FEBRUARY 2002 NUMBER 690 - Part I

Solar-Geophysical Data prompt reports

Data for December 2001 and January 2002
Explanation of Data Reports Issued as Number 515 (Supplement) July 1987

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Data for December 2001 and January 2002

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SOLAR-GEOPHYSICAL DATA

Number 690

(Issued in Two Parts)

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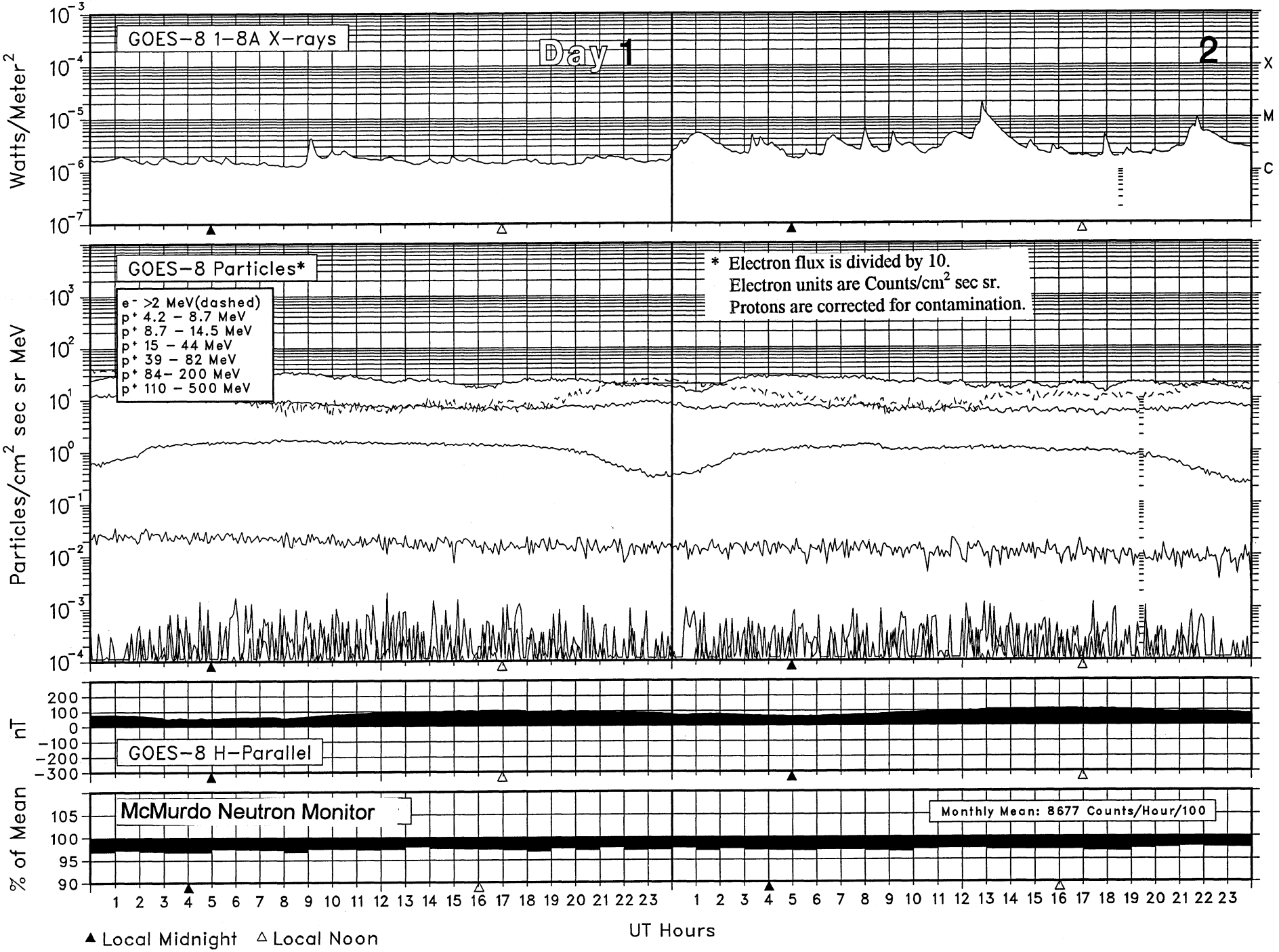

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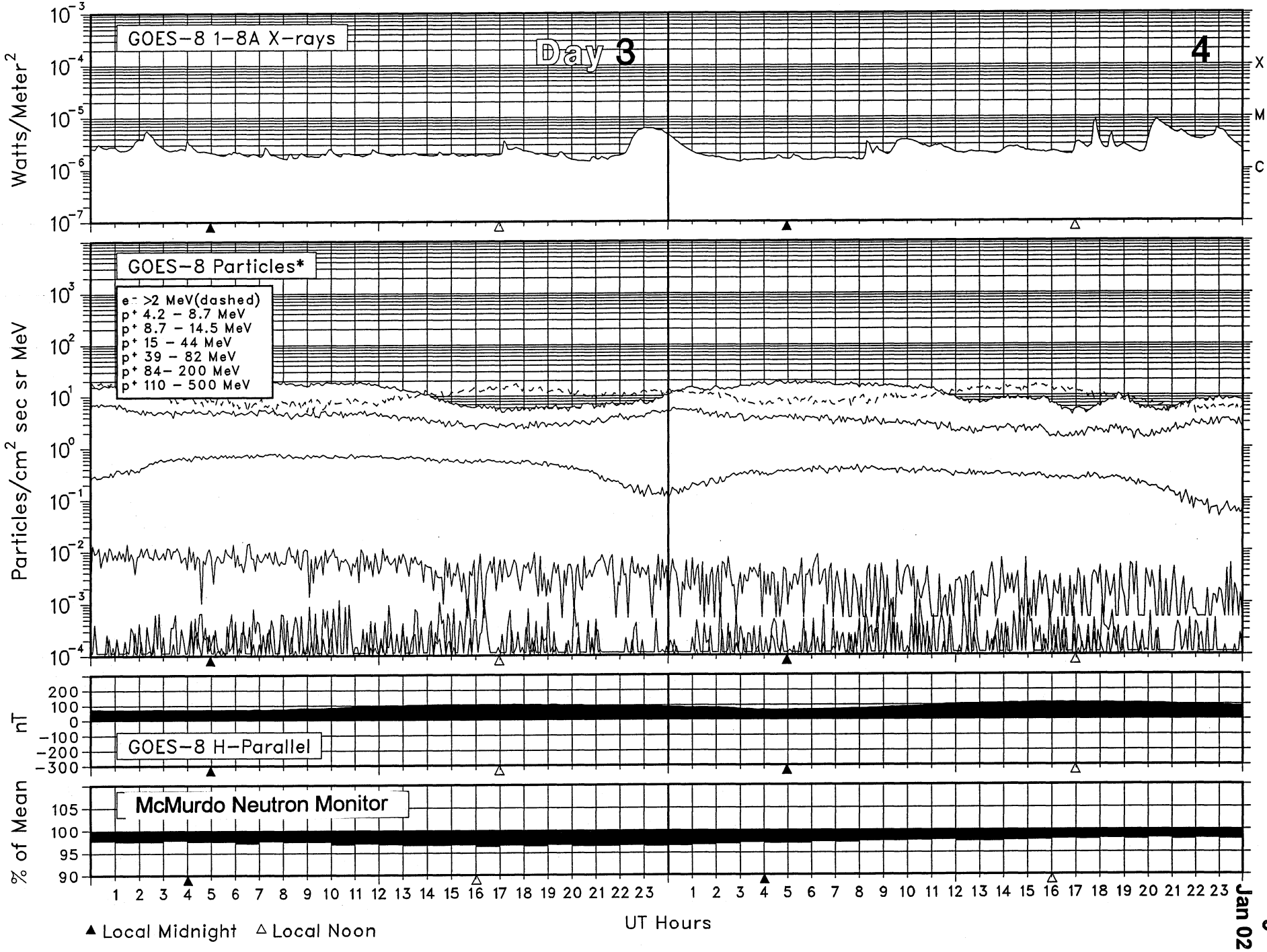

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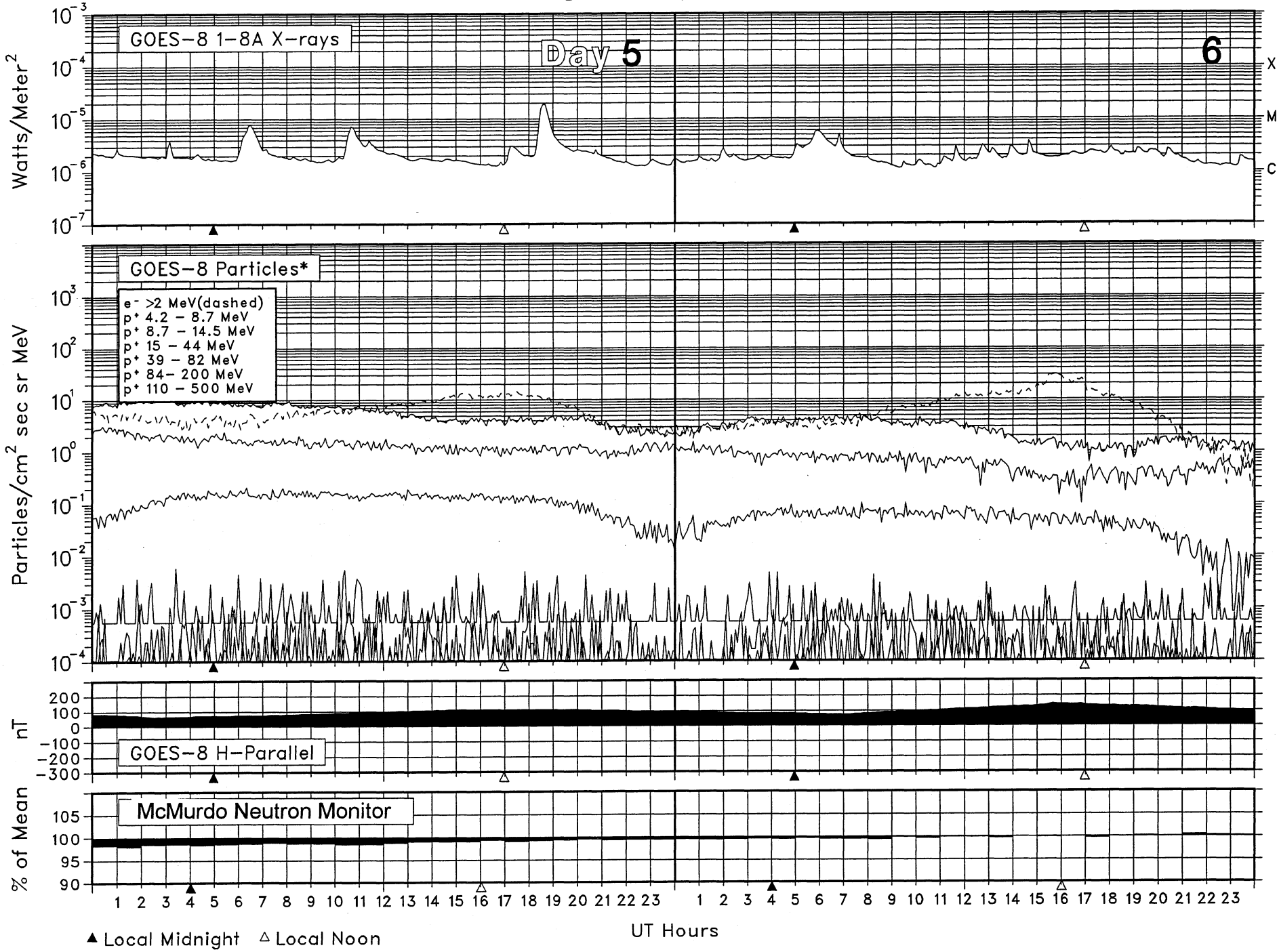

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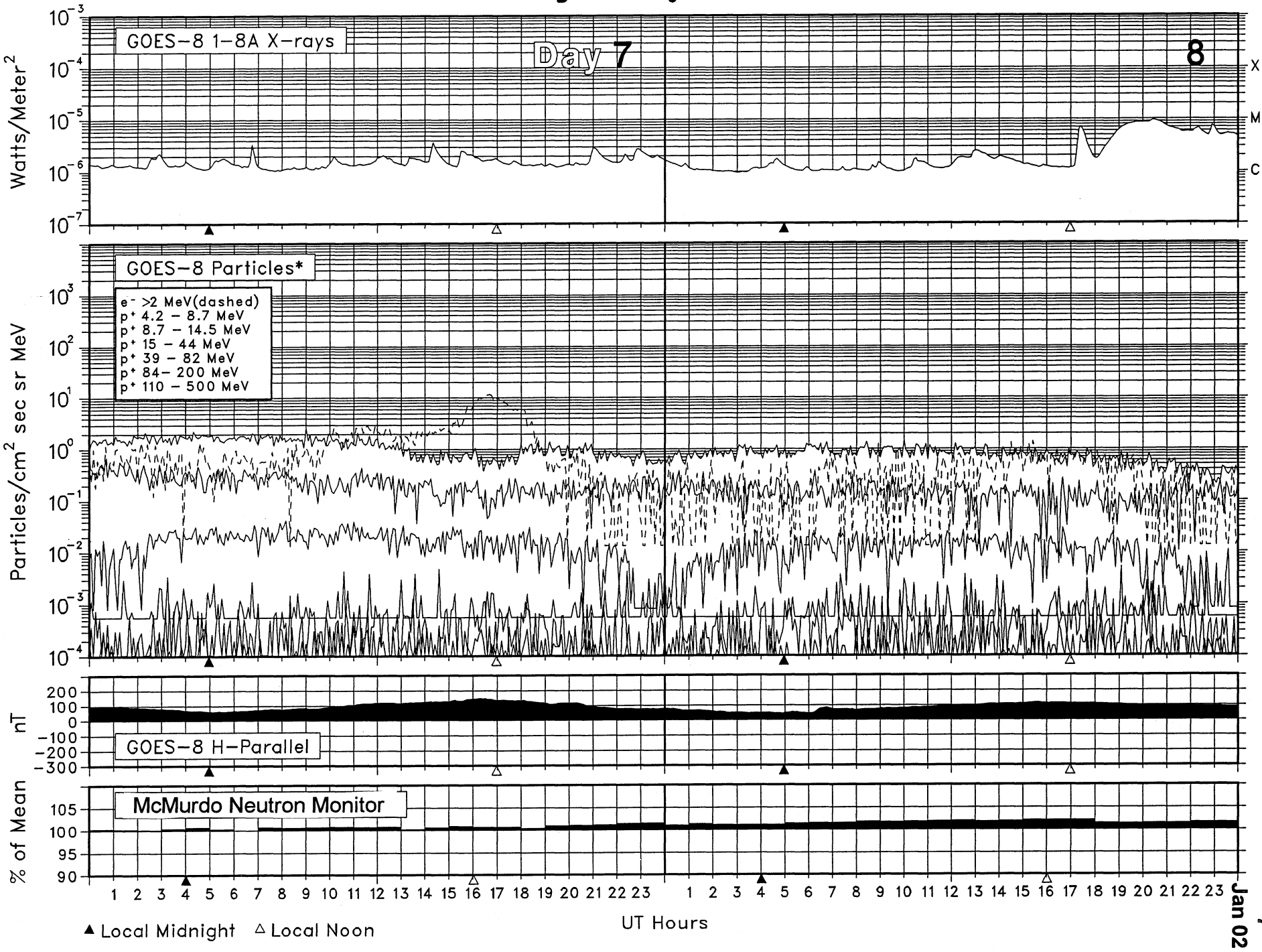

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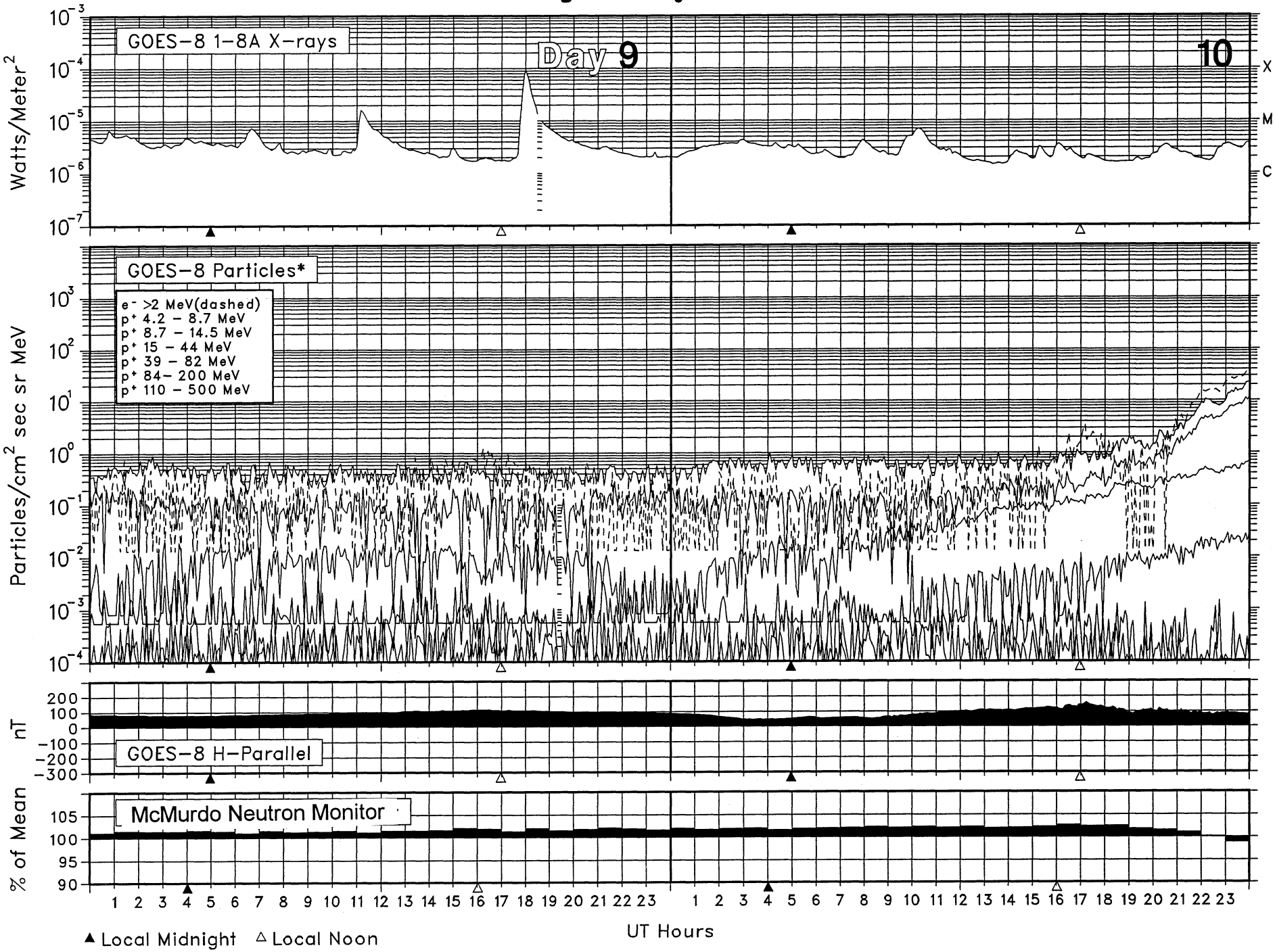

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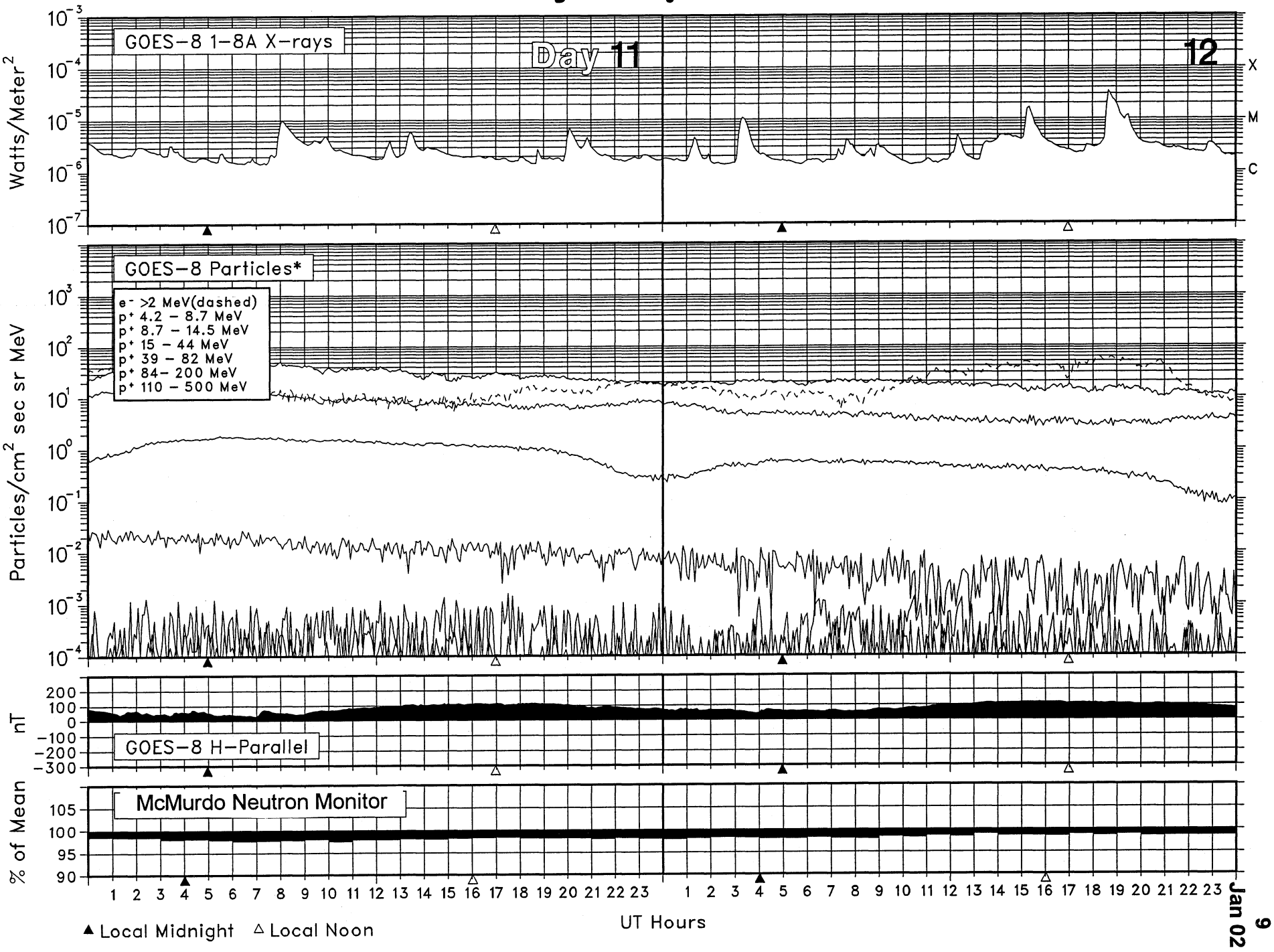

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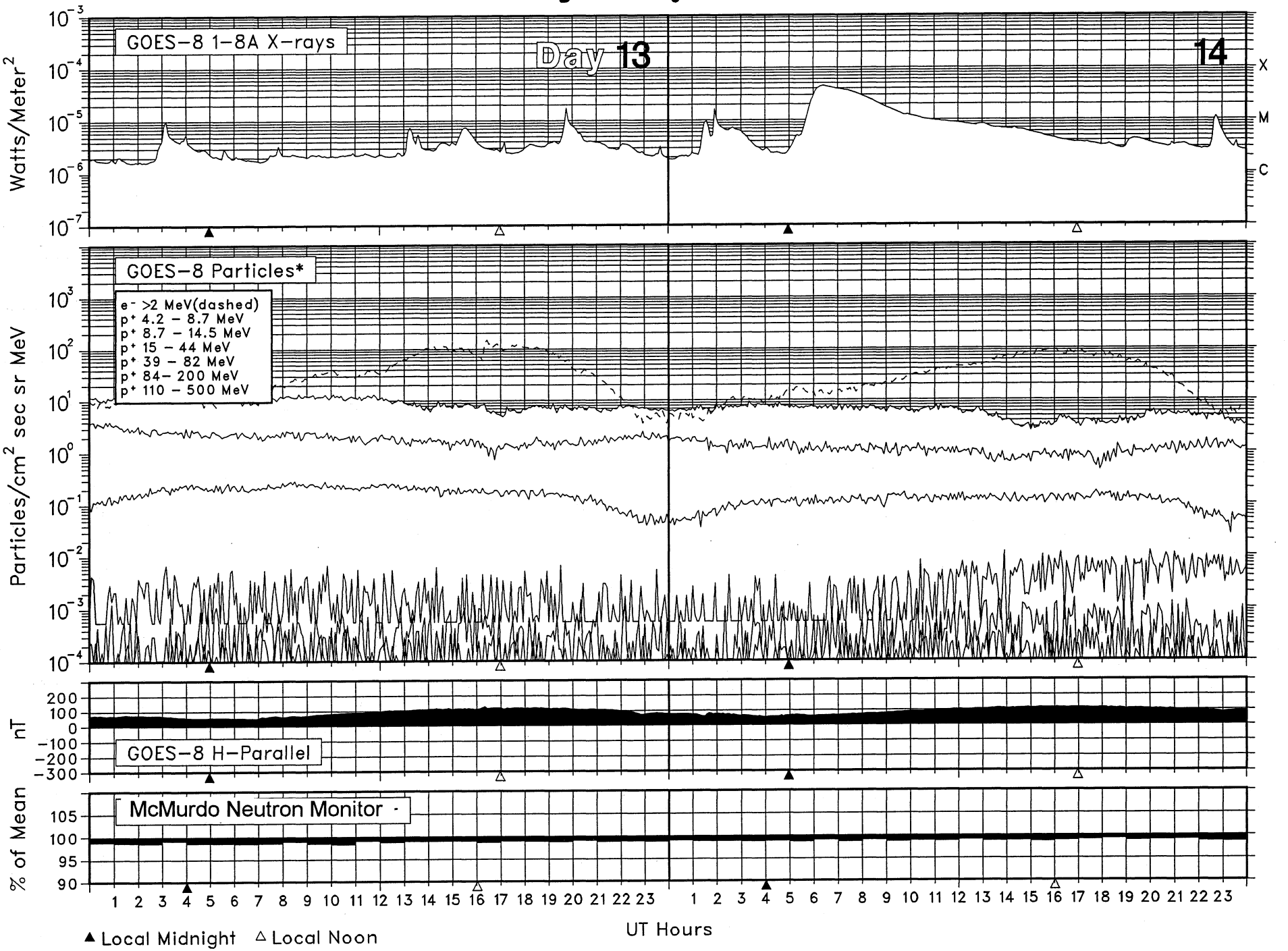

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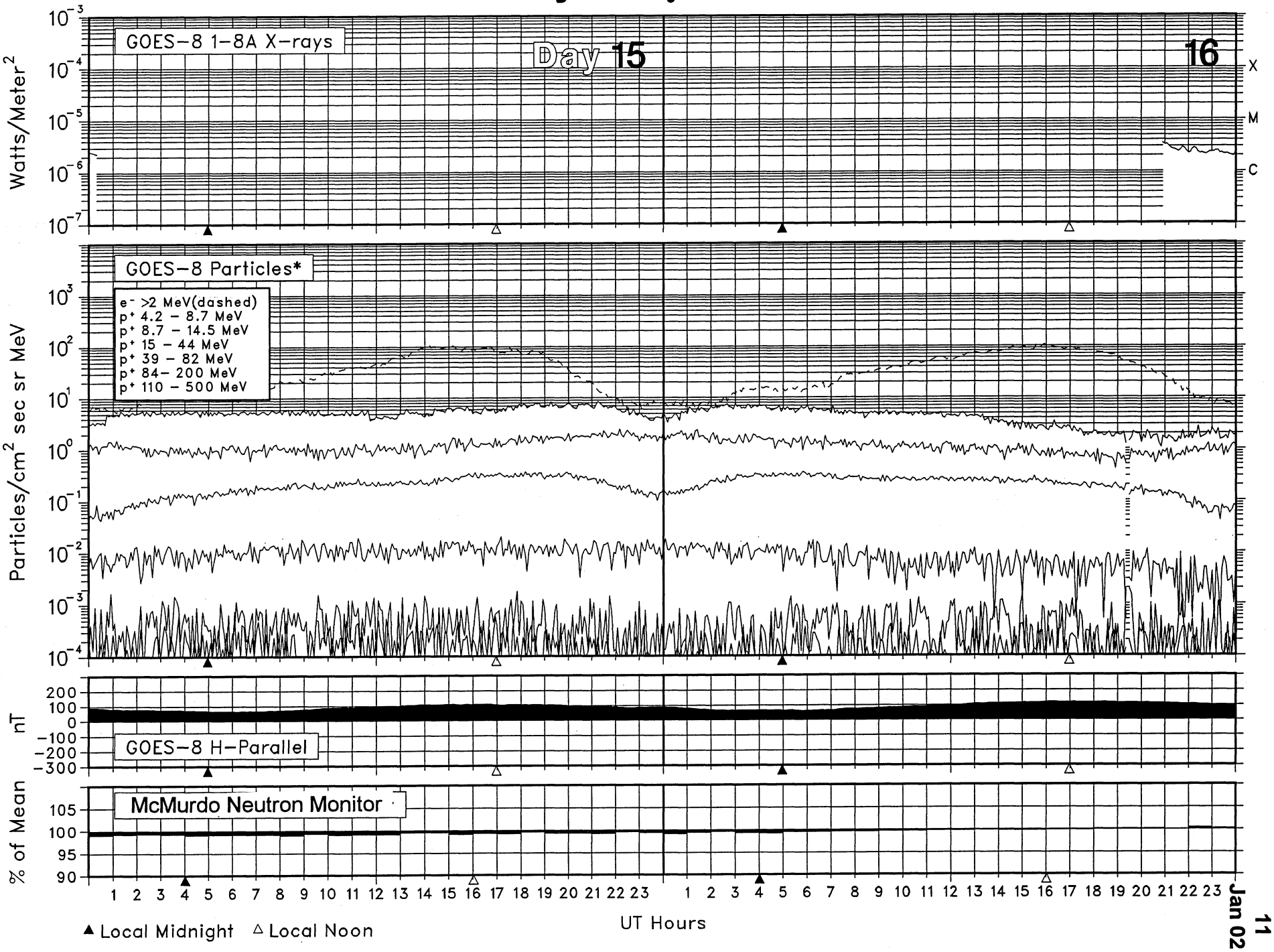

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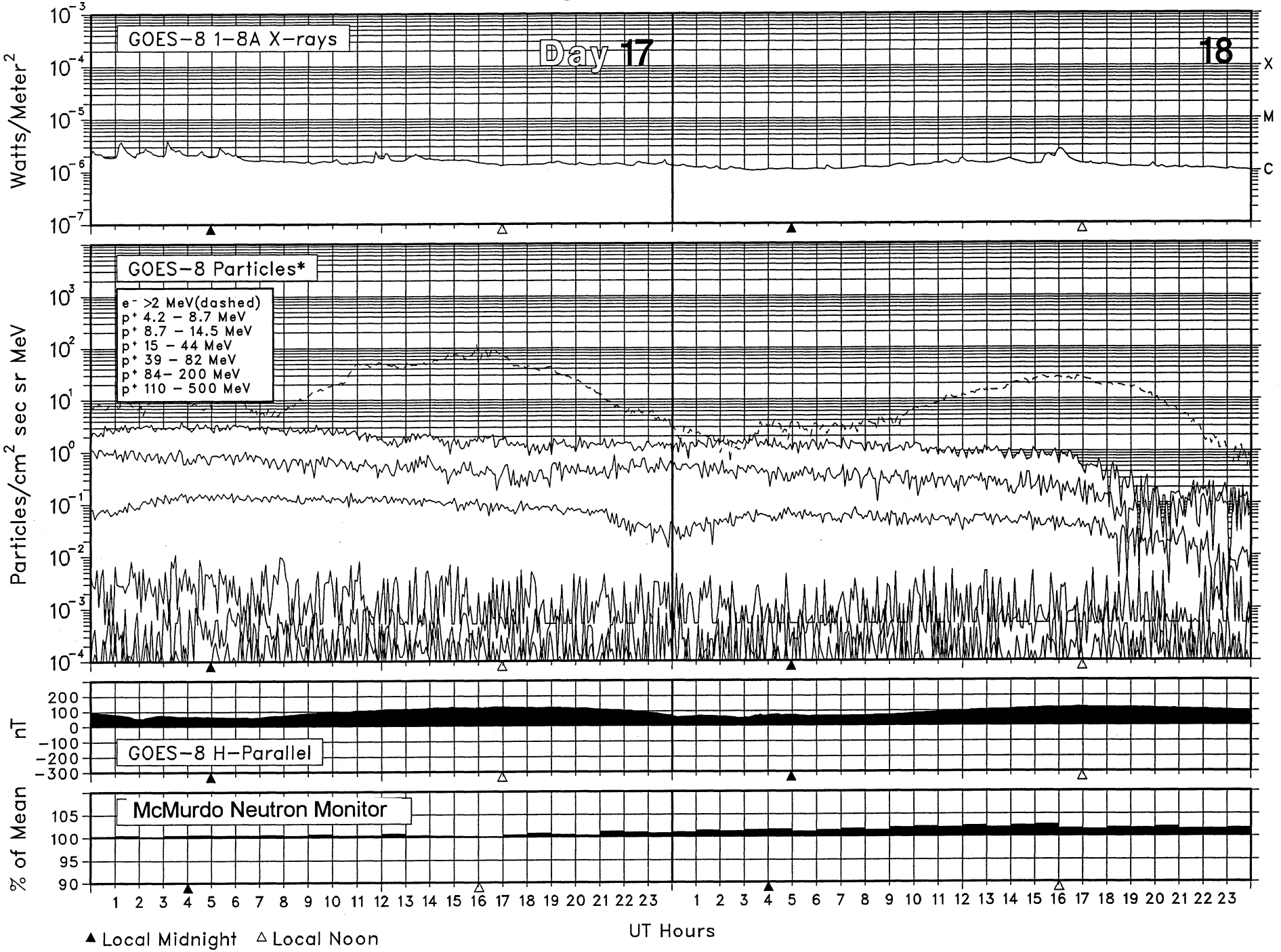

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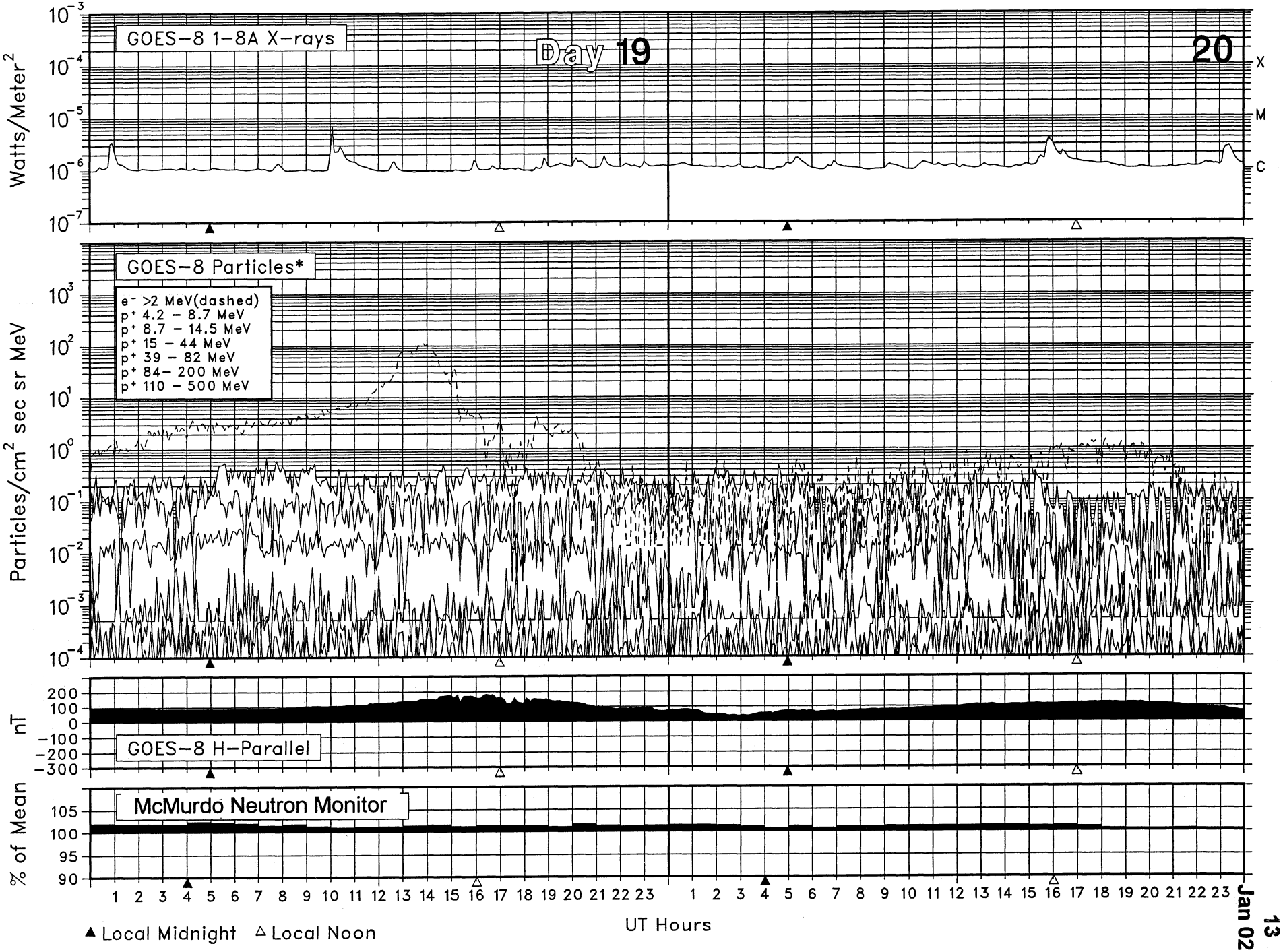

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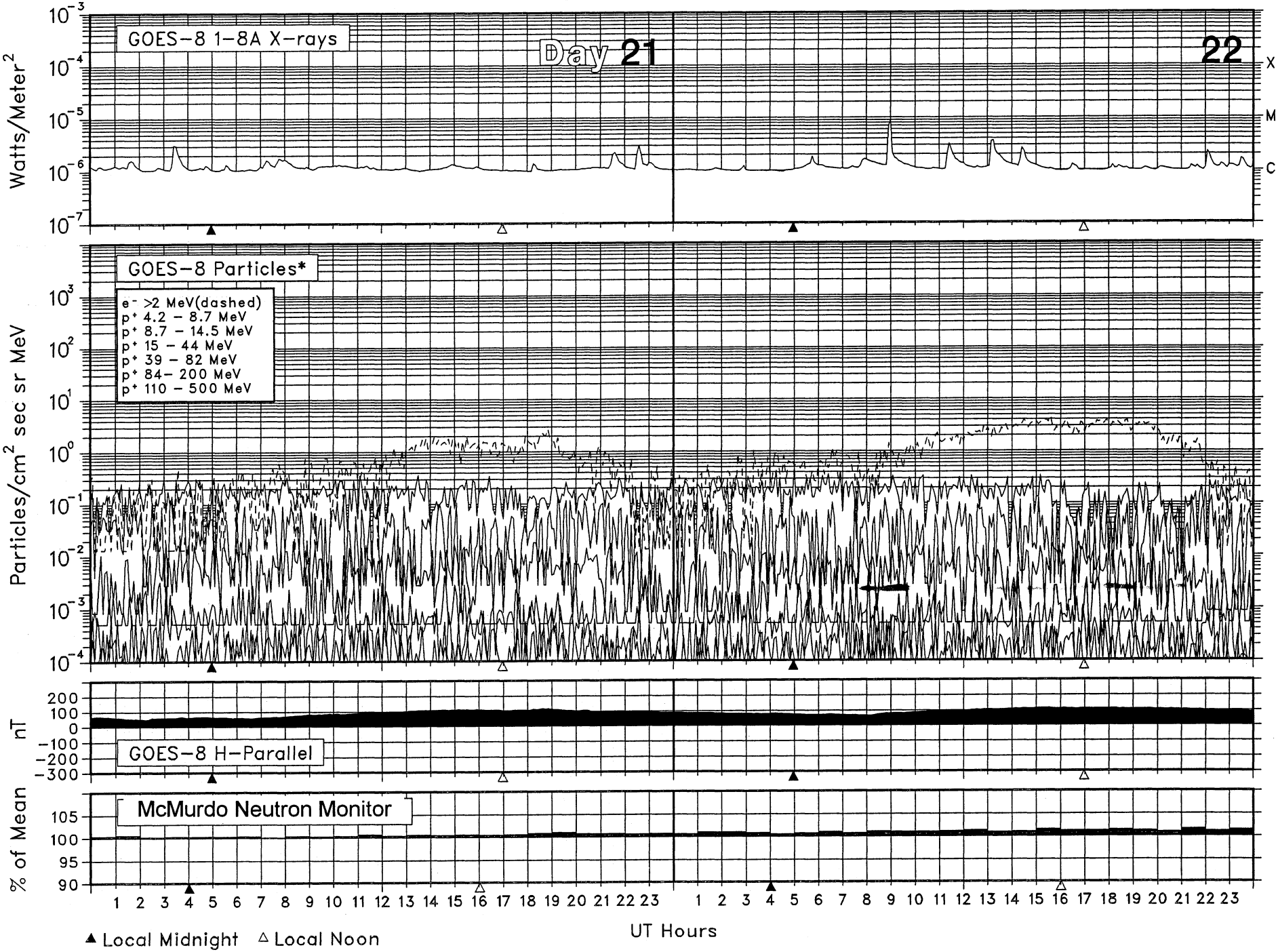

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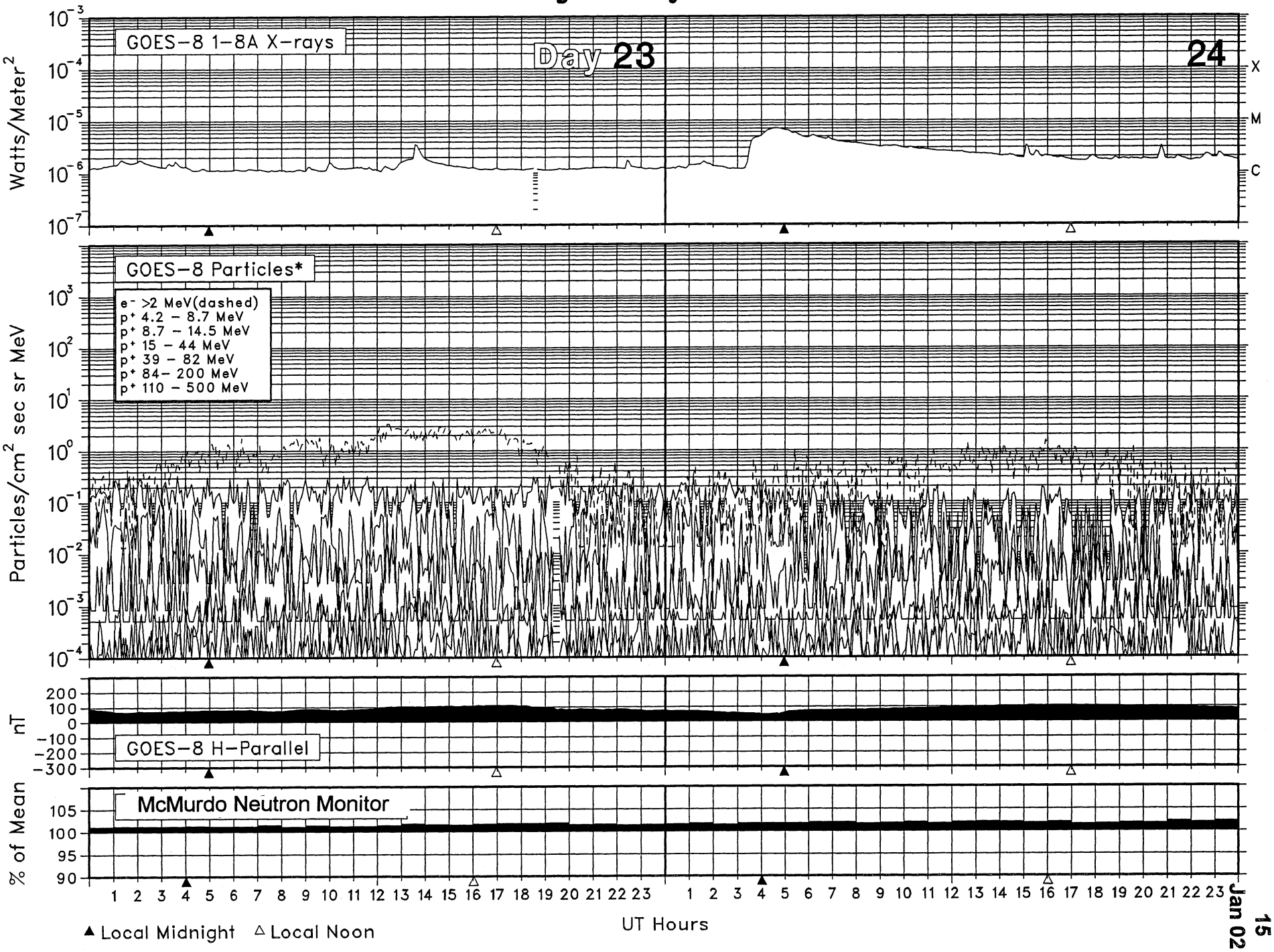

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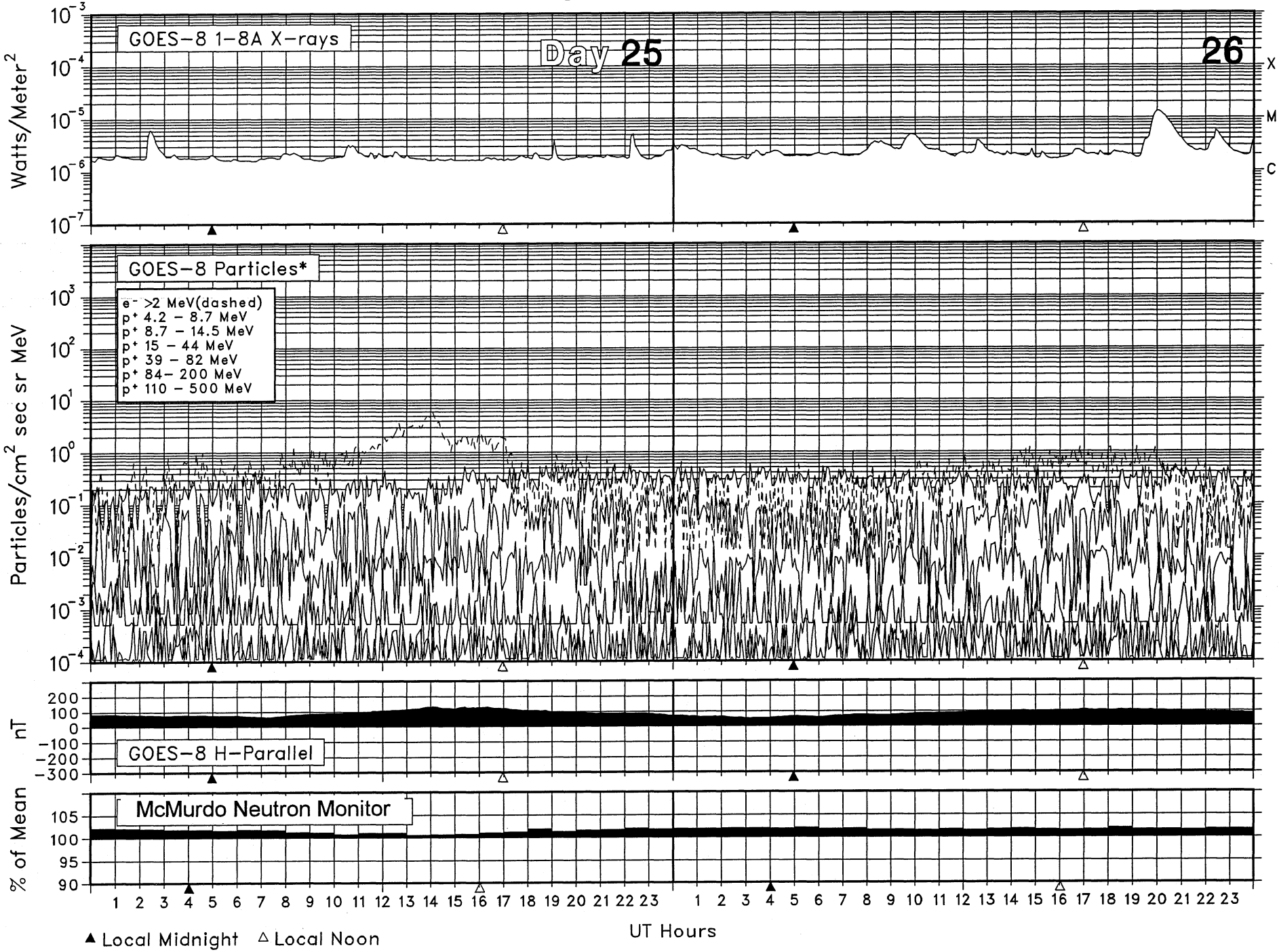

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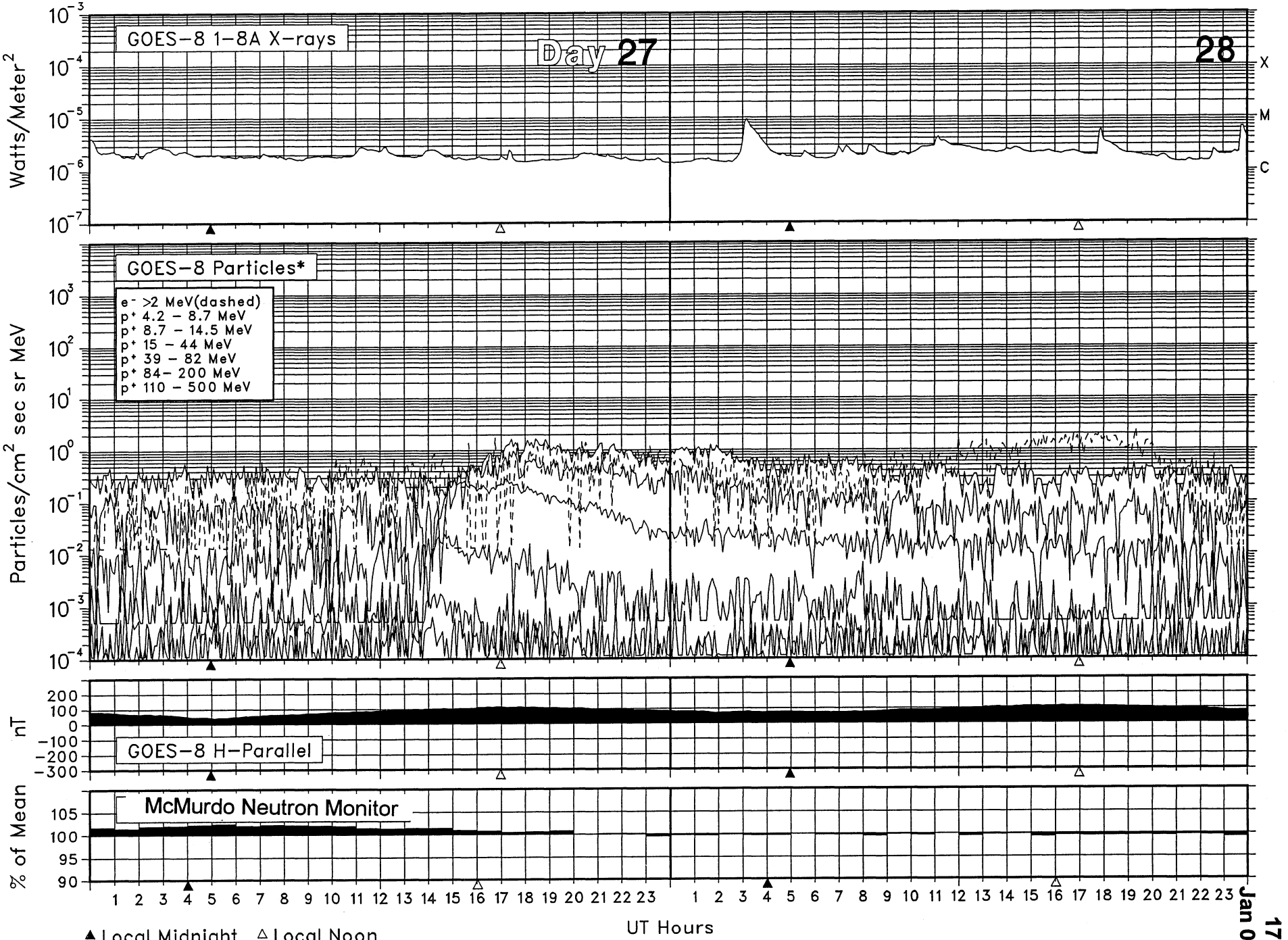

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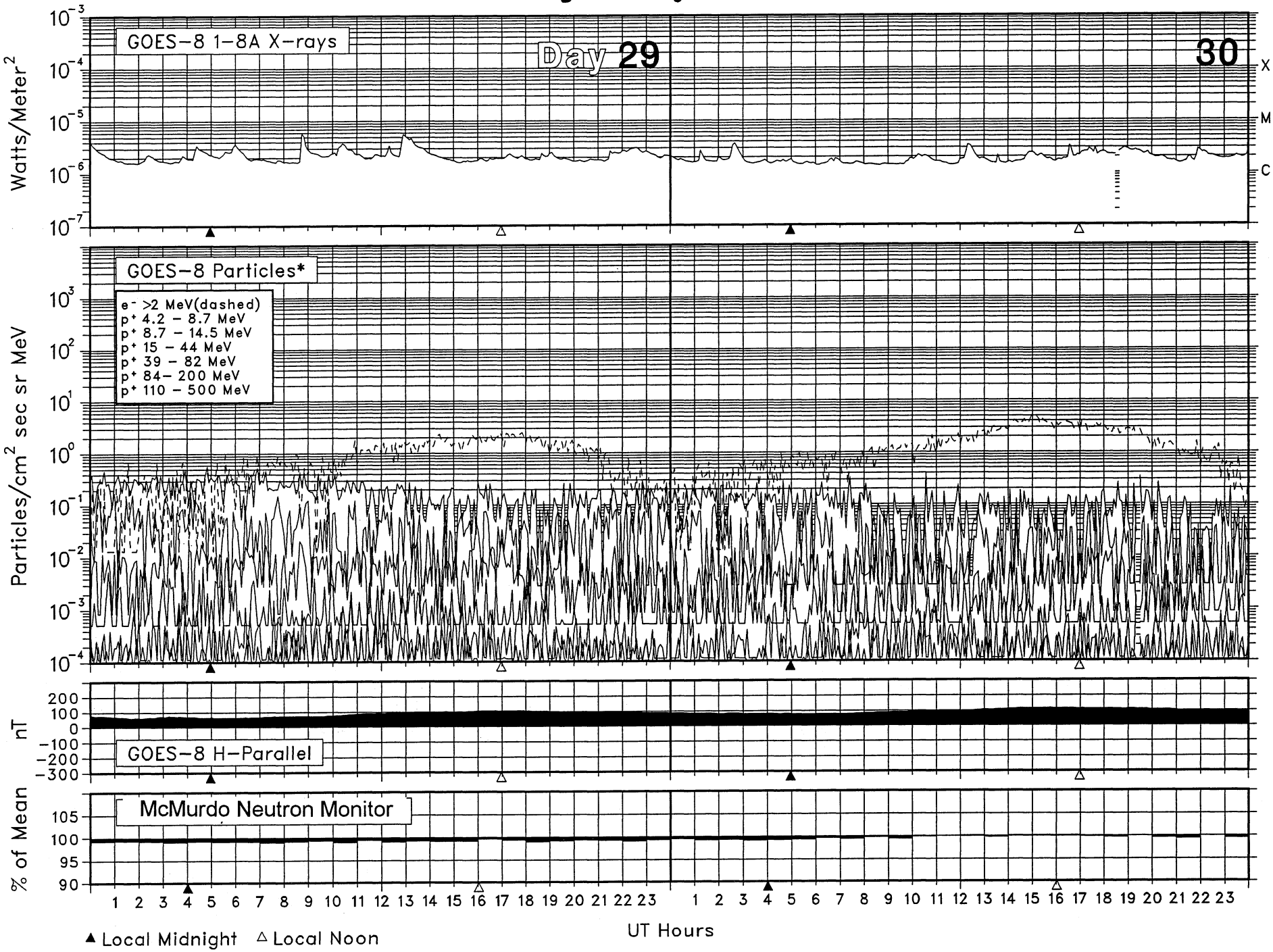

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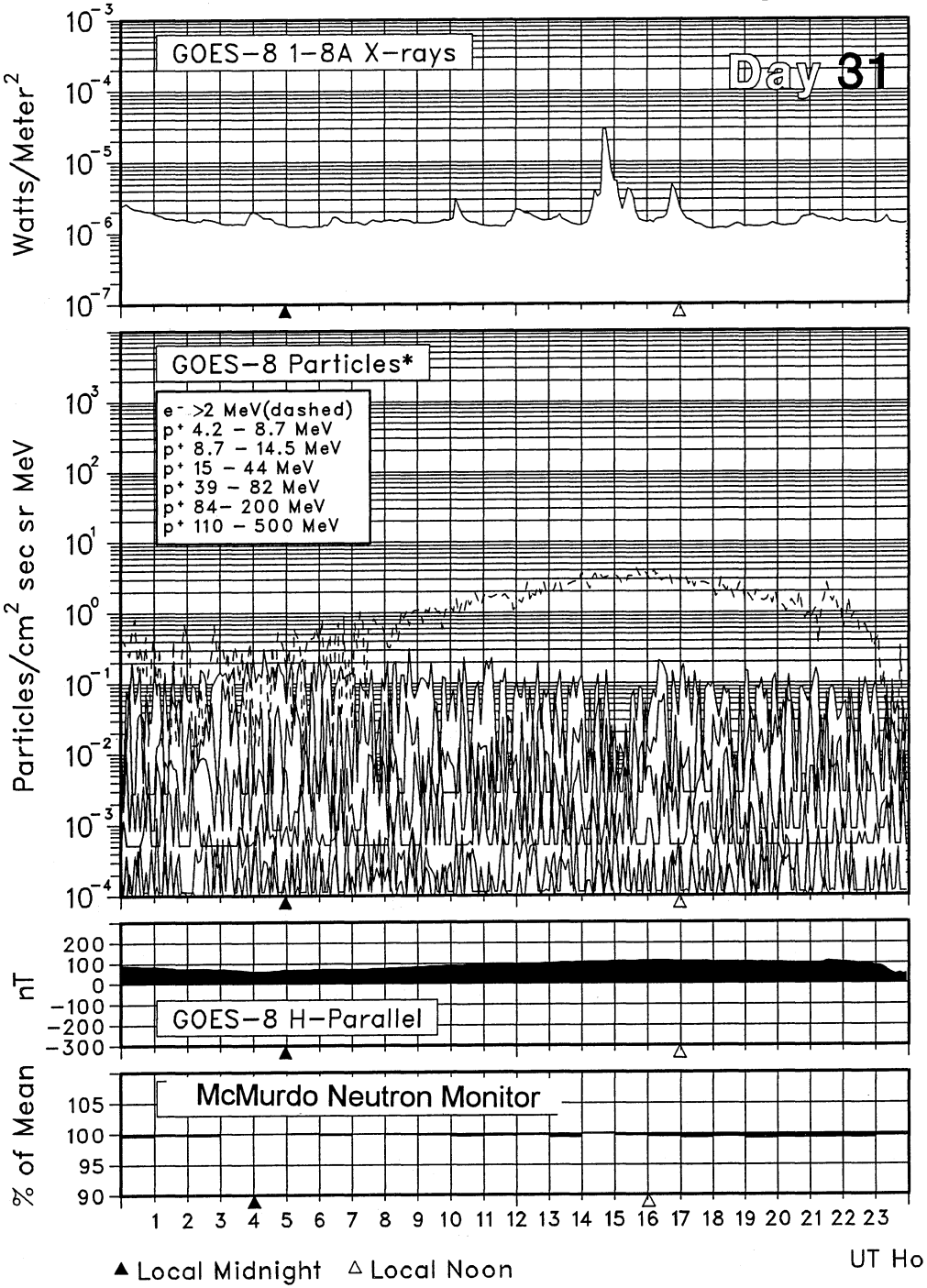
January 2002



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

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

JANUARY 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)
001	01	31	209	246	13	9751	N04	W64	1	0	0	01	E	SOL: Active
						9753	S17	W60	0	0	0	01	Q	MAG: Minor
						9754	S08	W42	1	0	0	01	E	PRO: No Fcst
						9755	S04	W16	0	0	0	01	Q	
						9756	S29	E08	1	0	0	01	Q	
						9761	N11	E08	0	0	0	01	Q	
						9763	N07	E20	0	0	0	01	Q	
						9764	N15	W24	0	0	0	01	Q	
						9765	N06	E36	0	0	0	01	Q	
						9766	N05	E48	0	0	0	01	Q	
						9767	S23	E60	2	0	0	01	E	
002	02	01	222	232	9	9751	N03	W77	0	0	0	02	E	SOL: Active
						9753	S17	W73	0	0	0	02	Q	MAG: Quiet
						9754	S07	W55	0	0	0	02	E	PRO: No Fcst
						9755	S08	W29	0	0	0	02	Q	
						9756	S28	W05	0	0	0	02	Q	
						9761	N10	W05	0	0	0	02	Q	
						9763	N06	E07	0	0	0	02	Q	
						9764	N14	W37	0	0	0	02	Q	
						9765	N06	E24	0	0	0	02	Q	
						9766	N04	E35	0	0	0	02	Q	
						9767	S23	E49	1	0	0	02	E	
						9768	S06	W15	0	0	0	02	Q	
003	03	02	241	231	7	9751	N04	W89	1	0	0	03	Q	SOL: Active
						9754	S07	W68	6	1	0	03	E	MAG: Quiet
						9755	S04	W42	0	0	0	03	Q	PRO: IP
						9761	N11	W18	0	0	0	03	Q	
						9763	N06	W06	0	0	0	03	Q	
						9764	N14	W50	5	0	0	03	E	
						9765	N06	E11	0	0	0	03	Q	
						9766	N04	E21	0	0	0	03	Q	
						9767	S23	E36	3	0	0	03	E	
						9768	S06	W28	0	0	0	03	Q	
						9769	S19	W33	0	0	0	03	Q	
						9770	N08	W29	0	0	0	03	Q	
						9771	S20	E17	0	0	0	03	Q	
004	04	03	229	220	1	9754	S05	W81	5	0	0	04	E	SOL: Active
						9755	S04	W55	0	0	0	04	Q	MAG: Quiet
						9761	N11	W31	0	0	0	04	Q	PRO: No Fcst
						9763	N07	W20	0	0	0	04	Q	
						9764	N14	W64	1	0	0	04	Q	
						9765	N06	W03	0	0	0	04	Q	
						9766	N07	E08	0	0	0	04	Q	
						9767	S23	E23	4	0	0	04	E	
						9768	S07	W43	0	0	0	04	Q	
						9769	S19	W45	0	0	0	04	Q	
						9770	N09	W41	2	0	0	04	Q	
						9771	S20	E05	0	0	0	04	Q	
						9772	S18	E83	0	0	0	04	Q	
005	05	04	248	218	4	9754	S07	W92	1	0	0	05	E	SOL: Active
						9755	S03	W71	0	0	0	05	Q	MAG: Quiet
						9761	N11	W45	0	0	0	05	Q	PRO: IP
						9763	N06	W34	0	0	0	05	Q	
						9764	N14	W80	0	0	0	05	Q	
						9765	N06	W16	0	0	0	05	Q	
						9767	S22	E08	3	0	0	05	E	
						9768	S06	W58	1	0	0	05	Q	
						9769	S19	W61	0	0	0	05	Q	
						9770	N07	W55	0	0	0	05	Q	
						9771	S20	W10	0	0	0	05	Q	
						9772	S16	E65	0	0	0	05	Q	
						9773	N14	E64	3	0	0	05	Q	

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

JANUARY 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)
006	06	05	201	212	3	9755	S05	W83	1	0	0	06	Q	SOL: Active
						9761	N12	W56	0	0	0	06	Q	MAG: Quiet
						9763	N06	W45	0	0	0	06	Q	PRO: Quiet
						9764	N13	W89	0	0	0	06	Q	
						9765	N07	W25	0	0	0	06	Q	
						9767	S22	W03	4	0	0	06	E	
						9768	S04	W70	5	0	0	06	Q	
						9769	S18	W72	0	0	0	06	Q	
						9770	N07	W62	0	0	0	06	Q	
						9771	S23	W20	1	0	0	06	Q	
						9772	S17	E52	0	0	0	06	Q	
						9773	N13	E52	6	1	0	06	E	
007	07	06	143	197	5	9761	N10	W70	0	0	0	07	Q	SOL: Active
						9763	N06	W59	0	0	0	07	Q	MAG: Quiet
						9765	N06	W41	0	0	0	07	Q	PRO: Quiet
						9767	S22	W17	6	0	0	07	E	
						9768	S05	W84	2	0	0	07	Q	
						9769	S18	W88	0	0	0	07	Q	
						9771	S23	W34	0	0	0	07	Q	
						9772	S17	E38	0	0	0	07	Q	
						9773	N13	E36	7	0	0	07	E	
008	08	07	158	189	9	9761	N09	W83	0	0	0	08	Q	SOL: Eruptive
						9763	N05	W73	1	0	0	08	Q	MAG: Quiet
						9765	N06	W54	1	0	0	08	Q	PRO: Quiet
						9767	S22	W30	2	0	0	08	E	
						9771	S21	W49	0	0	0	08	Q	
						9772	S17	E24	0	0	0	08	Q	
						9773	N12	E22	5	0	0	08	E	
						9774	N12	W37	0	0	0	08	Q	
						9775	S06	E37	0	0	0	08	Q	
						9776	N10	E59	0	0	0	08	Q	
009	09	08	143	199	9	9765	N06	W71	0	0	0	09	Q	SOL: Eruptive
						9767	S21	W43	2	0	0	09	E	MAG: Quiet
						9772	S16	E11	0	0	0	09	Q	PRO: Quiet
						9773	N13	E07	4	0	0	09	E	
						9775	S05	E24	0	0	0	09	Q	
						9776	N11	E46	0	0	0	09	Q	
						9777	S06	E64	0	0	0	09	Q	
						9778	S15	E67	1	0	0	09	Q	
						9779	N28	E65	0	0	0	09	Q	
010	10	09	159	229	5	9765	N07	W86	0	0	0	10	Q	SOL: Eruptive
						9767	S18	W61	3	0	0	10	E	MAG: Quiet
						9772	S16	W02	0	0	0	10	Q	PRO: Quiet
						9773	N14	W05	9	2	0	10	E	
						9775	S05	E11	0	0	0	10	Q	
						9776	N11	E32	0	0	0	10	Q	
						9778	S16	E58	4	0	0	10	Q	
						9779	N28	E53	1	0	0	10	Q	
						9780	S11	W49	0	0	0	10	Q	
011	11	10	179	225	14	9767	S17	W73	2	0	0	11	E	SOL: Active
						9772	S16	W14	0	0	0	11	Q	MAG: Active
						9773	N14	W17	8	0	0	11	E	PRO: IP
						9775	S05	W03	1	0	0	11	Q	
						9776	N10	E19	0	0	0	11	Q	
						9778	S17	E45	4	0	0	11	E	
						9779	N28	E40	0	0	0	11	Q	
						9780	S11	W62	0	0	0	11	Q	
012	12	11	195	229	18	9767	S18	W87	1	1	0	12	E	SOL: Active
						9772	S16	W28	0	0	0	12	Q	MAG: Active
						9773	N14	W32	5	0	0	12	E	PRO: IP
						9775	S05	W16	4	0	0	12	Q	

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						9776	N11	E04	0	0	0	12	Q	
						9778	S16	E33	0	0	0	12	E	
						9779	N28	E27	2	0	0	12	Q	
						9780	S10	W78	0	0	0	12	Q	
						9781	S06	E64	0	0	0	12	Q	
						9782	N09	E73	0	0	0	12	Q	
013	13	12	174	233	15	9772	S16	W41	0	0	0	13	Q	SOL: Active
						9773	N15	W46	6	0	0	13	E	MAG: Quiet
						9775	S05	W30	5	3	0	13	E	PRO: IP
						9776	N11	W13	0	0	0	13	Q	
						9778	S16	E21	0	0	0	13	E	
						9779	N29	E13	0	0	0	13	Q	
						9780	S10	W93	0	0	0	13	Q	
						9781	S05	E52	0	0	0	13	Q	
						9782	N09	E62	2	0	0	13	Q	
						9783	S10	E76	0	0	0	13	Q	
014	14	13	190	241	10	9772	S17	W54	0	0	0	14	Q	SOL: Active
						9773	N16	W57	4	1	0	14	E	MAG: Quiet
						9775	S05	W43	6	1	0	14	E	PRO: Quiet
						9776	N11	W26	0	0	0	14	Q	
						9778	S16	E09	3	0	0	14	E	
						9779	N30	E02	3	0	0	14	Q	
						9781	S05	E39	0	0	0	14	Q	
						9782	N08	E48	5	0	0	14	E	
						9783	S11	E65	0	0	0	14	Q	
						9784	S29	E58	0	0	0	14	Q	
						9785	N12	E53	0	0	0	14	Q	
015	15	14	191	229	10	9772	S17	W67	0	0	0	15	Q	SOL: Active
						9773	N16	W70	1	0	0	15	E	MAG: Quiet
						9775	S06	W57	3	2	0	15	E	PRO: Quiet
						9776	N10	W40	0	0	0	15	Q	
						9778	S16	W05	1	0	0	15	E	
						9779	N29	W12	0	0	0	15	Q	
						9781	S04	E25	0	0	0	15	Q	
						9782	N07	E33	3	1	0	15	E	
						9783	S11	E52	0	0	0	15	Q	
						9784	S28	E44	0	0	0	15	Q	
						9785	N11	E41	0	0	0	15	E	
016	16	15	155	218	6	9772	S17	W81	0	0	0	16	Q	SOL: Active
						9773	N16	W82	2	0	0	16	E	MAG: Quiet
						9775	S06	W69	8	0	0	16	E	PRO: IP
						9776	N08	W50	0	0	0	16	Q	
						9778	S15	W18	0	0	0	16	E	
						9779	N29	W24	0	0	0	16	Q	
						9781	S05	E13	0	0	0	16	Q	
						9782	N06	E20	1	0	0	16	E	
						9783	S11	E42	0	0	0	16	Q	
						9785	N11	E28	0	0	0	16	E	
017	17	16	131	216	5	9775	S06	W86	11	1	0	17	E	SOL: Active
						9778	S14	W35	0	0	0	17	Q	MAG: Quiet
						9779	N29	W38	0	0	0	17	Q	PRO: Quiet
						9781	S05	W01	0	0	0	17	Q	
						9782	N06	E05	0	0	0	17	E	
						9783	S12	E25	0	0	0	17	Q	
						9785	N10	E14	0	0	0	17	E	
						9786	S26	E07	0	0	0	17	Q	
018	18	17	122	212	7	9778	S14	W50	0	0	0	18	Q	SOL: Active
						9779	N29	W53	0	0	0	18	Q	MAG: Quiet
						9781	S04	W14	0	0	0	18	Q	PRO: Quiet
						9782	N06	W08	0	0	0	18	E	
						9783	S12	E12	1	0	0	18	Q	

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						9785	N10	E01	0	0	0	18	E	
						9786	S26	W06	0	0	0	18	Q	
						9787	S08	E85	0	0	0	18	Q	
019	19	18	156	211	6	9778	S14	W62	0	0	0	19	Q	SOL: Eruptive
						9779	N29	W64	0	0	0	19	Q	MAG: Quiet
						9781	S05	W28	0	0	0	19	Q	PRO: Quiet
						9782	N06	W22	0	0	0	19	E	
						9783	S11	E01	0	0	0	19	Q	
						9785	N09	W14	0	0	0	19	E	
						9786	S26	W19	0	0	0	19	Q	
						9787	S07	E71	0	0	0	19	Q	
						9788	N16	E52	0	0	0	19	Q	
						9789	N15	E10	0	0	0	19	Q	
020	20	19	153	214	13	9779	N28	W77	0	0	0	20	Q	SOL: Eruptive
						9781	S05	W42	0	0	0	20	Q	MAG: Quiet
						9782	N07	W35	0	0	0	20	E	PRO: Quiet
						9783	S11	W12	0	0	0	20	Q	
						9785	N09	W26	0	0	0	20	Q	
						9786	S25	W32	0	0	0	20	Q	
						9787	S07	E59	2	1	0	20	E	
						9788	N17	E40	1	0	0	20	Q	
						9789	N15	W02	0	0	0	20	Q	
						9790	N28	E25	0	0	0	20	Q	
021	21	20	212	222	8	9779	N27	W90	0	0	0	21	Q	SOL: Eruptive
						9781	S04	W55	0	0	0	21	Q	MAG: Quiet
						9782	N08	W48	0	0	0	21	Q	PRO: Quiet
						9783	S11	W25	0	0	0	21	Q	
						9785	N11	W39	0	0	0	21	Q	
						9786	S25	W45	0	0	0	21	Q	
						9787	S07	E46	4	0	0	21	E	
						9788	N17	E27	2	0	0	21	E	
						9789	N15	W15	0	0	0	21	Q	
						9790	N28	E12	0	0	0	21	Q	
						9791	S03	W19	0	0	0	21	Q	
						9792	N07	E23	0	0	0	21	Q	
						9793	S15	E32	0	0	0	21	Q	
						9794	N11	E65	0	0	0	21	Q	
022	22	21	187	225	11	9781	S04	W69	0	0	0	22	Q	SOL: Eruptive
						9782	N07	W62	0	0	0	22	Q	MAG: Quiet
						9783	S11	W39	0	0	0	22	Q	PRO: Quiet
						9785	N10	W53	1	0	0	22	Q	
						9786	S25	W59	0	0	0	22	Q	
						9787	S07	E32	0	0	0	22	E	
						9788	N18	E13	2	0	0	22	E	
						9789	N17	W29	1	0	0	22	Q	
						9790	N28	W02	0	0	0	22	Q	
						9791	S03	W33	2	0	0	22	E	
						9793	S15	E19	0	0	0	22	Q	
						9794	N11	E51	0	0	0	22	Q	
023	23	22	178	229	6	9781	S06	W82	0	0	0	23	Q	SOL: Eruptive
						9782	N08	W75	0	0	0	23	Q	MAG: Quiet
						9783	S10	W52	0	0	0	23	Q	PRO: Quiet
						9785	N13	W66	0	0	0	23	Q	
						9786	S26	W73	0	0	0	23	Q	
						9787	S06	E19	2	0	0	23	E	
						9788	N18	E00	0	0	0	23	E	
						9789	N18	W42	1	0	0	23	Q	
						9790	N29	W15	0	0	0	23	Q	
						9791	S02	W46	0	1	0	23	E	
						9793	S12	E01	1	0	0	23	Q	
024	24	23	272	227	6	9781	S03	W95	0	0	0	24	Q	SOL: Active

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						9782	N08	W88	0	0	0	24	Q	MAG: Quiet
						9783	S11	W65	1	0	0	24	Q	PRO: Quiet
						9784	S28	W73	0	0	0	24	Q	
						9785	N31	W79	0	0	0	24	Q	
						9786	S24	W86	0	0	0	24	Q	
						9787	S07	E06	2	0	0	24	E	
						9788	N17	W14	0	0	0	24	E	
						9789	N26	W55	0	0	0	24	Q	
						9790	N29	W28	0	0	0	24	Q	
						9791	S02	W59	0	0	0	24	E	
						9792	S03	W16	0	0	0	24	Q	
						9793	S14	W10	0	0	0	24	Q	
						9794	N12	E23	2	0	0	24	Q	
						9795	N23	W60	0	0	0	24	Q	
						9796	N09	E18	0	0	0	24	Q	
						9797	S16	E32	0	0	0	24	Q	
						9798	S03	E42	0	0	0	24	Q	
						9799	S25	E54	0	0	0	24	Q	
025	25	24	173	231	3	9783	S12	W79	0	0	0	25	Q	SOL: Eruptive
						9784	S34	W80	0	0	0	25	Q	MAG: Quiet
						9785	N08	W92	0	0	0	25	Q	PRO: Quiet
						9787	S06	W06	2	0	0	25	E	
						9788	N18	W30	0	0	0	25	Q	
						9791	S04	W78	0	0	0	25	Q	
						9793	S14	W23	0	0	0	25	Q	
						9794	N13	E10	1	0	0	25	Q	
						9795	N21	W80	0	0	0	25	Q	
						9796	N09	E03	0	0	0	25	Q	
						9798	S02	E30	0	0	0	25	Q	
						9799	S23	E43	0	0	0	25	Q	
026	26	25	196	235	7	9783	S12	W90	0	0	0	26	Q	SOL: Eruptive
						9784	S34	W90	0	0	0	26	Q	MAG: Quiet
						9787	S09	W21	0	0	0	26	E	PRO: Quiet
						9788	N17	W43	0	0	0	26	Q	
						9790	N28	W55	0	0	0	26	Q	
						9793	S14	W38	0	0	0	26	Q	
						9794	N13	W03	2	0	0	26	Q	
						9795	N18	W86	0	0	0	26	Q	
						9796	N09	W08	0	0	0	26	Q	
						9798	S02	E15	0	0	0	26	Q	
						9799	S23	E29	0	0	0	26	Q	
						9800	N07	E63	1	0	0	26	Q	
						9801	S03	E77	0	0	0	26	Q	
027	27	26	194	240	8	9787	S09	W33	0	0	0	27	E	SOL: Eruptive
						9788	N15	W57	4	0	0	27	E	MAG: Quiet
						9790	N27	W69	0	0	0	27	Q	PRO: Quiet
						9793	S15	W50	0	0	0	27	Q	
						9794	N12	W17	0	0	0	27	Q	
						9797	S18	W12	0	0	0	27	Q	
						9798	S01	E01	0	0	0	27	Q	
						9799	S24	E15	0	0	0	27	Q	
						9800	N08	E49	1	0	0	27	Q	
						9801	S03	E64	0	0	0	27	Q	
						9802	S13	E72	1	1	0	27	Q	
028	28	27	189	248	9	9787	S08	W48	1	0	0	28	E	SOL: Eruptive
						9788	N17	W70	1	0	0	28	E	MAG: Quiet
						9793	S14	W66	0	0	0	28	Q	PRO: Quiet
						9794	N13	W30	0	0	0	28	Q	
						9798	S02	W13	0	0	0	28	Q	
						9799	S24	E03	0	0	0	28	Q	
						9800	N07	E35	0	0	0	28	E	
						9801	S03	E50	0	0	0	28	Q	
						9802	S15	E60	1	0	0	28	E	

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						9803	S24	W47	0	0	0	28	Q	
029	29	28	207	260	7	9787	S08	W60	5	0	0	29	E	SOL: Active
						9788	N18	W85	1	0	0	29	E	MAG: Quiet
						9794	N14	W44	1	0	0	29	Q	PRO: Quiet
						9798	S03	W22	0	0	0	29	Q	
						9799	S24	W10	0	0	0	29	Q	
						9800	N07	E23	1	0	0	29	E	
						9801	S03	E38	0	0	0	29	Q	
						9802	S16	E49	0	0	0	29	E	
						9803	S25	W60	0	0	0	29	Q	
						9804	S19	E27	0	0	0	29	Q	
						9805	N14	E64	0	0	0	29	Q	
						9806	N11	E70	0	0	0	29	Q	
030	30	29	214	261	4	9787	S07	W73	0	0	0	30	Q	SOL: Active
						9794	N14	W59	1	0	0	30	Q	MAG: Quiet
						9798	S02	W39	0	0	0	30	Q	PRO: Quiet
						9799	S23	W23	0	0	0	30	Q	
						9800	N07	E10	3	0	0	30	E	
						9801	S03	E23	0	0	0	30	Q	
						9802	S16	E36	2	0	0	30	E	
						9803	S24	W73	0	0	0	30	Q	
						9804	S19	E13	0	0	0	30	Q	
						9805	N14	E51	1	0	0	30	Q	
						9806	N10	E57	0	0	0	30	Q	
031	31	30	210	256	3	9787	S07	W89	0	0	0	31	Q	SOL: Active
						9799	S23	W35	0	0	0	31	Q	MAG: Quiet
						9800	N08	W03	0	0	0	31	E	PRO: Quiet
						9801	S04	E12	0	0	0	31	Q	
						9802	S17	E22	1	0	0	31	E	
						9803	S24	W84	0	0	0	31	Q	
						9805	N14	E39	0	0	0	31	Q	
						9806	N10	E44	0	0	0	31	Q	
						9807	S27	E74	0	0	0	31	Q	

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

Magnetic (MAG) Geoadvice

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

Proton (PRO) Geoadvice

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

STRATWARM ALERTS

STRATWARM ALERTS from ftp://strat50.met.fu-berlin.de/pub/stratalert/2001_2002/

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02/01/01 1400 UT STRATALERT EXISTS.
MAJOR WARMING CONTINUES. WARM AIR COVERS MOST OF THE POLAR REGION IN THE UPPER AND MIDDLE STRATOSPHERE. THE TEMPERATURE GRADIENT ARE REVERSED DOWN TO 50 HPA, AND THERE ARE MEAN ZONAL EASTERLY WINDS AT 10 HPA AND ABOVE AT 60N.

02/01/02 1400 UT STRATALERT EXISTS.
MAJOR WARMING CONTINUES. IN THE MIDDLE AND UPPER STRATOSPHERE A WARM REGION IN THE POLAR REGION IS STILL LEADING TO A REVERSED TEMPERATURE GRADIENT DOWN TO 50 HPA. THERE ARE EASTERLY ZONAL MEAN ZONAL WINDS AT 60N FROM 10 HPA TO 1 HPA.

02/01/03 1400 UT STRATALERT EXISTS.
MAJOR WARMING CONTINUES. THE WARMING OVER THE POLAR REGION IS LEADING TO A REVERSED TEMPERATURE GRADIENT BETWEEN 50 AND 3 HPA, WITH EASTERLY ZONAL MEAN ZONAL WINDS FROM 10 TO 2 HPA.

02/01/04 1400 UT STRATALERT EXISTS.
DECAYING MAJOR WARMING. FORECASTS INDICATE CONTINUING DECAY.

02/01/05 1400 UT STRATALERT EXISTS.
DECAYING MAJOR WARMING. FORECASTS INDICATE CONTINUING DECAY.

02/01/06 1400 UT STRATALERT EXISTS.
DECAYING MAJOR WARMING. FORECASTS INDICATE CONTINUING DECAY.

02/01/07 1400 UT STRATALERT EXISTS.
DECAYING MAJOR WARMING. FORECASTS INDICATE CONTINUING DECAY IN THE LOWER STRATOSPHERE WITH WARMING DEVELOPING IN THE UPPER STRATOSPHERE.

02/01/13 1400 UT STRATALERT EXISTS.
A LARGE WARM REGION COVERS ASIA/EUROPE IN THE LOWER/UPPER STRATOSPHERE, RESPECTIVELY.

02/01/14 1400 UT STRATALERT EXISTS.
A LARGE WARM REGION COVERS ASIA/EUROPE IN THE LOWER/UPPER STRATOSPHERE, RESPECTIVLY.

02/01/15 1400 UT STRATALERT EXISTS.
A LARGE WARM REGION COVERS NORTHPACIFIC/ASIA IN THE LOWER/UPPER STRATOSPHERE, RESPECTIVLY.

02/01/16 1400 UT STRATALERT EXISTS.
A LARGE WARM REGION COVERS NORTHPACIFIC/ASIA IN THE LOWER/UPPER STRATOSPHERE, RESPECTIVLY.

02/01/18 1400 UT STRATALERT EXISTS.
A LARGE WARM REGION COVERS NORTHPACIFIC/ASIA IN THE LOWER/UPPER STRATOSPHERE, RESPECTIVLY

02/01/19 1400 UT STRATALERT EXISTS.
A LARGE WARM REGION COVERS THE CANADIAN ARCTIC/ASIA IN THE LOWER/UPPER STRATOSPHERE, RESPECTIVLY.

02/01/20 1400 UT STRATALERT EXISTS.
WARMING IN THE UPPER STRATOSPHERE GETS STRONGER. A REVERSED TEMPERATURE GRADIENT PREDICTED FROM 30 TO 2HPA.

02/01/21 1400 UT STRATALERT EXISTS.
WARMING IN THE UPPER STRATOSPHERE GETS STRONGER.

02/01/22 1400 UT STRATALERT EXISTS.
WARMING IN THE UPPER STRATOSPHERE GETS STRONGER.

02/01/23 1400 UT STRATALERT EXISTS.
WARMING IN THE UPPER STRATOSPHERE CONTINUES.

02/01/24 1400 UT STRATALERT EXISTS.
WARMING IN THE UPPER STRATOSPHERE CONTINUES.

02/01/25 1400 UT STRATALERT EXISTS.
WARMING IN THE UPPER STRATOSPHERE CONTINUES.

02/01/26 1400 UT STRATALERT EXISTS.

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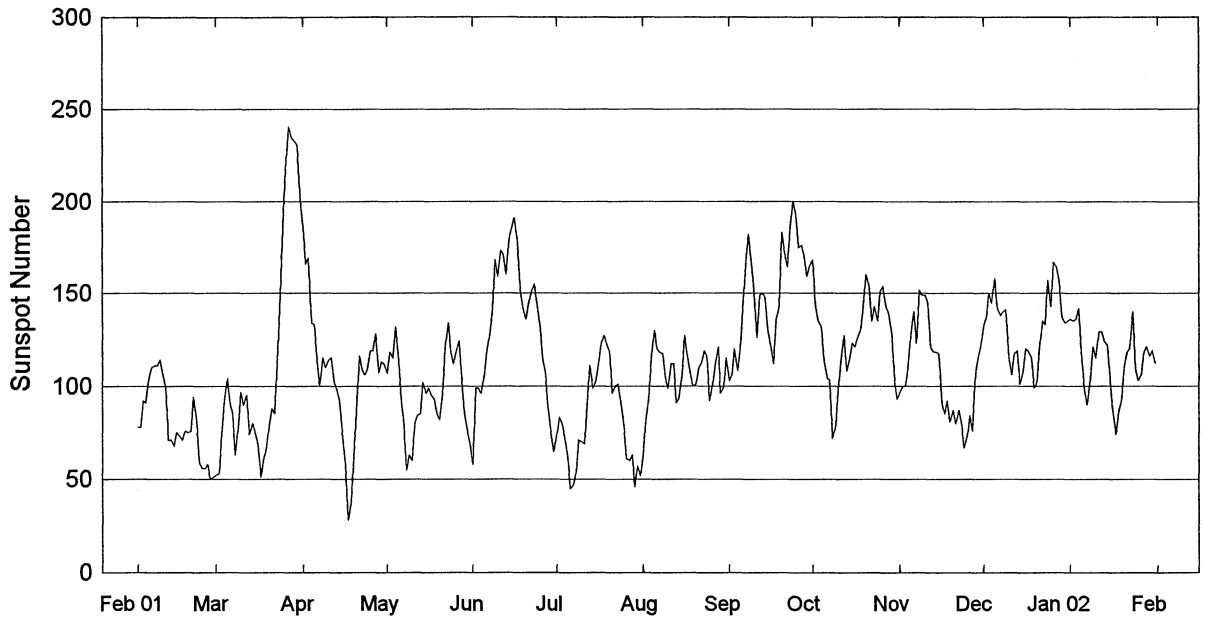
WARMING IN THE UPPER STRATOSPHERE CONTINUES.

02/01/27 1400 UT STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE UPPER STRATOSPHERE.

02/01/28 1400 UT STRATALERT EXISTS.
DISTURBED TEMPERATURE AND CIRCULATION PATTERN IN THE UPPER STRATOSHPERE.

International Relative Sunspot Numbers
Feb 2001 - Jan 2002

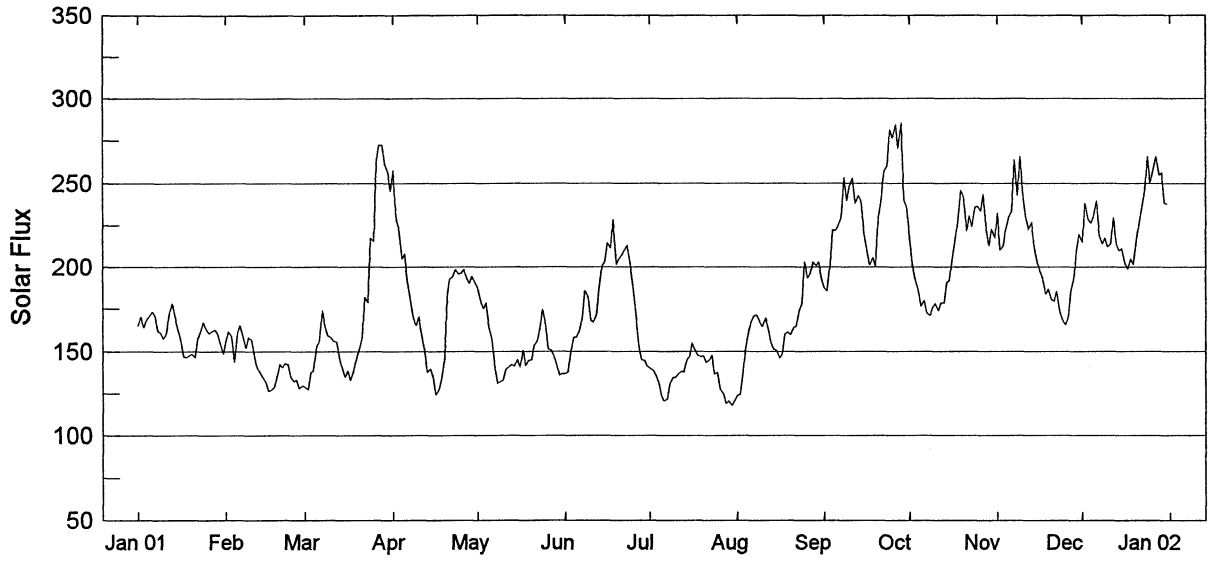


Day	Feb 01	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov*	Dec*	Jan 02*
1	78	52	186	107	58	74	62	103	168	96	133	136
2	78	53	166	118	99	83	81	106	144	100	137	135
3	92	75	169	115	99	80	93	120	135	100	150	136
4	91	92	134	132	96	71	115	108	132	111	145	142
5	105	104	133	118	106	62	130	120	114	130	158	118
6	110	91	110	92	119	45	120	141	104	140	142	98
7	111	85	100	79	129	47	118	166	103	123	138	90
8	111	63	115	55	142	54	117	182	72	152	140	100
9	114	79	110	63	168	71	104	166	79	149	141	121
10	105	97	114	60	159	70	99	150	98	149	115	115
11	100	90	115	80	173	69	112	126	113	145	106	129
12	71	95	103	84	171	90	112	149	127	121	117	129
13	71	74	98	85	160	111	91	150	108	118	119	124
14	68	80	92	102	180	99	93	148	115	118	101	122
15	75	75	75	96	186	102	106	130	123	117	108	104
16	73	70	58	99	191	113	127	121	121	90	120	87
17	71	51	28	95	178	123	117	112	126	85	119	74
18	76	61	38	93	153	127	106	136	131	92	115	86
19	75	66	62	85	141	122	100	143	143	81	99	93
20	76	80	86	82	136	118	101	183	160	87	101	109
21	94	88	116	95	144	96	110	173	154	80	120	118
22	81	85	109	121	151	100	112	164	135	87	135	120
23	59	113	106	134	155	101	119	186	143	80	133	140
24	56	149	109	118	145	90	116	200	135	67	157	109
25	56	186	119	112	131	79	92	193	151	73	143	103
26	58	218	119	118	114	61	101	175	154	84	167	106
27	50	241	128	124	107	60	112	176	143	76	164	118
28	51	235	107	103	89	63	121	170	139	107	156	121
29		233	113	85	74	46	96	159	127	115	137	116
30		231	112	75	65	57	99	165	103	121	134	119
31		205		69		52	115		93		135	112
Mean	80.6	113.5	107.7	96.6	134.0	81.8	106.4	150.7	125.6	106.5	131.8	113.9

* = Provisional.

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

Adjusted to 1 AU



Day	Feb 01	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02
1	156.2	129.0	257.2	187.4~	136.8	119.0	123.8	187.4	216.9	232.0	215.1	224.5
2	161.6	127.4	227.9	179.0	137.8	120.5	124.3	185.7	201.1	210.1	238.1	223.5
3	159.0	137.3	223.1	175.1	149.5	118.0	135.5	202.1	191.8	212.5	228.3	213.0
4	144.0	138.7	205.0	178.6	158.3	120.3	152.7	222.1	186.5	223.5	226.6	211.0
5	160.7	153.4	207.8*	163.5	158.0	135.6	160.5	221.8	176.8	230.6	230.1	205.2
6	165.3	155.4	192.0~	157.8	162.4	120.3	168.3	225.6	180.2	233.2	239.5	190.1
7	159.6	174.0	180.0	140.9	169.8	121.8	171.0	229.5	172.4	263.9	219.3	182.4
8	152.3	164.8	169.7	131.1	185.7	130.5	171.5	253.1	170.8	243.1	213.9	192.6
9	158.1	159.2	165.4	131.9	182.4	134.4	167.8	239.5	175.9	265.6	217.5	220.9
10	156.5	158.0	170.4	133.0	168.0	134.3	164.7	247.8	178.1	241.0	212.3	217.3
11	147.4	155.8	160.3	139.4	167.4	136.3	169.5	252.9	174.1	229.3	213.9	221.4
12	140.9	155.7	149.8	141.0	171.6	138.3	164.0	238.1	178.5	222.6	229.4	225.7
13	137.8	145.6	137.8	141.9	187.1	137.7	155.5	242.6	178.6	226.8	213.4	232.9
14	134.6	140.7	139.6	141.2	200.9	145.4	151.1	239.3	190.8	212.6	209.9#	221.6
15	131.8	134.7	135.1	145.2	203.2	146.8	150.5	221.7	191.7	202.4	211.0	211.2
16	126.5	138.5	124.3	140.9	214.3	154.7	146.2	209.3	205.8	197.6	202.5	209.1
17	126.8	132.9	127.1	150.8	211.2	150.4	148.4	201.1	215.8	194.0	199.0	205.0
18	129.0	138.5	133.0	141.5	228.5	147.7	159.9	205.7	226.9	183.8	205.0	203.8
19	134.0	145.7	145.8	144.6	201.7	146.9	161.3	200.6	245.6	186.8	201.6	206.9
20	142.3	152.1	182.2	144.9	205.0	147.2	159.8	228.7	242.5	180.6	214.0	215.2
21	140.5	158.2	193.0	153.8	206.9	143.5	163.9	240.5	222.0	179.7	226.7	217.5
22	142.7	181.8	194.6	155.8	210.3	144.9	165.2	257.0	230.4	185.3#	234.9	221.5
23	142.2	178.9	198.6	162.8	213.0	147.8	173.4	260.2	224.1	172.9	246.3	219.4
24	134.6	217.5	195.8	174.7	201.3	136.7	178.7	281.0	236.0	168.6	265.5	223.6
25	132.2	215.7	196.3	166.1	188.4	137.5	203.2	276.6	236.1	165.6	250.3	227.6
26	132.8	262.6	198.7	151.3	173.5	127.2	193.8	284.0	233.6	170.3	259.0	248.7
27	128.1	272.4	193.3	150.8	152.8	125.1	195.9	270.6	243.4	185.3	265.6	240.5
28	129.4	272.6	190.4	146.9	144.9	119.0	203.1	285.5	224.2	193.1	254.6#	252.0
29		261.0	194.5	142.3	144.6	120.5	200.9	240.2	212.8	210.5	255.7	253.2
30		256.3	190.7	136.0	141.2	118.0	203.0	236.3	222.7	219.6	238.5	248.8
31		245.3		136.6		120.3	192.2		217.8		237.5	235.5
Mean	143.1	176.1	179.3	152.0	179.2	135.6	167.1	236.2	206.6	208.1	228.2	220.1

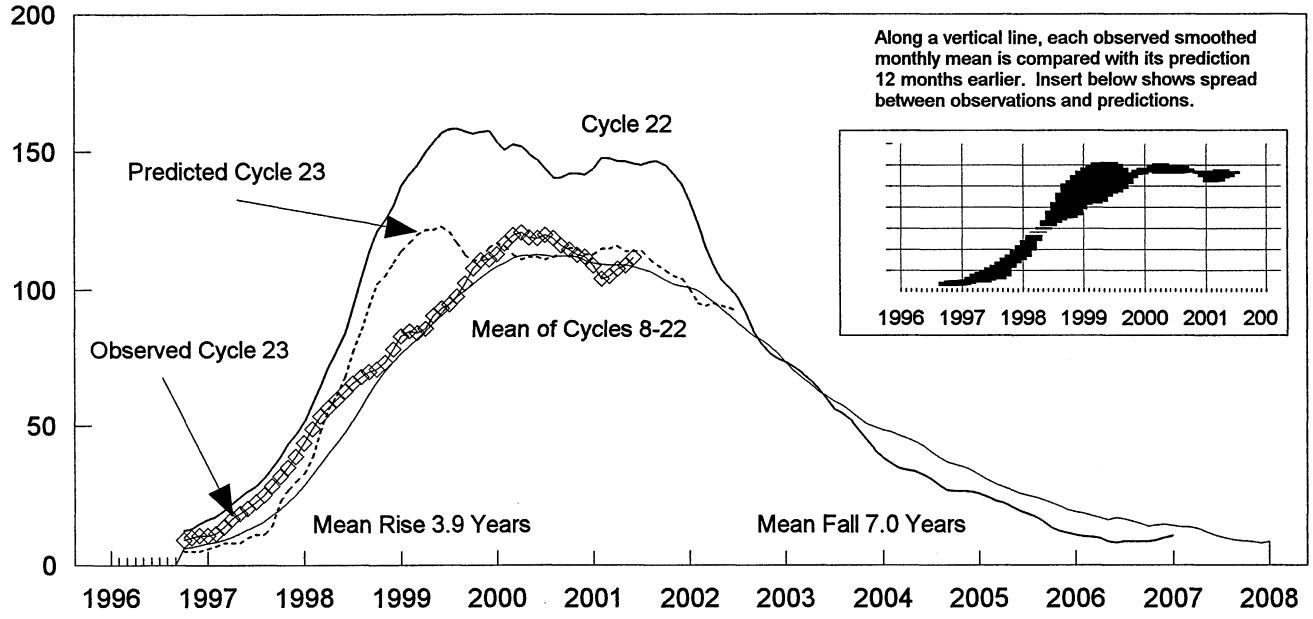
NOT : #1800UT reading - burst IP at 2000UT;
~ 1700UT reading - burst IP at 2000UT; * 2300UT reading - burst IP at 2000UT.

DAILY SOLAR INDICES
January 2002

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Amer	Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit — SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	1	9	136	136	232.2	583	369	253	224.5	212	156	72	45	20
2	2	10	135	145	231.1	572	371	266	223.5	207	157	73	48	40
3	3	11	136	147	220.3	562	367	254	213.0	204	155	70	46	45
4	4	12	142	147	218.2	589	371	261	211.0	198	156	74	47	22
5	5	13	118	119	212.2	570	355	245	205.2	191	143	72	45	21
6	6	14	98	92	196.6	570	354	239	190.1	180	140	68	44	20
7	7	15	90	76	188.6	516	337	223	182.4	169	137	68	45	26
8	8	16	100	105	199.2	576	363	237	192.6	175	136	69	47	21
9	9	17	121	121	228.5	619	457	318	220.9	217	149	73	48	23
10	10	18	115	126	224.6	574	360	267	217.3	205	145	75	50	22
11	11	19	129	142	228.9	547	342	250	221.4	203	140	59	49	21
12	12	20	129	141	233.3	588	389	276	225.7	208	150	74	47	21
13	13	21	124	144	240.7	282	250	229	232.9	239	142	67	39	27
14	14	22	122	135	229.0	584	375	277	221.6	209	151	69	46	21
15	15	23	104	111	218.3	530	372	263	211.2	193	144	67	47	22
16	16	24	87	85	216.1	588	373	260	209.1	197	148	75	48	25
17	17	25	74	87	211.8	565	357	253	205.0	216	147	74	47	21
18	18	26	86	92	210.5	580	366	246	203.8	191	148	72	44	18
19	19	27	93	104	213.7	578	367	247	206.9	193	154	74	47	24
20	20	1	109	118	222.2	587	369	255	215.2	204	157	74	45	24
21	21	2	118	132	224.5	506	333	238	217.5	202	156	69	45	20
22	22	3	120	134	228.7	584	363	254	221.5	207	166	71	45	36
23	23	4	140	128	226.5	582	365	254	219.4	211	163	75	45	19
24	24	5	109	114	230.8	586	370	265	223.6	210	170	78	47	21
25	25	6	103	102	234.8	602	375	271	227.6	218	165	76	47	21
26	26	7	106	115	256.5	595	381	283	248.7	226	157	74	47	20
27	27	8	118	120	248.0	591	366	288	240.5	227	162	76	48	22
28	28	9	121	126	259.8	603	397	325	252.0	248	189	79	49	24
29	29	10	116	122	261.0	590	352	286	253.2	228	172	74	45	22
30	30	11	119	122	256.3	494	383	288	248.8	230	177	73	45	19
31	31	12	112	129	242.6	558	383	289	235.5	224	164	79	46	20
MEAN			113.9	120.0	227.3	562	365	263	220.1	207	154	72	46	23

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	111	110	109	107	107	108
								(5)	(9)	(10)	(11)	(12)	(4)
2002	105	104	102	99	97	95	92	89	87	84	81	78	93
	(13)	(15)	(17)	(19)	(19)	(19)	(18)	(18)	(18)	(18)	(18)	(15)	(17)

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

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

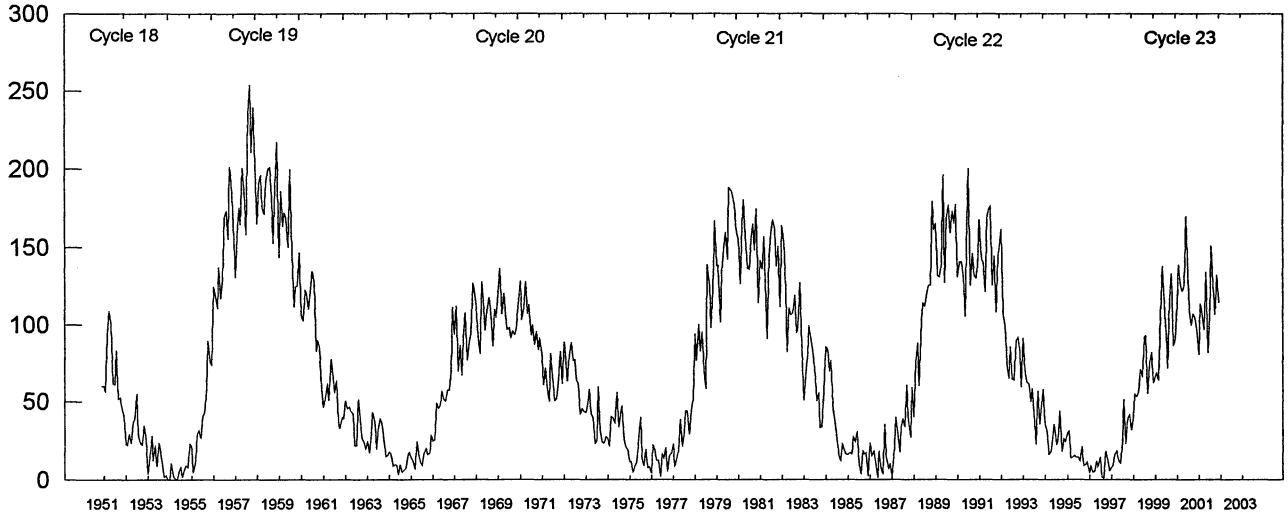
+ April 2000 marks Cycle 23 maximum.

Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Sep 2001 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data.*) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the July 2002 prediction. There exists a 90% chance that in July 2002, the actual smoothed number will fall somewhere between 74 and 110.

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

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

Mean Monthly Sunspot Numbers
Jan 1951 - Jan 2002



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

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

Hα SOLAR FLARES

JANUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	01	0533	0533	0538	S14	E51	9767	01	5.1	5	SF		3	E		12		
GOES		0859	0910	0917						18		C 4.5						3.8E-03
LEAR	02	0115	0123	0143	N13	W40	9764	12	30.1	28	SF		2	E		27		F
LEAR		0308	0426	0445	N13	W42	9764	12	30.1	97	SF		2	E		52		F
LEAR		0313	0319	0325	N04	W90	9751	12	26.5	12	SF		3	E		15		
GOES		0316	0323	0327	N04	W90	9751			11	SF	C 5.2						2.7E-03
LEAR		0336	0341	0403	S06	W58	9754	12	28.9	27	SF		2	E		70		F
GOES		0338	0341	0347	S06	W58	9754			9	SF	C 4.6						2.3E-03
LEAR		0407	0410	0423	S06	W60	9754	12	28.8	16	SF		2	E		16		
LEAR		0504	0513	0516	N13	W44	9764	12	30.0	12	SF		2	E		16		
LEAR		0517	0542	0556	N13	W43	9764	12	30.1	39	SF		2	E		20		
GOES		0533	0536	0538	N13	W43	9764			5	SF	C 3.1						7.5E-04
GOES		0755	0801	0808	S07	W56	9754			13	SF	C 7.2						4.2E-03
LEAR		0757	0800	0808	S07	W56	9754	12	29.2	11	SF		3	E		38		
LEAR		0905	0912	0919	S08	W57	9754	12	29.2	14	SF		3	E		47		F
GOES		0909	0913	0916	S08	W57	9754			7	SF	C 6.7						2.3E-03
SVTO		0912	0913	0914	S08	W58	9754	12	29.1	2	SF		2	E		11		
SVTO		1136	1136	1155	S20	E36	9767	01	5.2	19	SF		3	E		11		F
SVTO		1230	1231	1306	S25	E40	9767	01	5.6	36	SF		3	E		17		F
SVTO		1231	1232	1236	S06	W60	9754	12	29.1	5	SF		3	E		11		
GOES		1248	1252	1255	S07	W68	9754			7	1N	M 2.4						7.3E-03
SVTO		1249	1252	1326	S07	W68	9754	12	28.5	37	1N		3	E		125		
SVTO		1444	1451	1455	S22	E42	9767	01	5.8	11	SF		3	E		18		
GOES		1543	1548	1554						11		C 3.2						1.9E-03
RAMY		1739	1739	1747	N14	W49	9764	12	30.1	8	SF		3	E		16		
GOES		1751	1757	1804						13		C 5.1						3.0E-03
GOES		2144	2148	2151						7		M 1.1						4.1E-03
GOES	03	0016	0019	0023						7		C 3.5						1.3E-03
LEAR		0034	0035	0037	S07	W69	9754	12	28.9	3	SF		3	E		24		
LEAR		0105	0105	0110	S21	E37	9767	01	5.9	5	SF		3	E		13		
LEAR		0212	0216	0242	S11	E12		01	4.0	30	1F		3	E		220		F
GOES		0214	0220	0228	S11	E12	9767			14	1F	C 5.9						4.4E-03
LEAR		0216	0221	0249	S19	E36	9767	01	5.8	33	SF		3	E		38		
LEAR		0235	0236	0238	S06	W66	9754	12	29.3	3	SF		3	E		35		
GOES		0358	0402	0407	S05	W69	9754			9	SF	C 4.0						1.9E-03
LEAR		0401	0401	0408	S05	W69	9754	12	29.1	7	SF		3	E		20		
LEAR		0412	0412	0416	S06	W67	9754	12	29.3	4	SF		3	E		38		
LEAR		0712	0714	0731	S06	W75	9754	12	28.8	19	SF		3	E		33		
GOES		0713	0717	0723	S06	W75	9754			10	SF	C 2.8						1.5E-03
GOES		0840	0846	0853	N14	W60	9764			13	SF	C 2.1						1.6E-03
LEAR		0841	0843	0848	N14	W60	9764	12	29.9	7	SF		3	E		19		F
GOES		0952	0959	1003						11		C 2.6						1.6E-03
GOES		1145	1147	1151	N07	W35	9770			6	SF	C 2.7						9.0E-04
RAMY		1147	1147	1155	N07	W35	9770	12	31.9	8	SF		3	E		18		
RAMY		1215	1216	1224	S23	E31	9767	01	5.9	9	SF		3	E		12		
RAMY		1343	1344	1349	N12	W82	9758	12	28.5	6	SF		3	E		19		
GOES		1430	1432	1438	N07	W37	9770			8	SF	C 2.3						1.1E-03
RAMY		1431	1435	1441	N07	W37	9770	12	31.8	10	SF		3	E		18		
RAMY		1440	1441	1447	N12	W82	9758	12	28.5	7	SF		3	E		46		
RAMY		1505	1514	1519	N12	W82	9758	12	28.5	14	SF		3	E		49		
GOES		1709	1713	1717	S26	E30	9767			8	SF	C 4.4						1.7E-03
HOLL		1712	1716	1722	S26	E30	9767	01	6.0	10	SF		3	E		36		
GOES		1928	1934	1942						14		C 2.2						1.8E-03
GOES		2051	2054	2058						7		C 1.9						7.5E-04
GOES		2220	2304	2410	S17	E16	9767			110	SF	C 6.3						3.5E-02
LEAR		2303	2309	2334	S17	E16	9767	01	5.2	31	SF		2	E		21		F
LEAR	04	0705	0707	0710	S04	W62	9754	12	30.8	5	SF		3	E		24		
GOES		0817	0823	0830	S11	W05				13	SF	C 3.6						2.4E-03
LEAR		0818	0822	0841	S11	W05		01	4.0	23	SF		3	E		36		F
GOES		0924	0952	1035						71		C 3.7						1.4E-02
RAMY		1237	1239	1247	S05	W53	9768	12	31.6	10	SF		3	E		10		
RAMY		1740	1740	1745	N16	E71		01	10.1	5	SF		3	E		19		F
GOES		1743	1749	1754	N16	E71				11	SF	M 1.0						5.1E-03
GOES		1825	1829	1834	N13	E58	9773			9	1F	C 5.6						2.4E-03
HOLL		1827	1829	1842	N13	E58		01	9.1	15	1F		3	E		121		F

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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	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	04	1827	1829	1844	N14	E66	9773	01	9.7	17	1F		3	E		164		F
HOLL		1856	1857	1907	N14	E64	9773	01	9.6	11	SF		3	E		37		
RAMY		1856	1857	1908	N13	E66	9773	01	9.8	12	SF		3	E		26		
RAMY		1900	1900	1907	S24	E15	9767	01	5.9	7	SF		3	E		10		H
HOLL		1900	1902	1908	S24	E14	9767	01	5.9	8	SF		3	E		12		F
GOES		1951	2023	2104	N14	E67	9773			73	1F	C 8.7						2.7E-02
HOLL		2013	2039U	2100	N14	E67	9773	01	9.9	47	1F		3	E		100		F
RAMY		2039	2039	2043	S22	E04	9767	01	5.2	4	SF		3	E		17		
GOES		2253	2256	2258	S20	E03	9767			5	SF	C 7.2						1.8E-03
LEAR		2255	2256	2300	S20	E03	9767	01	5.2	5	SF		2	E		49		F
GOES	05	0057	0100	0103	S19	E02	9767			6	SF	C 3.1						9.7E-04
LEAR		0059	0100	0106	S19	E02	9767	01	5.2	7	SF		3	E		49		
LEAR		0221	0238	0244	N14	E62	9773	01	9.8	23	SF		3	E		44		F
LEAR		0247	0251	0258	S19	E01	9767	01	5.2	11	SF		3	E		34		
LEAR		0257	0303	0308	N16	E61	9773	01	9.7	11	SF		3	E		16		F
GOES		0304	0310	0315			9768			11		C 4.1						2.2E-03
LEAR		0305	0309	0322	S11	W16		01	3.9	17	SF		3	E		50		F
LEAR		0310	0313	0318	S06	W67	9768	12	31.1	8	SF		3	E		18		F
GOES		0559	0631	0647	N18	E62	9773			48	SF	C 8.0						1.5E-02
LEAR		0611	0634	0658	N18	E62	9773	01	10.0	47	SF		3	E		50		F
LEAR		0616	0617	0624	S04	W66	9768	12	31.3	8	SF		3	E		47		F
LEAR		0617	0619	0621	S03	W75	9755	12	30.7	4	SF		3	E		17		F
LEAR		0707	0710	0715	S18	W01	9767	01	5.2	8	SF		3	E		41		F
LEAR		0748	0750	0755	S04	W67	9768	12	31.3	7	SF		3	E		29		
SVTO		1013	1013	1016	S06	W67	9768	12	31.4	3	SF		3	E		13		
GOES		1027	1043	1056	N16	E58	9773			29	SF	C 7.4						9.9E-03
SVTO		1028	1037	1100	N16	E58	9773	01	9.8	32	SF		3	E		38		F
SVTO		1123	1124	1131	S07	W72	9768	12	31.1	8	SF		3	E		28		F
HOLL		1501	1601	1644	S04	W69	9768	12	31.5	103	SF		3	E		67		F
GOES		1707	1718	1740	N13	E57	9773			33	SF	C 3.1						5.3E-03
HOLL		1708	1709	1744	N13	E57	9773	01	10.0	36	SF		3	E		32		F
GOES		1819	1840	1851	N14	E53	9773			32	1F	M 1.9						2.5E-02
HOLL		1821	1841	1907	N14	E53	9773	01	9.8	46	1F		3	E		154		
HOLL		2001	2005	2010	S24	E01	9767	01	5.9	9	SF		3	E		18		
HOLL		2202	2202	2208	S21	W21	9771	01	4.3	6	SF		3	E		25		F
GOES	06	0152	0200	0207	N16	E50	9773			15	SF	C 2.8						2.1E-03
LEAR		0155	0202	0211	N16	E50	9773	01	9.9	16	SF		4	E		36		F
GOES		0451	0507	0523	S05	W82	9768			32	SF	C 3.4						5.1E-03
LEAR		0456	0500	0515	S05	W82	9768	12	31.1	19	SF		3	E		92		
GOES		0523	0555	0616						53		C 5.9						1.4E-02
LEAR		0548	0549	0551	N16	E49	9773	01	9.9	3	SF		3	E		12		F
LEAR		0552	0552	0555	N17	E49	9773	01	10.0	3	SF		3	E		21		
LEAR		0558	0600	0602	N16	E49	9773	01	10.0	4	SF		3	E		21		
LEAR		0606	0606	0615	N16	E49	9773	01	10.0	9	SF		3	E		16		
GOES		0646	0652	0655	S08	W84	9768			9	SF	C 5.3						2.5E-03
LEAR		0648	0651	0702	S08	W84	9768	12	31.0	14	SF		3	E		80		
LEAR		0929	0932	0938	S19	W15	9767	01	5.2	9	SF		2	E		52		F
GOES		0930	0933	0935	S18	W16	9767			5	SF	C 1.6						4.6E-04
SVTO		0931	0933	0937	S18	W16	9767	01	5.2	6	SF		3	E		24		FH
GOES		1136	1141	1147	S17	W13	9767			11	SF	C 3.1						1.7E-03
SVTO		1138	1140	1203	S17	W13	9767	01	5.5	25	SF		3	E		58		F
SVTO		1212	1213	1221	N14	E49	9773	01	10.2	9	SF		3	E		15		
GOES		1234	1248	1259						25		C 3.2						3.8E-03
GOES		1307	1312	1318	S21	W09	9767			11	SF	C 2.7						1.6E-03
SVTO		1310	1310	1318	S21	W09	9767	01	5.8	8	SF		3	E		21		
GOES		1348	1357	1409	N15	E40	9773			21	SF	C 3.1						3.2E-03
SVTO		1354	1356	1406	N15	E40	9773	01	9.6	12	SF		3	E		21		
GOES		1438	1444	1446	S18	W18	9767			8	SF	C 6.2						1.7E-03
SVTO		1440	1444	1448	S18	W18	9767	01	5.2	8	SF		3	E		42		
HOLL		1839	1842	1844	S18	W20	9767	01	5.2	5	SF		3	E		15		
HOLL		2052	2053	2056	S18	W21	9767	01	5.3	4	SF		3	E		22		
GOES	07	0227	0256	0305						38		C 2.4						4.4E-03
LEAR		0532	0532	0540	N16	E33	9773	01	9.7	8	SF		3	E		18		
GOES		0641	0647	0652	N15	E37	9773			11	1F	C 3.5						1.8E-03
LEAR		0643	0645	0700	N15	E37	9773	01	10.1	17	1F		3	E		145		FH

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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	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	07	1318	1319	1338	S22	W24	9767	01	5.7	20	SF		3	E		20		F
GOES		1414	1422	1430	S20	W27	9767			16	SF	C 3.8						2.9E-03
SVTO		1415	1418	1433	S22	W24	9767	01	5.7	18	SF		3	E		56		U
RAMY		1415	1419	1439	S20	W27	9767	01	5.5	24	SF		3	E		78		UF
GOES		1526	1534	1603	N14	E27	9773			37	SF	C 2.7						5.0E-03
RAMY		1559	1559	1608	N14	E27	9773	01	9.7	9	SF		3	E		13		
RAMY		1819	1819	1822	N08	W58	9763	01	3.4	3	SF		3	E		19		H
HOLL		2049	2050	2053	N07	W58	9765	01	3.5	4	SF		3	E		21		
GOES		2049	2101	2119	N13	E24	9773			30	SF	C 2.9						4.3E-03
HOLL		2055	2058	2124	N13	E24	9773	01	9.7	29	SF		3	E		42		F
GOES		2210	2221	2228						18		C 2.3						2.0E-03
GOES		2243	2255	2312	N14	E24	9773			29	SF	C 2.8						4.3E-03
HOLL		2245	2248	2307	N14	E24	9773	01	9.8	22	SF		3	E		28		F
GOES	08	1255	1301	1316	N14	E17	9773			21	SF	C 2.5						3.1E-03
SVTO		1256	1259	1304	N14	E15	9773	01	9.7	8	SF		3	E		17		FH
RAMY		1256	1300	1307	N14	E17	9773	01	9.8	11	SF		3	E		43		F
GOES		1713	1725	1739	S18	W42	9767			26	1F	C 7.2						8.2E-03
RAMY		1715	1718	1753	S24	W38	9767	01	5.8	38	1F		3	E		149		UF
HOLL		1717	1719	1749	S18	W42	9767	01	5.5	32	1F		3	E		158		UF
HOLL		1722	1728	1734	S18	E79	9778	01	14.7	12	SF		3	E		25		
GOES		1814	2025	2139						205		C 9.6						8.6E-02
RAMY		2018	2030	2106	S18	W44	9767	01	5.5	48	SF		3	E		42		F
HOLL		2020	2022	2056	S18	W43	9767	01	5.6	36	SF		3	E		30		F
HOLL		2207	2223	2234	N14	E11	9773	01	9.7	27	SF		3	E		36		FH
GOES		2209	2222	2227	N14	E11	9773			18	SF	C 6.7						6.9E-03
GOES		2251	2257	2306	N13	E06	9773			15	SF	C 7.5						6.2E-03
HOLL		2253	2256	2315	N13	E06	9773	01	9.4	22	SF		3	E		77		F
LEAR		2255E	2255U	2307	N14	E08	9773	01	9.5	12D	SF		2	E		45		F
HOLL		2325	2338	2349	N14	E12	9773	01	9.9	24	SF		3	E		28		F
LEAR	09	0043	0051	0101	N15	E08	9773	01	9.6	18	SF		1	E		30		F
LEAR		0051	0054	0057	S19	W45	9767	01	5.6	6	SF		1	E		21		F
LEAR		0302	0303	0308	N14	E05	9773	01	9.5	6	SF		2	E		16		F
LEAR		0401	0407	0418	S20	W45	9767	01	5.7	17	SF		1	E		39		F
LEAR		0546	0547	0553	S14	E67	9778	01	14.3	7	SF		2	E		43		F
LEAR		0630	0633	0636	N14	E03	9773	01	9.5	6	SF		1	E		24		F
LEAR		0638	0640	0657	N14	E04	9773	01	9.6	19	SF		2	E		59		F
LEAR		0646	0649	0657	S14	E66	9778	01	14.3	11	SF		2	E		51		
LEAR		0744	0752	0758	N13	E00	9773	01	9.3	14	SF		2	E		52		F
LEAR		0805	0809	0812	N32	E57	9779	01	13.8	7	SF		1	E		20		FH
LEAR		0817	0818	0822	S13	E65	9778	01	14.2	5	SF		1	E		73		F
LEAR		0848	0848	0854	S16	W54	9767	01	5.3	6	SF		1	E		23		F
GOES		0952	0955	0957						5		C 4.3						1.0E-03
GOES		1101	1113	1130	N13	E08	9773			29	1F	M 1.6						2.0E-02
RAMY		1115E	1147	1214	N13	E08	9773	01	10.1	59D	1F		3	E		132		F
RAMY		1251	1305	1310	N13	W01	9773	01	9.4	19	SF		3	E		13		
GOES		1742	1801	1812	N13	W02	9773			30	2B	M 9.5						9.1E-02
RAMY		1744	1800	1900	N13	W02	9773	01	9.6	76	2B		3	E		472		UF
RAMY		1958	1959	2004	S19	E72	9778	01	15.3	6	SF		3	E		70		H
LEAR		2321	2321	2323	N15	W10	9773	01	9.2	2	SF		2	E		42		F
LEAR	10	0251	0253	0316	S17	W66	9771	01	5.1	25	SF		2	E		36		F
LEAR		0255	0256	0304	S24	W56	9767	01	5.8	9	SF		2	E		32		F
LEAR		0305	0307	0312	S24	W56	9767	01	5.8	7	SF		2	E		21		F
LEAR		0451	0455	0504	S04	E08	9775	01	10.8	13	SF		2	E		17		F
GOES		0715	0759	0820	N13	W10	9773			65	SF	C 4.3						1.2E-02
LEAR		0738	0756	0830	N13	W10	9773	01	9.6	52	SF		2	E		35		F
LEAR		0846	0851	0857	S15	E57	9778	01	14.7	11	SF		2	E		15		
SVTO		0858E	0858U	0923	N13	W42	9773	01	7.2	25D	SF		2	E		60		
GOES		0927	1018	1039	N14	W09	9773			72	SF	C 7.0						2.2E-02
LEAR		0938	0946	1004	N14	W09	9773	01	9.7	26	SF		2	E		23		F
SVTO		1030E	1034U	1102	N14	W12	9773	01	9.5	32D	SF		3	E		18		F
RAMY		1154	1156	1205	S20	W64	9767	01	5.6	11	SF		3	E		18		F
GOES		1359	1420	1449	N14	W10	9773			50	SF	C 2.6						6.8E-03
RAMY		1419	1419	1423	N14	W10	9773	01	9.8	4	SF		3	E		11		F
HOLL		1511	1516	1524	S15	E49	9778	01	14.3	13	SF		3	E		13		
HOLL		1511	1516	1545	N14	W13	9773	01	9.6	34	SF		3	E		67		F

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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	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	10	1512	1518	1528	N14	W13	9773			16	SF	C 3.2						2.9E-03
RAMY		1529	1530	1540	N14	W10	9773	01	9.9	11	SF		3	E		29		F
GOES		1553	1608	1621	N14	W16	9773			28	SF	C 3.6						5.3E-03
RAMY		1605	1606	1621	N14	W16	9773	01	9.5	16	SF		3	E		14		F
HOLL		1855	1856	1900	S15	E48	9778	01	14.4	5	SF		3	E		10		
RAMY		1921	1925	1933	S17	E47	9778	01	14.4	12	SF		3	E		21		FH
RAMY		2004	2005	2009	N14	W19	9773	01	9.4	5	SF		3	E		27		
RAMY		2016	2025	2044	N14	W19	9773	01	9.4	28	SF		3	E		45		F
LEAR		2348	2353	2409	N11	W23	9773	01	9.3	21	SF		2	E		17		
GOES	11	0324	0328	0335						11		C 3.7						2.2E-03
LEAR		0650	0653	0658	S06	W08	9775	01	10.7	8	SF		3	E		12		
GOES		0753	0807	0831			9767			38		M 1.0						1.7E-02
LEAR		0755	0800	0809	N30	E36	9779	01	14.2	14	SF		3	E		96		F
LEAR		0757	0801	0816	S19	W79	9767	01	5.3	19	SF		3	E		51		
LEAR		0918	0918	0931	N12	W26	9773	01	9.4	13	SF		2	E		13		
LEAR		0945	0947	0952	N31	E35	9779	01	14.2	7	SF		2	E		19		
LEAR		0954	0957	0958	N15	W21	9773	01	9.8	4	SF		2	E		12		
GOES		1222	1236	1242	N13	W27	9773			20	SF	C 4.2						3.8E-03
RAMY		1224	1225	1228	N13	W28	9773	01	9.4	4	SF		3	E		28		F
RAMY		1234	1236	1245	N13	W27	9773	01	9.5	11	SF		3	E		30		F
GOES		1319	1329	1337	N17	W22	9773			18	SF	C 6.1						5.8E-03
RAMY		1321	1328	1340	N17	W22	9773	01	9.9	19	SF		3	E		20		
RAMY		1333	1334	1342	S04	W09	9775	01	10.9	9	SF		3	E		12		
GOES		1844	1848	1850	S06	W16	9775			6	SF	C 3.7						9.7E-04
RAMY		1847	1848	1855	S06	W16	9775	01	10.6	8	SF		3	E		24		
HOLL		1847	1850	1853	S05	W16	9775	01	10.6	6	SF		3	E		15		
GOES		1955	2007	2020	N16	W27	9773			25	SF	C 7.3						7.6E-03
HOLL		1958	2007	2019	N16	W27	9773	01	9.8	21	SF		3	E		34		F
GOES		2038	2052	2057	S05	W15	9775			19	SF	C 4.8						4.2E-03
HOLL		2049	2053	2100	S05	W15	9775	01	10.7	11	SF		3	E		14		F
GOES	12	0105	0123	0130	N12	W33	9773			25	SF	C 4.7						4.8E-03
LEAR		0110	0112	0131	N12	W33	9773	01	9.6	21	SF		2	E		29		F
GOES		0155	0156	0157						2		C 3.0						3.0E-04
GOES		0307	0322	0338			9775			31		M 1.0						1.5E-02
LEAR		0311	0311	0317	N11	E78	9782	01	18.0	6	SF		3	E		20		F
LEAR		0313	0318	0345	S07	W19	9775	01	10.7	32	SF		3	E		48		F
LEAR		0318	0318	0320	N11	E77	9782	01	17.9	2	SF		3	E		20		
GOES		0717	0721	0725						8		C 2.7						1.2E-03
GOES		0736	0742	0753	S06	W21	9775			17	SF	C 4.1						3.7E-03
LEAR		0738	0744	0758	S06	W21	9775	01	10.7	20	SF		3	E		45		F
GOES		0837	0840	0842	N15	W38	9773			5	SF	C 3.1						8.3E-04
LEAR		0839	0840	0844	N15	W38	9773	01	9.5	5	SF		2	E		24		F
GOES		0854	0858	0919	N11	W41	9773			25	1F	C 3.4						4.4E-03
LEAR		0856	0856	0928	N11	W41	9773	01	9.3	32	1F		2	E		126		FH
SVTO		0858E	0858U	0923	N13	W42	9773	01	9.2	25D	SF		2	E		60		
GOES		1215	1221	1229						14		C 5.4						3.5E-03
GOES		1505	1519	1533	S05	W26	9775			28	1N	M 1.7						1.9E-02
RAMY		1506	1517	1606	S05	W26	9775	01	10.7	60	1N		3	E		134		F
HOLL		1508	1523	1554	S06	W24	9775	01	10.8	46	1F		3	E		121		F
RAMY		1540	1543	1553	N18	W40	9773	01	9.6	13	SF		3	E		35		
HOLL		1541	1543	1545	N16	W41	9773	01	9.5	4	SF		3	E		34		F
RAMY		1745	1748	1754	N18	W37	9773	01	9.9	9	SF		3	E		29		
HOLL		1746	1748	1751	N16	W37	9773	01	9.9	5	SF		3	E		15		
RAMY		1755	1757	1801	S05	W28	9775	01	10.6	6	SF		3	E		17		
GOES		1832	1843	1903						31		M 3.4						4.3E-02
HOLL		1918	1918	1925	N18	W35	9773	01	10.1	7	SF		3	E		27		
RAMY		1918	1918	1938	N19	W35	9773	01	10.1	20	SF		3	E		32		
GOES		1925	1929	1934	S11	W39	9775			9	SF	M 1.3						6.3E-03
HOLL		1926	1927	1943	S07	W34	9775	01	10.3	17	SN		3	E		73		F
RAMY		1928	1928	1939	S08	W42		01	9.7	11	SF		3	E		33		
HOLL		1930	1930	1934	S11	W39	9772	01	9.9	4	SF		3	E		13		F
LEAR	13	0205	0205	0212	N30	E15	9779	01	14.3	7	SF		3	E		26		F
GOES		0304	0310	0313	N17	W40	9773			9	1N	M 1.4						5.1E-03
LEAR		0306	0311	0328	N17	W40	9773	01	10.1	22	1N		3	E		218		F
LEAR		0350	0351	0359	N06	E54	9782	01	17.2	9	SF		3	E		49		F

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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	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	13	0358	0401	0405	S14	E15	9778	01	14.3	7	SF		3	E		32		F
GOES		0359	0401	0403	S14	E15	9778			4	SF	C 0.8						1.4E-03
GOES		0534	0538	0542	N30	E13	9779			8	SF	C 3.5						1.4E-03
LEAR		0536	0538	0551	N30	E13	9779	01	14.2	15	SF		2	E		70		F
LEAR		0734	0735	0738	N09	E52	9782	01	17.2	4	SF		2	E		24		
GOES		0749	0752	0755	N17	W43	9773			6	SF	C 3.7						1.2E-03
LEAR		0751	0752	0758	N17	W43	9773	01	10.0	7	SF		2	E		29		F
SVTO		1055	1055	1058	N18	W47	9773	01	9.9	3	SF		3	E		17		
SVTO		1203	1205	1210	N30	E10	9779	01	14.3	7	SF		3	E		18		
GOES		1306	1315	1326	S06	W45	9775			20	SF	C 7.8						7.1E-03
RAMY		1319	1321	1350	S06	W45	9775	01	10.2	31	SF		3	E		42		F
RAMY		1322	1323	1329	S16	E12	9778	01	14.5	7	SF		3	E		30		F
SVTO		1323	1323	1327	S16	E13	9778	01	14.5	4	SF		3	E		15		F
GOES		1336	1338	1341	S05	W44	9775			5	SF	C 0.8						1.8E-03
SVTO		1337	1338	1342	S05	W44	9775	01	10.3	5	SF		3	E		41		
GOES		1512	1533	1555	N17	W50	9773			43	SF	C 7.4						1.6E-02
HOLL		1534	1536	1539	N17	W50	9773	01	9.8	5	SF		3	E		17		
RAMY		1617	1623	1626	N02	E50	9782	01	17.4	9	SF		3	E		53		F
RAMY		1617	1623	1626	S02	W41	9775	01	10.6	9	SF		3	E		28		F
GOES		1707	1710	1712	S07	W46	9775			5	SF	C 5.4						1.2E-03
HOLL		1708	1709	1712	S07	W46	9775	01	10.3	4	SF		3	E		26		
HOLL		1750	1751	1754	N07	E47	9782	01	17.3	4	SF		3	E		14		
RAMY		1751	1751	1818	N05	E47	9782	01	17.2	27	SF		3	E		19		
HOLL		1805	1818	1827	N02	E50	9782	01	17.5	22	SF		3	E		38		F
RAMY		1821	1824	1859	N00	E46	9782	01	17.2	38	SF		3	E		68		F
GOES		1935	1946	1949	S07	W48	9775			14	SF	M 2.2						9.1E-03
HOLL		1942	1946	1953	S07	W48	9775	01	10.2	11	SF		3	E		94		FH
RAMY		1944E	1945U	1953D	S05	W44	9775	01	10.5	9D	1N		3	E		132		
HOLL		2002	2003	2010	N04	E48	9782	01	17.4	8	SF		3	E		14		
HOLL		2002	2004	2016	S07	W49	9775	01	10.2	14	SF		3	E		10		
GOES		2337	2341	2343	S15	E04	9778			6	SF	C 3.6						1.1E-03
LEAR		2340	2340	2343	S15	E06	9778	01	14.4	3	SF		3	E		25		F
HOLL		2340	2341	2348	S15	E04	9778	01	14.3	8	SF		3	E		24		F
GOES	14	0120	0136	0144			9775			24		M 1.0						1.0E-02
LEAR		0123	0124	0135	N05	E44	9782	01	17.3	12	SF		3	E		20		F
LEAR		0126	0145U	0155	S07	W52	9775	01	10.2	29	SF		3	E		37		F
LEAR		0148	0155	0310	N05	E44	9782	01	17.4	82	2N		3	E		263		F
GOES		0152	0156	0203	N05	E44	9782			11	2N	M 1.7						8.4E-03
LEAR		0359	0403	0415	S15	W03	9778	01	13.9	16	SF		3	E		26		F
GOES		0359	0408	0410	S15	W03	9778			11	SF	C 3.0						1.9E-03
GOES		0529	0627	0825						176		M 4.4						3.4E-01
GOES		1421	1423	1425	S07	W59	9775			4	SF	C 7.7						1.7E-03
RAMY		1422	1423	1427	S07	W59	9775	01	10.2	5	SF		3	E		30		F
GOES		2053	2057	2059	N03	E34	9782			6	SF	C 3.7						1.2E-03
HOLL		2057	2057	2101	N03	E34	9782	01	17.4	4	SF		3	E		20		
RAMY		2057	2057	2101	N03	E34	9782	01	17.4	4	SF		3	E		17		
GOES		2235	2246	2258	S05	W65	9775			23	SF	M 1.1						1.2E-02
HOLL		2238	2238	2242	S05	W65	9775	01	10.1	4	SF		3	E		13		F
GOES		2334	2338	2340	N17	W70	9773			6	SF	C 4.9						1.3E-03
HOLL		2335	2336	2340	N17	W70	9773	01	9.7	5	SF		3	E		25		
LEAR	15	0302	0303	0308	N17	W73	9773	01	9.6	6	SF		3	E		40		
GOES		0431	0435	0441	N16	W76	9773			10	SF	C 2.1						1.1E-03
LEAR		0433	0435	0438	N16	W76	9773	01	9.4	5	SF		3	E		29		F
GOES		0953	1000	1007	N07	E25	9782			14	SF	C 2.6						1.9E-03
LEAR		0955	1001	1010	N07	E25	9782	01	17.3	15	SF		2	E		31		F
GOES		1748	1752	1754	S06	W70	9775			6	SF	C 4.6						1.4E-03
RAMY		1750	1751	1756	S06	W70	9775	01	10.5	6	SF		3	E		54		
GOES		1804	1809	1816	S08	W71	9775			12	SF	C 3.4						2.3E-03
HOLL		1808	1808U	1830	S08	W71	9775	01	10.4	22	SF		3	E		24		F
RAMY		1856	1907	1913	S05	W75	9775	01	10.2	17	SF		3	E		30		F
RAMY		1927	1934	1943	S05	W75	9775	01	10.2	16	SF		3	E		43		
RAMY		2026	2027	2031	S05	W75	9775	01	10.2	5	SF		3	E		20		F
HOLL		2120E	2121	2123	S07	W76	9775	01	10.2	3D	SF		3	E		36		F
HOLL		2131	2132	2135	S07	W76	9775	01	10.2	4	SF		3	E		17		
GOES		2141	2153	2213	S08	W76	9775			32	SF	C 3.9						6.4E-03
HOLL		2150	2152	2213	S08	W76	9775	01	10.2	23	SF		3	E		19		

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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	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	15	2320	2323	2328						8		C 4.7						2.0E-03
LEAR	16	0149	0150	0203	S08	W79	9775	01	10.1	14	SF		2	E		20		FH
LEAR		0306	0306	0310	S08	W80	9775	01	10.1	4	SF		1	E		20		F
GOES		0734	0740	0744						10		C 4.3						2.1E-03
GOES		0800	0809	0817	S07	W80	9775			17	SF	C 7.1						5.6E-03
LEAR		0805	0809	0814	S07	W80	9775	01	10.3	9	SF		2	E		41		F
LEAR		0813	0813	0817	N14	W89	9773	01	9.6	4	SF		2	E		20		
GOES		0903	0908	0919	S07	W85	9775			16	SF	C 4.3						3.5E-03
LEAR		0917	0918	0921	S07	W85	9775	01	10.0	4	SF		2	E		16		F
GOES		0927	0932	0938						11		C 6.6						3.3E-03
GOES		1005	1013	1018	S05	W75	9775			13	SF	M 1.5						7.7E-03
LEAR		1009	1010	1014	S08	W83	9775	01	10.2	5	SF		2	E		44		F
SVTO		1009	1010	1020	S05	W75	9775	01	10.8	11	SF		3	E		81		F
RAMY		1226	1237	1244	S06	W82	9775	01	10.4	18	SF		3	E		34		F
GOES		1351	1413	1438						47		C 9.5						2.0E-02
GOES		1502	1508	1513						11		C 4.6						2.6E-03
RAMY		1525	1527	1545D	S05	W83	9775	01	10.4	20D	SF		3	E		26		
GOES		1525	1529	1532	S05	W83	9775			7	SF	C 4.1						1.6E-03
HOLL		1532	1532U	1539	S06	W85	9775	01	10.3	7	SF		1	E		93		
GOES		1542	1557	1608						26		C 5.0						0.0E+00
RAMY		1650	1655	1712	S07	W88	9775	01	10.1	22	SF		3	E		92		F
HOLL		1651	1655	1709	S08	W89	9775	01	10.0	18	SF		3	E		98		F
GOES		1652	1655	1658	S07	W88	9775			6	SF	C 4.3						1.3E-03
GOES		1750	1756	1801	N15	W89	9773			11	SN	C 6.2						3.0E-03
HOLL		1753	1756	1816	N15	W89	9773	01	10.0	23	SN		3	E		78		
RAMY		1804	1804	1817	N15	W89	9773	01	10.0	13	SF		3	E		46		
RAMY		1929	1929	1938	S06	W88	9775	01	10.2	9	SF		3	E		27		
GOES		2000	2005	2019	N14	W79	9773			19	SF	C 5.8						5.5E-03
RAMY		2005	2005	2028	N14	W79	9773	01	10.9	23	SF		3	E		71		H
GOES		2019	2024	2030						11		C 9.2						5.0E-03
RAMY		2046	2047	2050	S05	W86	9775	01	10.4	4	SF		3	E		26		H
HOLL		2238	2239	2243	S05	W88	9775	01	10.4	5	SF		3	E		16		
GOES	17	0107	0116	0124						17		C 3.9						3.3E-03
GOES		0213	0216	0221	S08	W91	9775			8	SF	C 2.9						1.3E-03
LEAR		0215	0219	0224	S08	W90	9775	01	10.3	9	SF		3	E		77		FH
GOES		0306	0312	0318	S09	W78	9775			12	SF	C 4.2						2.4E-03
LEAR		0309	0311	0319	S09	W78	9775	01	11.3	10	SF		3	E		73		FH
GOES		0432	0435	0437						5		C 3.0						8.1E-04
GOES		0517	0521	0525						8		C 3.1						1.3E-03
GOES		1142	1146	1152						10		C 2.5						1.3E-03
GOES		1208	1215	1218	S11	E23	9783			10	SF	C 2.4						1.3E-03
RAMY		1210	1215	1228	S11	E23	9783	01	19.2	18	SF		3	E		35		F
GOES	18	1153	1201	1208	N18	E24				15	SF	C 1.7						1.5E-03
SVTO		1156	1156	1210	N18	E24		01	20.3	14	SF		3	E		21		F
GOES		1520	1606	1621						61		C 2.6						7.7E-03
GOES	19	0047	0054	0101	S08	E71	9787			14	SF	C 4.0						2.5E-03
LEAR		0052	0053	0059	S08	E71	9787	01	24.3	7	SF		3	E		16		F
GOES		0738	0752	0800						22		C 1.3						1.6E-03
GOES		1000	1005	1007	S08	E64	9787			7	SF	M 1.2						2.3E-03
LEAR		1004	1005	1011	S08	E64	9787	01	24.2	7	SF		2	E		52		
GOES		1230	1239	1245						15		C 1.5						1.2E-03
GOES		1550	1559	1604						14		C 1.6						1.1E-03
GOES		1847	1852	1858						11		C 1.7						1.0E-03
GOES		2005	2009	2016	N15	E42	9788			11	SF	C 1.8						1.1E-03
RAMY		2008	2008	2012	N15	E42	9788	01	23.0	4	SF		3	E		18		F
GOES		2116	2121	2125						9		C 1.9						9.0E-04
GOES		2255	2301	2308						13		C 1.4						1.0E-03
LEAR	20	0256	0301	0306	S08	E55	9787	01	24.2	10	SF		2	E		25		F
LEAR		0457	0459	0511	N16	E37	9788	01	23.0	14	SF		3	E		13		F
LEAR		0638	0642	0647	S07	E52	9787	01	24.2	9	SF		3	E		16		
LEAR		0652	0655	0706	S07	E51	9787	01	24.1	14	SF		3	E		27		
GOES		1543	1552	1606	N18	E34	9788			23	SF	C 3.8						4.5E-03
HOLL		1603	1608	1610	N18	E34	9788	01	23.2	7	SF		3	E		12		F

Hα SOLAR FLARES

JANUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
HOLL	20	1624	1625	1638	S09	E46	9787	01	24.1	14	SF		3	E		20		
GOES		2307	2326	2335	N18	E28	9788			28	SF	C 2.8						4.0E-03
HOLL		2310	2312	2337	N18	E27	9788	01	23.0	27	SF		3	E		27		
LEAR		2310	2323	2337	N18	E28	9788	01	23.1	27	SF		3	E		59		F
GOES	21	0135	0139	0149	N18	E25	9788			14	SF	C 1.7						1.4E-03
LEAR		0136	0137	0153	N18	E25	9788	01	23.0	17	SF		3	E		30		F
GOES		0322	0329	0338	N18	E25	9788			16	SF	C 3.4						2.6E-03
LEAR		0324	0328	0350	N18	E25	9788	01	23.0	26	SF		3	E		79		F
GOES		0536	0539	0541	N07	W45	9785			5	SF	C 1.6						4.3E-04
LEAR		0537	0539	0542	N07	W45	9785	01	17.9	5	SF		3	E		13		
GOES		0741	0747	0753	N15	W20	9789			12	SF	C 1.7						1.2E-03
LEAR		0743	0744	0755	N15	W20	9789	01	19.8	12	SF		3	E		12		
GOES		1815	1819	1821	S03	W28	9791			6	SF	C 1.7						5.3E-04
HOLL		1818	1818	1822	S03	W28	9791	01	19.7	4	SF		3	E		16		
GOES		2126	2137	2144						18		C 2.2						2.1E-03
GOES		2229	2233	2242	S02	W30	9791			13	SF	C 3.5						2.0E-03
HOLL		2237	2242	2245	S02	W30	9791	01	19.7	8	SF		3	E		18		
GOES	22	0252	0255	0257						5		C 1.4						3.7E-04
GOES		0542	0546	0550						8		C 1.9						8.1E-04
GOES		0741	0758	0826						45		C 0.1						3.9E-03
GOES		0852	0900	0903	S02	W37	9791			11	1N	M 1.3						4.6E-03
LEAR		0855	0858	0910	S02	W37	9791	01	19.6	15	1N		3	E		146		FE
SVTO		0856	0857	0908	S02	W37	9791	01	19.6	12	SF		3	E		63		F
LEAR		0914	0914	0921	S09	E22	9787	01	24.0	7	SF		3	E		13		
GOES		1119	1126	1135						16		C 3.3						2.4E-03
GOES		1308	1313	1319	N17	W32	9789			11	SF	C 5.0						2.2E-03
SVTO		1311	1316	1323	N17	W32	9789	01	20.1	12	SF		3	E		51		
GOES		1420	1429	1434						14		C 2.6						1.9E-03
GOES		1626	1631	1635	S16	E10	9793			9	SF	C 1.4						6.4E-04
HOLL		1639	1639	1645	S16	E10	9793	01	23.4	6	SF		3	E		24		FH
GOES		1808	1811	1812						4		C 1.4						2.9E-04
HOLL		1824	1826	1831	N13	E40	9794	01	25.8	7	SF		3	E		12		F
RAMY		2131	2131	2132D	N17	W36	9789	01	20.2	1D	SF		3	E		77		F
GOES		2202	2208	2215	S24	E68				13	SF	C 2.4						1.5E-03
HOLL		2207	2211	2218	S24	E68		01	28.2	11	SF		3	E		16		F
GOES		2239	2243	2247	N12	E36	9794			8	SF	C 1.3						6.2E-04
HOLL		2241	2242	2249	N12	E36	9794	01	25.6	8	SF		3	E		20		F
RAMY		2311	2311	2311D	N17	W36	9789	01	20.2	8D	SF		3	E		77		F
GOES		2327	2332	2342	S05	E21	9787			15	SF	C 1.6						1.4E-03
HOLL		2330	2333	2337	S05	E21	9787	01	24.5	7	SF		3	E		14		F
GOES	23	0117	0121	0125						8		C 1.9						8.7E-04
GOES		0316	0319	0324						8		C 1.6						7.4E-04
GOES		0332	0337	0341	N11	E34	9794			9	SF	C 1.7						8.8E-04
LEAR		0335	0336	0340	N11	E34	9794	01	25.7	5	SF		3	E		12		
LEAR		0906	0907	0922	S06	E09	9787	01	24.0	16	SF		3	E		33		FH
GOES		0906	0909	0912	S06	E09	9787			6	SF	C 1.4						4.9E-04
GOES		0956	1000	1011	S09	W57	9783			15	SF	C 1.6						1.3E-03
SVTO		0958	0959	1002	S09	W57	9783	01	19.1	4	SF		3	E		20		
GOES		1332	1337	1348	N12	E29	9794			16	SF	C 3.7						3.1E-03
SVTO		1334	1336	1357	N12	E29	9794	01	25.7	23	SF		3	E		72		F
GOES		2225	2228	2231	S08	E01	9787			6	SF	C 2.3						6.8E-04
HOLL		2227	2228	2235	S08	E01	9787	01	24.0	8	SF		3	E		17		
GOES	24	0325	0439	0706						221		C 7.1						7.1E-02T
LEAR		0509	0510	0517	S09	W02	9787	01	24.1	8	SF		3	E		14		
LEAR		0608	0608	0634	N13	E21	9794	01	25.8	26	SF		3	E		17		F
GOES		1503	1509	1513						10		C 3.7						1.9E-03
GOES		2040	2045	2048						8		C 3.8						1.4E-03
HOLL		2049	2050	2054	S11	W10	9787	01	24.1	5	SF		3	E		18		F
LEAR	25	0217	0224	0307	N13	E10	9794	01	25.8	50	SN		3	E		85		FE
GOES		0218	0225	0239	N13	E10	9794			21	SN	C 6.6						6.5E-03
GOES		1030	1035	1055						25		C 3.5						4.6E-03
GOES		1130	1133	1137						7		C 2.6						1.0E-03
RAMY		1735	1736	1742	N12	E00	9794	01	25.7	7	SF		3	E		14		F

Hα SOLAR FLARES

JANUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	25	1815	1818	1823						8		C 2.5						1.1E-03
GOES		1902	1906	1909						7		C 4.6						1.4E-03
GOES		2214	2218	2224						10		C 7.5						2.9E-03
HOLL		2348	2349	2351	N07	E62	9800	01	30.6	3	SF		3	E		28		
GOES	26	0001	0003	0005						4		C 4.5						1.1E-03
RAMY		1235	1237	1300	N06	E57	9800	01	30.8	25	SF		3	E		20		F
SVTO		1236	1250	1300	N03	E56	9800	01	30.7	24	SF		3	E		28		F
SVTO		1254	1300	1313	N15	W49	9788	01	22.8	19	SF		3	E		21		
SVTO		1351	1351	1358	N16	W49	9788	01	22.9	7	SF		3	E		26		
RAMY		1351	1352	1403	N19	W49	9788	01	22.8	12	SF		3	E		10		F
GOES		1447	1451	1454						7		C 2.7						1.0E-03
GOES		1926	2005	2034	S15	E78	9802			68	SF	M 1.3						3.7E-02
HOLL		1947	1947	1950	S15	E78	9802	02	1.7	3	SF		3	E		17		F
RAMY		2101	2105	2115	N20	W55	9788	01	22.7	14	SF		3	E		12		
GOES		2224	2228	2234	N19	W57	9788			10	SF	C 6.2						3.3E-03
HOLL		2225	2226	2234	N19	W57	9788	01	22.6	9	SF		3	E		30		F
GOES		2358	2406	2414						16		C 4.3						3.8E-03
RAMY	27	1214	1214	1218	N18	W62	9788	01	22.8	4	SF		3	E		51		
SVTO		1214	1214	1219	N18	W63	9788	01	22.7	5	SF		3	E		59		
GOES		1718	1723	1728	S07	W48	9787			10	SF	C 2.7						1.4E-03
RAMY		1720	1722	1731	S07	W48	9787	01	24.1	11	SF		3	E		28		F
RAMY		2033	2033	2036	S17	E61	9802	02	1.5	3	SF		3	E		18		
GOES	28	0300	0310	0327	N19	W71	9788			27	SF	C 9.6						1.2E-02
LEAR		0305	0309	0313	N19	W71	9788	01	22.7	8	SF		2	E		29		F
LEAR		0659	0703	0712	S06	W55	9787	01	24.2	13	SF		2	E		33		
LEAR		0717	0718	0721	N13	W32	9794	01	25.9	4	SF		2	E		18		
LEAR		0818	0818	0825	S09	W51	9787	01	24.5	7	SF		2	E		15		
LEAR		0828	0831	0833	S09	W51	9787	01	24.5	5	SF		2	E		21		F
GOES		1105	1110	1116						11		C 4.6						2.7E-03
RAMY		1318E	1318U	1324	S04	W55	9787	01	24.4	6D	SF		3	E		48		
RAMY		1400E	1400U	1406D	S06	W60	9787	01	24.1	6D	SF		3	E		39		
GOES		1749	1754	1759			9800			10		C 8.1						3.3E-03
GOES		2234	2237	2242	N05	E20	9800			8	SF	C 2.6						1.1E-03
HOLL		2236	2238	2240	N05	E20	9800	01	30.4	4	SF		3	E		11		
GOES		2342	2349	2353						11		C 9.6						3.9E-03
LEAR	29	0223	0224	0233	S20	E48	9802	02	1.8	10	SF		2	E		19		
GOES		0420	0424	0443	N05	E17	9800			23	SF	C 3.6						4.2E-03
LEAR		0423	0423	0431	N05	E17	9800	01	30.4	8	SF		3	E		45		F
GOES		0842	0848	0854	N05	E15	9800			12	1F	C 7.3						3.5E-03
LEAR		0844	0849	0915	N05	E15	9800	01	30.5	31	1F		3	E		141		F
SVTO		0845	0848	0915	N04	E14	9800	01	30.4	30	SN		3	E		76		F
GOES		1013	1028	1037			9800			24		C 4.0						4.9E-03
SVTO		1015	1015	1036	S18	E42	9802	02	1.6	21	SF		3	E		11		
SVTO		1026	1028	1034	N05	E15	9800	01	30.5	8	SF		3	E		41		
SVTO		1150E	1150U	1155D	N13	E59	9805	02	2.9	5D	SF		3	E		12		
GOES		1216	1220	1224						8		C 3.6						1.5E-03
GOES		1249	1255	1323	N05	E15	9800			34	SF	C 5.8						9.6E-03
RAMY		1300	1300	1322	N05	E15	9800	01	30.7	22	SF		3	E		61		F
RAMY		1655	1658	1717	N11	W56	9794	01	25.5	22	SF		3	E		11		
GOES		2127	2236	2254						87		C 3.1						1.4E-02
GOES	30	0113	0117	0121						8		C 2.9						1.2E-03
GOES		0231	0240	0251	S17	E36	9802			20	SF	C 3.6						3.8E-03
LEAR		0233	0234	0250D	S17	E36	9802	02	1.8	17D	SF		3	E		11		
GOES		1159	1225	1238						39		C 3.3						5.8E-03
GOES		1333	1337	1339						6		C 2.4						7.3E-04
GOES		1637	1639	1640						3		C 7.4						7.4E-04
GOES		1738	1741	1743						5		C 3.3						8.7E-04
GOES		2151	2157	2217						26		C 2.8						3.9E-03
GOES	31	1007	1012	1017	S16	E18	9802			10	SF	C 3.3						1.6E-03
LEAR		1010	1012	1019	S16	E18	9802	02	1.8	9	SF		3	E		27		F
GOES		1153	1204	1229	S02	W55	9798			36	SF	C 2.2						4.3E-03
RAMY		1200	1203	1211	S02	W55	9798	01	27.4	11	SF		3	E		14		F

Hα SOLAR FLARES

JANUARY 2002

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	31	1414	1416	1430	N06	W14	9800	01	30.5	16	SF		3	E		22		F
GOES		1420	1425	1435	N06	W14	9800			15	SF	C 4.3						3.0E-03
GOES		1436	1444	1450						14		M 3.6						1.9E-02
GOES		1520	1525	1537	S15	E12	9802			17	SF	C 4.6						3.9E-03
RAMY		1533	1535	1541	S15	E12	9802	02	1.5	8	SF		3	E		13		
RAMY		1640	1643	1706	N06	W14	9800	01	30.6	26	SF		3	E		91		F
GOES		1640	1647	1655	N06	W14	9800			15	SF	C 4.9						3.6E-03
HOLL		1646E	1649U	1703	N05	W15	9800	01	30.6	17D	1F		3	E		116		F

"Remarks"

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

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

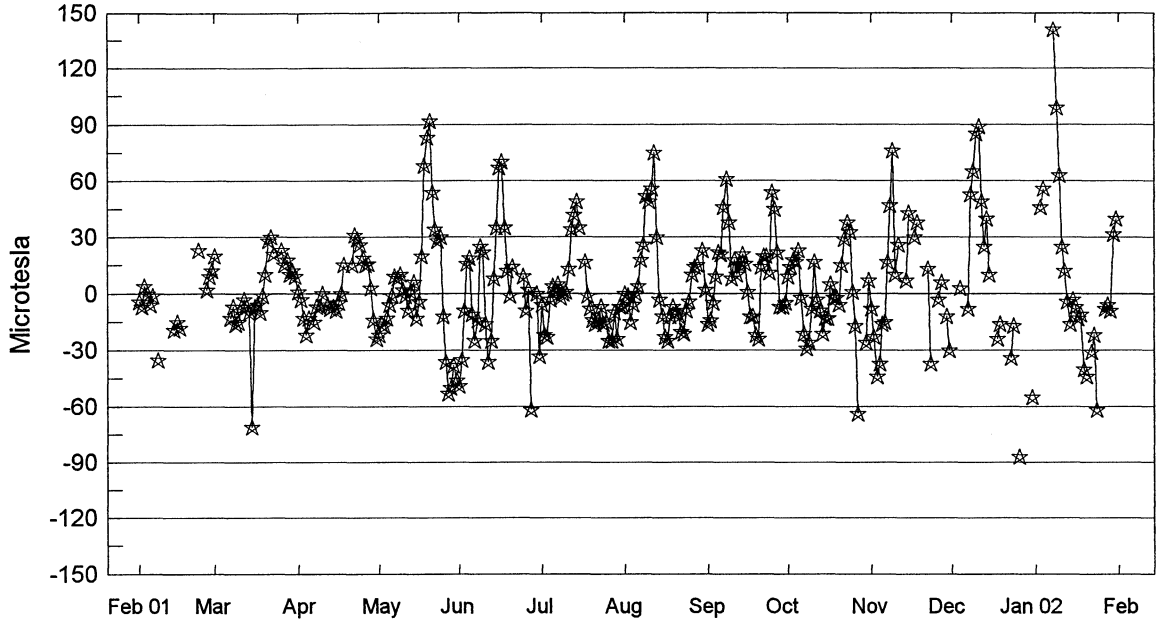
NOTE: Beginning July 1997, the times of all GOES X-ray events are now included in this table.

SOLAR RADIO EMISSION
Selected Fixed Frequency Events

JANUARY 2002

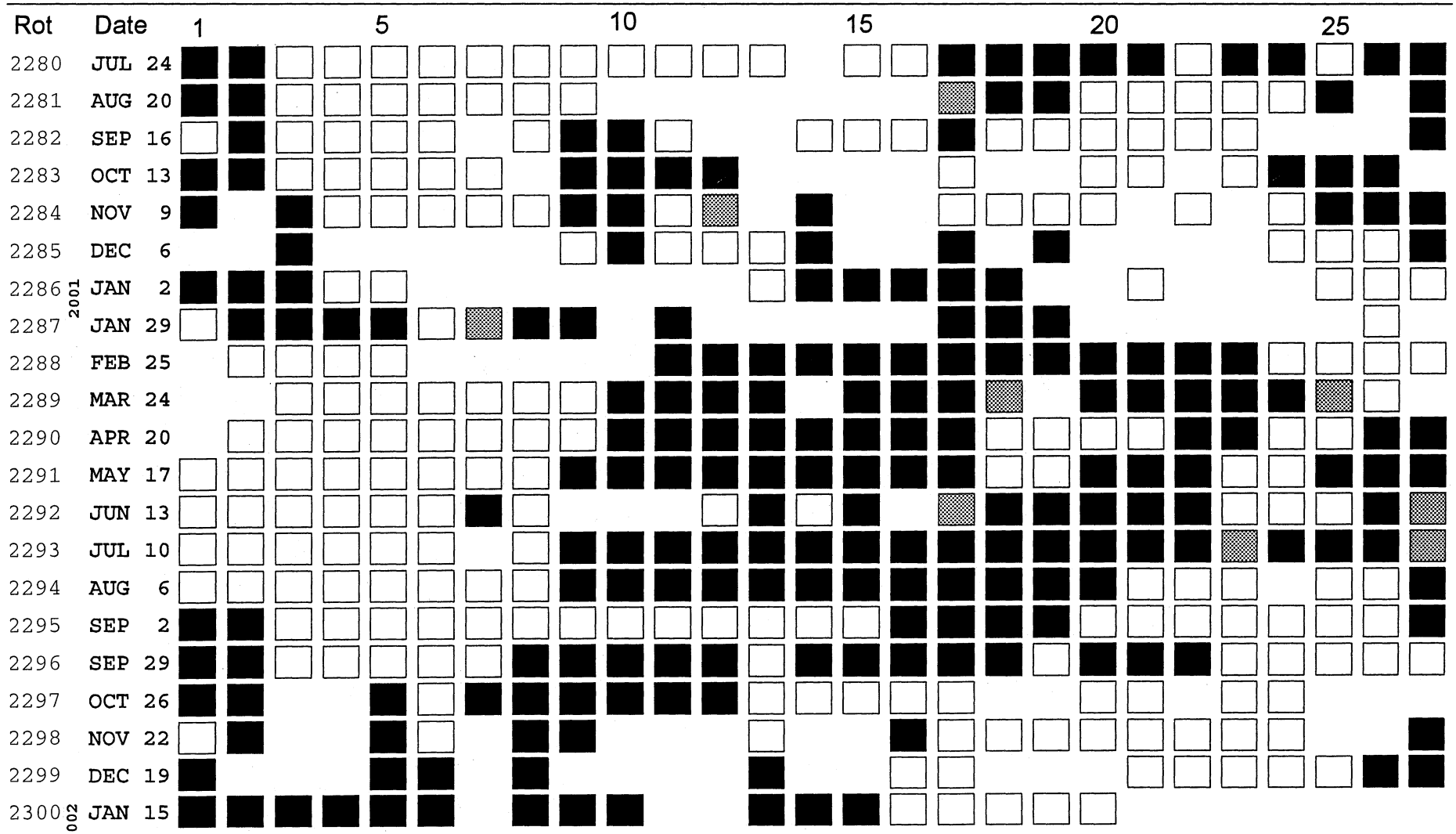
Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
02	2695	LEAR	48	C	0621.0	0623.0	23.0	66.0			QL=4 ST=2 TYP=8
	8800	LEAR	8	S	0758.0	0759.0	1.0	25.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1250.0	1250.0	1.0	21.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	1250.0	1250.0	2.0	33.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1250.0	1250.0	1.0	30.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1504.0	1504.0	U	52.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1504.0	1504.0	U	53.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2145.0	2145.0	1.0	90.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	2145.0	2145.0	1.0	120.0			QL=4 ST=2 TYP=3
09	8800	SGMR	49	GB	1751.0	1757.0	8.0	820.0			QL=4 ST=2 TYP=6
	2695	SGMR	4	S/F	1752.0	1757.0	7.0	230.0			QL=4 ST=2 TYP=3
	8800	PALE	49	GB	1753.0	1757.0	13.0	620.0			QL=4 ST=2 TYP=6
	2695	PALE	4	S/F	1754.0	1757.0	6.0	220.0			QL=4 ST=2 TYP=3
11	2695	LEAR	20	GRF	0757.0	0757.0	13.0	25.0			QL=4 ST=2 TYP=2
12	8800	SVTO	4	S/F	0717.0	0719.0	4.0	30.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0855.0	0856.0	1.0	62.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	0855.0	0856.0	1.0	60.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	0855.0	0856.0	1.0	58.0			QL=4 ST=2 TYP=3
	2695	PALE	46	C	1926.0	1927.0	1.0	27.0			QL=4 ST=2 TYP=8
	8800	SGMR	8	S	1937.0	1938.0	1.0	450.0			QL=4 ST=2 TYP=3
13	2695	LEAR	8	S	0305.0	0305.0	U	23.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0305.0	0305.0	U	82.0			QL=4 ST=2 TYP=3
	8800	PALE	48	C	0307.0	0307.0	U	78.0			QL=4 ST=2 TYP=8
	8800	LEAR	8	S	0536.0	0536.0	U	27.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1337.0	1337.0	1.0	180.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	1944.0	1945.0	2.0	110.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1944.0	1945.0	2.0	200.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1944.0	1945.0	2.0	110.0			QL=2 ST=2 TYP=3
	8800	SGMR	4	S/F	1952.0	1954.0	3.0	23.0			QL=2 ST=2 TYP=3
14	8800	LEAR	4	S/F	0153.0	0155.0	5.0	280.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	0154.0	0155.0	4.0	140.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	0157.0	0157.0	1.0	62.0			QL=4 ST=2 TYP=3
19	8800	LEAR	8	S	1003.0	1004.0	1.0	49.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	1003.0	1004.0	4.0	110.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1003.0	1004.0	1.0	62.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	1003.0	1004.0	4.0	100.0			QL=4 ST=2 TYP=3
21	8800	LEAR	8	S	0539.0	0539.0	U	29.0			QL=4 ST=2 TYP=3
24	2695	LEAR	8	S	0331.0	0331.0	2.0	61.0			QL=4 ST=2 TYP=3
29	8800	LEAR	46	C	0605.0	0605.0	U	36.0			QL=4 ST=2 TYP=8
	8800	LEAR	46	C	0846.0	0847.0	5.0	44.0			QL=4 ST=2 TYP=8
31	8800	SVTO	8	S	1439.0	1440.0	2.0	280.0			QL=4 ST=2 TYP=3
	8800	SGMR	48	C	1440.0	1440.0	U	230.0			QL=4 ST=2 TYP=8

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



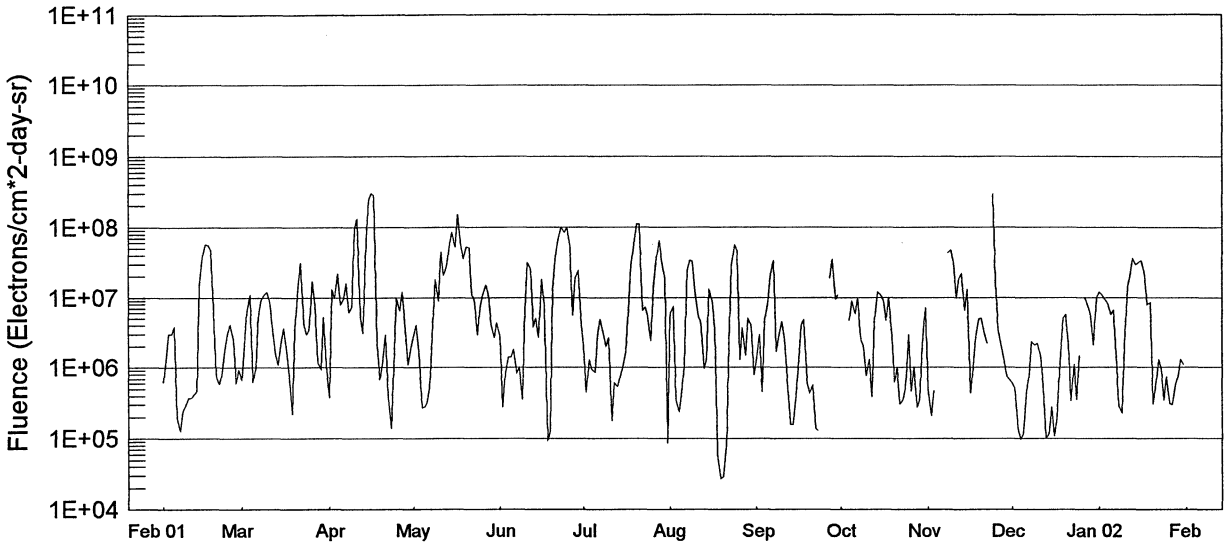
Day	Feb 01	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02
1	-4	20	1	-22	-35	-6	0	-16	9	-8	---	---
2	-7	---	-3	-16	-9	-22	-1	-14	14	-23	---	---
3	4	---	-13	-17	16	-23	-15	-5	18	-44	---	46
4	0	---	-22	-13	19	-3	-6	9	17	-37	3	56
5	-6	---	-13	-6	-11	4	0	22	23	-16	---	---
6	-1	---	---	-1	-25	2	4	21	-2	-15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

STANFORD MEAN SOLAR MAGNETIC FIELD



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

GOES Daily Electron Fluence
Feb 2001 - Jan 2002



Day	Feb 01	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02
1	6.2E+05	6.8E+05	3.8E+05	2.9E+06	2.8E+06	2.0E+06	5.9E+06	1.3E+06	-999	4.8E+05	6.1E+05	1.2E+07
2	1.3E+06	2.1E+06	1.3E+07	4.0E+06	2.8E+05	4.5E+05	7.4E+06	2.9E+06	-999	2.1E+05	5.2E+05	1.1E+07
3	3.0E+06	6.4E+06	1.0E+07	1.7E+06	8.1E+05	1.3E+06	3.5E+05	4.6E+05	-999	4.8E+05	1.3E+05	9.3E+06
4	3.0E+06	1.1E+07	2.2E+07	2.7E+05	1.4E+06	9.3E+05	2.4E+05	4.8E+06	4.7E+06	-999	9.9E+04	8.3E+06
5	3.8E+06	6.3E+05	7.8E+06	2.8E+05	1.4E+06	8.6E+05	4.5E+05	8.6E+06	9.0E+06	-999	1.2E+05	5.7E+06
6	1.9E+05	1.0E+06	9.8E+06	3.3E+05	1.8E+06	3.0E+06	1.1E+06	2.1E+07	5.9E+06	-999	4.4E+05	6.5E+06
7	1.3E+05	5.8E+06	1.6E+07	5.3E+05	8.4E+05	4.9E+06	2.4E+07	3.4E+07	1.0E+07	-999	7.6E+05	1.5E+06
8	2.4E+05	9.3E+06	6.2E+06	4.2E+06	1.0E+06	3.0E+06	3.4E+07	1.7E+06	2.5E+06	4.3E+07	2.3E+06	2.9E+05
9	3.0E+05	1.1E+07	7.4E+06	1.8E+07	3.6E+05	2.0E+06	3.3E+07	2.8E+06	2.0E+06	4.7E+07	2.1E+06	2.3E+05
10	3.7E+05	1.2E+07	9.5E+07	9.0E+06	6.5E+06	2.6E+06	1.2E+07	4.5E+06	7.7E+05	3.2E+07	2.2E+06	2.1E+06
11	3.7E+05	9.1E+06	1.3E+08	4.4E+07	3.2E+07	1.8E+05	5.4E+06	2.5E+06	1.3E+06	1.0E+07	1.5E+06	1.4E+07
12	4.2E+05	4.2E+06	5.6E+06	2.1E+07	2.5E+07	6.1E+05	4.6E+06	6.9E+05	3.9E+05	1.8E+07	5.4E+05	2.1E+07
13	4.7E+05	1.6E+06	3.1E+06	2.8E+07	3.8E+06	5.4E+05	9.6E+05	1.6E+05	4.7E+06	2.2E+07	1.0E+05	3.6E+07
14	1.5E+07	1.1E+06	6.5E+07	5.5E+07	5.0E+06	7.5E+05	1.3E+06	1.6E+05	1.2E+07	6.5E+06	1.2E+05	2.9E+07
15	3.9E+07	2.3E+06	2.4E+08	8.4E+07	2.7E+06	1.0E+06	1.3E+07	4.1E+05	1.1E+07	1.3E+07	2.8E+05	3.2E+07
16	5.7E+07	3.7E+06	3.0E+08	5.2E+07	1.8E+07	1.7E+06	9.0E+06	1.3E+06	9.2E+06	4.4E+05	1.1E+05	3.4E+07
17	5.6E+07	1.8E+06	2.8E+08	1.5E+08	7.9E+06	6.6E+06	3.6E+06	4.0E+06	4.7E+06	1.0E+06	1.9E+05	2.3E+07
18	4.7E+07	6.5E+05	2.2E+06	5.4E+07	9.5E+04	2.8E+07	5.9E+04	4.8E+06	1.0E+07	2.6E+06	1.2E+06	7.8E+06
19	6.8E+06	2.2E+05	6.8E+05	3.6E+07	1.3E+05	6.2E+07	2.7E+04	6.3E+05	2.8E+06	4.9E+06	5.1E+06	8.5E+06
20	7.7E+05	3.4E+06	1.1E+06	5.2E+07	1.3E+07	1.1E+08	2.9E+04	4.4E+05	6.2E+05	5.0E+06	5.7E+06	3.1E+05
21	5.9E+05	1.4E+07	2.9E+06	5.1E+07	4.5E+07	1.1E+08	8.0E+04	5.6E+05	1.0E+06	3.3E+06	2.2E+06	5.3E+05
22	8.2E+05	3.1E+07	3.9E+05	1.1E+07	7.2E+07	6.6E+06	2.2E+06	1.4E+05	3.1E+05	2.2E+06	3.4E+05	1.3E+06
23	1.7E+06	4.2E+06	1.4E+05	9.1E+06	1.0E+08	7.2E+06	2.8E+07	1.3E+05	3.5E+05	-999	1.1E+06	9.1E+05
24	3.1E+06	3.0E+06	1.0E+06	2.9E+06	8.4E+07	5.3E+06	5.6E+07	-999	5.2E+05	2.9E+08	3.6E+05	3.5E+05
25	4.1E+06	3.4E+06	9.6E+06	7.5E+06	1.0E+08	2.4E+06	4.5E+07	-999	2.9E+06	1.7E+07	1.5E+06	7.4E+05
26	2.5E+06	1.7E+07	6.6E+06	1.1E+07	5.4E+07	1.4E+07	1.3E+06	-999	4.7E+05	3.4E+06	-999	3.1E+05
27	6.0E+05	7.6E+06	1.2E+07	1.5E+07	5.6E+06	3.9E+07	3.7E+06	1.9E+07	1.0E+06	2.0E+06	9.9E+06	3.0E+05
28	9.3E+05	1.2E+06	4.5E+06	1.1E+07	1.9E+07	6.5E+07	1.5E+06	3.5E+07	2.8E+05	1.3E+06	7.2E+06	5.7E+05
29		9.4E+05	1.1E+06	4.2E+06	2.4E+07	3.4E+07	5.0E+06	9.5E+06	3.6E+05	7.6E+05	5.3E+06	7.5E+05
30		5.2E+06	1.8E+06	2.7E+06	5.2E+06	1.9E+07	4.0E+06	1.1E+07	2.1E+06	6.9E+05	2.1E+06	1.3E+06
31		1.1E+06		4.3E+06		8.7E+04	7.8E+05		7.1E+06		1.0E+07	1.1E+06

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

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

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CONTENTS

Prompt Reports Number 690 Part I

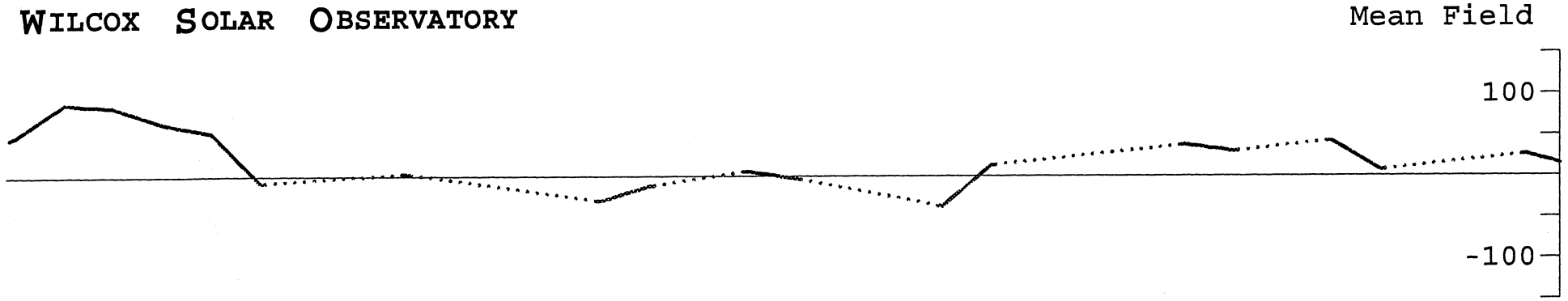
DATA FOR **DECEMBER 2001**

SOLAR MAGNETIC FIELD SYNOPTIC CHART

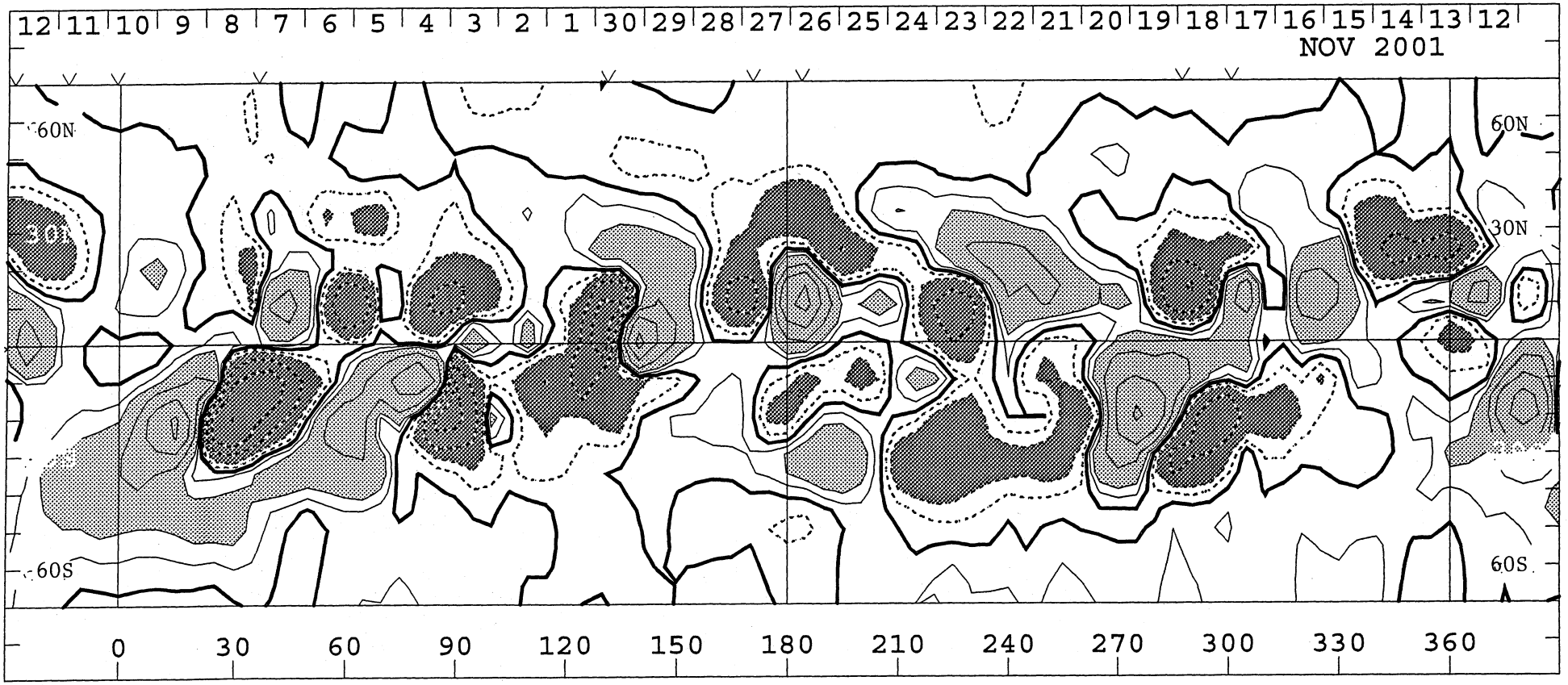
CARRINGTON ROTATION NUMBER 1983

(13 November to 10 December 2001)

WILCOX SOLAR OBSERVATORY



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



Heliographic Longitude

1983

SOLAR MAGNETIC FIELD SYNOPTIC CHART

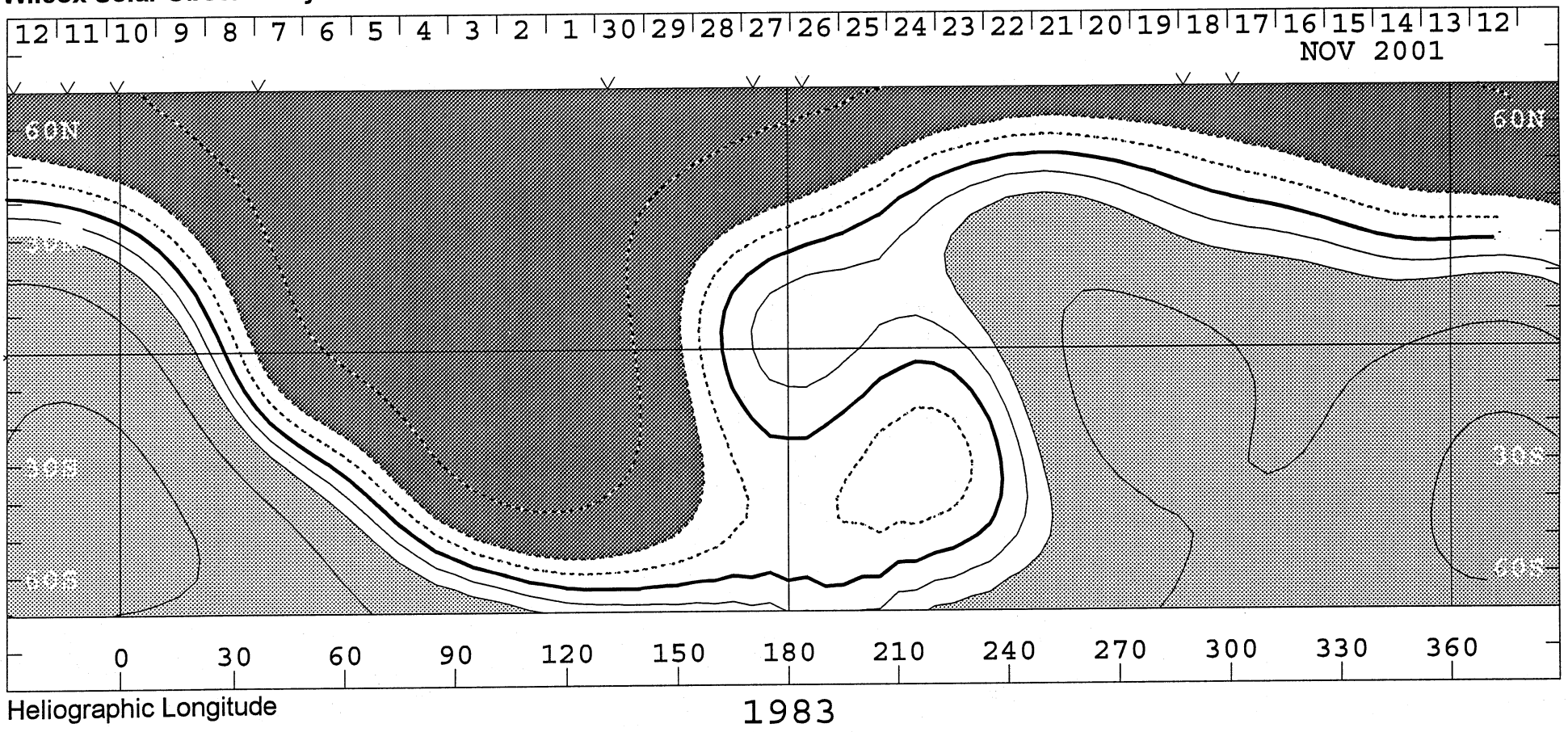
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1983

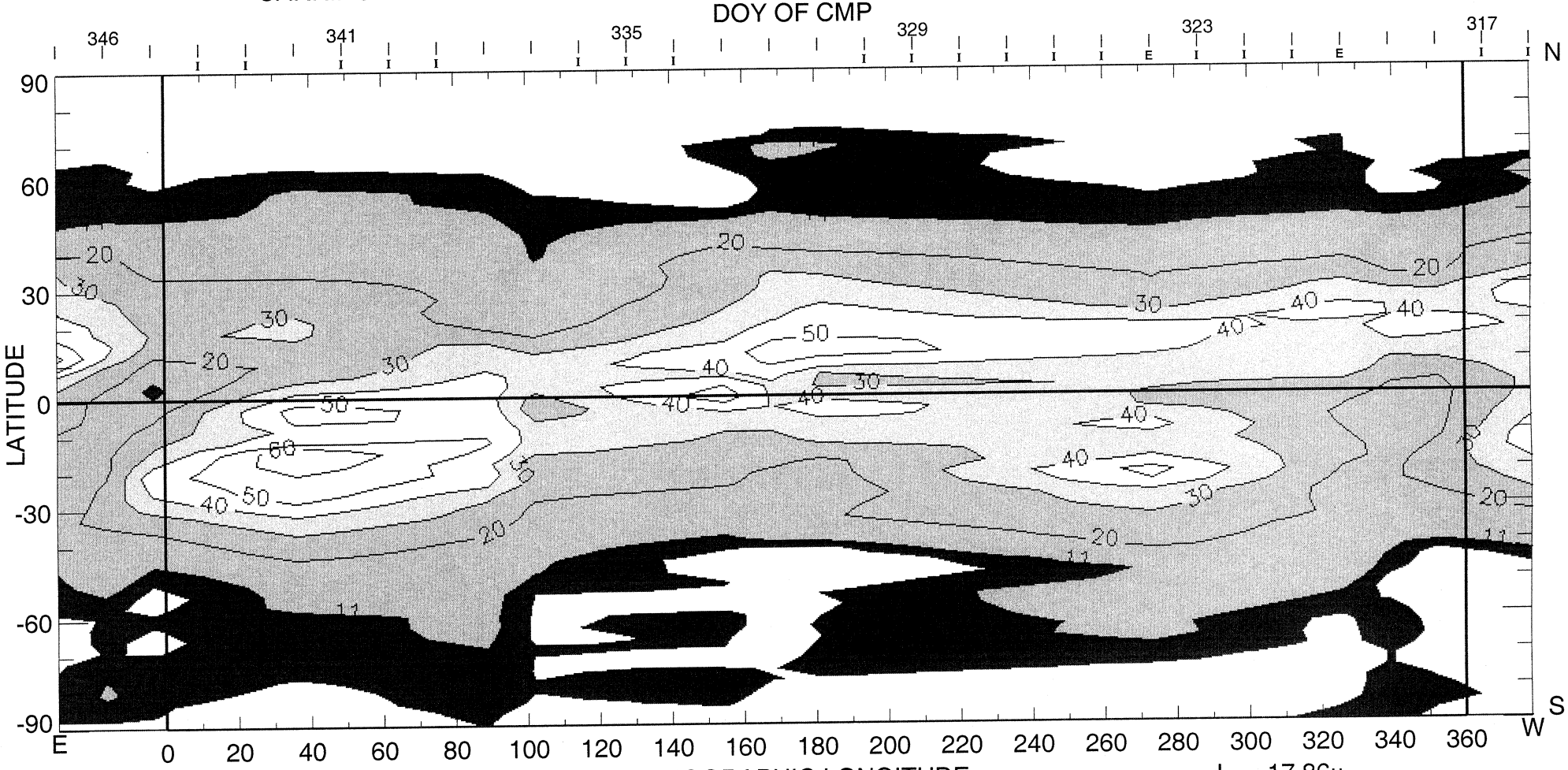
(13 November to 10 December 2001)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla

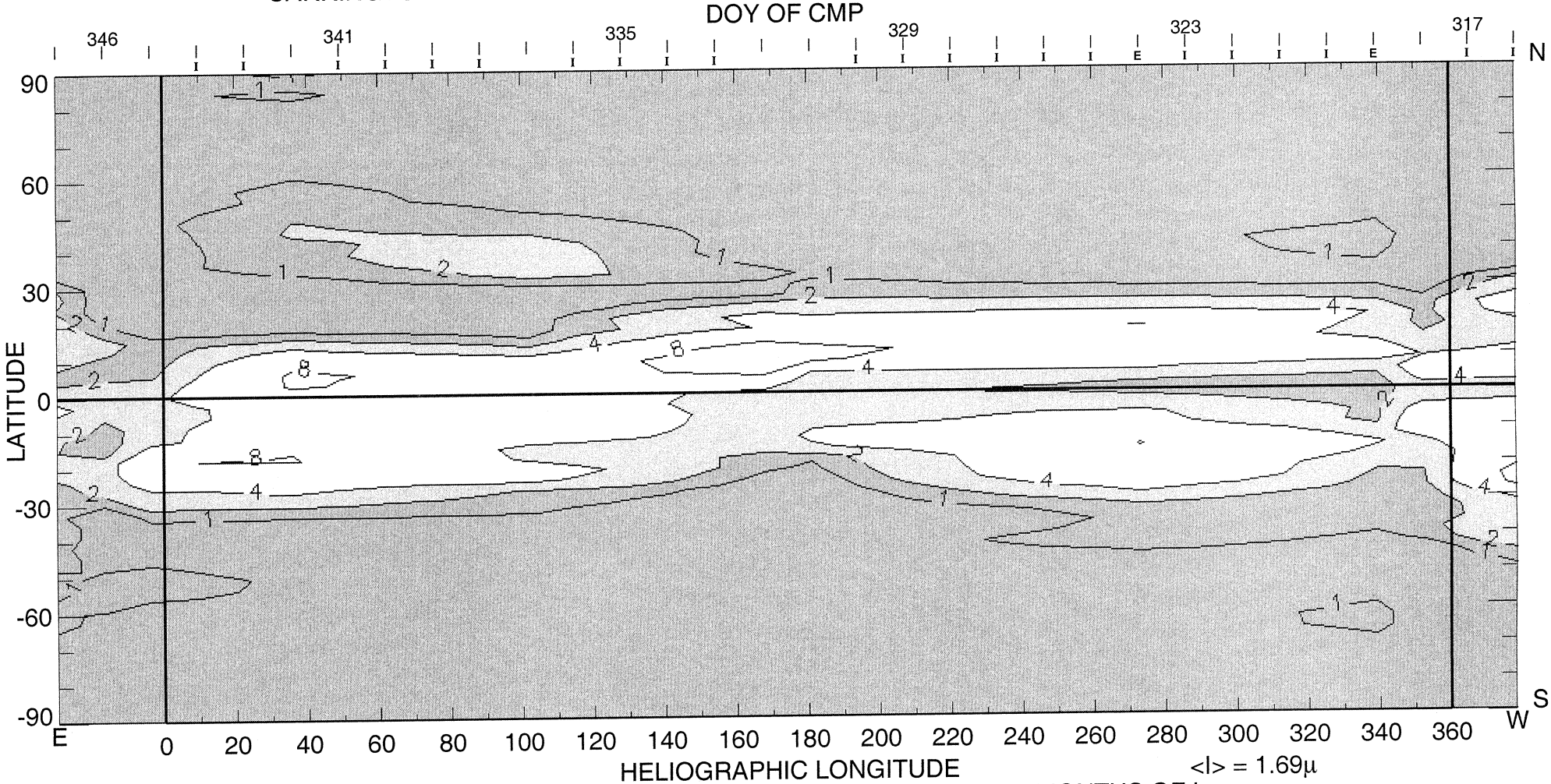


CARRINGTON ROTATION NUMBER 1983 ; NSO/SACRAMENTO PEAK FE XIV @ R = 1.15R_o



(01-Feb-02) 2001 W+E LIMB CONTOURS: 8, 11, 20, 30, 40, 50, 60, 80, 100, 120, 140 MILLIONTHS OF I_o
CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

CARRINGTON ROTATION NUMBER 1983 ; NSO/SACRAMENTO PEAK FE X @ R = 1.15R_o

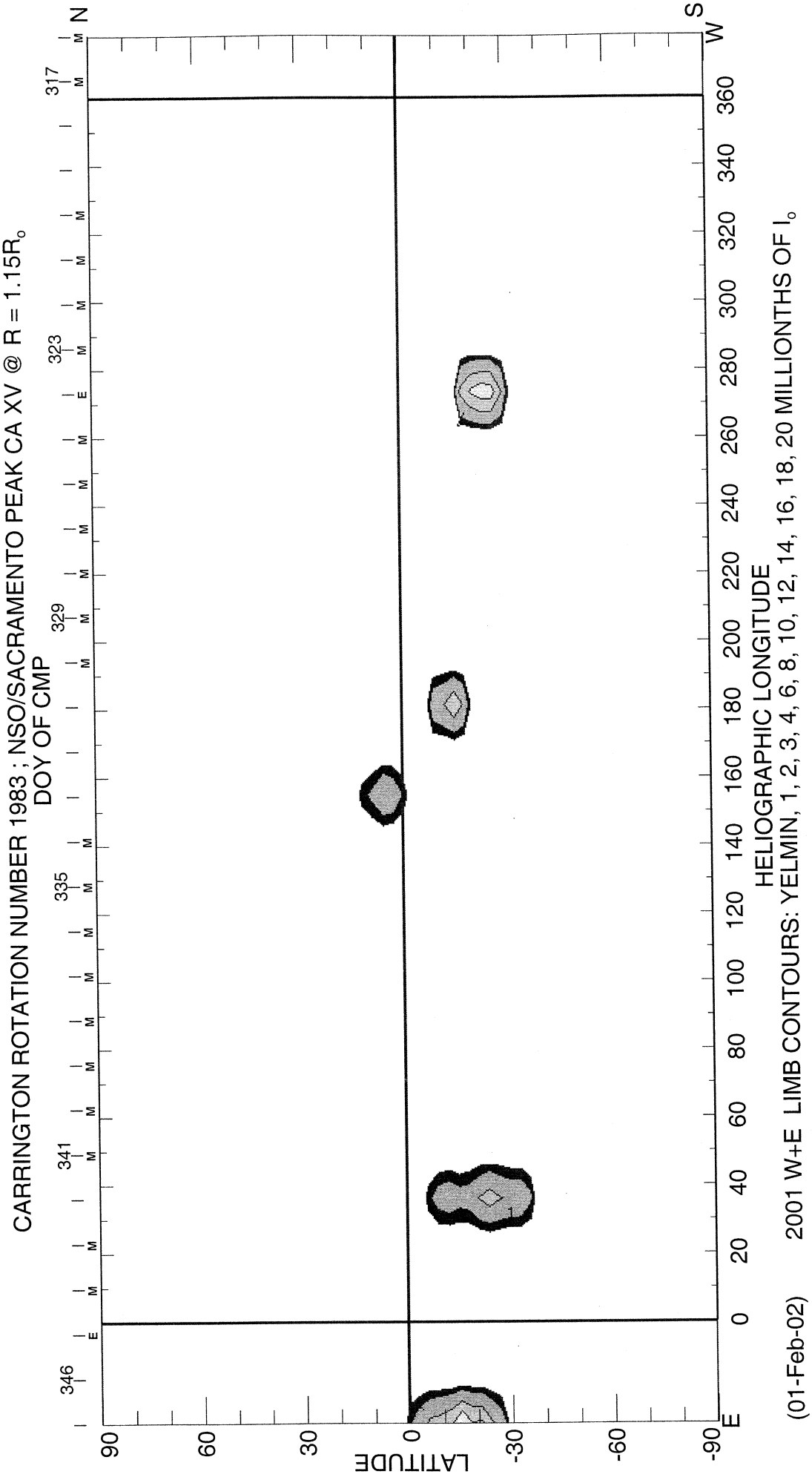


<I> = 1.69μ

(15-Feb-02)

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

τεξ Φρι, Φεβ 15 13:07:32 2002



SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1983

(13 November to 10 December 2001)

National Solar Observatory/Kitt Peak

Dates of Observation

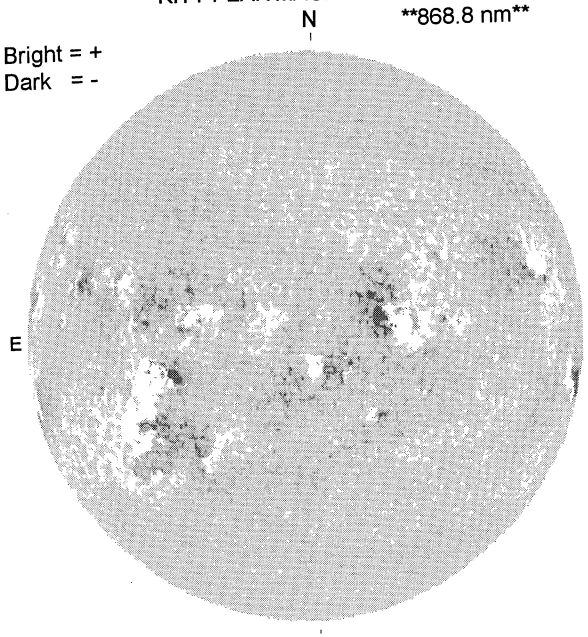
PHOTOGRAPHIC DATA UNAVAILABLE AT TIME OF PUBLICATION.

Heliographic Longitude

DECEMBER 1, 2001 (P= 16.09, Bo = 0.87, Lo = 128.13)

KITT PEAK MAGNETOGRAM
868.8 nm

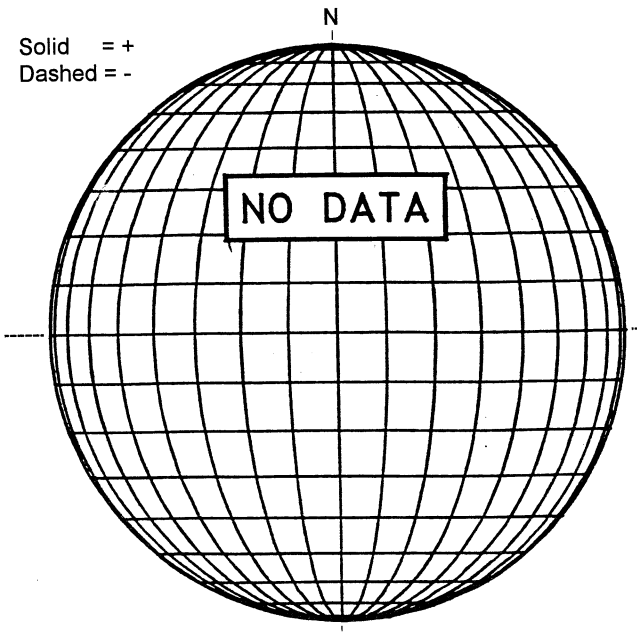
Bright = +
Dark = -



1550 UT

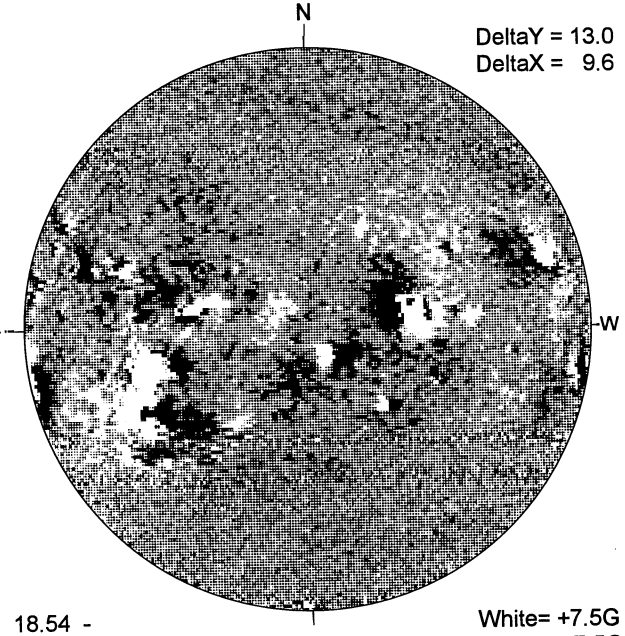
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

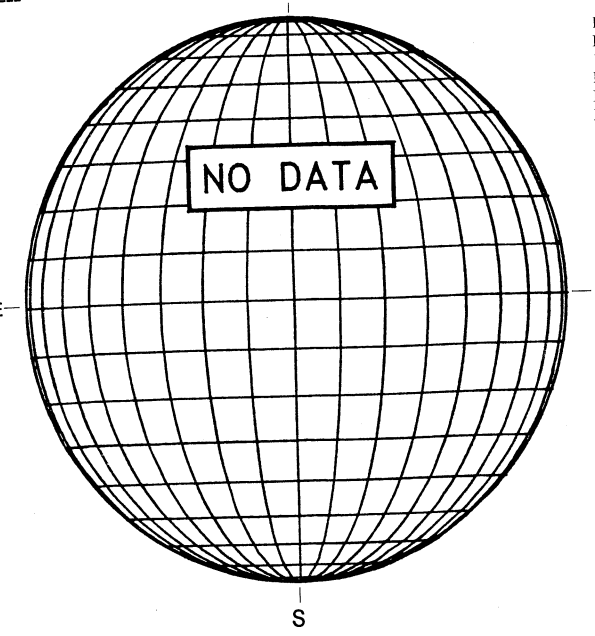
DeltaY = 13.0
DeltaX = 9.6



18.54 -
19.52 UT

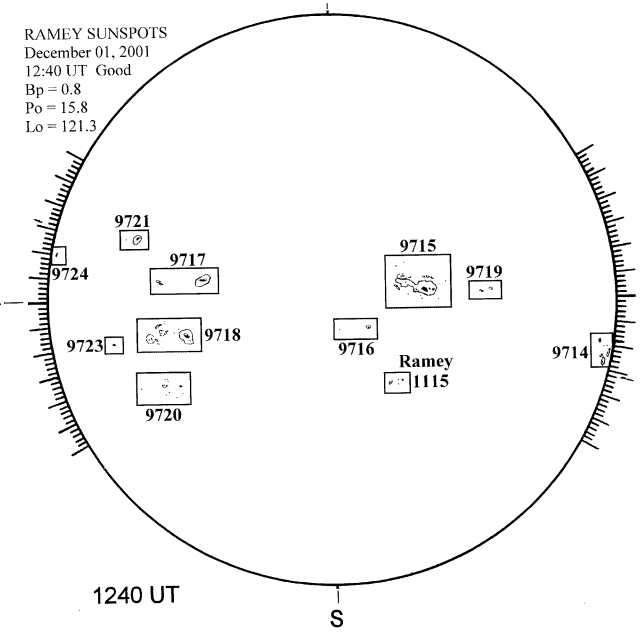
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



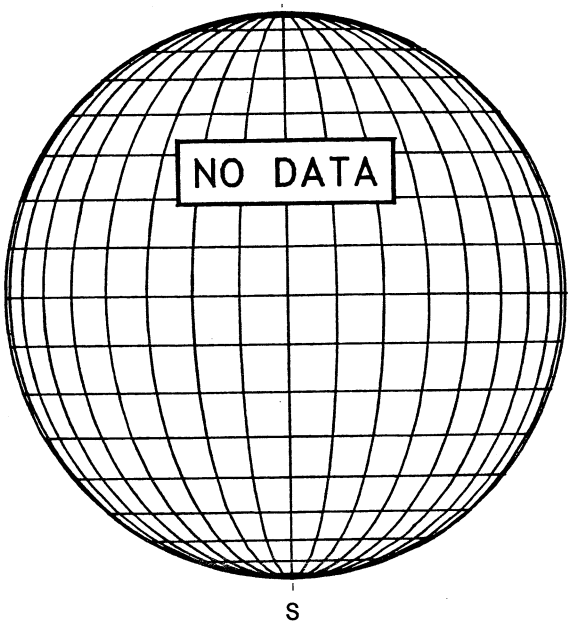
RAMEY SUNSPOT

RAMEY SUNSPOTS
December 01, 2001
12:40 UT Good
Bp = 0.8
Po = 15.8
Lo = 121.3



1240 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

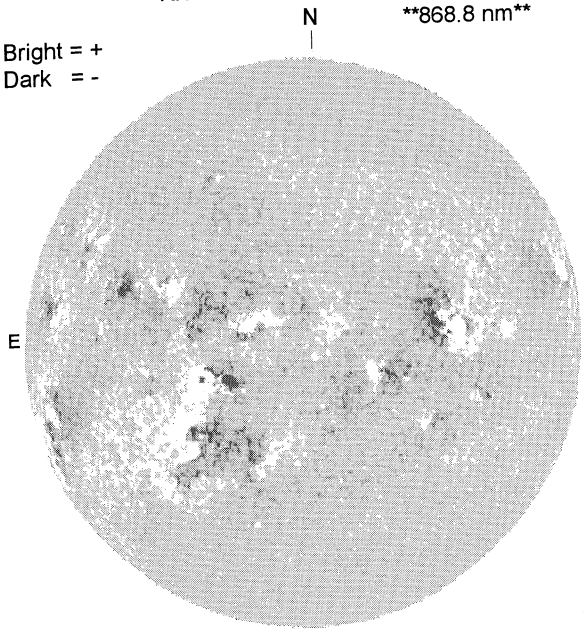


DECEMBER 2, 2001 (P= 15.70, Bo = 0.75, Lo = 114.95)

KITT PEAK MAGNETOGRAM

868.8 nm

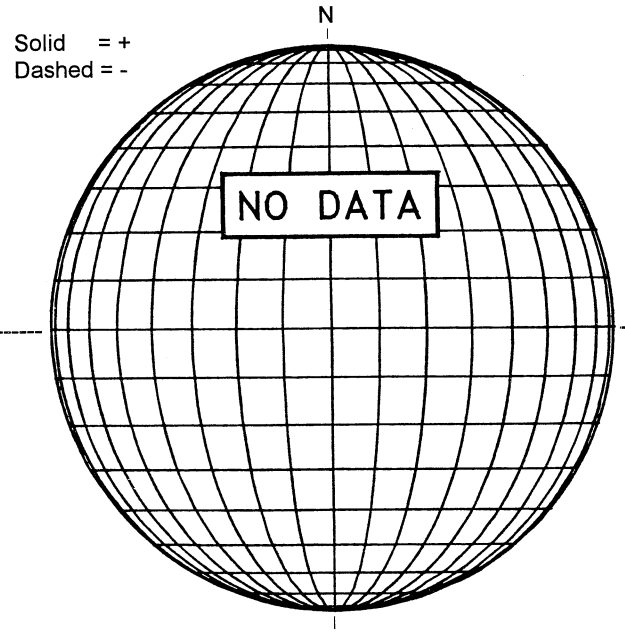
Bright = +
Dark = -



1546 UT

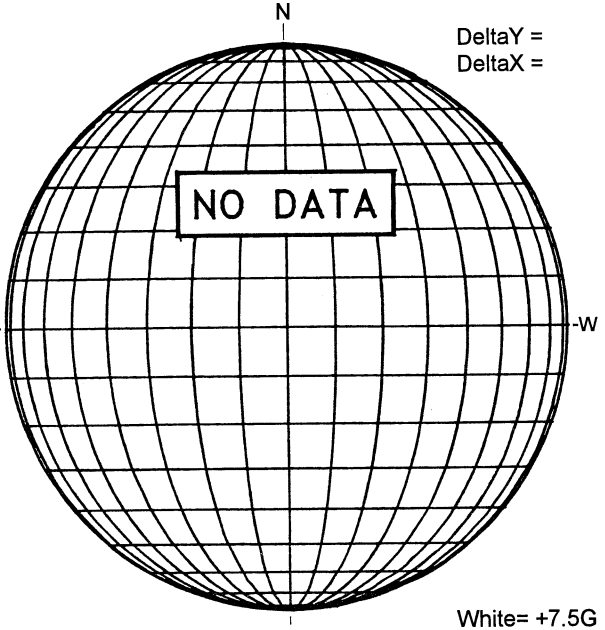
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



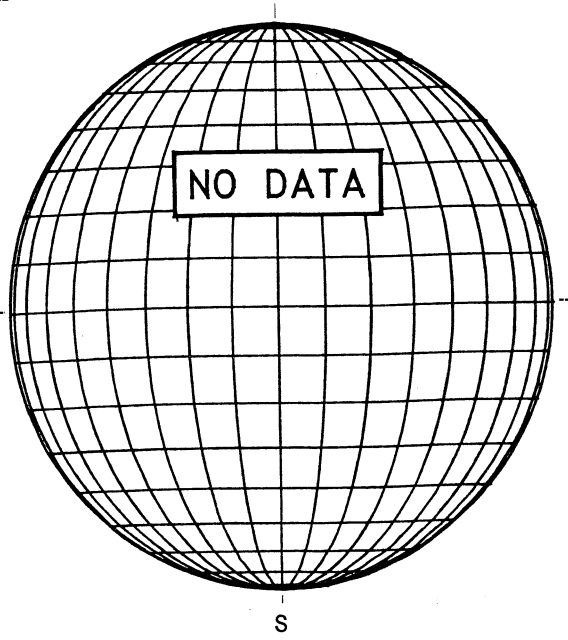
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

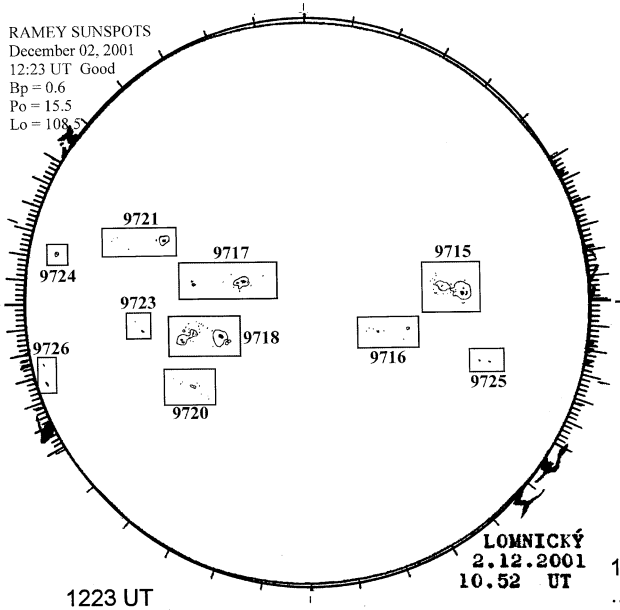


White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

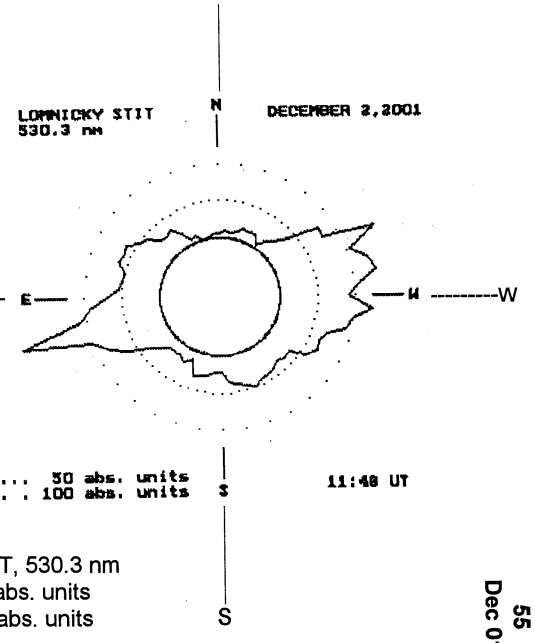


RAMEY SUNSPOT



1223 UT
1052 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----

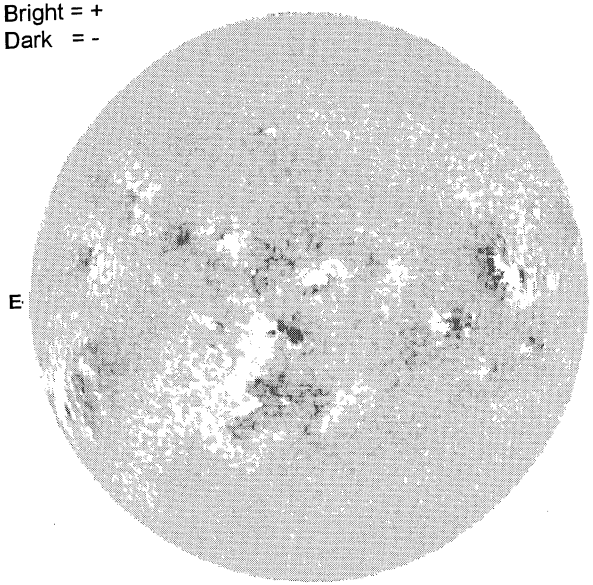


1148 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

55
Dec 01

DECEMBER 3, 2001 (P= 15.31, Bo = 0.62, Lo = 101.77)

KITT PEAK MAGNETOGRAM
N
868.8 nm
Bright = +
Dark = -
E



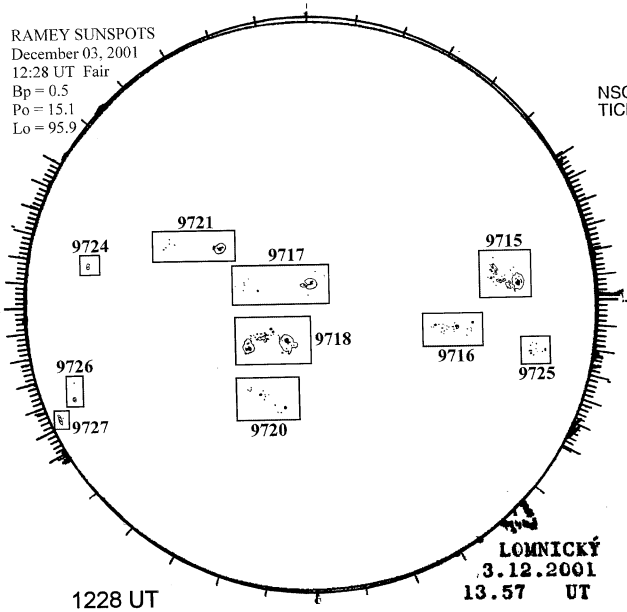
1552 UT

STANFORD MAGNETOGRAM
N
Solid = +
Dashed = -
NO DATA

MT. WILSON MAGNETOGRAM
N
DeltaY =
DeltaX =
NO DATA
W
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA
NO DATA
E
S

RAMEY SUNSPOT



1228 UT
1357 UT LOMN Prom S

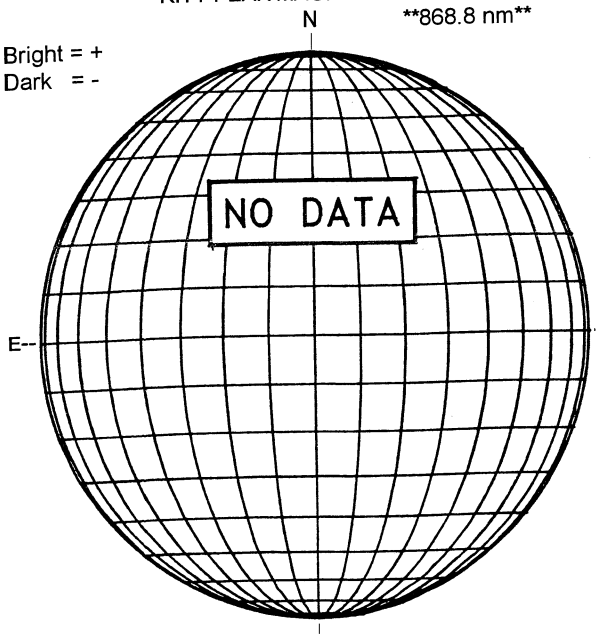
SACRAMENTO PEAK CORONA (1.15 Radii)----
NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS
N⊙
E
W
W
S
12/03/01
(DOY 337)
FE XIV 16:48 UT 1.15 R⊙
FE X 18:18 UT 1.15 R⊙
CA XV 17:27 UT 1.15 R⊙
S

DECEMBER 4, 2001 (P= 14.91, Bo = 0.49, Lo = 88.59)

KITT PEAK MAGNETOGRAM

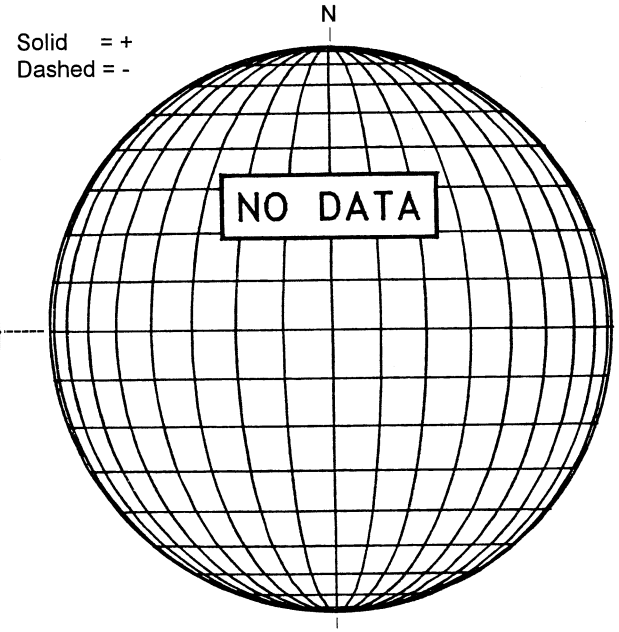
868.8 nm

Bright = +
Dark = -



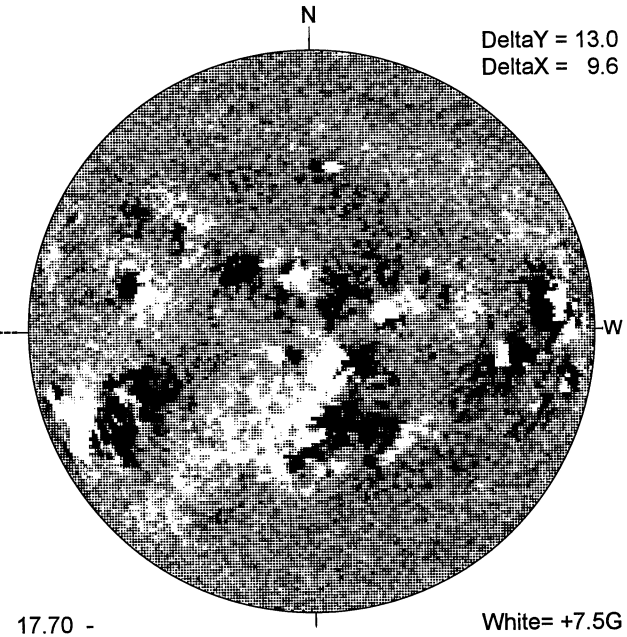
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

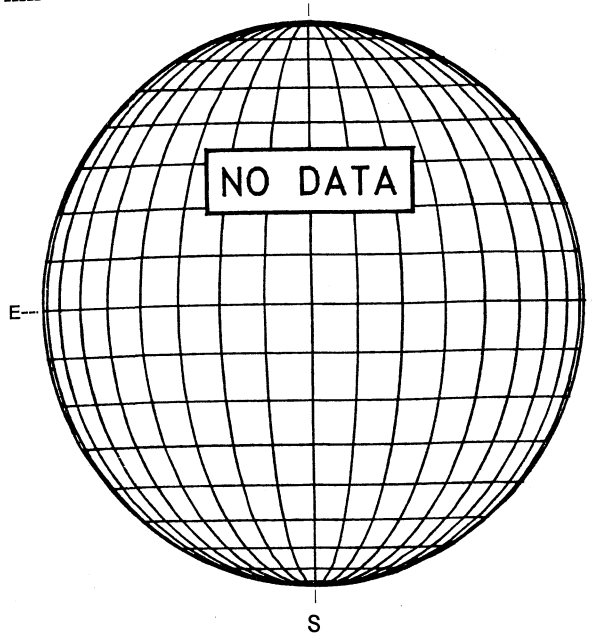
DeltaY = 13.0
DeltaX = 9.6



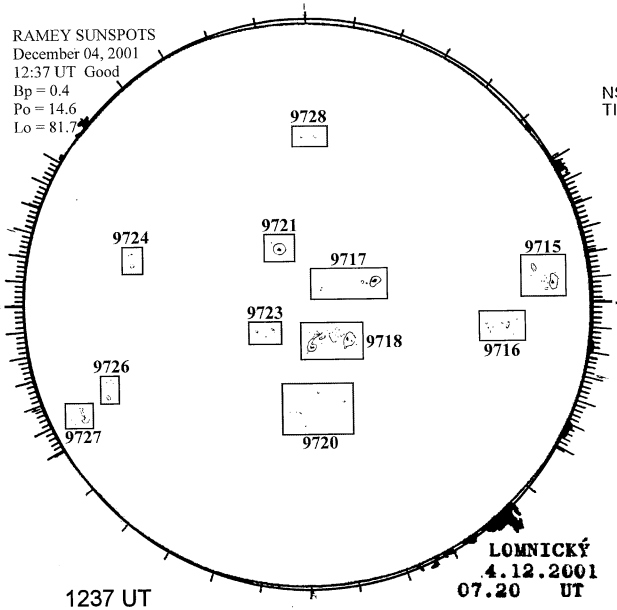
17.70 -
18.67 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

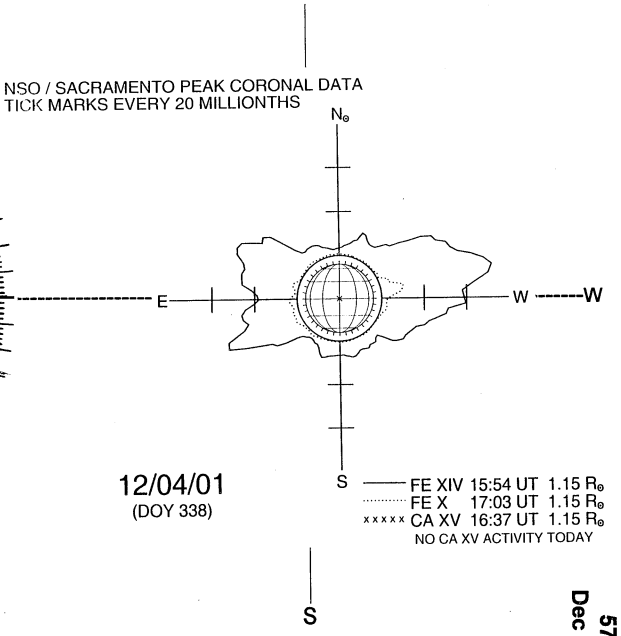


RAMEY SUNSPOT



1237 UT
0720 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



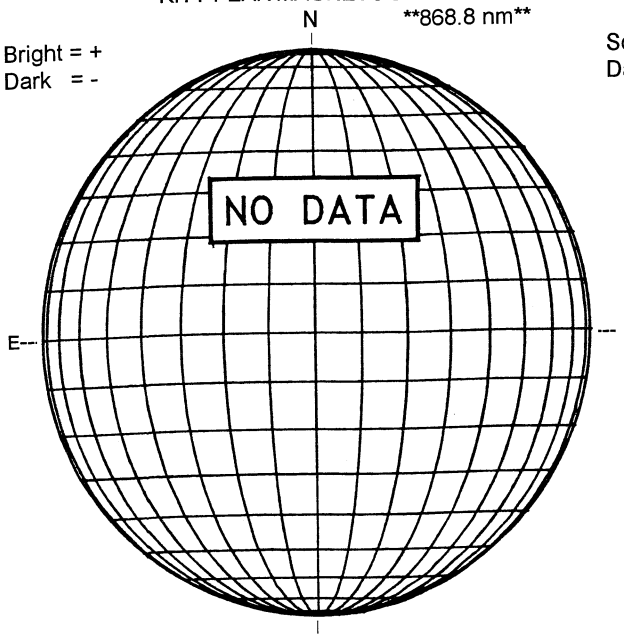
12/04/01
(DOY 338)

FE XIV 15:54 UT 1.15 R⊙
FE X 17:03 UT 1.15 R⊙
CA XV 16:37 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

57
Dec 01

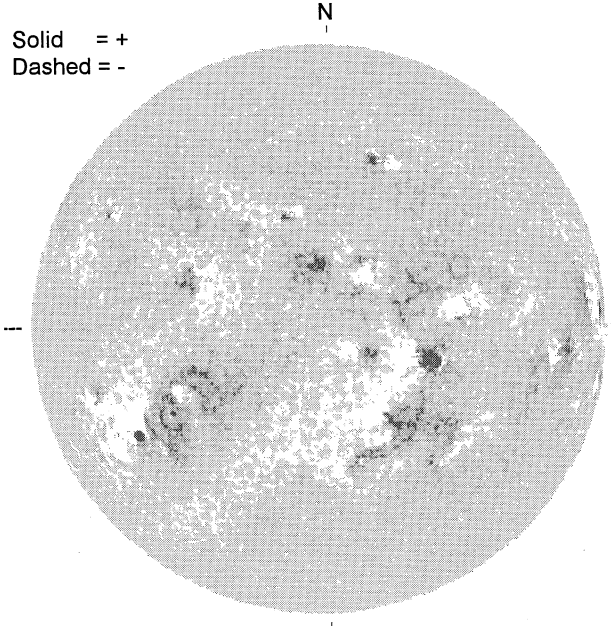
DECEMBER 5, 2001 (P= 14.50, Bo = 0.36, Lo = 75.41)

KITT PEAK MAGNETOGRAM

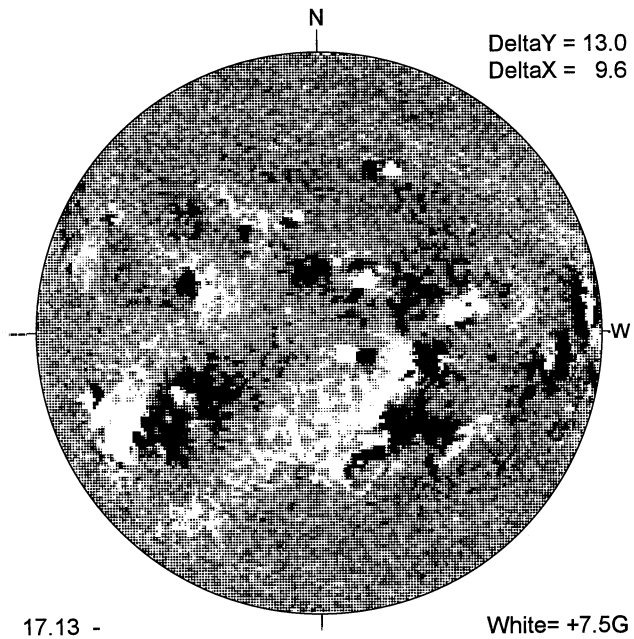


1651 UT

STANFORD MAGNETOGRAM



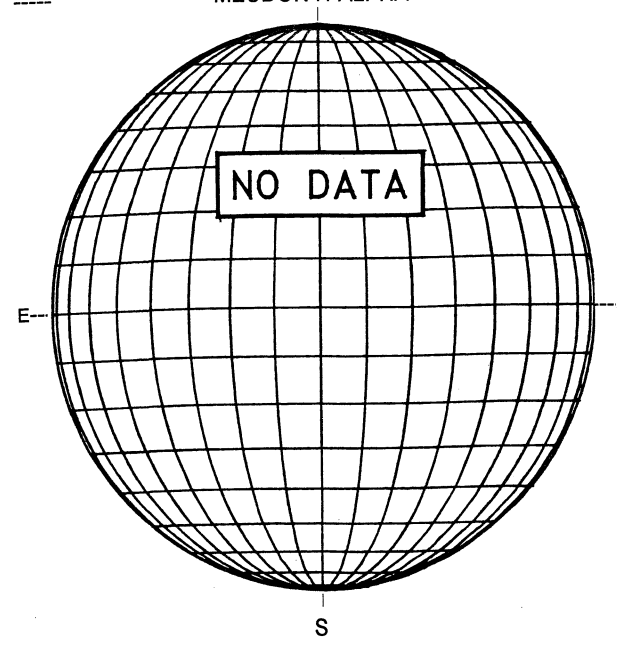
MT. WILSON MAGNETOGRAM



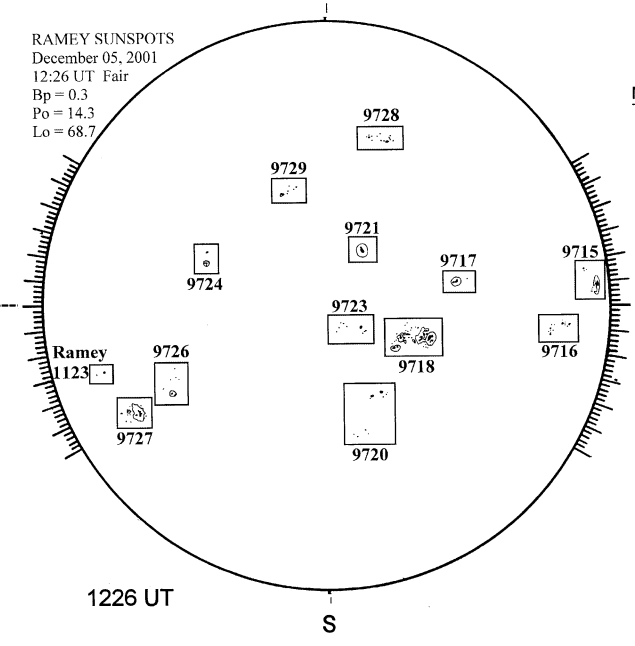
17.13 -
18.11 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

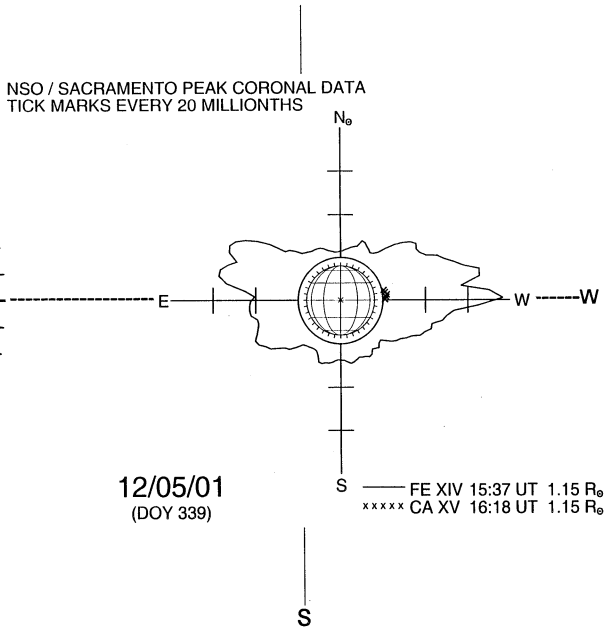


RAMEY SUNSPOT



1226 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



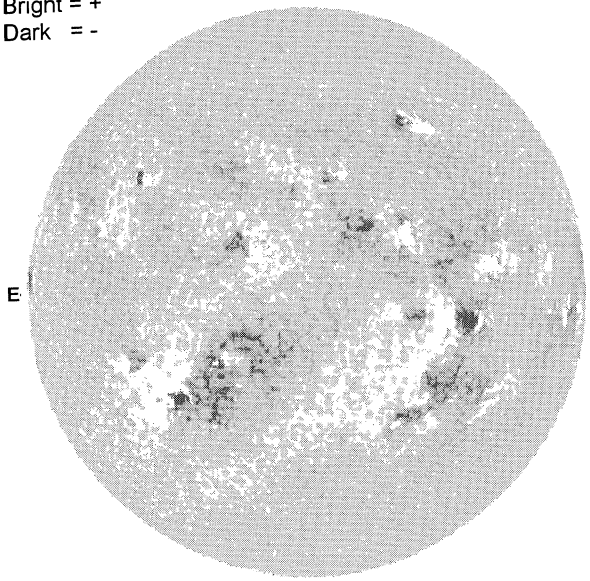
12/05/01
(DOY 339)

DECEMBER 6, 2001 (P= 14.09, Bo = 0.24, Lo = 62.24)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -



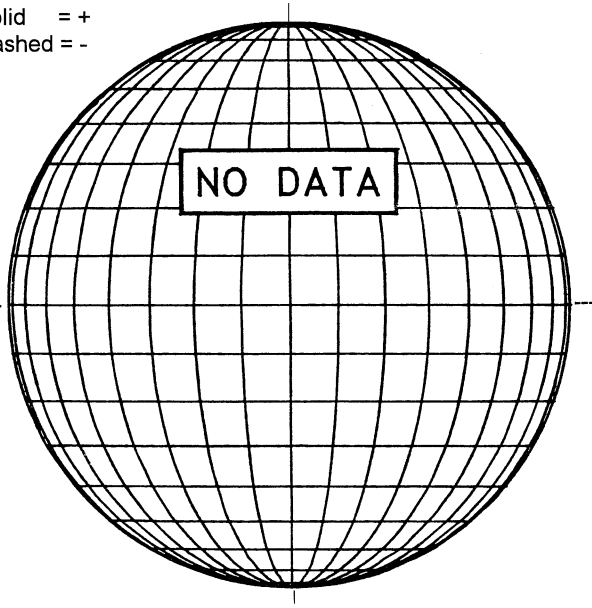
E

1618 UT

STANFORD MAGNETOGRAM

N

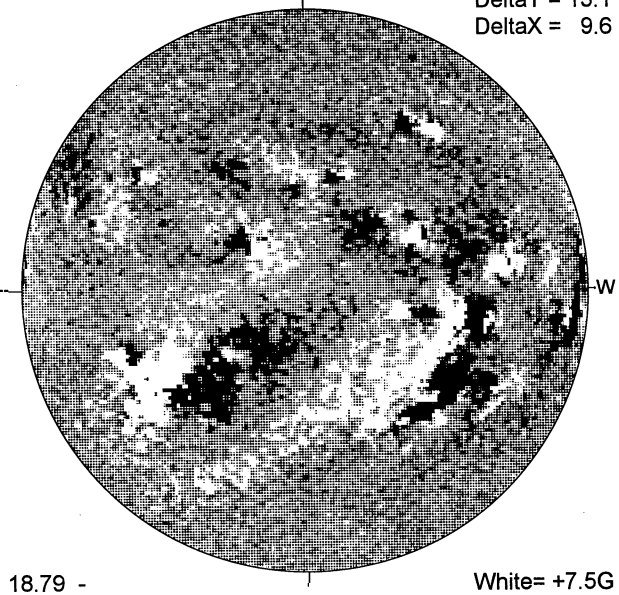
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

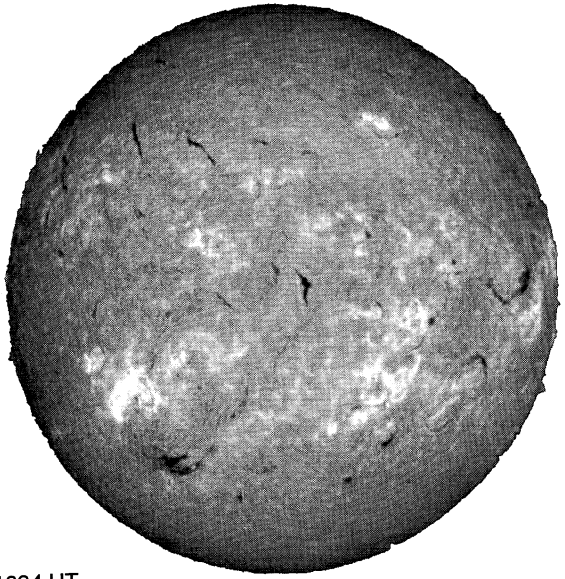


W

18.79 -
19.77 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

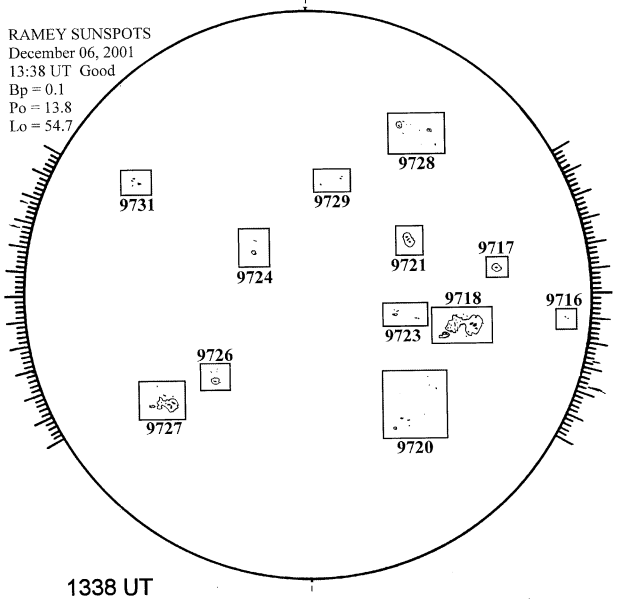


E

1034 UT

S

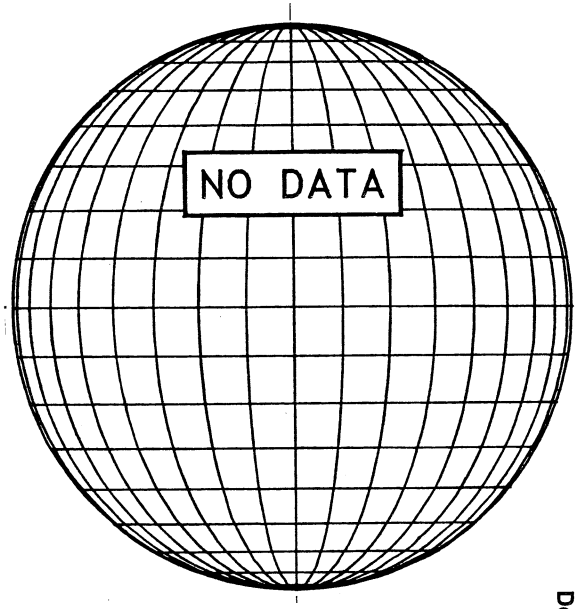
RAMEY SUNSPOT



1338 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



S

59
Dec 01

DECEMBER 7, 2001 (P= 13.68, Bo = 0.11, Lo = 49.06)

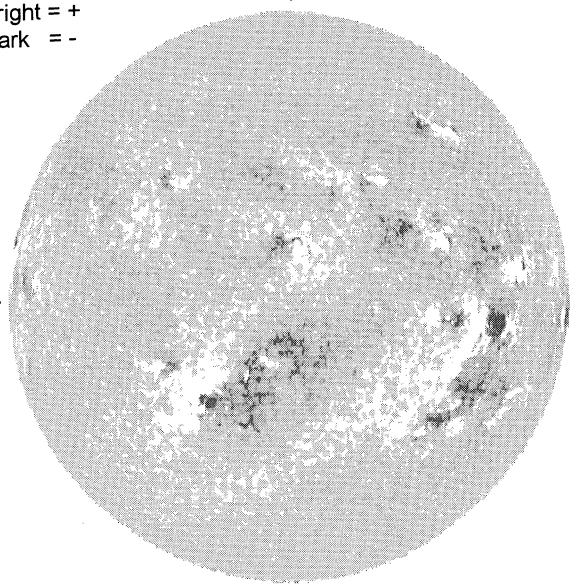
KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

E



1554 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

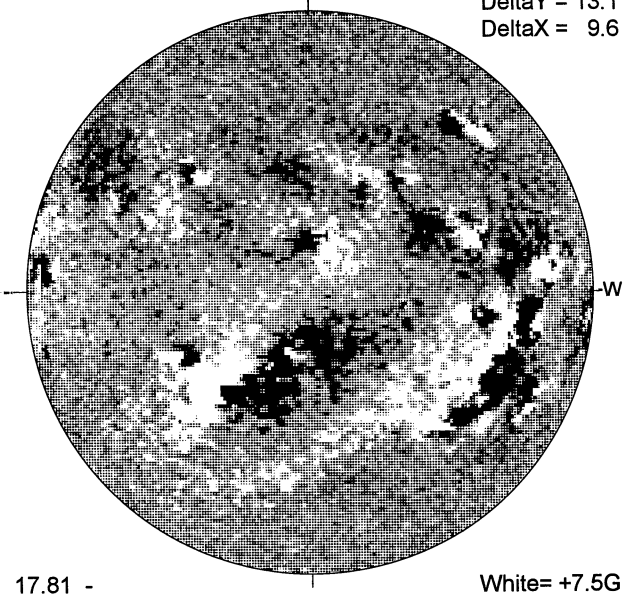
2206 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

W

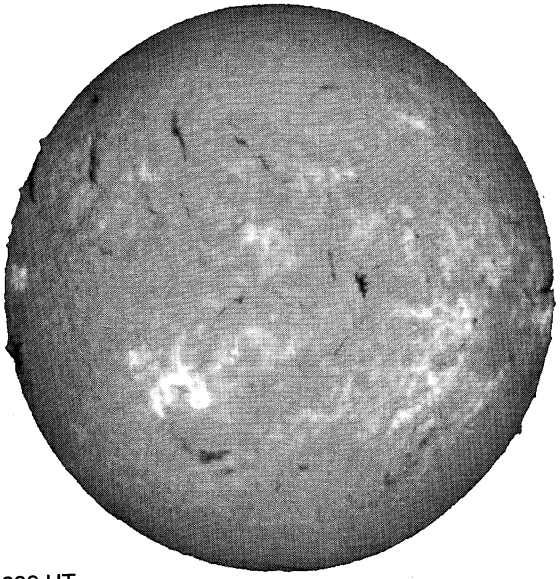


17.81 -
18.78 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

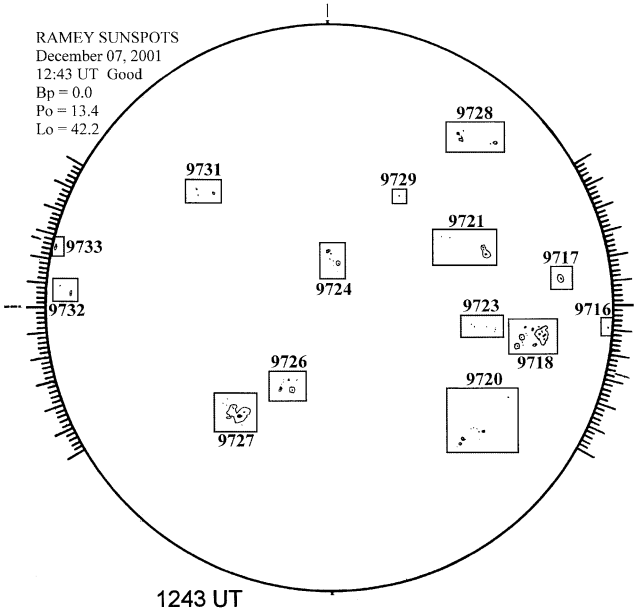
E



0839 UT

S

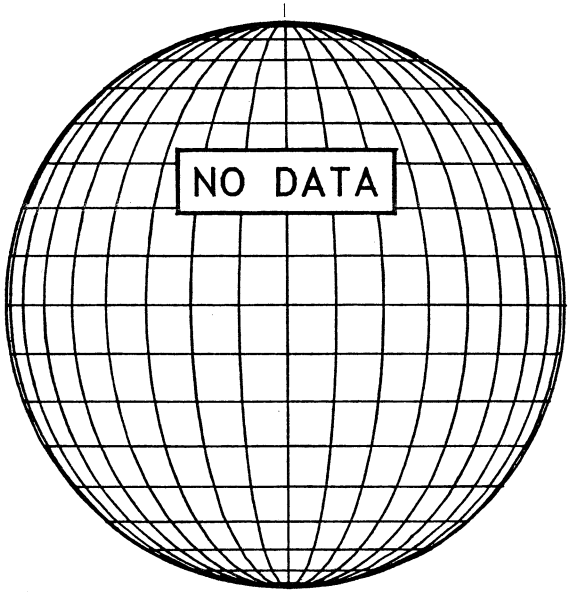
RAMEY SUNSPOTS



1243 UT

S

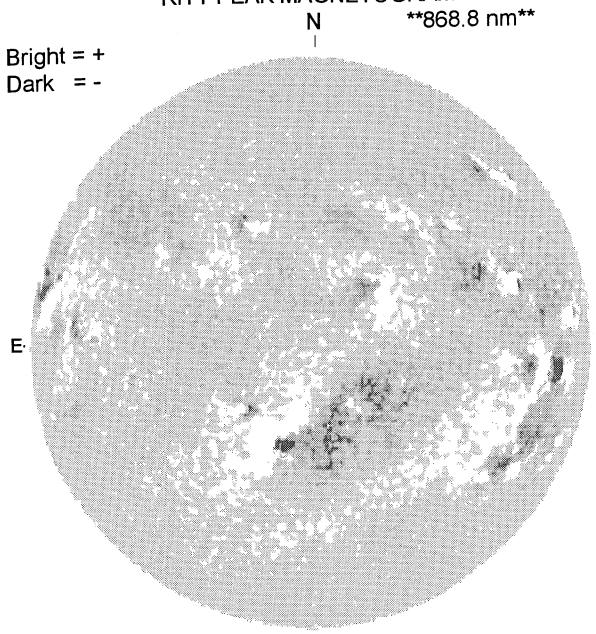
SACRAMENTO PEAK CORONA (1.15 Radii)----



S

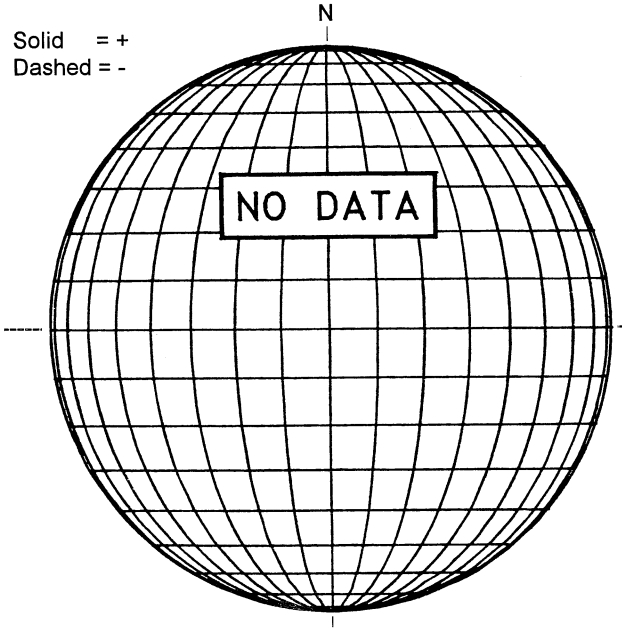
DECEMBER 8, 2001 (P= 13.26, Bo = -0.02, Lo = 35.88)

KITT PEAK MAGNETOGRAM

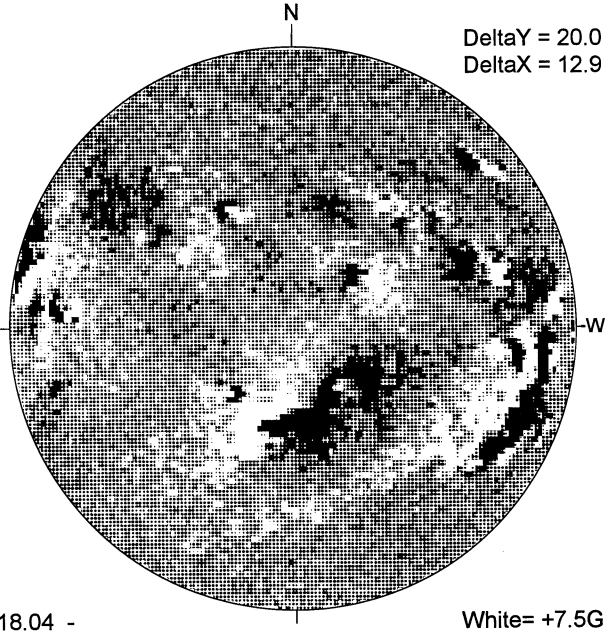


1558 UT

STANFORD MAGNETOGRAM



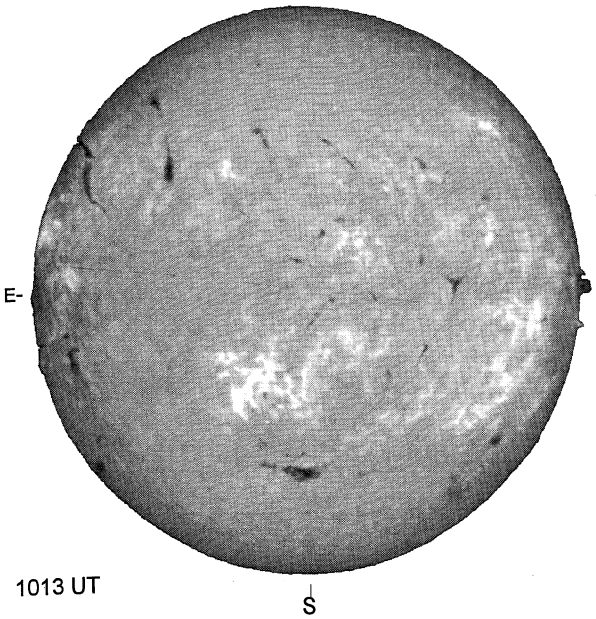
MT. WILSON MAGNETOGRAM



18.04 -
18.47 UT

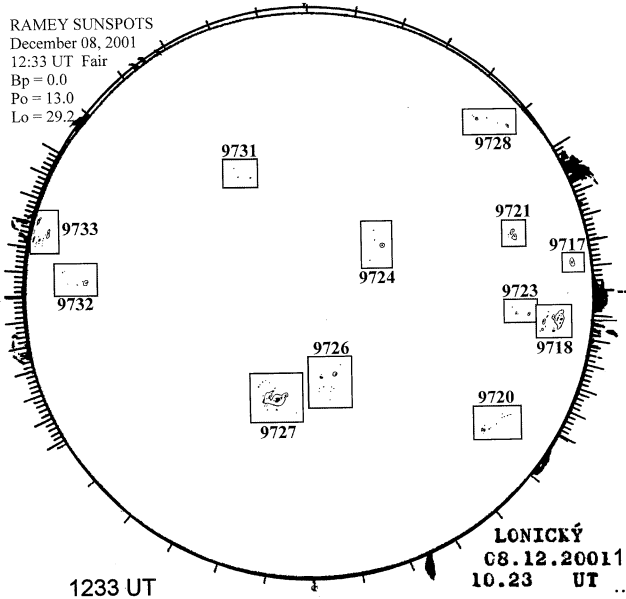
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



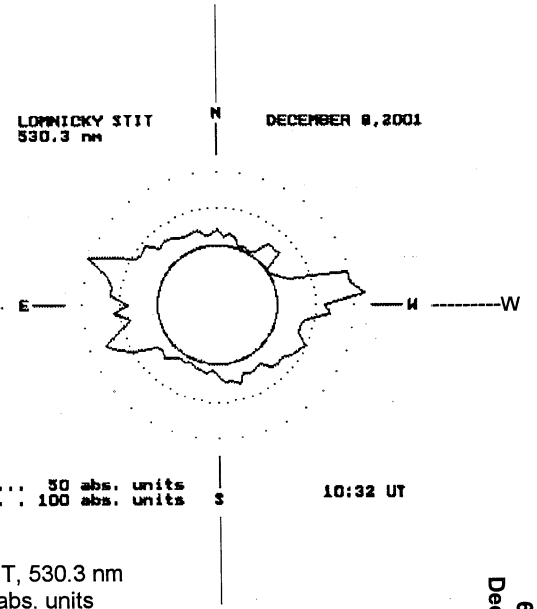
1013 UT

RAMEY SUNSPOT



1233 UT
1023 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



LONICKÝ
08.12.2001 1032 UT, 530.3 nm
10.23 UT .... 50 abs. units
. . 100 abs. units

61
Dec 01

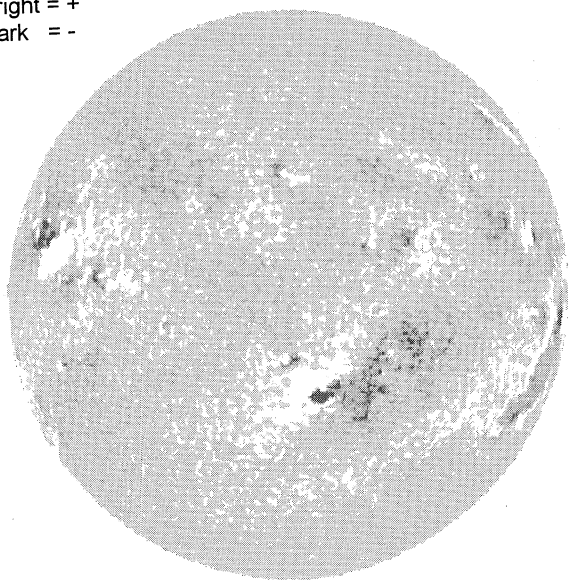
DECEMBER 9, 2001 (P= 12.83, Bo = -0.15, Lo = 22.70)

KITT PEAK MAGNETOGRAM

N **868.8 nm

Bright = +
Dark = -

E



1707 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

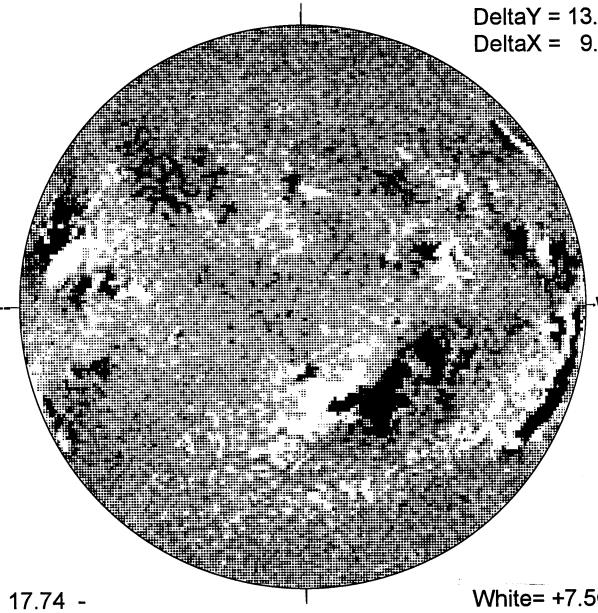
NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

W

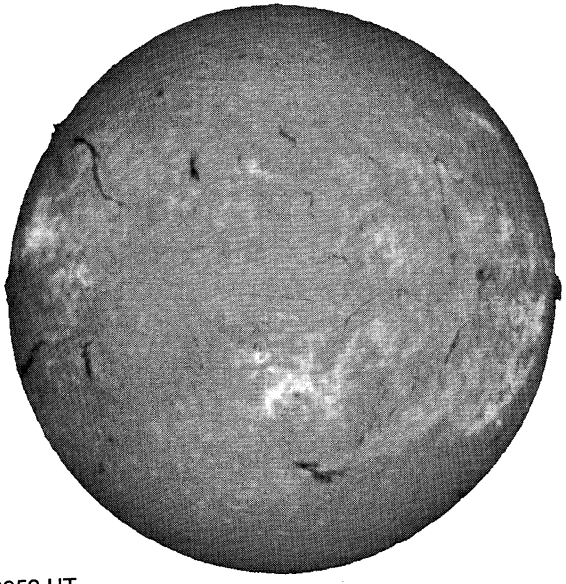


17.74 -
18.71 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

E

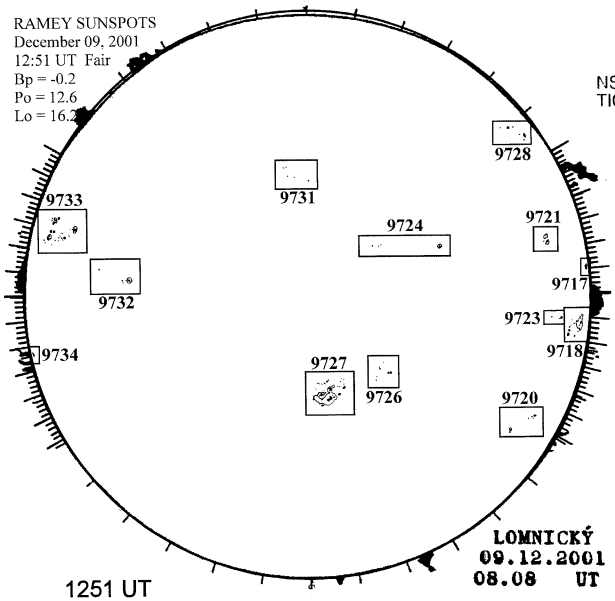


0953 UT

S

RAMEY SUNSPOT

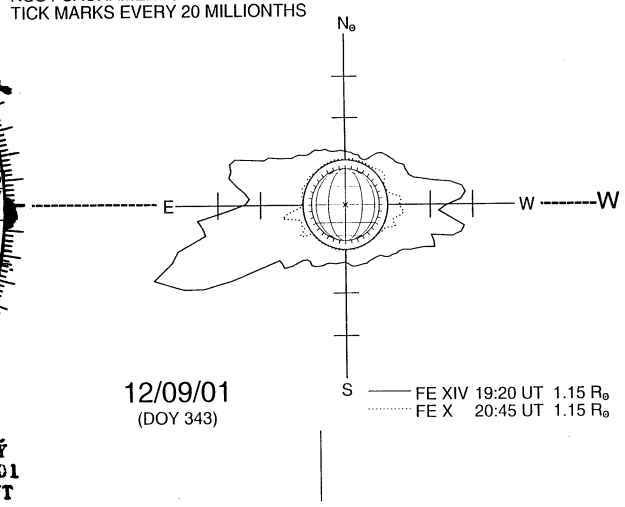
RAMEY SUNSPOTS
December 09, 2001
12:51 UT Fair
Bp = -0.2
Po = 12.6
Lo = 16.2



1251 UT
0808 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



12/09/01
(DOY 343)

FE XIV 19:20 UT 1.15 R⊙
FE X 20:45 UT 1.15 R⊙

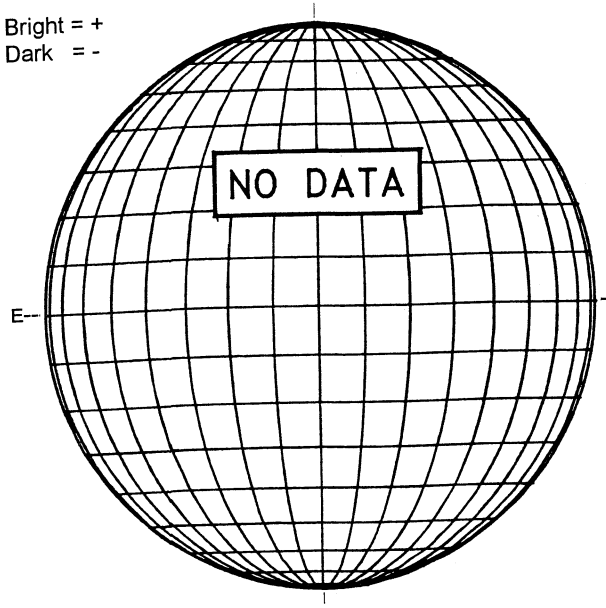
S

DECEMBER 10, 2001 (P= 12.40, Bo = -0.28 Lo = 9.53)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



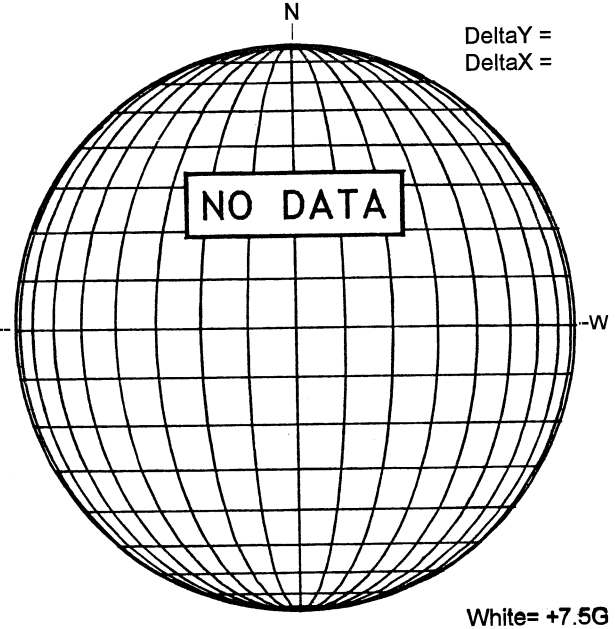
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

1858 UT

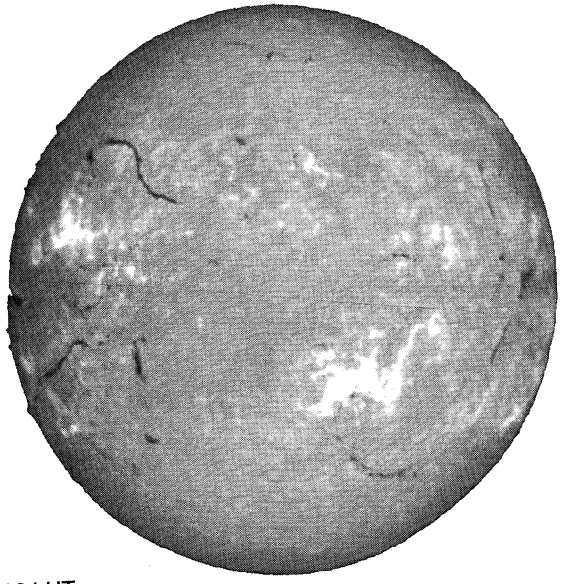
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



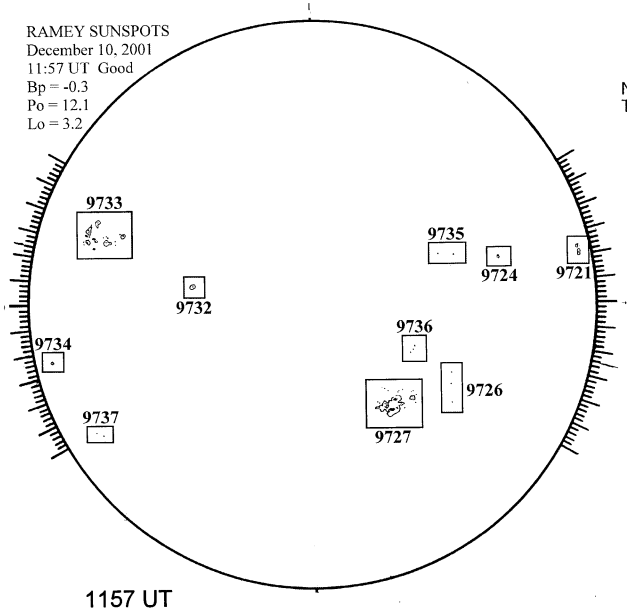
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



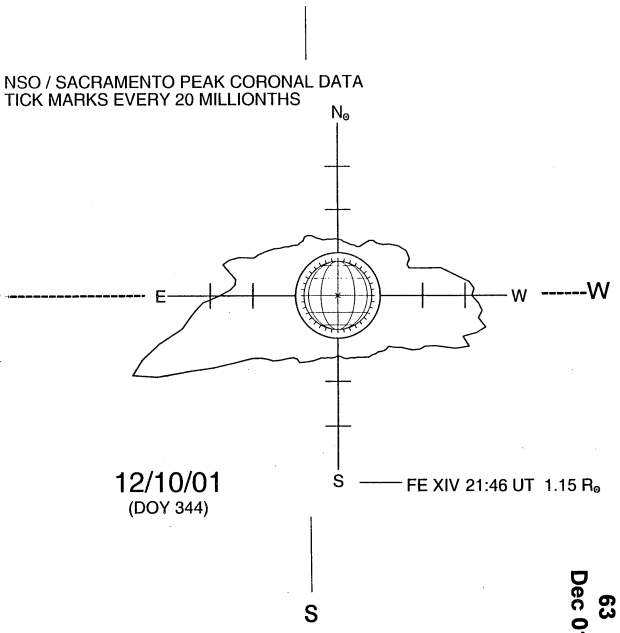
0904 UT

RAMEY SUNSPOTS



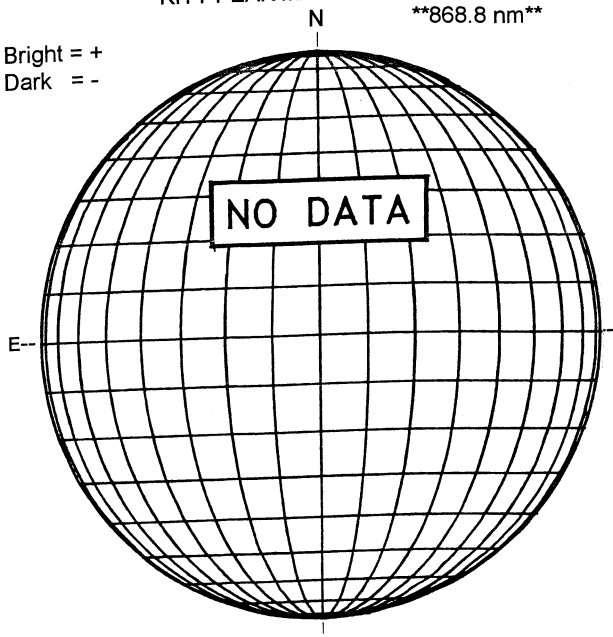
1157 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

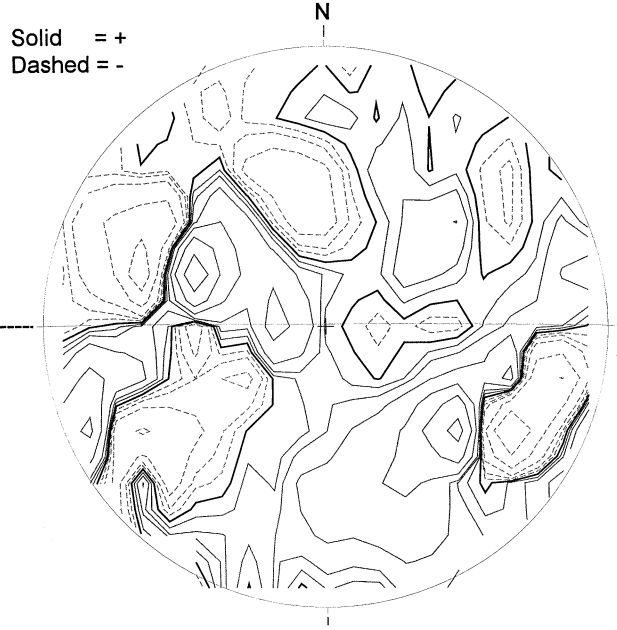


DECEMBER 11, 2001 (P= 11.97, Bo = -0.40, Lo = 356.35)

KITT PEAK MAGNETOGRAM

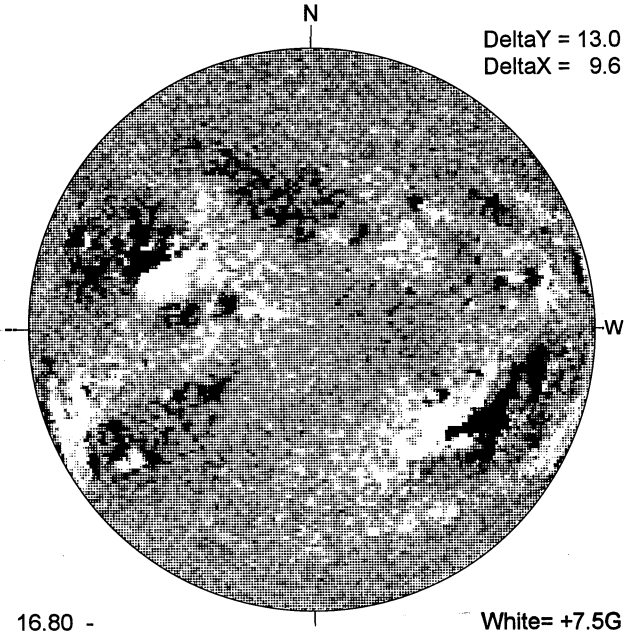


STANFORD MAGNETOGRAM



1900 UT

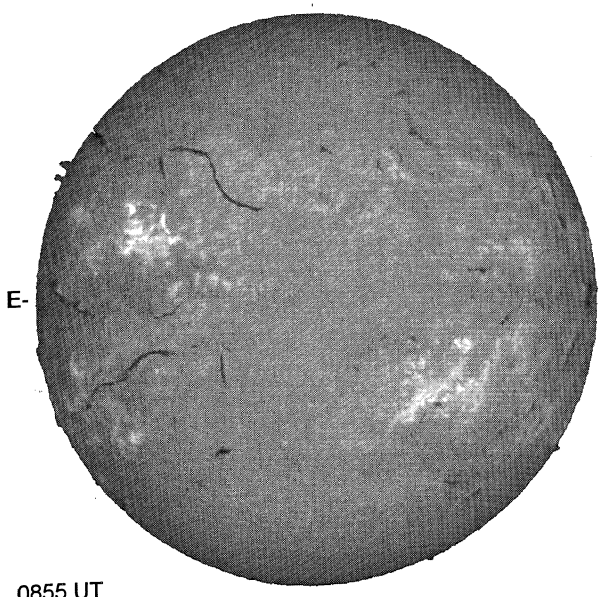
MT. WILSON MAGNETOGRAM



16.80 -
17.77 UT

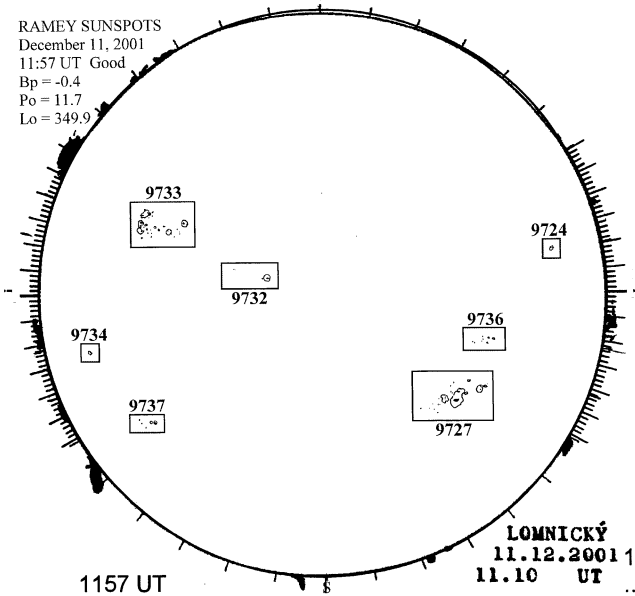
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



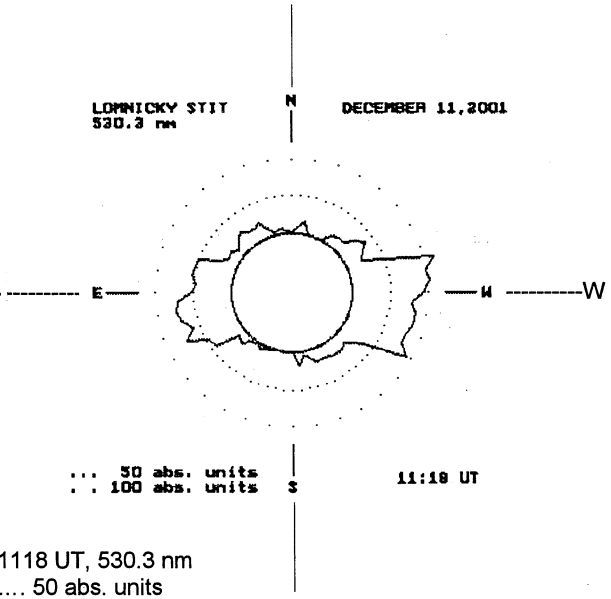
0855 UT

RAMEY SUNSPOTS



1157 UT
1110 UT LOMN Prom

LOMNICKY PEAK CORONA (1.04 Radii)----



LOMNICKÝ
11.12.2001
11.10 UT

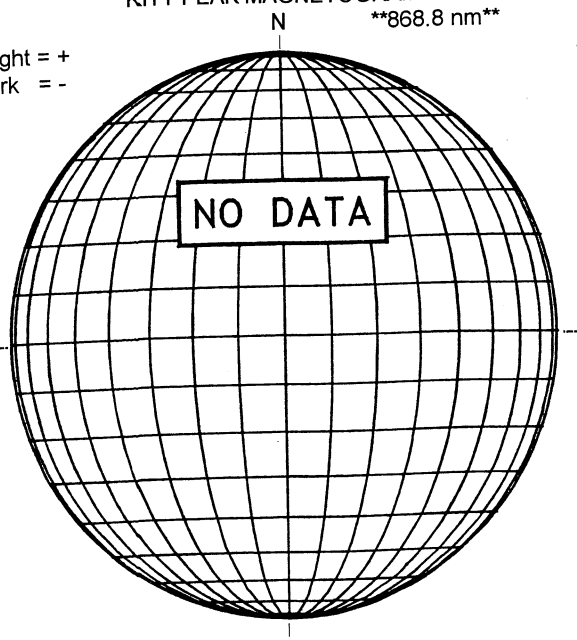
1118 UT, 530.3 nm
.... 50 abs. units
.. 100 abs. units

DECEMBER 12, 2001 (P= 11.53, Bo = -0.53 Lo = 343.18)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



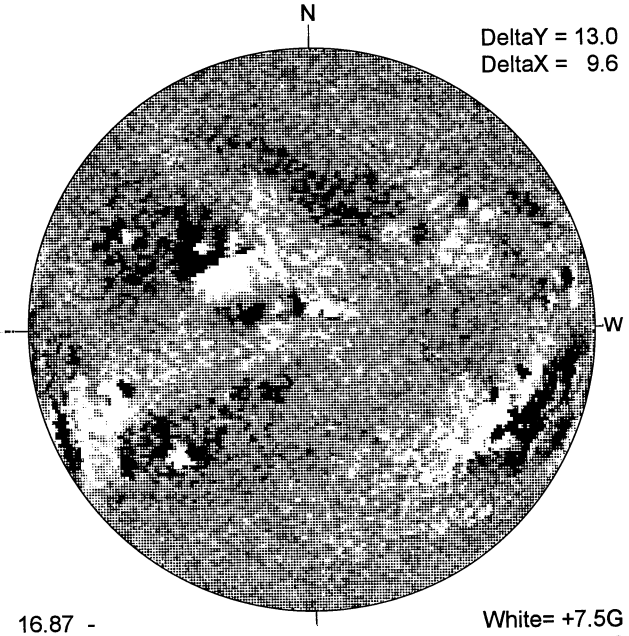
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2055 UT

MT. WILSON MAGNETOGRAM

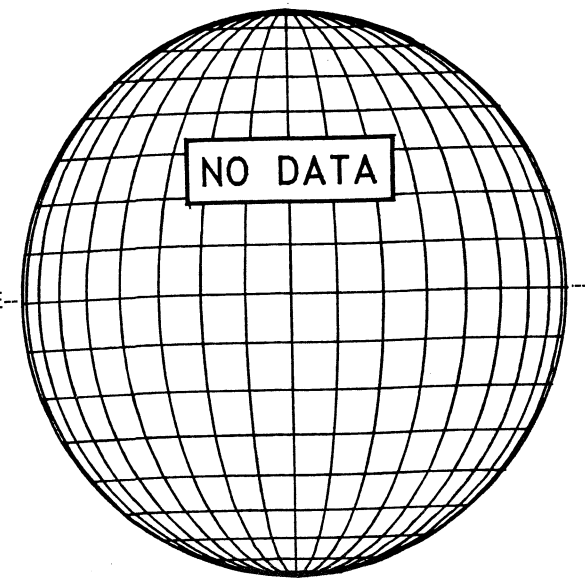
DeltaY = 13.0
DeltaX = 9.6



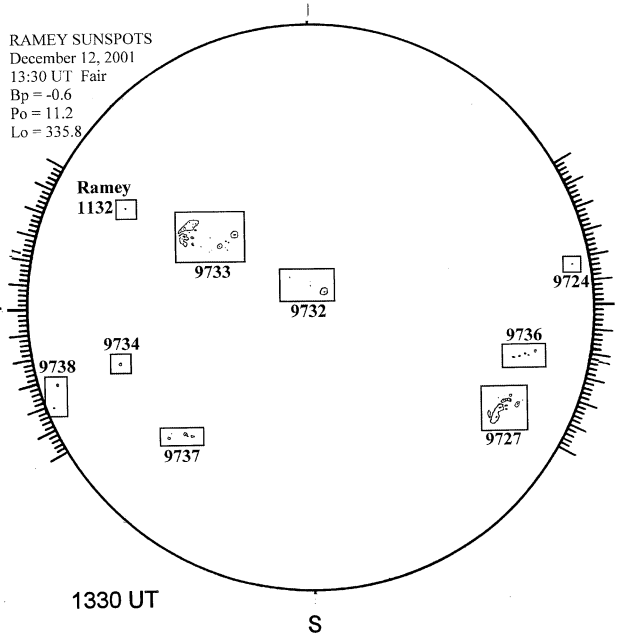
16.87 -
17.85 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

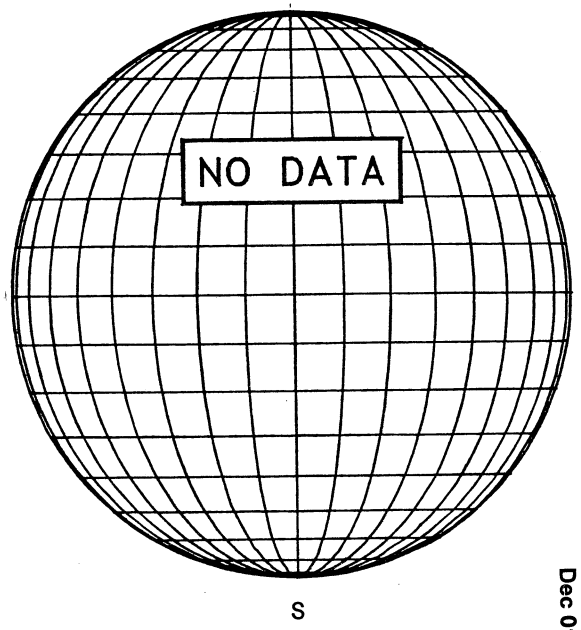


RAMEY SUNSPOTS



1330 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



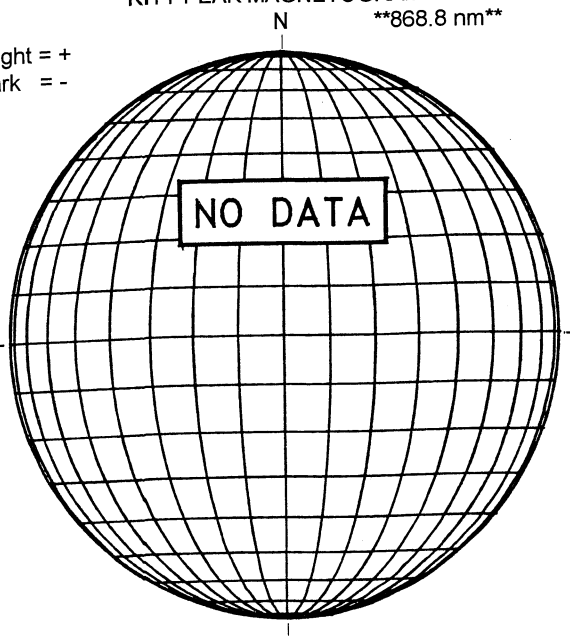
65
Dec 01

DECEMBER 13, 2001 (P= 11.08, Bo = -0.66, Lo = 330.00)

KITT PEAK MAGNETOGRAM

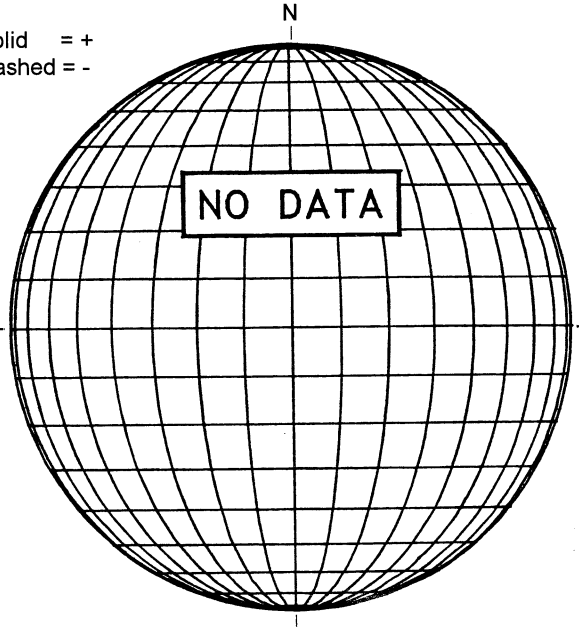
868.8 nm

Bright = +
Dark = -



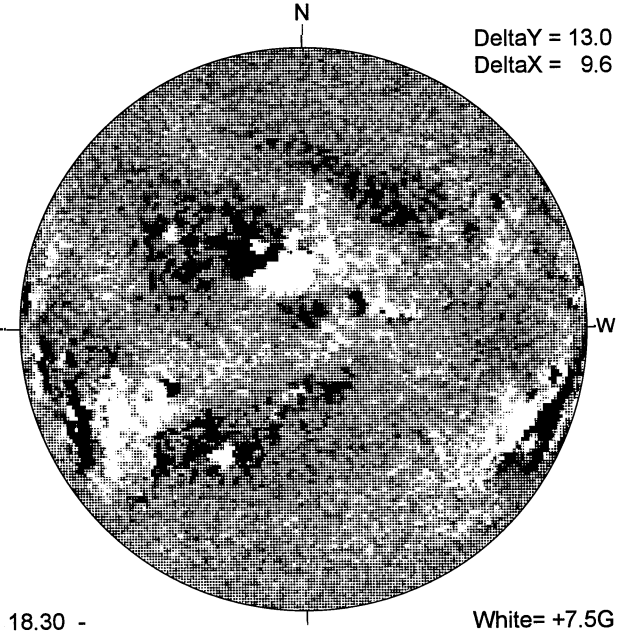
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

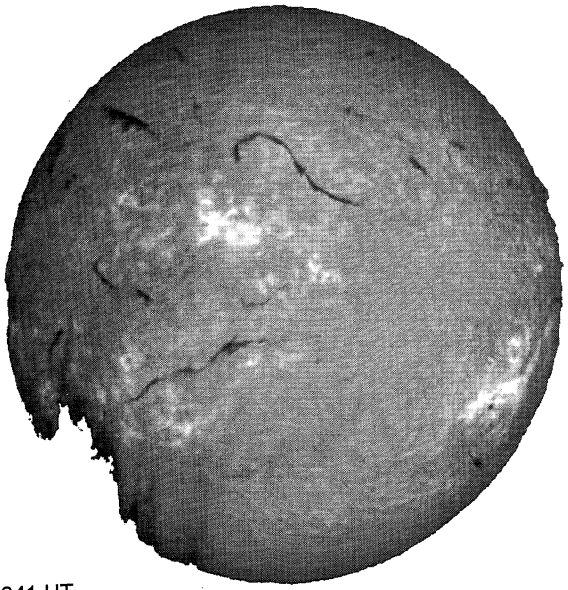
DeltaY = 13.0
DeltaX = 9.6



18.30 -
19.28 UT

White= +7.5G
Black = -7.5G

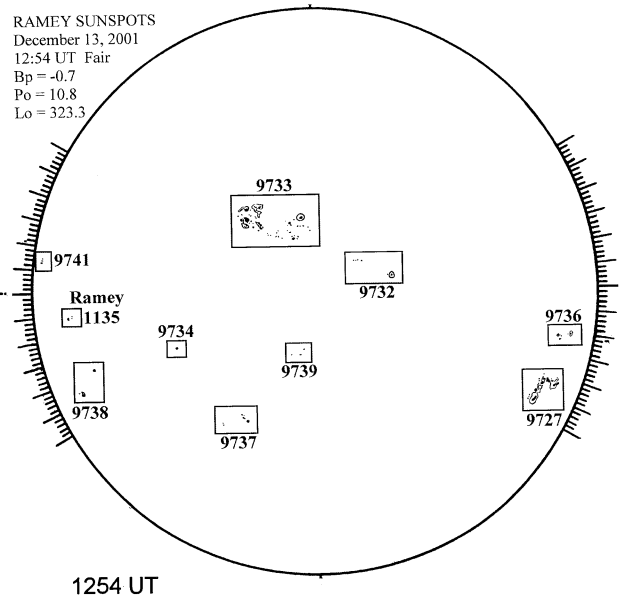
MEUDON H-ALPHA



1041 UT

S

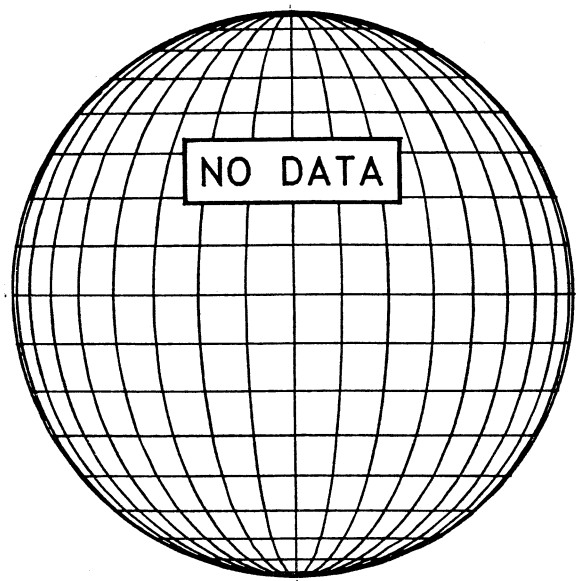
RAMEY SUNSPOT



1254 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----



S

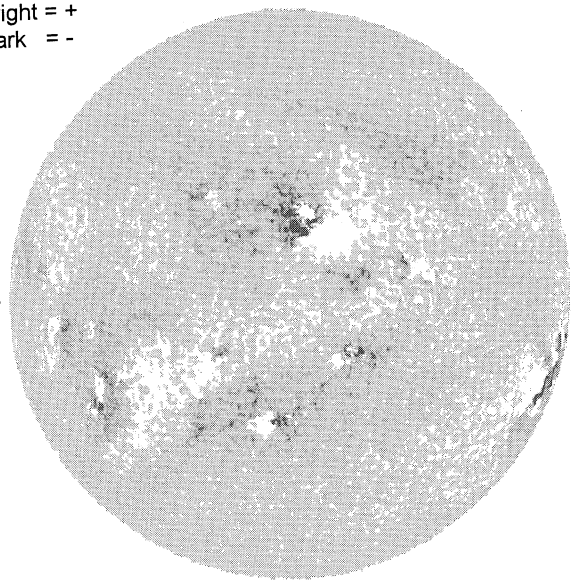
DECEMBER 14, 2001 (P= 10.64, Bo = -0.79, Lo = 316.83)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



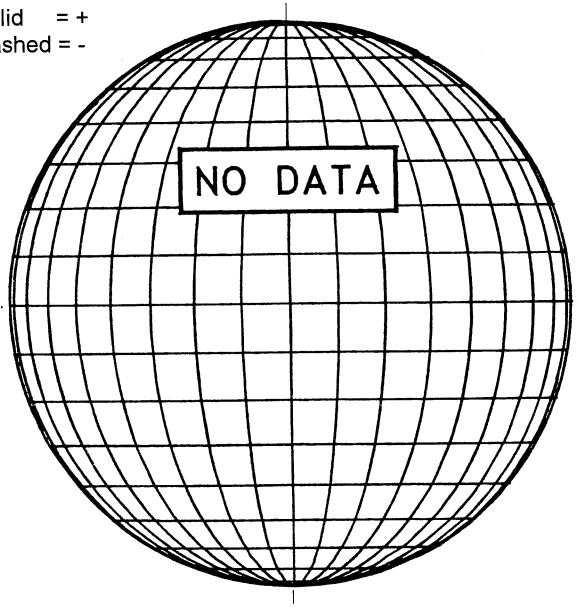
E

1728 UT

STANFORD MAGNETOGRAM

N

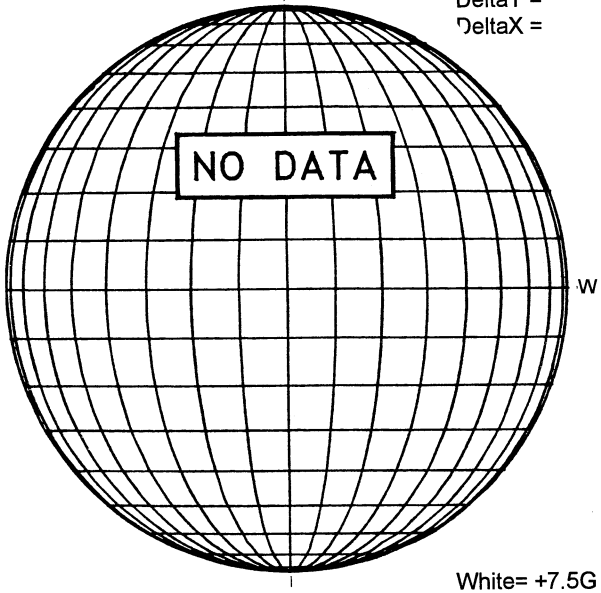
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

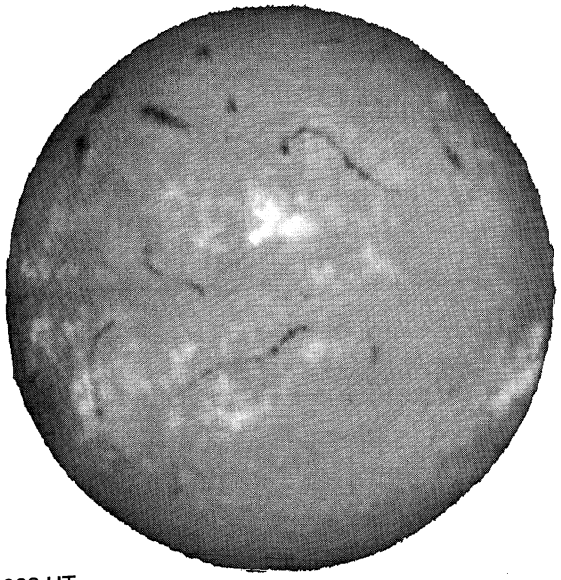
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

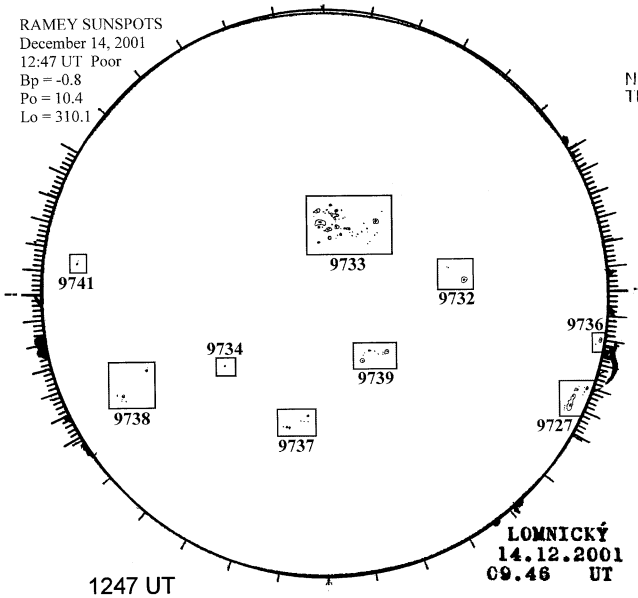


E

0908 UT

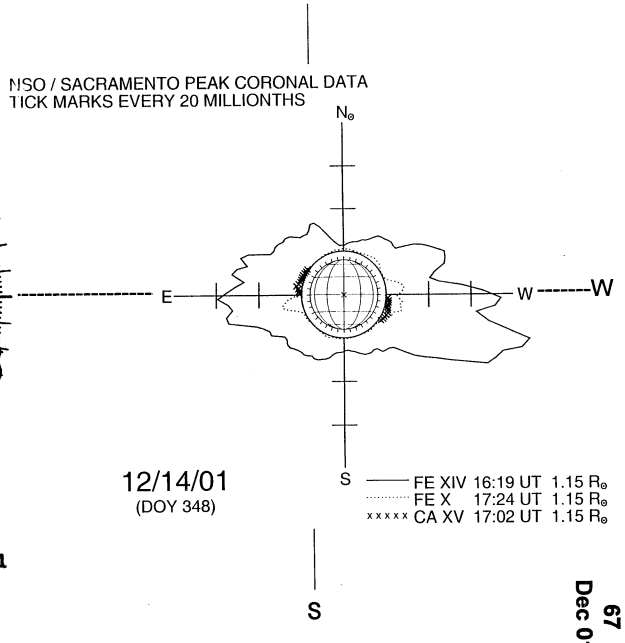
S

RAMEY SUNSPOT



1247 UT
0946 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----

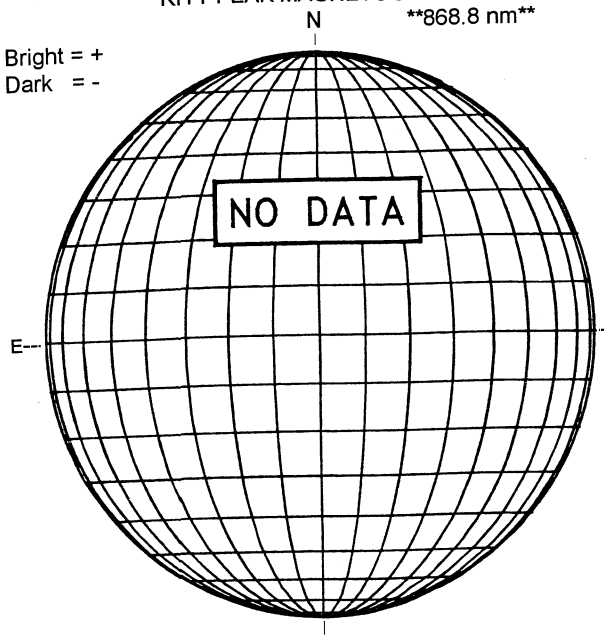


12/14/01
(DOY 348)

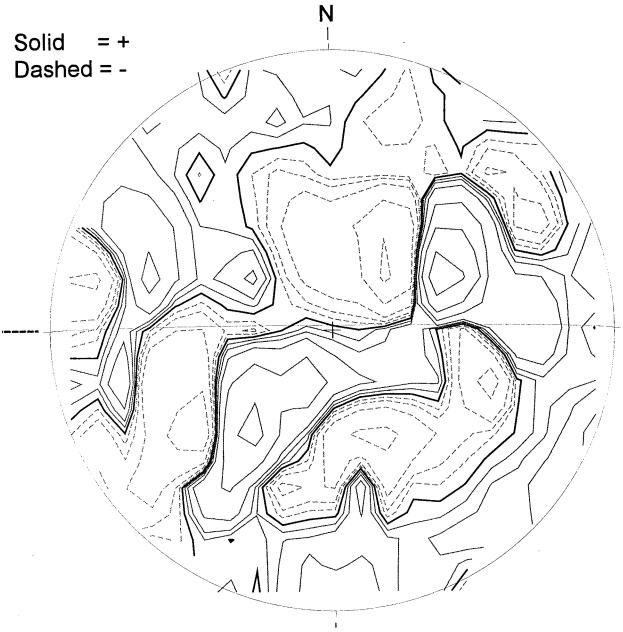
S

DECEMBER 15, 2001 (P= 10.19, Bo = -0.92, Lo = 303.65)

KITT PEAK MAGNETOGRAM

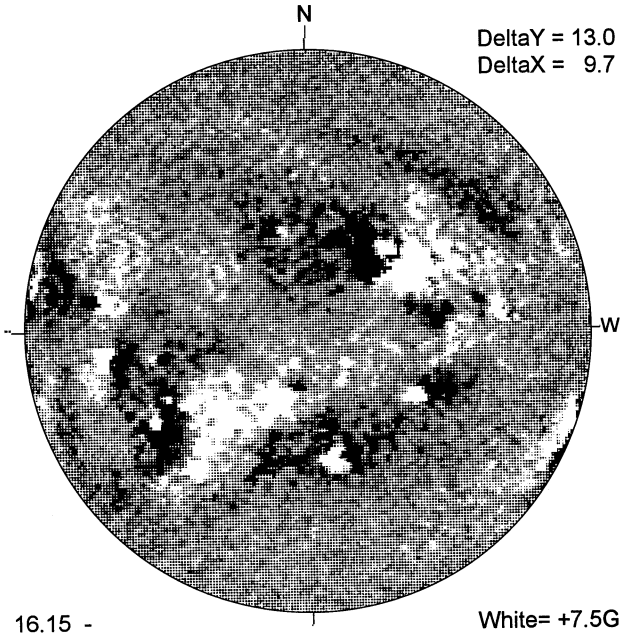


STANFORD MAGNETOGRAM



1903 UT

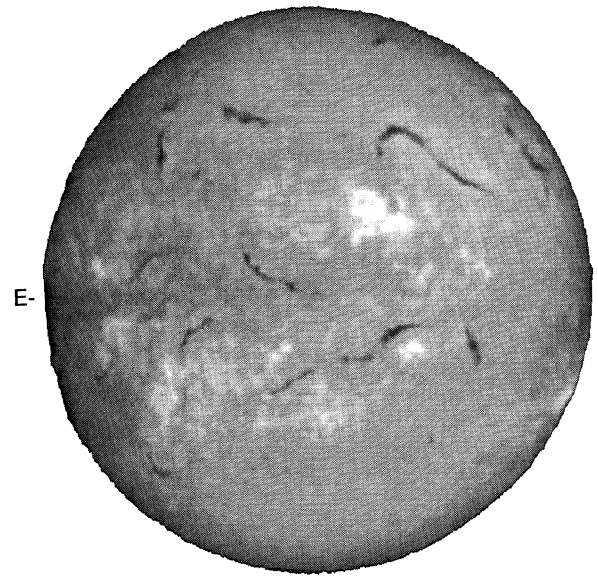
MT. WILSON MAGNETOGRAM



16.15 -
17.12 UT

White= +7.5G
Black = -7.5G

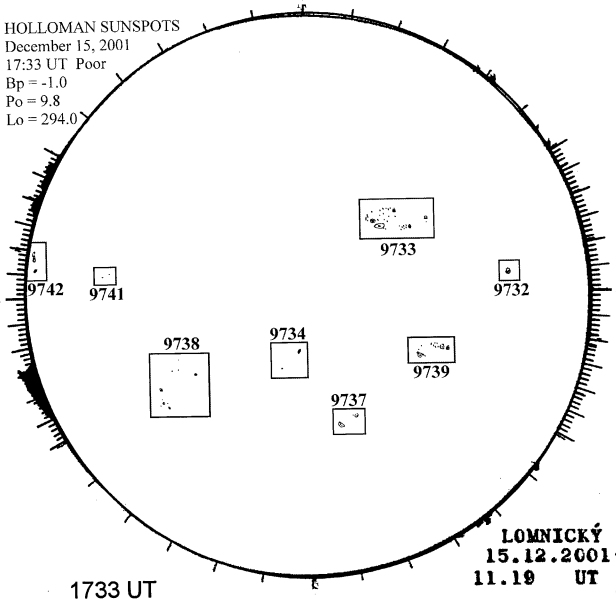
MEUDON H-ALPHA



1001 UT

S

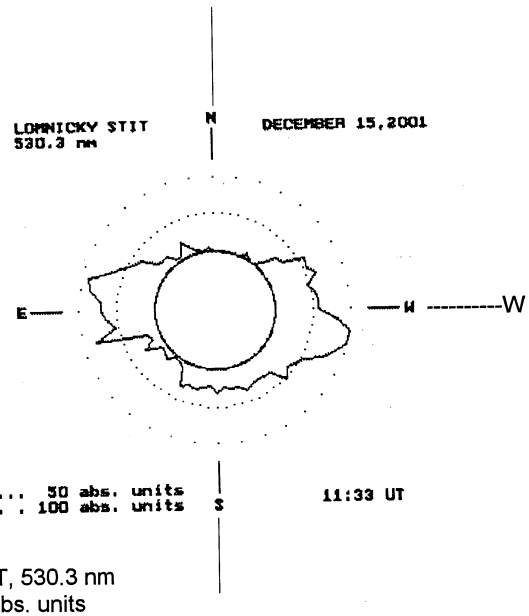
HOLLOMAN SUNSPOT



1733 UT

1119 UT LOMN Prom S

LOMNICKY PEAK CORONA (1.04 Radii)----



LOMNICKÝ
15.12.2001
11.19 UT

1133 UT, 530.3 nm
.... 50 abs. units
. . 100 abs. units

S

DECEMBER 16, 2001 (P= 9.73, Bo = -1.04, Lo = 290.48)

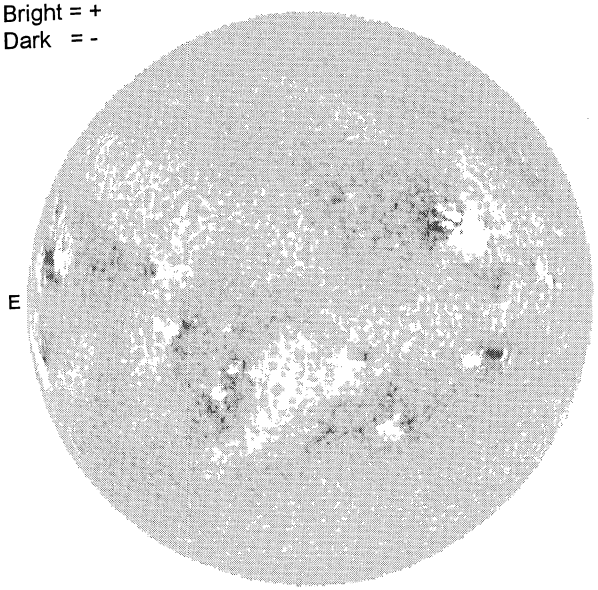
KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -

E



1810 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

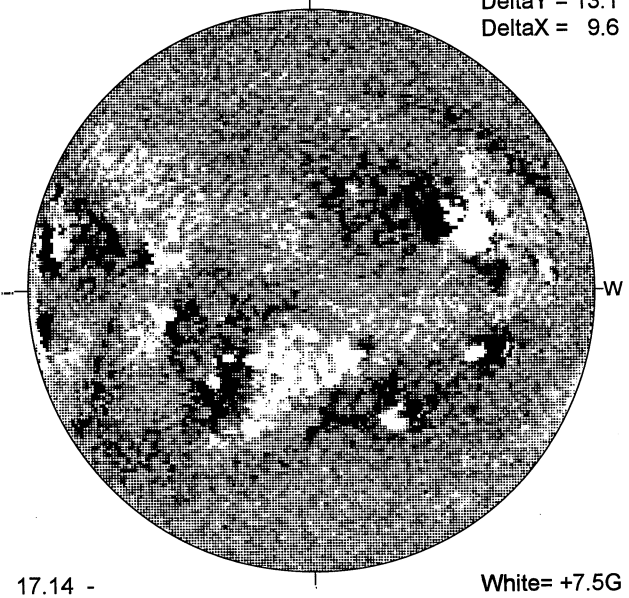
NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

W

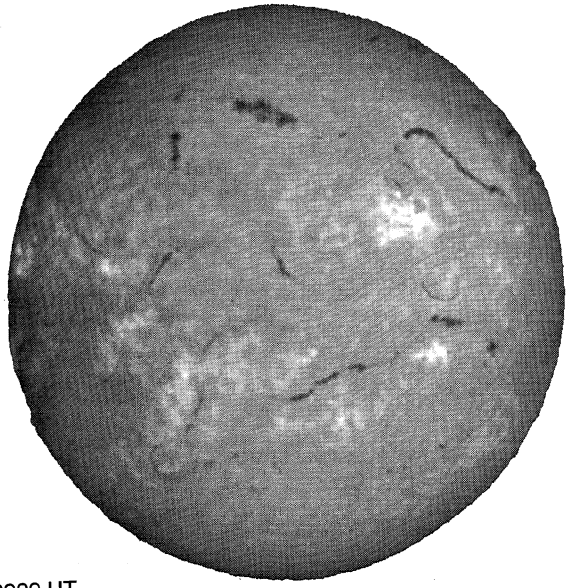


17.14 -
18.12 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

E

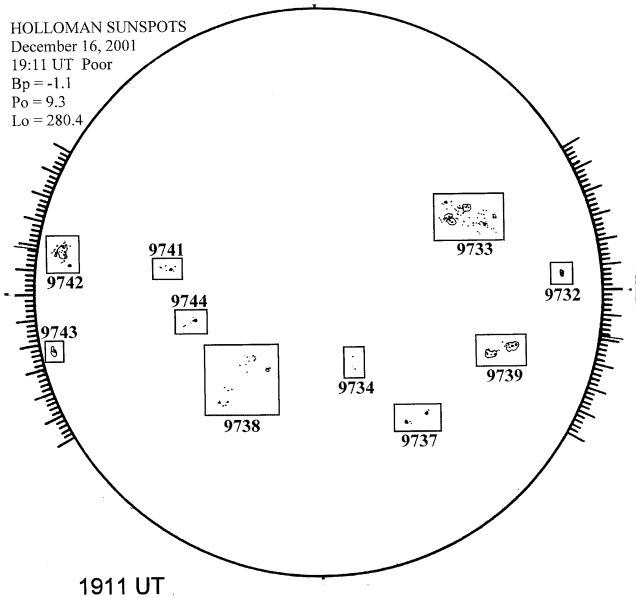


0909 UT

S

HOLLOMAN SUNSPOT

HOLLOMAN SUNSPOTS
December 16, 2001
19:11 UT Poor
Bp = -1.1
Po = 9.3
Lo = 280.4



1911 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NO DATA

S

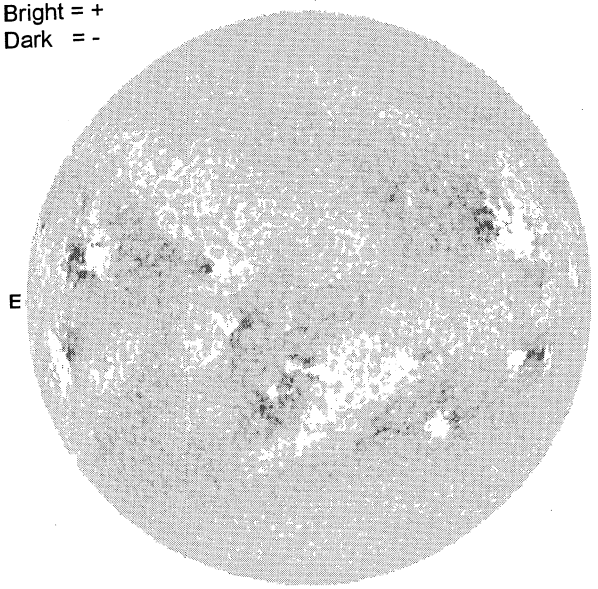
DECEMBER 17, 2001 (P= 9.27, Bo = -1.17, Lo = 277.30)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



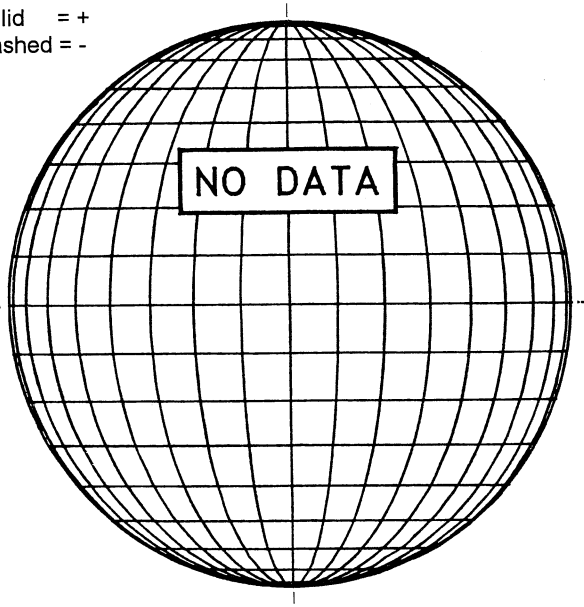
E

1739 UT

STANFORD MAGNETOGRAM

N

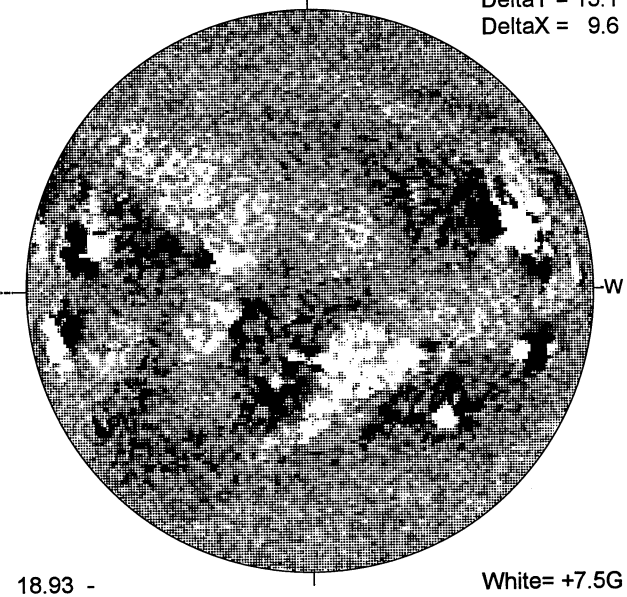
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

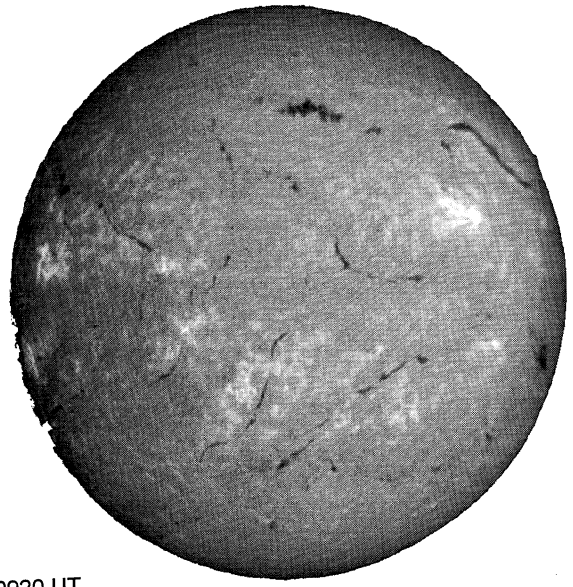


W

18.93 -
19.91 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

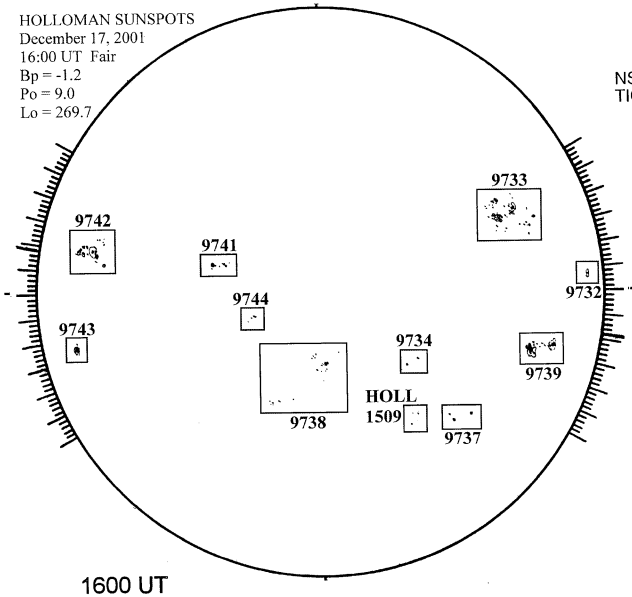


E

0920 UT

S

HOLLOMAN SUNSPOT

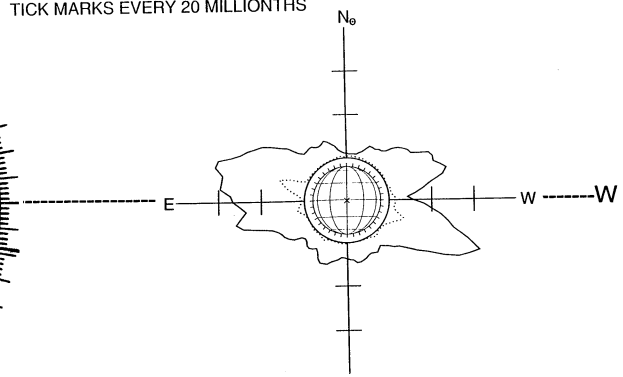


1600 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



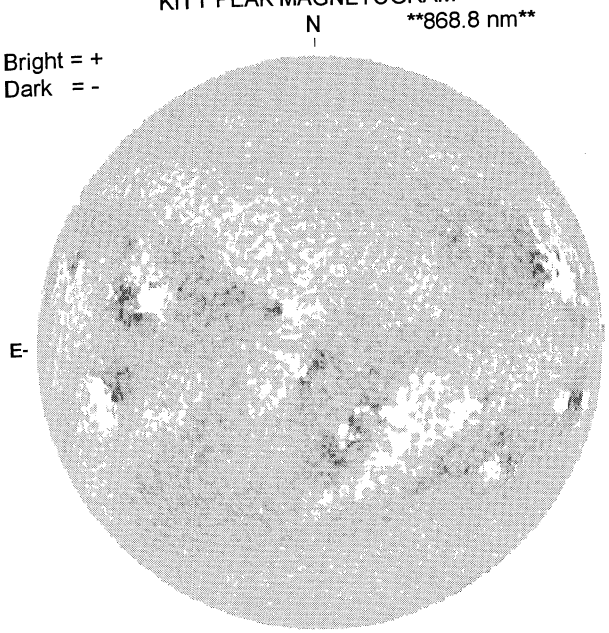
12/17/01
(DOY 351)

FE XIV 16:25 UT 1.15 R⊖
FE X 17:34 UT 1.15 R⊖
CA XV 17:10 UT 1.15 R⊖
NO CA XV ACTIVITY TODAY

S

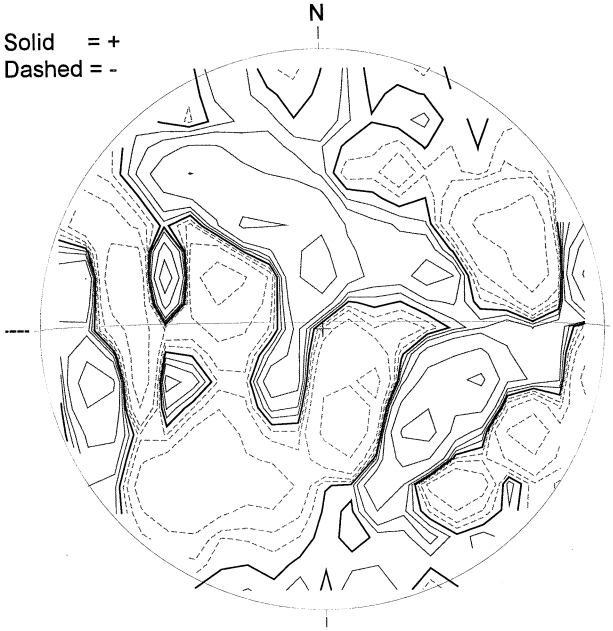
DECEMBER 18, 2001 (P= 8.81, Bo = -1.30, Lo = 264.13)

KITT PEAK MAGNETOGRAM



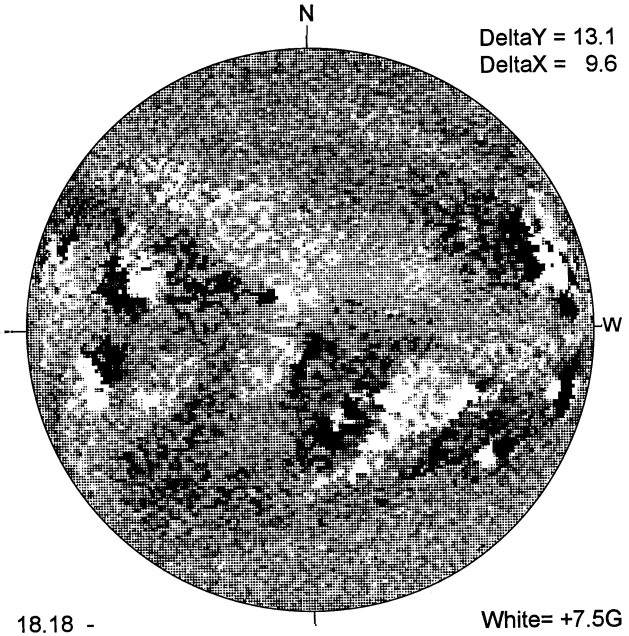
1739 UT

STANFORD MAGNETOGRAM



2119 UT

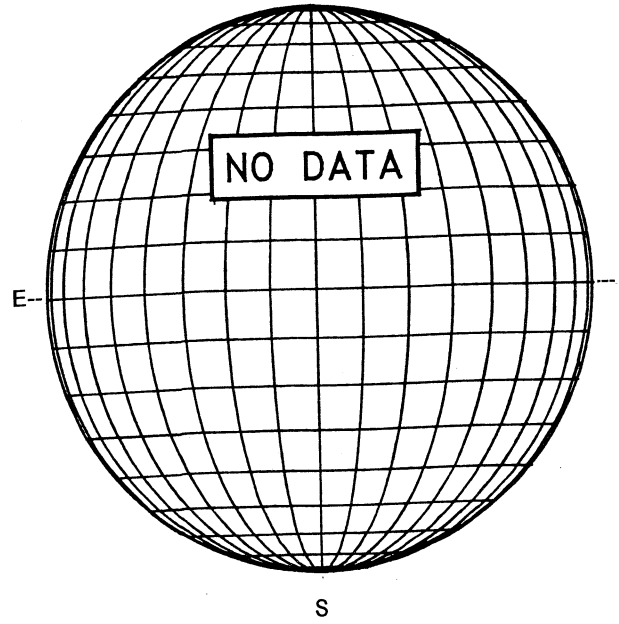
MT. WILSON MAGNETOGRAM



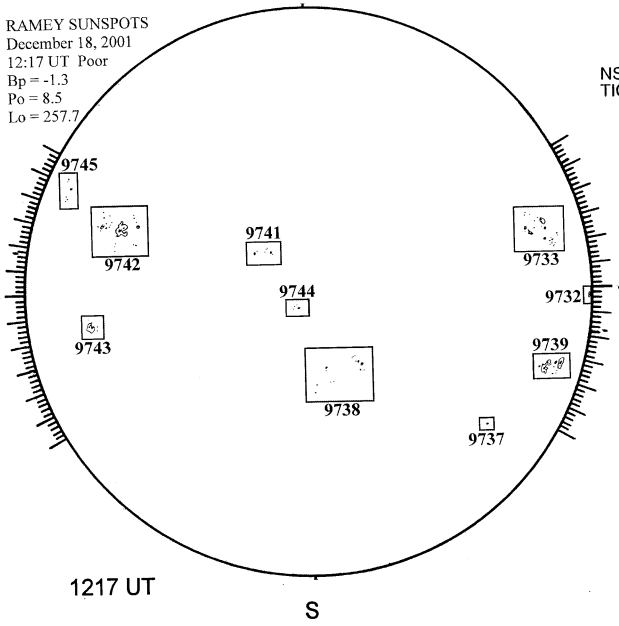
18.18 -
19.15 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALHPA

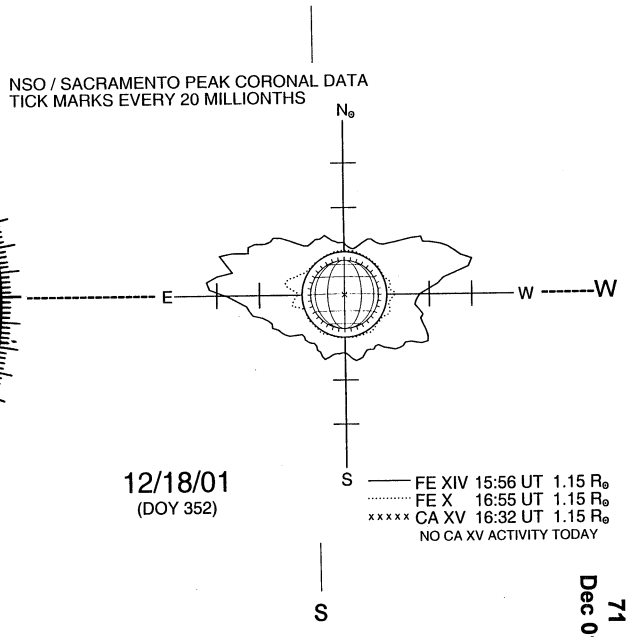


RAMEY SUNSPOT



1217 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



12/18/01
(DOY 352)

71
Dec 01

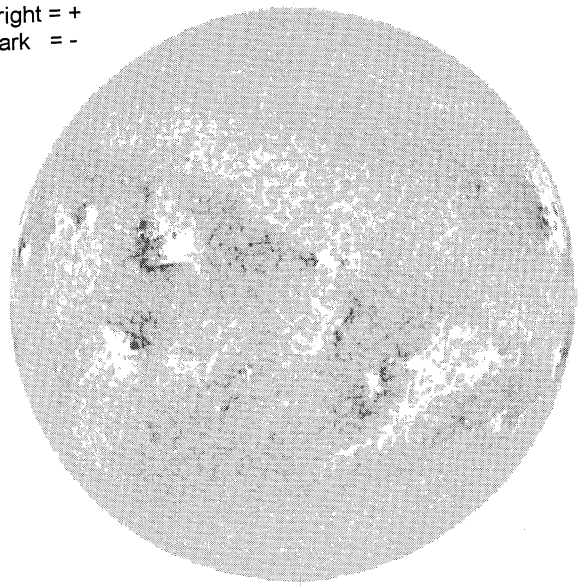
DECEMBER 19, 2001 (P= 8.35, Bo = -1.42, Lo = 250.95)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



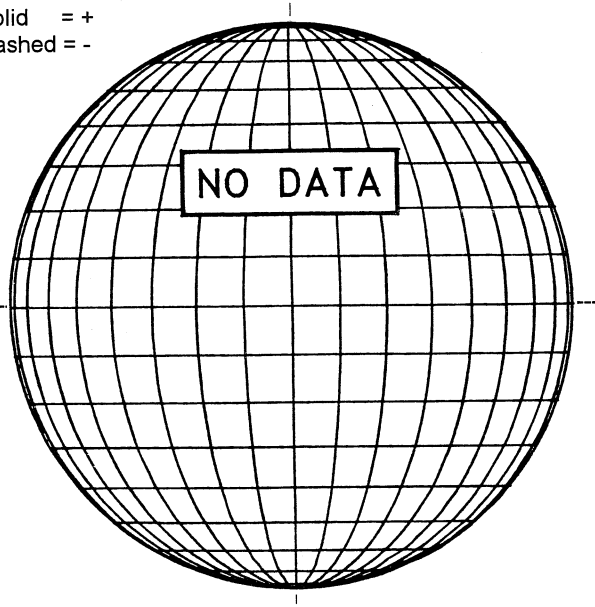
E

1558 UT

STANFORD MAGNETOGRAM

N

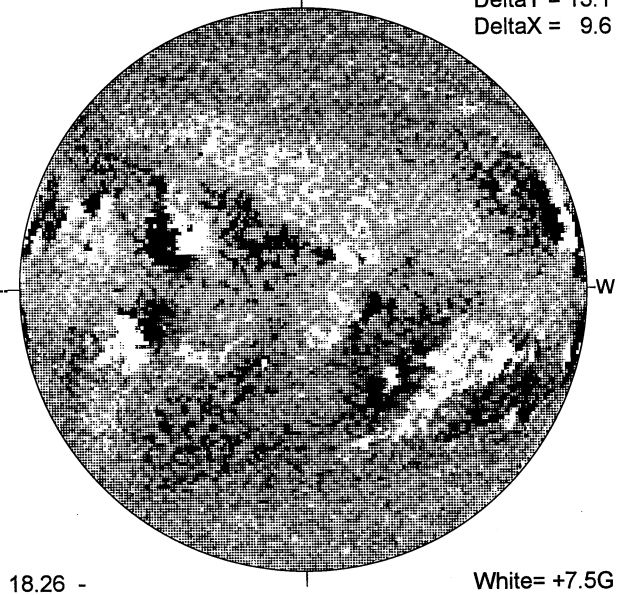
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

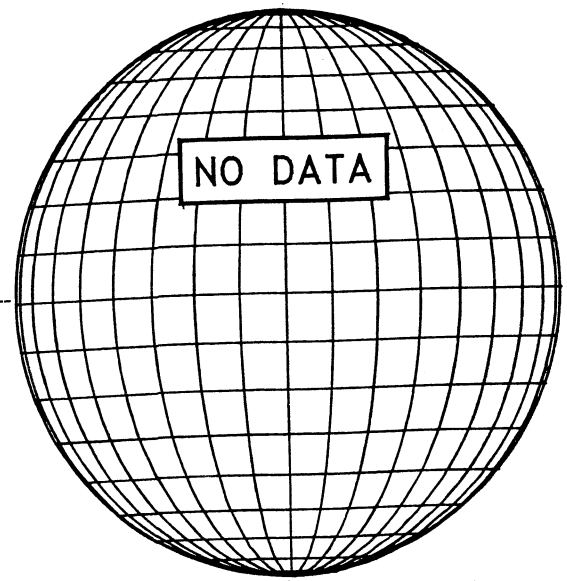


W

18.26 -
19.23 UT

White= +7.5G
Black = -7.5G

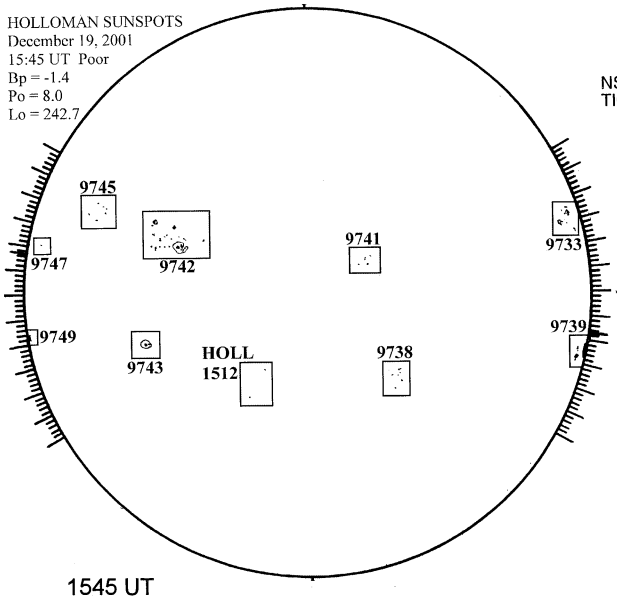
MEUDON H-ALPHA



E--

S

HOLLOMAN SUNSPOT

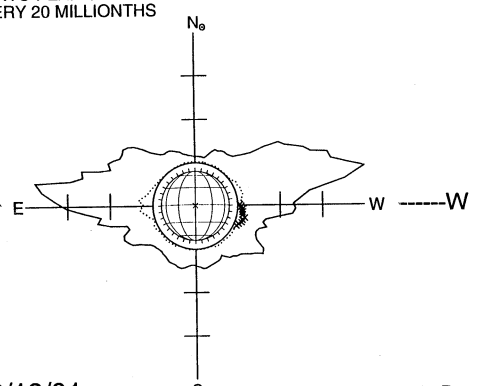


1545 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



12/19/01
(DOY 353)

FE XIV 16:01 UT 1.15 R⊙
FE X 17:05 UT 1.15 R⊙
CA XV 16:45 UT 1.15 R⊙

S

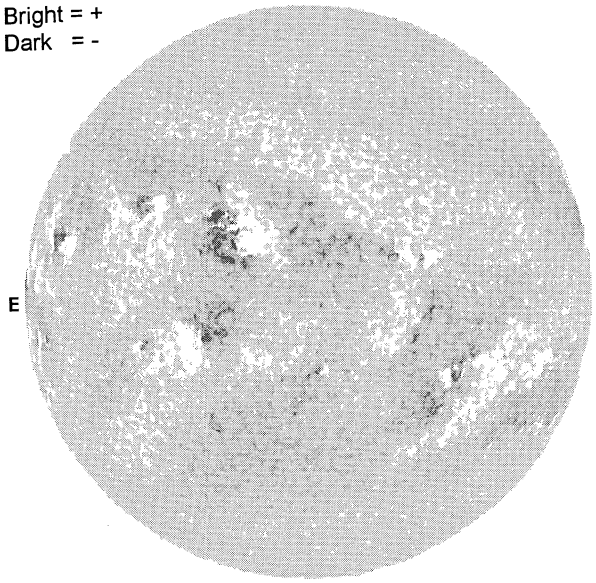
DECEMBER 20, 2001 (P= 7.88, Bo = -1.55, Lo = 237.78)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



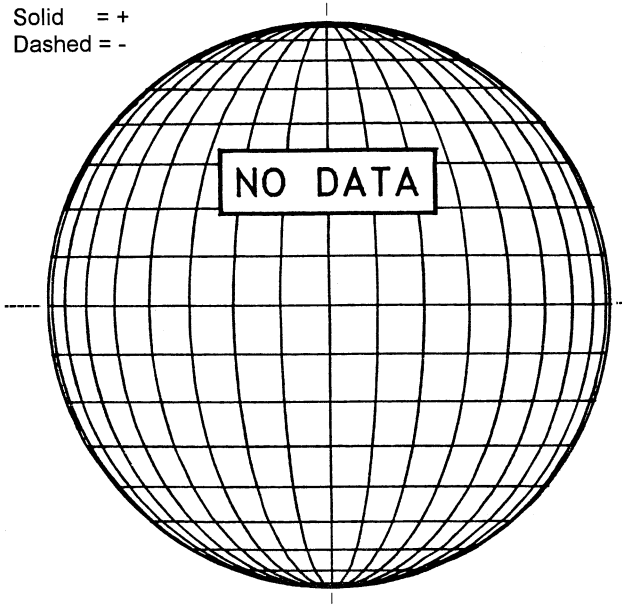
E

1621 UT

STANFORD MAGNETOGRAM

N

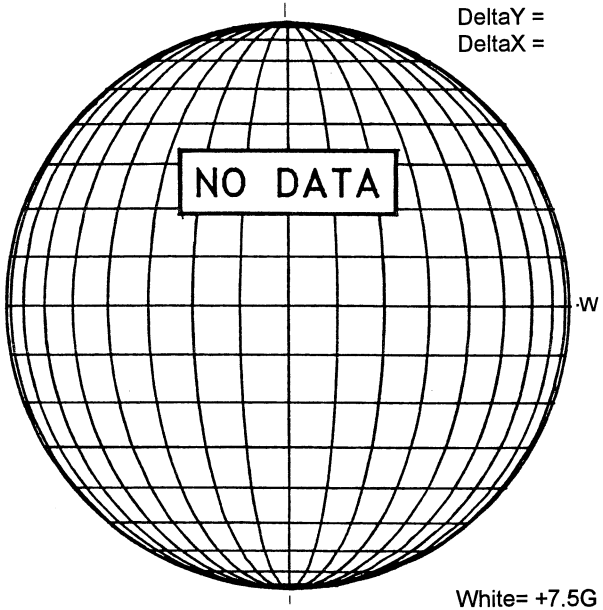
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

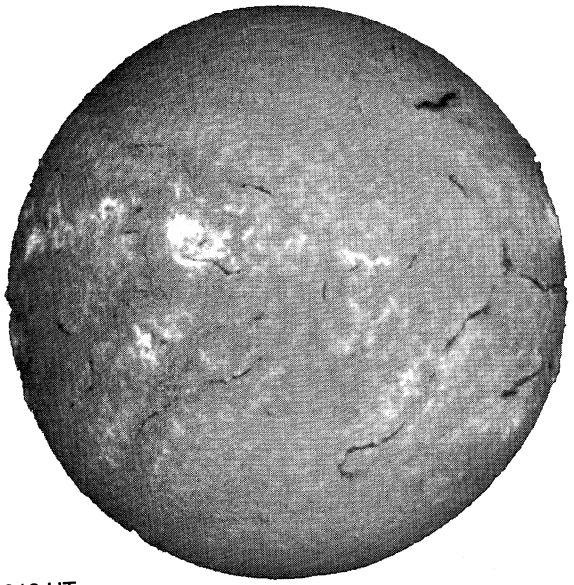
DeltaY =
DeltaX =



W

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

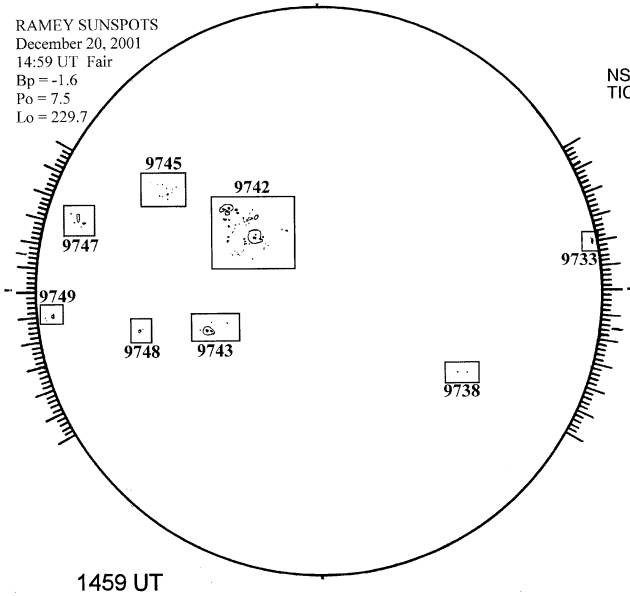


E

0910 UT

S

RAMEY SUNSPOT

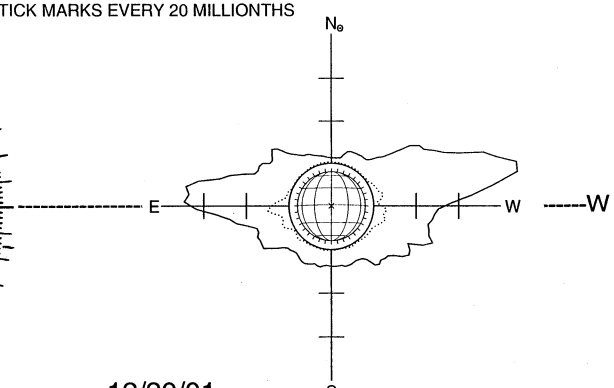


1459 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



12/20/01
(DOY 354)

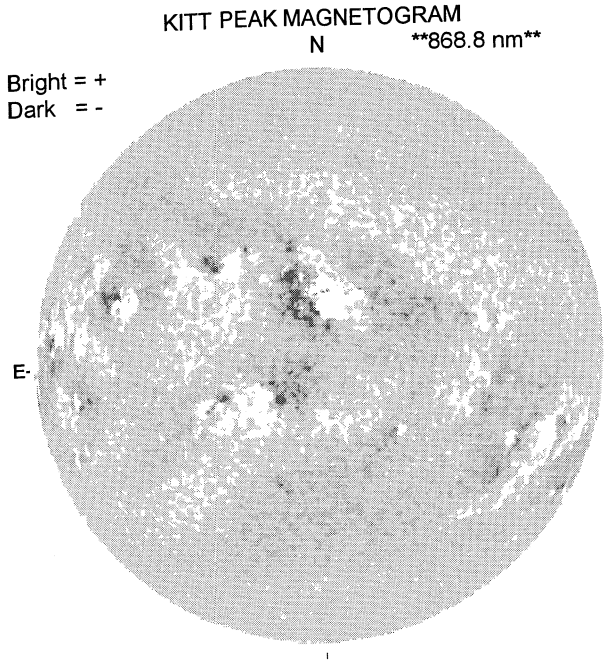
FE XIV 15:40 UT 1.15 R⊙
FE X 16:44 UT 1.15 R⊙
CA XV 16:23 UT 1.15 R⊙
NO CA XV ACTIVITY TODAY

S

73
Dec 01

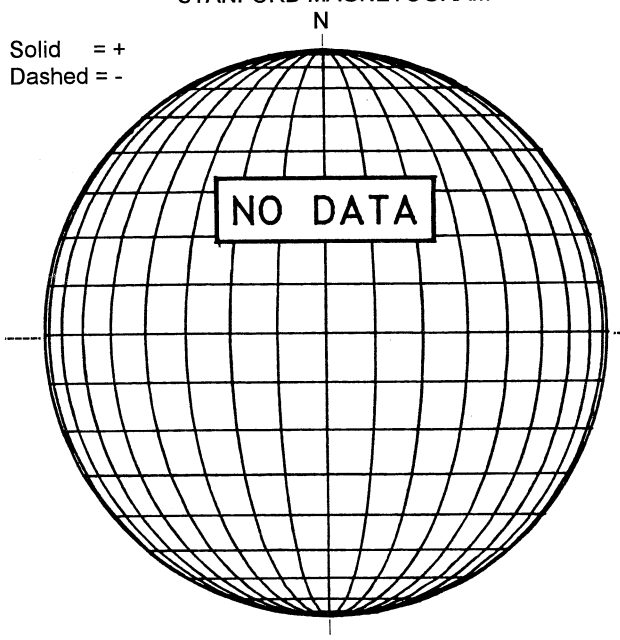
DECEMBER 21, 2001 (P= 7.41, Bo = -1.67, Lo = 224.61)

KITT PEAK MAGNETOGRAM
868.8 nm

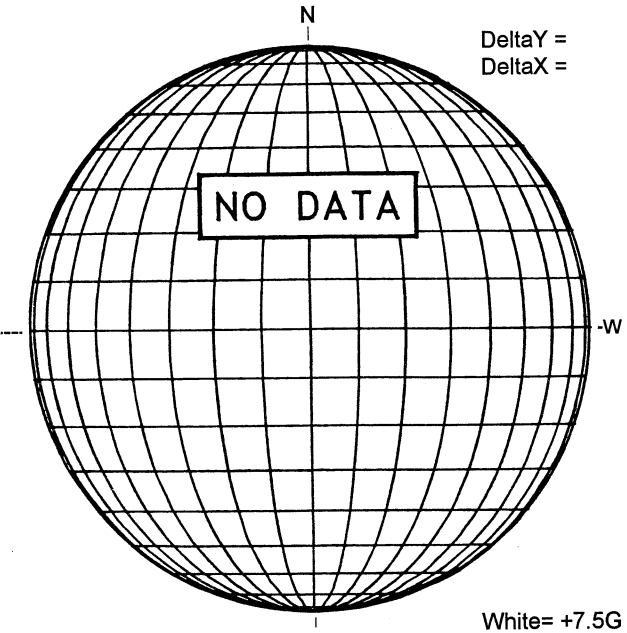


1807 UT

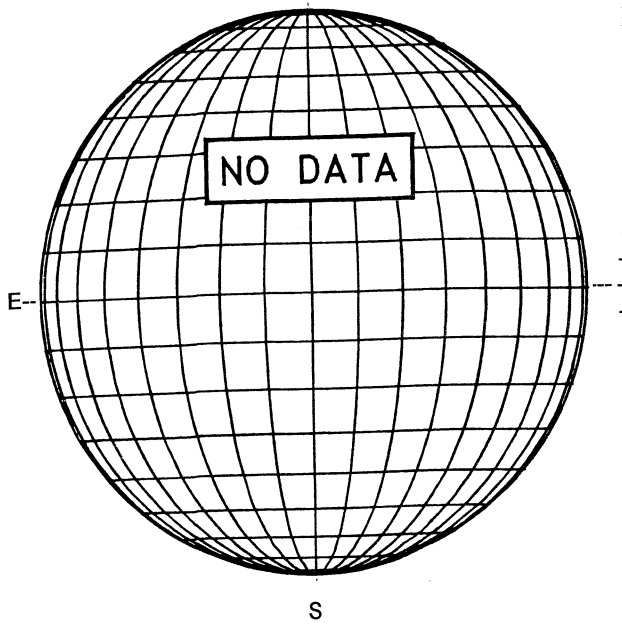
STANFORD MAGNETOGRAM



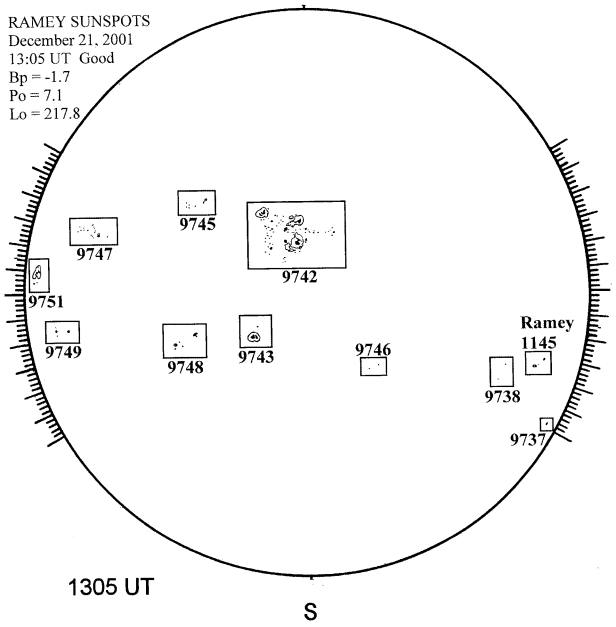
MT. WILSON MAGNETOGRAM



MEUDON H-ALPHA

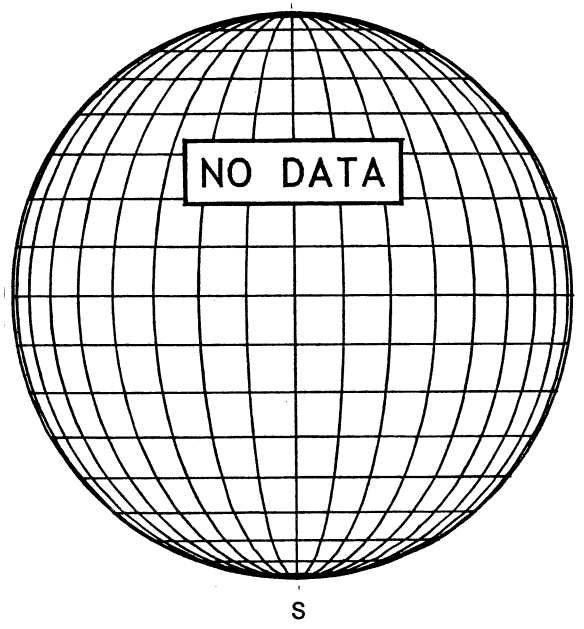


RAMEY SUNSPOT



1305 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



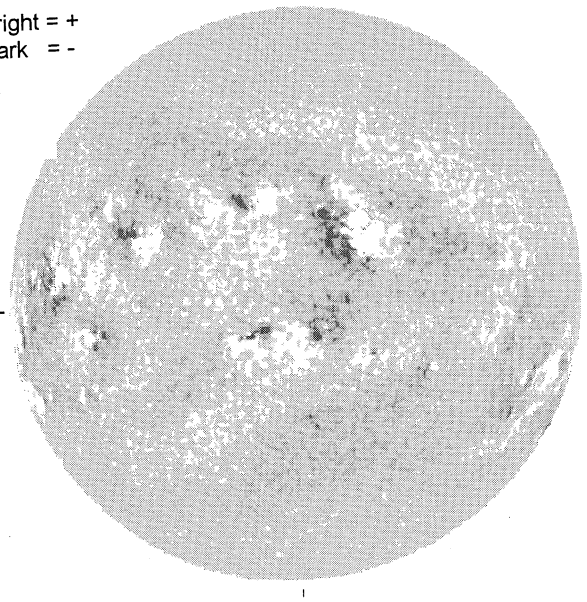
DECEMBER 22, 2001 (P= 6.94, Bo = -1.80, Lo = 211.43)

KITT PEAK MAGNETOGRAM

N

868.8 nm

Bright = +
Dark = -



E-

1644 UT

STANFORD MAGNETOGRAM

N

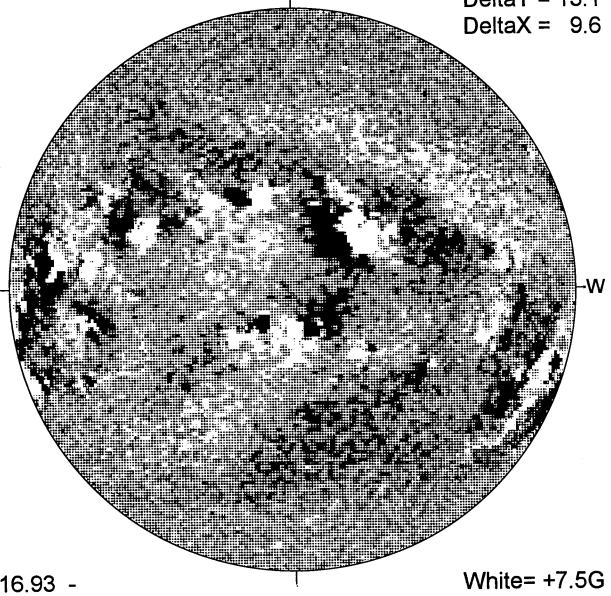
Solid = +
Dashed = -

NO DATA

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

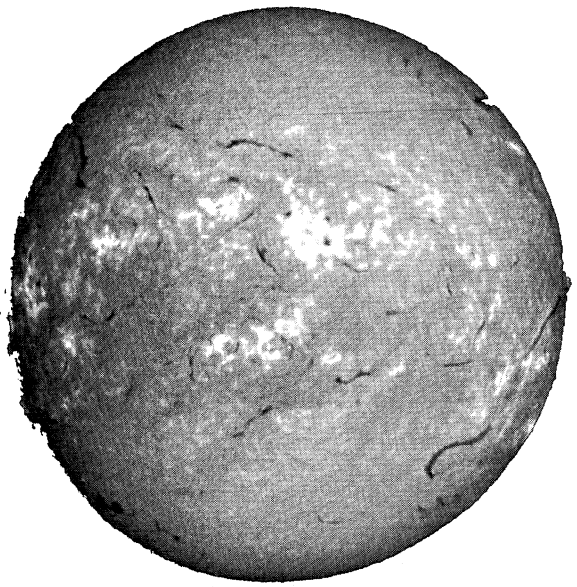


W

16.93 -
17.90 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



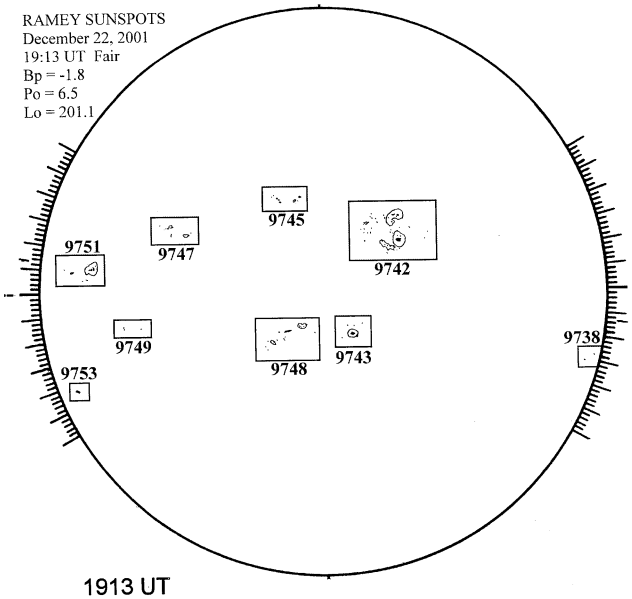
E

0925 UT

S

RAMEY SUNSPOT

RAMEY SUNSPOTS
December 22, 2001
19:13 UT Fair
Bp = -1.8
Po = 6.5
Lo = 201.1



1913 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

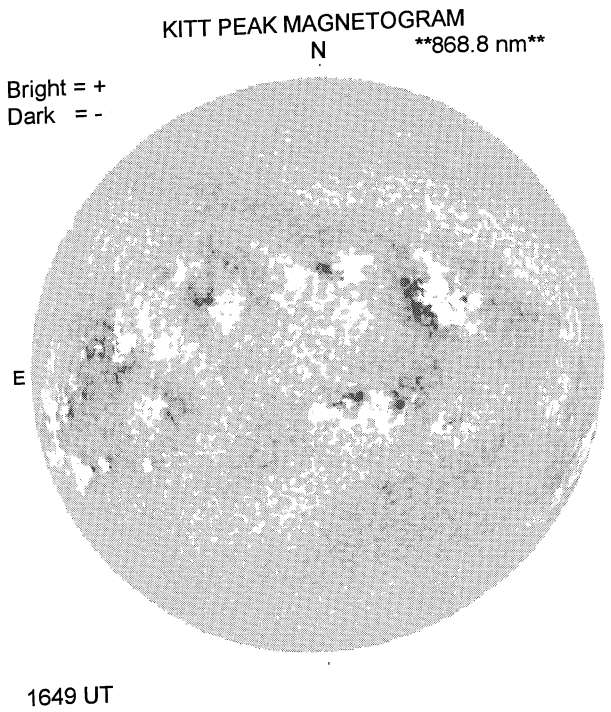
NO DATA

S

75
Dec 01

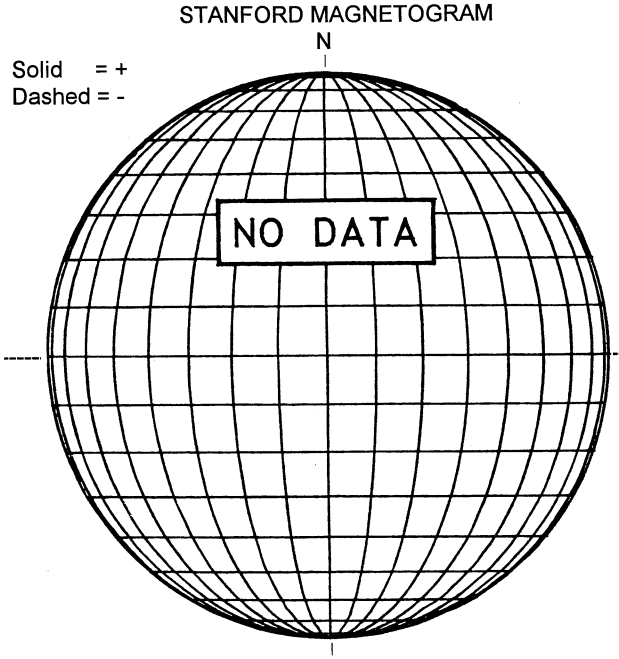
DECEMBER 23, 2001 (P= 6.46, Bo = -1.92, Lo = 198.26)

KITT PEAK MAGNETOGRAM
868.8 nm

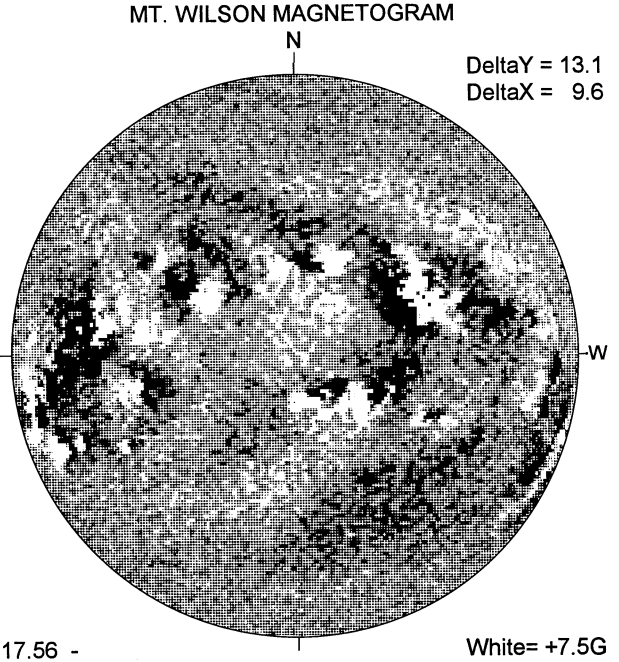


1649 UT

STANFORD MAGNETOGRAM



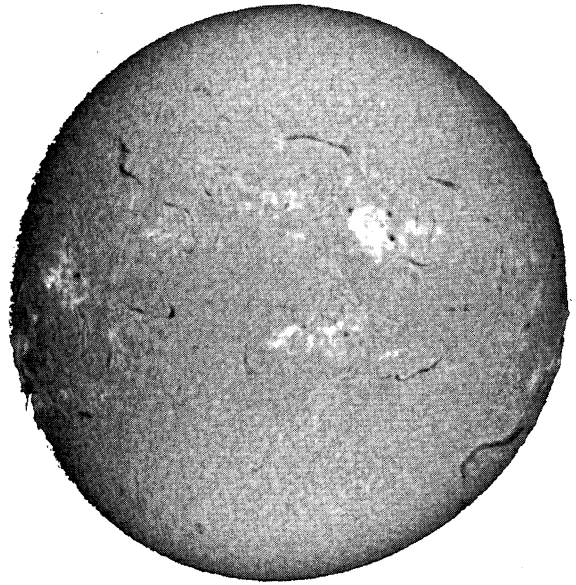
MT. WILSON MAGNETOGRAM



17.56 -
18.54 UT

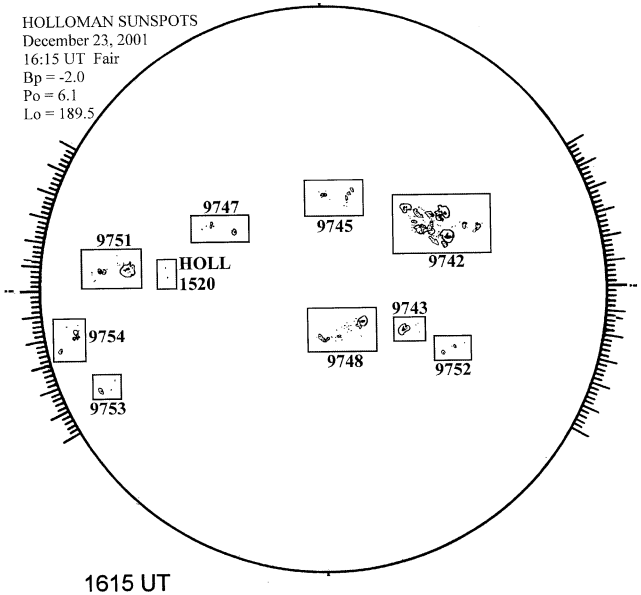
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



0926 UT

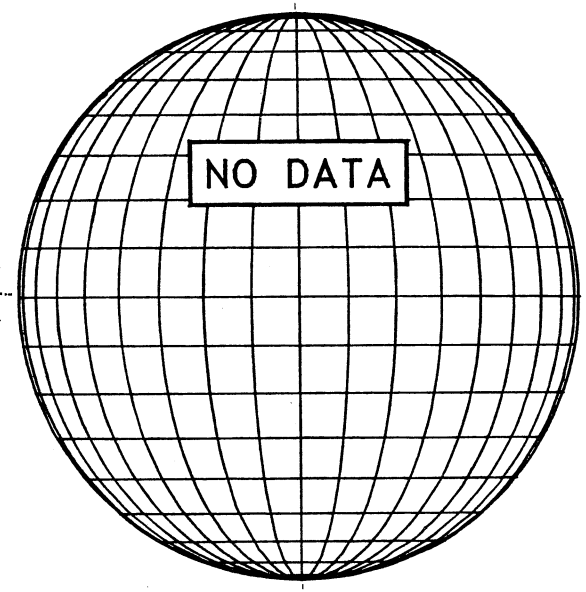
HOLLOMAN SUNSPOT



1615 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)----

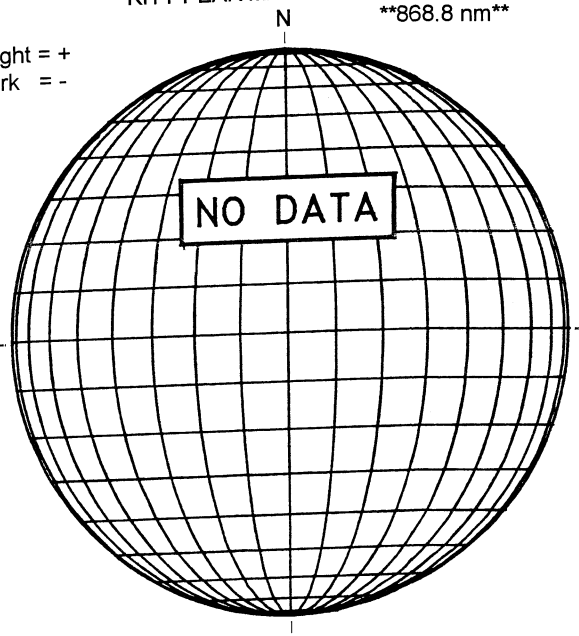


DECEMBER 24, 2001 (P= 5.99, Bo = -2.05, Lo = 185.09)

KITT PEAK MAGNETOGRAM

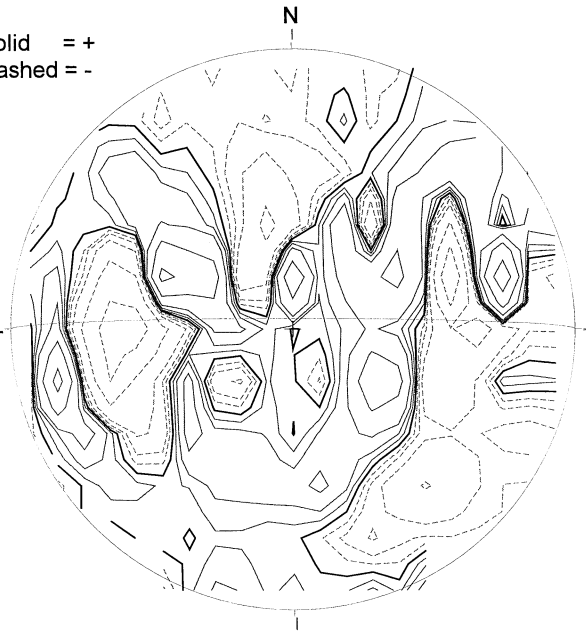
868.8 nm

Bright = +
Dark = -



STANFORD MAGNETOGRAM

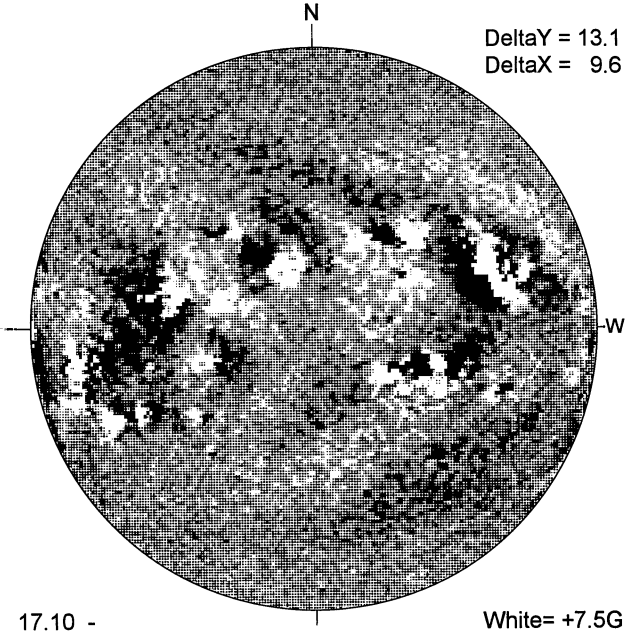
Solid = +
Dashed = -



2227 UT

MT. WILSON MAGNETOGRAM

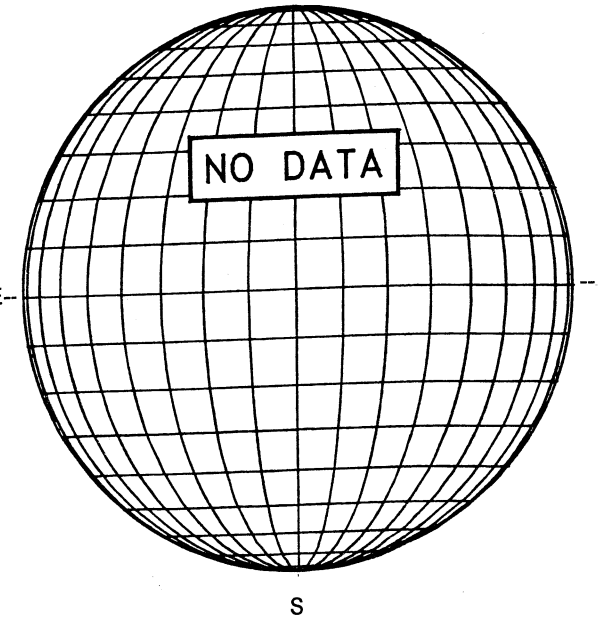
DeltaY = 13.1
DeltaX = 9.6



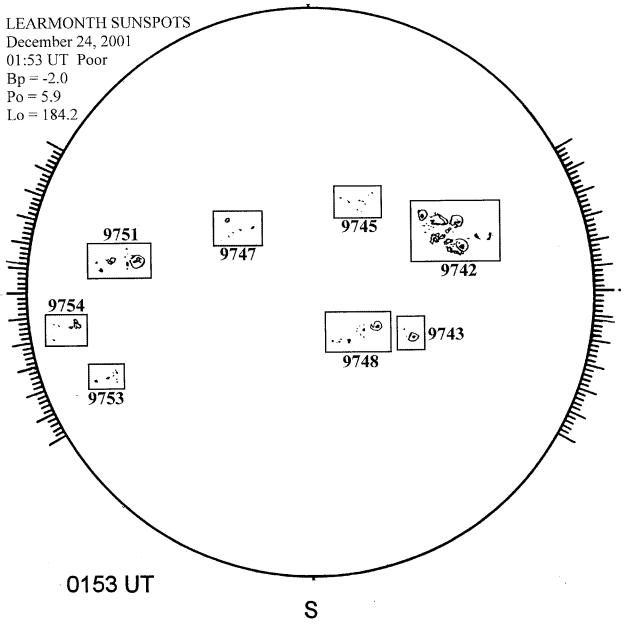
17.10 -
18.07 UT

White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

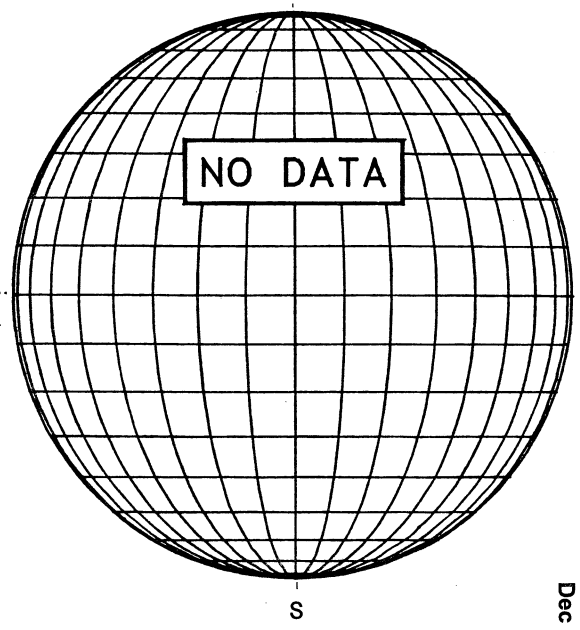


LEARMONTH SUNSPOT



0153 UT

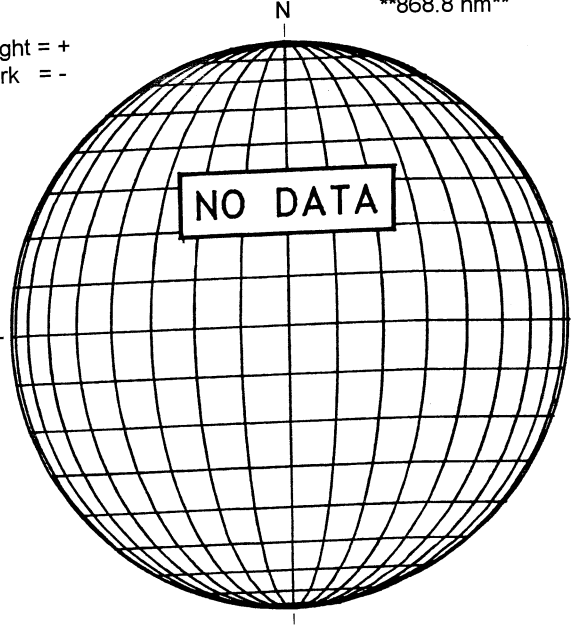
SACRAMENTO PEAK CORONA (1.15 Radii)----



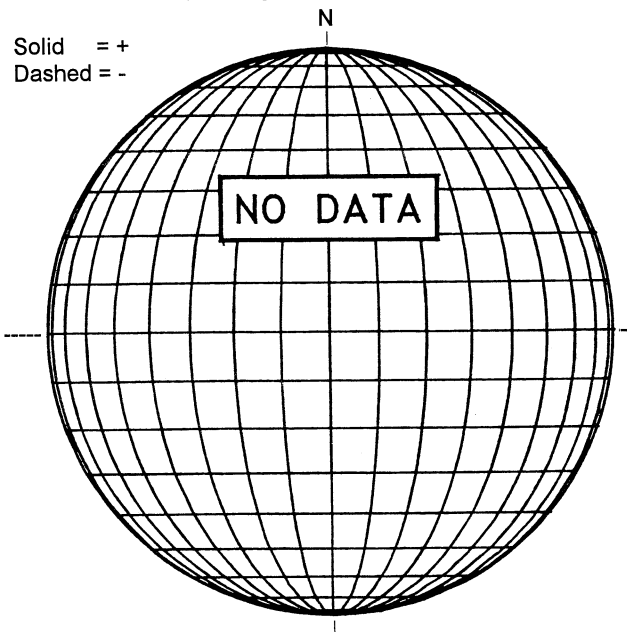
77
Dec 01

DECEMBER 25, 2001 (P= 5.51, Bo = -2.17, Lo = 171.91)

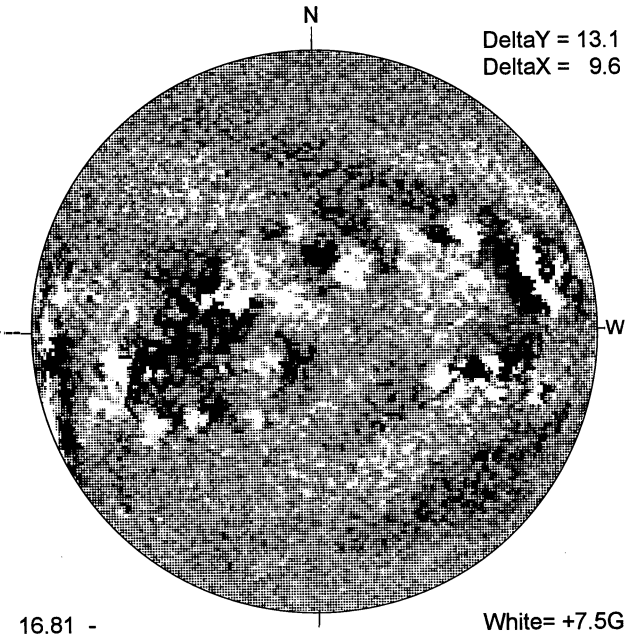
KITT PEAK MAGNETOGRAM
868.8 nm



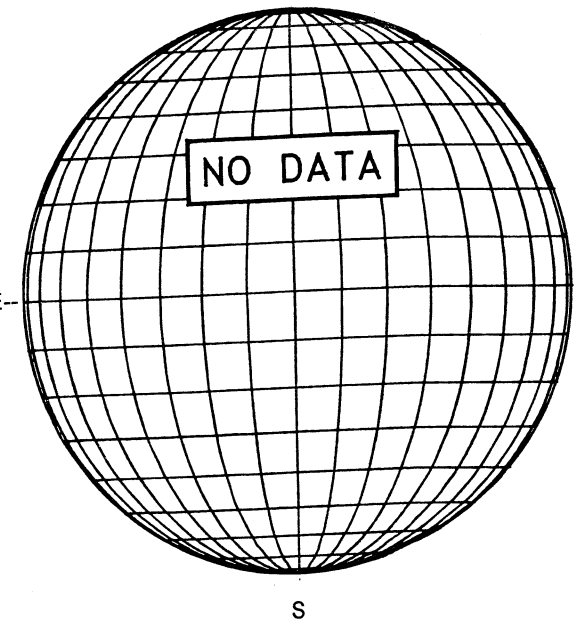
STANFORD MAGNETOGRAM



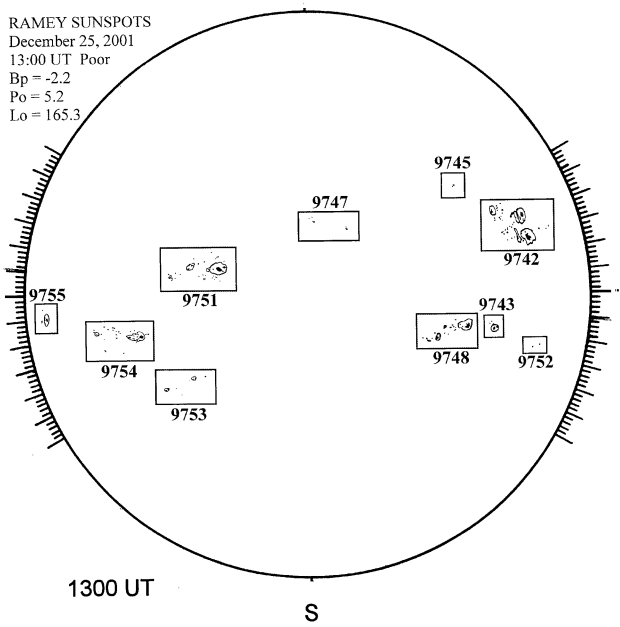
MT. WILSON MAGNETOGRAM



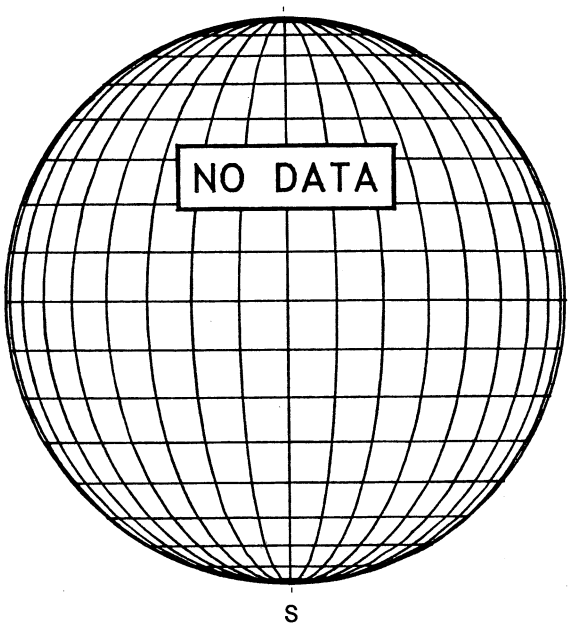
MEUDON H-ALPHA



RAMEY SUNSPOT



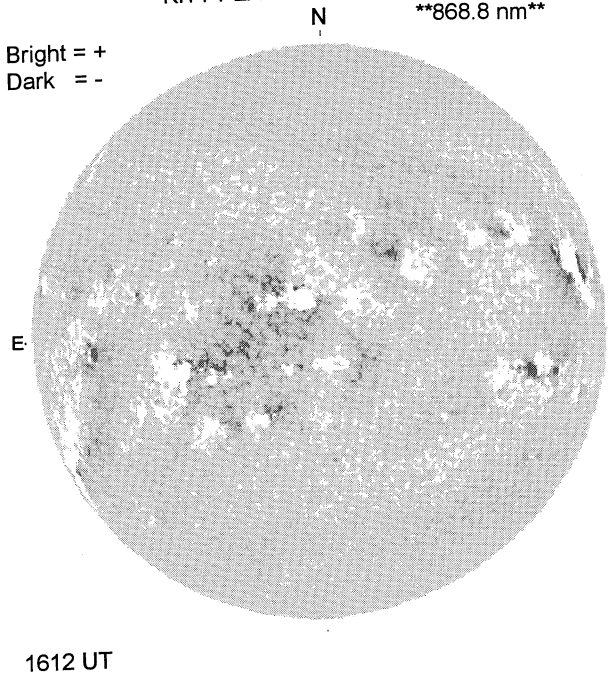
LOMNICKY PEAK CORONA (1.04 Radii)----



DECEMBER 26, 2001 (P= 5.03, Bo = -2.29, Lo = 158.74)

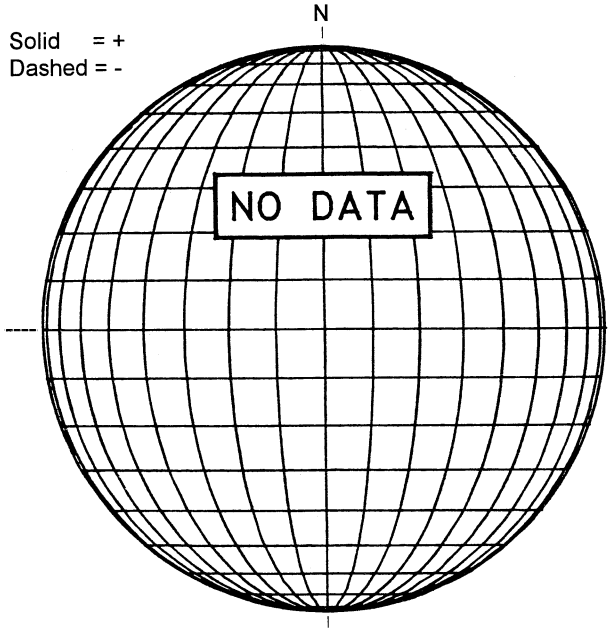
KITT PEAK MAGNETOGRAM

868.8 nm

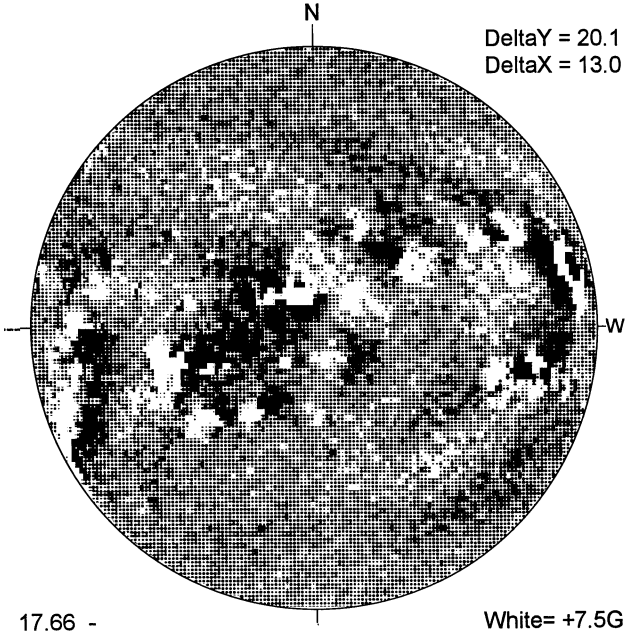


1612 UT

STANFORD MAGNETOGRAM



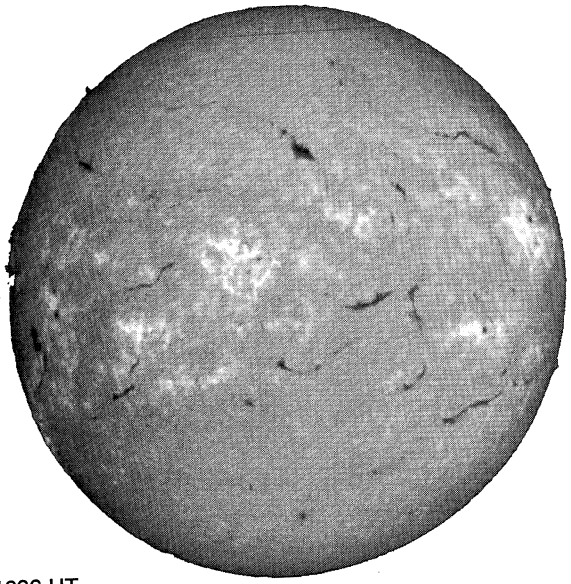
MT. WILSON MAGNETOGRAM



17.66 -
18.09 UT

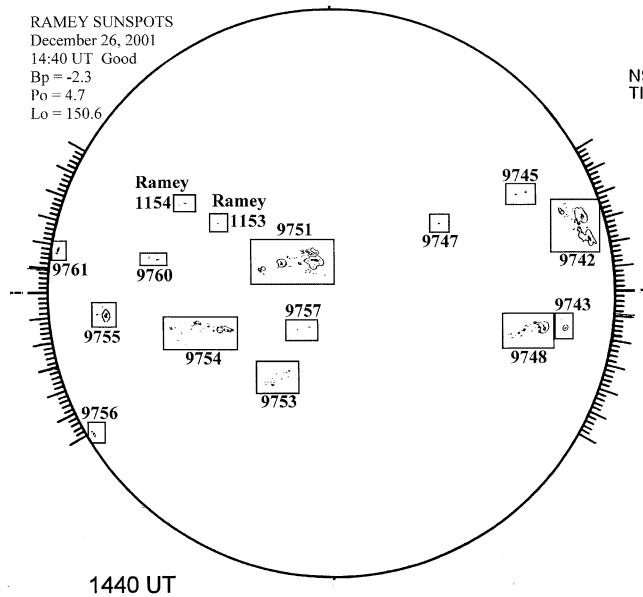
White= +7.5G
Black = -7.5G

MEUDON H-ALHPA



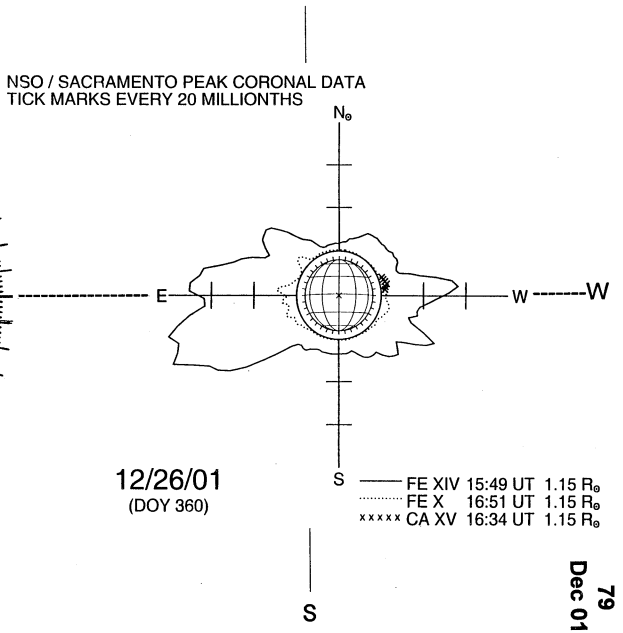
1036 UT

RAMEY SUNSPOT



1440 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



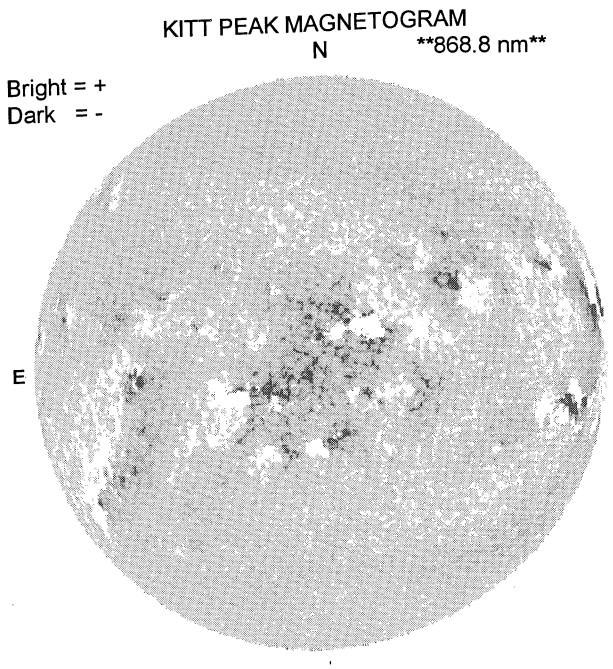
12/26/01
(DOY 360)

79
Dec 01

DECEMBER 27, 2001 (P= 4.55, Bo = -2.41, Lo = 145.57)

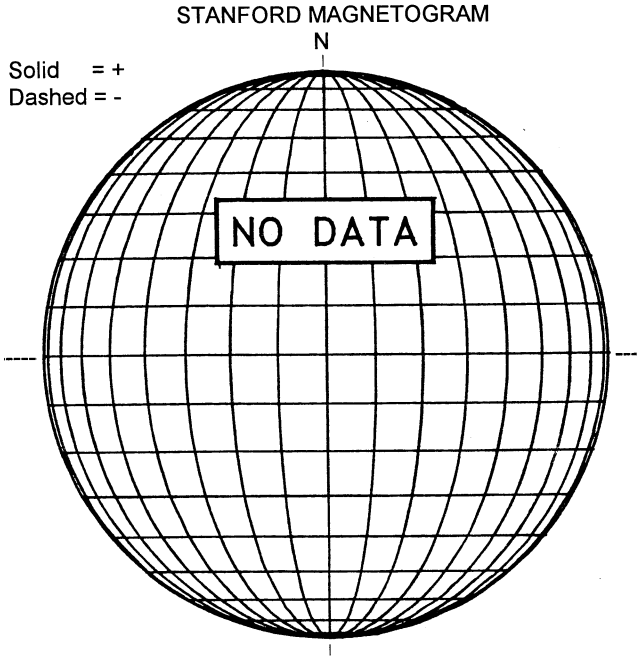
KITT PEAK MAGNETOGRAM

868.8 nm

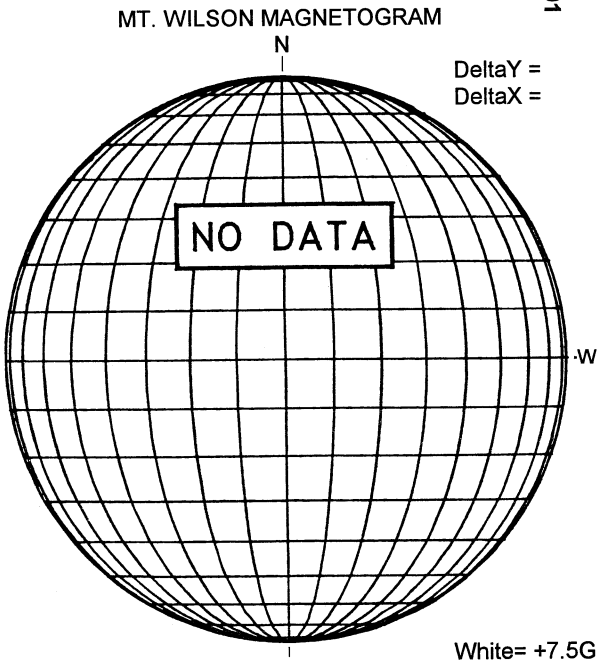


1549 UT

STANFORD MAGNETOGRAM

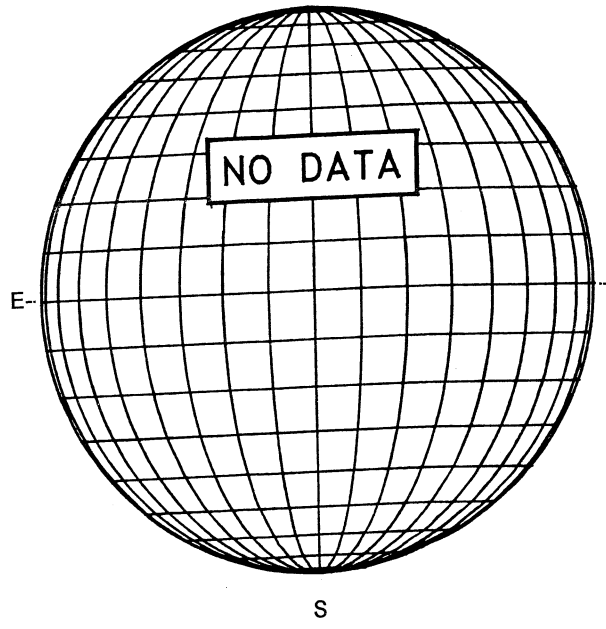


MT. WILSON MAGNETOGRAM

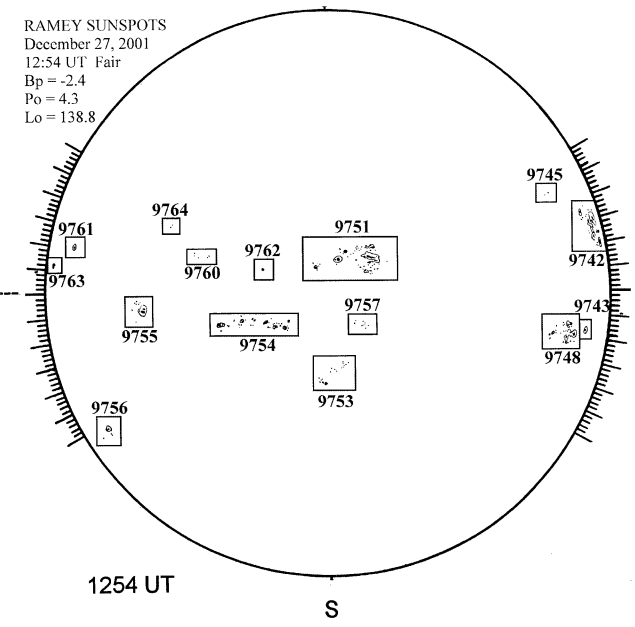


White= +7.5G
Black = -7.5G

MEUDON H-ALPHA

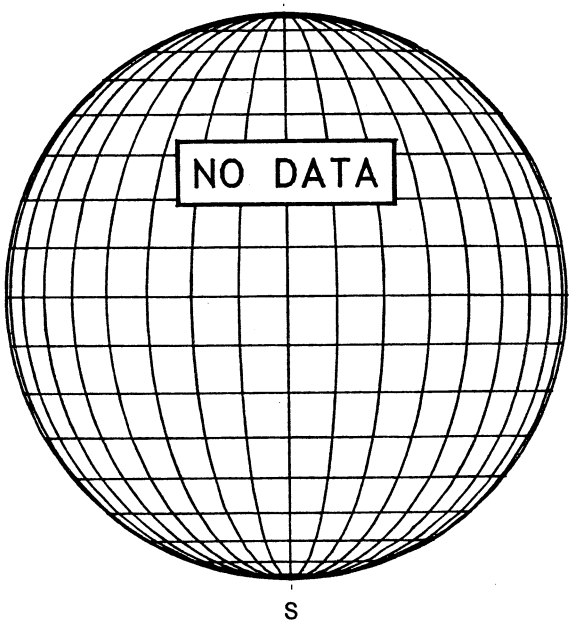


RAMEY SUNSPOT



1254 UT

LOMNICKY PEAK CORONA (1.04 Radii)----

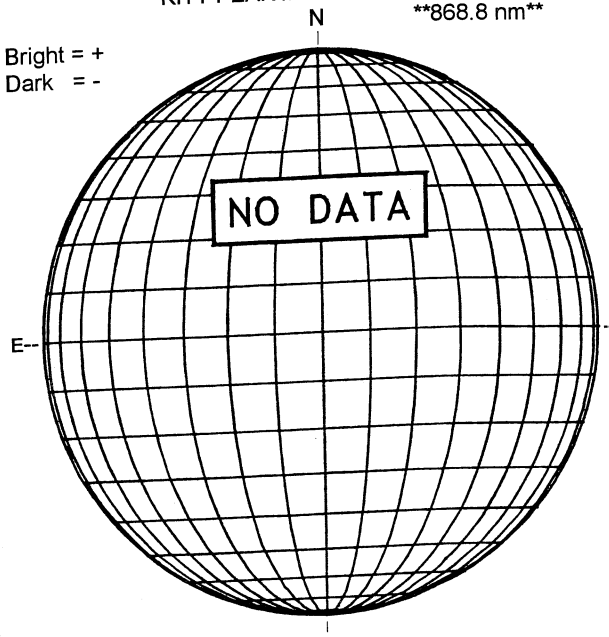


DECEMBER 28, 2001 (P= 4.07, Bo = -2.53, Lo = 132.40)

KITT PEAK MAGNETOGRAM

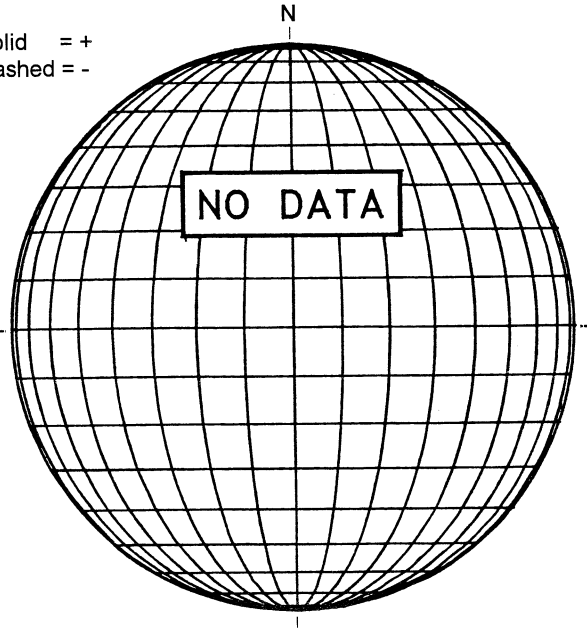
868.8 nm

Bright = +
Dark = -



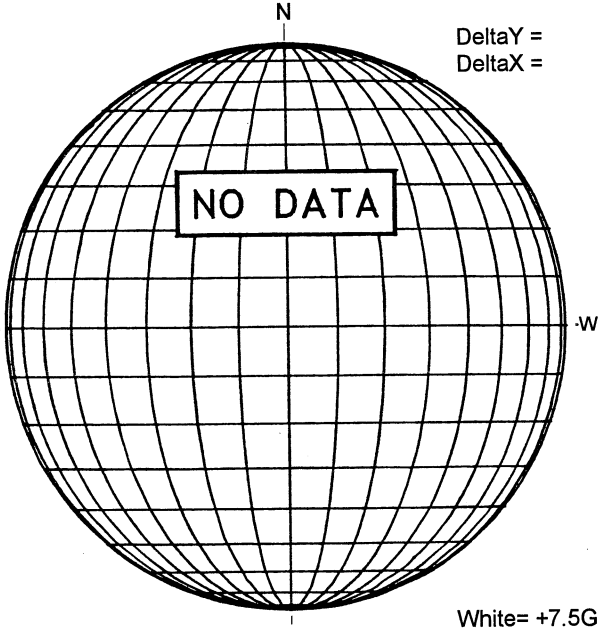
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



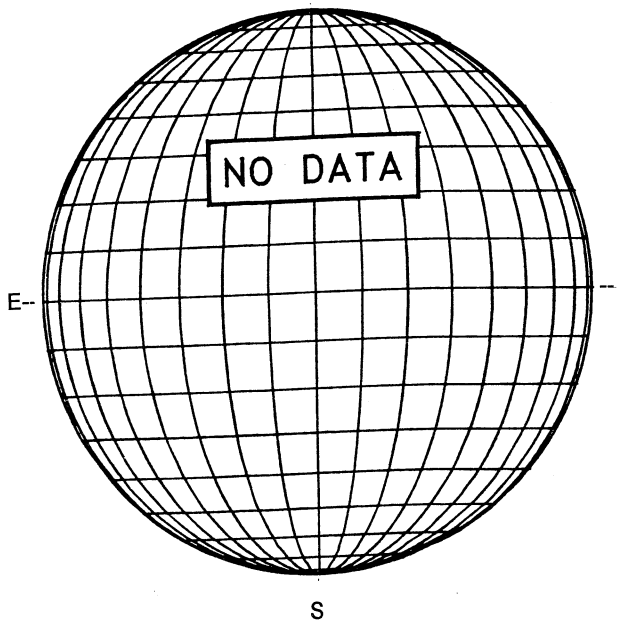
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

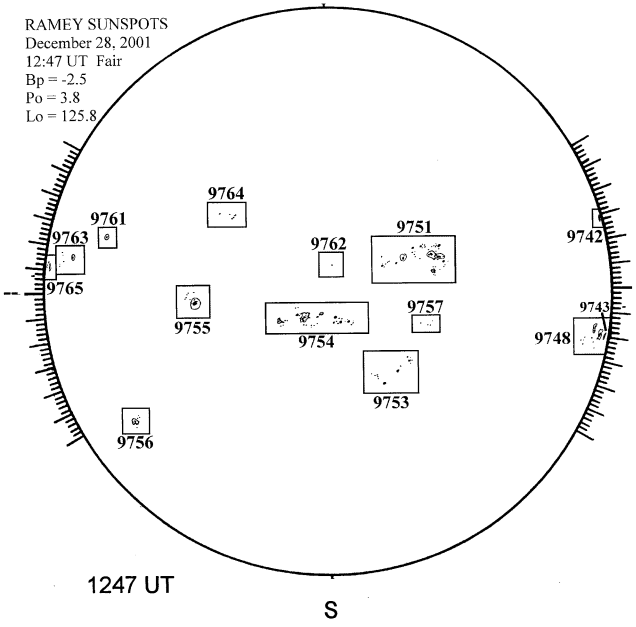


White= +7.5G
Black = -7.5G

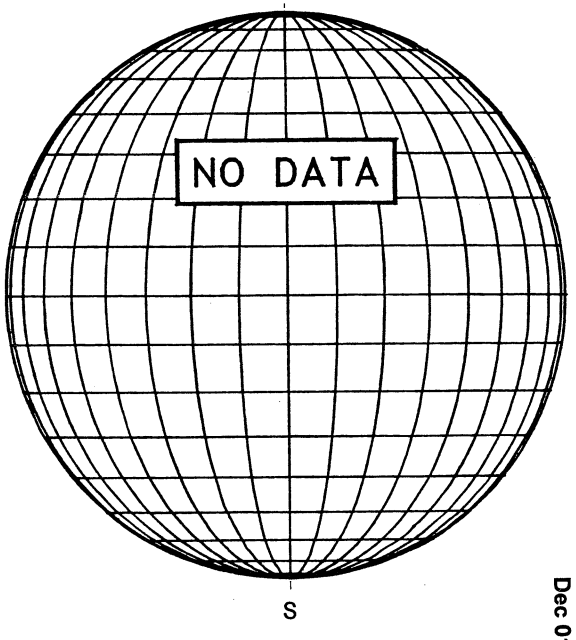
MEUDON H-ALPHA



RAMEY SUNSPOT



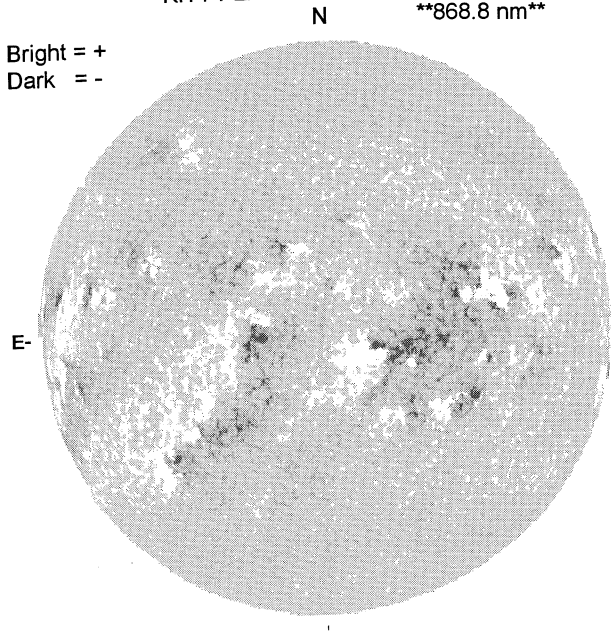
SACRAMENTO PEAK CORONA (1.15 Radii)----



81
Dec 01

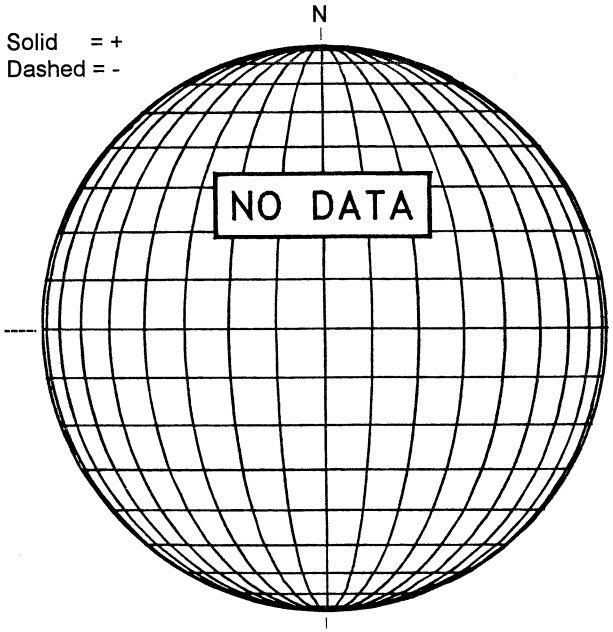
DECEMBER 29, 2001 (P= 3.58, Bo = -2.65, Lo = 119.23)

KITT PEAK MAGNETOGRAM
868.8 nm

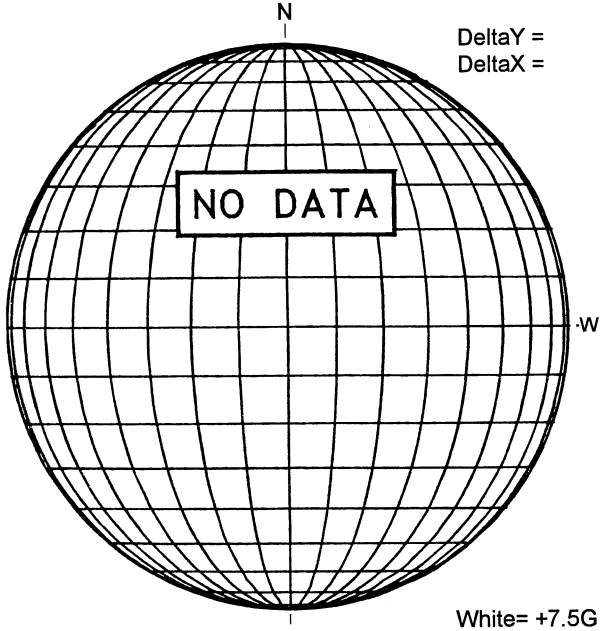


1540 UT

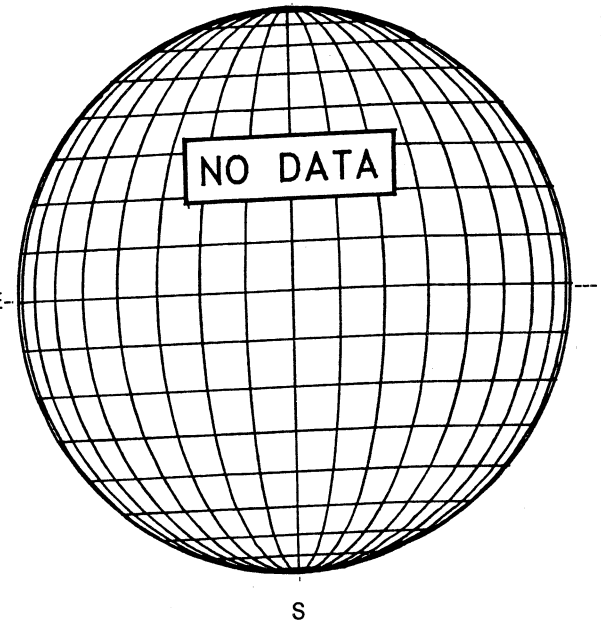
STANFORD MAGNETOGRAM



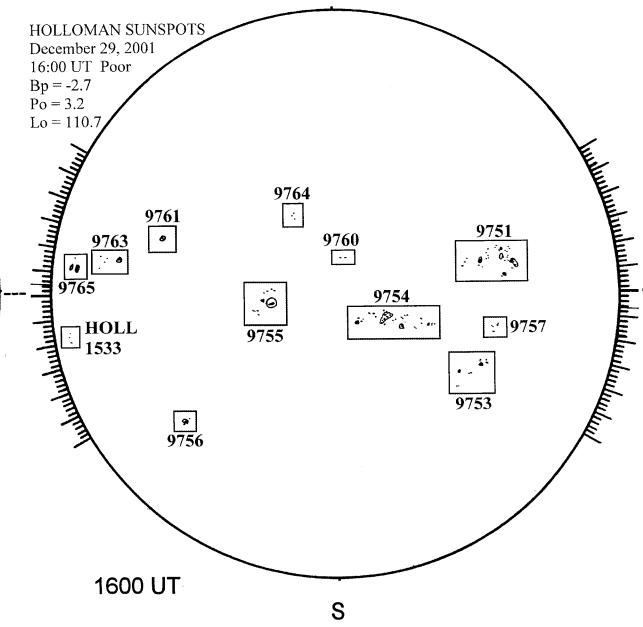
MT. WILSON MAGNETOGRAM



MEUDON H-ALPHA

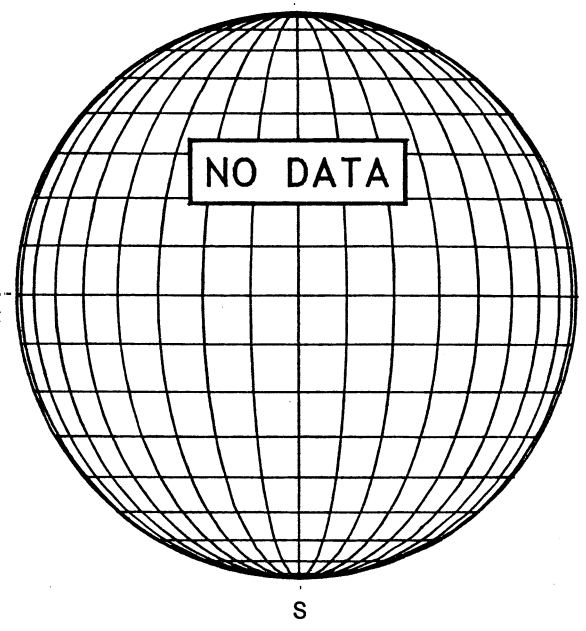


HOLLOMAN SUNSPOT



1600 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

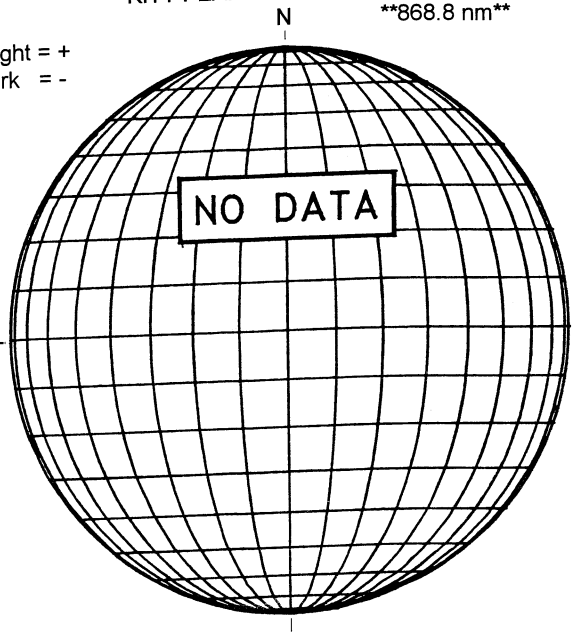


DECEMBER 30, 2001 (P= 3.10, Bo = -2.77, Lo = 106.05)

KITT PEAK MAGNETOGRAM

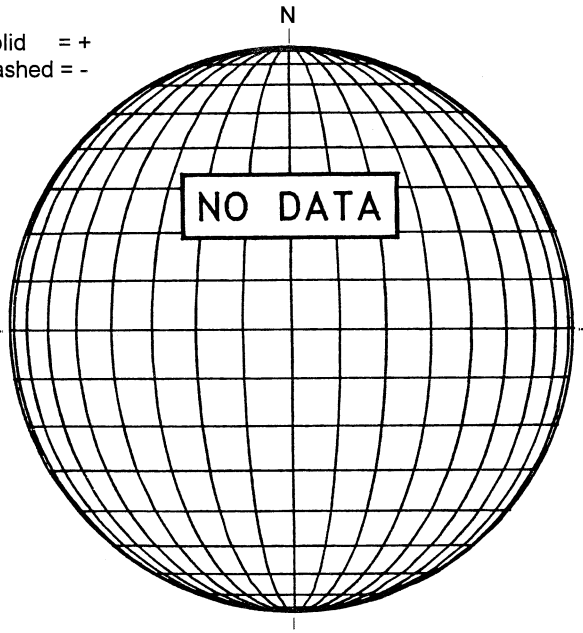
868.8 nm

Bright = +
Dark = -



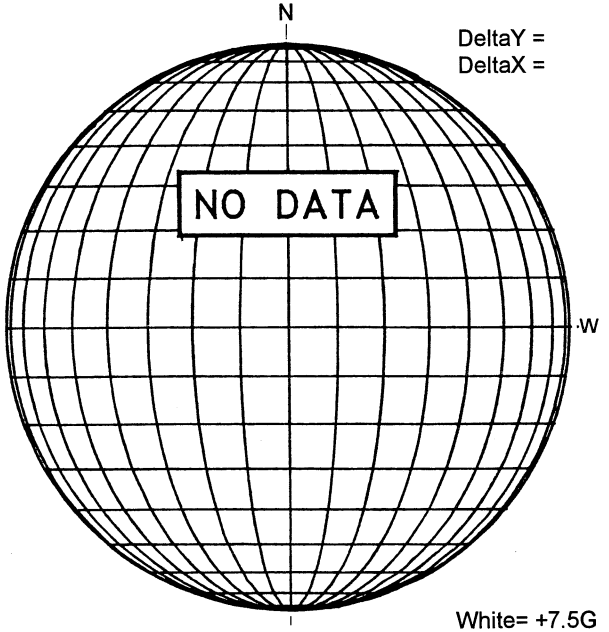
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



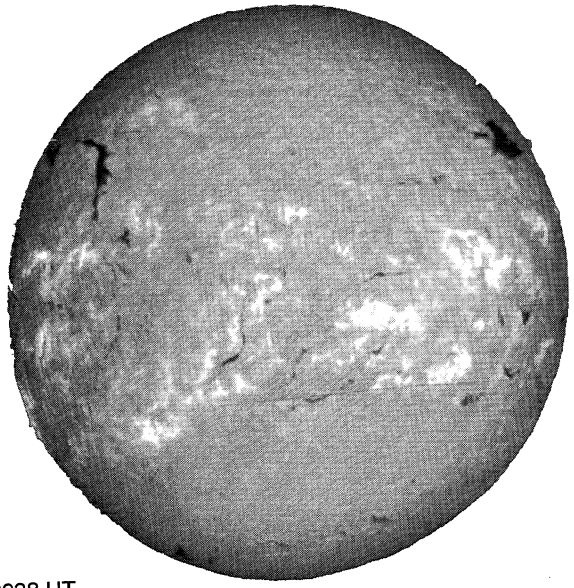
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



White= +7.5G
Black = -7.5G

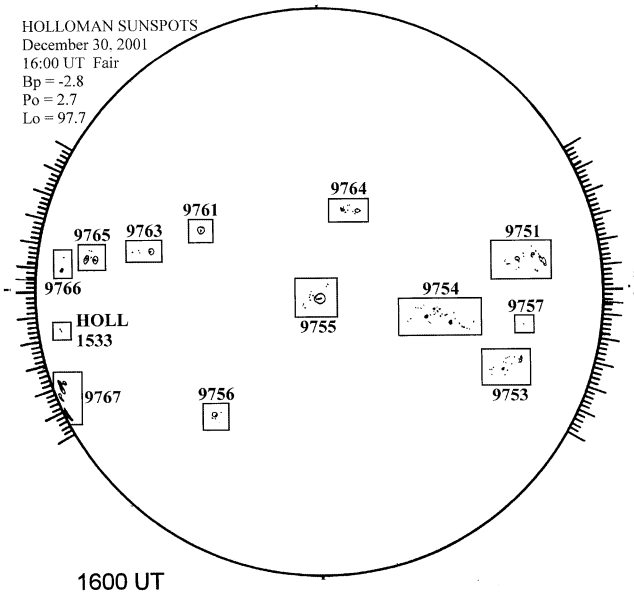
MEUDON H-ALPHA



0938 UT

S

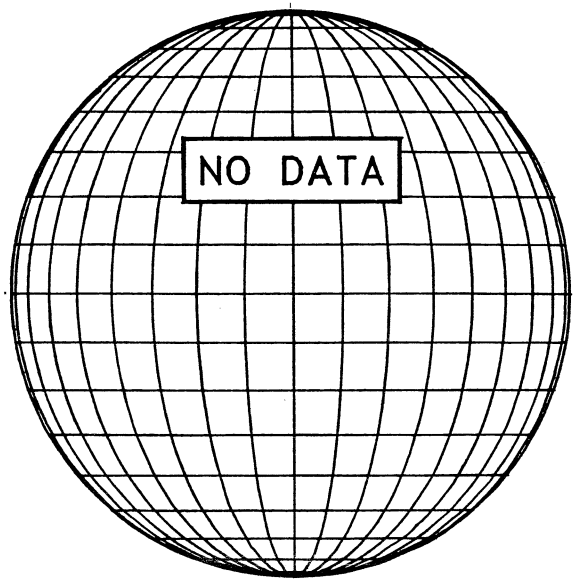
HOLLOMAN SUNSPOT



1600 UT

S

LOMNICKY PEAK CORONA (1.04 Radii)----



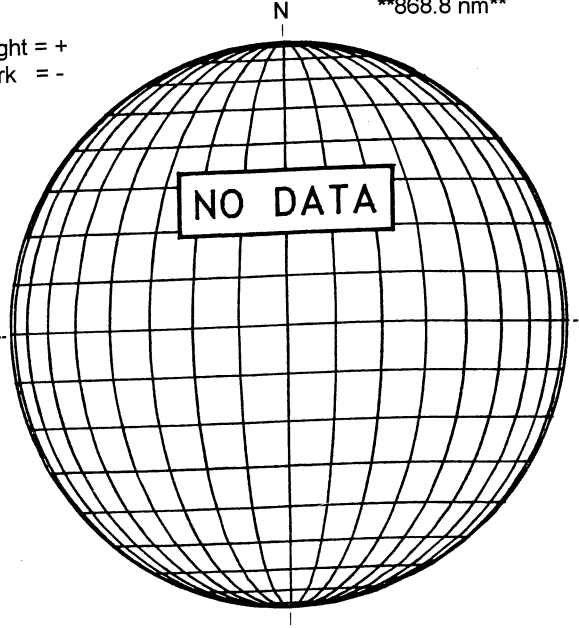
S

DECEMBER 31, 2001 (P= 2.61, Bo = -2.89, Lo = 92.88)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



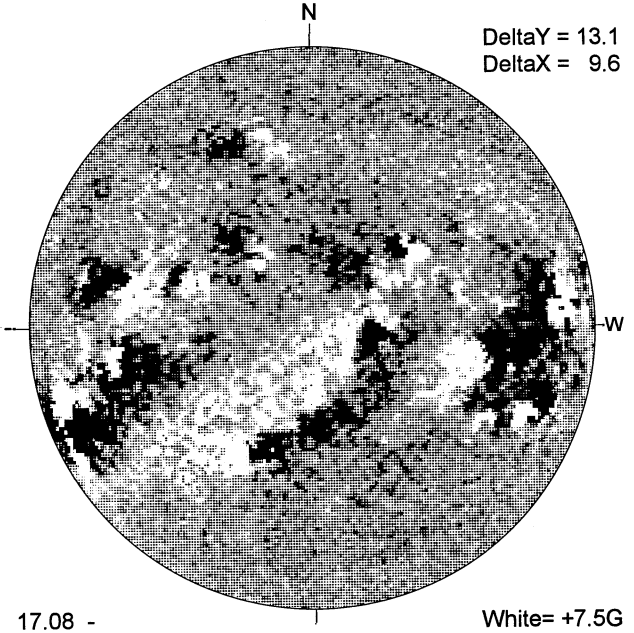
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

1921 UT

MT. WILSON MAGNETOGRAM

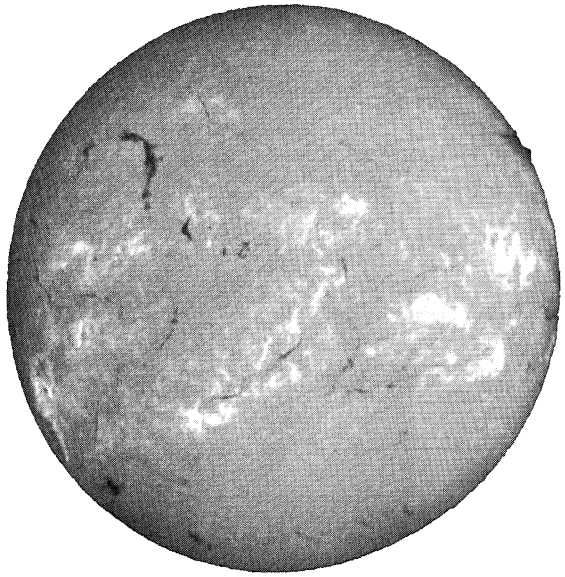
DeltaY = 13.1
DeltaX = 9.6



17.08 -
18.06 UT

White= +7.5G
Black = -7.5G

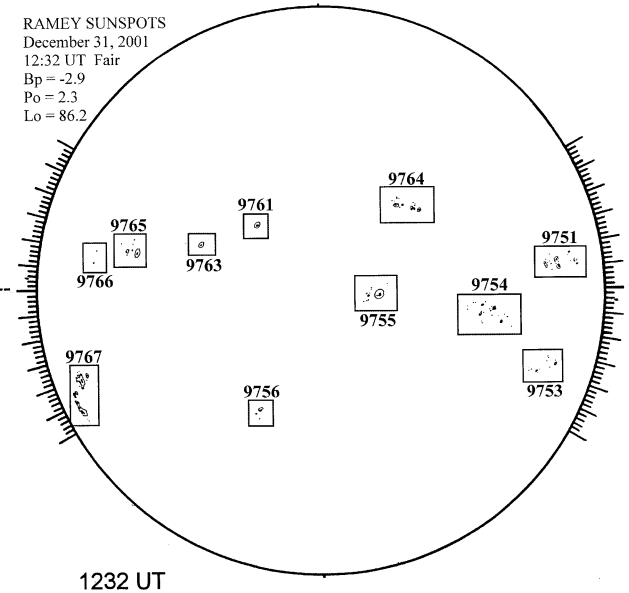
MEUDON H-ALPHA



0937 UT

S

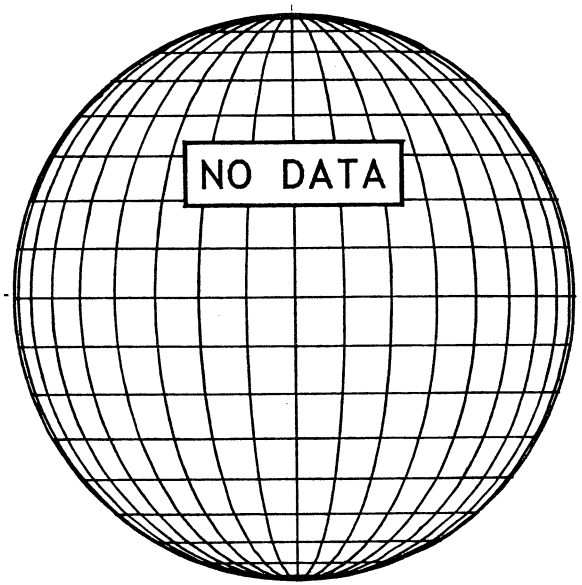
RAMEY SUNSPOT



1232 UT

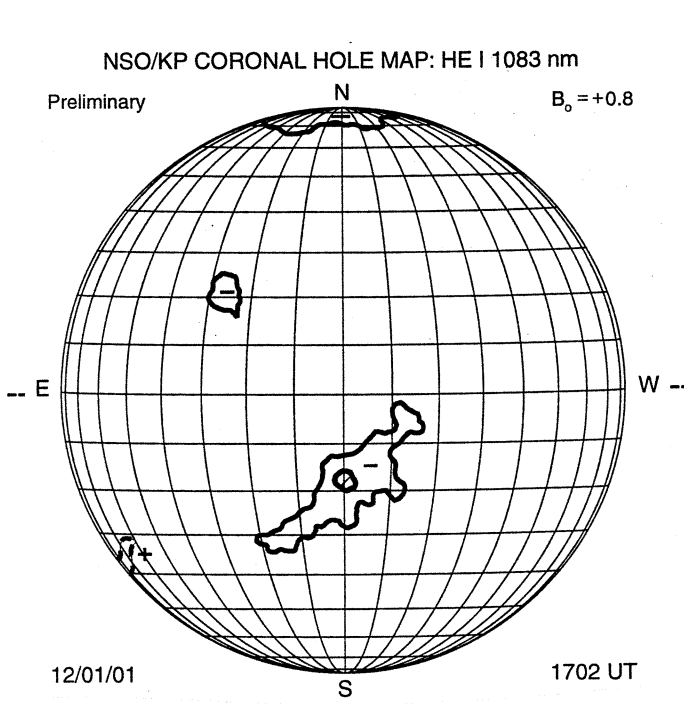
S

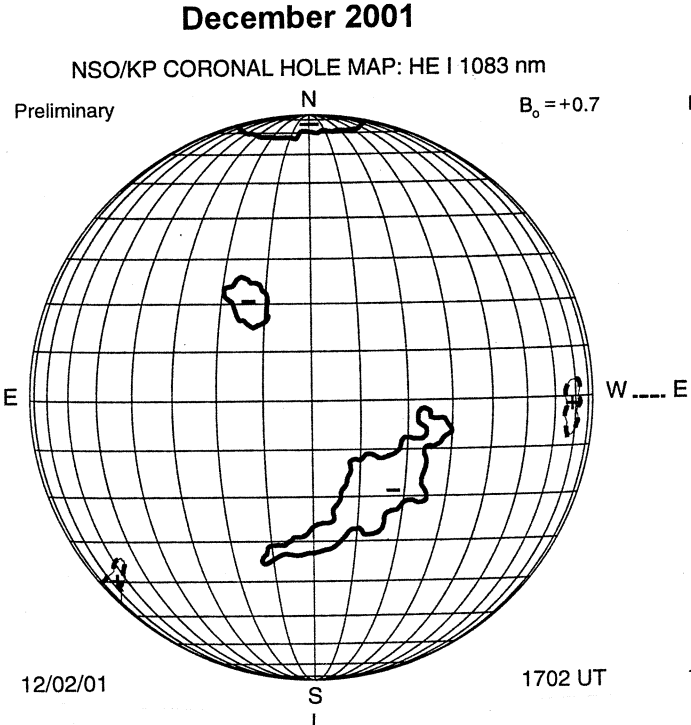
SACRAMENTO PEAK CORONA (1.15 Radii)----

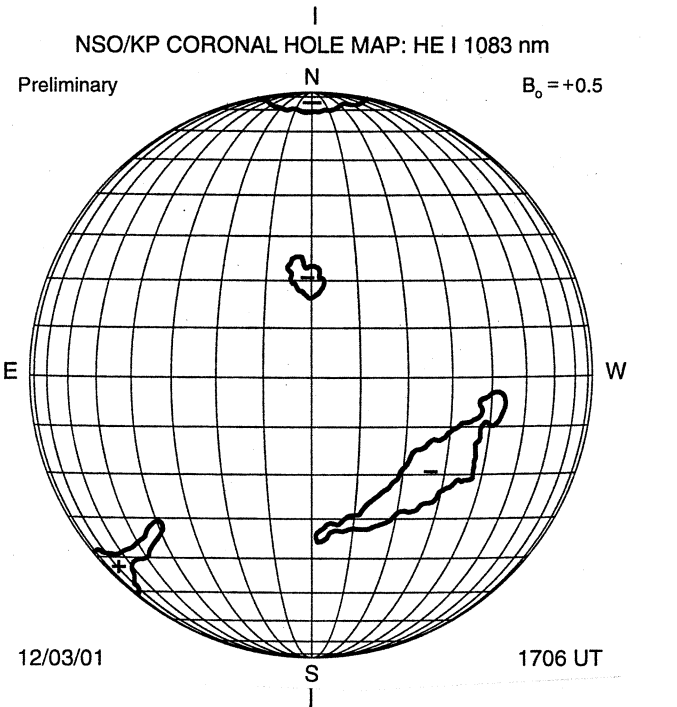


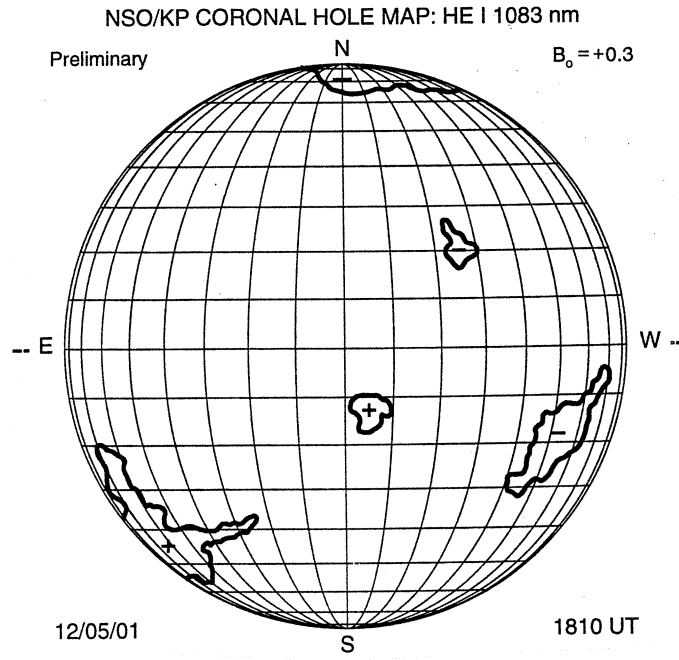
S

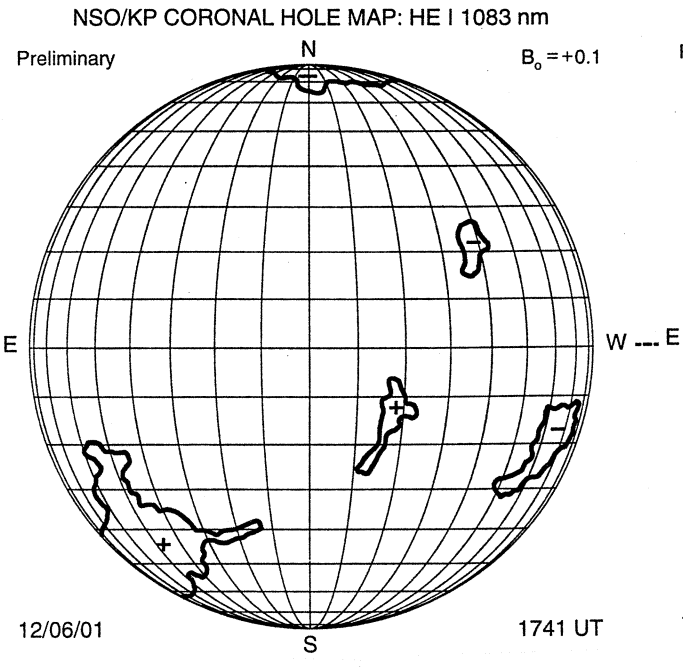
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2001

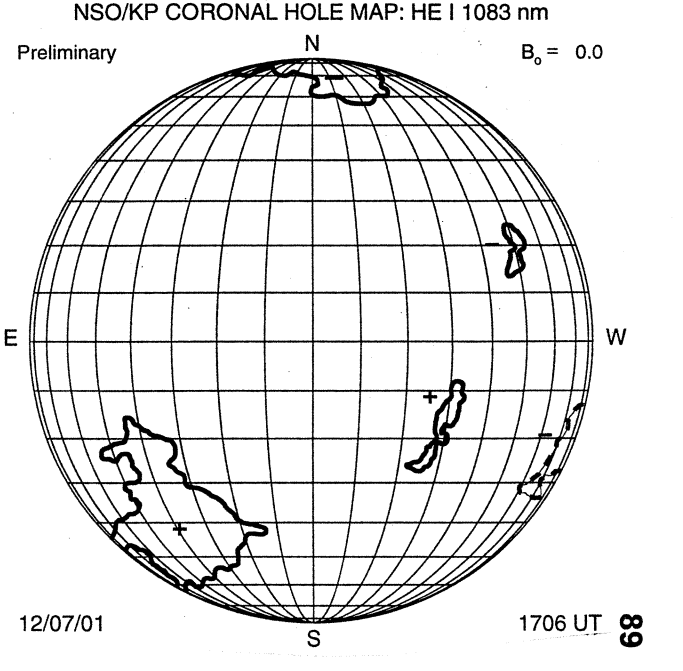






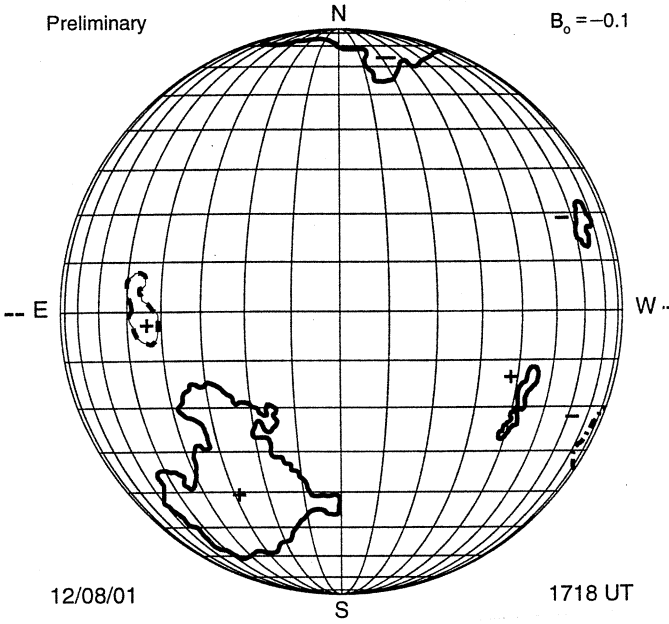




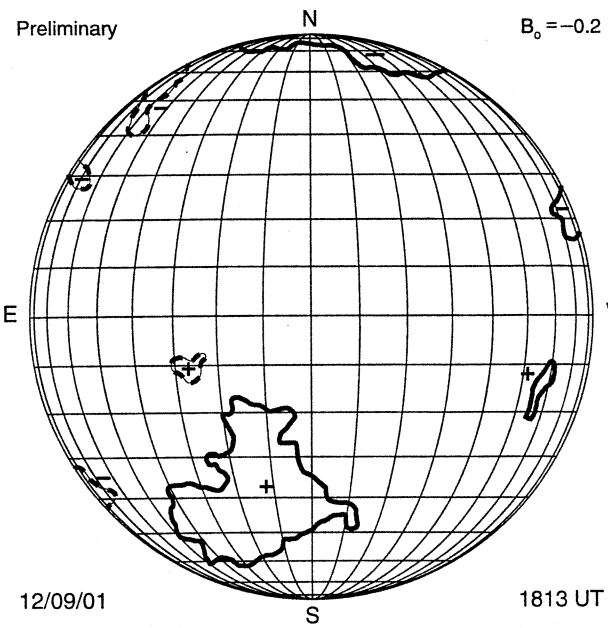


KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2001

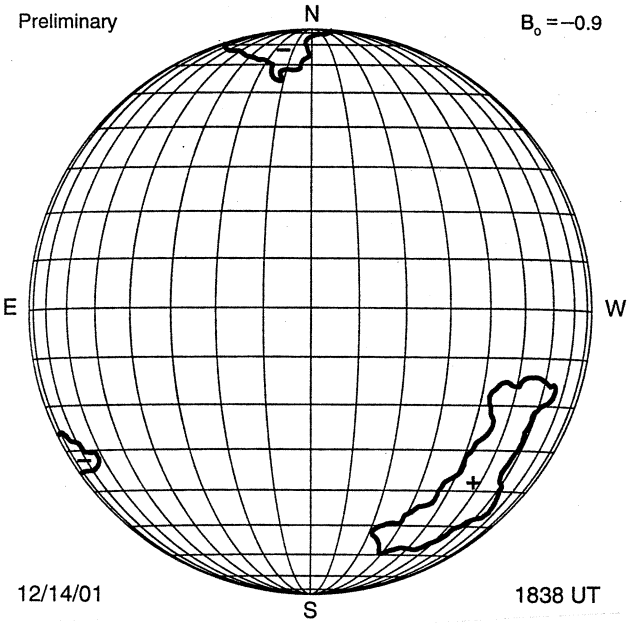
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



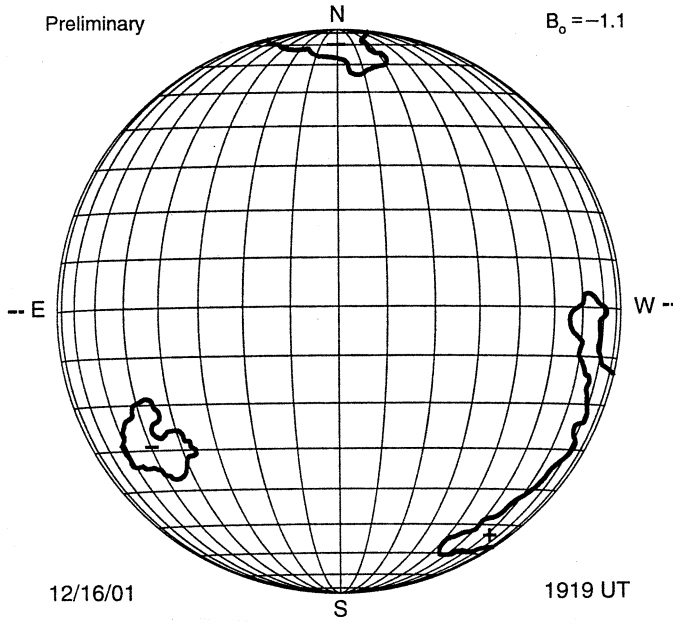
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



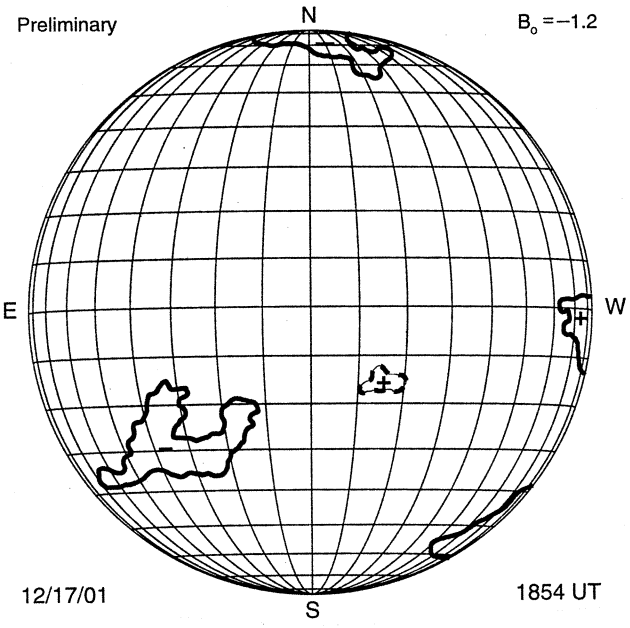
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



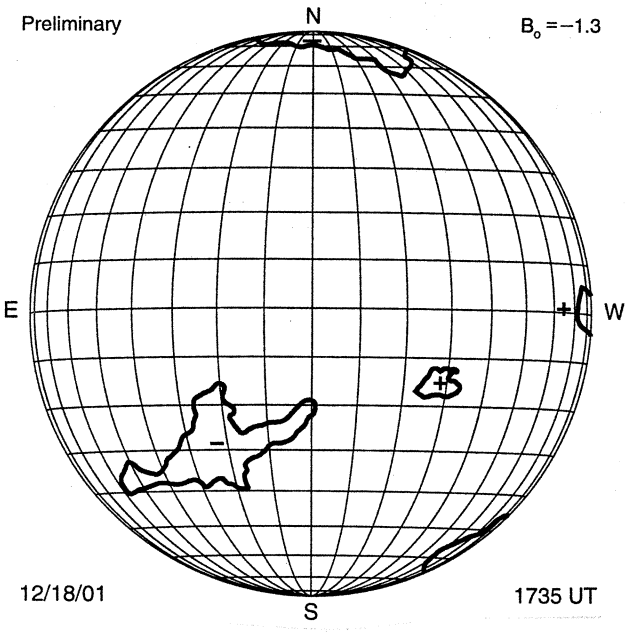
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



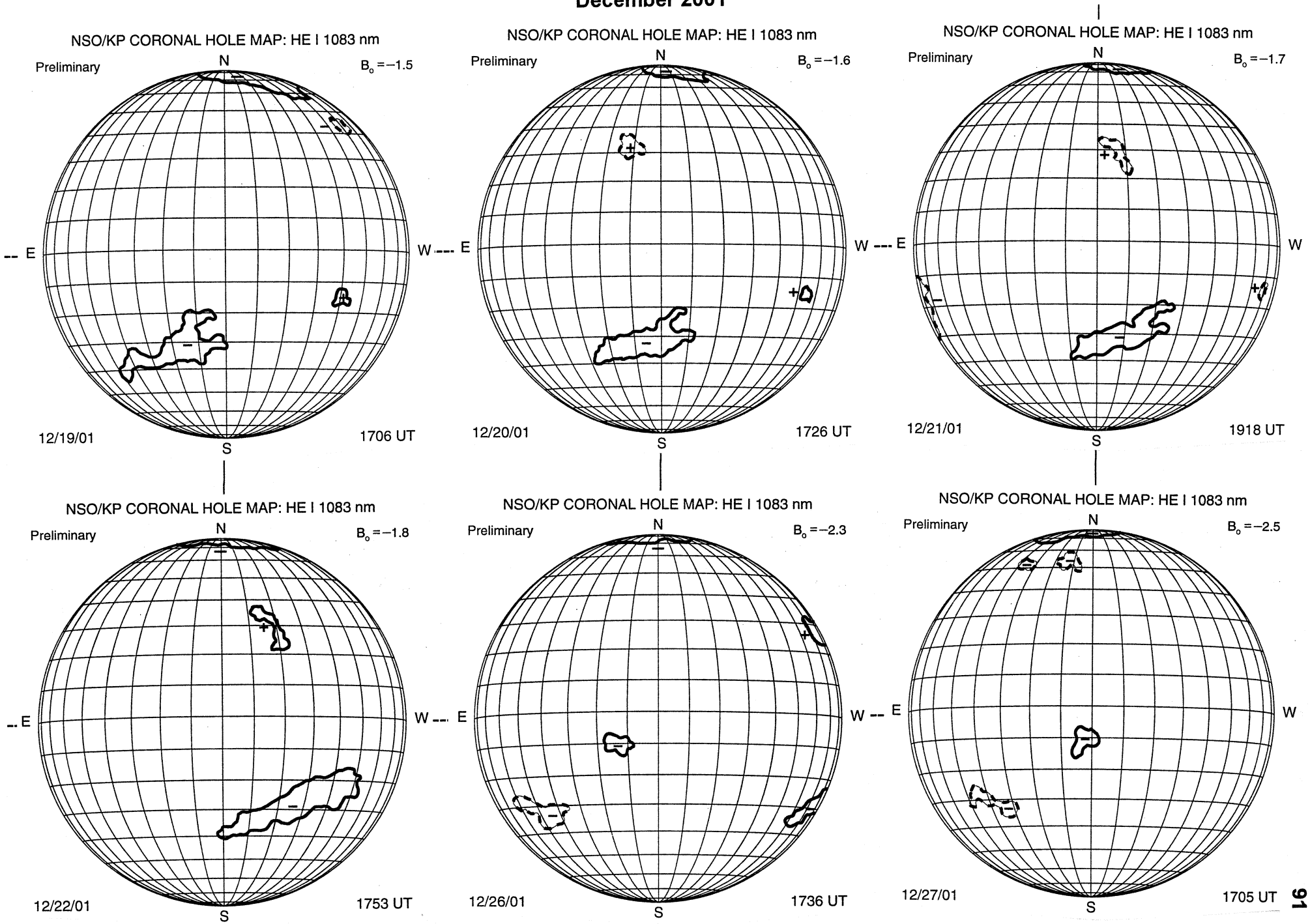
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



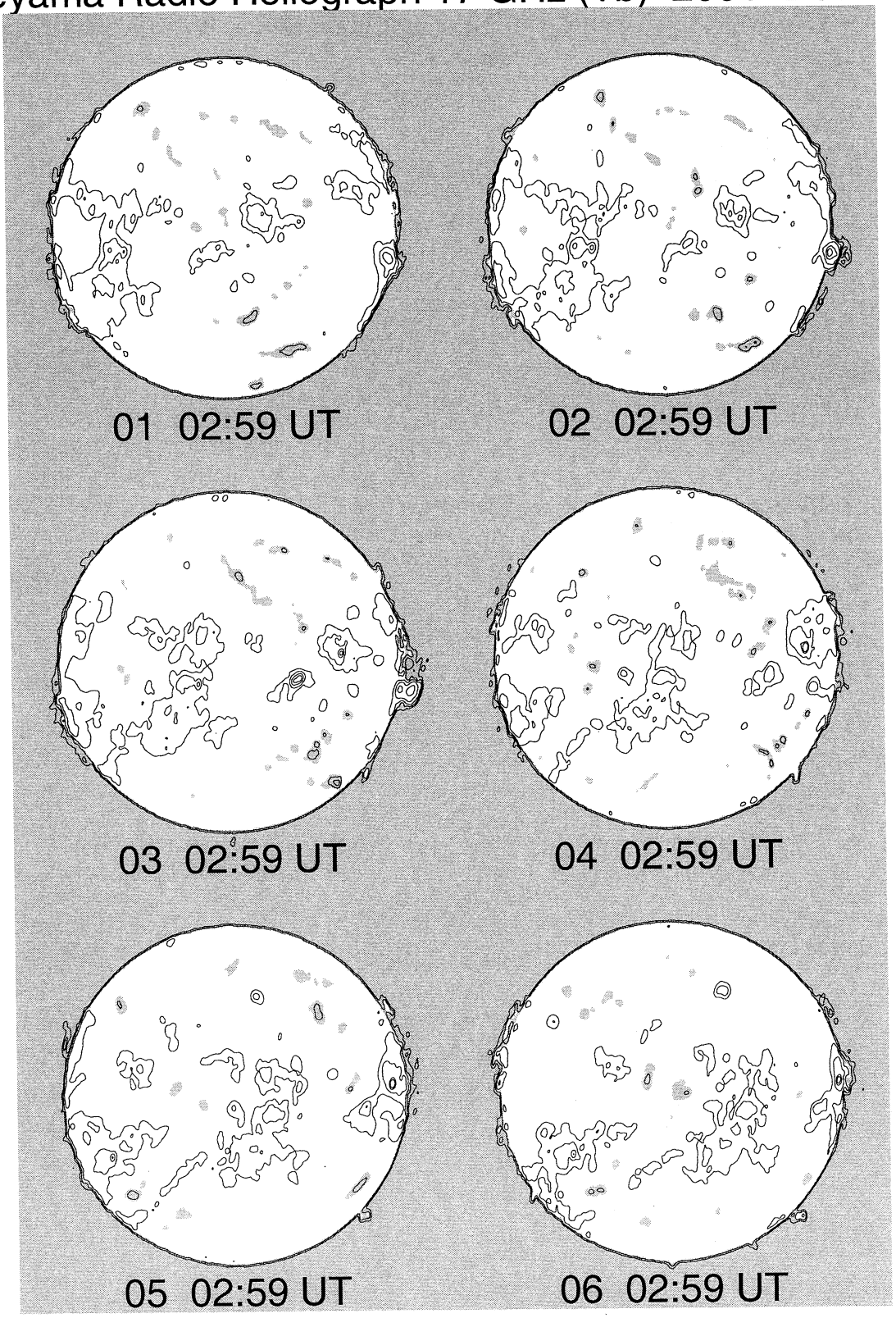
NSO/KP CORONAL HOLE MAP: HE I 1083 nm



KITT PEAK CORONAL HOLE MAPS HE I 1083 nm
December 2001

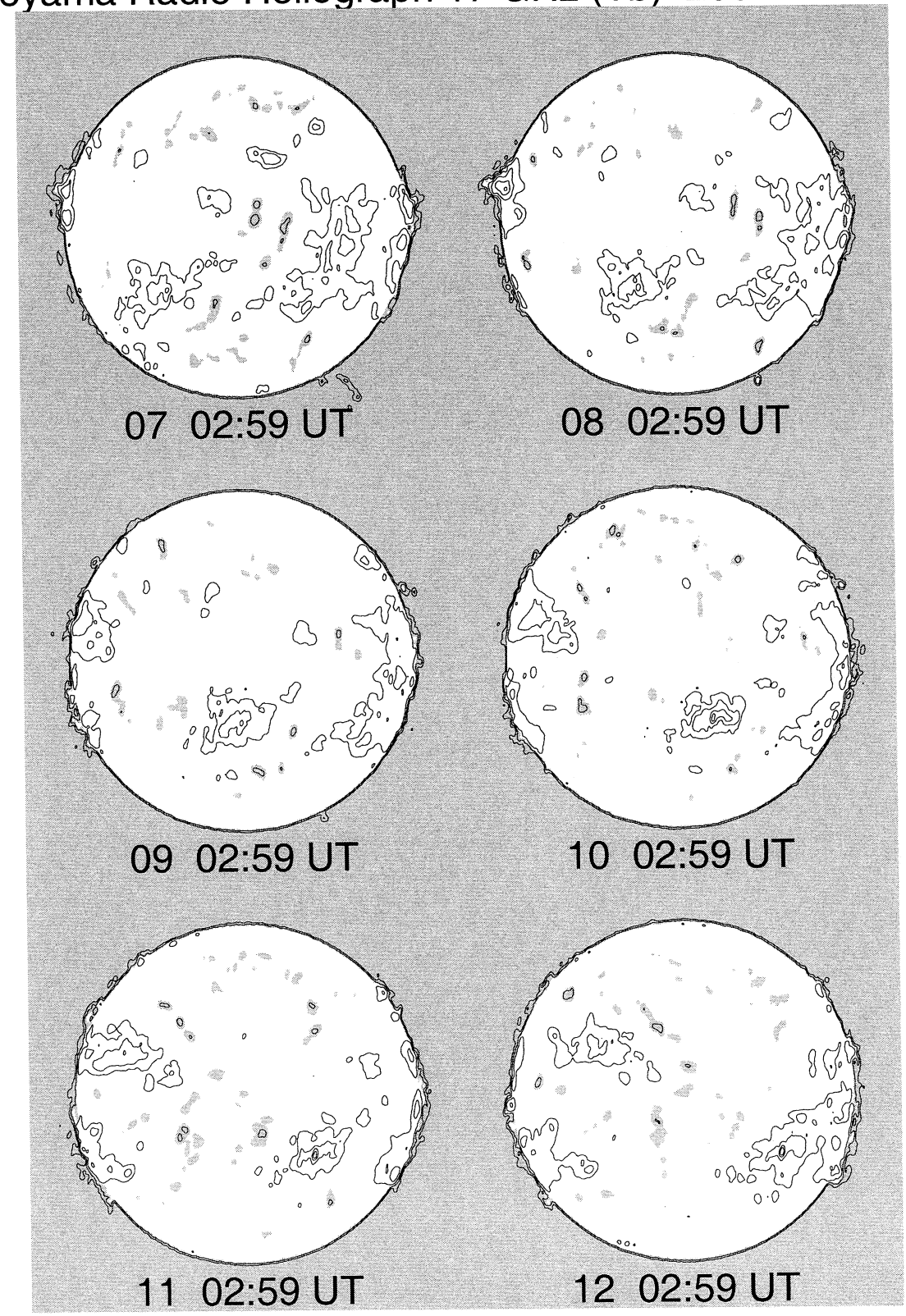


Nobeyama Radio Heliograph 17 GHz (Tb) 2001 December



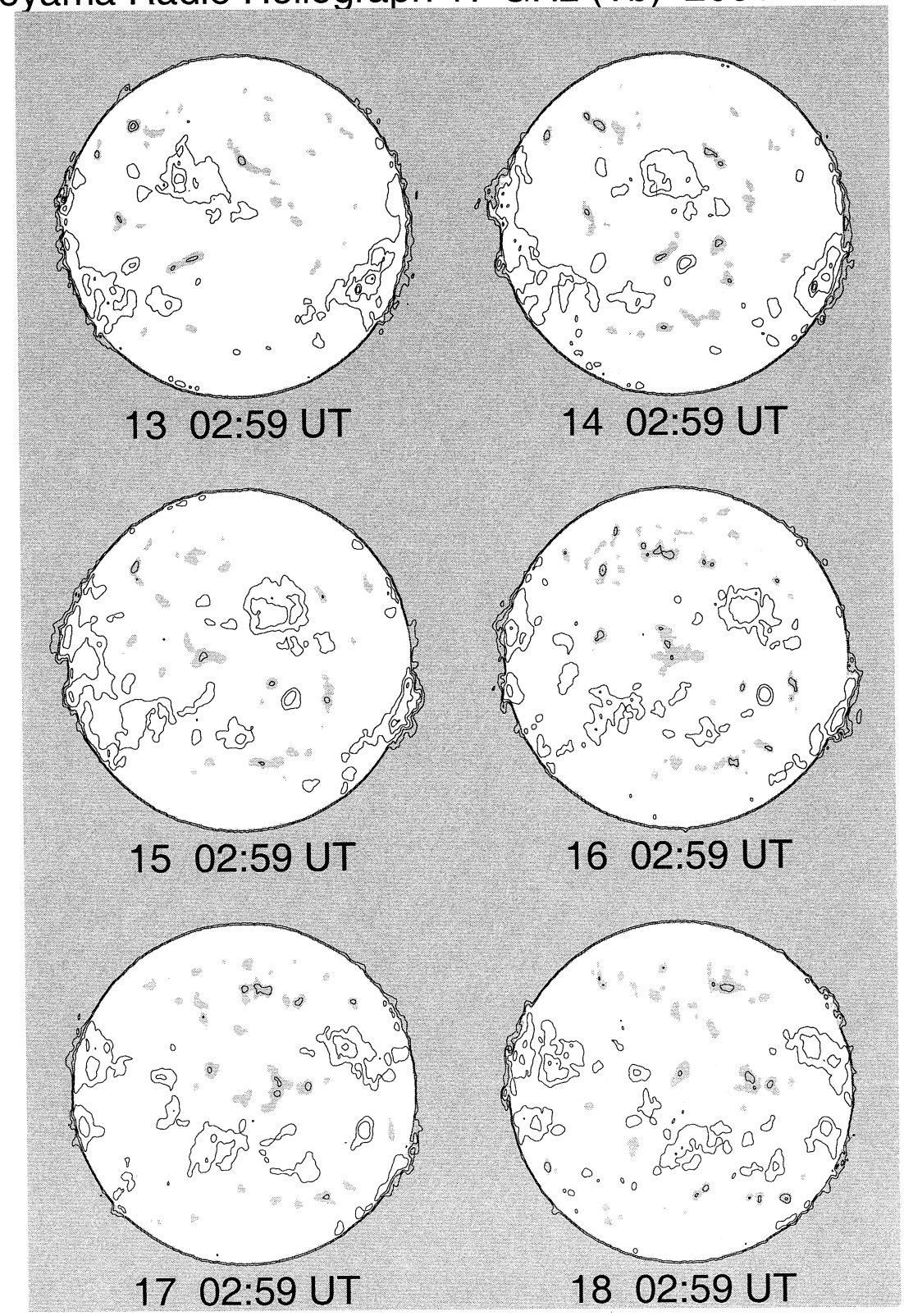
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2001 December



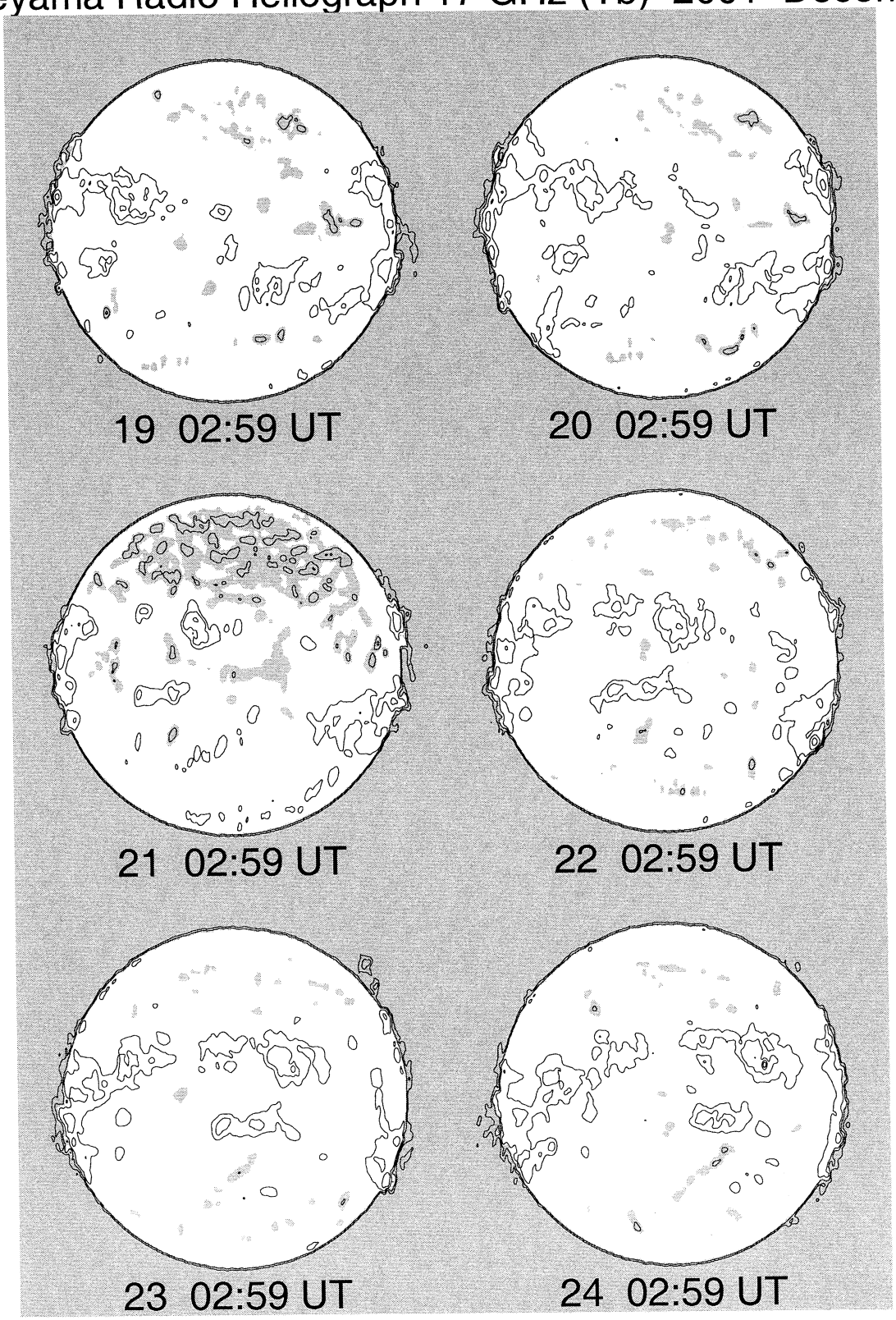
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2001 December



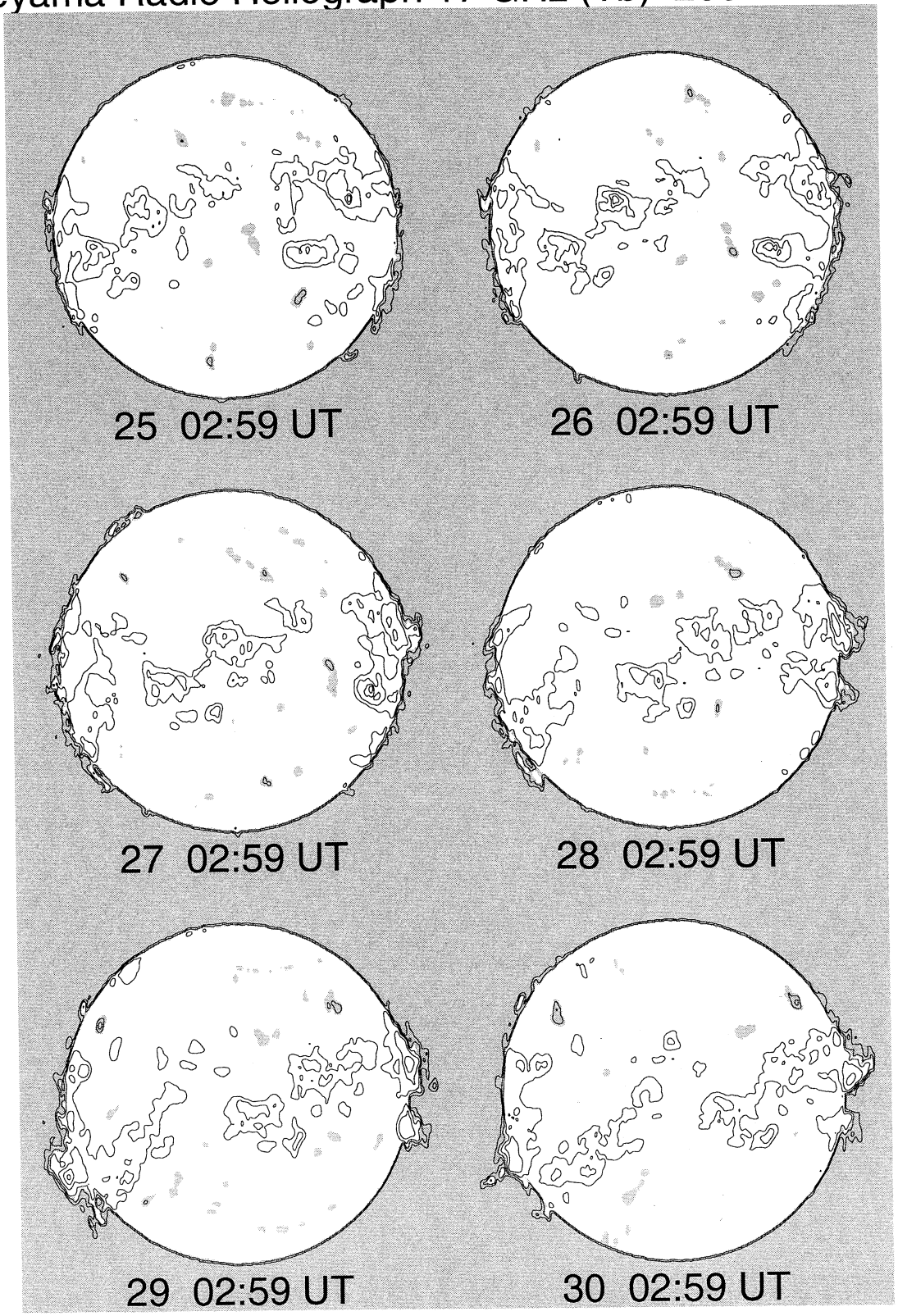
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2001 December



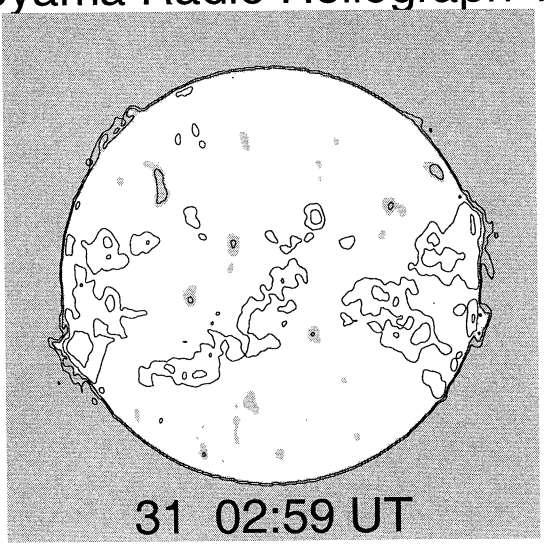
Contour Levels Tb=[5,8,12,20,50,100] x 10^3 K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 2001 December



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

Nobeyama Radio Heliograph 17 GHz (Tb) 2001 December



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

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

DECEMBER 2001

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
9716		LEAR	11	25	0025	S06	E82	12	1.1		A	HAX	60	1	3	2
9716		KAND	11	25	0815	S04	E83	12	1.5			HA		1	2	1
9716		RAMY	11	25	1314	S05	E77	12	1.3		B	DAO	50	3	7	3
9716		SVTO	11	25	1315	S03	E78	12	1.4		A	HSX	30	1	1	3
9716	30860	MWIL	11	25	1600	S05	E70	11	30.9	4	(AP)					
9716		LEAR	11	26	0102	S06	E70	12	1.3		B	DSO	50	3	10	3
9716		VORO	11	26	0107	S04	E68	12	1.1			HAX	75	1		2
9716		SVTO	11	26	0733	S04	E66	12	1.2		B	CSO	30	7	8	3
9716	30860	MWIL	11	26	1600	S04	E58	12	1.0	4	(AP)					
9716		RAMY	11	26	1631	S05	E60	12	1.2		B	CSO	40	3	3	3
9716		HOLL	11	26	2000	S04	E58	12	1.2		B	CSO	50	4	4	2
9716		VORO	11	26	2334	S06	E57	12	1.2			DSO	208	3	5	2
9716		LEAR	11	27	0010	S05	E56	12	1.2		B	CSO	70	5	5	4
9716		SVTO	11	27	0718	S04	E52	12	1.2		B	CSO	80	4	4	3
9716		KAND	11	27	0755	S05	E52	12	1.2			CAO		3	2	4
9716		RAMY	11	27	1222	S05	E48	12	1.1		B	DSO	40	2	3	2
9716		HOLL	11	27	2035	S04	E42	12	1.0		A	HSX	50	2	2	2
9716		VORO	11	27	2328	S04	E41	12	1.0			DSO	155	5	1	2
9716		LEAR	11	28	0010	S05	E42	12	1.1		B	CSO	40	5	3	4
9716		KAND	11	28	0835	S04	E40	12	1.3			CSO		3	8	3
9716		RAMY	11	28	1416	S05	E33	12	1.1		B	DAO	60	4	3	3
9716	30860	MWIL	11	28	1600	S04	E32	12	1.0	4	(B)					
9716		HOLL	11	28	1705	S06	E35	12	1.3		B	CSO	70	5	8	3
9716		VORO	11	28	2344	S05	E27	12	1.0			HAX	102	4		2
9716		LEAR	11	29	0015	S05	E27	12	1.0		B	CAO	50	6	3	1
9716		SVTO	11	29	1412	S06	E19	12	1.0		B	CSO	50	5	4	2
9716		RAMY	11	29	1500	S05	E20	12	1.1		B	CSO	30	7	2	1
9716		HOLL	11	29	1655	S06	E21	12	1.3		B	CAO	70	10	8	3
9716		VORO	11	30	0012	S05	E14	12	1.0			HAX	57	4		3
9716		LEAR	11	30	0130	S06	E16	12	1.3		B	DAO	60	5	8	1
9716		SVTO	11	30	0730	S05	E09	12	1.0		B	CAO	40	2	3	3
9716	30860	MWIL	11	30	1715	S05	E04	12	1.0	4	(B)					
9716		LEAR	12	01	0040	S05	E04	12	1.3		B	DSO	50	9	9	3
9716		VORO	12	01	0333	S05	W02	12	1.0			HAX	56	3		3
9716		SVTO	12	01	0826	S05	W05	12	1.0		B	CSO	20	2	2	3
9716		RAMY	12	01	1240	S04	W04	12	1.2		B	CSO	30	2	7	4
9716		HOLL	12	01	1524	S04	W05	12	1.3		B	DAO	30	4	10	3
9716	30860	MWIL	12	01	1545	S04	W07	12	1.1	5	(BG)					
9716		LEAR	12	02	0010	S04	W09	12	1.3		B	DAO	50	7	10	4
9716		VORO	12	02	0014	S05	W14	12	1.0			HAX	40	1		3
9716		SVTO	12	02	0840	S05	W14	12	1.3		B	CSO	40	9	8	2
9716		RAMY	12	02	1223	S05	W17	12	1.2		B	DSO	30	7	9	4
9716	30860	MWIL	12	02	1530	S04	W20	12	1.1	5	BG					
9716		HOLL	12	02	1540	S04	W21	12	1.1		B	DAO	30	10	7	3
9716		VORO	12	02	2342	S05	W25	12	1.1			DSO	70	4	4	2
9716		LEAR	12	03	0100	S05	W24	12	1.2		B	DSO	50	7	7	2
9716		TACH	12	03	0739	S05	W24	12	1.5			BXI	38	5	8	3
9716		SVTO	12	03	0850	S05	W28	12	1.3		B	DAO	80	12	9	2
9716		RAMY	12	03	1228	S05	W30	12	1.3		B	DAO	70	24	8	3
9716		HOLL	12	03	1525	S05	W32	12	1.2		B	DAI	110	27	10	3
9716		VORO	12	03	2345	S04	W36	12	1.3			CRI	107	14	9	2
9716		LEAR	12	04	0108	S06	W37	12	1.3		BG	DAO	80	13	9	2
9716		TACH	12	04	0635	S05	W37	12	1.5			BRI	42	13	7	3
9716		SVTO	12	04	0848	S05	W41	12	1.3		BG	DAO	80	9	9	2
9716		RAMY	12	04	1237	S04	W43	12	1.3		B	DSO	30	8	9	4
9716		HOLL	12	04	1530	S06	W44	12	1.3		B	DAO	80	9	9	2
9716		VORO	12	04	2338	S06	W50	12	1.2			CAI	127	4	4	2
9716		LEAR	12	05	0015	S06	W49	12	1.3		BG	DAO	80	13	8	4
9716		TACH	12	05	0628	S04	W50	12	1.5			BRO	17	7	7	4
9716		RAMY	12	05	1226	S04	W56	12	1.3		B	DSO	70	15	9	3
9716	30860	MWIL	12	05	1530	S05	W56	12	1.4	4	(B)					
9716		HOLL	12	05	1542	S05	W56	12	1.5		B	DSO	50	6	8	3
9716		VORO	12	05	2338	S05	W61	12	1.4			BXI	67	9	8	3
9716		LEAR	12	06	0020	S06	W61	12	1.4		B	DAO	80	8	9	3
9716		SVTO	12	06	0732	S05	W63	12	1.6		A	AXX		1		2
9716		RAMY	12	06	1338	S05	W67	12	1.5		A	AXX	20	2	2	4
9716	30860	MWIL	12	06	1530	S05	W71	12	1.3	4	(B)					
9716		VORO	12	06	2338	S05	W73	12	1.5			AXX	28	1		2
9716		RAMY	12	07	1243	S05	W80	12	1.5		A	AXX	10	1		4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

DECEMBER 2001

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9716A		VORO	12 01 0333	S09 E16	12 2.3			AXX	19	3	2	3
9716B		VORO	12 05 2338	S22 W43	12 2.7			AXX	4	1		3
9717		SVTO	11 27 0718	N06 E88	12 3.9		A	HKX	180	1	8	3
9717		KAND	11 27 0755	N04 E86	12 3.7			HS		1	2	4
9717		RAMY	11 27 1222	N05 E83	12 3.7		A	HSX	120	1	6	2
9717		HOLL	11 27 2035	N06 E78	12 3.7		A	HAX	180	1	2	2
9717		VORO	11 27 2328	N04 E73	12 3.4			HAX	269	1		2
9717		LEAR	11 28 0010	N04 E76	12 3.7		A	HHX	180	1	3	4
9717		KAND	11 28 0835	N04 E73	12 3.8			CSO		3	15	3
9717		RAMY	11 28 1416	N05 E71	12 3.9		B	EAO	300	2	13	3
9717	30862	MWIL	11 28 1600	N04 E66	12 3.6	5	(B)					
9717		HOLL	11 28 1705	N04 E68	12 3.8		B	CAO	220	2	10	3
9717		VORO	11 28 2344	N04 E66	12 3.9			DSO	577	2	10	2
9717		LEAR	11 29 0015	N04 E65	12 3.9		B	DSO	200	2	8	1
9717		SVTO	11 29 1412	N04 E58	12 3.9		B	EKO	230	2	15	2
9717		RAMY	11 29 1500	N05 E59	12 4.0		B	DSO	280	4	10	1
9717		HOLL	11 29 1655	N04 E55	12 3.8		B	FKO	330	5	16	3
9717		VORO	11 30 0012	N04 E53	12 4.0			DSO	476	5	10	3
9717		LEAR	11 30 0130	N04 E53	12 4.0		BG	EKO	330	4	14	1
9717		SVTO	11 30 0730	N05 E48	12 3.9		B	EKO	310	3	13	3
9717	30862	MWIL	11 30 1715	N04 E41	12 3.8	5	(BP)					
9717		LEAR	12 01 0040	N05 E39	12 3.9		B	DKO	290	5	13	3
9717		VORO	12 01 0333	N04 E38	12 4.0			DSO	440	3	10	3
9717		SVTO	12 01 0826	N03 E33	12 3.8		B	EKO	260	3	14	3
9717		RAMY	12 01 1240	N05 E34	12 4.1		B	EAO	320	3	12	4
9717		HOLL	12 01 1524	N04 E32	12 4.0		B	FAO	210	3	16	3
9717	30862	MWIL	12 01 1545	N05 E29	12 3.8	5	(BP)					
9717		LEAR	12 02 0010	N05 E25	12 3.9		B	EAO	230	5	13	4
9717		VORO	12 02 0014	N04 E26	12 3.9			DSO	262	3	10	3
9717		SVTO	12 02 0840	N05 E21	12 3.9		B	EAO	240	6	14	2
9717		RAMY	12 02 1223	N05 E18	12 3.9		B	EAO	250	8	15	4
9717	30862	MWIL	12 02 1530	N05 E15	12 3.8	5	BP					
9717		HOLL	12 02 1540	N03 E18	12 4.0		B	EKO	200	6	13	3
9717		VORO	12 02 2342	N04 E13	12 3.9			DKO	298	7	10	2
9717		LEAR	12 03 0100	N05 E12	12 3.9		B	EKO	240	12	16	2
9717		TACH	12 03 0739	N05 E03	12 3.5			HA	300	2	2	3
9717		SVTO	12 03 0850	N05 E07	12 3.9		B	EAO	180	7	14	2
9717		RAMY	12 03 1228	N04 E06	12 4.0		B	EKO	210	11	15	3
9717		HOLL	12 03 1525	N04 E03	12 3.9		BG	FAI	220	11	16	3
9717		VORO	12 03 2345	N04 W01	12 3.9			CHO	252	4	11	2
9717		LEAR	12 04 0108	N04 W02	12 3.9		B	EAO	170	5	13	2
9717		TACH	12 04 0635	N06 W11	12 3.4			HA	295	3	3	3
9717		SVTO	12 04 0848	N04 W06	12 3.9		B	EAO	180	7	12	2
9717		RAMY	12 04 1237	N04 W07	12 4.0		B	ESO	170	5	11	4
9717		HOLL	12 04 1530	N04 W14	12 3.6		B	CHO	170	4	4	2
9717		VORO	12 04 2338	N04 W14	12 3.9			CHO	215	3	11	2
9717		LEAR	12 05 0015	N04 W15	12 3.9		B	FSO	160	7	17	4
9717		TACH	12 05 0628	N06 W22	12 3.6			HSX	210	1	2	4
9717		RAMY	12 05 1226	N05 W28	12 3.4		B	CSO	110	2	5	3
9717	30862	MWIL	12 05 1530	N05 W29	12 3.5	5	(AP)					
9717		HOLL	12 05 1542	N05 W28	12 3.5		B	CAO	170	2	5	3
9717		VORO	12 05 2338	N05 W33	12 3.5			HHX	214	2		3
9717		LEAR	12 06 0020	N05 W26	12 4.1		B	CSO	150	5	17	3
9717		SVTO	12 06 0732	N05 W37	12 3.5		B	CAO	120	2	4	2
9717		RAMY	12 06 1338	N05 W42	12 3.4		A	HSX	130	1	2	4
9717	30862	MWIL	12 06 1530	N06 W43	12 3.4	5	(AP)					
9717		VORO	12 06 2338	N05 W47	12 3.5			HSX	200	2		2
9717		LEAR	12 07 0150	N04 W49	12 3.4		A	HSX	80	3	2	1
9717		SVTO	12 07 0715	N05 W52	12 3.4		A	HSX	100	1	2	2
9717		RAMY	12 07 1243	N05 W55	12 3.4		A	HSX	120	1	2	4
9717		HOLL	12 07 1609	N06 W56	12 3.5		A	HSX	110	1	2	2
9717		VORO	12 07 2338	N05 W61	12 3.4			HAX	148	2		3
9717		LEAR	12 08 0120	N05 W62	12 3.4		A	HSX	70	1	2	3
9717		SVTO	12 08 0816	N05 W66	12 3.4		A	HAX	140	1	3	3
9717		RAMY	12 08 1233	N05 W69	12 3.4		A	HSX	100	1	2	3
9717	30862	MWIL	12 08 1600	N06 W70	12 3.4	5	(AP)					
9717		HOLL	12 08 1610	N06 W69	12 3.5		A	HAX	90	1	2	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9717		VORO	12 08 2330	N05 W74	12 3.4			HAX	134	1		2
9717		LEAR	12 09 0015	N05 W75	12 3.4		A	HSX	80	1	2	3
9717		SVTO	12 09 0948	N05 W81	12 3.3		A	HSX	60	1	6	2
9717		RAMY	12 09 1251	N05 W82	12 3.4		A	HSX	60	1	3	3
9718		HOLL	11 27 2035	S06 E85	12 4.2		A	HAX	60	6	2	2
9718		VORO	11 27 2328	S06 E80	12 4.0			HAX	289	1		2
9718		LEAR	11 28 0010	S07 E82	12 4.1		A	HAX	70	4	3	4
9718		KAND	11 28 0835	S04 E79	12 4.3			CAO		7	7	3
9718		RAMY	11 28 1416	S06 E75	12 4.2		B	DKI	570	6	10	3
9718	30864	MWIL	11 28 1600	S07 E73	12 4.1	5	(B)					
9718		HOLL	11 28 1705	S07 E74	12 4.2		B	DAI	440	4	10	3
9718		VORO	11 28 2344	S07 E69	12 4.1			DSO	469	6	7	2
9718		LEAR	11 29 0015	S07 E66	12 3.9		B	DAI	360	7	7	1
9718		SVTO	11 29 1412	S07 E63	12 4.3		B	DKI	380	9	9	2
9718		RAMY	11 29 1500	S05 E63	12 4.3		B	EAO	300	15	13	1
9718		HOLL	11 29 1655	S07 E61	12 4.3		BG	EKI	550	16	13	3
9718		VORO	11 30 0012	S07 E57	12 4.3			DSO	559	14	10	3
9718		LEAR	11 30 0130	S08 E54	12 4.1		BGD	EKI	510	13	12	1
9718		SVTO	11 30 0730	S07 E51	12 4.1		B	EKO	490	12	12	3
9718	30864	MWIL	11 30 1715	S07 E45	12 4.1	5	(B)					
9718		LEAR	12 01 0040	S07 E42	12 4.2		BG	EKI	500	18	12	3
9718		VORO	12 01 0333	S07 E41	12 4.2			DSO	594	22	9	3
9718		SVTO	12 01 0826	S07 E38	12 4.2		BG	EKI	500	14	13	3
9718		RAMY	12 01 1240	S06 E36	12 4.2		BG	EKI	610	16	12	4
9718		HOLL	12 01 1524	S08 E33	12 4.1		BG	EKI	530	16	13	3
9718	30864	MWIL	12 01 1545	S07 E34	12 4.2	5	(D)					
9718		LEAR	12 02 0010	S06 E29	12 4.2		BG	EKI	580	31	12	4
9718		VORO	12 02 0014	S07 E29	12 4.2			DSO	766	17	9	3
9718		SVTO	12 02 0840	S07 E24	12 4.1		BG	EKC	630	23	12	2
9718		RAMY	12 02 1223	S05 E23	12 4.2		BGD	EKI	640	22	12	4
9718	30864	MWIL	12 02 1530	S07 E21	12 4.2	5	D *					
9718		HOLL	12 02 1540	S08 E21	12 4.2		BGD	EKI	570	44	11	3
9718		VORO	12 02 2342	S07 E17	12 4.3			DHI	787	18	9	2
9718		LEAR	12 03 0100	S06 E16	12 4.2		BG	EKI	740	28	12	2
9718		TACH	12 03 0739	S06 E11	12 4.1			DAI	753	12	7	3
9718		SVTO	12 03 0850	S07 E11	12 4.2		BG	EKC	440	29	12	2
9718		RAMY	12 03 1228	S08 E09	12 4.2		BG	EKI	640	27	11	3
9718		HOLL	12 03 1525	S06 E07	12 4.2		BG	EKI	730	36	12	3
9718		VORO	12 03 2345	S08 E03	12 4.2			DKI	855	28	8	2
9718		LEAR	12 04 0108	S06 E03	12 4.3		BG	EKI	710	28	12	2
9718		TACH	12 04 0635	S06 W02	12 4.1			DAI	547	26	6	3
9718		SVTO	12 04 0848	S07 W02	12 4.2		B	EKC	760	29	11	2
9718		RAMY	12 04 1237	S07 W05	12 4.1		BG	EKI	580	25	11	4
9718		HOLL	12 04 1530	S08 W06	12 4.2		B	DKI	640	31	10	2
9718		VORO	12 04 2338	S08 W10	12 4.2			DKC	980	28	8	2
9718		LEAR	12 05 0015	S07 W11	12 4.2		BG	EKI	820	35	11	4
9718		TACH	12 05 0628	S05 W14	12 4.2			DAI	723	29	7	4
9718		RAMY	12 05 1226	S07 W18	12 4.2		BG	EKC	620	32	11	3
9718	30864	MWIL	12 05 1530	S07 W19	12 4.2	5	(B)					
9718		HOLL	12 05 1542	S06 W19	12 4.2		B	DAI	500	36	10	3
9718		VORO	12 05 2338	S08 W24	12 4.2			DKC	854	40	9	3
9718		LEAR	12 06 0020	S07 W24	12 4.2		BG	EKI	760	29	11	3
9718		SVTO	12 06 0732	S07 W28	12 4.2		B	DKI	560	16	10	2
9718		RAMY	12 06 1338	S07 W34	12 4.0		BG	EKC	760	23	11	4
9718	30864	MWIL	12 06 1530	S06 W34	12 4.1	5	(B)					
9718		VORO	12 06 2338	S07 W38	12 4.1			DKI	840	28	7	2
9718		LEAR	12 07 0150	S07 W39	12 4.1		BG	DKO	300	16	10	1
9718		SVTO	12 07 0715	S07 W42	12 4.1		BGD	DKI	620	16	10	2
9718		RAMY	12 07 1243	S06 W46	12 4.1		BG	DKO	640	15	9	4
9718		HOLL	12 07 1609	S06 W46	12 4.2		BG	DKC	390	24	10	2
9718		VORO	12 07 2338	S08 W51	12 4.2			DKI	670	22	7	3
9718		LEAR	12 08 0120	S07 W48	12 4.4		BG	FKI	350	13	16	3
9718		SVTO	12 08 0816	S07 W56	12 4.1		BG	DKI	490	14	10	3
9718		RAMY	12 08 1233	S05 W59	12 4.1		BG	DKI	530	18	10	3
9718	30864	MWIL	12 08 1600	S06 W60	12 4.2	5	(B)					
9718		HOLL	12 08 1610	S05 W59	12 4.3		BG	DKC	500	16	9	3
9718		VORO	12 08 2330	S08 W65	12 4.1			DKI	573	11	6	2
9718		LEAR	12 09 0015	S06 W60	12 4.5		B	DKI	460	14	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
9718		SVTO	12	09	0948	S07	W70	12	4.2		B	DSO	180	6	9	2
9718		RAMY	12	09	1251	S06	W71	12	4.2		BG	DKO	270	12	10	3
9718		HOLL	12	09	1540	S06	W75	12	4.0		B	DAO	160	8	8	3
9718		VORO	12	09	2342	S07	W78	12	4.1			DKI	505	5	7	2
9718		LEAR	12	10	0015	S06	W76	12	4.3		B	DAO	200	3	8	3
9717A		TACH	12	03	0739	N03	E13	12	4.3			AXX	20	1	1	3
9717A		TACH	12	04	0635	N04	W01	12	4.2			AXX	25	1	1	3
9720		RAMY	11	28	1416	S17	E76	12	4.4		B	BXO	90	3	7	3
9720	30865	MWIL	11	28	1600	S17	E74	12	4.3	4	B					
9720	30863	MWIL	11	28	1600	S18	E70	12	4.0	3	(B)					
9720		HOLL	11	28	1705	S18	E76	12	4.5		B	DAO	200	4	10	3
9720		VORO	11	28	2344	S18	E68	12	4.2			AXX	53	6	3	2
9720		LEAR	11	29	0015	S18	E67	12	4.1		B	DAO	120	3	6	1
9720		SVTO	11	29	1412	S18	E64	12	4.5		B	DSO	90	6	9	2
9720		RAMY	11	29	1500	S16	E63	12	4.4		B	DSO	70	11	9	1
9720		HOLL	11	29	1655	S18	E63	12	4.5		B	EAO	160	12	14	3
9720		LEAR	11	30	0130	S18	E58	12	4.5		BG	EAO	110	7	11	1
9720		SVTO	11	30	0730	S18	E55	12	4.5		B	ERO	80	10	12	3
9720	30863	MWIL	11	30	1715	S18	E48	12	4.4	4	(BP)					
9720		LEAR	12	01	0040	S18	E46	12	4.5		B	DAO	100	16	12	3
9720		VORO	12	01	0333	S17	E41	12	4.3			BXO	46	5	4	3
9720		SVTO	12	01	0826	S18	E42	12	4.5		B	EAO	70	8	12	3
9720		RAMY	12	01	1240	S17	E39	12	4.5		B	ESO	60	11	11	4
9720		HOLL	12	01	1524	S18	E34	12	4.2		B	DAO	70	6	5	3
9720	30863	MWIL	12	01	1545	S17	E35	12	4.3	4	(BP)					
9720		LEAR	12	02	0010	S18	E33	12	4.5		B	EAO	70	15	12	4
9720		VORO	12	02	0014	S17	E28	12	4.1			BXO	38	5	8	3
9720		SVTO	12	02	0840	S18	E26	12	4.3		B	CSO	20	11	7	2
9720		RAMY	12	02	1223	S17	E26	12	4.5		B	CSO	30	9	8	4
9720	30863	MWIL	12	02	1530	S17	E22	12	4.3	4	B					
9720		HOLL	12	02	1540	S18	E23	12	4.4		B	CAO	40	14	9	3
9720		LEAR	12	03	0100	S17	E20	12	4.6		B	CAO	40	6	8	2
9720		TACH	12	03	0739	S17	E13	12	4.3			BXI	25	4	7	3
9720		SVTO	12	03	0850	S18	E13	12	4.3		B	DSO	40	11	8	2
9720		RAMY	12	03	1228	S19	E11	12	4.3		B	DSO	40	14	8	3
9720		HOLL	12	03	1525	S18	E08	12	4.2		B	DAO	40	11	8	3
9720		LEAR	12	04	0108	S18	E04	12	4.3		B	CRO	30	5	5	2
9720		TACH	12	04	0635	S15	W02	12	4.1			BRO	36	3	4	3
9720		SVTO	12	04	0848	S20	E00	12	4.4		B	ESO	30	6	11	2
9720		RAMY	12	04	1237	S22	W02	12	4.4		B	ESO	40	6	11	4
9720		HOLL	12	04	1530	S19	W02	12	4.5		B	CRO	60	10	15	2
9720		LEAR	12	05	0015	S21	W05	12	4.6		B	EAO	80	17	14	4
9720		TACH	12	05	0628	S16	W16	12	4.0			BRI	38	7	1	4
9720		RAMY	12	05	1226	S22	W11	12	4.7		B	DSO	30	10	10	3
9720	30863	MWIL	12	05	1530	S18	W12	12	4.7	4	(B)					
9720	30874	MWIL	12	05	1530	S27	W10	12	4.9	4	(B)					
9720		HOLL	12	05	1542	S22	W10	12	4.9		B	ESO	50	5	11	3
9720		VORO	12	05	2338	S27	W15	12	4.8			BXO	9	3	6	3
9720		LEAR	12	06	0020	S22	W16	12	4.8		B	DSO	50	12	10	3
9720		SVTO	12	06	0732	S27	W18	12	4.9		B	CSO	20	5	7	2
9720		RAMY	12	06	1338	S22	W25	12	4.6		B	DSO	40	8	9	4
9720	30863	MWIL	12	06	1530	S17	W28	12	4.5	4	(BP)					
9720	30874	MWIL	12	06	1530	S27	W22	12	4.9	4	(B)					
9720		LEAR	12	07	0150	S28	W27	12	5.0		B	CSO	20	5	5	1
9720		SVTO	12	07	0715	S28	W31	12	4.9		B	DSO	80	7	9	2
9720		RAMY	12	07	1243	S24	W38	12	4.6		B	DSO	80	11	10	4
9720		HOLL	12	07	1609	S26	W35	12	4.9		B	DAO	80	8	7	2
9720		VORO	12	07	2338	S28	W40	12	4.8			BXI	77	7	7	3
9720		LEAR	12	08	0120	S27	W39	12	5.0		B	CAO	40	6	8	3
9720		SVTO	12	08	0816	S28	W42	12	5.1		B	ESO	110	10	14	3
9720		RAMY	12	08	1233	S26	W48	12	4.8		B	DSO	40	14	9	3
9720	30874	MWIL	12	08	1600	S27	W48	12	4.9	4	(B)					
9720		HOLL	12	08	1610	S28	W50	12	4.8		B	DAO	40	9	9	3
9720		VORO	12	08	2330	S28	W53	12	4.8			CRI	64	10	9	2
9720		LEAR	12	09	0015	S27	W52	12	4.9		B	DAO	70	12	10	3
9720		SVTO	12	09	0948	S29	W54	12	5.2		A	HSX	40	1	1	2
9720		RAMY	12	09	1251	S27	W59	12	4.9		B	DSO	50	6	10	3

SUNSPOT GROUPS
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9720		HOLL	12 09 1540	S28 W58	12 5.1		A	AXX	10	2	1	3
9720		LEAR	12 10 0015	S28 W60	12 5.3		A	HSX	10	1	1	3
9728		TACH	12 04 0635	N36 E03	12 4.5			AR	6	2	1	3
9728		SVTO	12 04 0848	N35 E01	12 4.4		B	CRO	20	3	4	2
9728		RAMY	12 04 1237	N36 W01	12 4.4		B	DSO	20	3	3	4
9728		HOLL	12 04 1530	N36 W02	12 4.5		B	BXO	20	4	5	2
9728		VORO	12 04 2338	N36 W07	12 4.4			CAO	42	2	5	2
9728		LEAR	12 05 0015	N35 W08	12 4.4		B	DAO	60	8	6	4
9728		TACH	12 05 0628	N35 W11	12 4.4			CAO	71	4	5	4
9728		RAMY	12 05 1226	N37 W14	12 4.4		B	DSO	40	15	8	3
9728	30873	MWIL	12 05 1530	N36 W15	12 4.4	4	(B)					
9728		HOLL	12 05 1542	N36 W16	12 4.4		B	DSO	80	5	7	3
9728		LEAR	12 06 0020	N35 W21	12 4.3		B	DAO	80	10	8	3
9728		SVTO	12 06 0732	N36 W25	12 4.3		B	DAO	120	7	9	2
9728		RAMY	12 06 1338	N35 W29	12 4.2		B	DSO	100	10	9	4
9728	30873	MWIL	12 06 1530	N36 W29	12 4.3	4	(B)					
9728		VORO	12 06 2338	N36 W33	12 4.3			DAO	136	8	9	2
9728		LEAR	12 07 0150	N36 W35	12 4.3		B	DAO	110	5	10	1
9728		SVTO	12 07 0715	N35 W37	12 4.3		B	EAO	90	4	11	2
9728		RAMY	12 07 1243	N37 W42	12 4.1		B	ESO	110	5	14	4
9728		HOLL	12 07 1609	N36 W41	12 4.4		B	EAO	120	8	11	2
9728		VORO	12 07 2338	N36 W46	12 4.3			DAI	85	3	11	3
9728		LEAR	12 08 0120	N35 W48	12 4.2		B	DSO	60	2	10	3
9728		SVTO	12 08 0816	N36 W51	12 4.2		B	EAO	70	4	12	3
9728		RAMY	12 08 1233	N37 W55	12 4.1		B	ESO	50	6	14	3
9728	30873	MWIL	12 08 1600	N37 W55	12 4.2	4	(B)					
9728		HOLL	12 08 1610	N36 W55	12 4.2		B	EAO	90	5	12	3
9728		LEAR	12 09 0015	N35 W58	12 4.4		B	EAO	70	5	13	3
9728		SVTO	12 09 0948	N35 W59	12 4.7		B	CSO	20	2	10	2
9728		RAMY	12 09 1251	N35 W68	12 4.1		B	ESO	50	6	11	3
9728		HOLL	12 09 1540	N36 W71	12 3.9		A	HSX	60	1	1	3
9728		LEAR	12 10 0015	N35 W77	12 3.8		A	HSX	20	1	2	3
9721	30866	MWIL	11 28 1600	N11 E83	12 4.9	5	AP					
9721		HOLL	11 28 1705	N10 E81	12 4.8		A	HAX	120	1	1	3
9721		VORO	11 28 2344	N11 E80	12 5.0			HAX	128	1		2
9721		LEAR	11 29 0015	N11 E77	12 4.8		A	HAX	120	1	2	1
9721		SVTO	11 29 1412	N12 E74	12 5.2		B	CSO	90	3	4	2
9721		RAMY	11 29 1500	N14 E73	12 5.1		B	CSO	80	3	6	1
9721		HOLL	11 29 1655	N12 E75	12 5.3		B	CAO	180	3	11	3
9721		LEAR	11 30 0130	N12 E65	12 4.9		B	CAO	90	2	4	1
9721		SVTO	11 30 0730	N13 E67	12 5.4		B	DSO	150	3	15	3
9721	30866	MWIL	11 30 1715	N13 E60	12 5.2	5	(BP)					
9721		LEAR	12 01 0040	N13 E57	12 5.3		B	DKO	210	7	15	3
9721		VORO	12 01 0333	N12 E51	12 5.0			HAX	170	4	2	3
9721		SVTO	12 01 0826	N12 E54	12 5.4		B	EAO	140	6	14	3
9721		RAMY	12 01 1240	N13 E46	12 5.0		B	CSO	150	2	5	4
9721		HOLL	12 01 1524	N12 E44	12 4.9		B	CAO	140	2	4	3
9721	30866	MWIL	12 01 1545	N13 E47	12 5.2	5	(BP)					
9721		LEAR	12 02 0010	N13 E45	12 5.4		B	EAO	160	7	15	4
9721		VORO	12 02 0014	N12 E38	12 4.9			HAX	105	1		3
9721		VORO	12 02 0014	N13 E39	12 4.9			AXX	14	1		3
9721		SVTO	12 02 0840	N13 E34	12 4.9		A	HSX	180	2	3	2
9721		RAMY	12 02 1223	N14 E38	12 5.4		B	CSO	180	6	16	4
9721	30866	MWIL	12 02 1530	N13 E30	12 4.9	5	AP					
9721		HOLL	12 02 1540	N11 E30	12 4.9		A	HAX	180	4	3	3
9721		LEAR	12 03 0100	N13 E25	12 4.9		B	CAO	190	4	4	2
9721		TACH	12 03 0739	N11 E20	12 4.8			HX	352	2	3	3
9721		SVTO	12 03 0850	N13 E26	12 5.3		B	CAO	200	6	14	2
9721		RAMY	12 03 1228	N12 E24	12 5.3		B	CAO	170	8	16	3
9721		HOLL	12 03 1525	N13 E17	12 4.9		A	HAX	210	2	3	3
9721		LEAR	12 04 0108	N12 E12	12 4.9		B	CAO	160	2	4	2
9721		TACH	12 04 0635	N12 E06	12 4.7			HSX	300	1	2	3
9721		SVTO	12 04 0848	N12 E14	12 5.4		B	CSO	200	5	14	2
9721		RAMY	12 04 1237	N11 E06	12 5.0		B	CSO	210	2	3	4
9721		HOLL	12 04 1530	N12 E04	12 4.9		A	HHX	180	2	3	2
9721		LEAR	12 05 0015	N12 E04	12 5.3		B	EKO	260	7	13	4
9721		TACH	12 05 0628	N12 W05	12 4.9			HSX	400	1	3	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
9721		RAMY	12	05	1226	N11	W08	12	4.9		A	HSX	200	1	2	3
9721	30866	MWIL	12	05	1530	N11	W09	12	5.0	5	(AP)					
9721		HOLL	12	05	1542	N11	W08	12	5.0		A	HSX	160	1	2	3
9721		LEAR	12	06	0020	N12	W08	12	5.4		B	CHO	250	8	12	3
9721		SVTO	12	06	0732	N11	W17	12	5.0		A	HKX	200	3	4	2
9721		RAMY	12	06	1338	N11	W22	12	4.9		A	HSX	210	3	2	4
9721	30866	MWIL	12	06	1530	N11	W23	12	4.9	5	(AP)					
9721		LEAR	12	07	0150	N11	W28	12	5.0		A	HAX	100	3	2	1
9721		SVTO	12	07	0715	N11	W31	12	5.0		A	HAX	90	2	2	2
9721		RAMY	12	07	1243	N13	W28	12	5.4		B	CAO	150	5	11	4
9721		HOLL	12	07	1609	N12	W35	12	5.0		B	DAO	140	2	3	2
9721		LEAR	12	08	0120	N11	W41	12	5.0		B	DSO	90	2	2	3
9721		SVTO	12	08	0816	N10	W44	12	5.0		B	DAO	140	3	4	3
9721		RAMY	12	08	1233	N12	W46	12	5.0		B	DAO	70	5	4	3
9721	30866	MWIL	12	08	1600	N11	W48	12	5.0	5	(AP)					
9721		HOLL	12	08	1610	N11	W49	12	5.0		B	DAO	120	5	3	3
9721		LEAR	12	09	0015	N12	W48	12	5.4		B	DAO	140	4	10	3
9721		SVTO	12	09	0948	N11	W58	12	5.0		B	DAO	110	2	3	2
9721		RAMY	12	09	1251	N11	W60	12	5.0		B	DAO	80	3	3	3
9721		HOLL	12	09	1540	N11	W61	12	5.1		B	DSO	100	2	3	3
9721		VORO	12	09	2342	N11	W70	12	4.7			CAO	341	2	1	2
9721		LEAR	12	10	0015	N12	W65	12	5.1		B	DSO	80	2	4	3
9721		TACH	12	10	0625	N10	W68	12	5.1			HH	70	2	2	2
9721		SVTO	12	10	0955	N10	W73	12	4.9		B	DSO	120	2	3	2
9721		RAMY	12	10	1157	N11	W74	12	4.9		B	DSO	90	2	4	4
9721	30866	MWIL	12	10	1600	N12	W77	12	4.9	4	(AP)					
9721		HOLL	12	10	2040	N13	W79	12	4.9		B	DAO	120	2	3	2
9721		LEAR	12	11	0245	N11	W82	12	4.9		B	DSO	60	2	4	2
9721		TACH	12	11	0526	N10	W81	12	5.1			AR	6	2	2	3
9723		SVTO	12	01	0826	S10	E53	12	5.3		A	HRX	20	1	1	3
9723		RAMY	12	01	1240	S08	E52	12	5.4		A	HSX	20	1	1	4
9723		HOLL	12	01	1524	S09	E49	12	5.3		A	HSX	20	1	1	3
9723	30868	MWIL	12	01	1545	S09	E49	12	5.3	4	(AP)					
9723		LEAR	12	02	0010	S06	E44	12	5.3		B	CSO	30	3	3	4
9723		SVTO	12	02	0840	S06	E39	12	5.3		B	BXO	10	3	4	2
9723		RAMY	12	02	1223	S04	E36	12	5.2		B	CSO	20	2	3	4
9723	30868	MWIL	12	02	1530	S06	E35	12	5.3	3	B					
9723		HOLL	12	02	1540	S09	E35	12	5.3		B	CSO	20	6	7	3
9723		HOLL	12	03	1525	S04	E20	12	5.1		A	AXX	10	2	2	3
9723		VORO	12	03	2345	S05	E16	12	5.2			BXO	21	2	3	2
9723		LEAR	12	04	0108	S05	E15	12	5.2		B	CAO	30	5	3	2
9723		TACH	12	04	0635	S03	E11	12	5.1			AXX	6	4	2	3
9723		SVTO	12	04	0848	S05	E11	12	5.2		B	DSO	50	6	4	2
9723		RAMY	12	04	1237	S05	E09	12	5.2		B	DSO	30	5	4	4
9723		HOLL	12	04	1530	S06	E07	12	5.2		B	DRO	30	4	4	2
9723		LEAR	12	05	0015	S05	E02	12	5.1		B	DAO	40	7	5	4
9723		TACH	12	05	0628	S02	W02	12	5.1			BRI	12	6	5	4
9723		RAMY	12	05	1226	S04	W04	12	5.2		B	CSO	30	9	7	3
9723	30868	MWIL	12	05	1530	S04	W06	12	5.2	4	(B)					
9723		HOLL	12	05	1542	S04	W07	12	5.1		B	DAO	40	5	6	3
9723		VORO	12	05	2338	S04	W11	12	5.2			BXI	35	7	6	3
9723		LEAR	12	06	0020	S05	W12	12	5.1		B	DSO	40	8	6	3
9723		SVTO	12	06	0732	S04	W15	12	5.2		B	DSO	30	6	8	2
9723		RAMY	12	06	1338	S04	W21	12	5.0		B	DSO	40	7	5	4
9723	30868	MWIL	12	06	1530	S04	W22	12	5.0	4	(B)					
9723		VORO	12	06	2338	S04	W23	12	5.3			AXX	12	2		2
9723		LEAR	12	07	0150	S04	W23	12	5.3		B	BXO	10	2	1	1
9723		RAMY	12	07	1243	S04	W33	12	5.1		B	BXO	20	8	6	4
9723		HOLL	12	07	1609	S05	W34	12	5.1		B	DSO	90	2	6	2
9723		SVTO	12	08	0816	S05	W46	12	4.9		B	DSO	40	2	5	3
9723		RAMY	12	08	1233	S04	W47	12	5.0		B	DSO	20	4	6	3
9723	30868	MWIL	12	08	1600	S04	W50	12	4.9	5	(B)					
9723		HOLL	12	08	1610	S03	W51	12	4.9		B	DSO	60	2	5	3
9723		LEAR	12	09	0015	S04	W54	12	5.0		B	DSO	40	4	6	3
9723		SVTO	12	09	0948	S05	W61	12	4.8		B	DRO	40	2	4	2
9723		RAMY	12	09	1251	S05	W61	12	5.0		B	CSO	20	3	4	3
9723		HOLL	12	09	1540	S05	W65	12	4.8		B	CSO	50	2	6	3
9723		LEAR	12	10	0015	S05	W68	12	4.9		A	HSX	10	1	1	3

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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
9729		TACH	12	05	0628	N23	E10	12	6.0			AR	6	2	2	4
9729		RAMY	12	05	1226	N24	E09	12	6.2		B	CSO	30	6	4	3
9729	30875	MWIL	12	05	1530	N24	E07	12	6.2	4	(B)					
9729		HOLL	12	05	1542	N23	E08	12	6.3		B	DAO	50	6	4	3
9729		VORO	12	05	2338	N24	E03	12	6.2			BXI	38	7	4	3
9729		LEAR	12	06	0020	N24	E02	12	6.2		B	DSO	40	4	5	3
9729		SVTO	12	06	0732	N24	W03	12	6.1		B	DSO	20	2	5	2
9729		RAMY	12	06	1338	N23	W06	12	6.1		B	BXO	10	3	6	4
9729	30875	MWIL	12	06	1530	N24	W06	12	6.2	4	(B)					
9729		LEAR	12	07	0150	N24	W12	12	6.1		B	DSO	20	2	6	1
9729		SVTO	12	07	0715	N23	W13	12	6.3		A	HRX	10	1		2
9729		RAMY	12	07	1243	N23	W16	12	6.3		A	AXX	10	1		4
9729		HOLL	12	07	1609	N23	W17	12	6.4		B	CAO	40	2	3	2
9729		VORO	12	07	2338	N23	W21	12	6.4			AXX	2	1		3
9724		SVTO	12	01	0826	N09	E82	12	7.5		A	HSX	60	1	6	3
9724		RAMY	12	01	1240	N10	E79	12	7.5		A	HSX	60	1	1	4
9724		HOLL	12	01	1524	N08	E78	12	7.5		A	HSX	90	1	2	3
9724	30869	MWIL	12	01	1545	N09	E76	12	7.4	4	(AP)					
9724		LEAR	12	02	0010	N09	E72	12	7.4		A	HAX	70	1	2	4
9724		VORO	12	02	0014	N09	E72	12	7.4			HAX	98	1		3
9724		SVTO	12	02	0840	N09	E68	12	7.5		A	HSX	40	1	1	2
9724		RAMY	12	02	1223	N11	E65	12	7.4		A	HSX	40	1	2	4
9724	30869	MWIL	12	02	1530	N09	E64	12	7.4	4	AP					
9724		HOLL	12	02	1540	N08	E62	12	7.3		A	HSX	40	1	2	3
9724		LEAR	12	03	0100	N09	E58	12	7.4		A	HSX	40	1	2	2
9724		TACH	12	03	0739	N09	E53	12	7.3			HSX	55	1	2	3
9724		SVTO	12	03	0850	N11	E55	12	7.5		B	CSO	70	2	4	2
9724		RAMY	12	03	1228	N09	E52	12	7.4		A	HSX	50	1	2	3
9724		HOLL	12	03	1525	N11	E51	12	7.5		B	CAO	70	4	3	3
9724		VORO	12	03	2345	N10	E47	12	7.5			HSX	112	2	1	2
9724		LEAR	12	04	0108	N10	E45	12	7.4		B	CSO	70	4	3	2
9724		TACH	12	04	0635	N12	E37	12	7.1			CSO	51	3	1	3
9724		SVTO	12	04	0848	N10	E41	12	7.4		A	HSX	80	3	3	2
9724		RAMY	12	04	1237	N09	E39	12	7.4		B	CSO	30	3	3	4
9724		HOLL	12	04	1530	N09	E37	12	7.4		B	CAO	70	6	3	2
9724		VORO	12	04	2338	N10	E33	12	7.5			HSX	97	3	0	2
9724		LEAR	12	05	0015	N10	E32	12	7.4		B	DSO	60	3	3	4
9724		TACH	12	05	0628	N11	E26	12	7.2			CSO	85	2	1	4
9724		RAMY	12	05	1226	N10	E25	12	7.4		B	CSO	50	3	3	3
9724	30869	MWIL	12	05	1530	N10	E24	12	7.4	5	(AP)					
9724		HOLL	12	05	1542	N09	E24	12	7.4		B	DSO	70	2	3	3
9724		LEAR	12	06	0020	N10	E19	12	7.4		B	DSO	60	3	3	3
9724		SVTO	12	06	0732	N09	E16	12	7.5		B	DSO	50	3	5	2
9724		RAMY	12	06	1338	N10	E11	12	7.4		B	CSO	30	2	3	4
9724	30869	MWIL	12	06	1530	N10	E10	12	7.4	5	(AP)					
9724		LEAR	12	07	0150	N10	E03	12	7.3		A	CSO	30	2	1	1
9724		SVTO	12	07	0715	N10	E02	12	7.4		B	DSO	60	3	4	2
9724		RAMY	12	07	1243	N10	W01	12	7.4		B	DSO	60	7	3	4
9724		HOLL	12	07	1609	N10	W02	12	7.5		B	DAO	90	9	5	2
9724		LEAR	12	08	0120	N09	W09	12	7.4		B	CSO	20	3	2	3
9724		SVTO	12	08	0816	N11	W11	12	7.5		B	CSO	70	8	7	3
9724		RAMY	12	08	1233	N10	W14	12	7.5		B	CSO	30	4	4	3
9724	30869	MWIL	12	08	1600	N10	W17	12	7.4	5	(AP)					
9724		HOLL	12	08	1610	N09	W16	12	7.5		A	HSX	40	3	3	3
9724		LEAR	12	09	0015	N09	W22	12	7.3		A	HSX	50	1	2	3
9724		SVTO	12	09	0948	N09	W27	12	7.4		A	HAX	40	2	2	2
9724		RAMY	12	09	1251	N10	W23	12	7.8		B	CSO	30	4	14	3
9724		HOLL	12	09	1540	N10	W30	12	7.4		A	HSX	20	1	1	3
9724		LEAR	12	10	0015	N10	W34	12	7.4		A	HSX	40	1	1	3
9724		TACH	12	10	0625	N10	W36	12	7.6			AXX	25	1	1	2
9724		SVTO	12	10	0955	N09	W40	12	7.4		A	HSX	30	1	2	2
9724		RAMY	12	10	1157	N09	W42	12	7.3		A	HSX	10	1	1	4
9724	30869	MWIL	12	10	1600	N10	W44	12	7.4	4	(AP)					
9724		HOLL	12	10	2040	N11	W47	12	7.3		A	HAX	30	1	1	2
9724		LEAR	12	11	0245	N08	W50	12	7.4		A	HSX	20	1	2	2
9724		TACH	12	11	0526	N08	W50	12	7.5			AXX	25	1	1	3
9724		RAMY	12	11	1157	N08	W56	12	7.3		A	HSX	40	1	1	4
9724		HOLL	12	11	2115	N09	W59	12	7.4		A	HSX	80	1	1	2

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9724		LEAR	12 12 0135	N09 W63	12 7.3		A	HSX	20	1	2	3
9724		TACH	12 12 0639	N10 W63	12 7.5			AXX	15	1	1	4
9724		SVTO	12 12 0845	N08 W67	12 7.3		A	HSX	20	1	1	2
9724	30869	MWIL	12 12 1530	N09 W70	12 7.4	4	(AP)					
9724		HOLL	12 12 1553	N10 W71	12 7.3		A	AXX	40	1	1	2
9724		LEAR	12 13 0017	N09 W75	12 7.4		A	AXX	10	1	1	3
9726		SVTO	12 02 0840	S16 E76	12 8.1		B	DSO	90	2	4	2
9726		RAMY	12 02 1223	S14 E75	12 8.2		B	DSO	60	2	3	4
9726	30871	MWIL	12 02 1530	S16 E72	12 8.1	5	AP					
9726		HOLL	12 02 1540	S18 E72	12 8.1		B	DAO	90	2	5	3
9726		VORO	12 02 2342	S14 E68	12 8.1			AXX	21	1		3
9726		VORO	12 02 2342	S18 E70	12 8.3			HAX	66	1		3
9726		LEAR	12 03 0100	S15 E67	12 8.1		B	CAO	70	2	3	2
9726		TACH	12 03 0739	S15 E62	12 8.0			CSO	55	2	3	3
9726		SVTO	12 03 0850	S16 E63	12 8.1		B	DSO	90	2	5	2
9726		RAMY	12 03 1228	S16 E62	12 8.2		B	CSO	40	3	3	3
9726		HOLL	12 03 1525	S15 E59	12 8.1		B	CSO	90	2	3	3
9726		LEAR	12 04 0108	S15 E54	12 8.1		B	CSO	60	2	3	2
9726		TACH	12 04 0635	S13 E46	12 7.7			CSO	42	2	2	3
9726		SVTO	12 04 0848	S16 E50	12 8.1		B	DSO	90	5	5	2
9726		RAMY	12 04 1237	S17 E48	12 8.2		B	CSO	40	5	3	4
9726		HOLL	12 04 1530	S17 E45	12 8.1		B	CAO	80	6	6	2
9726		VORO	12 04 2338	S17 E43	12 8.2			HSX	104	1		2
9726		VORO	12 04 2354	S13 E48	12 8.6			AXX	4	1		3
9726		LEAR	12 05 0015	S15 E42	12 8.2		B	DAO	70	4	3	4
9726		RAMY	12 05 1226	S16 E35	12 8.2		B	CSO	50	6	6	3
9726	30871	MWIL	12 05 1530	S17 E33	12 8.1	5	(AP)					
9726		HOLL	12 05 1542	S17 E33	12 8.2		B	DSO	70	6	5	3
9726		VORO	12 05 2338	S17 E30	12 8.3			HSX	78	1		3
9726		LEAR	12 06 0020	S15 E28	12 8.1		B	DSO	60	2	3	3
9726		SVTO	12 06 0732	S18 E25	12 8.2		A	HSX	40	1	2	2
9726		RAMY	12 06 1338	S17 E21	12 8.2		B	CSO	90	4	3	4
9726	30871	MWIL	12 06 1530	S16 E19	12 8.1	5	(BP)					
9726		LEAR	12 07 0150	S15 E15	12 8.2		BG	DSO	50	6	4	1
9726		SVTO	12 07 0715	S14 E12	12 8.2		B	DSO	80	6	6	2
9726		RAMY	12 07 1243	S17 E09	12 8.2		B	DSO	80	8	4	4
9726		HOLL	12 07 1609	S16 E07	12 8.2		B	DAO	90	8	5	2
9726		LEAR	12 08 0120	S16 E03	12 8.3		B	DSO	40	3	4	3
9726		SVTO	12 08 0816	S17 W02	12 8.2		B	DAO	100	7	10	3
9726		RAMY	12 08 1233	S18 W04	12 8.2		B	DSO	40	12	6	3
9726	30871	MWIL	12 08 1600	S16 W05	12 8.3	4	(BP)					
9726		HOLL	12 08 1610	S16 W05	12 8.3		B	DAO	80	8	4	3
9726		LEAR	12 09 0015	S16 W09	12 8.3		B	DAO	60	16	6	3
9726		SVTO	12 09 0948	S16 W15	12 8.3		B	CSO	30	4	4	2
9726		RAMY	12 09 1251	S16 W17	12 8.2		B	DSO	30	7	5	3
9726		HOLL	12 09 1540	S16 W18	12 8.3		B	CSO	20	3	4	3
9726		LEAR	12 10 0015	S16 W25	12 8.1		B	DSO	50	9	9	3
9726		TACH	12 10 0625	S14 W25	12 8.4			AXX	3	1	1	2
9726		SVTO	12 10 0955	S16 W30	12 8.1		A	AXX	10	1	1	2
9726		RAMY	12 10 1157	S17 W31	12 8.1		B	BXO	10	3	3	4
9726	30871	MWIL	12 10 1600	S14 W33	12 8.2	3	(AP)					
9726A	30877	MWIL	12 06 1530	S25 E22	12 8.3	3	(AP)					
9735		LEAR	12 10 0015	N10 W21	12 8.4		B	DSO	20	2	4	3
9735		TACH	12 10 0625	N10 W24	12 8.5			BXO	3	2	4	2
9735		SVTO	12 10 0955	N10 W27	12 8.4		A	AXX	20	4	6	2
9735		RAMY	12 10 1157	N10 W28	12 8.4		B	BXO	10	2	3	4
9735	30881	MWIL	12 10 1600	N10 W31	12 8.3	4	(B)					
9735		HOLL	12 10 2040	N11 W33	12 8.4		B	BXO	10	5	4	2
9735		LEAR	12 12 0135	N05 W49	12 8.4		B	BXO	20	2	2	3
9736		TACH	12 05 0628	S10 E53	12 9.2			HSX	70	1	2	4
9736		RAMY	12 10 1157	S09 W21	12 8.9		B	BXO	10	3	3	4
9736	30882	MWIL	12 10 1600	S09 W24	12 8.9	4	(AF)					
9736		HOLL	12 10 2040	S08 W27	12 8.8		A	AXX	10	4	2	2
9736		LEAR	12 11 0245	S10 W30	12 8.9		B	DAO	20	3	2	2
9736		TACH	12 11 0526	S08 W31	12 8.9			AR	3	2	1	3

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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
9736		RAMY	12 11 1157	S10 W37	12 8.7		B	DSO	30	8	6	4
9736		HOLL	12 11 2115	S09 W39	12 8.9		B	CAO	30	5	5	2
9736		LEAR	12 12 0135	S10 W44	12 8.7		B	DSO	50	7	7	3
9736		TACH	12 12 0639	S09 W42	12 9.1			CSO	41	2	5	4
9736		SVTO	12 12 0845	S09 W46	12 8.9		B	DAO	60	6	8	2
9736	30882	MWIL	12 12 1530	S10 W51	12 8.8	4	(BG)					
9736		HOLL	12 12 1553	S08 W51	12 8.8		B	CAI	70	7	9	2
9736		LEAR	12 13 0017	S10 W56	12 8.8		B	DAO	90	5	6	3
9736		VORO	12 13 0052	S09 W61	12 8.4			HAX	84	1		2
9736		RAMY	12 13 1254	S11 W64	12 8.7		B	DSO	90	8	7	3
9736		HOLL	12 13 1525	S08 W65	12 8.8		B	DSO	90	4	7	2
9736	30882	MWIL	12 13 1545	S10 W65	12 8.8	4	(B)					
9736		LEAR	12 14 0014	S09 W70	12 8.7		B	DAO	90	4	9	3
9736		RAMY	12 14 1247	S11 W79	12 8.6		B	CSO	60	2	8	2
9736		HOLL	12 14 1544	S10 W76	12 8.9		B	BXO	30	3	2	3
9727	30872	MWIL	12 02 1530	S22 E83	12 9.0	4	AP					
9727		VORO	12 02 2342	S21 E82	12 9.3			HAX	38	1		3
9727		LEAR	12 03 0100	S22 E78	12 9.0		B	CAO	80	2	3	2
9727		TACH	12 03 0739	S21 E77	12 9.2			HSX	50	1	3	3
9727		SVTO	12 03 0850	S22 E78	12 9.4		A	HSX	120	2	2	2
9727		RAMY	12 03 1228	S23 E75	12 9.3		B	CSO	120	3	5	3
9727		HOLL	12 03 1525	S21 E71	12 9.1		A	HSX	130	2	2	3
9727		LEAR	12 04 0108	S22 E66	12 9.1		B	CAO	180	3	3	2
9727		TACH	12 04 0635	S19 E58	12 8.7			HA	150	2	4	3
9727		SVTO	12 04 0848	S22 E64	12 9.3		B	CAO	290	8	7	2
9727		RAMY	12 04 1237	S23 E64	12 9.4		B	CKO	200	3	8	4
9727		HOLL	12 04 1530	S22 E58	12 9.1		B	CKO	300	10	10	2
9727		VORO	12 04 2338	S21 E53	12 9.0			HKX	462	6		2
9727		LEAR	12 05 0015	S21 E55	12 9.2		B	DKO	360	16	8	4
9727		TACH	12 05 0628	S19 E49	12 9.0			CAI	587	8	6	4
9727		RAMY	12 05 1226	S22 E48	12 9.2		B	DKO	300	13	7	3
9727	30872	MWIL	12 05 1530	S21 E46	12 9.2	5	(D)					
9727		HOLL	12 05 1542	S21 E46	12 9.2		B	DKO	290	13	8	3
9727		VORO	12 05 2338	S21 E41	12 9.1			HKX	495	18		3
9727		LEAR	12 06 0020	S21 E42	12 9.2		BGD	DKO	390	17	9	3
9727		SVTO	12 06 0732	S21 E37	12 9.1		B	DKO	390	10	8	2
9727		RAMY	12 06 1338	S22 E34	12 9.2		B	DKI	420	10	8	4
9727	30872	MWIL	12 06 1530	S22 E31	12 9.0	5	(BG)					
9727		LEAR	12 07 0150	S22 E28	12 9.2		BGD	DAO	190	8	3	1
9727		SVTO	12 07 0715	S21 E24	12 9.1		BD	DKC	440	6	6	2
9727		RAMY	12 07 1243	S23 E22	12 9.2		B	CKO	480	8	5	4
9727		HOLL	12 07 1609	S22 E20	12 9.2		BG	DKC	420	12	7	2
9727		LEAR	12 08 0120	S21 E16	12 9.3		BGD	DKO	370	11	5	3
9727		SVTO	12 08 0816	S21 E11	12 9.2		BGD	DKO	380	9	8	3
9727		RAMY	12 08 1233	S21 E08	12 9.1		B	DKI	400	25	9	3
9727	30872	MWIL	12 08 1600	S21 E08	12 9.3	5	(D)					
9727		HOLL	12 08 1610	S23 E08	12 9.3		BG	DKI	350	35	8	3
9727		LEAR	12 09 0015	S22 E04	12 9.3		BGD	DKI	440	25	10	3
9727		SVTO	12 09 0948	S21 W03	12 9.2		B	DKI	370	11	9	2
9727		RAMY	12 09 1251	S20 W04	12 9.2		B	DKI	380	29	7	3
9727		HOLL	12 09 1540	S19 W06	12 9.2		BG	DAC	270	24	9	3
9727		LEAR	12 10 0015	S21 W10	12 9.2		BGD	EKI	380	42	13	3
9727		TACH	12 10 0625	S18 W14	12 9.2			DAI	592	17	7	2
9727		SVTO	12 10 0955	S21 W17	12 9.1		BGD	DKI	600	30	9	2
9727		RAMY	12 10 1157	S21 W18	12 9.1		B	DKI	640	22	10	4
9727	30872	MWIL	12 10 1600	S20 W21	12 9.1	5	(D)					
9727		HOLL	12 10 2040	S19 W24	12 9.0		BGD	EKC	560	33	11	2
9727		LEAR	12 11 0245	S22 W26	12 9.1		BGD	EKC	620	27	11	2
9727		TACH	12 11 0526	S18 W26	12 9.2			DAI	606	17	8	3
9727		RAMY	12 11 1157	S22 W30	12 9.2		B	FKI	570	23	16	4
9727		HOLL	12 11 2115	S18 W38	12 9.0		BGD	EKC	520	30	11	2
9727		LEAR	12 12 0135	S21 W39	12 9.1		BGD	DKC	540	23	10	3
9727		TACH	12 12 0639	S18 W38	12 9.4			DAI	643	10	8	4
9727		SVTO	12 12 0845	S22 W44	12 9.0		BGD	EKI	560	21	13	2
9727	30872	MWIL	12 12 1530	S20 W46	12 9.1	5	(D)					
9727		HOLL	12 12 1553	S19 W48	12 9.0		BGD	EKC	740	26	12	2
9727		LEAR	12 13 0017	S21 W53	12 8.9		BGD	EKI	640	34	12	3
9727		RAMY	12 13 1254	S22 W60	12 8.9		B	EKI	560	23	12	3

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9727		HOLL	12 13 1525	S20 W62	12 8.9		BGD	EKC	700	12	11	2
9727	30872	MWIL	12 13 1545	S22 W62	12 8.9	5	(D)					
9727		LEAR	12 14 0014	S21 W66	12 8.9		BGD	EKI	680	19	14	3
9727		RAMY	12 14 1247	S22 W73	12 8.9		BG	EKO	380	11	12	2
9727		HOLL	12 14 1544	S21 W70	12 9.3		BGD	DKI	530	6	9	3
9727		LEAR	12 15 0010	S22 W75	12 9.2		BGD	EKI	390	4	12	4
9727		KAND	12 15 1025	S22 W83	12 9.0			DAO		2	5	2
9727		SVTO	12 15 1100	S22 W80	12 9.3		B	EAO	180	3	11	2
9730		HOLL	12 04 1530	S13 E67	12 9.7		A	AXX	10	1	1	2
9730		LEAR	12 05 0015	S12 E62	12 9.7		A	HAX	20	2	1	4
9730		RAMY	12 05 1226	S13 E56	12 9.7		B	CRO	20	2	4	3
9730	30876	MWIL	12 05 1530	S13 E52	12 9.6	4	(AP)					
9730		HOLL	12 05 1542	S13 E53	12 9.6		A	AXX	10	1	1	3
9730		LEAR	12 06 0020	S12 E47	12 9.5		B	CSO	20	2	3	3
9730		SVTO	12 06 0732	S13 E43	12 9.5		A	AXX		1		2
9731		VORO	12 05 2338	N24 E51	12 9.9			AXX	35	4		3
9731		LEAR	12 06 0020	N25 E48	12 9.7		B	CSO	20	4	3	3
9731		SVTO	12 06 0732	N24 E45	12 9.8		B	DSO	60	3	4	2
9731		RAMY	12 06 1338	N24 E42	12 9.8		B	DSO	50	4	3	4
9731	30878	MWIL	12 06 1530	N24 E40	12 9.7	4	(B)					
9731		LEAR	12 07 0150	N25 E34	12 9.7		B	CAO	20	3	5	1
9731		SVTO	12 07 0715	N24 E31	12 9.7		B	CRO	20	4	5	2
9731		RAMY	12 07 1243	N24 E29	12 9.8		B	DSO	20	2	5	4
9731		HOLL	12 07 1609	N23 E28	12 9.8		B	DAO	50	2	6	2
9731		VORO	12 07 2338	N24 E21	12 9.6			AXX	10	1		3
9731		LEAR	12 08 0120	N25 E19	12 9.5		A	HSX	20	1	2	3
9731		SVTO	12 08 0816	N25 E17	12 9.7		B	CRO	20	3	5	3
9731		RAMY	12 08 1233	N25 E16	12 9.8		B	BXO	10	3	6	3
9731	30878	MWIL	12 08 1600	N25 E14	12 9.7	4	(BP)					
9731		HOLL	12 08 1610	N23 E13	12 9.7		B	DSO	20	3	5	3
9731		VORO	12 08 2330	N25 E10	12 9.7			BXI	14	3	5	2
9731		LEAR	12 09 0015	N25 E08	12 9.6		B	DAO	30	8	6	3
9731		SVTO	12 09 0948	N24 E03	12 9.6		B	BXO	10	2	4	2
9731		RAMY	12 09 1251	N25 E03	12 9.8		B	BXO	10	5	6	3
9731		HOLL	12 09 1540	N24 W02	12 9.5		A	AXX	10	1	1	3
9731A		HOLL	12 08 1610	S27 E19	12 10.1		A	AXX	10	2	2	3
9731A		LEAR	12 09 0015	S25 E15	12 10.2		A	AXX	10	3	2	3
9732		VORO	12 06 2338	N04 E77	12 12.7			HAX	54	1		2
9732		LEAR	12 07 0150	N04 E74	12 12.6		A	HSX	30	1	2	1
9732		SVTO	12 07 0715	N04 E72	12 12.7		B	CAO	80	2	7	2
9732		RAMY	12 07 1243	N03 E70	12 12.8		B	CSO	80	2	8	4
9732		HOLL	12 07 1609	N03 E69	12 12.8		B	DSO	80	3	7	2
9732		LEAR	12 08 0120	N06 E63	12 12.8		B	CSO	40	2	9	3
9732		SVTO	12 08 0816	N04 E59	12 12.7		B	ESO	100	4	11	3
9732		RAMY	12 08 1233	N04 E57	12 12.8		B	CSO	80	6	9	3
9732	30879	MWIL	12 08 1600	N03 E54	12 12.7	4	(BP)					
9732		HOLL	12 08 1610	N02 E58	12 13.0		B	DAO	100	7	9	3
9732		VORO	12 08 2330	N04 E51	12 12.8			CAO	89	2	9	2
9732		LEAR	12 09 0015	N04 E50	12 12.7		B	DAO	90	7	10	3
9732		SVTO	12 09 0948	N04 E45	12 12.8		B	DSO	70	2	9	2
9732		RAMY	12 09 1251	N05 E43	12 12.7		B	CSO	40	4	9	3
9732		HOLL	12 09 1540	N02 E38	12 12.5		B	CSO	60	3	3	3
9732		VORO	12 09 2342	N03 E33	12 12.4			HAX	131	1		2
9732		LEAR	12 10 0015	N03 E34	12 12.5		A	HSX	30	3	2	3
9732		TACH	12 10 0625	N04 E25	12 12.1			HSX	50	1	1	2
9732		SVTO	12 10 0955	N04 E28	12 12.5		A	HSX	40	1	2	2
9732		RAMY	12 10 1157	N04 E25	12 12.4		A	HSX	40	1	1	4
9732	30879	MWIL	12 10 1600	N03 E26	12 12.6	5	(BP)					
9732		HOLL	12 10 2040	N03 E20	12 12.3		B	CAO	80	4	3	2
9732		LEAR	12 11 0245	N04 E17	12 12.4		A	HSX	60	1	2	2
9732		TACH	12 11 0526	N04 E12	12 12.1			HSX	60	1	1	3
9732		RAMY	12 11 1157	N04 E15	12 12.6		B	CSO	60	2	7	4
9732		HOLL	12 11 2115	N03 E08	12 12.5		A	HSX	40	2	2	2
9732		LEAR	12 12 0135	N02 E05	12 12.4		B	CAO	50	2	2	3
9732		TACH	12 12 0639	N04 E01	12 12.3			HA	61	2	1	4

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9732		SVTO	12 12 0845	N05 E04	12 12.7		B	CSO	80	6	8	2
9732	30879	MWIL	12 12 1530	N03 W01	12 12.6	5	(BP)					
9732		HOLL	12 12 1553	N05 E01	12 12.7		B	CSI	120	7	9	2
9732		LEAR	12 13 0017	N04 W05	12 12.6		BG	DAO	90	9	8	3
9732		VORO	12 13 0052	N05 W03	12 12.8			AXX	14	1		2
9732		RAMY	12 13 1254	N04 W13	12 12.6		B	CSO	50	6	8	3
9732		HOLL	12 13 1525	N03 W14	12 12.6		B	CAO	80	3	4	2
9732	30879	MWIL	12 13 1545	N03 W15	12 12.5	5	(BP)					
9732		LEAR	12 14 0014	N03 W22	12 12.4		A	HSX	60	1	2	3
9732		RAMY	12 14 1247	N03 W27	12 12.5		B	CSO	50	3	5	2
9732		HOLL	12 14 1544	N04 W28	12 12.6		A	HSX	70	1	2	3
9732		LEAR	12 15 0010	N03 W36	12 12.3		A	HSX	50	1	2	4
9732		KAND	12 15 1025	N03 W41	12 12.4			HS		1	2	2
9732		SVTO	12 15 1100	N03 W42	12 12.3		A	HSX	50	1	2	2
9732		HOLL	12 15 1733	N03 W46	12 12.3		A	HSX	60	1	1	2
9732	30879	MWIL	12 15 2200	N02 W48	12 12.3	4	(AP)					
9732		LEAR	12 16 0105	N02 W50	12 12.3		A	HSX	30	1	2	3
9732		TACH	12 16 0639	N03 W49	12 12.6			HSX	50	1	2	3
9732		RAMY	12 16 1417	N01 W57	12 12.3		A	HSX	70	1	1	2
9732	30879	MWIL	12 16 1545	N02 W57	12 12.4	4	(AP)					
9732		HOLL	12 16 1911	N03 W59	12 12.4		A	HSX	80	1	1	2
9732		LEAR	12 17 0010	N02 W62	12 12.4		A	HSX	60	1	2	3
9732		HOLL	12 17 1600	N03 W71	12 12.4		A	HSX	110	1	2	3
9732	30879	MWIL	12 17 1615	N02 W71	12 12.4	4	(AP)					
9732		LEAR	12 18 0120	N02 W76	12 12.4		A	HSX	30	1	2	3
9732		TACH	12 18 0826	N03 W80	12 12.4			HSX	25	1	1	3
9732		RAMY	12 18 1217	S01 W86	12 12.1		A	HSX	30	1	3	2
9732A		HOLL	12 12 1553	N17 E09	12 13.3		A	AXX	20	2	2	2
9739		RAMY	12 13 1254	S13 E03	12 13.8		B	BXO	10	3	3	3
9739		HOLL	12 13 1525	S13 E02	12 13.8		B	CSO	20	2	3	2
9739	30887	MWIL	12 13 1545	S13 E02	12 13.8	4	(B)					
9739		LEAR	12 14 0014	S13 W03	12 13.8		B	DSO	30	9	6	3
9739		VORO	12 14 0309	S13 W05	12 13.7			CSO	89	4	5	2
9739		RAMY	12 14 1247	S13 W10	12 13.8		B	DAO	50	9	7	2
9739		HOLL	12 14 1544	S14 W10	12 13.9		B	DAI	90	9	7	3
9739		LEAR	12 15 0010	S13 W17	12 13.7		B	DAO	100	16	9	4
9739		KAND	12 15 1025	S13 W22	12 13.8			DSO		14	8	2
9739		SVTO	12 15 1100	S13 W23	12 13.7		B	DAO	130	19	9	2
9739		HOLL	12 15 1733	S13 W27	12 13.7		B	DSI	130	14	8	2
9739	30887	MWIL	12 15 2200	S14 W28	12 13.8	5	(B)					
9739		LEAR	12 16 0105	S13 W31	12 13.7		B	DAO	130	21	10	3
9739		VORO	12 16 0346	S13 W32	12 13.7			DSO	362	12	7	2
9739		TACH	12 16 0639	S12 W30	12 14.0			DAI	226	10	6	3
9739		RAMY	12 16 1417	S14 W38	12 13.7		B	DSO	420	8	8	2
9739	30887	MWIL	12 16 1545	S13 W39	12 13.7	5	(B)					
9739		HOLL	12 16 1911	S13 W41	12 13.7		B	DAO	360	13	9	2
9739		VORO	12 16 2352	S14 W44	12 13.7			DSO	460	8	7	2
9739		LEAR	12 17 0010	S14 W44	12 13.7		B	DAO	360	17	9	3
9739		HOLL	12 17 1600	S12 W53	12 13.7		BG	DKI	520	16	10	3
9739	30887	MWIL	12 17 1615	S13 W52	12 13.7	5	(B)					
9739		LEAR	12 18 0120	S14 W57	12 13.7		B	DAO	390	15	10	3
9739		TACH	12 18 0826	S12 W59	12 13.9			DAI	412	8	7	3
9739		RAMY	12 18 1217	S16 W63	12 13.7		BG	EKO	420	13	11	2
9739	30887	MWIL	12 18 1530	S14 W65	12 13.7	5	(B)					
9739		HOLL	12 18 1925	S12 W66	12 13.8		BG	EAI	520	9	10	2
9739		TACH	12 19 0625	S13 W74	12 13.7			DSO	110	3	10	2
9739		SVTO	12 19 0940	S14 W76	12 13.6		B	ESO	300	5	11	2
9739		RAMY	12 19 1244	S17 W78	12 13.6		B	ESO	150	4	13	2
9739		LEAR	12 19 1300	S14 W70	12 14.2		B	EAO	350	11	12	2
9739		HOLL	12 19 1545	S12 W80	12 13.6		B	EAI	290	6	11	2
9739	30887	MWIL	12 19 1545	S14 W79	12 13.7	4	(B)					
9739		TACH	12 20 0714	S15 W82	12 14.1			HSX	30	1	1	3
9739		LEAR	12 20 1345	S14 W79	12 14.6		B	DAO	50	2	2	2
9733		RAMY	12 07 1243	N12 E83	12 13.8		A	HSX	60	1	7	4
9733		HOLL	12 07 1609	N11 E90	12 14.4		A	AXX	60	1	3	2
9733		VORO	12 07 2338	N14 E80	12 14.0			HAX	125	1		3

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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
9733		LEAR	12 08 0120	N14 E76	12 13.8		A	HAX	30	1	1	3
9733		SVTO	12 08 0816	N14 E78	12 14.2		B	EAO	240	5	12	3
9733		RAMY	12 08 1233	N13 E75	12 14.2		B	EAO	230	19	12	3
9733	30880	MWIL	12 08 1600	N13 E74	12 14.2	5	(B)					
9733		LEAR	12 09 0015	N14 E70	12 14.3		B	EAI	300	19	14	3
9733		SVTO	12 09 0948	N13 E66	12 14.4		B	EAI	240	15	14	2
9733		RAMY	12 09 1251	N13 E64	12 14.4		B	ESI	300	24	14	3
9733		HOLL	12 09 1540	N14 E62	12 14.3		BG	FKI	310	25	17	3
9733		VORO	12 09 2342	N14 E57	12 14.3			DAI	755	19	11	2
9733		LEAR	12 10 0015	N14 E58	12 14.4		B	EAI	320	28	15	3
9733		TACH	12 10 0625	N16 E48	12 13.9			DAI	289	11	12	2
9733		SVTO	12 10 0955	N14 E51	12 14.3		BG	FSI	270	39	16	2
9733		RAMY	12 10 1157	N15 E50	12 14.3		BG	EAI	360	21	12	4
9733	30880	MWIL	12 10 1600	N13 E47	12 14.2	5	(D)					
9733		HOLL	12 10 2040	N13 E45	12 14.2		BG	EKI	500	28	14	2
9733		VORO	12 10 2326	N14 E43	12 14.2			DAI	672	27	12	2
9733		LEAR	12 11 0245	N15 E44	12 14.4		BG	EAI	500	31	13	2
9733		TACH	12 11 0526	N16 E34	12 13.8			DAI	408	12	10	3
9733		RAMY	12 11 1157	N15 E37	12 14.3		BG	EAI	440	25	13	4
9733		HOLL	12 11 2115	N11 E32	12 14.3		BGD	EKC	480	44	15	2
9733		LEAR	12 12 0135	N14 E30	12 14.3		BG	EKI	550	34	13	3
9733		TACH	12 12 0639	N14 E23	12 14.0			DSI	323	11	10	4
9733		SVTO	12 12 0845	N14 E27	12 14.4		BG	EAI	480	49	15	2
9733	30880	MWIL	12 12 1530	N13 E22	12 14.3	5	(D)					
9733		HOLL	12 12 1553	N14 E21	12 14.2		BGD	EKC	650	47	13	2
9733		LEAR	12 13 0017	N14 E17	12 14.3		BGD	EKI	560	41	14	3
9733		RAMY	12 13 1254	N14 E09	12 14.2		BG	EKC	520	53	15	3
9733		HOLL	12 13 1525	N13 E08	12 14.2		BGD	FKC	350	42	16	2
9733	30880	MWIL	12 13 1545	N13 E08	12 14.2	5	(BG)					
9733		LEAR	12 14 0014	N14 E03	12 14.2		BG	EKC	500	49	15	3
9733		RAMY	12 14 1247	N14 W05	12 14.1		BG	EAC	420	47	15	2
9733		HOLL	12 14 1544	N14 W06	12 14.2		BGD	EAI	410	73	14	3
9733		LEAR	12 15 0010	N14 W10	12 14.2		BGD	EKC	520	73	14	4
9733		KAND	12 15 1025	N15 W14	12 14.4			FSI		30	16	2
9733		SVTO	12 15 1100	N15 W17	12 14.2		B	FAO	500	48	17	2
9733		HOLL	12 15 1733	N15 W18	12 14.4		BG	EAI	190	35	13	2
9733	30880	MWIL	12 15 2200	N13 W22	12 14.2	5	(B)					
9733		LEAR	12 16 0105	N14 W23	12 14.3		BGD	EAI	160	47	15	3
9733		TACH	12 16 0639	N14 W24	12 14.5			DAI	373	17	12	3
9733		RAMY	12 16 1417	N13 W33	12 14.1		BG	EAI	390	26	14	2
9733	30880	MWIL	12 16 1545	N14 W30	12 14.4	5	(BG)					
9733		HOLL	12 16 1911	N15 W34	12 14.2		BG	EAI	440	67	15	2
9733		LEAR	12 17 0010	N14 W36	12 14.3		BG	EAI	360	44	15	3
9733		HOLL	12 17 1600	N15 W44	12 14.3		B	EAI	480	43	13	3
9733	30880	MWIL	12 17 1615	N14 W45	12 14.3	5	(BG)					
9733		LEAR	12 18 0120	N14 W50	12 14.3		BG	EAI	330	27	14	3
9733		TACH	12 18 0826	N14 W54	12 14.3			DAI	258	10	11	3
9733		RAMY	12 18 1217	N11 W57	12 14.2		B	EAI	200	25	14	2
9733	30880	MWIL	12 18 1530	N14 W58	12 14.3	5	(BG)					
9733		HOLL	12 18 1925	N15 W59	12 14.3		B	EAI	390	26	14	2
9733		TACH	12 19 0625	N13 W64	12 14.4			DAI	85	4	8	2
9733		SVTO	12 19 0940	N13 W68	12 14.3		BG	ESI	360	14	12	2
9733		RAMY	12 19 1244	N09 W73	12 14.0		B	EAO	300	3	12	2
9733		LEAR	12 19 1300	N14 W73	12 14.0		BG	EAI	430	30	14	2
9733	30880	MWIL	12 19 1545	N13 W75	12 14.0	5	(BG)					
9733		HOLL	12 19 1545	N16 W72	12 14.2		B	DAI	160	12	10	2
9733		TACH	12 20 0714	N12 W77	12 14.5			DSO	220	2	7	3
9733		SVTO	12 20 0743	N13 W76	12 14.6		B	DAO	90	2	7	3
9733		KAND	12 20 0810	N13 W77	12 14.5			HR		1	2	3
9733		LEAR	12 20 1345	N13 W75	12 14.9		BG	DAI	200	11	10	2
9733		RAMY	12 20 1459	N10 W80	12 14.6		A	HSX	60	1	1	3
9733		HOLL	12 20 1507	N14 W78	12 14.7		B	CAO	70	4	3	3
9737		SVTO	12 10 0955	S27 E59	12 15.0		A	AXX	10	1	1	2
9737		RAMY	12 10 1157	S27 E59	12 15.1		B	BXO	10	2	3	4
9737	30883	MWIL	12 10 1600	S27 E54	12 14.9	4	(B)					
9737		HOLL	12 10 2040	S28 E52	12 14.9		B	BXO	20	4	4	2
9737		VORO	12 10 2326	S28 E51	12 15.0			CSO	82	2	3	2
9737		LEAR	12 11 0245	S26 E50	12 15.0		B	DAO	40	4	4	2

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9737		TACH	12 11 0526	S24 E44	12 14.6			BRI	7	4	5	3
9737		RAMY	12 11 1157	S27 E45	12 15.0		B	DSO	40	5	6	4
9737		HOLL	12 11 2115	S28 E38	12 14.8		B	DSO	60	7	4	2
9737		LEAR	12 12 0135	S28 E38	12 15.0		B	DAO	100	9	6	3
9737		TACH	12 12 0639	S25 E32	12 14.7			BRI	49	3	4	4
9737		SVTO	12 12 0845	S28 E34	12 15.0		B	DSO	40	6	7	2
9737	30883	MWIL	12 12 1530	S28 E31	12 15.1	4	(B)					
9737		HOLL	12 12 1553	S27 E29	12 14.9		B	CAO	100	8	5	2
9737		LEAR	12 13 0017	S28 E27	12 15.1		B	DAO	50	6	9	3
9737		VORO	12 13 0052	S28 E25	12 15.0			CSO	84	6	7	2
9737		RAMY	12 13 1254	S28 E19	12 15.0		B	DSO	20	7	6	3
9737		HOLL	12 13 1525	S28 E16	12 14.9		B	DSO	30	5	7	2
9737	30883	MWIL	12 13 1545	S28 E17	12 15.0	4	(BP)					
9737		LEAR	12 14 0014	S28 E13	12 15.0		B	DSO	40	5	7	3
9737		VORO	12 14 0309	S27 E12	12 15.1			BXO	77	8	5	2
9737		RAMY	12 14 1247	S28 E06	12 15.0		B	DSO	40	7	6	2
9737		HOLL	12 14 1544	S27 E03	12 14.9		B	CAO	30	11	7	3
9737		LEAR	12 15 0010	S28 E00	12 15.0		B	DAO	70	7	7	4
9737		KAND	12 15 1025	S27 W04	12 15.1			DSO		4	5	2
9737		SVTO	12 15 1100	S26 W03	12 15.2		B	DAO	70	6	10	2
9737		HOLL	12 15 1733	S27 W08	12 15.1		B	DAO	70	4	5	2
9737	30883	MWIL	12 15 2200	S28 W10	12 15.1	4	(B)					
9737		LEAR	12 16 0105	S28 W12	12 15.1		B	DAO	30	5	5	3
9737		TACH	12 16 0639	S22 W15	12 15.1			BXO	45	2	10	3
9737		RAMY	12 16 1417	S28 W19	12 15.1		B	DSO	30	2	6	2
9737	30883	MWIL	12 16 1545	S27 W20	12 15.1	4	(BF)					
9737		HOLL	12 16 1911	S27 W23	12 15.0		B	DSO	50	5	6	2
9737		LEAR	12 17 0010	S28 W24	12 15.1		B	DAO	40	3	5	3
9737		HOLL	12 17 1600	S27 W33	12 15.1		B	DAO	50	3	7	3
9737	30883	MWIL	12 17 1615	S27 W34	12 15.0	4	(BP)					
9737		LEAR	12 18 0120	S27 W41	12 14.9		A	HSX	20	1	1	3
9737		RAMY	12 18 1217	S29 W45	12 15.0		A	AXX	10	1	1	2
9737	30883	MWIL	12 18 1530	S27 W48	12 14.9	3	(AP)					
9737		HOLL	12 18 1925	S26 W51	12 14.8		A	AXX	20	1		2
9737		RAMY	12 21 1305	S29 W83	12 15.0		A	HSX	10	1	1	4
9734		RAMY	12 09 1251	S12 E86	12 16.0		A	HSX	30	1	2	3
9734		HOLL	12 09 1540	S12 E85	12 16.0		B	CAO	70	2	10	3
9734		VORO	12 09 2342	S12 E75	12 15.6			HAX	116	1		2
9734		LEAR	12 10 0015	S12 E79	12 16.0		A	HSX	40	1	3	3
9734		TACH	12 10 0625	S10 E71	12 15.6			HSX	35	1	2	2
9734		SVTO	12 10 0955	S12 E73	12 15.9		A	CSO	30	2	3	2
9734		RAMY	12 10 1157	S12 E70	12 15.8		A	HSX	20	1	2	4
9734	30884	MWIL	12 10 1600	S12 E69	12 15.9	4	(AP)					
9734		HOLL	12 10 2040	S13 E66	12 15.8		A	HSX	50	1	1	2
9734		LEAR	12 11 0245	S11 E62	12 15.8		A	HAX	20	1	2	2
9734		TACH	12 11 0526	S09 E57	12 15.5			HSX	45	1	1	3
9734		RAMY	12 11 1157	S12 E58	12 15.9		A	HSX	30	1	1	4
9734		HOLL	12 11 2115	S13 E52	12 15.8		A	HAX	30	1	2	2
9734		VORO	12 12 0045	S12 E50	12 15.8			HAX	35	1		2
9734		LEAR	12 12 0135	S13 E50	12 15.8		B	CSO	30	2	2	3
9734		TACH	12 12 0639	S11 E43	12 15.5			AXX	5	1	1	4
9734		SVTO	12 12 0845	S12 E47	12 15.9		B	CSO	30	2	3	2
9734	30884	MWIL	12 12 1530	S13 E42	12 15.8	4	(AP)					
9734		HOLL	12 12 1553	S12 E42	12 15.8		A	HAX	30	1	1	2
9734		LEAR	12 13 0017	S13 E38	12 15.9		A	HSX	20	1	1	3
9734		VORO	12 13 0052	S13 E37	12 15.8			HAX	20	1		2
9734		RAMY	12 13 1254	S12 E30	12 15.8		A	HSX	10	1	1	3
9734		HOLL	12 13 1525	S12 E28	12 15.7		A	HSX	20	1	1	2
9734	30884	MWIL	12 13 1545	S13 E29	12 15.8	4	(AP)					
9734		LEAR	12 14 0014	S12 E23	12 15.7		A	HSX	10	1	1	3
9734		RAMY	12 14 1247	S14 E21	12 16.1		A	AXX	10	1	1	2
9734		LEAR	12 15 0010	S14 E14	12 16.1		B	CRO	20	7	5	4
9734		KAND	12 15 1025	S14 E08	12 16.0			BXO		4	4	2
9734		SVTO	12 15 1100	S13 E07	12 16.0		B	DAO	20	2	3	2
9734		HOLL	12 15 1733	S15 E04	12 16.0		B	CAO	30	2	4	2
9734		HOLL	12 16 1911	S15 W07	12 16.3		A	AXX	10	2	2	2
9734		HOLL	12 17 1600	S15 W19	12 16.2		B	BXO	20	2	3	3
9734		LEAR	12 18 0120	S16 W24	12 16.2		A	AXX	10	3	2	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
9737B		HOLL	12	17	1600	S28	W21	12	16.0		B	BXO	20	3	3	3
9737B	30894	MWIL	12	17	1615	S29	W21	12	16.0	4	(AP)					
9737B		LEAR	12	22	0015	S30	W76	12	16.0		B	CSO	30	5	5	4
9737A		LEAR	12	11	0245	N19	E62	12	15.8		A	AXX	20	1	1	2
9737A		HOLL	12	12	1553	N19	E45	12	16.1		A	AXX	10	1		2
9750		SVTO	12	21	0915	S16	W56	12	17.1		B	CSO	40	2	4	3
9750		KAND	12	21	0940	S16	W58	12	17.0			CSO		2	4	4
9750		RAMY	12	21	1305	S16	W58	12	17.1		B	DSO	30	4	5	4
9750		HOLL	12	21	1600	S14	W61	12	17.0		B	DSO	50	3	4	3
9750		LEAR	12	22	0015	S16	W64	12	17.1		B	DSO	40	5	6	4
9750		SVTO	12	22	0748	S16	W69	12	17.1		B	BXO	20	2	7	2
9750		HOLL	12	22	1520	S13	W74	12	17.0		B	BXO	40	2	8	2
9750	30902	MWIL	12	22	1600	S15	W73	12	17.1	4	B					
9750		LEAR	12	23	0105	S16	W74	12	17.4		B	DRO	50	2	3	2
9738		LEAR	12	12	0135	S22	E78	12	18.1		A	AXX	20	1	2	3
9738		TACH	12	12	0639	S16	E69	12	17.5			AXX	5	1	1	4
9738		SVTO	12	12	0845	S18	E76	12	18.1		B	DSO	40	2	7	2
9738	30885	MWIL	12	12	1530	S17	E67	12	17.7	4	AF					
9738	30886	MWIL	12	12	1530	S22	E71	12	18.1	4	AP					
9738		HOLL	12	12	1553	S21	E70	12	18.0		B	CAO	100	3	6	2
9738		LEAR	12	13	0017	S19	E66	12	18.0		B	DAO	50	3	7	3
9738		VORO	12	13	0052	S22	E69	12	18.3			HAX	88	1		2
9738		RAMY	12	13	1254	S19	E59	12	18.0		B	DAO	60	3	10	3
9738		HOLL	12	13	1525	S20	E57	12	18.0		B	DSO	90	2	7	2
9738	30885	MWIL	12	13	1545	S17	E54	12	17.7	4	(AF)					
9738	30886	MWIL	12	13	1545	S22	E61	12	18.3	5	(AP)					
9738		LEAR	12	14	0014	S19	E53	12	18.0		B	ESO	60	5	11	3
9738		RAMY	12	14	1247	S20	E46	12	18.0		B	ESO	40	7	12	2
9738		HOLL	12	14	1544	S22	E44	12	18.0		B	DAI	60	10	11	3
9738		LEAR	12	15	0010	S18	E40	12	18.0		B	EAO	50	10	11	4
9738		VORO	12	15	0039	S21	E43	12	18.3			BXO	53	5	1	2
9738		KAND	12	15	1025	S18	E35	12	18.1			BXO		13	10	2
9738		SVTO	12	15	1100	S18	E33	12	18.0		B	FAO	80	21	16	2
9738		HOLL	12	15	1733	S19	E31	12	18.1		B	ESI	50	9	12	2
9738	30885	MWIL	12	15	2200	S16	E26	12	17.9	4	(AF)					
9738	30886	MWIL	12	15	2200	S21	E33	12	18.4	4	(B)					
9738		LEAR	12	16	0105	S19	E27	12	18.1		B	ESO	20	10	12	3
9738		VORO	12	16	0346	S20	E25	12	18.1			DSO	67	4	10	2
9738		TACH	12	16	0639	S12	E20	12	17.8			BRO	37	3	7	3
9738		TACH	12	16	0639	S18	E27	12	18.3			BXO	8	2	1	3
9738		RAMY	12	16	1417	S19	E20	12	18.1		B	ESO	50	6	12	2
9738	30885	MWIL	12	16	1545	S15	E15	12	17.8	5	(BG)					
9738	30886	MWIL	12	16	1545	S22	E23	12	18.4	4	(BG)					
9738		HOLL	12	16	1911	S18	E17	12	18.1		B	CSO	60	20	13	2
9738		LEAR	12	17	0010	S18	E14	12	18.1		BG	EAO	100	13	14	3
9738		HOLL	12	17	1600	S18	E04	12	18.0		B	FAO	140	22	18	3
9738	30885	MWIL	12	17	1615	S15	E01	12	17.7	5	(BP)					
9738	30896	MWIL	12	17	1615	S23	E10	12	18.4	4	(AP)					
9738		LEAR	12	18	0120	S18	E00	12	18.0		BG	EAO	100	19	15	3
9738		TACH	12	18	0826	S12	W07	12	17.8			BRO	29	5	8	3
9738		RAMY	12	18	1217	S19	W06	12	18.0		B	DSO	40	14	10	2
9738	30885	MWIL	12	18	1530	S16	W09	12	18.0	4	(BG)					
9738	30896	MWIL	12	18	1530	S21	W03	12	18.4	4	(AF)					
9738		HOLL	12	18	1925	S17	W12	12	17.9		B	CAO	60	7	9	2
9738		TACH	12	19	0625	S15	W13	12	18.3			AXX	5	1	1	2
9738		SVTO	12	19	0940	S18	W15	12	18.3		B	DRO	40	7	6	2
9738		RAMY	12	19	1244	S19	W16	12	18.3		B	CSO	20	5	4	2
9738		LEAR	12	19	1300	S20	W13	12	18.5		BG	EAO	60	11	12	2
9738	30896	MWIL	12	19	1545	S17	W21	12	18.1	4	(B)					
9738		HOLL	12	19	1545	S18	W19	12	18.2		B	CAO	20	7	4	2
9738	30885	MWIL	12	19	1545	S19	W23	12	17.9	4	(BG)					
9738		TACH	12	20	0714	S16	W26	12	18.3			AXX	30	1	1	3
9738		SVTO	12	20	0743	S19	W26	12	18.3		B	CRO	10	2	4	3
9738		KAND	12	20	0810	S16	W27	12	18.3			AX		1		3
9738		LEAR	12	20	1345	S18	W27	12	18.5		BG	DAO	30	6	13	2
9738		RAMY	12	20	1459	S18	W32	12	18.2		B	BXO	20	2	3	3

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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
9738		HOLL	12 20 1507	S16 W31	12 18.3		B	CSO	20	4	3	3
9738		LEAR	12 21 0025	S18 W43	12 17.7		B	CSO	20	7	18	2
9738		SVTO	12 21 0915	S16 W46	12 17.9		B	CSO	40	2	4	3
9738		RAMY	12 21 1305	S17 W45	12 18.1		B	BXO	10	2	3	4
9738		HOLL	12 21 1600	S14 W51	12 17.8		B	DSO	50	3	4	3
9738		RAMY	12 22 1913	S14 W66	12 17.8		B	BXO	30	2	9	3
9740		RAMY	12 13 1254	S05 E61	12 18.1		B	CSO	30	3	3	3
9740		HOLL	12 13 1525	S07 E60	12 18.1		A	AXX	10	1	1	2
9740	30888	MWIL	12 13 1545	S06 E60	12 18.1	4	(B)					
9740		LEAR	12 14 0014	S06 E55	12 18.1		A	HSX	10	1	1	3
9738A	30897	MWIL	12 19 1545	N04 W12	12 18.7	4	(B)					
9744		VORO	12 16 0346	S06 E33	12 18.6			AXX	11	1		2
9744		TACH	12 16 0639	S04 E34	12 18.8			BXO	21	2	3	3
9744		RAMY	12 16 1417	S06 E29	12 18.8		A	HSX	20	1	1	2
9744	30891	MWIL	12 16 1545	S06 E28	12 18.7	4	(AP)					
9744		HOLL	12 16 1911	S06 E27	12 18.8		B	CAO	30	6	4	2
9744		LEAR	12 17 0010	S06 E25	12 18.9		B	CAO	30	3	4	3
9744		HOLL	12 17 1600	S06 E14	12 18.7		B	CAO	20	3	2	3
9744	30891	MWIL	12 17 1615	S05 E14	12 18.7	4	(AP)					
9744		VORO	12 18 0007	S07 E11	12 18.8			CSO	33	3	2	2
9744		LEAR	12 18 0120	S05 E09	12 18.7		A	HSX	20	2	2	3
9744		RAMY	12 18 1217	S04 E03	12 18.7		B	CSO	20	5	3	2
9744	30891	MWIL	12 18 1530	S05 E01	12 18.7	4	(AP)					
9744		HOLL	12 18 1925	S07 E00	12 18.8		B	BXO	20	2	6	2
9744		LEAR	12 19 1300	S11 W12	12 18.6		A	HSX	30	5	5	2
9741		RAMY	12 13 1254	N07 E78	12 19.4		B	BXO	10	3	2	3
9741		HOLL	12 13 1525	N07 E77	12 19.4		A	AXX	10	1	1	2
9741	30889	MWIL	12 13 1545	N06 E74	12 19.2	4	(AP)					
9741		LEAR	12 14 0014	N06 E69	12 19.2		A	HSX	10	1	1	3
9741		VORO	12 14 0309	N05 E68	12 19.2			AXX	23	1		2
9741		RAMY	12 14 1247	N07 E61	12 19.1		B	CSO	20	2	3	2
9741		HOLL	12 14 1544	N06 E61	12 19.2		A	AXX	10	2	2	3
9741		LEAR	12 15 0010	N06 E55	12 19.1		A	HRX	20	1	1	4
9741		KAND	12 15 1025	N05 E52	12 19.3			BXO		7	4	2
9741		SVTO	12 15 1100	N05 E51	12 19.3		B	DRO	50	6	6	2
9741		HOLL	12 15 1733	N04 E46	12 19.2		B	BXO	10	2	3	2
9741	30889	MWIL	12 15 2200	N05 E43	12 19.1	4	(AP)					
9741		LEAR	12 16 0105	N05 E41	12 19.1		B	CSO	10	2	2	3
9741		VORO	12 16 0346	N05 E39	12 19.1			AXX	13	1		2
9741		TACH	12 16 0639	N06 E36	12 19.0			AR	6	2	2	3
9741		RAMY	12 16 1417	N06 E36	12 19.3		B	DSO	40	4	6	2
9741	30889	MWIL	12 16 1545	N05 E33	12 19.1	4	(BP)					
9741		HOLL	12 16 1911	N04 E32	12 19.2		B	CAO	20	7	4	2
9741		VORO	12 16 2352	N05 E30	12 19.2			DSO	53	3	3	2
9741		LEAR	12 17 0010	N05 E29	12 19.2		B	DAO	30	3	5	3
9741		HOLL	12 17 1600	N05 E21	12 19.2		B	DAO	70	9	4	3
9741	30889	MWIL	12 17 1615	N06 E21	12 19.2	5	(B)					
9741		VORO	12 18 0007	N05 E17	12 19.3			DSO	85	7	3	2
9741		LEAR	12 18 0120	N05 E16	12 19.2		B	DAO	40	8	4	3
9741		TACH	12 18 0826	N07 E08	12 18.9			BRO	14	3	4	3
9741		RAMY	12 18 1217	N08 E09	12 19.2		B	DSO	30	7	5	2
9741	30889	MWIL	12 18 1530	N06 E08	12 19.2	4	(B)					
9741		HOLL	12 18 1925	N05 E06	12 19.2		B	CAO	50	5	4	2
9741		SVTO	12 19 0940	N07 W02	12 19.2		A	BXX	10	1	1	2
9741		LEAR	12 19 1300	N07 W03	12 19.3		B	DAO	30	6	3	2
9741	30889	MWIL	12 19 1545	N05 W05	12 19.3	4	(B)					
9741		HOLL	12 19 1545	N06 W12	12 18.7		B	CAO	10	5	3	2
9741		VORO	12 20 0015	N04 W16	12 18.8			DSO	67	6	3	3
9741		TACH	12 20 0714	N04 W20	12 18.8			BRO	14	3	3	3
9741		SVTO	12 20 0743	N03 W22	12 18.7		A	AXX		1		3
9741		LEAR	12 20 1345	N05 W21	12 19.0		BG	CAO	20	4	9	2
9741		HOLL	12 20 1507	N05 W20	12 19.1		B	BXO	10	6	6	3
9741		HOLL	12 21 1600	N05 W38	12 18.8		B	BXO	10	3	3	3
9741		VORO	12 21 2350	N04 W43	12 18.8			BXO	33	4	2	3
9741		LEAR	12 22 0015	N04 W44	12 18.7		B	DSO	30	4	3	4

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9741A	30899	MWIL	12	19	1545	N09	E08	12	20.2	4	(AF)					
9746		SVTO	12	19	0940	S16	E15	12	20.5		A	HSX	30	3	3	2
9746	30898	MWIL	12	19	1545	S17	E11	12	20.5	4	(B)					
9746		HOLL	12	19	1545	S19	E11	12	20.5		B	BXO	10	2	4	2
9746		LEAR	12	21	0025	S18	W07	12	20.5		B	DAO	30	4	3	2
9746		SVTO	12	21	0915	S18	W13	12	20.4		B	BXO	10	2	3	3
9746		KAND	12	21	0940	S17	W12	12	20.5			BXO		2	2	4
9746		RAMY	12	21	1305	S17	W14	12	20.5		B	BXO	10	2	3	4
9746		HOLL	12	21	1600	S17	W16	12	20.4		B	BXO	10	3	3	3
9746		LEAR	12	22	0015	S17	W19	12	20.6		B	BXO	10	2	4	4
9746A		KAND	12	20	0810	N11	E12	12	21.2			AX		1		3
9746A		KAND	12	21	0940	N10	W03	12	21.2			AX		3	2	4
9746A	30903	MWIL	12	22	1600	N11	W21	12	21.1	3	B					
9746A	30903	MWIL	12	23	1600	N11	W33	12	21.2	4	(B)					
9752A	30900	MWIL	12	19	1545	S23	E24	12	21.5	3	(AP)					
9752		LEAR	12	22	0015	S15	W05	12	21.6		B	CSO	20	5	3	4
9752		SVTO	12	22	0748	S14	W12	12	21.4		A	AXX		1		2
9752		HOLL	12	22	1520	S14	W16	12	21.4		A	AXX	10	1	1	2
9752	30904	MWIL	12	22	1600	S15	W15	12	21.5	4	AP					
9752		VORO	12	23	0110	S15	W30	12	20.8			AXX	12	1		3
9752		SVTO	12	23	0752	S15	W24	12	21.5		B	BXO	10	3	4	2
9752	30904	MWIL	12	23	1600	S15	W27	12	21.6	4	(B)					
9752		HOLL	12	23	1615	S14	W26	12	21.7		B	DSO	30	4	4	3
9752		RAMY	12	25	1300	S12	W56	12	21.3		B	BXO		2	3	2
9752		HOLL	12	25	1536	S13	W55	12	21.5		B	BXO	10	2	3	3
9752	30904	MWIL	12	25	2000	S15	W58	12	21.4	3	(B)					
9752		VORO	12	25	2335	S13	W63	12	21.2			AXX	8	1		2
9742		KAND	12	15	1025	N09	E86	12	21.9			CAO		3	3	2
9742		SVTO	12	15	1100	N09	E80	12	21.5		B	ESO	130	4	11	2
9742		HOLL	12	15	1733	N08	E76	12	21.4		B	DAO	160	6	6	2
9742	30890	MWIL	12	15	2200	N09	E76	12	21.6	5	(BP)					
9742		LEAR	12	16	0105	N08	E75	12	21.7		B	DAO	170	9	10	3
9742		VORO	12	16	0346	N09	E77	12	21.9			DSO	520	6	5	2
9742		TACH	12	16	0639	N08	E69	12	21.4			DSI	165	4	4	3
9742		RAMY	12	16	1417	N09	E70	12	21.8		B	DKI	400	7	10	2
9742	30890	MWIL	12	16	1545	N08	E67	12	21.7	5	(BP)					
9742		HOLL	12	16	1911	N07	E66	12	21.7		B	DKI	540	18	10	2
9742		VORO	12	16	2352	N09	E64	12	21.8			DSO	868	6	5	2
9742		LEAR	12	17	0010	N09	E63	12	21.7		B	DKI	340	15	10	3
9742		HOLL	12	17	1600	N08	E55	12	21.8		B	DKI	340	19	10	3
9742	30890	MWIL	12	17	1615	N09	E54	12	21.7	5	(BG)					
9742		VORO	12	18	0007	N10	E50	12	21.8			DSO	683	22	9	2
9742		LEAR	12	18	0120	N09	E49	12	21.7		BG	EKI	400	26	11	3
9742		TACH	12	18	0826	N10	E40	12	21.3			CHI	345	10	10	3
9742		RAMY	12	18	1217	N11	E43	12	21.7		BG	EKI	240	24	13	2
9742	30890	MWIL	12	18	1530	N09	E41	12	21.7	5	(BG)					
9742		HOLL	12	18	1925	N08	E40	12	21.8		BG	DKC	380	14	10	2
9742		VORO	12	19	0008	N10	E38	12	21.9			DSO	462	15	13	2
9742		TACH	12	19	0625	N12	E29	12	21.4			DSI	154	8	10	2
9742		SVTO	12	19	0940	N12	E33	12	21.9		BG	EAI	280	28	14	2
9742		RAMY	12	19	1244	N13	E33	12	22.0		B	DAO	380	12	10	2
9742		LEAR	12	19	1300	N11	E36	12	22.2		BG	EAI	330	24	14	2
9742	30890	MWIL	12	19	1545	N10	E28	12	21.8	5	(BG)					
9742		HOLL	12	19	1545	N10	E30	12	21.9		BG	EKC	290	31	14	2
9742		VORO	12	20	0015	N12	E23	12	21.7			HKX	507	14	13	3
9742		TACH	12	20	0714	N12	E16	12	21.5			DAI	783	26	12	3
9742		SVTO	12	20	0743	N09	E19	12	21.7		BG	FKI	480	29	17	3
9742		KAND	12	20	0810	N12	E22	12	22.0			DAI		30	10	3
9742		LEAR	12	20	1345	N10	E23	12	22.3		BG	EAI	350	27	14	2
9742		RAMY	12	20	1459	N11	E14	12	21.7		BG	EKI	690	49	15	3
9742		HOLL	12	20	1507	N09	E18	12	22.0		BG	EKC	540	70	14	3
9742		LEAR	12	21	0025	N10	E10	12	21.8		BG	EKI	500	44	15	2
9742		SVTO	12	21	0915	N09	E04	12	21.7		BG	FKI	820	32	20	3
9742		KAND	12	21	0940	N10	E06	12	21.8			EAI		36	12	4

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9742		RAMY	12	21	1305	N11	E02	12	21.7		BG	FKC	740	88	16	4
9742		HOLL	12	21	1600	N10	E02	12	21.8		BG	FKC	750	61	17	3
9742		VORO	12	21	2350	N13	W04	12	21.7			HKX	1277	52	15	3
9742		LEAR	12	22	0015	N10	W04	12	21.7		BG	FKC	770	78	17	4
9742		SVTO	12	22	0748	N09	W08	12	21.7		BG	FKI	860	28	21	2
9742		HOLL	12	22	1520	N12	W11	12	21.8		BG	EHC	320	34	13	2
9742	30890	MWIL	12	22	1600	N10	W10	12	21.9	5	BG					
9742		RAMY	12	22	1913	N14	W15	12	21.7		BG	EKI	730	40	15	3
9742		LEAR	12	23	0105	N10	W17	12	21.8		BG	FKC	630	37	18	2
9742		VORO	12	23	0110	N08	W14	12	22.0			HKX	1395	41	8	3
9742		SVTO	12	23	0752	N10	W22	12	21.7		BG	FKI	840	27	21	2
9742	30890	MWIL	12	23	1600	N11	W24	12	21.9	5	(B)					
9742		HOLL	12	23	1615	N10	W25	12	21.8		BGD	FKC	1110	86	17	3
9742		VORO	12	23	2332	N12	W31	12	21.6			FKI	1672	55	16	3
9742		LEAR	12	24	0153	N11	W32	12	21.7		BG	FKC	960	40	17	2
9742		TACH	12	24	0617	N11	W33	12	21.8			DAI	1210	24	16	3
9742		VORO	12	24	2343	N12	W44	12	21.7			FKI	1587	66	18	3
9742		LEAR	12	25	0010	N11	W43	12	21.8		BG	FKC	1050	59	19	3
9742		TACH	12	25	0525	N11	W45	12	21.8			DAI	956	16	17	2
9742		SVTO	12	25	0915	N13	W50	12	21.6		BG	FKC	1060	52	20	3
9742		RAMY	12	25	1300	N14	W55	12	21.4		BG	FKC	1110	43	23	2
9742		HOLL	12	25	1536	N11	W50	12	21.9		BG	FKC	1080	39	19	3
9742	30890	MWIL	12	25	2000	N10	W54	12	21.8	5	(BG)					
9742		VORO	12	25	2335	N12	W56	12	21.8			DKI	1708	36	11	2
9742		LEAR	12	26	0028	N12	W56	12	21.8		BG	FKC	1030	40	18	3
9742		TACH	12	26	0515	N11	W54	12	22.1			EAI	920	15	8	3
9742		KAND	12	26	0850	N11	W60	12	21.8			EKO		11	13	3
9742		RAMY	12	26	1440	N14	W65	12	21.7		BG	EKI	190	21	14	4
9742		HOLL	12	26	1510	N11	W62	12	22.0		BG	EKI	280	16	15	3
9742	30890	MWIL	12	26	1600	N11	W64	12	21.8	5	(BG)					
9742		VORO	12	26	2338	N11	W68	12	21.9			DKI	1354	17	10	3
9742		LEAR	12	27	0120	N10	W67	12	22.0		BG	EKI	830	16	15	2
9742		TACH	12	27	0629	N11	W69	12	22.1			EAI	513	7	14	4
9742		SVTO	12	27	1031	N11	W75	12	21.8		BG	FKI	600	5	17	3
9742		RAMY	12	27	1254	N13	W75	12	21.9		BG	EKI	680	22	12	3
9742	30890	MWIL	12	27	2300	N11	W79	12	22.0	5	BG					
9742		VORO	12	27	2339	N12	W79	12	22.0			DKI	683	12	8	3
9742		RAMY	12	28	1247	N14	W88	12	21.9		A	HSX	30	1	3	3
9742		LEAR	12	28	1300	N11	W90	12	21.8		BG	EKI	350	7	15	3
9742B	30912	MWIL	12	25	2000	S30	W47	12	22.1	3	(AP)					
9742C	30892	MWIL	12	16	1545	N19	E67	12	21.8	3	(AP)					
9742C		VORO	12	24	2343	N03	W34	12	22.4			AXX	11	1		3
9743		VORO	12	16	0346	S11	E82	12	22.3			HAX	270	1		2
9743		TACH	12	16	0639	S08	E78	12	22.1			HSX	30	1	5	3
9743		RAMY	12	16	1417	S10	E78	12	22.4		A	HSX	150	1	3	2
9743	30893	MWIL	12	16	1545	S11	E76	12	22.4	4	(AP)					
9743		HOLL	12	16	1911	S12	E74	12	22.4		A	HAX	240	2	2	2
9743		VORO	12	16	2352	S11	E71	12	22.3			HAX	578	2		2
9743		LEAR	12	17	0010	S11	E72	12	22.4		B	DAO	180	4	6	3
9743		HOLL	12	17	1600	S12	E62	12	22.3		A	HAX	130	4	2	3
9743	30893	MWIL	12	17	1615	S11	E62	12	22.3	5	(AP)					
9743		VORO	12	18	0007	S11	E57	12	22.3			DSO	558	4	2	2
9743		LEAR	12	18	0120	S11	E57	12	22.3		A	HAX	160	4	3	3
9743		TACH	12	18	0826	S09	E49	12	22.0			HA	180	2	2	3
9743		RAMY	12	18	1217	S08	E51	12	22.3		B	CAO	130	7	4	2
9743	30893	MWIL	12	18	1530	S10	E49	12	22.3	5	(AP)					
9743		HOLL	12	18	1925	S11	E47	12	22.3		B	CAI	150	4	3	2
9743		VORO	12	19	0008	S10	E44	12	22.3			HAX	214	3		2
9743		TACH	12	19	0625	S08	E38	12	22.1			HA	90	2	2	2
9743		SVTO	12	19	0940	S10	E39	12	22.3		A	HSX	130	2	3	2
9743		RAMY	12	19	1244	S08	E38	12	22.4		A	HSX	130	2	2	2
9743		LEAR	12	19	1300	S09	E44	12	22.8		B	CAO	100	4	4	2
9743	30893	MWIL	12	19	1545	S10	E36	12	22.4	5	(AP)					
9743		HOLL	12	19	1545	S11	E36	12	22.4		A	HAX	120	2	2	2
9743		VORO	12	20	0015	S11	E31	12	22.3			DSO	218	5	2	3
9743		TACH	12	20	0714	S08	E22	12	21.9			CSO	330	3	4	3

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9743		SVTO	12	20	0743	S11	E27	12	22.3		B	CAO	120	3	4	3
9743		KAND	12	20	0810	S10	E26	12	22.3			CAO		3	5	3
9743		LEAR	12	20	1345	S10	E30	12	22.8		B	CAO	130	7	4	2
9743		RAMY	12	20	1459	S09	E24	12	22.4		B	CSO	190	5	6	3
9743		HOLL	12	20	1507	S11	E23	12	22.4		B	CSO	110	6	5	3
9743		LEAR	12	21	0025	S10	E16	12	22.2		B	DAO	120	5	6	2
9743		SVTO	12	21	0915	S11	E13	12	22.4		B	DSO	120	3	4	3
9743		KAND	12	21	0940	S10	E13	12	22.4			DAO		3	3	4
9743		RAMY	12	21	1305	S10	E11	12	22.4		A	HAX	150	3	4	4
9743		HOLL	12	21	1600	S08	E07	12	22.2		B	CAO	120	6	7	3
9743		VORO	12	21	2350	S11	E05	12	22.4			DSO	217	3	1	3
9743		LEAR	12	22	0015	S08	E04	12	22.3		B	CSO	150	8	10	4
9743		SVTO	12	22	0748	S11	E03	12	22.5		B	CSO	110	2	4	2
9743		HOLL	12	22	1520	S10	W03	12	22.4		B	CSO	90	4	4	2
9743	30893	MWIL	12	22	1600	S11	W03	12	22.4	5	BP					
9743		RAMY	12	22	1913	S07	W06	12	22.3		B	CSO	130	5	6	3
9743		LEAR	12	23	0105	S11	W08	12	22.4		B	CSO	160	2	2	2
9743		VORO	12	23	0110	S11	W08	12	22.4			HAX	257	2		3
9743		SVTO	12	23	0752	S11	W12	12	22.4		B	CSO	110	2	4	2
9743	30893	MWIL	12	23	1600	S11	W17	12	22.4	5	(BG)					
9743		HOLL	12	23	1615	S11	W17	12	22.4		A	HAX	110	7	5	3
9743		VORO	12	23	2332	S10	W21	12	22.4			HAX	221	6		3
9743		LEAR	12	24	0153	S10	W22	12	22.4		B	CAO	90	2	3	2
9743		TACH	12	24	0617	S08	W23	12	22.5			HSX	135	1	2	3
9743		VORO	12	24	2343	S10	W34	12	22.4			HAX	142	1		3
9743		LEAR	12	25	0010	S10	W34	12	22.4		A	HAX	110	4	4	3
9743		SVTO	12	25	0915	S09	W38	12	22.5		B	CSO	100	5	5	3
9743		RAMY	12	25	1300	S09	W41	12	22.5		B	CSO	110	5	3	2
9743		HOLL	12	25	1536	S09	W42	12	22.5		B	CAO	80	3	3	3
9743	30893	MWIL	12	25	2000	S12	W45	12	22.4	5	(AP)					
9743		VORO	12	25	2335	S10	W48	12	22.4			HSX	146	1		2
9743		LEAR	12	26	0028	S10	W48	12	22.4		A	HSX	70	1	2	3
9743		RAMY	12	26	1440	S08	W56	12	22.4		B	CSO	70	2	3	4
9743		HOLL	12	26	1510	S10	W55	12	22.5		B	CSO	80	2	3	3
9743	30893	MWIL	12	26	1600	S11	W57	12	22.4	5	(AP)					
9743		VORO	12	26	2338	S11	W61	12	22.4			HAX	147	1		3
9743		RAMY	12	27	1254	S09	W68	12	22.4		A	HSX	50	1	2	3
9743	30893	MWIL	12	27	2300	S11	W74	12	22.4	5	AP					
9743		VORO	12	27	2339	S11	W74	12	22.4			HAX	81	1		3
9743		RAMY	12	28	1247	S10	W84	12	22.2		A	HSX	60	1	3	3
9743		HOLL	12	28	1738	S09	W82	12	22.6		B	DSO	180	3	4	1
9745		LEAR	12	18	0120	N16	E72	12	23.5		A	AXX	10	2	2	3
9745		RAMY	12	18	1217	N21	E67	12	23.6		B	CSO	40	6	6	2
9745	30895	MWIL	12	18	1530	N18	E62	12	23.4	4	(BP)					
9745		HOLL	12	18	1925	N17	E61	12	23.4		B	BXO	60	4	3	2
9745		SVTO	12	19	0940	N18	E54	12	23.5		B	BXO	40	3	6	2
9745		RAMY	12	19	1244	N22	E54	12	23.7		B	BXO	20	5	4	2
9745		LEAR	12	19	1300	N18	E57	12	23.9		B	BXO	20	2	2	2
9745		HOLL	12	19	1545	N16	E50	12	23.4		B	BXO	20	6	6	2
9745	30895	MWIL	12	19	1545	N17	E49	12	23.4	4	(BP)					
9745		VORO	12	20	0015	N16	E42	12	23.2			BXO	45	5	5	3
9745		SVTO	12	20	0743	N17	E42	12	23.5		B	BXO	30	6	7	3
9745		KAND	12	20	0810	N19	E41	12	23.5			BXO		4	5	3
9745		LEAR	12	20	1345	N17	E44	12	23.9		B	BXO	50	7	5	2
9745		RAMY	12	20	1459	N18	E36	12	23.4		B	CSO	40	11	6	3
9745		HOLL	12	20	1507	N17	E37	12	23.4		B	BXO	20	8	5	3
9745		LEAR	12	21	0025	N17	E30	12	23.3		B	CSO	30	6	5	2
9745		SVTO	12	21	0915	N16	E26	12	23.3		B	CRO	20	4	4	3
9745		KAND	12	21	0940	N17	E25	12	23.3			BXO		4	5	4
9745		RAMY	12	21	1305	N18	E24	12	23.4		B	CSO	20	8	6	4
9745		HOLL	12	21	1600	N16	E25	12	23.6		A	AXX	10	2	1	3
9745		VORO	12	21	2350	N16	E19	12	23.4			BXO	101	11	3	3
9745		LEAR	12	22	0015	N17	E18	12	23.4		B	DAO	40	10	5	4
9745		SVTO	12	22	0748	N16	E14	12	23.4		B	DAO	80	6	5	2
9745		HOLL	12	22	1520	N17	E10	12	23.4		B	DSO	60	8	8	2
9745	30895	MWIL	12	22	1600	N17	E09	12	23.3	4	B					
9745		RAMY	12	22	1913	N21	E08	12	23.4		B	DSO	40	9	6	3
9745		LEAR	12	23	0105	N17	E04	12	23.3		B	DAO	40	6	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
9745		VORO	12 23 0110	N18 E05	12 23.4			DSO	145	12	5	3
9745		SVTO	12 23 0752	N18 E00	12 23.3		B	DAO	70	5	7	2
9745	30895	MWIL	12 23 1600	N18 W04	12 23.4	4	(B)					
9745		HOLL	12 23 1615	N17 W02	12 23.5		B	EAO	80	17	11	3
9745		VORO	12 23 2332	N19 W08	12 23.4			BXI	53	8	7	3
9745		LEAR	12 24 0153	N17 W10	12 23.3		B	DAO	30	9	6	2
9745		TACH	12 24 0617	N18 W12	12 23.3			BRO	11	4	6	3
9745		VORO	12 24 2343	N19 W21	12 23.4			BXO	24	6	7	3
9745		LEAR	12 25 0010	N18 W22	12 23.3		B	DRO	30	6	9	3
9745		TACH	12 25 0525	N18 W28	12 23.1			AXX	10	1	1	2
9745		SVTO	12 25 0915	N19 W31	12 23.0		A	HSX	10	3	2	3
9745		RAMY	12 25 1300	N21 W34	12 22.9		A	HSX		2	1	2
9745		HOLL	12 25 1536	N18 W35	12 23.0		B	CSO	10	2	2	3
9745	30895	MWIL	12 25 2000	N18 W38	12 22.9	4	(AP)					
9745		VORO	12 25 2335	N18 W38	12 23.1			BXO	23	2	5	2
9745		LEAR	12 26 0028	N18 W38	12 23.1		B	DSO	20	4	6	3
9745		TACH	12 26 0515	N22 W37	12 23.4			AR	5	2	3	3
9745		KAND	12 26 0850	N17 W42	12 23.2			CSO		2	4	3
9745		RAMY	12 26 1440	N19 W46	12 23.1		B	DSO		2	4	4
9745		HOLL	12 26 1510	N17 W45	12 23.2		B	BXO	10	2	4	3
9745	30895	MWIL	12 26 1600	N17 W46	12 23.2	4	(B)					
9745		VORO	12 26 2338	N17 W50	12 23.2			BXO	23	2	4	3
9745		LEAR	12 27 0120	N17 W49	12 23.3		A	AXX	10	1	1	2
9745		TACH	12 27 0629	N17 W49	12 23.5			HSX	40	2	1	4
9745		RAMY	12 27 1254	N19 W56	12 23.3		B	BXO	10	2	2	3
9745		VORO	12 27 2339	N18 W61	12 23.3			AXX	7	1		3
9748		RAMY	12 20 1459	S10 E40	12 23.6		B	CSO	20	2	3	3
9748		HOLL	12 20 1507	S12 E39	12 23.6		B	CSO	30	6	2	3
9748		LEAR	12 21 0025	S11 E33	12 23.5		B	DAO	40	6	5	2
9748		SVTO	12 21 0915	S12 E28	12 23.5		B	DAO	80	7	7	3
9748		KAND	12 21 0940	S11 E29	12 23.6			DSO		8	5	4
9748		RAMY	12 21 1305	S11 E27	12 23.6		B	DSO	30	7	6	4
9748		HOLL	12 21 1600	S13 E24	12 23.5		B	DAO	60	12	7	3
9748		VORO	12 21 2350	S11 E20	12 23.5			DSO	148	16	6	3
9748		LEAR	12 22 0015	S11 E19	12 23.4		BG	DAO	70	23	7	4
9748		SVTO	12 22 0748	S11 E15	12 23.4		B	DAO	120	10	9	2
9748		HOLL	12 22 1520	S11 E11	12 23.5		B	ESO	60	14	11	2
9748	30905	MWIL	12 22 1600	S11 E10	12 23.4	5	BG					
9748		RAMY	12 22 1913	S07 E06	12 23.2		B	DAO	120	15	10	3
9748		LEAR	12 23 0105	S10 E06	12 23.5		B	DAO	120	11	9	2
9748		VORO	12 23 0110	S11 E05	12 23.4			DSO	163	14	8	3
9748		SVTO	12 23 0752	S10 E01	12 23.4		B	DAO	240	8	10	2
9748	30905	MWIL	12 23 1600	S10 W05	12 23.3	5	(BG)					
9748		HOLL	12 23 1615	S11 W04	12 23.4		BG	DAI	220	31	9	3
9748		VORO	12 23 2332	S10 W08	12 23.4			DAI	370	15	9	3
9748		LEAR	12 24 0153	S10 W09	12 23.4		B	EAO	180	13	10	2
9748		TACH	12 24 0617	S06 W12	12 23.4			CAI	176	7	9	3
9748		VORO	12 24 2343	S10 W22	12 23.3			DKI	347	22	9	3
9748		LEAR	12 25 0010	S10 W22	12 23.3		B	EAO	290	24	12	3
9748		TACH	12 25 0525	S08 W23	12 23.5			DSI	296	8	10	2
9748		SVTO	12 25 0915	S10 W28	12 23.3		BG	ESO	280	25	12	3
9748		RAMY	12 25 1300	S09 W31	12 23.2		B	DAI	490	24	10	2
9748		HOLL	12 25 1536	S11 W31	12 23.3		BG	EAI	260	21	13	3
9748	30905	MWIL	12 25 2000	S12 W33	12 23.3	5	(B)					
9748		VORO	12 25 2335	S11 W36	12 23.3			DKI	604	20	9	2
9748		LEAR	12 26 0028	S11 W35	12 23.4		B	ESO	280	16	11	3
9748		TACH	12 26 0515	S09 W41	12 23.1			DSI	276	13	14	3
9748		KAND	12 26 0850	S10 W42	12 23.2			FKO		12	19	3
9748		RAMY	12 26 1440	S09 W45	12 23.2		B	EKO	290	19	12	4
9748		HOLL	12 26 1510	S11 W44	12 23.3		BG	DAI	320	17	10	3
9748	30905	MWIL	12 26 1600	S11 W46	12 23.2	5	(BG)					
9748		VORO	12 26 2338	S11 W50	12 23.2			DAI	464	13	8	3
9748		LEAR	12 27 0120	S11 W53	12 23.1		B	FKO	340	13	16	2
9748		TACH	12 27 0629	S10 W54	12 23.2			CAI	326	10	15	4
9748		SVTO	12 27 1031	S11 W59	12 23.0		B	EAO	450	10	11	3
9748		RAMY	12 27 1254	S10 W58	12 23.2		B	EAI	210	25	11	3
9748	30905	MWIL	12 27 2300	S11 W64	12 23.1	5	(BG)					
9748		VORO	12 27 2339	S11 W64	12 23.2			DAI	336	18	11	3

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9748		RAMY	12	28	1247	S11	W71	12	23.2		B	EAO	240	12	13	3
9748		LEAR	12	28	1300	S12	W67	12	23.5		BG	FAO	300	16	16	3
9748		SVTO	12	28	1355	S11	W73	12	23.1		B	CAO	200	7	23	3
9748		VORO	12	29	0003	S10	W79	12	23.1			DAI	126	3	16	2
9748		LEAR	12	29	0020	S10	W79	12	23.1		B	DAO	180	4	5	3
9747		SVTO	12	19	0940	N11	E77	12	25.2		A	HSX	40	2	2	2
9747		RAMY	12	19	1244	N15	E79	12	25.5		B	BXO	30	2	3	2
9747		HOLL	12	19	1545	N10	E73	12	25.1		A	AXX	10	1	1	2
9747	30901	MWIL	12	19	1545	N12	E75	12	25.3	4	(BP)					
9747		VORO	12	20	0015	N11	E69	12	25.2			DSO	115	4	4	3
9747		TACH	12	20	0714	N13	E64	12	25.1			CSI	88	4	8	3
9747		SVTO	12	20	0743	N11	E66	12	25.3		B	CSO	40	2	4	3
9747		KAND	12	20	0810	N12	E67	12	25.4			CAO		10	6	3
9747		LEAR	12	20	1345	N13	E69	12	25.8		B	BXO	120	8	7	2
9747		RAMY	12	20	1459	N14	E62	12	25.3		B	DAO	120	5	9	3
9747		HOLL	12	20	1507	N10	E63	12	25.4		B	CAO	120	9	4	3
9747		LEAR	12	21	0025	N12	E56	12	25.2		B	DSO	70	9	7	2
9747		SVTO	12	21	0915	N11	E51	12	25.2		B	DAO	60	5	6	3
9747		KAND	12	21	0940	N11	E52	12	25.3			CSO		7	6	4
9747		RAMY	12	21	1305	N12	E51	12	25.4		B	CSO	40	16	9	4
9747		HOLL	12	21	1600	N11	E49	12	25.3		B	CAO	70	12	8	3
9747		VORO	12	21	2350	N11	E42	12	25.1			DSO	137	10	5	3
9747		LEAR	12	22	0015	N12	E43	12	25.2		B	DAO	80	12	9	4
9747		SVTO	12	22	0748	N11	E38	12	25.2		B	DAO	60	3	4	2
9747		HOLL	12	22	1520	N10	E34	12	25.2		B	CAO	40	6	7	2
9747	30901	MWIL	12	22	1600	N11	E34	12	25.2	4	B					
9747		RAMY	12	22	1913	N15	E34	12	25.4		B	DSO	60	10	8	3
9747		LEAR	12	23	0105	N12	E30	12	25.3		B	DAO	60	6	5	2
9747		VORO	12	23	0110	N11	E29	12	25.2			DSO	96	9	4	3
9747		SVTO	12	23	0752	N12	E24	12	25.1		B	DSO	30	2	6	2
9747	30901	MWIL	12	23	1600	N12	E20	12	25.2	4	(B)					
9747		HOLL	12	23	1615	N10	E21	12	25.2		B	DSO	60	6	7	3
9747		VORO	12	23	2332	N12	E17	12	25.3			DSI	82	4	6	3
9747		LEAR	12	24	0153	N12	E14	12	25.1		B	DSO	20	5	6	2
9747		TACH	12	24	0617	N13	E10	12	25.0			BXO	12	2	5	3
9747		VORO	12	24	2343	N12	E03	12	25.2			BXO	27	4	7	3
9747		LEAR	12	25	0010	N12	E02	12	25.1		B	DAO	30	3	7	3
9747		TACH	12	25	0525	N12	W02	12	25.1			BXO	6	2	6	2
9747		SVTO	12	25	0915	N12	W03	12	25.1		B	DRO	20	4	8	3
9747		RAMY	12	25	1300	N12	W04	12	25.2		B	DRO	10	5	8	2
9747		HOLL	12	25	1536	N12	W06	12	25.2		B	DSO	40	4	8	3
9747	30901	MWIL	12	25	2000	N12	W09	12	25.1	4	(B)					
9747		VORO	12	25	2335	N13	W11	12	25.1			BXO	23	2	7	2
9747		LEAR	12	26	0028	N13	W12	12	25.1		B	CSO	20	3	8	3
9747		TACH	12	26	0515	N12	W16	12	25.0			AXX	5	1	1	3
9747		KAND	12	26	0850	N11	W18	12	25.0			HS		1	1	3
9747		RAMY	12	26	1440	N12	W23	12	24.9		A	HSX		1	1	4
9747		HOLL	12	26	1510	N12	W23	12	24.9		B	BXO	10	2	1	3
9747	30901	MWIL	12	26	1600	N12	W24	12	24.8	4	(AP)					
9747		VORO	12	26	2338	N11	W27	12	24.9			AXX	10	1		3
9748A		LEAR	12	30	0045	S15	W65	12	25.1		A	HRX	10	1	1	3
9747A		LEAR	12	26	0028	N16	W01	12	25.9		A	AXX		1		3
9749		HOLL	12	19	1545	S08	E81	12	25.7		A	HAX	60	1	1	2
9749		VORO	12	20	0015	S08	E79	12	25.9			HAX	130	1		3
9749		TACH	12	20	0714	S06	E76	12	26.0			CSO	40	2	6	3
9749		SVTO	12	20	0743	S08	E80	12	26.3		B	CSO	60	2	9	3
9749		KAND	12	20	0810	S08	E80	12	26.3			CRO		2	10	3
9749		LEAR	12	20	1345	S07	E80	12	26.6		B	CAO	60	3	12	2
9749		RAMY	12	20	1459	S05	E76	12	26.3		B	CSO	60	3	8	3
9749		HOLL	12	20	1507	S11	E75	12	26.3		B	DSO	110	3	6	3
9749		LEAR	12	21	0025	S07	E69	12	26.2		B	CSO	50	5	6	2
9749		SVTO	12	21	0915	S09	E64	12	26.2		B	CSO	60	5	8	3
9749		KAND	12	21	0940	S08	E64	12	26.2			CSO		4	7	4
9749		RAMY	12	21	1305	S07	E62	12	26.2		B	DSO	50	5	7	4
9749		HOLL	12	21	1600	S09	E60	12	26.2		B	CAO	60	5	6	3

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9749		VORO	12	21	2350	S08	E55	12	26.1			DSO	112	4	6	3
9749		LEAR	12	22	0015	S07	E55	12	26.1		B	DSO	50	3	6	4
9749		SVTO	12	22	0748	S09	E52	12	26.2		B	DSO	30	3	9	2
9749		HOLL	12	22	1520	S09	E46	12	26.1		B	CSO	30	2	7	2
9749	30906	MWIL	12	22	1600	S09	E46	12	26.1	5	B					
9749		RAMY	12	22	1913	S05	E43	12	26.0		B	BXO	20	3	6	3
9749A		HOLL	12	23	1615	N03	E35	12	26.3		A	AXX	10	2	2	3
9757		RAMY	12	26	1440	S09	E07	12	27.1		B	BXO		3	3	4
9757		HOLL	12	26	1510	S09	E06	12	27.1		B	CSO	20	4	3	3
9757	30914	MWIL	12	26	1600	S08	E06	12	27.1	4	(B)					
9757		LEAR	12	27	0120	S08	W02	12	26.9		B	CSO	10	1	1	2
9757		TACH	12	27	0629	S07	W01	12	27.2			AR	4	3	2	4
9757		SVTO	12	27	1031	S08	W04	12	27.1		B	DSO	40	6	4	3
9757		RAMY	12	27	1254	S09	W07	12	27.0		B	BXO	10	9	3	3
9757	30914	MWIL	12	27	2300	S09	W12	12	27.0	4	BP					
9757		VORO	12	27	2339	S09	W13	12	27.0			AXX	20	3		3
9757		RAMY	12	28	1247	S09	W21	12	26.9		B	BXO	10	4	3	3
9757		LEAR	12	28	1300	S10	W14	12	27.5		B	CRO	10	2	1	3
9757		SVTO	12	28	1355	S10	W21	12	27.0		B	BXO	10	3	3	3
9757		HOLL	12	28	1738	S08	W22	12	27.1		A	AXX		1		1
9757		VORO	12	29	0003	S09	W25	12	27.1			AXX	3	1		2
9757		LEAR	12	29	0020	S09	W26	12	27.1		A	AXX		1		3
9757		RAMY	12	29	1420	S07	W32	12	27.2		B	BXO		2	2	1
9757		HOLL	12	29	1600	S09	W35	12	27.0		A	AXX	10	5	2	2
9757		LEAR	12	30	0045	S10	W38	12	27.2		A	AXX		1		3
9757		HOLL	12	30	1600	S08	W47	12	27.1		A	AXX	10	1	1	1
9751		HOLL	12	20	1507	N01	E85	12	27.0		A	HAX	120	1	3	3
9751		LEAR	12	21	0025	N05	E77	12	26.8		A	HAX	180	1	4	2
9751		SVTO	12	21	0915	N04	E75	12	27.0		A	HSX	180	1	5	3
9751		KAND	12	21	0940	N04	E73	12	26.9			HA		2	3	4
9751		RAMY	12	21	1305	N04	E75	12	27.1		B	CAO	280	6	7	4
9751		HOLL	12	21	1600	N03	E70	12	26.9		A	HKX	310	1	3	3
9751		VORO	12	21	2350	N04	E63	12	26.7			HKX	392	3		3
9751		LEAR	12	22	0015	N05	E66	12	26.9		A	HKX	400	6	5	4
9751		SVTO	12	22	0748	N04	E63	12	27.0		B	CAO	240	2	6	2
9751		HOLL	12	22	1520	N04	E61	12	27.2		B	CHO	290	4	11	2
9751	30907	MWIL	12	22	1600	N04	E58	12	27.0	5	BP					
9751		RAMY	12	22	1913	N06	E60	12	27.3		B	EKO	500	9	13	3
9751		LEAR	12	23	0105	N05	E55	12	27.1		B	CKO	340	11	12	2
9751		VORO	12	23	0110	N04	E56	12	27.2			HKX	553	8	8	3
9751		SVTO	12	23	0752	N05	E52	12	27.2		B	EAO	240	6	15	2
9751	30907	MWIL	12	23	1600	N04	E43	12	26.9	5	(BP)					
9751	30911	MWIL	12	23	1600	N04	E52	12	27.5	4	(BP)					
9751		HOLL	12	23	1615	N02	E48	12	27.3		B	EKI	360	22	13	3
9751		VORO	12	23	2332	N04	E45	12	27.3			DKI	615	13	11	3
9751		LEAR	12	24	0153	N05	E42	12	27.2		B	EKO	380	13	13	2
9751		TACH	12	24	0617	N06	E37	12	27.0			DAI	367	5	10	3
9751		VORO	12	24	2343	N04	E32	12	27.4			DKI	552	24	11	3
9751		LEAR	12	25	0010	N05	E30	12	27.2		BG	EKI	430	26	13	3
9751		TACH	12	25	0525	N05	E24	12	27.0			DSI	351	5	11	2
9751		SVTO	12	25	0915	N04	E25	12	27.2		BG	ESI	300	21	14	3
9751		RAMY	12	25	1300	N04	E25	12	27.4		BG	EKI	450	32	13	2
9751		HOLL	12	25	1536	N04	E23	12	27.4		BG	EKI	370	25	13	3
9751	30907	MWIL	12	25	2000	N04	E15	12	26.9	5	(BG)					
9751	30911	MWIL	12	25	2000	N04	E23	12	27.5	5	(B)					
9751		VORO	12	25	2335	N04	E18	12	27.3			DKI	559	22	11	2
9751		LEAR	12	26	0028	N05	E16	12	27.2		BG	EKI	450	23	14	3
9751		TACH	12	26	0515	N06	E13	12	27.2			DAI	476	14	10	3
9751		KAND	12	26	0850	N04	E11	12	27.2			EKC		17	14	3
9751		RAMY	12	26	1440	N04	E08	12	27.2		BG	EKI	570	40	14	4
9751		HOLL	12	26	1510	N04	E09	12	27.3		BGD	EKC	440	33	13	3
9751	30907	MWIL	12	26	1600	N04	E05	12	27.0	5	(D)					
9751	30911	MWIL	12	26	1600	N04	E11	12	27.5	5	(B)					
9751		VORO	12	26	2338	N04	E04	12	27.3			DKI	765	31	12	3
9751		LEAR	12	27	0120	N04	E03	12	27.3		BG	EKI	440	34	14	2
9751		TACH	12	27	0629	N06	E00	12	27.3			DAI	350	18	10	4

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
9751		SVTO	12 27 1031	N03 W05	12 27.1		BG	EAI	480	25	14	3
9751		RAMY	12 27 1254	N05 W04	12 27.2		BG	EAC	320	54	15	3
9751	30911	MWIL	12 27 2300	N04 W06	12 27.5	5	BP					
9751	30907	MWIL	12 27 2300	N04 W13	12 27.0	5	BG					
9751		VORO	12 27 2339	N04 W09	12 27.3			DKI	528	38	12	3
9751		RAMY	12 28 1247	N04 W18	12 27.2		BG	EAC	310	48	14	3
9751		LEAR	12 28 1300	N03 W18	12 27.2		BG	EAI	410	34	13	3
9751		SVTO	12 28 1355	N05 W19	12 27.1		B	FAI	440	25	16	3
9751		HOLL	12 28 1738	N04 W21	12 27.2		BG	EAC	280	21	14	1
9751		VORO	12 29 0003	N03 W24	12 27.2			DAI	436	21	14	2
9751		LEAR	12 29 0020	N04 W26	12 27.1		BG	FAI	330	34	16	3
9751		TACH	12 29 0639	N05 W28	12 27.2			DAI	120	16	11	3
9751		KAND	12 29 0805	N04 W30	12 27.1			EAO		24	15	3
9751		SVTO	12 29 0915	N04 W30	12 27.1		BG	EAI	300	28	15	2
9751		RAMY	12 29 1420	N06 W32	12 27.2		BG	EAI	230	22	13	1
9751		HOLL	12 29 1600	N05 W34	12 27.1		BG	EAC	280	33	13	2
9751		VORO	12 29 2348	N04 W40	12 27.0			DAI	322	9	9	2
9751		LEAR	12 30 0045	N04 W39	12 27.1		BG	EAI	280	26	13	3
9751		TACH	12 30 0810	N05 W42	12 27.2			DAI	203	6	8	2
9751		RAMY	12 30 1305	N07 W45	12 27.2		BG	EAI	160	5	12	2
9751	30907	MWIL	12 30 1600	N04 W47	12 27.1	4	(BG)					
9751		VORO	12 30 2338	N03 W52	12 27.1			DAI	250	6	12	2
9751		LEAR	12 31 0030	N04 W52	12 27.1		BG	EAI	220	14	12	2
9751		RAMY	12 31 1232	N04 W58	12 27.2		BG	EAI	170	19	12	3
9751	30907	MWIL	12 31 1545	N04 W59	12 27.2	4	(B)					
9751		VORO	01 01 0006	N04 W66	12 27.2			DAI	221	9	13	2
9751		LEAR	01 01 0050	N03 W65	12 27.3		BG	EAI	200	16	15	3
9751		SVTO	01 01 0749	N03 W66	12 27.5		B	DAI	130	5	8	3
9751		TACH	01 01 0954	N06 W66	12 27.6			DAO	91	4	6	3
9751		RAMY	01 01 1351	N04 W71	12 27.4		BG	EAO	120	10	13	3
9751		HOLL	01 01 2150	N03 W76	12 27.3		B	DSO	110	3	9	3
9751	30907	MWIL	01 01 2230	N02 W75	12 27.4	4	(B)					
9751		LEAR	01 02 0130	N03 W75	12 27.5		B	DAO	90	4	8	2
9751		VORO	01 02 0157	N04 W77	12 27.4			CAO	50	2	7	2
9751		KAND	01 02 0920	N04 W76	12 27.8			AX		1	1	3
9751		SVTO	01 02 1015	N04 W85	12 27.2		B	DAO	60	3	10	2
9753		VORO	12 21 2350	S20 E78	12 27.9			HAX	77	1		3
9753		LEAR	12 22 0015	S19 E79	12 28.0		A	HAX	30	1	2	4
9753		SVTO	12 22 0748	S20 E78	12 28.3		A	HSX	10	1	1	2
9753		RAMY	12 22 1913	S20 E69	12 28.1		A	FAX	20	1	2	3
9753		LEAR	12 23 0105	S19 E64	12 27.9		B	CSO	60	3	8	2
9753		VORO	12 23 0110	S20 E64	12 27.9			DSO	123	2	6	3
9753		SVTO	12 23 0752	S20 E60	12 27.9		B	CAO	40	2	8	2
9753	30910	MWIL	12 23 1600	S18 E52	12 27.6	3	(B)					
9753		HOLL	12 23 1615	S21 E58	12 28.1		B	CAO	70	3	7	3
9753		VORO	12 23 2332	S19 E52	12 27.9			CAO	66	2	4	3
9753		LEAR	12 24 0153	S18 E49	12 27.8		B	CAO	80	8	8	2
9753		TACH	12 24 0617	S15 E40	12 27.3			BRO	46	3	4	3
9753		VORO	12 24 2343	S19 E37	12 27.8			CAI	94	9	9	3
9753		LEAR	12 25 0010	S19 E36	12 27.7		B	CAO	40	8	10	3
9753		TACH	12 25 0525	S16 E33	12 27.7			BXO	7	2	4	2
9753		SVTO	12 25 0915	S20 E31	12 27.7		B	ERO	60	11	11	3
9753		RAMY	12 25 1300	S20 E29	12 27.7		B	DSO	50	10	10	2
9753		HOLL	12 25 1536	S19 E28	12 27.8		B	DSO	50	4	9	3
9753	30910	MWIL	12 25 2000	S18 E26	12 27.8	4	(AP)					
9753		VORO	12 25 2335	S19 E24	12 27.8			CRI	63	8	7	2
9753		LEAR	12 26 0028	S18 E22	12 27.7		B	DSO	50	13	10	3
9753		TACH	12 26 0515	S15 E18	12 27.6			BRI	10	7	7	3
9753		KAND	12 26 0850	S18 E19	12 27.8			CSO		6	9	3
9753		RAMY	12 26 1440	S19 E14	12 27.7		B	DSO	30	18	10	4
9753		HOLL	12 26 1510	S19 E13	12 27.6		B	DSO	90	12	10	3
9753	30910	MWIL	12 26 1600	S18 E11	12 27.5	4	(B)					
9753		VORO	12 26 2338	S19 E07	12 27.5			BXI	62	9	4	3
9753		LEAR	12 27 0120	S18 E06	12 27.5		B	DSO	50	9	6	2
9753		TACH	12 27 0629	S16 E03	12 27.5			BRI	27	6	3	4
9753		SVTO	12 27 1031	S18 E01	12 27.5		B	DSO	80	8	9	3
9753		RAMY	12 27 1254	S18 W01	12 27.5		B	CSO	30	17	7	3
9753	30910	MWIL	12 27 2300	S18 W06	12 27.5	4	B					

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9753		VORO	12	27	2339	S19	W05	12	27.6			BXI	32	14	6	3
9753		RAMY	12	28	1247	S19	W15	12	27.4		B	DSO	40	14	9	3
9753		LEAR	12	28	1300	S19	W12	12	27.6		B	DSO	60	12	8	3
9753		SVTO	12	28	1355	S21	W13	12	27.6		B	FSO	80	12	16	3
9753		HOLL	12	28	1738	S19	W15	12	27.6		B	EAI	60	12	13	1
9753		VORO	12	29	0003	S20	W20	12	27.5			BXI	48	7	4	2
9753		LEAR	12	29	0020	S19	W17	12	27.7		BG	EAO	50	13	15	3
9753		TACH	12	29	0639	S17	W24	12	27.4			BRI	9	4	4	3
9753		KAND	12	29	0805	S18	W25	12	27.4			DSO		8	9	3
9753		SVTO	12	29	0915	S20	W25	12	27.5		B	DSO	50	8	6	2
9753		RAMY	12	29	1420	S18	W29	12	27.4		B	DSO	30	5	8	1
9753		HOLL	12	29	1600	S18	W30	12	27.4		B	DAO	70	11	7	2
9753		VORO	12	29	2348	S18	W34	12	27.4			DAI	120	5	7	2
9753		LEAR	12	30	0045	S19	W34	12	27.4		B	DAO	90	18	9	3
9753		TACH	12	30	0810	S14	W36	12	27.6			CSI	71	5	7	2
9753		RAMY	12	30	1305	S15	W44	12	27.2		B	DSO	80	8	8	2
9753		HOLL	12	30	1600	S17	W44	12	27.3		B	DAO	90	17	9	1
9753	30910	MWIL	12	30	1600	S18	W44	12	27.3	5	(B)					
9753		VORO	12	30	2338	S18	W48	12	27.3			DAI	115	4	9	2
9753		LEAR	12	31	0030	S18	W49	12	27.3		B	DAO	80	5	8	2
9753		RAMY	12	31	1232	S17	W54	12	27.4		B	DSO	50	13	10	3
9753	30910	MWIL	12	31	1545	S17	W57	12	27.3	4	(B)					
9753		VORO	01	01	0006	S18	W62	12	27.4			CRI	59	8	10	2
9753		LEAR	01	01	0050	S17	W64	12	27.3		B	DSO	90	8	10	3
9753		SVTO	01	01	0749	S18	W66	12	27.4		B	BXO	20	2	11	3
9753		TACH	01	01	0954	S15	W65	12	27.6			BXO	4	2	12	3
9753		RAMY	01	01	1351	S17	W68	12	27.5		B	CSO	40	7	8	3
9754A		TACH	12	24	0617	S06	E51	12	28.1			HA	72	3	4	3
9754A		TACH	12	25	0525	S03	E36	12	27.9			HSX	100	1	2	2
9754A		TACH	12	25	0525	S06	E39	12	28.1			BRI	58	4	3	2
9754A		TACH	12	26	0515	S05	E28	12	28.3			CAI	130	9	6	3
9754A		TACH	12	27	0629	S06	E14	12	28.3			BRI	105	9	5	4
9754A	30920	MWIL	12	27	2300	S05	W02	12	27.8	4	B					
9754A		TACH	12	29	0639	S07	W12	12	28.4			BRI	38	5	7	3
9754A		RAMY	01	02	1745	S16	W49	12	30.1		A	AXX		1		3
9754A		TACH	01	04	0459	S15	W70	12	30.0			AR	3	2	1	3
9753A		HOLL	12	22	1520	S21	E71	12	28.1		A	HSX	60	1	1	2
9753A	30908	MWIL	12	22	1600	S21	E71	12	28.1	5	AP					
9753A	30908	MWIL	12	23	1600	S20	E57	12	28.0	4	(AP)					
9753A		KAND	12	29	0805	S21	W14	12	28.3			AX		1		3
9753B		RAMY	12	26	1440	N13	E24	12	28.4		A	AXX		1	1	4
9753B		HOLL	12	26	1510	N13	E24	12	28.4		A	AXX	10	1	1	3
9753B	30915	MWIL	12	26	1600	N14	E23	12	28.4	3	(AP)					
9762		VORO	12	26	2338	N03	E22	12	28.6			AXX	8	1		3
9762		TACH	12	27	0629	N04	E15	12	28.4			AXX	25	1	1	4
9762		SVTO	12	27	1031	N03	E14	12	28.5		A	HAX	20	1	1	3
9762		RAMY	12	27	1254	N03	E13	12	28.5		A	AXX	10	1	1	3
9762	30921	MWIL	12	27	2300	N02	E07	12	28.5	4	AP					
9762		VORO	12	27	2339	N04	E07	12	28.5			AXX	9	1		3
9762		RAMY	12	28	1247	N02	W01	12	28.4		A	AXX		1		3
9762		LEAR	12	28	1300	N03	W06	12	28.1		A	HSX	10	1	1	3
9754	30909	MWIL	12	22	1600	S08	E75	12	28.3	5	AP					
9754		LEAR	12	23	0105	S07	E70	12	28.3		B	CSO	40	2	2	2
9754		VORO	12	23	0110	S08	E72	12	28.4			HAX	85	3		3
9754		SVTO	12	23	0752	S08	E67	12	28.3		A	HAX	50	1	2	2
9754	30909	MWIL	12	23	1600	S10	E67	12	28.7	5	(BP)					
9754		HOLL	12	23	1615	S10	E69	12	28.9		B	EAI	160	9	13	3
9754		VORO	12	23	2332	S09	E63	12	28.7			DAI	161	4	11	3
9754		LEAR	12	24	0153	S08	E60	12	28.6		B	EAO	80	6	11	2
9754		TACH	12	24	0617	S08	E60	12	28.8			AXX	5	1	1	3
9754		VORO	12	24	2343	S08	E53	12	29.0			CAI	300	25	11	3
9754		LEAR	12	25	0010	S08	E50	12	28.7		BG	EAI	270	28	14	3
9754		TACH	12	25	0525	S04	E53	12	29.2			BXO	15	2	4	2
9754		SVTO	12	25	0915	S10	E46	12	28.8		BG	EAI	160	25	13	3

S U N S P O T G R O U P S
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9754		RAMY	12 25 1300	S11 E44	12 28.8		B	EKI	320	31	15	2
9754		HOLL	12 25 1536	S09 E42	12 28.8		BG	EAI	330	19	14	3
9754	30909	MWIL	12 25 2000	S07 E38	12 28.7	4	(BP)					
9754		VORO	12 25 2335	S08 E37	12 28.7			DAI	392	22	13	2
9754		LEAR	12 26 0028	S08 E35	12 28.6		BG	EAI	290	20	15	3
9754		TACH	12 26 0515	S06 E35	12 28.8			BRI	4	4	3	3
9754		KAND	12 26 0850	S08 E31	12 28.7			EAI		21	15	3
9754		RAMY	12 26 1440	S10 E28	12 28.7		BG	EAI	210	28	14	4
9754		HOLL	12 26 1510	S08 E29	12 28.8		BG	EAI	270	28	15	3
9754	30909	MWIL	12 26 1600	S07 E27	12 28.7	5	(B)					
9754		VORO	12 26 2338	S08 E24	12 28.8			DAI	300	17	14	3
9754		LEAR	12 27 0120	S08 E23	12 28.8		BG	EAI	110	20	15	2
9754		TACH	12 27 0629	S06 E24	12 29.1			AR	30	2	2	4
9754		SVTO	12 27 1031	S08 E18	12 28.8		BG	EAI	200	16	15	3
9754		RAMY	12 27 1254	S09 E16	12 28.7		BG	EAI	90	33	15	3
9754	30909	MWIL	12 27 2300	S08 E11	12 28.8	4	B					
9754		VORO	12 27 2339	S08 E11	12 28.8			DAI	211	27	15	3
9754		RAMY	12 28 1247	S09 E03	12 28.7		BG	FAI	230	40	17	3
9754		LEAR	12 28 1300	S09 E09	12 29.2		BG	FAI	150	26	17	3
9754		SVTO	12 28 1355	S08 E02	12 28.7		B	FAI	240	18	16	3
9754		HOLL	12 28 1738	S07 E01	12 28.8		BG	FAC	160	30	17	1
9754		VORO	12 29 0003	S08 W03	12 28.8			DAI	314	22	15	2
9754		LEAR	12 29 0020	S08 W04	12 28.7		BG	FAI	260	36	17	3
9754		TACH	12 29 0639	S06 W04	12 29.0			CAI	94	8	5	3
9754		KAND	12 29 0805	S08 W05	12 29.0			FAO		20	17	3
9754		SVTO	12 29 0915	S08 W08	12 28.8		BG	FAI	270	31	16	2
9754		RAMY	12 29 1420	S08 W12	12 28.7		BG	FAI	170	26	16	1
9754		HOLL	12 29 1600	S07 W13	12 28.7		BG	FKC	260	33	17	2
9754		VORO	12 29 2348	S09 W16	12 28.8			DAI	205	11	16	2
9754		LEAR	12 30 0045	S08 W16	12 28.8		BG	FAI	210	32	16	3
9754		TACH	12 30 0810	S06 W18	12 29.0			BRI	98	10	7	2
9754		RAMY	12 30 1305	S07 W21	12 29.0		B	EAI	100	21	13	2
9754		HOLL	12 30 1600	S07 W26	12 28.7		BG	FAI	120	30	16	1
9754	30909	MWIL	12 30 1600	S08 W24	12 28.9	5	(BG)					
9754		VORO	12 30 2338	S08 W30	12 28.7			DAI	94	12	5	2
9754		LEAR	12 31 0030	S08 W31	12 28.7		BG	DAO	80	14	7	2
9754		RAMY	12 31 1232	S08 W36	12 28.8		B	EAI	70	24	11	3
9754	30909	MWIL	12 31 1545	S07 W37	12 28.9	4	(BG)					
9754		VORO	01 01 0006	S07 W43	12 28.9			CAI	55	11	5	2
9754		LEAR	01 01 0050	S07 W42	12 29.0		BG	DAI	120	16	10	3
9754		SVTO	01 01 0749	S07 W47	12 28.9		B	DSO	90	9	10	3
9754		TACH	01 01 0954	S03 W46	12 29.1			BXI	101	5	6	3
9754		RAMY	01 01 1351	S07 W49	12 29.0		B	EAI	80	23	7	3
9754		HOLL	01 01 2150	S06 W54	12 29.0		B	ESI	180	20	13	3
9754	30909	MWIL	01 01 2230	S06 W54	12 29.0	4	(B)					
9754		LEAR	01 02 0130	S06 W55	12 29.0		B	DAI	120	20	10	2
9754		VORO	01 02 0157	S07 W56	12 29.0			CAI	94	9	9	2
9754		KAND	01 02 0920	S06 W60	12 29.0			ESO		7	11	3
9754		SVTO	01 02 1015	S07 W65	12 28.6		B	ESO	200	12	13	2
9754		RAMY	01 02 1745	S07 W65	12 29.0		B	EAI	150	18	11	3
9754		VORO	01 02 2358	S04 W69	12 28.9			DAI	251	8	11	2
9754		LEAR	01 03 0010	S06 W69	12 28.9		B	EAO	120	14	11	4
9754		TACH	01 03 0544	S06 W71	12 29.0			BRI	25	7	9	3
9754		KAND	01 03 0835	S07 W73	12 29.0			ESO		8	14	2
9754		SVTO	01 03 0845	S05 W74	12 28.9		B	ESO	210	6	12	2
9754		HOLL	01 03 1910	S04 W75	12 29.3		B	CAO	180	6	8	2
9754		LEAR	01 04 0045	S07 W80	12 29.1		B	CSO	20	5	2	3
9759		KAND	12 26 0850	N18 E37	12 29.2			AX		2	1	3
9759		RAMY	12 26 1440	N17 E32	12 29.0		B	CRO		2	2	4
9759		HOLL	12 26 1510	N18 E33	12 29.1		B	BXO	20	3	2	3
9759	30916	MWIL	12 26 1600	N17 E32	12 29.1	3	(B)					
9759	30916	MWIL	12 27 2300	N17 E18	12 29.3	3	B					
9759		VORO	12 27 2339	N19 E17	12 29.3			AXX	1	2		3
9759		LEAR	12 28 1300	N17 E15	12 29.7		B	BXO	20	3	4	3
9759		LEAR	12 29 0020	N18 E02	12 29.2		B	BXO	10	4	3	3
9760		KAND	12 26 0850	N08 E44	12 29.7			AX		2	1	3
9760		RAMY	12 26 1440	N06 E40	12 29.6		B	CRO	10	4	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
9760		HOLL	12 26 1510	N07 E39	12 29.5		B	CSO	20	2	3	3
9760	30917	MWIL	12 26 1600	N07 E38	12 29.5	4	(B)					
9760		VORO	12 26 2338	N07 E35	12 29.6			BXO	24	2	3	3
9760		LEAR	12 27 0120	N07 E33	12 29.5		B	CRO	20	3	3	2
9760		TACH	12 27 0629	N08 E28	12 29.4			BXO	3	2	4	4
9760		SVTO	12 27 1031	N06 E28	12 29.5		B	CSO	20	3	3	3
9760		RAMY	12 27 1254	N07 E27	12 29.6		B	BXO	10	5	4	3
9760	30917	MWIL	12 27 2300	N05 E21	12 29.5	4	B					
9760		VORO	12 27 2339	N07 E21	12 29.5			BXO	10	2	3	3
9760		LEAR	12 28 1300	N06 E19	12 30.0		B	CRO	10	2	3	3
9760		HOLL	12 29 1600	N04 W02	12 29.5		A	AXX	10	2	2	2
9764		RAMY	12 27 1254	N12 E35	12 30.2		B	BXO	10	2	2	3
9764	30922	MWIL	12 27 2300	N13 E28	12 30.1	4	AP					
9764		VORO	12 27 2339	N14 E29	12 30.2			AXX	14	1		3
9764		RAMY	12 28 1247	N12 E21	12 30.1		B	BXO	10	6	4	3
9764		LEAR	12 28 1300	N12 E27	12 30.6		A	HSX	10	1	1	3
9764		SVTO	12 28 1355	N13 E21	12 30.2		B	BXO	20	4	4	3
9764		HOLL	12 28 1738	N13 E17	12 30.0		B	BXO	10	2	3	1
9764		VORO	12 29 0003	N14 E18	12 30.4			AXX	3	1		2
9764		LEAR	12 29 0020	N13 E15	12 30.1		B	BXO	10	4	5	3
9764		TACH	12 29 0639	N14 E11	12 30.1			AXX	10	1	1	3
9764		KAND	12 29 0805	N14 E13	12 30.3			AX		2	1	3
9764		SVTO	12 29 0915	N14 E13	12 30.4		A	HSX	10	3	1	2
9764		RAMY	12 29 1420	N13 E11	12 30.4		A	HSX		2	1	1
9764		HOLL	12 29 1600	N13 E08	12 30.3		A	AXX	10	3	2	2
9764		VORO	12 29 2348	N15 E05	12 30.4			HRX	20	1		2
9764		LEAR	12 30 0045	N13 E02	12 30.2		B	BXO	10	6	5	3
9764		RAMY	12 30 1305	N13 W05	12 30.2		B	DSO	20	4	5	2
9764		HOLL	12 30 1600	N14 W06	12 30.2		B	DAO	70	11	4	1
9764	30922	MWIL	12 30 1600	N14 W07	12 30.1	4	(B)					
9764		VORO	12 30 2338	N14 W10	12 30.2			DAI	80	5	4	2
9764		LEAR	12 31 0030	N14 W11	12 30.2		B	DSO	60	4	4	2
9764		RAMY	12 31 1232	N15 W18	12 30.1		B	DAO	70	15	7	3
9764	30922	MWIL	12 31 1545	N14 W20	12 30.1	4	(B)					
9764		VORO	01 01 0006	N14 W25	12 30.2			DAI	260	20	5	2
9764		LEAR	01 01 0050	N14 W25	12 30.2		B	DAO	140	18	7	3
9764		SVTO	01 01 0749	N14 W29	12 30.2		B	DSO	200	8	8	3
9764		TACH	01 01 0954	N16 W28	12 30.4			CAI	110	12	5	3
9764		RAMY	01 01 1351	N15 W31	12 30.3		B	DAO	170	16	8	3
9764		HOLL	01 01 2150	N14 W37	12 30.2		B	DHO	230	14	10	3
9764	30922	MWIL	01 01 2230	N14 W37	12 30.2	5	(B)					
9764		LEAR	01 02 0130	N14 W39	12 30.2		B	DAO	200	18	9	2
9764		VORO	01 02 0157	N14 W39	12 30.2			DAI	366	11	7	2
9764		KAND	01 02 0920	N14 W44	12 30.2			DSO		6	9	3
9764		SVTO	01 02 1015	N14 W45	12 30.1		B	DSO	180	9	10	2
9764		RAMY	01 02 1745	N15 W47	12 30.3		B	DAO	210	15	9	3
9764		LEAR	01 03 0010	N14 W52	12 30.2		B	DAO	210	13	10	4
9764		TACH	01 03 0544	N14 W52	12 30.4			CSO	141	3	7	3
9764		KAND	01 03 0835	N13 W58	12 30.1			DAO		5	10	2
9764		SVTO	01 03 0845	N13 W58	12 30.1		B	EHO	240	7	14	2
9764		RAMY	01 03 1245	N15 W58	12 30.2		B	DSO	80	3	9	3
9764		HOLL	01 03 1910	N16 W60	12 30.3		B	DAO	130	3	8	2
9764		LEAR	01 04 0045	N14 W64	12 30.3		B	EAO	220	8	12	3
9764		TACH	01 04 0459	N14 W67	12 30.2			CSO	52	2	8	3
9764		RAMY	01 04 1225	N13 W74	12 30.0		B	DSO	170	3	9	3
9764		HOLL	01 04 1805	N14 W80	12 29.8		A	HAX	120	2	2	3
9764		VORO	01 04 2358	N12 W81	12 30.0			HAX	137	1		2
9764		LEAR	01 05 1253	N13 W93	12 29.6		B	DAO	90	3	6	2
9755		VORO	12 24 2343	S03 E80	12 31.0			HAX	365	2		3
9755		LEAR	12 25 0010	S07 E76	12 30.7		A	HAX	180	2	5	3
9755		TACH	12 25 0525	S01 E72	12 30.6			HSX	80	1	3	2
9755		SVTO	12 25 0915	S04 E74	12 30.9		B	CKO	190	2	6	3
9755		RAMY	12 25 1300	S05 E71	12 30.8		B	DSO	230	4	6	2
9755		HOLL	12 25 1536	S04 E68	12 30.7		B	CAO	140	3	5	3
9755	30913	MWIL	12 25 2000	S02 E67	12 30.8	5	(BP)					
9755		VORO	12 25 2335	S04 E63	12 30.7			HAX	301	1		2
9755		LEAR	12 26 0028	S03 E62	12 30.6		B	CAO	190	6	5	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
9755		TACH	12	26	0515	S02	E55	12	30.3			HSX	80	1	2	3
9755		KAND	12	26	0850	S03	E59	12	30.8			CSO		5	6	3
9755		RAMY	12	26	1440	S06	E54	12	30.6		B	DSO	230	5	5	4
9755		HOLL	12	26	1510	S04	E54	12	30.7		B	CHO	160	6	5	3
9755	30913	MWIL	12	26	1600	S03	E54	12	30.7	5	(BP)					
9755		VORO	12	26	2338	S03	E49	12	30.6			HKX	268	6		3
9755		LEAR	12	27	0120	S03	E50	12	30.8		B	CAO	130	6	5	2
9755		SVTO	12	27	1031	S03	E44	12	30.7		B	DSO	160	6	6	3
9755		RAMY	12	27	1254	S05	E42	12	30.7		B	CAO	160	10	5	3
9755	30913	MWIL	12	27	2300	S04	E37	12	30.7	5	BP					
9755		VORO	12	27	2339	S03	E36	12	30.7			HKX	234	7		3
9755		RAMY	12	28	1247	S04	E29	12	30.7		B	CSO	170	9	4	3
9755		LEAR	12	28	1300	S04	E36	12	31.2		B	CAO	140	5	3	3
9755		SVTO	12	28	1355	S04	E28	12	30.7		B	CSO	230	4	4	3
9755		HOLL	12	28	1738	S03	E26	12	30.7		B	CAO	120	6	4	1
9755		VORO	12	29	0003	S04	E23	12	30.7			HAX	222	6		2
9755		LEAR	12	29	0020	S03	E22	12	30.6		B	CAO	170	12	5	3
9755		TACH	12	29	0639	S02	E16	12	30.5			CAI	206	7	3	3
9755		KAND	12	29	0805	S04	E17	12	30.6			CAO		9	6	3
9755		SVTO	12	29	0915	S05	E18	12	30.7		B	DSO	200	12	9	2
9755		RAMY	12	29	1420	S03	E15	12	30.7		B	DSO	160	10	6	1
9755		HOLL	12	29	1600	S04	E14	12	30.7		B	BSO	170	12	5	2
9755		VORO	12	29	2348	S04	E10	12	30.7			HAX	191	4		2
9755		LEAR	12	30	0045	S04	E10	12	30.8		B	DSO	180	12	5	3
9755		TACH	12	30	0810	S01	E04	12	30.6			DSI	113	4	5	2
9755		RAMY	12	30	1305	S04	E04	12	30.8		B	DSI	90	7	5	2
9755		HOLL	12	30	1600	S04	E02	12	30.8		B	CSO	170	11	5	1
9755	30913	MWIL	12	30	1600	S04	W00	12	30.7	5	(BG)					
9755		VORO	12	30	2338	S04	W04	12	30.7			HAX	218	4		2
9755		LEAR	12	31	0030	S03	W04	12	30.7		B	DSO	170	7	4	2
9755		RAMY	12	31	1232	S04	W11	12	30.7		B	DSO	120	12	4	3
9755	30913	MWIL	12	31	1545	S04	W13	12	30.7	5	(AP)					
9755		VORO	01	01	0006	S04	W18	12	30.7			HAX	146	8		2
9755		LEAR	01	01	0050	S05	W17	12	30.9		B	DSO	120	8	4	3
9755		SVTO	01	01	0749	S04	W23	12	30.7		B	DSO	120	7	6	3
9755		TACH	01	01	0954	S02	W20	12	31.0			CAO	105	5	3	3
9755		RAMY	01	01	1351	S04	W25	12	30.8		B	CSO	170	17	4	3
9755		HOLL	01	01	2150	S04	W28	12	30.9		B	DHO	120	9	8	3
9755	30913	MWIL	01	01	2230	S03	W31	12	30.7	5	(BG)					
9755		LEAR	01	02	0130	S05	W32	12	30.8		B	DAO	140	7	5	2
9755		VORO	01	02	0157	S04	W33	12	30.7			HAX	160	5		2
9755		KAND	01	02	0920	S03	W36	12	30.8			CSO		3	3	3
9755		SVTO	01	02	1015	S04	W37	12	30.8		B	DSO	70	4	4	2
9755		RAMY	01	02	1745	S03	W41	12	30.8		B	CSO	60	6	4	3
9755		VORO	01	02	2358	S04	W45	12	30.7			HAX	119	2		2
9755		LEAR	01	03	0010	S04	W44	12	30.8		B	CSO	80	5	5	4
9755		TACH	01	03	0544	S03	W46	12	30.9			HSX	90	1	2	3
9755		KAND	01	03	0835	S04	W51	12	30.6			HS		1	1	2
9755		SVTO	01	03	0845	S04	W51	12	30.6		A	HSX	60	1	2	2
9755		RAMY	01	03	1245	S03	W51	12	30.8		B	DSI	80	3	5	3
9755		HOLL	01	03	1910	S03	W55	12	30.8		A	HAX	60	1	2	2
9755		LEAR	01	04	0045	S03	W56	12	30.9		B	DSO	80	6	8	3
9755		TACH	01	04	0459	S04	W60	12	30.8			HSX	55	1	2	3
9755		RAMY	01	04	1225	S04	W67	12	30.6		A	HSX	80	1	2	3
9755		HOLL	01	04	1805	S02	W69	12	30.7		A	HAX	110	2	2	3
9755		VORO	01	05	0032	S04	W72	12	30.7			HAX	63	1		2
9755		SVTO	01	05	0900	S05	W78	12	30.6		A	HSX	60	1	2	3
9755		LEAR	01	05	1253	S04	W73	12	31.1		A	HSX	60	1	3	2
9755	30913	MWIL	01	05	1600	S04	W80	12	30.8	4	AP					
9764A		SVTO	01	01	0749	N14	W21	12	30.8		A	AXX	10	2	2	3
9764A		SVTO	01	01	0749	N14	W21	12	30.8		A	AXX	10	2	2	3
9764B		VORO	01	01	0006	N06	W16	12	30.9			BXO	13		3	2
9769		RAMY	01	01	1351	S18	W16	12	31.3		B	BXO		2	1	3
9769		KAND	01	02	0920	S19	W25	12	31.5			BXO		5	3	3
9769		SVTO	01	02	1015	S18	W26	12	31.4		B	CSO	20	3	5	2
9769		RAMY	01	02	1745	S20	W30	12	31.4		B	DSO	30	5	3	3

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9769		VORO	01	02	2358	S20	W34	12	31.4			CAI	60		2	2
9769		LEAR	01	03	0010	S20	W35	12	31.3		B	DSO	40	9	7	4
9769		TACH	01	03	0544	S17	W35	12	31.6			BRO	57	3	2	3
9769		KAND	01	03	0835	S20	W39	12	31.4			DSO		3	4	2
9769		SVTO	01	03	0845	S19	W39	12	31.4		B	DSO	80	2	5	2
9769		RAMY	01	03	1245	S18	W42	12	31.3		B	DSO	40	4	5	3
9769		HOLL	01	03	1910	S19	W42	12	31.6		B	DAO	110	2	5	2
9769		LEAR	01	04	0045	S19	W47	12	31.4		B	CSO	38	3	4	3
9769		TACH	01	04	0459	S18	W48	12	31.5			BXO	25	2	3	3
9769		RAMY	01	04	1225	S20	W56	12	31.2		B	DSO	40	2	6	3
9769		HOLL	01	04	1805	S19	W58	12	31.3		B	DSO	80	2	4	3
9769		VORO	01	05	0032	S19	W61	12	31.4			HAX	78		2	2
9769		SVTO	01	05	0900	S21	W66	12	31.3		B	DSO	80	2	5	3
9769		LEAR	01	05	1253	S19	W62	12	31.8		B	DSO	50	4	5	2
9769		HOLL	01	05	1520	S15	W69	12	31.4		B	DSO	40	3	6	4
9769	30929	MWIL	01	05	1600	S19	W68	12	31.5	4	(B)					
9769		LEAR	01	06	0030	S19	W75	12	31.3		A	HSX	60	1	2	4
9769		VORO	01	06	0138	S19	W78	12	31.1			AXX	28		1	2
9769		SVTO	01	06	0736	S17	W80	12	31.2		A	AXX		1		3
9768		LEAR	01	01	0050	S05	W02	12	31.9		A	AXX	10	2	1	3
9768		SVTO	01	01	0749	S06	W07	12	31.8		B	BXO	10	2	3	3
9768		TACH	01	01	0954	S02	W06	01	1.0			AXX	5	1	1	3
9768		RAMY	01	01	1351	S06	W10	12	31.8		B	CAO	20	7	3	3
9768		HOLL	01	01	2150	S07	W15	12	31.8		B	CAI	50	9	4	3
9768	30927	MWIL	01	01	2230	S06	W16	12	31.7	4	(BG)					
9768		LEAR	01	02	0130	S06	W17	12	31.8		B	DAO	30	7	4	2
9768		KAND	01	02	0920	S07	W22	12	31.7			AX		1		3
9768		SVTO	01	02	1015	S06	W23	12	31.7		B	DSO	30	7	6	2
9768		RAMY	01	02	1745	S07	W30	12	31.5		B	DSO	20	6	7	3
9768		VORO	01	02	2358	S07	W34	12	31.4			CAI	44		2	2
9768		LEAR	01	03	0010	S07	W33	12	31.5		B	DSO	30	7	8	4
9768		TACH	01	03	0544	S06	W35	12	31.6			BXO	35	2	4	3
9768		KAND	01	03	0835	S08	W39	12	31.4			CSO		5	6	2
9768		SVTO	01	03	0845	S08	W38	12	31.5		B	CSO	50	4	7	2
9768		RAMY	01	03	1245	S07	W42	12	31.4		B	DSO	40	4	5	3
9768		HOLL	01	03	1910	S07	W41	12	31.7		A	HSX	50	2	4	2
9768		LEAR	01	04	0045	S07	W45	12	31.7		B	CSO	20	2	3	3
9768		TACH	01	04	0459	S06	W46	12	31.8			BRI	9	5	4	3
9768		RAMY	01	04	1225	S06	W53	12	31.5		B	DSO	50	18	5	3
9768		HOLL	01	04	1805	S06	W55	12	31.6		B	DAO	90	14	6	3
9768		VORO	01	05	0138	S05	W59	12	31.6			CAI	100		10	2
9768		SVTO	01	05	0900	S06	W65	12	31.5		B	DSO	220	11	10	3
9768		LEAR	01	05	1253	S07	W59	01	1.1		B	DSO	130	14	6	2
9768		HOLL	01	05	1520	S01	W67	12	31.6		B	DSI	130	12	8	4
9768	30927	MWIL	01	05	1600	S05	W67	12	31.6	5	(BF)					
9768		VORO	01	06	0019	S06	W74	12	31.5			DAI	332		5	2
9768		LEAR	01	06	0030	S06	W71	12	31.7		BG	DAO	300	10	10	4
9768		SVTO	01	06	0736	S04	W76	12	31.6		BG	DAO	240	5	10	3
9768		RAMY	01	06	1315	S04	W78	12	31.7		B	DAO	150	3	5	2
9768		HOLL	01	06	1521	S04	W79	12	31.7		B	CSO	110	5	8	2
9768	30927	MWIL	01	06	1800	S05	W80	12	31.8	5	BF					
9768		LEAR	01	07	0007	S06	W84	12	31.7		BG	DAO	120	5	8	3
9770		KAND	01	02	0920	N08	W20	12	31.9			BXO		2	3	3
9770		SVTO	01	02	1015	N07	W22	12	31.8		B	DSO	40	6	5	2
9770		RAMY	01	02	1745	N08	W26	12	31.8		B	CSO	20	10	4	3
9770		VORO	01	02	2358	N08	W29	12	31.8			BXO	42		4	2
9770		LEAR	01	03	0010	N08	W29	12	31.8		B	CRO	30	11	4	4
9770		TACH	01	03	0544	N08	W30	01	1.0			BRI	8	7	3	3
9770		KAND	01	03	0835	N07	W33	12	31.9			BXO		8	6	2
9770		SVTO	01	03	0845	N08	W33	12	31.9		B	BXO	40	10	4	2
9770		RAMY	01	03	1245	N09	W35	12	31.9		B	CSO	50	8	5	3
9770		HOLL	01	03	1910	N09	W39	12	31.9		B	DAO	70	8	4	2
9770		LEAR	01	04	0045	N07	W43	12	31.8		B	CSO	50	8	5	3
9770		TACH	01	04	0459	N09	W44	12	31.9			BRI	7	4	4	3
9770		LEAR	01	05	1253	N07	W56	01	1.3		B	CSO	90	10	6	2

DECEMBER 2001

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	0652	0654	0732	2-	1					1	0647	M2.2	9718
01	1059	1106	1129	2	5		1	1			*		
01	1441	1445	1458	1-	5					4	1430	M1.2	9714
01	1504	1518	1625	2+	3					3	1500	M4.8	
01	1508	1553	1628	2+	1					1	1500	M4.8	
01	1655	1658	1727	2-	5					4	1653	M2.9	9714
01	1728	1732	1738	1-	1					1	1729	M1.5	9714
01	1743	1750	1846	2	3					4	1739	M1.8	9724
02	0810	0815	0835	1	1					1	0808	C4.8	
02	1422	1453	1634	3	5					4	1409	M1.3	9714
02	1526	1538	1732	3+	1					1	1532		9717
02	1845	1849	2000	2+	1					1	1849	C4.6	9715
02	2121	2133	2157	2-	1					2	2125	M2.0	9714
03	0710	0715	0730	1	1					1	0706	C7.0	9715
03	1052	1056	1111	2	5		1	1		2	1049	C3.4	9715
04	0543	0547	0612	1+	1					1	0537	M1.3	
04	0855	0859	0910	2	5					2	0855	C4.3	9718
06	0814	0820	0855	3-	5					2	0813	M1.0	9727
06	1853	1908	2052	3-	1					1	1848	C7.6	9720
07	0803	0814	0826	1	1					1	0804	C8.2	9727
08	2138	2144	2144D	3+	1					1	2135	C4.2	9727
09	1530	1546	1620	2-	5					4	1533	C6.8	9727
09	1634	1638	1705	1+	5					5	1632	C3.2	9733
09	1737	1745U	2000	3+	1					1	1726	C6.3	9733
09	1740	1759	1838	2	5					2	1726	C6.3	9733
09	1841	1844	1934	2+	1					1	No flare		
09	2029	2034	2115	2	1					1	2027	C4.5	9727
10	0932	0939	0948	1-	1					1	0931	C8.6	9727
10	1819	1822	1845	1+	1					1	1816	C4.3	
11	0803	0806	0813	3-	5	1	1	1		3	0758	X2.8	9733
11	1446	1451	1456	2+	5		2	1		7	1442	M1.3	9727
11	1857	1901	1913	1-	1					1	1854	C3.4	
12	0747	0752	0759	2	5		1	1			No flare		
12	1228	1231	1241	2	5		2	1		2	1224	C4.8	9733
12	1421	1428	1455	1+	5					2	1415	C4.4	
12	1902	1909	2001	2	5					5	1900	M3.0	9733
12	2004	2006	2200	3	1					1	*		
12	2023	2027	2044	1	5					2	2020	C9.3	9727
13	0643	0648	0715	2	1					1	0632	M1.8	9727
13	1007	1054U	1218	1	1		1				1006	C3.1	
13	1424	1430	1452	3	5	1	1	1		6	1420	X6.2	9733
13	1555	1604	1616	1-	3					2	1555		9727
13	1616	1618	1630	1-	1					2	1616		9727
13	1756	1803	1829	2-	3					2	1752		9727
14	0650	0653	0725	2-	1					1	0645	C5.9	9727
14	0839	0913	1022	2	3		1			1	0840	M3.5	9736
14	1248	1258	1324	1	3		1			1	1250	C7.0	9733
14	1622	1629	1700	2	1					1	1626		9733
14	1746	1750	1830	2	1					1	No flare		
14	1943	1951	2055	2+	5					3	1941	M4.4	9733
14	2018	2022	2107D	2+	1					1	No flare		
15	1004	1010	1018	1-	1					1	1005	C4.9	9733
15	1240	1250	1321	1	5		1			2	1239	C9.4	
15	1657	1701	1710	1-	5					3	1656	C5.0	
15	1732	1736	1746	1-	1					1	1728	C4.3	9733

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

DECEMBER 2001

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
16	0729	0741	0815	2	3		1			1	0733	C8.5	9733
16	1418	1424	1432	2-	5		2	1		3	1415	C3.2	
18	0445	0447	0510	1	1					1	0439	C3.0	9733
19	1050	1055	1110	1	1					1	*		
19	1259	1304	1309	2	5		1	1		2	1256	C5.4	
19	1325	1325U	1330	1+	1					1	*		
19	1703	1707	1748	2-	5					5	1701	M1.3	9739
20	1518	1528	1600	2-	3					2	1522	C4.4	9742
20	1712	1716	1730D	1-	1					1	1710	C2.7	9742
20	1734	1747	1806	1+	3					2	No flare		
20	1810	1812	1851	1+	3					2	1808	C5.0	9742
22	1400	1404	1417	1	1		1				*		
22	1515	1518	1545	1+	1					1	1514	C2.6	
23	1058	1109	1159	2	5		1			1	1100	C7.1	
23	1247	1257	1328	1	1		1				1247	C5.0	
23	1907	1917	2007	2+	1					1	1912	C3.9	
24	0928	0941	1010	1	1		1				No flare		
24	1038	1107U	1200	1	1		1				*		
24	1323	1340	1356	1	1		1				*		
24	1356	1403	1432	3-	5		2	1		5	1350	M3.5	
24	1630	1638	1707	2	1					1	1626		9742
25	2015	2037	2145	3	1					1	2028	C9.8	9748
26	1102	1114	1145	2	1		1				*		
26	1225	1235	1308	3	5		2	1		1	1222	M1.8	9742
26	1600	1633U	1915	3+	1					1	1614		9742
26	1713	1720	1803	2	5					4	1713	M1.3	9742
27	1044	1103	1130	1	1		1				*		
27	1130	1140	1214	3	5		2	1		2	1127	M1.0	9742
27	1222	1235	1302	1	1		1				1218		9742
27	1417	1423	1450	1+	5		1			4	1417	C7.8	
27	1527	1532	1557	1+	3					3	1526	C9.0	9754
27	1548	1556	1636	2	3					2	No flare		
27	1642	1651	1819	2+	5		1			3	1643	M2.3	9748
27	1648	1659	1914	3+	1					1	1643	M2.3	9748
27	1939	1945	2004	1+	1					1	1943	C7.6	
27	2016	2025	2057D	2	1					1	2019	C6.5	9754
28	1218	1235	1235D	2	5	1	2	1		1	1210	M1.3	9748
28	1348	1356	1442	2	5		1			1	No flare		
28	1520	1523	1536D	1-	1					1	No flare		
28	1846	1850	1920	2-	3					2	1846	C8.2	9751
28	1922	2000	2345	3+	1					1	No flare		
28	1947	2023	2106U	2+	1					1	2002	X3.4	
29	0908	0919	0942	2	1		1				0905	M1.8	
29	0942	0950	1044	3	1		1				0938	M9.3	9748
29	1152	1159	1222	1+	5		1			1	1152	M1.4	
29	1624	1630	1719	2-	3					3	1633	M3.3	
29	1633	1646	1727	2+	1					1	1633	M3.3	
29	1800	1803U	1842D	2	1					1	No flare		
29	1840	1845	1925	2-	3					3	No flare		
29	1948	1956	2222	3+	1					1	1950	M1.8	
29	2245	2252	2345	2+	1					1	2251	M2.8	9767
30	1432	1438U	1445	1-	1					1	No flare		
30	1501	1506	1515	1-	5					2	1502	C5.0	9767

* = no flare patrol.

DECEMBER 2001

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
30	1516	1523	1600	2	1					1	No flare		
30	1817	1828	1937	2+	3					2	No flare		
30	2150	2152	2222	1+	1					1	2153	C4.2	9767
31	1016	1024	1112	1	1		1				No flare		
31	1232	1242	1259	1	1		1				1234	C3.7	

* = no flare patrol.

OBSERVATORIES REPORTING FOR DECEMBER 2001

Alberta, Canada	SES	Milan, Italy	SES
Bedford, Massachusetts, USA	SES	Panska Ves, Czech Republic	SES, SEA, SWF
Bern, Switzerland	SES	Sussex, United Kingdom	SES
Brookline, Massachusetts, USA	SES	Torrington, Connecticut, USA	SES
Edenvale, Rep of S. Africa	SES	Udine City, Italy	SES
Houston, Texas, USA	SES	Upice, Czech Republic	SEA
Marlboro, Massachusetts, USA	SES		

Observations are not necessarily continuous.

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

DECEMBER 2001

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
01		LEAR	0015.0	0027.0	III		1	37	85	
0000	0810	CULG	0015.0	0017.0	III	G	1	57X	100	
0000	0724	HIRA	0044.5	0045.5	III	G	1	110	290	
		CULG	0434.0	0438.0	III	G	1	57X	100	
		HIRA	0434.0	0434.5	III	B	1	40	110	
		LEAR	0434.0	0438.0	III		1	25	120	
		HIRA	0437.5	0438.0	III	B	1	50	170	
		LEAR	0541.0	0542.0	III		1	25	153	
		CULG	0542.0	0542.0	III	B	1	57X	150	
		HIRA	0542.0	0542.5	III	B	1	50	150	
		SVTO	0723.0	0725.0	III		2	25U	75U	
0715	1445	POTS	0815 E	1408 U	I	C,N	1	120	360	
0813	1329	ONDR	0817.1	0817.3	DCIM	G	1	800X	2000X	
0703	1200	IZMI	0819.4	0819.6	III	B	1	50	95	
		IZMI	0849.0	0849.4	III	G	1	50	75	
		POTS	0908.5	0909.3	III	G	1	120	300	
		IZMI	0912.9	0913.8	III	G,U	2	115	270X	
		POTS	0952.9	0953.1	III	G	1	40X	150	
		POTS	0955.3	0955.6	III	G	2	40X	220	
		POTS	0956.9	0957.2	III	B	1	40X	170U	
		POTS	0959.9	1002.2	III	G	1	40X	150	
		IZMI	1000.0	1006.5	III	GG	2	40	175	
		LEAR	1000.0	1000.0	III		1	25	180	
		SVTO	1000.0	1000.0	III		1	25	150	
		IZMI	1014.1	1014.2	III	B	2	40	70	
		POTS	1019.8	1021.3	III	G	1	40X	270	
		SVTO	1024.0	1026.0	III		1	25	132	
		IZMI	1024.6	1026.1	III	G	2	40	155	
0820	1440	BLEN	1107.5	1108.1	III	G,S,C	2	490	4000X	
		POTS	1131.6	1131.8	III	B	1	110U	300	
		POTS	1201.8	1202.1	UNCLF		1	40X	60	
		BLEN	1231.4	1232.7	III	GG,RS	3	670	4000X	
		POTS	1311.4	1311.7	III	B	1	40X	300	
		HOLL	1709.0	1709.0	III		1	25	154	
		HOLL	1824.0	1825.0	III		1	25	180	
		HOLL	1847.0	1848.0	III		1	25	180	
1930	2400	CULG	2037.0	2038.0	III	G	1	60	420	
		CULG	2106.0	2136.0	III	N	1	57X	90	
		CULG	2209.0	2209.0	III	B	1	57X	90	
		CULG	2304.0	2336.0	III	N	1	57X	90	
		LEAR	2311.0	2317.0	III		1	33	91	
2130	2400	HIRA	2311.0	2311.5	III	B	1	25X	80	
		HIRA	2316.5	2317.0	III	B	1	25X	70	
		LEAR	2335.0	2336.0	III		1	32	99	
		HIRA	2335.5	2336.0	III	B	1	40	140	
02	0000	0810	CULG	0009.0	0010.0	III	G	1	57X	90	
			LEAR	0308.0	0308.0	III		1	28	51	
			CULG	0330.0	0332.0	III	G	2	57X	460	
			LEAR	0330.0	0332.0	V		3	25	180	
0000	0723	HIRA	0330.0	0332.0	III	G	2	25X	520	
		CULG	0336.0	0338.0	III	G	1	70	400	
		CULG	0421.0	0431.0	III	G	1	57X	400	
		LEAR	0425.0	0427.0	III		1	36	180	
		HIRA	0426.5	0427.0	III	B	2	100	230	
		CULG	0707.0	0712.0	III	G	1	57X	150	
0700	1200	IZMI	0707.3	0707.5	III	B	2	110	215	
0815	1328	ONDR								
0715	1445	POTS	0820 E	1408 U	I	C,N	1	120	380	
		POTS	1006.8	1007.4	III	G	1	40X	360	
		IZMI	1011.8	1012.0	III	G	2	55	160	
		POTS	1053.9	1054.6	UNCLF		1	200U	300	
		IZMI	1115.0U	1200.0D	I	S	1	200	270X	
		POTS	1203.8	1204.2	III	G	2	110U	500	
0820	1440	BLEN	1208.6	1208.9	III	G,U,S	2	150	710	
		BLEN	1218.7	1219.8	DCIM	C	1	2700	4000X	
		BLEN	1346.3	1346.4	III		2	560	690	
		HOLL	1533.0	1535.0	III		1	25	180	
		HOLL	1752.0	1758.0	III		1	25	142	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2001

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
02			HOLL	1819.0	1819.0	III		1	25	180	
			SGMR	1819.0	1819.0	III		1	30	60	
			HOLL	1950.0	1952.0	III		1	25	111	
	1930	2400	CULG	1951.0	1952.0	III	G	1	57X	90	
			CULG	2020.0	2020.0	III	B	1	57X	90	
			CULG	2025.0	2026.0	III	G	1	57X	110	
			CULG	2058.0	2100.0	III	G	1	57X	160	
			HOLL	2059.0	2100.0	III		1	25	138	
			CULG	2120.0	2120.0	III	B	1	57X	90	
			CULG	2135.0	2135.0	III	B	1	57X	70	
			CULG	2155.0	2400.0D	III	S,C	1	57X	160	
			LEAR	2249.0	0018.0	CONT		1	73	180	
			LEAR	2339.0	2339.0	III		1	106	180	
	2130	2400	HIRA	2339.5	2340.0	III	B	1	80	340	
			CULG	2340.0	2340.0	III	G	1	57X	300	
03	0000	0800	CULG	0000.0E	0013.0	III	S,C	1	57X	90	
			CULG	0232.0	0232.0	III	B	1	57X	120	
			LEAR	0232.0	0232.0	III		1	25	107	
	0000	0723	HIRA	0232.0	0232.5	III	B	1	40	110	
			LEAR	0711.0	0712.0	III		1	25	85	
	0701	1200	IZMI	0711.8	0712.2	III	B,C	2	50	125	
	0720	1445	POTS	0809 E	1407	I	C,N	1	120	370	
	0816	1327	ONDR								
			POTS	0829.7	0831.2	III	G	1	40X	150	
			LEAR	0834.0	0836.0	III		1	25	86	
			IZMI	0834.4	0835.9	III	G	1	40	140	
			POTS	0900.9	0902.3	III	G	1	40X	360	
			POTS	0929.5	0929.9	III	B	1	110U	160	
	0820	1440	BLEN	1050.6	1054.5	DCIM	C	1	1930	4000X	
			POTS	1123.3	1124.3	III	G	2	40X	250	
			IZMI	1127.7	1129.2	III	G	2	35	180	
			POTS	1315	1324	UNCLF		1	40X	70	
	2000	2400	CULG	2028.0	2041.0	III	GG	1	57X	90	
			CULG	2034.0	2035.0	III	G	3	57X	300	
			HOLL	2034.0	2034.0	III		1	25	180	
			PALE	2034.0	2034.0	III		1	25	180	
			PALE	2338.0	0242.0	III	N	1	25	180	
			CULG	2339.0	2345.0	III	G	1	57X	150	
			LEAR	2340.0	2340.0	III		1	39	83	
	2131	2400	HIRA	2340.0	2340.5	III	B	1	50	120	
04	0000	0810	CULG	0124.0	0318.0	III	S	1	57X	180	
			LEAR	0154.0	0326.0	CONT		1	73	150	
			LEAR	0243.0	0311.0	III	N	1	25	122	
			LEAR	0532.0	0533.0	III		1	35	84	
	0000	0723	HIRA	0532.5	0533.0	III	B	1	50	210	
			CULG	0533.0	0533.0	III	G	1	57X	180	
			CULG	0540.0	0540.0	III	B	1	57X	90	
	0650	1200	IZMI	0650.1	0650.3	III	B	1	50	70	
			IZMI	0752.4	0752.7	III	G	1	165	270X	
	0720	1445	POTS	0753.0	0757.9	III	G	1	40X	160U	
			LEAR	0756.0	0803.0	III		1	25	152	
			IZMI	0756.3	0759.3	III	GG	2	25	145	
			CULG	0757.0	0759.0	III	G	1	57X	80	
			SVTO	0758.0	0802.0	III	N	2	25U	150U	
			IZMI	0800.7	0801.6	III	G	2	35X	270X	
			IZMI	0802.6	0803.8	III	G	2	45	200	
	0820	1440	BLEN								
			POTS	0835 U	1405 U	I	C,N	1	120	300	
			POTS	0844.1	0845.8	III	G	1	40X	300	
			IZMI	0845.8	0845.9	III	B	1	225	270X	
			IZMI	0846.2	0846.6	III	B	1	45	90	
			IZMI	0849.3	0850.6	III	GG	2	60	270X	
			POTS	0853.0	0855.3	III	G	1	110U	220	
	0818	1326	ONDR	0854.2	0859.5	DCIM	G	1	1180	2000X	
			IZMI	0855.5	0856.1	III	G	1	60	125	
			IZMI	0900.2	0900.4	III	B	1	65	240	
			IZMI	0908.3	0909.0	III	G	1	55	75	

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OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
04		POTS	1037.7	1038.3	III	G	1	40X	170U	
		IZMI	1042.7	1043.2	III	G	1	45	130	
		POTS	1120.0	1121.0	III	G	1	40X	150	
		IZMI	1125.4	1126.0	III	G	1	40	75	
		POTS	1142.3	1142.7	III	B	1	40X	170U	
		SVTO	1147.0	1147.0	III		1	52	129	
		IZMI	1147.3	1147.6	III	G	1	50	160	
		HOLL	1832.0	1832.0	III		1	55	142	
2132	2400	HIRA								
1930	2400	CULG	2236.0	2236.0	III	B	1	57X	180	
		CULG	2240.0	2241.0	III	G	1	57X	130	
		CULG	2255.0	2256.0	III	G	1	57X	180	
05 0000	0723	HIRA								
0000	0810	CULG	0402.0	0402.0	III	B	1	57X	150	
0820	1325	ONDR								
0820	1440	BLEN								
0720	1445	POTS	0850	1402	I	C,N	1	120	250	
		POTS	0931.3	0931.5	UNCLF		1	40X	70	
		LEAR	0936.0	0936.0	III		1	25	109	
0656	1200	IZMI	0936.3	0936.6	III	B	1	40	90	
		HOLL	1830.0	1830.0	III		1	25	76	
1930	2400	CULG								
2133	2400	HIRA								
06 0000	0723	HIRA								
		LEAR	0121.0	0121.0	III		1	25	61	
0000	0810	CULG	0122.0	0122.0	III	G	1	57X	80	
0821	1324	ONDR								
0720	1445	POTS	0824 U	1402	I	C,N	1	120	280	
0840	1440	BLEN								
		IZMI	1155.7	1155.8	III	B	1	205	270X	
1930	2400	CULG	2046.0	2046.0	III	B	1	57X	180	
		CULG	2224.0	2224.0	III	B	1	57X	90	
		CULG	2230.0	2231.0	III	G	1	57X	180	
2134	2400	HIRA	2230.0	2231.0	III	G	1	50	230	
07		LEAR	0039.0	0043.0	III		1	25	115	
0000	0723	HIRA	0039.0	0040.0	III	G	1	50	210	
0000	0810	CULG	0039.0	0040.0	III	G	1	57X	180	
		CULG	0044.0	0050.0	III	G	1	57X	90	
		HIRA	0050.0	0050.5	III	B	1	120	210	
		HIRA	0140.5	0141.0	III	B	1	100	250	
		CULG	0141.0	0141.0	III	B	1	100	280	
		HIRA	0238.5	0239.0	III	B	1	100	270	
		CULG	0239.0	0239.0	III	B	1	100	260	
		LEAR	0250.0	0255.0	II		1	25	45	ESS 0490
		CULG	0256.0	0256.0	III	B	1	57X	180	
		LEAR	0256.0	0256.0	III		1	25	127	
		LEAR	0338.0	0339.0	III		1	25	134	
		HIRA	0338.5	0339.0	III	B	1	25X	270	
		CULG	0339.0	0339.0	III	B	1	57X	180	
		CULG	0438.0	0439.0	III	G	2	70	500	
		HIRA	0438.0	0439.0	III	B	3	100	400	
		LEAR	0438.0	0441.0	III		1	25	180	
		CULG	0439.0	0440.0	III	G	1	57X	180	
		LEAR	0509.0	0509.0	III		1	44	142	
		CULG	0510.0	0510.0	III	B	1	57X	160	
		CULG	0534.0	0535.0	III	G	1	57X	180	
		HIRA	0534.0	0535.0	III	B	1	40	220	
		LEAR	0534.0	0535.0	III		2	25	148	
		CULG	0556.0	0634.0	III	N	1	57X	180	
		LEAR	0620.0	0646.0	III	N	1	25	180	
		CULG	0625.0	0625.0	III	B	3	57X	180	
0700	1200	IZMI	0727.4	0727.9	III	GG	2	95	270X	
		CULG	0728.0	0728.0	III	B	1	100	300	
		LEAR	0735.0	0738.0	III		1	25	180	
		SVTO	0735.0	0738.0	III		1	45U	180U	
		IZMI	0735.7	0735.9	III	B	2	50	160	

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OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
07		CULG	0736.0	0736.0	III	B	1	57X	160	
		IZMI	0738.3	0739.0	III	G,C	2	125	270X	
		CULG	0739.0	0739.0	III	B	1	120	180	
		IZMI	0745.1	0745.2	III	B,U	2	140	215	
		IZMI	0750.5	0752.0	III	GG	1	175	270X	
0720	1445	POTS	0814 U	1400 U	I	C,N	1	120	350	
0823	1324	ONDR								
		POTS	0847.9	0848.3	III	G	1	110U	800X	
		POTS	0851.2	0853.4	III/V	GG	2	40X	800X	
		IZMI	0852.1	0853.6	III	G	1	110	270X	
0840	1440	BLEN	0852.1	0853.6	III	GG,S	3	160	1760	
		POTS	0854.2	0854.5	DCIM		1	210	380	
		POTS	0855.7	0856.1	III	G	1	40X	320	
		LEAR	0856.0	0901.0	III		2	25	180	
		IZMI	0856.5	0858.3	III	G	2	50	160	
		SVTO	0857.0	0901.0	III		2	25	180	
		IZMI	0857.9	0858.3	III	G	3	40	270X	
		IZMI	0900.8	0901.4	III	G,C	2	50	270X	
		POTS	0940.7	0941.2	III	B	2	40X	300	
		IZMI	0946.0	0946.3	III	B	2	40	190	
		LEAR	0946.0	0946.0	III		1	25	155	
		SVTO	0946.0	0946.0	III		1	25	143	
		POTS	1000.1	1002.5	III/V	G	2	40X	300	
		SVTO	1006.0	1208.0	III	N	2	25	180	
		IZMI	1006.2	1007.6	III	G,U	2	40	240	
		POTS	1009.4	1009.7	III	G	1	40X	150	
		POTS	1010.6	1010.8	III	B	2	40X	300	
		IZMI	1012.2	1022.0	III	GG	1	40	95	
		POTS	1012.2	1012.9	III/V	G	2	40X	800X	
		POTS	1013.6	1015.4	III/V	G	2	40X	500	
		IZMI	1014.6	1020.6	III	GG,U	2	30	270X	
		BLEN	1017.3	1019.3	III	GG	2	130	1450	
		POTS	1036.1	1036.6	UNCLF		2	110U	300	
		IZMI	1041.3	1041.8	III	GG,C	2	95	270X	
		BLEN	1041.4	1041.8	III	G,S	1	163	170	
		POTS	1041.9	1042.1	III	B	1	110U	350	
		POTS	1043.7	1044.0	III	G	1	40X	150	
		POTS	1046.6	1049.2	III	G	1	40X	300	
		IZMI	1047.2	1047.2	III	B	1	80	250	
		IZMI	1048.9	1049.4	III	G	1	50	145	
		IZMI	1051.9	1053.1	III	GG,FS	1	40	270X	
		IZMI	1054.1	1054.4	III	G	1	40	175	
		IZMI	1113.4	1114.2	III	G	2	140	260	
		POTS	1120.2	1120.5	III	B	2	40X	250	
		POTS	1121.7	1122.3	III	G	2	40X	320	
		POTS	1124.3	1124.7	III	B	2	40X	160	
		IZMI	1125.4	1129.9	III	GG	2	30	270X	
		POTS	1126.4	1126.7	III	G	2	40X	350	
		IZMI	1131.7	1131.9	III	G	2	40	270X	
		POTS	1136.6	1137.2	UNCLF		1	40X	70	
		POTS	1137.9	1139.5	III/V	G	2	40X	300	
		IZMI	1140.9	1142.4	III	G	1	40	95	
		IZMI	1143.2	1144.7	III	GG,C	2	30	230X	
		POTS	1144.1	1146.5	III	G	2	40X	170U	
		IZMI	1149.4	1149.6	III	B	1	60	150	
		POTS	1149.6	1151.6	III	G	1	40X	170U	
		IZMI	1151.3	1151.7	III	B	2	50	180	
		IZMI	1154.9	1155.3	III	G	2	40	150	
		IZMI	1156.0	1156.8	III	GG	2	40	190	
		POTS	1202.7	1203.0	III	B	1	40X	140	
		POTS	1239.9	1240.1	III	B	1	40X	160	
		POTS	1247.9	1249.6	III	G	2	40X	300	
		SVTO	1253.0	1253.0	III		1	25	139	
		POTS	1257.7	1257.9	III	B	1	110U	300	
		POTS	1302.6	1302.8	III	B	1	40X	130	
		POTS	1314.9	1315.1	UNCLF		1	210	300	
		POTS	1318.1	1318.3	UNCLF		1	160	300	
		POTS	1329.0	1334.5	III	GG	2	40X	380	
		SVTO	1334.0	1339.0	III		2	25	143	

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07		SVTO	1407.0	1408.0	III		1	113U	180U	
		POTS	1413.7	1413.9	III	B	1	40X	90U	
		POTS	1420.1	1420.3	III	B	1	40X	70	
		HOLL	1700.0	1701.0	III		1	25	116	
		HOLL	1906.0	2059.0	III	N	1	25	180	
		PALE	1906.0	1906.0	III		1	25	134	
1920	2400	CULG	1928.0	1929.0	III	G	2	57X	100	
		CULG	1948.0	1948.0	III	B	1	57X	80	
		CULG	2138.0	2138.0	III	B	1	80	180	
		CULG	2157.0	2158.0	III	G	2	57X	420	
		HOLL	2157.0	2157.0	III		1	25	180	
		LEAR	2157.0	2157.0	III		2	25	180	
		PALE	2157.0	2158.0	III		1	25	180	
2135	2400	HIRA	2157.0	2158.0	III	B	2	40	300	
		LEAR	2247.0	2249.0	III		1	25	180	
		CULG	2248.0	2303.0	III	G	1	57X	180	
		HIRA	2248.0	2249.5	III	G	1	25X	210	
		CULG	2341.0	2348.0	III	G	1	57X	140	
		LEAR	2341.0	2342.0	III		1	25	128	
		HIRA	2341.5	2343.0	III	G	1	25X	140	
08	0000	0810	CULG	0016.0	0019.0	III	G	1	120	180
		CULG	0021.0	0041.0	III	N	2	57X	180	
		LEAR	0026.0	0040.0	III	N	2	25	180	
		CULG	0111.0	0113.0	III	G	1	57X	180	
		LEAR	0111.0	0113.0	III		1	25	101	
0000	0723	HIRA	0112.0	0112.5	III	B	1	30	180	
		CULG	0132.0	0132.0	III	B	1	120	180	
		LEAR	0142.0	0143.0	III		1	25	100	
		HIRA	0142.5	0143.0	III	B	1	40	140	
		CULG	0143.0	0143.0	III	B	1	57X	150	
		CULG	0240.0	0240.0	III	B	1	57X	90	
		CULG	0310.0	0310.0	III	B	1	120	180	
		HIRA	0310.0	0310.5	III	B	1	120	200	
		CULG	0331.0	0331.0	III	B	1	70	180	
		HIRA	0331.0	0331.5	III	B	1	90	250	
		LEAR	0331.0	0331.0	III		1	25	180	
		LEAR	0432.0	0440.0	III		1	25	160	
		CULG	0433.0	0441.0	III	G	1	57X	180	
		HIRA	0433.0	0433.5	III	B	1	50	140	
		HIRA	0440.5	0441.0	III	B	1	100	260	
		CULG	0608.0	0608.0	III	B	1	75	280	
		CULG	0642.0	0643.0	III	G	1	100	160	
		LEAR	0729.0	0729.0	III		1	74	180	
		SVTO	0729.0	0729.0	III		1	74	180	
0650	1200	IZMI	0729.6	0729.9	III	G	2	80	215	
		CULG	0730.0	0730.0	III	G	1	70	180	
		IZMI	0752.9	0753.1	UNCLF		2	130	170	
		IZMI	0754.2	0754.4	III	G,C	2	125	180	
0720	1445	POTS	0817 U	1400 U	I	C,N	1	120	300	
0824	1323	ONDR								
		POTS	0844.1	0844.3	III	B	1	40X	150	
		POTS	0848.6	0849.1	III	G,RS	2	40X	800X	
		LEAR	0849.0	0854.0	III		1	25	180	
		SVTO	0849.0	0930.0	III	N	2	25U	180U	
		IZMI	0849.5	0849.8	III	B	2	40	145	
		BLEN	0854.0	0854.5	III	RS,C	1	130	1050	
		IZMI	0854.0	0854.4	III	GG,C	2	60	270X	
0840	1440	BLEN	0854.0	0854.2	DCIM	P	1	500	1050	
		POTS	1044.5	1044.8	III	B	1	40X	210	
		IZMI	1050.0	1050.2	III	B	2	50	155	
		SVTO	1050.0	1050.0	III		1	50	84	
		POTS	1245.2	1245.6	III	B	1	40X	150	
		SVTO	1250.0	1250.0	III		1	33U	86U	
1920	2400	CULG	2028.0	2036.0	III	G	1	57X	180	
		CULG	2134.0	2141.0	III	G	1	70	180	
		HOLL	2134.0	2135.0	III		1	107	180	
		PALE	2134.0	2137.0	III		1	25	180	
		CULG	2215.0	2219.0	III	G	1	200	500	

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Day	OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
08	2136	2400	HIRA	2217.5	2219.5	III	G	1	210	640	
09	0000	0810	CULG	0437.0	0445.0	III	G	1	57X	180	
			LEAR	0442.0	0442.0	III		1	25	115	
	0000	0723	HIRA	0442.0	0442.5	III	B	1	25X	220	
			CULG	0443.0	0444.0	II	FN	1	57X	75	
			CULG	0443.0	0448.0	II	SH	2	70	150	ESS 650
			HIRA	0443.0	0447.5	II		1	80	230	
			LEAR	0443.0	0458.0	II		1	75	150	ESS 0839
			CULG	0454.0	0458.0	III	G	1	57X	70	
	0700	1200	IZMI	0659.2	0659.5	III	G	1	180	220	
			IZMI	0719.1	0719.2	III	B	1	105	140	
	0720	1445	POTS	0812 U	1357 U	I	C,N	1	120	300	
	0829	1323	ONDR								
			POTS	1035.2	1036.1	III	G	2	110U	300	
			IZMI	1040.7	1041.5	III	GG	2	105	270X	
	0840	1440	BLEN	1040.8	1041.3	III	G	1	130	390	
			SVTO	1041.0	1041.0	III		1	111	180	
			POTS	1205.5	1207.7	III	G	1	130	360	
			POTS	1210.4	1210.5	DCIM	RS	1	220	350	
	1920	2400	CULG	1949.0	2008.0	III	N	1	57X	130	
			CULG	2126.0	2141.0	III	G	1	100	180	
	2137	2222	HIRA								
	2352	2400	HIRA								
10	0000	0723	HIRA								
			LEAR	0100.0	0100.0	III		1	35	96	
	0000	0810	CULG	0100.0	0100.0	III	B	1	57X	120	
	0725	1445	POTS	0812 E	1400 U	I	C,N	1	120	300	
			POTS	0926.9	0932.0	III/V	G	2	40X	650	
			POTS	0930.7	0930.8	DCIM		1	450	700	
			LEAR	0932.0	0936.0	III		1	36U	180U	
			SVTO	0932.0	0936.0	III		2	32U	175U	
	0700	1200	IZMI	0932.5	0937.5	III	GG,C	2	35	270X	
	0840	1440	BLEN	0932.8	0936.7	III	GG,C	3	110X	4000X	
			ONDR	0933.4	0935.5	DCIM	GG	2	800X	2000X	
	0827	1322	ONDR	0933.4	0937.1	DCIM	GG	2	2000X	4500X	
			POTS	0933.9	0946.2	II		2	40X	160	
			IZMI	0939.5	0939.6	III	B	1	115	145	
			IZMI	0939.9	0954.0U	II	G	2	30	160	
			LEAR	0940.0	0953.0	II		2	36	147	ESS 0420
			SVTO	0940.0	0950.0	II		3	25	180	ESS 0978
			IZMI	0954.0	1000.0U	I	N	1	40	90	
			POTS	1122.1	1122.3	III	B	1	40X	150	
			IZMI	1127.7	1127.9U	III	B	1	90	140	
			POTS	1200.8	1201.0	III	B	1	110U	220	
			HOLL	1659.0	1701.0	III		1	25	180	
	1920	2400	CULG	2321.0	2321.0	III	B	1	57X	90	
	2337	2400	HIRA								
11			LEAR	0250.0	0250.0	III		1	25	67	
	0000	0723	HIRA	0250.5	0251.0	III	B	1	25X	80	
	0000	0820	CULG	0251.0	0251.0	III	B	1	57X	75	
			CULG	0322.0	0322.0	III	B	1	57X	75	
			LEAR	0323.0	0346.0	III	N	1	25	180	
			CULG	0324.0	0334.0	III	G	2	57X	160	
			HIRA	0324.0	0347.0	III	G	3	30	500	
			CULG	0327.0	0338.0	III	GG	1	57X	370	
			CULG	0339.0	0343.0	III	G	3	57X	480	
			CULG	0343.0	0346.0	V		1	57X	100	
			CULG	0346.0	0346.0	III	G	2	57X	180	
			LEAR	0409.0	0409.0	III		1	25	52	
			CULG	0626.0	0628.0	III	G	1	57X	180	
			LEAR	0626.0	0628.0	III		1	25	153	
			HIRA	0627.0	0628.0	III	G	1	50	210	
	0650	1200	IZMI	0720.4	0721.1	III	B	1	50	145	
			CULG	0721.0	0721.0	III	B	1	57X	90	
	0725	1445	POTS	0756.7	0759.7	III/V	G	2	40X	160	
			CULG	0802.0	0805.0	III	G	2	57X	150	

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11		LEAR	0802.0	0807.0	V		2	25	180	
		SVTO	0802.0	0806.0	V		2	25	180	
		IZMI	0802.4	0806.3	III	GG	2	25X	270X	
		IZMI	0802.8	0808.3	V		2	50	210	
		POTS	0803.0	0836	II		2	40X	170U	
		IZMI	0806.9	0828.9	II	HARM	2	35	270X	
		LEAR	0807.0	0828.0	II		2	25	180	ESS 0733
		SVTO	0807.0	0825.0	II		2	25	180	ESS 1080
		IZMI	0809.6	0845.0U	III	N	1	180	270X	
		CULG	0810.0	0819.0	II	SH	1	57X	150	ESS 650
		POTS	0813 U	0843 U	IV		1	110U	400	
		IZMI	0815.0U	0825.0U	CONT	CTA	1	90	270X	
		LEAR	0822.0	1023.0	IV		1	36	180	
		SVTO	0822.0	0922.0	IV		1	75U	180U	
		IZMI	0823.1	0823.2	III	G,RS	2	35	70	
		IZMI	0825.0U	0845.0U	I	N	1	45	270X	
		IZMI	0827.2	0905.0U	III	N	1	45	150	
0829	1322	ONDR								
		IZMI	0835.5	0835.7	III	G	2	50	160	
		POTS	0843 U	1400 U	I	C	1	110U	350	
		POTS	0843.4	0843.9	III	B	2	40X	380	
		IZMI	0849.0	0849.5	III	G	2	35	270X	
		SVTO	0849.0	0849.0	III		2	25	143	
		IZMI	0851.5	0856.1	UNCLF		2	40	90	
		IZMI	0901.0	0901.8	III	G	2	40	65	
		POTS	0916	0919.5	UNCLF		1	40X	60	
		IZMI	0929.0U	0954.0U	III	N,C	2	180	270X	
0840	1440	BLEN	0929.5	0955.0	I	DC	1	200	470	
		POTS	0940.6	0940.8	UNCLF		1	40X	70	
		IZMI	0942.4	0942.6	III	B	1	45	90	
		IZMI	0946.3	0946.6	III	G	2	40	85	
		IZMI	1002.2	1002.3	III	B	1	50	75	
		IZMI	1004.0	1007.5	UNCLF	RS	2	40	65	
		IZMI	1005.9	1007.1	III	G	2	45	90	
		POTS	1012.2	1015.6	III	G	1	40X	220	
		IZMI	1017.8	1021.2	III	GG	2	50	210	
		IZMI	1035.3	1038.3	III	GG	1	40	70	
		POTS	1145.8	1147.0	III	G	1	40X	170U	
		IZMI	1147.0	1152.7	III	GG	2	35	150	
		POTS	1203.3	1203.5	UNCLF		1	40X	70	
		BLEN	1446.4	1452.0X	III	GG,S	2	200	630	
		HOLL	1452.0	1452.0	III		1	111	180	
		SVTO	1452.0	1452.0	III		1	115U	180U	
		HOLL	1803.0	1804.0	III		1	25	150	
1920	2400	CULG	1951.0	1951.0	III	B	1	57X	90	
2138	2400	HIRA								
		HOLL	2229.0	2308.0	III	N	1	25	180	
		PALE	2229.0	2320.0	CONT		1	25	180	
		CULG	2240.0	2242.0	III	G	1	57X	75	
		CULG	2259.0	2339.0	I	S	1	120	180	
		HOLL	2307.0	2337.0	CONT		1	25	180	
12		LEAR	0048.0	0049.0	III		1	25	55	
		LEAR	0113.0	0207.0	III	N	1	25	100	
0000	0724	HIRA	0113.0	0114.0	III	B	1	50	220	
0000	0820	CULG	0113.0	0114.0	III	G	1	57X	180	
		CULG	0132.0	0139.0	III	G	1	57X	90	
		HIRA	0132.0	0133.0	III	B	1	40	120	
		HIRA	0240.0	0240.5	III	B	1	30	250	
		LEAR	0240.0	0240.0	III		1	25	152	
		CULG	0249.0	0251.0	III	G	1	57X	180	
		LEAR	0308.0	0308.0	III		1	71	85	
		CULG	0349.0	0352.0	III	G	1	57X	180	
		HIRA	0349.0	0349.5	III	B	1	90	280	
		LEAR	0349.0	0349.0	III		1	87	180	
		CULG	0455.0	0456.0	III	G	1	75	240	
		HIRA	0455.0	0456.0	III	B	1	90	270	
		LEAR	0455.0	0512.0	III	N	1	25	110	
		CULG	0508.0	0512.0	III	G	1	57X	160	

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12		CULG	0625.0	0625.0	III	B	1	57X	160	
		CULG	0651.0	0651.0	III	B	1	57X	90	
		LEAR	0651.0	0651.0	III		1	25	91	
0650	1200	IZMI	0651.0	0651.3	III	B	2	45	100	
		CULG	0740.0	0746.0	III	GG	1	57X	180	
		LEAR	0740.0	0746.0	III		1	25	180	
		IZMI	0740.3	0746.2	III	GG	2	50	210	
		SVTO	0741.0	0746.0	III		1	75	180	
		IZMI	0748.8	0749.7	III	G	1	60	85	
0725	1445	POTS	0819 E	1400 U	I	C	1	120	300	
0830	1321	ONDR								
		POTS	1001.7	1001.9	III	G	1	110U	150	
		IZMI	1007.1	1007.7	III	G	2	95	145	
		POTS	1113.6	1116.4	III	G	1	40X	170U	
		SVTO	1119.0	1121.0	III		1	25	136	
		IZMI	1119.4	1122.2	III	GG	2	30	190	
		POTS	1134.7	1138.4	III/V	GG	2	40X	350	
		IZMI	1140.5	1144.5	III	GG,C	2	30	270X	
		SVTO	1141.0	1143.0	V		2	25	180	
0840	1440	BLEN	1141.5	1143.7	III	GG	1	100X	440	
		IZMI	1146.6	1147.6	III	G	2	100	175	
		POTS	1205.1	1205.7	III	G	1	110U	300	
		POTS	1244.6	1244.9	DCIM		1	220	450	
		SVTO	1425.0	1427.0	III		1	25	180	
		HOLL	1537.0	1540.0	III		1	25	180	
		HOLL	1739.0	2220.0	III	N	1	25	163	
1920	2400	CULG	1948.0	1951.0	III	G	2	57X	230	
		CULG	1956.0	2058.0	I	S	1	110	160	
		CULG	2150.0	2319.0	I	S	1	110	180	
		LEAR	2151.0	2355.0	CONT		1	108	180	
		HOLL	2238.0	2241.0	III		1	25	180	
		LEAR	2238.0	2245.0	III		1	25	141	
2139	2400	HIRA	2238.5	2243.5	III	G	1	40	300	
		CULG	2239.0	2245.0	III	G	1	57X	300	
		CULG	2316.0	2318.0	III	G	1	60	260	
		HIRA	2316.5	2318.0	III	G	1	100	240	
13	0000	0724	HIRA	0039.5	0040.0	III	B	1	230	390	
		LEAR	0110.0	0110.0	III		1	25	85	
0000	0820	CULG	0110.0	0110.0	III	B	1	57X	150	
		LEAR	0139.0	0950.0	III	N	1	25	180	
		CULG	0143.0	0147.0	III	G	1	57X	280	
		HIRA	0145.5	0147.5	III	G	1	80	390	
		LEAR	0230.0	0240.0	V		1	25	166	
		CULG	0231.0	0237.0	III	GG	1	57X	670	
		HIRA	0231.0	0236.5	III	G	1	40	600	
		CULG	0243.0	0820.0D	III	N	1	57X	170	
		LEAR	0247.0	0248.0	III		3	25	180	
		CULG	0248.0	0248.0	III	B	3	57X	450	
		HIRA	0248.0	0248.5	III	B	3	30	400	
		CULG	0312.0	0312.0	III	B	1	240	400	
		HIRA	0611.0	0611.5	III	B	1	50	200	
0656	1200	IZMI	0656.0E	0910.0I	I	N	1	60	270	
		IZMI	0725.1	0725.1	III	G	1	140	270X	
		IZMI	0805.7	0806.2	III	G	1	50	70	
0725	1445	POTS	0814 E	1354 U	I	C	1	120	350	
		SVTO	0823.0	1010.0	III	N	1	75	180	
0831	1321	ONDR								
		IZMI	0841.1	0849.6	III	GG	1	45	95	
		IZMI	0935.6	0935.8	III	B	1	50	70	
		POTS	1004.0	1004.4	DCIM		1	300	450	
		POTS	1227.1	1228.8	III	GG	2	40X	220	
		SVTO	1233.0	1234.0	III		1	50	169	
		POTS	1332.4	1332.7	III	B	2	40X	300	
		SGMR	1338.0	1338.0	III		1	35	50	
		SVTO	1338.0	1338.0	III		1	36	131	
		POTS	1417.5	1421.5	III/V	G	1	40X	170U	
		POTS	1423.5	1443 U	II		2	40X	170U	
0840	1440	BLEN	1424.0	1453.7	IV	P	3	100X	4000X	

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13		HOLL	1425.0	1427.0	III		1	25	180	
		SGMR	1425.0	1448.0	III	N	3	30	80	
		SVTO	1425.0	1427.0	III		2	37U	180U	
		BLEN	1428.6	1436.3	II	H	3	100X	320	
		HOLL	1429.0	1448.0	II		1	42	180	ESS 1048
		SVTO	1429.0	1445.0	II		3	45	180	ESS 0931
		SVTO	1429.0	1447.0	II		3	45	180	ESS 0931
		HOLL	1439.0	1630.0	IV		1	51	150	
		HOLL	1749.0	1758.0	III		1	25	164	
	1920	CULG	2028.0	2400.0D	I	S	1	80	160	
		HOLL	2109.0	2109.0	III		1	25	180	
		PALE	2109.0	2109.0	III		1	25	180	
		CULG	2110.0	2110.0	III	B	2	57X	180	
		CULG	2201.0	2206.0	III	G	1	57X	180	
		CULG	2240.0	2241.0	III	G	1	57X	180	
	2140	HIRA	2240.0	2241.0	III	G	1	50	180	
		LEAR	2332.0	1043.0	CONT		1	42	125	
14	0000	CULG	0000.0E	0805.0	I	S	1	60	140	
		CULG	0014.0	0014.0	III	B	1	57X	160	
		LEAR	0014.0	0018.0	III		1	25	141	
	0000	HIRA	0014.0	0014.5	III	B	1	25X	140	
		CULG	0018.0	0018.0	III	B	1	57X	180	
		HIRA	0018.0	0018.5	III	B	1	30	200	
		CULG	0101.0	0102.0	III	G	1	57X	300	
		HIRA	0101.0	0102.0	III	G	1	140	400	
		CULG	0132.0	0136.0	III	G	1	57X	180	
		HIRA	0132.0	0136.0	III	G	1	30	420	
		LEAR	0132.0	0146.0	III		1	25	180	
		PALE	0141.0	0145.0	III		1	25	113	
		CULG	0142.0	0147.0	III	G	3	57X	150	
		HIRA	0142.0	0146.5	III	G	3	25X	150	
		CULG	0323.0	0349.0	III	N	2	57X	100	
		HIRA	0323.5	0331.5	III	G	1	30	80	
		HIRA	0345.0	0346.0	III	G	1	30	110	
		CULG	0349.0	0351.0	III	G	3	57X	180	
		HIRA	0349.0	0351.0	III	G	3	30	300	
		CULG	0454.0	0557.0	III	N	1	57X	140	
		CULG	0541.0	0541.0	III	B	3	57X	180	
		HIRA	0541.0	0541.5	III	B	2	40	250	
		LEAR	0541.0	0541.0	III		3	25	180	
		CULG	0554.0	0554.0	III	B	3	57X	180	
		HIRA	0554.0	0554.5	III	B	3	40	310	
		LEAR	0554.0	0604.0	III		3	25	180	
		HIRA	0622.5	0628.0	III	G	1	50	110	
		CULG	0623.0	0628.0	III	G	2	57X	120	
		SVTO	0627.0	1457.0	III	N	3	25U	180U	
		CULG	0632.0	0706.0	III	N	3	57X	180	
		HIRA	0635.0	0640.0	III	G	2	50	400	
	0655	IZMI	0644.3	0645.7	III	G	1	35	90X	
		IZMI	0653.7	0658.5	III	G	2	45	160	
		IZMI	0655.0E	1200.0	I	S	1	45	150	
		HIRA	0655.5	0656.0	III	B	2	60	120	
		IZMI	0701.9	0706.1	III	GG	2	25	210	
		HIRA	0704.0	0705.0	III	B	2	50	160	
		IZMI	0708.5	0708.7	III	G	2	40	70	
		IZMI	0713.0U	0850.0U	IV	N	1	45	95	
		IZMI	0715.9	0716.4	III	G	1	45	270	
		IZMI	0726.6	0727.7	III	G	1	40	130	
		CULG	0727.0	0746.0	III	N	1	57X	160	
	0725	POTS	0729.3	0729.6	III	B	1	40X	160	
		IZMI	0730.3	0734.5	III	GG	2	25	100	
		CULG	0735.0	0736.0	III	G	3	57X	180	
		LEAR	0735.0	0740.0	V		3	25	180	
		SVTO	0735.0	0736.0	V		2	35U	162U	
		IZMI	0735.1	0736.8	III	G,C	3	25X	270X	
		IZMI	0739.1	0739.5	III	G	2	40	160	
		IZMI	0743.0	0746.3	III	GG	2	40	130	
		POTS	0803.1	0803.3	III	B	1	40X	140	

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14		IZMI	0809.2	0812.3	III	GG	2	25	150	
		POTS	0814 E	1358 U	I	C	1	120	300	
		POTS	0832.3	0833.0	III	G	2	40X	170U	
		IZMI	0838.5	0842.5	III	GG	2	25X	180	
0840	1440	BLEN	0840.0X	0950.0	DCIM	P,C	3	100X	4000X	
		POTS	0840.3	0842.0	III	GG	2	40X	350	
		IZMI	0845.2	0849.2	III	GG	1	25	155	
0832	1321	ONDR	0845.2	0941.4	DCIM	GG	2	2000X	4500X	
		POTS	0847	0917	II	UE	2	110U	150	
		POTS	0847	0917	IV		2	40X	400	
		SVTO	0847.0	0848.0	III		3	29U	150U	
		IZMI	0847.8	0848.1	III	GG,C	3	25X	270X	
		ONDR	0848.4	0945.5	DCIM	GG	2	800X	2000X	
		LEAR	0853.0	0917.0	II		1	25	141	ESS 0707
		SVTO	0853.0	0917.0	II		2	28U	138U	ESS 0506
		IZMI	0853.8	0915.6	II	G	2	40	145	
		IZMI	0855.1	0903.8	III	N	2	40	65	
		IZMI	0859.3	0900.8	UNCLF		2	35	130	
		SVTO	0900.0	0917.0	II		2	45U	136U	ESS 0506
		POTS	0905.2	0908.0	III/V	GG	2	40X	450	
		IZMI	0908.4	0910.9	III	GG	2	25	185	
		SVTO	0911.0	0914.0	V		3	25U	180U	
		IZMI	0911.3	0914.6	III	GG	3	25X	270X	
		IZMI	0916.7	0918.7	I	GG,DC	2	50	70	
		IZMI	0918.8	0919.8	III	G	2	40	95	
		IZMI	0922.6	0923.9	III	GG	3	30	270X	
		IZMI	0926.2	0927.7	III	GG,C	3	25X	270X	
		IZMI	0932.1	0933.6	III	G	2	40	145	
		POTS	0940.9	0941.0	III	B	1	110U	350	
		IZMI	0946.0	0947.2	III	G	2	45	165	
		POTS	0952.9	0953.1	III	B	2	40X	250	
		IZMI	0959.0	1002.4	III	G	2	30	180	
		POTS	0959.3	0959.5	III	B	2	40X	360	
		IZMI	1005.5	1005.7	III	G	2	40	270X	
		POTS	1009.7	1009.9	III	B	2	40X	170U	
		SVTO	1014.0	1226.0	CONT		1	25U	180U	
		SVTO	1014.0	1226.0	CONT		1	75U	83U	
		IZMI	1015.8	1015.9	III	B	2	50	170	
		POTS	1035.9	1037.5	III	G	2	40X	370	
		IZMI	1040.1	1043.6	III	GG	2	25X	180	
		POTS	1053.8	1054.0	UNCLF		2	40X	70	
		IZMI	1059.3	1100.2	III	G	2	25X	95	
		POTS	1116.6	1116.8	UNCLF		2	40X	70	
		IZMI	1118.6	1119.8	III	G	1	45	55	
		IZMI	1122.7	1123.0	III	B	2	25X	100	
		POTS	1130.1	1130.4	III	B	1	40X	150	
		IZMI	1134.8	1136.4	III	G	2	40	140	
		POTS	1135.5	1135.8	UNCLF		1	40X	70	
		IZMI	1141.1	1142.0	III	G	2	40	120	
		POTS	1202.9	1203.1	DCIM		1	280	360	
		POTS	1211.0	1211.2	UNCLF		1	40X	70	
		POTS	1216.0	1216.7	III	G	2	40X	340	
		POTS	1224.5	1225.9	III	G	1	40X	150	
		POTS	1230.9	1231.1	III	B	2	40X	350	
		BLEN	1237.1	1241.2	III	G,S	2	100X	1360	
		BLEN	1251.3	1253.1	DCIM	P	2	1000	3800	
		POTS	1307.3	1309.5	UNCLF		1	40X	70	
		POTS	1319.6	1320.0	III	B	1	40X	150	
		POTS	1332.6	1332.8	UNCLF		1	40X	60	
		POTS	1418.5	1419.4	III	G	1	40X	90U	
		HOLL	1424.0	1424.0	III		1	25	88	
		SGMR	1424.0	1424.0	III		2	30	50	
		SGMR	1424.0	1443.0	III	N	3	30	80	
		POTS	1436.5	1436.8	III	G	2	40X	90U	
		HOLL	1442.0	1442.0	III		2	25	134	
		HOLL	1919.0	1923.0	III		1	25	180	
1920	2400	CULG	1920.0	1923.0	III	G	1	57X	90	
		CULG	2034.0	2035.0	III	G	1	57X	160	
		HOLL	2034.0	2034.0	III		1	25	85	

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OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
14		CULG	2200.0	2201.0	III	G	1	57X	150	
		LEAR	2200.0	2200.0	III		1	25	104	
		LEAR	2219.0	0313.0	III	N	1	25	134	
		CULG	2253.0	2255.0	III	G	1	57X	160	
		HOLL	2256.0	2257.0	III		1	25	43	
		HOLL	2304.0	2308.0	III		1	25	180	
		LEAR	2304.0	2311.0	III		1	25	180	
		CULG	2305.0	2311.0	III	GG	1	57X	350	
2140	2400	HIRA	2306.0	2311.5	III	G	1	40	300	
		LEAR	2332.0	0000.0	CONT		1	42	125	
15 0000	0820	CULG	0103.0	0103.0	III	B	1	57X	90	
		CULG	0123.0	0124.0	III	G	1	57X	90	
0000	0725	HIRA	0123.5	0124.5	III	G	1	30	130	
		CULG	0140.0	0141.0	III	G	1	57X	180	
		CULG	0147.0	0147.0	III	B	1	57X	80	
		LEAR	0553.0	0611.0	III	N	1	25	84	
		CULG	0554.0	0559.0	III	G	1	57X	90	
		LEAR	0702.0	0738.0	III	N	1	25	180	
0702	1200	IZMI	0702.6	0709.2	III	GG	2	40	250	
		CULG	0703.0	0725.0	III	N	1	57X	180	
		SVTO	0707.0	0738.0	III	N	1	25	180	
		IZMI	0712.6	0714.7	III	G	1	50	150	
		IZMI	0721.8	0722.0	III	B	1	55	160	
		IZMI	0723.9	0724.8	III	GG	1	40	160	
		IZMI	0737.8	0737.9	III	B	1	60	95	
0730	1440	POTS	0816 E	1356 U	I	C	1	120	350	
0833	1321	ONDR								
		IZMI	0933.3	0933.3	III	B	2	50	90	
		POTS	1202.1	1202.6	UNCLF		1	40X	70	
		POTS	1209.9	1211.8	III	G	1	40X	170U	
		POTS	1232.6	1232.8	III	B	1	40X	140	
		POTS	1237.2	1242.2	III	GG	2	40X	400	
		SVTO	1244.0	1251.0	III		1	25	180	
		POTS	1245.0	1245.5	III	G	1	40X	800U	
0840	1440	BLEN	1245.7	1254.6	III	GG,C,S	2	100X	4000X	
2140	2400	HIRA								
1920	2345	CULG	2221.0	2221.0	III	B	1	310	400	
		CULG	2225.0	2225.0	III	B	1	310	430	
		CULG	2242.0	2242.0	III	G	1	57X	90	
16 0000	0725	HIRA								
0834	1321	ONDR								
0840	1440	BLEN								
0650	1200	IZMI	0924.7	0931.0	I	S	1	180	270	
		IZMI	0929.3	0929.4	III	B	2	150	215	
1920	2400	CULG								
2141	2400	HIRA								
17 0000	0616	HIRA								
0000	0820	CULG	0302.0	0308.0	III	G	1	57X	150	
		LEAR	0305.0	0307.0	III		1	25	134	
		CULG	0318.0	0318.0	III	B	1	57X	90	
0730	1440	POTS	0820 E	1358 U	I	C	1	120	350	
0835	1321	ONDR								
0840	1440	BLEN								
0658	1200	IZMI	1022.4	1023.4	UNCLF		1	240	270X	
		HOLL	2033.0	2315.0	CONT		1	52	82	
		LEAR	2154.0	0210.0	CONT		1	113	180	
		HOLL	2215.0	2215.0	III		1	25	180	
1920	2400	CULG	2333.0	2337.0	III	G	1	57X	160	
18 0230	0726	HIRA								
		LEAR	0508.0	0509.0	III		1	38	142	
0000	0820	CULG	0509.0	0509.0	III	B	1	57X	160	
		CULG	0525.0	0528.0	III	G	1	57X	180	
0730	1440	POTS	0734.1	0734.3	III	B	1	40X	90U	
0700	1200	IZMI	0739.5	0741.4	III	GG	2	38	270	
		LEAR	0740.0	0741.0	III		2	25	180	

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Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
18			SVTO	0740.0	0741.0	III		2	25	180	
			POTS	0824 E	1357 U	I	C	1	120	300	
	0836	1321	ONDR								
	0840	1440	BLEN								
			POTS	0852.2	0852.4	UNCLF		1	40X	70	
			IZMI	0858.7	0859.2	III	B	1	45	95	
			POTS	1055.1	1055.4	III	B	1	100U	350	
			IZMI	1101.7	1101.9	III	G	2	110	160	
	1920	2400	CULG	2001.0	2002.0	III	G	1	75	280	
	2142	2400	HIRA								
19			LEAR	0230.0	0232.0	III		1	76	180	
			PALE	0230.0	0231.0	III		1	67	180	
	0000	0820	CULG	0230.0	0232.0	III	G	2	60	480	
	0000	0430	HIRA	0230.5	0232.5	III	G	2	90	600	
			CULG	0239.0	0241.0	II	FN	1	57X	70	
			CULG	0239.0	0241.0	II	SH	1	110U	130	ESS 500
	0730	1440	POTS	0830 E	1401 U	I	C	1	120	350	
			POTS	1033.9	1040.2	III/V	GG	2	40X	380	
	0705	1200	IZMI	1033.9	1041.0	III	GG	2	25X	270X	
			LEAR	1035.0	1039.0	III		1	25	180	
			SVTO	1035.0	1040.0	III		2	25U	180U	
			IZMI	1036.4	1039.5	V	G	2	35	95	
	0845	1440	BLEN	1037.0	1040.0	III	GG,C	1	100X	4000X	
			SVTO	1108.0	1108.0	III		1	47	84	
			IZMI	1108.5	1108.7	III	B	2	35	95	
			POTS	1108.5	1108.7	UNCLF		1	40X	70	
			SVTO	1136.0	1320.0	III	N	1	31	126	
			IZMI	1136.1	1137.7	III	GG	2	30	150	
			POTS	1136.3	1137.8	III	G	1	40X	170U	
			POTS	1207.6	1215.3	III	G	2	40X	350	
			POTS	1254.7	1356.5	III/V	G	2	40X	350	
			BLEN	1256.0	1301.4	DCIM	S,C	3	100X	4000X	
			POTS	1256.0	1301.8	III/V	G	2	40X	800X	
			ONDR	1258.0	1259.1	DCIM	GG,SP	2	800X	1780	
			SVTO	1258.0	1300.0	III		1	25U	180U	
	0837	1322	ONDR	1258.2	1259.0	DCIM	G	1	2000X	4500X	
			SGMR	1354.0	1356.0	V		3	30	80	
			SVTO	1354.0	1356.0	V		2	30	180	
			BLEN	1354.6	1355.7	III	S,C	2	140	4000X	
			HOLL	1652.0	1656.0	III		1	25	134	
			SGMR	1652.0	1652.0	III		1	30	70	
	2143	2400	HIRA								
	1920	2400	CULG	2243.0	2244.0	III	G	1	57X	180	
20	0000	0820	CULG	0239.0	0240.0	III	G	1	57X	90	
	0000	0727	HIRA	0536.5	0537.5	III	G	1	100	400	
			CULG	0537.0	0537.0	III	G	1	100	430	
	0730	1440	POTS	0823 E	1400 U	I	C	1	120	350	
	0837	1322	ONDR								
	0845	1440	BLEN								
			LEAR	0944.0	0945.0	III		1	25	109	
			POTS	0944.0	0946.3	III	G	1	40X	600	
			SVTO	0944.0	0945.0	III		1	52	121	
	0650	1200	IZMI	0944.0	0945.1	III	GG	2	40	270	
			IZMI	0946.1	0946.2	III	G	1	50	140	
			IZMI	1005.3	1005.6	III	G	1	100	160	
			SVTO	1318.0	1318.0	III		1	115	170	
			POTS	1318.3	1318.5	III	B	2	110U	300	
	1920	2400	CULG	2002.0	2033.0	III	N	1	57X	150	
			CULG	2033.0	2400.0D	I	S,C	1	57X	120	
	2143	2400	HIRA								
			LEAR	2154.0	1047.0	CONT		1	66	126	
21	0000	0820	CULG	0000.0E	0028.0	I	S,C	1	57X	80	
			CULG	0247.0	0247.0	III	B	1	57X	160	
			CULG	0429.0	0429.0	III	B	1	120	180U	
	0000	0727	HIRA	0429.0	0430.0	III	G	1	110	220	
			CULG	0542.0	0544.0	III	G	1	57X	180	

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21			SVTO	0651.0	1322.0	CONT		1	44U	139U	
	0730	1440	POTS	0821 E	1400 U	I	C	1	120	350	
	0838	1322	ONDR								
	0658	1200	IZMI	1004.8	1005.1	III	G	1	45	90	
			IZMI	1054.1	1054.1	III	B	1	55	70	
			POTS	1220.4	1220.5	III	B	1	110U	160	
	0845	1440	BLEN	1340.3	1345.0	DCIM	C	1	1900	4000X	
	2144	2400	HIRA								
	1920	2400	CULG	2225.0	2232.0	III	G	1	60	140	
22	0000	0728	HIRA	0539.0	0542.0	III	G	1	60	190	
	0000	0820	CULG	0539.0	0542.0	III	G	1	57X	180	
			LEAR	0540.0	0542.0	III		1	25	180	
			CULG	0555.0	0557.0	III	G	1	57X	180	
			LEAR	0555.0	0556.0	III		1	49	137	
	0730	1440	POTS	0821 E	1400 U	I	C	1	120	300	
	0838	1323	ONDR								
	0845	1440	BLEN								
	0700	1200	IZMI	0856.6	0856.7	III	B	1	175	270	
			IZMI	0915.0U	1150.0U	I	N	1	180	270X	
			IZMI	1008.0	1008.8	III	G,U	1	50	85	
			POTS	1008.1	1008.3	UNCLF		1	40X	60	
			LEAR	2232.0	2233.0	III		1	25	51	
	1920	2400	CULG	2232.0	2233.0	III	G	1	57X	140	
			CULG	2241.0	2242.0	III	G	1	57X	180U	
	2144	2400	HIRA	2341.5	2342.0	III	B	1	90	170	
23	0000	0424	HIRA	0132.0	0132.5	III	B	1	100	210	
	0000	0820	CULG	0132.0	0133.0	III	G	1	100	180	
			CULG	0144.0	0144.0	III	B	1	57X	70	
			LEAR	0347.0	0348.0	III		1	25	117	
			HIRA	0347.5	0348.0	III	B	1	40	200	
			CULG	0348.0	0348.0	III	B	1	57X	180	
			CULG	0356.0	0358.0	III	G	1	57X	180	
			CULG	0511.0	0511.0	III	B	1	57X	180	
			LEAR	0511.0	0511.0	III		1	25	81	
			CULG	0612.0	0739.0	I	S	1	110	170	
			LEAR	0623.0	0624.0	III		1	25	180	
	0500	0728	HIRA	0623.5	0624.0	III	B	1	60	170	
			CULG	0624.0	0624.0	III	G	1	57X	180	
			CULG	0651.0	0652.0	III	G	1	57X	120	
			LEAR	0651.0	0654.0	III		1	25	64	
	0701	1200	IZMI	0701.0E	0740.0U	I	S	1	120	215	
			SVTO	0752.0	0754.0	III		1	73U	83U	
			CULG	0753.0	0755.0	III	G	1	57X	90	
			LEAR	0753.0	0755.0	III		1	25	104	
			IZMI	0753.2	0754.1	III	G	2	50	90	
	0730	1440	POTS	0822 E	1401 U	I	C,N	1	120	300	
	0839	1324	ONDR								
	0845	1440	BLEN								
			IZMI	1034.1	1134.5	III	B	1	45	65	
			IZMI	1111.4	1111.8	III	G	1	50	185	
			POTS	1111.4	1112.0	III	G	1	40X	300	
			SVTO	1124.0	1124.0	III		1	110	147	
			POTS	1124.4	1124.6	III	G	1	110U	160	
			POTS	1130.0	1130.7	III	G	1	40X	330	
			IZMI	1130.1	1130.8	III	G	1	40	95	
			IZMI	1137.4	1137.8	UNCLF		2	50	75	
			POTS	1137.5	1138.5	UNCLF		1	40X	60	
			HOLL	1549.0	1558.0	III		1	25	180	
			HOLL	1719.0	1720.0	III		1	25	106	
	1920	2400	CULG	1940.0	2019.0	III	N	1	57X	130	
			CULG	1958.0	2132.0	I	S	1	100	180	
			CULG	2047.0	2048.0	III	G	1	57X	100	
			CULG	2120.0	2120.0	III	B	1	57X	180	
			HOLL	2137.0	2138.0	III		1	25	134	
			CULG	2144.0	2144.0	III	B	1	110	300	
			CULG	2226.0	2226.0	III	B	1	57X	180	
			CULG	2232.0	2345.0	I	S	1	150	260	

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Day 23										
		CULG	2240.0	2252.0	III	G	1	57X	180	
		HOLL	2240.0	2242.0	III		1	25	113	
		LEAR	2240.0	2242.0	III		1	25	88	
2145	2400	HIRA	2241.0	2242.5	III	G	1	40	140	
Day 24										
0000	0820	CULG	0013.0	0034.0	III	GG	1	57X	350	
		LEAR	0018.0	0033.0	III		1	25	180	
0000	0728	HIRA	0019.5	0033.5	III	G	1	40	1800	
		CULG	0033.0	0034.0	III	G	1	550	1200	
		CULG	0107.0	0141.0	I	S	1	100	160	
		LEAR	0303.0	0313.0	III		1	25	99	
		CULG	0313.0	0313.0	III	B	1	57X	180	
		HIRA	0313.0	0313.5	III	B	1	30	190	
		CULG	0514.0	0519.0	III	G	1	57X	150	
		HIRA	0516.0	0517.5	III	G	1	50	100	
		LEAR	0516.0	0522.0	III		1	25	84	
0735	1440	POTS	0825 E	1402 U	I	C,N	1	200U	300	
0839	1324	ONDR								
0650	1200	IZMI	1053.8	1053.9	III	B	2	220	270X	
		IZMI	1102.8	1102.9	III	B	1	200	270X	
		POTS	1353.5	1353.7	DCIM		1	300	400	
0845	1440	BLEN	1353.6	1411.0	DCIM	P	3	700	4000X	
		SVTO	1354.0	1356.0	III		1	37U	160U	
		POTS	1354.9	1355.8	III	G	1	40X	360	
		BLEN	1355.0	1400.0	II	H	2	190	1150	
		POTS	1355.7	1356.2	DCIM		1	280	400	
		POTS	1359.0	1400.5	DCIM		1	200U	400	
		SVTO	1400.0	1401.0	III		1	64	157	
		POTS	1401.0	1401.2	UNCLF		1	40X	70	
		HOLL	1938.0	1939.0	III		1	25	91	
1920	2400	CULG	1938.0	1939.0	III	G	1	57X	90	
		CULG	2206.0	2207.0	III	G	1	57X	180	
		HOLL	2206.0	2207.0	III		1	25	144	
		LEAR	2206.0	2207.0	III		1	25	180	
2145	2400	HIRA	2206.0	2207.0	III	G	1	40	300	
		CULG	2332.0	2333.0	III	G	1	57X	160	
		CULG	2341.0	2341.0	III	B	1	57X	140	
Day 25										
0000	0729	HIRA								
		LEAR	0610.0	0610.0	III		1	25	83	
0000	0820	CULG	0610.0	0610.0	III	B	1	57X	90	
0654	1205	IZMI	0654.0E	1135.0U	I	S	2	110	270X	
		CULG	0703.0	0752.0	III	S	1	100	180	
		SVTO	0703.0	1055.0	CONT		1	111U	151U	
		LEAR	0711.0	1049.0	CONT		1	109	180	
		IZMI	0738.0	0738.1	UNCLF		2	130	210	
0735	1440	POTS	0818 E	1401 U	I	C,N	1	120	350	
0839	1325	ONDR								
0850	1440	BLEN								
		IZMI	0850.4	0851.6	III	G	1	40	90	
		LEAR	0907.0	0914.0	III		1	25	158	
		IZMI	0907.2	0909.0	III	G	1	50	260	
		POTS	0911.9	0913.8	III	G	1	40X	300	
		SVTO	0913.0	0913.0	III		1	50	85	
		IZMI	0913.2	0913.8	III	G	2	40	180	
		IZMI	1109.4	1117.2	III	GG	1	50	95	
		POTS	1116.0	1117.3	II	UE	1	40X	70	
		IZMI	1121.8	1122.7	III	G	2	40	215	
		POTS	1121.8	1122.0	III	B	2	40X	320	
		POTS	1122.0	1122.7	V		1	40X	70	
		SVTO	1122.0	1122.0	III		1	25U	135U	
		SVTO	1122.0	1131.0	III		1	25U	135U	
		POTS	1304.0	1304.7	III	G	2	60	300	
		SVTO	1304.0	1304.0	III		3	75U	175U	
		POTS	1342.3	1342.8	III	G	1	110U	300	
		HOLL	1925.0	2021.0	CONT		1	76	146	
1920	2400	CULG	1930.0	2025.0	I	S	1	80	180	
		CULG	1952.0	2032.0	III	N	1	57X	110	
		CULG	2022.0	2023.0	III	G	2	57X	180	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2001

Day	OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
25			HOLL	2022.0	2023.0	III		1	25	180	
			CULG	2047.0	2400.0D	III	S,C	1	57X	180U	
			HOLL	2103.0	0000.0	CONT		1	75	147	
	2145	2400	HIRA								
			LEAR	2148.0	0519.0	CONT		1	45	180	
26	0000	0810	CULG	0000.0E	0330.0	III	S,C	1	57X	180U	
			LEAR	0042.0	0042.0	III		2	25	64	
			CULG	0414.0	0416.0	III	G	1	57X	180	
			CULG	0436.0	0436.0	III	B	1	57X	180	
			CULG	0455.0	0511.0	III	GG	2	57X	250	
	0000	0730	HIRA	0459.0	0517.0	II		2	40	200	
			CULG	0501.0	0810.0D	IV		2	57X	1000	
			LEAR	0502.0	0519.0	II		3	25	180	ESS 0538
			CULG	0512.0	0516.0	II	SH	3	57X	80	ESS 800
			HIRA	0520.0	0534.0	IV		2	40	70	
			LEAR	0520.0	1049.0	IV		3	25	180	
			HIRA	0557.0	0557.5	III	B	1	40	70	
			LEAR	0557.0	0557.0	III		3	25	72	
			CULG	0634.0	0732.0	I	S	1	110	170	
			SVTO	0634.0	1342.0	IV		2	43U	180U	
	0652	1200	IZMI	0652.0E	1200.0U	I	N	2	60	270X	
	0735	1445	POTS	0759.5	0806.5	UNCLF		1	40X	70	
			POTS	0818 E	1401 U	I	C	1	120	300	
			IZMI	0839.1	0840.7	III	GG	1	55	270X	
			POTS	0839.3	0839.7	III	B	1	40X	350	
			POTS	0928.5	0935 U	II	UE	1	40X	150	
			POTS	0947.4	0948 2	DCIM		2	200U	450	
			IZMI	0947.8	0948.1	III	G	1	180	270X	
			IZMI	1024.0	1033.3	III	GG	2	45	270X	
			POTS	1024.0	1033.2	III	G,N	2	40X	380	
	0850	1440	BLEN	1024.8	1025.4	III	G	1	180	600	
			SVTO	1025.0	1030.0	III		2	54	180	
	0837	1326	ONDR	1224.4	1228.1	DCIM	G	2	2000X	4500X	
			BLEN	1224.7	1228.6	III	G	3	270	4000X	
			POTS	1254.7	1254.9	III	B	1	40X	300	
			POTS	1400.5	1403.7	III	G	1	40X	300	
			SVTO	1401.0	1403.0	III		1	36U	180U	
			BLEN	1401.8	1411.4	III	GG,RS,U	3	150	620	
			SVTO	1458.0	1458.0	III		1	135	173	
			HOLL	1606.0	1606.0	III		1	73	180	
			SGMR	1613.0	1614.0	III		3	30	66	
			HOLL	2029.0	2032.0	III		1	25	180	
	1920	2400	CULG	2030.0	2032.0	III	G	1	57X	180U	
			CULG	2041.0	2138.0	I	S	1	110	170	
			CULG	2053.0	2055.0	III	G	1	57X	100	
			HOLL	2133.0	2153.0	III	N	1	25	180	
			CULG	2136.0	2140.0	III	G	1	57X	180	
			PALE	2149.0	2151.0	III		1	64	180	
	2146	2400	HIRA	2149.5	2153.5	III	G	2	40	280	
			CULG	2150.0	2153.0	III	G	3	57X	200U	
27	0000	0810	CULG	0015.0	0019.0	III	G	1	57X	160	
			CULG	0137.0	0138.0	III	G	1	57X	150	
			LEAR	0137.0	0137.0	III		1	25	120	
	0000	0731	HIRA	0137.5	0138.0	III	B	1	70	120	
			CULG	0216.0	0625.0	I	S	1	110	170	
			CULG	0520.0	0617.0	III	N	1	57X	180	
			LEAR	0543.0	0545.0	III		1	43	63	
			HIRA	0543.5	0544.0	III	B	1	50	130	
	0700	1200	IZMI	0700.0E	1200.0D	I	S	1	80	260	
			CULG	0705.0	0750.0	I	S	1	110	180	
			IZMI	0745.9	0746.0	III	B	1	50	95	
	0735	1445	POTS	0819 E	1402 U	I	C	1	120	350	
			SVTO	1122.0	1122.0	III		1	75U	133U	
			IZMI	1122.1	1122.5	III	G	2	40	160	
			POTS	1122.2	1122.6	III	G	2	40X	150	
	0840	1327	ONDR	1128.2	1132.4	DCIM	G	2	2000X	4500X	
			ONDR	1129.5	1131.3	DCIM	GG	1	800X	1006	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2001

OBSERVATION Start (UT)	End (UT)	Sta	EVENT Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	Upper (MHz)	Remarks
27		POTS	1134.7	1134.8	DCIM		1	320	380	
		IZMI	1147.2	1148.2	III	G	1	45	70	
		POTS	1147.2	1147.7	UNCLF		1	40X	60	
		SVTO	1203.0	1222.0	III	N	1	32U	151U	
		POTS	1203.6	1205.2	III	G	1	40X	160	
		POTS	1215.2	1215.4	III	B	1	40X	130	
		POTS	1222.2	1222.4	III	B	2	40X	220	
		POTS	1313.9	1316.4	III/V	G	2	40X	300	
		SVTO	1314.0	1316.0	III		2	34U	157U	
		SVTO	1339.0	1341.0	III		2	38U	155U	
		POTS	1339.3	1340.6	III	G	2	40X	350	
0850	1440	BLEN	1339.4	1340.6	III	GG,S	1	180	370	
		POTS	1345.2	1345.4	III	B	1	40X	170U	
		POTS	1347.4	1347.7	III	B	1	40X	170U	
		BLEN	1403.0	1403.8	III	GG,S	1	300	630	
		HOLL	1822.0	1906.0	III	N	1	25	180	
1920	2400	CULG	2015.0	2015.0	III	B	1	57X	180	
		CULG	2048.0	2049.0	III	G	1	75	180	
		CULG	2159.0	2205.0	III	G	1	57X	140	
		CULG	2207.0	2224.0	III	N	1	100	180	
		CULG	2255.0	2255.0	III	B	1	57X	120	
		LEAR	2255.0	2255.0	III		1	25	83	
2146	2400	HIRA	2255.5	2256.0	III	B	1	30	110	
		CULG	2357.0	2358.0	III	G	1	57X	140	
		HIRA	2357.0	2357.5	III	B	1	25X	80	
		LEAR	2357.0	2357.0	III		1	25	84	
28 0000	0149	HIRA								
0449	0732	HIRA								
0000	0810	CULG	0527.0	0538.0	III	GG	1	57X	150	
		CULG	0608.0	0608.0	III	B	1	57X	100	
0735	1445	POTS	0830	1402 U	I	C,N	1	200	300	
0840	1328	ONDR								
0650	1200	IZMI	0942.7	0947.0	III	GG	2	25X	270X	
		LEAR	0943.0	0953.0	III		1	25	180	
		SVTO	0943.0	1022.0	III	N	1	25	180	
		POTS	0943.2	0947.0	III	GG	2	40X	300	
		IZMI	0952.0	0952.9	III	GG	2	30	215	
		POTS	0952.1	0952.9	III/V	GG	2	40X	220	
		IZMI	1022.3	1023.0	III	GG,U	2	105	230	
		POTS	1022.3	1023.6	III	G	1	110U	300	
		POTS	1052.4	1052.6	III	B	1	40X	160	
		IZMI	1053.8	1054.7	UNCLF		1	230	270X	
		IZMI	1118.5	1120.9	III	GG	2	50	160	
		POTS	1119.4	1120.3	III	G	1	40X	160	
		HOLL	1938.0	1940.0	III		1	25	180	
1920	2400	CULG	1939.0	1941.0	III	G	1	57X	130	
		CULG	1953.0	1954.0	III	G	1	57X	80	
		CULG	1959.0	2007.0	II	SH	3	57X	150	ESS 800
		HOLL	1959.0	2040.0	II		1	25	180	ESS 0542
		PALE	2003.0	2006.0	II		2	25	180	ESS 0429
		CULG	2005.0	2014.0	III	GG	3	57X	130	
		HOLL	2007.0	2040.0	III	N	1	25	180	
		PALE	2007.0	2040.0	III	N	2	25	180	
		SGMR	2008.0	2021.0	III	N	2	30	70	
		CULG	2015.0	2019.0	III	GG	3	57X	110	
		CULG	2018.0	2037.0	II	SH	3	57X	130	ESS 400
2146	2400	HIRA								
29		LEAR	0339.0	0340.0	III		1	122	180	
0000	0732	HIRA	0339.0	0340.0	III	G	1	110	200	
0000	0810	CULG	0339.0	0340.0	III	G	1	120	180U	
		LEAR	0403.0	0404.0	III		1	25	58	
0735	1445	POTS	0843	0939	I	C	1	140	320	
0703	1200	IZMI	0913.0	0913.7	III	G	1	50	270	
		IZMI	0936.4	0939.3	III	N	1	180	270	
		LEAR	0939.0	0943.0	III		3	25	180	
		SVTO	0939.0	0942.0	III		2	25	180	
0839	1329	ONDR	0939.2	0944.4	DCIM	G	1	2000X	4500X	

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 2001

OBSERVATION Start (UT)	OBSERVATION End (UT)	Sta	EVENT Start (UT)	EVENT End (UT)	EVENT Spectral Class	EVENT Event Remarks	Int (1-3)	FREQUENCY Lower (MHz)	FREQUENCY Upper (MHz)	Remarks
29		ONDR	0939.3	0945.1	DCIM	GG	1	800X	2000X	
		POTS	0939.3	0942.5	III/V	G,U	3	40X	700	
		POTS	0939.3	1020	IV		2	40X	450	
		IZMI	0939.4	0940.0	III	G,C	2	25X	270X	
		IZMI	0939.7	0940.5	V	G	2	45	165	
		IZMI	0940.0	0943.7	III	NG	2	40	270X	
		POTS	0943.0	1015	II		3	40X	280	
		SVTO	0943.0	0956.0	II		2	25	180	ESS 1227
		IZMI	0943.9	0949.6	III	GG	2	40	270X	
		IZMI	0943.9	0953.8	II	G,HARM	2	40	265	
		LEAR	0944.0	0956.0	II		3	25	180	ESS 1050
		IZMI	0950.1	0957.5	III	N	2	30	155	
		IZMI	0950.4	1003.5	II	G	2	30	150	
		LEAR	0956.0	1050.0	IV		2	25	180	
		SVTO	0956.0	1056.0	IV		2	25	180	
		IZMI	1000.9	1020.4	IV		2	30	140	
		POTS	1020	1402	I	C	1	200U	280	
		POTS	1138.3	1138.4	III	B	1	110U	160	
		IZMI	1138.4	1138.4	III	B	2	95	215	
		IZMI	1141.3	1141.6	III	G	1	180	270	
		SVTO	1204.0	1204.0	III		1	42U	66U	
	1920 2400	CULG	1945.0	2043.0	III	N	1	57X	90	
		CULG	2013.0	2228.0	I	S	1	70	170	
		CULG	2116.0	2116.0	III	G	1	57X	150	
		CULG	2140.0	2148.0	III	G	1	57X	180	
		LEAR	2158.0	0538.0	CONT		1	78	180	
		CULG	2304.0	2348.0	III	S	1	57X	100	
		LEAR	2348.0	2348.0	III		1	25	88	
	2147 2400	HIRA	2348.0	2348.5	III	B	1	30	180	
		CULG	2356.0	2400.0D	I	S	1	130	170	
30	0000 0732	HIRA								
	0000 0810	CULG	0000.0E	0108.0	I	S	1	120	180	
	0650 1200	IZMI								
		CULG	0702.0	0702.0	III	B	1	57X	90	
	0735 1445	POTS	0828	1402	I	C	1	200U	320	
	0839 1330	ONDR	1231.4	1239.1	DCIM	G	1	2000X	4500X	
		ONDR	1237.4	1237.5	DCIM	GG,SP	2	805	1278	
		POTS	1322.7	1322.8	DCIM		1	300	380	
		POTS	1324.6	1324.7	DCIM		1	320	380	
		POTS	1330.3	1330.7	DCIM		1	280	370	
		POTS	1431.8	1433 U	UNCLF		1	40X	70	
	1920 2400	CULG	2207.0	2227.0	III	N	1	57X	180	
		CULG	2331.0	2337.0	III	G	1	57X	180U	
	2148 2400	HIRA	2331.5	2334.5	III	G	1	120	270	
		CULG	2347.0	2353.0	III	G	1	65	180	
31	0000 0810	CULG	0026.0	0136.0	III	N	1	57X	180	
		LEAR	0130.0	0130.0	III		1	37	180	
	0000 0733	HIRA	0130.0	0130.5	III	B	2	60	200	
	0735 1445	POTS	0825 U	1145	I	C,N	1	120	320	
	0839 1331	ONDR								
	0700 1200	IZMI	0918.1	0918.2	III	G	1	220	270X	
		IZMI	0946.0	0946.5	III	G	1	220	270X	
		IZMI	0955.7	0956.1	III	G	1	130	270X	
		IZMI	0957.3	0957.7	III	G	1	40	155	
		IZMI	1012.3	1013.0	III	G	1	110	270X	
		SVTO	1145.0	1147.0	III		1	25	124	
		IZMI	1145.5	1146.2	CONT		1	40	120	
		IZMI	1145.6	1151.3	III	N	1	35	270	
		POTS	1145.6	1151.3	III/V	GG	2	40X	300	
		POTS	1151	1403	I	C	1	200U	300	
	1920 2400	CULG								
	2148 2400	HIRA								
		LEAR	2335.0	2336.0	III		1	25	111	

SOLAR RADIO NOISE STORM AT 164 MHZ

FROM NANÇAY RADIOHELIOGRAPH

DECEMBER 2001

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
10/12/01	-1.18	+0.48	I	11H30	15H14 D
11/12/01*	-1.05	+0.60	II	8H14 E	15H14 D
11/12/01*	-0.16	+0.19	I	8H14 E	15H14 D
11/12/01*	+0.81	-0.20	I	8H14 E	15H14 D
12/12/01*	+0.11	+0.09	II	8H14 E	15H14 D
12/12/01*	-0.64	+0.79	I	8H14 E	15H14 D
13/12/01	+0.40	+0.08	I	8H15 E	15H15 D
14/12/01*	-0.09	+0.37	I	8H15 E	15H15 D
14/12/01*	+0.45	+0.56	I	10H40	15H15 D
15/12/01*	+0.84	-0.17	I	8H16 E	12H25
18/12/01	+1.46	-0.33	III	8H55 E	15H18 D
21/12/01	-0.98	+0.00	II	9H27 E	11H10
21/12/01	-0.17	+0.65	I	9H27 E	13H00
23/12/01	+0.20	+0.62	II	11H59 E	15H20 D
24/12/01	+0.39	+0.29	I	8H21 E	13H40
25/12/01	+1.09	+0.43	I	8H21 E	15H21 D
26/12/01	-0.39	+0.08	II	8H21 E	15H21 D
26/12/01	+1.15	+0.71	III	8H21 E	15H21 D
26/12/01	+1.36	+0.45	III	8H21 E	15H21 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 NANÇAY OBSERVATIONS

NOISE STORM AT 327 MHZ

FROM NANÇAY RADIOHELIOGRAPH

DECEMBER 2001

	HELIOGRAPHICS POSITIONS MEAN VALUES[1]		IMP[2]	OBSERVING TIME[3]	
DAY	E-W	S-N		START(UT)	END(UT)
01/12/01	-0.47	+0.11	I	8H10 E	15H10 D
01/12/01	+1.26	-0.26	I	8H10 E	11H35
03/12/01	-0.05	+0.03	I	8H25 E	15H11 D
10/12/01	-1.10	+0.42	I	8H14 E	15H14 D
10/12/01	-0.91	+0.47	I	8H14 E	15H14 D
11/12/01*	-0.82	+0.37	I	8H14 E	15H14 D
11/12/01*	-0.16	-0.03	I	13H35	15H14 D
11/12/01*	+0.59	-0.53	I	8H14 E	15H14 D
12/12/01*	-0.62	+0.51	I	8H14 E	15H14 D
12/12/01*	+0.05	-0.02	I	8H14 E	15H14 D
14/12/01*	-1.30	-0.08	I	8H54 E	12H50 D
16/12/01	-1.19	+0.03	I	8H16 E	15H16 D
16/12/01	+0.68	-0.48	I	8H16 E	15H16 D
17/12/01	+0.98	-0.50	I	8H17 E	15H17 D
19/12/01	+1.26	-0.05	I	8H18 E	15H18 D
21/12/01	-0.90	-0.25	II	9H27 E	12H00
21/12/01	-0.25	+0.48	II	9H27 E	15H19 D
23/12/01	+0.33	+0.47	I	11H59 E	15H20 D
24/12/01	+0.65	+0.48	I	8H20 E	14H15
24/12/01	+0.43	-0.14	I	13H47	15H20 D
25/12/01	+0.64	-0.14	II	8H21 E	15H21 D
25/12/01	+1.02	+0.33	II	11H16	15H21 D
26/12/01	-0.33	+0.17	I	8H21 E	15H21 D
26/12/01	+0.93	-0.09	I	8H21 E	15H21 D
26/12/01	+1.09	+0.48	I	8H21 E	15H21 D
28/12/01	+1.26	-0.23	I	8H22 E	15H22 D

2, 22, 27 DECEMBER NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

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

** Following a large burst.

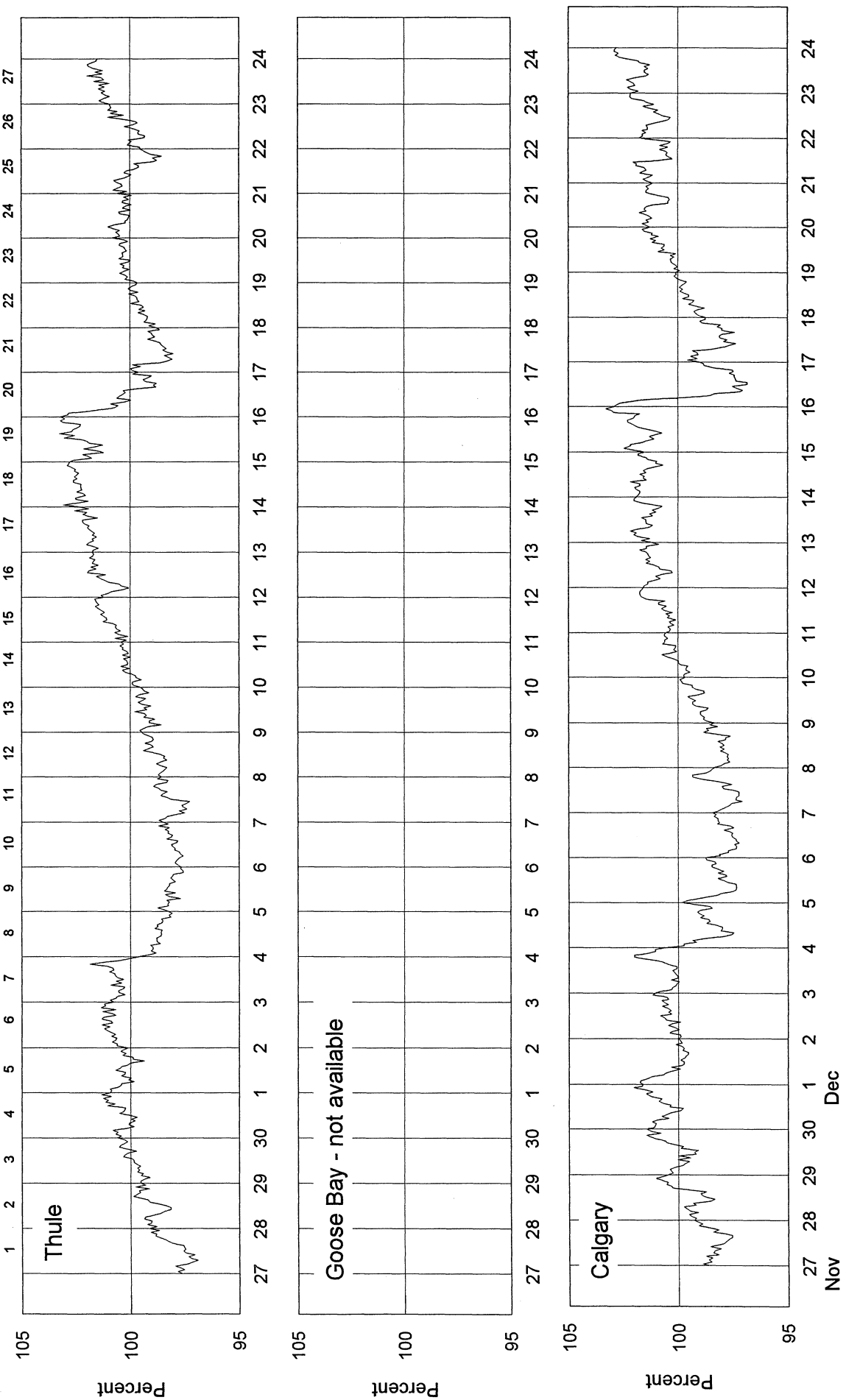
*** Importance not well determined due to the proximity off the very strong other source.

COSMIC RAY INDICES
(Neutron Monitor)
December 2001

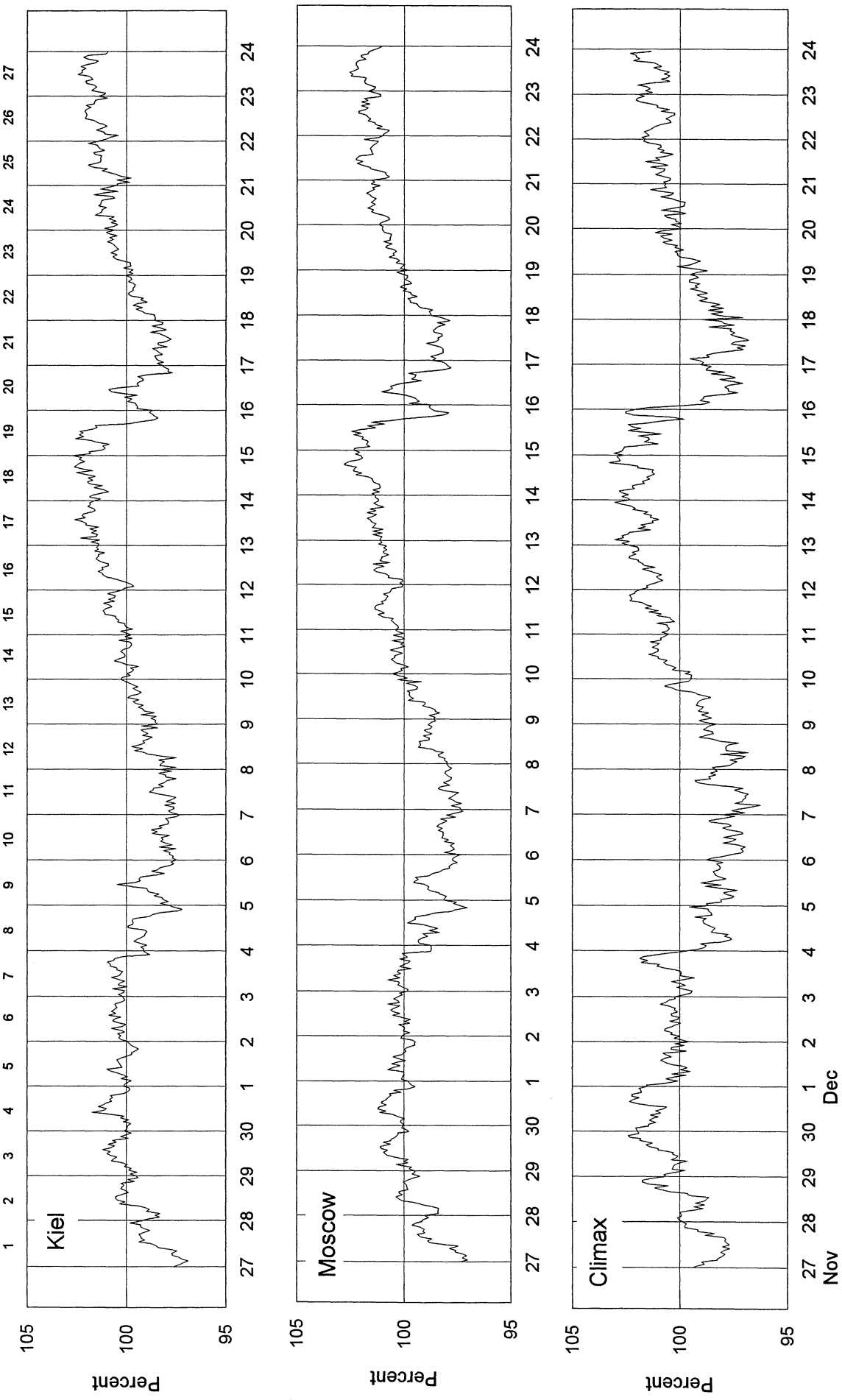
Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	4049.5	not	3533.7	5684.5	8490.0	3797.7	1889.1	3503.4
2	4074.6	available	3538.5	5702.0	8500.7	3797.1	1904.7	3488.8
3	4065.3		3545.7	5696.2	8479.9	3800.3	1898.8	3479.5
4	3986.5		3479.7	5625.8	8373.2	3733.3	1903.5	3414.0
5	3963.0		3460.2	5602.8	8352.8	3716.5	1900.6	3419.6
6	3957.9		3446.3	5567.7	8312.7	3698.7	1900.6	3429.0
7	3965.1		3453.5	5566.5	8301.8	3697.6	1911.8	3451.0
8	3989.6		3455.7	5610.4	8374.0	3711.0	1912.4	3463.0
9	4010.6		3493.5	5638.7	8427.2	3757.3	1923.8	3476.8
10	4040.7		3529.0	5679.7	8507.5	3808.6	1935.6	3506.0
11	4077.1		3551.8	5710.3	8551.1	3832.5	1943.2	3501.0
12	4089.5		3565.7	5731.8	8557.3	3846.2	1944.8	3494.5
13	4112.7		3576.7	5782.5	8598.1	3859.8	1948.8	3472.4
14	4136.4		3579.7	5784.5	8642.7	3867.0	1939.9	3476.3
15	4130.7		3591.5	5733.2	8558.8	3855.1	1946.6	3483.1
16	4053.5		3479.5	5643.5	8438.1	3729.8	1949.9	3418.0
17	3991.0		3468.5	5583.6	8349.1	3707.4	1950.5	3432.0
18	4018.3		3508.0	5644.5	8452.7	3740.0	1942.8	3452.8
19	4046.6		3546.8	5701.6	8532.2	3787.3	1939.8	3484.0
20	4051.5		3567.3	5735.8	8598.5	3798.3	1932.0	3492.5
21	4032.1		3562.2	5740.0	8613.7	3820.2	1926.0	3501.3
22	4041.0		3571.3	5763.5	8611.0	3829.5	1927.5	3509.5
23	4093.8		3596.0	5780.7	8646.5	3835.8	1937.7	3513.2
24	4111.1		3593.8	5771.9	8671.5	3829.0	1933.0	3514.9
25	4121.1		3598.7	5787.4	8634.6	3845.2	1929.3	3508.8
26	4107.4		3610.7	5775.4	8629.6	3828.9	1928.5	3493.6
27	4082.6		3588.8	5745.1	8588.7	3832.5	1933.3	3487.1
28	4070.1		3582.3	5742.5	8583.6	3822.3	1947.0	3477.1
29	4015.0		3557.3	5681.8	8483.2	3758.3	1946.9	3441.1
30	4020.4		3566.3	5743.8	8583.0	3807.4	1947.3	3457.4
31	3882.0		3453.3	5549.9	8300.7	3662.0	1946.5	3340.0
Mean	4044.0		3537.2	5693.8	8507.9	3787.2	1929.7	3470.3

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.

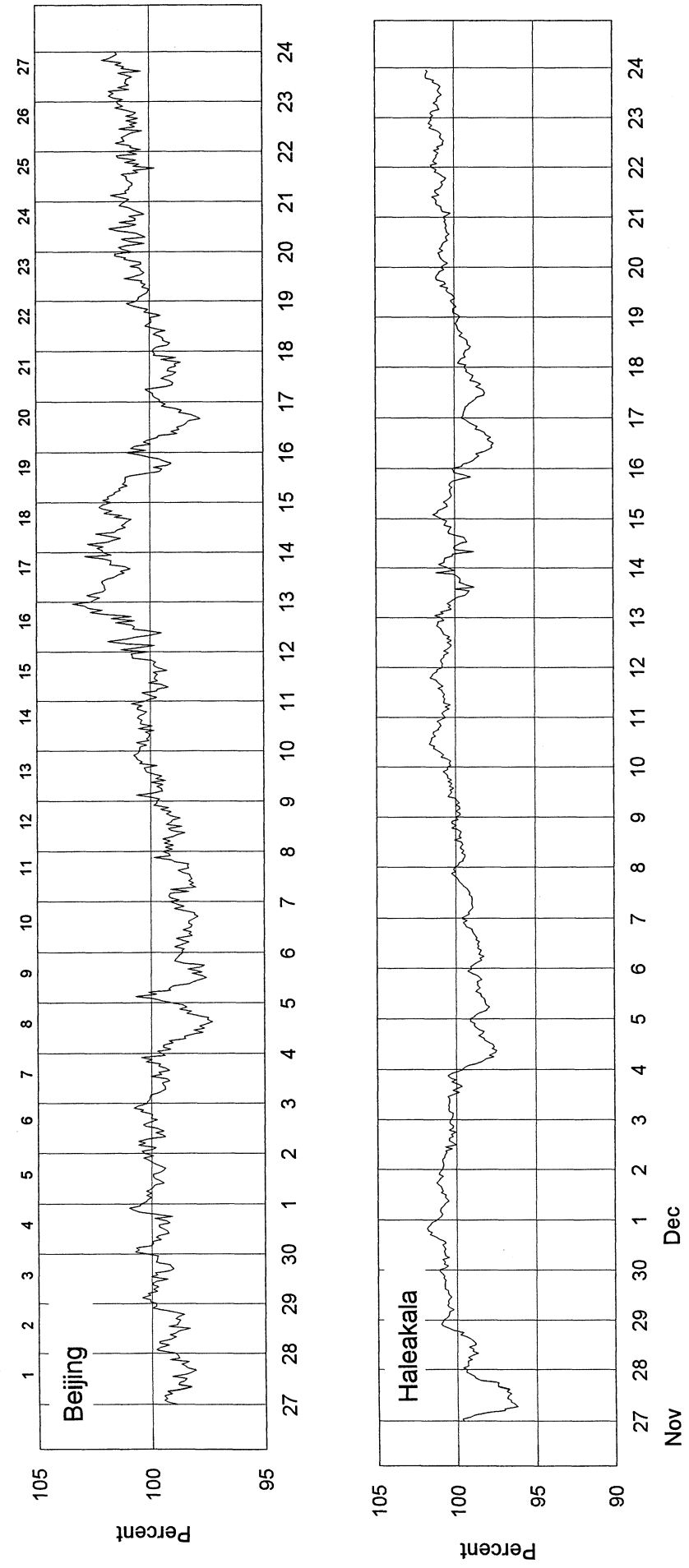
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2298 - Beginning 27 Nov 2001



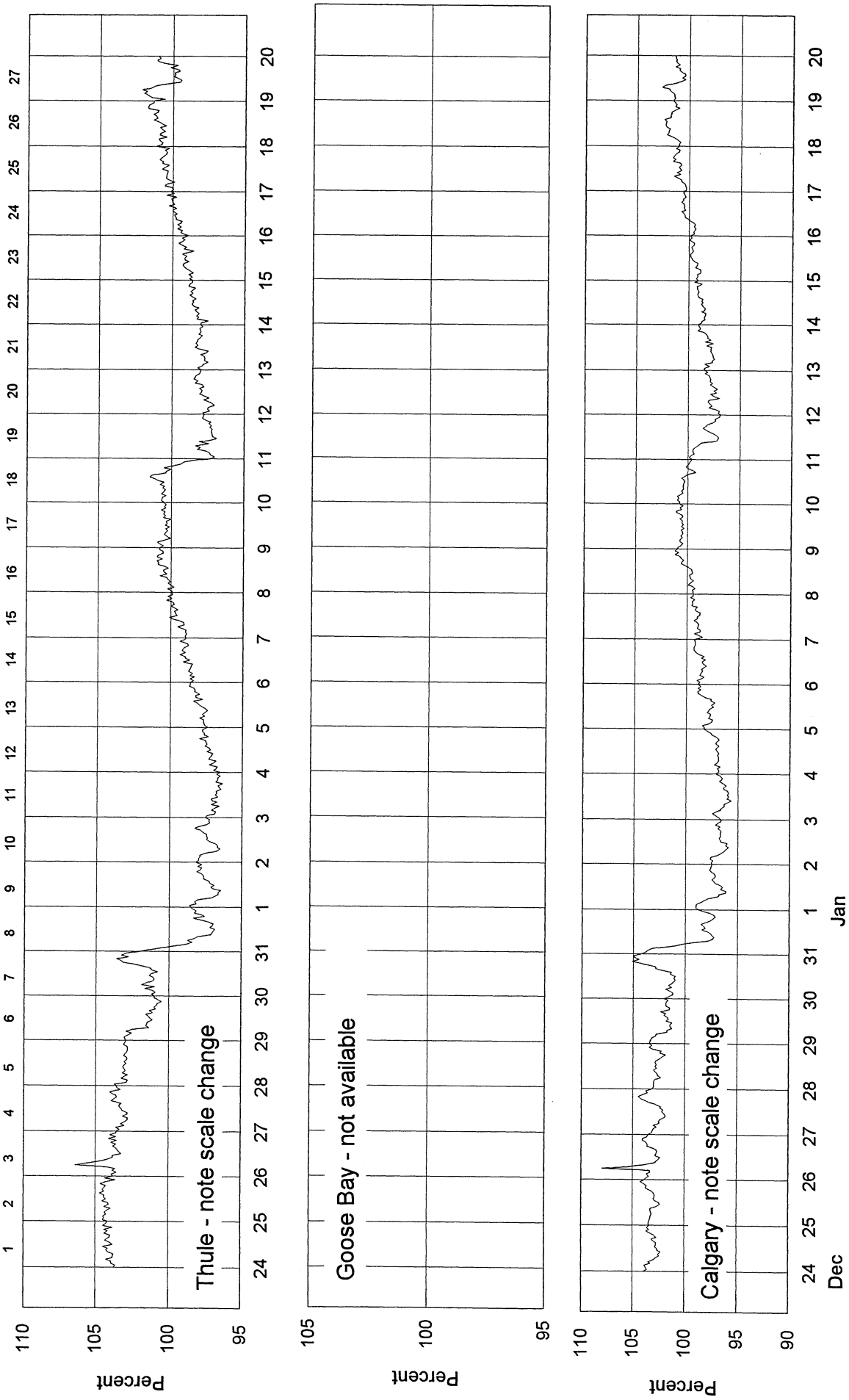
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2298 - Beginning 27 Nov 2001



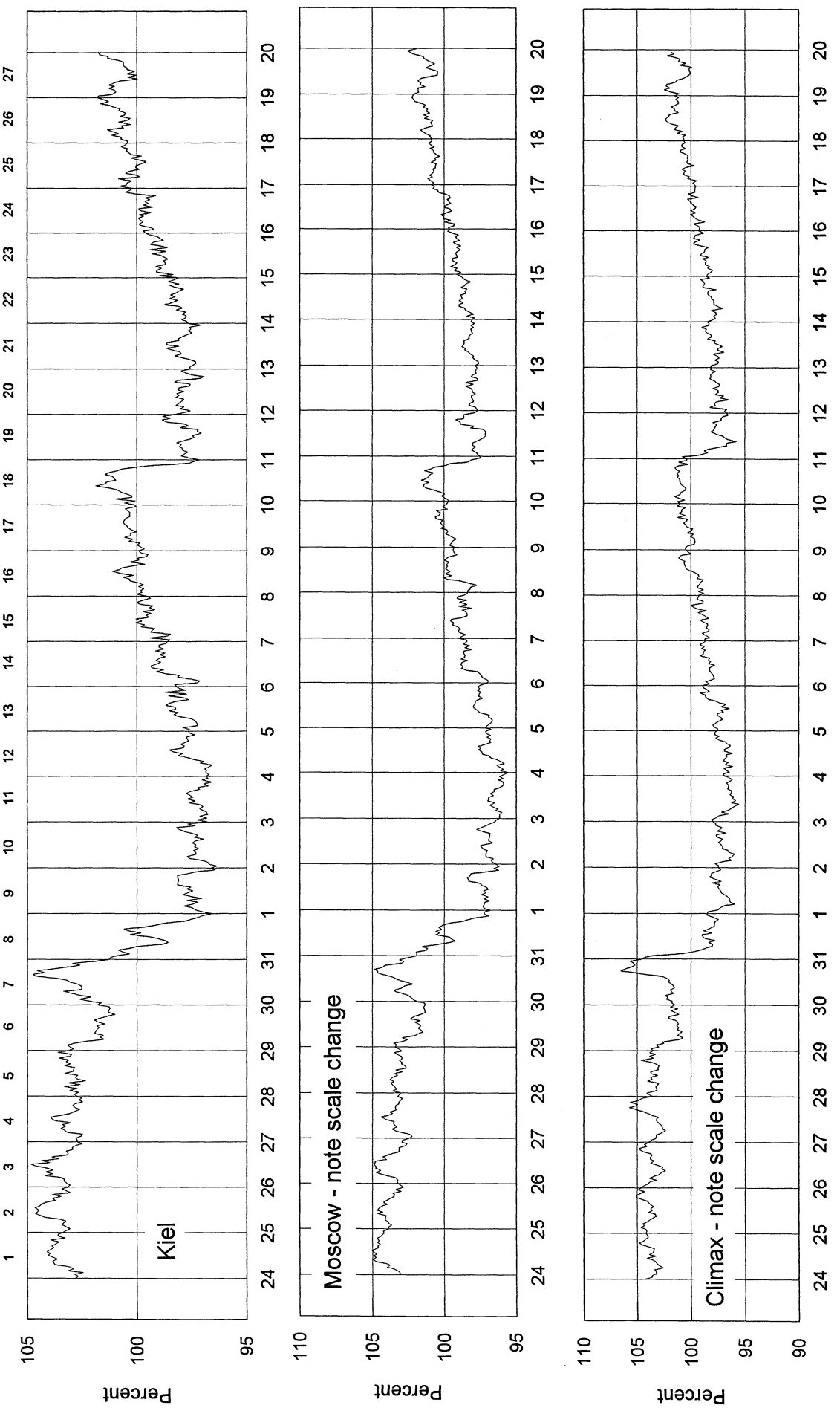
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2298 - Beginning 27 Nov 2001



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



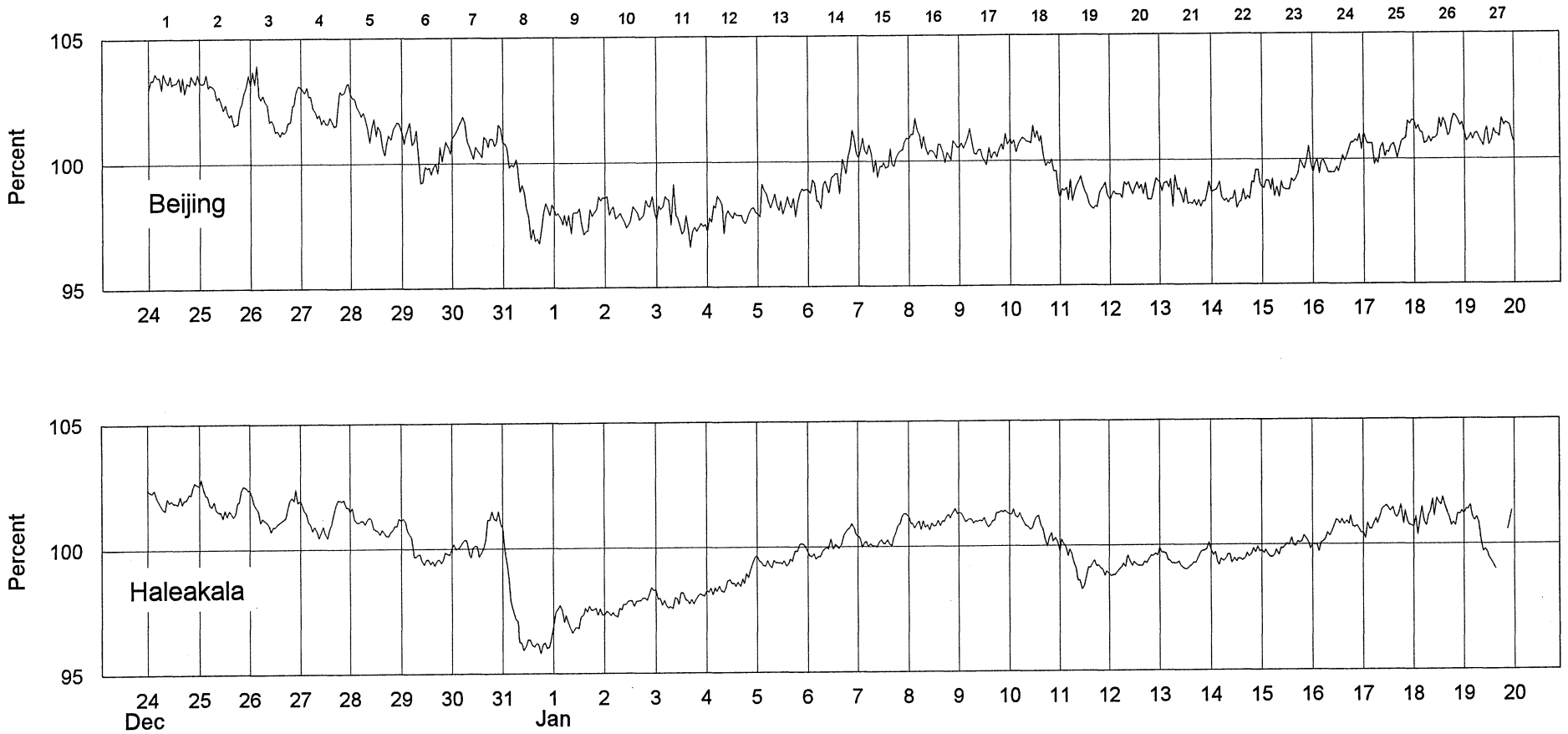
COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2299 - Beginning 24 Dec 2001



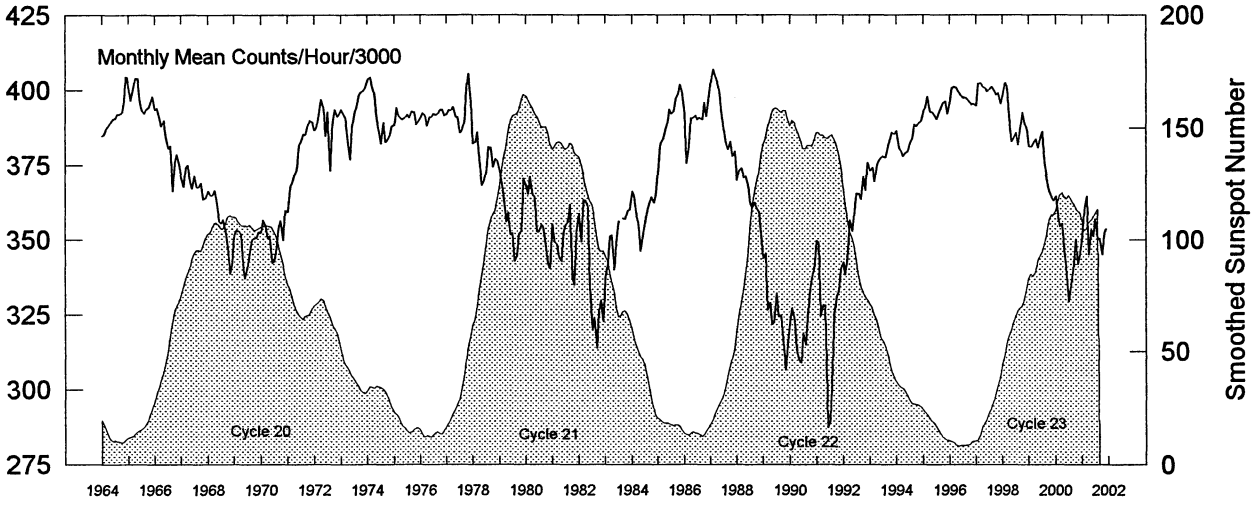
COSMIC RAY INDICES

(Neutron Monitor)

Bartels Rotation 2299 - Beginning 24 Dec 2001



Calgary Neutron Monitor Pressure-Corrected Values
Jan 1964 - Dec 2001



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1964	3847	3852	3872	3883	3892	3905	3905	3921	3920	3926	3966	4064	3913
1965	4006	3968	4007	4040	4040	3967	3935	3923	3938	3942	3960	3980	3976
1966	3935	3943	3906	3881	3899	3844	3807	3814	3663	3758	3785	3750	3832
1967	3710	3678	3741	3750	3697	3671	3713	3679	3675	3691	3638	3639	3690
1968	3663	3653	3647	3665	3632	3561	3556	3567	3529	3482	3386	3420	3563
1969	3515	3531	3529	3520	3417	3370	3408	3464	3500	3507	3506	3524	3483
1970	3523	3565	3548	3505	3512	3424	3426	3477	3543	3564	3497	3596	3515
1971	3593	3678	3693	3712	3737	3813	3832	3853	3851	3883	3899	3893	3786
1972	3865	3875	3924	3969	3942	3847	3926	3731	3895	3935	3912	3920	3895
1973	3935	3919	3903	3819	3768	3875	3926	3944	3986	3995	3997	4008	3923
1974	4036	4043	4005	3988	3906	3861	3822	3890	3827	3831	3850	3881	3912
1975	3883	3943	3914	3905	3904	3910	3918	3907	3929	3927	3884	3897	3910
1976	3908	3923	3915	3881	387	3909	3921	3918	3920	3936	3935	3916	3916
1977	3919	3933	3933	3943	3911	3911	3857	3865	3895	4010	4055	3961	3933
1978	3823	3826	3860	3773	3681	3697	3730	3811	3808	3744	3772	3764	3774
1979	3726	3696	3647	3559	3592	3516	3521	3427	3447	3519	3528	3705	3573
1980	3681	3652	3711	3649	3643	3527	3525	3550	3540	3471	3414	3403	3564
1981	3550	3491	3483	3440	3426	3522	3546	3560	3615	3374	3348	3520	3490
1982	3586	3492	3634	3632	3608	3344	3196	3239	3137	3257	3296	3225	3387
1983	3364	3421	3510	3515	3399	3487	3563	No Data	3571	3569	3597	3599	3509
1984	3661	3646	3586	3551	3460	3515	3551	3593	3623	3641	3623	3652	3592
1985	3723	3821	3834	3858	3888	3936	3921	3929	3971	3987	4017	3997	3907
1986	3923	3755	3814	3905	3906	3915	3902	3907	3902	3958	3912	3974	3898
1987	4025	4068	4047	4028	3993	3914	3866	3822	3802	3827	3779	3796	3914
1988	3698	3729	3739	3709	3714	3682	3621	3608	3624	3603	3590	3520	3653
1989	3436	3454	3263	3290	3216	3222	3321	3224	3246	3164	3063	3152	3254
1990	3227	3272	3232	3129	3099	3089	3188	3147	3237	3317	3375	3401	3226
1991	3496	3489	3244	3279	3280	2873	2896	3078	3253	3311	3330	3412	3245
1992	3425	3382	3463	3566	3528	3593	3655	3655	3636	3711	3665	3758	3586
1993	3730	3741	3693	3753	3765	3775	3780	3775	3815	3836	3859	3852	3781
1994	3864	3807	3798	3779	3793	3793	3822	3841	3885	3878	3891	3896	3837
1995	3929	3945	3919	3929	3927	3917	3902	3919	3940	3956	3963	3920	3931
1996	3960	4008	4012	4010	3993	3983	3976	3976	3970	3960	3953	3955	3980
1997	3947	4023	4024	4014	4007	3998	4001	4010	3999	3985	3990	3955	3996
1998	3982	4025	4013	3910	3827	3839	3857	3817	3876	3925	3890	3875	3903
1999	3816	3811	3823	3836	3810	3843	3861	3760	3699	3664	3644	3631	3767
2000	3646	3586	3544	3554	3465	3386	3293	3337	3395	3503	3417	3447	3464

Multiply table entries by 300 to obtain hourly counting rate. Calgary, Canada: N51 W114, Alt=1128m, Cutoff Rigidity=1.09GV.

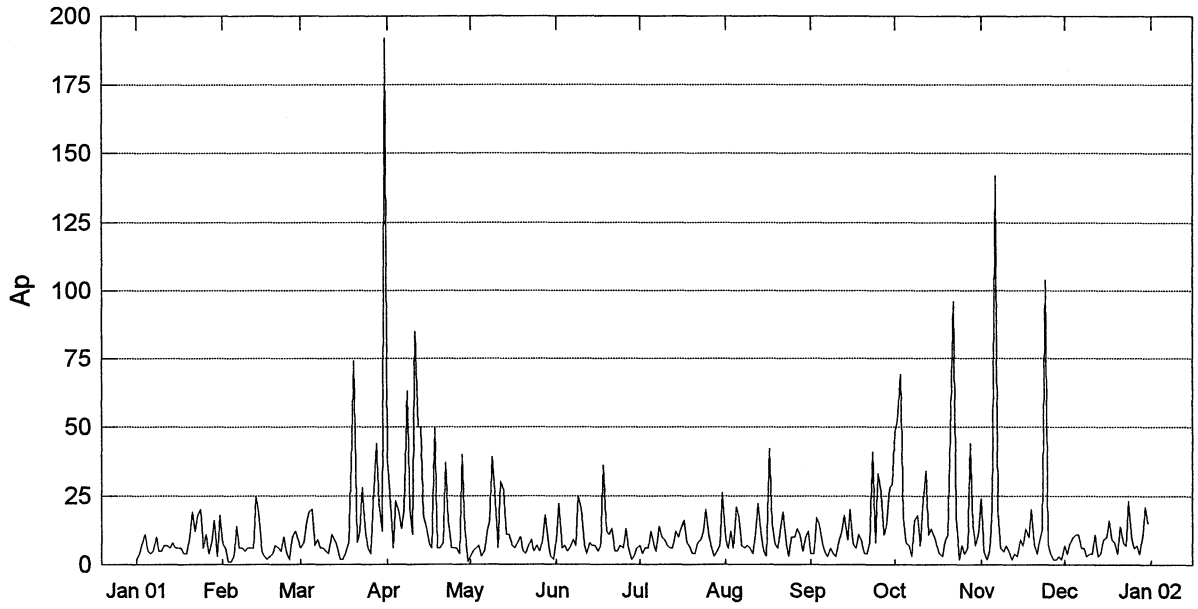
Geomagnetic Activity Indices

December 2001

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1		1-	1-	2-	2	3-	3-	1	2-	13	7	0.3	1+	1o	2o	3-	3-	3-	2-	2o	16	16	21	17	20	K
2	Q6	1	0	1	1+	2	2	1+	1	10-	4	0.2	1+	1-	1+	1+	2o	2o	2o	1+	11	10	13	10	13	CK
3		0+	2-	1-	1+	2+	2	3+	3+	15	8	0.5	1o	2-	1+	2-	2+	2+	4o	3+	21	21	19	11	29	
4		3	2+	2-	2+	3	2-	3	2	19	10	0.6	3+	2o	2o	2o	3-	2-	3o	2+	20	24	19	22	21	
5		4	3-	1+	2+	2	2	3-	2	19	11	0.6	3o	2+	2o	2o	2-	2o	3-	2+	19	22	12	19	15	
6		3	2-	2	3	2+	3-	3-	3	20+	11	0.7	3-	2-	2o	3-	2+	3-	3o	3o	22	23	22	21	24	
7	Q10	2+	1+	1-	1	2+	3-	1	2-	13	6	0.3	2+	2-	1+	1+	3-	3-	2-	2o	15	15	15	12	18	
8		3+	1+	2-	2-	2	1	1-	1-	12+	6	0.3	3-	1+	2-	2-	2+	2-	1o	1o	12	11	10	13	9	CK
9	Q1	0+	1-	0	1+	1-	0	0+	2-	5	3	0.0	1-	1-	0+	1+	1-	0+	1o	2-	6	7	7	7	7	CC
10	Q2	0+	0+	1	1-	2-	1-	1-	1+	7-	4	0.1	1-	1o	2-	1+	2o	2-	1o	1+	9	8	13	7	14	CC
11	Q3	1-	1	1-	1-	1	1	2-	2-	8+	4	0.1	1-	1o	2o	1+	1+	1+	2o	2o	10	9	14	7	17	C
12		2	2+	2+	3+	2+	2+	3	3	21-	11	0.7	2+	2o	3-	4-	3-	2-	3+	3o	25	32	28	30	31	
13	Q4	2	2-	1	0+	1	1	0	0	7	3	0.1	2-	1+	1+	1-	2o	1+	0+	0+	7	7	8	10	5	CK
14	Q8	0	1-	0	1	2	2-	2	2	9+	4	0.1	0+	1+	1-	1+	2o	2o	2+	3o	12	10	16	8	18	CC
15		2+	3	2	2+	3	2-	1	2+	18-	9	0.5	3-	3-	2+	3-	3o	2-	2-	3-	20	17	24	17	24	
16		3-	3+	3+	2+	2+	2-	2-	1+	19-	10	0.6	2+	3o	4-	3-	2+	2-	2+	2-	23	22	34	40	15	
17	D3*	3-	4-	3	3	3+	4-	3	2-	24	16	0.9	2o	3-	3o	3o	3o	3+	3o	2-	25	33	20	24	30	
18		4-	2	2	2+	3-	2	1	2-	17+	9	0.5	3o	2-	2o	3-	2+	2o	1+	2-	17	18	17	21	14	
19		3	2+	2	3-	1	2-	2+	1+	16+	8	0.5	3-	2o	2+	3-	1+	2o	2+	2o	17	17	16	19	14	
20	Q5	1	0	1	1+	2	1+	1	2-	9+	4	0.2	1+	1-	1+	2o	2-	2-	1+	2o	11	9	10	8	11	CC
21	D5*	0+	2	2+	3-	2+	4-	4	4-	21	14	0.8	1o	2-	2o	3-	3-	4o	4o	4-	29	29	25	12	41	
22		3	3	2+	2+	2	1-	2	1-	16	8	0.5	3-	2o	2o	3-	2-	1+	2o	1+	16	18	11	19	10	
23		1+	2	1+	3-	2-	2	1	2	14	7	0.3	1o	1+	2-	3-	2o	2+	1+	3o	15	13	19	14	18	
24	D1	2	3+	5-	4+	4+	4+	3	3-	29-	23	1.1	2+	3-	5-	4-	4-	4o	3o	2+	40	44	47	50	41	
25		3-	2+	2-	3-	2-	2	1	3	17	9	0.5	2o	2-	2o	2+	2-	2+	2-	3o	17	18	14	14	18	
26	Q9	2+	1-	1-	1	1	2-	2+	2+	12	6	0.3	2o	1+	1o	1+	1o	2o	2+	2+	12	14	10	10	14	CK
27		2+	1	1	1+	2-	2	3-	2-	14-	7	0.3	2-	1o	1o	2-	2-	2+	3-	2-	13	17	8	11	14	CC
28	Q7	1-	0	2-	1+	2	1	1	2	10-	4	0.2	1-	1-	2-	2o	3-	1+	1+	3-	13	11	16	11	16	
29		2-	4	2+	3-	2+	2+	2	3-	20	11	0.7	2-	4o	3-	3+	3-	3-	2+	3-	27	29	53	54	28	
30	D2	3+	5-	3+	2	2+	2+	4	5-	27-	21	1.1	3+	4o	3o	2o	2+	3-	4o	5o	40	43	43	37	49	
31	D4*	3+	3+	2	1+	1+	3	4-	4	22	15	0.8	3+	3-	2o	1+	1+	3o	4o	4o	30	30	22	20	33	
Mean											9	0.46									18.4	19.3	19.7		19.5	

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	Prov Sa	Ri	Ra	Rs	IMF
1	1-	1-	2-	2+	3-	2+	2-	2-	13	2-	1+	2o	3o	3o	3-	2-	2+	19	215.1	133	173	170	
2	1-	0+	1-	1o	2o	2-	2-	1o	8	2o	1+	2-	2-	2o	2o	2+	2-	13	238.1	137	163	195	
3	1-	1+	1-	1o	2+	2o	4-	3o	16	1+	2o	2-	2+	3-	3-	4o	4-	26	228.3	150	175	185	
4	3o	2-	2-	2o	2+	2-	3o	2-	18	3+	2+	2o	2o	3-	2-	3o	3-	22	226.6	145	167	183	
5	3o	2o	2-	2o	2o	2+	3-	2o	18	3o	3-	2+	2o	2-	2o	3-	2+	20	230.1	158	174	187	
6	2+	1+	2-	3-	3-	3-	3-	3-	20	3-	2o	3-	3o	2o	3-	3+	3o	25	239.5	142	163	197	
7	2-	1+	1-	1+	3-	3-	1+	2-	12	3-	2o	2-	1+	3-	3-	2-	3-	17	219.3	138	164	175	
8	2+	1-	1+	1+	3-	2+	1o	1o	12	3-	2-	2-	2-	2o	1+	1o	1o	12	213.9	140	163	169	
9	0+	0+	0o	1+	1-	0o	1-	2-	4	1o	1o	1o	2-	1-	0+	1+	2-	7	217.5	141	146	173	
10	1-	0+	1+	1-	2-	1+	1-	1o	7	1o	1+	2-	2-	2+	2o	1+	2-	12	212.3	115	123	167	
11	1-	1o	1-	1-	1o	1+	2o	2o	8	1o	1o	3o	2-	1+	1+	2o	2o	13	213.9	106	113	169	
12	2-	2-	2+	4-	3-	2o	3+	3o	25	3-	2o	3-	3+	3-	1+	3+	3-	24	229.4	117	130	186	
13	2-	1o	1-	0+	1o	1-	0o	0o	5	2-	2-	2-	1o	3-	1+	0+	1-	10	213.4	119	137	168	
14	0o	1-	0o	1+	2-	2o	2-	3-	10	1-	2-	1o	2-	2o	2o	3-	3+	16	209.9#	101	118	165	
15	2+	2+	2+	3-	3o	2-	1+	2o	18	3-	3-	2+	3-	3o	2-	2o	3o	22	211.0	108	134	166	
16	2o	3o	3+	3-	3-	2-	2o	2-	21	3-	3+	4-	3-	2o	2-	2+	2-	24	202.5	120	139	157	
17	2o	2+	3o	3o	3+	3+	3o	1+	26	2o	3o	3-	3-	2+	3+	3+	2o	25	199.0	119	133	153	
18	3o	2-	2-	3o	2+	2+	1+	2-	18	3-	2-	2+	3-	3-	2o	2-	2-	17	205.0	115	118	159	
19	3-	2-	2o	3o	1+	2-	2o	1+	15	3-	2o	2+	3-	1o	2o	3-	2+	18	201.6	99	101	156	
20	1-	0o	1o	2-	2-	2o	1+	2-	9	1+	1o	2-	2o	2-	2-	2-	2+	13	214.0	101	113	169	
21	1-	2-	2-	3-	3-	4o	4o	3+	28	1+	2-	2o	3-	3-	4-	4+	4o	31	226.7	120	148	183	
22	2+	2+	2o	3o	2-	2-	2o	1o	16	3o	2-	2o	3-	2-	1o	2+	2-	16	234.9	135	156	192	
23	1-	1o	1+	3o	2+	2+	1o	2+	14	1+	2-	2o	3-	2o	2o	1+	3+	17	246.3	133	162	204	
24	2-	2+	4+	4-	4o	4o	3o	2o	37	3-	3o	5o	4-	4-	4o	3o	3-	43	265.5	157	169	225	
25	2o	2o	2-	3-	2-	2+	1+	3o	16	2+	2-	2+	2+	2-	2+	2+	3o	17	250.3	143	178	208	
26	2+	1-	1-	1o	1o	2o	2o	2-	10	2-	2o	1+	2-	1+	2o	2+	3-	14	259.0	167	195	218	
27	2-	1-	1-	1+	2-	2+	2+	1+	11	2-	1+	1+	2-	2-	2+	3-	2+	14	265.6	164	198	225	
28	0+	0+	2-	2-	3-	1+	1o	2o	10	1-	1+	2-	2+	3o	1+	2-	3-	15	254.6#	156	181	213	
29	1o	4-	2+	3-	3-	3-	2o	2+	22	2o	5-	3o	4-	3-	3o	3-	3o	33	255.7	137	149	214	
30	3o	4-	3-	2o	2+	2+	4o	4+	34	4-	4o	3o	2o	2+	3-	4+	5+	47	238.5	134	159	196	
31	3+	3-	2-	1+	1+	3o	4o	4-	28	3+	3-	2o	1+	2-	3o	4+	4o	31	237.5	135	155	195	
Mean									16.4									20.4	228.2	131.8	151.5	184.5	

Daily Average Indices Ap
Jan 2000 -Dec 2001



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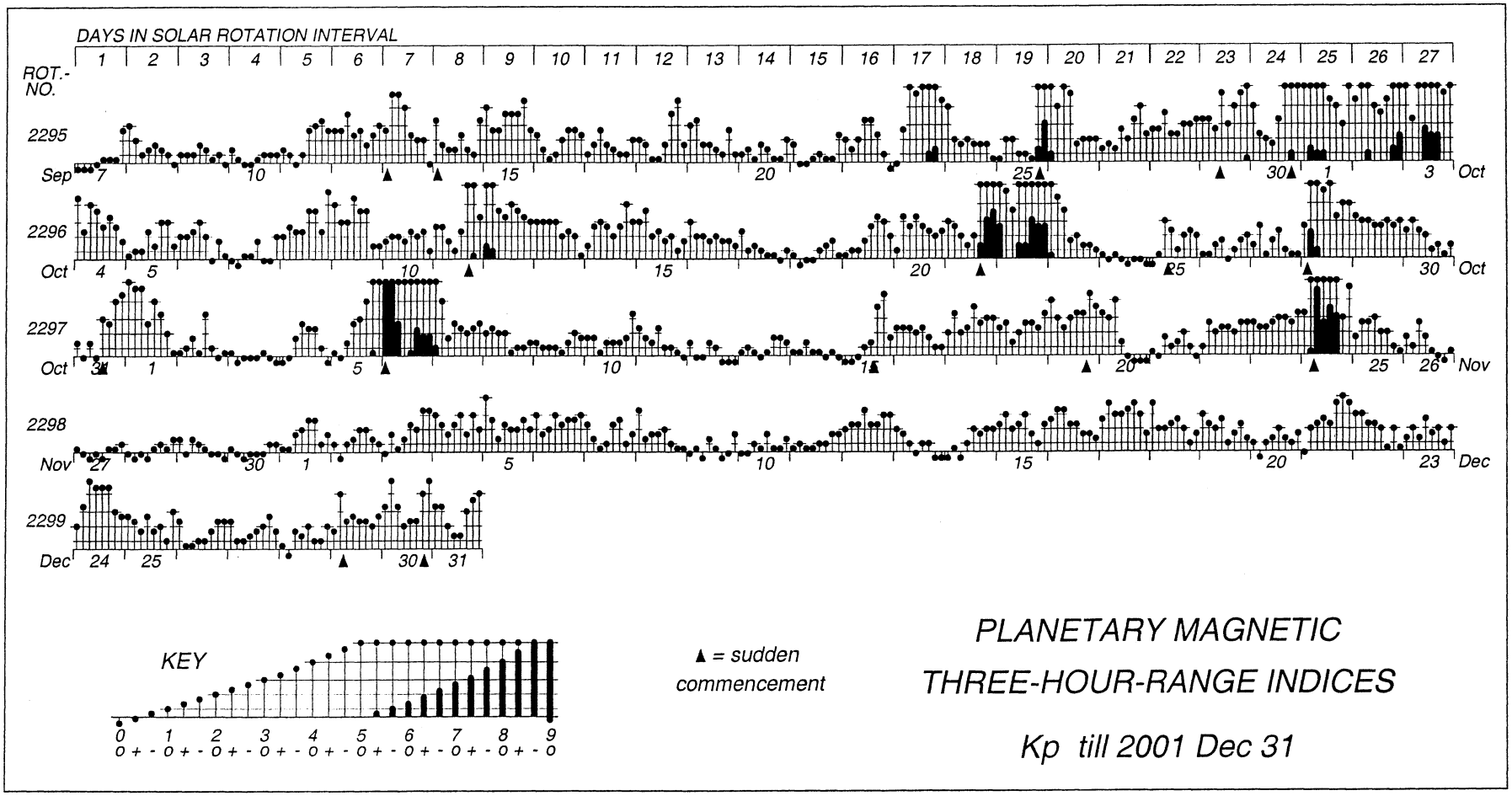
18	4	3	8	50	8	36	8	15	11	3	10	9
19	4	4	37	6	10	12	7	8	9	9	20	8
20	9	7	74	6	5	11	4	6	4	11	8	4
21	19	6	8	8	4	13	4	13	4	57	4	14
22	12	5	12	37	7	5	8	19	8	96	9	8
23	18	10	28	16	9	5	9	8	41	17	13	7
24	20	4	11	6	5	7	12	3	8	2	104	23
25	6	2	6	6	7	6	20	10	33	7	8	9
26	11	10	4	6	5	13	10	10	26	4	4	6
27	4	12	27	4	8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

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

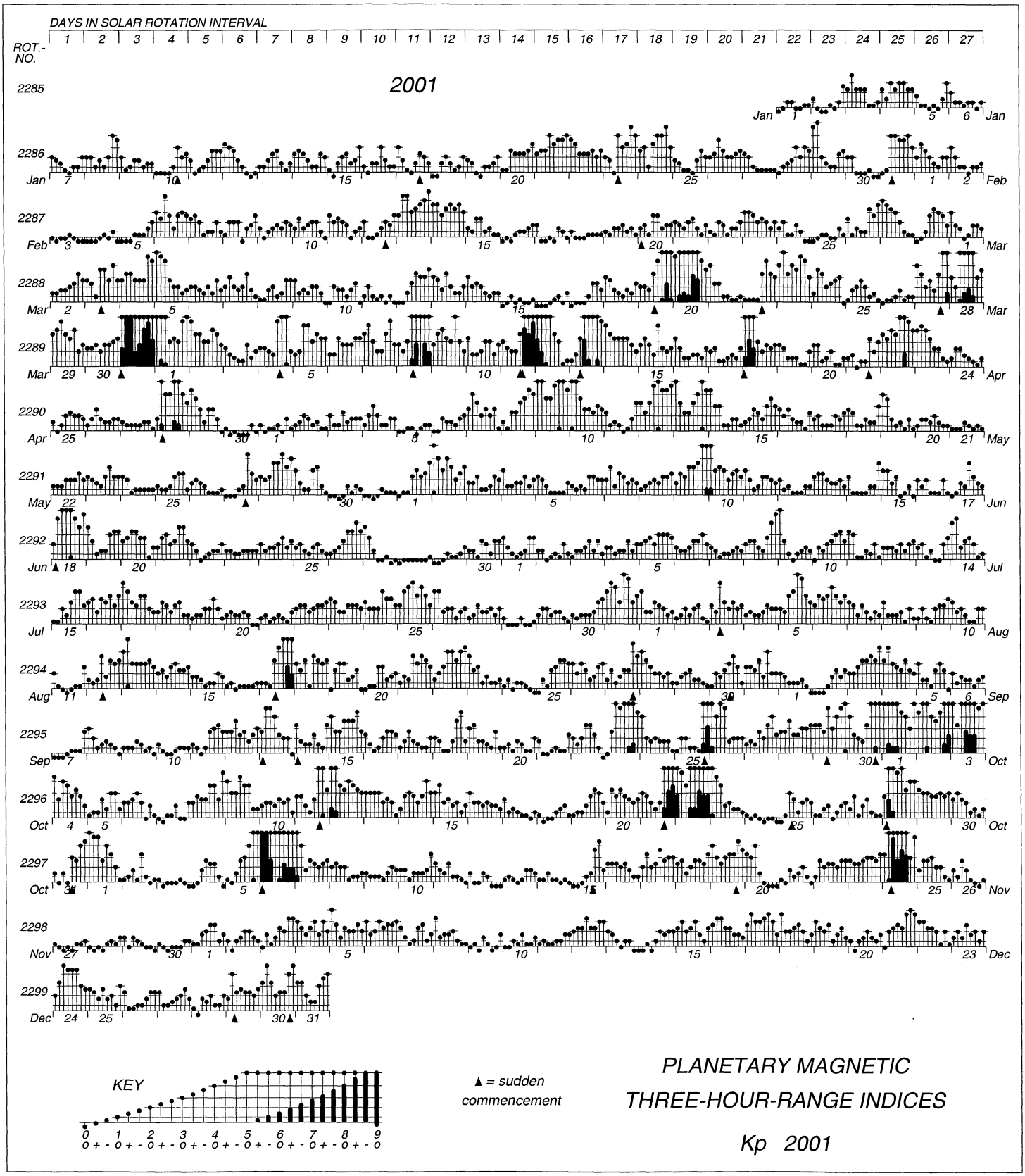
GeoForschungsZentraum Potsdam

Kp through December 31, 2001

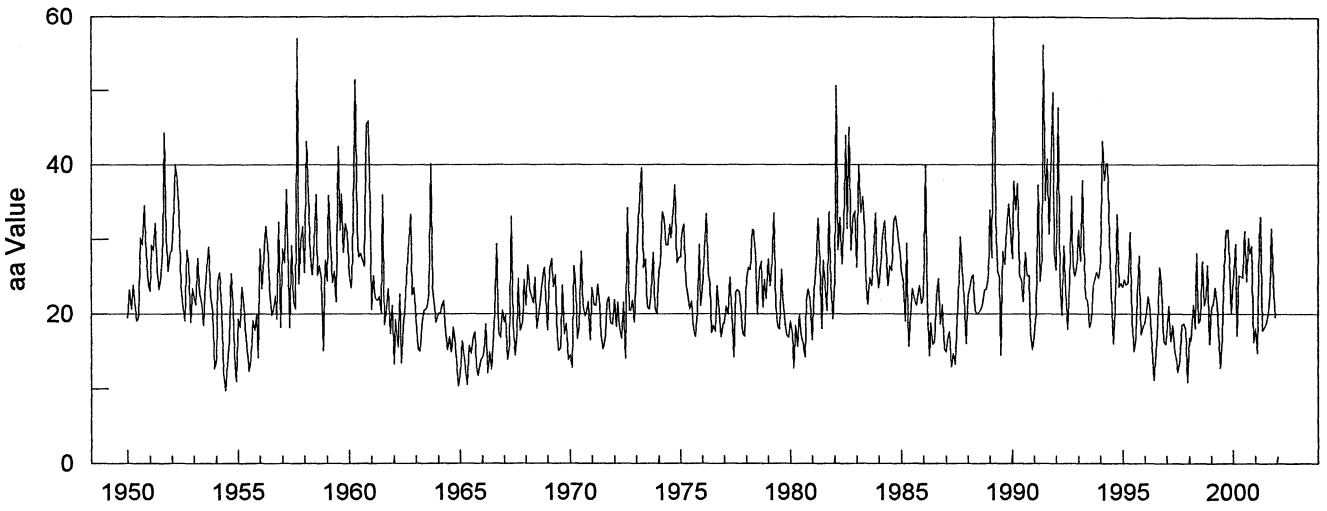


PLANETARY 3-HOUR RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

GeoForschungsZentraum Potsdam **Kp for 2001**



Monthly Mean aa Index Jan 1950 - Dec 2001

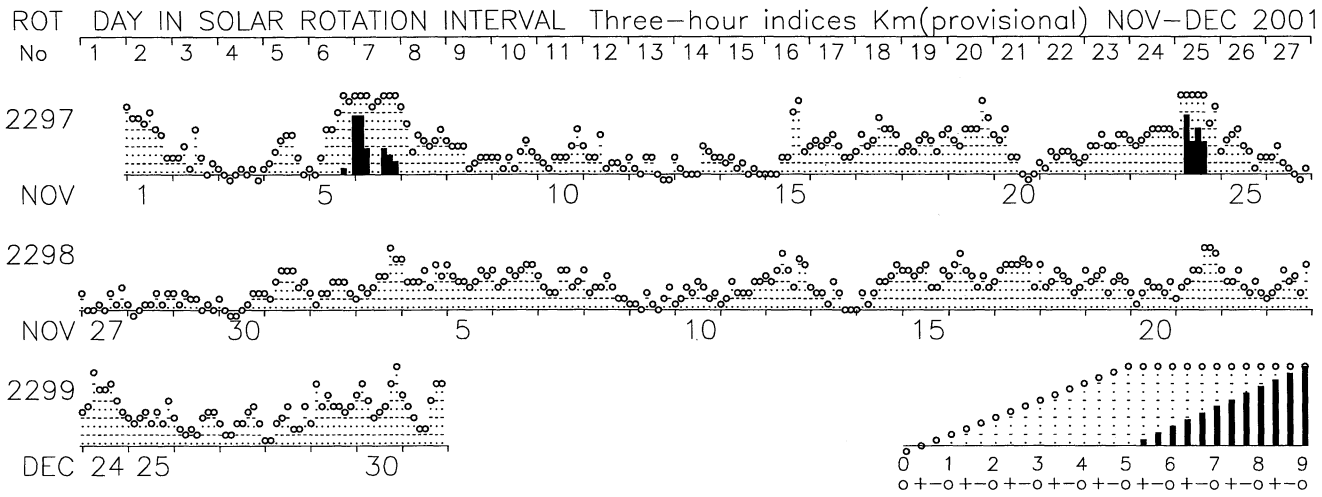


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4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

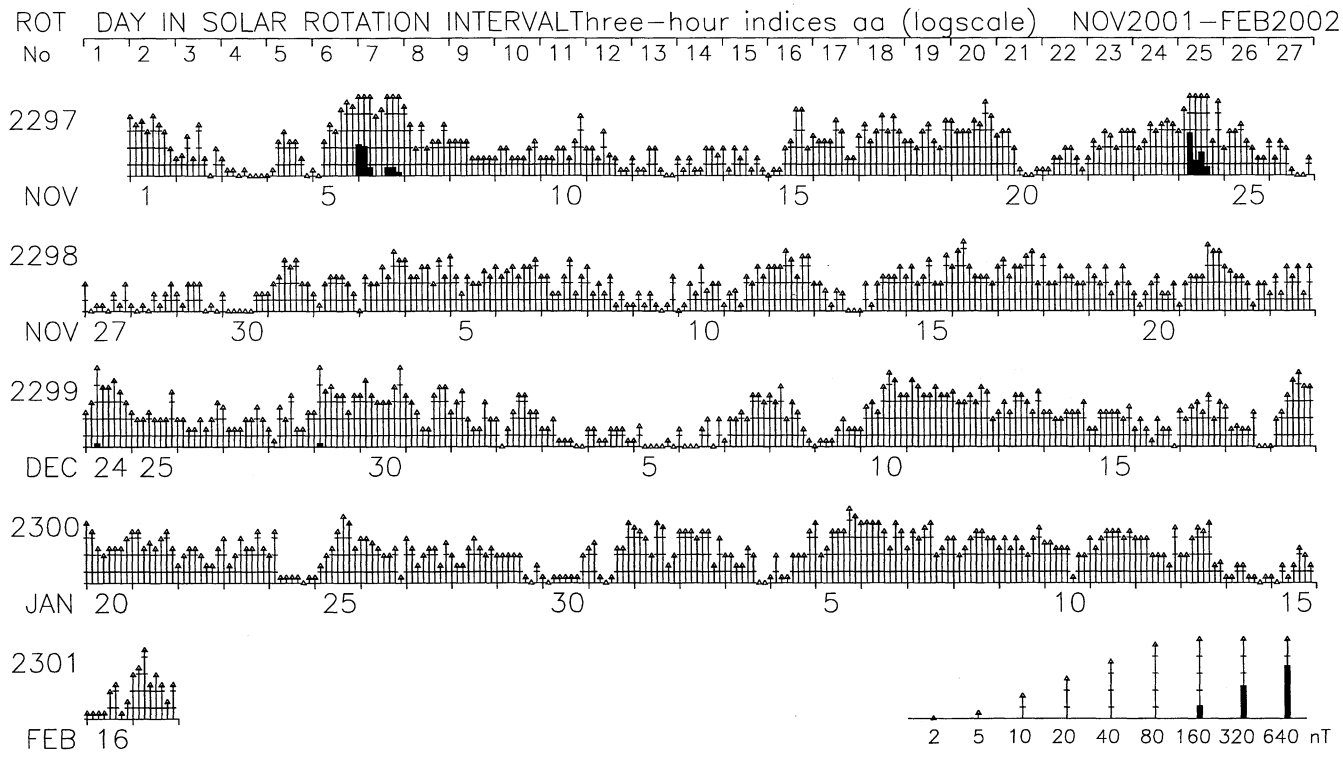
PLANETARY GEOMAGNETIC ACTIVITY

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

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



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



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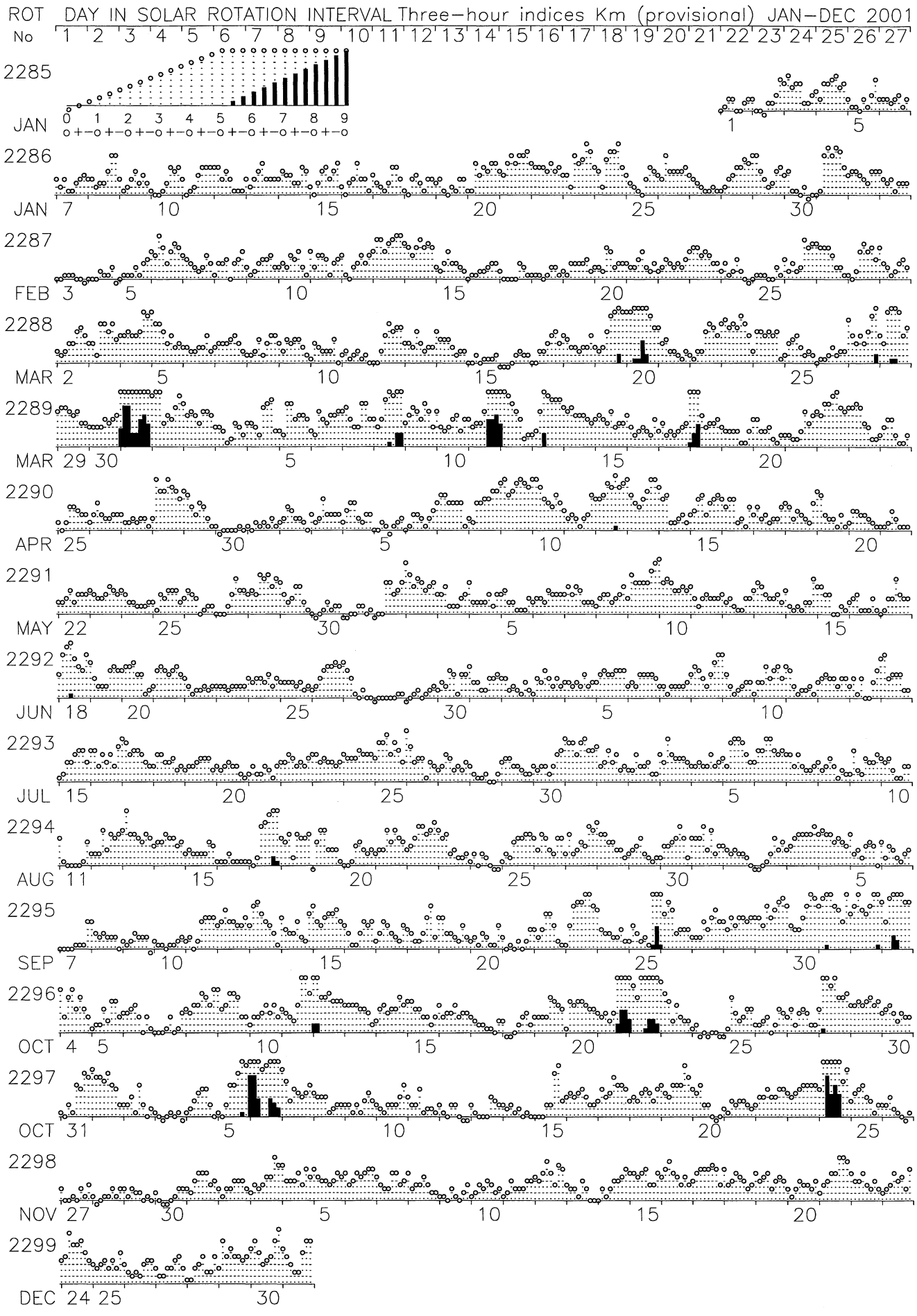
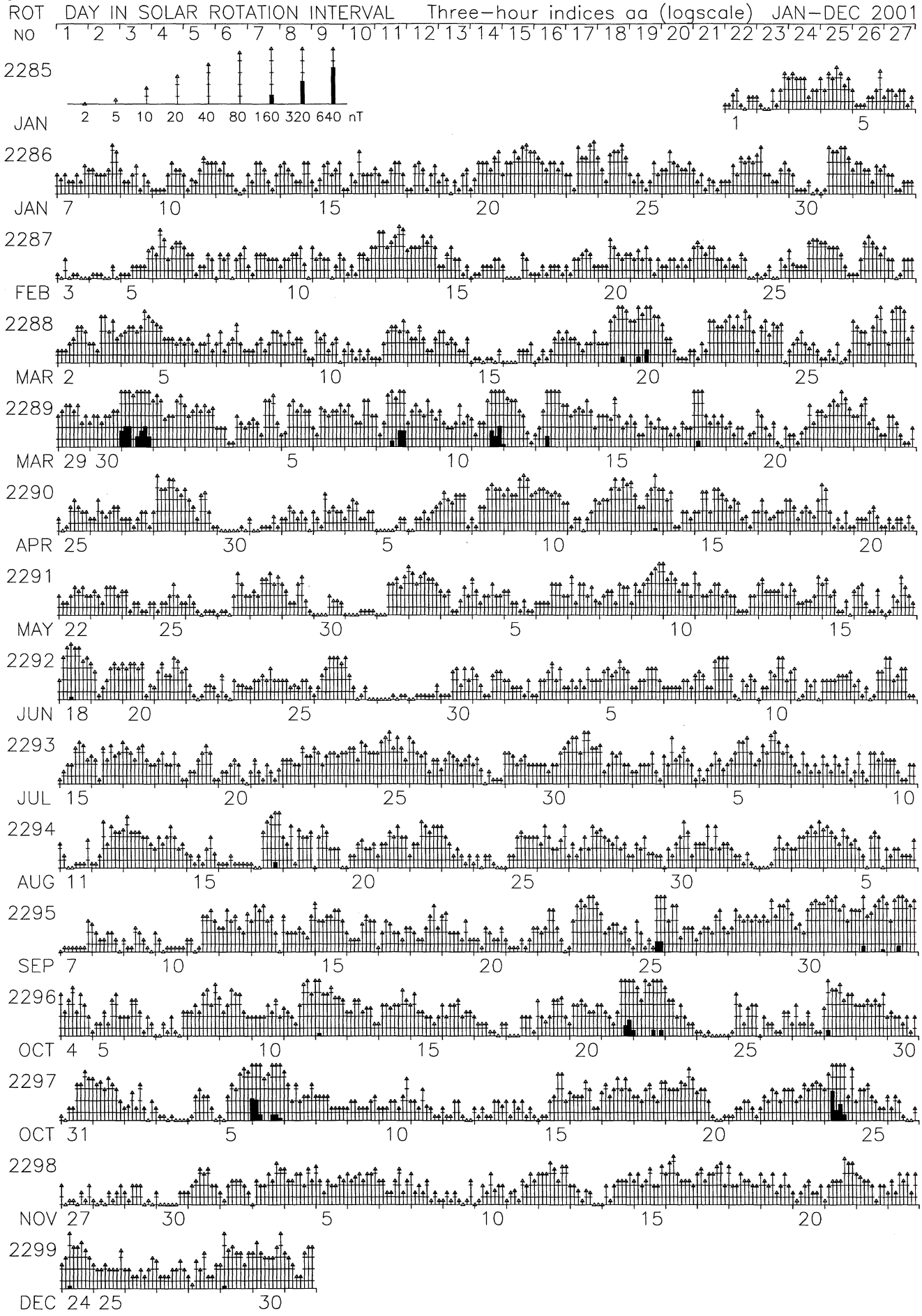
PLANETARY GEOMAGNETIC ACTIVITY – MUSICAL DIAGRAM OF Km 2001



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

PLANETARY GEOMAGNETIC ACTIVITY - MUSICAL DIAGRAM OF aa 2001



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

WDC FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES(PROVISIONAL)

DECEMBER 2001

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	14	12	14	15	15	23	26	25	22	19	22	30	23	14	15	14	9	16	16	12	11	12	8	12
2	13	13	14	15	16	18	15	17	18	22	26	28	31	30	33	29	25	21	21	20	15	15	13	13
3	17	19	22	23	26	20	20	20	16	12	13	14	20	20	22	22	21	15	14	-8	-15	-16	-11	-11
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5	-18	-18	-15	-15	-15	-13	-12	-10	-13	-14	-12	-9	-7	-4	-1	-4	0	5	4	3	3	6	5	-5
6	-13	-14	-8	-7	-2	-1	1	-2	-3	-1	-5	-7	-10	-10	-4	-2	1	4	0	3	5	-2	-5	4
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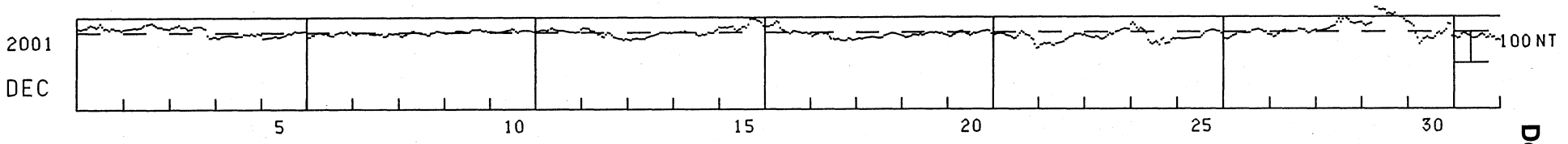
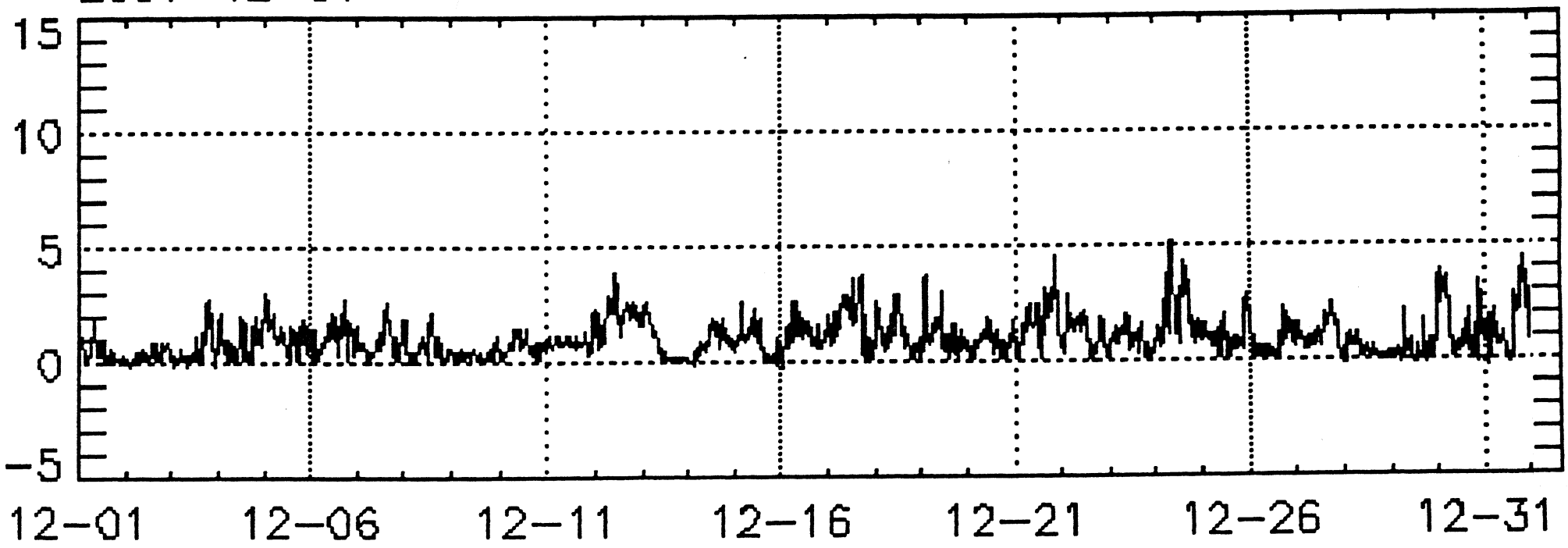


WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Thule(Qaanaaq), THL

2001-12-01

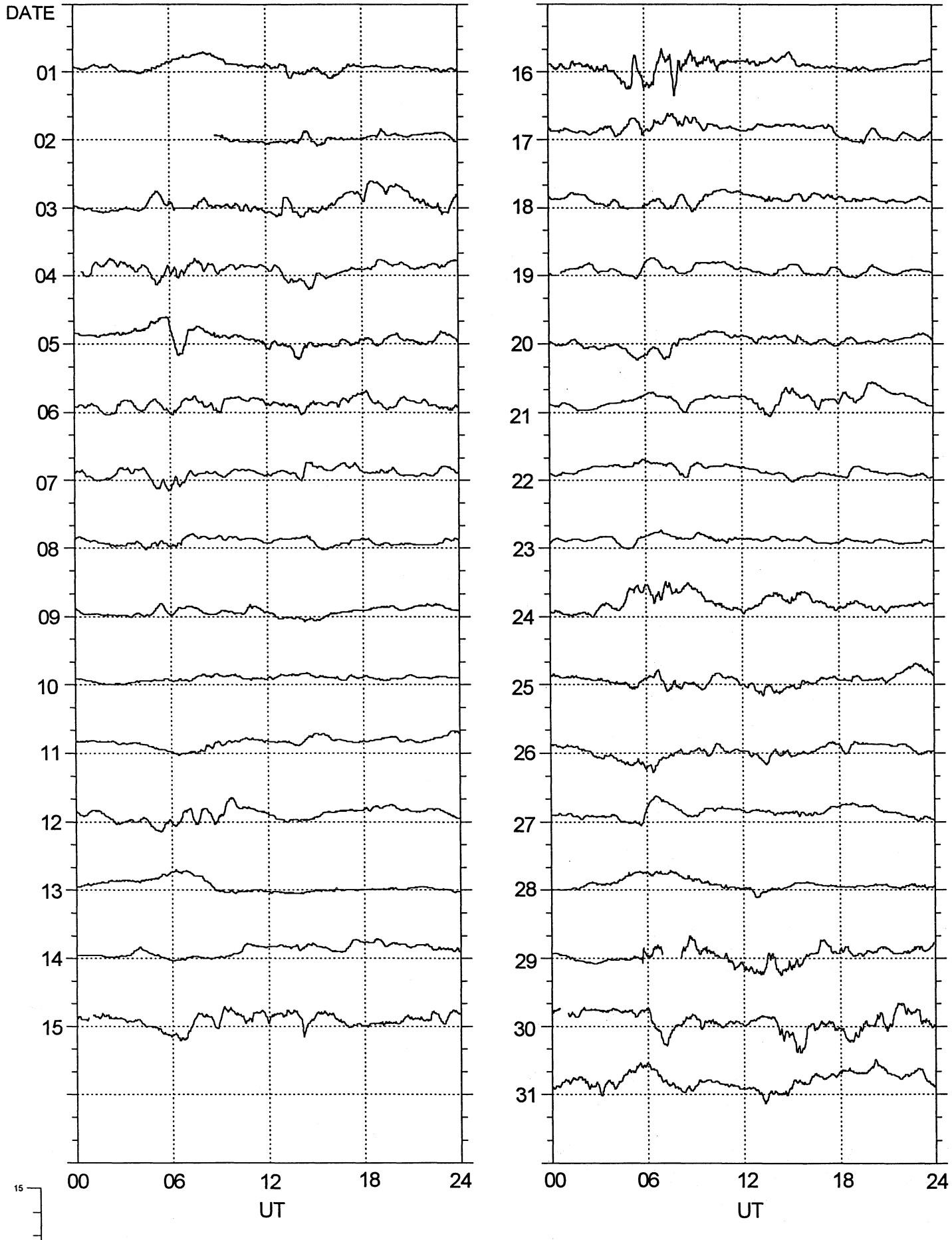


Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

PC-INDEX

Vostok

December, 2001



1-min. Values

Arctic & Antarctic Research Institute. Russia

PRINCIPAL MAGNETIC STORMS

DECEMBER 2001

Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Day	End Hour (UT)
HYB	07.6N	03	0200	..	..	..	..	03(7)	4	2	101	16	05	13
ETT	00.7S	03	0000	..	..	..	..		-	4	200	55	05	13
HYB	07.6N	11	0802	SC	- 0.4	27	- 2	11(3)	4	2	123	24	13	02
ETT	00.7S	11	0803	SC	0	8	12		-	2	163	62	13	15
UJJ	13.6N	12	0600	..	..	..	..		-	2	75	20	12	24
NGP	11.3N	12	0600	..	..	..	..		-	2	108	17	12	24
ABG	09.4N	12	0600	..	..	..	..	03(7)	5	2	101	17	12	24
PND	02.0N	12	0600	..	..	..	..		-	1	120	50	12	24
TIR	00.6S	12	0600	..	..	..	..		-	2	170	50	12	24
HYB	07.6N	14	1100	..	..	..	..	16(3)	4	4	161	30	17	23
ETT	00.7S	14	0400	..	..	..	..		-	4	144	83	16	21
UJJ	13.6N	16	2300	..	..	..	..		-	2	102	26	17	22
NGP	11.3N	16	2300	..	..	..	..		-	3	131	25	17	22
ABG	09.4N	16	2300	..	..	..	..	16(3) 17(4,7)	4	2	129	16	17	22
PND	02.0N	16	2300	..	..	..	..		-	3	140	41	17	22
TIR	00.6S	16	2300	..	..	..	..		-	3	217	66	17	22
HYB	07.6N	21	0500	..	..	..	..	21(6)	4	2	137	38	22	22
BJI	28.8N	23	2315	SC	0.2	20	1	24(3)	6	8	109	23	24	21
KRC	16.4N	23	2308	SC	- 2	27	18	24(3,5)	5	6	113	71	24	22
UJJ	13.6N	23	2314	SC	- 0.6	21	- 6		-	5	109	30	24	21
NGP	11.3N	23	2314	SC	- 0.3	20	- 2		-	4	137	25	24	21
ABG	09.4N	23	2314	SC	- 0.6	18	- 7	21(6) 24(3,5,7)	5	5	132	49	24	21
HYB	07.6N	23	2315	SC	- 0.5	19	- 2	24(3,5)	5	4	137	20	24	23
PND	02.0N	23	2314	SC	- 0.4	19	18		-	3	154	77	24	21
TIR	00.6S	23	2314	SC	- 0.5	15	19		-	5	230	78	24	21
ETT	00.7S	23	2316	SC	- 1.0	18	16		-	4	228	67	24	22
HER	33.6S	23	2316	SC	2	25	20	23(8)	4	22	141	77	24	21
CAN	43.6S	23	2200	..	..	..	..	24(3)	6	19	169	67	25	12
KRC	16.4N	29	0543	SC	- 5	92	41	29(2)	6	7	184	103	30	10
UJJ	13.6N	29	0536	SC	- 1.2	67	- 16		-	4	153	42	30	15
NGP	11.3N	29	0536	SC	- 0.6	65	- 5		-	5	184	30	30	15
ABG	09.4N	29	0536	SC	- 1.6	62	- 14	29(2)	5	4	188	47	30	15
HYB	07.6N	29	0538	SC	- 1.0	67	- 5	29(2,3)	5	5	167	19	30	18
PND	02.0N	29	0536	SC	- 1.1	--	43		-	6	--	76	30	15
TIR	00.6S	29	0536	SC	- 2.1	122	123		-	6	276	174	30	15
ETT	00.7S	29	0538	SC	- 2.0	110	60		-	7	245	112	30	17
HER	33.6S	29	0540	SC*	- 7	40	20	29(2,4)	4	39	97	72	29	18
KRC	16.4N	30	2014	SC	- 3	54	30	30(7,8)	5	6	101	52	31	23
UJJ	13.6N	30	2009	SC	- 0.8	35	- 8		-	5	80	28	31	23
NGP	11.3N	30	2009	SC	- 0.3	35	- 5		-	5	85	25	31	23
ABG	09.4N	30	2009	SC	- 0.8	32	- 9	30(2,7,8)	5	5	79	41	31	23
HYB	07.6N	30	2009	SC	- 0.5	32	- 2	30(8)	5	5	84	26	31	24
PND	02.0N	30	2009	SC	- 0.2	31	30		-	3	81	53	31	23
TIR	00.6S	30	2009	SC	- 0.2	28	35		-	5	135	69	31	23
ETT	00.7S	30	2009	SC	0	30	30		-	4	125	58	31	24
HER	33.6S	30	2010	SC*	2	39	21	30(8)	5	21	69	76	31	09

Stations:

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

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

December 2001

Storm Sudden Commencements (SSC)

Day	Time	Quality: Station Group*
23	2316	B: ETT HER
		C: BDV GCK EBR HTY GUI
29	0538	A: VAL* CLF* HRB* NAG* EBR* HTY GUI* HYB ETT
		B: NGK* BDV* GNA HER* CNB
		C: NUR GCK
30	2009	A: GUI HYB ETT
		B: NGK* VAL BDV* NAG* EBR GNA* HER* CNB
		C: GCK* HTY

Solar Flare Effects (sfe)

Day	Begin-End	Station(s)
03	1023-1041	NAG (si: HRB)
11	0800-0824	BDV+GNA+HER CNB+
13	1424-1454	NGK BDV+ NAG EBR HER (si: HRB)
26	1226-1236	BDV+
28	0345-0403	GNA+ CNB+
30	1543-1600	GUI

REPORTING OBSERVATORIES (up to the 6th of February 2002):
SOD NUR NGK VAL BDV CLF HRB NAG GCK EBR HTY GUI HYB ETT GNA HER CNB

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