210	N01	E69	05	21.7			HA		1	2	5
9958	31199	MWIL	05	16	1445	N04	E67	05	21.6	5	(AP)					
9958		VORO	05	16	2211	N04	E64	05	21.7			HAX	141	1		3
9958		KAND	05	17	0740	N02	E57	05	21.6			HA		1	2	4
9958		HOLL	05	17	1410	N04	E55	05	21.7		B	CSO	140	4	5	3
9958	31199	MWIL	05	17	1445	N04	E54	05	21.6	5	(AP)					
9958		TACH	05	18	0449	N03	E42	05	21.3			HSX	150	1	1	4
9958		SVTO	05	18	0520	N04	E47	05	21.7		B	CSO	100	4	4	3
9958		KAND	05	18	0850	N02	E44	05	21.6			HA		3	2	4
9958	31199	MWIL	05	18	1430	N04	E41	05	21.7	5	(AP)					
9958		HOLL	05	18	1530	N04	E40	05	21.6		B	CSO	100	7	5	3
9958		VORO	05	19	0042	N04	E35	05	21.6			HHX	122	1		3
9958		LEAR	05	19	0240	N04	E35	05	21.7		B	CSO	110	2	3	3
9958		TACH	05	19	0539	N04	E27	05	21.2			HSX	180	1	1	3
9958		SVTO	05	19	0925	N04	E32	05	21.8		B	CSO	70	2	3	3
9958		KAND	05	19	1315	N03	E29	05	21.7			CAO		4	4	3
9958	31199	MWIL	05	19	1430	N04	E28	05	21.7	5	(BP)					
9958		HOLL	05	19	1630	N03	E27	05	21.7		A	HSX	80	1	2	3
9958		VORO	05	19	2148	N04	E24	05	21.7			HSX	120	1		3
9958		LEAR	05	20	0025	N04	E22	05	21.7		A	HSX	80	1	2	4
9958		TACH	05	20	0537	N02	E15	05	21.3			HSX	200	1	1	3
9958		KAND	05	20	0730	N03	E18	05	21.6			CSO		3	3	4

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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
9958		SVTO	05	20	0738	N04	E18	05	21.7		A	HSX	80	1	3	3
9958		RAMY	05	20	1348	N03	E14	05	21.6		A	HSX	60	1	2	2
9958		HOLL	05	20	1441	N04	E13	05	21.6		A	HSX	150	4	2	3
9958		VORO	05	20	2253	N04	E10	05	21.7			HSX	148	1		3
9958		LEAR	05	21	0141	N04	E08	05	21.7		A	HSX	80	1	2	4
9958		SVTO	05	21	0615	N03	E05	05	21.6		A	HSX	80	1	3	3
9958		KAND	05	21	1055	N04	E04	05	21.7			HS		1	2	3
9958		RAMY	05	21	1205	N03	E02	05	21.6		A	HSX	60	1	2	3
9958		HOLL	05	21	1320	N04	E02	05	21.7		A	HSX	100	2	2	3
9958		LEAR	05	22	0120	N04	W06	05	21.6		A	HSX	40	1	2	2
9958		TACH	05	22	0537	N03	W09	05	21.6			HSX	200	1	1	4
9958		VORO	05	22	0550	N04	W08	05	21.6			HSX	84	1		3
9958		SVTO	05	22	0605	N04	W07	05	21.7		B	CSO	80	2	3	3
9958		RAMY	05	22	1239	N03	W12	05	21.6		A	HSX	60	1	1	3
9958		HOLL	05	22	1345	N04	W12	05	21.7		A	HSX	80	2	2	2
9958	31199	MWIL	05	22	1445	N04	W13	05	21.6	5	(AP)					
9958		VORO	05	22	2150	N04	W17	05	21.6			HAX	69	1		3
9958		TACH	05	23	0617	N04	W21	05	21.7			HSX	160	1	1	4
9958		SVTO	05	23	0900	N04	W24	05	21.6		A	HSX	60	1	2	2
9958		KAND	05	23	1105	N06	W24	05	21.7			HS		1	1	4
9958		RAMY	05	23	1257	N03	W26	05	21.6		A	HSX	50	1	2	3
9958		HOLL	05	23	1400	N05	W26	05	21.6		A	HSX	70	1	2	3
9958		VORO	05	24	0211	N04	W33	05	21.6			HAX	84	1		3
9958		LEAR	05	24	0345	N04	W33	05	21.7		A	HSX	60	1	2	3
9958		TACH	05	24	0512	N04	W33	05	21.7			HSX	150	1	1	4
9958		KAND	05	24	0820	N06	W36	05	21.6			HS		1	1	4
9958		HOLL	05	24	1304	N04	W38	05	21.7		A	HSX	20	1	1	2
9958	31199	MWIL	05	24	1430	N04	W39	05	21.7	5	(AP)					
9958		LEAR	05	25	0135	N04	W45	05	21.7		A	HSX	50	1	2	2
9958		TACH	05	25	0514	N04	W45	05	21.8			HSX	100	1	1	5
9958		SVTO	05	25	0826	N05	W50	05	21.6		A	HSX	30	1	2	2
9958		KAND	05	25	0910	N09	W49	05	21.7			HS		1	2	3
9958		RAMY	05	25	1230	N05	W52	05	21.6		A	HSX	30	1	1	3
9958		HOLL	05	25	1345	N05	W53	05	21.6		A	HAX	30	1	2	3
9958	31199	MWIL	05	25	2145	N04	W58	05	21.6	4	AP					
9958		LEAR	05	26	0030	N05	W58	05	21.7		A	HSX	30	1	2	3
9958		VORO	05	26	0158	N04	W59	05	21.7			HRX	64	1		3
9958		SVTO	05	26	0450	N04	W63	05	21.5		A	HSX	40	1	1	3
9958		KAND	05	26	1005	N07	W62	05	21.8			HS		1	1	2
9958		RAMY	05	26	1220	N05	W65	05	21.6		A	HSX	50	1	2	3
9958	31199	MWIL	05	26	1500	N04	W67	05	21.6	5	(AP)					
9958		HOLL	05	26	1500	N04	W68	05	21.5		A	HAX	40	1	2	3
9958		VORO	05	26	2124	N04	W71	05	21.6			HAX	59	1		3
9958		LEAR	05	27	0112	N04	W71	05	21.7		A	HSX	40	1	2	4
9958		SVTO	05	27	0544	N04	W77	05	21.5		A	HSX	50	1	2	4
9958		KAND	05	27	1025	N08	W76	05	21.7			HS		2	1	2
9958		RAMY	05	27	1259	N04	W79	05	21.6		A	HSX	30	1	2	3
9958		HOLL	05	27	1345	N03	W80	05	21.6		A	HSX	30	1	1	3
9958	31199	MWIL	05	27	1430	N04	W80	05	21.6	3	(AP)					
9958A		RAMY	05	22	1239	N19	W09	05	21.8		B	BXO	10	3	3	3
9958A		HOLL	05	22	1345	N20	W11	05	21.7		A	AXX	10	2	2	2
9958A	31208	MWIL	05	22	1445	N20	W10	05	21.8	4	(B)					
9957		RAMY	05	15	1220	N04	E87	05	22.0		A	HSX	30	1	1	4
9957		HOLL	05	15	1450	N04	E88	05	22.2		A	HSX	40	1	2	2
9957		SVTO	05	16	0459	N05	E77	05	22.0		B	EAO	240	3	14	3
9957		HOLL	05	16	1410	N07	E72	05	22.0		B	FKO	900	5	17	3
9957	31201	MWIL	05	16	1445	N07	E78	05	22.4	4	(BG)					
9957		VORO	05	16	2211	N09	E77	05	22.7			DHO	1419	12	7	3
9957		SVTO	05	17	0455	N08	E67	05	22.2		B	FKO	750	11	22	3
9957		KAND	05	17	0740	N05	E70	05	22.5			CKO		39	9	4
9957		RAMY	05	17	1126	N07	E61	05	22.0		BG	FKC	760	37	17	4
9957		HOLL	05	17	1410	N08	E67	05	22.6		BGD	EKC	1000	30	11	3
9957	31201	MWIL	05	17	1445	N08	E66	05	22.6	5	(D)					
9957		TACH	05	18	0449	N06	E51	05	22.0			DAI	961	17	2	4
9957		TACH	05	18	0449	N11	E56	05	22.4			DSO	180	2	2	4
9957		SVTO	05	18	0520	N09	E57	05	22.5		B	EKI	830	33	11	3
9957		KAND	05	18	0850	N05	E57	05	22.6			EKC		53	11	4

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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
9957		RAMY	05	18	1147	N08	E51	05	22.3		BG	FKI	760	21	18	4
9957	31201	MWIL	05	18	1430	N08	E52	05	22.5	5	(D)					
9957		HOLL	05	18	1530	N07	E52	05	22.5		BGD	EKC	860	30	11	3
9957		VORO	05	19	0042	N09	E47	05	22.5			DHO	1316	29	7	3
9957		LEAR	05	19	0240	N08	E45	05	22.5		BGD	FKC	860	36	15	3
9957		TACH	05	19	0539	N08	E38	05	22.1			DAI	872	12	5	3
9957		TACH	05	19	0539	N13	E42	05	22.4			DAO	160	3	2	3
9957		SVTO	05	19	0925	N08	E45	05	22.8		B	EKI	850	33	13	3
9957		KAND	05	19	1315	N07	E41	05	22.6			DKC		47	8	3
9957	31201	MWIL	05	19	1430	N08	E39	05	22.5	5	(D)					
9957		RAMY	05	19	1513	N08	E33	05	22.1		BG	FKI	630	23	17	2
9957		HOLL	05	19	1630	N07	E38	05	22.5		BGD	EKC	910	54	11	3
9957		VORO	05	19	2148	N09	E36	05	22.6			DHO	945	27	6	3
9957		LEAR	05	20	0025	N08	E34	05	22.6		BGD	EKC	930	36	13	4
9957		TACH	05	20	0537	N05	E26	05	22.2			DAI	945	36	4	3
9957		TACH	05	20	0537	N10	E29	05	22.4			DAI	96	11	2	3
9957		KAND	05	20	0730	N07	E30	05	22.5			DKC		27	9	4
9957		SVTO	05	20	0738	N10	E31	05	22.6		B	EKI	800	29	14	3
9957		RAMY	05	20	1348	N08	E26	05	22.5		BG	EKC	680	30	11	2
9957		HOLL	05	20	1441	N09	E26	05	22.6		BGD	EKC	830	51	12	3
9957		VORO	05	20	2253	N09	E22	05	22.6			DHO	940	21	6	3
9957		LEAR	05	21	0141	N09	E20	05	22.6		BGD	EKC	1090	59	14	4
9957		SVTO	05	21	0615	N09	E18	05	22.6		BD	FKC	700	56	17	3
9957		KAND	05	21	1055	N08	E15	05	22.6			EKC		72	12	3
9957		RAMY	05	21	1205	N07	E15	05	22.6		BG	EKI	530	60	12	3
9957		HOLL	05	21	1320	N09	E11	05	22.4		BGD	EKC	600	59	13	3
9957		LEAR	05	22	0120	N09	E07	05	22.6		BGD	EAC	450	56	14	2
9957		TACH	05	22	0537	N07	E01	05	22.3			EAI	468	40	5	4
9957		TACH	05	22	0537	N12	E05	05	22.6			CAI	95	26	4	4
9957		VORO	05	22	0550	N10	E05	05	22.6			DAI	484	22	8	3
9957		SVTO	05	22	0605	N11	E06	05	22.7		B	FAI	560	55	19	3
9957		RAMY	05	22	1239	N11	E02	05	22.7		BG	EAI	530	33	11	3
9957		HOLL	05	22	1345	N08	E00	05	22.6		BGD	EKC	500	49	14	2
9957	31201	MWIL	05	22	1445	N08	E00	05	22.6	5	(D)					
9957		VORO	05	22	2150	N11	W03	05	22.7			DAI	662	27	7	3
9957		TACH	05	23	0617	N08	W12	05	22.4			DAI	594	32	6	4
9957		TACH	05	23	0617	N12	W06	05	22.8			CAI	187	25	2	4
9957		SVTO	05	23	0900	N10	W11	05	22.5		BG	FSI	380	47	16	2
9957		KAND	05	23	1105	N10	W10	05	22.7			DAC		36	9	4
9957		RAMY	05	23	1257	N09	W13	05	22.6		BG	EAC	360	52	11	3
9957		HOLL	05	23	1400	N10	W13	05	22.6		BG	EAC	510	39	11	3
9957		VORO	05	24	0211	N10	W20	05	22.6			DAI	481	21	8	3
9957		LEAR	05	24	0345	N11	W21	05	22.6		BGD	EKC	420	47	15	3
9957		TACH	05	24	0512	N08	W23	05	22.5			DAI	432	21	5	4
9957		TACH	05	24	0512	N12	W19	05	22.8			DAI	159	19	5	4
9957		KAND	05	24	0820	N10	W21	05	22.8			EAO		23	11	4
9957		HOLL	05	24	1304	N10	W26	05	22.6		BG	EAC	250	44	12	2
9957	31201	MWIL	05	24	1430	N09	W27	05	22.6	5	(D)					
9957		LEAR	05	25	0135	N11	W32	05	22.6		BG	EAC	330	43	15	2
9957		TACH	05	25	0514	N07	W35	05	22.6			CAI	291	17	6	5
9957		TACH	05	25	0514	N11	W30	05	23.0			CAI	113	21	3	5
9957		SVTO	05	25	0826	N10	W38	05	22.5		B	EAO	340	27	15	2
9957		KAND	05	25	0910	N12	W36	05	22.7			ESO		22	11	3
9957		RAMY	05	25	1230	N10	W39	05	22.6		BG	EAI	180	18	13	3
9957		HOLL	05	25	1345	N08	W39	05	22.6		BG	EAI	400	22	11	3
9957	31201	MWIL	05	25	2145	N10	W44	05	22.6	5	BG					
9957		LEAR	05	26	0030	N11	W45	05	22.6		BGD	EAI	260	23	15	3
9957		VORO	05	26	0158	N10	W47	05	22.5			CRI	349	13	8	3
9957		SVTO	05	26	0450	N10	W47	05	22.7		B	EAO	220	14	13	3
9957		KAND	05	26	1005	N13	W50	05	22.6			DAO		7	10	2
9957		RAMY	05	26	1220	N10	W52	05	22.6		B	EAI	290	23	11	3
9957		HOLL	05	26	1500	N09	W56	05	22.4		BG	EAC	340	27	11	3
9957	31201	MWIL	05	26	1500	N10	W55	05	22.5	5	(D)					
9957		VORO	05	26	2124	N10	W58	05	22.5			DAI	193	27	8	3
9957		LEAR	05	27	0112	N10	W59	05	22.6		BG	EAI	240	29	11	4
9957		SVTO	05	27	0544	N11	W64	05	22.4		B	FAO	330	25	13	4
9957		KAND	05	27	1025	N14	W63	05	22.7			CRO		8	8	2
9957		RAMY	05	27	1259	N10	W66	05	22.6		BG	EAI	310	29	12	3
9957		HOLL	05	27	1345	N09	W69	05	22.4		B	CAO	280	19	9	3

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9957	31201	MWIL	05	27	1430	N10	W69	05	22.4	4	(BG)					
9957		VORO	05	27	2128	N10	W70	05	22.6			DAI	293	14	7	3
9957		LEAR	05	28	0312	N12	W75	05	22.5		BG	EAI	240	14	11	2
9957		TACH	05	28	0633	N12	W71	05	22.9			CAI	360	11	5	4
9957		KAND	05	28	0715	N17	W77	05	22.4			DAO		3	7	4
9957		RAMY	05	28	1320	N12	W84	05	22.2		B	DSO	90	7	9	2
9957		HOLL	05	28	1323	N13	W80	05	22.5		B	CAO	270	9	9	3
9957	31201	MWIL	05	28	1430	N13	W82	05	22.4	4	BG					
9964		VORO	05	22	0550	S14	E10	05	23.0			BXO	19	2	3	3
9964		VORO	05	26	0158	S15	W35	05	23.4			AXX	6	1		3
9964		VORO	05	27	2128	S14	W60	05	23.4			AXX	3	1		3
9964		KAND	05	21	1055	S16	E29	05	23.6			BXO		5	3	3
9964		RAMY	05	21	1205	S16	E28	05	23.6		B	BXO		4	3	3
9964		HOLL	05	21	1320	S15	E27	05	23.6		B	BXO	20	3	4	3
9964		LEAR	05	22	0120	S15	E20	05	23.6		B	CAO	20	2	2	2
9964		TACH	05	22	0537	S13	E14	05	23.3			BRI	6	5	3	4
9964		SVTO	05	22	0605	S15	E18	05	23.6		B	BXO	10	6	5	3
9964		RAMY	05	22	1239	S15	E13	05	23.5		B	DSO	30	3	5	3
9964		HOLL	05	22	1345	S13	E14	05	23.6		B	BXO	20	3	4	2
9964	31209	MWIL	05	22	1445	S15	E13	05	23.6	4	(B)					
9964		TACH	05	23	0617	S13	E03	05	23.5			BXO	22	2	3	4
9964		SVTO	05	23	0900	S14	E04	05	23.7		B	CSO	20	3	3	2
9964		KAND	05	23	1105	S13	E02	05	23.6			BXO		3	3	4
9964		RAMY	05	23	1257	S15	E00	05	23.5		B	CSO	20	5	3	3
9964		HOLL	05	23	1400	S14	E01	05	23.6		B	BXO	20	3	3	3
9964		LEAR	05	24	0345	S14	W05	05	23.8		B	BXO	10	3	5	3
9964		TACH	05	24	0512	S14	W09	05	23.5			BRO	7	3	3	4
9964	31209	MWIL	05	24	1430	S15	W12	05	23.7	2	(AF)					
9964		LEAR	05	27	0112	S13	W46	05	23.6		B	BXO	20	3	2	4
9964		SVTO	05	27	0544	S14	W50	05	23.5		B	BXO	10	4	4	4
9964		RAMY	05	27	1259	S13	W54	05	23.5		B	CSO	20	6	4	3
9964		HOLL	05	27	1345	S14	W54	05	23.5		B	BXO	20	3	3	3
9964	31217	MWIL	05	27	1430	S14	W56	05	23.4	4	(AP)					
9960B		VORO	05	26	0158	S11	W33	05	23.6			AXX	3	1		3
9960		RAMY	05	17	1126	N10	E86	05	23.9		B	DSO	30	5	3	4
9960		SVTO	05	18	0520	N15	E86	05	24.7		B	DSO	90	4	10	3
9960		KAND	05	18	0850	N12	E84	05	24.7			CAO		3	3	4
9960		RAMY	05	18	1147	N14	E78	05	24.4		B	DAO	90	5	10	4
9960	31205	MWIL	05	18	1430	N15	E77	05	24.4	4	(B)					
9960		HOLL	05	18	1530	N15	E79	05	24.6		B	CAO	120	4	7	3
9960		VORO	05	19	0042	N15	E73	05	24.5			HAX	172	3		3
9960		LEAR	05	19	0240	N14	E69	05	24.3		B	DAO	100	7	9	3
9960		TACH	05	19	0539	N16	E67	05	24.3			HA	200	2	2	3
9960		SVTO	05	19	0925	N14	E65	05	24.3		B	EAO	150	6	11	3
9960		KAND	05	19	1315	N12	E66	05	24.5			CAO		7	9	3
9960	31205	MWIL	05	19	1430	N15	E63	05	24.4	4	(D)					
9960		RAMY	05	19	1513	N14	E62	05	24.3		B	CAO	190	6	9	2
9960		HOLL	05	19	1630	N14	E63	05	24.4		B	DAO	140	10	8	3
9960		VORO	05	19	2148	N15	E62	05	24.6			CAI	175	3	2	3
9960		LEAR	05	20	0025	N14	E56	05	24.2		B	DAO	140	8	9	4
9960		TACH	05	20	0537	N12	E50	05	24.0			CAI	115	8	8	3
9960		KAND	05	20	0730	N12	E55	05	24.4			CAO		5	10	4
9960		SVTO	05	20	0738	N14	E57	05	24.6		B	DAO	100	5	5	3
9960		RAMY	05	20	1348	N13	E53	05	24.6		B	CAO	130	3	3	2
9960		HOLL	05	20	1441	N15	E52	05	24.5		B	DSO	190	5	4	3
9960		VORO	05	20	2253	N15	E49	05	24.7			CRI	204	2	3	3
9960		LEAR	05	21	0141	N14	E46	05	24.5		B	DAO	140	6	3	4
9960		SVTO	05	21	0615	N14	E45	05	24.7		B	CAO	110	3	4	3
9960		KAND	05	21	1055	N13	E42	05	24.6			HA		5	3	3
9960		RAMY	05	21	1205	N13	E41	05	24.6		B	CAO	190	4	3	3
9960		HOLL	05	21	1320	N14	E39	05	24.5		B	CKO	130	5	4	3
9960		LEAR	05	22	0120	N14	E33	05	24.5		B	CAO	110	5	5	2
9960		TACH	05	22	0537	N12	E23	05	24.0			CAO	308	8	6	4
9960		VORO	05	22	0550	N15	E31	05	24.6			HAX	152	2		3
9960		SVTO	05	22	0605	N15	E28	05	24.4		B	CAO	130	6	11	3
9960		RAMY	05	22	1239	N14	E24	05	24.3		B	CAO	100	5	8	3

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9960		HOLL	05	22	1345	N14	E23	05	24.3		B	CKO	130	6	8	2
9960	31205	MWIL	05	22	1445	N14	E24	05	24.4	5	(D)					
9960		VORO	05	22	2150	N15	E22	05	24.6			HAX	115	2		3
9960		TACH	05	23	0617	N12	E11	05	24.1			CAI	266	8	8	4
9960		SVTO	05	23	0900	N14	E17	05	24.6		B	CSO	110	9	5	2
9960		KAND	05	23	1105	N14	E15	05	24.6			CAO		8	9	4
9960		RAMY	05	23	1257	N14	E12	05	24.4		B	DAO	80	12	5	3
9960		HOLL	05	23	1400	N14	E09	05	24.3		B	CAO	110	9	8	3
9960		VORO	05	24	0211	N15	E05	05	24.5			CRI	110	5	5	3
9960		LEAR	05	24	0345	N14	E03	05	24.4		B	EAO	70	16	11	3
9960		TACH	05	24	0512	N12	W01	05	24.1			CAI	131	11	7	4
9960		KAND	05	24	0820	N14	E04	05	24.6			CSO		5	7	4
9960		HOLL	05	24	1304	N13	W04	05	24.2		B	CAO	70	8	9	2
9960	31205	MWIL	05	24	1430	N14	W03	05	24.4	4	(BD)					
9960		LEAR	05	25	0135	N14	W09	05	24.4		BD	EAO	90	21	13	2
9960		TACH	05	25	0514	N12	W10	05	24.5			CAI	408	28	12	5
9960		SVTO	05	25	0826	N15	W12	05	24.4		B	DAO	90	16	9	2
9960		KAND	05	25	0910	N10	W06	05	24.9			AX		1		3
9960		KAND	05	25	0910	N16	W08	05	24.8			CSO		5	3	3
9960		RAMY	05	25	1230	N15	W13	05	24.5		B	DSO	20	11	8	3
9960		HOLL	05	25	1345	N14	W13	05	24.6		B	CAO	50	9	8	3
9960	31205	MWIL	05	25	2145	N15	W19	05	24.5	4	BP					
9960		LEAR	05	26	0030	N15	W19	05	24.6		B	DSO	40	11	6	3
9960		VORO	05	26	0158	N15	W19	05	24.6			CRI	40	3	1	3
9960		SVTO	05	26	0450	N15	W21	05	24.6		B	DAO	40	3	2	3
9960		KAND	05	26	1005	N17	W21	05	24.8			CSO		2	3	2
9960		RAMY	05	26	1220	N16	W24	05	24.7		B	DSO	30	7	4	3
9960		HOLL	05	26	1500	N15	W25	05	24.7		B	CSO	20	4	3	3
9960	31205	MWIL	05	26	1500	N15	W26	05	24.6	5	(BP)					
9960		VORO	05	26	2124	N15	W29	05	24.7			BXI	17	5	3	3
9960		LEAR	05	27	0112	N15	W31	05	24.7		B	DSO	30	6	4	4
9960		SVTO	05	27	0544	N15	W34	05	24.7		B	CSO	20	3	3	4
9960		KAND	05	27	1025	N17	W34	05	24.8			CRO		3	3	2
9960		RAMY	05	27	1259	N16	W37	05	24.7		B	DSO	20	9	5	3
9960		HOLL	05	27	1345	N16	W37	05	24.8		B	CSO	30	8	6	3
9960	31205	MWIL	05	27	1430	N15	W38	05	24.7	4	(B)					
9960		VORO	05	27	2128	N15	W43	05	24.6			AXX	4	1		3
9960		LEAR	05	28	0312	N15	W45	05	24.7		A	HSX	10	1	1	2
9960		TACH	05	28	0633	N13	W45	05	24.9			AXX	20	1	1	4
9960		KAND	05	28	0715	N17	W47	05	24.7			AX		1		4
9960		RAMY	05	28	1320	N14	W51	05	24.7		A	HSX	10	1	1	2
9960		HOLL	05	28	1323	N14	W52	05	24.6		A	AXX	10	1	1	3
9960	31205	MWIL	05	28	1430	N15	W51	05	24.7	4	(AP)					
9960		VORO	05	29	0007	N15	W57	05	24.7			AXX	10	1		2
9960		LEAR	05	29	0228	N15	W58	05	24.7		A	AXX		1		3
9960		SVTO	05	29	0630	N14	W58	05	24.9			AXX		1		3
9960	31205	MWIL	05	29	1445	N15	W65	05	24.7	3	(AP)					
9960A		KAND	05	27	1025	S37	W33	05	24.8			BXO		2		2
9961B		VORO	05	26	0158	N25	W17	05	24.8			BXO	5	2	4	3
9962	31207	MWIL	05	19	1430	N16	E80	05	25.7	4	(AP)					
9962		LEAR	05	20	0025	N14	E71	05	25.4		B	BXO	20	2	2	4
9962		TACH	05	20	0537	N16	E63	05	25.0			DAO	50	3	12	3
9962		KAND	05	20	0730	N12	E69	05	25.5			HS		1	1	4
9962		SVTO	05	20	0738	N15	E68	05	25.5		A	HRX	20	1	1	3
9962		RAMY	05	20	1348	N14	E65	05	25.5		A	HSX	20	1	1	2
9962		HOLL	05	20	1441	N16	E65	05	25.5		A	HSX	20	1	1	3
9962		LEAR	05	21	0141	N15	E58	05	25.5		A	HSX	20	1	1	4
9962		SVTO	05	21	0615	N14	E56	05	25.5		A	HAX	20	1	1	3
9962		KAND	05	21	1055	N13	E53	05	25.4			HA		2	1	3
9962		RAMY	05	21	1205	N14	E53	05	25.5		A	HSX	20	1	1	3
9962		HOLL	05	21	1320	N15	E52	05	25.5		A	HSX	30	1	1	3
9962		LEAR	05	22	0120	N14	E47	05	25.6		A	HSX	40	1	2	2
9962		TACH	05	22	0537	N15	E38	05	25.1			AXX	30	1	1	4
9962		SVTO	05	22	0605	N15	E43	05	25.5		A	HSX	30	2	2	3
9962		RAMY	05	22	1239	N15	E39	05	25.5		A	HSX	20	1	1	3
9962		HOLL	05	22	1345	N16	E38	05	25.4		A	HSX	30	1	1	2

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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
9962	31207	MWIL	05	22	1445	N15	E37	05	25.4	5	(AP)					
9962		TACH	05	23	0617	N14	E25	05	25.1			HSX	150	1	1	4
9962		SVTO	05	23	0900	N15	E31	05	25.7		B	CSO	20	3	7	2
9962		KAND	05	23	1105	N14	E29	05	25.6			CSO		4	7	4
9962		RAMY	05	23	1257	N15	E25	05	25.4		A	HSX	20	1	2	3
9962		HOLL	05	23	1400	N15	E26	05	25.5		B	CSO	40	6	5	3
9962		LEAR	05	24	0345	N15	E20	05	25.7		B	CAO	60	4	7	3
9962		TACH	05	24	0512	N15	E10	05	25.0			CSO	112	4	7	4
9962		KAND	05	24	0820	N14	E15	05	25.5			HA		1	1	4
9962		HOLL	05	24	1304	N15	E12	05	25.4		A	HSX	20	1	1	2
9962	31207	MWIL	05	24	1430	N15	E11	05	25.4	5	(BP)					
9962		LEAR	05	25	0135	N15	E07	05	25.6		B	CSO	40	3	4	2
9962		TACH	05	25	0514	N13	E01	05	25.3			AXX	20	1	1	5
9962		SVTO	05	25	0826	N17	E00	05	25.3		A	HSX	30	1	2	2
9962		KAND	05	25	0910	N16	E02	05	25.5			HS		1	1	3
9962		RAMY	05	25	1230	N16	W02	05	25.4		A	HSX	20	1	1	3
9962		HOLL	05	25	1345	N15	W03	05	25.3		A	HSX	40	2	2	3
9962	31207	MWIL	05	25	2145	N16	W07	05	25.4	4	AP					
9962		LEAR	05	26	0030	N16	W08	05	25.4		A	HSX	40	1	2	3
9962		SVTO	05	26	0450	N15	W12	05	25.3		A	HSX	30	1	2	3
9962		KAND	05	26	1005	N17	W12	05	25.5			HS		2	1	2
9962		RAMY	05	26	1220	N16	W15	05	25.4		A	HSX	20	1	1	3
9962		HOLL	05	26	1500	N15	W18	05	25.3		A	HAX	40	1	2	3
9962	31207	MWIL	05	26	1500	N16	W17	05	25.3	5	(AP)					
9962		LEAR	05	27	0112	N16	W22	05	25.4		A	HSX	30	1	2	4
9962		SVTO	05	27	0544	N16	W25	05	25.3		A	HSX	20	1	1	4
9962		KAND	05	27	1025	N17	W25	05	25.5			HR		1		2
9962		RAMY	05	27	1259	N16	W29	05	25.3		A	HSX	20	1	2	3
9962		HOLL	05	27	1345	N15	W29	05	25.4		A	HSX	20	1	1	3
9962	31207	MWIL	05	27	1430	N16	W29	05	25.4	5	(AP)					
9962		LEAR	05	28	0312	N16	W36	05	25.4		A	HSX	20	1	1	2
9962		TACH	05	28	0633	N13	W36	05	25.5			HSX	50	1	1	4
9962		KAND	05	28	0715	N18	W37	05	25.5			HR		1		4
9962		RAMY	05	28	1320	N15	W42	05	25.4		A	HSX	10	1	1	2
9962		HOLL	05	28	1323	N15	W43	05	25.3		A	HSX	20	1	1	3
9962	31207	MWIL	05	28	1430	N16	W42	05	25.4	5	(AP)					
9962		LEAR	05	29	0228	N16	W49	05	25.4		A	HSX	10	1	1	3
9962		TACH	05	29	0554	N14	W49	05	25.5			AR	12	2	1	4
9962		SVTO	05	29	0630	N15	W54	05	25.2		A	HSX	10	1	1	3
9962		KAND	05	29	0710	N19	W51	05	25.4			AX		1		3
9962		RAMY	05	29	1420	N16	W56	05	25.4		A	HSX	20	1	1	3
9962	31207	MWIL	05	29	1445	N15	W55	05	25.4	4	(AP)					
9962		HOLL	05	29	1500	N16	W58	05	25.2		A	AXX	10	1	1	3
9961		SVTO	05	19	0925	S22	E82	05	25.7		B	CSO	60	3	6	3
9961		KAND	05	19	1315	S23	E78	05	25.6			CRO		3	2	3
9961	31206	MWIL	05	19	1430	S21	E78	05	25.6	4	(B)					
9961		RAMY	05	19	1513	S22	E82	05	25.9		B	EAO	150	5	15	2
9961		HOLL	05	19	1630	S23	E80	05	25.8		B	DAO	120	7	8	3
9961		LEAR	05	20	0025	S22	E75	05	25.8		BG	EAI	240	16	12	4
9961		TA6H	05	20	0537	S22	E67	05	25.4			DAI	188	14	11	3
9961		KAND	05	20	0730	S21	E70	05	25.7			DAO		9	10	4
9961		SVTO	05	20	0738	S22	E70	05	25.7		B	EAO	240	6	14	3
9961		RAMY	05	20	1348	S23	E66	05	25.7		B	EAO	450	6	14	2
9961		HOLL	05	20	1441	S22	E67	05	25.8		BG	EAC	530	19	12	3
9961		LEAR	05	21	0141	S22	E60	05	25.7		BG	EAI	350	18	14	4
9961		SVTO	05	21	0615	S24	E58	05	25.7		B	EAI	290	15	14	3
9961		KAND	05	21	1055	S23	E54	05	25.6			EAO		18	13	3
9961		RAMY	05	21	1205	S23	E54	05	25.7		B	EAI	320	18	13	3
9961		HOLL	05	21	1320	S22	E52	05	25.5		BG	EAC	350	14	11	3
9961		LEAR	05	22	0120	S23	E46	05	25.6		BG	DAI	220	24	11	2
9961		TACH	05	22	0537	S20	E40	05	25.3			DAI	435	20	12	4
9961		SVTO	05	22	0605	S22	E43	05	25.5		BG	EAI	290	26	13	3
9961		RAMY	05	22	1239	S21	E41	05	25.7		B	EAI	360	17	14	3
9961		HOLL	05	22	1345	S22	E39	05	25.6		BG	EKC	460	15	11	2
9961	31206	MWIL	05	22	1445	S21	E39	05	25.6	5	(BG)					
9961		TACH	05	23	0617	S21	E28	05	25.4			EAI	560	14	11	4
9961		SVTO	05	23	0900	S23	E30	05	25.7		BG	EAI	250	32	15	2
9961		KAND	05	23	1105	S21	E28	05	25.6			EAC		21	14	4

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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
9961		RAMY	05	23	1257	S21	E26	05	25.5		BG	EAI	250	26	14	3
9961		HOLL	05	23	1400	S23	E28	05	25.7		BG	EKC	350	24	14	3
9961		LEAR	05	24	0345	S22	E20	05	25.7		BGD	EAI	300	24	15	3
9961		TACH	05	24	0512	S20	E16	05	25.4			CAI	525	16	13	4
9961		KAND	05	24	0820	S21	E16	05	25.6			ESO		8	14	4
9961		HOLL	05	24	1304	S23	E15	05	25.7		BG	EAC	200	21	14	2
9961	31206	MWIL	05	24	1430	S22	E13	05	25.6	5	(D)					
9961		LEAR	05	25	0135	S22	E08	05	25.7		BGD	EAI	320	29	15	2
9961		TACH	05	25	0514	S20	E04	05	25.5			CAI	140	16	11	5
9961		SVTO	05	25	0826	S21	E03	05	25.6		BG	EAI	300	26	15	2
9961		KAND	05	25	0910	S20	E01	05	25.4			CAO		27	15	3
9961		RAMY	05	25	1230	S21	E01	05	25.6		BG	ESI	250	23	15	3
9961		HOLL	05	25	1345	S21	E01	05	25.6		BG	EAI	260	21	15	3
9961	31206	MWIL	05	25	2145	S21	W05	05	25.5	5	BG					
9961		LEAR	05	26	0030	S21	W05	05	25.6		BGD	EAI	250	30	14	3
9961		SVTO	05	26	0450	S22	W08	05	25.6		BG	EAI	270	14	15	3
9961		KAND	05	26	1005	S19	W12	05	25.5			ESO		9	13	2
9961		RAMY	05	26	1220	S21	W11	05	25.7		BG	EAI	230	26	14	3
9961		HOLL	05	26	1500	S21	W13	05	25.6		B	EAI	220	26	14	3
9961	31206	MWIL	05	26	1500	S21	W14	05	25.5	5	(BG)					
9961		LEAR	05	27	0112	S21	W18	05	25.7		BG	EAI	220	24	14	4
9961		SVTO	05	27	0544	S22	W21	05	25.6		BG	EAO	160	17	14	4
9961		KAND	05	27	1025	S20	W25	05	25.5			CSO		9	13	2
9961		RAMY	05	27	1259	S21	W25	05	25.6		BG	EAI	150	20	15	3
9961		HOLL	05	27	1345	S22	W25	05	25.6		B	CAO	190	14	14	3
9961	31206	MWIL	05	27	1430	S22	W26	05	25.6	5	(BP)					
9961		LEAR	05	28	0312	S21	W32	05	25.7		BG	EAO	130	11	12	2
9961		TACH	05	28	0633	S22	W34	05	25.6			CAO	313	3	10	4
9961		KAND	05	28	0715	S19	W38	05	25.4			CSO		3	12	4
9961		RAMY	05	28	1320	S22	W39	05	25.5		B	ESO	100	4	11	2
9961		HOLL	05	28	1323	S23	W39	05	25.5		BG	CAO	130	5	12	3
9961	31206	MWIL	05	28	1430	S22	W42	05	25.4	5	(BG)					
9961		LEAR	05	29	0228	S21	W46	05	25.6		BG	EAO	120	10	12	3
9961		TACH	05	29	0554	S22	W47	05	25.6			CSO	202	3	10	4
9961		SVTO	05	29	0630	S22	W48	05	25.6		BG	EAO	120	8	11	3
9961		KAND	05	29	0710	S20	W51	05	25.4			CSO		3	11	3
9961		RAMY	05	29	1420	S21	W58	05	25.1		A	HSX	120	2	2	3
9961	31206	MWIL	05	29	1445	S22	W57	05	25.2	5	(AP)					
9961		HOLL	05	29	1500	S21	W59	05	25.1		A	HAX	70	2	2	3
9961		LEAR	05	30	0040	S20	W65	05	25.0		B	CSO	40	2	2	2
9961		SVTO	05	30	0530	S22	W66	05	25.1		A	HSX	140	1	4	3
9961		TACH	05	30	0553	S22	W62	05	25.5			HSX	200	1	2	4
9961		KAND	05	30	0840	S18	W68	05	25.2			HA		1	2	4
9961		HOLL	05	30	1400	S22	W72	05	25.0		A	HAX	120	1	2	3
9961	31206	MWIL	05	30	1430	S22	W70	05	25.2	4	(AP)					
9961		LEAR	05	31	0135	S21	W78	05	25.1		A	HAX	120	1	2	2
9961		SVTO	05	31	0454	S22	W78	05	25.2		A	HSX	60	1	3	3
9961		RAMY	05	31	1344	S20	W85	05	25.1		A	HSX	60	1	5	3
9961	31206	MWIL	05	31	1445	S22	W84	05	25.1	4	(AP)					
9962		VORO	05	20	2253	N15	E59	05	25.4			HRX	31	1		3
9962		VORO	05	22	0550	N15	E42	05	25.4			HRX	24	1		3
9962		VORO	05	22	2150	N15	E34	05	25.5			HRX	22	1		3
9962		VORO	05	24	0211	N15	E18	05	25.4			HAX	53	1		3
9962		VORO	05	26	0158	N15	W09	05	25.4			HRX	27	1		3
9962		VORO	05	26	2124	N15	W20	05	25.4			HAX	39	2		3
9962		VORO	05	27	2128	N15	W33	05	25.4			HRX	22	1		3
9962		VORO	05	29	0007	N15	W48	05	25.4			AXX	10	1		2
9961		VORO	05	19	0042	S22	E84	05	25.5			CRI	46	3	9	3
9961		VORO	05	20	2253	S21	E61	05	25.6			DAI	305	6	10	3
9961		VORO	05	22	0550	S22	E45	05	25.7			DAI	363	15	10	3
9961		VORO	05	22	2150	S22	E36	05	25.7			DAI	435	6	11	3
9961		VORO	05	24	0211	S22	E21	05	25.7			DAI	399	11	13	3
9961		VORO	05	26	0158	S22	W06	05	25.6			DAI	362	11	13	3
9961		VORO	05	26	2124	S22	W16	05	25.7			DAI	203	25	13	3
9961		VORO	05	27	2128	S22	W29	05	25.7			CAO	176	8	13	3
9961		VORO	05	29	0007	S23	W45	05	25.5			CAI	138	5	10	2
9961		VORO	05	30	0416	S22	W65	05	25.2			HAX	108	1		2

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9961		VORO	05	30	2200	S22	W75	05	25.1			HAX	76	1		3
9961A	31218	MWIL	05	28	1430	S13	W38	05	25.7	4	(AP)					
9966A		KAND	05	29	0710	S19	W39	05	26.3			AX		1		3
9966		TACH	05	22	0537	N11	E53	05	26.2			AXX	20	1	1	4
9966		HOLL	05	22	1345	N09	E53	05	26.5		A	AXX	20	1	1	2
9966	31211	MWIL	05	22	1445	N10	E52	05	26.5	4	(AP)					
9966		TACH	05	23	0617	N08	E38	05	26.1			AR	3	3	2	4
9966		SVTO	05	23	0900	N09	E41	05	26.4		A	AXX	10	2	2	2
9966		KAND	05	23	1105	N08	E39	05	26.4			AX		1		4
9966		HOLL	05	23	1400	N10	E39	05	26.5		B	BXO	30	4	4	3
9966		LEAR	05	24	0345	N09	E31	05	26.5		B	CSO	20	4	4	3
9966		TACH	05	24	0512	N08	E24	05	26.0			AXX	25	1	1	4
9966		KAND	05	24	0820	N09	E27	05	26.4			AX		1		4
9966		HOLL	05	24	1304	N10	E26	05	26.5		B	BXO	10	2	4	2
9966		LEAR	05	25	0135	N09	E17	05	26.3		B	CSO	10	3	3	2
9966		TACH	05	25	0514	N08	E12	05	26.1			AXX	5	1	1	5
9966		SVTO	05	25	0826	N11	E11	05	26.2		A	AXX		1		2
9966		KAND	05	25	0910	N11	E17	05	26.7			BXO		2	2	3
9966		HOLL	05	25	1345	N10	E09	05	26.2		A	AXX		1	1	3
9966		LEAR	05	26	0030	N11	E05	05	26.4		B	CSO	20	6	3	3
9966		KAND	05	26	1005	N12	E01	05	26.5			BXO		2	2	2
9966		HOLL	05	26	1500	N11	W02	05	26.5		B	CSO	20	4	2	3
9966		LEAR	05	27	0112	N11	W08	05	26.4		B	CSO	20	4	3	4
9966		KAND	05	27	1025	N11	W13	05	26.4			BXO		6	3	2
9966		HOLL	05	27	1345	N11	W17	05	26.3		A	AXX	20	7	2	3
9966		LEAR	05	28	0312	N11	W24	05	26.3		B	CAO	30	3	1	2
9966		TACH	05	28	0633	N08	W24	05	26.5			AXX	15	1	1	4
9966		KAND	05	28	0715	N13	W25	05	26.4			AX		1		4
9966		HOLL	05	28	1323	N11	W31	05	26.2		A	HSX	10	1	1	3
9966		LEAR	05	29	0228	N11	W38	05	26.2		A	HSX	10	1	1	3
9966		SVTO	05	29	0630	N08	W41	05	26.2		A	HSX	10	1	1	3
9966		KAND	05	29	0710	N13	W40	05	26.3			BXO		2	1	3
9966		VORO	05	22	0550	N10	E58	05	26.6			AXX	13	1		3
9966		VORO	05	22	2150	N10	E48	05	26.5			AXX	10	1		3
9966		VORO	05	24	0211	N03	E34	05	26.6			AXX	22	2		3
9966		VORO	05	26	0158	N11	E05	05	26.4			AXX	27	1		3
9966		VORO	05	26	2124	N11	W04	05	26.6			BXI	10	7	6	3
9966		VORO	05	27	2128	N11	W21	05	26.3			AXX	15	3		3
9966		VORO	05	29	0007	N11	W37	05	26.2			AXX	4	1		2
9963		KAND	05	20	0730	N15	E85	05	26.7			HA		1	2	4
9963		KAND	05	20	0730	N15	E85	05	26.7			HA		1	2	4
9963		SVTO	05	20	0738	N17	E85	05	26.8		A	HAX	120	1	4	3
9963		RAMY	05	20	1348	N16	E80	05	26.6		A	HSX	20	1	1	2
9963		HOLL	05	20	1441	N18	E79	05	26.6		A	HAX	180	2	2	3
9963		VORO	05	20	2253	N17	E73	05	26.5			HAX	336	1		3
9963		LEAR	05	21	0141	N17	E71	05	26.5		A	HAX	150	3	3	4
9963		SVTO	05	21	0615	N16	E70	05	26.6		A	HAX	200	1	4	3
9963		KAND	05	21	1055	N15	E68	05	26.6			HA		3	5	3
9963		KAND	05	21	1055	N15	E68	05	26.6			HA		3	5	3
9963		RAMY	05	21	1205	N16	E66	05	26.5		A	HKX	290	2	3	3
9963		HOLL	05	21	1320	N18	E65	05	26.5		A	HKX	240	3	4	3
9963		LEAR	05	22	0120	N17	E58	05	26.5		A	HKX	240	2	4	2
9963		TACH	05	22	0537	N17	E53	05	26.3			CAI	408	8	5	4
9963		VORO	05	22	0550	N17	E60	05	26.8			CKI	360	1	9	3
9963		SVTO	05	22	0605	N14	E59	05	26.7		B	CHO	350	7	12	3
9963		RAMY	05	22	1239	N17	E56	05	26.8		B	DHO	390	9	11	3
9963		HOLL	05	22	1345	N17	E53	05	26.6		B	DAO	350	12	11	2
9963	31210	MWIL	05	22	1445	N17	E52	05	26.6	5	(BP)					
9963		VORO	05	22	2150	N17	E51	05	26.8			CSI	549	5	8	3
9963		TACH	05	23	0617	N13	E42	05	26.4			CSI	934	5	8	4
9963		SVTO	05	23	0900	N14	E46	05	26.8		B	DSO	350	10	10	2
9963		KAND	05	23	1105	N15	E43	05	26.7			DHO		4	8	4
9963		KAND	05	23	1105	N15	E43	05	26.7			DHO		4	8	4
9963		RAMY	05	23	1257	N13	E40	05	26.5		B	DAO	420	10	10	3
9963		HOLL	05	23	1400	N16	E42	05	26.8		B	DKO	460	11	9	3

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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
9963		VORO	05	24	0211	N14	E34	05	26.7			CSI	493	9	4	3
9963		LEAR	05	24	0345	N14	E35	05	26.8		B	DKO	430	14	10	3
9963		TACH	05	24	0512	N12	E30	05	26.5			DAI	991	12	6	4
9963		KAND	05	24	0820	N13	E31	05	26.7			DSO		7	7	4
9963		KAND	05	24	0820	N13	E31	05	26.7			DSO		7	7	4
9963		HOLL	05	24	1304	N16	E28	05	26.7		B	DKI	250	18	7	2
9963	31210	MWIL	05	24	1430	N15	E27	05	26.6	5	(BG)					
9963		LEAR	05	25	0135	N14	E21	05	26.6		B	DKI	350	21	9	2
9963		TACH	05	25	0514	N12	E17	05	26.5			DAI	960	28	4	5
9963		SVTO	05	25	0826	N15	E17	05	26.6		B	DHO	500	29	10	2
9963		KAND	05	25	0910	N15	E19	05	26.8			DHO		18	6	3
9963		KAND	05	25	0910	N15	E19	05	26.8			DHO		18	6	3
9963		RAMY	05	25	1230	N14	E15	05	26.6		B	EAO	260	21	12	3
9963		HOLL	05	25	1345	N13	E15	05	26.7		B	EKI	440	36	11	3
9963	31210	MWIL	05	25	2145	N15	E10	05	26.7	5	BG					
9963		LEAR	05	26	0030	N15	E10	05	26.8		B	DKI	380	32	9	3
9963		VORO	05	26	0158	N15	E08	05	26.7			CSI	530	19	4	3
9963		SVTO	05	26	0450	N14	E07	05	26.7		BG	EHO	440	27	11	3
9963		KAND	05	26	1005	N16	E05	05	26.8			DKO		4	6	2
9963		KAND	05	26	1005	N16	E05	05	26.8			DKO		4	6	2
9963		RAMY	05	26	1220	N14	E02	05	26.7		B	EAI	420	32	11	3
9963	31210	MWIL	05	26	1500	N15	E01	05	26.7	5	(BP)					
9963		HOLL	05	26	1500	N15	E02	05	26.8		BG	EKC	400	24	13	3
9963		VORO	05	26	2124	N14	W02	05	26.7			DKI	395	26	4	3
9963		LEAR	05	27	0112	N15	W03	05	26.8		BG	DHI	460	16	9	4
9963		SVTO	05	27	0544	N14	W08	05	26.6		BG	ESI	320	21	12	4
9963		KAND	05	27	1025	N17	W08	05	26.8			DKO		11	6	2
9963		KAND	05	27	1025	N17	W08	05	26.8			DKO		11	6	2
9963		RAMY	05	27	1259	N14	W11	05	26.7		BG	EAI	400	20	11	3
9963		HOLL	05	27	1345	N15	W12	05	26.7		BG	DKI	390	17	8	3
9963	31210	MWIL	05	27	1430	N15	W12	05	26.7	5	(BG)					
9963		VORO	05	27	2128	N16	W15	05	26.7			DKI	352	15	4	3
9963		LEAR	05	28	0312	N15	W19	05	26.7		BG	DKI	310	16	8	2
9963		TACH	05	28	0633	N12	W18	05	26.9			CAI	436	12	4	4
9963		KAND	05	28	0715	N18	W20	05	26.8			DHI		11	7	4
9963		KAND	05	28	0715	N18	W20	05	26.8			DHI		11	7	4
9963		RAMY	05	28	1320	N13	W26	05	26.6		BG	EAO	260	11	11	2
9963		HOLL	05	28	1323	N14	W24	05	26.7		BG	DKI	320	33	8	3
9963	31210	MWIL	05	28	1430	N15	W26	05	26.6	5	(BG)					
9963		VORO	05	29	0007	N16	W32	05	26.6			HKX	322	24		2
9963		LEAR	05	29	0228	N15	W32	05	26.7		BG	DKI	300	21	8	3
9963		TACH	05	29	0554	N12	W32	05	26.8			CAI	420	17	4	4
9963		SVTO	05	29	0630	N16	W34	05	26.7		BG	DKI	340	22	8	3
9963		KAND	05	29	0710	N18	W34	05	26.7			CKO		12	7	3
9963		KAND	05	29	0710	N18	W34	05	26.7			CKO		12	7	3
9963		RAMY	05	29	1420	N16	W38	05	26.7		B	DAO	340	11	5	3
9963	31210	MWIL	05	29	1445	N16	W39	05	26.6	6	(BP)					
9963		HOLL	05	29	1500	N15	W40	05	26.6		BG	DKC	420	10	5	3
9963		LEAR	05	30	0040	N17	W45	05	26.6		BG	DSO	180	12	5	2
9963		VORO	05	30	0416	N16	W47	05	26.6			HKX	338	7		2
9963		SVTO	05	30	0530	N16	W48	05	26.6		B	CKO	330	12	6	3
9963		TACH	05	30	0553	N12	W43	05	27.0			CAI	354	14	5	4
9963		KAND	05	30	0840	N20	W48	05	26.7			DKO		5	5	4
9963		KAND	05	30	0840	N20	W48	05	26.7			DKO		5	5	4
9963		HOLL	05	30	1400	N15	W53	05	26.6		BG	DKC	250	13	6	3
9963	31210	MWIL	05	30	1430	N16	W52	05	26.7	5	(BP)					
9963		VORO	05	30	2200	N17	W57	05	26.6			HKX	367	14		3
9963		LEAR	05	31	0135	N16	W56	05	26.8		B	DKI	300	11	7	2
9963		SVTO	05	31	0454	N16	W60	05	26.6		B	CAO	240	3	6	3
9963		RAMY	05	31	1344	N16	W64	05	26.7		B	CAO	230	5	9	3
9963	31210	MWIL	05	31	1445	N16	W66	05	26.6	5	(BP)					
9963		LEAR	06	01	0050	N17	W73	05	26.6		B	CAO	240	5	5	2
9963		SVTO	06	01	0510	N17	W74	05	26.7		A	HSX	300	1	4	3
9963		KAND	06	01	1145	N20	W76	05	26.8			HA		1	3	3
9963		RAMY	06	01	1322	N18	W78	05	26.7		A	HAX	190	1	3	4
9963		HOLL	06	01	1409	N16	W78	05	26.8		A	HAX	180	1	2	4
9963	31210	MWIL	06	01	1445	N16	W79	05	26.7	5	(AP)					
9963		VORO	06	01	2122	N17	W84	05	26.6			HAX	260	1		3
9968		TACH	05	24	0512	S13	E34	05	26.8			AR	4	2	2	4

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9968		KAND	05	24	0820	S14	E35	05	27.0			BXO		2	2	4
9968		HOLL	05	24	1304	S13	E32	05	26.9		B	CSO	20	4	3	2
9968	31213	MWIL	05	24	1430	S15	E31	05	26.9	4	(B)					
9968		LEAR	05	25	0135	S14	E26	05	27.0		B	CSO	20	3	4	2
9968		TACH	05	25	0514	S13	E19	05	26.6			HA	80	2	1	5
9968		SVTO	05	25	0826	S13	E22	05	27.0		B	CRO	10	2	3	2
9968		KAND	05	25	0910	S14	E19	05	26.8			AX		1		3
9968		RAMY	05	25	1230	S14	E18	05	26.9		A	HRX	10	1	1	3
9968		HOLL	05	25	1345	S15	E18	05	26.9		B	BXO	10	2	3	3
9968	31213	MWIL	05	25	2145	S13	E13	05	26.9	3	AP					
9968		LEAR	05	26	0030	S14	E12	05	26.9		A	AXX		1		3
9965		HOLL	05	21	1320	S10	E79	05	27.5		A	AXX	10	1	1	3
9965		LEAR	05	22	0120	S11	E75	05	27.7		B	CSO	60	3	4	2
9965		TACH	05	22	0537	S08	E67	05	27.2			HR	110	3	2	4
9965		VORO	05	22	0550	S09	E71	05	27.6			HRX	60	1		3
9965		SVTO	05	22	0605	S10	E72	05	27.7		B	CSO	80	5	7	3
9965		RAMY	05	22	1239	S08	E67	05	27.5		B	CAO	70	3	3	3
9965		HOLL	05	22	1345	S12	E68	05	27.7		B	CAO	120	4	3	2
9965	31212	MWIL	05	22	1445	S09	E68	05	27.7	5	(B)					
9965		VORO	05	22	2150	S08	E61	05	27.5			HRX	101	1		3
9965		TACH	05	23	0617	S10	E55	05	27.4			CSO	102	3	2	4
9965		SVTO	05	23	0900	S11	E57	05	27.7		B	CSO	40	9	8	2
9965		KAND	05	23	1105	S11	E55	05	27.6			CSO		4	6	4
9965		KAND	05	23	1105	S11	E55	05	27.6			CSO		4	6	4
9965		RAMY	05	23	1257	S10	E53	05	27.5		B	CAO	40	6	8	3
9965		HOLL	05	23	1400	S10	E53	05	27.6		B	CSO	80	5	7	3
9965		VORO	05	24	0211	S09	E44	05	27.4			HRX	40	2		3
9965		LEAR	05	24	0345	S10	E48	05	27.8		B	CSO	30	3	9	3
9965		TACH	05	24	0512	S08	E39	05	27.1			HR	71	2	2	4
9965		KAND	05	24	0820	S11	E41	05	27.4			HS		2	2	4
9965		KAND	05	24	0820	S11	E41	05	27.4			HS		2	2	4
9965		HOLL	05	24	1304	S09	E39	05	27.5		B	CSO	40	3	3	2
9965	31212	MWIL	05	24	1430	S08	E37	05	27.4	4	(AP)					
9965		LEAR	05	25	0135	S10	E34	05	27.6		B	CSO	30	4	7	2
9965		TACH	05	25	0514	S08	E25	05	27.1			HSX	100	2	1	5
9965		SVTO	05	25	0826	S08	E27	05	27.4		A	HSX	30	2	2	2
9965		KAND	05	25	0910	S09	E26	05	27.3			HS		2	2	3
9965		KAND	05	25	0910	S09	E26	05	27.3			HS		2	2	3
9965		RAMY	05	25	1230	S08	E24	05	27.3		A	HSX	30	2	2	3
9965		HOLL	05	25	1345	S08	E23	05	27.3		A	HAX	60	2	2	3
9965	31212	MWIL	05	25	2145	S08	E19	05	27.3	5	AP					
9965		LEAR	05	26	0030	S08	E18	05	27.4		A	HAX	40	2	2	3
9965		VORO	05	26	0158	S08	E17	05	27.3			HAX	39	2		3
9965		SVTO	05	26	0450	S08	E15	05	27.3		A	HSX	40	2	2	3
9965		KAND	05	26	1005	S07	E13	05	27.4			HS		2	2	2
9965		KAND	05	26	1005	S07	E13	05	27.4			HS		2	2	2
9965		RAMY	05	26	1220	S09	E11	05	27.3		A	HSX	40	2	2	3
9965	31212	MWIL	05	26	1500	S07	E09	05	27.3	5	(AP)					
9965		VORO	05	26	2124	S08	E06	05	27.3			HAX	59	2		3
9965		LEAR	05	27	0112	S08	E03	05	27.3		A	HAX	40	2	2	4
9965		SVTO	05	27	0544	S09	E05	05	27.6		B	CSO	50	4	10	4
9965		KAND	05	27	1025	S07	W01	05	27.3			HS		2	2	2
9965		KAND	05	27	1025	S07	W01	05	27.3			HS		2	2	2
9965		RAMY	05	27	1259	S08	W02	05	27.4		B	CAO	40	5	4	3
9965		HOLL	05	27	1345	S07	W03	05	27.3		A	HAX	40	3	2	3
9965	31212	MWIL	05	27	1430	S08	W03	05	27.4	4	(BP)					
9965		VORO	05	27	2128	S08	W08	05	27.3			HAX	61	2		3
9965		LEAR	05	28	0312	S08	W10	05	27.4		B	CAO	40	3	3	2
9965		TACH	05	28	0633	S08	W13	05	27.3			HA	70	2	1	4
9965		KAND	05	28	0715	S06	W13	05	27.3			HA		2	2	4
9965		KAND	05	28	0715	S06	W13	05	27.3			HA		2	2	4
9965		RAMY	05	28	1320	S08	W18	05	27.2		A	HSX	50	2	2	2
9965		HOLL	05	28	1323	S07	W17	05	27.3		B	CAO	60	3	3	3
9965	31212	MWIL	05	28	1430	S08	W18	05	27.2	4	(BP)					
9965		VORO	05	29	0007	S08	W23	05	27.3			HSX	56	1		2
9965		LEAR	05	29	0228	S08	W24	05	27.3		A	HSX	50	1	1	3
9965		TACH	05	29	0554	S08	W26	05	27.3			HSX	120	1	1	4
9965		SVTO	05	29	0630	S08	W26	05	27.3		A	HSX	60	1	10	3

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9965		KAND	05	29	0710	S06	W27	05	27.3			HS		1	2	3
9965		KAND	05	29	0710	S06	W27	05	27.3			HS		1	2	3
9965		KAND	05	29	0710	S07	W18	05	27.9			AX		1		3
9965		RAMY	05	29	1420	S07	W27	05	27.6		B	CSO	50	5	8	3
9965	31224	MWIL	05	29	1445	S07	W24	05	27.8	4	(AP)					
9965	31212	MWIL	05	29	1445	S08	W30	05	27.4	5	(BP)					
9965		HOLL	05	29	1500	S08	W31	05	27.3		B	CSO	40	4	3	3
9965		LEAR	05	30	0040	S08	W36	05	27.3		B	CSO	20	5	2	2
9965		VORO	05	30	0416	S08	W38	05	27.3			CAO	70	4	2	2
9965		SVTO	05	30	0530	S09	W39	05	27.3		B	CSO	40	5	4	3
9965		TACH	05	30	0553	S09	W36	05	27.5			CSI	104	5	3	4
9965		KAND	05	30	0840	S05	W40	05	27.4			CSO		3	3	4
9965		KAND	05	30	0840	S05	W40	05	27.4			CSO		3	3	4
9965		HOLL	05	30	1400	S09	W45	05	27.2		A	HAX	50	4	3	3
9965	31212	MWIL	05	30	1430	S08	W44	05	27.3	5	(AP)					
9965		VORO	05	30	2200	S07	W48	05	27.3			CAO	37	3	2	3
9965		LEAR	05	31	0135	S06	W50	05	27.3		B	CSO	40	2	3	2
9965		SVTO	05	31	0454	S07	W52	05	27.3		B	CSO	30	2	3	3
9965		RAMY	05	31	1344	S07	W55	05	27.4		B	CSO	30	4	3	3
9965	31212	MWIL	05	31	1445	S08	W57	05	27.3	4	(B)					
9965		LEAR	06	01	0050	S06	W64	05	27.3		B	CSO	30	2	1	2
9965		SVTO	06	01	0510	S07	W66	05	27.4		A	HSX	30	2	1	3
9965		TACH	06	01	0538	S08	W66	05	27.4			AXX	20	1	1	3
9965		KAND	06	01	1145	S05	W70	05	27.3			AX		1		3
9965		RAMY	06	01	1322	S06	W70	05	27.4		A	HSX	10	1	1	4
9965		HOLL	06	01	1409	S07	W69	05	27.5		A	HSX	60	1	1	4
9965	31212	MWIL	06	01	1445	S08	W72	05	27.3	4	(AP)					
9967		VORO	05	24	0211	N14	E46	05	27.6			AXX	22	1		3
9967		VORO	05	26	0158	N13	E16	05	27.3			BXI	42	4	4	3
9967		VORO	05	26	2124	N13	E05	05	27.3			BXO	11	6	5	3
9967		VORO	05	27	2128	N11	W10	05	27.1			BXI	10	3	4	3
9967		VORO	05	30	0416	N12	W42	05	27.0			XX	9	1		2
9967		VORO	05	30	2200	N13	W50	05	27.1			AXX	9	1		3
9967		TACH	06	01	0538	N15	W73	05	26.8			HSX	250	1	4	3
9967		SVTO	05	23	0900	N13	E55	05	27.5		A	AXX		1		2
9967		KAND	05	23	1105	N12	E53	05	27.4			AX		1		4
9967		RAMY	05	23	1257	N13	E51	05	27.4		B	CSO	20	2	3	3
9967		HOLL	05	23	1400	N14	E51	05	27.4		A	AXX	20	1	1	3
9967		LEAR	05	24	0345	N13	E44	05	27.5		B	CSO	30	5	5	3
9967		TACH	05	24	0512	N12	E38	05	27.1			CAO	45	4	4	4
9967		KAND	05	24	0820	N12	E42	05	27.5			CSO		2	1	4
9967		HOLL	05	24	1304	N13	E38	05	27.4		B	CSO	20	4	5	2
9967	31214	MWIL	05	24	1430	N13	E37	05	27.4	4	(BF)					
9967		LEAR	05	25	0135	N13	E32	05	27.5		B	DSO	30	4	6	2
9967		TACH	05	25	0514	N12	E25	05	27.1			CSO	36	2	5	5
9967		SVTO	05	25	0826	N13	E23	05	27.1		A	HSX	10	1	1	2
9967		KAND	05	25	0910	N11	E24	05	27.2			AX		1		3
9967		RAMY	05	25	1230	N13	E22	05	27.2		A	HRX	10	1	1	3
9967		HOLL	05	25	1345	N15	E28	05	27.7		A	AXX	10	2	2	3
9967	31214	MWIL	05	25	2145	N13	E17	05	27.2	4	BP					
9967		LEAR	05	26	0030	N14	E17	05	27.3		B	DAO	40	11	5	3
9967		SVTO	05	26	0450	N14	E17	05	27.5		A	AXX		1		3
9967		KAND	05	26	1005	N13	E10	05	27.2			HS		1	1	2
9967		RAMY	05	26	1220	N12	E09	05	27.2		B	CSO	10	3	3	3
9967	31214	MWIL	05	26	1500	N14	E07	05	27.1	4	(B)					
9967		LEAR	05	27	0112	N14	E05	05	27.4		B	CSO	20	4	2	4
9967		SVTO	05	27	0544	N15	E03	05	27.5		A	AXX		2	1	4
9967		KAND	05	27	1025	N13	W03	05	27.2			CSO		2	2	2
9967		RAMY	05	27	1259	N13	W06	05	27.1		B	CSO	20	4	3	3
9967		LEAR	05	28	0312	N13	W15	05	27.0		B	DSO	30	9	4	2
9967		KAND	05	28	0715	N14	W16	05	27.1			BXO		6	3	4
9967		RAMY	05	28	1320	N12	W18	05	27.2		B	CRO	10	5	6	2
9967		LEAR	05	29	0228	N12	W28	05	27.0		B	BXO	20	2	1	3
9967		KAND	05	29	0710	N14	W31	05	26.9			AX		1		3
9967		SVTO	05	30	0530	N13	W43	05	27.0		B	BXO	10	3	3	3
9967		SVTO	05	31	0454	N13	W55	05	27.0		A	HRX	20	1	1	3
9967D		KAND	05	28	0715	N18	W04	05	28.0			AX		1		4

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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
9967A		LEAR	05	31	0135	S20	W29	05	28.8		B	CRO	20	2	2	2
9967A		RAMY	05	31	1344	S20	W36	05	28.8		B	DSO	20	5	4	3
9967A	31229	MWIL	05	31	1445	S21	W37	05	28.8	4	(B)					
9967B		LEAR	05	28	0312	N21	E12	05	29.0		B	CRO	20	3	2	2
9967B		RAMY	05	28	1320	N21	E04	05	28.9		B	B X	10	2	3	2
9967B		HOLL	05	28	1323	N22	E04	05	28.9		B	BXO	10	3	2	3
9967B	31219	MWIL	05	28	1430	N21	E04	05	28.9	4	(AP)					
9977		LEAR	06	01	0050	S19	W42	05	28.9		B	DSO	30	3	3	2
9977		SVTO	06	01	0510	S21	W44	05	28.9		B	DRO	60	9	5	3
9977		KAND	06	01	1145	S18	W48	05	28.9			BXO		7	4	3
9977		RAMY	06	01	1322	S20	W49	05	28.9		B	CSO	20	10	3	4
9977		HOLL	06	01	1409	S21	W49	05	28.9		B	CSO	70	5	3	4
9977	31229	MWIL	06	01	1445	S21	W49	05	28.9	4	(BG)					
9977		VORO	06	01	2122	S21	W53	05	28.9			BXI	43	4	2	3
9977		SVTO	06	02	0550	S21	W58	05	28.9		B	DRO	40	9	7	3
9977		KAND	06	02	0730	S18	W59	05	28.9			DRI		6	4	4
9977		RAMY	06	02	1403	S18	W64	05	28.8		B	DSO	80	5	5	2
9977		HOLL	06	02	1406	S22	W60	05	29.1		B	DSO	140	10	6	3
9977	31229	MWIL	06	02	1500	S21	W63	05	28.9	4	(BF)					
9977		VORO	06	02	2131	S21	W66	05	28.9			CAI	136	7	2	3
9977		SVTO	06	03	0535	S21	W68	05	29.1		B	DRO	80	4	5	2
9977		RAMY	06	03	1335	S19	W75	05	28.9		A	HSX	30	1	2	2
9977		HOLL	06	03	1410	S21	W73	05	29.1		B	CAO	30	2	3	3
9977	31229	MWIL	06	03	1445	S20	W75	05	29.0	4	(BF)					
9977		VORO	06	04	0050	S20	W79	05	29.1			HAX	40	1		3
9777		TACH	06	01	0538	S20	W44	05	29.0			BRI	22	6	4	3
9777		TACH	06	02	0548	S19	W55	05	29.1			BRI	8	6	3	2
9777		TACH	06	03	0555	S22	W66	05	29.3			BRI	26	6	1	3
9967C		HOLL	05	27	1345	S10	E27	05	29.6		A	AXX	10	4	2	3
9976A		KAND	05	29	0710	N15	E09	05	30.0			AX		1		3
9976		SVTO	05	30	0530	S11	E11	05	31.0		B	BXO	10	5	4	3
9976		KAND	05	30	0840	S09	E10	05	31.1			BXO		5	4	4
9976		HOLL	05	30	1400	S10	E05	05	30.9		B	BXO	20	6	6	3
9976	31227	MWIL	05	30	1430	S09	E06	05	31.0	4	(B)					
9976		LEAR	05	31	0135	S08	W02	05	30.9		B	BXO	20	5	3	2
9976		RAMY	05	31	1344	S10	W07	05	31.0		B	CSO	20	9	6	3
9976	31227	MWIL	05	31	1445	S10	W08	05	31.0	4	(B)					
9790		TACH	06	01	0538	N04	W17	05	31.0			DSI	228	5	5	3
9790		TACH	06	02	0548	N05	W28	05	31.1			BXO	60	2	6	2
9790		TACH	06	03	0555	N04	W41	05	31.2			DSO	150	2	6	3
9969		SVTO	05	25	0826	N09	E78	05	31.2		B	DSO	60	3	4	2
9969		RAMY	05	25	1230	N09	E76	05	31.2		B	DSO	30	3	4	3
9969		HOLL	05	25	1345	N08	E68	05	30.7		A	AXX	30	3	2	3
9969	31216	MWIL	05	25	2145	N10	E70	05	31.2	4	B					
9969		LEAR	05	26	0030	N07	E67	05	31.0		B	DAO	80	10	9	3
9969		SVTO	05	26	0450	N07	E64	05	31.0		B	ESO	160	9	11	3
9969		KAND	05	26	1005	N06	E62	05	31.1			BXO		2	4	2
9969		RAMY	05	26	1220	N07	E59	05	30.9		B	DAO	100	14	9	3
9969		HOLL	05	26	1500	N09	E60	05	31.1		B	CSO	40	4	4	3
9969	31216	MWIL	05	26	1500	N09	E61	05	31.2	5	(B)					
9969		LEAR	05	27	0112	N09	E55	05	31.2		B	DAO	90	7	5	4
9969		SVTO	05	27	0544	N09	E52	05	31.1		B	DSO	60	7	5	4
9969		KAND	05	27	1025	N07	E50	05	31.2			BXO		6	6	2
9969		RAMY	05	27	1259	N10	E48	05	31.1		B	DAO	50	9	4	3
9969		HOLL	05	27	1345	N09	E47	05	31.1		B	CAO	30	6	5	3
9969	31216	MWIL	05	27	1430	N09	E47	05	31.1	4	(B)					
9969		LEAR	05	28	0312	N09	E40	05	31.1		B	DAO	60	6	5	2
9969		TACH	05	28	0633	N08	E34	05	30.8			BRO	36	4	6	4
9969		KAND	05	28	0715	N08	E39	05	31.2			BXO		5	5	4
9969		RAMY	05	28	1320	N10	E34	05	31.1		B	DSO	20	8	6	2
9969		HOLL	05	28	1323	N09	E35	05	31.2		B	CSO	50	19	6	3

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MAY 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
9969	31216	MWIL	05	28	1430	N09	E33	05	31.1	4	(B)					
9969		LEAR	05	29	0228	N09	E28	05	31.2		B	DSO	50	10	5	3
9969		TACH	05	29	0554	N08	E22	05	30.9			BRI	24	4	3	4
9969		SVTO	05	29	0630	N09	E27	05	31.3		B	DSO	60	7	5	3
9969		KAND	05	29	0710	N09	E26	05	31.2			BXO		10	4	3
9969		RAMY	05	29	1420	N09	E21	05	31.2		B	DSO	10	5	3	3
9969	31216	MWIL	05	29	1445	N09	E21	05	31.2	4	(B)					
9969		HOLL	05	29	1500	N09	E20	05	31.1		B	CSO	20	5	3	3
9969		LEAR	05	30	0040	N09	E15	05	31.1		B	CRO	10	3	3	2
9969		SVTO	05	30	0530	N09	E13	05	31.2		B	BXO	10	5	3	3
9969		TACH	05	30	0553	N07	E09	05	30.9			BRO	7	3	3	4
9969		KAND	05	30	0840	N10	E13	05	31.3			AX		1		4
9969		HOLL	05	30	1400	N08	E08	05	31.2		B	BXO	20	5	5	3
9969	31216	MWIL	05	30	1430	N09	E06	05	31.0	4	(B)					
9969	31216	MWIL	05	31	1445	N05	W08	05	31.0	5	(B)					
9970	31215	MWIL	05	25	2145	N05	E68	05	31.0	4	B					
9970		KAND	05	26	1005	N03	E60	05	30.9			DAO		4	7	2
9970		HOLL	05	26	1500	N05	E58	05	31.0		B	DAO	180	6	7	3
9970	31215	MWIL	05	26	1500	N05	E58	05	31.0	5	(B)					
9970		LEAR	05	27	0112	N05	E53	05	31.0		B	DAO	170	11	8	4
9970		SVTO	05	27	0544	N05	E50	05	31.0		B	DAO	170	9	7	4
9970		KAND	05	27	1025	N03	E48	05	31.0			DSO		5	8	2
9970		RAMY	05	27	1259	N05	E46	05	31.0		B	DAO	170	12	9	3
9970		HOLL	05	27	1345	N06	E46	05	31.0		B	DAO	200	18	8	3
9970	31215	MWIL	05	27	1430	N05	E45	05	31.0	5	(B)					
9970		LEAR	05	28	0312	N05	E38	05	31.0		B	DAO	170	9	8	2
9970		TACH	05	28	0633	N04	E33	05	30.7			DAI	316	10	8	4
9970		KAND	05	28	0715	N04	E36	05	31.0			DSO		10	8	4
9970		RAMY	05	28	1320	N06	E32	05	30.9		B	DAO	160	9	9	2
9970		HOLL	05	28	1323	N05	E33	05	31.0		B	DAI	170	14	9	3
9970	31215	MWIL	05	28	1430	N05	E32	05	31.0	5	(B)					
9970		LEAR	05	29	0228	N05	E26	05	31.0		B	DAO	180	13	9	3
9970		TACH	05	29	0554	N04	E20	05	30.7			DAI	274	7	7	4
9970		SVTO	05	29	0630	N06	E24	05	31.1		B	DAO	180	10	9	3
9970		KAND	05	29	0710	N04	E23	05	31.0			DAO		11	8	3
9970		RAMY	05	29	1420	N05	E18	05	30.9		B	DAO	140	7	7	3
9970	31215	MWIL	05	29	1445	N05	E19	05	31.0	5	(B)					
9970		HOLL	05	29	1500	N06	E18	05	31.0		B	DAO	120	8	8	3
9970		LEAR	05	30	0040	N05	E12	05	30.9		B	DSO	80	7	8	2
9970		SVTO	05	30	0530	N04	E10	05	31.0		B	DSO	140	8	8	3
9970		TACH	05	30	0553	N03	E08	05	30.8			DAI	387	7	6	4
9970		KAND	05	30	0840	N06	E10	05	31.1			DSO		5	8	4
9970		HOLL	05	30	1400	N05	E04	05	30.9		B	DSO	120	8	8	3
9970	31215	MWIL	05	30	1430	N05	E06	05	31.0	5	(B)					
9970		LEAR	05	31	0135	N06	W01	05	31.0		B	DSO	100	8	7	2
9970		SVTO	05	31	0454	N06	W03	05	31.0		B	DSO	170	5	8	3
9970		RAMY	05	31	1344	N05	W07	05	31.0		B	DSO	80	8	7	3
9976		LEAR	06	01	0050	S09	W14	05	31.0		B	CSO	30	5	5	2
9976		SVTO	06	01	0510	S10	W16	05	31.0		B	BXO	10	3	5	3
9976		HOLL	06	01	1409	S10	W23	05	31.0		B	BXO	10	2	3	4
9976	31227	MWIL	06	01	1445	S10	W23	05	31.0	4	(AP)					
9976A		VORO	06	01	2122	S20	W26	05	31.0			AXX	6	1		3
9970		VORO	05	26	0158	N05	E66	05	31.0			CRO	79	3	5	3
9970		KAND	05	26	1005	N03	E60	05	30.9			DAO		4	7	2
9970		VORO	05	26	2124	N05	E56	05	31.1			DAI	225	9	7	3
9970		KAND	05	27	1025	N03	E48	05	31.0			DSO		5	8	2
9970		VORO	05	27	2128	N05	E42	05	31.0			DAI	251	10	7	3
9970		KAND	05	28	0715	N04	E36	05	31.0			DSO		10	8	4
9970		VORO	05	29	0007	N05	E27	05	31.0			DAI	170	10	7	2
9970		KAND	05	29	0710	N04	E23	05	31.0			DAO		11	8	3
9970		VORO	05	30	0416	N05	E11	05	31.0			DAI	148	8	6	2
9970		KAND	05	30	0840	N06	E10	05	31.1			DSO		5	8	4
9970		VORO	05	30	2200	N05	E02	05	31.1			DAI	148	10	6	3
9970		LEAR	06	01	0050	N06	W14	05	31.0		B	DSO	100	6	6	2
9970		SVTO	06	01	0510	N05	W16	05	31.0		B	DSO	90	6	7	3

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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
9970		KAND	06	01	1145	N07	W20	05	31.0			DSO		2	7	4
9970		RAMY	06	01	1322	N06	W21	05	31.0		B	DSO	80	3	7	4
9970		HOLL	06	01	1409	N05	W22	05	31.0		B	DAO	90	5	7	4
9970	31215	MWIL	06	01	1445	N05	W21	05	31.0	5	(B)					
9970		VORO	06	01	2122	N05	W25	05	31.0			DAO	106	5	6	3
9970		SVTO	06	02	0550	N05	W30	05	31.0		B	DSO	70	2	7	3
9970		KAND	06	02	0730	N07	W30	05	31.1			DSO		2	7	4
9970		RAMY	06	02	1403	N06	W35	05	31.0		B	DSO	50	2	7	2
9970		HOLL	06	02	1406	N06	W35	05	31.0		B	DSO	80	2	7	3
9970	31215	MWIL	06	02	1500	N05	W35	05	31.0	4	(B)					
9970		VORO	06	02	2131	N05	W39	05	31.0			DAO	175	2	6	3
9970		SVTO	06	03	0535	N05	W45	05	31.0		B	DSO	50	2	7	2
9970		RAMY	06	03	1335	N06	W48	05	31.0		B	DSO	30	2	6	2
9970		HOLL	06	03	1410	N06	W47	05	31.1		B	DAO	40	2	6	3
9970	31215	MWIL	06	03	1445	N05	W48	05	31.0	5	(B)					
9970		VORO	06	04	0050	N05	W54	05	31.0			DAO	48	2	6	3
9970		LEAR	06	04	0115	N05	W54	05	31.0		B	CSO	20	2	8	1
9970		SVTO	06	04	0714	N04	W58	05	31.0		B	DSO	70	3	6	2
9970		KAND	06	04	0805	N08	W58	05	31.0			CRO		3	6	3
9970		HOLL	06	04	1327	N07	W62	05	31.0		B	CSO	20	2	9	3
9970		RAMY	06	04	1359	N06	W61	05	31.0		B	CSO	30	4	6	2
9970	31215	MWIL	06	04	1445	N05	W62	05	31.0	4	(B)					
9970		VORO	06	04	2141	N06	W66	05	31.0			DAO	50	2	7	3
9970		LEAR	06	05	0045	N06	W68	05	31.0		B	DSO	40	2	7	2
9970	31215	MWIL	06	05	1430	N05	W78	05	30.9	2	AP					
9969		VORO	05	26	0158	N09	E68	05	31.2			BXO	72	3	3	3
9969		VORO	05	26	2124	N08	E58	05	31.2			DAI	75	3	4	3
9969		VORO	05	27	2128	N09	E44	05	31.2			CAI	51	7	5	3
9969		VORO	05	29	0007	N09	E31	05	31.3			AXX	20	6		2
9969		VORO	05	30	0416	N09	E15	05	31.3			AXX	5	2		2
9969	31216	MWIL	06	01	1445	N08	W19	05	31.2	4	(AF)					

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

MAY 2002

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	1000	1005	1044	1	1					1	0957	C2.4	9932
01	1915	1925	1945	1+	1					1	1918	C1.8	
02	0905	0913	0958	1+	1					1	0902	C1.9	
02	1112	1116	1139	2	5	1	1	1		2	1121	C3.0	
02	1436	1439	1505	2-	5		2	1		1	1444	C2.3	
02	1620	1627	1644	1	1		1				No flare		
02	2105	2122	2245	3	1					1	2106	C6.3	9926
03	0632	0637	0647	2+	1			1			0642	C3.3	9926
03	0644	0652	0922	3-	1					1	0642	C3.3	9926
03	1436	1545U	1704	1	1		1				No flare		
03	1804	1810	1849	2	3					5	1802	C3.9	9934
03	2015	2020	2054	2-	3					3	2012	C5.4	
03	2116	2121	2200	2-	3					2	2114	C2.8	
04	1301	1309	1410	3	5	1	2	1		8	1309	C9.3	9937
04	1855	1859	1931	2-	3					2	1853	C2.0	9937
04	2037	2048	2115	2	1					1	*		
04	2125	2131	2145	1	1					1	2124	C1.4	
04	2147	2156	2215	1+	3					2	2143	C2.7	
05	0754	0758	0822	2	5		2	1		2	0804	C4.8	9934
05	1209	1215	1242	2+	5	1		1		6	1214	C3.0	9934
05	1438	1445	1510	2-	3					2	1438	C1.9	9937
05	1911	1915	1942	1+	3					3	1911	C2.6	9943
07	0850	0853	0905	1-	1					1	0846	C2.8	
08	1300	1305	1400	2+	1					1	1258	C4.2	9934
08	1302	1326	1506	2+	5		1			3	1258	C4.2	9934
08	1440	1445	1524	2	3					3	1439	C2.8	
08	1542	1551	1645	2+	3					2	1546	C2.3	
08	2035	2038	2115	2	1					1	2030	C1.9	
09	0910	0917	1116	1	1		1				No flare		
09	0941	1002	1020	1	1		1				*		
10	0927	0930	0951	3-	5	1	1	1		3	0936	C3.9	9937
10	2127	2128	2137	1-	1					1	2123	C1.6	9934
11	0245	0252	0315	1+	1					1	0244	C6.4	
11	0653	0655	0715	1	1					1	0651	C3.6	
11	0747	0806	0823	1	1		1				*		
11	0838	0900	0928	1	1		1				*		
11	1113	1125	1221	3	5	1	2	1		9	1121	M1.4	9937
11	1647	1651	1716	1+	3					4	1645	C2.7	9946
11	1734	1740	1816	2-	3					4	1732	C3.7	9934
11	1855	1856	1906	1-	1					1	No flare		
12	0934	0944	1015	2	5	1	1	1		3	0925	C3.7	
13	1650	1654	1724	1	1		1				No flare		
14	0936	0954	1008	1+	1					1	0932	C3.2	9948
14	1258	1312	1400	2+	5	1		1		7	1258	C4.2	
15	0802	0815	0851	3	5	1	2	1		5	0800	M1.0	9948
16	0534	0553	0658	2	1		1				0451	C5.0	
17	0200	0204	0215	1-	1					1	*		
17	0519	0527	0619	2	3		1			2	0516	C7.0	9957
17	0729	0744	0921	3	5	1	2	1		4	0727	M1.5	
17	1600	1611	1625	3	5	1	2	1		11	1550	M2.9	9954

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MAY 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
18	0920	0923	0945	1	1					1	0918	C2.6	9957
18	1234	1239	1306	1+	1					1	1236	C2.5	
18	1540	1544	1620	2-	5					5	1540	C3.4	9957
18	1825	1830	1851	1	3					4	1824	C2.2	9957
19	0755	0840	0854	2	1		1				0808	C2.5	
19	1617	1619	1635	1-	3					2	1618	C2.3	9957
19	1704	1710	1739	1+	3					4	1704	C2.2	9961
19	1842	1845	1901	1	3					4	1841	C2.7	
19	1909	1913	1935	1	3					3	1909	C3.1	
19	2022	2024	2100	2	1					1	2001	C2.8	
19	2146	2149	2230	2	1					1	2143	C4.7	
20	0745	0746	0800	1-	1					1	0729	C3.9	9961
20	0805	0807	0830	1	1					1	0729	C3.9	9961
20	1017	1025	1047	3	5	1	2	1		7	1014	M4.7	9961
20	1051	1055	1132	3	5		1	1		6	1049	M5.0	9961
20	1138E	1138U	1138	1	1	1					No flare		
20	1328	1339	1417	1	1		1				*		
20	1523	1530	1559	3	5	1	2	1		5	1521	X2.1	9961
20	2018	2025	2107	2+	3					2	2017	C3.0	9961
20	2116	2118	2138	1	1					1	2116	C2.0	
21	0505	0507	0540	2	1					1	0458	C4.8	9960
21	1019	1025	1040	1	1					1	1015	C1.9	9960
21	1310	1314U	1435	1	1		1				No flare		
21	1630	1635	1720	1	1		1				No flare		
21	1719	1724	1800	2	1					1	1717	C3.2	9963
21	2124	2135	2221	2+	3					3	2120	M1.5	9960
22	1540	1547	1609	1+	3					3	1539	C2.5	9961
22	1559	1605	1640	2	1					1	1539	C2.5	9961
22	1808	1818	1828	1	1		1				No flare		
22	2051	2055	2120	1+	1					1	2048	C2.4	9961
24	0639	0645	0701	3	5	1	2	1		2	0637	M1.1	
24	0827	0832U	0900	1	1		1				0821	C2.0	9963
24	1053	1058	1114	2	1			1			1050	C2.9	
24	1443	1451	1528	1	1		1				No flare		
25	1408	1434	1519	1	1		1				No flare		
25	1610	1620	1635	1	1					1	1619		9969
26	0614	0758	0819	2	1		1				0618		9969
26	0956	1016	1330	2	1		1				0922	C1.1	
26	1354	1358	1408	1-	1					1	1353	C4.4	9961
27	0558	0618	0646	1	1		1				0557	C3.5	9957
27	1703	1711	1742	2-	3					3	1703	C4.0	9957
27	1802	1808	1852	2	3					4	1800	M2.0	9957
27	1901	1905	1930	1+	3					4	1900	C7.5	
27	2122	2123	2137	1-	3					2	2123	C3.4	
28	1200	1204	1218	2-	5	1		1		1	1159	C2.8	
28	1419	1426	1431	1-	1					1	1413	C2.0	
28	1540	1545	1615	2	1					1	1531	C2.6	
28	1627	1635	1708	2-	3					3	1629	C3.6	9957
29	0406	0409	0439	1	1		1				No flare		
29	0515	0517	0612	1	1		1				0425	C8.1	9972
29	0658	0709	0821	1	3		1			1	0655	C4.7	
29	0848	0853	0951	1	1					1	0835	C3.5	
29	0950	1009	1108	1	1		1				1008	C2.1	
29	1158	1201	1224	1+	1					1	1157	C2.4	
29	1252	1259	1320	1+	1					1	1251	C3.3	9960

* = no flare patrol.

MAY 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
29	1323	1328	1438	1	1					1	1322	C2.6	
29	1445	1450	1502D	1-	1					1	1445	C1.8	
29	1501	1506	1534	1+	5		1			3	1500	C3.3	
29	1548	1553	1631	2-	5		1			3	1546	C5.9	9973
29	1746	1752	1809	1	3					2	1745	C2.5	
30	0444	0530	0652	1	1		1				0424	M1.3	
30	1322	1326	1334	1-	1					1	No flare		
30	1418	1434	1450	2	5	1	2	1		4	1401	C4.1	
30	1441	1448	1501D	1	1					1	1401	C4.1	
30	1500	1505	1538	2	1					1	No flare		
30	1533	1547	1613	2	5	1	1	1		4	1528	C3.3	
30	1618	1625	1655	2-	3					4	1614	C3.5	9972
30	1709	1717	1730	2	5		2	1		4	1711	M1.6	9973
31	1258	1307	1316	2	5	1	2	1		2	1257	C2.7	9973
31	1505	1528	1603	2+	3					2	1459	C3.0	9973

* = no flare patrol.

OBSERVATORIES REPORTING FOR MAY 2002

Alberta, Canada	SES	Milan, Italy	SES
Bedford, Massachusetts, USA	SES	Nerja, Spain	SES
Bern, Switzerland	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Edenvale, Rep of S. Africa	SES	Sofia, Bulgaria	SES
Houston, Texas, USA	SES	Sussex, United Kingdom	SES
Isola del Gran Sasso, Italy	SES	Torrington, Connecticut, USA	SES
Marlborough, Massachusetts, USA	SES	Upice, Czech Republic	SEA

Observations are not necessarily continuous.

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

MAY 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	0720	CULG								
	0000	0926	HIRA								
	0452	1707	ONDR								
	0515	1740	BLEN								
	0550	1200	IZMI								
	0350	1830	POTS	1136.2	1350 U	I	S,N	2	220	300	
			POTS	1431.9	1435.8	III	G	3	100	380	
			POTS	1632.0	1632.3	III	G	2	100	300	
	1943	2400	HIRA								
	2040	2400	CULG	2349.0	2349.0	III	B	1	120	220	
			HOLL	2359.0	2359.0	III		1	25	71	
			PALE	2359.0	2359.0	III		1	25	80	
02	0000	0710	CULG	0328.0	0329.0	III	G	1	65	260	
	0000	0927	HIRA	0328.0	0329.0	III	B	1	110	280	
	0350	1830	POTS	0459.6	0505.7	III	GG,N	2	220	500	
			CULG	0505.0	0505.0	III	B	1	250	450	
			POTS	0606 U	1810 U	I	S,N	2	220	300	
			CULG	0639.0	0640.0	III	G	2	57X	180	
			HIRA	0639.0	0640.0	III	B	2	25X	250	
			LEAR	0639.0	0639.0	III		1	25	180	
			POTS	0639.2	0639.9	III	GG	2	80	320	
	0550	1200	IZMI	0639.2	0639.9	III	GG,C	2	25	270X	
			SVTO	0658.0	0704.0	III		1	25U	81U	
			POTS	0658.7	0659.2	III	G	2	40X	170U	
			IZMI	0658.8	0659.2	III	G	1	30	155	
			CULG	0659.0	0659.0	III	B	1	57X	120	
			CULG	0704.0	0706.0	III	G	1	57X	90	
			POTS	0739.9	0740.3	DCIM		2	330	540	
			IZMI	0950.1	0950.3	III	B	1	45	90	
	0515	1740	BLEN	1123.2	1126.9	III	GG	3	190	4000X	
			ONDR	1123.3	1125.5	DCIM	G	1	800X	2000X	
			POTS	1123.3	1124.8	DCIM		2	250	620	
	0450	1708	ONDR	1123.4	1125.2	DCIM	G	1	2000X	4500X	
			POTS	1126.2	1133.0	III	G	2	200U	340	
			HOLL	2103.0	2104.0	III		1	25	54	
			PALE	2103.0	2108.0	III		1	25	53	
	2050	2400	CULG	2103.0	2122.0	III	N	1	57X	150	
	1942	2400	HIRA	2103.5	2104.0	III	B	1	25X	110	
			HIRA	2108.0	2108.5	III	B	1	25X	200	
			HOLL	2108.0	2108.0	III		1	25	53	
			HIRA	2109.0	2115.0	II		1	70	140	
			CULG	2110.0	2113.0	UNCLF		1	60	150	II?
			HOLL	2112.0	2116.0	II		1	45	56	ESS 0478
			PALE	2112.0	2116.0	II		1	44	54	ESS 0506
			HIRA	2305.5	2306.0	III	B	1	50	190	
			LEAR	2355.0	2355.0	III		1	53	180	
			CULG	2356.0	2356.0	III	G	1	57X	180	
03			LEAR	0014.0	0014.0	III		1	79	180	
	0000	0710	CULG	0014.0	0014.0	III	B	1	70	160	
	0000	0928	HIRA	0014.0	0014.5	III	B	1	80	140	
			CULG	0308.0	0313.0	III	GG	1	57X	90	
			CULG	0326.0	0329.0	III	G	1	57X	450	
			HIRA	0326.5	0327.0	III	B	1	80	250	
			HIRA	0328.5	0329.0	III	B	1	130	230	
			CULG	0357.0	0358.0	III	G	1	150	420	
			HIRA	0357.0	0358.0	III	B	1	200	380	
	0350	1830	POTS	0357.2	0402.6	III	GG,N	3	200U	370	
			CULG	0401.0	0403.0	III	G	1	80	300	
			HIRA	0401.0	0403.0	III	G	2	100	300	
			LEAR	0401.0	0403.0	III		1	82	180	
			CULG	0425.0	0710.0D	I	S	1	120	180	
			POTS	0434 U	1825 U	I	S,DC,N	2	110	370	
	0449	1710	ONDR								
			POTS	0504.8	0505.9	III	G	2	110	370	
			POTS	0513.5	0514.7	III	G	2	130	270	
	0515	1740	BLEN								
	0550	1200	IZMI	0550.0E	1200.0D	I	S	2	120	270X	

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

MAY 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			CULG	0608.0	0710.0D	III	S	1	57X	160	
			LEAR	0616.0	0941.0	III	N	1	61	180	
			IZMI	0619.3	0620.3	III	G	1	50	160	
			SVTO	0626.0	0653.0	III	N	1	28U	83U	
			IZMI	0627.8	0631.4	III	GG	1	45	90	
			IZMI	0633.5	0635.3	III	G	1	45	90	
			IZMI	0641.2	0649.4	III	GG	2	40	95	
			IZMI	0651.1	0654.3	III	GG	1	45	70	
			IZMI	0716.4	0716.5	III	B	2	170	210	
			SVTO	0931.0	1218.0	CONT		1	112U	180U	
			POTS	0958.1	0958.6	III	G	2	140	390	
			SVTO	1047.0	1047.0	III		1	28U	50U	
			IZMI	1047.2	1048.4	III	G	1	45	75	
			IZMI	1059.0	1059.5	III	G	2	40	80	
			SVTO	1059.0	1127.0	III	N	2	25	180	
			IZMI	1122.3	1125.0	III	GG	2	30	270X	
			POTS	1122.3	1126.5	III	GG	3	40X	400	
			SGMR	1125.0	1126.0	III		2	30	80	
			IZMI	1125.4	1126.4	III	GG	2	25	270X	
			POTS	1216.0	1217.1	III	GG	3	40X	460	
			SGMR	1216.0	1217.0	III		2	30	80	
			SVTO	1216.0	1217.0	III		2	25	180	
			POTS	1233.0	1233.5	III	G	3	40X	90	
			SVTO	1233.0	1510.0	III	N	2	25U	82U	
			SVTO	1318.0	1619.0	CONT		1	107U	180U	
			POTS	1326.8	1328.4	III	G	2	40X	70	
			HOLL	1332.0	1536.0	III	N	1	25	87	
			SGMR	1337.0	1337.0	III		2	30	65	
			POTS	1337.4	1345.5	III	G,N	3	40X	90	
			HOLL	1338.0	2116.0	CONT		1	109	180	
			SGMR	1450.0	1510.0	III	N	1	30	80	
			POTS	1450.7	1451.1	III	G	2	40X	330	
			POTS	1510.1	1510.4	III	B	2	40X	140	
			HOLL	1703.0	2124.0	III	N	1	25	180	
			PALE	1733.0	2202.0	III	N	1	25	135	
			SGMR	1802.0	1804.0	V		1	30	55	
			HOLL	1930.0	1930.0	III		1	25	180	
			SGMR	1930.0	1930.0	III		2	30	80	
			HOLL	2016.0	2018.0	III		1	25	151	
	1941	2400	HIRA	2016.0	2017.0	III	B	2	25X	200	
			CULG	2050.0E	2125.0	III	S	1	57X	130	
	2050	2400	CULG	2050.0E	2345.0	I	S	1	110	170	
			SGMR	2100.0	2100.0	III		1	30	60	
			HIRA	2115.0	2120.5	III	G	1	25X	130	
			LEAR	2300.0	0012.0	CONT		1	71	180	
			CULG	2307.0	2322.0	III	GG	1	57X	130	
			PALE	2307.0	0333.0	III	N	1	25	180	
			HOLL	2312.0	2348.0	III	N	1	25	86	
			HIRA	2314.0	2315.0	III	B	1	140	270	
			HOLL	2355.0	2355.0	III		1	25	140	
			LEAR	2355.0	2355.0	III		1	53	180	
04			HOLL	0052.0	0055.0	III		1	25	111	
			LEAR	0052.0	0244.0	III	N	1	25	180	
	0000	0710	CULG	0052.0	0057.0	III	G	1	57X	140	
			CULG	0115.0	0130.0	III	GG	2	57X	200	
			HOLL	0115.0	0129.0	III	N	1	25	180	
	0000	0929	HIRA	0115.0	0129.0	III	G	1	25X	200	
			CULG	0137.0	0212.0	III	N	1	57X	140	
			CULG	0347.0	0347.0	III	B	1	57X	90	
			CULG	0412.0	0412.0	III	B	1	57X	130	
			HIRA	0412.0	0412.5	III	B	1	25X	100	
			LEAR	0412.0	0412.0	III		1	25	98	
			LEAR	0434.0	0455.0	III	N	1	63	109	
			CULG	0435.0	0441.0	III	G	1	57X	90	II?
	0350	1835	POTS	0455 U	0542 U	I	S,N	2	200U	320	
			POTS	0635 U	0748 U	I	S,N	2	150	300	
			POTS	0915 U	1011 U	I	S,N	2	200U	330	
	0601	1200	IZMI	0955.2	0955.7	III	G	1	50	70	

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

MAY 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
04			IZMI	0958.0	0958.1	III	B	1	45	75	
			IZMI	1029.4	1029.5	III	B	1	45	70	
			SGMR	1042.0	1043.0	III		2	30	80	
			SVTO	1042.0	1044.0	III		2	25	146	
			IZMI	1042.7	1044.4	III	GG	2	25X	160	
			POTS	1042.8	1044.4	III	G	3	40X	160	
			POTS	1103.9	1104.4	III	G	2	40X	160	
			IZMI	1104.0	1104.1	III	B	1	60	145	
			POTS	1136 U	1341 U	I	S,N	2	100	330	
			POTS	1209.3	1209.4	III	B	1	40X	140	
	0515	1740	BLEN	1311.8	1312.5	III	G,C	2	470	4000X	
			BLEN	1317.2	1325.6	II		2	210	4000X	
			HOLL	1318.0	1430.0	III	N	1	25	114	
			SVTO	1318.0	1422.0	III	N	1	25	147	
			POTS	1318.8	1322.5	III	G,N	2	40X	330	
	0447	1711	ONDR	1319.1	1334.2	DCIM	GG	1	800X	1156	
			POTS	1333.9	1334.1	III	B	2	200U	370	
			POTS	1417.8	1418.5	I	DC	2	130	150	
			POTS	1431.5	1455 U	I	S,N	1	220	400	
			POTS	1505 U	1535 U	I	S,DC,N	1	140	320	
			BLEN	1521.5	1521.7	III		1	210	500	
			POTS	1521.5	1521.7	III	G	2	200U	500	
			POTS	1652 U	1757 U	I	S,DC,N	1	120	380	
			HOLL	1654.0	1656.0	III		1	25	141	
			POTS	1655.0	1656.2	III	G	2	100	360	
			SVTO	1655.0	1656.0	III		1	29	172	
			HOLL	1711.0	1827.0	III	N	1	25	133	
	1940	2400	HIRA	2015.5	2018.0	III	G	1	90	300	
	2050	2400	CULG	2055.0	2055.0	III	B	1	57X	150	
			PALE	2124.0	2125.0	III		1	25	65	
			HIRA	2124.5	2125.0	III	B	1	25X	130	
			CULG	2125.0	2125.0	III	B	1	57X	150	
			CULG	2206.0	2207.0	III	G	1	57X	130	
			HIRA	2206.0	2207.0	III	B	1	25X	160	
			HOLL	2206.0	2206.0	III		1	25	86	
			PALE	2206.0	2206.0	III		1	25	87	
			SGMR	2206.0	2206.0	III		2	30	80	
			CULG	2302.0	2302.0	III	B	1	57X	170	
05	0000	0710	CULG	0209.0	0209.0	III	B	1	57X	150	
			CULG	0405.0	0405.0	III	B	1	57X	180	
			LEAR	0405.0	0453.0	III	N	1	25	180	
	0000	0930	HIRA	0405.0	0405.5	III	B	1	90	210	
			HIRA	0421.5	0422.5	III	B	1	25X	180	
			CULG	0422.0	0422.0	III	B	1	57X	180	
	0350	1835	POTS	0437.3	0437.4	DCIM		2	360	440	
			POTS	0441.7	0444.5	III	GG	2	100	380	
			CULG	0442.0	0444.0	III	G	1	57X	300	
			HIRA	0442.0	0444.0	III	G	1	30	310	
			SVTO	0442.0	0554.0	III	N	1	25	180	
	0446	1712	ONDR								
			HIRA	0452.5	0453.5	III	B	2	30	240	
			POTS	0452.6	0453.2	III	G	2	100	320	
			CULG	0453.0	0454.0	III	G	1	57X	250	
	0510	1740	BLEN								
			POTS	0539.0	1806 U	I	S,N	2	200U	360	
			POTS	0603.2	0603.9	III	G	2	140	300	
	0550	1200	IZMI	0603.2	0603.9	III	G	1	145	270X	
			LEAR	0616.0	0618.0	III		1	80	180	
			HIRA	0618.5	0619.0	III	B	1	90	200	
			IZMI	0618.7	0618.8	III	G	1	120	220	
			POTS	0618.7	0619.0	III	G	1	110	230	
			POTS	0722.0	0723.3	III	GG	2	110	380	
			IZMI	0722.7	0723.3	III	G	1	185	270X	
			HIRA	0805.0	0809.0	III	G	1	80	210	
			LEAR	0805.0	0808.0	III		1	25	180	
			IZMI	0805.5	0805.7	III	G,U	2	130	210	
			POTS	0805.5	0807.6	III	G,N	2	120	390	
			SVTO	0806.0	0808.0	III		1	25	180	

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05			IZMI	0807.5	0808.7	III	G	2	30	215	
			SVTO	1149.0	1149.0	III		1	25U	83U	
			IZMI	1149.1	1149.3	III	B	1	30	65	
			POTS	1658.4	1658.6	III	B	2	200U	350	
			HOLL	1758.0	1801.0	III		1	25	84	
			HOLL	1912.0	1921.0	III		1	25	180	
			SGMR	1914.0	1914.0	III		1	30	65	
			HOLL	2059.0	2059.0	III		1	25	180	
			SGMR	2059.0	2100.0	III		1	30	60	
	2050	2400	CULG	2059.0	2100.0	III	G	1	57X	170	
			CULG	2131.0	2216.0	III	N	1	57X	180	
			HOLL	2200.0	2200.0	III		1	25	84	
			HOLL	2215.0	2215.0	III		1	108	180	
	1939	2400	HIRA	2215.5	2216.0	III	B	2	90	270	
			HOLL	2248.0	0130.0	III	N	1	25	12	
			CULG	2251.0	2251.0	III	B	1	57X	90	
			LEAR	2347.0	2348.0	III		1	25	145	
			CULG	2348.0	2349.0	III	G	1	57X	170	
			HIRA	2348.0	2348.5	III	B	1	25X	140	
06			LEAR	0009.0	0210.0	III	N	1	25	180	
	0000	0710	CULG	0010.0	0036.0	III	N	1	57X	130	
	0000	0930	HIRA	0108.5	0109.0	III	B	2	25X	120	
			CULG	0109.0	0109.0	III	G	2	57X	180	
			CULG	0206.0	0210.0	III	G	1	57X	180	
			HIRA	0209.0	0209.5	III	B	1	25X	110	
			CULG	0306.0	0432.0	III	N	1	57X	180	
			LEAR	0306.0	0306.0	III		1	25	104	
			LEAR	0330.0	0939.0	III	N	1	25	180	
			HIRA	0421.5	0427.0	III	G	1	25X	200	
			CULG	0432.0	0710.0D	III	S,C	1	57X	180	
			IZMI	0602.0E	1200.0U	III	S	2	40	90	
	0602	1200	IZMI	0602.0E	1200.0D	I	S,C	2	60	270X	
			IZMI	0730.5	0730.7	III	B	1	30	50	
			SVTO	0810.0	1029.0	III	N	1	25	180	
			IZMI	0817.9	0818.5	III	G	2	40	70	
	0510	1740	BLEN	0821.8	0829.1	III	G,RS	1	130	700	
			HIRA	0822.5	0823.0	III	B	1	110	260	
			IZMI	0822.5	0822.7	III	B	3	110	270X	
			IZMI	0823.3	0823.8	III	G	2	40	70	
			IZMI	0826.5	0830.0	III	GG	2	40	90	
			IZMI	0828.3	0829.0	III	G	2	110	270X	
			IZMI	0835.1	0836.8	III	GG	2	30	130	
			IZMI	0837.6	0837.8	III	G	2	120	260	
			IZMI	0850.0U	1200.0	III	N	1	40	90	
			IZMI	0908.7	0908.8	III	B	2	120	255	
			IZMI	0916.0	0916.1	III	G	2	40	90	
			IZMI	1029.1	1029.3	III	B	2	25X	90	
	0622	1714	ONDR	1055.3	1057.4	DCIM	G	1	955	2000X	
			BLEN	1055.5	1057.5	DCIM	S	1	260	2800	
			BLEN	1334.5	1340.3	III	G	1	130	400	
			HOLL	1339.0	1340.0	III		1	109	180	
			SVTO	1340.0	1340.0	III		1	126	180	
			BLEN	1401.5	1401.8	III	GG,RS	1	200	1250	
			SVTO	1415.0	1431.0	III	N	1	25	61	
			HOLL	1423.0	1431.0	III		1	25	59	
			SVTO	1557.0	1557.0	III		1	130	180	
			BLEN	1557.6	1557.7	III	V	2	120	320	
			HOLL	1807.0	1807.0	III		1	25	57	
			HOLL	1834.0	1834.0	III		1	25	140	
			SGMR	1834.0	1834.0	III		1	30	65	
			PALE	1854.0	0406.0	III	N	1	25	180	
			HOLL	1932.0	1932.0	III		1	25	55	
			HOLL	2108.0	0130.0	III	N	1	25	88	
	2050	2400	CULG	2109.0	2250.0	III	N	1	57X	120	
			CULG	2317.0	2400.0D	I	S	1	120	180	
			CULG	2350.0	2358.0	III	G	1	57X	140	
	1938	2400	HIRA	2350.0	2353.0	III	G	1	25X	80	

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07	0000	0710	CULG	0000.0E	0020.0	I	S	1	120	180	
			CULG	0003.0	0057.0	III	N	1	57X	180	
	1937	2400	HIRA	0106.5	0107.0	III	B	1	25X	80	
			LEAR	0120.0	0355.0	III	N	1	25	180	
			CULG	0333.0	0340.0	III	G	1	57X	90	
			CULG	0341.0	0348.0	III	GG	2	57X	420	
	0000	0931	HIRA	0341.0	0347.0	III	G	2	25X	260	
	0344	1840	POTS	0344 U	1352 U	I	S,DC,C	3	40X	600	
			CULG	0345.0	0710.0D	IV	FS	2	57X	1300	
			HIRA	0350.0	0430.0	IV		2	25X	1000	
			LEAR	0355.0	0938.0	CONT		1	25	180	
			PALE	0359.0	0442.0	CONT		1	25	180	
			SVTO	0408.0	1456.0	CONT		1	25	180	
			IZMI	0602.0E	1200.5D	III	N	2	25X	95	
	0602	1205	IZMI	0602.0E	1200.5D	I	S,C	2	50	270X	
			SVTO	0611.0	1610.0	III	N	2	25	180	
			POTS	0810.6	1352 U	III	GG,N	3	40X	170U	
			IZMI	0857.6	0859.2	III	G	2	25X	90	
			IZMI	0901.2	0904.3	I	GG,DC	2	55	70	
			IZMI	0952.4	0954.2	III	G	2	25X	95	
			HOLL	1310.0	2015.0	III	N	1	25	141	
	0609	1715	ONDR	1315.5	1316.4	DCIM	G	1	1002	2000X	
	0505	1745	BLEN	1315.9	1316.8	DCIM	P	2	1000	2400	
			POTS	1352 U	1831 U	I	S,DC	2	120	350	
			ONDR	1408.3	1411.3	DCIM	GG	2	992	2000X	
			POTS	1523.2	1525.0	III	G	2	40X	70	
			PALE	1807.0	0409.0	III	N	1	25	180	
	2050	2400	CULG	2050.0E	2400.0D	I	S	1	120	180	
			HOLL	2106.0	2107.0	III		1	25	64	
			CULG	2107.0	2300.0	III	N	1	57X	160	
			HOLL	2147.0	0100.0	III	N	1	25	74	
			LEAR	2302.0	0937.0	III	N	1	95	180	
			LEAR	2350.0	0029.0	III	N	1	25	180	
08	0000	0709	CULG	0000.0E	0038.0	I	S	1	130	180	
			CULG	0010.0	0010.0	III	G	1	57X	90	
			CULG	0056.0	0710.0D	III	N	1	57X	180	
	0000	0932	HIRA	0230.5	0231.0	III	B	1	200	340	
			CULG	0231.0	0231.0	III	B	1	200	360	
			SVTO	0551.0	0725.0	III	N	1	25U	82U	
	0600	1200	IZMI	0604.6	0609.7	III	GG	1	40	90	
			IZMI	0619.6	0619.7	III	B	1	45	90	
			IZMI	0755.0U	1200.0	I	S	2	120	270X	
			SVTO	0803.0	0804.0	III		1	37U	81U	
			HIRA	0803.5	0804.0	III	B	1	50	150	
			IZMI	0803.8U	0804.2	III	G,FS	2	40	140	
			SVTO	0824.0	0825.0	III		1	34U	83U	
			SVTO	0824.0	0920.0	III	N	1	34U	83U	
			IZMI	0824.8	0825.1	III	G,HARM	2	40	160	
			IZMI	0851.2	0851.5	III	G	1	40	65	
	0500	1745	BLEN	0855.3	0855.8	III		2	190	300	
			IZMI	1146.2	1146.4	III	G,HARM	2	45	175	
			ONDR	1237.0	1415.5	DCIM	GG	2	800X	2000X	
			HOLL	1243.0	1651.0	CONT		2	25	180	
			BLEN	1252.2	1535.0	DCIM	P,S,Z	3	130	3400	
			SVTO	1253.0	1634.0	CONT		2	25	180	
	0452	1716	ONDR	1254.2	1323.0	DCIM	GG	2	2000X	4500X	
			SGMR	1308.0	1641.0	CONT		1	30	80	
			HOLL	1523.0	1605.0	III	N	1	25	180	
			SGMR	1551.0	1552.0	III		1	30	80	
			SVTO	1551.0	1551.0	III		2	25U	124U	
			HOLL	1810.0	2000.0	III	N	1	25	180	
			PALE	1842.0	0442.0	III	N	1	25	180	
			SGMR	1844.0	1913.0	III	N	1	30	80	
	2050	2400	CULG	2050.0E	2320.0	III	N	1	57X	180	
			CULG	2229.0	2232.0	III	G	1	57X	280	
	1936	2400	HIRA	2229.0	2231.5	III	G	1	60	290	
09	0000	0720	CULG	0022.0	0022.0	III	B	1	57X	160	

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09			CULG	0215.0	0218.0	III	G	1	57X	90	
	0000	0932	HIRA	0215.0	0215.5	III	B	1	25X	80	
			LEAR	0223.0	0320.0	III	N	1	25	143	
			CULG	0231.0	0326.0	III	N	1	57X	150	
			CULG	0323.0	0357.0	I	S	1	120	180	
			CULG	0423.0	0423.0	III	B	1	57X	180	
			HIRA	0423.0	0423.5	III	B	1	60	210	
			LEAR	0423.0	0455.0	III	N	1	72	180	
			CULG	0433.0	0442.0	III	G	1	57X	180	
	0449	1717	ONDR								
	0550	1200	IZMI	0550.0	1200.0D	I	N	2	90	270X	
			CULG	0630.0	0630.0	III	B	1	57X	160	
			HIRA	0630.0	0630.5	III	B	1	50	180	
	0455	1745	BLEN	0640.2	0640.7	III	J	2	280	700	
			CULG	0656.0	0659.0	III	G	1	130	220	
			HIRA	0656.0	0659.0	III	G	1	130	400	
			IZMI	0656.3	0659.2	III	GG	2	140	270X	
			CULG	0711.0	0716.0	III	G	2	57X	180	
			HIRA	0711.0	0715.0	III	G	2	30	350	
			LEAR	0711.0	0715.0	V		2	25	180	
			SVTO	0711.0	0715.0	V		2	25	164	
			IZMI	0711.1	0711.3	III	G	1	25	90	
			IZMI	0712.4	0714.1	III	GG,FS	2	25X	270X	
			IZMI	0714.1	0715.6	III	GG,FS	2	25X	270X	
			SVTO	0801.0	1218.0	CONT		1	75	180	
			BLEN	0803.4	0804.2	III	GG	2	390	500	
			LEAR	0805.0	0937.0	CONT		1	25	180	
			IZMI	0809.2	0833.0U	III	N	1	45	95	
			IZMI	0824.1	0824.4	III	G	1	45	95	
			HIRA	0834.0	0836.0	III	G	1	30	130	
			SVTO	0834.0	0835.0	V		2	25	155	
			IZMI	0834.2	0835.7	III	GG,C	2	25X	95	
			IZMI	1035.8	1036.1	III	GG	2	160	270X	
			IZMI	1049.0	1052.8	III	GG,C	2	25X	270X	
			SVTO	1049.0	1049.0	V		2	25	180	
			BLEN	1142.8	1143.6	III	G,C	2	140	600	
			IZMI	1142.9	1143.6	III	GG	2	25	270X	
			SVTO	1143.0	1145.0	III		1	25	180	
			IZMI	1144.0	1145.6	III	GG	2	25	270X	
			IZMI	1159.8	1159.8	III	G	2	45	155	
			SVTO	1231.0	1234.0	III		1	25	81	
			SVTO	1318.0	1338.0	III	N	1	25U	83U	
			HOLL	1329.0	1329.0	III		1	25	86	
			SVTO	1409.0	1409.0	III		1	28	75	
			HOLL	1438.0	1441.0	III		1	25	141	
			SVTO	1438.0	1443.0	III		1	25	174	
			SGMR	1439.0	1441.0	III		1	30	55	
			BLEN	1440.9	1441.2	III	GG,S	2	140	800	
			HOLL	1526.0	1527.0	III		1	25	140	
	1935	2208	HIRA								
	2050	2400	CULG	2055.0	2101.0	III	G	1	57X	160	
10	0000	0710	CULG	0058.0	0102.0	III	G	1	57X	100	
			CULG	0110.0	0110.0	III	G	1	250	420	
			CULG	0200.0	0202.0	III	G	1	57X	90	
			CULG	0231.0	0233.0	III	G	1	57X	180	
			LEAR	0239.0	0243.0	III		1	25	180	
			CULG	0240.0	0244.0	III	G	2	57X	180	
			CULG	0252.0	0252.0	III	B	1	57X	180	
	0344	1840	POTS	0353 U	1820 U	I	N,S,DC	2	120	380	
	0447	1719	ONDR								
	0450	1400	BLEN	0450.0X	1400.0X	I	DC	3	180	380	
			CULG	0452.0	0453.0	III	G	1	57X	420	
			LEAR	0452.0	0453.0	III		1	52	180	
			SVTO	0452.0	0453.0	III		1	40	180	
			BLEN	0452.3	0453.0	III	GG	3	140	550	
			POTS	0452.3	0453.3	III	GG	3	110U	450	
	0455	0933	HIRA								
			SVTO	0520.0	0755.0	CONT		1	111U	180U	

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10	0602	1200	IZMI	0602.0E	1200.0	I	N	1	180	270X	
			POTS	0838.5	0838.6	III	B	2	110U	160	
			POTS	1048.4	1048.6	III	G	1	110U	140	
			SVTO	1115.0	1115.0	III		1	33U	82U	
			IZMI	1115.2	1115.3	III	B	1	45	95	
			POTS	1115.2	1115.4	III	B	1	40X	140	
			SVTO	1149.0	1155.0	III		1	25U	83U	
			IZMI	1155.2	1155.7	III	GG	1	25X	170	
			POTS	1155.3	1156.0	III	GG	2	40X	170U	
			HOLL	1329.0	1330.0	III		1	25	85	
			POTS	1329.8	1330.2	III	G	2	40X	150	
			SVTO	1330.0	1330.0	III		1	25	82	
			HOLL	1358.0	1359.0	III		1	25	55	
			SVTO	1358.0	1359.0	III		1	25	56	
			SVTO	1717.0	1717.0	III		1	112	180	
			POTS	1717.8	1718.1	III	G	3	130	350	
			HOLL	1754.0	1817.0	III	N	1	25	115	
			PALE	1807.0	1808.0	III		1	25	86	
			SGMR	1807.0	1807.0	III		2	30	80	
	1934	2400	HIRA	1934.0	1934.5	III	B	1	80	230	
			HIRA	2147.5	2148.0	III	B	1	130	300	
	2050	2400	CULG	2148.0	2148.0	III	B	1	75	280	
			HOLL	2301.0	2302.0	III		1	25	94	
			CULG	2339.0	2341.0	III	G	1	110	180	
			HIRA	2339.0	2339.5	III	B	1	110	250	
			CULG	2358.0	2358.0	III	B	1	400	500	
11			LEAR	0007.0	0014.0	III		1	25	180	
			HOLL	0008.0	0009.0	III		1	25	150	
	0000	0710	CULG	0008.0	0014.0	III	G	1	57X	180	
			CULG	0113.0	0122.0	III	GG	1	57X	180	
			LEAR	0115.0	0122.0	III		1	25	180	
	0000	0933	HIRA	0118.0	0118.5	III	B	1	30	170	
			HIRA	0249.0	0249.5	III	B	1	280	420	
			CULG	0255.0	0300.0	UNCLF		1	57X	130	II?
			CULG	0258.0	0258.0	III	G	1	220	430	
			HIRA	0258.0	0258.5	III	B	1	190	480	
			CULG	0307.0	0307.0	III	B	1	57X	140	
			CULG	0438.0	0438.0	III	G	1	57X	90	
			CULG	0458.0	0519.0	III	N	1	57X	180	
	0342	1842	POTS	0458.0	0517.3	III	GG,N	3	40X	380	
			POTS	0508.2	0920 U	I	S,N	2	200U	350	
			SVTO	0511.0	0513.0	III		1	25	162	
			HIRA	0511.5	0514.0	III	G	2	25X	310	
			CULG	0512.0	0513.0	III	G	2	57X	450	
			LEAR	0512.0	0513.0	III		1	25	180	
			CULG	0553.0	0559.0	III	G	1	57X	80	
	0600	1200	IZMI	0600.0E	0951.0U	I	N	1	190	270X	
	0446	1720	ONDR	0653.5	0655.3	DCIM	G	1	2439	4500X	
			ONDR	0852.5	0855.0	DCIM	G	1	2410	4500X	
			SVTO	0924.0	0924.0	III		1	25	55	
			IZMI	0924.7	0924.9	III	B	1	25X	55	
			IZMI	0954.0	0954.3	III	G	1	25X	80	
			SVTO	0954.0	0954.0	III		1	25	58	
			POTS	0954.1	0954.2	III	B	2	40X	60	
			IZMI	0958.6	0958.7	III	B	2	125	165	
			POTS	0958.6	0958.8	III	B	2	130	170U	
			SVTO	1039.0	1045.0	III		1	25	127	
			IZMI	1039.2	1039.9	III	G	2	25X	95	
			POTS	1039.3	1039.9	III	G,RS	2	40X	170U	
			IZMI	1043.9	1045.3	III	GG	1	40X	170	
			POTS	1044.6	1045.3	III	GG	2	40X	300	
			ONDR	1124.1	1133.0	DCIM	G	1	800X	2000X	
			POTS	1125.1	1129.7	I	S,DC	2	140	350	
			IZMI	1127.5	1132.8	III	GG	1	130	270X	
			SVTO	1131.0	1146.0	II		2	29	180	ESS 0415
			IZMI	1131.3	1147.6	II	HARM	2	32	210	
			POTS	1131.4	1148 U	II		2	40X	220	
			SGMR	1133.0	1142.0	II		2	35	80	ESS 0500

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11			IZMI	1137.9	1139.7	III	G	2	35	42	
			IZMI	1148.1	1150.0	III	G	1	45	95	
			SVTO	1149.0	1150.0	III		1	25	78	
			POTS	1241	1244	I	S,DC	2	220	300	
			POTS	1502	1505	I	S,DC	2	120	150	
			HOLL	1503.0	1504.0	III		1	25	84	
			SVTO	1503.0	1504.0	III		1	29U	135U	
			POTS	1520	1531	I	S,N	1	200U	280	
			HOLL	1621.0	1624.0	III		1	25	180	
			SVTO	1621.0	1624.0	III		1	25	162	
			POTS	1621.2	1631.9	III	GG,N	3	110U	400	
			POTS	1633.7	1633.8	UNCLF		2	140	170U	
			POTS	1637	1719	I	S,N	1	200U	280	
			HOLL	1644.0	1645.0	III		1	25	65	
			SVTO	1644.0	1644.0	III		1	29	78	
			HOLL	1807.0	1819.0	III	N	1	25	136	
			SGMR	1815.0	1816.0	III		1	30	60	
	2050	2400	CULG	2126.0	2126.0	III	G	1	57X	150	
			CULG	2151.0	2152.0	III	G	1	120	180	
			CULG	2214.0	2215.0	III	G	1	57X	180	
			HOLL	2214.0	2214.0	III		1	25	180	
	1933	2400	HIRA	2214.0	2215.0	III	G	1	25X	300	
			CULG	2313.0	2314.0	III	G	1	57X	150	
			CULG	2319.0	2319.0	III	G	1	100	160	
12	0000	0934	HIRA	0002.5	0003.0	III	B	1	180	300	
			HOLL	0013.0	0013.0	III		1	25	141	
			LEAR	0013.0	0014.0	III		1	25	180	
	0000	0710	CULG	0013.0	0015.0	III	G	1	57X	180	
			HIRA	0013.5	0015.0	III	G	1	25X	190	
			CULG	0055.0	0055.0	III	B	1	57X	90	
			CULG	0134.0	0134.0	III	B	1	57X	90	
			CULG	0155.0	0159.0	III	G	1	60	180	
			HIRA	0155.5	0156.0	III	B	1	90	190	
			LEAR	0252.0	0252.0	III		1	124	180	
			HIRA	0252.5	0253.0	III	B	1	110	280	
			CULG	0253.0	0253.0	III	G	1	120	260	
			CULG	0258.0	0258.0	III	B	1	57X	100	
			HIRA	0258.0	0258.5	III	B	1	30	110	
			LEAR	0258.0	0258.0	III		1	30	99	
	0340	1843	POTS	0412	1031 U	I	S,N,DC	2	200U	380	
			CULG	0415.0	0415.0	III	B	1	70	160	
	0455	1721	ONDR								
			CULG	0546.0	0547.0	III	G	1	240	380	
			HIRA	0547.0	0547.5	III	B	1	210	370	
	0604	1200	IZMI	0604.0E	1020.0U	I	N	1	170	270X	
			IZMI	0823.1	0825.6	III	G	2	120	270X	
			HIRA	0824.0	0824.5	III	B	1	100	180	
			LEAR	0824.0	0824.0	III		1	108	180	
			POTS	0824.3	0826.7	III	G,N	2	120	350	
			IZMI	0828.4	0828.9	III	G	1	195	270X	
			IZMI	0843.7	0844.0	III	G	2	220	270X	
			POTS	1028.7	1029.2	III	G	1	120	140	
			POTS	1055	1143 U	I	S,N	1	200U	300	
			POTS	1153.5	1209.5	III	GG,N	3	40X	350	
			IZMI	1153.6	1156.0	III	GG	2	25X	145	
			IZMI	1156.7	1157.9	III	GG	2	25X	270X	
			SGMR	1157.0	1157.0	III		1	30	80	
			SVTO	1157.0	1157.0	III		1	25	180	
			POTS	1227	1824 U	I	S,N	2	120	400	
			HOLL	1338.0	1339.0	III		1	25	72	
			SVTO	1338.0	1339.0	III		1	25	55	
			HOLL	1740.0	1815.0	III	N	1	25	109	
			LEAR	2330.0	0002.0	III	N	1	25	180	
	1932	2400	HIRA	2338.5	2339.0	III	B	1	50	200	
	2050	2400	CULG	2339.0	2339.0	III	B	1	57X	130	
			CULG	2349.0	2352.0	III	G	1	57X	180	
			HIRA	2349.0	2351.0	III	G	1	25X	200	

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13	0000	0710	CULG	0003.0	0003.0	III	B	1	65	150	
			CULG	0041.0	0041.0	III	B	1	70	180	
			LEAR	0041.0	0041.0	III		1	65	180	
			CULG	0053.0	0056.0	III	G	1	57X	260	
			LEAR	0053.0	0104.0	III		1	25	180	
	0000	0935	HIRA	0053.0	0056.0	III	G	2	30	260	
			HOLL	0054.0	0055.0	III		1	25	180	
			CULG	0102.0	0109.0	III	GG	1	57X	90	II?
			CULG	0252.0	0252.0	III	B	2	57X	150	
			HIRA	0252.0	0252.5	III	B	2	50	140	
			LEAR	0252.0	0252.0	III		1	52	156	
			CULG	0254.0	0254.0	III	G	1	57X	90	
	0340	1844	POTS	0452	0523 U	I	S,N	1	120	300	
			CULG	0502.0	0503.0	III	G	1	57X	140	
	0550	1200	IZMI	0550.0E	1045.0U	I	N	1	200	270	
			POTS	0618	0712	I	S,N	1	200U	300	
	0453	1722	ONDR	0745.1	0745.4	DCIM	GG	1	2000X	3680	
	0740	1115	BLEN	0745.1	0745.9	DCIM	P	2	2000	3700	
			POTS	0841	0944	I	S,N,DC	2	200U	360	
			SVTO	0848.0	0848.0	III		1	25U	42U	
			POTS	0942.3	0943.6	DCIM		1	400	500	
			POTS	1012	1207 U	I	S,N	2	200U	320	
			POTS	1231.7	1804 U	I	S,N,DC	2	200U	380	
			POTS	1232.0	1232.2	III	B	2	220	550	
			SVTO	1255.0	1255.0	III		1	25	76	
			POTS	1347.8	1348.0	III	B	2	200U	550	
			POTS	1638.7	1639.3	DCIM		2	250	600	
			HOLL	2049.0	2053.0	III		1	25	180	
			PALE	2050.0	2053.0	III		1	25	180	
	1931	2400	HIRA	2050.0	2053.0	III	G	1	25X	230	
	2050	2400	CULG	2050.0	2053.0	III	G	1	57X	180	
			CULG	2058.0	2106.0	II	SH	2	57X	120	ESS 500
			HIRA	2058.0	2106.0	II		1	60	120	
			PALE	2058.0	2107.0	II		1	25	180	ESS 0309
			HOLL	2059.0	2111.0	II		1	30	121	ESS 0831
			HOLL	2330.0	2351.0	III	N	1	25	129	
14			LEAR	0057.0	0102.0	III		1	25	180	
	0000	0710	CULG	0057.0	0103.0	III	G	1	57X	180	
			HOLL	0101.0	0102.0	III		1	25	138	
	0000	0936	HIRA	0103.0	0104.0	III	B	1	25X	210	
			LEAR	0440.0	0442.0	III		1	70	141	
	0340	1844	POTS	0440.8	0442.6	III	G	1	110U	140	
			CULG	0441.0	0443.0	III	G	1	57X	150	
			HIRA	0441.0	0441.5	III	B	1	50	110	
	0452	1723	ONDR								
			POTS	0514	0554	I	S,N	1	250	300	
			POTS	0523.5	0524.9	III	G	2	110U	160	
			CULG	0524.0	0525.0	III	G	1	57X	170	
			LEAR	0524.0	0747.0	CONT		1	74	180	
			HIRA	0524.5	0525.0	III	B	1	50	130	
			SVTO	0526.0	0747.0	CONT		1	109U	126U	
			CULG	0618.0	0618.0	III	B	1	57X	170	
			HIRA	0618.0	0618.5	III	B	1	50	140	
			SVTO	0618.0	0618.0	III		1	46	81	
	0600	1200	IZMI	0618.1	0618.4	III	B	2	55	150	
			POTS	0618.2	0618.4	III	G	2	110U	160	
			HIRA	0627.0	0627.5	III	B	1	60	150	
			POTS	0627.3	0627.7	III	G	2	110U	160	
			IZMI	0627.5	0627.6	III	B	1	65	125	
			CULG	0628.0	0628.0	III	B	1	57X	170	
			POTS	0640.5	0729	I	S,N	2	120	300	
			IZMI	0640.8	0641.1	III	G	1	190	270X	
			CULG	0655.0	0655.0	III	B	1	57X	140	
			HIRA	0655.0	0655.5	III	B	1	50	100	
			IZMI	0655.3	0655.5	III	B	2	60	140	
			POTS	0655.3	0655.6	III	B	2	40X	140	
			SVTO	0726.0	0727.0	III		1	25	56	
			HIRA	0726.5	0727.0	III	B	1	50	130	

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14			IZMI	0726.5	0726.9	III	G	2	60	155	
			POTS	0726.5	0727.3	III	GG	2	40X	140	
			HIRA	0733.0	0743.0	II		1	50	110	
			POTS	0733.2	0743	II		2	40X	120	
			SVTO	0738.0	0746.0	II		1	40	75	ESS 0543
			IZMI	0738.2	0743.7	II	HARM	1	45	100	
			LEAR	0747.0	0824.0	IV		1	57	180	
			SVTO	0747.0	0800.0	IV		1	25	75	
			IZMI	0747.3	0752.5	III	GG	1	25X	50	
			IZMI	0748.5	0751.7	II	G	1	55	75	
			POTS	0759.5	1027	I	S,N,DC	2	200U	450	
			IZMI	0823.0U	0848.0U	I	N	1	190	270X	
	0445	1800	BLEN	0823.7	0905.0	I	DC	3	230	600	
			SVTO	1114.0	1114.0	III		1	25	180	
			IZMI	1114.1	1115.0	III	GG,C	2	25	175	
			POTS	1114.1	1114.8	III	G	2	40X	160	
			POTS	1114.3	1115.2	V	G	2	40X	70	
			BLEN	1312.3	1313.1	DCIM	P	1	600	2000	
			HOLL	1319.0	1321.0	III		1	25	162	
			HOLL	1319.0	1425.0	III	N	1	25	162	
			SGMR	1319.0	1321.0	III		1	30	80	
			SVTO	1319.0	1321.0	III		1	25	180	
			POTS	1319.1	1321.6	III	GG	3	40X	240	
			SVTO	1343.0	1345.0	III		1	25	79	
			POTS	1343.1	1343.7	III	G	2	40X	240	
			POTS	1413.3	1415.0	III	G	2	40X	240	
			SVTO	1414.0	1425.0	III	N	1	25	180	
			POTS	1414.5	1415.0	V		2	40X	150	
			POTS	1415	1425	I	S,C	2	120	170U	
	2050	2400	CULG	2310.0	2310.0	III	B	1	57X	140	
			LEAR	2323.0	2325.0	III		1	60	147	
			CULG	2339.0	2340.0	III	G	1	57X	90	
			HOLL	2339.0	2340.0	III		1	25	81	
			LEAR	2339.0	2340.0	III		1	55U	98U	
			LEAR	2353.0	2354.0	III		1	62	180	
	1930	2400	HIRA	2353.5	2354.0	III	B	1	80	210	
			CULG	2354.0	2354.0	III	B	1	80	180	
15	0000	0937	HIRA								
	0000	0710	CULG	0015.0	0015.0	III	B	1	100	130	
			LEAR	0105.0	0117.0	III	N	1	61U	154U	
			CULG	0107.0	0107.0	III	B	1	57X	90	
			CULG	0118.0	0118.0	III	B	1	100	130	
	0449	1724	ONDR								
	0340	1844	POTS	0453 U	1727 U	I	S,N,DC	2	200U	320	
			POTS	0658.8	0700.2	DCIM		2	450	750	
	0445	1800	BLEN	0805.0	0811.9	DCIM	P	2	400	4000X	
			POTS	0807.7	0809.5	DCIM		3	450	770	
			SVTO	0821.0	0821.0	III		1	25	41	
			LEAR	0844.0	0844.0	III		1	75	180	
			POTS	1110.1	1110.4	DCIM		3	450	800X	
	0601	1200	IZMI	1138.1	1138.5	III	B	1	25X	75	
			IZMI	1144.6	1144.7	III	B	1	30	75	
			POTS	1347.8	1347.9	III	B	2	130	170U	
	1929	2400	HIRA								
	2050	2400	CULG								
16	0000	0710	CULG	0015.0	0016.0	III	G	1	550	1300	
			LEAR	0025.0	0934.0	CONT		1	25	180	
			CULG	0026.0	0027.0	III	G	1	65	100	
			CULG	0028.0	0043.0	II	SH	1	85	290	FLA ESS 400
	0000	0938	HIRA	0030.0	0039.0	II		1	110	320	
			PALE	0036.0	0445.0	CONT		2	25	180	
			CULG	0041.0	0710.0D	IV	FS	2	57X	1800X	
	0337	1844	POTS	0337 E	1421 U	I	S,C,DC	3	40X	500	
			SVTO	0346.0	1310.0	CONT		1	25	180	
	0445	1800	BLEN	0440.0X	0705.0	DCIM	P,F	3	120	4000X	
	0447	1726	ONDR								
			SVTO	0547.0	0710.0	III	N	1	25	180	

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OBSERVATION Day	Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
16			IZMI	0601.0E	1200.0D	III	N	2	40	95	
	0601	1200	IZMI	0601.0E	0725.0U	I	S,C	2	50	270X	
			BLEN	0625.5	0626.5	III	RS	1	880	1500	
			IZMI	0725.0U	1200.0D	I	S,C	1	50	270X	
			IZMI	0732.6	0733.3	UNCLF		1	35	40	
			SVTO	0822.0	1059.0	III	N	2	25	180	
			IZMI	0830.4	0830.8	III	B	1	25X	70	
			IZMI	0900.6	0901.8	III	GG	2	25	95	
			IZMI	0958.6	0959.6	III	G	2	25X	155	
			POTS	0958.7	0958.9	III	B	3	40X	150	
			IZMI	1013.7	1016.9	III	GG	2	25X	175	
			POTS	1013.7	1016.5	III	GG	3	40X	240	
			IZMI	1035.0	1036.3	III	GG	2	25X	95	
			IZMI	1058.7	1059.7	III	GG	2	25X	100	
			POTS	1058.7	1059.3	III	G	2	40X	90U	
			BLEN	1101.0	1127.0	DCIM	P	1	150	600	
			SVTO	1143.0	1143.0	III		1	25	52	
			SGMR	1219.0	1222.0	III		1	30	60	
			SVTO	1219.0	1222.0	III		2	25U	63U	
			POTS	1219.5	1220.1	III	G	2	40X	70	
			BLEN	1240.5	1353.0	DCIM	S	1	130	600	
			SVTO	1323.0	1438.0	III	N	2	25U	82U	
			HOLL	1342.0	1343.0	III		1	25	135	
			HOLL	1401.0	1609.0	III	N	1	25	69	
			POTS	1421 U	1732 U	I	S,N,DC	2	120	250	
			HOLL	1423.0	1424.0	III		1	25	129	
			SGMR	1423.0	1424.0	V		1	30	70	
			POTS	1423.1	1424.2	III	G	2	40X	70	
			SGMR	1508.0	1508.0	III		1	30	55	
			SVTO	1508.0	1552.0	III	N	2	25	180	
			POTS	1508.1	1508.3	III	B	2	40X	70	
			HOLL	1530.0	1530.0	III		1	25	143	
			SGMR	1530.0	1530.0	III		1	30	70	
			POTS	1530.2	1530.7	III	G	3	40X	170U	
			HOLL	1653.0	1654.0	III		1	25	180	
			PALE	1653.0	1654.0	III		1	25	180	
			SGMR	1653.0	1654.0	V		2	30	55	
			SVTO	1653.0	1654.0	III		1	25	180	
			BLEN	1653.3	1654.9	III	RS	1	140	230	
			POTS	1653.8	1655.5	III	GG	3	110U	220	
			POTS	1751.6	1751.8	DCIM		2	350	500	
			HOLL	1808.0	1810.0	III		1	25	147	
			PALE	1808.0	1810.0	III		1	25	149	
			SGMR	1808.0	1810.0	III		2	30	55	
			HOLL	1821.0	1821.0	III		1	25	54	
			PALE	1821.0	1821.0	III		1	25	53	
			POTS	1822 U	1840 U	I	S,N	1	200U	320	
			HOLL	2000.0	2336.0	III	N	1	25	172	
			PALE	2000.0	0446.0	III	N	1	25	180	
			SGMR	2005.0	2010.0	III		2	30	65	
	1928	2400	HIRA	2005.0	2011.0	III	G	2	25X	160	
	2050	2400	CULG	2050.0E	2358.0	I	S	1	110	230	
			SGMR	2109.0	2109.0	III		1	30	55	
			HIRA	2109.5	2110.0	III	B	1	25X	130	
			CULG	2110.0	2110.0	III	B	1	57X	140	
			CULG	2121.0	2126.0	III	G	1	57X	180	
			HIRA	2151.5	2202.0	III	G	1	25X	200	
			CULG	2152.0	2202.0	III	G	1	57X	180	
			CULG	2224.0	2228.0	III	G	1	57X	180	
			HIRA	2227.0	2227.5	III	B	1	25X	140	
			CULG	2256.0	2336.0	III	N	1	57X	180	
			HIRA	2256.0	2258.5	III	G	1	25X	220	
			LEAR	2306.0	0055.0	CONT		1	46	180	
17			HOLL	0014.0	0015.0	III		1	25	164	
			LEAR	0014.0	0021.0	III		1	25	180	
	0000	0710	CULG	0015.0	0016.0	III	G	1	57X	160	
			CULG	0019.0	0022.0	III	G	1	57X	180	
			HOLL	0019.0	0021.0	III		1	25	141	

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17			CULG	0103.0	0105.0	III	G	1	57X	90	
			CULG	0115.0	0121.0	III	N	1	57X	180	
	0000	0939	HIRA	0115.0	0116.0	III	G	2	25X	120	
			HIRA	0119.0	0121.5	III	G	1	25X	190	
			LEAR	0119.0	0150.0	III	N	1	25	180	
			HOLL	0122.0	0122.0	III		1	25	180	
			HIRA	0216.0	0216.5	III	B	1	25X	130	
			LEAR	0216.0	0220.0	III		1	25	180	
			HIRA	0220.0	0221.0	III	B	1	25X	110	
			CULG	0248.0	0251.0	III	G	2	57X	160	
			LEAR	0248.0	0250.0	III		1	25	180	
			CULG	0341.0	0405.0	III	N	1	57X	180	
			LEAR	0344.0	0440.0	III	N	1	25	180	
	0446	1727	ONDR	0516.4	0522.1	DCIM	G	1	800X	2000X	
			SVTO	0518.0	0518.0	III		1	25	70	
	0337	1846	POTS	0530.8	0531.4	III	G	2	110U	220	
			CULG	0531.0	0532.0	III	G	1	57X	170	
			HIRA	0531.0	0531.5	III	B	1	30	200	
			LEAR	0531.0	0532.0	III		1	25	180	
			SVTO	0531.0	0532.0	III		1	25	144	
			SVTO	0538.0	0538.0	III		1	30	56	
			POTS	0554 U	0624 U	I	N,S	2	120	340	
			SVTO	0601.0	0614.0	III	N	1	25	147	
			CULG	0602.0	0612.0	III	G	1	57X	160	
	0550	1200	IZMI	0602.0	0607.6	III	GG	1	45	145	
			POTS	0606.3	0611.4	III	G,N	2	40X	220	
			LEAR	0609.0	0611.0	III		1	25	180	
			HIRA	0609.5	0612.0	III	G	1	30	160	
			IZMI	0609.5	0613.1	III	GG	2	25X	175	
			SVTO	0651.0	1050.0	III	N	2	25	135	
			CULG	0700.0	0703.0	III	G	1	57X	180	
			IZMI	0700.5	0703.2	III	GG	2	25X	95	
			POTS	0701.8	0702.5	III	G	2	40X	150	
			IZMI	0711.1	0711.4	III	B	1	45	75	
			IZMI	0733.5	0733.7	III	G	1	25X	90	
			ONDR	0737.1	0813.5	DCIM	GG	3	800X	2000X	
	0440	1800	BLEN	0737.7	0810.0	DCIM	P	3	140	2000	
			LEAR	0741.0	0933.0	III	N	1	25	180	
			IZMI	0741.1	0743.2	III	GG	2	45	135	
			POTS	0741.8	0745.0	III	GG,N	3	40X	160	
			HIRA	0742.0	0746.0	III	G	1	30	140	
			IZMI	0743.7	0745.8	III	GG	2	25X	165	
			POTS	0751.8	0752.2	III	B,W	1	40X	140	
			IZMI	0752.0	0753.1	III	G	1	25X	90	
			HIRA	0753.5	0754.0	III	B	1	50	100	
			POTS	0759.7	0808.2	DCIM		2	450	800X	
			POTS	0802.3	0818 U	I	S,N	2	120	170U	
			ONDR	0803.1	0812.5	DCIM	G	1	2000X	4500X	
			IZMI	0810.4	0811.0	III	G	2	25X	155	
			POTS	0810.4	0810.7	III	B	2	40X	150	
			IZMI	0814.8	0821.9	II		1	45	65	
			POTS	0815	0826	II	F	2	40X	60	
			HIRA	0815.0	0815.5	III	B	1	25X	180	
			SVTO	0818.0	0825.0	II		1	36	56	ESS 0378
			POTS	0911.5	0912.4	DCIM		2	280	550	
			BLEN	0911.6	0912.9	III	GG	2	250	520	
			IZMI	0911.6	0912.1	III	G	2	240	270X	
			IZMI	0920.3	0920.8	III	G	1	40	155	
			POTS	0920.3	0920.8	III	G	2	40X	150	
			POTS	1103.6	1104.6	DCIM		2	280	450	
			IZMI	1113.3	1113.3	III	B	1	50	75	
			SGMR	1155.0	1229.0	III	N	1	30	60	
			SVTO	1155.0	1159.0	III		2	25	150	
			POTS	1155.3	1159.3	III	GG,N	3	40X	160	
			IZMI	1155.6	1156.2	III	G	2	25X	160	
			IZMI	1157.8	1159.2	III	GG	2	25X	190	
			POTS	1218.6	1229.1	III	G,N	3	40X	160	
			HOLL	1222.0	1845.0	III	N	1	25	106	
			SVTO	1232.0	1350.0	III	N	2	25	180	

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17			POTS	1258.7	1314.7	III	GG,N	2	40X	170U	
			SGMR	1312.0	1323.0	III	N	1	30	80	
			POTS	1323.0	1325.7	III	G	3	40X	170U	
			POTS	1343.2	1343.5	III	G	1	40X	140	
			SGMR	1448.0	1503.0	III	N	1	30	55	
			SVTO	1448.0	1448.0	III		1	25	58	
			POTS	1503.0	1503.6	III	G	1	40X	140	
			SVTO	1503.0	1503.0	III		1	25	82	
			ONDR	1553.3	1607.5	DCIM	GG	1	800X	2000X	
			ONDR	1555.4	1605.5	DCIM	GG	1	2000X	4500X	
			BLEN	1555.6	1557.7	III	GG,C,RS	3	320	4000X	
			POTS	1555.8	1556.8	DCIM		1	330	620	
			POTS	1603	1615	I	S,DC,C	2	120	170U	
			SGMR	1603.0	1626.0	III	N	3	30	50	
	1927	2400	HIRA								
	2050	2400	CULG								
18			LEAR	0244.0	0245.0	III		1	25	142	
	0000	0710	CULG	0337.0	0431.0	III	N	1	57X	200	
	0000	0940	HIRA	0346.0	0359.0	III	G	1	40	200	
			LEAR	0349.0	0401.0	III	N	1	25	180	
			LEAR	0430.0	0432.0	III		1	25	146	
			HIRA	0431.0	0431.5	III	B	1	30	80	
			SVTO	0431.0	0431.0	III		1	39	56	
	0337	1846	POTS	0444	0713	I	S,N,DC	2	120	170U	
			LEAR	0500.0	0502.0	III		1	25	180	
			CULG	0504.0	0523.0	I	S	1	130	160	
			LEAR	0530.0	0530.0	III		1	25	180	
			LEAR	0700.0	0701.0	III		1	25	180	
			POTS	0828	1500 U	IV		3	40X	800	CME?
			LEAR	0830.0	0830.0	III		1	25	180	
			LEAR	0917.0	0918.0	III		1	25	114	
			SVTO	0917.0	0918.0	III		2	25	124	
			HIRA	0917.5	0918.0	III	B	1	30	130	
			POTS	0917.5	0918.9	III	G	2	40X	240	
	0600	1200	IZMI	0917.5	0918.6	III	GG	2	25X	95	
			IZMI	0926.0U	1200.0D	I	N	2	110	270X	
			SVTO	0930.0	1027.0	CONT		1	112	153	
			IZMI	1045.7	1046.0	UNCLF		2	200	210	
	0455	1728	ONDR	1101.5	1134.2	DCIM	GG	2	800X	2000X	
	0440	1810	BLEN	1101.7	1135.1	DCIM	P	2	300	1500	
			IZMI	1131.6	1132.2	III	G,RS	1	50	75	
			SVTO	1132.0	1446.0	CONT		1	25	180	
			HOLL	1254.0	1700.0	CONT		1	65	180	
			HOLL	1323.0	1325.0	III		1	25	180	
			SVTO	1323.0	1325.0	V		1	25	146	
			SGMR	1324.0	1325.0	III		2	30	55	
			POTS	1500 U	1840 U	I	S,N	2	120	400	
			HOLL	1535.0	1536.0	III		1	25	180	
			SVTO	1535.0	1538.0	III		1	25	151	
			POTS	1535.2	1537.8	III	GG	2	110U	170U	
			SVTO	1630.0	1737.0	CONT		1	124	153	
			HOLL	1906.0	0138.0	CONT		1	40	180	
	1927	2400	HIRA								
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	2	57X	180	
			LEAR	2307.0	0933.0	CONT		1	39	180	
19	0000	0700	CULG	0000.0E	0356.0	I	S,C	1	57X	180	
			CULG	0007.0	0008.0	III	G	2	57X	230	
	0000	0941	HIRA	0007.0	0008.0	III	G	2	130	250	
	0336	1847	POTS	0424 E	1847 U	I	S,DC,N	2	120	300	
			CULG	0447.0	0700.0D	I	S,C	1	80	170	
	0604	1220	IZMI	0604.0E	1220.0D	I	N	1	120	220	
			CULG	0635.0	0700.0D	III	N	1	60	170	
			SVTO	0816.0	0840.0	III	N	1	25U	81U	
			IZMI	0817.3	0818.5	III	G	1	40	155	
	0453	1729	ONDR	0822.1	0822.4	DCIM	G	1	800X	1541	
			IZMI	0840.0	0840.2	III	B	1	25	95	
			HOLL	1557.0	1558.0	III		1	25	68	

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19			SVTO	1557.0	1558.0	III		1	39U	52U	
			HOLL	1705.0	2024.0	III	N	1	25	122	
	0440	1815	BLEN	1705.6	1710.8	DCIM	S	3	500	1200	
			SGMR	1706.0	1706.0	III		1	30	40	
			SVTO	1706.0	1706.0	III		1	36U	82U	
	2050	2400	CULG	2050.0E	2400.0D	I	S,C	1	57X	180	
			CULG	2124.0	2400.0D	III	N	1	57X	180	
			HOLL	2141.0	2146.0	III		1	25	137	
			PALE	2141.0	2142.0	III		1	25	70	
			SGMR	2141.0	2146.0	III		2	30	65	
	1926	2400	HIRA	2141.5	2142.0	III	B	1	25X	100	
			CULG	2145.0	2147.0	III	G	2	57X	1200	
			PALE	2145.0	2147.0	III		1	25	90	
			HIRA	2145.5	2147.0	III	G	2	25X	200	
			LEAR	2308.0	0932.0	CONT		1	54	180	
20			CULG	0000.0E	0122.0	III	N	1	57X	160	
	0000	0700	CULG	0000.0E	0233.0	I	S,C	1	57X	170	
			CULG	0233.0	0700.0D	I	S,C	1	80	180	
	0000	0942	HIRA	0337.5	0338.0	III	B	2	360	610	
	0336	1848	POTS	0423 E	1354 U	I	S,DC,N	2	120	350	
			CULG	0447.0	0447.0	III	G	1	57X	150	
			CULG	0546.0	0700.0D	III	N	1	57X	150	
			LEAR	0546.0	0546.0	III		1	36	145	
			SVTO	0546.0	0547.0	III		1	25U	81U	
			HIRA	0546.5	0547.0	III	B	1	50	110	
	0600	1200	IZMI	0600.0E	0840.0U	I	N	2	110	270X	
			IZMI	0606.7	0606.9	III	B	1	45	70	
			IZMI	0650.0U	0800.0U	I	S,DC	2	85	270X	
			IZMI	0712.4	0712.8	III	G	1	60	95	
			IZMI	0717.0	0717.1	III	G	2	140	190	
			IZMI	0717.0	0717.6	I	GG,DC	2	165	215	
			IZMI	0742.0	0744.5	III	GG,FS	2	45	150	
			POTS	0742.2	0742.4	III	B	2	40X	140	
			IZMI	0753.6	0753.7	III	B	1	55	70	
			IZMI	0943.3	0943.5	III	B	1	90	140	
			POTS	1012.8	1042.0	III	GG,U,N	3	40X	800X	
	0440	1815	BLEN	1012.8	1024.6	III	GG,C	3	100X	4000X	
			IZMI	1012.9	1014.3	III	GG	3	25X	270X	
			IZMI	1015.0	1025.2	III	GG	2	25X	270X	
	0427	1730	ONDR	1017.2	1021.5	DCIM	G	1	2000X	4500X	
			ONDR	1028.4	1033.3	DCIM	GG,SP	2	800X	2000X	
			BLEN	1029.5	1040.9	DCIM	P,S	3	170	4000X	
			IZMI	1033.0U	1043.3	III	S,C	2	180	270X	
			BLEN	1045.2	1108.3	III	GG,C	3	170	4000X	
			ONDR	1050.3	1052.5	DCIM	G	1	800X	2000X	
			POTS	1051.4	1051.5	DCIM		2	600	700	
			POTS	1052.3	1101.3	III	GG,N	3	140	800X	
			IZMI	1052.4	1052.8	III	G	2	180	270X	
			IZMI	1055.4	1055.7	III	G	1	50	90	
			IZMI	1100.8	1101.3	III	GG	2	50	270X	
			IZMI	1101.5	1109.5	III	GG	1	45	95	
			POTS	1101.5	1101.8	DCIM		2	300	760	
			POTS	1103.5	1105.1	III	G	1	40X	60	
			BLEN	1112.8	1124.6	III	GG,C	3	100X	4000X	
			IZMI	1153.0U	1200.0D	III	N	1	45	95	
			ONDR	1213.1	1213.4	DCIM	G,W	1	1334	2000X	
			HOLL	1349.0	1350.0	III		1	25	164	
			HOLL	1523.0	1529.0	III		2	25	180	
			POTS	1523.0	1528.8	III	GG,RS,U	3	40X	800X	
			POTS	1523.0	1538	IV		3	40X	800X	
			SGMR	1523.0	1532.0	V		2	30	80	
			BLEN	1523.3	1531.0	II	C	3	100X	4000X	
			ONDR	1524.2	1528.4	DCIM	GG,FS	2	800X	2000X	
			ONDR	1524.2	1528.5	DCIM	G	2	2000X	4500X	
			POTS	1526.1	1532	II	G	3	40X	400	
			HOLL	1529.0	1533.0	III		2	25	180	
			POTS	1538	1552 U	I	S,DC	3	110U	260	
			ONDR	1715.5	1716.4	DCIM	GG	2	800X	1025	

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20			POTS	1802.4	1802.8	DCIM		2	200U	550	
			HOLL	1804.0	1804.0	III		1	25	141	
			PALE	1804.0	1804.0	III		1	25	98	
			SGMR	1804.0	1805.0	III		1	30	60	
			HOLL	2019.0	2023.0	III		1	25	85	
	1925	2400	HIRA	2019.0	2023.0	III	G	1	25X	110	
			CULG	2050.0E	2400.0D	I	S,C	1	70	150	
	2050	2400	CULG	2050.0E	2251.0	III	N	1	57X	160	
			LEAR	2308.0	0932.0	III		1	52	180	
21	0000	0700	CULG	0000.0E	0700.0D	I	S,C	1	70	140	
			CULG	0308.0	0403.0	III	N	1	57	140	
			PALE	0328.0	0332.0	III		1	25	86	
	0000	0943	HIRA	0328.0	0333.0	III	G	1	25X	190	
			LEAR	0329.0	0332.0	III		1	25	180	
	0335	1848	POTS	0442 U	1610 U	I	S,DC,N	2	120	300	
			CULG	0458.0	0549.0	III	N	1	57	170	
	0426	1732	ONDR	0502.3	0506.1	DCIM	GG,FS	2	1081	1934	
	0440	1815	BLEN	0503.7	0505.7	DCIM	P,C	3	1000	4000X	
			HIRA	0508.0	0508.5	III	B	1	110	270	
			SVTO	0508.0	0508.0	III		1	119	180	
	0550	1200	IZMI	0651.6	0652.7	UNCLF		2	115	155	
			SVTO	0909.0	0909.0	III		1	25U	81U	
			IZMI	0909.3	0909.3	III	B	1	45	70	
			HOLL	1432.0	1433.0	III		1	25	64	
			SVTO	1432.0	1433.0	III		1	25	59	
			SGMR	1433.0	1433.0	III		1	30	50	
			POTS	1504.7	1504.9	UNCLF		2	40X	70	
			HOLL	1626.0	1627.0	III		1	25	58	
			BLEN	1626.3	1627.2	DCIM	P	2	450	1000	
			POTS	1748.8	1749.1	UNCLF		2	140	330	
			HOLL	1958.0	1959.0	III		1	25	83	
			PALE	1958.0	1959.0	III		1	25	54	
			SGMR	1958.0	1959.0	III		1	30	60	
	1925	2400	HIRA	1958.5	1959.0	III	B	1	30	50	
	2100	2400	CULG	2104.0	2107.0	III	G	1	100	180	
			HIRA	2122.0	2130.0	III	G	3	25X	320	
			CULG	2123.0	2129.0	III	G	2	57X	1300	
			HOLL	2128.0	2156.0	II		1	25	162	ESS 0670
			PALE	2128.0	2156.0	II		1	25	160	ESS 0797
			CULG	2129.0	2135.0	II	FN	3	57X	80	
			CULG	2129.0	2140.0	III	GG	1	57X	180	
			CULG	2129.0	2145.0	II	SH	3	57X	160	FLA ESS 500
			HIRA	2129.0	2157.0	II		3	25X	140	
			SGMR	2133.0	2149.0	III		1	30	80	
			CULG	2149.0	2150.0	III	G	1	57X	90	
			CULG	2151.0	2324.0	I	S,C	1	60	180	
			CULG	2205.0	2300.0	III	S	1	57X	100	
			LEAR	2309.0	0215.0	CONT		1	25	180	
			LEAR	2309.0	0215.0	CONT		1	52	180	
			CULG	2323.0	2330.0	III	GG	1	360	680	
			CULG	2345.0	2346.0	III	G	1	450	900	
			CULG	2347.0	2400.0D	III	GG	2	57X	140	
			PALE	2347.0	0448.0	CONT		1	25	180	
			HIRA	2349.0	0011.0	III	G	1	25X	130	
22	0000	0700	CULG	0000.0E	0014.0	III	GG	2	57X	140	
			CULG	0004.0	0004.0	III	B	1	550U	850	
	0000	0944	HIRA	0004.0	0004.5	III	B	1	520	900	
			CULG	0014.0	0015.0	III	G	1	300U	1000	
			HIRA	0014.0	0015.0	III	G	1	520	1000	
			HIRA	0047.0	0048.0	III	G	1	600	1200	
			CULG	0114.0	0114.0	III	B	1	550	850	
			CULG	0147.0	0225.0	III	N	1	57X	90	
			CULG	0320.0	0353.0	III	GG	2	57X	180	
			LEAR	0321.0	0353.0	CONT		1	25	180	
			HIRA	0322.0	0335.0	III	G	1	30	160	
			LEAR	0348.0	0352.0	III		2	25	180	
			HIRA	0351.0	0352.0	III	B	1	25X	70	

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22			SVTO	0351.0	0353.0	III		2	25	62	
	0335	1847	POTS	0517 U	0627 U	I	S,N	1	130	260	
	0601	1200	IZMI								
			POTS	0651.6	0654.0	III	G,RS	2	260	380	
			POTS	0747.2	0747.5	DCIM	U	2	300	400	
			HIRA	0823.5	0824.5	III	B	1	200	400	
			POTS	0823.7	0825.3	III	GG,RS	2	140	450	
			POTS	0847.2	0850.0	III	G,N	2	120	170U	
			POTS	0955.2	0955.4	DCIM		2	300	450	
			POTS	0958	1000	I	DC,S	1	130	150	
			POTS	1111.1	1112.4	III	G	2	40X	170U	
			POTS	1213.3	1213.5	DCIM		2	350	400	
			POTS	1218.1	1218.7	DCIM		2	280	550	
	0440	1815	BLEN	1218.1	1227.8	III	GG	2	300	600	
			POTS	1225.2	1225.4	DCIM	U	2	280	400	
			POTS	1227.8	1227.9	DCIM		1	320	400	
			POTS	1339	1438	I	S,N	1	130	170U	
			POTS	1414.9	1415.2	III	G	1	40X	300	
			POTS	1531	1543	I	S,N	1	120	170U	
	0425	1733	ONDR	1621.3	1622.0	DCIM	GG,FS	2	1105	2000X	
			BLEN	1621.6	1624.2	III	C	2	300	2400	
			POTS	1840.6	1840.8	DCIM		2	320	550	
			POTS	1843.0	1844.3	III	G	2	200U	320	
	1924	2400	HIRA								
	2100	2400	CULG								
			HOLL	2347.0	0033.0	III	N	1	25	132	
23	0000	0700	CULG								
	0000	0944	HIRA								
	0424	1734	ONDR								
	0336	1848	POTS	0759 U	0934 U	I	S,N	1	130	170U	
			POTS	1023 U	1039 U	I	S,N	1	140	170U	
			SVTO	1122.0	1123.0	III		1	25	64	
			POTS	1122.5	1123.0	III	G	2	40X	130	
	0601	1200	IZMI	1122.5	1122.9	III	G	2	25X	65	
			POTS	1130.3	1753 U	I	S,N	2	120	400U	
			POTS	1344.0	1344.2	III	B	1	40X	60	
			SVTO	1344.0	1344.0	III		1	33U	57U	
			HOLL	1423.0	1424.0	III		1	32	68	
			SVTO	1423.0	1424.0	III		1	33U	59U	
			POTS	1423.7	1423.9	III	B	1	40X	60	
			POTS	1559.7	1603.2	III	GG,N	2	110U	400U	
	0440	1815	BLEN	1602.2	1603.2	III	G	1	160	400	
	1924	2400	HIRA								
			LEAR	2320.0	2321.0	III		1	106	180	
	2100	2400	CULG	2321.0	2321.0	III	G	1	120	160	
24	0000	0700	CULG	0314.0	0316.0	III	G	1	57X	180	
			LEAR	0321.0	0327.0	II		1	31	160	ESS 0723
			CULG	0322.0	0328.0	II	UE	2	57X	140	ESS 700
			CULG	0323.0	0325.0	III	G	2	57X	170	
			LEAR	0323.0	0323.0	III		1	28	167	
			PALE	0323.0	0323.0	III		1	25	130	
	0000	0945	HIRA	0323.0	0327.0	III	G	1	40	120	
			PALE	0324.0	0325.0	II		1	25	100	ESS 0810
	0336	1848	POTS	0430 U	1804 U	I	S,N,DC	1	120	250	
			CULG	0530.0	0530.0	III	B	1	57X	150	
	0423	1735	ONDR	0641.0	0647.4	DCIM	G,W	1	2215	4500X	
			POTS	1028.5	1031.5	III	GG,N	2	40X	170U	
			POTS	1041.0	1041.4	III	G	3	40X	300	
			SVTO	1041.0	1041.0	III		1	25	85	
	0601	1200	IZMI	1041.1	1041.4	III	G	1	25X	130	
	0440	1820	BLEN	1053.0	1054.5	III	C	1	140	4000X	
			ONDR	1053.1	1053.4	DCIM	G	1	2977	4500X	
			SVTO	1245.0	1246.0	III		1	25	58	
			POTS	1245.2	1245.4	III	B	2	40X	150	
			POTS	1316.7	1317.4	III	G	2	40X	170U	
			HOLL	1317.0	1317.0	III		1	25	133	
			HOLL	1317.0	1344.0	III	N	2	25	180	

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24			SGMR	1317.0	1344.0	III	N	2	30	80	
			SVTO	1317.0	1317.0	III		1	25	180	
			SVTO	1317.0	1344.0	III	N	2	25	180	
			POTS	1328.9	1334.5	III	GG,N	3	40X	400U	
			HOLL	1333.0	1334.0	III		2	25	180	
			BLEN	1333.7	1334.3	III	GG,V	3	100X	460	
			POTS	1344.3	1344.7	III	G	3	40X	170U	
			POTS	1822.1	1822.3	DCIM		2	320	500	
	1923	2400	HIRA								
	2100	2400	CULG								
25	0000	0700	CULG								
	0000	0946	HIRA								
	0336	1848	POTS	0417 U	1141 U	I	S,N,DC	1	120	370	
	0423	1736	ONDR								
	0430	1820	BLEN								
			POTS	0620.1	0620.3	III	G	2	140	400U	
	0550	1200	IZMI	0620.1	0620.5	III	G	1	195	270X	
			POTS	0953.4	0954.3	III	GG,RS	2	130	380	
			IZMI	1107.6	1107.7	III	B	1	190	270X	
			POTS	1328 U	1405 U	I	S,N	1	120	280	
			POTS	1612 U	1728 U	I	S,N	1	120	170U	
			HOLL	1703.0	1704.0	III		1	25	61	
			POTS	1842.2	1843.7	III	GG	2	200U	380	
	1923	2400	HIRA								
	2100	2400	CULG	2338.0	2340.0	III	G	1	65	180	
26	0000	0700	CULG								
	0000	0947	HIRA								
	0422	1737	ONDR								
	0430	0900	BLEN								
	0337	1847	POTS	0810 U	1013 U	I	S,N	1	200U	400U	
	0600	1200	IZMI	0937.9	0938.0	III	B	1	220	265	
			IZMI	0942.5	0948.3	III	G	1	200	270X	
			POTS	1001.8	1003.6	III	G,N,U	2	200U	400U	
			IZMI	1001.9	1002.0	III	B	2	205	270X	
			IZMI	1003.3	1006.3	III	G,RS	1	210	270	
			POTS	1033 U	1120 U	I	S,N	1	270	400U	
			POTS	1226.0	1227.5	UNCLF		1	40X	65	
			SVTO	1226.0	1227.0	III		1	40	59	
			POTS	1243 U	1254 U	I	S,N	1	270	350	
			POTS	1304.0	1304.2	III	B	2	200U	400U	
			POTS	1328 U	1401 U	I	S,N	1	270	380	
			POTS	1431 U	1846 U	I	S,N	1	200U	400U	
			POTS	1719.2	1721.5	III	G	2	200U	400U	
	1922	2400	HIRA								
	2100	2400	CULG								
27	0000	0700	CULG								
	0000	0948	HIRA								
	0337	1848	POTS	0433 U	0525 U	I	S,N	1	220	330	
			POTS	0445.9	0446.6	III	GG	2	210	460	
	0421	1738	ONDR	0502.3	0505.2	DCIM	G	1	800X	2000X	
			POTS	0515.4	0515.7	III	GG	2	230	400	
			POTS	0602.2	0603.5	III	G	2	220	400	
	0555	1200	IZMI	0602.2	0602.4	III	G	1	225	270X	
	0430	1800	BLEN	0602.3	0602.5	III	G	1	230	450	
			IZMI	0620.6	0620.7	III	B	1	195	270X	
			POTS	0620.6	0620.9	III	G	2	200U	400	
			POTS	0852 U	1122 U	I	S,N	1	260	350	
			POTS	1220.4	1259.2	III	GG,N	2	40X	400	
			SVTO	1224.0	1342.0	III	N	2	25	84	
			HOLL	1230.0	1418.0	III	N	1	25	86	
			SGMR	1230.0	1243.0	III	N	1	30	80	
			SGMR	1327.0	1327.0	III		1	30	60	
			HOLL	1418.0	1418.0	III		1	25	155	
			SGMR	1418.0	1418.0	III		2	30	70	
			SVTO	1418.0	1419.0	III		2	25	144	
			POTS	1418.1	1419.3	III	G	3	40X	170U	

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27			HOLL	1501.0	1529.0	III	N	1	25	127	
			SVTO	1501.0	1529.0	III	N	1	25	155	
			SGMR	1518.0	1529.0	III	N	1	30	60	
			POTS	1518.3	1518.6	III	B	2	40X	170U	
			POTS	1528.9	1529.7	III	G	2	40X	300	
			POTS	1535 U	1640 U	I	S,N	1	270	400	
			HOLL	1659.0	1712.0	III	N	1	25	85	
			ONDR	1705.3	1711.5	DCIM	GG,FS	1	800X	2000X	
			BLEN	1705.5	1711.3	III	GG,U,C	3	450	3800	
			POTS	1751 U	1754 U	I	DC	1	280	380	
			POTS	1755.9	1756.8	III	G	2	130	230	
			POTS	1823.8	1824.2	III	G	2	320	420	
			HOLL	1938.0	1939.0	III		1	25	86	
	2100	2400	CULG	2218.0	2218.0	III	G	1	57X	90	
			CULG	2220.0	2221.0	III	G	2	57X	150	
	1921	2400	HIRA	2220.0	2221.0	III	B	2	60	140	
			CULG	2224.0	2225.0	III	G	1	57X	90	
			CULG	2353.0	2355.0	III	G	1	57X	110	
			HOLL	2353.0	2354.0	III		1	25	93	
			LEAR	2353.0	0033.0	III	N	1	49	112	
28	0000	0700	CULG	0000.0	0001.0	III	G	1	57X	90	
			CULG	0005.0	0009.0	III	G	1	57X	80	
			CULG	0022.0	0022.0	III	G	1	57X	90	
			LEAR	0208.0	0820.0	CONT		1	75	180	
	0420	1739	ONDR								
	0337	1848	POTS	0454 U	0508 U	I	S,N	1	50	230	
			CULG	0454.0	0457.0	III	G	2	57X	140	
			LEAR	0454.0	0459.0	III		1	25	180	
	0000	0948	HIRA	0454.5	0459.0	III	G	1	30	190	
			SVTO	0455.0	0456.0	III		1	25U	82U	
			POTS	0458.8	0459.8	III	G	2	40X	300	
			CULG	0459.0	0500.0	III	G	1	57X	180	
			CULG	0507.0	0507.0	III	B	1	57X	75	
			CULG	0535.0	0617.0	III	N	1	57X	140	
			POTS	0539 U	1848 U	I	S,N	2	80	400	
			POTS	0605.3	0608.1	DCIM		2	300	470	
			LEAR	0609.0	0614.0	III		1	25	180	
			SVTO	0609.0	0613.0	III		1	25	180	
			HIRA	0609.5	0614.0	III	G	2	40	200	
			POTS	0609.6	0614.3	III	GG	2	40X	220	
	0550	1200	IZMI	0609.7	0609.9	III	B	2	65	145	
			IZMI	0611.7	0612.5	III	GG	2	45	215	
			CULG	0612.0	0613.0	III	G	2	57X	180	
			IZMI	0613.0	0613.2	III	G	1	90	170	
			IZMI	0613.8	0614.2	III	G	1	95	125	
			SVTO	0704.0	0705.0	III		1	25	61	
			POTS	0714.2	0718.0	III	GG	2	40X	150	
			IZMI	0716.2	0716.6	III	G	1	25X	145	
			POTS	0757.6	0813.1	III	GG,N	2	40X	170U	
			IZMI	0758.4	0759.9	III	GG	2	60	180	
			HIRA	0758.5	0800.0	III	G	1	50	150	
			IZMI	1135.0U	1200.0D	I	N	1	200	270X	
			IZMI	1147.7	1148.0	III	G	1	210	270X	
			SVTO	1213.0	1214.0	V		2	25U	55U	
			POTS	1213.6	1214.0	III	G	2	40X	80	
			SVTO	1535.0	1554.0	III	N	1	25	145	
			HOLL	1536.0	1556.0	III	N	1	25	161	
	0430	1835	BLEN	1539.3	1540.9	DCIM	P	2	500	1500	
			SGMR	1540.0	1605.0	III	N	2	30	80	
			HOLL	1643.0	1647.0	III		1	25	51	
			SVTO	1643.0	1646.0	III		1	25U	53U	
	2100	2400	CULG								
	1921	2400	HIRA	2134.0	2135.0	III	B	2	50	200	
			LEAR	2323.0	2325.0	III		1	41	170	
29	0000	0948	HIRA	0243.0	0247.5	III	G	1	520	1200	
	0000	0700	CULG	0246.0	0246.0	III	B	1	600	1200	
			CULG	0330.0	0333.0	III	G	1	450	800	

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29			HIRA	0330.0	0333.0	III	G	1	430	800	
	0337	1848	POTS	0410 U	1609 U	I	S,N,DC	2	60	400U	
			CULG	0423.0	0424.0	III	G	1	60	160	
			HIRA	0423.0	0423.5	III	B	1	100	140	
			LEAR	0423.0	0423.0	III		1	96	180	
			POTS	0423.0	0423.6	UNCLF		2	100	170U	
			SVTO	0423.0	0423.0	III		1	112U	180U	
	0420	1739	ONDR	0547.3	0547.3	DCIM	G	2	800X	1222	
			POTS	0555.6	0555.9	III	G	2	110	170U	
	0550	1200	IZMI	0630.0U	1200.0D	I	S	1	180	270X	
			ONDR	0723.5	0729.3	DCIM	G	1	800X	1316	
			HIRA	0750.0	0752.0	III	G	1	100	300	
			IZMI	0750.2	0750.5	III	G	2	145	270X	
			POTS	0750.2	0756.5	III	GG,N	3	100	480	
	0430	1805	BLEN	0750.2	0756.6	III	GG,C	2	150	600	
			LEAR	0751.0	0752.0	III		1	102	180	
			SVTO	0751.0	0752.0	III		1	139U	180U	
			IZMI	0751.4	0752.1	III	G,C	2	110	270X	
			IZMI	0753.9	0754.1	III	G	1	110	160	
			IZMI	0755.1	0756.1	III	G	1	200	270	
			IZMI	1013.9	1014.2	III	G	1	180	270X	
			POTS	1013.9	1014.2	III	GG	3	140	480	
			BLEN	1022.5	1032.0	III	GG,RS,C	3	100X	4000X	
			SVTO	1025.0	1029.0	III		1	123	180	
			ONDR	1025.5	1029.5	DCIM	G	1	2000X	4500X	
			POTS	1025.8	1026.4	III	GG	3	110	800X	
			IZMI	1025.9	1026.3	III	GG,C	2	110	270X	
			ONDR	1026.0	1031.0	DCIM	G,FS	2	800X	2000X	
			POTS	1026.2	1028.8	DCIM		2	350	800X	
			IZMI	1028.3	1028.4	III	B	1	130	160	
			IZMI	1029.2	1029.4	III	B,U	2	125	270X	
			ONDR	1050.3	1053.3	DCIM	GG,FS	3	800X	2000X	
			SVTO	1052.0	1057.0	III		1	25	180	
			BLEN	1052.3	1053.0	III	GG,RS,C	3	100X	2200	
			ONDR	1052.4	1053.0	DCIM	G	1	2000X	4500X	
			POTS	1052.6	1053.8	III	GG,N	3	120	800X	
			IZMI	1052.7	1052.9	III	G,FS	2	130	270X	
			IZMI	1056.8	1057.1	III	G	2	25X	175	
			POTS	1056.8	1057.1	III	G	3	40X	170U	
			SVTO	1119.0	1134.0	III	N	1	25	180	
			ONDR	1124.4	1125.0	DCIM	G	3	800X	1006	
			POTS	1132.6	1133.1	III	G	3	40X	400U	
			IZMI	1132.8	1132.9	III	G	2	25X	270X	
			SVTO	1217.0	1221.0	III		1	25U	84U	
			SGMR	1219.0	1220.0	III		1	30	60	
			POTS	1219.9	1220.6	III	G	2	40X	330	
			ONDR	1252.1	1254.2	DCIM	G,W	1	2361	4500X	
			BLEN	1252.3	1256.2	DCIM	C	2	2000	4000X	
			BLEN	1548.4	1552.1	III	GG	3	500	900	
			POTS	1658 U	1817 U	I	S,N	1	230	390	
			HOLL	2306.0	2307.0	III		1	25	126	
	1920	2400	HIRA	2306.5	2307.0	III	B	1	25X	120	
	2100	2400	CULG	2307.0	2307.0	III	B	1	57X	120	
			CULG	2326.0	2327.0	III	G	1	130	670	
			HIRA	2326.0	2326.5	III	B	1	110	700	
			LEAR	2326.0	2330.0	III		1	25	180	
			CULG	2328.0	2331.0	III	G	1	57X	90	
			HOLL	2328.0	2331.0	III		1	25	86	
			PALE	2329.0	2331.0	V		1	25	71	
			HIRA	2329.5	2331.0	III	B	2	25X	70	
30			HOLL	0009.0	0009.0	III		1	25	86	
			LEAR	0009.0	0009.0	III		1	48	102	
	0000	0949	HIRA	0009.5	0010.0	III	B	1	50	100	
	0000	0700	CULG	0010.0	0010.0	III	B	1	57X	90	
			CULG	0225.0	0313.0	III	N	1	57X	200	
			HIRA	0235.0	0236.0	III	G	1	80	200	
			LEAR	0235.0	0238.0	III		1	78	180	
			CULG	0408.0	0408.0	III	B	1	57X	100	

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

MAY 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
30			HIRA	0408.0	0408.5	III	B	1	40	70	
			LEAR	0408.0	0408.0	III		1	25	98	
	0337	1848	POTS	0415 U	0956 U	I	S,N,DC	1	40X	400U	
	0419	1740	ONDR								
	0430	1805	BLEN								
			CULG	0504.0	0538.0	III	N	1	57X	170	
			LEAR	0504.0	0521.0	III	N	1	29	160	
			HIRA	0513.0	0521.0	III	G	1	40	200	
			SVTO	0513.0	0521.0	III		1	25U	84U	
	0600	1200	IZMI	0600.0E	0655.0U	I	N	1	190	270X	
			CULG	0631.0	0632.0	III	G	1	57X	110	
			IZMI	0635.7	0637.9U	I	GG	2	180	215	
			IZMI	0951.0	0956.0	I	GG	1	250	270X	
			POTS	1029 U	1040 U	I	S,N	1	230	400U	
			IZMI	1044.4	1047.9	I	GG	1	240	270X	
			POTS	1105 U	1312 U	I	S,N	2	220	350	
			IZMI	1116.0	1200.0D	I	S	1	210	270X	
			POTS	1336.2	1341.0	III	GG	3	40X	400U	
			SGMR	1337.0	1337.0	III		1	30	65	
			SVTO	1337.0	1337.0	III		1	25	180	
			POTS	1442 U	1543 U	I	S,N	2	220	400U	
			POTS	1520.3	1520.7	III	G	3	40X	320	
			POTS	1648.7	1649.1	III	G	2	40X	350	
			POTS	1653 U	1700 U	I	S,N	2	120	380	
			POTS	1752 U	1842 U	I	S,N	2	200U	400U	
	2100	2400	CULG	2311.0	2344.0	IV		1	57X	200	
			LEAR	2313.0	0318.0	CONT		1	57	180	
			HOLL	2330.0	2337.0	III		2	25	85	
			PALE	2331.0	2334.0	III		1	25	88	
	1920	2400	HIRA	2331.0	2336.0	III	G	3	25X	100	
			LEAR	2332.0	2335.0	III		1	25	88	
			CULG	2333.0	2335.0	UNCLF		3	57X	85	
			PALE	2334.0	2339.0	II		1	25	88	ESS 0668
			LEAR	2353.0	0012.0	III	N	1	25	180	
			CULG	2354.0	2400.0	III	GG	3	57X	260	
			HIRA	2356.5	0002.5	III	G	3	25X	200	
31	0000	0700	CULG	0003.0	0030.0	III	N	1	57X	180	
			CULG	0007.0	0007.0	III	B	1	120	1000	
	0000	0950	HIRA	0011.0	0012.0	III	B	2	110	370	
			CULG	0304.0	0315.0	II	SH	1	57X	85	ESS 400
			LEAR	0304.0	0318.0	II		1	37U	87U	ESS 0498
			HIRA	0312.0	0318.0	II		1	40	50	
	0337	1848	POTS	0409 U	1848 U	I	S,N,DC	1	120	400U	
			CULG	0503.0	0504.0	III	G	1	57X	160	
	0603	1200	IZMI	0603.0	0850.0U	I	N	1	110	155	
			CULG	0605.0	0612.0	III	G	1	57X	160	
			POTS	0605.6	0612.2	III	GG,N	2	110	290	
			IZMI	0605.8	0607.8	III	GG	1	45	90	
			IZMI	0607.3	0607.4	III	N	1	45	175	
			POTS	0806.3	0809.1	III	GG	2	40X	330	
			IZMI	1018.6	1018.8	III	B	1	45	90	
			POTS	1019.9	1020.2	III	B	2	40X	130	
			IZMI	1031.0	1031.1	III	B	1	45	90	
			IZMI	1047.4	1047.6	III	B	1	45	90	
			POTS	1113.0	1113.5	III	G	3	40X	170U	
			SVTO	1114.0	1115.0	III		1	25	131	
			IZMI	1114.5	1115.4	III	G	2	25X	150	
			IZMI	1125.0	1149.0	I	N	1	180	270X	
	0418	1741	ONDR	1255.4	1300.5	DCIM	G	1	2000X	4500X	
			POTS	1257.2	1257.6	III	G	2	60	480	
	0430	1805	BLEN	1258.4	1259.4	III	G,C	2	180	4000X	
			SVTO	1559.0	1600.0	III		1	36U	82U	
			HOLL	1722.0	1723.0	III		1	25	140	
			PALE	1722.0	1723.0	III		1	25	86	
			SVTO	1722.0	1723.0	III		1	25	134	
			SGMR	1723.0	1724.0	V		1	30	47	
			SGMR	1808.0	1809.0	V		2	30	54	
	1920	2400	HIRA								

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

MAY 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
31	2100	2400	CULG	2100.0E	2400.0D	I	S	1	100	180	
			LEAR	2313.0	0056.0	CONT		1	120	180	
			CULG	2337.0	2338.0	III	G	1	57X	80	
			HOLL	2337.0	2338.0	III		1	25	75	
			HOLL	2353.0	0012.0	III	N	1	25	180	

Event Remarks:

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

Frequency qualifiers:

X = Extends beyond instrument range
U = Uncertain frequency

Remarks:

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

Stations Reporting:

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

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

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MAY 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
03/05/02	+0.39	+0.65	III	8H35 E	14H51 D
06/05/02	-0.90	+0.03	IV	8H16 E	15H18 D
07/05/02	-0.47	-0.11	IV	8H36 E	15H17 D
07/05/02	-0.39	-0.06	IV	8H36 E	15H17 D
08/05/02	+0.17	-0.05	IV	8H18 E	15H18 D
09/05/02	+0.51	-0.23	II	8H35 E	15H18 D
10/05/02	+0.68	-0.11	I	8H18 E	15H18 D
16/05/02	-0.03	-0.36	III	8H34 E	15H18 D
17/05/02	-0.39	-0.26	I	8H28 E	12H50
18/05/02	-0.62	+0.16	II	8H56 E	15H18 D
18/05/02	+0.62	-0.12	III	8H56 E	15H18 D
19/05/02	-0.36	+0.22	III	8H58 E	15H18 D
20/05/02	-0.20	+0.23	I	8H18 E	15H18 D
20/05/02	+1.07	-0.42	I	8H18 E	15H18 D
21/05/02	-0.03	+0.16	II	8H50 E	15H18 D
22/05/02	-0.60	-0.53	I	12H38	15H17 D
22/05/02	+0.25	+0.11	I	8H17 E	15H17 D
23/05/02	-0.34	-0.50	II	12H50	15H17 D
23/05/02	-0.12	+0.20	I	8H43 D	15H17 D
24/05/02	+0.03	+0.33	I	8H18 E	15H18 D
25/05/02	+0.33	+0.40	I	8H18 E	15H18 D
25/05/02	+0.43	+0.42	I	8H18 E	15H18 D
29/05/02	-1.32	-0.62	II	8H18 E	13H30
30/05/02	-0.81	-0.47	I	12H13	15H19 D
30/05/02	-0.50	-0.50	I	9H04 E	15H19 D
31/05/02	-0.25	-0.45	II	8H32 E	15H20 D

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

NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MAY 2002

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/05/02	-0.74	-0.54	****	8H39 E	15H18 D
01/05/02	+1.10	+0.23	****	8H39 E	15H18 D
02/05/02	-0.22	+0.48	I	8H18 E	15H18 D
03/05/02	+0.36	+0.57	III	8H35 E	14H51 D
06/05/02	-0.71	-0.08	II	8H16 E	15H18 D
07/05/02	-0.54	-0.06	II	8H36 E	15H17 D
07/05/02	-0.34	-0.09	III	8H36 E	15H17 D
07/05/02	-0.12	-0.11	I	11H50	15H17 D
08/05/02	+0.09	-0.03	III	8H18 E	15H18 D
09/05/02	+0.48	-0.20	III	8H35 E	15H18 D
10/05/02	+0.74	-0.16	III	8H18 E	15H18 D
11/05/02	-0.96	-0.39	****	8H48 E	15H18 D
11/05/02	+0.59	-0.08	****	8H48 E	15H18 D
12/05/02	-0.74	-0.42	II	8H18 E	15H18 D
12/05/02	+0.00	-0.02	I	12H43	15H18 D
13/05/02	-0.64	-0.43	I	8H19 E	15H18 D
13/05/02	+0.26	-0.05	I	8H19 E	15H18 D
14/05/02	-0.36	-0.45	I	8H26 E	15H18 D
14/05/02	+0.42	+0.20	I	8H26 E	15H18 D
15/05/02	-0.17	-0.34	I	8H18 E	15H18 D
15/05/02	+0.12	-0.40	I	8H18 E	15H18 D
15/05/02	+0.68	+0.20	I	8H18 E	15H18 D
15/05/02	+0.74	-0.11	II	8H18 E	15H18 D
16/05/02	-0.05	-0.26	III	8H34 E	15H18 D
18/05/02	+0.53	-0.22	III	8H56 E	15H18 D
19/05/02	-0.43	+0.22	I	8H58 E	15H18 D
19/05/02	+0.85	-0.22	I	8H58 E	15H18 D
20/05/02	-0.93	-0.36	I	8H18 E	15H18 D
21/05/02	-0.82	-0.42	I	8H50 E	15H18 D
21/05/02	-0.02	+0.14	I	8H50 E	15H18 D
21/05/02	+1.07	+0.16	I	11H00	15H18 D

NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

MAY 2002

22/05/02	-0.56	-0.36	I	8H17 E	15H17 D
22/05/02	+0.19	+0.17	I	8H17 E	15H17 D
23/05/02	-0.33	-0.37	I	8H43 D	15H17 D
24/05/02	-0.34	-0.28	I	8H18 E	15H18 D
24/05/02	-0.12	-0.43	I	8H18 E	15H18 D
24/05/02	+0.03	+0.25	I	8H18 E	15H18 D
25/05/02	-0.12	-0.28	I	8H18 E	15H18 D
26/05/02	-0.93	+0.23	I	8H39 E	15H18 D
27/05/02	-0.78	+0.16	I	8H18 E	15H18 D
28/05/02	-1.19	-0.34	II	8H34 E	15H18 D
28/05/02	-0.91	-0.45	I	8H34 E	15H18 D
28/05/02	-0.65	+0.06	I	8H34 E	15H18 D
28/05/02	+0.71	-0.59	I	8H34 E	14H00
29/05/02	-1.18	-0.28	II	8H18 E	15H18 D
29/05/02	-0.40	+0.16	I	8H18 E	15H18 D
30/05/02	-1.04	-0.48	I	9H04 E	11H00
30/05/02	-0.98	-0.19	II	9H04 E	15H19 D
30/05/02	-0.51	-0.40	I	9H04 E	15H19 D
31/05/02	-0.43	-0.37	II	8H32 E	15H20 D

4, 5 MAY : NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

** Following a large burst.

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

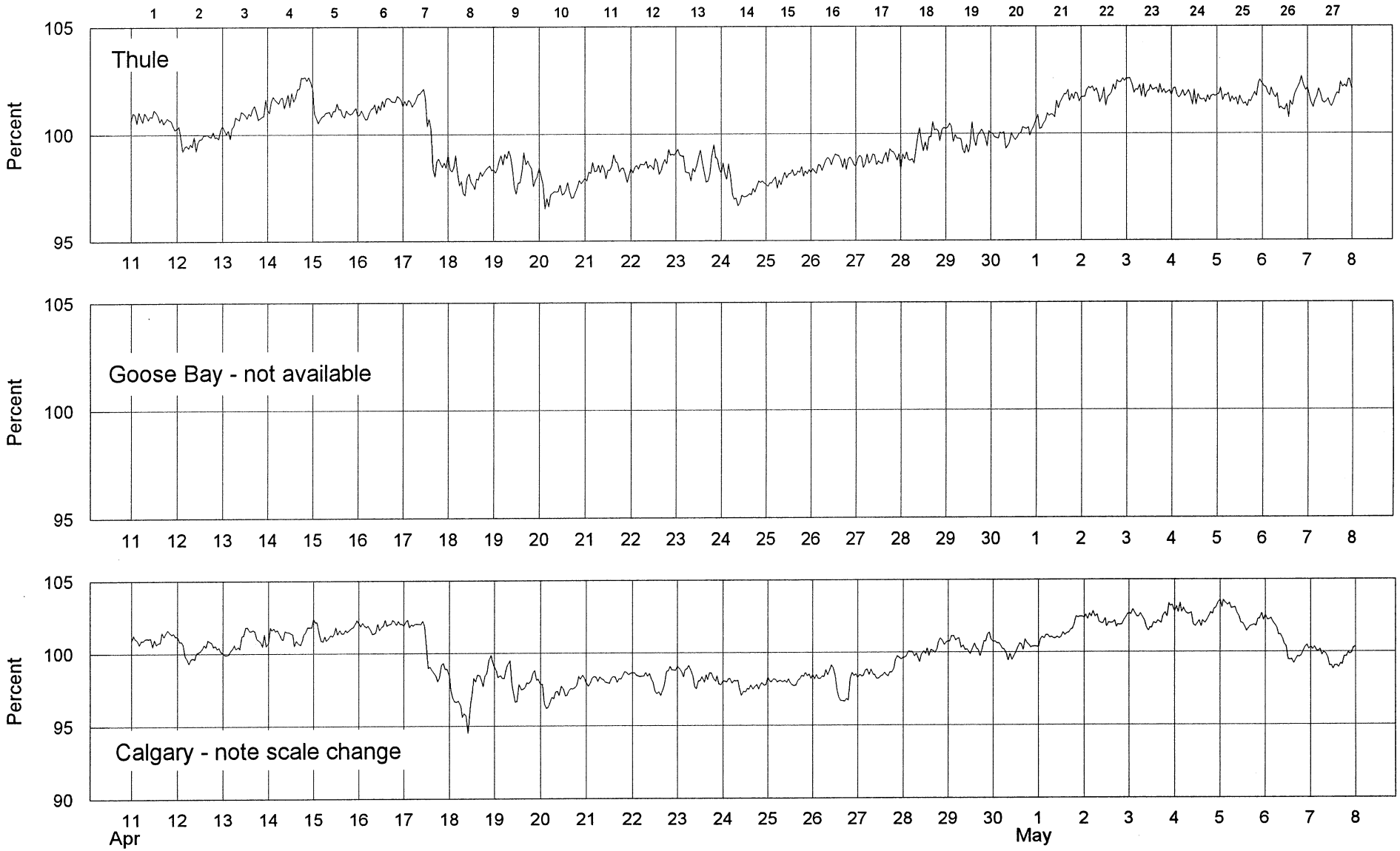
**** No flux measurements available.

COSMIC RAY INDICES
(Neutron Monitor)
May 2002

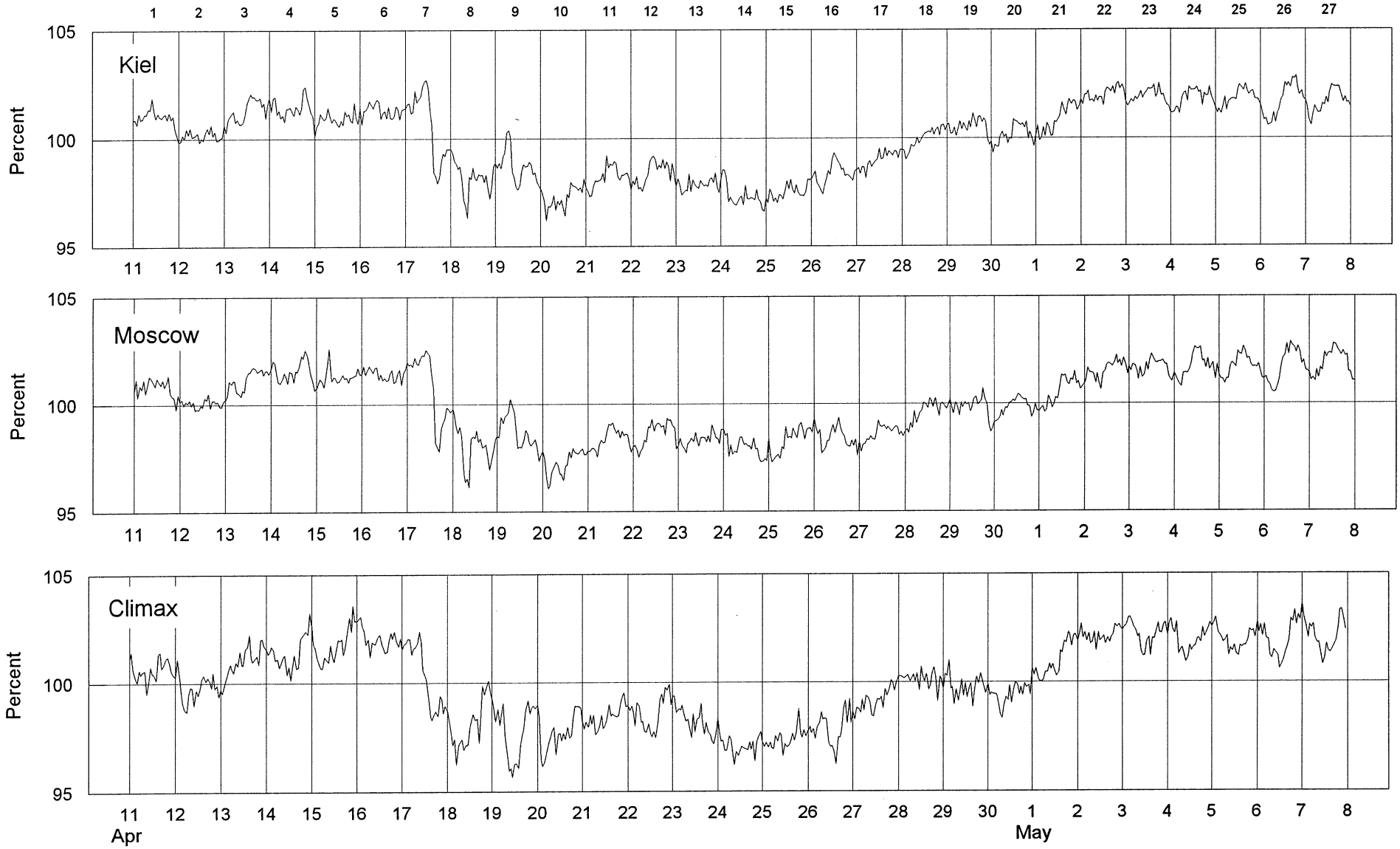
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4073.3		3572.3	5666.1	8480.3	3776.9	1937.4	3476.7
2	4105.2	not	3602.3	5730.2	8564.7	3819.7	1947.1	3496.8
3	4109.0	available	3608.5	5724.2	8575.6	3823.4	1944.5	3500.5
4	4095.1		3615.0	5719.5	8579.9	3813.7	1944.5	3485.2
5	4093.5		3612.0	5719.2	8580.5	3813.0	1946.3	3490.0
6	4095.8		3548.5	5711.4	8579.5	3814.2	1946.0	3487.2
7	4097.1		3512.2	5710.0	8594.3	3820.8	1942.3	3490.8
8	4093.3		3545.3	5693.7	8550.4	3829.9	1941.7	3490.0
9	4114.0		3606.3	5705.5	8590.9	3843.0	1939.6	3501.5
10	4097.4		3590.5	5684.7	8582.3	3803.6	1931.0	3486.0
11	4047.8		3552.3	5623.9	8446.5	3776.5	1923.9	3478.5
12	4026.8		3524.0	5605.8	8423.5	3737.0	1917.2	3471.6
13	4025.0		3541.5	5610.7	8434.5	3748.3	1908.1	3460.7
14	4042.7		3523.3	5599.7	8420.7	3737.6	1912.3	3466.5
15	4013.7		3500.5	5569.7	8368.1	3718.8	1904.9	3453.1
16	4011.2		3522.7	5580.0	8393.0	3725.2	1909.3	3462.5
17	4032.0		3535.5	5610.5	8420.2	3742.5	1912.5	3473.2
18	4050.0		3545.7	5628.8	8455.4	3759.0	1908.5	3484.9
19	3955.0		3460.0	5523.4	8301.2	3682.0	1890.3	3462.4
20	3941.1		3436.5	5511.2	8276.7(23)	3650.6	1869.4	3438.1
21	3969.9		3438.3	5513.4	8263.2	3661.0	1870.6	3434.8
22	3939.1		3435.8	5500.0	8248.0	3659.7	1873.0	3440.5
23	3907.1		3379.3	5463.4	8185.5	3592.7	1860.3	3408.3
24	3924.1		3415.0	5465.6	8190.9	3628.0	1873.0	3426.6
25	3952.3		3489.7	5587.4	8369.7	3718.7	1891.5	3451.3
26	3966.0		3485.3	5560.4	8318.7	3693.7	1883.3	3451.2
27	3942.2		3464.7	5555.7	8316.2	3686.2	1887.8	3457.5
28	3951.1		3461.5	5541.8	8298.7	3672.5	1881.9	3447.1
29	3977.4		3470.8	5566.8	8349.9	3693.2	1884.0	3449.5
30	4010.2		3511.2	5609.2	8417.0	3730.3	1888.8	3472.3
31	4029.8		3534.2	5631.5	8450.8	3729.9	1892.1	3481.2
Mean	4022.0		3517.4	5610.4	8420.2	3738.7	1908.5	3467.0

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.

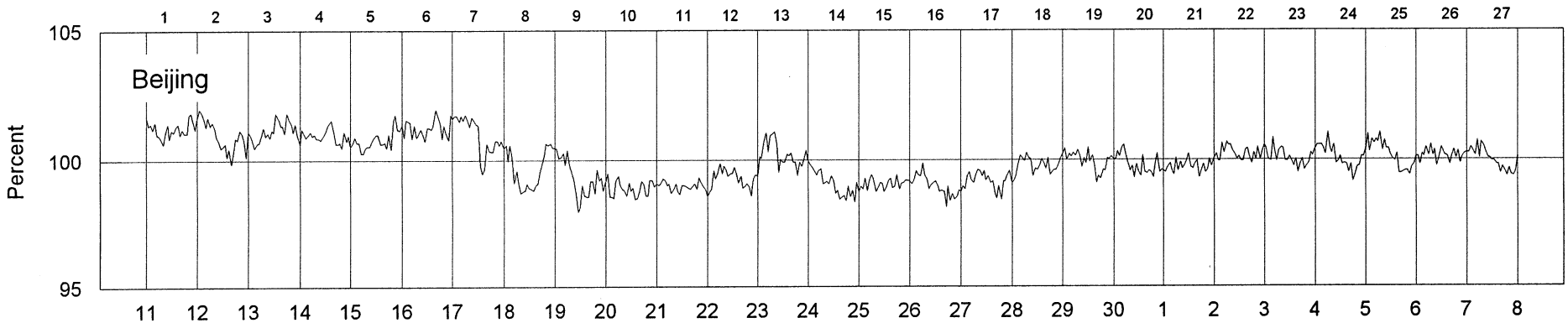
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2303 - Beginning 11 April 2002

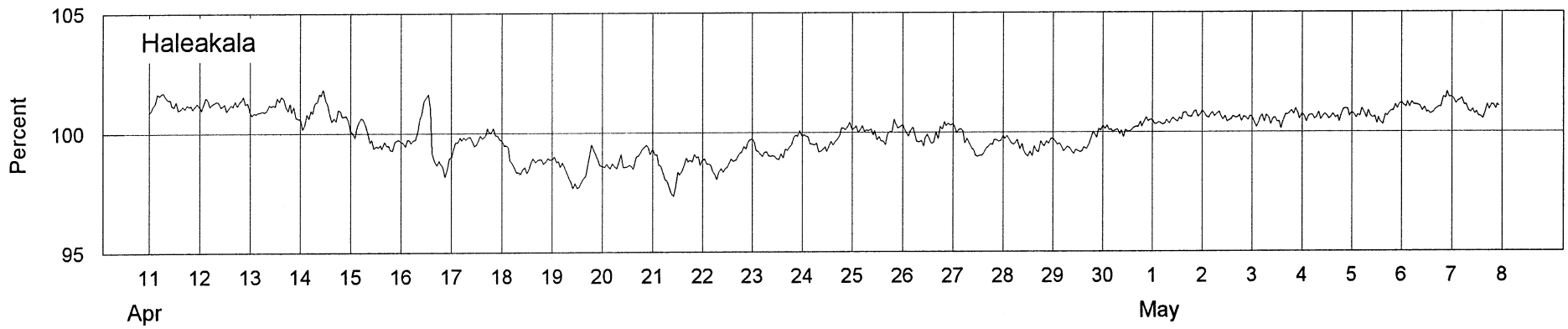


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2303 - Beginning 11 April 2002

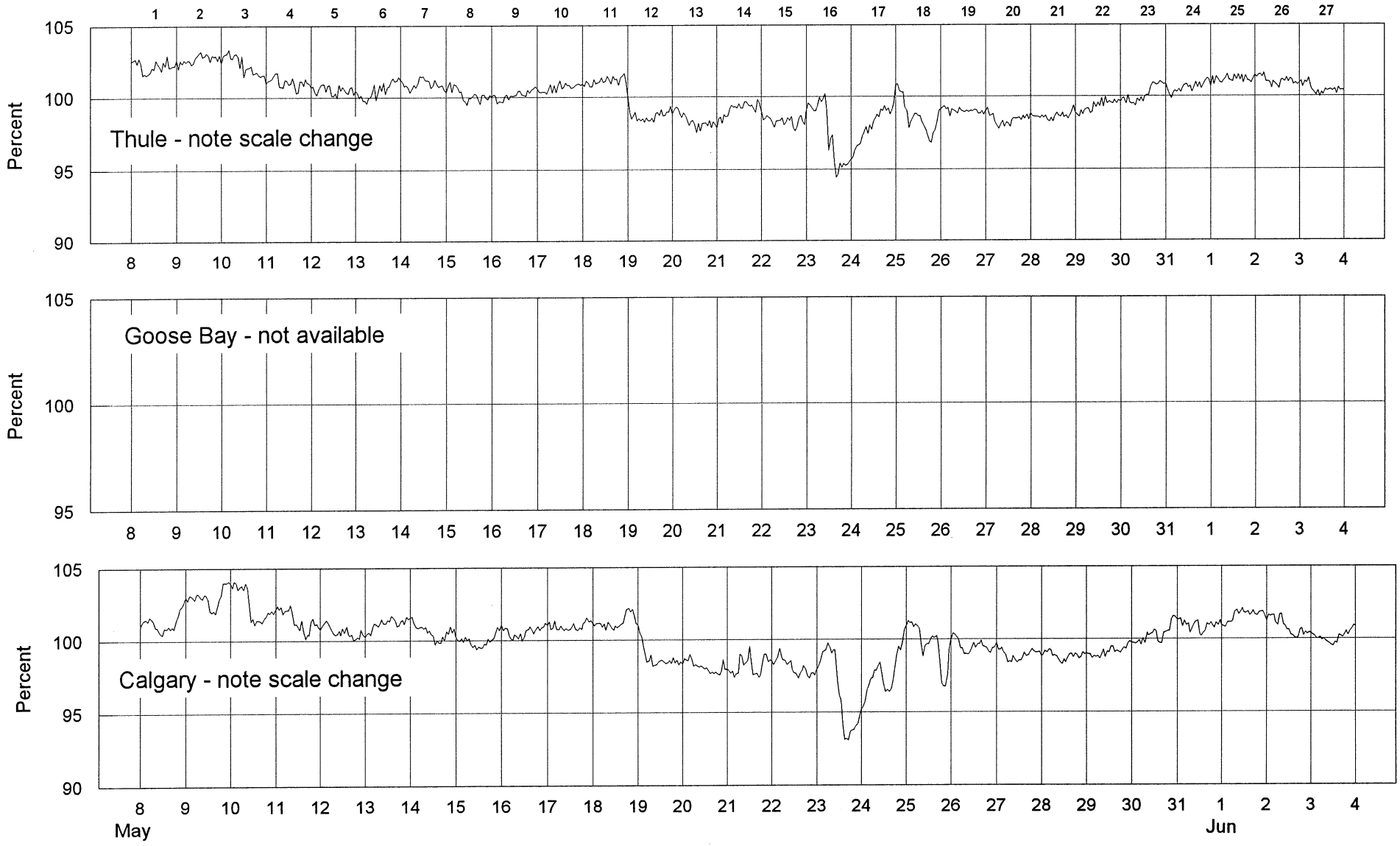


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2303 - Beginning 11 April 2002

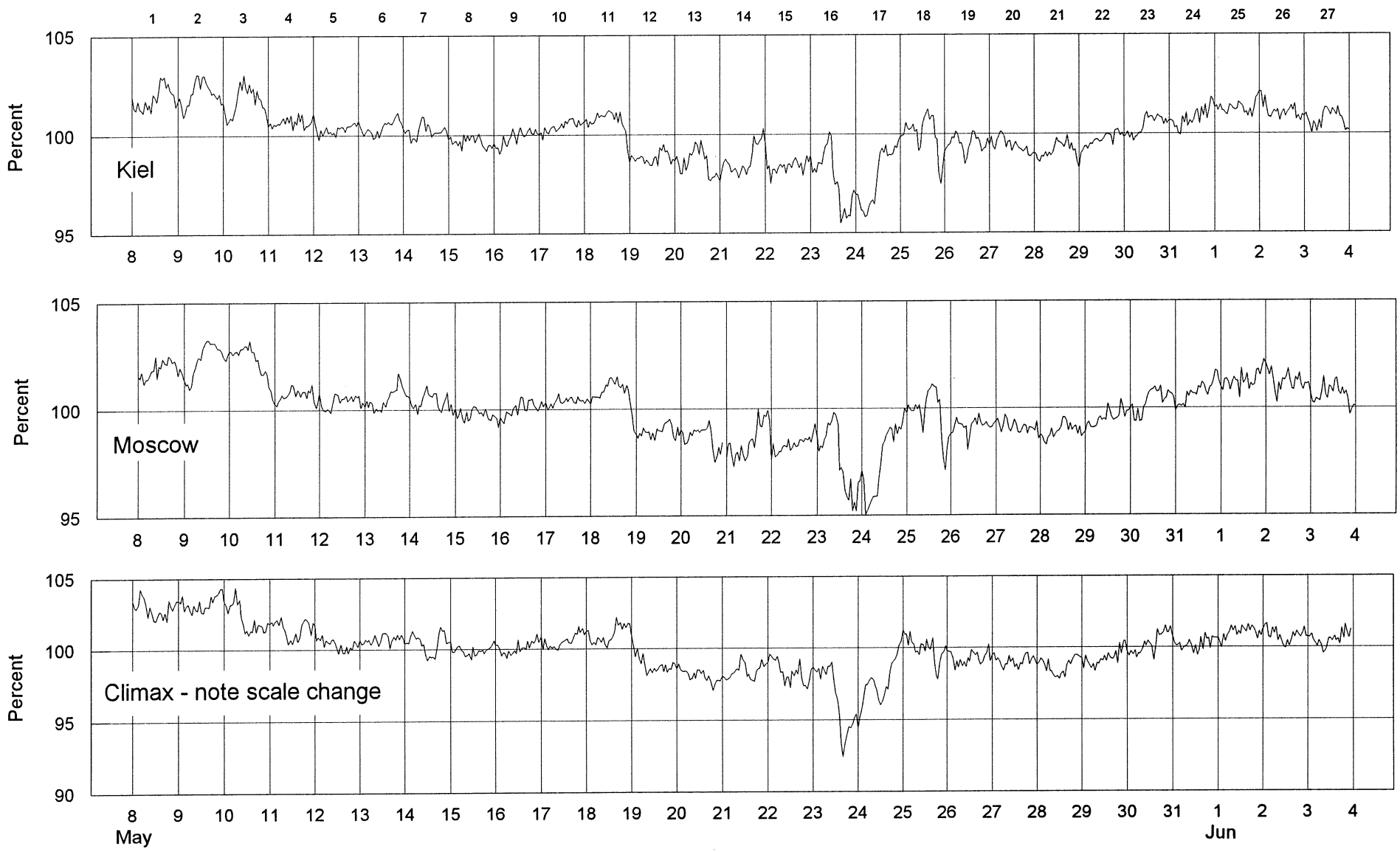




COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2304 - Beginning 8 May 2002



COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2304 - Beginning 8 May 2002



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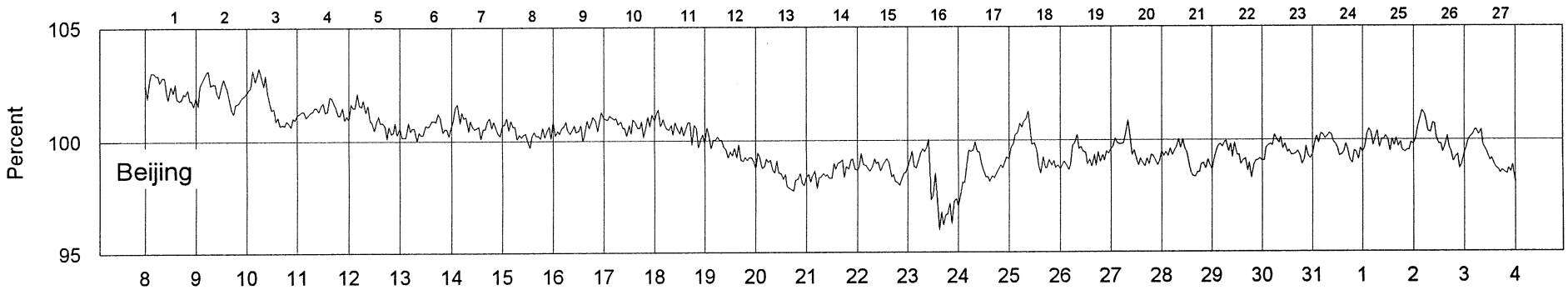
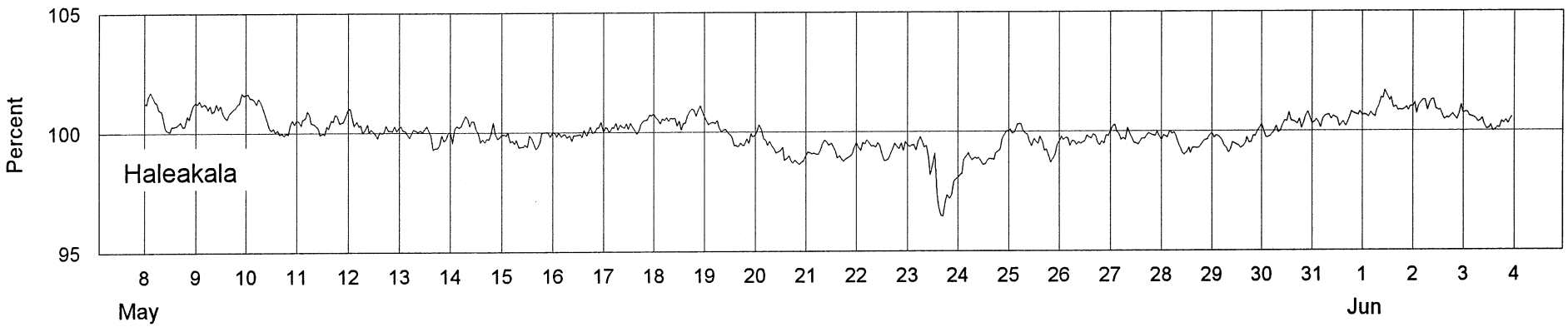
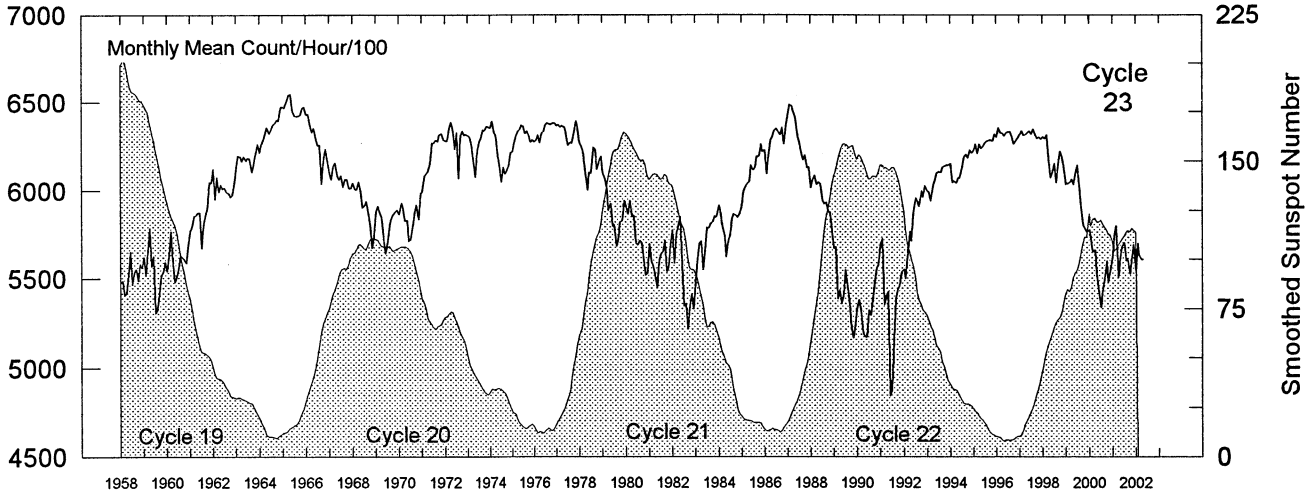
May 02

COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2304 - Beginning 8 May 2002





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



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1958	5481	5488	5409	5417	5523	5651	5466	5538	5553	5485	5584	5561	5513
1959	5623	5515	5659	5783	5569	5625	5307	5328	5420	5518	5536	5593	5540
1960	5539	5628	5764	5596	5480	5509	5557	5628	5620	5607	5586	5692	5601
1961	5766	5793	5853	5856	5872	5874	5672	5804	5859	5898	6046	6041	5861
1962	6122	5949	6072	5989	6030	6010	6013	5991	5982	5963	5971	6052	6012
1963	6125	6197	6191	6163	6194	6168	6185	6182	6103	6133	6197	6260	6175
1964	6215	6253	6287	6331	6355	6321	6347	6366	6383	6399	6393	6475	6344
1965	6474	6469	6506	6542	6545	6451	6424	6420	6423	6424	6467	6475	6468
1966	6433	6432	6375	6330	6353	6300	6258	6258	6033	6168	6236	6172	6279
1967	6101	6061	6139	6155	6088	6061	6086	6016	6064	6063	6014	6009	6071
1968	6041	6011	6001	6048	5997	5901	5910	5937	5878	5805	5673	5739	5912
1969	5876	5909	5872	5845	5686	5640	5700	5812	5843	5864	5879	5887	5818
1970	5863	5928	5906	5830	5831	5716	5719	5803	5885	5915	5832	5985	5851
1971	5985	6081	6094	6103	6151	6268	6265	6286	6275	6314	6322	6288	6203
1972	6281	6278	6351	6387	6344	6232	6328	6065	6306	6334	6313	6318	6295
1973	6309	6298	6250	6155	6074	6220	6271	6296	6341	6340	6365	6360	6273
1974	6353	6391	6331	6308	6201	6139	6047	6132	6090	6113	6139	6215	6205
1975	6217	6267	6308	6334	6341	6370	6363	6320	6334	6313	6272	6286	6310
1976	6275	6281	6314	6269	6325	6331	6370	6380	6379	6375	6383	6380	6339
1977	6366	6371	6355	6366	6357	6322	6254	6272	6263	6317	6391	6355	6332
1978	6271	6242	6215	6113	5998	6101	6095	6241	6232	6117	6167	6193	6165
1979	6104	6063	6006	5883	5923	5794	5806	5682	5723	5820	5827	5942	5881
1980	5905	5862	5942	5850	5854	5702	5690	5717	5704	5611	5522	5528	5741
1981	5697	5600	5569	5517	5447	5600	5642	5650	5717	5539	5564	5702	5604
1982	5772	5586	5755	5799	5848	5582	5347	5362	5217	5349	5414	5329	5530
1983	5481	5606	5702	5711	5549	5659	5787	5785	5814	5820	5852	5849	5718
1984	5911	5880	5799	5740	5622	5706	5753	5837	5867	5856	5844	5864	5807
1985	5911	5986	6016	6038	6049	6142	6114	6135	6193	6192	6260	6220	6105
1986	6229	6093	6176	6280	6308	6336	6350	6331	6315	6356	6259	6359	6283
1987	6429	6489	6484	6443	6410	6319	6273	6217	6171	6198	6131	6131	6308
1988	6013	6064	6085	6030	6047	6033	5945	5922	5931	5880	5872	5761	5965
1989	5673	5678	5385	5441	5360	5407	5552	5460	5378	5228	5167	5241	5414
1990	5348	5381	5313	5197	5177	5173	5324	5297	5382	5471	5563	5584	5351
1991	5696	5726	5355	5405	5431	4841	4882	5162	5390	5443	5466	5540	5361
1992	5553	5500	5624	5766	5713	5869	5956	5942	5905	5994	5960	6024	5817
1993	5996	5992	5937	6026	6061	6094	6108	6099	6129	6137	6142	6141	6072
1994	6150	6042	6052	6067	6070	6068	6129	6189	6203	6183	6226	6209	6132
1995	6225	6260	6205	6260	6234	6250	6267	6279	6281	6285	6279	6319	6262
1996	6301	6354	6330	6324	6306	6325	6332	6331	6303	6262	6277	6294	6312
1997	6313	6337	6313	6314	6324	6336	6317	6347	6319	6295	6301	6289	6317
1998	6305	6293	6312	6177	6069	6101	6154	6042	6149	6220	6190	6124	6178
1999	6034	6040	6041	6062	6032	6100	6140	6023	5898	5805	5780	5765	5977
2000	5778	5729	5650	5661	5537	5441	5339	5425	5487	5602	5481	5542	5556
2001	5629	5736	5800	5509	5631	5678	5707	5602	5614	5527	5637	5694	5647
2002	5540	5701	5628	5613	5610								5618

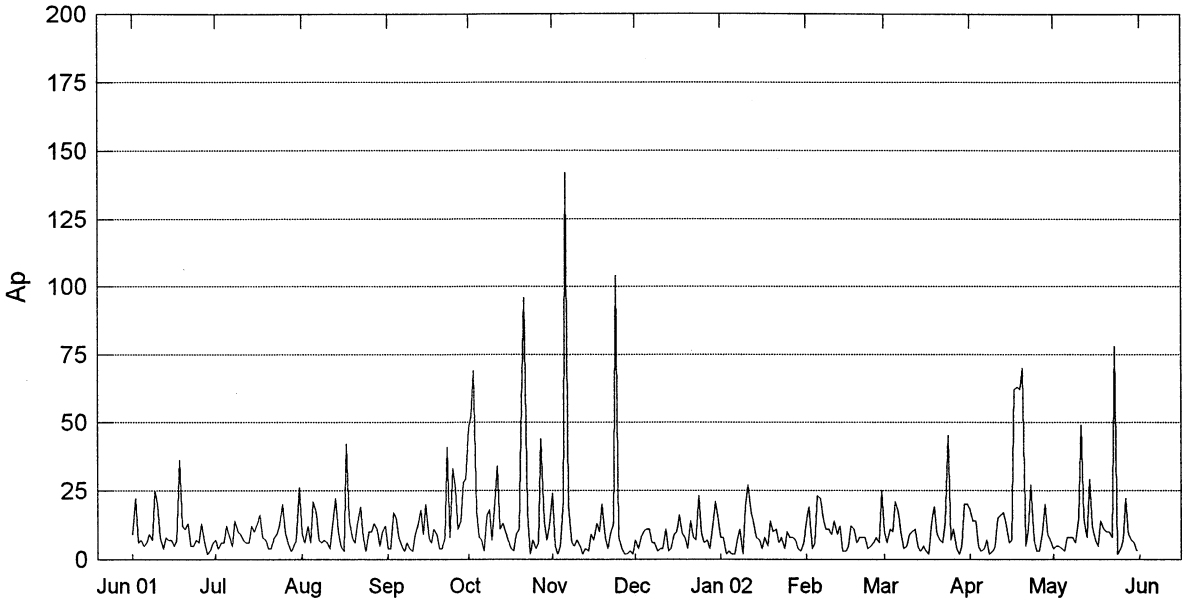
Multiply table entries by 100 to obtain hourly counting rate. Kiel, Germany: N54, E10, Alt= 54 m, Cutoff Rigidity= 2.32GV.

Geomagnetic Activity Indices
May 2002

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1	Q4	1	1+	1	1	1	0+	1-	1-	7	4	0.1	1o	1+	1o	1+	1o	0+	1-	0+	6	8	7	8	7 CC
2	Q9	2-	1+	0+	1-	2+	2+	1-	1-	10	5	0.2	1+	1o	0+	1o	2-	2o	1-	1-	8	12	6	7	11 CC
3	Q7	1+	2	1+	1-	1+	1+	2-	1-	10+	5	0.2	1+	2o	1+	1o	1+	1o	1+	1-	9	12	7	9	10 CC
4	Q6	1-	2-	2	1-	1-	1	2-	1	9+	4	0.2	1-	1+	2+	1o	0+	1+	1+	1o	8	10	8	9	9 CC
5	Q2	1-	0+	0+	1	1	0+	1-	1+	6-	3	0.1	1-	0+	0+	1+	1o	0+	0+	1+	5	8	5	5	8 CC
6		1-	1-	1	1+	2	3	2+	3	14	8	0.4	1-	1o	1+	2-	2o	3-	2+	3-	14	16	12	7	21 K
7		2+	1+	1	1	2	2+	3-	3	16-	8	0.4	2+	1+	1+	2-	2-	2+	3-	3-	16	19	11	10	20
8		3	3-	2+	1+	1+	2-	2-	2-	16-	8	0.4	3-	3o	2+	2-	2-	2-	2-	2-	17	20	12	17	15
9		3-	1	2	2+	2-	0+	1-	1	12-	6	0.3	2+	1+	2+	3-	2-	1-	0+	1+	12	13	10	15	8 C
10	D5*	2	2-	3	4-	2+	3	3+	4	23	15	0.8	2o	1+	3o	3+	2+	3-	3o	4-	27	30	24	23	31
11	D2	1	1-	2	6-	7-	7-	5+	4+	32+	49	1.6	1o	1o	2+	5o	5+	5+	5o	4o	63	68	51	34	85
12		5-	3	4-	2	3-	2+	2	2+	23-	15	0.8	4o	3-	3+	3-	3o	3-	1+	3-	28	31	29	32	29
13		4-	3-	1	1+	2+	1+	1	1	14+	8	0.4	3o	2+	1+	2-	2+	1+	1o	1o	14	20	12	18	14
14	D3	4-	5-	4+	4-	4-	4	5	4-	33-	29	1.3	4-	4o	4o	3+	3+	3o	4o	4-	46	47	35	31	51
15		4-	3+	2+	2+	2-	2+	3-	2	20+	12	0.7	4-	3o	2+	3-	1+	2+	3-	2-	23	24	19	23	20
16		2-	2	2-	2	2-	1+	2	2+	15-	7	0.3	2o	2+	2o	2+	2-	1+	2+	2o	15	16	11	13	14 CK
17	Q8	1	0+	1+	1	2+	1+	2-	1+	10+	5	0.2	1-	0+	1+	1+	2+	1+	1o	2o	9	18	9	7	20 KC
18		1+	1	1	1	1+	1	5+	4+	16+	14	0.8	1+	1o	1o	1o	1o	1o	4+	4+	21	27	13	7	33
19		3+	4	4	1	1-	0+	0+	1-	14+	11	0.6	3o	3+	4o	1+	1-	0o	0o	0+	19	17	16	30	4
20		1-	3-	2	3+	2	2+	3+	2	18+	10	0.6	1-	3-	2o	3o	2+	2o	3-	2-	18	22	19	22	19
21		3+	1	3+	1	2-	1-	1+	4-	16	10	0.6	3o	1o	3+	2o	1+	1-	1o	3o	17	20	17	21	16
22		2-	1+	2-	3-	2+	2	2+	2-	16-	8	0.4	1+	2o	2+	3o	2+	2o	2-	2-	16	15	16	16	15
23	D1	3-	3-	2	7-	8-	8+	5	3+	38+	78	1.8	3-	3o	2+	5+	7-	7-	4o	3-	85	109	70	48	131
24	Q1	1-	0+	0+	0+	0+	0	0+	1-	3	2	0.0	1-	0o	0o	0+	0+	0o	0+	0+	2	4	4	3	5 C
25	Q5	1-	0+	0+	0+	1+	2	1+	1	7+	4	0.1	0+	0o	0o	0+	1o	2-	1+	1o	5	9	5	2	11 CC
26		1+	1	1+	1+	1+	2+	2-	3	13+	7	0.3	1-	1-	2-	2-	1+	2o	2-	3o	12	16	12	10	18
27	D4	3+	2+	5-	4-	4	5-	2+	3-	28-	22	1.1	3+	2+	4o	4+	3+	4-	2+	2+	37	50	39	48	41
28		2+	3-	3-	1+	2+	2+	2+	2	18	9	0.5	2-	2+	2+	2-	2o	2o	2o	2o	15	21	13	18	16
29		3	2-	2-	1	3-	1	1	1	13	7	0.3	3-	2o	2-	1+	2-	1o	1-	1-	11	16	8	14	10 CC
30	Q10	2-	1+	2	1+	2	2-	1	1+	12+	6	0.3	2-	1+	2+	1+	2o	1+	1-	1o	10	15	11	13	13 CC
31	Q3	1+	1	0+	1-	1-	1-	1-	1-	6	3	0.1	1o	1-	1-	1-	0+	0+	0+	1-	4	6	5	7	4 CC
Mean											12	0.51									19.1	23.2	16.7		19.9

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	1+	1+	1o	2-	1+	1-	1o	1-	8	1o	1o	1o	1+	1o	0o	0+	0+	5	164.9	102	122	116	
2	1+	1+	0+	1+	2o	2+	1o	1o	10	2-	1o	0+	1-	1o	1o	0o	0+	5	171.7	114	131	123	
3	1+	2o	1+	1o	2-	1+	2o	1o	10	1+	2o	1+	1o	1o	1-	1o	0+	7	182.0	149	158	135	
4	1o	2-	2+	1o	1o	1+	2-	1+	10	1-	1o	2o	1-	0o	1-	1-	1o	6	192.7	166	184	146	
5	1-	1-	0+	1+	1+	1-	1-	2o	7	0+	0+	0o	1o	1o	0o	0o	1-	3	183.2	172	171	136	
6	1o	1-	1+	2+	3-	3o	2+	3o	17	0+	1o	1o	1+	1+	2+	2o	3-	12	194.3	149	162	148	
7	3-	2-	1+	2o	2+	3o	3-	3-	19	2+	1+	1o	1+	1+	2-	2+	3-	13	190.3	157	171	144	
8	3-	3-	2+	2-	2-	2o	2o	2-	17	3o	3o	3-	2o	1+	1+	1+	2-	16	190.2	142	153	143	
9	3-	1+	2+	3-	2+	1o	1-	1o	14	2o	1+	2o	2o	1o	0+	0o	1+	9	193.7	126	129	147	
10	2-	1+	3+	4-	3o	3+	4-	4-	31	2o	1+	3o	3o	2-	2o	2+	4-	23	194.8	133	131	148	
11	1-	1o	2+	5o	5+	6-	5o	4o	66	1o	1o	3-	5+	5o	5o	5-	4+	60	191.8	138	139	145	
12	4o	2+	3+	3-	3o	3-	2-	3-	28	4+	3-	4-	2+	3o	2+	1o	3-	28	187.1	130	131	140	
13	3o	3-	1+	2-	3-	2-	1o	1o	16	3o	2+	1+	2o	2-	1o	1-	1-	13	175.6	104	101	128	
14	3+	4o	4+	3+	4-	4-	4o	4-	47	4-	4o	4o	3+	3o	3-	4o	4o	45	164.2	76	81	115	
15	3o	3o	2+	3o	1+	3-	3-	2-	22	4o	3+	2+	3-	1+	2+	3-	2-	23	162.7	74	85	114	
16	2-	2o	2o	3-	2-	2-	2+	2+	16	2+	2+	2o	2o	1+	1o	2o	2-	13	162.0	84	83	113	
17	0+	0+	2-	1+	2+	2-	1+	2-	10	1+	0o	1o	1o	2+	1o	1-	2+	9	160.7	86	88	112	
18	1+	1o	1o	1+	1+	1+	4+	4+	22	2-	1-	1o	0+	1-	0+	4o	5-	20	166.8	93	100	118	
19	3o	3+	5-	1+	1-	0o	0+	1-	21	3o	3+	4-	1+	0+	0o	0o	0o	16	175.0	93	103	127	
20	1o	2+	2o	3+	3-	3-	3o	2o	21	0+	3-	2o	3o	2o	1+	2o	1+	14	175.4	107	117	127	
21	3-	1-	4-	2o	2-	1+	1+	3+	19	3o	1o	3o	2-	1o	0o	1-	3-	14	190.4	121	138	144	
22	2-	2-	2+	3o	3-	3-	2o	2o	19	1o	2+	2o	3o	2-	1o	1+	1+	13	185.6	137	150	138	
23	3o	3+	2+	6o	7o	7-	4+	3-	98	2o	3-	2+	5-	6o	6+	4-	3o	73	184.8	136	142	138	
24	0+	0o	0+	0+	1-	0o	0+	1-	3	1-	0o	0o	0o	0o	0o	0o	0+	1	193.9	128	142	147	
25	0+	0o	0o	0+	1+	2o	2-	1+	7	0o	0o	0o	0o	0+	1o	1o	1o	3	187.4	127	139	140	
26	1o	1o	1+	2-	2-	3-	2o	3+	16	0+	1-	2-	1+	1o	1+	1+	2o	8	188.0	121	137	141	
27	3+	3-	4o	4+	4-	4-	3-	2+	39	3o	2-	4+	5-	3-	3+	2o	2o	34	191.6	123	128	145	
28	2o	3-	2+	2o	2+	2+	2+	2+	18	2-	2o	2o	1+	2o	1+	1+	1+	12	191.4	119	127	145	
29	3-	2-	2-	1+	2+	1+	1o	1o	12	3-	2+	2o	1+	1o	1-	0+	0+	10	189.8	114	119	143	
30	2-	1+	3-	1+	2+	2-	1+	1+	13	1+	1-	2o	1+	1+	1o	0o	0+	7	185.1	103	116	138	
31	1o	1o	1-	1+	1-	1o	1o	1o	7	1o	0+	1-	0o	0o	0o	0o	0o	2	187.0	120	123	140	
Mean									21.4									16.7	182.4	120.8	129.1	135.0	

Daily Average Indices Ap
Jun 2001 -May 2002

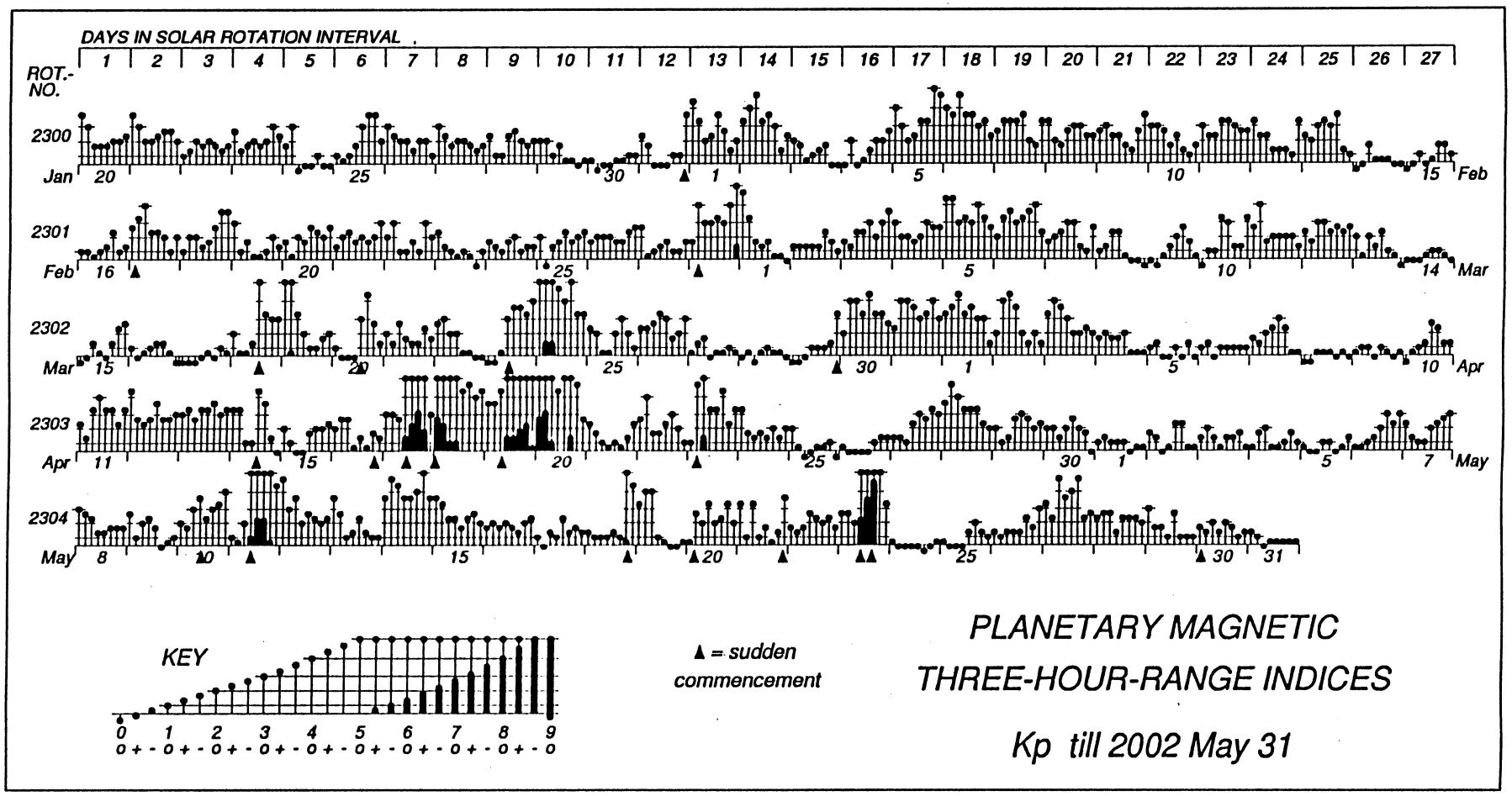


Day	Jun 01	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May
1	9	7	9	4	48	24	7	8	14	10	18	4
2	22	4	6	4	52	5	4	8	19	6	14	5
3	6	6	12	17	69	2	8	2	4	11	14	5
4	7	6	6	15	17	5	10	3	6	10	5	4
5	5	12	21	8	8	21	11	2	23	21	3	3
6	6	8	17	5	7	142	11	2	22	17	4	8
7	9	5	7	3	3	19	6	7	15	9	7	8
8	7	14	6	6	16	6	6	11	11	4	2	8
9	25	10	7	4	18	5	3	2	11	5	3	6
10	20	9	6	3	7	7	4	19	9	9	5	15
11	8	7	4	9	21	5	4	27	14	10	15	49
12	4	6	12	12	34	2	11	17	9	11	16	15
13	8	6	22	18	11	4	3	13	12	5	17	8
14	7	12	10	9	13	3	4	8	3	3	13	29
15	7	10	5	20	10	9	9	7	3	5	6	12
16	5	13	3	8	7	7	10	4	5	3	7	7
17	7	16	42	6	4	13	16	8	12	2	62	5
18	36	8	15	11	3	10	9	5	11	14	63	14
19	12	7	8	9	9	20	8	14	6	19	62	11
20	11	4	6	4	11	8	4	10	8	9	70	10
21	13	4	13	4	57	4	14	11	8	7	5	10
22	5	8	19	8	96	9	8	6	8	6	11	8
23	5	9	8	41	17	13	7	8	4	13	27	78
24	7	12	3	8	2	104	23	4	5	45	7	2
25	6	20	10	33	7	8	9	10	6	7	3	4
26	13	10	10	26	4	4	6	8	8	11	3	7
27	6	6	13	11	6	2	7	8	6	4	10	22
28	2	3	11	14	44	2	4	7	25	2	20	9
29	3	5	5	28	14	3	11	4		5	9	7
30	6	7	10	29	7	2	21	3		20	7	6
31		26	12		12		15	6		20		3
Mean	10	9	11	13	20	16	9	8	10	10	17	12

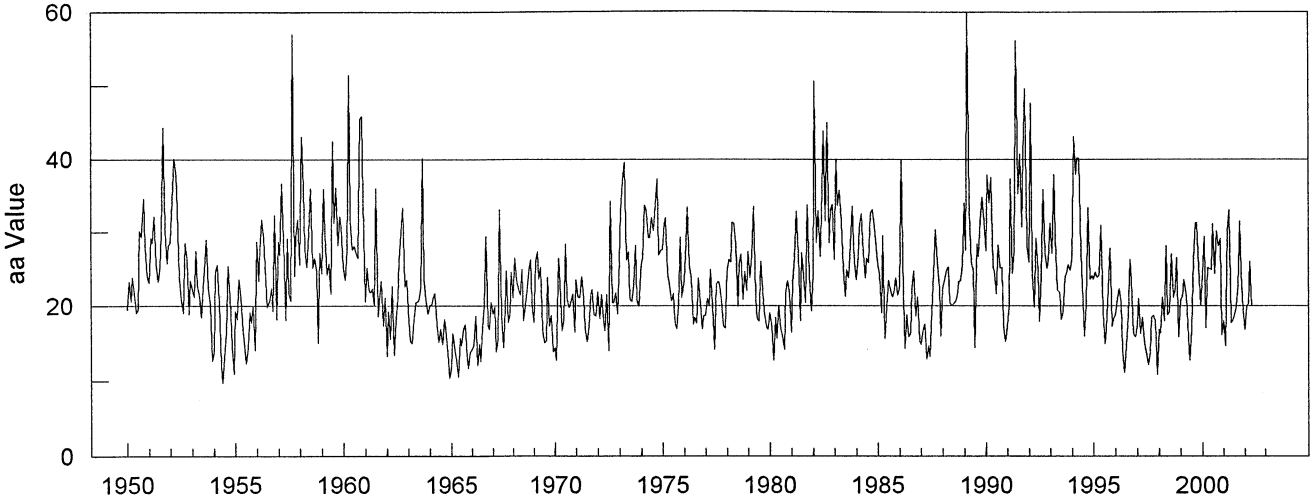
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam

Kp through May 31, 2002



Monthly Mean aa Index Jan 1950 - May 2002

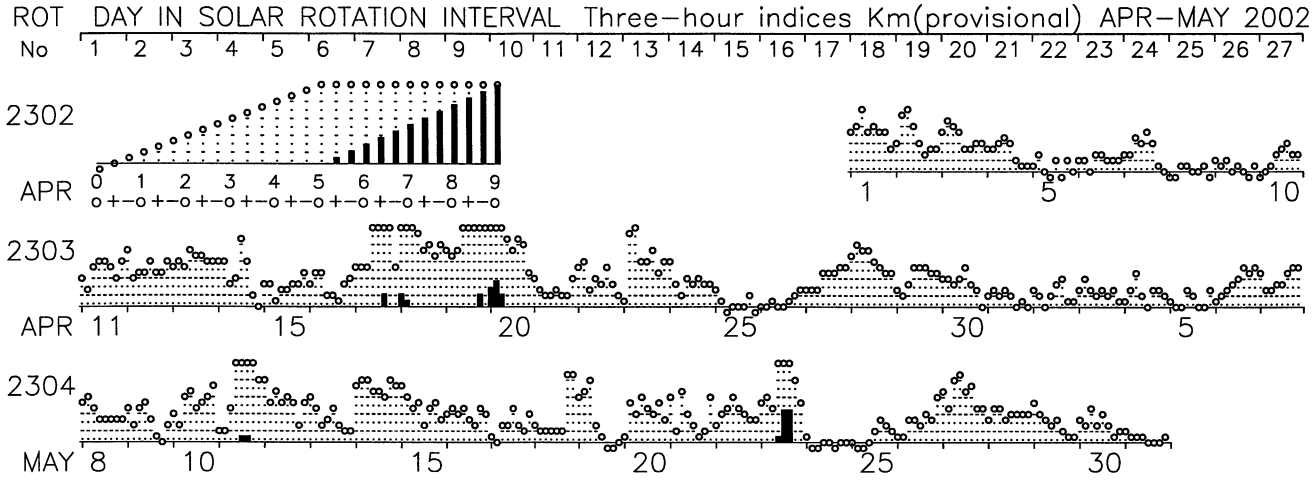


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4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

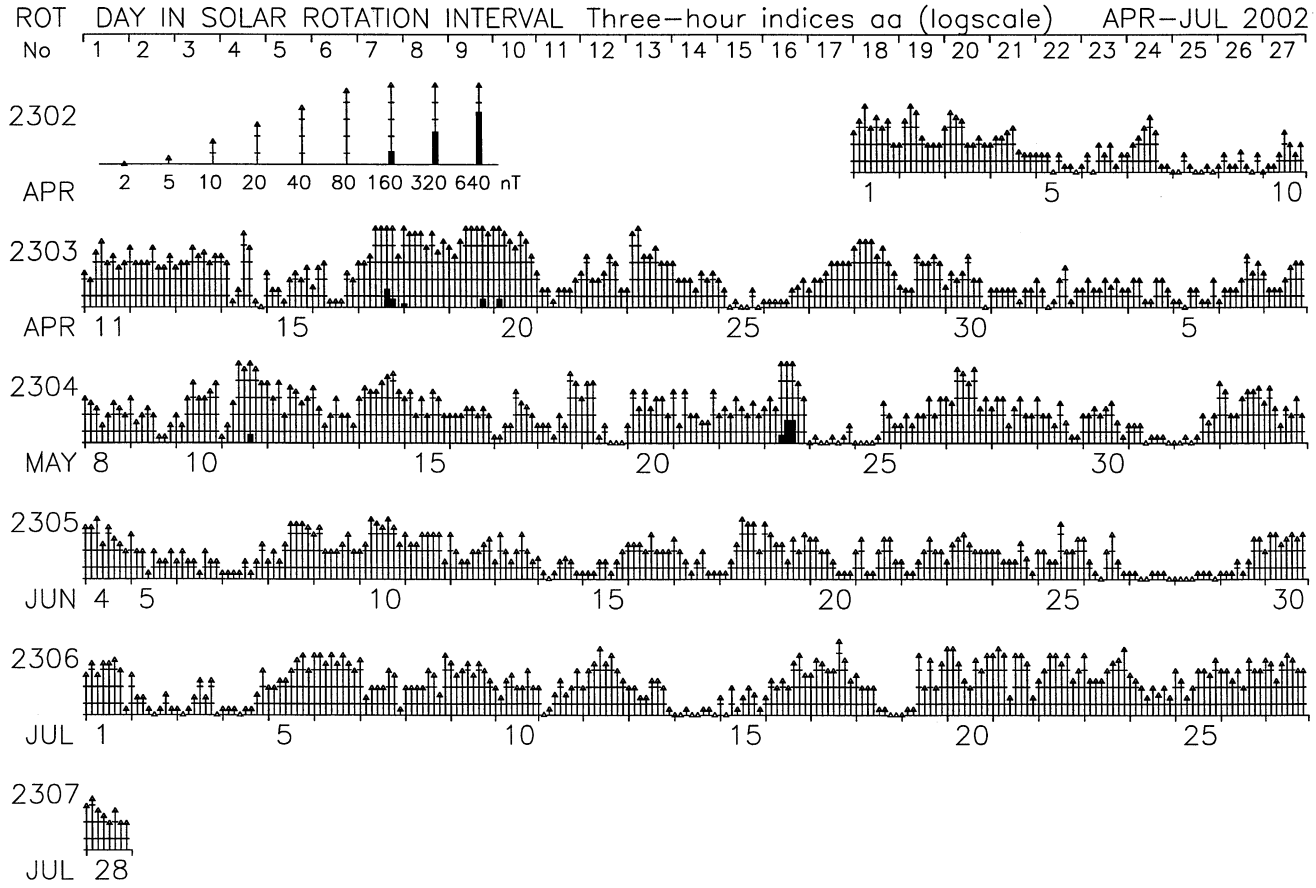
PLANETARY GEOMAGNETIC ACTIVITY

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)

MAY 2002

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24 (U.T.)
1	2	2	1	5	6	2	-1	0	0	-1	-2	1	2	0	-1	1	1	3	3	4	3	2	0	-2
2	-1	2	2	1	6	7	7	7	6	7	7	4	4	5	2	-6	-6	-1	-1	2	4	4	5	6
3	9	8	10	6	2	0	0	1	0	0	3	4	4	7	9	7	4	3	8	8	6	6	4	3
4	5	8	9	9	9	10	9	8	7	7	10	11	12	12	10	9	9	11	10	7	6	4	2	2
5	4	6	9	12	12	13	12	12	12	13	15	17	18	17	15	15	15	14	16	17	18	20	21	21
6	23	25	25	25	24	21	23	24	22	20	22	18	16	13	5	-1	-6	-15	-24	-25	-20	-23	-20	-12
7	-8	-4	0	5	5	1	-1	3	2	2	8	10	9	5	-2	-5	-10	-11	-6	-3	1	3	-1	-4
8	-4	-5	-9	-12	-16	-16	-13	-12	-13	-14	-11	-12	-12	-14	-15	-19	-25	-25	-19	-16	-14	-18	-18	-13
9	-12	-15	-10	-9	-12	-9	-7	-7	-5	-5	-3	-3	-2	-2	-3	-2	-4	-3	-4	-6	-6	-6	-6	-2
10	1	2	0	-3	-4	-7	-9	-12	-11	-12	-3	9	21	22	25	25	21	18	18	20	16	6	1	-8
11	-9	-6	-5	-5	-7	-7	-3	-3	-7	-4	10	-8	-19	-14	-29	-73	-85	-98	-100	-102	-96	-84	-80	-80
12	-89	-84	-73	-74	-72	-68	-68	-59	-61	-58	-49	-48	-50	-53	-59	-51	-50	-44	-38	-35	-36	-36	-34	-31
13	-33	-39	-37	-37	-33	-33	-31	-24	-22	-21	-18	-19	-16	-9	-3	0	-4	-4	-1	-2	-2	0	-1	-2
14	-2	-13	-28	-40	-45	-42	-43	-55	-58	-47	-53	-60	-51	-41	-41	-42	-47	-53	-49	-49	-53	-48	-55	-52
15	-57	-51	-42	-46	-54	-59	-53	-46	-42	-38	-35	-30	-29	-30	-33	-36	-33	-29	-27	-27	-30	-31	-27	-29
16	-26	-22	-23	-17	-19	-18	-14	-16	-23	-27	-22	-22	-25	-25	-24	-22	-21	-21	-21	-23	-24	-22	-23	-25
17	-21	-16	-13	-12	-12	-10	-7	-6	-3	-2	1	-3	-9	-7	-7	-6	-5	-6	-5	-8	-7	-4	-7	-9
18	-7	-4	-2	-2	-3	-5	-4	1	-1	0	1	0	1	0	0	1	0	2	1	-1	30	33	11	5
19	7	4	0	-7	-22	-38	-57	-57	-46	-38	-34	-36	-38	-36	-36	-34	-32	-30	-27	-28	-29	-27	-26	-22
20	-16	-12	-11	-6	0	6	2	1	-2	-5	-15	-14	-11	-6	-6	-6	-5	-7	-3	-8	-13	-17	-18	-19
21	-20	-26	-32	-32	-33	-32	-20	-25	-27	-24	-18	-16	-14	-14	-12	-5	1	1	4	8	5	5	21	8
22	6	6	2	-1	-2	-4	-2	-5	-5	-5	-6	-12	-10	-6	-7	-10	-5	-3	0	-1	2	3	2	1
23	0	6	7	10	13	1	1	2	6	7	14	69	-21	-69	-54	-52	-74	-109	-102	-91	-90	-93	-89	-85
24	-77	-72	-70	-70	-71	-69	-64	-60	-56	-54	-53	-54	-53	-50	-50	-50	-47	-45	-42	-43	-45	-46	-48	-47
25	-41	-34	-31	-31	-35	-37	-34	-32	-32	-31	-29	-28	-24	-28	-29	-28	-28	-28	-30	-26	-22	-19	-17	-16
26	-15	-13	-10	-8	-9	-11	-14	-17	-17	-15	-13	-12	-17	-19	-18	-15	-13	-15	-14	-13	-11	-10	-14	-17
27	-12	-7	-3	0	-4	-11	-19	-35	-62	-62	-46	-42	-42	-43	-53	-54	-50	-39	-37	-37	-37	-37	-35	-28
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29	-13	-12	-16	-13	-13	-13	-10	-7	-10	-10	-12	-14	-15	-13	-14	-13	-13	-10	-9	-9	-9	-10	-10	-9
30	-7	-5	4	3	0	0	4	-1	-1	-2	-2	-3	-3	-2	-1	-2	-4	-1	1	6	6	5	5	5
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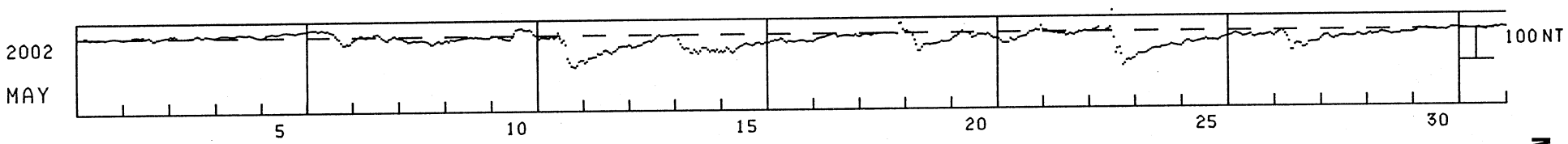
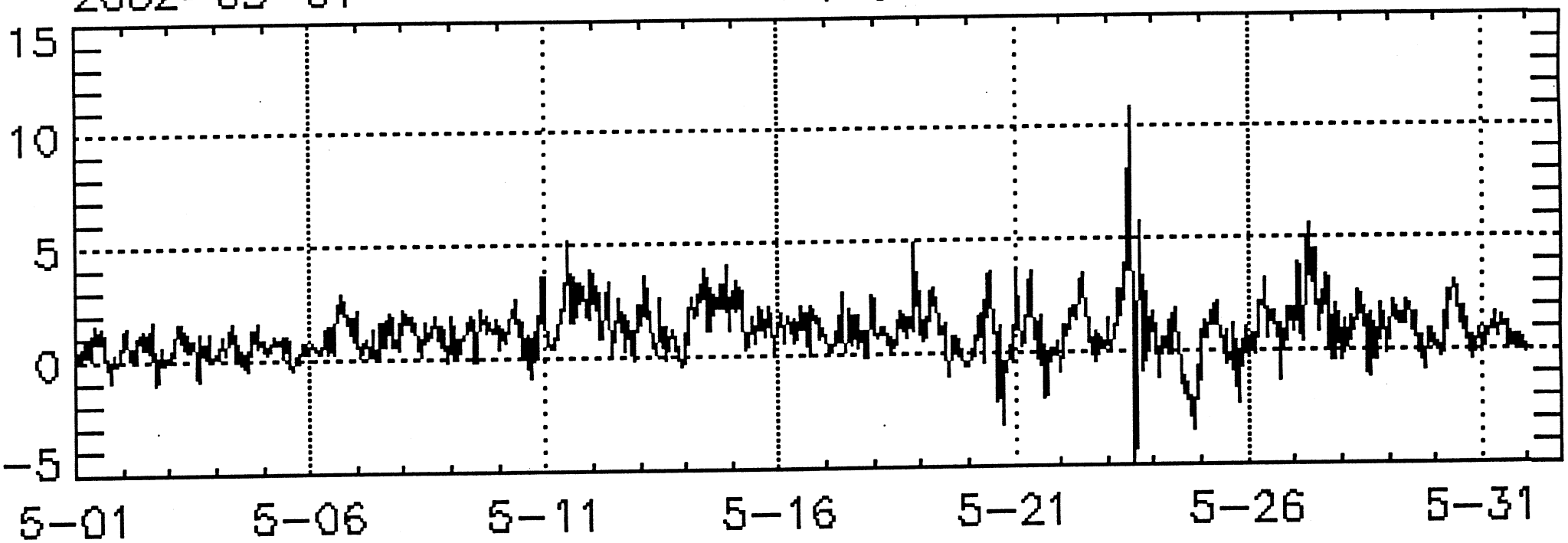


WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Qaanaaq (Thule), THL

2002-05-01



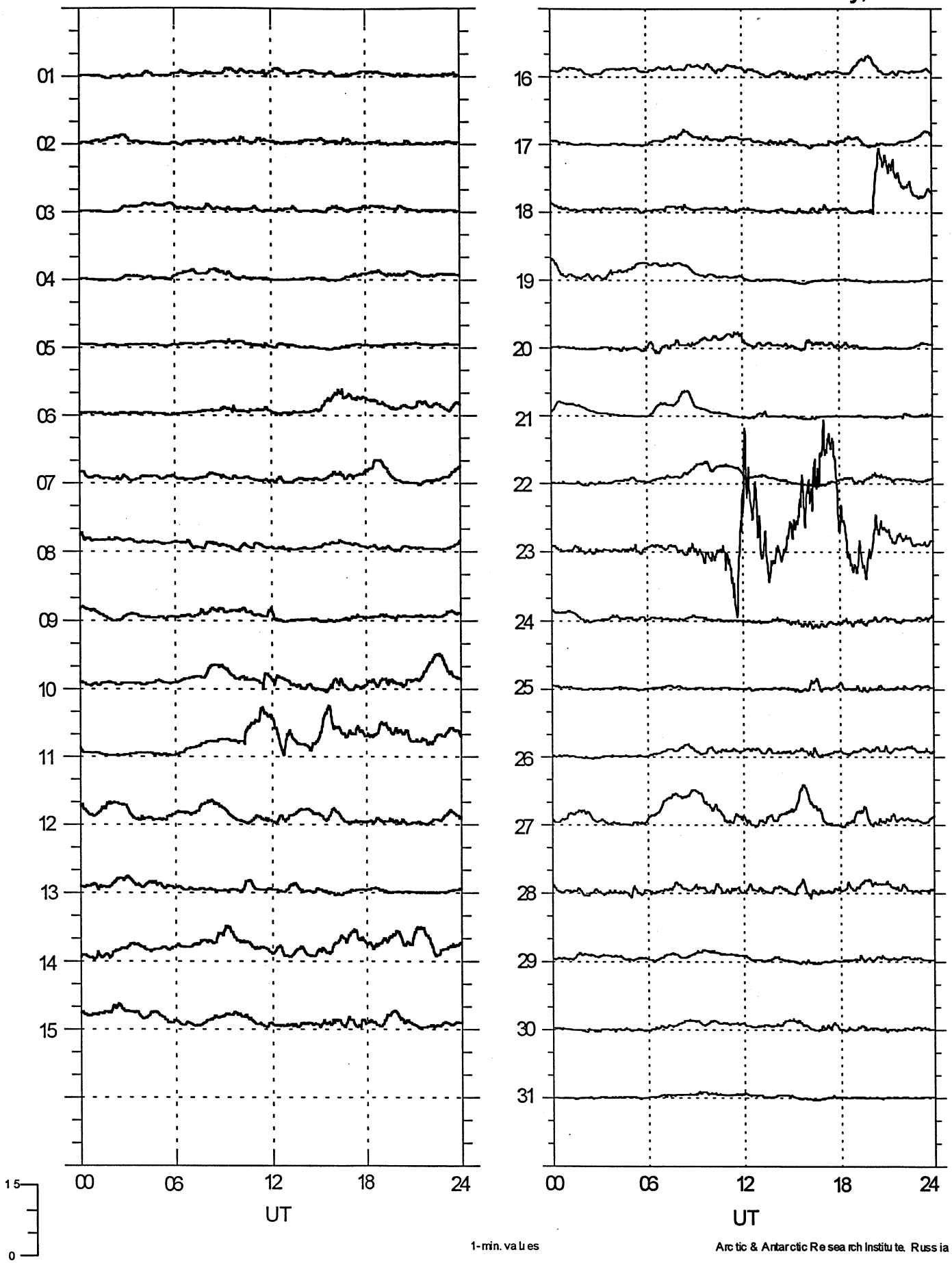
Date, mm-dd

Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

PC INDEX

Vostok

May, 2002



1-min. values

Arctic & Antarctic Research Institute. Russia

P R I N C I P A L M A G N E T I C S T O R M S
MAY 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	0500	..	..	..	..	06(4,5,6) 07(1,6)	3	7	127	21	09	21
ETT	00.7S	06	0500	..	..	..	..		-	5	200	42	09	18
HYB	07.6N	10	1125	SC	- 0.3	22	- 2	10(4,8)	4	5	48	11	11	01
ETT	00.7S	10	1124	SC	- 0.4	27	21		-	2	50	16	10	24
BJI	28.8N	11	1014	SC	1.3	16	3	11(4)	6	11	140	22	12	06
KRC	16.4N	11	1002	SC	- 3	39	21	11(4,5)	6	10	130	66	12	10
UJJ	13.6N	11	1013	SC	- 0.6	22	- 7		-	6	143	19	12	03
NGP	11.3N	11	1013	SC	- 0.3	23	- 4		-	6	163	15	12	03
ABG	09.4N	11	1013	SC	- 0.6	21	- 11	11(4)	6	7	157	25	12	03
HYB	07.6N	11	1015	SC	- 0.4	23	- 1	11(5,6)	6	8	158	38	12	24
PND	02.0N	11	1013	SC	- 0.3	23	21		-	5	165	74	12	03
TIR	00.6S	11	1013	SC	- 0.7	31	34		-	2	178	67	12	03
ETT	00.7S	11	1015	SC	- 0.4	30	25		-	7	209	85	12	17
HER	33.6S	11	1016	SC	..	28	38	11(5,6,7) 12(1)	5	32	176	146	12	04
HYB	07.6N	13	1200	..	..	..	..	14(4,7)	4	7	155	37	15	21
UJJ	13.6N	14	0030	..	..	..	..		-	6	87	25	15	03
NGP	11.3N	14	0030	..	..	..	..		-	7	108	20	15	03
ABG	09.4N	14	0030	..	..	..	..	14(1,4)	5	6	98	33	15	03
PND	02.0N	14	0030	..	..	..	..		-	5	115	57	15	03
TIR	00.6S	14	0030	..	..	..	..		-	6	179	62	15	03
ETT	00.7S	14	0000	..	..	..	..		-	5	177	62	15	21
HER	33.6S	14	00--	..	..	..	..	14(7)	5	27	90	77	15	03
BJI	28.8N	18	2018	SC	1.3	59	3	18(7)	7	14	120	36	19	09
KRC	16.4N	18	2010	SC	- 3	75	39	18(7)	6	9	99	54	19	18
UJJ	13.6N	18	2007	SC*	--	49	- 10		-	4	81	27	19	14
NGP	11.3N	18	2007	SC*	- 0.4	49	- 5		-	5	76	21	19	14
ABG	09.4N	18	2007	SC*	- 0.4	46	- 6	18(7,8) 19(2)	5	4	86	37	19	14
HYB	07.6N	18	2010	SC	0	45	- 1	18(7,8)	5	4	86	20	19	14
PND	02.0N	18	2007	SC*	- 0.1	38	30		-	3	96	75	19	14
TIR	00.6S	18	2007	SC*	- 0.2	25	22		-	3	116	91	19	14
ETT	00.7S	18	2009	SC	0	30	38		-	2	108	80	19	14
HER	33.6S	18	2011	SC	2	30	26	18(7,8)	5	13	63	72	19	08
HYB	07.6N	20	0341	SC	- 0.3	18	- 1	20(2,4,7)	3	4	165	15	20	19
ETT	00.7S	20	0341	SC	- 0.4	40	21		-	2	137	76	20	19
HER	33.6S	20	0343	SC	2	7	6	20(3,4,7)	3	18	63	37	20	19
HYB	07.6N	21	2204	SC	- 0.4	20	- 1	23(5,6)	7	7	220	37	23	23
ETT	00.7S	21	2203	SC	- 0.3	15	16		-	6	300	157	23	23
BJI	28.8N	23	1050	SC	3.8	63	5	23(5)	8	11	24	22	23	22
KRC	16.4N	23	1050	SC	- 4	104	56	23(5)	8	14	274	126	24	08
UJJ	13.6N	23	1049	SC	- 1.2	48	- 10		-	7	226	35	23	24
NGP	11.3N	23	1049	SC	- 0.6	--	- 8		-	6	--	35	23	24
ABG	09.4N	23	1049	SC	- 1.4	46	- 15	23(5)	7	8	255	44	23	24
HYB	07.6N	23	1050	SC	- 1.1	50	- 4		-	-	--	--	--	--
PND	02.0N	23	1049	SC	- 0.7	40	49		-	5	244	149	23	24
TIR	00.6S	23	1049	SC	- 1.5	56	69		-	6	239	168	23	24
ETT	00.7S	23	1049	SC	- 0.9	65	54		-	-	--	--	--	--
HER	33.6S	23	1052	SC	3	21	19	23(5,6)	7	33	235	249	23	24
HYB	07.6N	26	1500	..	..	..	..	27(3)	5	7	116	45	29	03
ETT	00.7S	26	1500	..	..	..	..		-	4	197	97	28	23
HYB	07.6N	30	0203	SC	- 0.3	13	- 1		-	-	--	--	--	--
ETT	00.7S	30	0204	SC	- 0.1	18	11		-	-	--	--	--	--

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)

May 2002

Storm Sudden Commencements (SSC)

Day	Time	Quality: Station Group*
10	1123	A: VAL* NAG* SPT* GUI
		B: SOD* NUR* NGK* BDV* CLF HRB* EBR HTY* CNB*
11	1014	A: VAL* CLF* NAG* SPT* GUI*
		B: BDV* HRB* MMB* EBR* KAK* HTY* KNY* HER
		C: SOD* NUR* NGK* LIV*
18	2008	A: NGK VAL CLF HRB NAG* SPT* GUI HER
		B: BDV* EBR* HTY GNA* CNB* LIV
20	0340	A: GUI*
		B: VAL NAG* EBR LIV*
		C: NUR NGK* BDV* CLF* HER
21	2203	A: GUI*
		B: BDV HRB
		C: NGK* SPT* LIV*
23	1050	A: CLF MMB EBR* SPT* KAK HTY KNY* GUI HER
		B: VAL* BDV* NAG* LIV
		C: NGK HRB
30	0204	B: GUI LIV
		C: NGK BDV EBR

Solar Flare Effects (sfe)

Day	Begin-End	Station(s)
18	0700-0711	NAG
20	1524-1542	NGK+ BDV+ GUI
24	0640-0701	BDV

REPORTING OBSERVATORIES (up to the 3rd of July 2002):
SOD NUR NGK VAL BDV CLF HRB NAG MMB EBR SPT KAK HTY KNY QTA GUI GNA HER CNB LIV

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

Note that we have included data of the Antartic Station LIVINGSTONE (62° 39' 44" S, 60°23' 41" W) -- Luis F.