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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
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FEBRUARY 1991 NUMBER 558 - Part I

Solar-Geophysical Data prompt reports

Data for January 1991, December 1990, and Late Data

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NATIONAL GEOPHYSICAL DATA CENTER
Michael A. Chinnery, Director
Boulder, Colorado

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S O L A R - G E O P H Y S I C A L D A T A

NUMBER 558

(Issued in Two Parts)

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Solar-Terrestrial Physics Division

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C O N T E N T S

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PART II (COMPREHENSIVE REPORTS)

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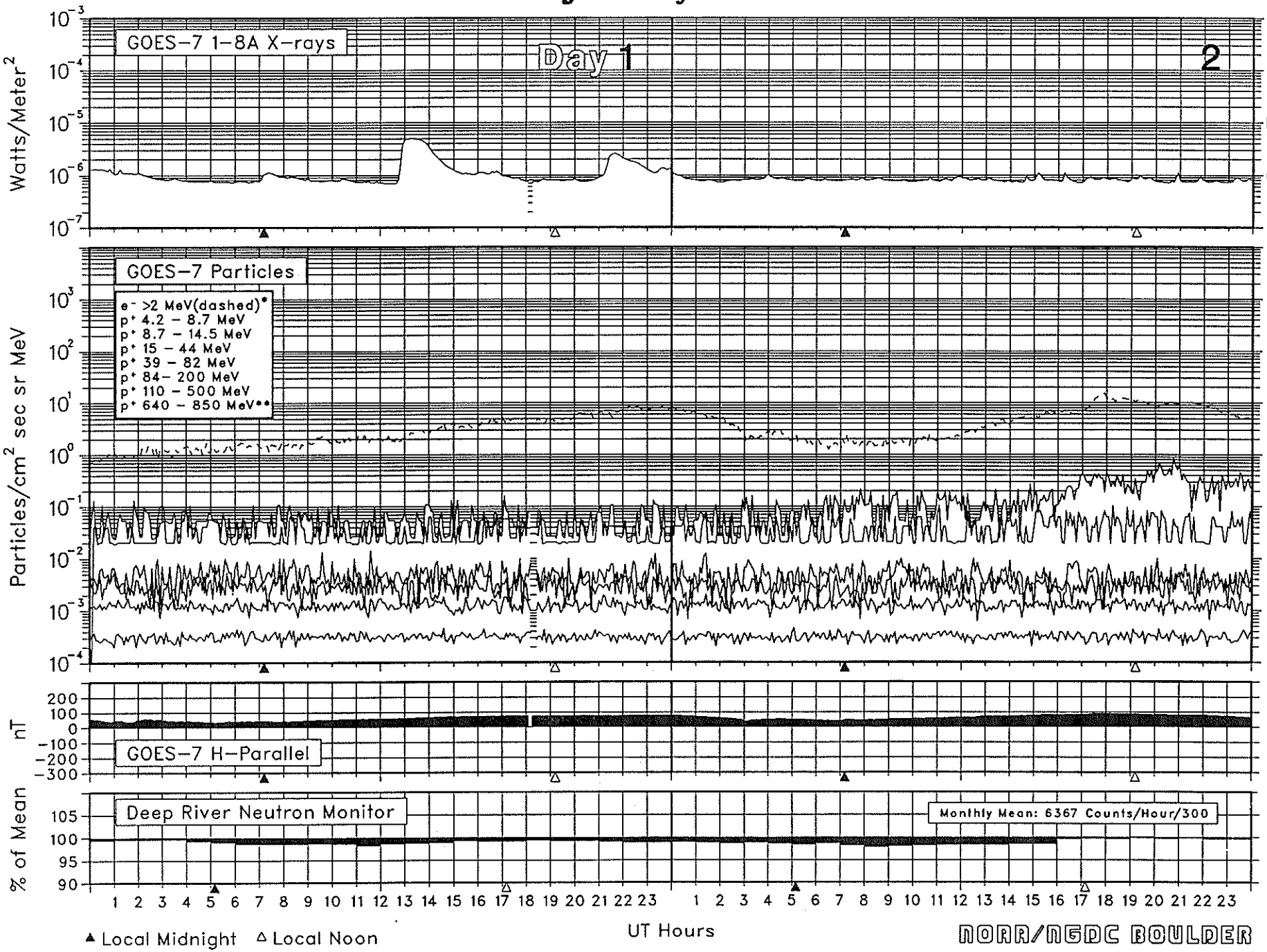
C O N T E N T S

Prompt Reports DATA FOR **JANUARY 1991** Number 558 Part I

SOLAR-TERRESTRIAL ENVIRONMENT
January 1991



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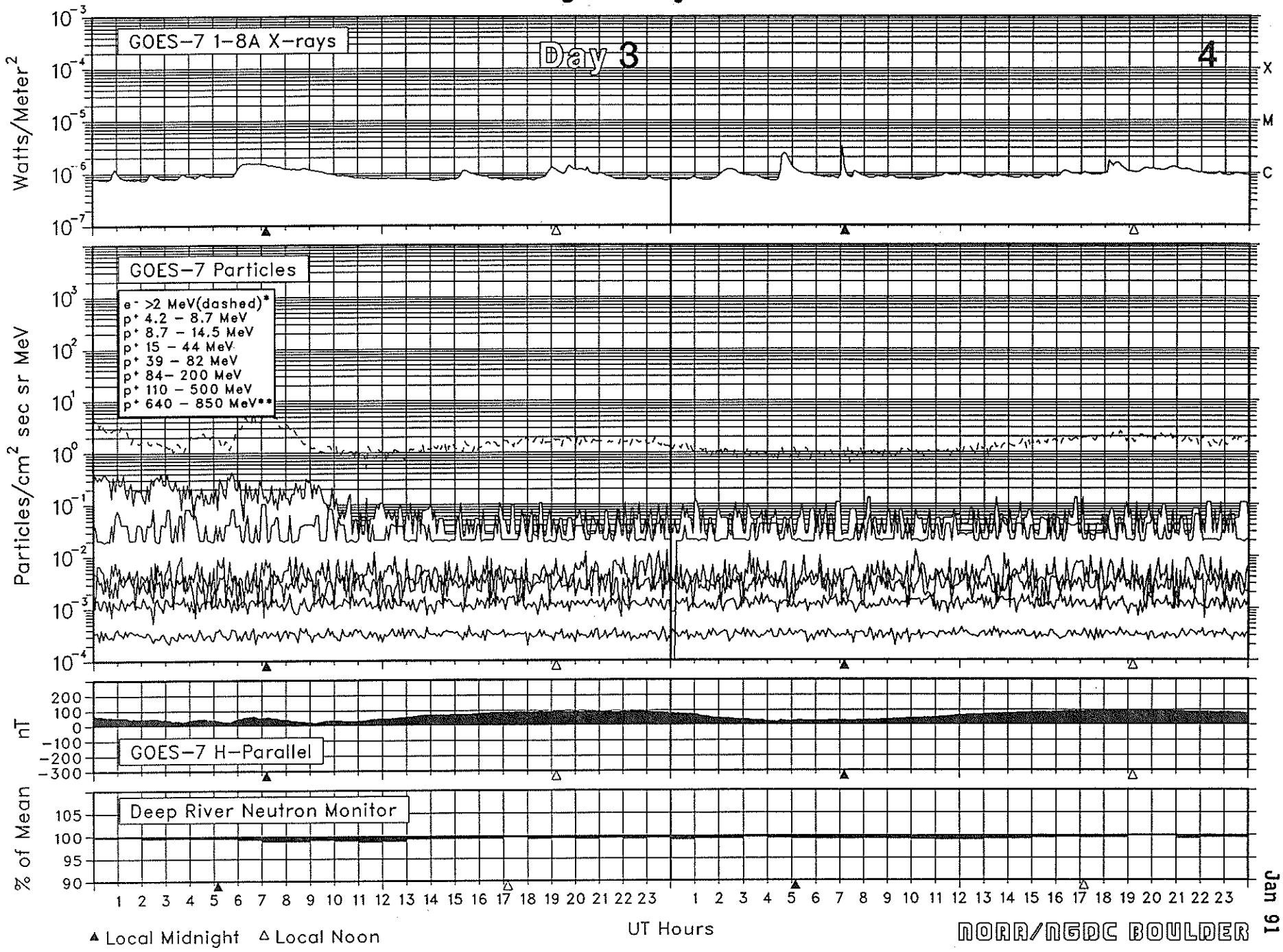
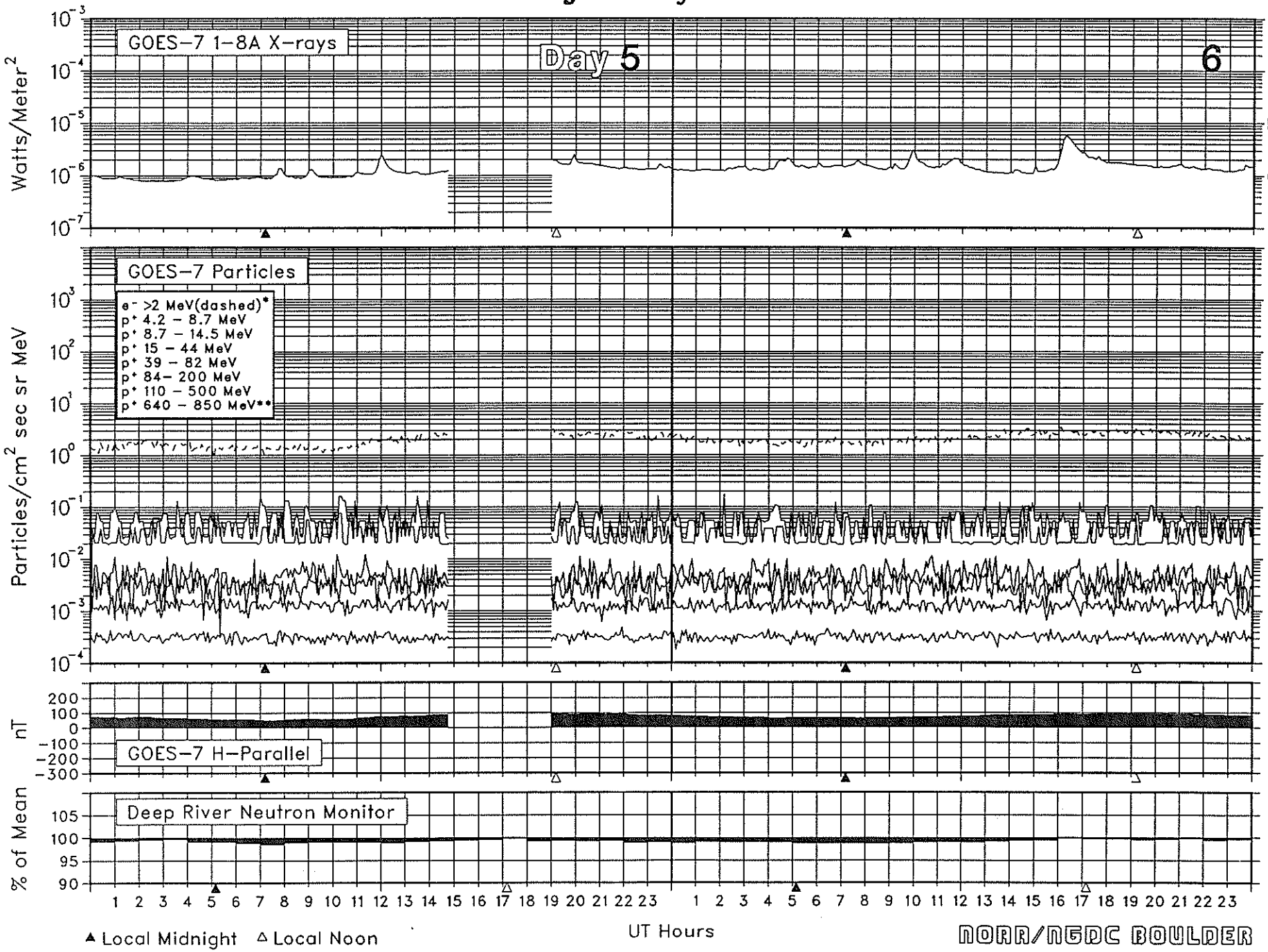
January 1991



NOAA/NGDC BOULDER

5 Jan 91

SOLAR-TERRESTRIAL ENVIRONMENT
January 1991



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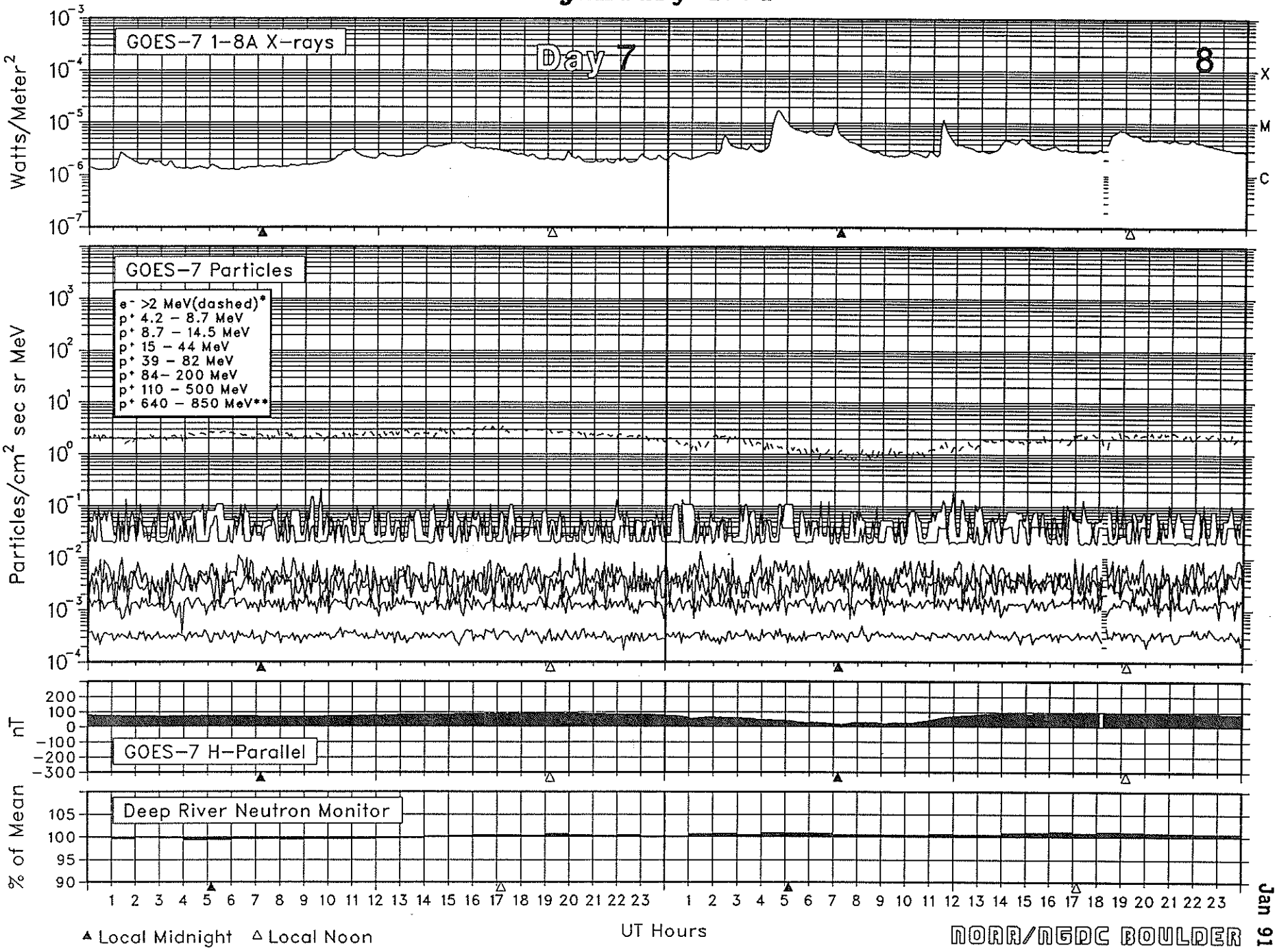
January 1991



7 Jan 91

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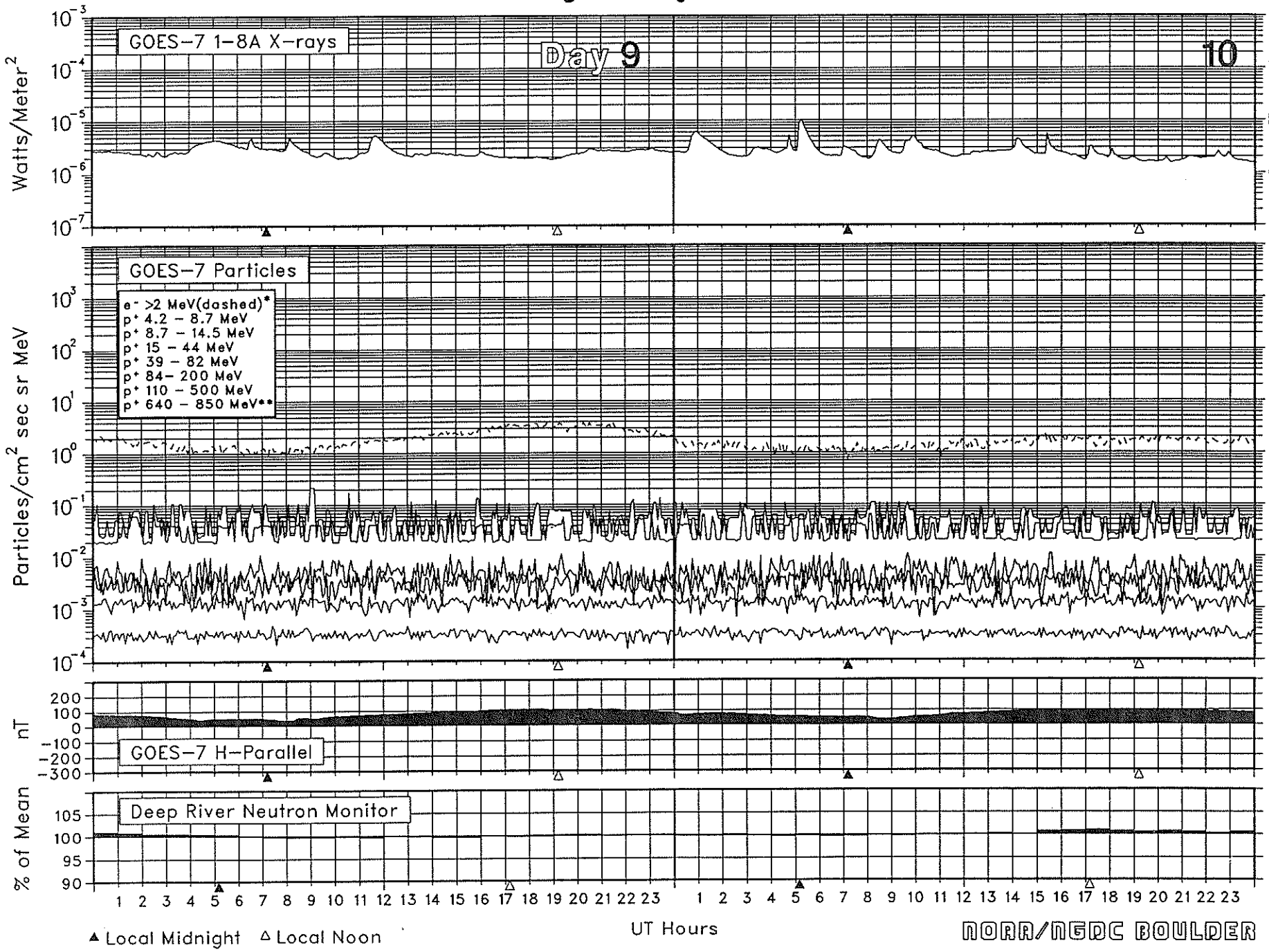

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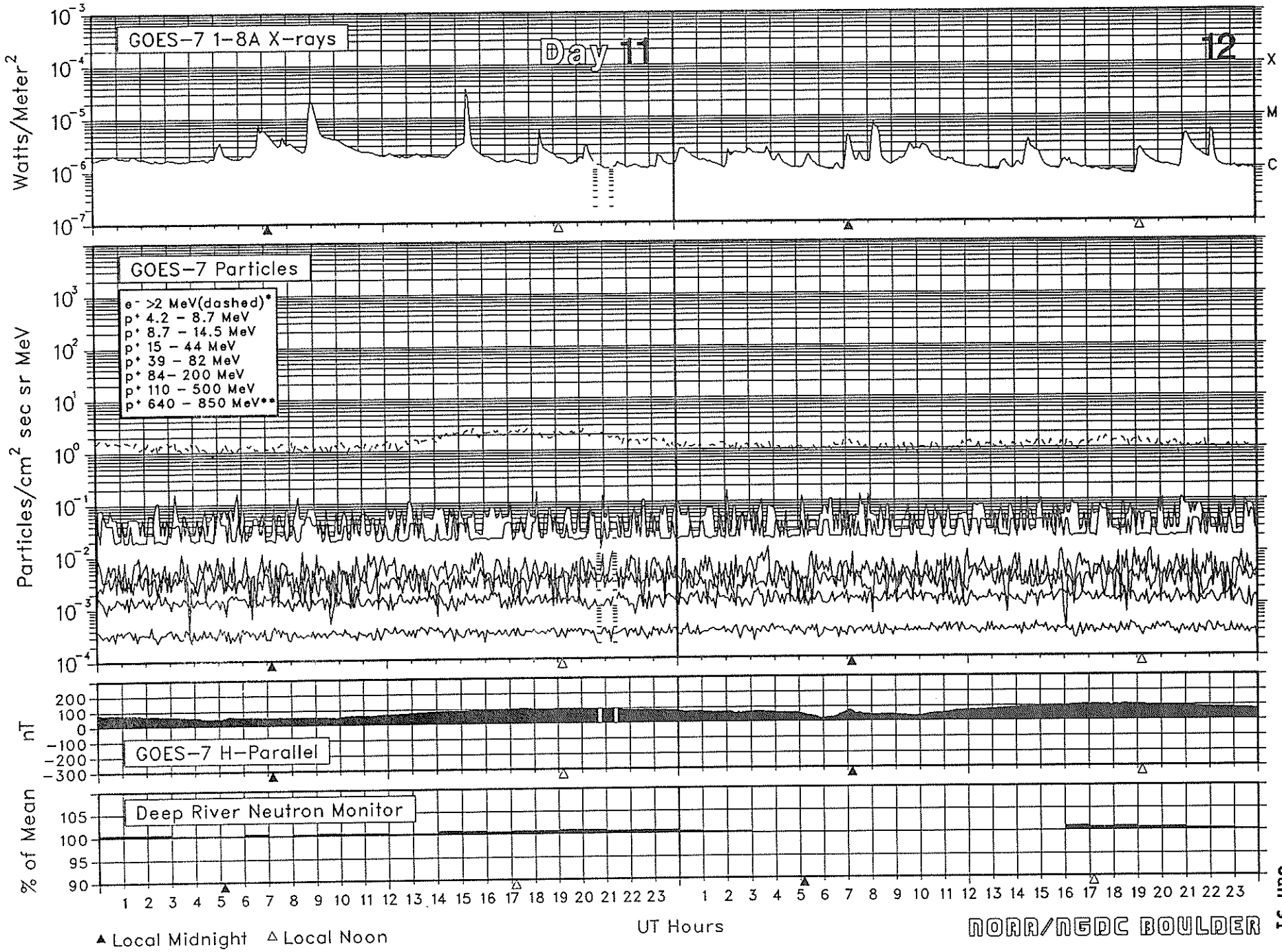

9 Jan 91

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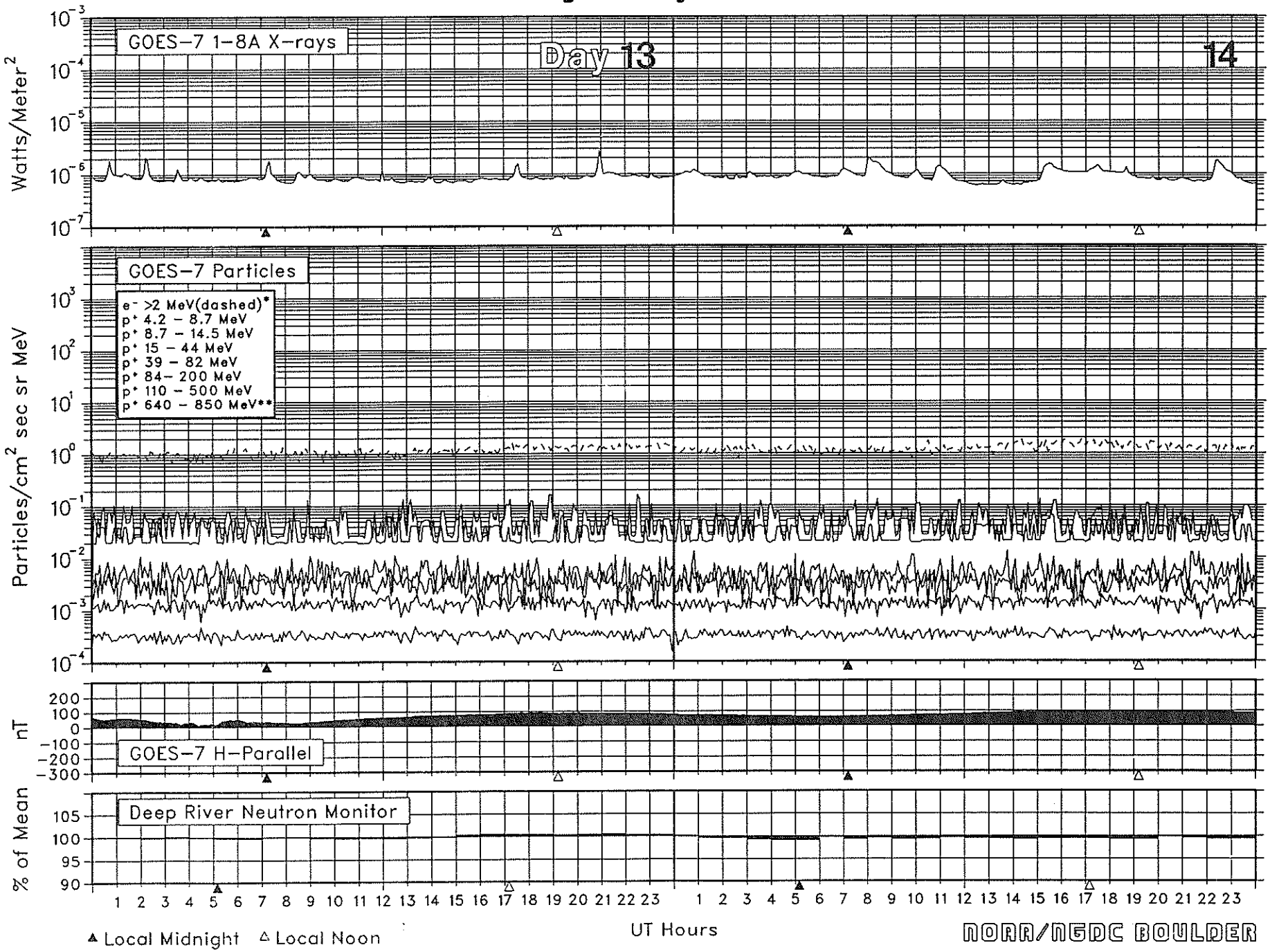

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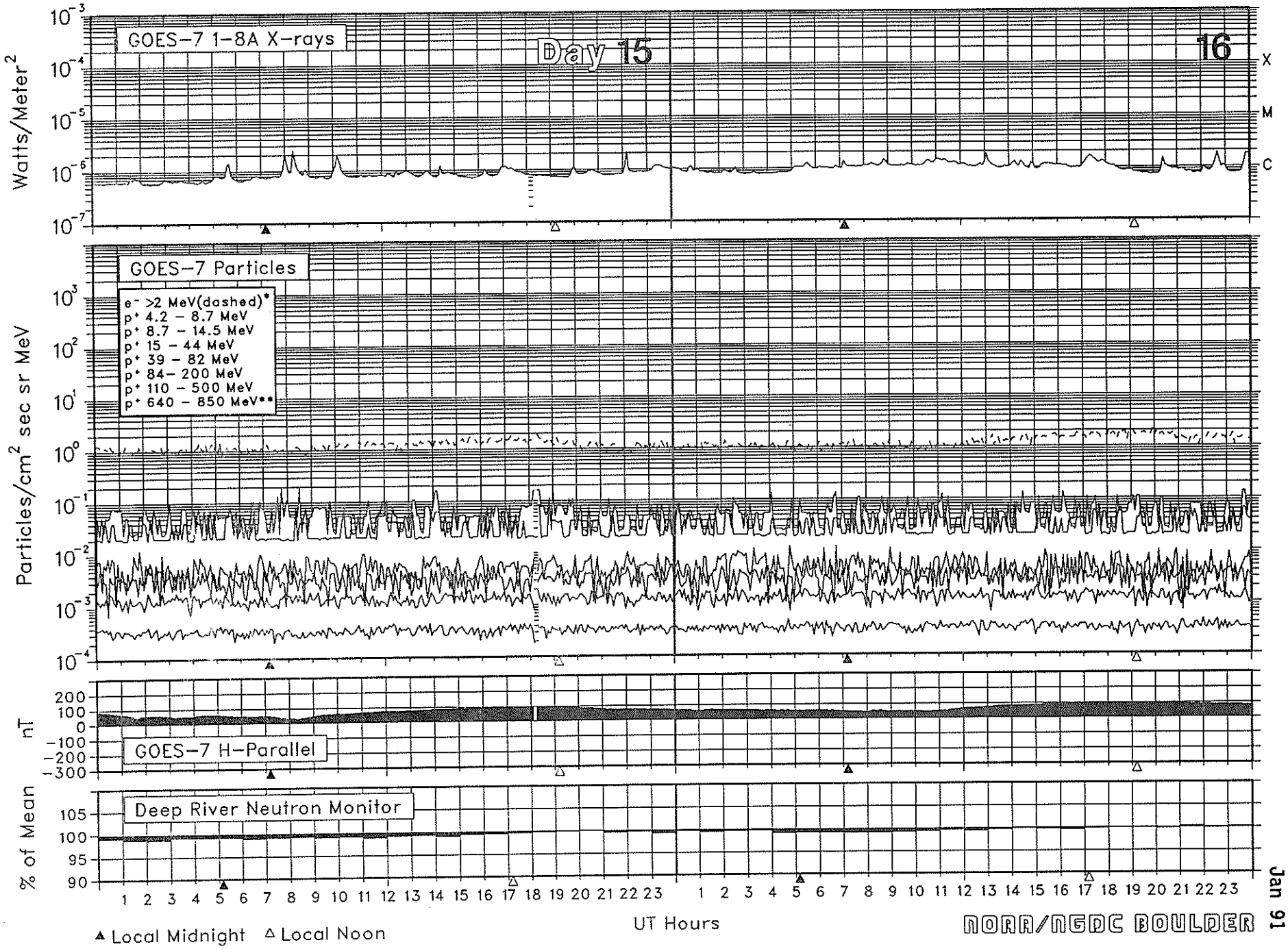

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SOLAR-TERRESTRIAL ENVIRONMENT
January 1991

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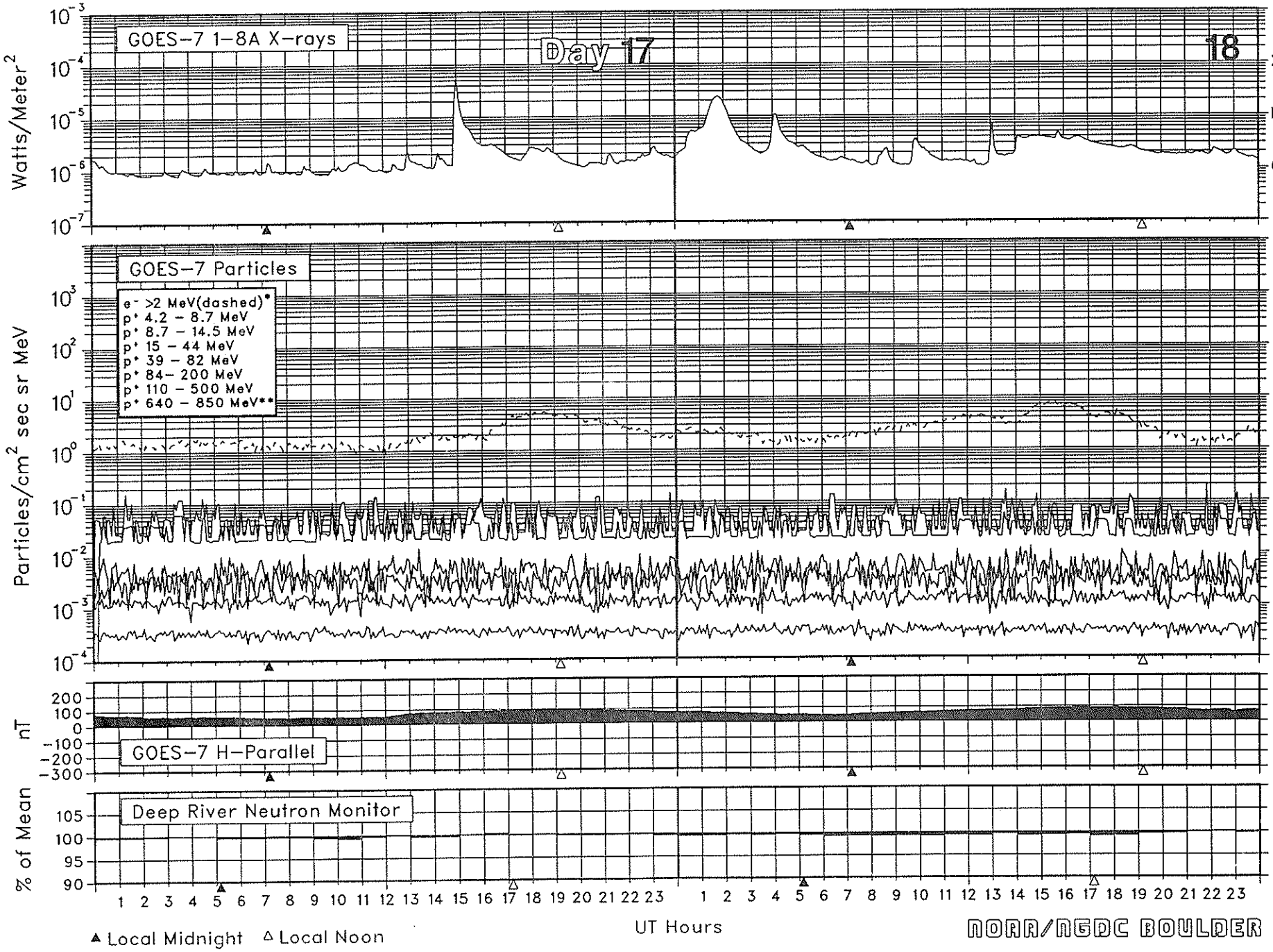

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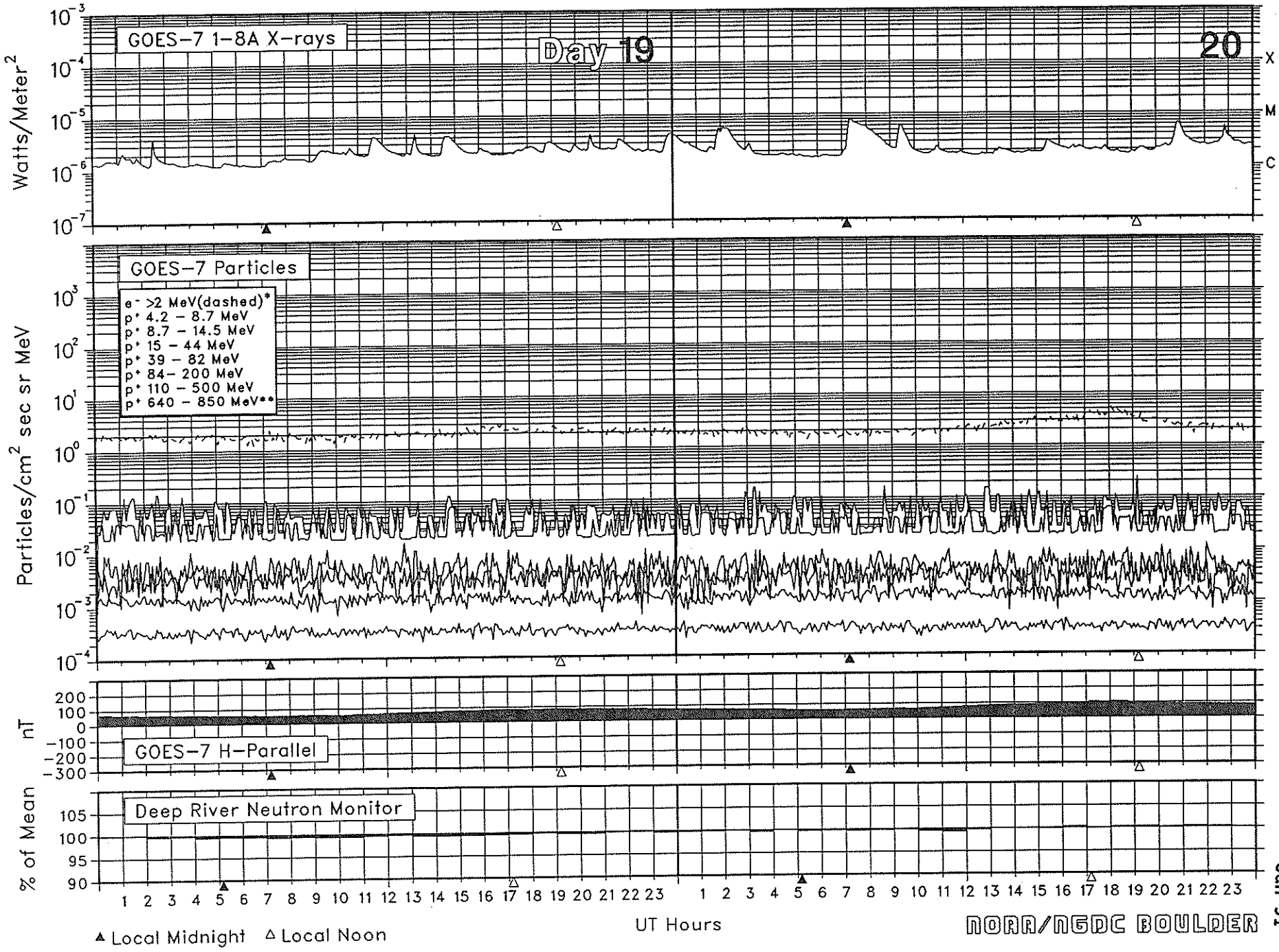

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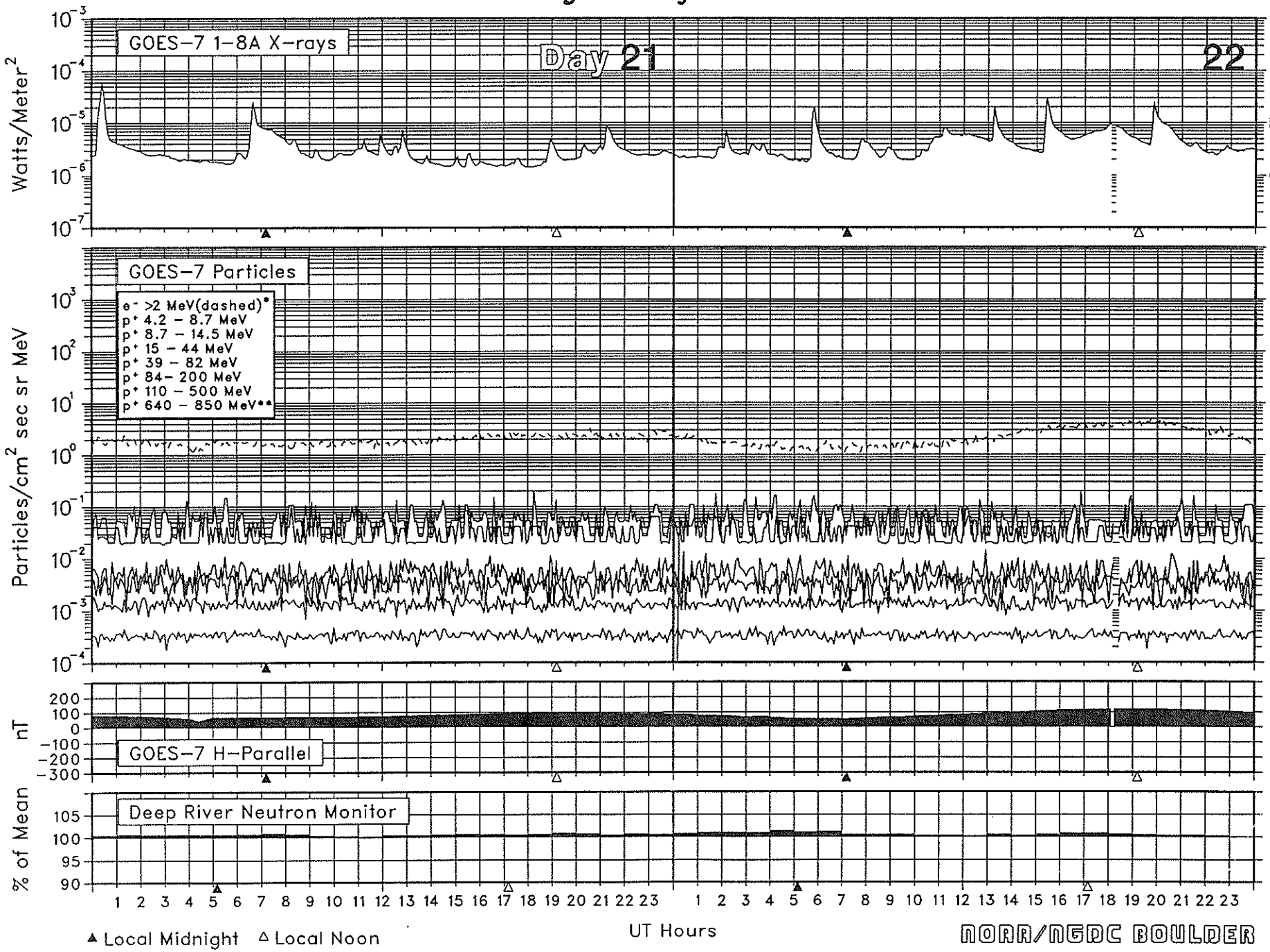
January 1991



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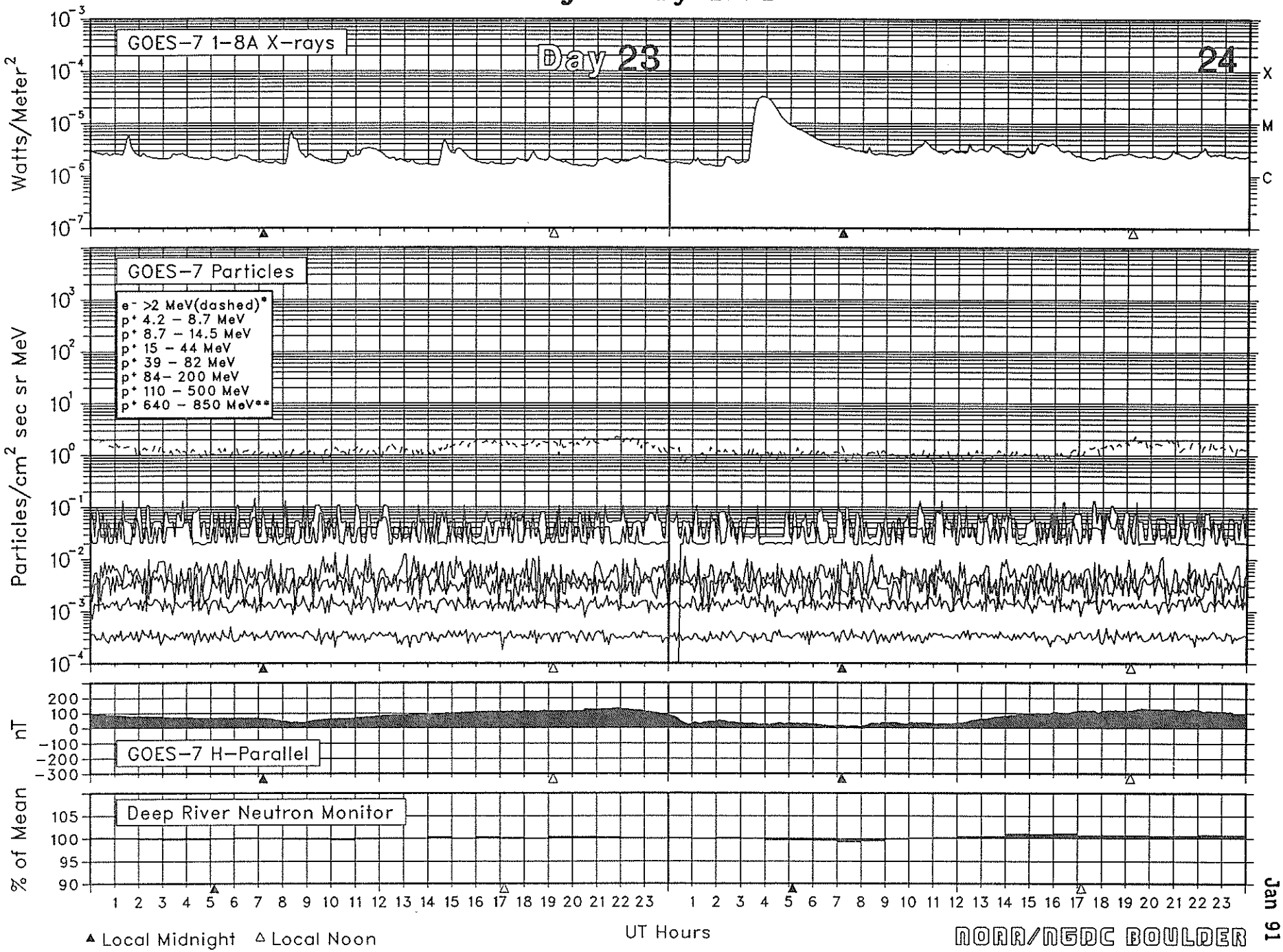

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SOLAR-TERRESTRIAL ENVIRONMENT
January 1991

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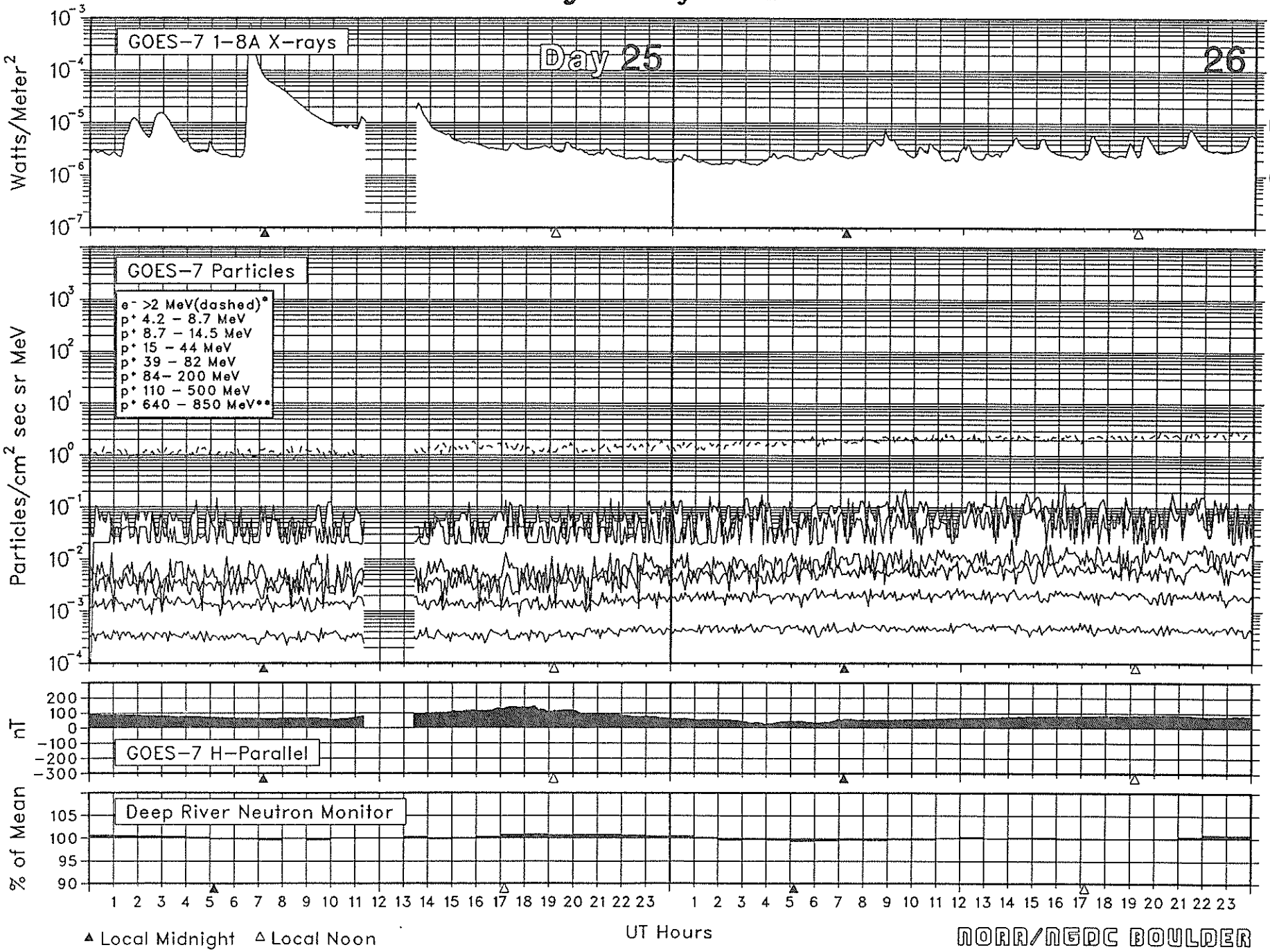
Jan 91



NOAA/NGDC BOULDER

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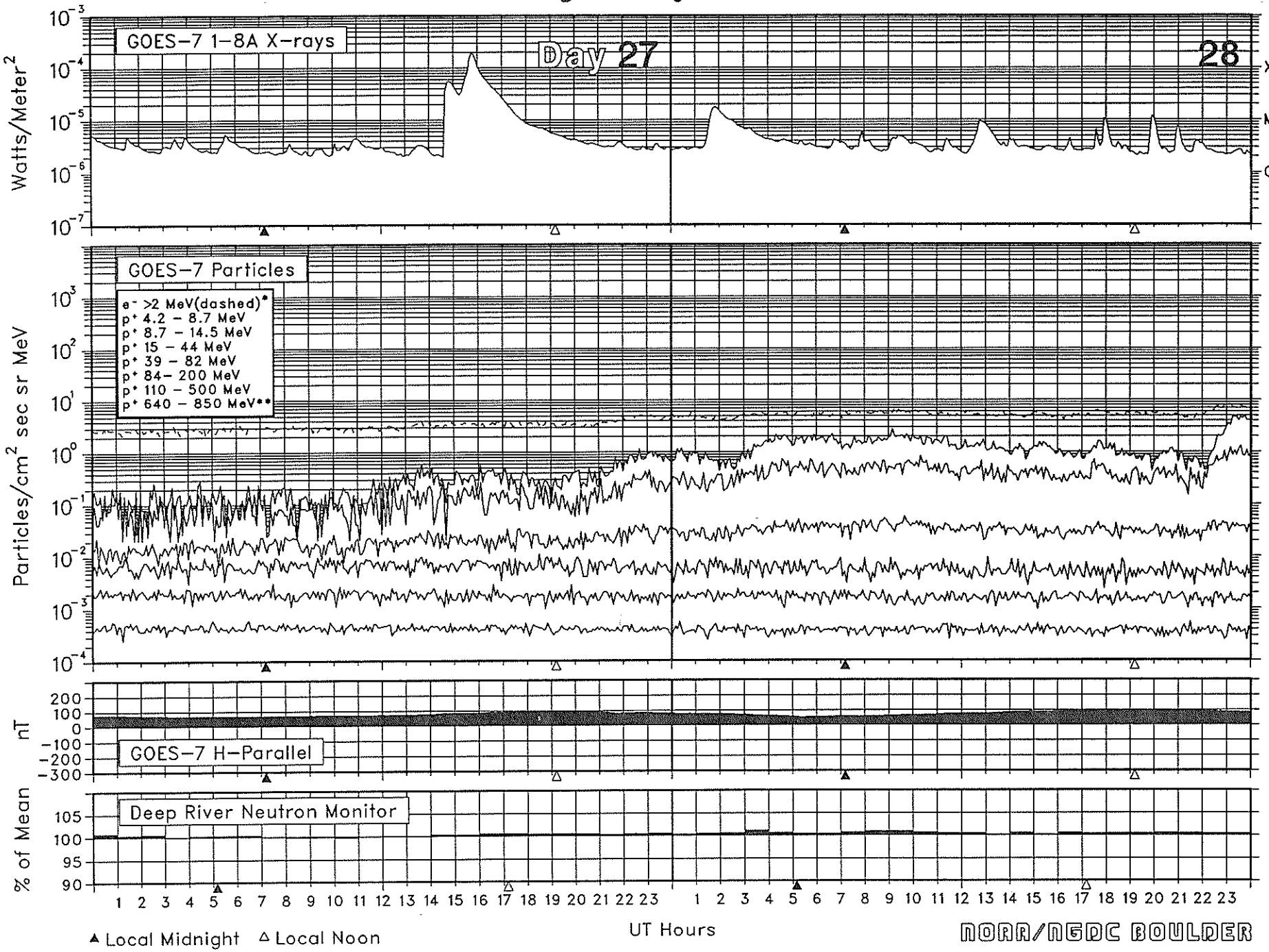

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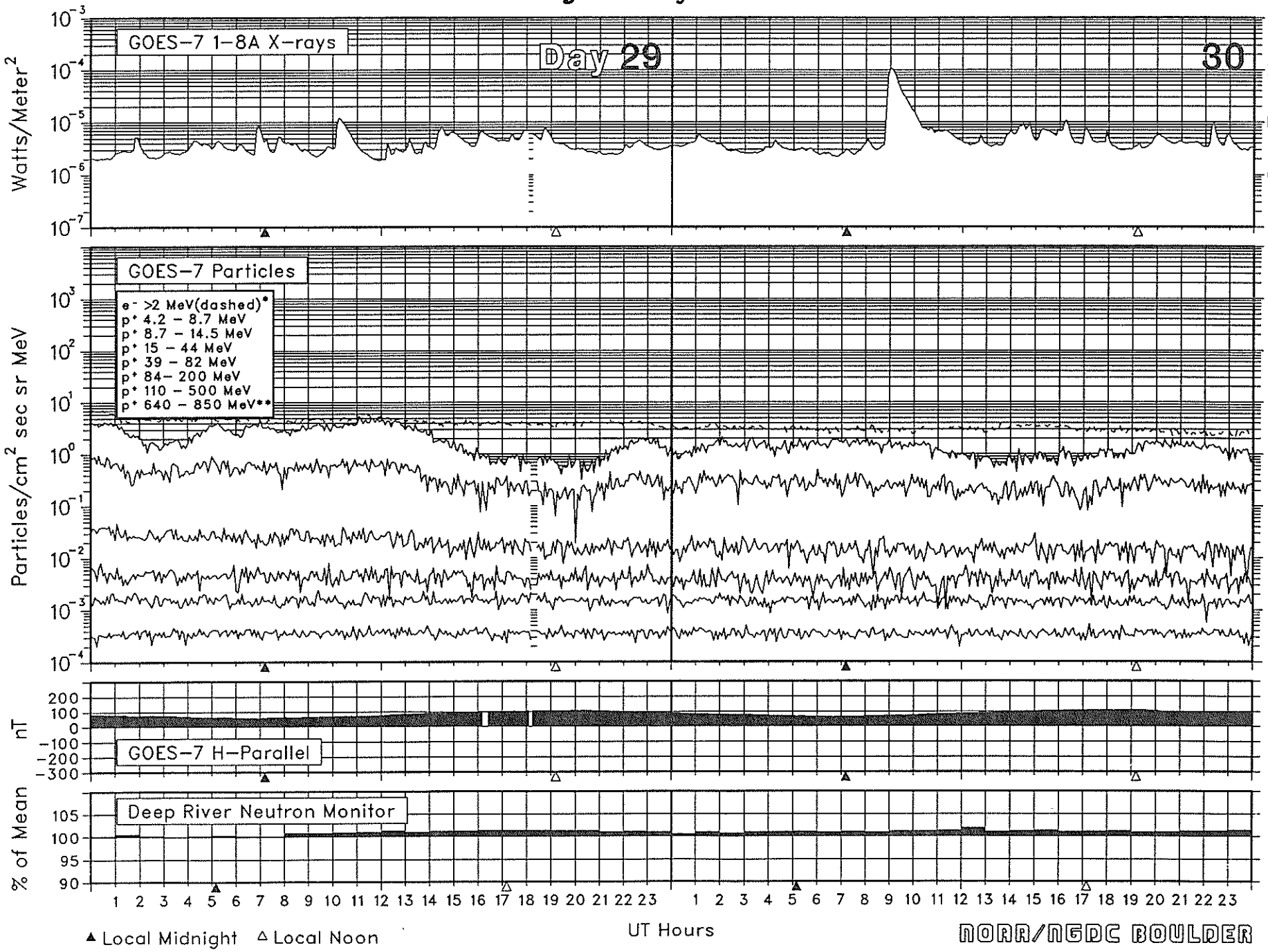
NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
January 1991



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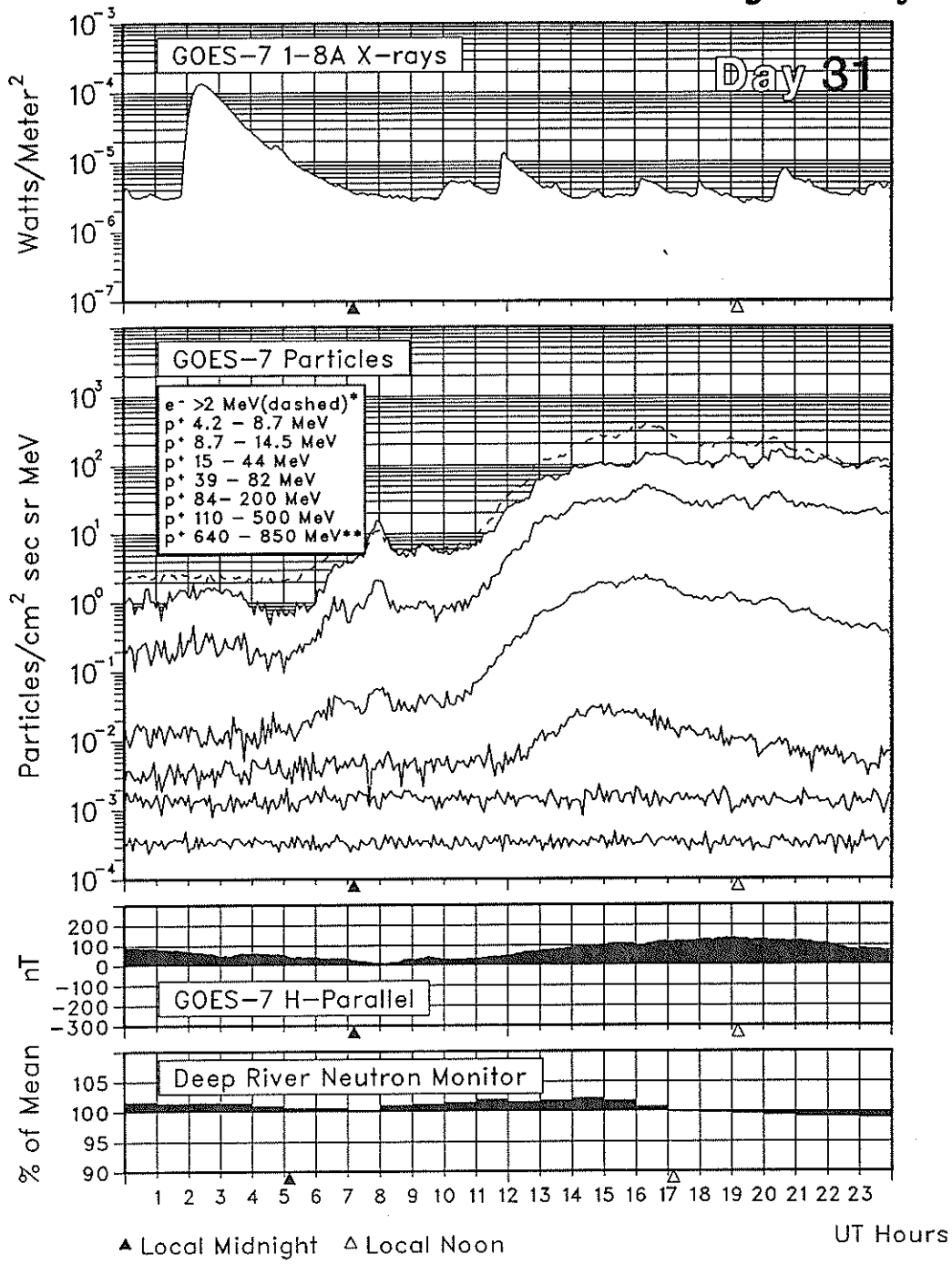

* The y-axis units for the electron flux are **Particles/cm^2 sec sr.** Also, the plotted electron values have been divided by 10.

** The 640 - 850 MeV proton data are from the GOES-6 High Energy Proton and Alpha Detector (HEPAD). These data will appear on these charts only during very energetic proton events.

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NOAA/NGDC BOULDER

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **JANUARY 1991**

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat	Location °Long	Flares Total	Flares M	Flares X	Date of Forecast	Location °Lat	Location °Long	Region Forecast [1]	Geoalerts
001	01	31	213	184	011	S19	W49	1	0	0	01	S19	W49	Q	Solquiet, Magquiet.
						S21	W67	0	0	0		S21	W67	Q	
						S10	W61	3	0	0		S10	W61	E	
						S11	E07	3	0	0		S11	E07	E	
						S25	E12	3	0	0		S25	E12	E	
						S14	W13	0	0	0		S14	W13	Q	
						N08	E41	0	0	0		N08	E41	Q	
						S10	E26	1	0	0		S10	E26	Q	
						N01	W37	0	0	0		N01	W37	Q	
						S24	E01	0	0	0		S24	E01	Q	
						S25	E22	0	0	0		S25	E22	Q	
002	02	01	224	186	005	S28	W58	0	0	0	02	S28	W58	Q	Solquiet, Magquiet.
						S19	W63	0	0	0		S19	W63	Q	
						S21	W81	1	0	0		S21	W81	Q	
						S09	W78	7	0	0		S09	W78	E	
						S10	W06	1	0	0		S10	W06	Q	
						S23	E01	0	0	0		S23	E01	E	
						S08	W25	0	0	0		S08	W25	Q	
						N10	E28	2	0	0		N10	E28	Q	
						S09	E13	0	0	0		S09	E13	E	
						N02	W51	1	0	0		N02	W51	Q	
						S23	W12	0	0	0		S23	W12	Q	
						S23	E06	1	0	0		S23	E06	Q	
						N15	W30	0	0	0		N15	W30	Q	
						S18	E72	0	0	0		S18	E72	Q	
003	03	02	184	181	011	S28	W69	0	0	0	03	S28	W69	Q	Solquiet, Magquiet.
						S19	W73	0	0	0		S19	W73	Q	
						S22	W94	0	0	0		S22	W94	Q	
						S11	W89	0	0	0		S11	W89	Q	
						S10	W19	0	0	0		S10	W19	Q	
						S23	W14	0	0	0		S23	W14	Q	
						N09	E16	0	0	0		N09	E16	Q	
						S10	W01	9	0	0		S10	W01	E	
						N02	W63	0	0	0		N02	W63	Q	
						S23	W26	0	0	0		S23	W26	Q	
						S24	W06	0	0	0		S24	W06	Q	
						S18	E64	0	0	0		S18	E64	Q	
004	04	03	166	173	013	S29	W82	0	0	0	04	S29	W82	Q	Solquiet, Magquiet.
						S20	W89	0	0	0		S20	W89	Q	
						S10	W32	1	0	0		S10	W32	Q	
						S24	W24	1	0	0		S24	W24	Q	
						S07	W51	0	0	0		S07	W51	Q	
						N10	E02	1	0	0		N10	E02	E	
						S10	W13	4	0	0		S10	W13	E	
						N02	W77	0	0	0		N02	W77	Q	
						S27	W20	0	0	0		S27	W20	Q	
						S16	E51	0	0	0		S16	E51	Q	
						S10	E75	0	0	0		S10	E75	Q	
005	05	04	157	173	005	S10	W45	0	0	0	05	S10	W45	Q	Solquiet, Magquiet.
						S24	W39	2	0	0		S24	W39	Q	
						S06	W64	4	0	0		S06	W64	Q	
						N09	W11	4	0	0		N09	W11	E	
						S10	W27	1	0	0		S10	W27	E	
						S23	W33	0	0	0		S23	W33	Q	
						S17	E38	0	0	0		S17	E38	Q	
						S11	E63	0	0	0		S11	E63	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **JANUARY 1991**

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat	Location °Long	Flares Total	Flares M	Flares X	Date of Forecast	Location °Lat	Location °Long	Region Forecast [1]	Geoalerts
006	06	05	119	178	004	S10	W59	4	0	0	06	S10	W59	Q	Solquiet, Magquiet.
						S24	W52	0	0	0		S24	W52	Q	
						S08	W78	1	0	0		S08	W78	E	
						N09	W25	1	0	0		N09	W25	E	
						S10	W41	0	0	0		S10	W41	E	
						S22	W46	0	0	0		S22	W46	Q	
						S18	E25	0	0	0		S18	E25	Q	
						S10	E49	0	0	0		S10	E49	Q	
007	07	06	205	184	003	S10	W73	1	0	0	07	S10	W73	Q	Solquiet, Magquiet.
						S24	W64	0	0	0		S24	W64	Q	
						S08	W91	5	0	0		S08	W91	E	
						N09	W36	1	0	0		N09	W36	Q	
						S10	W54	0	0	0		S10	W54	Q	
						S23	W59	1	0	0		S23	W59	Q	
						S18	E11	1	0	0		S18	E11	Q	
						S11	E37	0	0	0		S11	E37	Q	
						N08	W80	0	0	0		N08	W80	Q	
						S07	W47	0	0	0		S07	W47	Q	
						S16	W32	0	0	0		S16	W32	Q	
						S11	W31	0	0	0		S11	W31	Q	
						N18	W30	0	0	0		N18	W30	Q	
008	08	07	164	204	001	S09	W87	0	0	0	08	S09	W87	Q	Solquiet, Magquiet.
						S24	W76	0	0	0		S24	W76	Q	
						N09	W50	0	0	0		N09	W50	Q	
						S10	W67	0	0	0		S10	W67	Q	
						S24	W73	2	0	0		S24	W73	Q	
						S18	E03	0	0	0		S18	E03	Q	
						S11	E23	0	0	0		S11	E23	Q	
						S05	W60	1	0	0		S05	W60	Q	
						S11	W45	12	0	0		S11	W45	E	
						N13	E73	2	0	0		N13	E73	Q	
						S16	W17	0	0	0		S16	W17	Q	
009	09	08	145	214	007	N08	W65	0	0	0	09	N08	W65	Q	Solquiet, Magquiet.
						S10	W76	2	0	0		S10	W76	Q	
						S18	W13	0	0	0		S18	W13	Q	
						S11	E10	0	0	0		S11	E10	Q	
						S06	W74	0	0	0		S06	W74	Q	
						S11	W59	12	3	0		S11	W59	A	
						N14	E65	12	0	0		N14	E65	E	
						S17	W31	1	0	0		S17	W31	Q	
						N07	E41	0	0	0		N07	E41	Q	
		Presto:[2]	Boulder	Tenflare 640 flux units 08/0420 UT duration 23 minutes.											
010	10	09	129	215	008	N08	W78	0	0	0	10	N08	W78	Q	Solquiet, Magquiet.
						S12	W01	0	0	0		S12	W01	Q	
						S11	W72	4	0	0		S11	W72	E	
						N15	E53	1	0	0		N15	E53	E	
						S18	W44	0	0	0		S18	W44	Q	
						N07	E25	1	0	0		N07	E25	Q	
						S06	E81	0	0	0		S06	E81	Q	
011	11	10	148	220	007	N07	W92	0	0	0	11	N07	W92	Q	Solquiet, Magquiet.
						S12	W16	0	0	0		S12	W16	Q	
						S11	W86	1	0	0		S11	W86	E	
						N15	E40	10	1	0		N15	E40	E	
						S19	W58	0	0	0		S19	W58	Q	
						N07	E09	0	0	0		N07	E09	Q	
						S07	E68	5	0	0		S07	E68	Q	

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Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat	Location °Long	Flares Total	Flares M	Flares X	Date of Forecast	Location °Lat	Location °Long	Region Forecast [1]	Geoalerts
012	12	11	170	212	006	S11	W28	1	0	0	12	S11	W28	Q	Solquiet, Magquiet.
						N16	E27	10	1	0		N16	E27	A	
						S19	W71	1	0	0		S19	W71	Q	
						N08	W03	0	0	0		N08	W03	Q	
						S06	E60	7	2	0		S06	E60	A	
						S33	W20	0	0	0		S33	W20	Q	
						S23	W00	0	0	0		S23	W00	Q	
						N16	E06	1	0	0		N16	E06	Q	
		Presto:[2]	Boulder	Tenflare 600 flux units 11/1524 UT duration 6 minutes.											
013	13	12	180	207	015	S11	W42	0	0	0	13	S11	W42	Q	Solalert, 13/XX, Magquiet.
						N16	E13	5	0	0		N16	E13	A	
						S19	W83	0	0	0		S19	W83	Q	
						N08	W16	0	0	0		N08	W16	Q	
						S06	E47	17	0	0		S06	E47	E	
						S33	W34	1	0	0		S33	W34	Q	
						N14	W06	1	0	0		N14	W06	Q	
014	14	13	221	197	014	S16	W75	0	0	0	14	S16	W75	Q	Solalert, 14/XX, Magquiet.
						N15	E02	13	0	0		N15	E02	A	
						N08	W29	0	0	0		N08	W29	Q	
						S07	E35	9	0	0		S07	E35	E	
						S34	W44	0	0	0		S34	W44	Q	
						N13	W19	0	0	0		N13	W19	Q	
						N14	W25	0	0	0		N14	W25	Q	
						S20	E41	1	0	0		S20	E41	E	
						S13	E31	0	0	0		S13	E31	Q	
015	15	14	179	192	001	N16	W12	5	0	0	15	N16	W12	E	Solalert, 15/XX, Magquiet.
						N08	W44	0	0	0		N08	W44	Q	
						S07	E22	4	0	0		S07	E22	E	
						S34	W58	0	0	0		S34	W58	Q	
						N13	W39	0	0	0		N13	W39	Q	
						S21	E27	0	0	0		S21	E27	E	
						S13	E19	0	0	0		S13	E19	Q	
016	16	15	203	190	007	N16	W25	3	0	0	16	N16	W25	E	Solalert, 16/17, Magquiet.
						S07	E06	4	0	0		S07	E06	E	
						S35	W71	0	0	0		S35	W71	Q	
						N14	W52	0	0	0		N14	W52	Q	
						S21	E15	1	0	0		S21	E15	Q	
						S14	E04	0	0	0		S14	E04	Q	
						N28	E25	5	0	0		N28	E25	Q	
						S12	E21	0	0	0		S12	E21	Q	
017	17	16	217	192	008	N16	W37	4	0	0	17	N16	W37	E	Solalert, Magquiet.
						S07	W08	2	0	0		S07	W08	E	
						S21	E02	0	0	0		S21	E02	Q	
						S13	W10	0	0	0		S13	W10	Q	
						N28	E13	1	0	0		N28	E13	Q	
						S13	E07	0	0	0		S13	E07	Q	
						S28	E56	0	0	0		S28	E56	Q	
						S22	W16	0	0	0		S22	W16	Q	
						N23	E65	0	0	0		N23	E65	Q	
018	18	17	182	207	010	N15	W50	5	0	0	18	N15	W50	E	Solalert, 18/XX, Magquiet.
						S07	W23	5	0	0		S07	W23	E	
						S21	W09	0	0	0		S21	W09	Q	
						S14	W22	0	0	0		S14	W22	Q	
						N28	E01	0	0	0		N28	E01	Q	
						S14	W07	6	1	0		S14	W07	E	
						S28	E43	0	0	0		S28	E43	Q	

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Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat	Location °Long	Flares Total	Flares M	Flares X	Date of Forecast	Location °Lat	Location °Long	Region Forecast [1]	Geoalerts
018	18	17				S23	W31	0	0	0	18	S23	W31	Q	
						N22	E52	0	0	0		N22	E52	Q	
		Presto:[2] Boulder Tenflare 350 flux units 17/1457 UT duration 6 minutes.													
019	19	18	204	202	006	N15	W63	8	0	0	19	N15	W63	E	Solalert, 19/XX, Magquiet.
						S07	W37	4	1	0		S07	W37	E	
						S21	W23	0	0	0		S21	W23	Q	
						N28	W13	0	0	0		N28	W13	Q	
						S14	W21	6	1	0		S14	W21	E	
						S28	E32	1	0	0		S28	E32	Q	
						S22	W42	0	0	0		S22	W42	Q	
						N23	E39	0	0	0		N23	E39	E	
						S10	E53	1	0	0		S10	E53	Q	
						S24	W06	0	0	0		S24	W06	Q	
		Presto: Boulder Tenflare 280 flux units 18/1403 UT duration 7 minutes.													
020	20	19	181	199	003	N14	W77	5	0	0	20	N14	W77	E	Solalert, 20/XX, Magquiet.
						S07	W51	2	0	0		S07	W51	E	
						S21	W35	0	0	0		S21	W35	Q	
						N27	W28	2	0	0		N27	W28	Q	
						S13	W35	3	0	0		S13	W35	E	
						S28	E20	2	0	0		S28	E20	Q	
						S22	W57	0	0	0		S22	W57	Q	
						N22	E25	0	0	0		N22	E25	E	
						S09	E41	0	0	0		S09	E41	Q	
						S10	E67	0	0	0		S10	E67	Q	
021	21	20	136	204	004	N16	W86	0	0	0	21	N16	W86	E	Solalert, 21/XX, Magquiet.
						S07	W65	1	0	0		S07	W65	Q	
						N27	W45	0	0	0		N27	W45	Q	
						S14	W48	3	0	0		S14	W48	E	
						S28	E05	2	0	0		S28	E05	Q	
						N23	E12	2	0	0		N23	E12	Q	
						S08	E54	0	0	0		S08	E54	Q	
						S18	E80	1	0	0		S18	E80	Q	
		Presto: Toyokawa Tenflare 280 flux units 21/0004 UT duration 20 minutes.													
022	22	21	175	203	005	S07	W78	4	0	0	22	S07	W78	E	Solalert, 22/XX, Magquiet.
						N27	W59	0	0	0		N27	W59	Q	
						S13	W63	4	1	0		S13	W63	E	
						S27	W10	0	0	0		S27	W10	Q	
						N25	W02	0	0	0		N25	W02	Q	
						S09	E40	0	0	0		S09	E40	Q	
						S16	E68	9	0	0		S16	E68	E	
						S06	E58	0	0	0		S06	E58	Q	
						N27	E55	0	0	0		N27	E55	Q	
						N09	E62	1	0	0		N09	E62	E	
						S09	E78	0	0	0		S09	E78	Q	
023	23	22	154	221	004	S13	W76	9	3	0	23	S13	W76	E	Solalert, 23/XX, Magquiet.
						N23	W14	0	0	0		N23	W14	Q	
						S17	E56	6	1	0		S17	E56	E	
						S04	E46	0	0	0		S04	E46	Q	
						N26	E42	1	0	0		N26	E42	Q	
						N10	E49	1	0	0		N10	E49	E	
						S09	E64	11	0	0		S09	E64	E	
						S19	E03	0	0	0		S19	E03	Q	
024	24	23	207	226	003	S15	W91	5	0	0	24	S15	W91	E	Solalert, 24/XX, Magquiet.
						N22	W27	0	0	0		N22	W27	E	
						S08	W12	0	0	0		S08	W12	Q	
						S08	E14	0	0	0		S08	E14	Q	

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024	24	23				S17	E44	5	0	0	24	S17	E44	E	
						S06	E37	0	0	0		S06	E37	Q	
						N27	E29	1	0	0		N27	E29	Q	
						N11	E37	0	0	0		N11	E37	Q	
						S10	E52	3	0	0		S10	E52	E	
						S19	E05	0	0	0		S19	E05	Q	
						S11	E67	1	0	0		S11	E67	Q	
025	25	24	216	244	016	N23	W40	0	0	0	25	N23	W40	Q	Solalert, 25/XX,
						S15	E32	5	1	0		S15	E32	A	Magquiet.
						N26	E16	2	0	0		N26	E16	Q	
						N10	E20	0	0	0		N10	E20	Q	
						S09	E37	5	0	0		S09	E37	A	
						S19	W08	1	0	0		S19	W08	Q	
						S10	E54	0	0	0		S10	E54	Q	
						S07	W62	2	0	0		S07	W62	Q	
		Presto:[2]	Boulder	Tenflare 1200 flux units 24/0335 UT duration										83 minutes.	
026	26	25	228	267	011	N21	W53	1	0	0	26	N21	W53	Q	Solalert, 26/XX,
						S16	E21	14	0	0		S16	E21	A	Magalert, 26/28.
						S06	E08	0	0	0		S06	E08	Q	
						N27	E02	1	0	0		N27	E02	Q	
						N10	E11	0	0	0		N10	E11	Q	
						S08	E23	9	2	0		S08	E23	A	
						S19	W21	0	0	0		S19	W21	Q	
						S11	E41	2	0	0		S11	E41	Q	
						S07	W79	3	0	0		S07	W79	Q	
						S13	E74	1	0	1		S13	E74	A	
		Presto:	Boulder	X-ray event X11 25/0623 UT duration 208 minutes.											
			Boulder	Tenflare 3500 flux units 25/0629 UT duration 84 minutes.											
027	27	26	279	283	006	N20	W64	0	0	0	27	N20	W64	Q	Solalert, 27/28,
						S10	W43	0	0	0		S10	W43	Q	Magalert, 27/28.
						S18	E07	16	0	0		S18	E07	E	
						S07	W00	0	0	0		S07	W00	Q	
						N26	W11	1	0	0		N26	W11	Q	
						N10	W02	1	0	0		N10	W02	Q	
						S09	E10	2	0	0		S09	E10	A	
						S21	W34	0	0	0		S21	W34	Q	
						S11	E27	1	0	0		S11	E27	Q	
						S13	E64	7	0	0		S13	E64	A	
						N12	E23	4	0	0		N12	E23	Q	
028	28	27	309	303	005	N22	W77	0	0	0	28	N22	W77	Q	Solalert, 28/XX,
						S17	W05	8	0	0		S17	W05	E	Magalert, 28/30.
						S07	W17	0	0	0		S07	W17	Q	
						N26	W23	0	0	0		N26	W23	Q	
						N10	W15	6	0	0		N10	W15	Q	
						S08	W01	2	0	0		S08	W01	E	
						S12	E14	4	0	0		S12	E14	Q	
						S11	E53	10	0	1		S11	E53	A	
						N13	E09	8	0	0		N13	E09	Q	
						S14	E69	0	0	0		S14	E69	Q	
						S09	E25	0	0	0		S09	E25	Q	
		Presto:[2]	Boulder	X-ray event X1/1B S14 E59 27/1439 UT duration 85 minutes.											
			Boulder	Tenflare 2900 flux units 27/1538 UT duration 87 minutes.											
029	29	28	418	327	004	N21	W90	0	0	0	29	N21	W90	Q	Solalert, 29/XX,
						S18	W19	5	0	0		S18	W19	E	Magalert, 29/30.
						N25	W38	0	0	0		N25	W38	Q	
						N09	W30	2	0	0		N09	W30	E	
						S09	W13	6	1	0		S09	W13	E	

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029	29	28				S12	E03	11	0	0	29	S12	E03	E	
						S12	E41	14	3	0		S12	E41	A	
						N12	W05	1	0	0		N12	W05	Q	
						S14	E58	0	0	0		S14	E58	Q	
						S11	E13	1	0	0		S11	E13	Q	
						S14	E29	0	0	0		S14	E29	Q	
						N20	E67	6	0	0		N20	E67	E	
						S17	E60	0	0	0		S17	E60	Q	
						N16	W77	0	0	0		N16	W77	Q	
						N05	E76	1	1	0		N05	E76	Q	
030	30	29	376	353	003	S18	W31	5	0	0	30	S18	W31	E	Solalert, 30/XX, Magnil.
						N25	W51	0	0	0		N25	W51	Q	
						N08	W43	2	0	0		N08	W43	E	
						S10	W26	2	0	0		S10	W26	E	
						S13	W10	11	0	0		S13	W10	E	
						S10	E28	9	1	0		S10	E28	A	
						N12	W18	0	0	0		N12	W18	Q	
						S13	E44	0	0	0		S13	E44	Q	
						S11	W01	0	0	0		S11	W01	Q	
						S14	E16	0	0	0		S14	E16	Q	
						N20	E54	7	0	0		N20	E54	E	
						S17	E49	1	0	0		S17	E49	Q	
						N04	E61	1	0	0		N04	E61	Q	
031	31	30	378	367	005	S18	W45	15	0	0	31	S18	W45	E	Solalert, 31/XX, Magquiet.
						N25	W64	0	0	0		N25	W64	Q	
						N09	W56	2	0	0		N09	W56	E	
						S09	W38	5	1	1		S09	W38	A	
						S14	W25	15	2	0		S14	W25	E	
						S12	E15	9	1	0		S12	E15	A	
						N12	W31	0	0	0		N12	W31	Q	
						S15	E30	0	0	0		S15	E30	Q	
						S11	W17	0	0	0		S11	W17	Q	
						S16	E05	0	0	0		S16	E05	Q	
						N20	E42	2	0	0		N20	E42	E	
						S17	E37	1	0	0		S17	E37	Q	
						N05	E49	0	0	0		N05	E49	Q	

Presto: Boulder X-ray event X1/2B S08 W34 30/0849 UT duration 87 minutes.
Boulder Tenflare 460 flux units 30/0849 UT duration 16 minutes.

032	01	31	366	357	016	S18	W57	3	0	0	01	S18	W57	A	Solalert, 01/XX, Magalert, 02/XX, Flare.
						N09	W68	0	0	0		N09	W68	Q	
						S09	W53	5	0	0		S09	W53	A	
						S13	W40	4	0	1		S13	W40	A	
						S12	E02	3	0	0		S12	E02	A	
						N12	W43	1	0	0		N12	W43	Q	
						S14	E17	0	0	0		S14	E17	Q	
						S11	W31	0	0	0		S11	W31	Q	
						S16	W07	0	0	0		S16	W07	Q	
						N20	E30	3	0	0		N20	E30	E	
						S17	E24	0	0	0		S17	E24	Q	
						N05	E35	1	0	0		N05	E35	Q	

Presto:[2] Boulder X-ray event X1/2B S11 W35 31/0153 UT duration 102 minutes.
Toyokawa Tenflare 570 flux units 31/0153 UT in progress.
Boulder Tenflare 600 flux units 31/0155 UT duration 128 minutes.
Boulder Proton event began 31/1130 UT, maximum of 220 particles-cm^{-2}-s-ster at greater than 10 MeV 31/1615 UT, in progress.

[1] Q = quiet, E = eruptive, A = active, P = proton.
[2] Presto message is a rapid report of a major event.

STRATWARM ALERTS

03 January Stratwarm exists. Intense warming exists over the eastern parts of the United States and southern Canada with temperature increase of more than 30° over Labrador during the last week at 10 HPA. The strong vortex displaced to northern Canada and the coldest air to the Bering Sea.

04 January Stratwarm exists. Intense warming over the North American continent expands northwards.

05 January Stratwarm exists. Minor warming over North America and the Atlantic Ocean expands northeastward.

06 January Stratwarm exists. Large warm area, reaching from the North American continent over the Atlantic Ocean towards Europe, slowly moves northeastwards.

07 January Stratwarm exists. Large warm region further exists from the United States and eastern Canada across the Atlantic to Europe, spreading northeastwards.

08 January Stratwarm exists. Very intense warming with center over southern Greenland further spreading northeastwards.

09 January Stratwarm exists. Very intense warming (center around 0° over Greenland today) from Europe across the Atlantic to the eastern part of Canada and the northeastern United States continues. Warm air further spreading northeastwards.

10 January Stratwarm exists. Very intense warming with center over Greenland continues. Warm air further spreading northeastwards. Intensification of the European anticyclone.

11 January Stratwarm exists. Very intense warming center crossing Scandinavia with an anticyclone over middle Europe.

13 January Stratwarm exists. Intense warming connected with a strong anticyclone over Europe slowly weakening. Warm air further spreading eastwards. Temperature gradient reversed between 60° North and the pole at 10 HPA.

14 January Stratwarm exists. Intense warming over Europe continuously weakening. Polar region cooling again. Temperature gradient no longer reversed between 60° North and the pole at 10 HPA.

15 January Stratwarm exists. Warming over Europe slowly weakening, warm air continuously spreading eastwards. A new warming developed around Japan and the adjacent Pacific, moving northeastwards.

16 January Stratwarm exists. Minor warming over Europe and southern Siberia continuously weakening. Weak warm area over Japan moving northeastwards.

17 January Stratwarm exists. Warming over Europe further weakening, but intensification of the warming over eastern Siberia (temperature increase of more than 35° Celsius during the last week). Warm air spreading northeastwards.

18 January Stratwarm exists. Intensification of the warming over northeastern Siberia today.

19 January Stratwarm exists. The intense warming over northeastern Siberia extends to northern Canada today, whereby the temperature over northern Canada increased more than 20° since yesterday.

20 January Stratwarm exists. The intense warming from Siberia to northern Canada spreading polewards today at 10 HPA.

21 January Stratwarm exists. Intensification of the large warming over central Siberia, the east Siberian and Canadian Arctic and northern Canada. Temperature gradient reversed between 60° North and the pole at 10 HPA and upwards.

22 January Stratwarm exists. Large and intense warming over central and eastern Siberia, the adjacent Arctic and Canada/Greenland continues. Temperature gradient reversed between 60° North and the pole at 10 HPA and upwards in the whole upper stratosphere.

23 January Stratwarm exists. Intense warming from eastern Siberia, the adjacent Arctic to Canada and Greenland continues. Temperature gradient reversed between 60° North and the pole in the middle and upper stratosphere.

24 January Stratwarm exists. Intense warming continues over Siberia, warm air has spread over Greenland-Canada and Alaska-Western United States. Strong cold air exists over Scandinavia. Reversed temperature gradient between 60° North and the pole only in the middle stratosphere (between 30 and 10 HPA).

25 January Stratwarm exists. Strong intensification of the warming over central Siberia today.

26 January Stratwarm exists. Very intense warming over southern, central, and eastern Siberia continues. Warm center moving eastwards. No longer reversed temperature gradient between 60° North and the pole.

27 January Stratwarm exists. Large intense warm center over Siberia spreading northwards causing temperatures warmer than 0° Celsius at 10 HPA over New Siberian Islands.

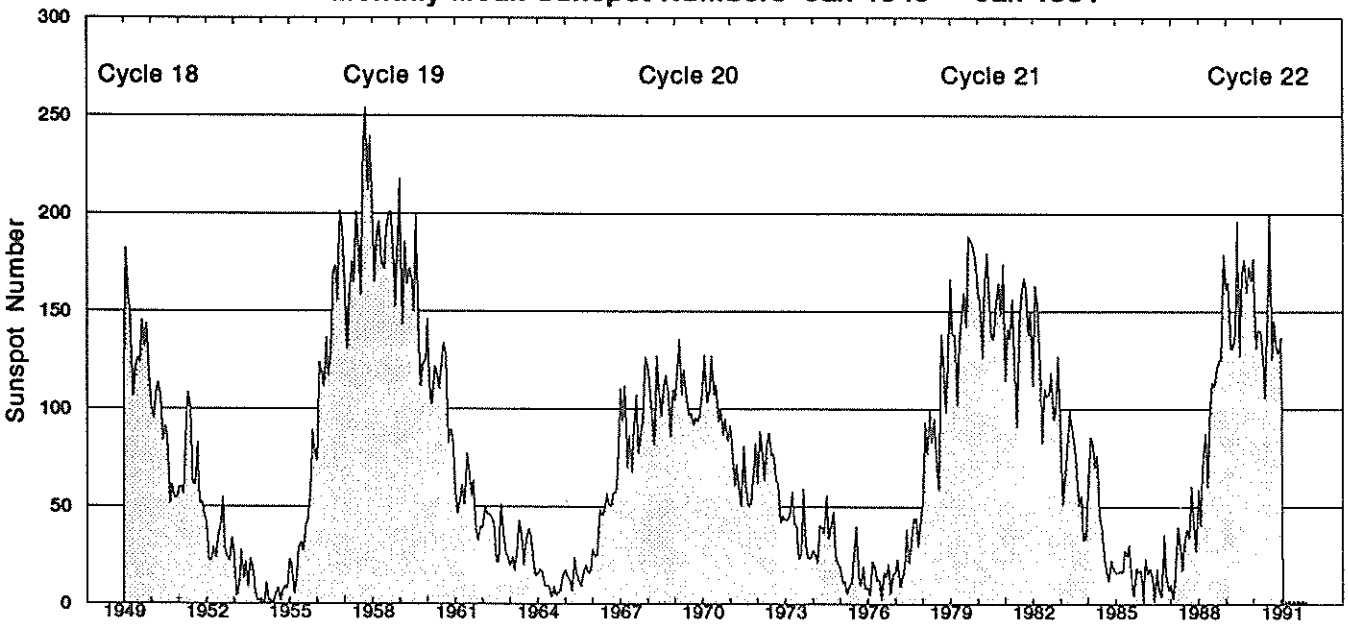
28 January Stratwarm exists. Very intense warming over Siberia and the Siberian Arctic continues. Warm center over the Laptev Sea moving polewards. Temperature gradient reversed again between 60° North and the pole at 10 HPA and upwards today.

29 January Stratwarm exists. Intense warm center has reached the polar region at the middle and upper stratosphere. Temperature gradient reversed between 60° North and the pole from 10 HPA upwards and mean zonal wind at 60° North from the east at 1 HPA.

30 January Stratwarm exists. Intense warming centered over the Canadian Arctic continues. Temperature gradient reversed between 60° North and the pole in the middle and upper stratosphere. Mean zonal wind of 60° North at 10 HPA continuously weakening. At 1 HPA weak zonal wind at 60° North from east.

31 January Stratwarm exists. Intensive warming weakening and moving from Alaska to the Aleutian area. Cold air spreading from northern Europe northwestwards. Temperature gradient no longer reversed between 60° North and the pole.

Monthly Mean Sunspot Numbers Jan 1949 – Jan 1991



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6	134.7
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1	83.9
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4 m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2 M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	112.3
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	183.0	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
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.2	130.5	128.5	142.1
1991	136.9												136.9

Monthly values are preliminary since Oct 1990. For the yearly means, each "M" marks a sunspot cycle maximum and each "m" a minimum.

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Feb 90	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct†	Nov†	Dec†	Jan 91†
01	171	173	103	70	96	272	146	120	115	77	127	139
02	161	171	114	59	80	253	175	116	117	81	160	79
03	124	163	113	61	73	264	151	126	140	108	171	93
04	113	126	127	86	77	241	137	134	134	146	186	95
05	97	98	132	80	79	213	128	118	123	154	167	100
06	80	104	138	106	101	186	124	118	124	197	169	119
07	82	105	128	132	107	173	120	112	135	209	182	105
08	95	88	128	138	99	135	136	112	141	208	177	99
09	103	71	88	133	87	102	145	113	148	188	176	94
10	79	80	82	116	107	88	160	121	153	163	157	97
11	75	73	88	126	126	106	161	116	195	167	157	106
12	80	85	77	146	115	110	167	124	192	151	138	113
13	85	83	123	144	122	114	192	142	201	129	117	145
14	75	90	142	141	118	118	215	178	202	106	98	119
15	78	110	171	144	102	98	229	162	227	107	88	114
16	64	129	170	157	110	95	232	156	192	95	99	133
17	54	123	199	167	100	87	269	137	182	103	112	154
18	77	167	203	170	83	57	270	136	181	97	121	127
19	107	202	213	187	79	61	290	151	181	104	134	119
20	134	217	206	187	68	81	295	145	169	98	124	91
21	159	211	212	193	57	123	278	150	136	102	125	107
22	191	195	207	187	71	143	262	141	140	125	99	106
23	239	206	174	160	64	165	281	117	134	114	91	127
24	249	209	157	158	88	201	276	101	131	118	95	135
25	245	204	160	146	94	204	263	94	125	110	98	149
26	234	188	118	134	103	196	220	93	102	111	91	179
27	217	168	124	139	140	177	188	77	104	109	104	220
28	187	129	103	121	184	165	176	113	114	134	111	237
29		132	94	118	203	144	186	119	98	152	109	248
30		133	114	90	230	117	181	115	87	153	103	239
31		115		101		142	155		77		96	256
Mean	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.2	130.5	128.5	136.9

† = preliminary. The preliminary yearly mean sunspot number equals 142.4 for 1990.

Algonquin Radio Observatory — OTTAWA 2800 MHz (10.7 cm) SOLAR FLUX — Adjusted to 1 AU

Day	Feb 90	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 91
01	200.8	200.0	159.2	129.0	140.6	248.3	199.0	171.4	160.5	141.6*	172.6	180.6
02	177.8	192.7	153.3	129.2	141.2	267.6	208.6	168.9	162.8	138.5	178.0	175.8
03	157.9	176.3*	151.6	125.2	146.1	253.8	192.4	162.6	177.4*	150.2	187.6	170.0
04	154.8	168.9	148.6*	123.6	148.1	238.3*	191.2	158.2*	186.8	154.7	199.3	170.2
05	150.9	161.7	156.5	130.6	153.7	231.6	180.8	157.5	170.0	169.7	207.0*	172.9
06	147.5	163.8*	150.2	151.0	161.4	221.8	174.6	157.6	170.0	196.4	221.0	179.7*
07	144.3	168.1	155.0	155.5	183.6	215.7	172.1	165.1	169.3	214.3	222.0	199.6
08	142.2	157.1*	152.3	170.7	195.5	189.6	184.8	163.5	175.9*	211.8	223.6	207.9
09	142.0	150.9*	146.8	174.6	203.9*	170.9	183.2	170.4	183.9	201.2	230.3	209.1
10	148.5	149.0	149.3	195.4	207.5*	164.0	186.3	171.2	194.7	191.1	233.4	214.6
11	134.9	142.5	160.8	205.4*	217.2	160.2	187.1	180.6	205.1	195.0	233.4	209.4
12	140.0	146.1	169.9	215.2	221.8*	160.9	188.2	193.3	200.6	191.0	228.0	201.6
13	142.8	146.3	195.5*	225.8	208.8	161.5	192.5	198.0	209.4	181.5	219.5	190.5
14	149.5	149.8*	215.7	224.2*	206.8	155.4	188.2*	209.4*	220.6	198.0	195.3	184.5
15	148.8	164.2*	222.9	246.6	196.3	149.1	199.6	207.3	231.6	207.3	193.2	184.6
16	148.8	178.1	226.3*	251.5	189.9	146.5	211.0	205.2	224.6	207.3	186.2	181.8
17	151.6	182.0	236.7*	248.9	187.5	147.6	228.4	210.7	193.7	217.1	192.5	202.0
18	161.1	196.4	243.0	271.8	169.5	144.7	246.1	207.5	198.2	198.9	201.6	196.8
19	180.3	216.3	244.2*	280.0	163.5	145.3	268.0*	213.8	214.2*	191.2	191.2	192.3
20	189.5	223.9*	257.1	272.5	161.2	154.0	288.7	204.0	201.7	186.8	181.6	197.5
21	211.9	227.6	239.6	259.2	155.8	159.2	298.3	203.2	188.7	177.6	185.8	195.9
22	215.7	243.1*	232.8	250.0	145.2	166.0*	322.8*	195.3	167.9	177.4	178.1	217.5*
23	216.6	245.3	226.3	239.5	139.1	180.4	322.7	185.4	164.0	171.7	185.6	216.0
24	231.5	231.3	217.4	209.2	143.8	186.6	329.2	178.7	157.5	167.2	184.9	236.8
25	225.3	223.9*	198.3	189.1	149.3	213.6	303.9	167.1	161.8	162.3	185.0	260.9
26	213.3	226.9	188.9*	186.3	154.5	209.9	285.1*	159.6	153.5	153.2	188.1	276.9
27	224.1	215.1	169.8	164.6	173.4*	197.2	269.2	152.6	162.5	155.0	191.9	293.8J
28	222.0	206.0	152.7	159.3	187.7	193.1	250.2	152.1	150.9	167.1	192.4	313.8
29		184.1	140.9	144.8	210.8	180.3	225.2	150.1	155.9	163.2	195.5	344.5
30		186.5E	136.9	142.5*	226.6	188.3	210.4	157.8	151.1*	169.6	189.6	359.2
31		172.8		142.5*		183.4	182.9*		141.6		180.6	348.6
Mean	174.1	187.0	186.6	194.0	176.3	186.6	228.1	179.3	180.9	180.3	198.5	222.1

* = corrected for burst in progress; E = corrected for snow on antenna; J = no calibration due to burst.

DAILY SOLAR INDICES

January 1991

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit — PALE (15400)	PALE (8800)	PALE (4995)	Ottawa (2800)	PALE (2695)	PALE (1415)	PALE (610)	PALE (410)	PALE (245)
01	1	14	139	140	186.8	600	299	219	180.6	180	143	81	39	21
02	2	15	79	111	181.8	586	312	214	175.8	169	130	88	40	19
03	3	16	93	105	175.8	606	265	205	170.0	164	125	89	42	30
04	4	17	95	101	176.0	618	267	208	170.2	167	128	88	41	19
05	5	18	100	105	178.8	472	269	213	172.9	171	134	92	47	23
06	6	19	119	129	185.8*	565	284	228	179.7*	181	147	92	46	20
07	7	20	105	118	206.5	558	303	253	199.6	190	146	94	49	27
08	8	21	99	105	215.0	539	316	284	207.9	210	142	66	48	42
09	9	22	94	90	216.3	529	325	290	209.1	204	142	101	89	--
10	10	23	97	104	221.9	516	328	283	214.6	208	132	88	51	22
11	11	24	106	119	216.5	503	296	265	209.4	203	130	88	46	20
12	12	25	113	123	208.4	553	302	260	201.6	194	133	88	48	18
13	13	26	145	142	196.9	552	306	238	190.5	186	122	86	48	20
14	14	27	119	122	190.7	583	299	240	184.5	177	129	83	51	46
15	15	1	114	129	190.8	578	302	242	184.6	185	129	88	53	30
16	16	2	133	140	187.9	615	318	244	181.8	181	121	74	54	49
17	17	3	154	124	208.7	537	324	250	202.0	185	128	79	54	62
18	18	4	127	132	203.3	467	334	255	196.8	189	119	83	45	29
19	19	5	119	108	198.6	469	324	244	192.3	188	143	88	49	27
20	20	6	91	95	203.9	474	318	253	197.5	196	132	93	50	44
21	21	7	107	112	202.3	506	367	272	195.9	201	135	93	46	16
22	22	8	106	101	224.5*	506	367	280	217.5*	210	138	98	47	20
23	23	9	127	127	223.0	554	350	302	216.0	222	140	94	45	20
24	24	10	135	143	244.4	506	379	323	236.8	240	152	101	51	20
25	25	11	149	154	269.2	551	376	345	260.9	249	158	102	47	11
26	26	12	179	195	285.6	540	361	383	276.9	281	196	108	52	32
27	27	13	220	225	303.0J	523	332	349	293.8J	283	183	105	49	30
28	28	14	237	231	232.6	521	389	406	313.8	308	191	106	53	35
29	29	15	248	247	355.1	533	441	441	344.5	331	193	115	79	62
30	30	16	239	253	370.1	548	460	470	359.2	339	194	113	62	18
31	31	17	256	232	359.1	536	432	456	348.6	325	212	122	73	29
Mean			136.9	140.7	229.4	540	334	288	222.1	217	147	93	51	29

The International numbers shown above are preliminary values; the American numbers are final.

The observed and the adjusted Ottawa fluxes tabulated here are the "Series C" daily values reported by the Algonquin Radio Observatory, Ottawa, Ontario, Canada. Numbers in parentheses in the column headings denote frequencies in MHz. Qualifiers after an entry have the following meaning:

* = corrected for burst in progress; J = no calibration due to burst.

Equipment problems produced any gaps in the Air Weather Service's Palehua (PALE) observations.

SMOOTHED (OBSERVED AND PREDICTED) SUNSPOT NUMBERS: CYCLES 21 AND 22

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	120	117	115	109	101	96	95	95
1983	93	90	86	82	77	70	66	66	68	68	67	64
1984	60	56	53	50	48	46	44	40	34	29	25	22
1985	20	20	19	18	18	18	17	17	17	17	17	15
1986	14	13	13	14	14	14	14	13	12*	13	15	16
1987	18	20	22	24	26	28	31	35	39	44	47	51
1988	58	65	71	78	84	94	104	114	121	125	130	138
1989	142	145	150	154	157	158	159	158	157	157	158	154
1990	151	153	152	149	147	144	140	140	137	133	130	128
								(5)	(9)	(13)	(14)	(13)
1991	128	126	125	124	124	122	120	117	115	113	113	113
	(14)	(15)	(18)	(24)	(24)	(22)	(19)	(18)	(16)	(14)	(16)	(17)
1992	111	109	106	103	100	97	95	92	90	87	82	77
	(18)	(15)	(10)	(5)	(8)	(5)	(8)	(11)	(12)	(14)	(18)	(24)

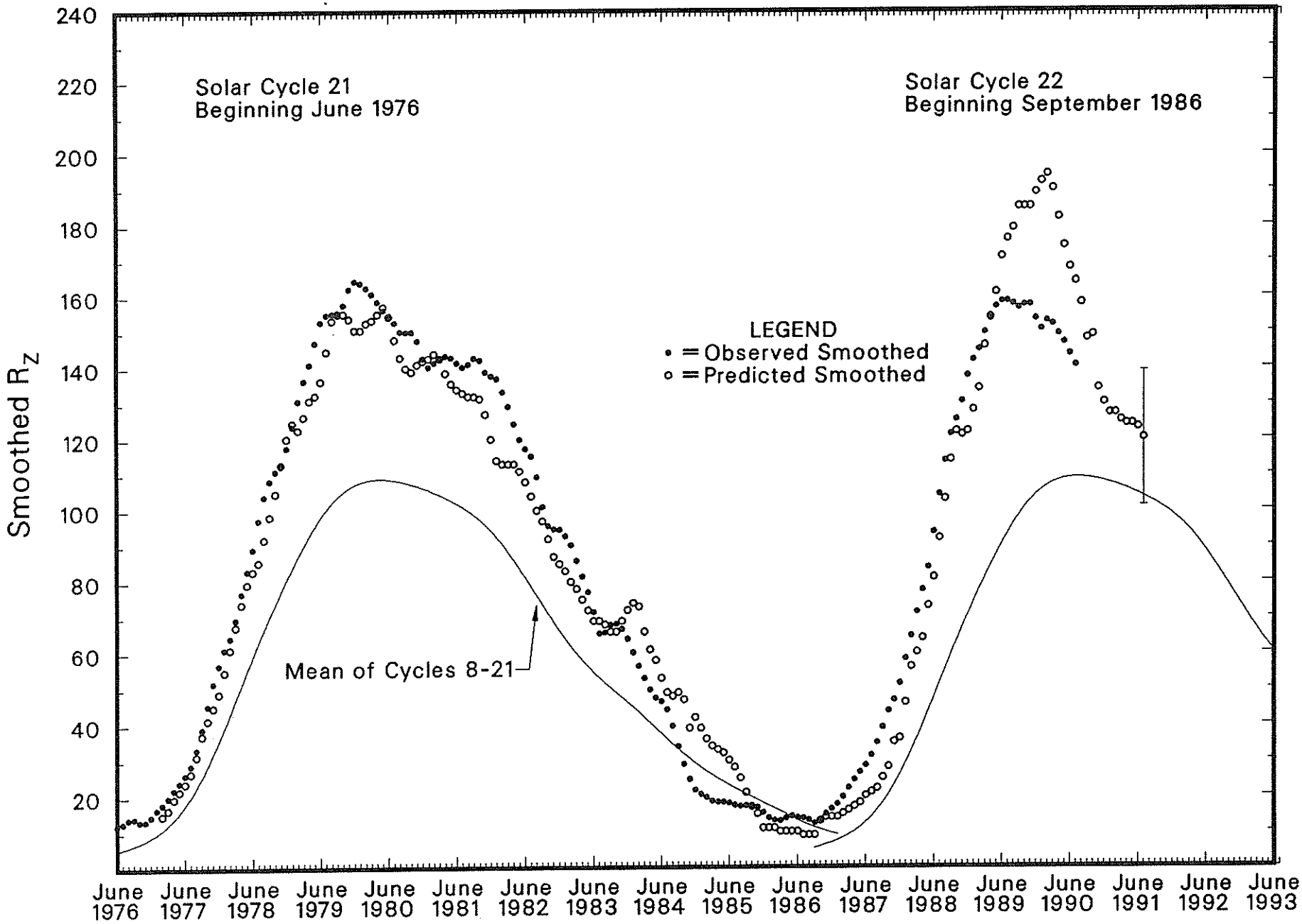
*September 1986 marks the onset of Sunspot Cycle 22.

For the end of Solar Cycle 21, and the beginning of 22, the table gives observed smoothed sunspot numbers up to the one calculated from the most recently available monthly mean. These smoothed observed values are based on final, monthly means through September 1990 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 July 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 1991 prediction. There exists a 90% chance that in July 1991 the actual smoothed sunspot number will fall somewhere between 101 and 139.

THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED, MONTHLY MEAN SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles used in the computation. Moreover, the method is very sensitive to the data defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on the minimum value of 12.3 that occurred in September 1986.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SUNSPOT NUMBERS



Hα SOLAR FLARES

JANUARY 1991

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
LEAR	01	0331	0334	0340	N01	W38	6433	12	29.4	9	SF		3	E		21		
LEAR		0612	0614	0621	S10	W65	6424	12	27.5	9	SF		3	E		16		
LEAR		0646	0652	0658	S09	W65	6424	12	27.5	12	SF		3	E		21		
LEAR		0829	0831	0844	S09	W69	6424	12	27.3	15	SF		3	E		24		
LEAR		0945	0953	1035	S09	W68	6424	12	27.4	50	SF		3	E		27		
RAMY		1249	1251	1311	S24	E14	6435	01	2.6	22	SF		3	E		13		F
RAMY		1249	1252	1348	N13	E32	6431	01	3.9	59	1F	C 5.0	3	E		102		UF
RAMY		1421	1424	1432	N14	E34	6431	01	4.2	11	SF		3	E		24		
HOLL		1557	1603	1618	S10	W70	6424	12	27.5	21	SF		1	E		16		
HOLL		1623	1624	1633	S10	W73	6424	12	27.3	10	SF		2	E		20		
GOES		2118E	2125	2134D						16D		C 2.5						
LEAR		2232	2251	2324	S08	W71	6424	12	27.7	52	SF		3	E		53		
LEAR		2357	2401	2404	S13	W05	6427	01	1.6	7	SF		3	E		33		
LEAR	02	0816	0828	0848	S11	E08	6432	01	2.9	32	SF		3	E		23		
RAMY		1244	1245	1255	S10	E07	6432	01	3.0	11	SF		3	E		10		F
RAMY		1310	1310	1319	S10	E06	6432	01	3.0	9	SF		3	E		22		F
RAMY		1441	1448	1450	S10	E06	6432	01	3.1	9	SF		3	E		18		F
┌RAMY		1615	1616	1630	S10	E04	6432	01	3.0	15	SF	C 1.3	3	E		20		F
└HOLL		1615	1616	1636	S11	E05	6432	01	3.0	21	SF	C 1.3	3	E		56		F
HOLL		1716	1720	1724	S12	E04	6432	01	3.0	8	SF		3	E		11		F
HOLL		1900	1904	1931	S11	E03	6432	01	3.0	31	SF		4	E		26		
HOLL		2053E	2056U	2105D	S11	E03	6432	01	3.1	12D	SF	C 1.3	1	E		23		
LEAR		2346	2352	2445	S10	E00	6432	01	3.0	59	SF		3	E		20		
LEAR	03	0045	0055	0131	S10	E00	6432	01	3.0	46	SF	C 1.3	3	E		59		F
LEAR		0222	0229	0303	S11	W02	6432	01	2.9	41	SF		3	E		37		
LEAR		0555	0611	0734	S13	W30	6427	01	1.0	99	SF	C 1.6	3	E		68		F
LEAR		0612	0612	0615	N08	E10	6431	01	4.0	3	SF		3	E		14		
GOES		1514	1521	1538						24		C 1.1						
HOLL		1900E	2014	2031	S10	W12	6432	01	2.9	91D	SF	C 1.3	3	E		47		F
HOLL		2030	2030	2039	S26	W26	6429	01	1.8	9	SF	C 1.4	3	E		18		F
LEAR		2302	2306	2325	S10	W13	6432	01	3.0	23	SF		3	E		32		F
LEAR	04	0057	0057	0100	N08	W01	6431	01	4.0	3	SF		3	E		17		
GOES		0158	0221	0253						55		C 1.2						
LEAR		0431	0440	0526	N14	W05	6431	01	3.8	55	1F	C 2.4	3	E		171		F
┌LEAR		0705	0707	0720	S25	W32	6429	01	1.8	15	SF	C 4.1	3	E		84		
└SVTO		0713E	0713U	0727	S28	W32	6429	01	1.8	14D	SF		3	E		33		
┌LEAR		0735		0754	N11	E01	6431	01	4.4	19	SF		3	E		35		
└SVTO		0735	0740	0801	N09	W05	6431	01	3.9	26	SF	C 1.2	3	E		22		
┌SVTO		0741	0757	0802	S08	W55	6430	12	31.2	21	SF		3	E		12		
└SVTO		0743	0757	0802	S08	W55	6430	12	31.2	19	SF		3	E		12		
SVTO		1126	1127	1133	S27	W34	6429	01	1.8	7	SF		3	E		12		U
SVTO		1414	1424	1442	S09	W61	6430	12	31.0	28	SF		3	E		14		
GOES		1810	1813	1816						6		C 2.0						
GOES		1823	1829	1836						13		C 1.6						
PALE		2051	2100	2122	S09	W62	6430	12	31.2	31	SF		3	E		12		
PALE		2139	2142	2157	S09	W61	6430	12	31.3	18	SF		3	E		14		H
LEAR		2232	2318	2507	S07	W65	6430	12	31.1	155	1F		3	E		138		T
LEAR		2243	2245	2255	N07	W13	6431	01	4.0	12	SF		3	E		19		
LEAR		2306	2309	2315	S11	W26	6432	01	3.0	9	SF		3	E		15		
GOES	05	0730	0751	0758						28		C 1.4						
GOES		0847	0907	0913						26		C 1.4						
GOES		1149	1202	1217						28		C 2.5						
RAMY		1428	1431U	1434D	N10	W57		01	1.3	6D	SF		3	E		20		
RAMY		1900E	1900U	1930D	N12	W27	6431	01	3.7	30D	SF		3	E		27		
RAMY		1951	1959U	2007D	S07	W57	6427	01	1.5	16D	SF	C 2.8	3	E		29		
RAMY		2030	2044U	2051D	S07	W57	6427	01	1.6	21D	SF		3	E		25		
LEAR		2241	2246	2313	S10	W58	6427	01	1.6	32	SF		3	E		52		
LEAR		2325	2327	2341	S08	W59	6427	01	1.5	16	SF	C 1.7	3	E		30		F
LEAR	06	0116	0119	0125	S23	W50	6435	01	2.2	9	SF		3	E		21		F
LEAR		0236	0239	0321	S18	E26	6437	01	8.1	45	SF		3	E		34		F
LEAR		0447	0448	0455	S06	W85	6430	12	30.9	8	SF	C 2.6	3	E		56		
GOES		0602	0605	0608						6		C 2.2						
LEAR		0835	0842	0851	S08	W83	6430	12	31.1	16	SF		3	E		34		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	06	0911	0915	0917						6		C 1.9						
GOES		0956	0959	1002						6		C 3.6						
GOES		1134	1144	1146						12		C 2.4						
SVTO		1154	1154	1212	S10	W68	6427	01	1.4	18	SF		3	E		17		
RAMY		1503	1504	1508	S04	W85	6430	12	31.3	5	SF	C 1.8	3	E		15		
RAMY		1603E	1611	1720	N34	W26		01	4.6	77D	1F	C 5.7	3	E		226		UF
RAMY		1704	1706	1712	S04	W90	6430	12	31.0	8	SF		3	E		21		
PALE		1730E	1730U	1743	N34	W27		01	4.6	13D	SF		3	E		28		FH
GOES		1734	1735	1737						3		C 2.6						
PALE		1737	1739	1744	S07	W90	6430	12	31.0	7	SF		3	E		32		
RAMY		1740	1744	1751	S04	W89	6430	12	31.1	11	SF		3	E		23		
HOLL		2130	2131	2140	N08	W34	6431	01	4.3	10	SF		3	E		17		
GOES	07	0122E	0123	0133D						11D		C 2.7						
GOES		0229	0231	0243						14		C 2.0						
GOES		0321	0324	0327						6		C 2.0						
LEAR		0402	0417	0432	S10	W33	6442	01	4.7	30	SF		3	E		22		F
LEAR		0434	0437	0447	S11	W35	6442	01	4.5	13	SF		3	E		16		F
LEAR		0504	0547	0610	S10	W35	6442	01	4.6	66	SF	C 1.6	3	E		33		
GOES		1015	1054	1108						53		C 3.2						
RAMY		1200	1213	1515D	S11	W42	6442			195D	SF			E		46		K
RAMY		1200	1417	1515D	S11	W42	6442	01	4.3	195D	SF		3	E		37		F
HOLL		1812	1816	1826	N10	E77	6444	01	13.5	14	SF		3	E		15		
HOLL		1844	1846	1855	N09	E80	6444	01	13.8	11	SF		3	E		32		
HOLL		1919	1932	1936	S11	W44	6442	01	4.5	17	SF		3	E		12		
HOLL		1944	1952	2038	S10	W42	6442	01	4.7	54	SF	C 3.0	3	E		50		F
HOLL		1944	2020	2038	S10	W42	6442			54	SF			E		42		K
RAMY		1950	1953	2012	S10	W44	6442	01	4.5	22	SF		3	E		16		F
GOES		2016	2018	2020						4		C 2.9						
RAMY		2020	2021	2039	S09	W44	6442	01	4.5	19	SF		3	E		17		F
HOLL		2041	2044	2117	S11	W45	6442	01	4.5	36	SF		3	E		15		
PALE		2044	2103	2225D	S13	W47	6442	01	4.3	101D	SF		3	E		23		F
PALE		2044	2124	2225D	S13	W47	6442			101D	SF			E		50		K
HOLL		2124	2125	2144	S10	W43	6442	01	4.7	20	SF	C 2.2	3	E		26		
HOLL		2124	2133	2144	S10	W43	6442			20	SF			E		16		K
HOLL		2152	2155	2204	S11	W45	6442	01	4.5	12	SF	C 2.3	3	E		40		
HOLL		2210	2212	2219	S10	W44	6442	01	4.6	9	SF	C 2.2	3	E		12		
PALE		2216	2219	2231	S25	W68	6435	01	2.6	15	SF		3	E		31		
PALE		2248	2251	2309D	S11	W45	6442	01	4.6	21D	SF		3	E		22		
LEAR		2250	2252	2258	S23	W69	6435	01	2.6	8	SF	C 2.9	3	E		21		
HOLL		2250	2252	2306	S10	W44	6442	01	4.6	16	SF		3	E		20		
GOES		2334	2336	2346						12		C 2.4						
LEAR	08	0023	0029	0057	S11	W68	6432	01	2.9	34	SF		3	E		24		
PALE		0145	0154	0201	S12	W48	6442	01	4.4	16	SF		3	E		17		
GOES		0211	0221	0232						21		C 5.9						
LEAR		0248	0257	0303	N13	E71	6444	01	13.5	15	SF		3	E		21		F
PALE		0305	0308	0310	N11	E76	6444	01	13.8	5	SF		3	E		11		
LEAR		0305	0327	0333	N13	E70	6444	01	13.4	28	SF		3	E		52		F
PALE		0317	0327	0332	N13	E70	6444	01	13.4	15	SF		3	E		61		
PALE		0326	0328	0332	S12	W48	6442	01	4.5	6	SF		3	E		20		
LEAR		0356	0400	0408	S11	W48	6442	01	4.5	12	SF		3	E		23		
LEAR		0409	0420	0623	S11	W48	6442			134	1N			E		74		K
LEAR		0409	0432	0623	S11	W48	6442	01	4.6	134	1N	M 1.8	3	E		141		FE
LEAR		0623	0626	0712	S12	W50	6442			49	SF			E		22		K
LEAR		0623	0658	0712	S12	W50	6442	01	4.5	49	SF	M 1.1	3	E		64		F
LEAR		0717	0719	0726	N13	E68	6444	01	13.4	9	SF		3	E		34		
LEAR		0937	0959	1039	S11	W51	6442	01	4.6	62	SF		3	E		40		F
SVTO		1124E	1124U	1159D	S13	W51	6442	01	4.6	35D	1N	M 1.2	2	E		133		
RAMY		1126E		1143	S12	W48	6442	01	4.9	17D	SB		3	E				F
RAMY		1202	1204	1211	N11	E72	6444	01	13.9	9	SF		3	E		12		F
HOLL		1517	1525	1530D	N11	E68	6444	01	13.7	13D	SF		2	E		33		
HOLL		1556	1606	1617	N12	E62	6444	01	13.3	21	SF		3	E		35		
HOLL		1654	1656	1701	S11	W55	6442	01	4.6	7	SF		3	E		11		
PALE		1731	1755	1800	S14	W57	6442	01	4.4	29	SF		3	E		11		
GOES		1815	1848	1927						72		C 7.5						
PALE		1832	1848	1851	N13	E70	6444	01	14.0	19	SF		3	E		17		
PALE		1840	1848	1857	S15	W55	6442	01	4.6	17	SF		3	E		36		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
HOLL	08	1845	1912U	1914D	N12	E68	6444	01	13.9	29D	SF		1	E		70		FH
HOLL		1927	1929	1939	N11	E68	6444	01	13.9	12	SN		3	E		61		FE
PALE		1928	1930	1933	N14	E68	6444	01	13.9	5	SF		3	E		35		
HOLL		1934	1934	1938	S12	W58	6442	01	4.4	4	SF		3	E		13		F
HOLL		2016	2016	2022	S11	W78	6432	01	3.0	6	SF		3	E		26		F
HOLL		2129	2129	2134	S18	W29	6445	01	6.7	5	SF		3	E		14		F
HOLL		2130	2130	2133	N11	E67	6444	01	13.9	3	SF		3	E		13		F
HOLL		2144	2148	2152	N12	E66	6444	01	13.9	8	SF		3	E		30		F
PALE		2209	2212	2217	S18	W59	6442	01	4.4	8	SF		3	E		28		
HOLL		2210	2215	2220	S13	W58	6442	01	4.5	10	SF		3	E		14		F
PALE		2318	2321	2332	N13	E66	6444	01	13.9	14	SF		3	E		21		
PALE	09	0223	0223	0229	N13	E64	6444	01	13.9	6	SF		3	E		32		
PALE		0240	0241	0251	S14	W61	6442	01	4.5	11	SF		3	E		23		
LEAR		0402	0445	0631	N06	E36	6446	01	11.9	149	SF		3	E		84		F
GOES		0445E	0447	0523D						38D		C 4.5						
GOES		0630	0636	0641						11		C 5.0						
LEAR		0806	0808	0839	S15	W67	6442	01	4.3	33	1N	C 5.2	3	E		216		E
LEAR		0851	0856	0903	S11	W64	6442	01	4.5	12	SF		3	E		35		
GOES		1127	1141	1216						49		C 5.3						
RAMY		1336	1339	1349	S10	W66	6442	01	4.6	13	SF		3	E		23		
SVTO		1336	1340	1355	S14	W69	6442	01	4.3	19	SF		3	E		28		
LEAR	10	0037	0045	0130	N16	E54	6444	01	14.1	53	SF	C 6.2	3	E		43		F
LEAR		0115	0129	0146	S10	W75	6442	01	4.4	31	SF		3	E		28		
LEAR		0313	0314	0320	N11	E57	6444	01	14.4	7	SF	C 3.1	3	E		19		F
LEAR		0321	0322	0343	N15	E51	6444	01	14.0	22	SF		3	E		33		F
LEAR		0447	0447	0454	N11	E60	6444	01	14.7	7	SN	C 6.8	3	E		59		
LEAR		0510	0511	0536	N19	E59	6444	01	14.7	26	SN	M 1.0	3	E		53		FE
GOES		0700	0704	0719						19		C 3.6						
LEAR		0809	0815	0842	S07	E73	6447	01	15.8	33	SF	C 4.3	3	E		23		
LEAR		0900	0901	0906	N12	E56	6444	01	14.6	6	SF		3	E		16		
LEAR		0932	0934	1010	N12	E57	6444	01	14.7	38	SF	C 5.2	3	E		58		F
SVTO		1340	1400	1430	N16	E52	6444			50	SN			E		20		K
SVTO		1340	1412	1430	N16	E52	6444	01	14.5	50	1N	C 4.8	4	E		100		F
RAMY		1409	1412	1423	N16	E54	6444	01	14.7	14	SN	C 4.8	4	E		57		FE
HOLL		1524	1525	1544	N13	E51	6444	01	14.5	20	SN		2	E		39		
RAMY		1534E	1535	1543	N12	E55	6444	01	14.8	9D	SF	C 6.8	4	E		32		H
HOLL		1710	1711	1720	S06	E80	6447	01	16.7	10	SF	C 3.4	3	E		21		
PALE		1805E	1805U	1814	N18	E72	6447	01	16.2	9D	SF	C 3.0	2	E		35		
HOLL		1817	1817	1820	N12	E53	6444	01	14.7	3	SF		3	E		13		
PALE		2228	2229	2243D	S06	E77	6447	01	16.7	15D	SF		3	E		23		F
HOLL		2228	2230	2238	S07	E76	6447	01	16.6	10	SF		3	E		22		F
HOLL		2253	2254	2319	S02	E72	6447	01	16.3	26	SF		3	E		22		F
LEAR	11	0312	0323	0335	S09	E68	6447	01	16.2	23	SF		3	E		53		
LEAR		0313	0318	0329	S20	W59	6445	01	6.6	16	SF		3	E		36		
LEAR		0506	0508	0526	S07	E67	6447	01	16.2	20	SF		3	E		32		
LEAR		0515	0518	0527	N17	E38	6444	01	14.1	12	SF	C 4.0	3	E		49		F
GOES		0650E	0651	0656D						6D		C 9.5						
LEAR		0650	0652	0657	N19	E46	6444	01	14.8	7	SN		3	E		60		
LEAR		0703	0707	0712	S09	E71	6447	01	16.6	9	SF		3	E		28		F
SVTO		0748	0749	0756D	N10	E43	6444	01	14.5	8D	SF	C 5.0	1	E		20		
LEAR		0749	0749	0754	N12	E45	6444	01	14.7	5	SF	C 5.0	3	E		31		
LEAR		0851	0901	0925	S10	E81	6447	01	17.4	34	1N	M 2.2	4	E		242		F
SVTO		0852	0855	0932	S10	E85	6447	01	17.7	40	SN		1	E		90		F
RAMY		1210	1212	1218D	N17	E16		01	12.7	8D	SF		3	E		21		F
SVTO		1212	1213	1233	N16	E15		01	12.6	21	SF		3	E		22		
SVTO		1315	1321	1339	S07	E61	6447	01	16.1	24	SF		3	E		18		
SVTO		1440	1448	1454	N13	E33	6444	01	14.1	14	SF		3	E		10		
HOLL		1453E	1500	1537	N13	E29	6444	01	13.8	44D	SF		2	E		39		F
HOLL		1521	1526	1546	S04	E61	6447	01	16.2	25	1B	M 4.6	3	E		186		UF
RAMY		1721	1721	1729	N12	E40	6444	01	14.7	8	SF		3	E		12		
HOLL		1817	1827	1906	N12	E36	6444	01	14.5	49	1B	M 1.0	3	E		142		FE
RAMY		1819	1827	1838	N12	E39	6444	01	14.7	19	SB	M 1.0	3	E		84		
PALE		1826E	1828U	1842	N13	E40	6444	01	14.8	16D	SB		3	E		63		FH
PALE		1924E	1926	1935	N09	E27	6444	01	13.8	11D	SF		3	E		28		
RAMY		1924	1928	1938	N10	E28	6444	01	13.9	14	SF		3	E		34		

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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	Imp See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	11	2007	2007	2015	N17	E31	6444	01	14.2	8	SF		3	E		22		
PALE		2017E	2024U	2036D	N16	E32	6444	01	14.3	19D	SF	C 3.7	3	E		39		F
RAMY		2018	2022	2034	N15	E30	6444	01	14.1	16	SF	C 3.7	3	E		53		F
RAMY		2021	2027	2038	S06	E57	6447	01	16.1	17	SF		3	E		38		
PALE		2321	2322	2346D	N13	E37	6444	01	14.8	25D	SF	C 2.3	3	E		32		
LEAR		2321	2323	2338	N12	E36	6444	01	14.7	17	SF	C 2.3	3	E		42		
LEAR	12	0026	0028	0048	N11	E24	6444	01	13.8	22	SF		3	E		62		
PALE		0031E	0033	0043D	N10	E25	6444	01	13.9	12D	SF	C 2.6	3	E		14		
LEAR		0214	0219	0224	S09	E58	6447	01	16.4	10	SF	C 2.5	3	E		26		
PALE		0215	0218	0225	S08	E57	6447	01	16.4	10	SF	C 2.5	4	E		29		FH
PALE		0303	0304	0320	N17	E28	6444	01	14.2	17	SF		3	E		22		F
PALE		0348	0350	0403D	N08	E51	6447	01	16.0	15D	SF	C 2.6	3	E		46		
LEAR		0413	0417	0429	S07	E53	6447	01	16.1	16	SF		3	E		39		
GOES		0527E	0534	0535D						8D		C 2.0						
LEAR		0528	0533	0547	N19	E20	6444	01	13.7	19	SF		3	E		95		
LEAR		0534	0536	0543	N14	W02		01	12.1	9	SF		3	E		21		
LEAR		0702	0712	0801	S06	E51	6447	01	16.1	59	1F	C 4.6	3	E		131		F
GOES		0739	0743	0745						6		C 2.4						
LEAR		0807	0816	0843	S06	E51	6447			36	1N			E		93		K
LEAR		0807	0830	0843	S06	E51	6447	01	16.1	36	1N	C 7.9	3	E		154		FE
GOES		0827	0830	0832						5		C 9.0						
GOES		0940	0947	0956						16		C 3.1						
SVTO		0957E	1002U	1036	S08	E55	6447	01	16.5	39D	SF		3	E		65		
SVTO		1013	1016	1117	N13	E25	6444	01	14.3	64	SF		3	E		47		U
SVTO		1047	1100	1119	S08	E55	6447	01	16.6	32	SF		3	E		34		
SVTO		1120	1123	1139D	S08	E55	6447	01	16.6	19D	SF		3	E		43		
RAMY		1214	1225	1233	S06	E47	6447	01	16.0	19	SF		3	E		27		
RAMY		1239	1242	1300	S07	E47	6447			21	SF			E		25		K
RAMY		1239	1249	1300	S07	E47	6447	01	16.0	21	SF		3	E		47		F
RAMY		1329	1332	1350	N14	E24	6444	01	14.4	21	SF		3	E		17		
RAMY		1412	1413	1422	S06	E47	6447	01	16.1	10	SF	C 1.4	3	E		24		
RAMY		1426	1438	1520	S06	E46	6447	01	16.0	54	SN	C 3.8	3	E		93		F
RAMY		1602	1612	1618	S08	E45	6447	01	16.0	16	SF	C 1.5	3	E		30		F
HOLL		1605	1606	1622D	S09	E47	6447	01	16.2	17D	SF		1	E		20		F
RAMY		1621	1627	1643	S32	W30	6448	01	10.3	22	SF	C 1.6	3	E		14		
PALE		1906	1914	1950	S09	E47	6447	01	16.3	44	1F	C 2.5	4	E		113		F
RAMY		1907	1912	1927D	S09	E45	6447	01	16.2	20D	SF	C 2.5	3	E		48		F
PALE		2100	2105	2137	S08	E58	6447	01	17.2	37	1F	C 4.6	4	E		139		F
PALE		2207	2213	2227	S08	E43	6447	01	16.1	20	1N	C 9.4	4	E		108		E
LEAR	13	0006	0010	0012	S21	E55		01	17.2	6	SF		3	E		37		
PALE		0040E	0045U	0102D	S06	E43	6447	01	16.2	22D	SF	C 2.0	3	E		38		F
LEAR		0041	0047	0058	S07	E42	6447	01	16.2	17	SF	C 2.0	3	E		72		F
LEAR		0121	0126	0143	S05	E40	6447	01	16.0	22	SF		3	E		41		F
PALE		0122	0129	0145	S05	E41	6447	01	16.1	23	SF		3	E		53		
LEAR		0210	0217	0238	S07	E49	6447	01	16.8	28	1N		3	E		123		F
PALE		0213	0219	0241D	S06	E41	6447	01	16.2	28D	SF	C 2.7	3	E		97		
LEAR		0332	0335	0348	N11	E08	6444	01	13.7	16	SF	C 1.3	3	E		80		F
LEAR		0401	0411	0426	S07	E48	6447	01	16.8	25	SF		3	E		35		
LEAR		0510	0516	0526	N12	E02	6444	01	13.4	16	SF		3	E		58		F
LEAR		0713	0720	0735	S07	E39	6447	01	16.2	22	1N	C 2.0	3	E		109		
LEAR		0721	0724	0727	N12	E00	6444	01	13.3	6	SF		3	E		12		F
LEAR		0733	0735	0739	N14	E09	6444	01	14.0	6	SF		3	E		30		
LEAR		0856	0902	0913	N14	E08	6444	01	14.0	17	SF		3	E		48		
HOLL		1200	1740U	1742	N01	E40	6444	01	16.5	342	SN		1	E		70		FHT
RAMY		1201	1203	1206	S06	E34	6447	01	16.0	5	SF	C 1.6	3	E		31		H
RAMY		1224	1225	1233	S07	E33	6447	01	16.0	9	SF		3	E		22		
RAMY		1347	1404	1411	N12	W03	6444	01	13.3	24	SF	B 9.9	3	E		23		
RAMY		1643	1643	1648	N12	W04	6444	01	13.4	5	SF		3	E		19		F
PALE		1731	1734	1745	N14	W01	6444	01	13.6	14	SF	C 1.9	3	E		27		
RAMY		1731	1735	1742	N13	W05	6444	01	13.3	11	SF	C 1.9	3	E		73		F
RAMY		1923	1925	1927D	N12	W06	6444	01	13.3	4D	SF		3	E		27		F
HOLL		2020	2031	2037	N11	W07	6444	01	13.3	17	SF		3	E		25		F
PALE		2052	2100	2108	N12	W08	6444	01	13.3	16	SF	C 3.4	3	E		70		H
HOLL		2055	2101	2108	N12	W08	6444	01	13.3	13	SN	C 3.4	3	E		74		FE
HOLL		2108	2112	2120	S08	E33	6447	01	16.3	12	SF		3	E		23		
PALE		2111	2112	2115	S07	E36	6447	01	16.6	4	SF		3	E		16		

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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	13	2122	2129	2135	N12	E01	6444	01	14.0	13	SF		3	E		28		F
PALE		2127	2127	2131	N12	E00	6444	01	13.9	4	SF		3	E		13		
HOLL		2305	2309	2313	N13	W09	6444	01	13.3	8	SF	C 1.2	3	E		34		F
LEAR	14	0046	0048	0119	N15	E04	6444	01	14.3	33	SF		3	E		23		F
LEAR		0236	0237	0245	N11	W11	6444	01	13.3	9	SF		3	E		88		
LEAR		0304	0312	0334	S07	E34	6447	01	16.7	30	SF		3	E		48		
LEAR		0309	0311	0315	N11	W10	6444	01	13.4	6	SF		3	E		28		
LEAR		0758	0805	0839	S05	E28	6447	01	16.4	41	1F	C 2.0	3	E		115		F
GOES		0955	1007	1008						13		C 1.2						
GOES		1048	1103	1110						22		C 1.4						
GOES		1513	1532	1541						28		C 1.6						
HOLL		1710	1713	1715	N12	W05	6444	01	14.3	5	SF	C 1.5	2	E		52		F
HOLL		1735	1740	1746	S09	E21	6447	01	16.3	11	SF		2	E		14		F
GOES		1837	1841	1844						7		C 1.4						
HOLL		2200	2201	2206	N15	W17	6444	01	13.6	6	SF		3	E		19		
HOLL		2223	2227	2236	S10	E20	6447	01	16.4	13	SF	C 1.9	3	E		18		
GOES	15	0137		0140						3		C 1.1						
LEAR		0142	0150	0210	N06	W35	6446	01	12.4	28	SF		3	E		49		
GOES		0543		0545						2		C 1.6						
LEAR		0723	0737	0818	N27	E34				55	SF			E		26		K
LEAR		0723	0759	0818	N27	E34		01	17.9	55	SF		3	E		38		F
GOES		0757	0803	0807						10		C 2.2						
LEAR		0818	0820	0908	S07	E17	6447	01	16.6	50	SF	C 2.6	3	E		70		FE
LEAR		0849	0852	0903	N07	W46	6446	01	11.9	14	1F		3	E		101		
LEAR		0937	0950	1001	N24	E32		01	17.9	24	SF		3	E		32		
GOES		1008	1013	1018						10		C 2.0						
RAMY		1238	1238	1242	S05	E07	6447	01	16.0	4	SF	C 1.2	3	E		11		
HOLL		1422E	1424U	1445	N27	E32		01	18.1	23D	SF	C 1.5	1	E		35		
HOLL		1505	1505	1510	N27	E32		01	18.1	5	SF		2	E		17		
GOES		1615	1618	1620						5		C 1.2						
HOLL		1654	1654	1701	S06	E09	6447	01	16.4	7	SF	C 1.2	3	E		11		F
RAMY		1655	1655	1701	S05	E10	6447	01	16.4	6	SF	C 1.2	4	E		13		F
HOLL		1957	1959	2007	N13	W12	6444	01	14.9	10	SF	C 1.3	2	E		18		F
PALE		1959	2001	2012	N13	W13	6444	01	14.8	13	SF	C 1.3	3	E		15		
HOLL		2056	2100	2105	S06	E08	6447	01	16.5	9	SF		2	E		20		
HOLL		2205	2211	2224	N13	W15	6444	01	14.8	19	SF	C 2.7	3	E		42		H
HOLL		2206	2207	2214	S23	E18	6452	01	17.3	8	SF		3	E		19		
PALE	16	0047	0047	0058	N14	W25	6444	01	14.1	11	SF	C 1.4	3	E		19		
PALE		0054	0055	0106	S06	E06	6447	01	16.5	12	SF		3	E		16		
GOES		0237	0240	0244						7		C 1.2						
GOES		0531	0539	0553						22		C 1.3						
LEAR		0705E	0711	0728	N13	W18	6444	01	14.9	23D	SF	C 1.5	3	E		34		
GOES		0851	0855	0857						6		C 1.7						
GOES		1247	1306	1313						26		C 2.3						
HOLL		1457	1458	1501	S08	W04	6447	01	16.3	4	SF	C 1.5	1	E		15		
RAMY		1458	1500	1503	S07	W02	6447	01	16.5	5	SF	C 1.5	3	E		10		
HOLL		1512	1534	1640	N21	W26	6444	01	14.6	88	SF		3	E		30		
GOES		1706	1722	1730						24		C 1.7						
RAMY		1714	1733	1748	N28	E19	6454	01	18.2	34	SF		4	E		17		F
PALE		1726E	1728	1746	N28	E17	6454	01	18.0	20D	SF		3	E		16		
PALE		2023	2024	2032	N12	W35	6444	01	14.2	9	SF	C 1.9	4	E		48		F
GOES		2205	2209	2213						8		C 1.1						
GOES		2241	2244	2246						5		C 2.4						
GOES		2345	2352	2416						31		C 1.8						
LEAR	17	0311	0322	0328	S06	W13	6447	01	16.1	17	SF		3	E		13		F
GOES		0341	0345	0352						11		C 1.2						
GOES		0715	0720	0723						8		C 1.9						
SVTO		0845	0846	0849	N11	W39	6444	01	14.4	4	SF	C 1.3	3	E		23		F
SVTO		1011	1012	1019	S06	W18	6447	01	16.1	8	SF		3	E		30		F
GOES		1034	1051	1106						32		C 1.5						
SVTO		1038	1046U	1124	S13	W02	6455	01	17.3	46	SF		3	E		45		
GOES		1226	1229	1232						6		C 1.6						
RAMY		1259	1259	1310	S04	W18	6447	01	16.2	11	SF		3	E		12		
RAMY		1301	1302	1306	N14	W39	6444	01	14.6	5	SF	C 3.3	3	E		28		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
SVTO	17	1302E	1302U	1309	N11	W41	6444	01	14.4	7D	SF	C 3.3	3	E		66		
RAMY		1315	1318	1327	S11	W02	6455	01	17.4	12	SF		3	E		11		
RAMY		1415E	1416	1420D	N13	W33	6444	01	15.1	5D	SF	C 2.5	3	E		22		
RAMY		1454	1454	1506	S06	W15	6447	01	16.5	12	SF		3	E		22		
RAMY		1457	1501	1557	S11	W04	6455	01	17.3	60	1B	M 6.9	3	E		209		ZF
SVTO		1457	1502U	1525D	S13	W04	6455	01	17.3	28D	1N	M 6.9	3	E		225		F
RAMY		1457	1506	1557	S11	W04	6455			60	1B			E		148		K
GOES		1742	1847	1859						77		C 2.7						
RAMY		1756	1800	1816	N17	W51	6444	01	13.9	20	SF		3	E		28		
RAMY		1849	1854	1857	S12	W07	6455	01	17.2	8	SF		3	E		23		F
RAMY		1907	1912	1916	N15	W38	6444	01	14.9	9	SF		3	E		36		
GOES		2116E	2118	2125D						9D		C 2.0						
PALE		2145E	2150U	2202	S14	W10	6455	01	17.1	17D	SF		3	E		19		F
PALE		2304	2309U	2315	S05	W26	6447	01	16.0	11	SF	C 2.9	3	E		26		F
PALE		2309E	2309U	2316	S15	W11	6455	01	17.1	7D	SF		3	E		13		
LEAR	18	0046	0158	0237D	S05	W24	6447	01	16.2	111D	1N	M 2.3	3	E		105		F
PALE		0121E	0135	0223	S07	W24	6447	01	16.2	62D	SN		3	E		95		UF
PALE		0251	0252	0301	N16	W50	6444	01	14.3	10	SF		3	E		33		F
LEAR		0414	0416	0508	S12	W11	6455	01	17.3	54	SN	M 1.1	3	E		87		
LEAR		0442	0456	0500	N16	W51	6444	01	14.3	18	SF		3	E		18		
LEAR		0511	0515	0532	N16	W54	6444	01	14.1	21	SF		3	E		32		
LEAR		0516	0529	0538	N16	W72	6450	01	12.7	22	SF		3	E		17		
LEAR		0539	0549	0600	N15	W84	6451	01	11.9	21	SF		3	E		35		
LEAR		0555	0611	0620	N16	W73	6450	01	12.7	25	SF		3	E		58		
LEAR		0619	0706	0719	N12	W61	6451	01	13.7	60	SF		3	E		25		
LEAR		0646	0652	0714	S07	W30	6447	01	16.0	28	SF		3	E		36		
LEAR		0752	0755	0818	S28	E40	6456	01	21.4	26	SF		3	E		40		
SVTO		0752	0758	0811	S27	E42	6456	01	21.6	19	SF		3	E		19		
SVTO		0824	0826	0858	S13	W14	6455	01	17.3	34	SF	C 2.9	3	E		38		F
SVTO		0945	0953	1055	S14	W16	6455	01	17.2	70	SF	C 3.9	3	E		59		F
SVTO		1259	1306	1320	N12	W50	6444	01	14.8	21	SN	C 7.7	3	E		84		FH
RAMY		1300	1306	1320	N14	W48	6444	01	14.9	20	SN	C 7.7	4	E		64		FE
SVTO		1406	1409	1420	S07	W31	6447	01	16.3	14	SF	C 3.0	3	E		28		F
RAMY		1406	1409	1428	S05	W29	6447	01	16.4	22	SF	C 3.0	4	E		29		F
RAMY		1530	1548	1559	N15	W88	6444	01	12.0	29	2N	C 5.9	4	E		291		
HOLL		1619	1626	1700	S15	E59		01	23.1	41	SF		3	E		70		
RAMY		1621	1635	1650	S12	E58		01	23.0	29	SF		3	E		48		
RAMY		2002	2002	2019	S06	W32	6447	01	16.4	17	SF		3	E		14		
HOLL		2005	2010	2015	S07	W32	6447	01	16.4	10	SF		3	E		14		F
HOLL		2044	2104	2114	S13	W20	6455	01	17.3	30	SF		3	E		24		
RAMY		2105	2106	2110	S12	W19	6455	01	17.4	5	SF		3	E		13		
PALE		2140	2143	2204D	N13	W67	6444	01	13.8	24D	SF		3	E		19		F
HOLL		2207	2210	2233	S13	W21	6455	01	17.3	26	SF	C 6.6	3	E		28		F
HOLL		2234	2326	2329	S13	W23	6455	01	17.2	55	SF		3	E		15		F
HOLL		2241	2244	2250	N13	W75	6444	01	13.3	9	SF		3	E		27		F
HOLL		2255	2259	2312	N11	W58	6444	01	14.6	17	SF		3	E		20		F
PALE	19	0112	0113	0121	S13	W21	6455	01	17.5	9	SF	C 2.3	3	E		20		
LEAR		0112	0113	0123	S13	W21	6455	01	17.5	11	SF	C 2.3	3	E		13		F
LEAR		0149	0151	0157	N12	W56	6444	01	14.8	8	SF	C 2.0	3	E		52		F
PALE		0150	0150	0155	N12	W55	6444	01	14.9	5	SF	C 2.0	3	E		19		H
LEAR		0228	0232	0237	N14	W56	6444	01	14.9	9	1N	C 5.7	3	E		135		FE
LEAR		0703	0706	0713	N11	W59	6444	01	14.8	10	SF		3	E		60		F
LEAR		0920	0922	0954	N28	W18	6454	01	18.0	34	SF	C 2.4	3	E		47		F
SVTO		0920	0924	0950	N27	W19	6454	01	17.9	30	SF	C 2.4	3	E		28		
SVTO		1038	1039	1050	N10	W61	6444	01	14.8	12	SF	C 3.1	3	E		59		
GOES		1130	1139	1202						32		C 4.2						
SVTO		1259	1302	1313	S15	W31	6455	01	17.2	14	SF		3	E		16		F
SVTO		1312	1335	1351	S27	E25	6456	01	21.5	39	SF		3	E		32		
RAMY		1314	1323	1338	S26	E24	6456	01	21.4	24	SN	C 5.4	3	E		47		
SVTO		1433	1433	1441	N27	W23	6454	01	17.8	8	SF		3	E		14		
RAMY		1443	1446	1455	S08	W46	6447	01	16.2	12	SF	C 4.5	3	E		32		
SVTO		1445	1446	1455	S10	W47	6447	01	16.1	10	SF	C 4.5	3	E		37		
RAMY		1454	1454	1459	N13	W63	6444	01	14.9	5	SF		3	E		30		
SVTO		1454	1455	1458	N10	W64	6444	01	14.8	4	SF		3	E		70		
HOLL		1455E	1455U	1458	N12	W61	6444	01	15.0	3D	SF		2	E		16		
HOLL		1559	1608	1636	S06	W47	6447	01	16.1	37	SF	C 2.2	3	E		32		F

Hα S O L A R F L A R E S

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
RAMY	19	1716	1718	1728	S26	E23	6456	01	21.5	12	SF		3	E		26		
HOLL		1716	1719	1737	S28	E23	6456	01	21.5	21	SF		3	E		26		F
GOES		1842	1857	1916						34		C 3.2						
HOLL		1950	1954	2003	S11	W33	6455	01	17.3	13	SF	C 2.9	3	E		27		F
RAMY		1953	1953	2006	S11	W33	6455	01	17.3	13	SF	C 2.9	3	E		18		F
GOES		2033	2038	2042						9		C 4.7						
GOES		2144	2148	2201						17		C 3.7						
GOES		2341	2359	2423						42		C 4.5						
LEAR	20	0107	0123	0134	N23	E26	6458	01	22.0	27	SF		3	E		28		
LEAR		0143	0143	0156	N23	E26	6458	01	22.1	13	SF	C 6.5	3	E		29		
GOES		0713	0724	0809						56		C 8.4						
LEAR		0921	0922	0955	S13	W39	6455			34	SB	C 6.3		E		44		K
LEAR		0921	0926	0955	S13	W39	6455	01	17.4	34	SF	C 6.3	3	E		33		F
SVTO		1103E	1103U	1128	S27	E13	6456	01	21.5	25D	SF		3	E		50		
RAMY		1322	1323	1331	S19	E64		01	25.4	9	SF		3	E		54		
RAMY		1747	1747	1758	S06	W55	6447	01	16.6	11	SF		3	E		10		
RAMY		2002	2010	2017	S11	W44	6455	01	17.5	15	SF		3	E		14		
RAMY		2016	2016	2020	S27	E09	6456	01	21.5	4	SF		3	E		14		
RAMY		2042	2050	2136	S11	W44	6455	01	17.5	54	SF	C 6.5	3	E		65		FE
PALE		2051	2052	2102	S12	W45	6455	01	17.5	11	SF	C 6.5	3	E		37		F
GOES		2251		2253D						2D		C 6.0						
PALE	21	0016	0029	0049	S14	W47	6455	01	17.4	33	1N		3	E		166		
PALE		0018	0019U	0029	S11	W65	6453	01	16.1	11	SN		3	E		75		
PALE		0018	0019	0031	S06	W61	6447	01	16.4	13	SF		3	E		73		
LEAR		0020E	0033	0128D	S12	W47	6455	01	17.5	68D	2N	M 6.1	3	E		490		E
PALE		0054	0057	0106	S14	W46	6455	01	17.6	12	SF		3	E		19		
GOES		0551	0610	0617						26		C 2.9						
GOES		0632	0643	0802						90		M 2.7						
LEAR		0737	0738	0746	S09	W63	6447	01	16.6	9	SF		3	E		46		
SVTO		0737	0738	0811	S11	W65	6447	01	16.4	34	SF		3	E		38		
SVTO		0740	0752	0759	S11	W70	6453	01	16.0	19	SF		3	E		67		
LEAR		0747	0753	0824	S10	W66	6447	01	16.4	37	1F		3	E		107		
SVTO		0759	0800	0807	S17	E82	6462	01	27.6	8	SF		3	E		38		
SVTO		0818	0819	0827	S14	W52	6455	01	17.4	9	SF	C 5.9	3	E		11		F
GOES		0915	0918	0923						8		C 3.7						
LEAR		0931	0947	1000	S09	W68	6447	01	16.3	29	SF		3	E		49		
SVTO		1056	1120U	1145D	S19	E71	6462	01	26.9	49D	1F	C 5.4	3	E		112		
SVTO		1155	1157	1203	S14	E76	6462	01	27.2	8	SF	C 6.5	3	E		18		
SVTO		1223	1227	1238	S17	E68	6462	01	26.7	15	SF	C 4.0	3	E		15		H
SVTO		1247	1249	1307	S12	W54	6455	01	17.5	20	SF	C 8.4	3	E		68		
RAMY		1249	1251	1305	S11	W54	6455	01	17.5	16	SN	C 8.4	3	E		19		
SVTO		1324	1324	1331	N11	E70		01	26.8	7	SF		3	E		17		
RAMY		1345	1351	1403	S17	E78	6462	01	27.5	18	SF	C 2.6	3	E		32		
RAMY		1457	1506	1521	S07	W68	6447	01	16.5	24	SF	C 2.6	3	E		23		
GOES		1529	1535	1542						13		C 2.8						
RAMY		1652	1654	1658	S14	E74	6462	01	27.3	6	SF		3	E		28		F
RAMY		1727	1729	1733	S15	E73	6462	01	27.2	6	SF	C 2.2	3	E		10		F
RAMY		1757	1801	1810	S15	E72	6462	01	27.2	13	SF		3	E		28		F
GOES		1851	1900	1910						19		C 4.9						
RAMY		2014	2052	2115	S20	E68	6462	01	27.0	61	SF	C 3.9	3	E		40		F
GOES		2050	2101	2105						15		C 3.7						
RAMY		2112	2114	2137	S11	W57	6455	01	17.6	25	SN	C 9.3	3	E		68		FE
RAMY		2122E	2122	2154	S17	E51		01	25.8	32D	1F		3	E		223		F
LEAR	22	0129	0130	0134	S07	W68	6447	01	17.0	5	SF		3	E		22		
LEAR		0134	0139	0150	S07	W68	6447	01	17.0	16	SF		3	E		27		
GOES		0210E	0215	0222D						12D		C 8.1						
LEAR		0246	0248	0305	S10	E72	6466	01	27.5	19	SF		3	E		23		
LEAR		0256	0257	0303	S19	E70	6462	01	27.5	7	SF		3	E		28		
GOES		0309	0318	0328						19		C 4.1						
GOES		0337	0345	0348						11		C 4.2						
LEAR		0340	0347	0416	S10	E72	6466	01	27.6	36	SF		3	E		52		
LEAR		0533	0541	0631	S07	W71	6447			58	SF			E		74		K
LEAR		0533	0547	0631	S07	W71	6447	01	16.9	58	SF		2	E		81		
LEAR		0545	0633	0700	S08	E72	6466	01	27.6	75	SF		2	E		31		
GOES		0546	0556	0605D						19D		M 3.4						

Hα SOLAR FLARES

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
LEAR	22	0725	0734	0749	S09	E73	6466	01	27.8	24	SF		2	E		25		
SVTO		0733	0734	0753	S07	E69	6466	01	27.5	20	SF		3	E		14		
SVTO		0744	0746	0759	S19	E67	6462	01	27.4	15	SF	C 5.3	3	E		16		
LEAR		0751	0756	0806	S07	W72	6447	01	16.9	15	SF		2	E		28		
SVTO		0801	0813	0822	S19	E67	6462	01	27.4	21	SF		3	E		16		
LEAR		0846	0858	0947	S09	E72	6466	01	27.8	61	SF		2	E		64		
SVTO		0846	0901	0932	S07	E70	6466	01	27.6	46	SF		3	E		20		
SVTO		0853	0855	0902	S08	E11	6459	01	23.2	9	SF		3	E		14		
SVTO		0854	0854	0900	S19	E67	6462	01	27.5	6	SF	C 3.6	3	E		16		
SVTO		1015	1019	1032	S09	W79	6447	01	16.5	17	SF		3	E		36		
SVTO		1015	1028	1036	S07	E70	6466	01	27.7	21	SF		3	E		10		
SVTO		1016	1020	1031	S11	W75	6453	01	16.8	15	SF		3	E		30		
LEAR		1019	1021	1030	S16	W64	6455	01	17.6	11	SF		2	E		30		F
SVTO		1043	1046	1049	S12	W78	6455	01	16.6	6	SF		3	E		20		
SVTO		1045	1047	1057	S11	W75	6453	01	16.8	12	SF		3	E		21		
SVTO		1110	1113	1120	S17	W68	6455	01	17.3	10	SF	C 8.3	3	E		14		F
SVTO		1110	1113	1130	S21	W69	6452	01	17.2	20	SF		3	E		24		
RAMY		1115E		1140	S14	W62	6455	01	17.8	25D	SF		2	E				F
RAMY		1130	1134	1202	S08	E67	6466	01	27.5	32	SF		3	E		17		
SVTO		1200	1202	1211	S18	E63	6462	01	27.3	11	SF		3	E		65		F
RAMY		1200	1203	1210	S19	E62	6462	01	27.2	10	SF		3	E		76		F
RAMY		1201	1212	1224	S13	W66	6455	01	17.5	23	SF		3	E		24		F
RAMY		1210	1212	1216	S06	W80	6447	01	16.5	6	SF		3	E		31		
RAMY		1313	1316	1356	S12	W67	6455	01	17.5	43	1F	M 2.4	3	E		106		FE
RAMY		1522	1527	1549	S19	E66	6462	01	27.7	27	SN	M 3.2	3	E		99		FE
RAMY		1529	1531	1535	N10	E57	6465	01	26.9	6	SF		3	E		15		F
RAMY		1545	1605	1615	S08	E33	6461	01	25.1	30	SF		3	E		16		
HOLL		1702E	1708	1736	S09	E32	6461	01	25.1	34D	SF		3	E		23		F
RAMY		1703	1713	1729	S08	E33	6461	01	25.2	26	SF		3	E		22		F
HOLL		1724	1732	1745	S10	E66	6466	01	27.7	21	SF		3	E		21		F
HOLL		1758E	1800U	1819	S08	E67	6466	01	27.8	21D	SF	C 9.8	2	E		36		F
HOLL		1934	1955	2112D	S15	W72	6455	01	17.4	98D	2N	M 2.7	3	E		301		HF
RAMY		1946	1955	2054	S13	W71	6455	01	17.5	68	1N	M 2.7	3	E		203		F
HOLL		2214	2214	2218	S09	E62	6466	01	27.6	4	SF		3	E		19		F
HOLL		2231	2237	2253	S14	W76	6455	01	17.2	22	SF	C 3.8	3	E		32		
HOLL		2237	2237	2252	S09	E61	6466	01	27.5	15	SF		3	E		19		
LEAR	23	0124	0130	0148	S19	W74	6455	01	17.4	24	1B	C 7.0	3	E		199		
LEAR		0327	0327	0331	S20	E49	6462	01	26.9	4	SF	C 2.7	3	E		28		
LEAR		0332	0334	0338	S15	W75	6455	01	17.5	6	SF		3	E		41		
GOES		0611	0613	0616						5		C 2.6						
LEAR		0741	0742	0744	S13	W76	6455	01	17.6	3	SF		3	E		28		
LEAR		0812	0819	0838	S12	E63	6466	01	28.1	26	SF	C 7.4	3	E		85		F
SVTO		0813	0817	0838	S09	E62	6466	01	28.0	25	SF		3	E		55		F
LEAR		0831	0836	0841	S13	W78	6455	01	17.5	10	SF	C 6.3	3	E		20		
SVTO		0901	0902	0909	S13	W78	6455	01	17.5	8	SF		3	E		32		
LEAR		0902	0904	0919	S14	W78	6455	01	17.5	17	1F		3	E		115		
SVTO		0936	0937	0940	S18	E45	6462	01	26.8	4	SF		3	E		16		
SVTO		1040E	1041U	1109D	S07	E61	6466	01	28.0	29D	SF	C 3.1	3	E		31		
GOES		1113	1118	1153						40		C 3.1						
SVTO		1321	1321	1327	S16	E53	6462	01	27.6	6	SF		3	E		13		
SVTO		1433	1442	1449	S10	E80		01	29.6	16	SF	C 5.0	3	E		37		
RAMY		1510	1511	1524	S12	E56	6462	01	27.8	14	SF	C 3.4	3	E		10		F
GOES		1736	1743	1759						23		C 2.2						
HOLL		1819E	1819U	1833D	S21	E47	6462	01	27.4	14D	SF	C 2.9	2	E		15		F
HOLL		1857	1902	1913	N25	E30	6464	01	26.1	16	SF	C 2.4	3	E		35		F
GOES		2056	2124	2140						44		C 2.2						
HOLL		2248	2249	2257	S08	E52	6466	01	27.8	9	SF	C 2.8	4	E		19		
LEAR	24	0111	0111	0119	S07	E54	6466	01	28.1	8	SF		3	E		13		
LEAR		0227	0230	0249	S11	E45	6466	01	27.5	22	SF		3	E		83		F
LEAR		0318	0337	0403	S13	E43	6466	01	27.4	45	SF		3	E		65		F
LEAR		0329	0337	0403	S19	E42	6462	01	27.3	34	SN	M 3.2	3	E		87		F
LEAR		0420	0421	0438	N26	E25	6464	01	26.1	18	SF		3	E		29		
SVTO		0812	0815	0822	S20	E37	6462	01	27.2	10	SF		3	E		30		F
SVTO		0931	0933	0937D	S19	E01	6468	01	24.5	6D	SF		3	E		26		F
LEAR		0931	0933	0944	S18	E02	6468	01	24.5	13	SF		3	E		36		F
SVTO		1030	1032	1034	S15	E90		01	31.2	4	SF		3	E		18		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
SVTO	24	1218	1227U	1239	S08	E45	6466	01	27.9	21	SN	C 4.5	2	E		58		F
RAMY		1224	1226	1240	S09	E46	6466	01	28.0	16	SF	C 4.5	4	E		29		FE
HOLL		1448E	1451U	1458	S21	E29	6462	01	26.8	10D	SF	C 3.9	2	E		28		FH
HOLL		1810	1813	1815	S16	E29	6462	01	26.9	5	SF		3	E		21		
HOLL		1845	1853	1903	S07	W60		01	20.3	18	SF		3	E		19		
HOLL		2043E	2045U	2049D	S08	E41	6466	01	27.9	6D	SF		3	E		14		
HOLL		2048	2051	2103	N27	E18	6464	01	26.3	15	SF		3	E		54		
RAMY		2049	2050	2101	N26	E18	6464	01	26.3	12	SF		3	E		28		
RAMY		2049	2051	2104	S09	E40	6466	01	27.9	15	SF		3	E		25		
HOLL		2050	2107	2154	S07	W62		01	20.2	64	SF		3	E		25		
HOLL		2207	2214	2225	S20	E27	6462	01	27.0	18	SF		3	E		29		F
LEAR	25	0017	0027	0042	S09	E38	6466	01	27.9	25	SF		3	E		21		F
GOES		0120	0150	0209						49		M 1.3						
GOES		0228	0256	0318						50		M 1.6						
LEAR		0355	0404	0417	S21	E23	6462	01	26.9	22	SF		3	E		35		F
LEAR		0455	0457	0506	S18	E28	6462	01	27.3	11	SF	C 5.1	3	E		40		
LEAR		0609	0615	0630	S07	W67	6470	01	20.2	21	SF		3	E		17		
LEAR		0619	0620	0645	S09	E29	6466	01	27.4	26	SF		3	E		15		
LEAR		0627	0628	0630	N21	W43	6458	01	22.0	3	SF		3	E		13		
LEAR		0630	0630	0638	S16	E78		01	31.2	8	SF	X10.0	3	E		33		
LEAR		0656	0703	0710	S21	E21	6462	01	26.9	14	SF		3	E		12		
LEAR		0746	0755	0858	S07	E34	6466	01	27.9	72	SF		3	E		44		
LEAR		0755	0755	0804	S07	W68	6470	01	20.2	9	SF		3	E		19		
LEAR		0815	0823	0830	S09	W67	6470	01	20.3	15	SF		3	E		10		
LEAR		1014	1024	1034	S21	E18	6462	01	26.8	20	SF		3	E		26		
SVTO		1020	1025	1036	S21	E20	6462	01	27.0	16	SF		3	E		12		
LEAR		1027	1027	1030	S14	E49	6469	01	29.1	3	SF		3	E		26		
LEAR		1027	1028	1033	S08	E32	6466	01	27.8	6	SF		3	E		16		F
SVTO		1039	1111U	1249	S06	E30	6466	01	27.7	130	SN	M 1.4	3	E		65		
RAMY		1126E	1226	1253	S08	E31	6466	01	27.8	87D	SN		3	E		89		F
SVTO		1315	1336	1423	S06	E31	6466	01	27.9	68	2N		3	E		289		F
RAMY		1317	1329	1426	S08	E30	6466	01	27.8	69	2N	M 2.4	4	E		276		UF
RAMY		1317	1342	1426	S08	E30	6466			69	2N			E		241		K
RAMY		1331	1332	1339	S19	E35	6462	01	28.2	8	SF		4	E		21		
SVTO		1331	1333	1341	S18	E36	6462	01	28.3	10	SF		3	E		23		
SVTO		1443	1445	1457	S18	E31	6462	01	28.0	14	SF		3	E		32		F
HOLL		1824	1842	2228	S08	E28	6466			244	SN			E		37		KT
HOLL		1824	1900	1916	S17	E16	6462	01	27.0	52	SF		3	E		28		F
HOLL		1824	1936	2228	S08	E28	6466	01	27.9	244	1N		3	E		105		FT
PALE		1830	1842	1908	S09	E28	6466	01	27.9	38	SF		3	E		25		
RAMY		1844E	2017U	2022	S08	E29	6466	01	27.9	98D	SF		3	E		43		F
PALE		1934E	2102U	2205	S09	E21	6466	01	27.4	151D	SF	C 4.6	3	E		22		
RAMY		2003	2004	2009	S17	E15	6462	01	27.0	6	SF		3	E		13		
HOLL		2007	2011	2031	S11	E48	6469	01	29.4	24	SF		3	E		35		F
RAMY		2008	2011	2017	S12	E47	6469	01	29.4	9	SF		3	E		22		
HOLL		2025	2025	2041	S17	E15	6462	01	27.0	16	SF		3	E		16		F
HOLL		2048	2050	2101	S17	E15	6462	01	27.0	13	SF		3	E		21		F
HOLL		2229	2241	2250	S17	E15	6462	01	27.1	21	SF		3	E		18		F
HOLL		2305	2305	2310	S16	E20	6462	01	27.5	5	SF		3	E		22		F
HOLL		2306	2310	2324	S08	E26	6466	01	27.9	18	SF		3	E		15		
HOLL		2313	2314	2324	N25	E06	6464	01	26.4	11	SF		3	E		14		
LEAR		2316	2322	2330	S18	E21	6462	01	27.6	14	SF		3	E		30		F
LEAR		2335	2351	2457	S18	E20	6462			82	SF			E		32		K
LEAR		2335	2433	2457	S18	E20	6462	01	27.5	82	1F		3	E		112		F
PALE	26	0026	0026	0115	S15	E20	6462	01	27.5	49	SF		3	E		41		
LEAR		0358	0358	0404	S19	E22	6462	01	27.8	6	SF		3	E		18		F
LEAR		0410	0413	0423	S15	E25	6462	01	28.1	13	SF		3	E		31		
LEAR		0534	0534	0545	S16	E17	6462	01	27.5	11	SF		3	E		14		
LEAR		0621	0622	0630	S15	E34	6469	01	28.8	9	SF		3	E		42		
SVTO		0720	0721	0724	S15	E22	6462	01	28.0	4	SF		3	E		12		F
LEAR		0801	0815	0905	S15	E14	6462			64	1N			E		113		K
LEAR		0801	0845	0905	S15	E14	6462	01	27.4	64	SN	C 8.3	3	E		86		FE
LEAR		0858	0859	0907	S11	E75	6471	02	1.0	9	SF		3	E		52		
LEAR		0906	0906	0913	S18	E16	6462	01	27.6	7	SF		3	E		19		F
SVTO		1002	1031	1047	S15	E16	6462	01	27.6	45	SF	C 3.8	3	E		16		F
GOES		1035	1039	1047						12		C 4.6						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	26	1123E	1127	1143	N08	E08	6465	01	27.1	20D	SF		2	E		30		F
RAMY		1130	1132	1144	S16	E16	6462	01	27.7	14	SF		2	E		38		F
RAMY		1140	1141	1152	S21	E69	6471	01	31.8	12	SF		2	E		46		
RAMY		1148	1148	1215	S16	E14	6462	01	27.5	27	SF	C 4.5	3	E		44		F
RAMY		1337	1342	1355	N26	W04	6464	01	26.2	18	SF		3	E		19		F
RAMY		1405	1409	1429	S16	E11	6462	01	27.4	24	SF		3	E		34		F
RAMY		1433	1442	1455	N12	E29		01	28.8	22	SF		3	E		22		
GOES		1510	1513	1526						16		C 5.4						
RAMY		1546	1551	1557	S13	E70	6471	01	31.9	11	SF		3	E		33		
HOLL		1551	1553	1600	S11	E72	6471	02	1.1	9	SF		3	E		13		F
RAMY		1601	1601	1605	S12	E71	6471	02	1.0	4	SF		3	E		14		
RAMY		1711	1712	1718	S16	E13	6462	01	27.7	7	SF	C 6.2	3	E		21		F
RAMY		1734	1734	1739	S13	E71	6471	02	1.1	5	SF		3	E		19		
PALE		1843	1849	1922	S07	E16	6466	01	28.0	39	SF		3	E		66		F
RAMY		1843	1856	1920	S11	E16	6466	01	28.0	37	SF	C 4.4	3	E		41		F
PALE		1850	1857	1907	S16	E18	6462	01	28.1	17	SF		3	E		29		F
RAMY		1851	1856	1911	S21	E14	6462	01	27.8	20	SF		3	E		25		F
PALE		1923	1924	1932	N11	E27	6472	01	28.8	9	SF	C 6.1	3	E		34		
PALE		2053	2053	2057	S16	E16	6462	01	28.1	4	SF		3	E		18		
PALE		2114	2115	2138	S11	E69	6471	02	1.1	24	SF	C 7.8	3	E		33		F
LEAR		2253	2324	2345	N12	E24	6472	01	28.8	52	SF		3	E		44		
PALE		2335	2336	2342	S20	E13	6462	01	28.0	7	SF		3	E		21		
LEAR		2335	2336	2346	S19	E07	6462	01	27.5	11	SF		3	E		34		
LEAR		2339	2403	2420	S11	E11	6466	01	27.8	41	SF		3	E		36		
LEAR		2344	2347	2356	S14	E61	6471	01	31.6	12	SF		3	E		14		
LEAR	27	0003	0009	0014	N11	E24	6472	01	28.8	11	SF		3	E		12		
LEAR		0111	0111	0118	N09	W03	6465	01	26.8	7	SF		3	E		14		
PALE		0129	0130	0152D	S13	E32	6469	01	29.5	23D	SF	C 5.2	3	E		73		
LEAR		0129	0134	0150D	S14	E30	6469	01	29.3	21D	1F	C 5.2	3	E		124		F
LEAR		0148	0207	0223	N10	W05	6465	01	26.7	35	SF		3	E		21		
LEAR		0237	0239	0242	N11	E23	6472	01	28.8	5	SF		3	E		17		
LEAR		0256	0307	0410	S07	E11	6466			74	SF			E		55		K
LEAR		0256	0330	0410	S07	E11	6466	01	27.9	74	SF		3	E		94		F
PALE		0307	0332	0345	S07	E12	6466	01	28.0	38	SF		3	E		33		
LEAR		0317	0320	0330	N09	W03	6465	01	26.9	13	SF		3	E		13		
LEAR		0326	0329	0345	N11	E20	6472	01	28.6	19	SF		3	E		26		F
LEAR		0335	0335	0341	S14	E29	6469	01	29.3	6	SF		3	E		18		F
LEAR		0447	0504	0512	S14	E60	6471	01	31.7	25	SF		3	E		26		
LEAR		0520	0522	0537	S18	E08	6462	01	27.8	17	SF		3	E		47		
LEAR		0526	0535	0637	S12	E64	6471	02	1.0	71	SF	C 5.5	3	E		94		F
LEAR		0706	0739	0759	S15	E09	6462	01	28.0	53	SF		3	E		32		
LEAR		0716	0720	0747	N10	W08	6465	01	26.7	31	SF		3	E		23		
LEAR		0810	0814	0829	S19	E02	6462	01	27.5	19	SF		3	E		45		F
GOES		0852	0855	0857						5		C 3.6						
LEAR		1004	1005	1017	S12	E62	6471	02	1.1	13	SF	C 4.1	3	E		47		
RAMY		1138	1142	1231	N09	W08	6465			53	SF			E		17		K
RAMY		1138	1151	1231	N09	W08	6465	01	26.9	53	SF		3	E		25		F
RAMY		1201	1205	1213	S12	E61	6471	02	1.1	12	SF		3	E		43		E
RAMY		1212	1212	1304	S19	E00	6462	01	27.5	52	SF		3	E		15		F
RAMY		1236	1237	1244	S10	E63	6471	02	1.2	8	SF		3	E		15		
RAMY		1306	1313	1345	S16	E00	6462			39	SF			E		17		K
RAMY		1306	1322	1345	S16	E00	6462	01	27.5	39	SF		3	E		42		F
RAMY		1326	1333	1348	S13	E23	6469	01	29.3	22	SF		3	E		11		F
RAMY		1337	1342	1351	N11	E15	6472	01	28.7	14	SF		3	E		13		
RAMY		1342	1345	1353	S13	E60	6471	02	1.1	11	SF		3	E		19		
RAMY		1418	1422	1435	S20	E03	6462	01	27.8	17	SF		3	E		12		F
RAMY		1440	1441U	1441D	S14	E59	6471	02	1.1	1D	1B	X 1.9	3	E		159		
RAMY		1440	1442	1742	S14	E59	6471	02	1.1	182	1B	X 1.9	3	E		178		YF
RAMY		1449	1535	1611	N12	E13	6472	01	28.6	82	SF		3	E		43		F
HOLL		1836E	1853U	1904	S12	E57	6471	02	1.1	28D	SF		2	E		15		
RAMY		1842	1858	1900	S13	E57	6471	02	1.1	18	SF		3	E		25		
RAMY		1916	1916	1922	S12	E12	6469	01	28.7	6	SF		3	E		11		
HOLL		1916	1917	1924	S11	E12	6469	01	28.7	8	SF		3	E		24		
HOLL		2025	2025	2028	N13	E10	6472	01	28.6	3	SF		3	E		19		
HOLL		2242	2252	2308	S15	W06	6462	01	27.5	26	SF		3	E		35		
HOLL		2250E	2256	2316	S11	E53	6471	01	31.9	26D	SF		3	E		66		
LEAR		2255	2257	2316	S13	E55	6471	02	1.1	21	SF		3	E		38		

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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
LEAR	27	2255	2308	2347	N12	E10	6472	01	28.7	52	SF		3	E		29		
LEAR		2256	2309	2315	N10	W16	6465	01	26.7	19	SF		3	E		11		
LEAR		2256	2350	2359	N15	W63		01	23.2	63	SF		3	E		16		
┌LEAR		2318	2318	2332	S14	E50	6471	01	31.7	14	SF		3	E		11		
└HOLL		2318	2324	2334	S11	E53	6471	01	31.9	16	SF		3	E		29		
HOLL		2328	2330	2333	S18	W05	6462	01	27.6	5	SF		3	E		13		
LEAR		2351	2352		S10	W03	6466	01	27.8	9	SF		3	E		38		
LEAR	28	0031	0033	0045	S14	E49	6471	01	31.7	14	SF		3	E		31		
LEAR		0125	0142	0214	S20	W04	6462	01	27.7	49	SF		3	E		33		
LEAR		0130	0142	0358	S09	W04	6466	01	27.8	148	1N	M 1.7	3	E		195		FE
┌LEAR		0214	0226	0306	S18	W07	6462			52	SF			E		24		K
└LEAR		0214	0235	0306	S18	W07	6462	01	27.6	52	SF		3	E		45		
LEAR		0238	0242	0247	N09	W16	6465	01	26.9	9	SF		3	E		12		
LEAR		0313	0314	0317	N16	E73		02	2.7	4	SF		3	E		24		
LEAR		0335	0339	0346	S14	E48	6471	01	31.8	11	SF		3	E		11		
LEAR		0403	0404	0407	S10	W05	6466	01	27.8	4	SF		3	E		17		
LEAR		0522	0525	0531	S13	E47	6471	01	31.8	9	SF		3	E		28		F
LEAR		0541	0541	0547	S14	E09	6469	01	28.9	6	SF		3	E		13		
LEAR		0656	0656	0702	N18	E74		02	2.9	6	SF		3	E		42		
LEAR		0737	0738	0807	S15	E09	6469	01	29.0	30	SF		3	E		55		
LEAR		0738	0754	0841	N08	W21	6465	01	26.7	63	SN	C 7.2	3	E		79		
LEAR		0755	0814	0819	S11	E20	6474	01	29.8	24	SF		3	E		21		
LEAR		0804	0811	0834	N12	E05	6472	01	28.7	30	SF		3	E		23		
LEAR		0806	0809	0816	S10	E49	6471	02	1.0	10	SF		3	E		14		
LEAR		0859	0859	0902	S20	W06	6462	01	27.9	3	SF		3	E		15		
LEAR		0906	0909	0926	N16	E68		02	2.5	20	SF		3	E		39		
LEAR		0911	0932	1002	S09	W07	6466	01	27.8	51	SF	C 5.1	3	E		36		
LEAR		0923	0925	1004	S11	E12	6469	01	29.3	41	SF		3	E		43		
LEAR		1004	1017	1022	S18	W11	6462	01	27.6	18	SF		3	E		15		
GOES		1120	1126	1136						16		C 4.5						
RAMY		1140	1149	1152	S13	W03	6466	01	28.2	12	SF		3	E		16		
RAMY		1240	1249	1347	S13	E48	6471	02	1.1	67	SF	M 1.1	3	E		26		F
RAMY		1347	1347	1350	N15	E71		02	2.9	3	SF	C 4.3	3	E		12		
RAMY		1352	1353	1356	S13	E48	6471	02	1.2	4	SF		3	E		12		
┌RAMY		1359	1402	1426	S18	E37	6471	01	31.4	27	SF	C 4.7	3	E		53		
└RAMY		1359	1411	1426	S18	E37	6471			27	SF			E		60		K
RAMY		1401	1409	1434	S12	E09	6469	01	29.3	33	SF		3	E		14		
┌RAMY		1430	1430	1436	S18	W12	6462	01	27.7	6	SF		3	E		11		F
└HOLL		1432E	1432U	1436D	S18	W13	6462	01	27.6	4D	SF		1	E		20		
RAMY		1525	1542	1550	S14	E48	6471	02	1.3	25	SF		3	E		39		
┌HOLL		1622	1630	1635	S10	W08	6466	01	28.1	13	SF		3	E		34		H
└RAMY		1623	1630	1635	S11	W07	6466	01	28.1	12	SF		3	E		24		H
┌HOLL		1630	1630	1637	N16	E71	6476	02	3.1	7	SF	C 4.8	3	E		34		
└RAMY		1630	1630	1638	N15	E68	6476	02	2.8	8	SF	C 4.8	3	E		38		
HOLL		1707	1745	1754	S12	E08	6469	01	29.3	47	SF	C 7.8	3	E		60		
HOLL		1751	1757	1819	S15	E49	6471	02	1.4	28	1N	M 1.1	3	E		126		F
HOLL		1754	1754	1801	S13	E09	6469	01	29.4	7	SF		3	E		17		
HOLL		1754	1756	1758	S09	W13	6466	01	27.8	4	SF		3	E		20		
HOLL		1845	1851	1907	S12	E08	6469	01	29.4	22	SF		3	E		89		F
HOLL		1849	1852	1904	S13	E46	6471	02	1.2	15	SF		3	E		24		
HOLL		1922E	1930	1939	S12	E08	6469	01	29.4	17D	SF		3	E		79		F
HOLL		1950	1955	2040	S15	E48	6471	02	1.5	50	1N	M 1.2	3	E		114		UE
HOLL		2046	2047	2053	S12	E07	6469	01	29.4	7	SF		3	E		27		F
HOLL		2057	2059U	2112	N03	E80		02	3.8	15	SF	M 1.1	2	E		44		FH
HOLL		2114	2116	2123	S15	E48	6471	02	1.5	9	SF		3	E		14		
┌HOLL		2140	2141U	2224	S13	E43	6471	02	1.1	44	SF	C 4.0	2	E		57		F
└PALE		2143E	2146U	2200D	S12	E46	6471	02	1.4	17D	SF	C 4.0	3	E		18		F
HOLL		2149	2151U	2222	N16	E65	6476	02	2.8	33	SF		2	E		43		F
HOLL		2200	2202U	2225	S12	E06	6469	01	29.4	25	SF		2	E		37		F
LEAR	29	0056	0105	0133	S16	W21	6462	01	27.4	37	SF		3	E		37		F
LEAR		0152	0153	0213	S15	E44	6471	02	1.4	21	SF	C 5.9	3	E		45		FE
LEAR		0156	0159	0211	N14	E61	6476	02	2.7	15	1F		3	E		110		F
PALE		0200E	0200	0231	S14	E46	6471	02	1.5	31D	SF		3	E		55		F
LEAR		0316	0317	0325	S13	E41	6471	02	1.2	9	SF		3	E		21		F
LEAR		0414	0414	0439	S14	W01	6469	01	29.1	25	SF		3	E		40		F
LEAR		0449	0452	0457	S14	W29	6462	01	27.0	8	SF		3	E		52		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	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	29	0509	0518	0551	S13	W01	6469	01	29.1	42	SF		3	E		52		
LEAR		0605	0609	0625	S12	E39	6471	02	1.2	20	SF		3	E		42		F
LEAR		0608	0610	0618	S09	E04	6469	01	29.5	10	SF		3	E		46		F
LEAR		0651	0651	0729	S16	E42	6471	02	1.5	38	SN	C 9.9	3	E		62		FE
LEAR		0707	0712	0726	N15	E61	6476	02	2.9	19	SF		3	E		42		F
LEAR		0714	0716	0735	N08	W35	6465	01	26.7	21	SN		3	E		69		FE
LEAR		0737	0741	0825	S12	E37	6471	02	1.1	48	SF		3	E		24		F
LEAR		0741	0743	0830	S12	E00	6469			49	SF			E		39		K
LEAR		0741	0748	0830	S12	E00	6469	01	29.3	49	SF		3	E		63		F
LEAR		0946	1015	1055D	S13	E36	6471	02	1.1	69D	SN	M 1.2	3	E		75		F
LEAR		1024	1025	1029	S13	W05	6469	01	29.0	5	SF		3	E		23		F
GOES		1214	1218	1224						10		C 4.3						
RAMY		1347	1348	1401	N08	W38	6465	01	26.7	14	SF	C 6.1	3	E		30		
RAMY		1416	1420	1451	N02	E68	6479	02	3.7	35	SF		3	E		39		
RAMY		1416	1421	1437	S17	W07	6469	01	29.1	21	SF	C 8.7	3	E		14		
RAMY		1543	1546	1601	S14	E36	6471	02	1.4	18	SF		3	E		12		
RAMY		1558	1610	1632	N19	E64	6476	02	3.5	34	SF	C 6.8	3	E		27		F
HOLL		1559E	1604U	1625D	S20	E54	6476	02	2.8	26D	SF		3	E		72		F
HOLL		1602	1605U	1613	S17	W08	6469	01	29.1	11	SF		3	E		45		F
RAMY		1603	1608U	1739D	S13	W07	6469	01	29.1	96D	SF		3	E		38		
PALE		1723E	1723U	1740	S15	W10	6469	01	29.0	17D	SF	C 6.6	3	E		48		FH
PALE		1744	1750	1826	N21	E63	6476	02	3.6	42	SF	C 7.2	3	E		34		F
RAMY		1748	1751	1820	N19	E63	6476	02	3.5	32	SF	C 7.2	3	E		22		F
RAMY		1801	1813	1820	S14	W33	6462	01	27.2	19	SF		3	E		26		F
PALE		1838	1844	1913	S15	W07	6469	01	29.2	35	SF	C 8.1	3	E		73		FE
RAMY		1840	1842	1905	S17	W10	6469	01	29.0	25	SF		3	E		48		F
HOLL		1859E	1859U	1903D	S17	W11	6469	01	28.9	4D	SF		2	E		97		F
RAMY		1915	1918	1938	S07	W22	6466	01	28.1	23	SF		3	E		18		F
PALE		1917	1918	1935	S07	W21	6466	01	28.2	18	SF		3	E		23		F
RAMY		1932	1937	1941	S13	E32	6471	02	1.2	9	SF		3	E		16		F
PALE		2007	2008	2012	N21	E58	6476	02	3.3	5	SF		3	E		29		
HOLL		2056	2057	2110D	N16	E54	6476	02	3.0	14D	SF		3	E		90		
RAMY		2056	2057	2111	N14	E53	6476	02	2.9	15	SF		3	E		27		
PALE		2056	2057	2121	N18	E55	6476	02	3.1	25	SF		3	E		52		
PALE		2106	2108	2115	S17	W06	6469	01	29.4	9	SF		3	E		11		
PALE		2203	2204	2213	S17	W12	6469	01	29.0	10	SF	C 3.9	3	E		29		F
PALE		2208	2214	2231	S18	W31	6462	01	27.6	23	SF		3	E		14		
PALE		2229	2232	2257D	S11	W23	6466	01	28.2	28D	SF		3	E		20		
LEAR		2245	2245	2347	S13	E32	6471	02	1.4	62	SF		3	E		62		F
LEAR	30	0020	0105	0135	S11	E26	6471	02	1.0	75	SF		3	E		58		F
LEAR		0103	0107	0133	S15	W32	6462	01	27.6	30	SF	C 6.3	3	E		59		F
PALE		0107	0107	0119	S15	W34	6462	01	27.5	12	SF	C 6.3	3	E		23		F
LEAR		0140	0146	0200	N16	E51	6476	02	2.9	20	SF		3	E		61		F
PALE		0145	0146	0157	N21	E55	6476	02	3.3	12	SF		3	E		32		
LEAR		0157	0202	0209	S09	W26	6466	01	28.1	12	SF		3	E		27		F
PALE		0201	0202	0211	S09	W25	6466	01	28.2	10	SF		3	E		19		
LEAR		0255	0256	0302	S16	E47	6477	02	2.7	7	SF		3	E		18		
LEAR		0343	0354	0410	S13	W13	6469	01	29.2	27	SF		3	E		41		
GOES		0412E	0415	0420D						8D		C 4.9						
LEAR		0412	0415	0426	N07	W46	6465	01	26.7	14	SF		3	E		73		
LEAR		0709	0712	0731	N08	W47	6465	01	26.8	22	SF	C 3.2	3	E		51		
LEAR		0738	0806	0826	S10	W29	6466	01	28.1	48	SF	C 4.9	3	E		99		F
LEAR		0849	0900	1025	S08	W34	6466	01	27.8	96	2B	X 1.0	3	E		406		F
LEAR		0849	0939	1025	S08	W34	6466			96	1B			E		159		K
SVTO		0854E	0918	1029D	S07	W34	6466	01	27.8	95D	1N		2	E		238		FE
SVTO		0855E	0904	0933	S13	W42	6462	01	27.2	38D	SF		2	E		44		F
SVTO		0903E	0911	0934	S17	W21	6469	01	28.8	31D	SF		3	E		25		F
LEAR		0908	0909	0927	S13	W16	6469	01	29.2	19	SF		3	E		24		F
SVTO		0929	0934	1107	S12	E23	6471	02	1.1	98	SF		3	E		29		F
SVTO		0929	1042	1107	S12	E23	6471			98	SF			E		28		K
LEAR		0934	0935	1019	S12	E24	6471	02	1.2	45	SN		3	E		46		FE
LEAR		0934	0952	1019	S12	E24	6471			45	SB			E		37		K
LEAR		1029	1043	1053D	S12	E22	6471	02	1.1	24D	SF		1	E		91		F
GOES		1243	1247	1252						9		C 5.9						
RAMY		1350	1355	1359	S14	E23	6471	02	1.3	9	SF		3	E		16		
RAMY		1350	1429	1509	S15	W40	6462			79	SN			E		75		K
RAMY		1350	1445	1509	S15	W40	6462	01	27.5	79	SN	M 1.2	3	E		97		F

Hα SOLAR FLARES

JANUARY 1991

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
RAMY	30	1359	1404	1415	S16	W22	6469	01	28.9	16	SF		3	E		22		F
RAMY		1407	1413	1458	S10	W39	6466			51	SN			E		23		K
RAMY		1407	1445	1458	S10	W39	6466	01	27.6	51	SN		3	E		24		F
RAMY		1419	1419	1437	S14	E21	6471	02	1.2	18	SN	M 1.0	3	E		32		F
HOLL		1428E	1428U	1440D	S13	E20	6471	02	1.1	12D	SF		2	E		11		F
HOLL		1428E	1428U	1501D	S16	W39	6462	01	27.6	33D	SF		2	E		21		F
RAMY		1508	1511	1532	S11	E18	6471	02	1.0	24	SF		3	E		25		F
HOLL		1510	1512	1544	S10	E18	6471	02	1.0	34	SF		3	E		63		F
RAMY		1533	1534	1540	S11	E18	6471	02	1.0	7	SF		3	E		25		
HOLL		1540	1540	1554	S16	W39	6462	01	27.7	14	SF		3	E		12		F
HOLL		1545	1545	1551	S11	E19	6471	02	1.1	6	SF		3	E		12		F
HOLL		1553	1615	1644	S13	E20	6471	02	1.2	51	SN		3	E		57		F
RAMY		1556	1559	1612	S16	W24	6469	01	28.8	16	SF		3	E		22		
HOLL		1556	1601	1609	S16	W24	6469	01	28.8	13	SF		3	E		37		F
RAMY		1601	1617	1638	S13	E20	6471	02	1.2	37	SF		3	E		38		F
RAMY		1611	1611	1615	S18	W40	6462	01	27.6	4	SF		3	E		14		F
HOLL		1611	1611	1618	S14	W41	6462	01	27.6	7	SF		3	E		21		F
HOLL		1615	1615	1620	S16	W22	6469	01	29.0	5	SF		3	E		12		F
HOLL		1638	1644	1654	N15	E41	6476	02	2.8	16	SF		3	E		30		F
RAMY		1640	1642	1649	N15	E42	6476	02	2.9	9	SF		3	E		30		
RAMY		1700	1702	1721	S15	W42	6462	01	27.5	21	SF	C 7.9	3	E		66		F
HOLL		1732	1733	1745	S18	W41	6462	01	27.6	13	SF		3	E		18		F
HOLL		1746	1752	1804	S16	W43	6462	01	27.5	18	SF		3	E		33		F
HOLL		1756	1757	1804	S16	W25	6469	01	28.8	8	SN	M 1.0	3	E		52		FE
RAMY		1756	1757	1807	S14	W23	6469	01	29.0	11	SF	M 1.0	3	E		40		F
HOLL		1810	1811	1814	S18	W41	6462	01	27.6	4	SF		3	E		18		F
HOLL		1908	1909	1915	S13	E17	6471	02	1.1	7	SF	C 4.6	3	E		31		F
RAMY		1908	1909	1918	S13	E18	6471	02	1.1	10	SF	C 4.6	3	E		28		F
PALE		1911	1954	2432	S17	W41	6462			321	SB	C 6.4		E		64		KT
PALE		1911	2337	2432	S17	W41	6462	01	27.7	321	SF		3	E		49		FT
HOLL		1914	1917	1922	S16	W25	6469	01	28.9	8	SF		3	E		20		F
PALE		1915	1915	1925	S11	W22	6469	01	29.1	10	SF		3	E		27		
HOLL		1948	1957	2024	S15	W40	6462	01	27.8	36	SF	C 6.4	3	E		28		
RAMY		1951	1952	2014	S16	W42	6462	01	27.6	23	SF	C 6.4	3	E		24		F
HOLL		2004	2004	2011	S16	W26	6469	01	28.9	7	SF		3	E		35		
HOLL		2021	2028	2041	S16	W24	6469	01	29.0	20	SF		3	E		28		F
HOLL		2048	2050	2054	S11	W20	6469	01	29.4	6	SF		3	E		34		
PALE		2110	2118	2154	S06	W45	6466	01	27.5	44	SF		3	E		29		
HOLL		2134	2134	2149	S11	W24	6469	01	29.1	15	SF		3	E		21		F
RAMY		2135	2135	2145	S12	W24	6469	01	29.1	10	SF		3	E		19		F
PALE		2215	2217	2241	S18	W21	6469	01	29.3	26	SN		3	E		97		
HOLL		2215	2218	2249	S16	W22	6469	01	29.2	34	SN	M 1.0	3	E		78		FE
HOLL		2237	2301	2324	S14	W45	6462	01	27.5	47	SF	C 6.1	3	E		33		F
HOLL		2314	2314	2324	S14	W25	6469	01	29.1	10	SF		3	E		18		F
HOLL		2337	2337	2345	S18	W49	6462	01	27.2	8	SF		3	E		18		
PALE		2350	2351	2356	S16	W23	6469	01	29.2	6	SF		3	E		24		F
PALE		2357	2404	2408	S11	W25	6469	01	29.1	11	SF		3	E		10		F
PALE	31	0005	0005	0032	N03	E47	6479	02	3.5	27	SF		3	E		61		FZ
PALE		0038	0055	0150	S18	W50	6462	01	27.2	72	SF		3	E		30		
PALE		0108	0108	0112	S06	W47	6466	01	27.5	4	SF		3	E		20		F
PALE		0151	0151U	0207	S06	W47	6466	01	27.5	16	SF		3	E		75		
PALE		0151	0211	0310D	S18	W50	6462	01	27.3	79D	1B		3	E		192		
LEAR		0153	0159	0303	N21	E48	6476	02	3.7	70	1B		3	E		235		F
PALE		0157E		0301D	N17	E38	6476	02	3.0	64D	1F		3	E		197		
LEAR		0158	0200	0519	S17	W35	6469			201	1B			E		153		K
LEAR		0158	0222	0519	S17	W35	6469	01	28.4	201	2B	X 1.3	3	E		457		F
LEAR		0159	0219	0447	S18	W51	6462			168	1B			E		208		K
LEAR		0159	0232	0447	S18	W51	6462	01	27.2	168	1B		3	E		229		F
PALE		0207E		0310D	S11	W27	6469	01	29.0	63D	2N		3	E		312		
GOES		0953	1016	1111						78		C 5.4						
GOES		1147	1155	1259						72		M 1.4						
GOES		1326	1333	1336						10		C 5.1						
GOES		1437	1440	1444						7		C 3.8						
GOES		1448	1451	1455						7		C 4.0						
HOLL		1559	1606	1627	S15	W34	6469			28	SF			E		22		K
HOLL		1559	1612	1627	S15	W34	6469	01	29.1	28	SF	C 5.7	3	E		36		
HOLL		1733	1733	1740	S08	W49	6466	01	28.0	7	SF		3	E		19		F

Hα SOLAR FLARES

JANUARY 1991

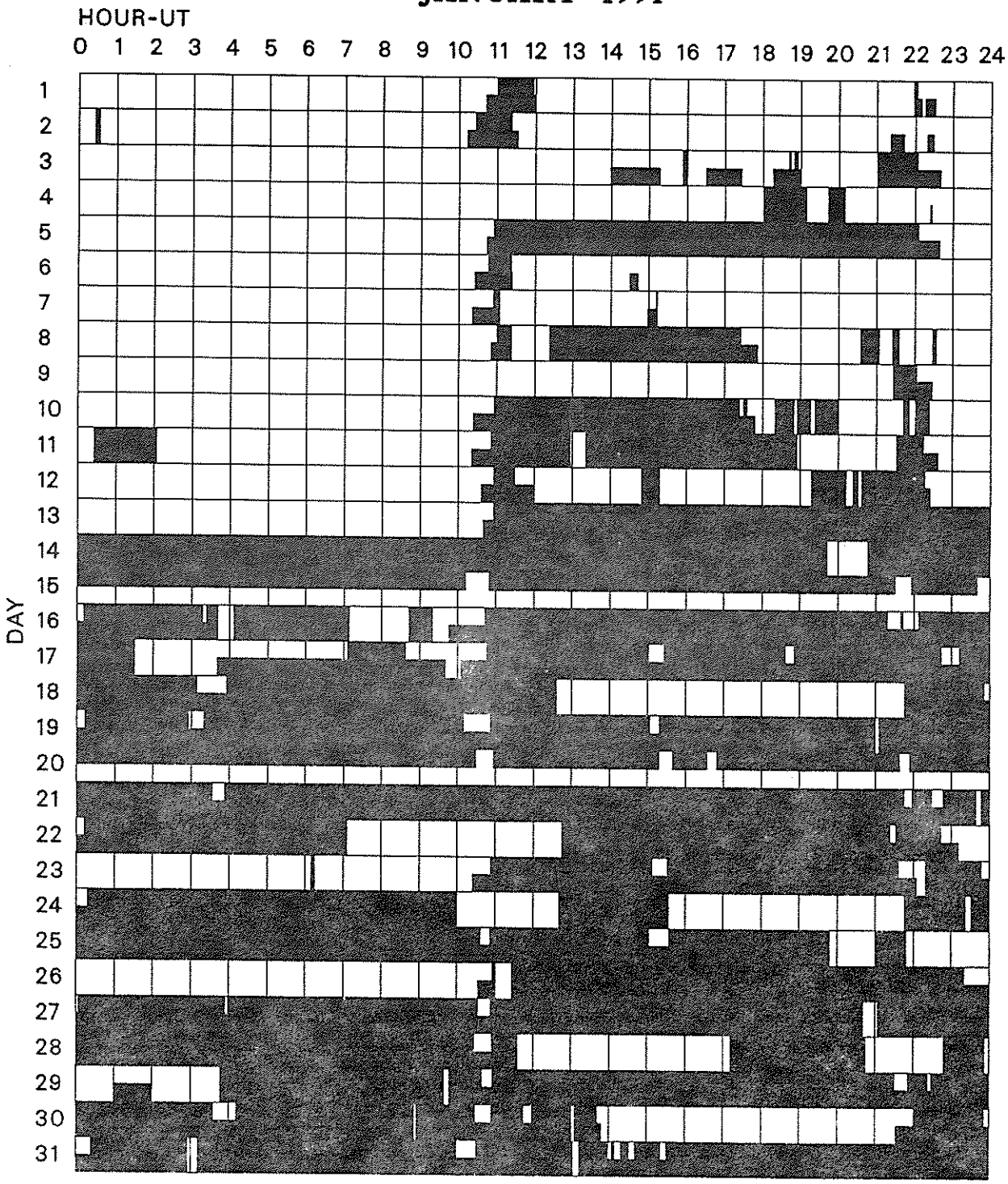
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	31	1758	1804	1808						10		C 6.4						
HOLL		1759	1802	1825	S16	E09	6471	02	1.4	26	SF		3	E		58		F
PALE		1759	1802	1837	S16	E10	6471	02	1.5	38	SF		3	E		45		
PALE		1848	1858	1946	S13	W57	6466	01	27.5	58	SF		3	E		44		
HOLL		1852	1854	1903	S15	E08	6471	02	1.4	11	SF		3	E		18		F
PALE		1923	1927	1936	S15	W38	6469	01	28.9	13	SF		3	E		20		
HOLL		1930	1930	1934	S12	E04	6471	02	1.1	4	SF		3	E		23		F
HOLL		1936	1938	1943	S15	W37	6469	01	29.0	7	SF		3	E		36		F
HOLL		1942	1943	1949	N19	E22	6476	02	2.5	7	SF		3	E		27		
HOLL		2017	2022	2107	S16	W40	6469			50	SN			E		31		K
HOLL		2017	2028	2107	S16	W40	6469	01	28.8	50	SN	C 8.4	3	E		81		F
PALE		2018	2028U	2125D	S16	W38	6469	01	29.0	67D	SF	C 8.4	3	E		58		
HOLL		2039	2041	2117	S09	W50	6466	01	28.1	38	SF		3	E		20		F
PALE		2053E	2053U	2212D	N12	W43	6472	01	28.6	79D	SF		3	E		60		
HOLL		2124	2126	2142	S13	E03	6471	02	1.1	18	SF	C 5.5	3	E		18		F
HOLL		2157	2158	2204	N19	E22	6476	02	2.6	7	SF		3	E		19		F
HOLL		2322	2323	2345	S15	W55	6462	01	27.8	23	SF	C 5.0	3	E		43		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.

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

JANUARY 1991



Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

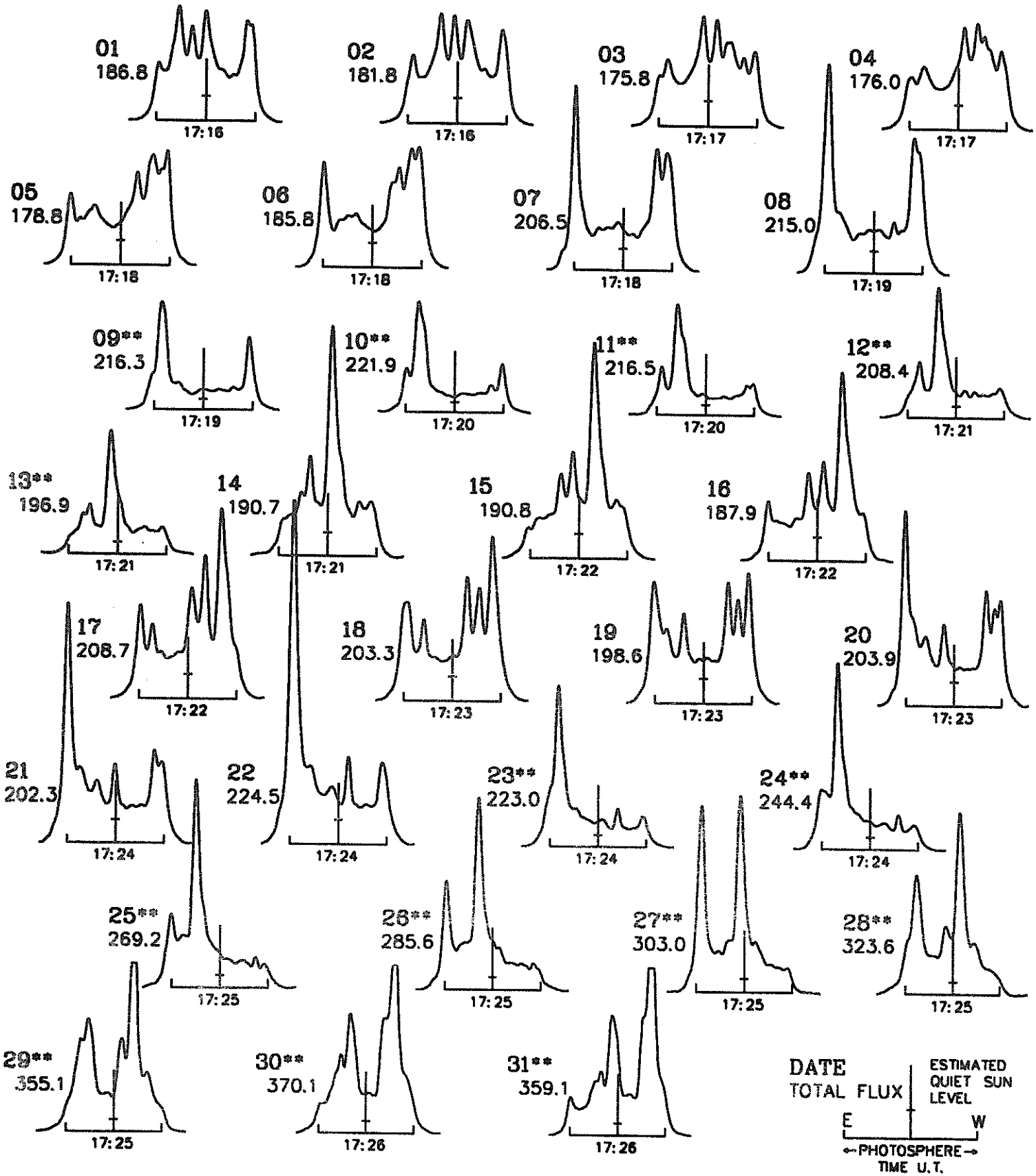
Holloman Learmonth Palehua Ramey San Vito

EAST - WEST SOLAR SCANS
JANUARY 1991

** 3dB attenuator in.

ALGONQUIN RADIO OBSERVATORY
CANADA

10.7 cm
Fan Beam with 1.5 minutes of arc
E - W Resolution



SOLAR RADIO EMISSION
Selected Fixed Frequency Events

JANUARY 1991

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
06	2800	OTTA	20	GRF	1549.0	1630.0	142.0	14.5	7.0		
08	2695	LEAR	49	GB	0420.0E	0429.0	23.0D	640.0			QL=4 ST=2 TYP=6
	8800	LEAR	49	GB	0422.0E	0429.0	26.0D	1100.0			QL=4 ST=2 TYP=7
	2800	OTTA	3	S	1816.2	1818.1	10.9	39.2	8.0		
	2695	PALE	8	S	1817.0E	1817.0	2.0D	55.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1844.0E	1844.0	U	41.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1844.3	1844.7	3.1	17.6	3.0		
	2800	OTTA	3	S	1930.0	1930.6	2.5	11.9	2.0		
09	2695	SVTO	4	S/F	1130.0E	1132.0	5.0D	80.0			QL=4 ST=2 TYP=3
10	2695	LEAR	4	S/F	0510.0E	0511.0	7.0D	150.0			QL=2 ST=2 TYP=3
	8800	LEAR	4	S/F	0511.0E	0512.0	6.0D	150.0			QL=2 ST=2 TYP=3
	2800	OTTA	3	S	1525.0	1526.2	3.6	35.6	7.0		
	2800	OTTA	3	S	1802.9	1803.9	3.8	19.0	4.0		
11	2695	LEAR	4	S/F	0649.0E	0653.0	6.0D	120.0			QL=2 ST=2 TYP=3
	2695	SVTO	4	S/F	0652.0E	0653.0	4.0D	120.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1324.0E	1324.0	1.0D	150.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1324.0E	1324.0	1.0D	120.0			QL=4 ST=2 TYP=3
	2695	SGMR	49	GB	1524.0E	1525.0	6.0D	600.0			QL=4 ST=2 TYP=6
	8800	SGMR	49	GB	1524.0E	1525.0	6.0D	1300.0			QL=4 ST=2 TYP=6
	2800	OTTA	47	GB	1524.0	1526.4	22.0	694.0	138.0		
	2695	PALE	4	S/F	1826.0E	1826.0	5.0D	130.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1826.0E	1826.0	2.0D	140.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1826.0E	1826.0	2.0D	160.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1826.0E	1826.0	3.0D	130.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1826.1	1827.0	7.9	144.0	29.0		
	2800	OTTA	3	S	2017.6	2018.1	1.8	10.5	2.0		
	2800	OTTA	3	S	2020.8	2021.8	10.2	68.6	13.0		
	2695	PALE	8	S	2021.0E	2021.0	1.0D	63.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2021.0E	2021.0	1.0D	72.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	2021.0E	2021.0	1.0D	66.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	2021.0E	2021.0	1.0D	86.0			QL=4 ST=2 TYP=3
12	2695	LEAR	4	S/F	0707.0E	0708.0	5.0D	20.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	1205.0E	1205.0	U	190.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	1215.0E	1215.0	U	210.0			QL=2 ST=2 TYP=3
	2800	OTTA	4	S/F	1429.1	1429.6	1.1	23.9	5.0		
	2695	PENT	3	S	2209.8	2211.8	10.2	104.1	20.0		
	2695	LEAR	8	S	2210.0E	2211.0	2.0D	120.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	2210.0E	2211.0	2.0D	66.0			QL=2 ST=2 TYP=3
	2695	PALE	8	S	2210.0E	2211.0	2.0D	110.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	2211.0E	2211.0	4.0D	75.0			QL=4 ST=2 TYP=3
13	2695	SVTO	8	S	0718.0E	0718.0	1.0D	50.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1142.0E	1142.0	1.0D	88.0			QL=2 ST=2 TYP=3
	2800	OTTA	22	GRF	1728.9	1732.9	10.6	26.7	8.0		
16	8800	LEAR	8	S	0046.0E	0047.0	1.0D	50.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0046.0E	0047.0	1.0D	19.0			QL=2 ST=2 TYP=3
	8800	PALE	8	S	0046.0E	0047.0	1.0D	29.0			QL=4 ST=2 TYP=3
17	2695	LEAR	8	S	0009.0E	0010.0	1.0D	15.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0009.0E	0009.0	U	15.0			QL=2 ST=2 TYP=3
	2800	OTTA	47	GB	1456.8	1458.6	8.1	512.0	102.0		
	8800	SGMR	4	S/F	1457.0E	1458.0	5.0D	330.0			QL=2 ST=2 TYP=3
	2695	SVTO	4	S/F	1457.0E	1458.0	6.0D	350.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1457.0E	1458.0	5.0D	320.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1457.0E	1458.0	543.0D	350.0			QL=4 ST=1 TYP=3
	2800	OTTA	29	PBI	1505.0	1505.0	290.0	14.5	7.0		
18	8800	LEAR	8	S	0032.0E	0033.0	2.0D	31.0			QL=2 ST=2 TYP=3
	2695	SGMR	4	S/F	1403.0E	1404.0	4.0D	270.0			QL=2 ST=2 TYP=3
	8800	SGMR	4	S/F	1403.0E	1404.0	4.0D	100.0			QL=2 ST=2 TYP=3
	2695	SVTO	4	S/F	1403.0E	1404.0	7.0D	280.0			QL=4 ST=2 TYP=3
	8800	SVTO	8	S	1404.0E	1404.0	2.0D	83.0			QL=4 ST=2 TYP=3

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

JANUARY 1991

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
19	2695	LEAR	8	S	0231.0E	0232.0	1.0D	31.0			QL=2 ST=2 TYP=3
	8800	PALE	8	S	1842.0E	1843.0	1.0D	65.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	1842.0E	1843.0	1.0D	56.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1842.0E	1843.0	2.0D	61.0			QL=4 ST=2 TYP=3
	2695	SGMR	4	S/F	1842.0E	1843.0	5.0D	41.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1842.6	1843.1	3.2	49.7	10.0		
20	2695	LEAR	4	S/F	0712.0E	0715.0	7.0D	56.0			QL=2 ST=2 TYP=3
	2695	SVTO	4	S/F	0712.0E	0715.0	5.0D	58.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	0713.0E	0714.0	3.0D	47.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0714.0E	0715.0	3.0D	33.0			QL=2 ST=2 TYP=3
	8800	SVTO	4	S/F	0920.0E	0923.0	4.0D	83.0			QL=4 ST=2 TYP=3
21	2695	LEAR	4	S/F	0014.0E	0018.0	6.0D	200.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0014.0E	0018.0	4.0D	160.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	0014.0E	0018.0	8.0D	240.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	0017.0E	0018.0	2.0D	190.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	0627.0E	0628.0	4.0D	53.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0627.0E	0627.0	1.0D	37.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	0636.0E	0638.0	9.0D	170.0			QL=2 ST=2 TYP=3
	8800	LEAR	4	S/F	0637.0E	0638.0	6.0D	150.0			QL=2 ST=2 TYP=3
	2695	SVTO	4	S/F	0637.0E	0638.0	8.0D	90.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	0637.0E	0638.0	2.0D	89.0			QL=2 ST=2 TYP=3
22	8800	LEAR	4	S/F	0547.0E	0547.0	3.0D	87.0			QL=2 ST=2 TYP=3
	2695	LEAR	8	S	0547.0E	0547.0	2.0D	55.0			QL=2 ST=2 TYP=3
	8800	SGMR	4	S/F	1314.0E	1314.0	3.0D	73.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1314.0E	1314.0	3.0D	72.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1521.2	1523.8	6.7	44.3	9.0		
	2695	SGMR	8	S	1522.0E	1523.0	2.0D	46.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1522.0E	1523.0	2.0D	63.0			QL=4 ST=2 TYP=3
	2800	OTTA	20	GRF	1614.0	1700.0	195.0	11.2	5.0		
	2800	OTTA	3	S	1948.8	1950.1	3.7	13.0	3.0		
24	8800	LEAR	4	S/F	0319.0E	0321.0	10.0D	150.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	0319.0E	0321.0	13.0D	180.0			QL=2 ST=2 TYP=3
	2695	PALE	4	S/F	0320.0E	0321.0	9.0D	160.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	0320.0E	0321.0	1240.0D	150.0			QL=4 ST=1 TYP=3
	2695	LEAR	49	GB	0335.0E	0403.0	83.0D	1200.0			QL=2 ST=2 TYP=7
	8800	LEAR	49	GB	0338.0E	0403.0	80.0D	1200.0			QL=2 ST=2 TYP=7
	2695	PALE	49	GB	0345.0E	0359.0U	14.0D	600.0			QL=2 ST=2 TYP=6
	8800	PALE	4	S/F	0345.0E	0359.0U	14.0D	700.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0814.0E	0814.0	1.0D	28.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0840.0E	0840.0	1.0D	14.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0904.0E	0904.0	U	22.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	1036.0E	1036.0	2.0D	34.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	1036.0E	1036.0	3.0D	34.0			QL=2 ST=2 TYP=3
	8800	SVTO	8	S	1224.0E	1224.0	1.0D	27.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	2207.0E	2210.0	3.0D	43.0			QL=4 ST=2 TYP=3
	2695	PENT	3	S	2209.5	2210.3	2.3	31.4	6.0		
	2695	PALE	8	S	2210.0E	2210.0	U	36.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	2212.0E	2218.0	20.0D	130.0			QL=2 ST=3 TYP=5
	2695	LEAR	8	S	2213.0E	2213.0U	2.0D	45.0			QL=2 ST=3 TYP=3
25	8800	LEAR	8	S	0457.0E	0457.0	U	38.0			QL=2 ST=2 TYP=3
	2695	SVTO	49	GB	0602.0E	0716.0	1078.0D	950.0			QL=2 ST=1 TYP=7
	8800	LEAR	49	GB	0628.0E	0630.0	71.0D	4200.0			QL=2 ST=3 TYP=7
	8800	SVTO	49	GB	0629.0E	0632.0	18.0D	5400.0			QL=2 ST=2 TYP=7
	2695	LEAR	49	GB	0629.0E	0631.0	84.0D	3500.0			QL=2 ST=3 TYP=7
	2695	SVTO	49	GB	0630.0E	0632.0	17.0D	2100.0			QL=2 ST=2 TYP=7
	8800	SVTO	49	GB	0652.0E	0715.0	54.0D	570.0			QL=2 ST=2 TYP=7
	2695	SVTO	49	GB	0652.0E	0721.0	54.0D	1200.0			QL=2 ST=2 TYP=7
	2695	LEAR	8	S	1021.0E	1022.0	1.0D	31.0			QL=2 ST=2 TYP=3
	2695	SVTO	8	S	1021.0E	1022.0	1.0D	49.0			QL=4 ST=2 TYP=3
	8800	SVTO	20	GRF	1318.0E	1329.0	14.0D	62.0			QL=4 ST=2 TYP=2
	2695	SVTO	4	S/F	1318.0E	1321.0	15.0D	45.0			QL=4 ST=2 TYP=3
	2695	SGMR	20	GRF	1320.0E	1321.0	1.0D	60.0			QL=4 ST=2 TYP=2
	8800	SGMR	20	GRF	1327.0E	1329.0	5.0D	66.0			QL=4 ST=2 TYP=2
	2800	OTTA	3	S	1934.1	1935.1	3.1	44.2	9.0		

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

JANUARY 1991

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
25	2695	PENT	20	GRF	2107.0	2113.5	38.0	8.7	4.0		
26	8800	LEAR	8	S	0248.0E	0249.0	1.0D	20.0			QL=2 ST=2 TYP=3
	2695	LEAR	8	S	0248.0E	0248.0	1.0D	66.0			QL=2 ST=2 TYP=3
	8800	LEAR	4	S/F	0843.0E	0844.0	7.0D	60.0			QL=2 ST=2 TYP=3
	2695	LEAR	8	S	0843.0E	0844.0	1.0D	42.0			QL=2 ST=2 TYP=3
	8800	SVTO	4	S/F	0843.0E	0844.0	4.0D	63.0			QL=4 ST=2 TYP=3
	2800	OTTA	20	GRF	1844.0	1851.2	45.0	16.8	5.0		
	8800	SGMR	4	S/F	1846.0E	1848.0	3.0D	50.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1855.0E	1856.0	2.0D	38.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	2052.7	2053.2	1.9	21.6	6.0		
	2695	PENT	20	GRF	2101.0	2114.5	49.0	20.7	7.0		
	2695	PALE	8	S	2113.0E	2113.0	1.0D	43.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2113.0E	2114.0	2.0D	53.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	2114.0E	2114.0	U	52.0			QL=4 ST=2 TYP=3
27	8800	LEAR	8	S	0059.0E	0059.0	U	45.0			QL=2 ST=2 TYP=3
	8800	LEAR	4	S/F	0812.0E	0813.0	5.0D	120.0			QL=2 ST=2 TYP=3
	8800	LEAR	4	S/F	0813.0E	0813.0	4.0D	120.0			QL=2 ST=3 TYP=3
	8800	SVTO	8	S	0813.0E	0813.0	2.0D	110.0			QL=2 ST=2 TYP=3
	8800	SGMR	49	GB	1439.0E	1441.0	17.0D	2900.0			QL=4 ST=2 TYP=6
	8800	SVTO	49	GB	1439.0E	1441.0	20.0D	2300.0			QL=2 ST=2 TYP=6
	2695	SGMR	4	S/F	1440.0E	1441.0	5.0D	43.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	1440.0E	1441.0	5.0D	45.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1440.0	1442.0	11.4	59.5	12.0		
	2800	OTTA	47	GB	1527.5	1618.7	145.0	4420.0	884.0		
	8800	SGMR	49	GB	1528.0E	1615.0	97.0D	3400.0			QL=4 ST=3 TYP=7
	2695	SGMR	49	GB	1538.0E	1618.0	87.0D	2900.0			QL=4 ST=3 TYP=7
28	2695	LEAR	4	S/F	0127.0E	0135.0	38.0D	220.0			QL=2 ST=2 TYP=5
	8800	LEAR	4	S/F	0131.0E	0135.0	18.0D	31.0			QL=2 ST=2 TYP=3
	2695	PALE	4	S/F	0131.0E	0135.0	12.0D	180.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1753.0E	1754.0	3.0D	190.0			QL=2 ST=2 TYP=3
	8800	SGMR	4	S/F	1950.0E	1952.0	12.0D	340.0			QL=2 ST=2 TYP=3
29	8800	LEAR	4	S/F	0650.0E	0651.0	5.0D	120.0			QL=2 ST=2 TYP=3
	8800	SVTO	4	S/F	0650.0E	0651.0	4.0D	120.0			QL=2 ST=2 TYP=3
	2695	SVTO	8	S	0743.0E	0743.0	U	48.0			QL=4 ST=3 TYP=3
	8800	LEAR	4	S/F	1008.0E	1009.0	9.0D	47.0			QL=2 ST=2 TYP=3
	2695	LEAR	8	S	1010.0E	1010.0	U	14.0			QL=2 ST=2 TYP=3
	2695	LEAR	8	S	1037.0E	1037.0	U	20.0			QL=2 ST=2 TYP=3
	8800	SGMR	4	S/F	1839.0E	1842.0	5.0D	56.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1841.0E	1842.0	1.0D	28.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	1841.0E	1842.0	2.0D	52.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1841.3	1842.3	2.9	42.3	9.0		
30	8800	PALE	49	GB	0007.0E	0007.0	1.0D	720.0			QL=4 ST=2 TYP=6
	2695	SVTO	4	S/F	0849.0E	0855.0	16.0D	460.0			QL=4 ST=2 TYP=3
	8800	SVTO	49	GB	0849.0E	0854.0	16.0D	1800.0			QL=4 ST=2 TYP=6
	2695	LEAR	49	GB	0849.0E	0855.0	56.0D	520.0			QL=2 ST=2 TYP=6
	8800	LEAR	49	GB	0849.0E	0854.0	56.0D	1700.0			QL=2 ST=2 TYP=6
	8800	SVTO	4	S/F	0933.0E	0934.0	4.0D	85.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0943.0E	0945.0	12.0D	32.0			QL=2 ST=2 TYP=3
	2695	LEAR	20	GRF	0943.0E	0953.0	22.0D	33.0			QL=2 ST=2 TYP=2
	8800	SVTO	4	S/F	1242.0E	1244.0	6.0D	170.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1243.0E	1244.0	3.0D	150.0			QL=4 ST=2 TYP=3
	8800	SGMR	49	GB	1418.0E	1418.0	5.0D	680.0			QL=4 ST=2 TYP=6
	8800	SVTO	49	GB	1418.0E	1418.0	6.0D	660.0			QL=4 ST=2 TYP=6
	2800	OTTA	20	GRF	1503.0	1509.0	34.0	15.6	5.0		
	2800	OTTA	22	GRF	1925.0	1951.0	80.0	18.8	7.0		
	2695	PENT	3	S	2215.4	2217.3	4.9	108.5	22.0		
	2695	PALE	8	S	2216.0E	2217.0	2.0D	120.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2216.0E	2217.0	1.0D	110.0			QL=4 ST=2 TYP=3
31	2695	LEAR	49	GB	0153.0E	0204.0	147.0D	740.0			QL=2 ST=2 TYP=7
	8800	LEAR	4	S/F	0154.0E	0204.0	146.0D	320.0			QL=2 ST=2 TYP=5
	2695	PALE	49	GB	0155.0E	0204.0	128.0D	600.0			QL=4 ST=2 TYP=7
	8800	PALE	4	S/F	0156.0E	0204.0	127.0D	340.0			QL=4 ST=2 TYP=5
	8800	LEAR	8	S	0614.0E	0615.0	1.0D	24.0			QL=2 ST=2 TYP=3

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

JANUARY 1991

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
31	2695	SVTO	4 S/F	1149.0E	1150.0	4.0D	46.0			QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1149.0E	1150.0	9.0D	52.0			QL=2 ST=2 TYP=3
	8800	SVTO	8 S	1206.0E	1206.0	U	63.0			QL=2 ST=2 TYP=3
	8800	SGMR	8 S	1758.0E	1758.0	1.0D	48.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	1929.0E	1929.0	1.0D	58.0			QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1929.0E	1929.0	U	46.0			QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	2026.0E	2026.0	3.0D	95.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2123.0E	2124.0	2.0D	65.0			QL=4 ST=2 TYP=3
	8800	PALE	8 S	2316.0E	2316.0	1.0D	160.0			QL=4 ST=3 TYP=3
	8800	PALE	8 S	2322.0E	2323.0	1.0D	160.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:

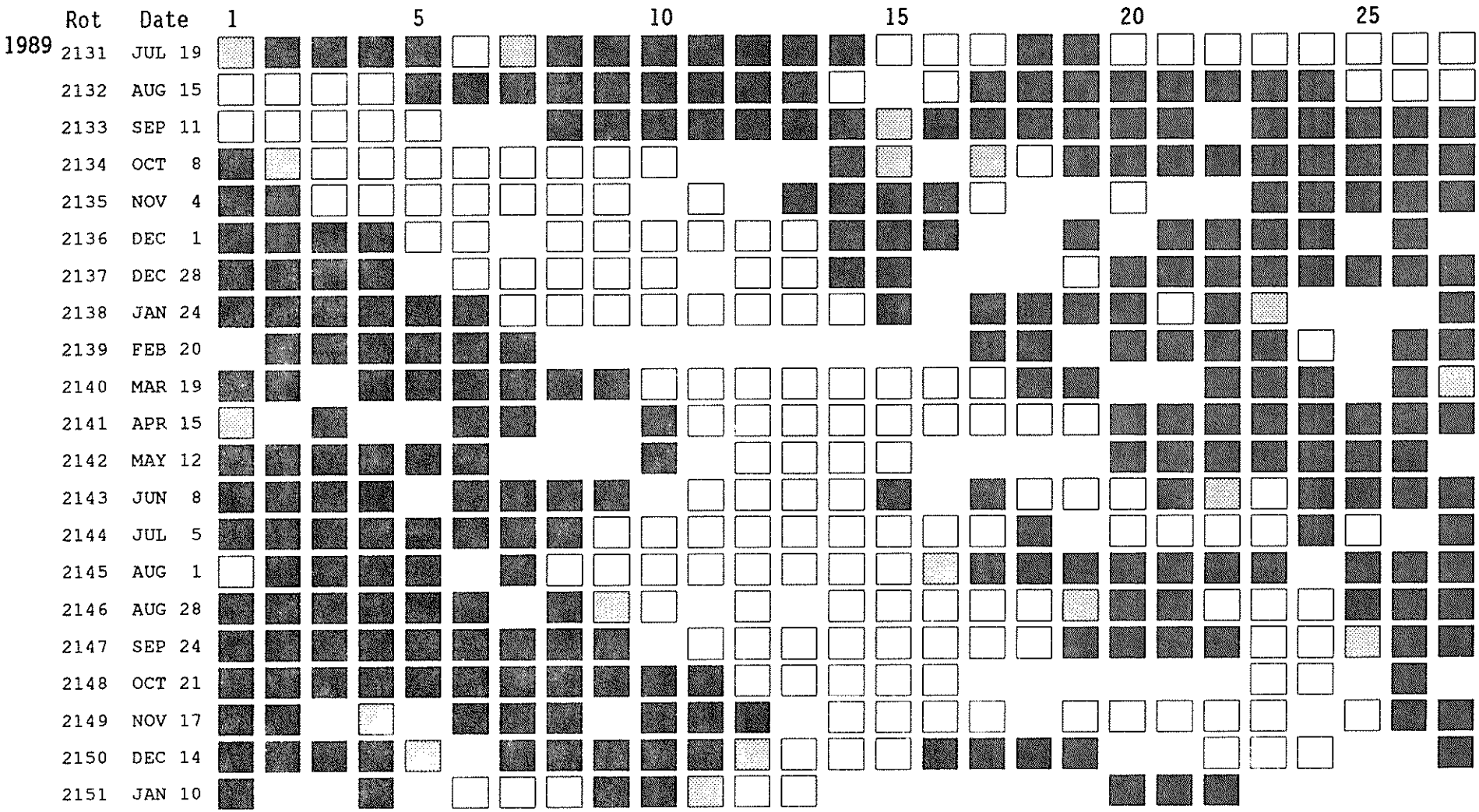
BERN = Berne LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill
OTTA = Ottawa PENT = Penticton SVTO = San Vito

Explanation of Type Code:

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD



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

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1990 Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1991 Jan
1	128	.	84	35	-9	-4	14	-75	-80	3	57	-55
2	150	.	47	19	-8	-13	-29	-77	-49	25	58	.
3	344	.	33	23	-5	-34	-27	.	.	45	34	.
4	99	.	4	-18	-34	-42	-38	-44	22	45	.	26
5	69	.	-8	-24	-33	-36	-25	-2	44	29	11	74
6	23	.	-29	-25	-33	-36	.	19	57	.	7	94
7	-11	.	.	-27	.	-45	-13	.	51	.	47	.
8	.	-28	.	-38	-26	-34	3	68	36	.	58	.
9	-15	-23	-29	-33	-52	-12	26	.	41	.	82	-108
10	-8	.	-36	-15	-86	-11	43	60	33	.	.	-168
11	-14	-25	-34	-4	-83	-10	94	43	8	.	46	.
12	-9	-23	.	-9	.	-15	137	41	-10	68	-7	.
13	4	-11	-8	-47	-88	17	76	14	-25	52	-83	-27
14	-12	-15	0	-80	-58	32	25	5	-43	.	-126	.
15	-2	2	-2	-82	-31	78	3	-1	-9	-4	-62	58
16	.	.	.	-80	-10	95	1	-17	24	.	-51	46
17	.	-10	-20	-88	.	57	-34	-9	12	-46	-20	35
18	.	-45	.	.	47	10	-33	30	0	-8	0	-7
19	-78	-63	.	.	44	26	-27	35	-62	.	.	-21
20	.	-108	-105	.	43	41	-22	23	-91	-1	-9	0
21	-142	.	-99	-29	11	20	-30	-20	-89	.	-23	23
22	-193	-150	.	.	-4	-12	-15	-78	-87	-24	-41	60
23	-167	-124	.	25	.	.	-16	-96	-69	-47	-55	.
24	-133	-113	-21	33	-12	7	.	-112	-56	-50	-37	.
25	-102	-74	23	16	7	25	-83	-121	-44	.	-1	.
26	-41	-62	57	3	13	50	-82	-107	-52	-69	36	.
27	.	-34	75	.	42	10	-89	-90	-54	-56	45	.
28	.	9	65	.	-7	-13	-107	-82	-65	-11	31	.
29		45	50	.	-2	39	-131	-86	-66	.	-18	-69
30		103	50	.	8	.	-128	-103	-54	48	-59	-53
31		94		-4		-67	-90		-31		-48	-15

Dot symbol indicates no data available for the day.
Note: Data from 21 June to 15 August 1990 are of poorer quality due to instrument problems.

C O N T E N T S

Prompt Reports DATA FOR **DECEMBER 1990** Number 558 Part I

PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1836
(21 November to 19 December 1990)

Dates of Observations Below Days of Year: 100 95 90

EDITOR'S NOTE: There continues to be no H-alpha synoptic chart. This will continue to be the case until computer software conversion is complete and a new assistant becomes available. For more information, please contact Patrick McIntosh, NOAA R/E/SE, 325 Broadway, Boulder, CO 80303 USA (phone: (303)497-3795; e-mail: SOLAR::PMCINTOSH on SPAN.).

Heliographic Longitude

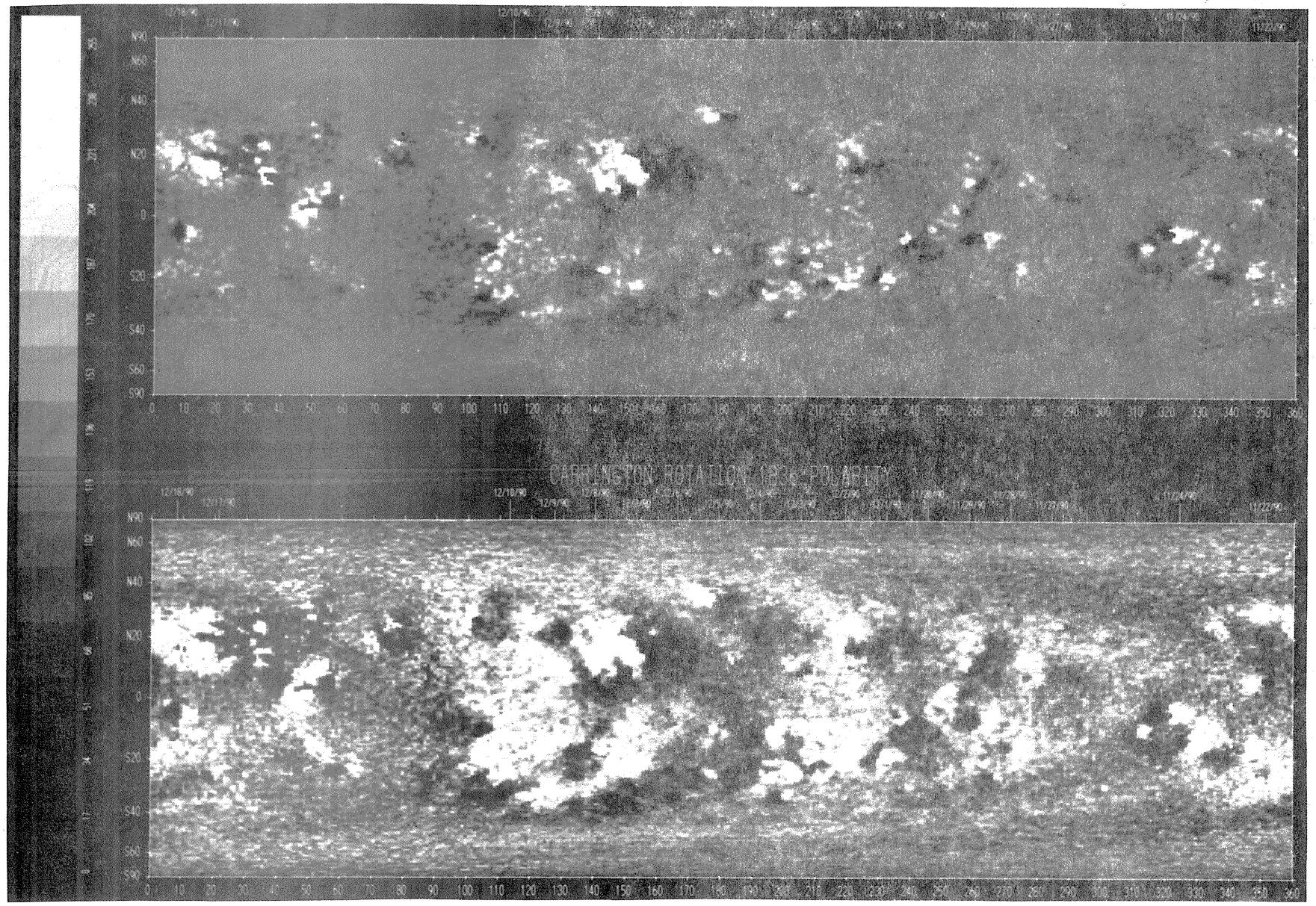
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1836

(21 November to 19 December 1990)

National Solar Observatory/Kitt Peak

Dates of Observation



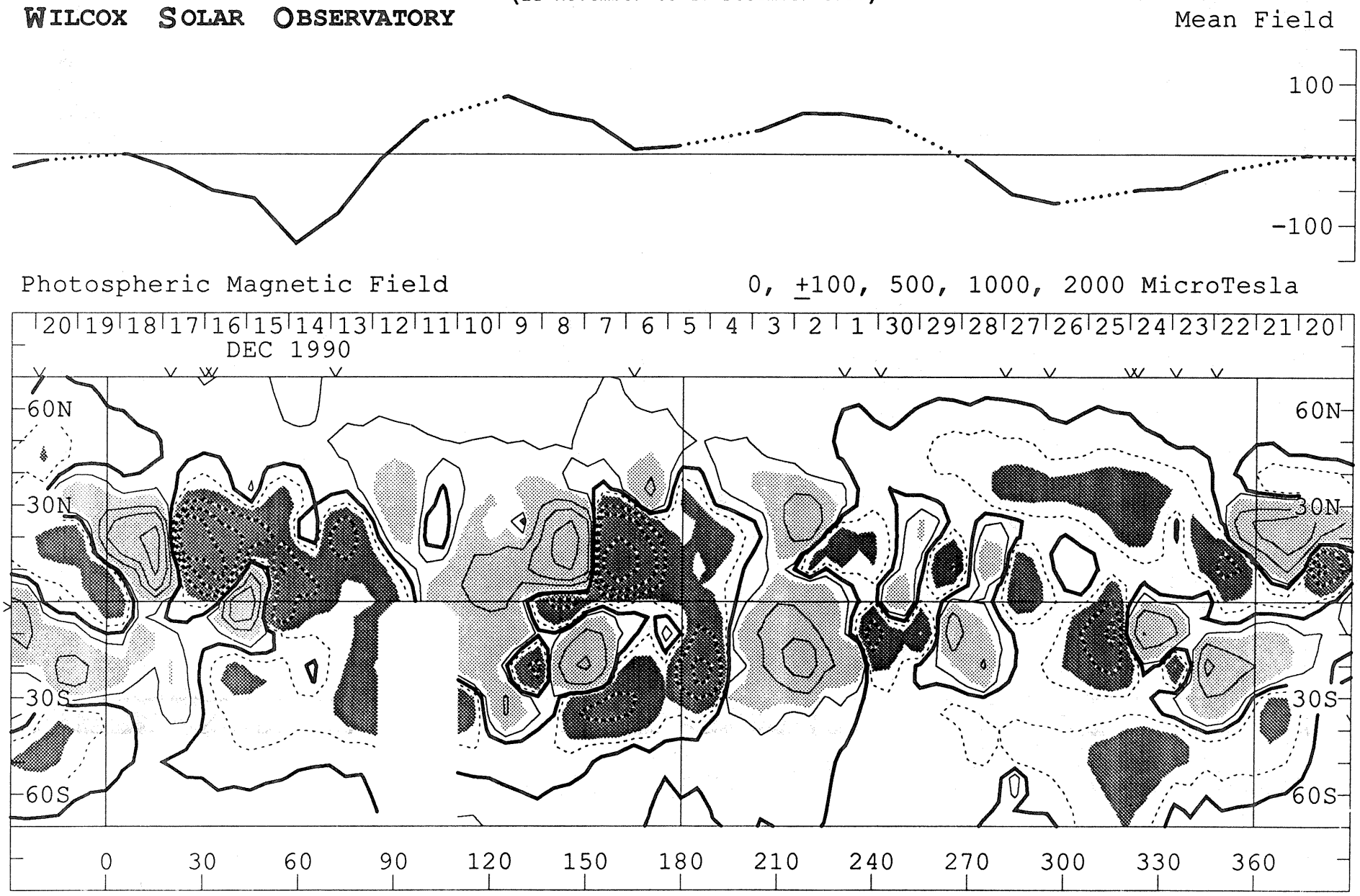
Heliographic Longitude

57
Dec 90

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1836
(21 November to 19 December 1990)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

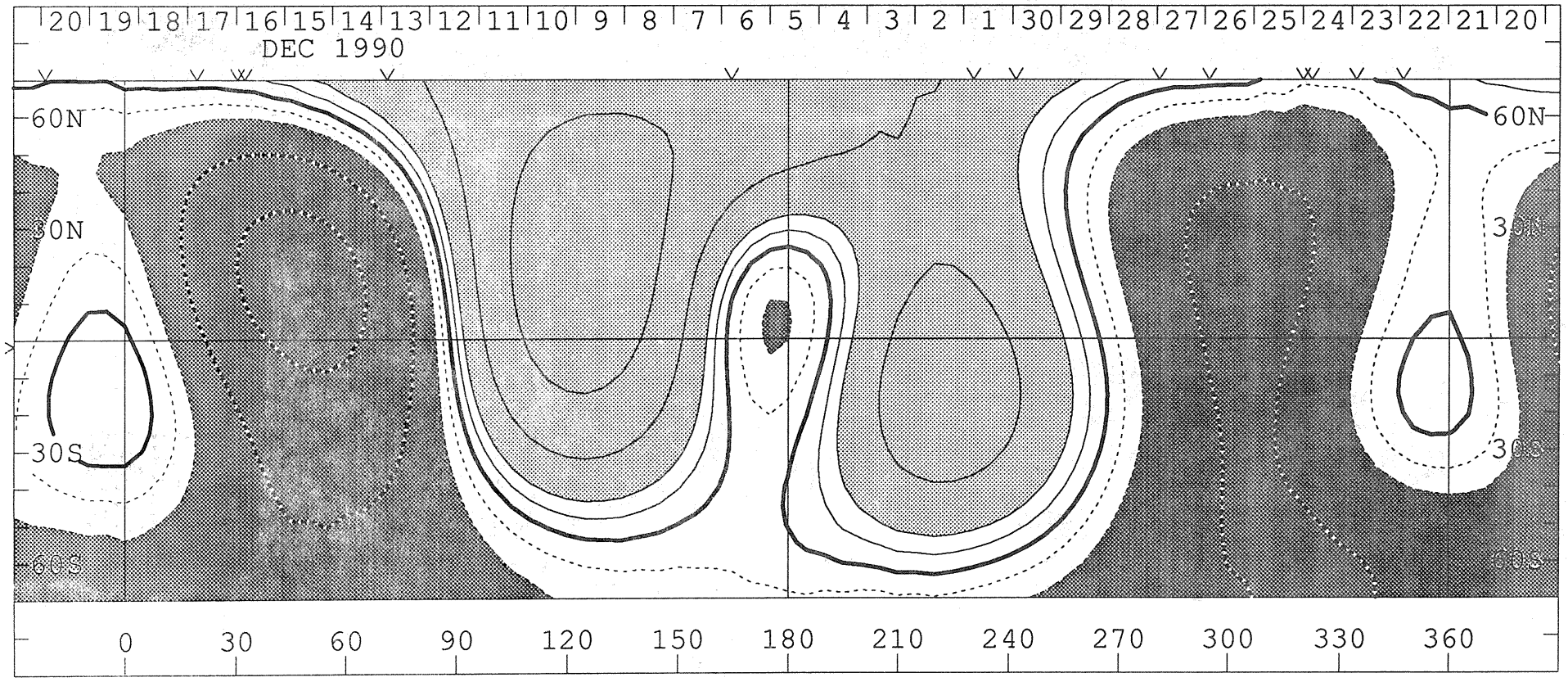
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1836

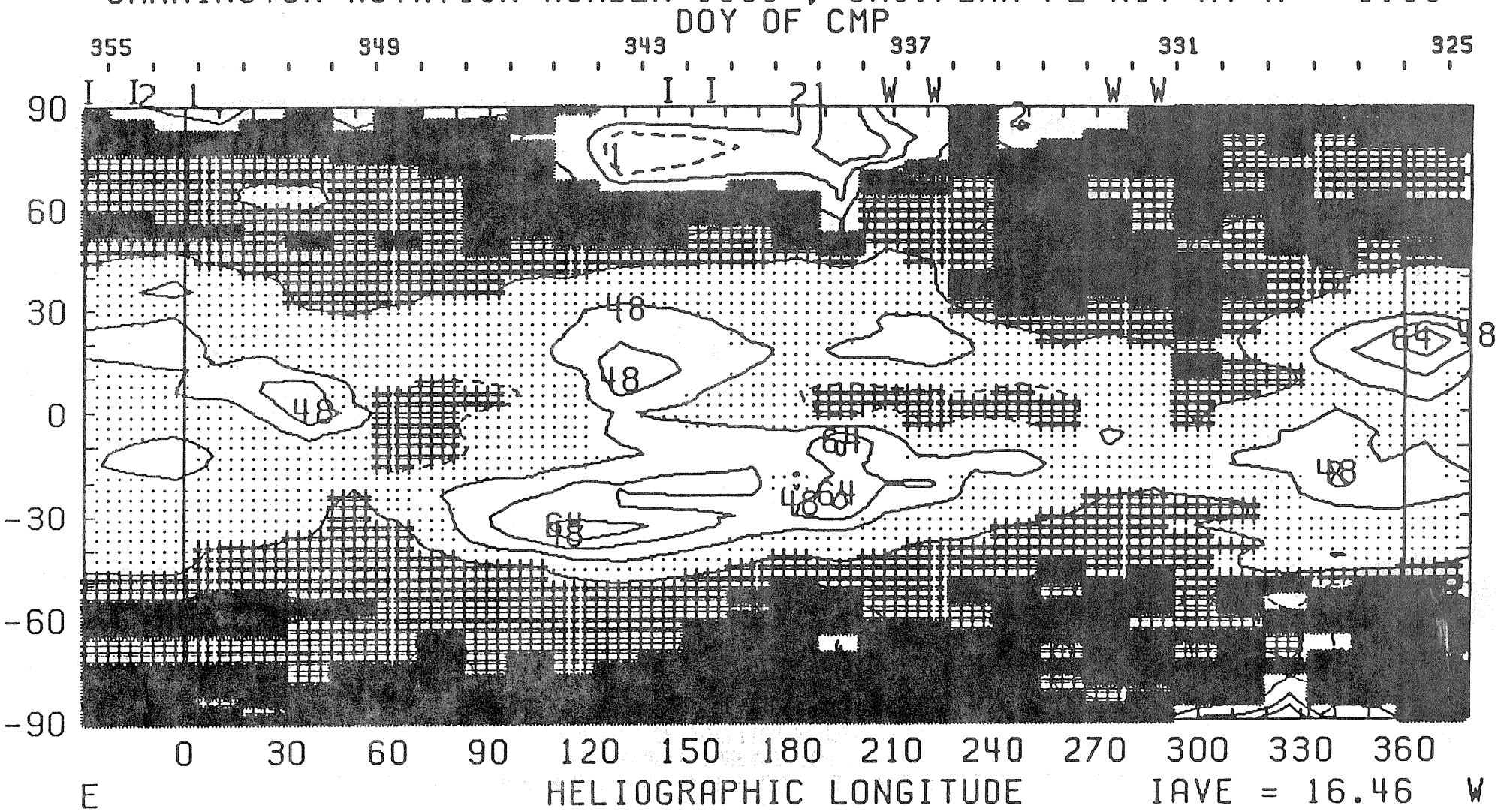
(21 November to 19 December 1990)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



CARRINGTON ROTATION NUMBER 1836 ; SAC.PEAK FE XIV AT R = 1.15

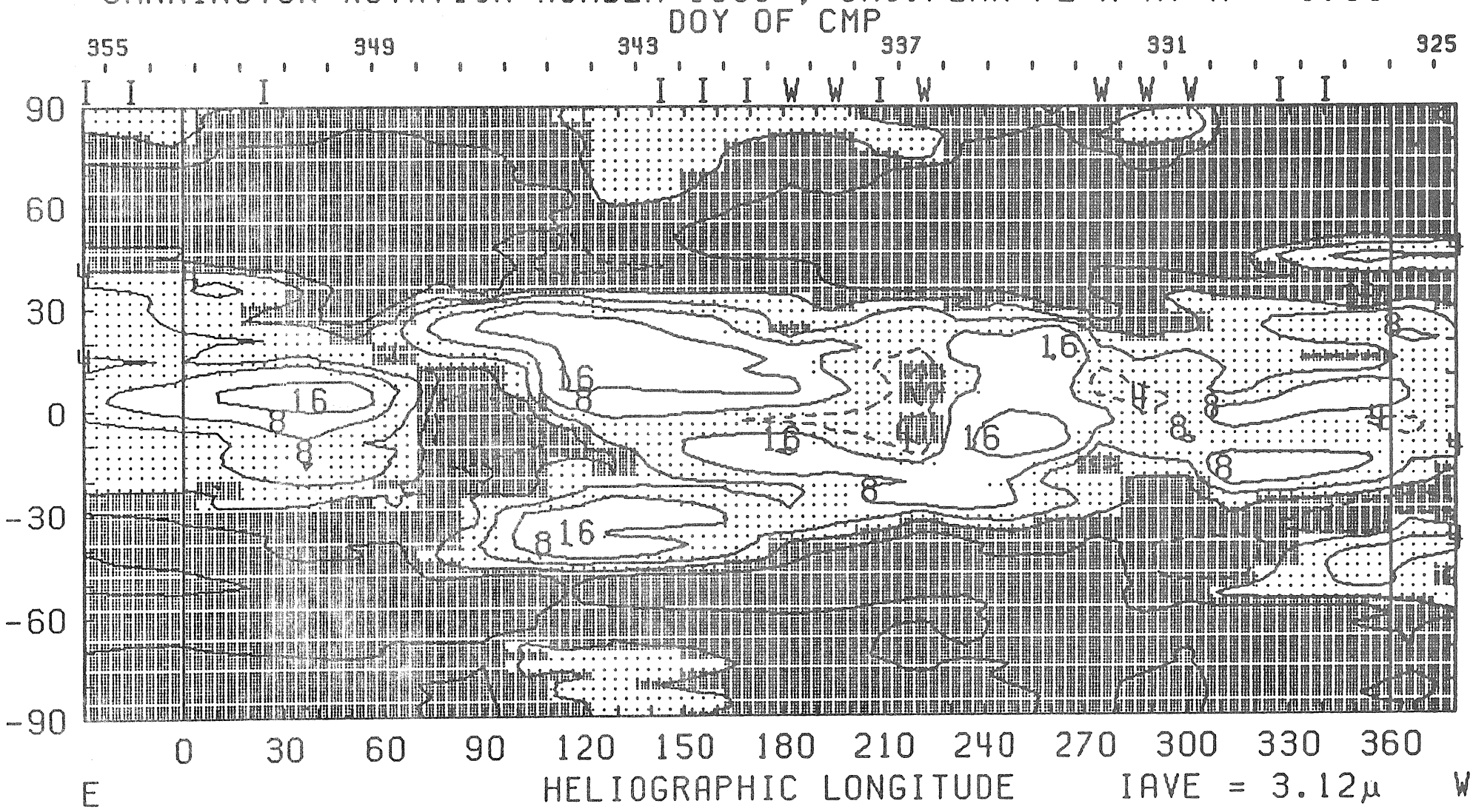


IAVE = 16.46

1990 E+W LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF Io

(21-Jan-91) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK

CARRINGTON ROTATION NUMBER 1836 ; SAC.PEAK FE X AT R = 1.15

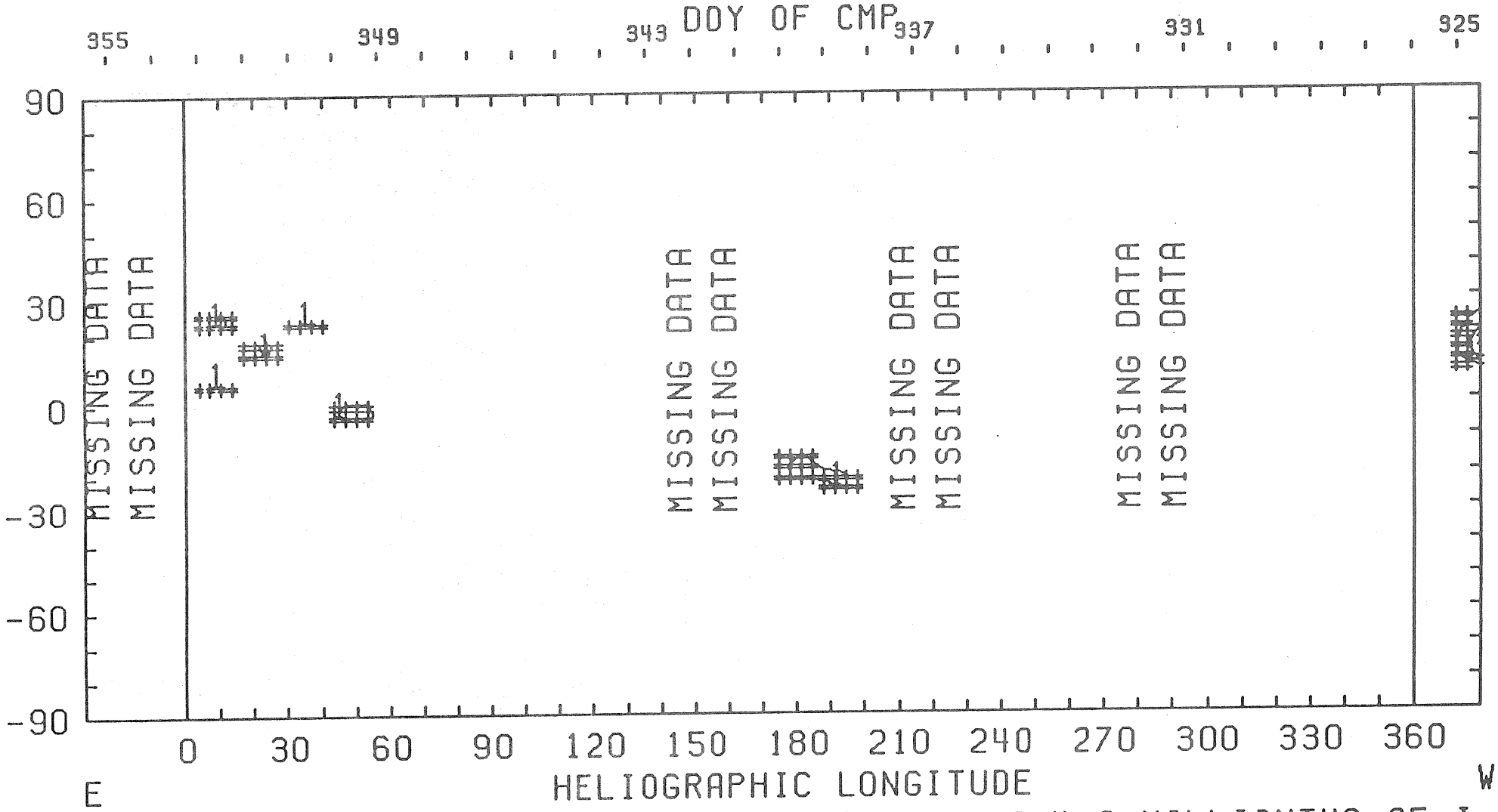


IAVE = 3.12μ

1990 E+W LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF Io

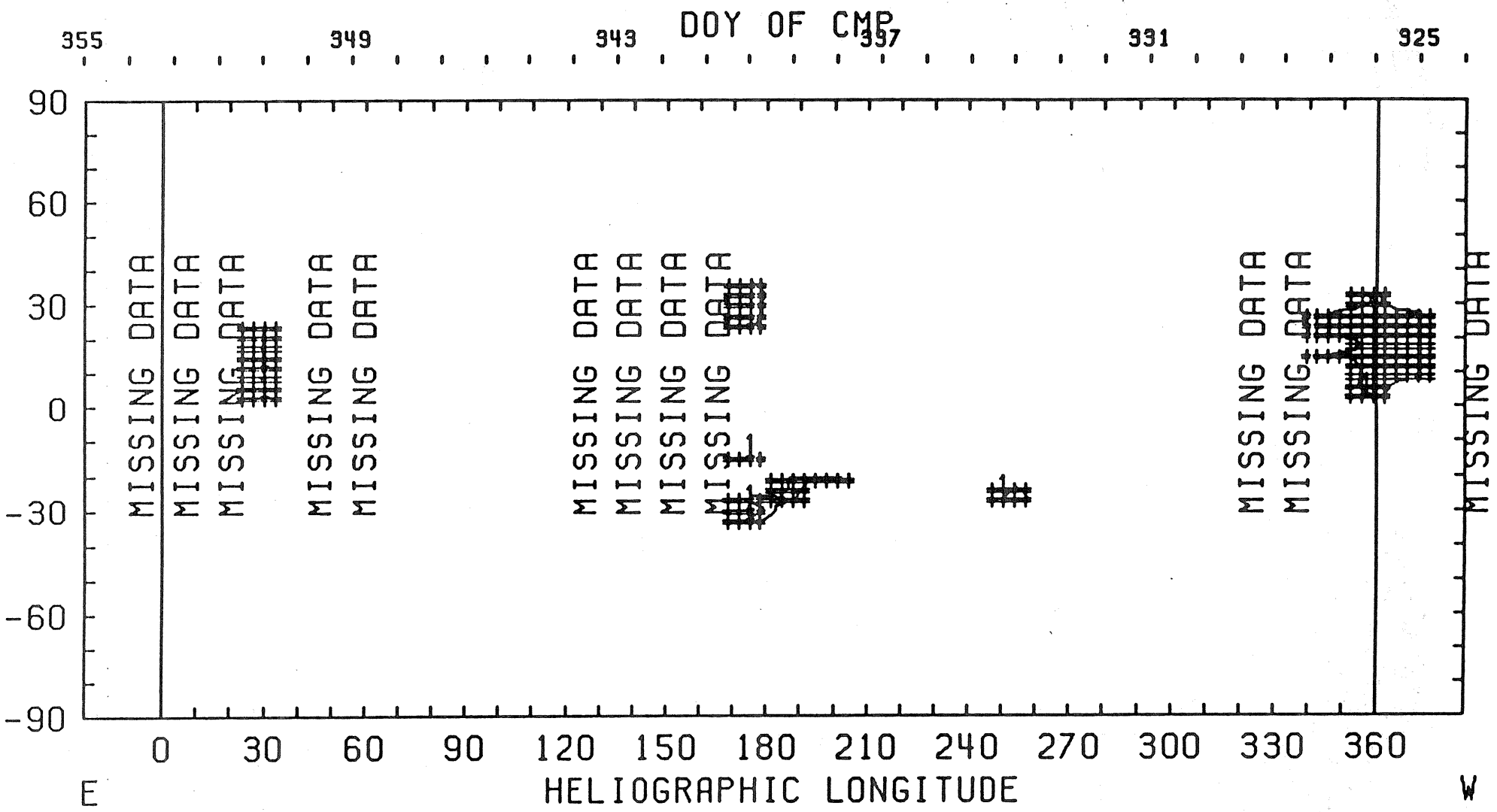
(21-Jan-91)

CARRINGTON ROTATION NUMBER 1836 ; SAC.PEAK CA XV at R = 1.13



1990 EAST LIMB CONTOURS: YELLOW-MINIMUM,1,2,4,8 MILLIONTHS OF Io
(21-Jan-91)

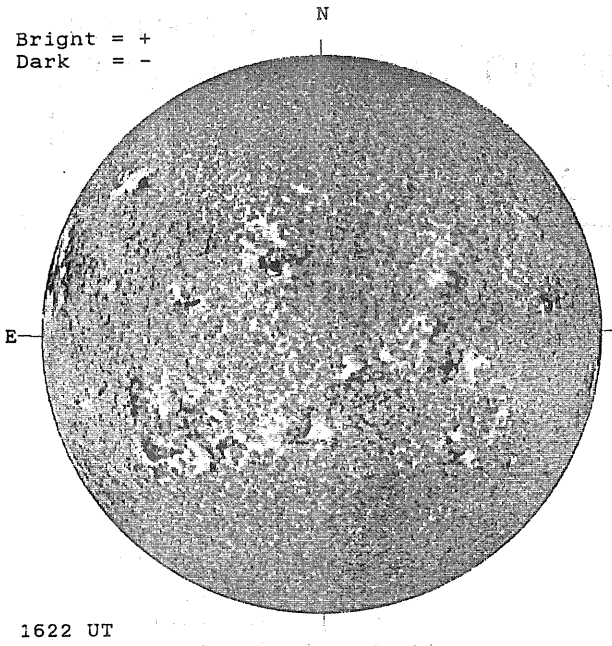
CARRINGTON ROTATION NUMBER 1836 ; SAC.PEAK CA XV at R = 1.13



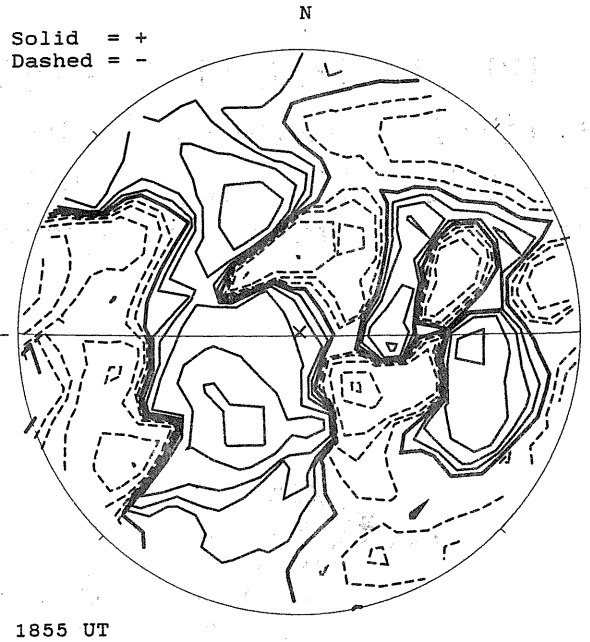
1990 WEST LIMB CONTOURS: YELLOW-MINIMUM,1,2,4,8 MILLIONTHS OF Io
(21-Jan-91)

DECEMBER 1, 1990 (P= 16.20, B_o = 0.90, L_o = 240.89)

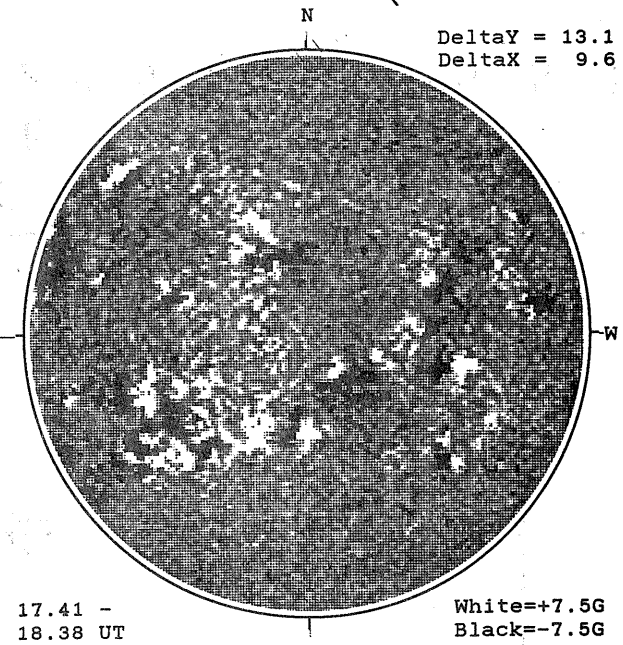
KITT PEAK MAGNETOGRAM



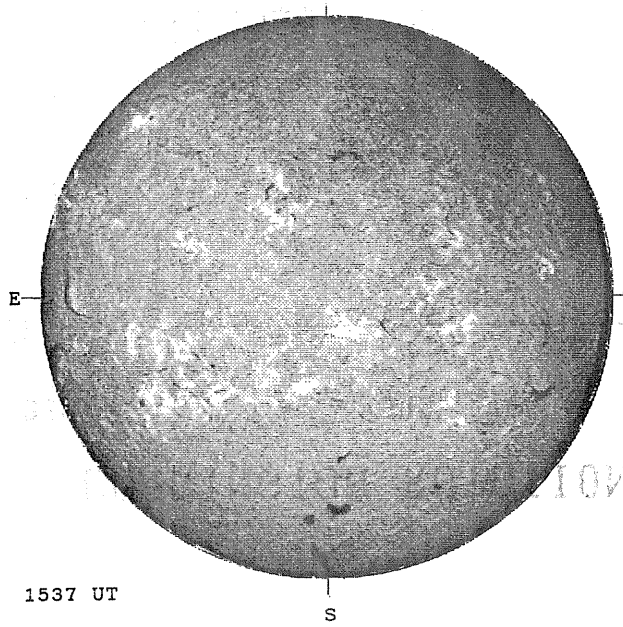
STANFORD MAGNETOGRAM



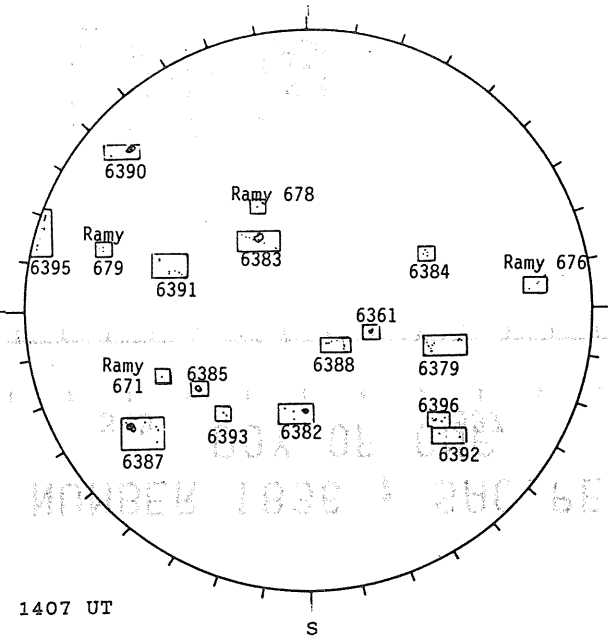
MT. WILSON MAGNETOGRAM



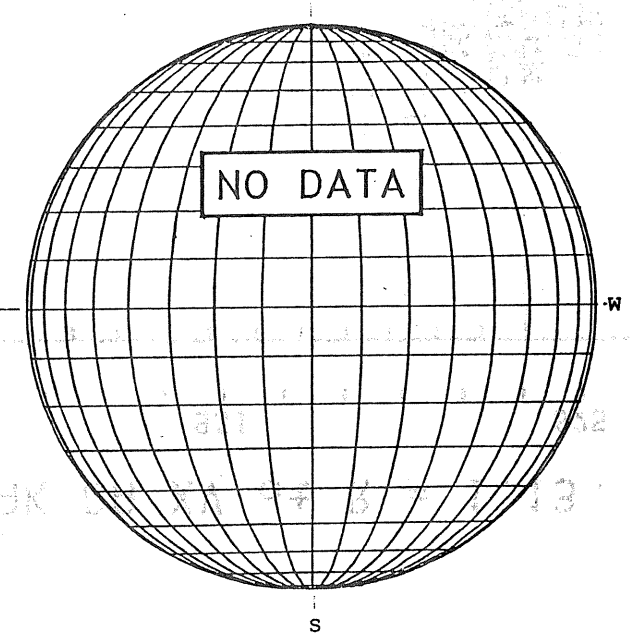
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



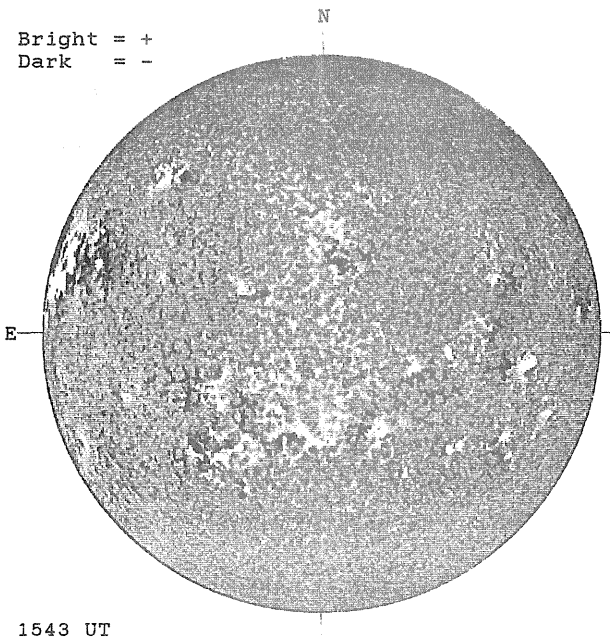
SACRAMENTO PEAK CORONA (1.15 Radii)



DECEMBER 2, 1990 (P= 15.81, B_o = 0.77, L_o = 227.71)

KITT PEAK MAGNETOGRAM

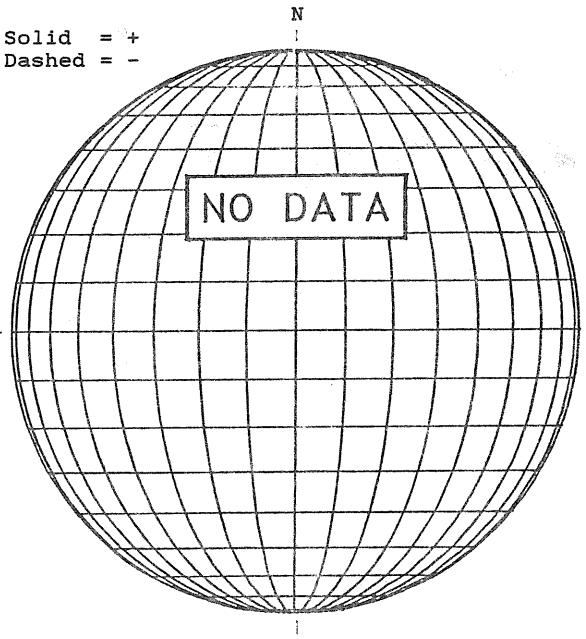
Bright = +
Dark = -



1543 UT

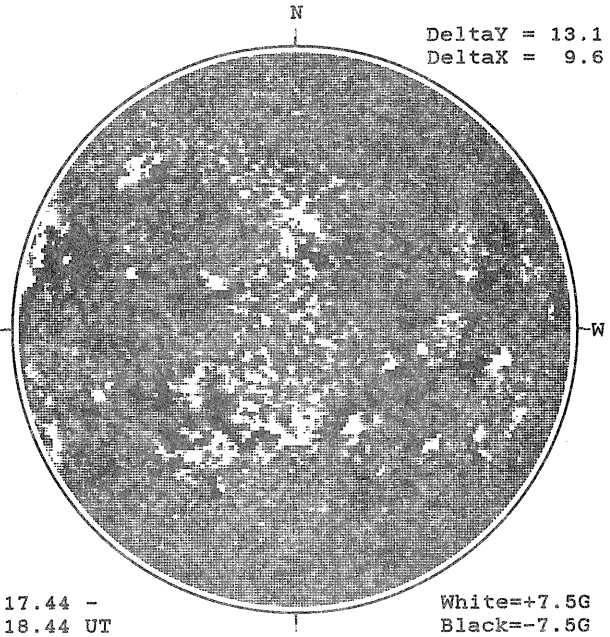
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

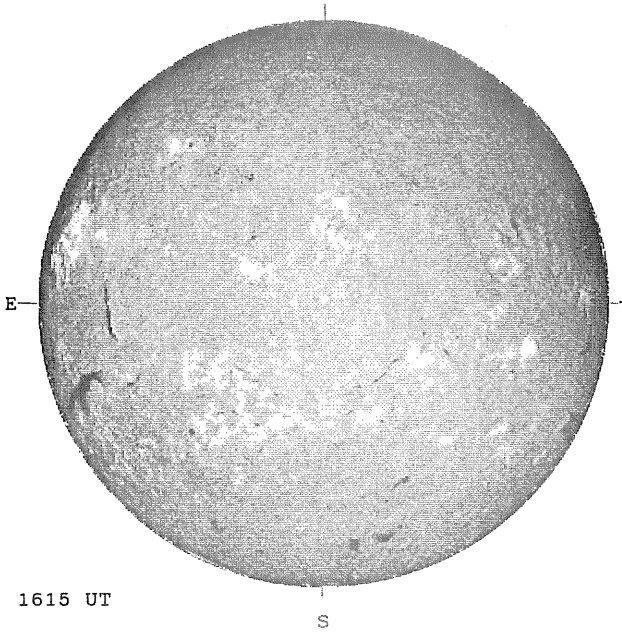
DeltaY = 13.1
DeltaX = 9.6



17.44 -
18.44 UT

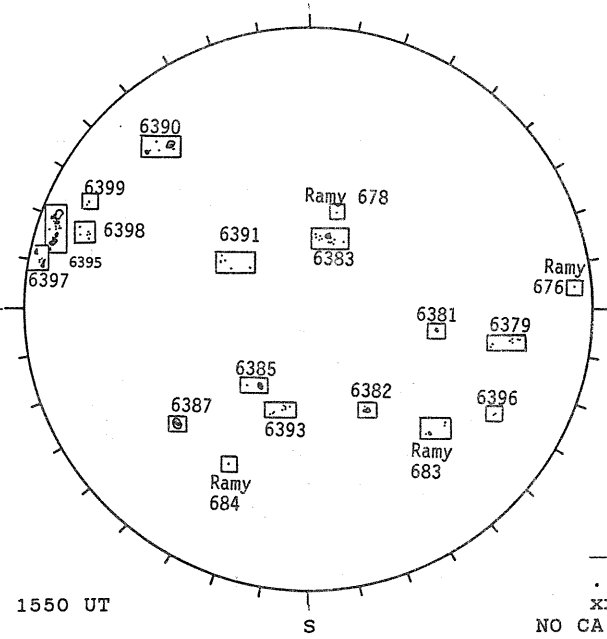
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



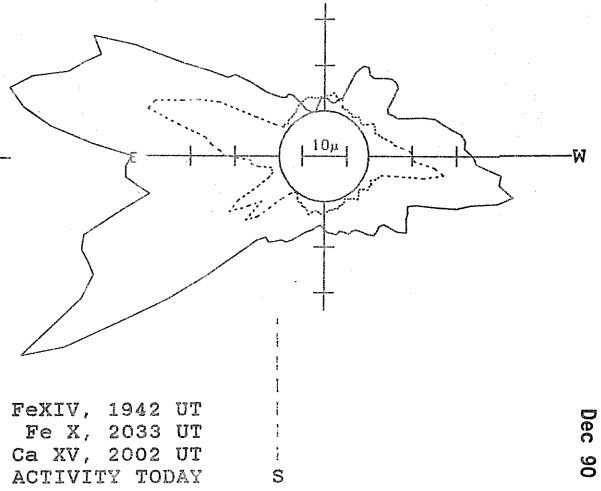
1615 UT

RAMEY SUNSPOT



1550 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

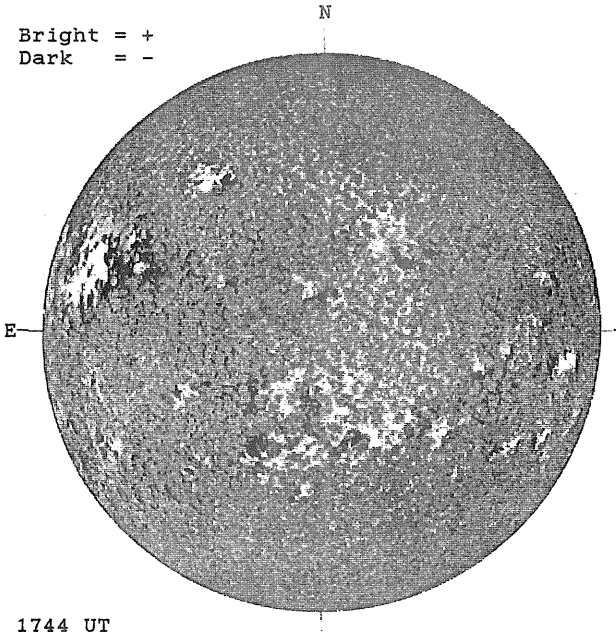


—— FeXIV, 1942 UT
.... Fe X, 2033 UT
xxxx Ca XV, 2002 UT
NO CA XV ACTIVITY TODAY

DECEMBER 3, 1990 (P= 15.42, B_o = 0.64, L_o = 214.53)

KITT PEAK MAGNETOGRAM

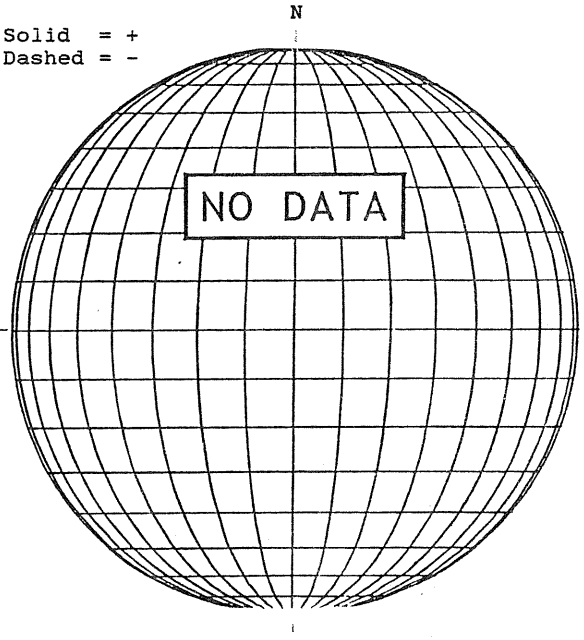
Bright = +
Dark = -



1744 UT

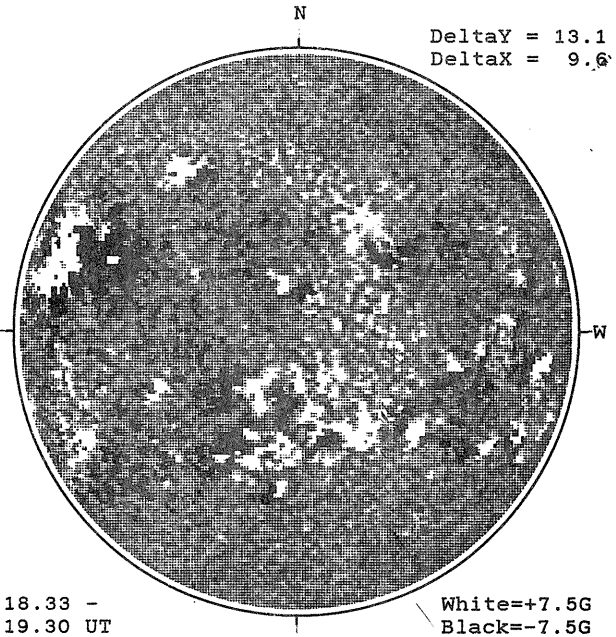
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

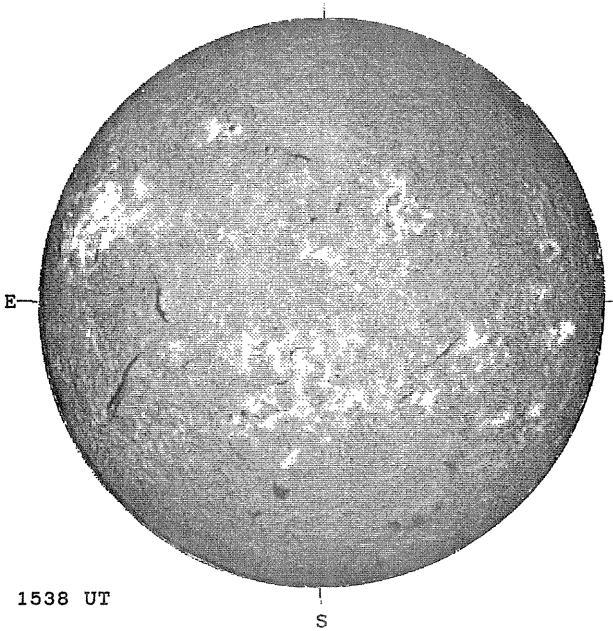
DeltaY = 13.1
DeltaX = 9.6



18.33 -
19.30 UT

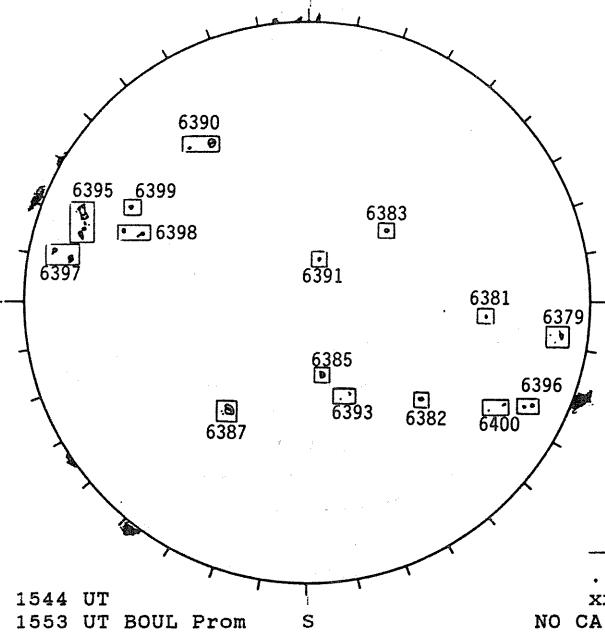
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



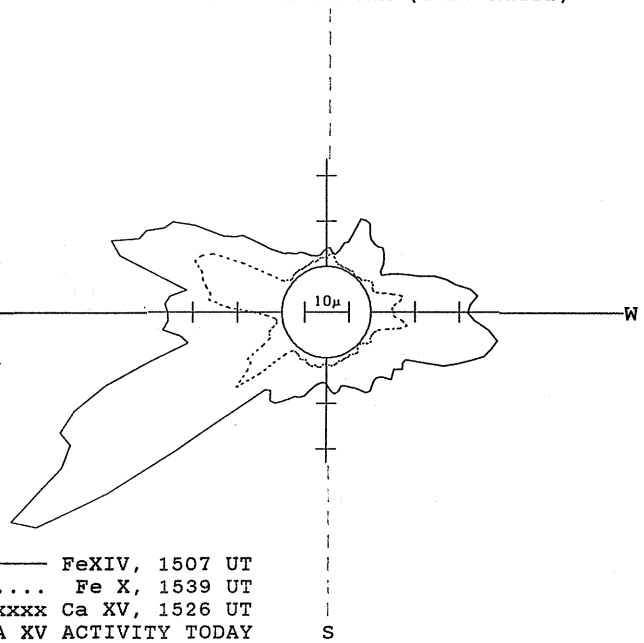
1538 UT

BOULDER SUNSPOT



1544 UT
1553 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

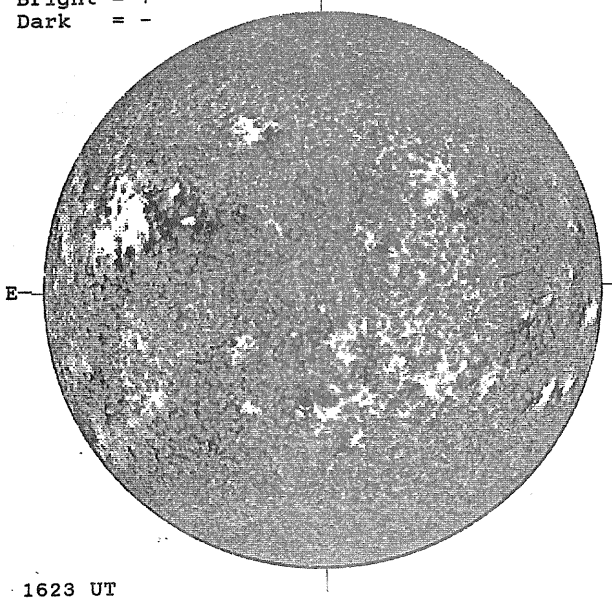


—— FeXIV, 1507 UT
.... Fe X, 1539 UT
xxxx Ca XV, 1526 UT
NO CA XV ACTIVITY TODAY

DECEMBER 4, 1990 (P= 15.02, B_o = 0.52, L_o = 201.35)

KITT PEAK MAGNETOGRAM

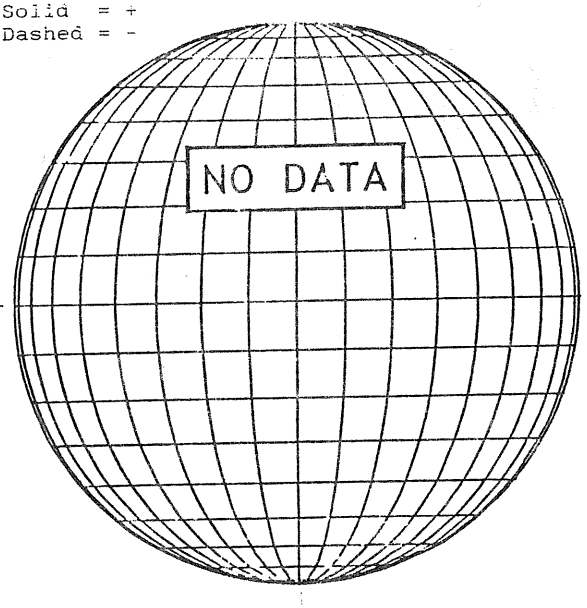
Bright = +
Dark = -



1623 UT

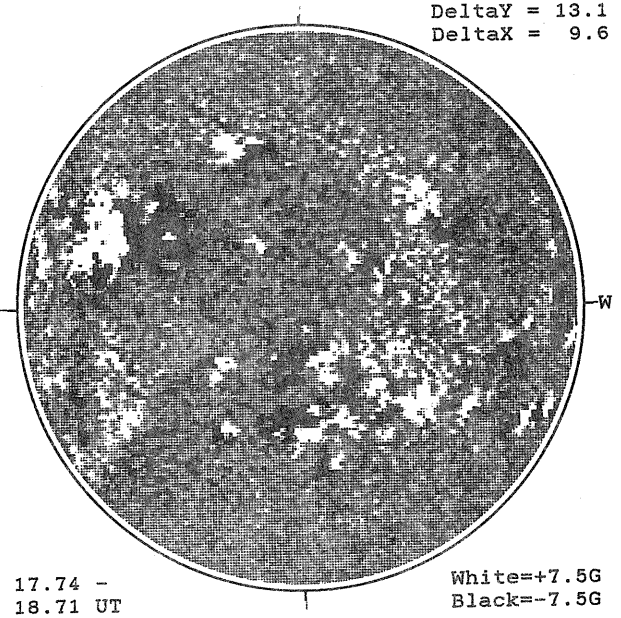
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

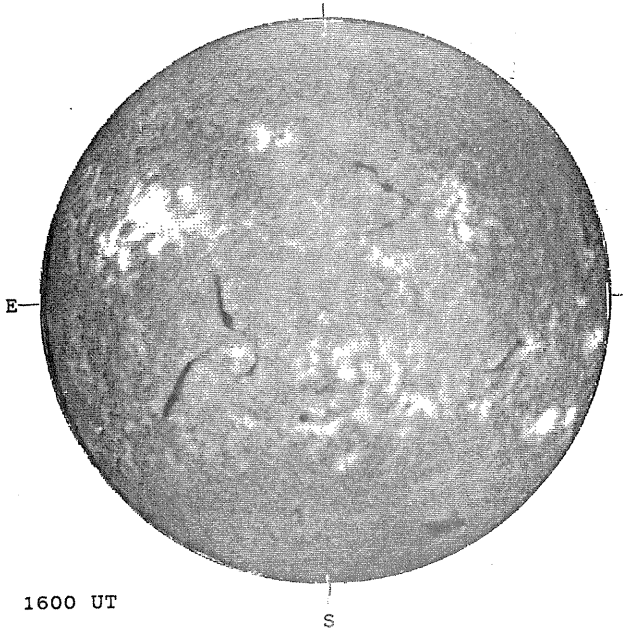
DeltaY = 13.1
DeltaX = 9.6



17.74 -
18.71 UT

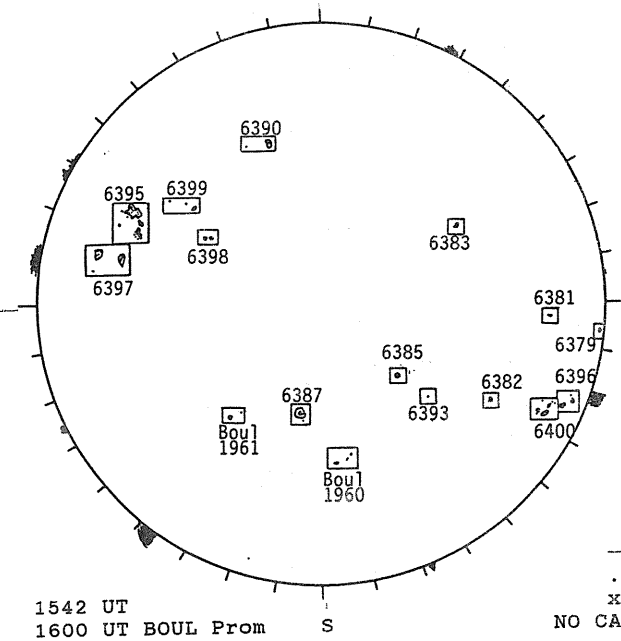
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



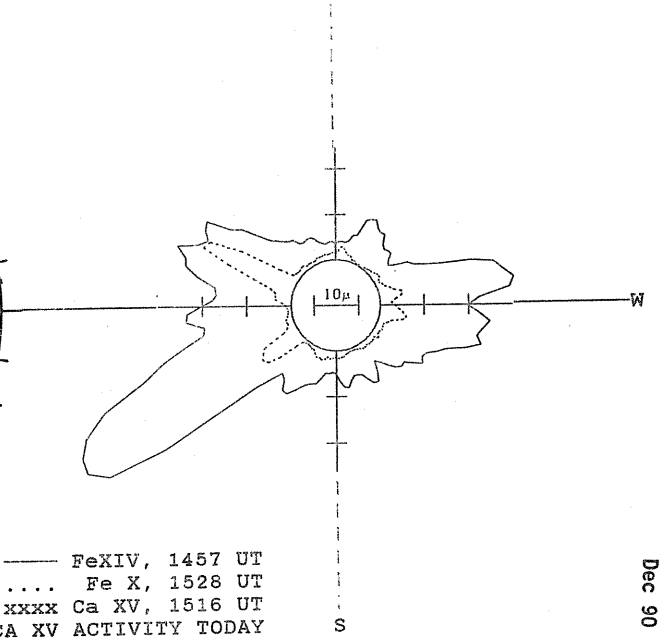
1600 UT

BOULDER SUNSPOT



1542 UT
1600 UT BOUL Prom

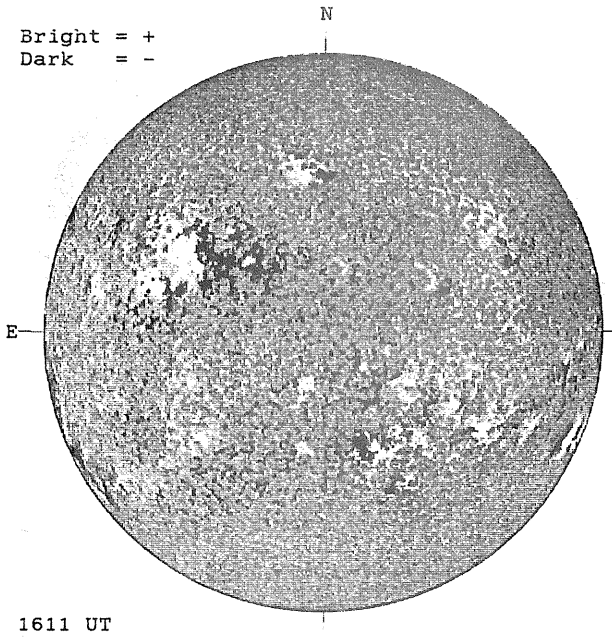
SACRAMENTO PEAK CORONA (1.15 Radii)



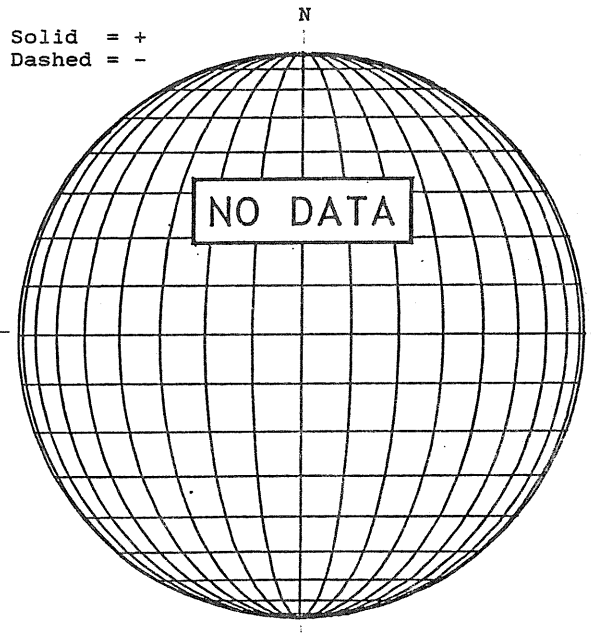
—— FeXIV, 1457 UT
.... Fe X, 1528 UT
xxxx Ca XV, 1516 UT
NO CA XV ACTIVITY TODAY

DECEMBER 5, 1990 (P= 14.62, B_o = 0.39, L_o = 188.17)

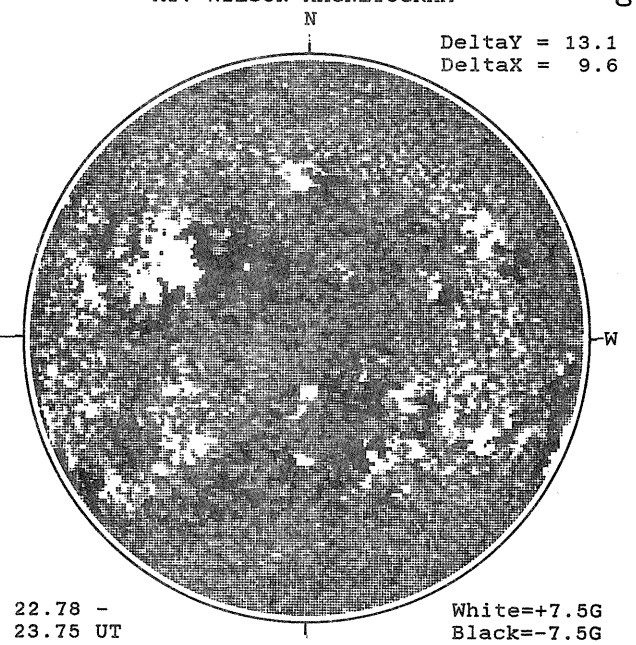
KITT PEAK MAGNETOGRAM



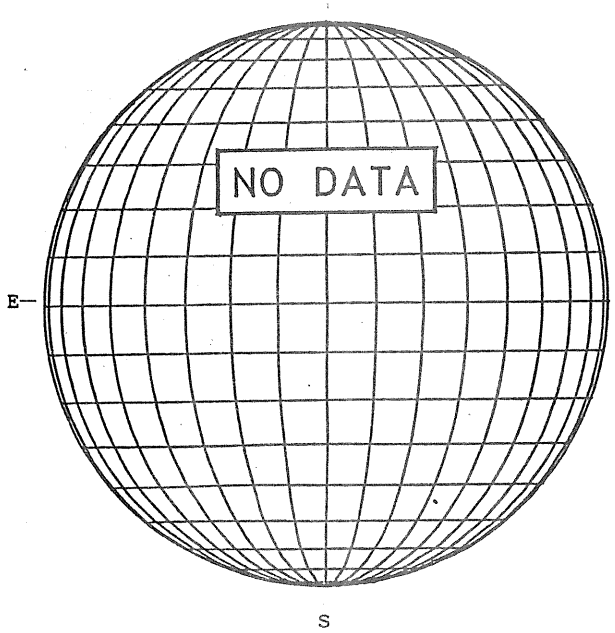
STANFORD MAGNETOGRAM



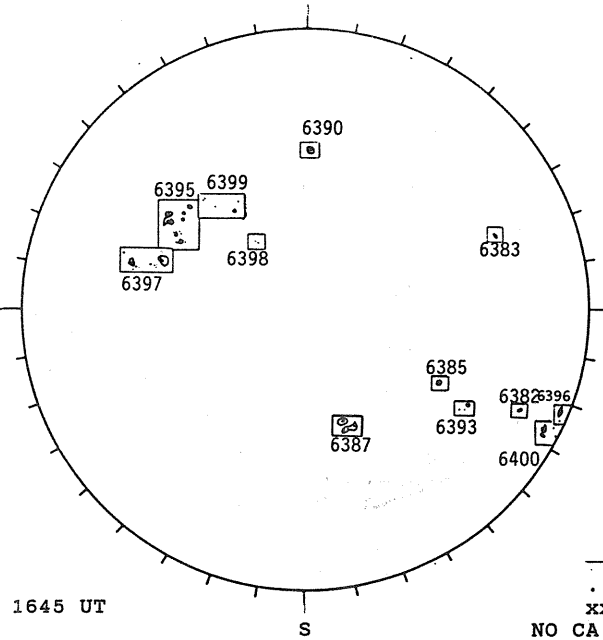
MT. WILSON MAGNETOGRAM



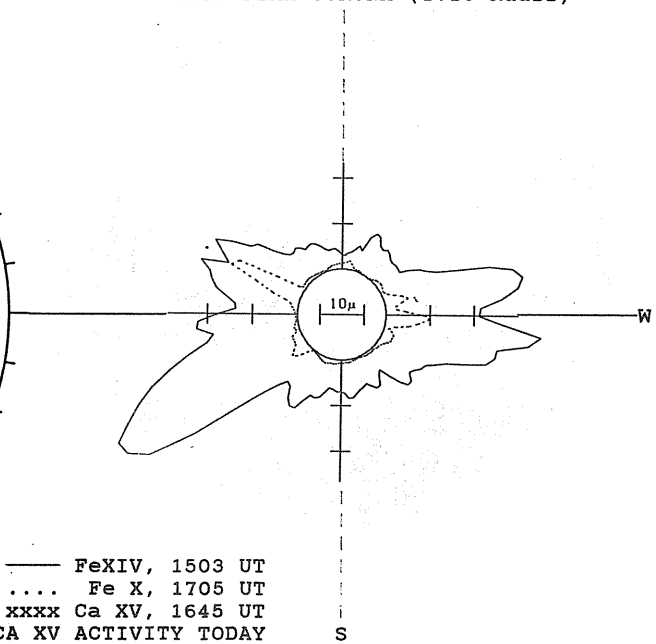
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT

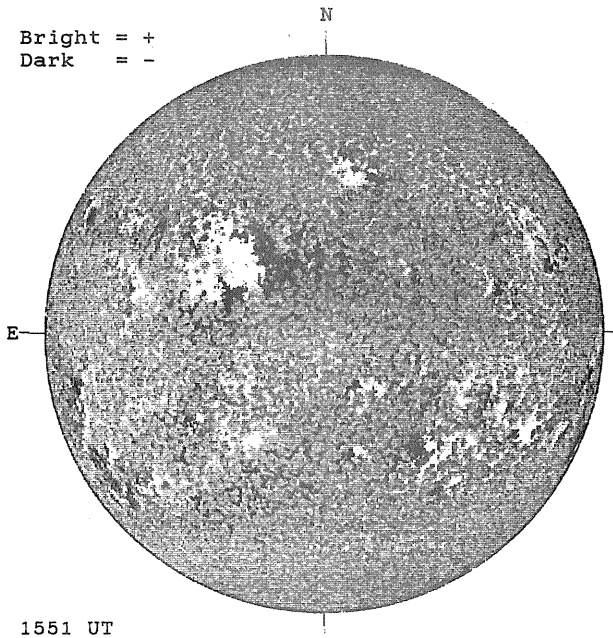


SACRAMENTO PEAK CORONA (1.15 Radii)



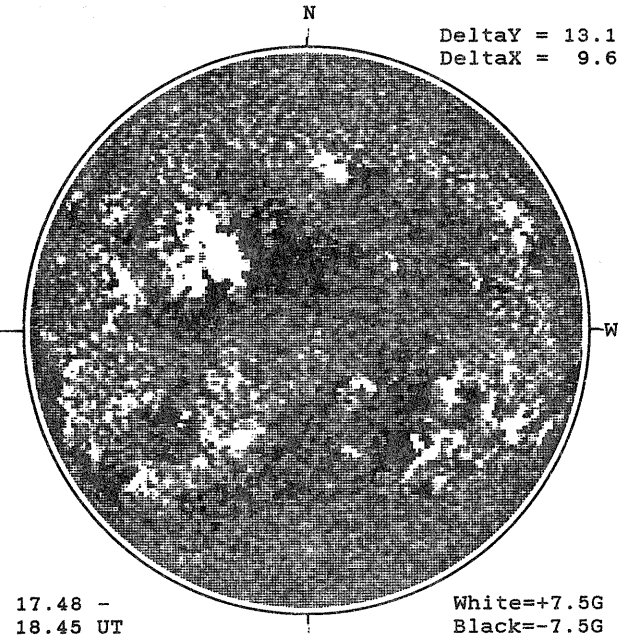
DECEMBER 6, 1990 (P= 14.21, B_o = 0.26, L_o = 175.00)

KITT PEAK MAGNETOGRAM

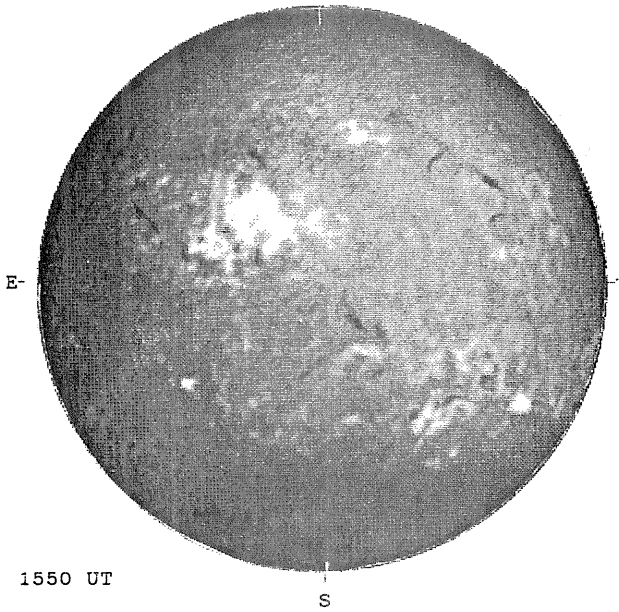


STANFORD MAGNETOGRAM

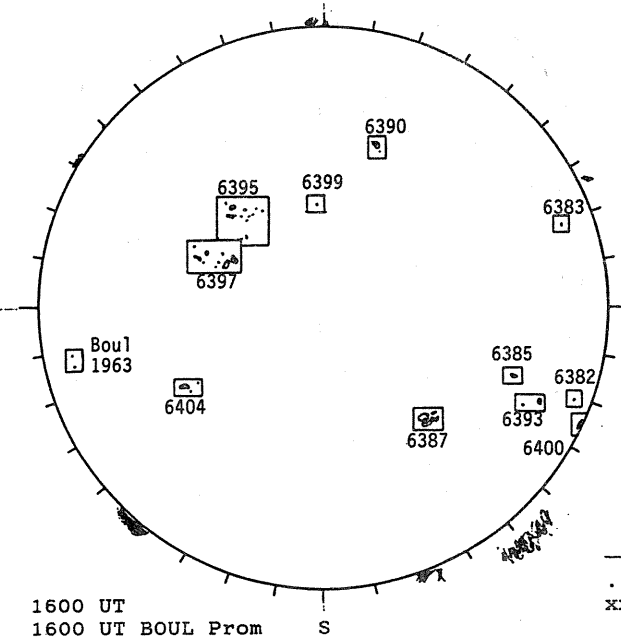
MT. WILSON MAGNETOGRAM



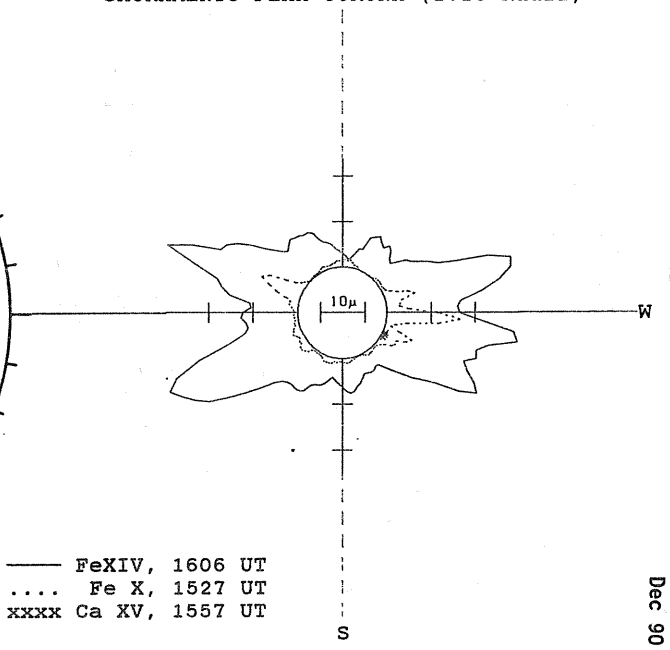
BOULDER H-ALPHA



BOULDER SUNSPOT



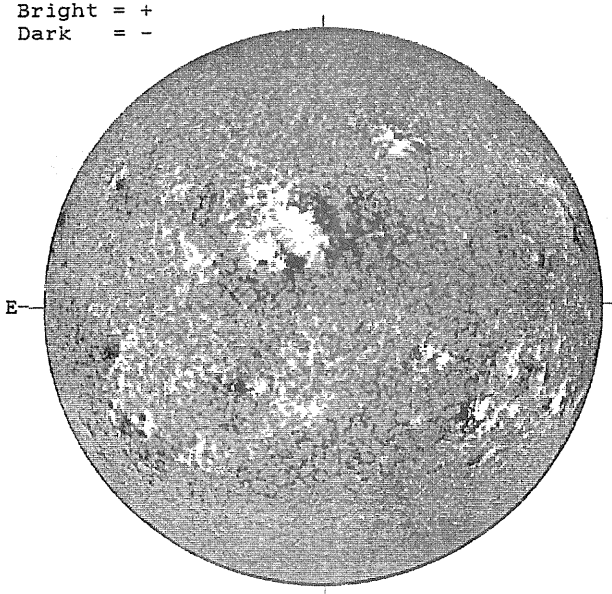
SACRAMENTO PEAK CORONA (1.15 Radii)



DECEMBER 7, 1990 (P= 13.80, [illegible] L_C = 161.82)

KITT PEAK MAGNETOGRAM

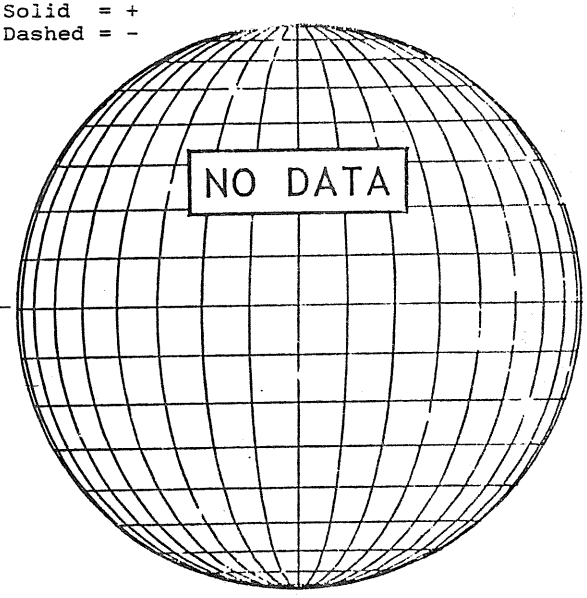
Bright = +
Dark = -



1545 UT

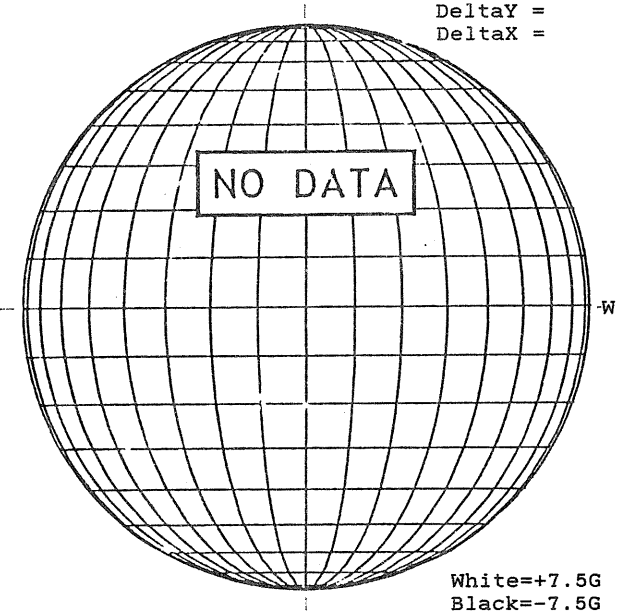
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



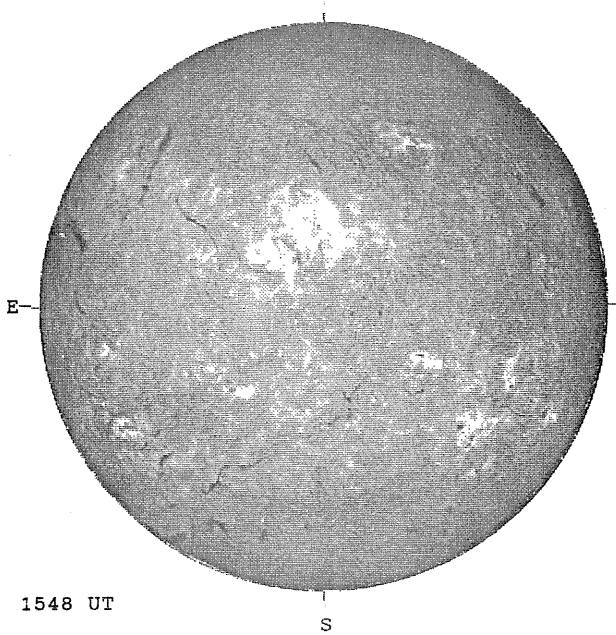
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



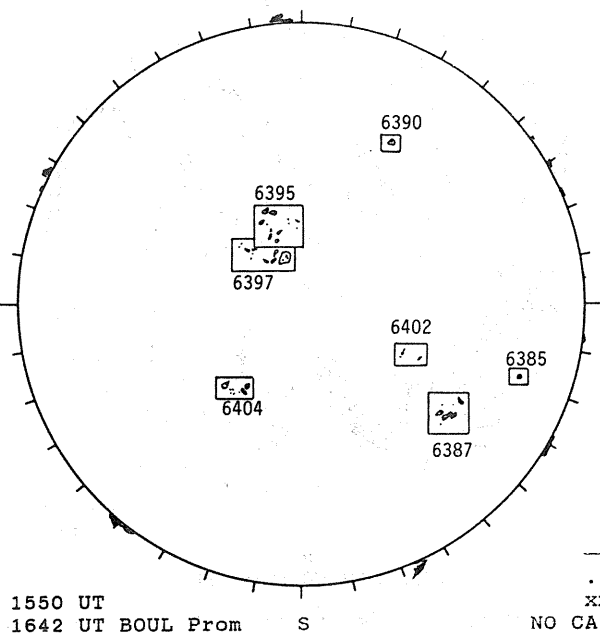
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



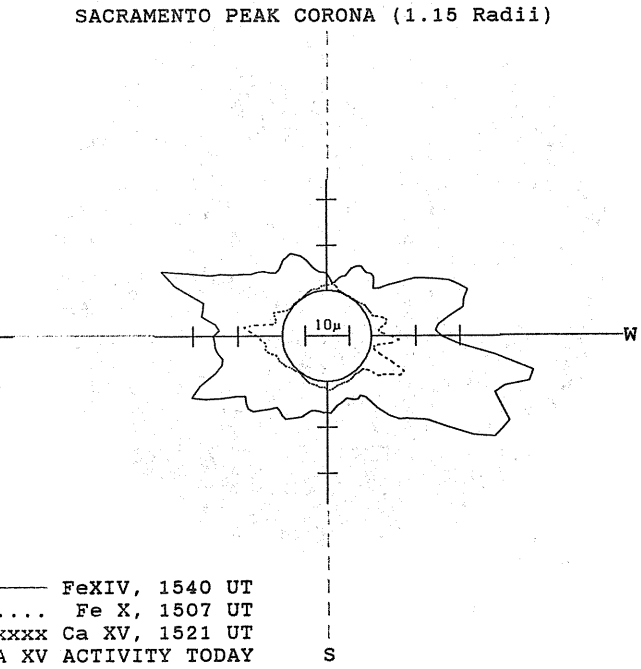
1548 UT

BOULDER SUNSPOT



1550 UT
1642 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

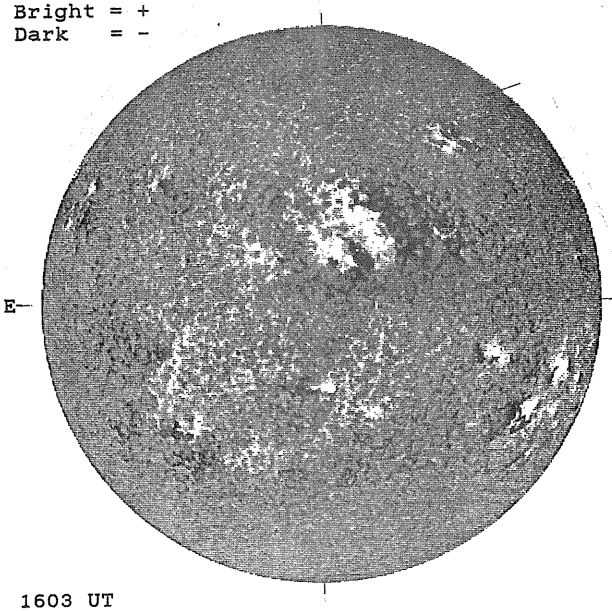


—— FeXIV, 1540 UT
.... Fe X, 1507 UT
xxxx Ca XV, 1521 UT
NO CA XV ACTIVITY TODAY

DECEMBER 8, 1990 (P= 13.38, B_0 = 0.01, L_0 = 148.64)

KITT PEAK MAGNETOGRAM

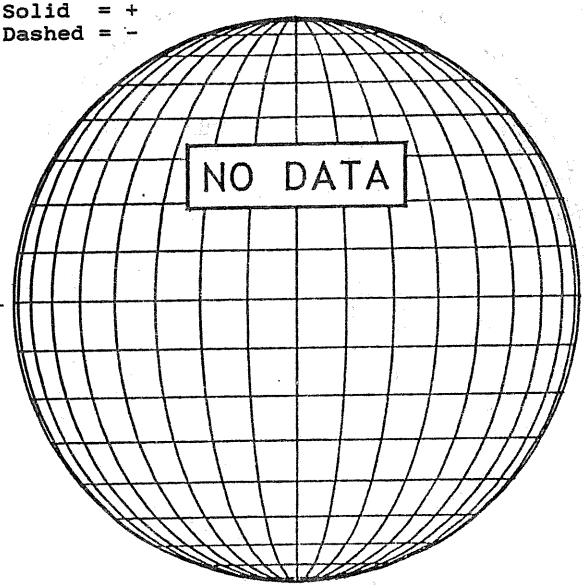
Bright = +
Dark = -



1603 UT

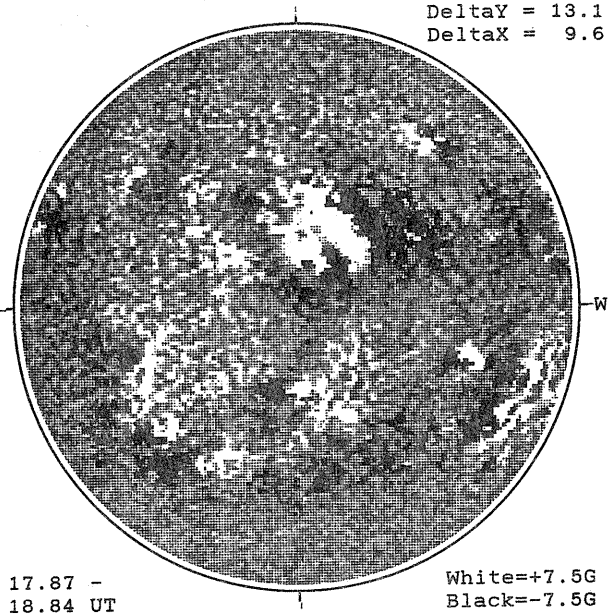
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

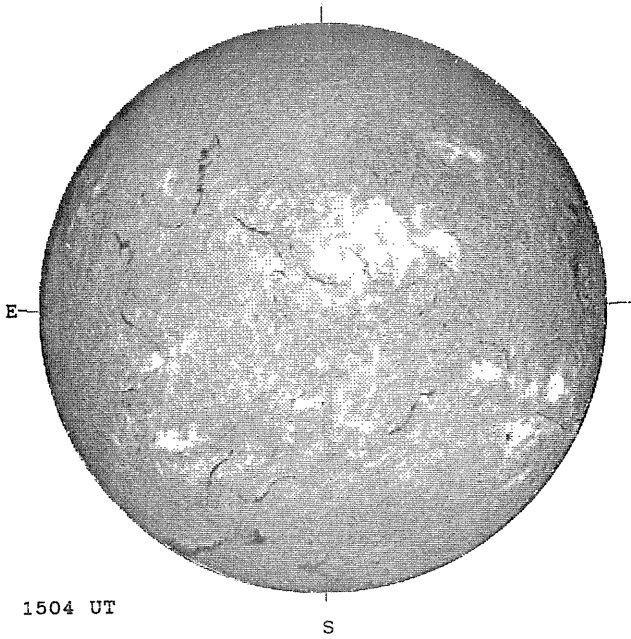
DeltaY = 13.1
DeltaX = 9.6



17.87 -
18.84 UT

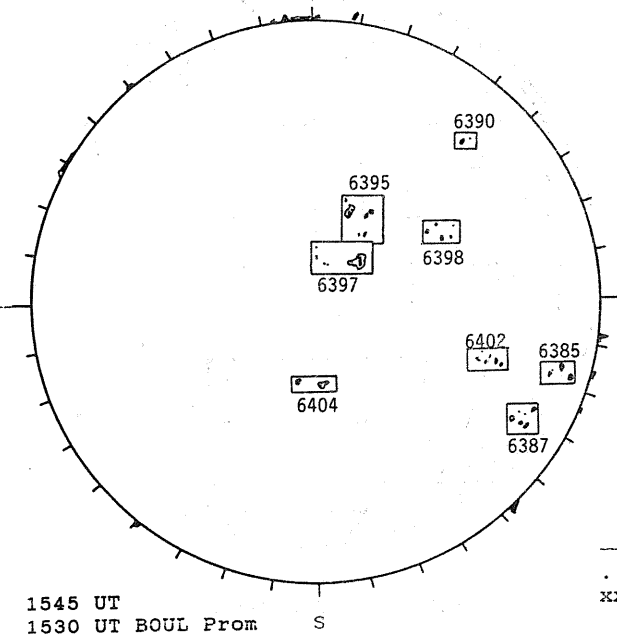
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



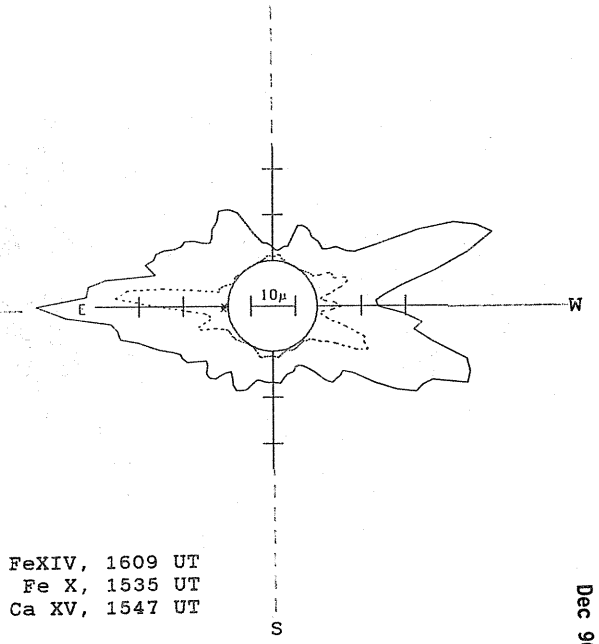
1504 UT

BOULDER SUNSPOT



1545 UT
1530 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

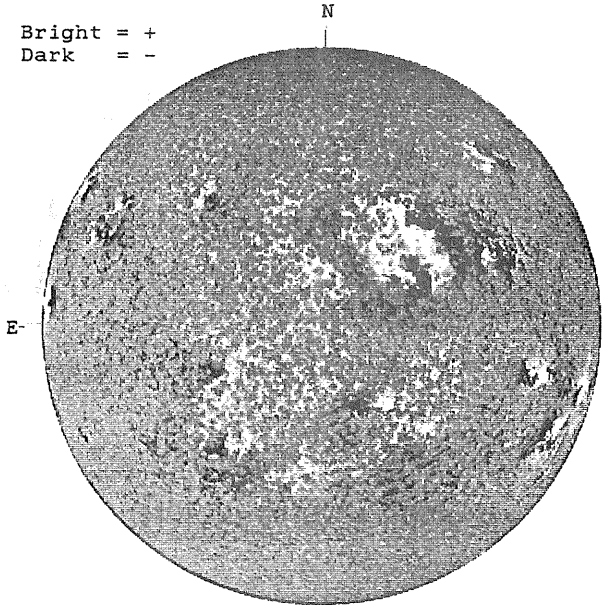


—— FeXIV, 1609 UT
.... Fe X, 1535 UT
xxxx Ca XV, 1547 UT

DECEMBER 9, 1990 (P= 12.95, B_o =-0.12, L_o = 135.46)

KITT PEAK MAGNETOGRAM

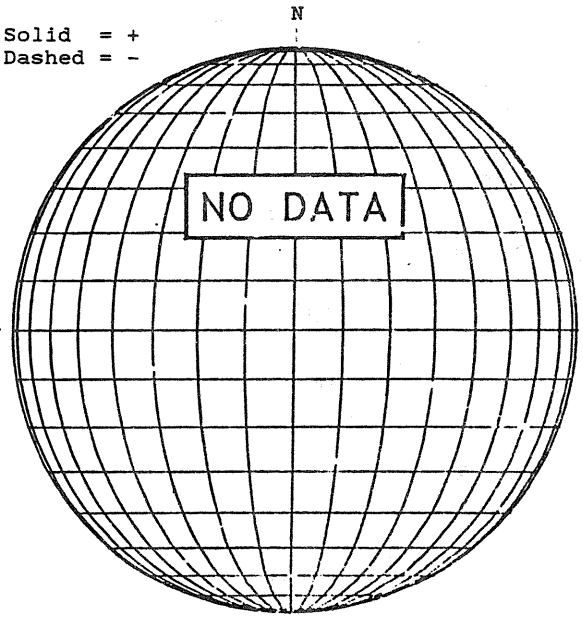
Bright = +
Dark = -



1547 UT

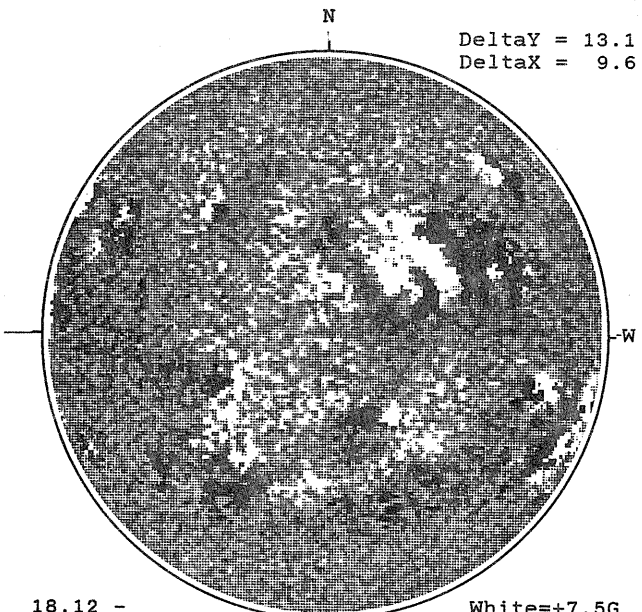
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

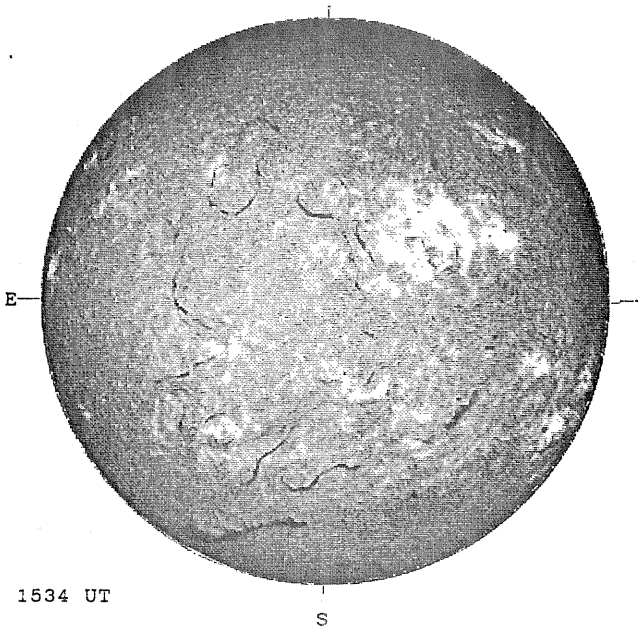
DeltaY = 13.1
DeltaX = 9.6



18.12 -
19.12 UT

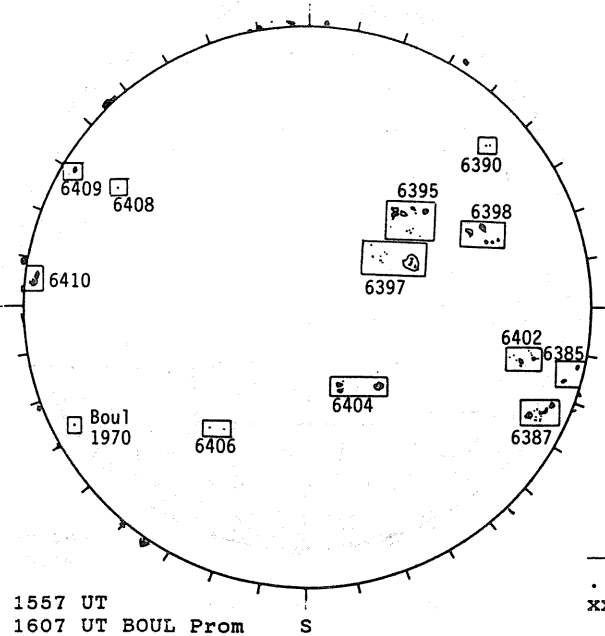
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



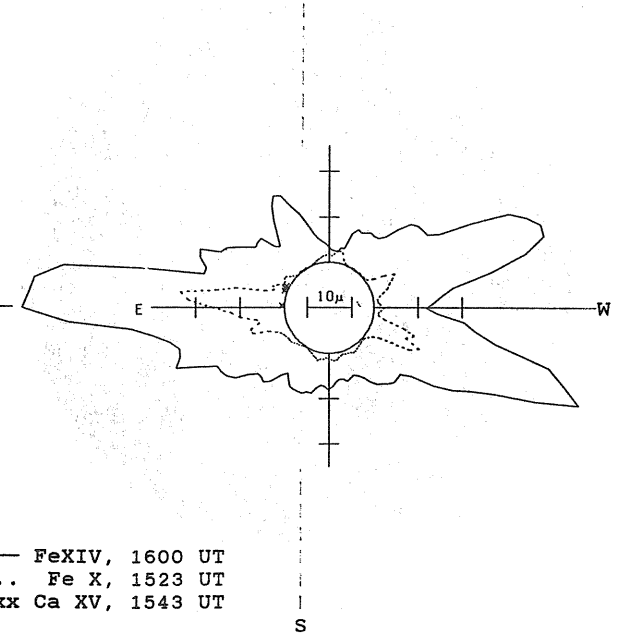
1534 UT

BOULDER SUNSPOT



1557 UT
1607 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

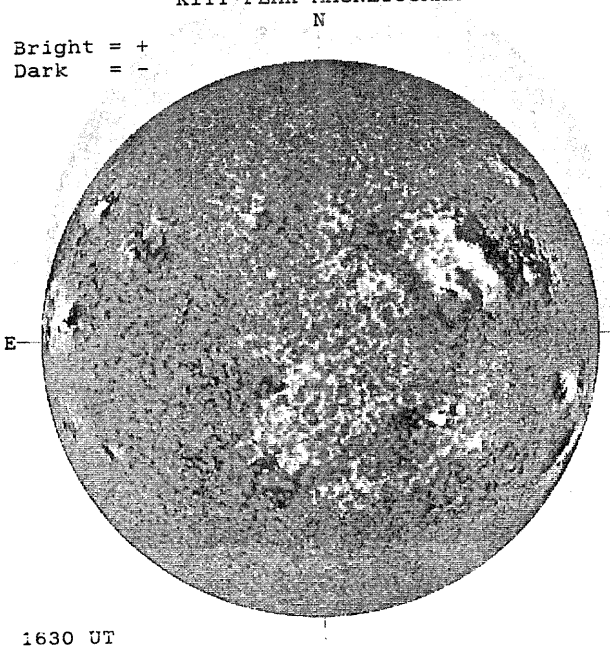


—— FeXIV, 1600 UT
.... Fe X, 1523 UT
xxxx Ca XV, 1543 UT

DECEMBER 10, 1990 (P= 12.52, B_o =-0.25, L_o = 122.29)

KITT PEAK MAGNETOGRAM

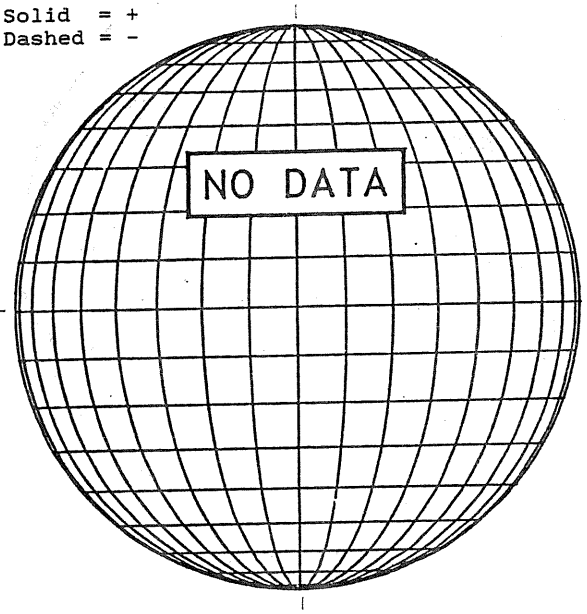
Bright = +
Dark = -



1630 UT

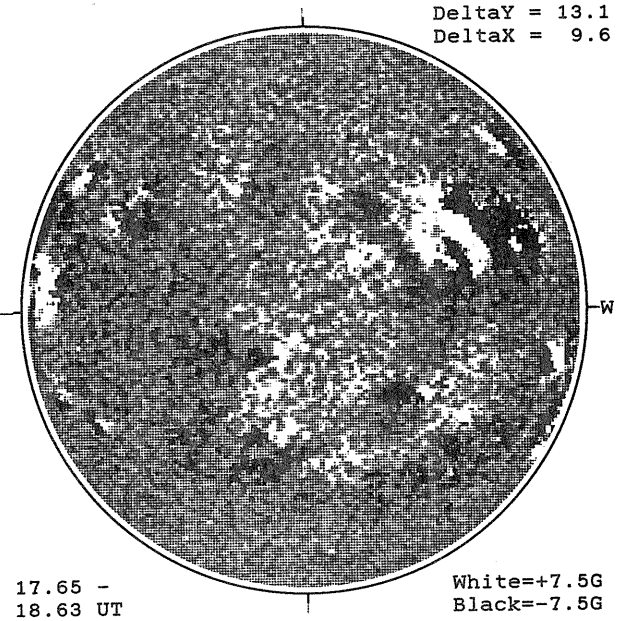
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

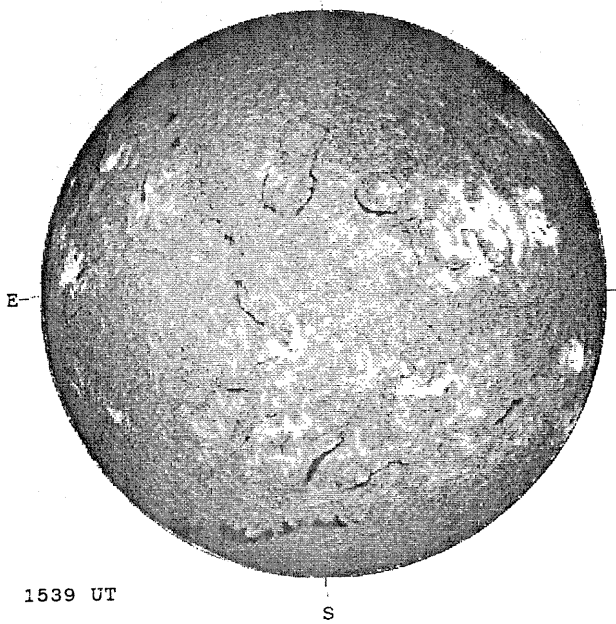
DeltaY = 13.1
DeltaX = 9.6



17.65 -
18.63 UT

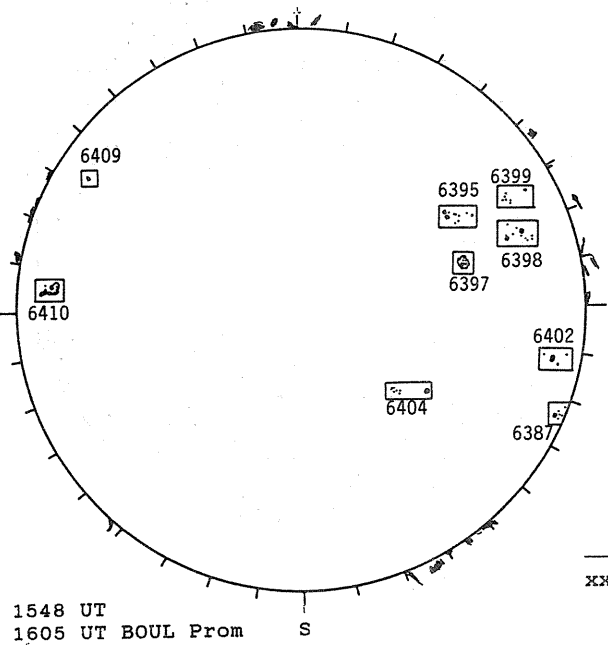
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



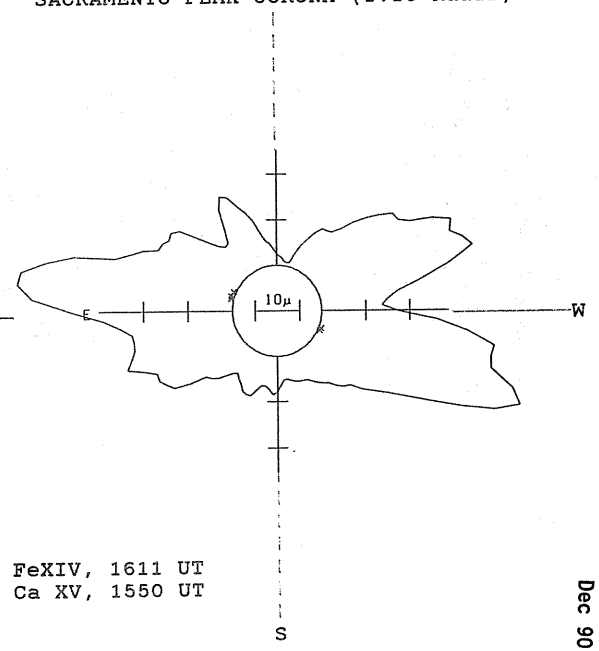
1539 UT

BOULDER SUNSPOT



1548 UT
1605 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

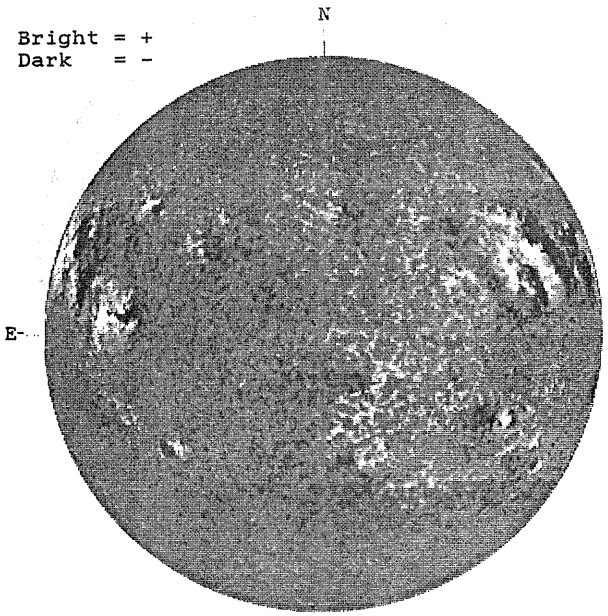


—— FeXIV, 1611 UT
xxxx Ca XV, 1550 UT

DECEMBER 11, 1990 (P= 12.09, B_o =-0.38, L_o = 109.11)

KITT PEAK MAGNETOGRAM

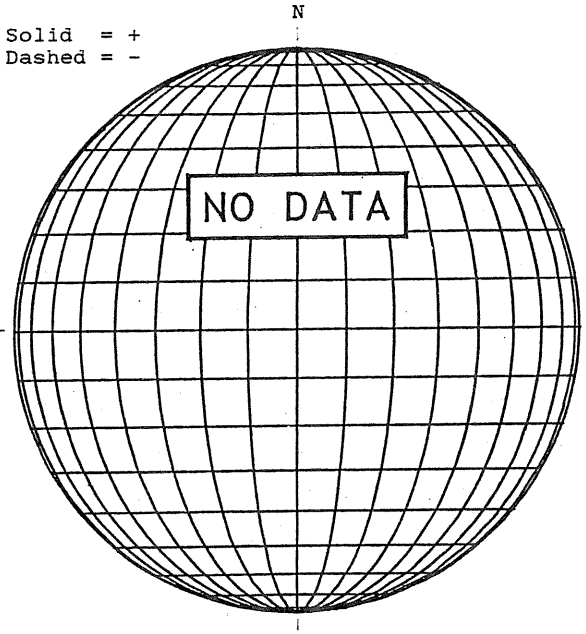
Bright = +
Dark = -



2134 UT

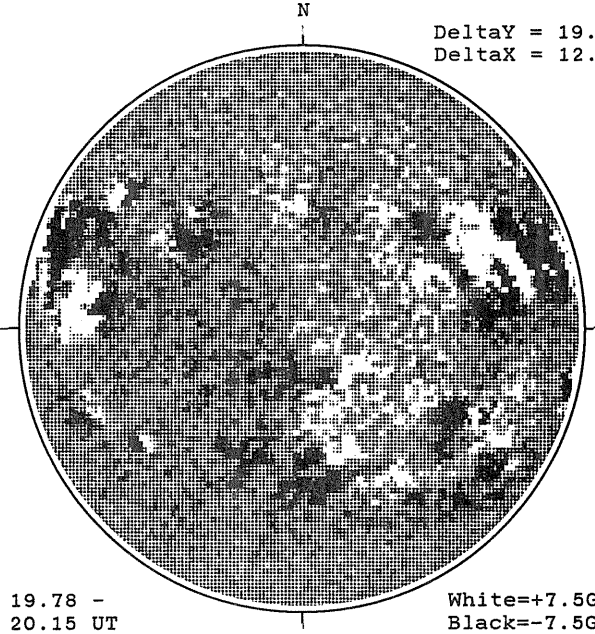
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

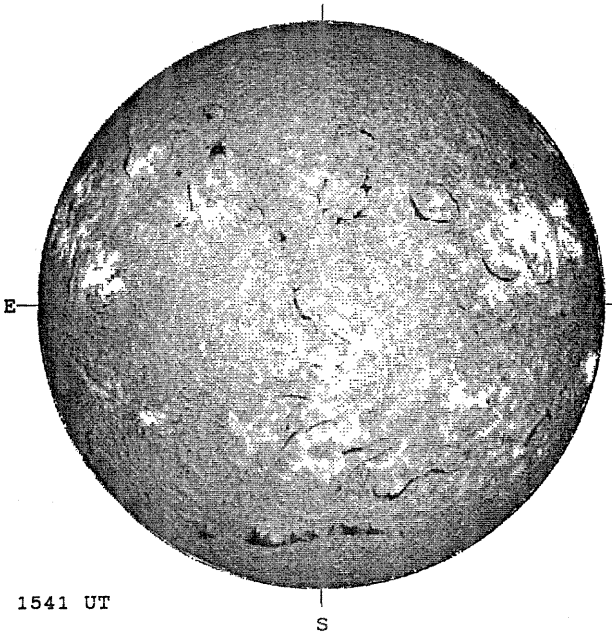
DeltaY = 19.8
DeltaX = 12.8



19.78 -
20.15 UT

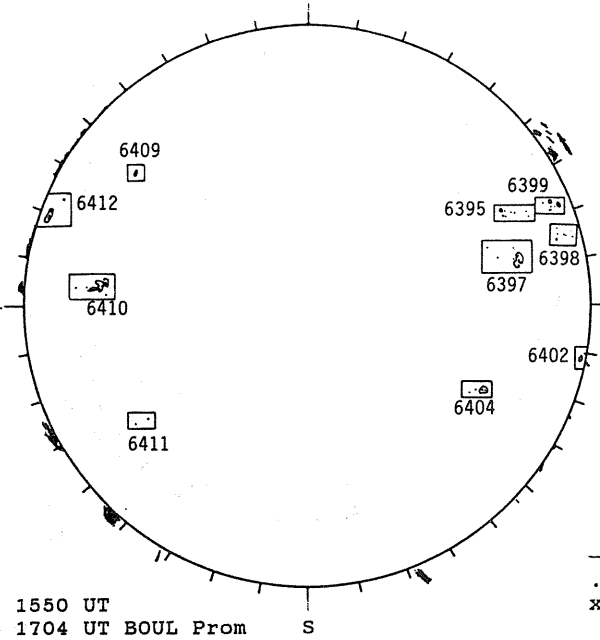
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



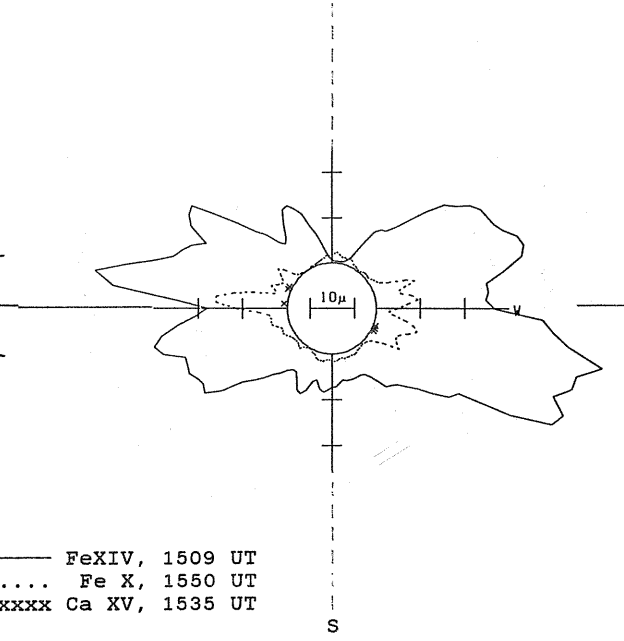
1541 UT

BOULDER SUNSPOT



1550 UT
1704 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

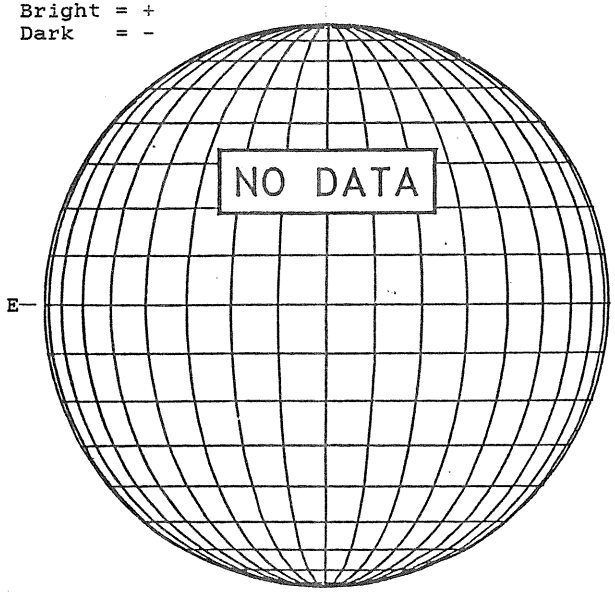


—— FeXIV, 1509 UT
.... Fe X, 1550 UT
xxxx Ca XV, 1535 UT

DECEMBER 12, 1990 (P= 11.65, B_o =-0.51, L_o = 95.94)

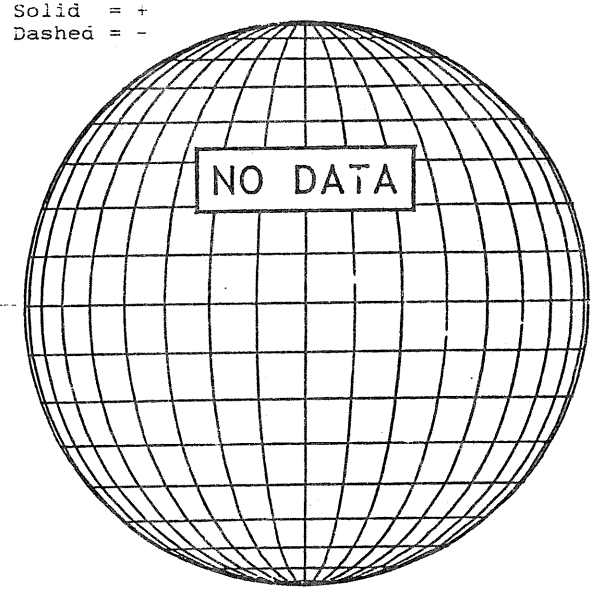
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



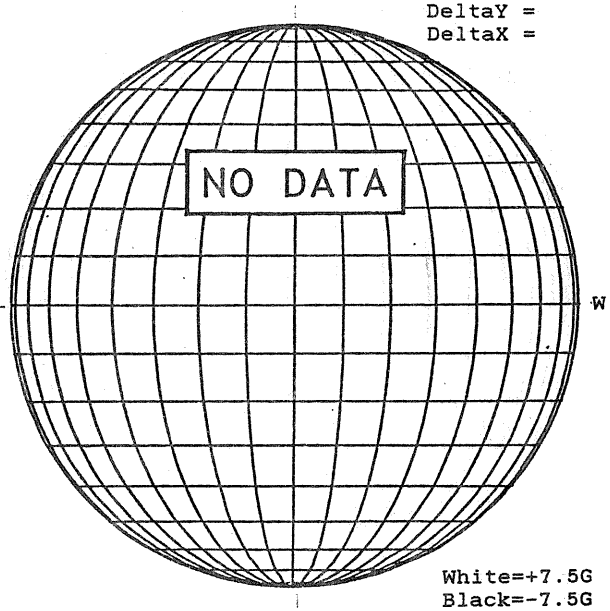
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



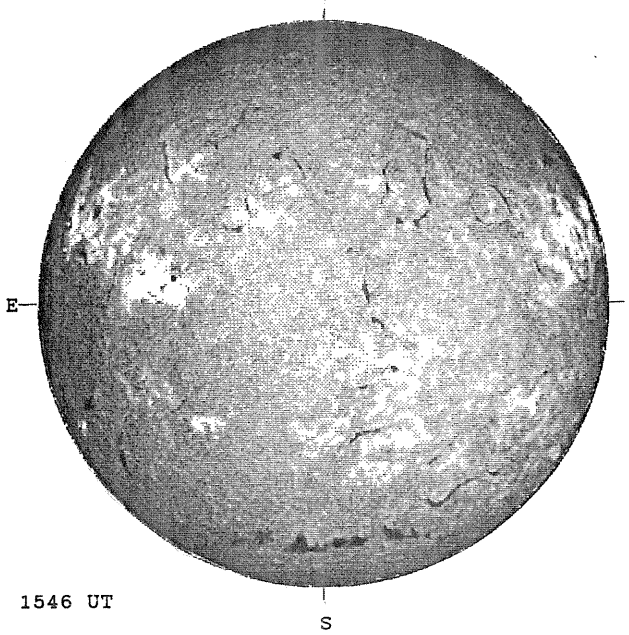
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



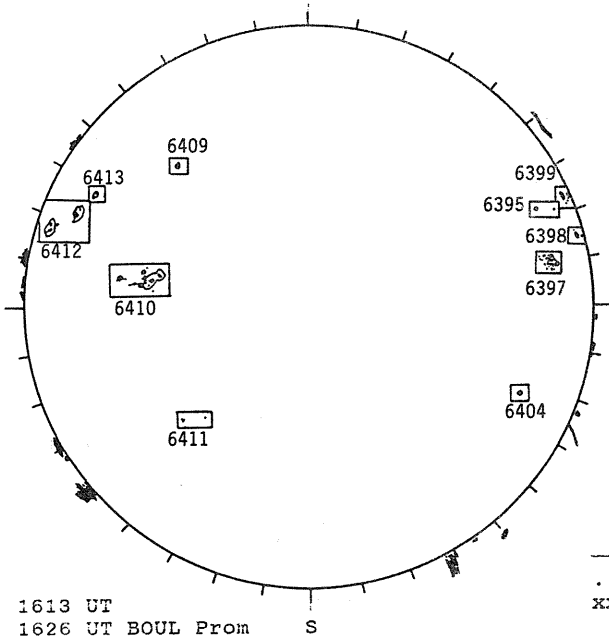
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



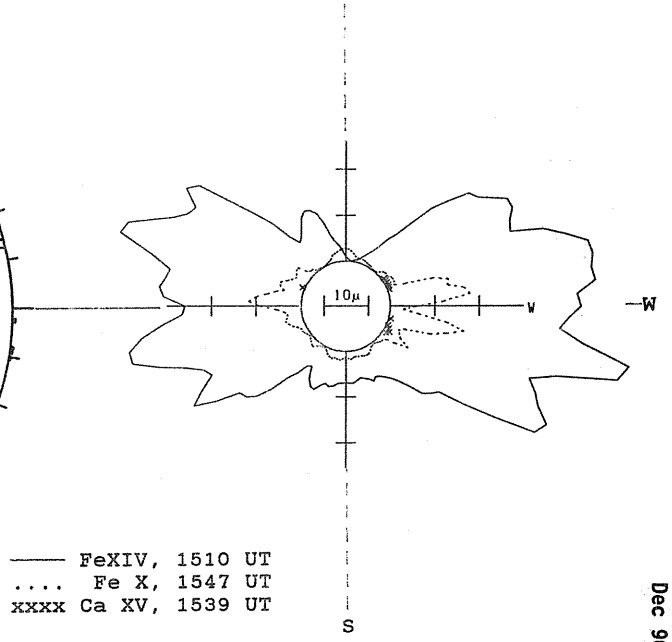
1546 UT

BOULDER SUNSPOT



1613 UT
1626 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

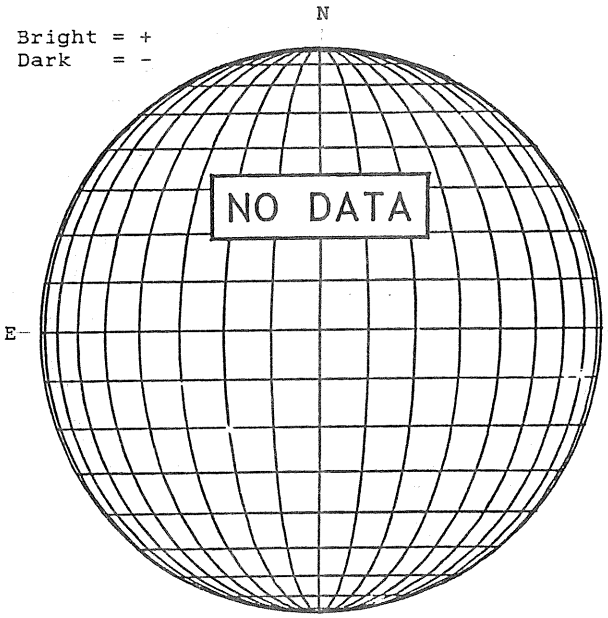


—— FeXIV, 1510 UT
.... Fe X, 1547 UT
xxxx Ca XV, 1539 UT

DECEMBER 13, 1990 (P= 11.21, B_o =-0.63, L_o = 82.76)

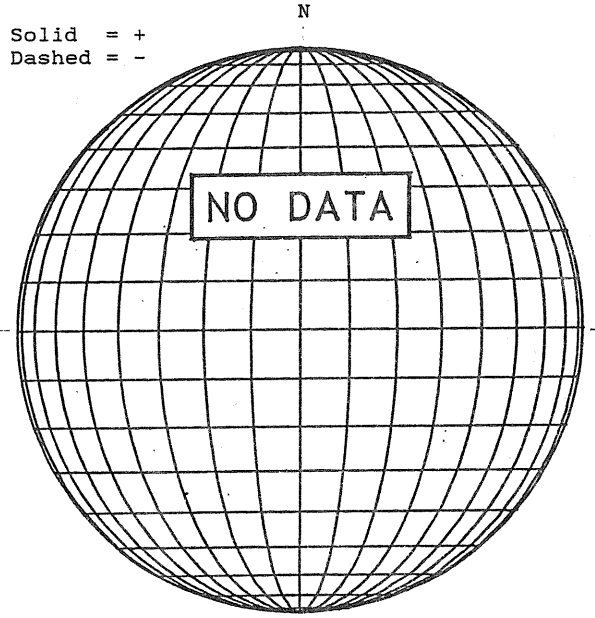
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



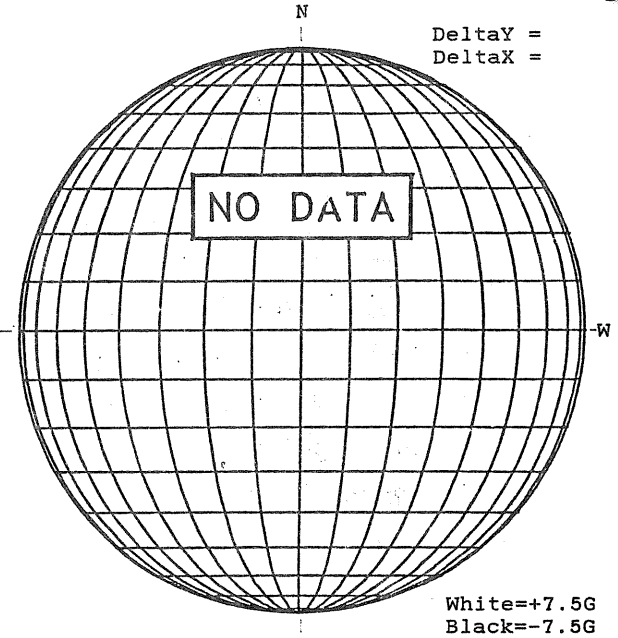
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

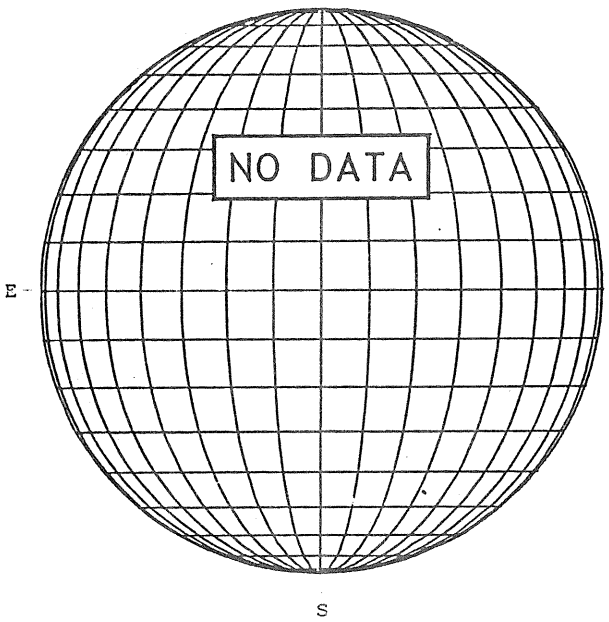


MT. WILSON MAGNETOGRAM

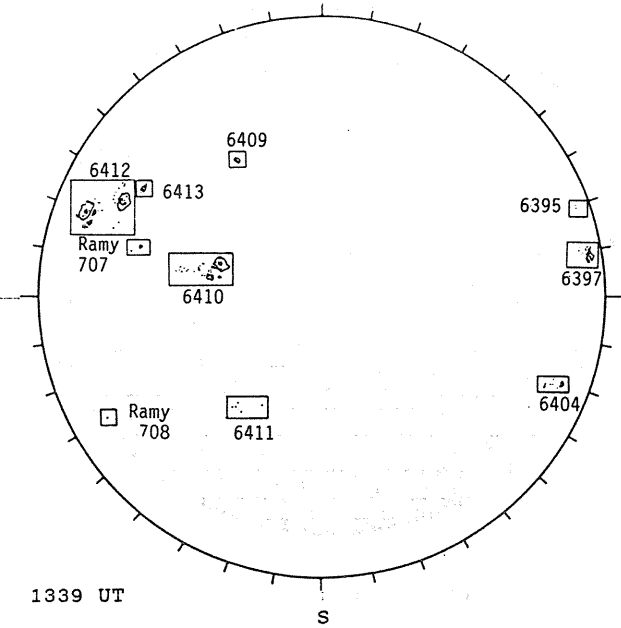
DeltaY =
DeltaX =



SACRAMENTO PEAK H-ALPHA

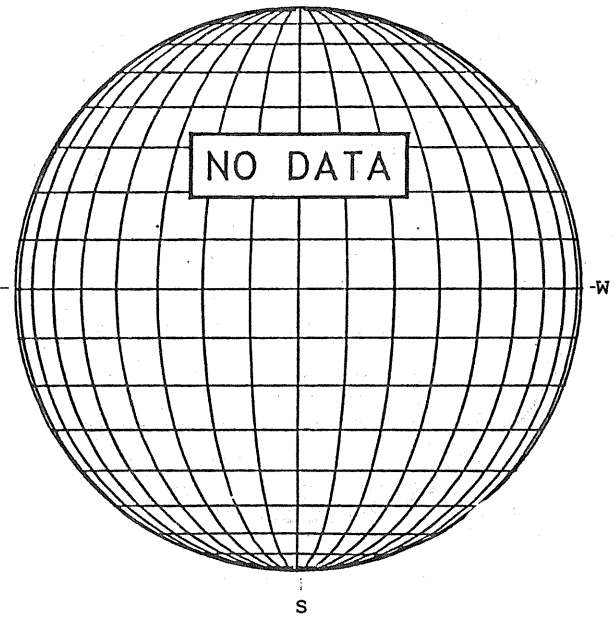


RAMEY SUNSPOT



1339 UT

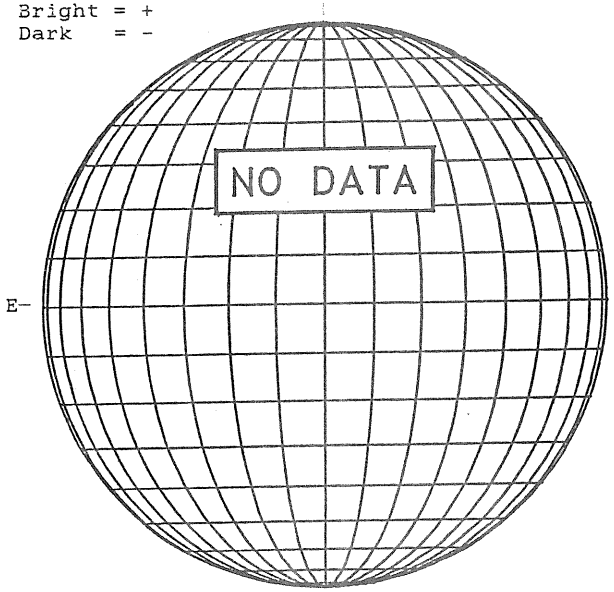
SACRAMENTO PEAK CORONA (1.15 Radii)



DECEMBER 14, 1990 (P= 10.76, B_o =-0.76, L_o = 69.58)

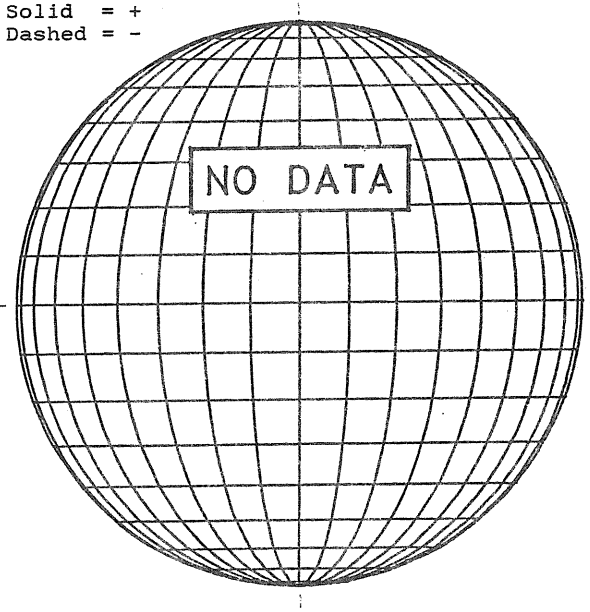
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



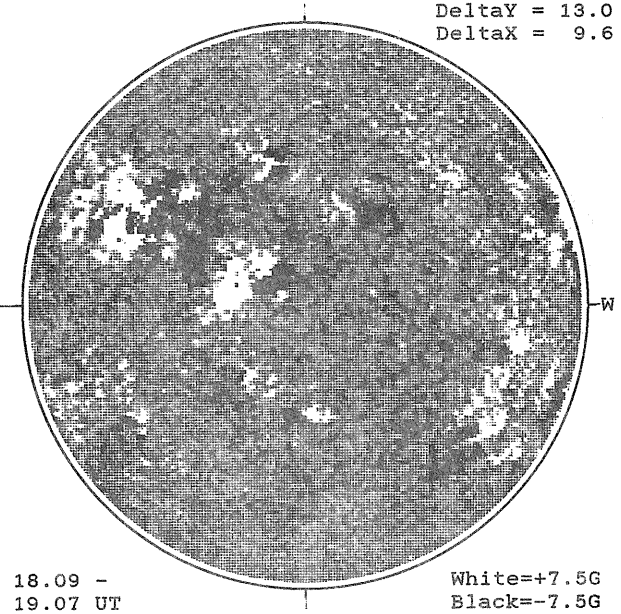
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

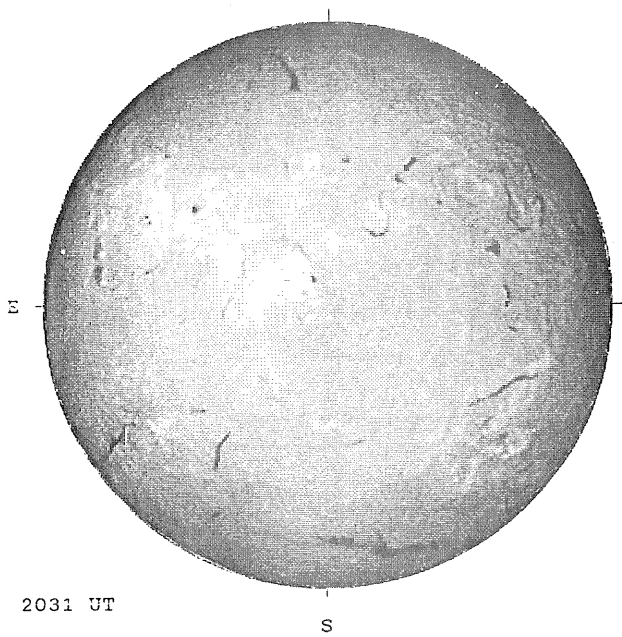
DeltaY = 13.0
DeltaX = 9.6



18.09 -
19.07 UT

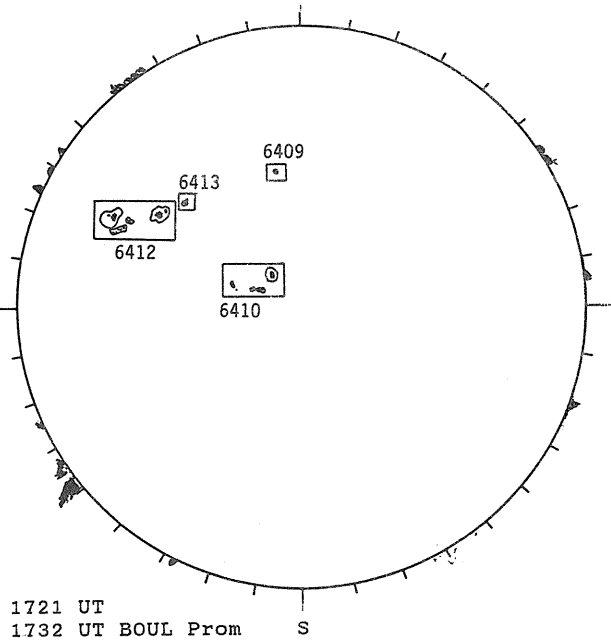
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



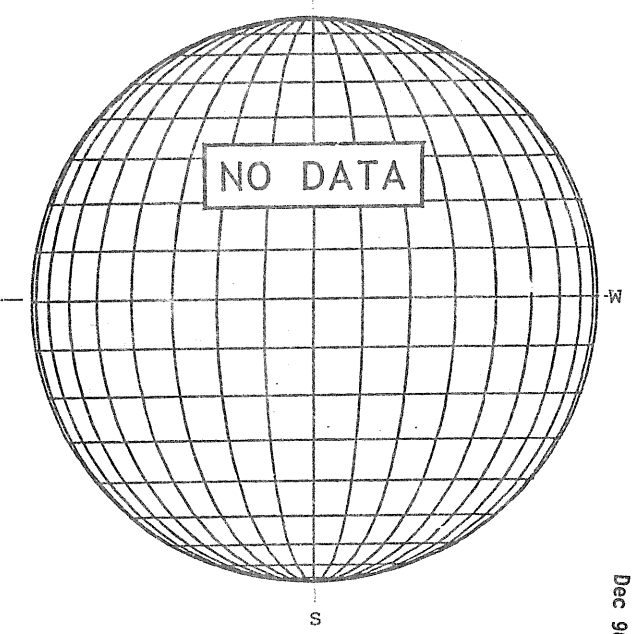
2031 UT

BOULDER SUNSPOT



1721 UT
1732 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



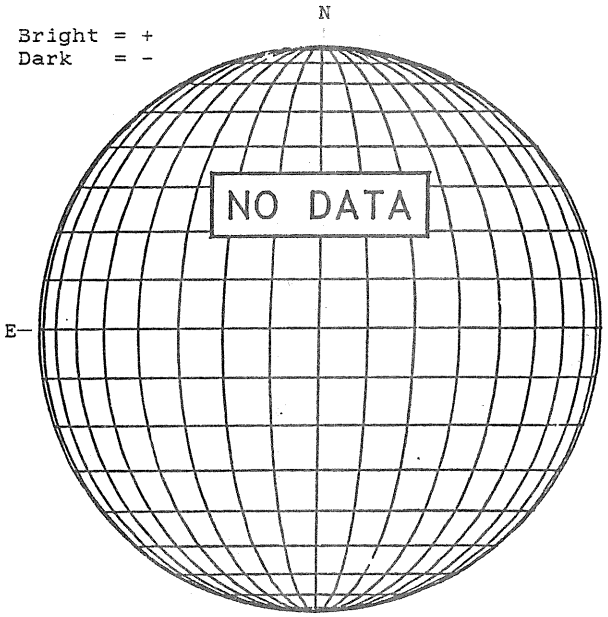
77
Dec 90

DECEMBER 15, 1990 (P= 10.31, B_o =-0.89, L_o = 56.41)

78
Dec 90

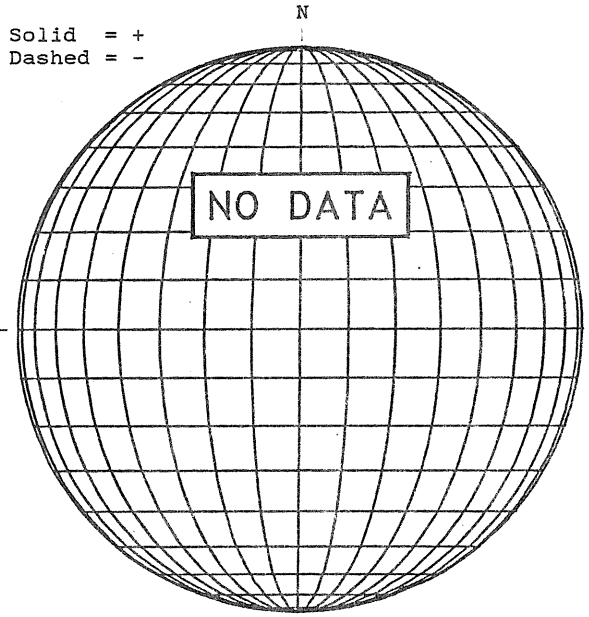
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



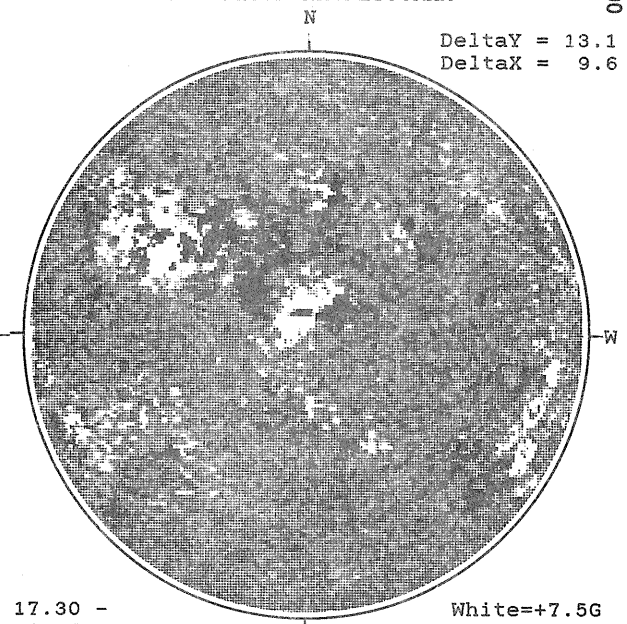
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

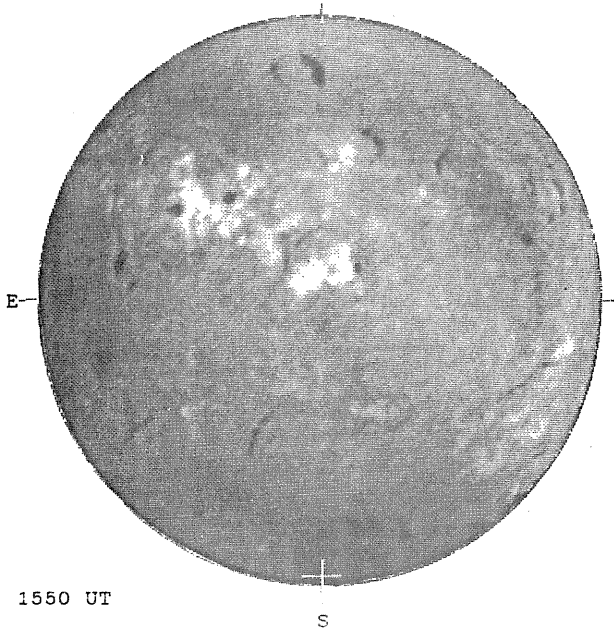
DeltaY = 13.1
DeltaX = 9.6



17.30 -
18.27 UT

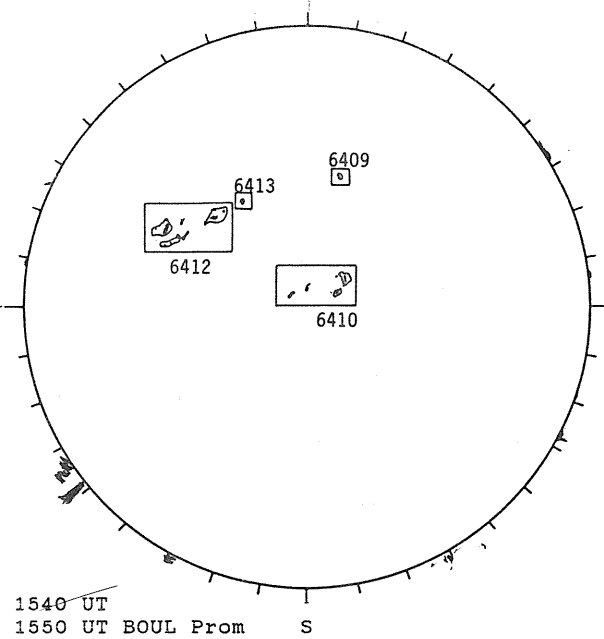
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



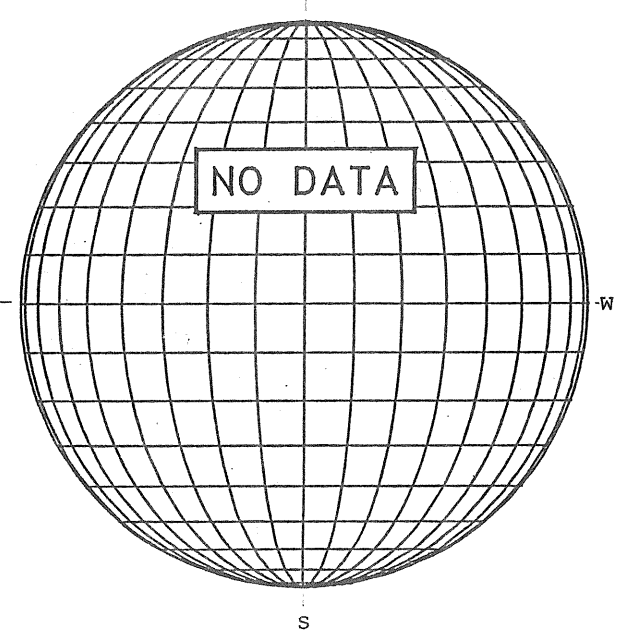
1550 UT

BOULDER SUNSPOT



~~1540 UT~~
1550 UT BOUL Prom

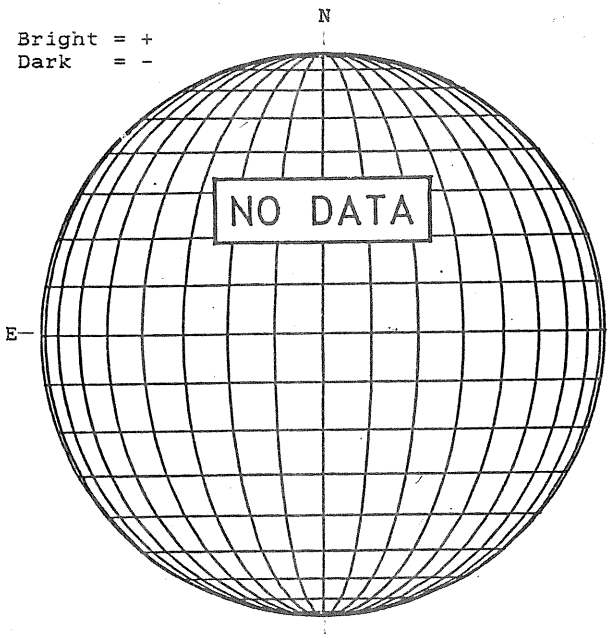
SACRAMENTO PEAK CORONA (1.15 Radii)



DECEMBER 16, 1990 (P= 9.86, B_o =-1.02, L_o = 43.24)

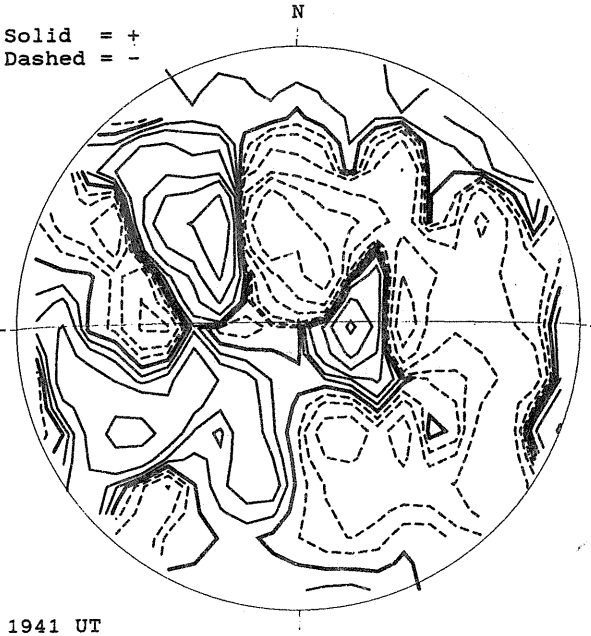
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

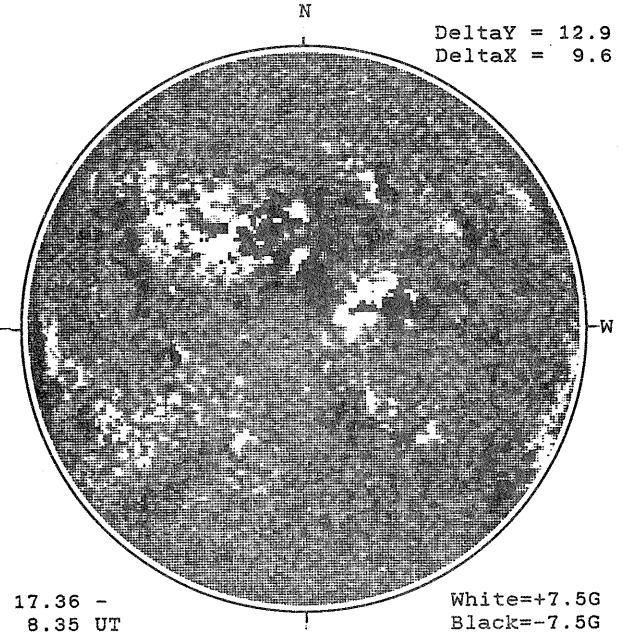
Solid = +
Dashed = -



1941 UT

MT. WILSON MAGNETOGRAM

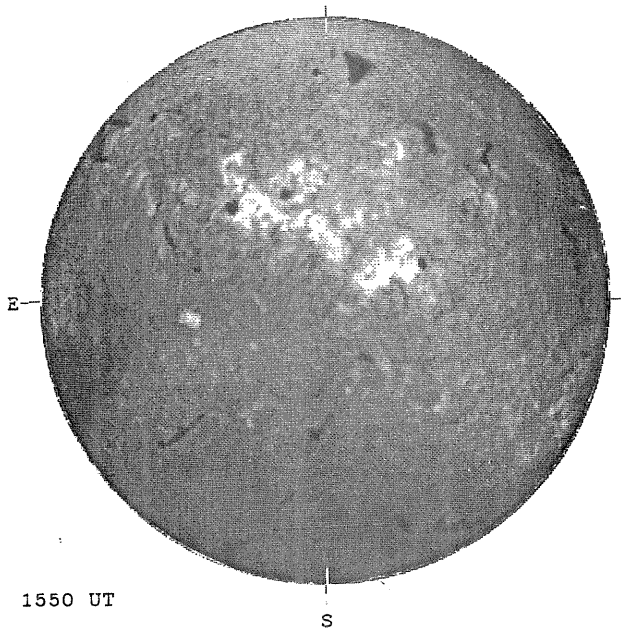
DeltaY = 12.9
DeltaX = 9.6



17.36 -
8.35 UT

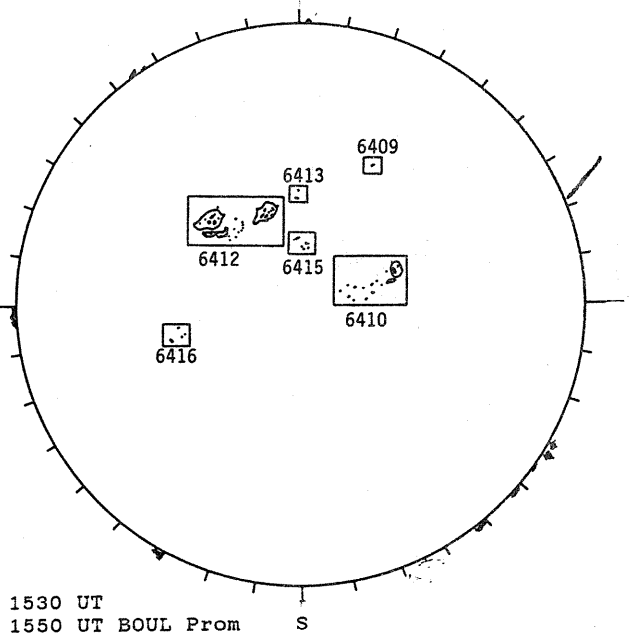
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



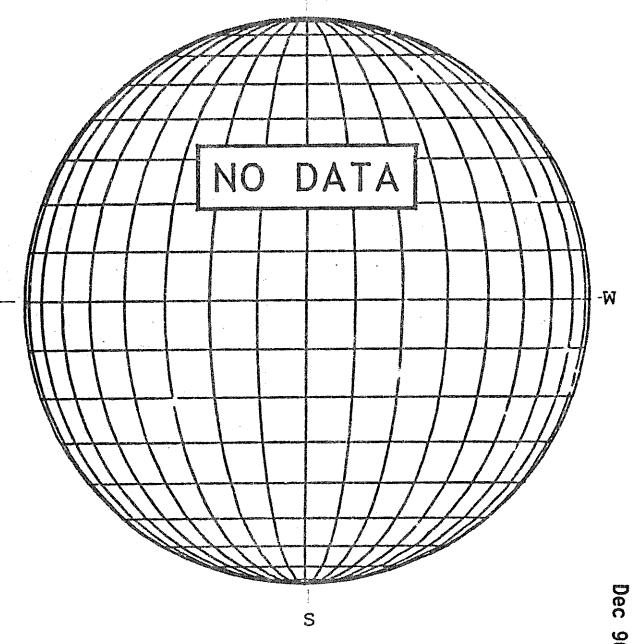
1550 UT

BOULDER SUNSPOT



1530 UT
1550 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

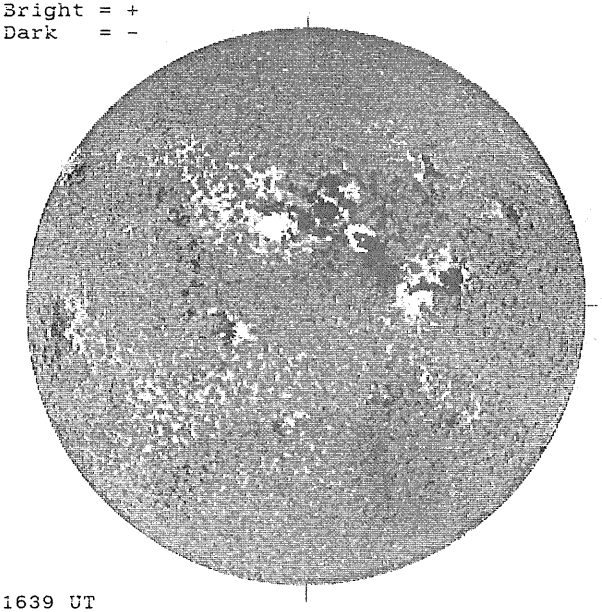


79
Dec 90

DECEMBER 17, 1990 (P= 9.40, B_o =-1.14, L_o = 30.06)

KITT PEAK MAGNETOGRAM

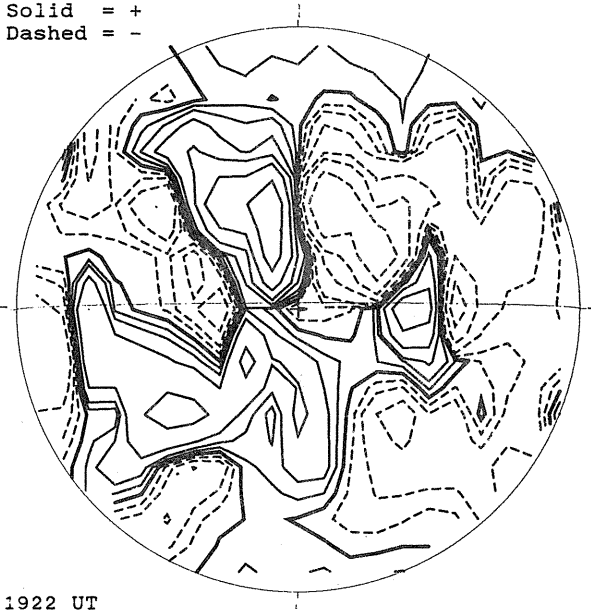
Bright = +
Dark = -



1639 UT

STANFORD MAGNETOGRAM

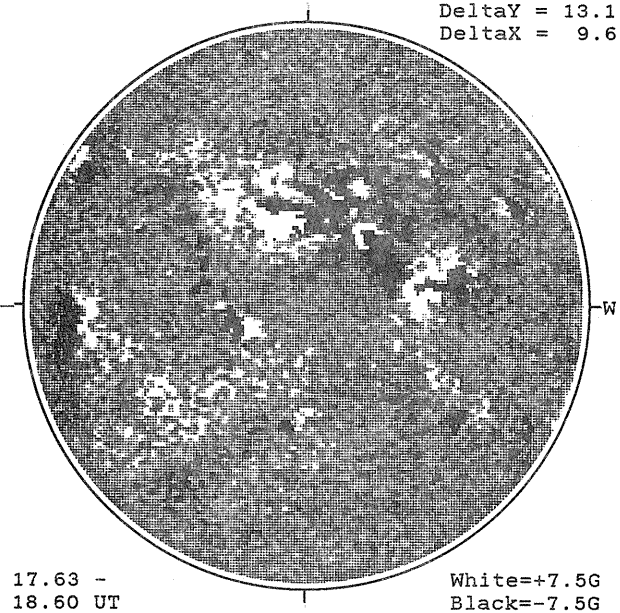
Solid = +
Dashed = -



1922 UT

MT. WILSON MAGNETOGRAM,

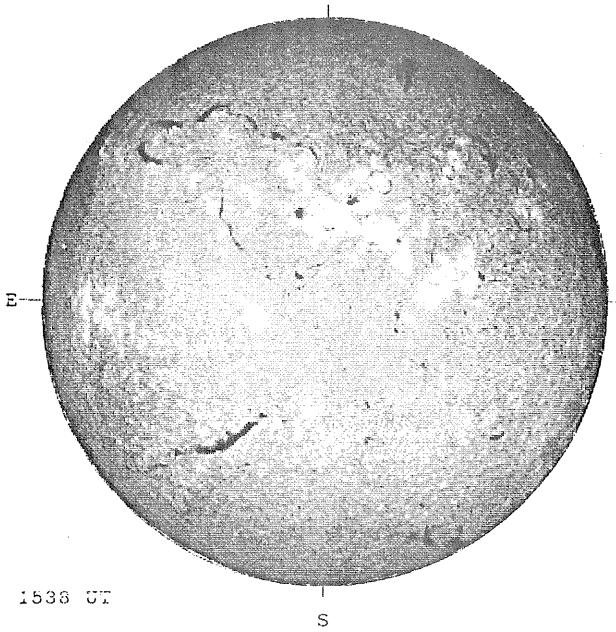
DeltaY = 13.1
DeltaX = 9.6



17.63 -
18.60 UT

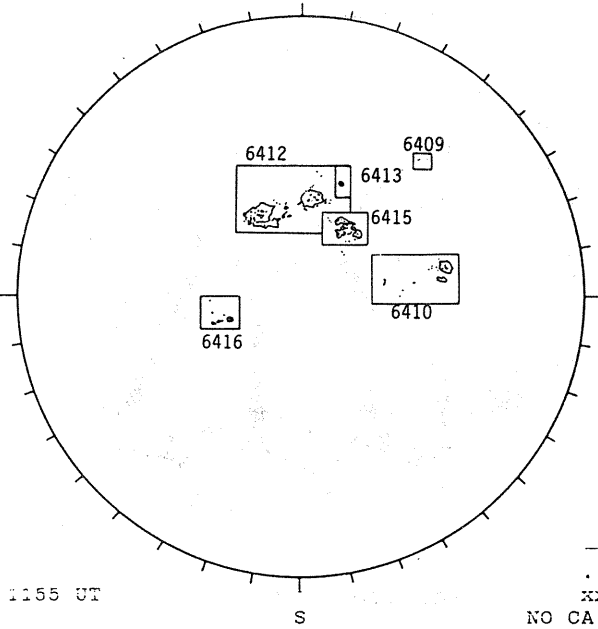
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



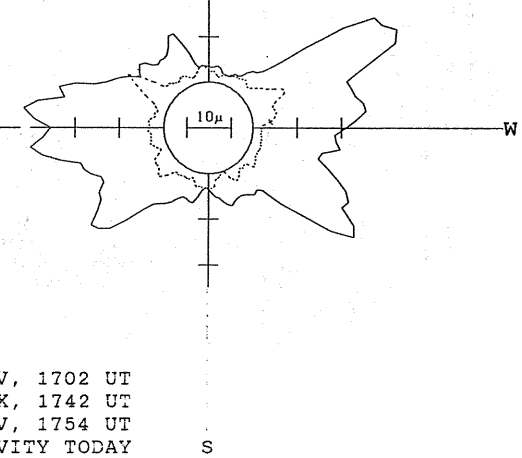
1538 UT

RAMEY SUNSPOT



1155 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

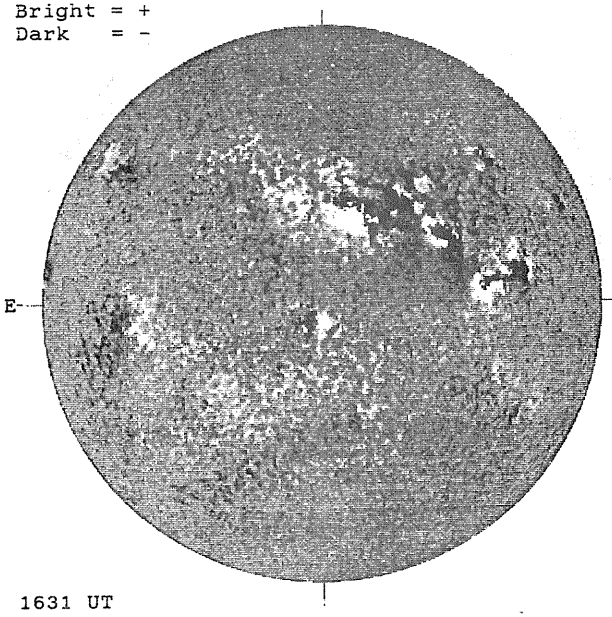


—— FeXIV, 1702 UT
.... CFeXX, 1742 UT
xxxx Ca XV, 1754 UT
NO CA XV ACTIVITY TODAY

DECEMBER 18, 1990 (P= 8.94, B_o =-1.27, L_o = 16.89)

KITT PEAK MAGNETOGRAM

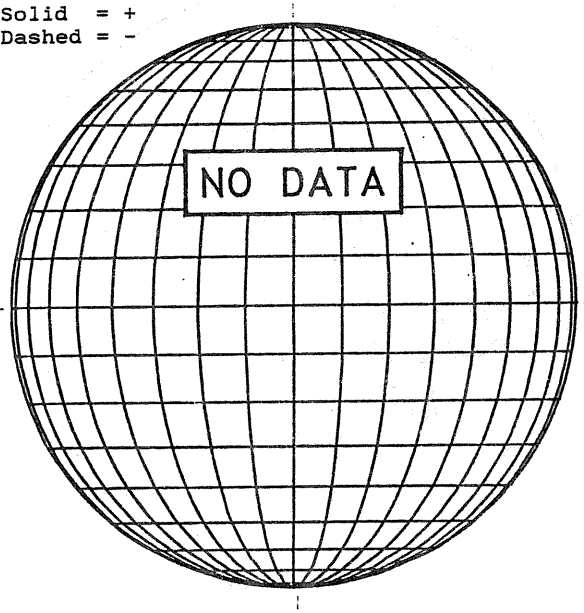
Bright = +
Dark = -



1631 UT

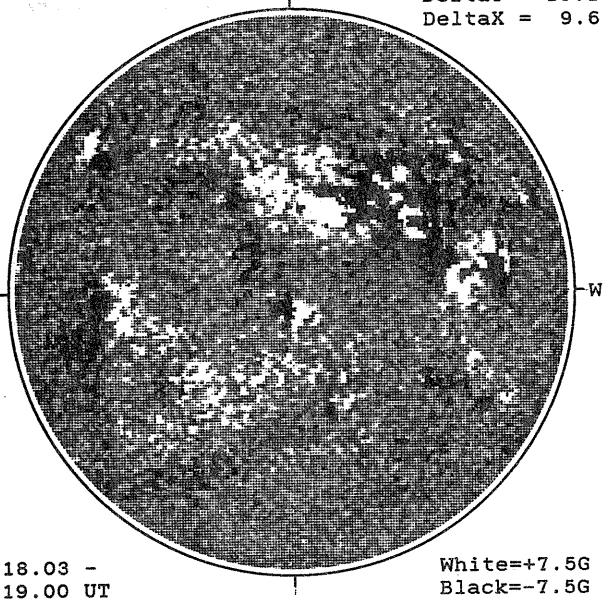
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

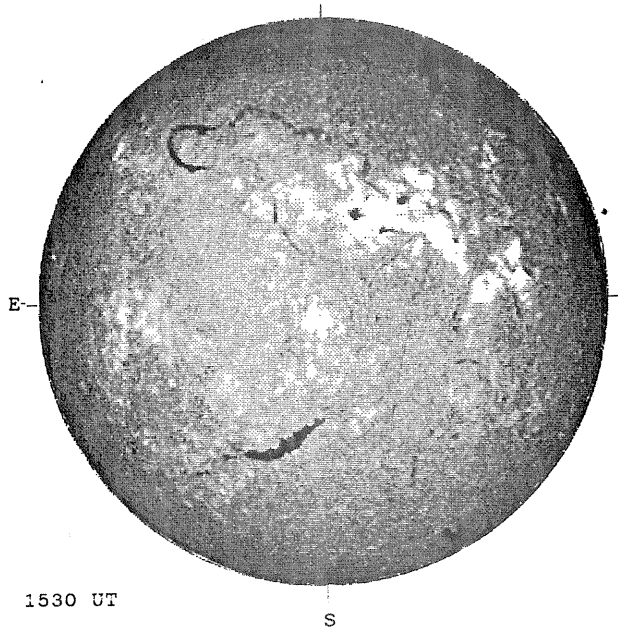
DeltaY = 13.1
DeltaX = 9.6



18.03 -
19.00 UT

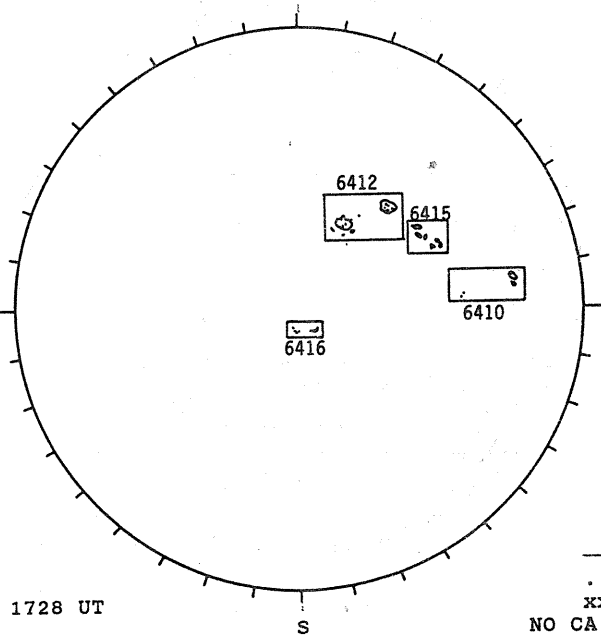
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



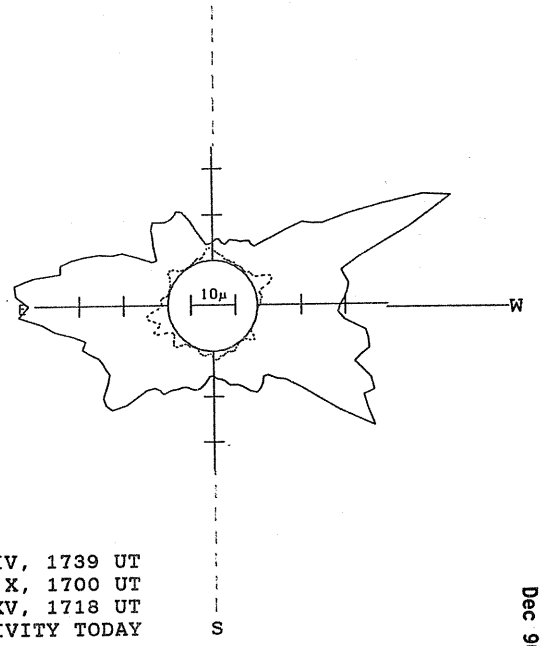
1530 UT

BOULDER SUNSPOT



1728 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

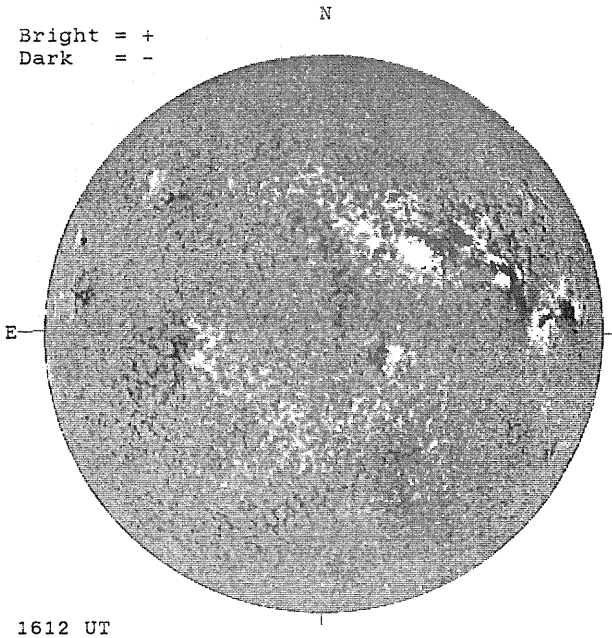


—— FeXIV, 1739 UT
.... Fe X, 1700 UT
xxxx Ca XV, 1718 UT
NO CA XV ACTIVITY TODAY

DECEMBER 19, 1990 (P= 8.48, B_o =-1.39, L_o = 3.71)

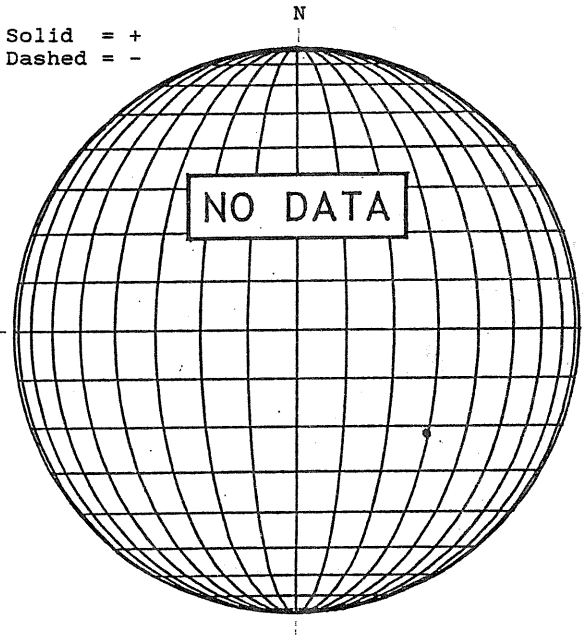
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



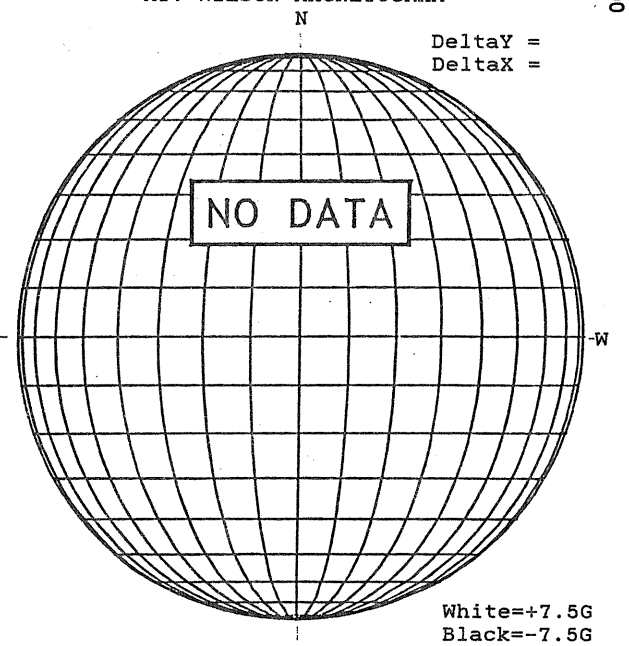
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



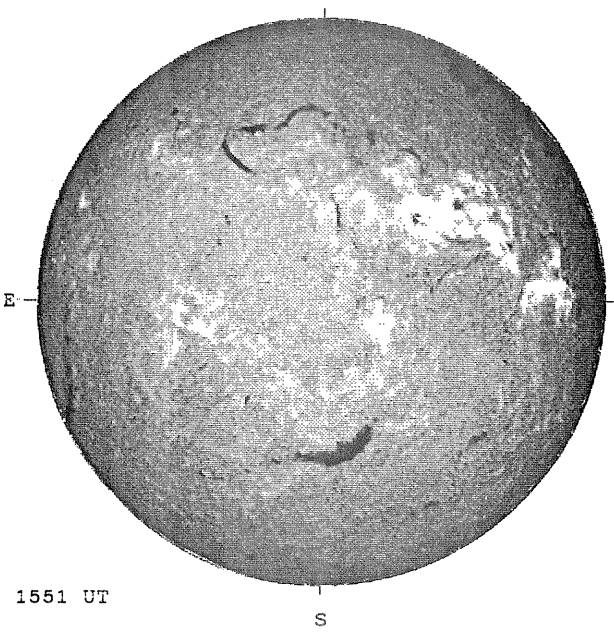
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

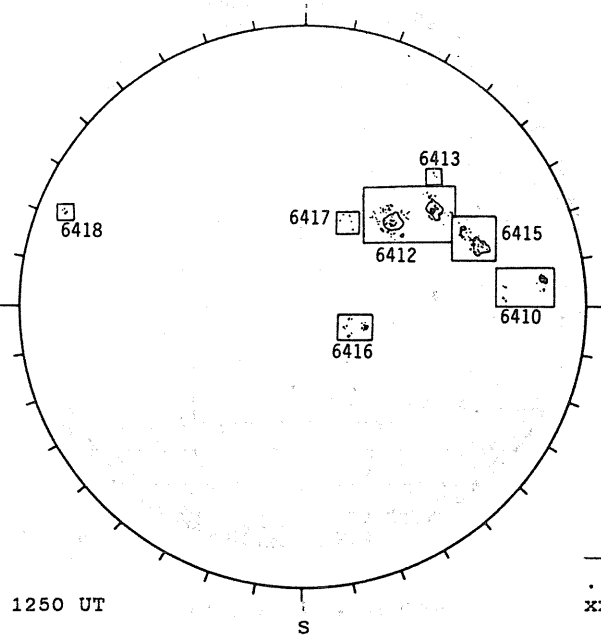


White=+7.5G
Black=-7.5G

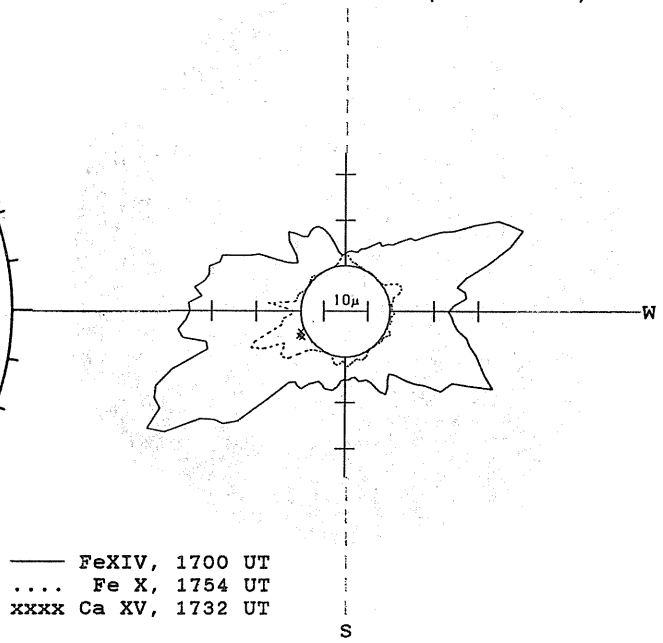
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

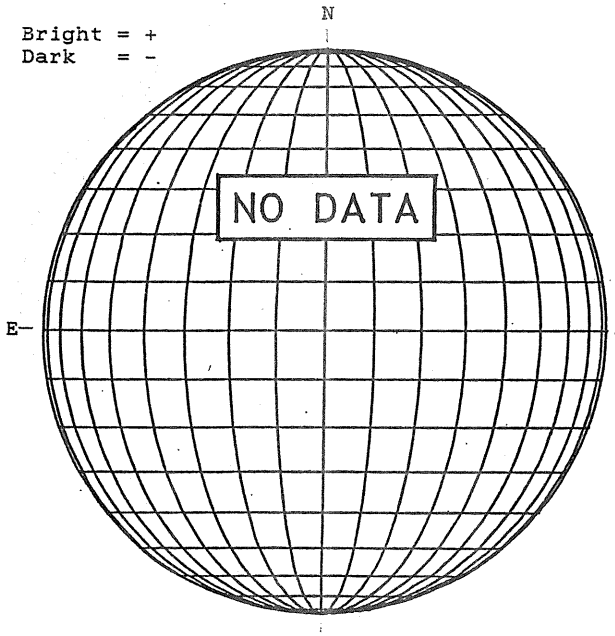


—— FeXIV, 1700 UT
.... Fe X, 1754 UT
xxxx Ca XV, 1732 UT

DECEMBER 20, 1990 (P= 8.01, B_o =-1.52, L_o = 350.54)

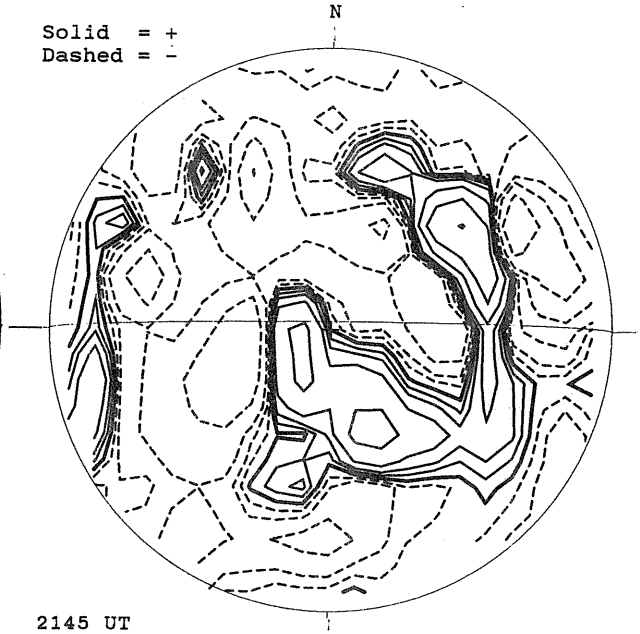
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

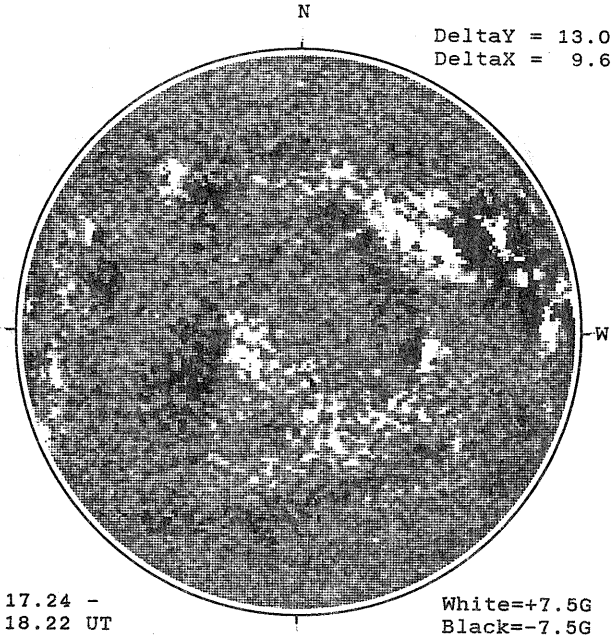
Solid = +
Dashed = -



2145 UT

MT. WILSON MAGNETOGRAM

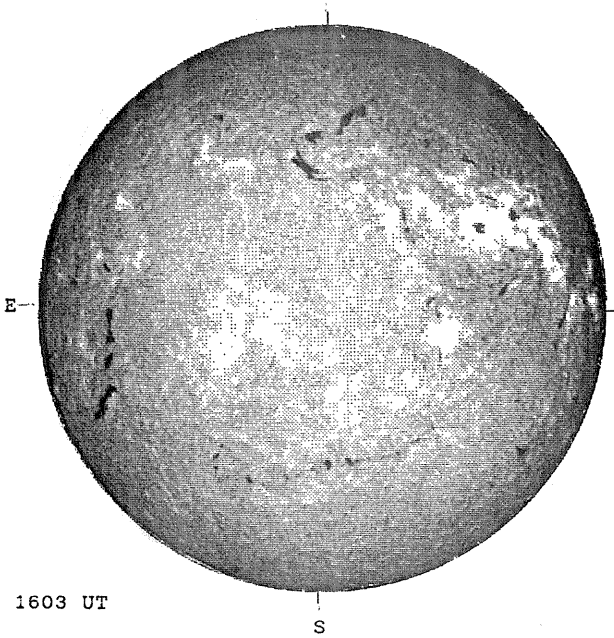
DeltaY = 13.0
DeltaX = 9.6



17.24 -
18.22 UT

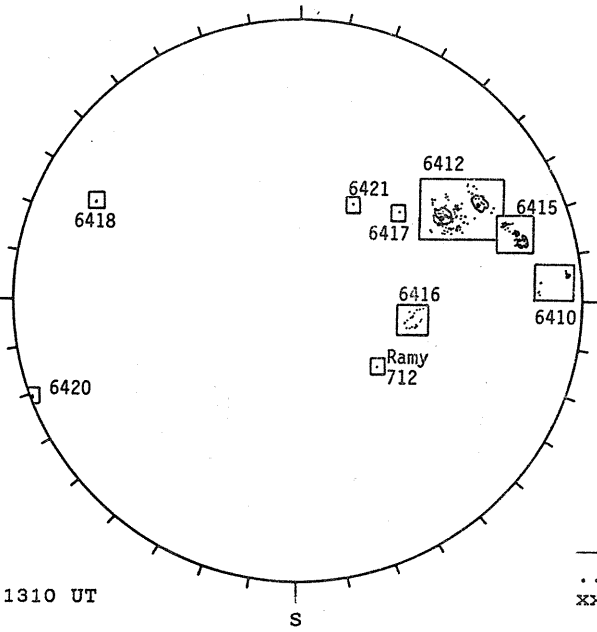
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



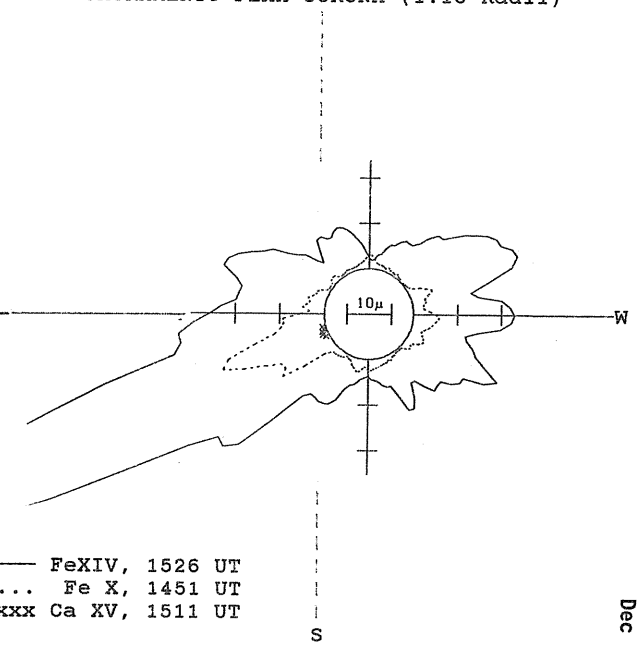
1603 UT

RAMEY SUNSPOT



1310 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

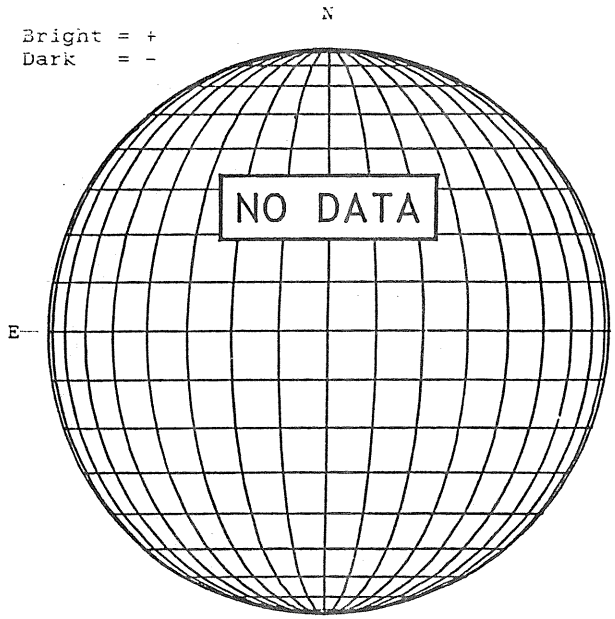


—— FeXIV, 1526 UT
.... Fe X, 1451 UT
xxxx Ca XV, 1511 UT

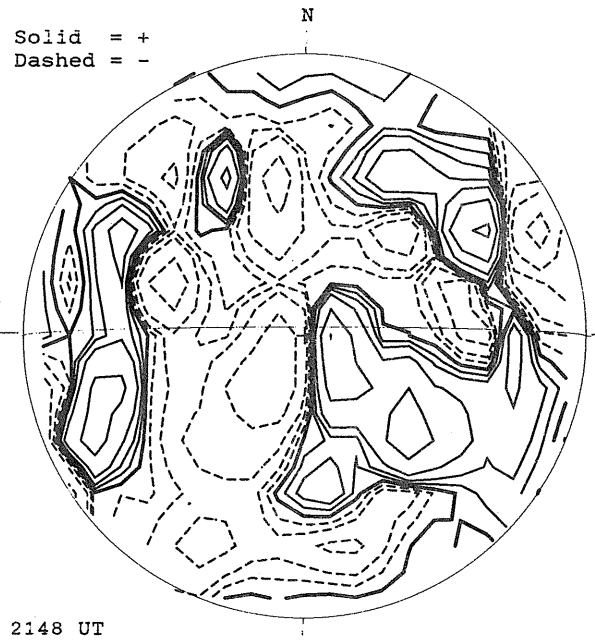
83
Dec 90

DECEMBER 21, 1990 (P= 7.54, B_o =-1.65, L_o = 337.37)

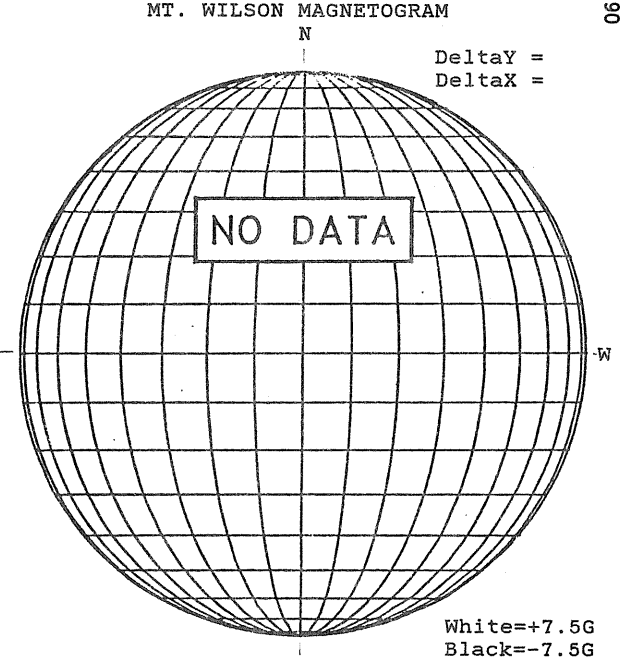
KITT PEAK MAGNETOGRAM



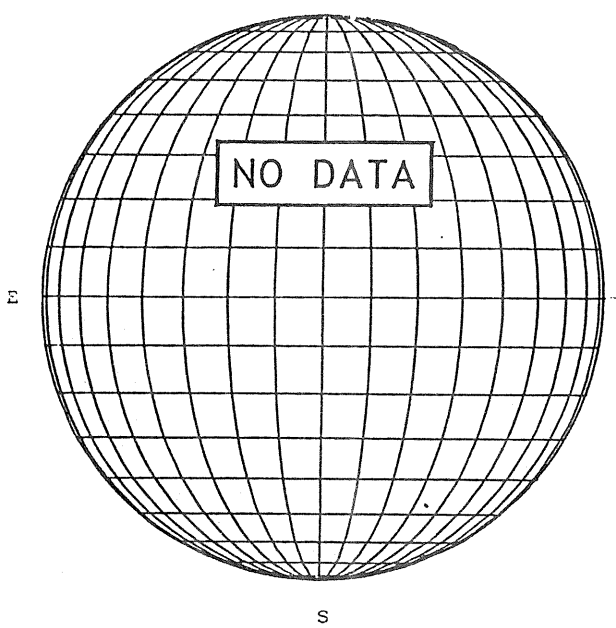
STANFORD MAGNETOGRAM



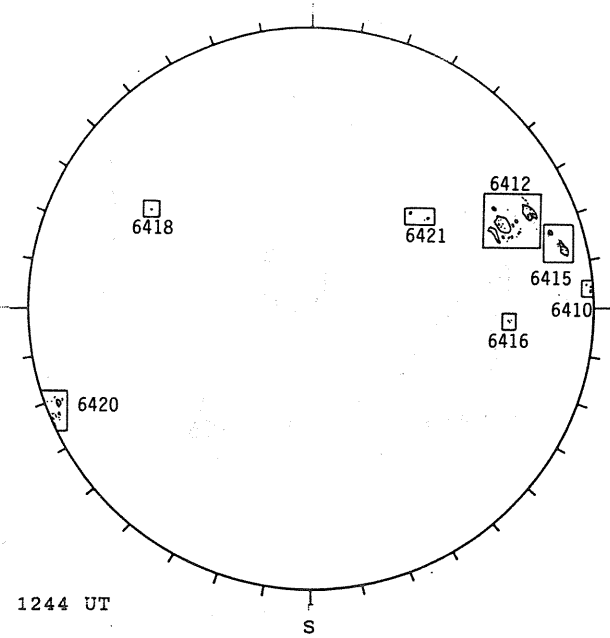
MT. WILSON MAGNETOGRAM



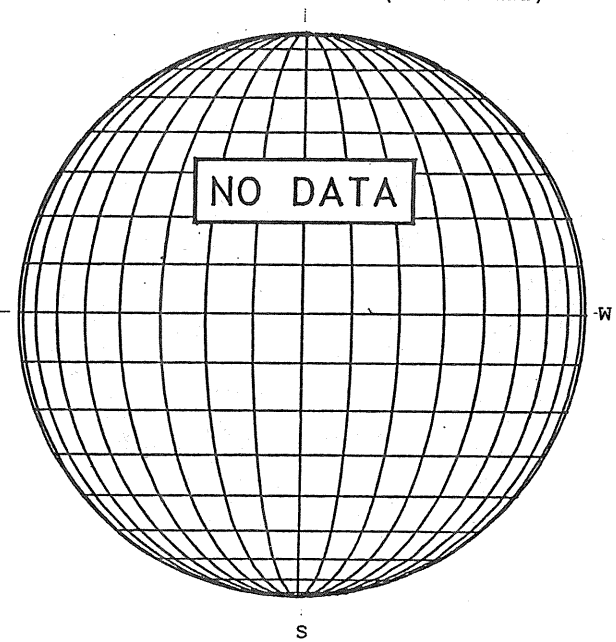
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT

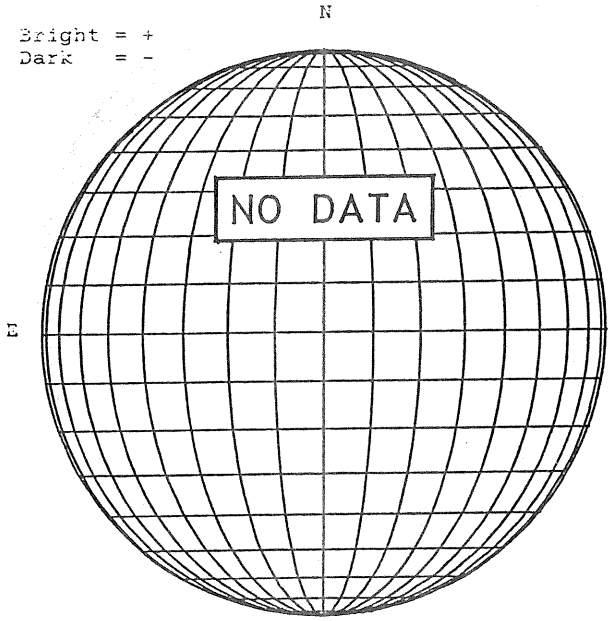


SACRAMENTO PEAK CORONA (1.15 Radii)

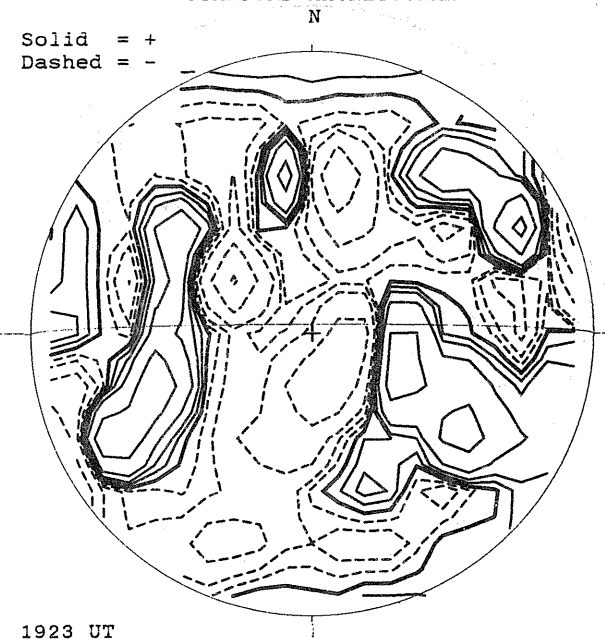


DECEMBER 22, 1990 (P= 7.07, B_o =-1.77, L_o = 324.19)

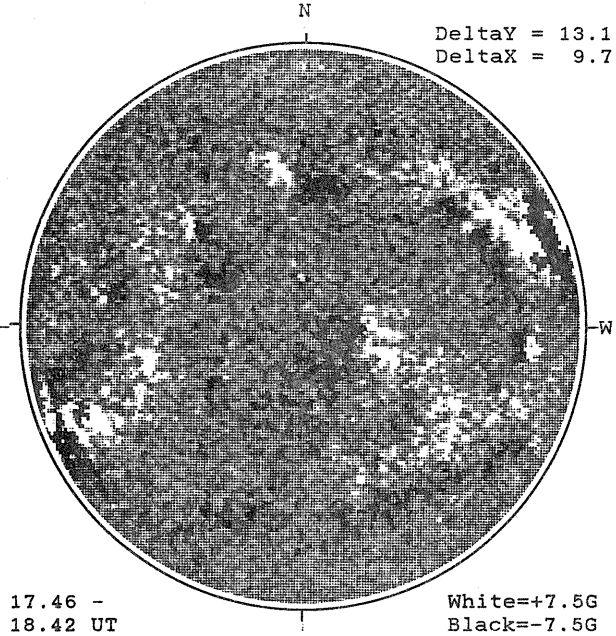
KITT PEAK MAGNETOGRAM



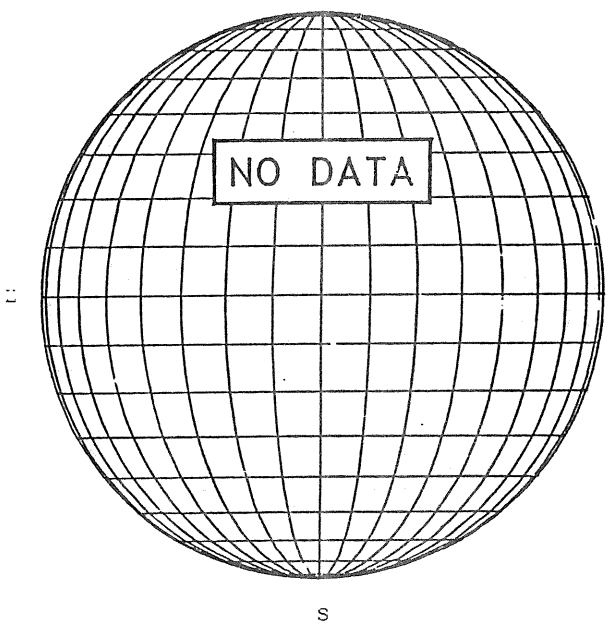
STANFORD MAGNETOGRAM



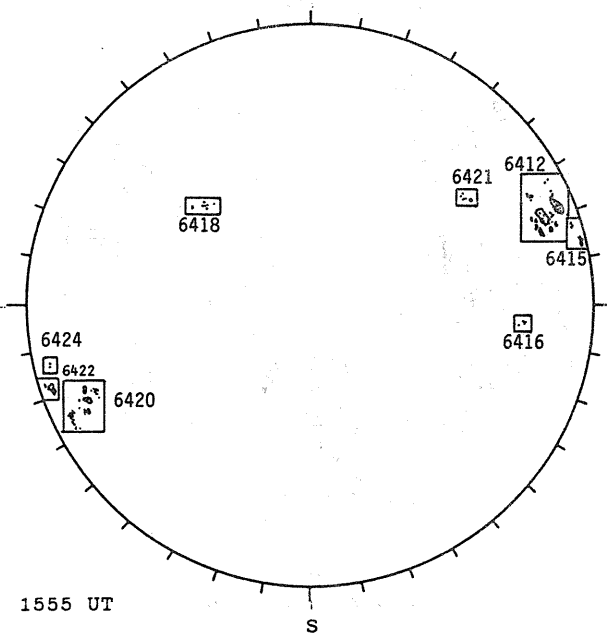
MT. WILSON MAGNETOGRAM



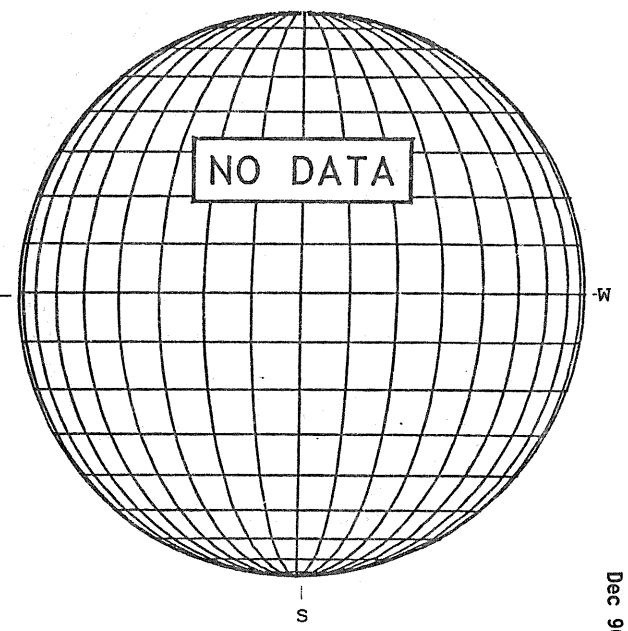
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



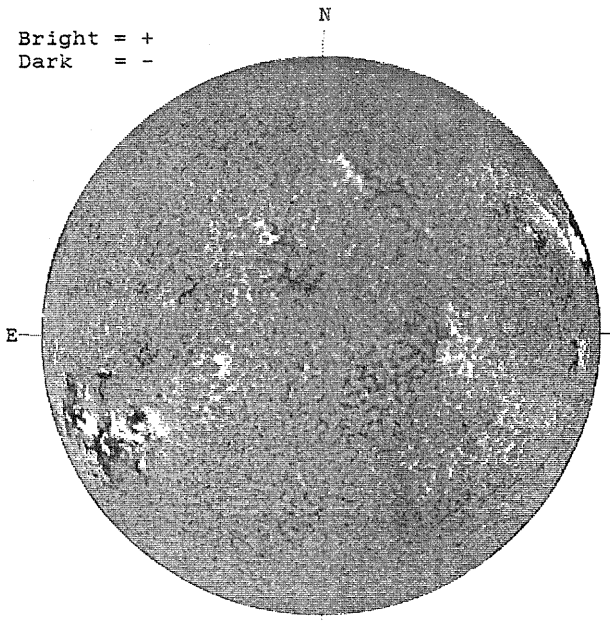
SACRAMENTO PEAK CORONA (1.15 Radii)



DECEMBER 23, 1990 (P= 6.60, B_o =-1.89, L_o = 311.02)

KITT PEAK MAGNETOGRAM

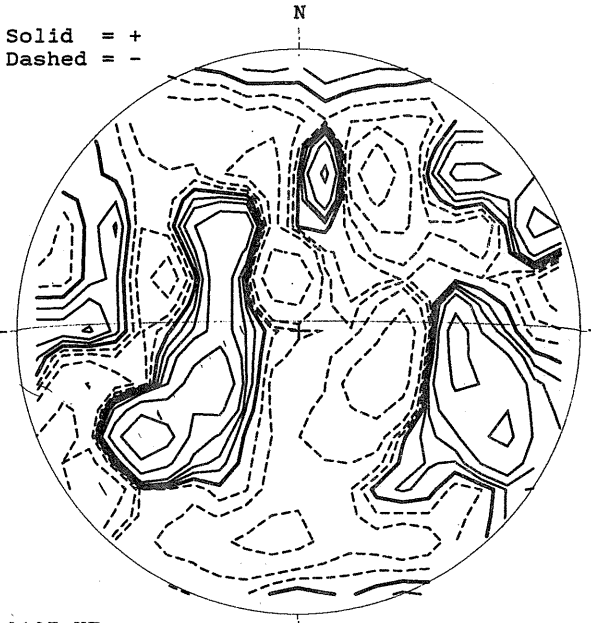
Bright = +
Dark = -



1627 UT

STANFORD MAGNETOGRAM

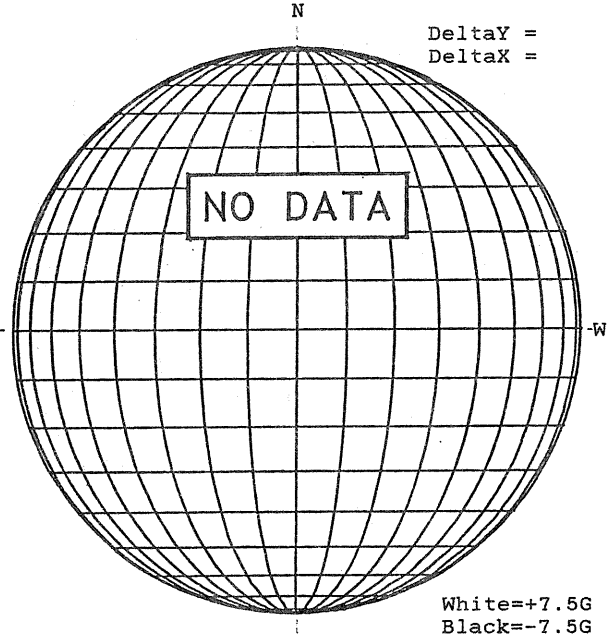
Solid = +
Dashed = -



2127 UT

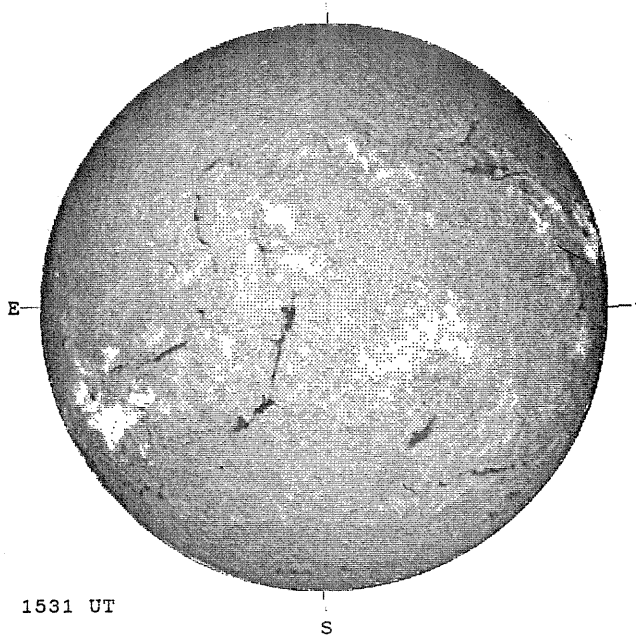
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



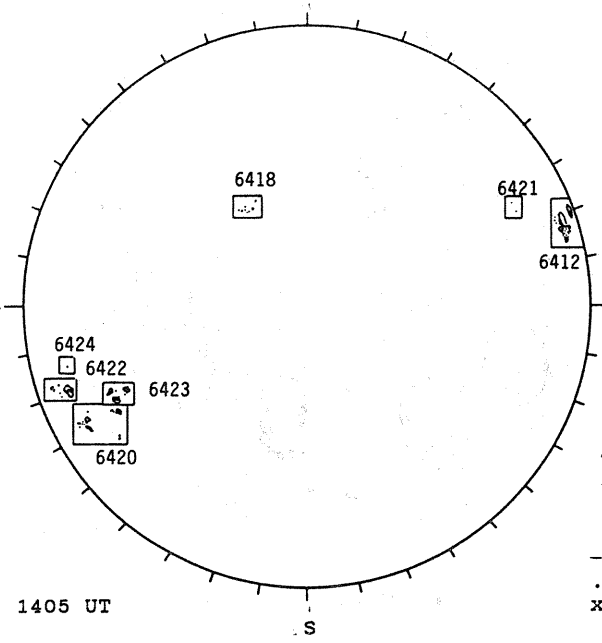
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



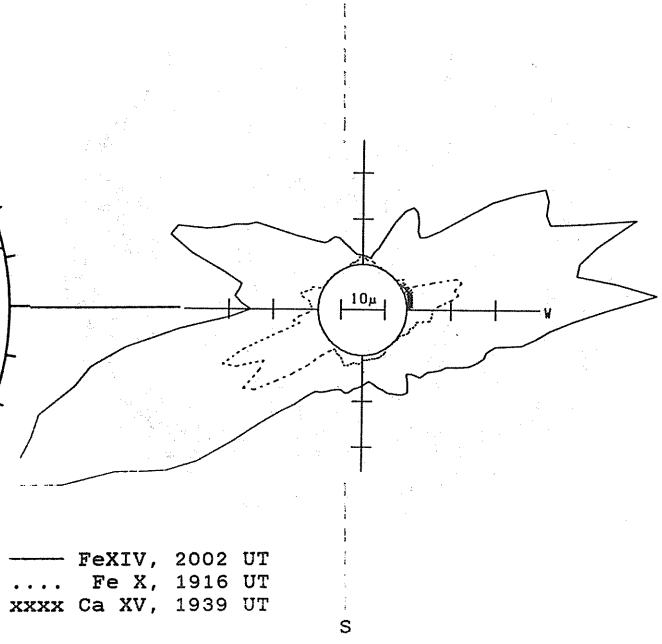
1531 UT

RAMEY SUNSPOT



1405 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

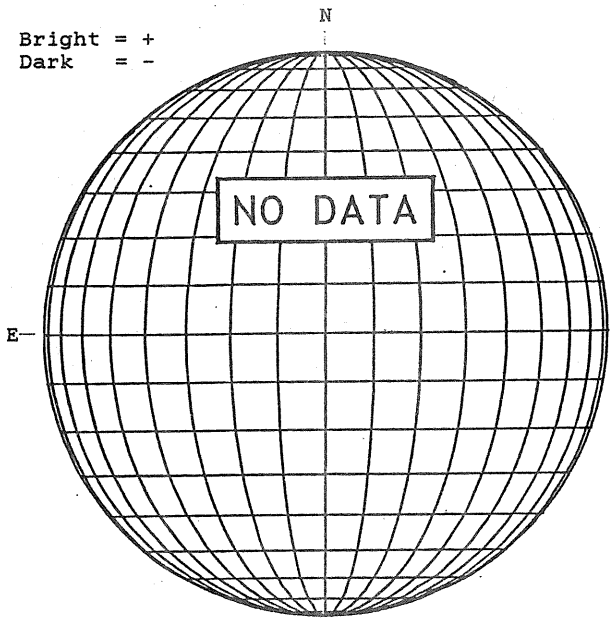


—— FeXIV, 2002 UT
.... Fe X, 1916 UT
xxxx Ca XV, 1939 UT

DECEMBER 24, 1990 (P= 6.12 B_o =-2.02, L_o = 297.85)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



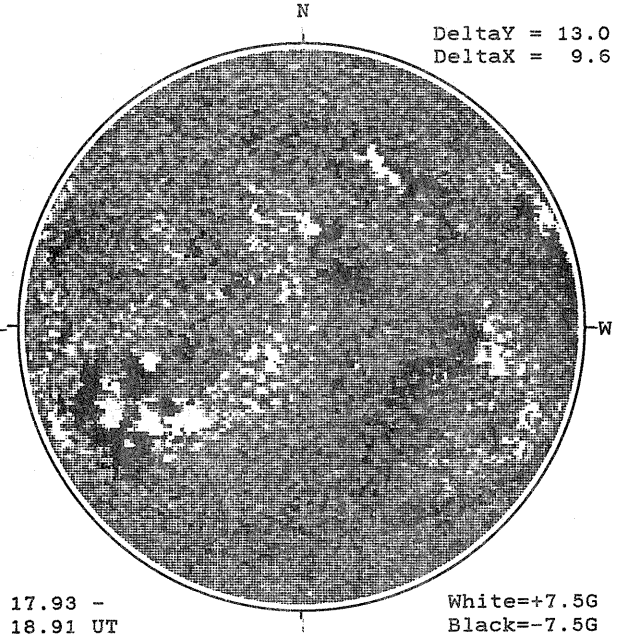
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2145 UT

MT. WILSON MAGNETOGRAM

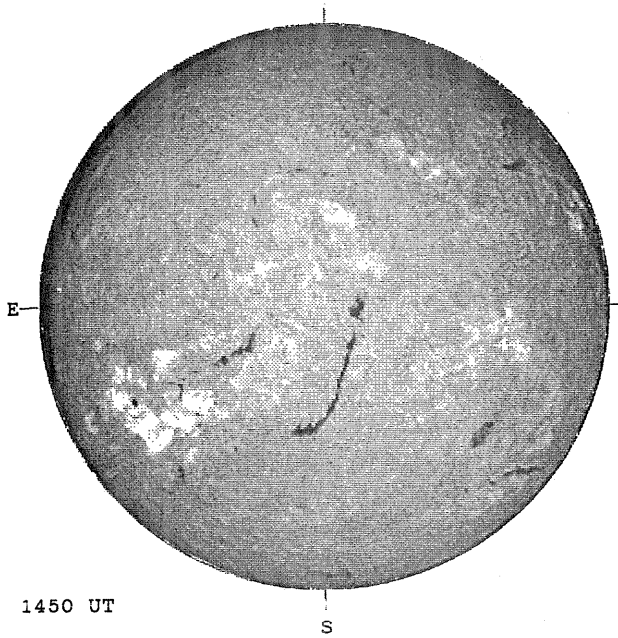
DeltaY = 13.0
DeltaX = 9.6



17.93 -
18.91 UT

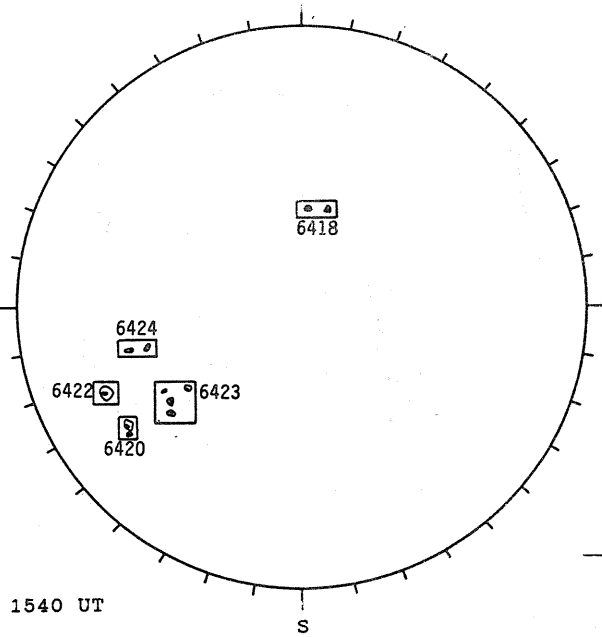
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



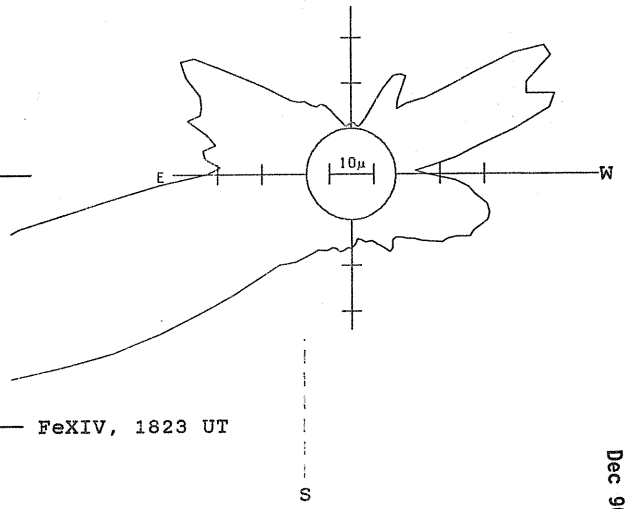
1450 UT

BOULDER SUNSPOT



1540 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

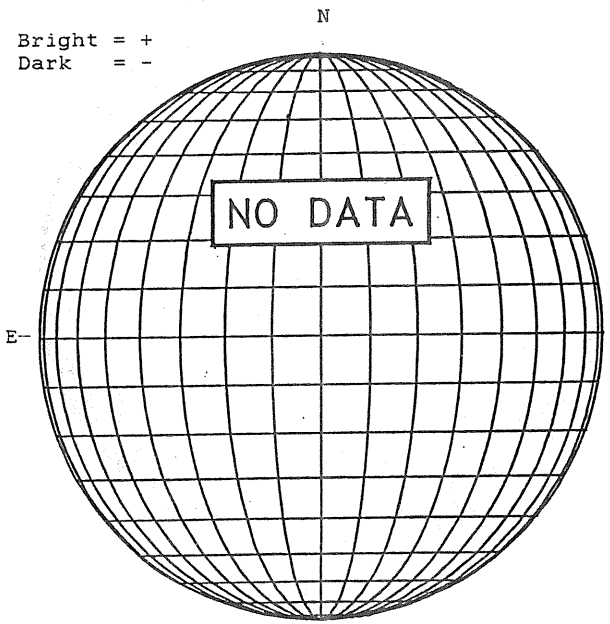


—— FeXIV, 1823 UT

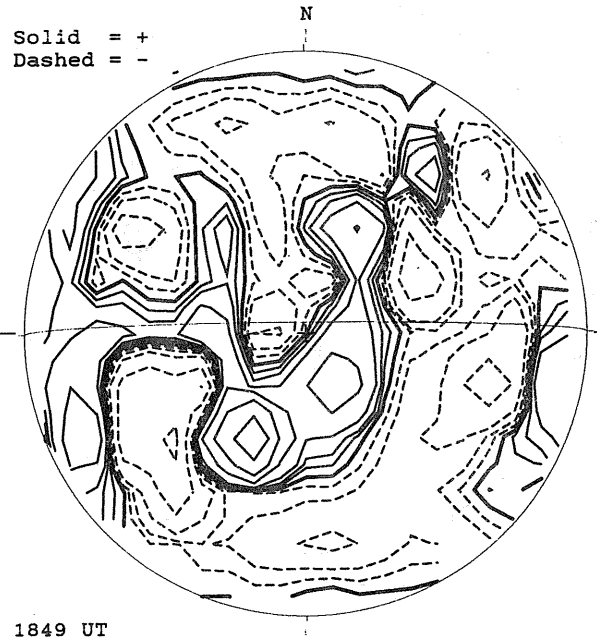
87
Dec 90

DECEMBER 25, 1990 (P= 5.64, B_o =-2.14, L_o = 284.68)

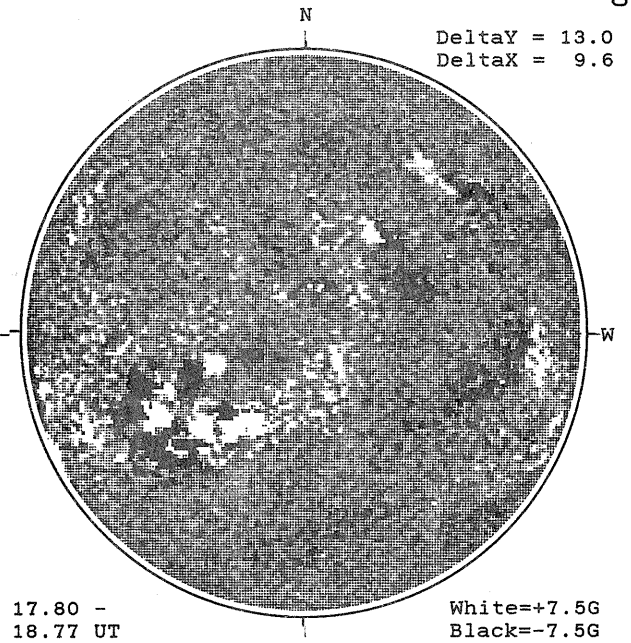
KITT PEAK MAGNETOGRAM



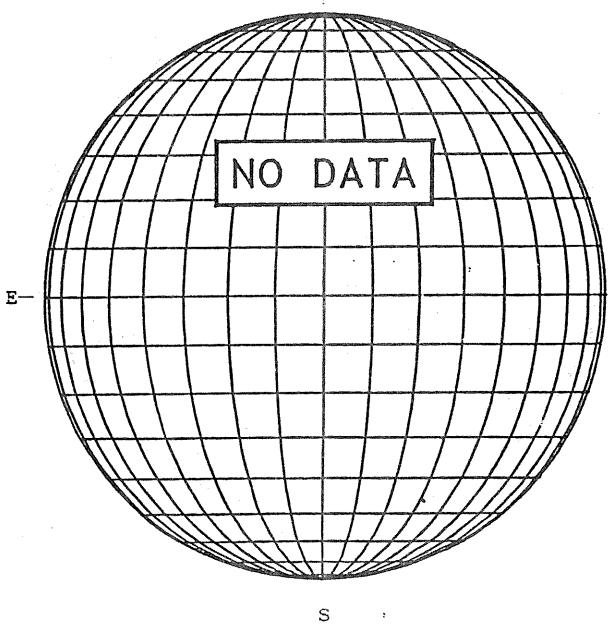
STANFORD MAGNETOGRAM



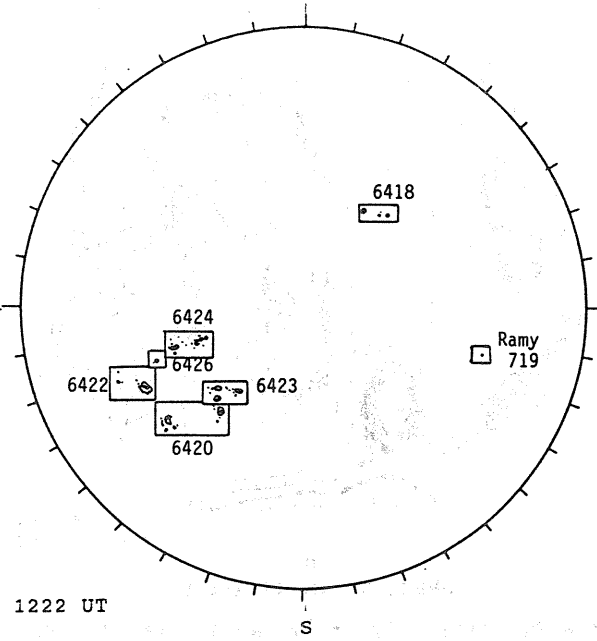
MT. WILSON MAGNETOGRAM,



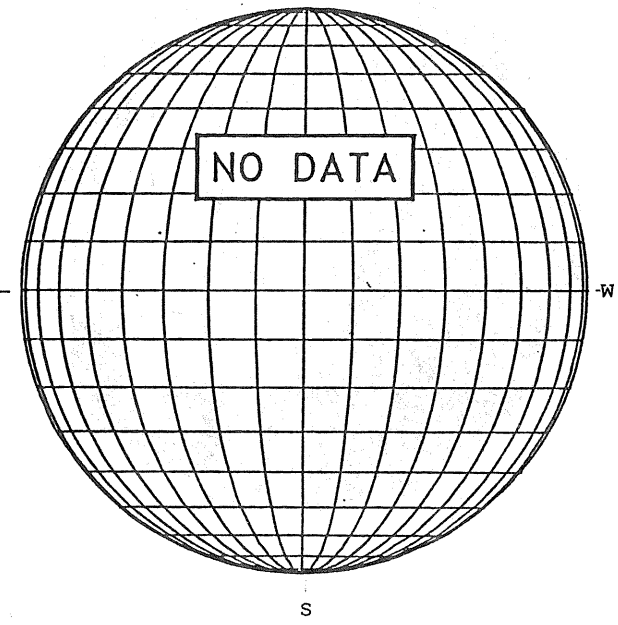
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT

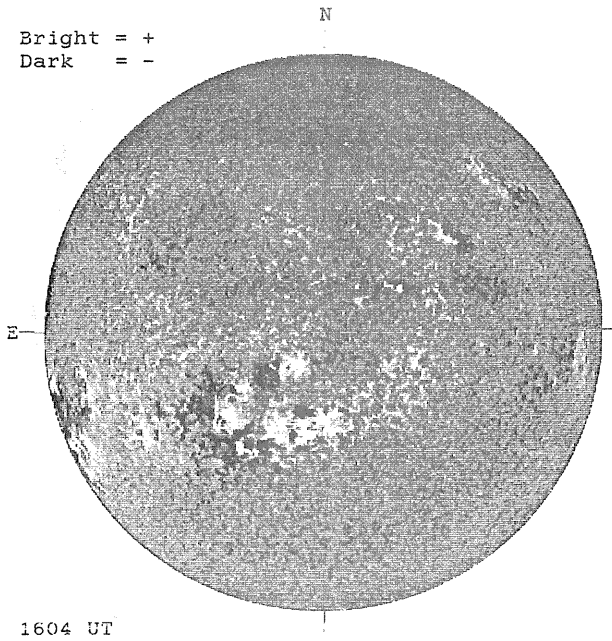


SACRAMENTO PEAK CORONA (1.15 Radii)

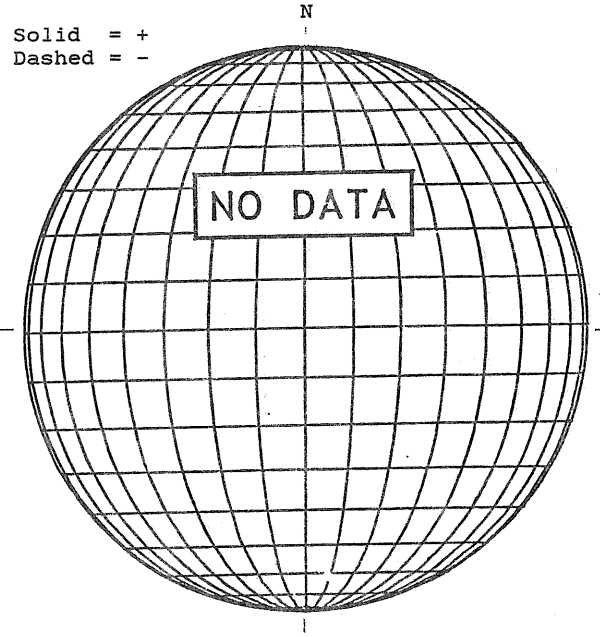


DECEMBER 26, 1990 (P= 5.16, B_o =-2.26, L_o = 271.50)

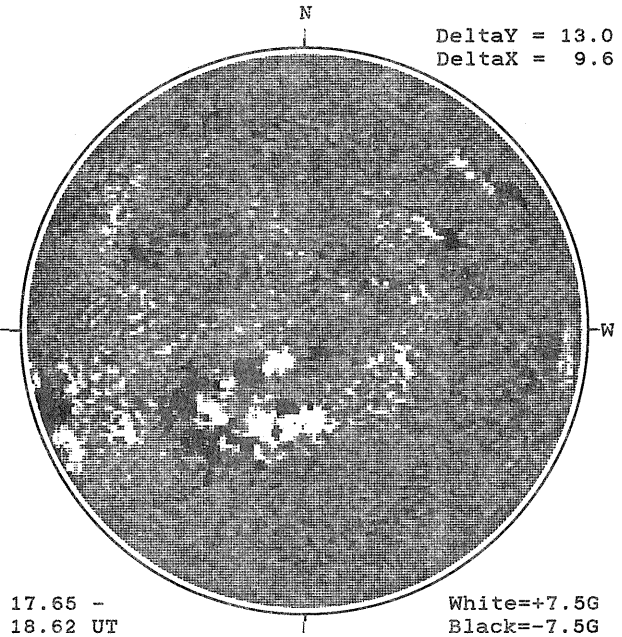
KITT PEAK MAGNETOGRAM



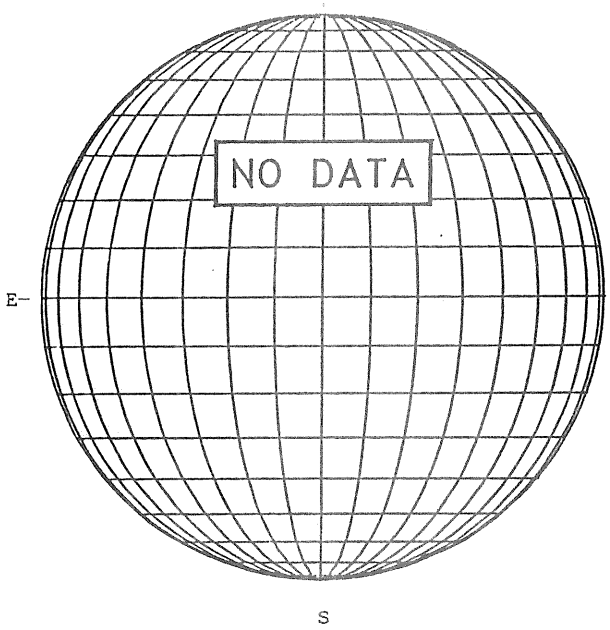
STANFORD MAGNETOGRAM



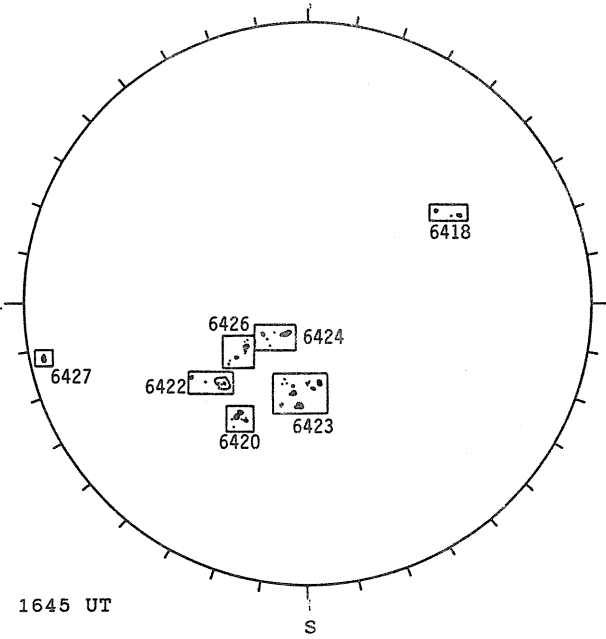
MT. WILSON MAGNETOGRAM



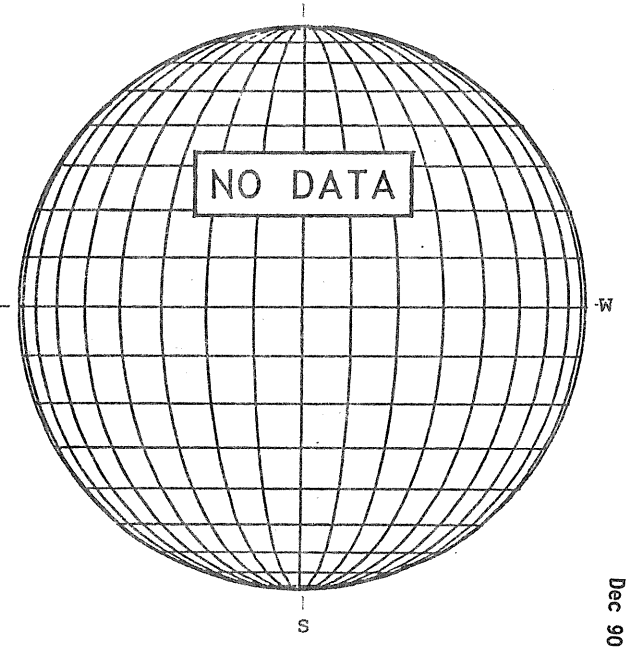
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

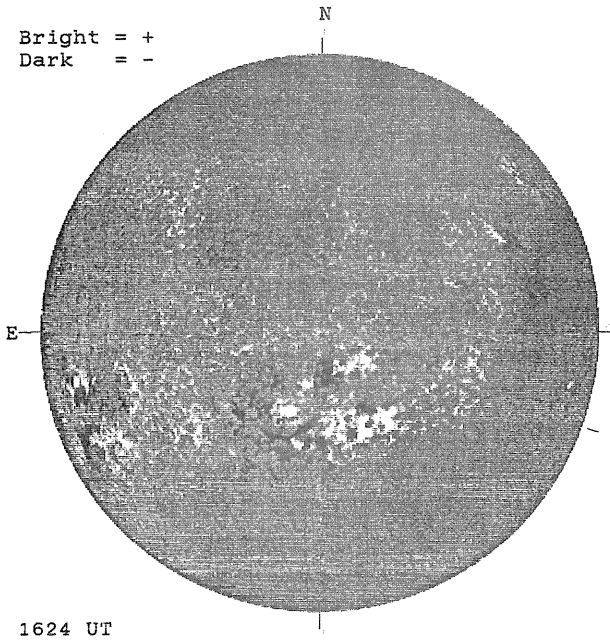


89
Dec 90

DECEMBER 27, 1990 (P= 4.68, B_o =-2.39, L_o = 258.33)

KITT PEAK MAGNETOGRAM

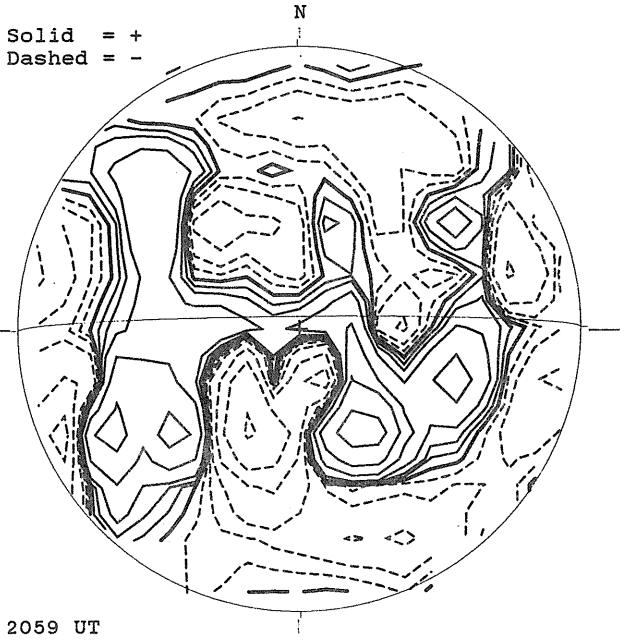
Bright = +
Dark = -



1624 UT

STANFORD MAGNETOGRAM

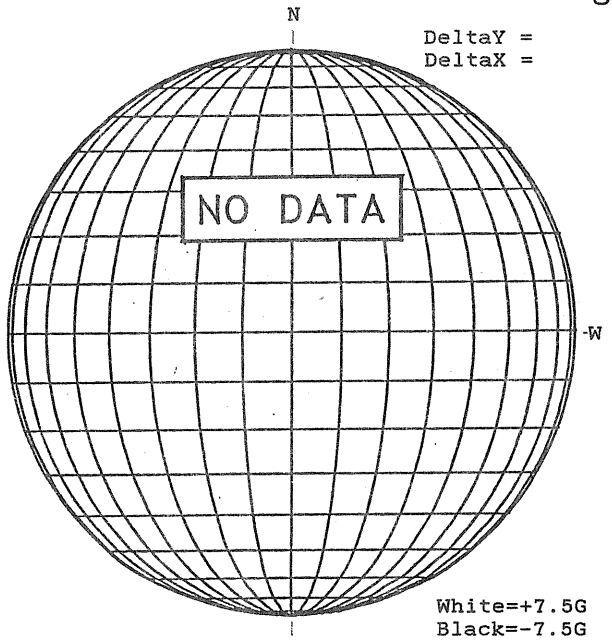
Solid = +
Dashed = -



2059 UT

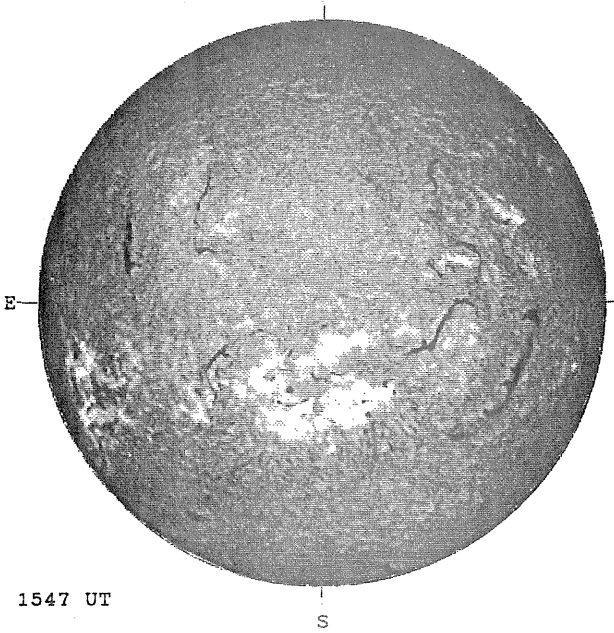
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



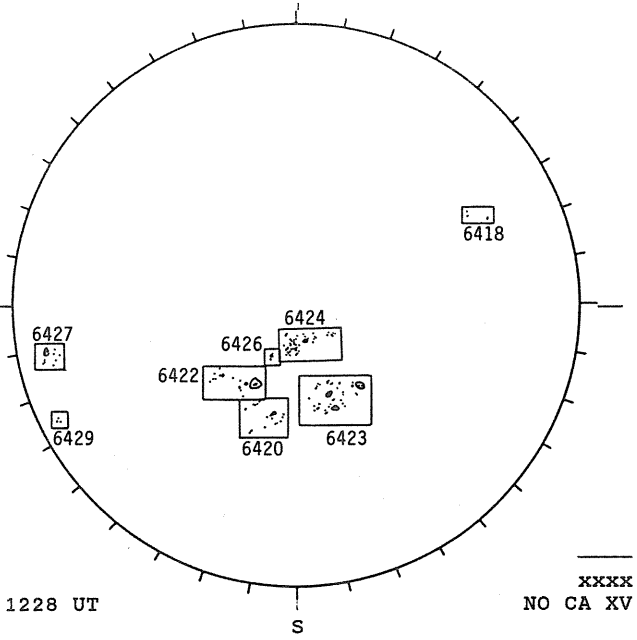
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



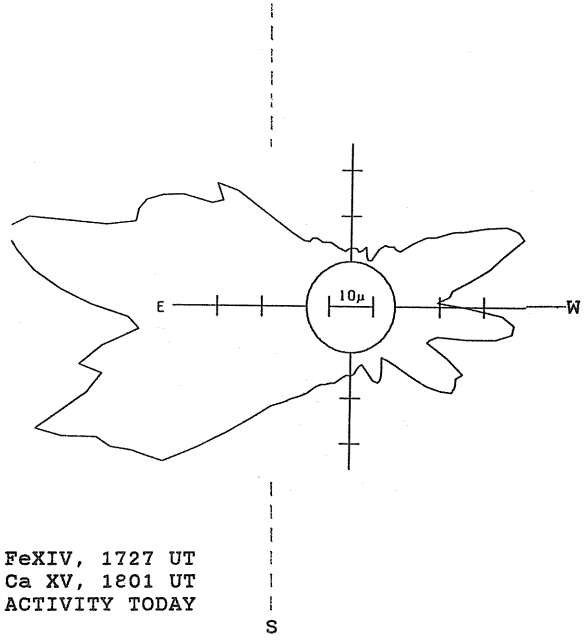
1547 UT

RAMEY SUNSPOT



1228 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

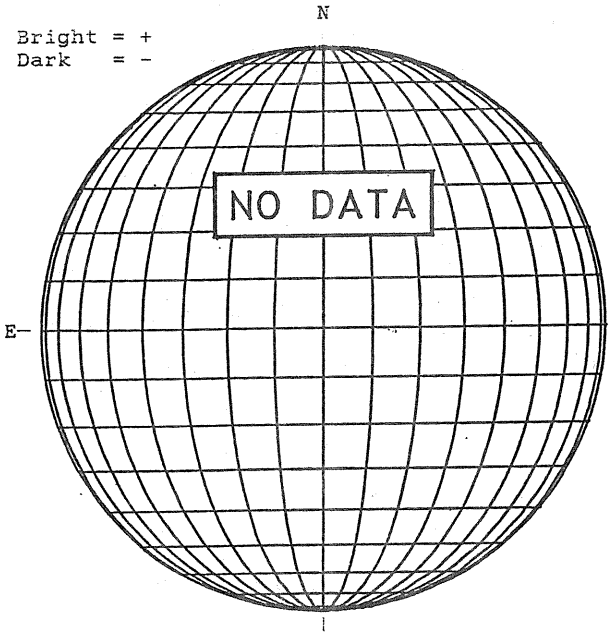


—— FeXIV, 1727 UT
xxxx Ca XV, 1201 UT
NO CA XV ACTIVITY TODAY

DECEMBER 28, 1990 (P= 4.20 B_o =-2.51, L_o = 245.16)

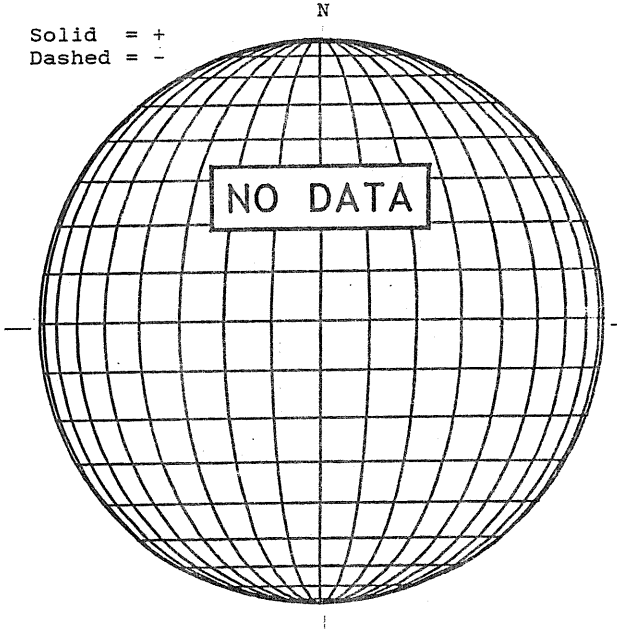
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



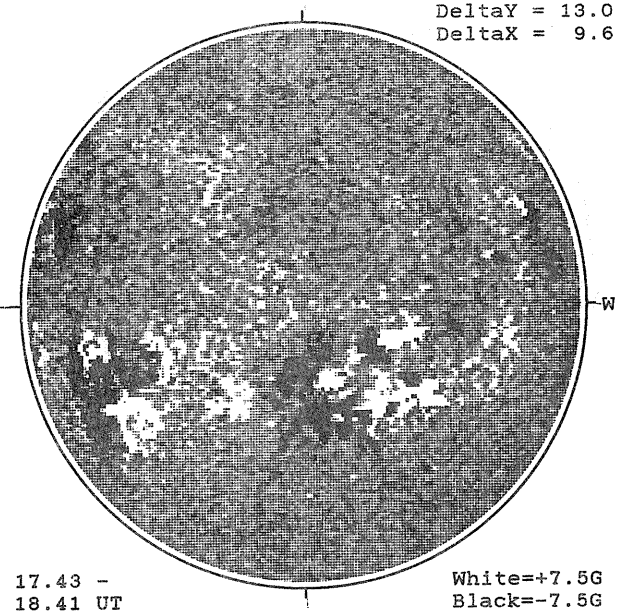
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

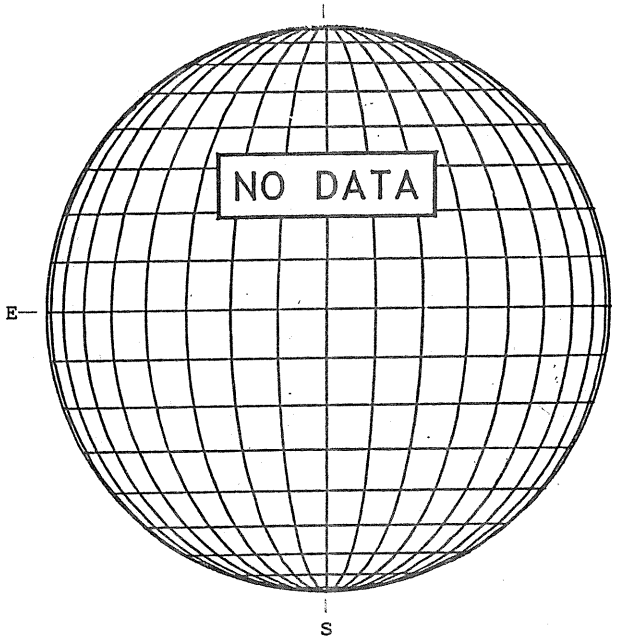
DeltaY = 13.0
DeltaX = 9.6



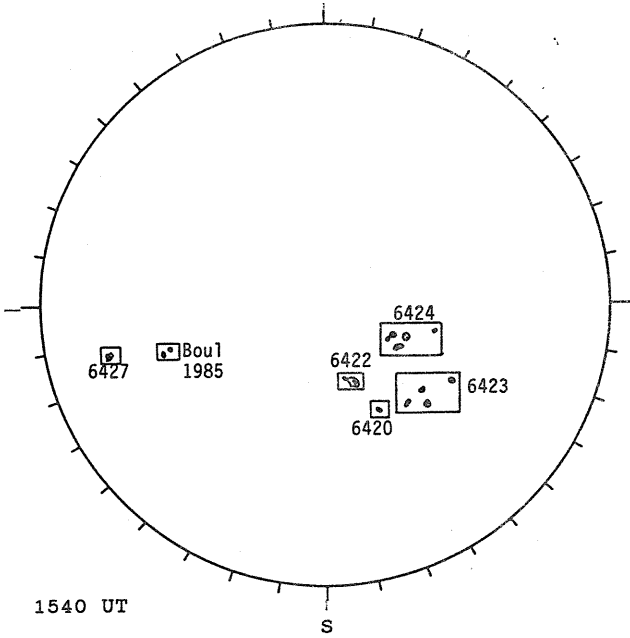
17.43 -
18.41 UT

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

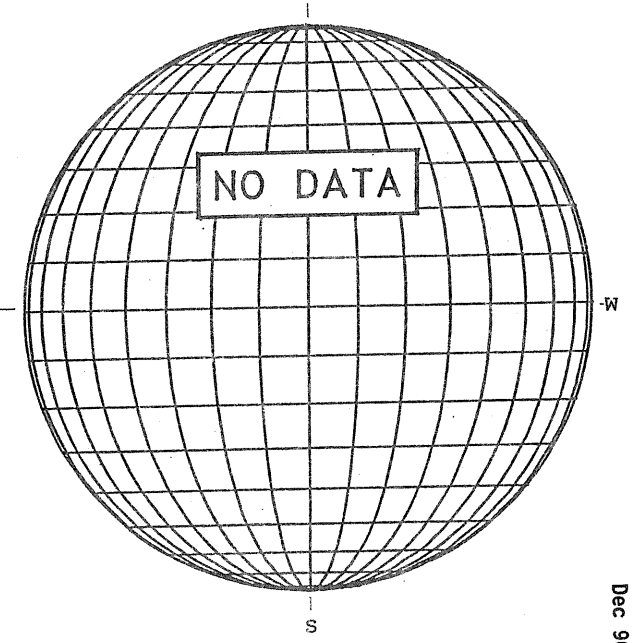


BOULDER SUNSPOT



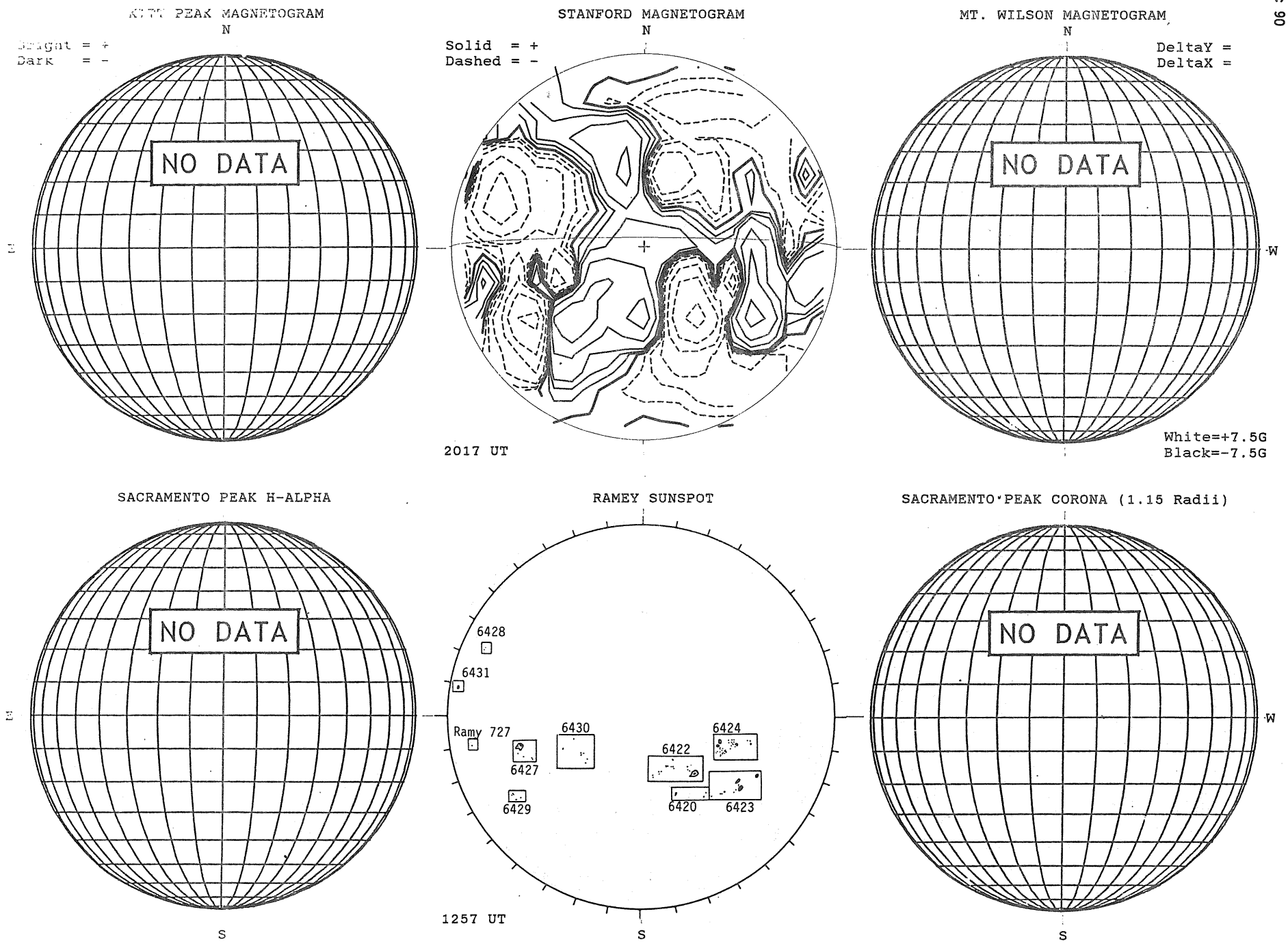
1540 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



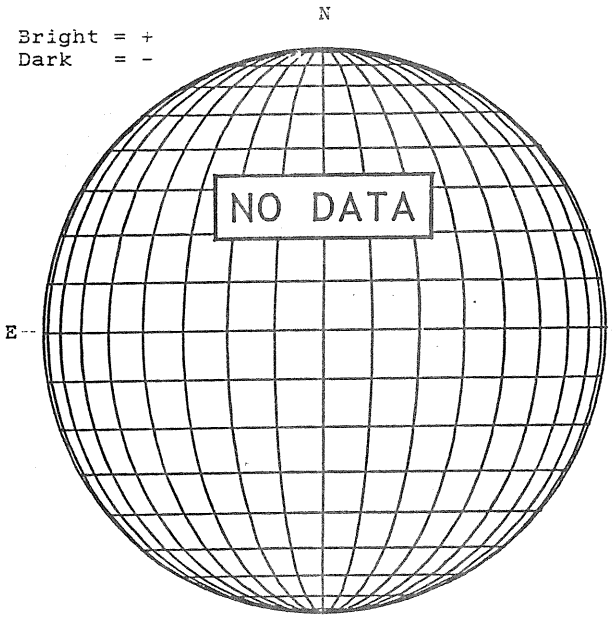
91
Dec 90

DECEMBER 29, 1990 (P= 3.72, B_o =-2.63, L_o = 231.99)

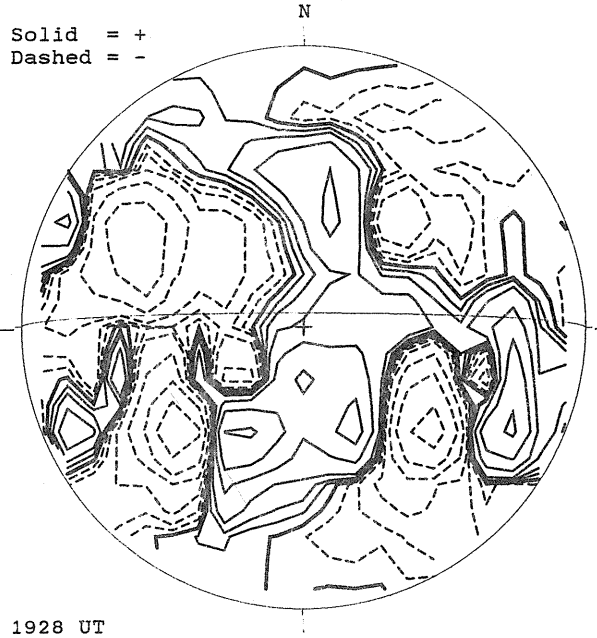


DECEMBER 30, 1990 (P= 3.23, B_o =-2.75, L_o = 218.82)

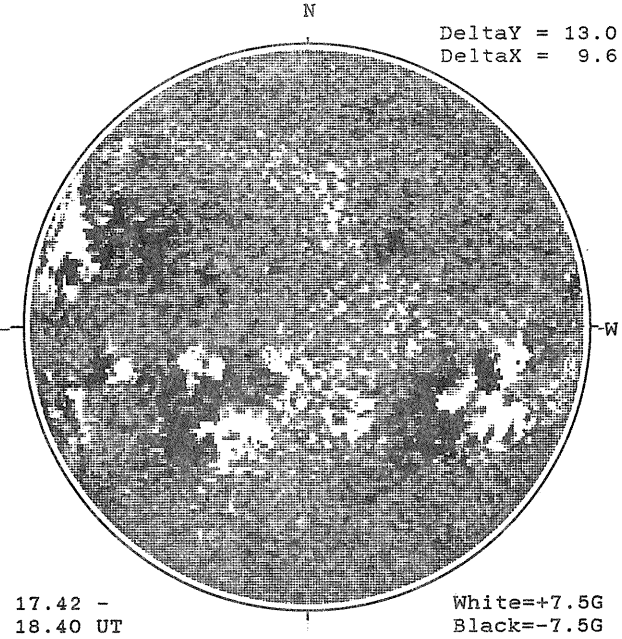
KITT PEAK MAGNETOGRAM



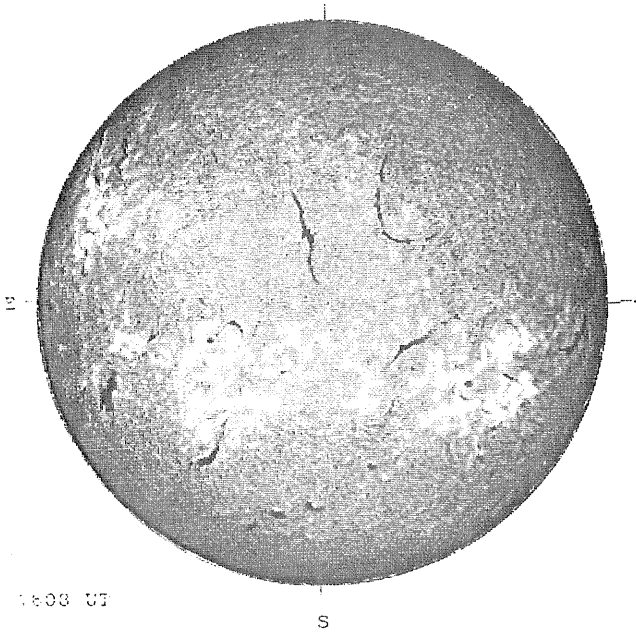
STANFORD MAGNETOGRAM



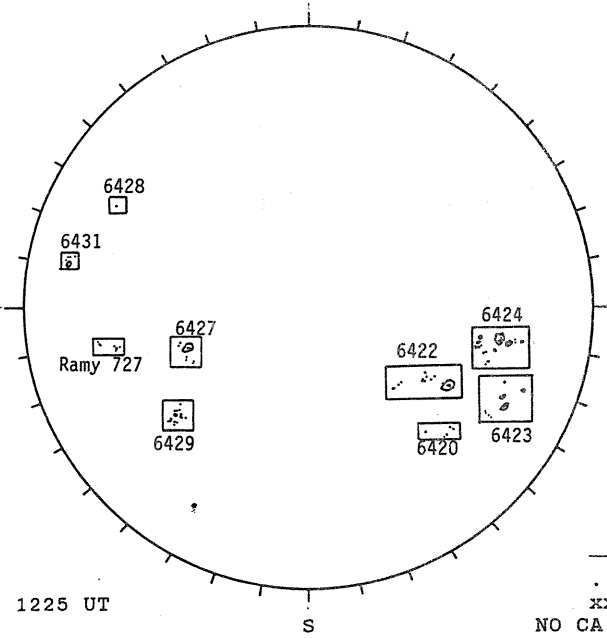
MT. WILSON MAGNETOGRAM



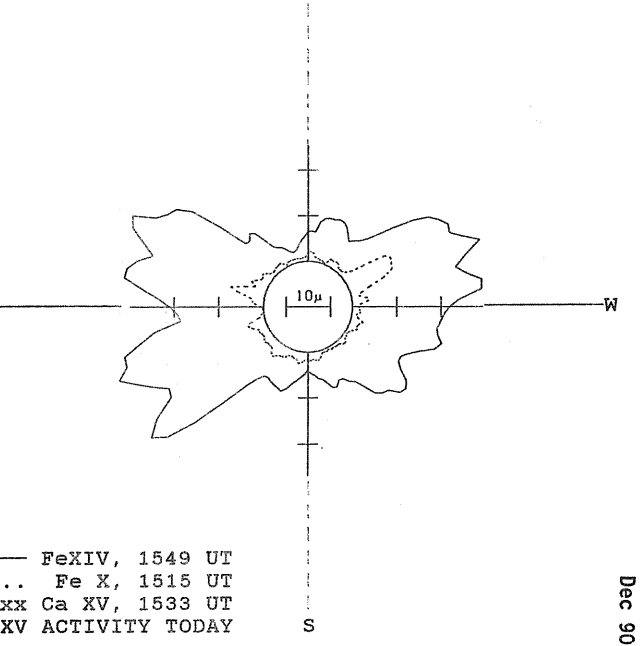
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



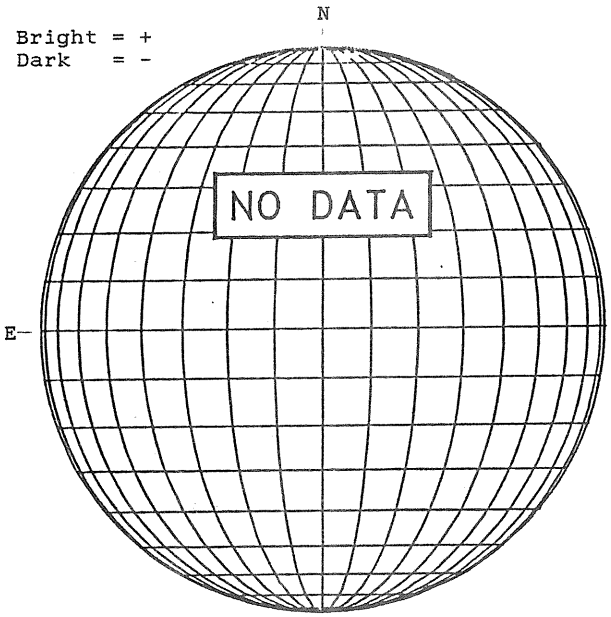
—— FeXIV, 1549 UT
.... Fe X, 1515 UT
xxxx Ca XV, 1533 UT
NO CA XV ACTIVITY TODAY

93
Dec 90

DECEMBER 31, 1990 (P= 2.75, B_o =-2.86, L_o = 205.64)

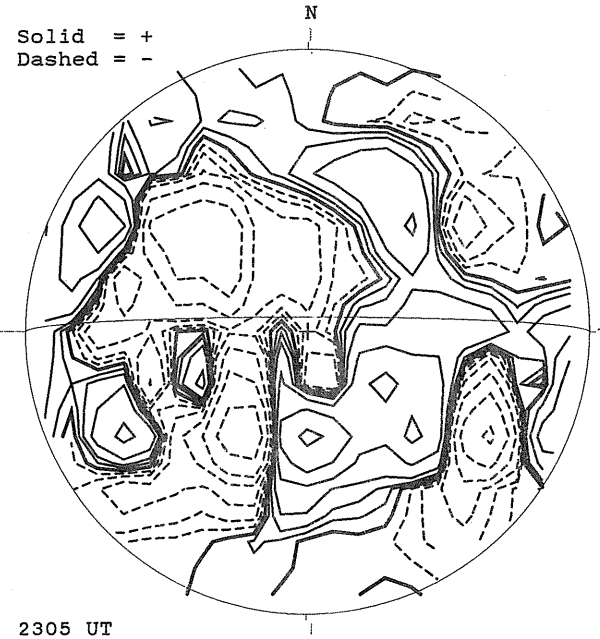
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

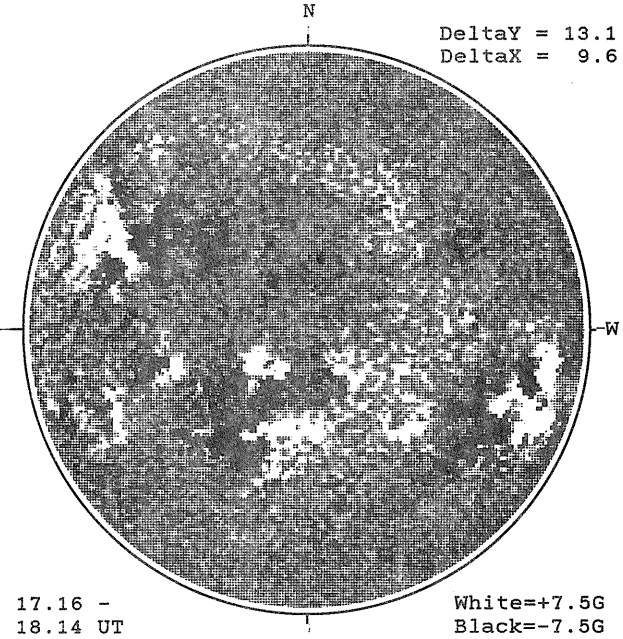
Solid = +
Dashed = -



2305 UT

MT. WILSON MAGNETOGRAM

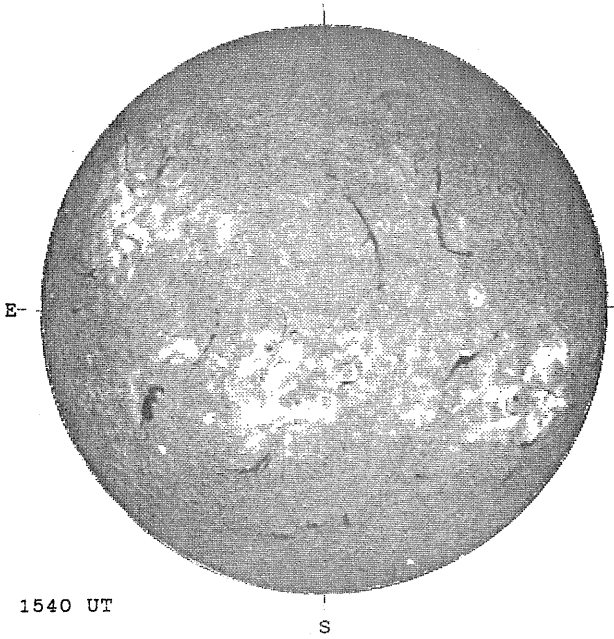
DeltaY = 13.1
DeltaX = 9.6



17.16 -
18.14 UT

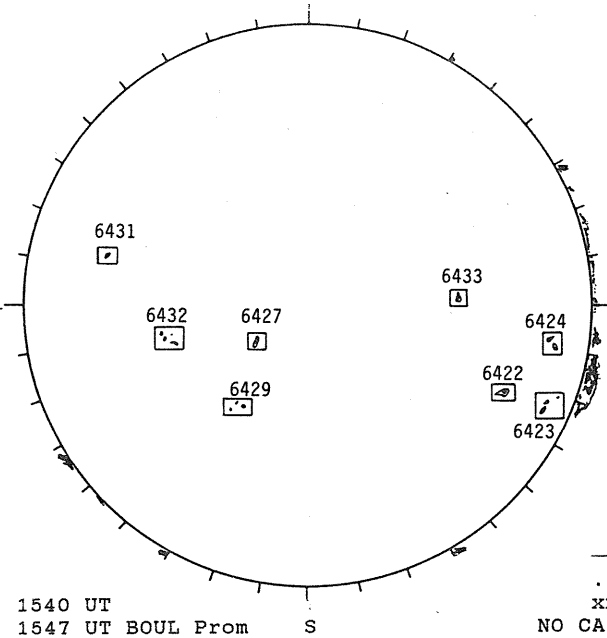
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



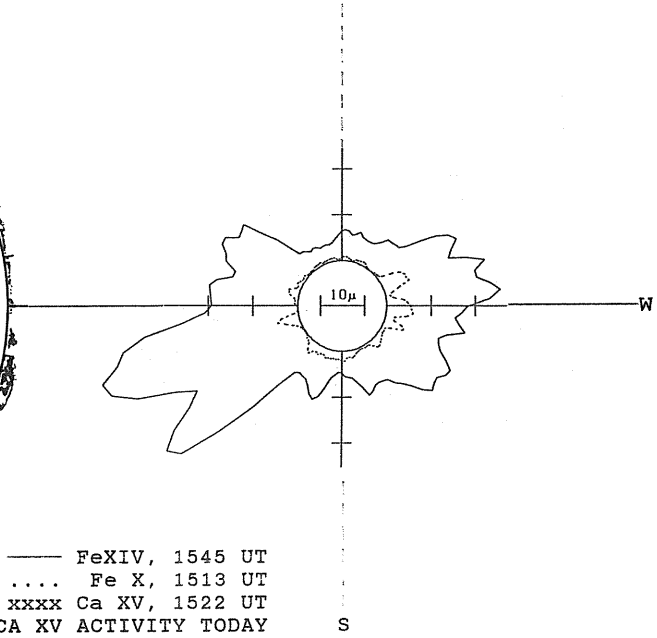
1540 UT

BOULDER SUNSPOT



1540 UT
1547 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1545 UT
.... Fe X, 1513 UT
xxxx Ca XV, 1522 UT
NO CA XV ACTIVITY TODAY

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

DECEMBER 1990

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
6388		SVTO	11	28	1040	S09	E39	12	1.4		A	AX		4	2	4
6388		RAMY	11	28	1226	S10	E38	12	1.4		B	BXO	10	6	5	2
6388	26437	MWIL	11	28	1545	S07	E34	12	1.2	4	(BG)					
6388		HOLL	11	28	1700	S07	E33	12	1.2		B	CRO	30	10	4	3
6388		BOUL	11	28	1815	S08	E34	12	1.3		B	CAO	40	4	2	2
6388		LEAR	11	29	0040	S07	E30	12	1.3		B	CAO	40	13	3	3
6388		CULG	11	29	0135	S07	E30	12	1.3		B	BXO	10	10	4	2
6388		SVTO	11	29	0810	S07	E26	12	1.3		B	BXO	30	17	4	4
6388		RAMY	11	29	1315	S08	E23	12	1.3		B	CRO	40	24	4	3
6388	26437	MWIL	11	29	1540	S07	E20	12	1.1	4	(BG)					
6388		HOLL	11	29	1540	S07	E21	12	1.2		B	CSO	40	18	4	3
6388		LEAR	11	30	0019	S07	E17	12	1.3		B	CSO	100	15	5	2
6388		RAMY	11	30	1318	S07	E09	12	1.2		B	BXO	10	11	4	3
6388		BOUL	11	30	1555	S06	E07	12	1.2		B	DSO	20	4	3	1
6388		HOLL	11	30	1700	S07	E07	12	1.2		B	CSO	40	10	4	3
6388		PALE	11	30	1830	S07	E06	12	1.2		B	BXO	20	9	5	3
6388	26437	MWIL	11	30	1900	S07	E06	12	1.2	4	(BG)					
6388		LEAR	12	01	0114	S07	E04	12	1.3		B	DSO	30	4	4	2
6388		SVTO	12	01	1222	S06	W05	12	1.1		B	CRO	20	7	4	3
6388		RAMY	12	01	1407	S06	W05	12	1.2		B	CRO	10	6	4	3
6388	26437	MWIL	12	01	1600	S07	W07	12	1.1	4	(B)					
6388		PALE	12	01	1820	S07	W08	12	1.2		B	BXO	10	2	4	3
6388		HOLL	12	01	1955	S07	W09	12	1.1		B	BXO		2	3	2
6388		LEAR	12	02	0014	S07	W12	12	1.1		A	AX	10	1	1	3
6388		CULG	12	02	0120	S07	W16	11	30.8		A	AX		1		2
6382		SVTO	11	25	0835	S21	E82	12	1.6		A	HA	90	1	1	2
6382		RAMY	11	25	1336	S21	E80	12	1.7		A	HA	70	1	2	3
6382	26431	MWIL	11	25	1530	S20	E78	12	1.6	4	AP					
6382		BOUL	11	25	1540	S21	E78	12	1.6		A	AX	60	1	3	2
6382		PALE	11	25	1950	S22	E74	12	1.5		A	HA	90	1	1	3
6382		LEAR	11	26	0210	S21	E70	12	1.4		A	HS	60	1	1	1
6382		SVTO	11	26	1139	S21	E69	12	1.8		A	HA	100	1	1	2
6382		RAMY	11	26	1338	S21	E65	12	1.5		A	HA	100	1	2	2
6382	26431	MWIL	11	26	1815	S21	E63	12	1.6	4	(AP)					
6382		PALE	11	26	1925	S21	E62	12	1.6		A	HS	90	1	1	3
6382		HOLL	11	26	2115	S21	E60	12	1.5		A	HS	60	1	2	1
6382		LEAR	11	27	0028	S22	E59	12	1.5		A	HS	40	1	1	2
6382		SVTO	11	27	1110	S21	E55	12	1.7		A	HA	140	1	2	3
6382	26431	MWIL	11	27	1545	S21	E52	12	1.6	5	(AP)					
6382		HOLL	11	27	1713	S21	E51	12	1.6		B	CSO	150	4	4	1
6382		PALE	11	27	2130	S21	E50	12	1.7		B	CSO	140	2	2	3
6382		LEAR	11	28	0045	S20	E47	12	1.6		B	CSO	50	2	3	3
6382		SVTO	11	28	1040	S20	E43	12	1.7		A	HS	40	2	3	4
6382		RAMY	11	28	1226	S20	E40	12	1.6		B	CAO	110	7	4	2
6382	26431	MWIL	11	28	1545	S21	E39	12	1.6	5	(AP)					
6382		HOLL	11	28	1700	S20	E39	12	1.7		B	CSO	120	2	3	3
6382		BOUL	11	28	1815	S19	E36	12	1.5		B	CSO	70	2	3	2
6382		LEAR	11	29	0040	S20	E36	12	1.8		B	CSO	70	3	6	3
6382		CULG	11	29	0135	S20	E34	12	1.7		B	CSO	60	2	3	2
6382		SVTO	11	29	0810	S20	E33	12	1.9		B	CSO	80	3	6	4
6382		RAMY	11	29	1315	S20	E28	12	1.7		B	CSO	100	8	4	3
6382		HOLL	11	29	1540	S20	E27	12	1.7		B	CAO	130	2	3	3
6382	26431	MWIL	11	29	1540	S21	E26	12	1.6	5	(AP)					
6382		LEAR	11	30	0019	S21	E21	12	1.6		A	HS	90	1	2	2
6382		RAMY	11	30	1318	S20	E14	12	1.6		A	HS	70	1	2	3
6382		BOUL	11	30	1555	S20	E13	12	1.6		A	HS	60	1	2	1
6382		HOLL	11	30	1700	S21	E15	12	1.8		B	CSO	120	2	5	3
6382		PALE	11	30	1830	S20	E11	12	1.6		A	HS	60	1	2	3
6382	26431	MWIL	11	30	1900	S21	E11	12	1.6	5	(AP)					
6382		LEAR	12	01	0114	S20	E08	12	1.7		A	HS	20	1	1	2
6382		SVTO	12	01	1222	S20	E02	12	1.7		A	HS	80	1	2	3
6382		RAMY	12	01	1407	S20	E03	12	1.8		B	CSO	60	6	5	3
6382	26431	MWIL	12	01	1600	S20	W00	12	1.7	5	(AP)					
6382		PALE	12	01	1820	S20	W02	12	1.6		A	HS	60	2	2	3
6382		HOLL	12	01	1955	S20	W02	12	1.7		A	HA	50	1	1	2
6382		LEAR	12	02	0014	S20	W03	12	1.8		A	HA	50	2	2	3
6382		CULG	12	02	0120	S21	W08	12	1.4		A	HS	40	2	1	2
6382	26431	MWIL	12	02	1530	S21	W13	12	1.6	4	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6382		RAMY	12	02	1550	S20	W13	12	1.7		B	CAO	40	3	2	3
6382		HOLL	12	02	1700	S20	W14	12	1.6		A	HA	50	2	1	3
6382		PALE	12	02	2018	S21	W15	12	1.7		A	HA	30	2	1	3
6382		LEAR	12	03	0017	S20	W18	12	1.6		A	HS	30	1	2	3
6382		CULG	12	03	0210	S20	W19	12	1.6		A	HA	40	2	1	2
6382		BOUL	12	03	1544	S19	W25	12	1.7		A	HS	20	1	1	1
6382	26431	MWIL	12	03	1600	S21	W26	12	1.7	5	(AP)					
6382		RAMY	12	03	1730	S20	W25	12	1.8		A	HS	50	1	1	1
6382		HOLL	12	03	1815	S20	W27	12	1.7		A	HS	50	2	2	3
6382		PALE	12	03	2020	S20	W27	12	1.8		A	HA	20	1	2	3
6382		LEAR	12	04	0028	S21	W30	12	1.7		A	HA	80	1	2	3
6382		CULG	12	04	0045	S20	W31	12	1.7		A	HS	20	2	1	2
6382		RAMY	12	04	1223	S21	W37	12	1.7		A	HA	20	1	2	3
6382		BOUL	12	04	1542	S21	W39	12	1.7		A	HA	30	1	1	2
6382	26431	MWIL	12	04	1600	S21	W39	12	1.7	6	(AP)					
6382		HOLL	12	04	1610	S21	W38	12	1.8		A	HS	60	1	2	3
6382		PALE	12	04	2010	S22	W42	12	1.6		A	AX	10	1	1	3
6382		CULG	12	05	0037	S21	W46	12	1.5		A	HS	10	1	1	2
6382		RAMY	12	05	1230	S20	W51	12	1.6		A	HA	20	1	1	1
6382		BOUL	12	05	1645	S21	W54	12	1.5		A	HS	40	1	1	2
6382		HOLL	12	05	1723	S21	W53	12	1.7		A	HS	10	1	1	3
6382		PALE	12	05	1805	S21	W55	12	1.5		A	HS	20	1	1	3
6382	26431	MWIL	12	05	1915	S21	W54	12	1.7	5	(AP)					
6382		CULG	12	06	0013	S21	W60	12	1.4		A	HS	10	1	1	3
6382		LEAR	12	06	0014	S21	W56	12	1.7		A	AX	20	1	1	3
6382	26431	MWIL	12	06	1530	S20	W66	12	1.6	4	(AP)					
6382		BOUL	12	06	1600	S19	W69	12	1.4		A	AX	10	1	1	2
6382		HOLL	12	06	1725	S22	W68	12	1.5		A	AX	20	2	2	2
6382		RAMY	12	06	1759	S21	W68	12	1.5		A	AX	10	2	1	3
6382		PALE	12	06	1800	S21	W68	12	1.5		A	AX	10	2	1	3
6382		CULG	12	07	0023	S21	W75	12	1.3		A	AX	10	1	1	3
6382		LEAR	12	07	0302	S19	W70	12	1.8		A	AX	20	2	4	2
6382		SVTO	12	07	0915	S21	W68	12	2.2		B	CAO	20	3	13	3
6382		RAMY	12	07	1334	S22	W78	12	1.6		A	AX	10	1		3
6382	26431	MWIL	12	07	1545	S21	W79	12	1.6	4	AP					
6382		PALE	12	07	1805	S21	W81	12	1.5		A	AX	10	1		4
6382A		RAMY	12	01	1407	N22	E11	12	2.4		A	AX		1		3
6382A		RAMY	12	02	1550	N21	W06	12	2.2		A	AX		1		3
6383		SVTO	11	26	1139	N16	E79	12	2.5		A	HA	60	1	2	2
6383		RAMY	11	26	1338	N17	E76	12	2.3		B	DAO	80	3	3	2
6383	26432	MWIL	11	26	1815	N16	E76	12	2.5	4	(AP)					
6383		PALE	11	26	1925	N15	E73	12	2.3		B	DAO	210	4	6	3
6383		HOLL	11	26	2115	N17	E70	12	2.2		B	CSO	100	8	5	1
6383		LEAR	11	27	0028	N16	E70	12	2.3		B	BXO	100	5	4	2
6383		SVTO	11	27	1110	N16	E64	12	2.3		B	DAO	110	5	6	3
6383	26432	MWIL	11	27	1545	N17	E62	12	2.4	5	(AP)					
6383		RAMY	11	27	1625	N17	E61	12	2.3		B	DAO	140	5	8	1
6383		HOLL	11	27	1713	N16	E59	12	2.2		B	CSO	100	7	6	1
6383		PALE	11	27	2130	N15	E58	12	2.3		B	DAO	170	4	7	3
6383		LEAR	11	28	0045	N15	E57	12	2.3		B	DSO	90	3	6	3
6383		SVTO	11	28	1040	N16	E50	12	2.2		B	CAO	80	10	8	4
6383		RAMY	11	28	1226	N17	E48	12	2.2		B	DAO	60	14	6	2
6383	26432	MWIL	11	28	1545	N17	E49	12	2.4	5	(AP)					
6383		HOLL	11	28	1700	N17	E47	12	2.3		B	CAO	90	9	5	3
6383		BOUL	11	28	1815	N17	E48	12	2.4		B	CAO	130	3	6	2
6383		LEAR	11	29	0040	N15	E43	12	2.3		B	DAO	60	6	7	3
6383		CULG	11	29	0135	N16	E44	12	2.4		B	CAO	30	8	6	2
6383		SVTO	11	29	0810	N16	E41	12	2.4		B	CSO	70	10	8	4
6383		RAMY	11	29	1315	N15	E39	12	2.5		B	DAO	100	26	10	3
6383		HOLL	11	29	1540	N15	E36	12	2.4		B	CAO	100	12	3	3
6383	26432	MWIL	11	29	1540	N16	E37	12	2.4	5	(BG)					
6383		LEAR	11	30	0019	N15	E31	12	2.4		B	DSO	100	9	3	2
6383		RAMY	11	30	1318	N15	E25	12	2.4		B	CAO	80	10	3	3
6383		BOUL	11	30	1555	N16	E23	12	2.4		B	CAO	100	4	3	1
6383		HOLL	11	30	1700	N16	E22	12	2.4		B	DAO	100	11	4	3
6383		PALE	11	30	1830	N15	E20	12	2.3		B	CAO	90	8	4	3
6383	26432	MWIL	11	30	1900	N16	E21	12	2.4	5	(BF)					

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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
6383		LEAR	12	01	0114	N15	E18	12	2.4		B	CSO	70	5	3	2
6383		SVTO	12	01	1222	N15	E11	12	2.3		B	CSO	110	6	5	3
6383		RAMY	12	01	1407	N16	E11	12	2.4		B	CAO	80	11	5	3
6383	26432	MWIL	12	01	1600	N16	E10	12	2.4	5	(BG)					
6383		PALE	12	01	1820	N15	E07	12	2.3		B	CSO	100	10	6	3
6383		HOLL	12	01	1955	N16	E07	12	2.4		B	CSO	80	13	5	2
6383		LEAR	12	02	0014	N16	E07	12	2.5		B	CAO	70	11	7	3
6383		CULG	12	02	0120	N15	E06	12	2.5		B	DAO	70	11	6	2
6383	26432	MWIL	12	02	1530	N15	W03	12	2.4	5	(BP)					
6383		RAMY	12	02	1550	N16	W04	12	2.3		B	DAO	70	13	6	3
6383		HOLL	12	02	1700	N16	W04	12	2.4		B	CAO	50	9	4	3
6383		PALE	12	02	2018	N15	W06	12	2.4		B	CSO	30	8	6	3
6383		LEAR	12	03	0017	N16	W07	12	2.5		B	CSO	50	6	4	3
6383		CULG	12	03	0210	N16	W08	12	2.5		B	CAO	40	7	4	2
6383		BOUL	12	03	1544	N16	W16	12	2.4		A	HA	40	2	2	1
6383	26432	MWIL	12	03	1600	N15	W16	12	2.4	5	(BG)					
6383		RAMY	12	03	1730	N16	W19	12	2.3		B	CAO	30	4	3	1
6383		HOLL	12	03	1815	N15	W19	12	2.3		B	CAO	70	13	8	3
6383		PALE	12	03	2020	N16	W21	12	2.2		B	CAO	30	9	6	3
6383		LEAR	12	04	0028	N16	W22	12	2.3		B	DSO	130	6	7	3
6383		CULG	12	04	0045	N17	W22	12	2.3		B	CAO	40	9	4	2
6383		RAMY	12	04	1223	N17	W28	12	2.4		B	CAO	20	6	2	3
6383		BOUL	12	04	1542	N16	W30	12	2.4		A	HA	20	3	1	2
6383	26432	MWIL	12	04	1600	N15	W30	12	2.4	5	(BP)					
6383		HOLL	12	04	1610	N17	W30	12	2.4		B	CRO	60	7	5	3
6383		PALE	12	04	2010	N15	W32	12	2.4		A	HA	20	2	2	3
6383		CULG	12	05	0037	N15	W37	12	2.2		A	HA	10	3	1	2
6383		SVTO	12	05	1145	N15	W41	12	2.4		B	HR	10	2	1	2
6383		RAMY	12	05	1230	N16	W40	12	2.5		B	CRO	10	5	4	1
6383		BOUL	12	05	1645	N15	W44	12	2.4		A	HA	30	2	1	2
6383		HOLL	12	05	1723	N15	W44	12	2.4		A	AX	10	2	1	3
6383		PALE	12	05	1805	N15	W45	12	2.3		A	HR	10	2	1	3
6383	26432	MWIL	12	05	1915	N15	W45	12	2.4	5	(AP)					
6383		CULG	12	06	0013	N16	W50	12	2.2		A	AX	10	1	1	3
6383		LEAR	12	06	0014	N16	W48	12	2.4		B	BXO	20	2	2	3
6383	26432	MWIL	12	06	1530	N15	W56	12	2.4	5	(AP)					
6383		BOUL	12	06	1600	N17	W61	12	2.0		A	AX	20	1	1	2
6383		HOLL	12	06	1725	N14	W57	12	2.4		B	BXO	20	2	3	2
6383		RAMY	12	06	1759	N15	W56	12	2.5		A	AX	10	1		3
6383		PALE	12	06	1800	N15	W58	12	2.3		A	AX	10	1	1	3
6383		CULG	12	07	0023	N15	W64	12	2.2		A	AX	10	1	1	3
6383		LEAR	12	07	0302	N17	W60	12	2.6		A	AX	10	1	1	2
6383		SVTO	12	07	0915	N15	W67	12	2.3		A	AX		1		3
6383		RAMY	12	07	1334	N14	W68	12	2.4		A	AX		1		3
6383	26432	MWIL	12	07	1545	N15	W69	12	2.4	4	(AP)					
6383		HOLL	12	07	1745	N15	W70	12	2.4		A	AX	10	1	1	2
6383		PALE	12	07	1805	N15	W73	12	2.2		B	BXO	20	3	5	4
6383		LEAR	12	08	0016	N15	W75	12	2.3		A	AX	30	1	1	3
6383A		RAMY	11	30	1318	S21	E33	12	3.1		A	AX	10	2	2	3
6383A		BOUL	11	30	1555	S20	E32	12	3.1		A	AX	10	1		1
6383A		HOLL	11	30	1700	S21	E32	12	3.2		A	AX		2	1	3
6383A		PALE	11	30	1830	S20	E30	12	3.1		A	HS	10	1	1	3
6393	26443	MWIL	11	30	1900	S21	E30	12	3.1	4	(AP)					
6393		SVTO	12	01	1222	S20	E19	12	3.0		A	HR	20	1	1	3
6393		RAMY	12	01	1407	S20	E19	12	3.0		A	HA	10	1	1	3
6393	26443	MWIL	12	01	1600	S21	E18	12	3.0	4	(AP)					
6393		PALE	12	01	1820	S20	E17	12	3.1		A	AX		1		3
6393		HOLL	12	01	1955	S21	E16	12	3.0		B	BXO		3	3	2
6393		LEAR	12	02	0014	S21	E16	12	3.2		B	BXO	10	4	4	3
6393		CULG	12	02	0120	S22	E12	12	3.0		B	BXO	10	6	4	2
6393	26443	MWIL	12	02	1530	S22	E06	12	3.1	4	(B)					
6393		RAMY	12	02	1550	S21	E07	12	3.2		B	DAO	20	9	4	3
6393		HOLL	12	02	1700	S20	E05	12	3.1		B	BXO	10	8	4	3
6393		PALE	12	02	2018	S20	E04	12	3.1		B	BXO	10	6	5	3
6393		LEAR	12	03	0017	S20	E02	12	3.2		B	BXO	30	5	4	3
6393		CULG	12	03	0210	S21	E00	12	3.1		B	BXO		6	4	2
6393		BOUL	12	03	1544	S19	W08	12	3.0		B	CSO	10	3	3	1

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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
6393	26443	MWIL	12	03	1600	S21	W08	12	3.0	4	(B)					
6393		RAMY	12	03	1730	S20	W07	12	3.2		B	CRO	20	6	5	1
6393		HOLL	12	03	1815	S19	W08	12	3.1		B	BXO	10	5	3	3
6393		PALE	12	03	2020	S20	W10	12	3.1		B	BXO	10	2	4	3
6393		LEAR	12	04	0028	S20	W15	12	2.9		A	AX	10	1	1	3
6393		CULG	12	04	0045	S20	W14	12	3.0		B	BXO		3	4	2
6393		RAMY	12	04	1223	S22	W22	12	2.8		B	CAO	10	5	2	3
6393		BOUL	12	04	1542	S19	W23	12	2.9		A	AX		1		2
6393	26443	MWIL	12	04	1600	S21	W24	12	2.8	4	(AP)					
6393		HOLL	12	04	1610	S21	W23	12	2.9		A	AX		1		3
6393		PALE	12	04	2010	S21	W25	12	2.9		A	AX	10	5	2	3
6393		CULG	12	05	0037	S21	W30	12	2.7		A	AX		1		2
6393		RAMY	12	05	1230	S21	W35	12	2.8		B	BXO	10	4	2	1
6393		BOUL	12	05	1645	S20	W37	12	2.9		B	CSO	20	3	2	2
6393		HOLL	12	05	1723	S22	W38	12	2.8		B	CSO	20	7	4	3
6393		PALE	12	05	1805	S21	W38	12	2.8		B	CRO	20	8	4	3
6393	26443	MWIL	12	05	1915	S21	W38	12	2.9	5	(BP)					
6393		CULG	12	06	0013	S21	W41	12	2.9		B	DSO	20	8	5	3
6393		LEAR	12	06	0014	S22	W40	12	2.9		B	DAO	60	6	5	3
6393	26443	MWIL	12	06	1530	S20	W50	12	2.8	4	(B)					
6393		BOUL	12	06	1600	S20	W51	12	2.8		B	CSO	30	2	6	2
6393		HOLL	12	06	1725	S21	W50	12	2.9		B	BXO	30	4	6	2
6393		RAMY	12	06	1759	S21	W50	12	2.9		B	DAO	50	6	6	3
6393		PALE	12	06	1800	S21	W51	12	2.8		B	CAO	40	4	6	3
6393		CULG	12	07	0023	S21	W59	12	2.5		B	CAO	30	4	4	3
6393		LEAR	12	07	0302	S20	W56	12	2.8		B	CSO	20	2	2	2
6393		RAMY	12	07	1334	S22	W62	12	2.8		B	BXO	20	5	2	3
6393	26443	MWIL	12	07	1545	S21	W65	12	2.7	4	(AP)					
6393		PALE	12	07	1805	S21	W68	12	2.5		A	AX	10	3	2	4
6393		PALE	12	08	1942	S23	W83	12	2.4		A	AX		1	1	3
6383B		HOLL	11	30	1700	S12	E33	12	3.2		B	BXO	10	4	3	3
6385		SVTO	11	27	1110	S16	E80	12	3.5		A	HS	60	1	1	3
6385	26435	MWIL	11	27	1545	S16	E76	12	3.4	4	(AP)					
6385		RAMY	11	27	1625	S15	E78	12	3.6		A	HA	60	1	1	1
6385		HOLL	11	27	1713	S16	E73	12	3.2		A	HS	60	1	2	1
6385		PALE	11	27	2130	S16	E63	12	2.7		A	HA	90	1	1	3
6385		LEAR	11	28	0045	S15	E68	12	3.2		A	HS	60	1	2	3
6385		SVTO	11	28	1040	S16	E66	12	3.4		A	HS	30	1	1	4
6385		RAMY	11	28	1226	S16	E63	12	3.3		A	HA	90	9	2	2
6385	26435	MWIL	11	28	1545	S16	E62	12	3.3	5	(AP)					
6385		HOLL	11	28	1700	S15	E62	12	3.4		A	HS	70	1	2	3
6385		BOUL	11	28	1815	S15	E60	12	3.3		A	HA	60	1	1	2
6385		LEAR	11	29	0040	S16	E56	12	3.3		A	HA	30	1	2	3
6385		CULG	11	29	0135	S16	E58	12	3.5		A	HS	30	1	1	2
6385		SVTO	11	29	0810	S16	E54	12	3.4		A	HS	30	1	1	4
6385		RAMY	11	29	1315	S15	E51	12	3.4		B	CSO	100	2	3	3
6385		HOLL	11	29	1540	S15	E49	12	3.4		A	HS	100	1	2	3
6385	26435	MWIL	11	29	1540	S16	E49	12	3.4	5	(AP)					
6385		LEAR	11	30	0019	S16	E44	12	3.3		A	HS	70	1	2	2
6385		RAMY	11	30	1318	S16	E38	12	3.4		A	HA	80	1	2	3
6385		BOUL	11	30	1555	S14	E36	12	3.4		A	HA	70	2	2	1
6385		HOLL	11	30	1700	S15	E36	12	3.4		A	HS	70	1	2	3
6385		PALE	11	30	1830	S15	E34	12	3.3		A	HS	50	1	2	3
6385	26435	MWIL	11	30	1900	S16	E34	12	3.4	5	(AP)					
6385		LEAR	12	01	0114	S18	E30	12	3.3		B	DSO	70	2	5	2
6385		SVTO	12	01	1222	S15	E25	12	3.4		A	HS	90	1	2	3
6385	26435	MWIL	12	01	1600	S16	E22	12	3.3	5	(AP)					
6385		PALE	12	01	1820	S15	E21	12	3.3		A	HS	70	2	2	3
6385		HOLL	12	01	1955	S15	E21	12	3.4		A	HS	70	2	2	2
6385		LEAR	12	02	0014	S15	E19	12	3.4		B	CAO	60	2	4	3
6385		CULG	12	02	0120	S17	E17	12	3.3		A	HS	70	2	1	2
6385	26435	MWIL	12	02	1530	S17	E10	12	3.4	5	(AP)					
6385		RAMY	12	02	1550	S15	E12	12	3.6		B	CSO	70	3	2	3
6385		HOLL	12	02	1700	S15	E11	12	3.5		B	CSO	30	2	4	3
6385		PALE	12	02	2018	S15	E08	12	3.4		A	HS	50	1	1	3
6385		LEAR	12	03	0017	S15	E06	12	3.5		A	HS	50	1	2	3
6385		CULG	12	03	0210	S15	E04	12	3.4		A	HS	60	2	2	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
6385		BOUL	12	03	1544	S14	W04	12	3.3		A	HA	60	1	2	1
6385	26435	MWIL	12	03	1600	S16	W04	12	3.4	5	(AP)					
6385		RAMY	12	03	1730	S14	W02	12	3.6		A	HA	60	3	2	1
6385		HOLL	12	03	1815	S15	W04	12	3.4		A	HA	100	1	2	3
6385		PALE	12	03	2020	S15	W05	12	3.5		A	HS	40	1	1	3
6385		LEAR	12	04	0028	S17	W08	12	3.4		A	HA	100	1	3	3
6385		CULG	12	04	0045	S15	W09	12	3.3		A	HS	50	2	1	2
6385		RAMY	12	04	1223	S16	W14	12	3.4		A	C	70	1	2	3
6385		BOUL	12	04	1542	S15	W16	12	3.4		A	HS	40	1	2	2
6385	26435	MWIL	12	04	1600	S16	W17	12	3.4	5	(AP)					
6385		HOLL	12	04	1610	S16	W17	12	3.4		A	HS	80	1	2	3
6385		PALE	12	04	2010	S16	W18	12	3.5		A	HS	40	1	1	3
6385		CULG	12	05	0037	S15	W21	12	3.4		A	HS	40	1	1	2
6385		SVTO	12	05	1145	S16	W26	12	3.5		A	HS	40	1	1	2
6385		RAMY	12	05	1230	S15	W27	12	3.5		A	HS	40	1	1	1
6385		HOLL	12	05	1723	S16	W29	12	3.5		A	HS	70	1	1	3
6385		PALE	12	05	1805	S16	W31	12	3.4		A	HS	50	1	2	3
6385	26435	MWIL	12	05	1915	S16	W31	12	3.4	5	(AP)					
6385		CULG	12	06	0013	S16	W33	12	3.5		A	HS	70	1	2	3
6385		LEAR	12	06	0014	S15	W32	12	3.6		A	HA	20	1	2	3
6385	26435	MWIL	12	06	1530	S16	W42	12	3.5	4	(AP)					
6385		BOUL	12	06	1600	S14	W44	12	3.3		A	HA	30	1	2	2
6385		HOLL	12	06	1725	S17	W43	12	3.4		A	HS	40	1	1	2
6385		RAMY	12	06	1759	S15	W42	12	3.6		A	HA	30	1	1	3
6385		PALE	12	06	1800	S16	W43	12	3.5		A	HS	30	1	1	3
6385		CULG	12	07	0023	S17	W48	12	3.4		A	HS	20	1	1	3
6385		LEAR	12	07	0302	S15	W47	12	3.6		A	HS	30	1	1	2
6385		SVTO	12	07	0915	S16	W55	12	3.2		B	CSO	20	2	9	3
6385		RAMY	12	07	1334	S16	W52	12	3.6		A	HA	40	1	1	3
6385	26435	MWIL	12	07	1545	S16	W55	12	3.5	5	(AP)					
6385		BOUL	12	07	1550	S16	W52	12	3.7		A	HS	50	1	2	1
6385		HOLL	12	07	1745	S15	W55	12	3.6		A	HS	40	1	1	2
6385		PALE	12	07	1805	S16	W56	12	3.5		A	HS	40	1	2	4
6385		LEAR	12	08	0016	S16	W58	12	3.6		A	HS	40	1	2	3
6385		CULG	12	08	0120	S13	W55	12	3.9		B	CSO	50	4	5	2
6385		SVTO	12	08	0920	S17	W65	12	3.4		A	HS	20	1	2	3
6385		RAMY	12	08	1305	S16	W66	12	3.5		A	HA	40	1	2	4
6385		BOUL	12	08	1545	S16	W65	12	3.7		B	EAO	110	4	12	1
6385	26435	MWIL	12	08	1615	S16	W68	12	3.5	4	(AP)					
6385		HOLL	12	08	1845	S16	W70	12	3.5		A	HS	50	5	1	2
6385		PALE	12	08	1942	S17	W69	12	3.6		A	AX	20	1	1	3
6385		LEAR	12	09	0030	S16	W70	12	3.7		A	AX	10	1	1	3
6385		RAMY	12	09	1223	S16	W80	12	3.4		A	AX	10	2	1	4
6385		BOUL	12	09	1557	S14	W73	12	4.1		B	DAO	90	2	8	3
6391		SVTO	11	29	0810	N10	E61	12	3.9		A	AX		1		4
6391		RAMY	11	29	1315	N09	E57	12	3.8		B	BXO	10	3	3	3
6391	26439	MWIL	11	29	1540	N08	E57	12	3.9	4	(B)					
6391		HOLL	11	29	1540	N09	E55	12	3.8		B	BXO	20	4	4	3
6391		LEAR	11	30	0019	N08	E51	12	3.8		B	BXO	30	2	3	2
6391		RAMY	11	30	1318	N08	E44	12	3.8		B	BXO	20	11	6	3
6391		BOUL	11	30	1555	N09	E42	12	3.8		B	DSO	40	6	5	1
6391		HOLL	11	30	1700	N10	E43	12	3.9		B	BXO	30	16	7	3
6391		PALE	11	30	1830	N09	E40	12	3.8		B	BXO	10	8	5	3
6391	26439	MWIL	11	30	1900	N08	E40	12	3.8	3	(BG)					
6391		LEAR	12	01	0114	N09	E38	12	3.9		B	DSO	50	4	5	2
6391		SVTO	12	01	1222	N10	E31	12	3.8		B	BXO	30	6	6	3
6391		RAMY	12	01	1407	N09	E30	12	3.8		B	CRO	10	6	6	3
6391	26439	MWIL	12	01	1600	N09	E30	12	3.9	4	(BP)					
6391		PALE	12	01	1820	N10	E27	12	3.8		B	CRO	20	4	6	3
6391		HOLL	12	01	1955	N10	E25	12	3.7		B	CRO	20	8	6	2
6391		LEAR	12	02	0014	N10	E25	12	3.9		B	CAO	20	5	7	3
6391		CULG	12	02	0120	N10	E23	12	3.8		B	CRO	20	4	7	2
6391	26439	MWIL	12	02	1530	N08	E15	12	3.8	4	(BF)					
6391		RAMY	12	02	1550	N10	E17	12	3.9		B	DRO	20	5	6	3
6391		HOLL	12	02	1700	N10	E13	12	3.7		B	BXO	10	4	7	3
6391		PALE	12	02	2018	N10	E13	12	3.8		B	BXO		3	5	3
6391		LEAR	12	03	0017	N09	E09	12	3.7		B	BXO	40	6	4	3
6391		CULG	12	03	0210	N10	E08	12	3.7		B	CRO	10	4	4	2

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6391		BOUL	12	03	1544	N10	W03	12	3.4		A	HS	20	1	1	1
6391	26439	MWIL	12	03	1600	N08	E01	12	3.7	4	(BP)					
6391		RAMY	12	03	1730	N10	W01	12	3.6		B	BXO	10	5	3	1
6391		HOLL	12	03	1815	N09	W02	12	3.6		B	BXO	10	3	3	3
6391		PALE	12	03	2020	N09	W04	12	3.5		A	AX		1		3
6391		LEAR	12	04	0028	N08	W07	12	3.5		A	AX	10	1	1	3
6391		CULG	12	04	0045	N10	W06	12	3.6		A	AX		2		2
6391		RAMY	12	04	1223	N08	W13	12	3.5		A	AX	10	1	1	3
6391A		RAMY	11	28	1226	S08	E86	12	5.0		A	AX	10	2	1	2
6391A		HOLL	11	28	1700	S10	E77	12	4.5		A	AX		1		3
6391A		LEAR	11	29	0040	S11	E71	12	4.4		A	AX	10	1	1	3
6391A		SVTO	11	29	0810	S10	E70	12	4.6		A	AX		1		4
6391A		RAMY	11	29	1315	S11	E66	12	4.5		A	AX		1	1	3
6391A		RAMY	11	30	1318	S12	E45	12	3.9		A	AX		2	2	3
6391A		RAMY	12	01	1407	S12	E32	12	4.0		A	AX		1		3
6401		RAMY	12	02	1550	S33	E19	12	4.2		A	AX		1	1	3
6401		HOLL	12	02	1700	S32	E18	12	4.1		A	AX		2	1	3
6401		LEAR	12	03	0017	S33	E16	12	4.3		B	BXO	40	4	4	3
6401		CULG	12	03	0210	S35	E13	12	4.1		B	BXO		5	4	2
6401	26450	MWIL	12	03	1600	S35	E07	12	4.2	4	(B)					
6401		RAMY	12	03	1730	S32	E09	12	4.4		B	BXO	20	9	6	1
6401		HOLL	12	03	1815	S33	E07	12	4.3		B	BXO	10	5	3	3
6401		LEAR	12	04	0028	S33	E02	12	4.2		B	BXO	40	8	7	3
6401		CULG	12	04	0045	S34	E00	12	4.0		B	BXO		4	3	2
6401		RAMY	12	04	1223	S34	W03	12	4.3		B	DAO	50	8	5	3
6401		BOUL	12	04	1542	S33	W06	12	4.2		B	CSO	20	3	5	2
6401	26450	MWIL	12	04	1600	S34	W06	12	4.2	4	(B)					
6401		HOLL	12	04	1610	S33	W05	12	4.3		B	BXO	20	5	5	3
6401		PALE	12	04	2010	S34	W07	12	4.3		B	BXO		2	4	3
6401		CULG	12	05	0037	S34	W07	12	4.5		A	AX		1		2
6401		HOLL	12	05	1723	S33	W21	12	4.0		A	AX	10	3	2	3
6401		PALE	12	05	1805	S32	W22	12	4.0		A	AX		3	2	3
6401	26450	MWIL	12	05	1915	S32	W23	12	4.0	4	(B)					
6407	26459	MWIL	12	07	1545	S15	W45	12	4.2	4	(B)					
6407		HOLL	12	07	1745	S15	W46	12	4.2		B	BXO	30	2	3	2
6407		PALE	12	07	1805	S14	W47	12	4.2		B	BXO	10	6	3	4
6407		LEAR	12	08	0016	S14	W49	12	4.3		B	DSO	60	2	4	3
6407		SVTO	12	08	0920	S15	W55	12	4.2		B	DAO	70	10	7	3
6407		RAMY	12	08	1305	S14	W56	12	4.3		B	DAO	90	9	6	4
6407	26459	MWIL	12	08	1615	S15	W58	12	4.3	5	(B)					
6407		HOLL	12	08	1845	S15	W61	12	4.2		B	DAO	140	11	6	2
6407		PALE	12	08	1942	S15	W60	12	4.3		B	CAO	50	4	8	3
6407		LEAR	12	09	0030	S15	W61	12	4.4		B	DAO	40	3	5	3
6407		SVTO	12	09	1126	S16	W65	12	4.5		B	EAO	70	5	15	2
6407		RAMY	12	09	1223	S15	W68	12	4.4		B	DAO	140	7	7	4
6407		HOLL	12	09	1515	S15	W70	12	4.3		B	CSO	60	4	10	3
6407	26459	MWIL	12	09	1630	S15	W72	12	4.2	5	(B)					
6407		PALE	12	09	1956	S14	W75	12	4.2		A	AX	30	1	1	2
6407		LEAR	12	10	0030	S15	W74	12	4.4		B	CAO	30	2	9	3
6407		RAMY	12	10	1342	S13	W79	12	4.6		B	CAO	210	4	2	3
6407A		RAMY	12	01	1407	N13	E39	12	4.5		B	BXO		3	3	3
6407B		RAMY	12	04	1223	S14	E05	12	4.9		A	AX	10	4	2	3
6407B	26452	MWIL	12	04	1600	S15	E03	12	4.9	4	(AF)					
6407B		HOLL	12	04	1610	S14	E03	12	4.9		A	AX	10	2	1	3
6407B		CULG	12	05	0037	S14	W02	12	4.9		A	HA	10	3	1	2
6407B		HOLL	12	05	1723	S12	W08	12	5.1		A	AX		1		3
6407B	26452	MWIL	12	05	1915	S13	W09	12	5.1	3	(AF)					
6407B		CULG	12	06	0013	S11	W12	12	5.1		A	AX		1		3
6387		SVTO	11	28	1040	S23	E78	12	4.4		B	CSO	40	4	11	4
6387		RAMY	11	28	1226	S23	E84	12	5.0		B	CKO	120	6	9	2
6387	26438	MWIL	11	28	1545	S23	E79	12	4.7	4	(BF					
6387		HOLL	11	28	1700	S22	E73	12	4.3		B	CSO	140	5	9	3
6387		BOUL	11	28	1815	S23	E78	12	4.8		A	HS	90	1	2	2

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6387		LEAR	11	29	0040	S23	E74	12	4.7		B	CAO	70	3	8	3
6387		CULG	11	29	0135	S23	E74	12	4.8		B	CSO	90	2	9	2
6387		SVTO	11	29	0810	S23	E67	12	4.5		B	CSO	90	4	9	4
6387		RAMY	11	29	1315	S23	E65	12	4.6		B	CAO	250	7	10	3
6387		HOLL	11	29	1540	S23	E65	12	4.7		B	CSO	210	5	11	3
6387	26438	MWIL	11	29	1540	S23	E66	12	4.7	5	(BF)					
6387		LEAR	11	30	0019	S23	E57	12	4.4		B	DHO	230	6	10	2
6387		RAMY	11	30	1318	S24	E50	12	4.4		B	CAO	190	13	11	3
6387		BOUL	11	30	1555	S24	E50	12	4.5		B	EAO	210	6	11	1
6387		HOLL	11	30	1700	S23	E52	12	4.7		BG	CAO	210	12	13	3
6387		PALE	11	30	1830	S24	E50	12	4.6		B	CSO	140	7	12	3
6387	26438	MWIL	11	30	1900	S24	E53	12	4.9	5	(BF)					
6387		LEAR	12	01	0114	S23	E50	12	4.9		A	HS	110	2	3	2
6387		SVTO	12	01	1222	S23	E40	12	4.6		B	CAO	140	4	9	3
6387		RAMY	12	01	1407	S24	E38	12	4.5		B	CAO	130	9	8	3
6387	26438	MWIL	12	01	1600	S24	E40	12	4.7	5	(BF)					
6387		PALE	12	01	1820	S24	E41	12	4.9		A	HS	200	2	3	3
6387		HOLL	12	01	1955	S24	E35	12	4.5		B	CSO	130	5	8	2
6387		LEAR	12	02	0014	S22	E38	12	4.9		A	HH	130	2	4	3
6387		CULG	12	02	0120	S26	E36	12	4.8		A	HS	110	2	1	2
6387	26438	MWIL	12	02	1530	S25	E30	12	5.0	5	(AF)					
6387		RAMY	12	02	1550	S23	E30	12	5.0		A	HS	200	2	2	3
6387		HOLL	12	02	1700	S23	E29	12	4.9		A	HS	120	2	2	3
6387		PALE	12	02	2018	S23	E28	12	5.0		A	HH	160	1	3	3
6387		LEAR	12	03	0017	S23	E26	12	5.0		B	CSO	140	4	4	3
6387		CULG	12	03	0210	S23	E24	12	4.9		B	CSO	220	4	4	2
6387		BOUL	12	03	1544	S22	E17	12	5.0		B	CAO	170	3	3	1
6387	26438	MWIL	12	03	1600	S25	E16	12	4.9	5	(BG)					
6387		RAMY	12	03	1730	S25	E15	12	4.9		B	CAO	220	9	9	1
6387		HOLL	12	03	1815	S26	E13	12	4.8		B	CSO	190	8	10	3
6387		PALE	12	03	2020	S24	E15	12	5.0		B	CHO	120	4	4	3
6387		LEAR	12	04	0028	S26	E15	12	5.2		B	CSO	230	4	6	3
6387		CULG	12	04	0045	S25	E08	12	4.6		B	CSO	150	6	9	2
6387		BOUL	12	04	1542	S23	E05	12	5.0		B	CAO	150	2	3	2
6387	26438	MWIL	12	04	1600	S25	E04	12	5.0	5	(BG)					
6387		HOLL	12	04	1610	S25	E03	12	4.9		A	CS	200	4	7	3
6387		PALE	12	04	2010	S25	E03	12	5.1		B	CHO	150	2	3	3
6387		CULG	12	05	0037	S24	E00	12	5.0		B	CSO	160	9	4	2
6387		SVTO	12	05	1145	S26	W06	12	5.0		BG	DAO	330	10	5	2
6387		RAMY	12	05	1230	S25	W06	12	5.0		B	DHO	300	15	4	1
6387		BOUL	12	05	1645	S24	W09	12	5.0		B	DAO	250	11	5	2
6387		HOLL	12	05	1723	S25	W09	12	5.0		BD	DSC	330	12	5	3
6387		PALE	12	05	1805	S26	W10	12	5.0		B	DSO	330	16	5	3
6387	26438	MWIL	12	05	1915	S25	W10	12	5.0	5	(B)					
6387		CULG	12	06	0013	S24	W13	12	5.0		B	DKO	280	9	5	3
6387		LEAR	12	06	0014	S25	W13	12	5.0		B	DKO	240	7	7	3
6387	26438	MWIL	12	06	1530	S24	W23	12	4.9	5	(D)					
6387		BOUL	12	06	1600	S24	W23	12	4.9		B	DHO	300	7	5	2
6387		HOLL	12	06	1725	S25	W22	12	5.0		B	DAO	340	13	7	2
6387		RAMY	12	06	1759	S24	W23	12	5.0		B	DAI	310	14	6	3
6387		CULG	12	07	0023	S26	W27	12	4.9		B	DKO	190	13	6	3
6387		LEAR	12	07	0302	S23	W28	12	5.0		B	DSO	340	16	5	2
6387		SVTO	12	07	0915	S24	W32	12	4.9		B	DAI	220	20	6	3
6387		RAMY	12	07	1334	S24	W34	12	4.9		B	DAI	290	31	6	3
6387	26438	MWIL	12	07	1545	S24	W36	12	4.9	5	(B)					
6387		BOUL	12	07	1550	S24	W35	12	4.9		B	DAO	260	9	8	1
6387		HOLL	12	07	1745	S23	W36	12	5.0		B	DSI	290	24	7	2
6387		PALE	12	07	1805	S24	W37	12	4.9		B	DAI	340	26	7	4
6387		LEAR	12	08	0016	S23	W40	12	4.9		B	DAI	310	21	6	3
6387		CULG	12	08	0120	S22	W45	12	4.6		B	DAI	170	20	7	2
6387		SVTO	12	08	0920	S24	W47	12	4.7		B	DAI	230	23	8	3
6387		RAMY	12	08	1305	S23	W47	12	4.9		B	DSO	260	18	8	4
6387		BOUL	12	08	1545	S24	W54	12	4.5		B	DAO	150	6	9	1
6387	26438	MWIL	12	08	1615	S24	W49	12	4.9	5	(BG)					
6387		HOLL	12	08	1845	S24	W50	12	4.9		B	DSI	280	26	10	2
6387		PALE	12	08	1942	S25	W51	12	4.9		B	DAO	230	15	9	3
6387		LEAR	12	09	0030	S23	W53	12	4.9		B	DSI	160	20	9	3
6387		SVTO	12	09	1126	S25	W59	12	4.9		B	DAO	260	13	8	2
6387		RAMY	12	09	1223	S22	W60	12	4.9		B	DAO	260	22	10	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
6387		HOLL	12	09	1515	S24	W62	12	4.8		B	DAI	210	16	10	3
6387		BOUL	12	09	1557	S23	W63	12	4.8		B	EAI	320	16	11	3
6387	26438	MWIL	12	09	1630	S24	W62	12	4.9	5	(BG)					
6387		PALE	12	09	1956	S25	W66	12	4.7		B	EAO	190	11	13	2
6387		LEAR	12	10	0030	S23	W65	12	5.0		B	DAI	180	8	10	3
6387		CULG	12	10	0123	S22	W70	12	4.7		B	DAI	180	17	9	2
6387		RAMY	12	10	1342	S23	W76	12	4.7		B	DAO	330	12	8	3
6387		BOUL	12	10	1548	S23	W75	12	4.9		B	CSI	140	6	8	1
6387	26438	MWIL	12	10	1615	S24	W75	12	4.9	5	(B)					
6387		HOLL	12	10	1630	S24	W73	12	5.0		B	DAC	330	11	8	3
6387		PALE	12	10	1923	S23	W76	12	4.9		B	DAI	240	6	10	2
6387		CULG	12	11	0110	S23	W85	12	4.5		B	EKO	300	6	12	2
6387		LEAR	12	11	0115	S23	W77	12	5.1		B	DAO	120	5	5	2
6387		SVTO	12	11	0845	S21	W85	12	4.8		B	DSO	80	3	9	3
6387		RAMY	12	11	1220	S22	W88	12	4.7		B	DAO	110	5	8	4
6387		HOLL	12	11	1748	S25	W87	12	5.0		B	BXO	60	2	2	2
6387A		SVTO	12	05	1145	S07	W05	12	5.1		B	BXO	10	4	4	2
6387B		HOLL	12	02	1700	N22	E33	12	5.2		A	AX		2	1	3
6390		LEAR	11	29	0040	N35	E75	12	5.0		A	HS	70	1	3	3
6390		SVTO	11	29	0810	N36	E80	12	5.8		A	HS	40	1	3	4
6390		RAMY	11	29	1315	N35	E78	12	5.8		B	DAO	140	5	8	3
6390		HOLL	11	29	1540	N35	E75	12	5.6		B	DSO	150	3	8	3
6390	26440	MWIL	11	29	1540	N35	E77	12	5.8	5	B					
6390		LEAR	11	30	0019	N35	E71	12	5.7		B	DSO	210	2	8	2
6390		RAMY	11	30	1318	N34	E65	12	5.7		B	DAO	160	2	9	3
6390		BOUL	11	30	1555	N36	E68	12	6.1		B	DAO	200	4	7	1
6390		HOLL	11	30	1700	N35	E65	12	5.9		B	DSO	170	2	9	3
6390		PALE	11	30	1830	N35	E64	12	5.9		B	DSO	210	3	9	3
6390	26440	MWIL	11	30	1900	N35	E65	12	6.0	5	(B)					
6390		LEAR	12	01	0114	N35	E59	12	5.8		B	DSO	100	2	7	2
6390		RAMY	12	01	1407	N34	E54	12	5.9		B	DAO	130	3	9	3
6390	26440	MWIL	12	01	1600	N34	E55	12	6.0	5	(B)					
6390		PALE	12	01	1820	N35	E52	12	5.9		B	DSO	170	3	10	3
6390		HOLL	12	01	1955	N35	E50	12	5.8		B	DSO	130	4	9	2
6390		LEAR	12	02	0014	N35	E50	12	6.0		B	CAO	70	5	8	3
6390		CULG	12	02	0120	N35	E50	12	6.0		B	DSO	10	3	5	2
6390	26440	MWIL	12	02	1530	N34	E40	12	5.8	5	(BP)					
6390		RAMY	12	02	1550	N35	E40	12	5.8		B	DAO	150	7	8	3
6390		HOLL	12	02	1700	N35	E39	12	5.8		B	DSO	150	5	10	3
6390		PALE	12	02	2018	N36	E39	12	6.0		B	DHO	190	7	8	3
6390		LEAR	12	03	0017	N34	E36	12	5.9		B	DSO	150	5	8	3
6390		CULG	12	03	0210	N35	E35	12	5.9		B	DAO	170	5	8	2
6390		BOUL	12	03	1544	N35	E28	12	5.9		B	DAO	130	2	7	1
6390	26440	MWIL	12	03	1600	N34	E27	12	5.8	5	(BP)					
6390		RAMY	12	03	1730	N35	E28	12	6.0		B	DAO	160	7	7	1
6390		HOLL	12	03	1815	N35	E27	12	5.9		B	DSO	150	5	7	3
6390		PALE	12	03	2020	N35	E26	12	5.9		B	DHO	120	5	7	3
6390		LEAR	12	04	0028	N32	E22	12	5.8		B	ESO	160	8	12	3
6390		CULG	12	04	0045	N35	E22	12	5.8		B	CSO	100	5	8	2
6390		RAMY	12	04	1223	N33	E17	12	5.9		B	DAO	110	9	8	3
6390		BOUL	12	04	1542	N34	E15	12	5.8		B	CAO	80	2	7	2
6390	26440	MWIL	12	04	1600	N34	E15	12	5.9	5	(BG)					
6390		HOLL	12	04	1610	N35	E14	12	5.8		B	CSO	130	4	8	3
6390		PALE	12	04	2010	N34	E12	12	5.8		B	CSO	120	3	6	3
6390		CULG	12	05	0037	N35	E09	12	5.7		B	CSO	70	5	7	2
6390		RAMY	12	05	1230	N34	E06	12	6.0		B	CAO	110	9	8	1
6390		BOUL	12	05	1645	N34	W01	12	5.6		A	HA	100	1	2	2
6390		HOLL	12	05	1723	N34	E01	12	5.8		B	CSO	90	12	7	3
6390		PALE	12	05	1805	N34	E02	12	5.9		B	CAO	130	8	7	3
6390	26440	MWIL	12	05	1915	N35	E01	12	5.9	5	(BP)					
6390		CULG	12	06	0013	N36	W03	12	5.8		B	CSO	100	10	7	3
6390		LEAR	12	06	0014	N35	W04	12	5.7		B	CAO	70	4	4	3
6390	26440	MWIL	12	06	1530	N34	W12	12	5.7	5	(AP)					
6390		BOUL	12	06	1600	N35	W13	12	5.6		B	CAO	60	2	2	2
6390		HOLL	12	06	1725	N33	W14	12	5.6		B	CSO	80	3	4	2
6390		RAMY	12	06	1759	N35	W12	12	5.8		B	CAO	90	7	4	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
6390		PALE	12	06	1800	N34	W13	12	5.7		A	HS	80	4	2	3
6390		CULG	12	07	0023	N35	W16	12	5.7		B	CSO	50	4	6	3
6390		LEAR	12	07	0302	N35	W18	12	5.7		A	HS	90	2	2	2
6390		SVTO	12	07	0915	N35	W24	12	5.5		B	CSO	50	2	4	3
6390	26440	MWIL	12	07	1545	N35	W25	12	5.6	5	(BP)					
6390		BOUL	12	07	1550	N35	W22	12	5.9		A	HA	30	1	2	1
6390		HOLL	12	07	1745	N35	W26	12	5.6		A	HA	80	3	2	2
6390		LEAR	12	08	0016	N34	W29	12	5.7		A	HS	50	3	2	3
6390		CULG	12	08	0120	N37	W34	12	5.3		B	CSO	60	2	2	2
6390		SVTO	12	08	0920	N35	W34	12	5.7		B	CSO	30	2	3	3
6390		RAMY	12	08	1305	N37	W35	12	5.7		A	HA	60	2	2	4
6390		BOUL	12	08	1545	N34	W40	12	5.5		B	CAO	80	2	3	1
6390	26440	MWIL	12	08	1615	N35	W37	12	5.7	4	(AP)					
6390		HOLL	12	08	1845	N35	W40	12	5.6		B	CAO	30	3	3	2
6390		PALE	12	08	1942	N33	W41	12	5.6		A	AX	20	3	2	3
6390		LEAR	12	09	0030	N35	W41	12	5.7		B	BXO	20	2	2	3
6390		SVTO	12	09	1126	N35	W49	12	5.5		B	DAO	40	2	4	2
6390		RAMY	12	09	1223	N35	W48	12	5.7		A	AX	10	2	2	4
6390		HOLL	12	09	1515	N35	W49	12	5.7		A	AX	10	2	2	3
6390		BOUL	12	09	1557	N34	W50	12	5.7		B	BXO	20	2	2	3
6390	26440	MWIL	12	09	1630	N36	W50	12	5.7	4	(AP)					
6390		PALE	12	09	1956	N34	W54	12	5.5		A	AX		2	2	2
6390		LEAR	12	10	0030	N36	W53	12	5.8		A	AX	20	1	1	3
6390		CULG	12	10	0123	N36	W56	12	5.6		B	BXO		1	1	2
6390		RAMY	12	10	1342	N35	W61	12	5.7		A	AX	10	1	1	3
6390	26440	MWIL	12	10	1615	N36	W62	12	5.7	4	(AP)					
6390		HOLL	12	10	1630	N35	W62	12	5.7		A	AX		1		3
6390		LEAR	12	11	0115	N35	W67	12	5.7		A	AX		1	1	2
6402B		BOUL	12	03	1544	S08	E34	12	6.2		A	AX	10	1	1	1
6402B	26451	MWIL	12	03	1600	S12	E32	12	6.1	4	(B)					
6402B	26451	MWIL	12	04	1600	S11	E17	12	5.9	4	(AP)					
6402		LEAR	12	03	0017	S11	E41	12	6.1		B	BXO	30	2	3	3
6402		CULG	12	03	0210	S11	E39	12	6.0		B	BXO		2	3	2
6402		RAMY	12	03	1730	S10	E32	12	6.1		B	BXO	10	4	3	1
6402		HOLL	12	03	1815	S10	E30	12	6.0		B	BXO	10	4	3	3
6402		PALE	12	03	2020	S10	E32	12	6.2		A	AX		1		3
6402		CULG	12	04	0045	S11	E26	12	6.0		B	BXO		2	3	2
6402		RAMY	12	04	1223	S11	E19	12	5.9		A	AX	10	2	1	3
6402		HOLL	12	04	1610	S11	E18	12	6.0		A	AX	10	2	1	3
6402	26455	MWIL	12	06	1530	S12	W12	12	5.7	4	(AP)					
6402		HOLL	12	06	1725	S12	W12	12	5.8		A	AX	10	3	1	2
6402		RAMY	12	06	1759	S11	W10	12	6.0		B	BXO	10	5	7	3
6402		PALE	12	06	1800	S11	W12	12	5.8		B	BXO	10	4	3	3
6402		CULG	12	07	0023	S10	W14	12	6.0		B	BXO	10	4	7	3
6402		LEAR	12	07	0302	S10	W15	12	6.0		B	CSO	20	4	7	2
6402		SVTO	12	07	0915	S12	W20	12	5.9		B	BXO	10	6	5	3
6402		RAMY	12	07	1334	S11	W22	12	5.9		B	DAO	40	6	7	3
6402	26455	MWIL	12	07	1545	S12	W25	12	5.8	4	(BG)					
6402		BOUL	12	07	1550	S11	W23	12	5.9		B	CAO	30	3	5	1
6402		HOLL	12	07	1745	S11	W25	12	5.8		B	BXO	20	13	9	2
6402		PALE	12	07	1805	S11	W25	12	5.9		B	DRO	30	16	8	4
6402		LEAR	12	08	0016	S11	W26	12	6.0		B	DSO	100	12	8	3
6402		CULG	12	08	0120	S10	W28	12	5.9		B	ESO	60	12	9	2
6402		SVTO	12	08	0920	S12	W33	12	5.9		B	DAO	60	16	9	3
6402		RAMY	12	08	1305	S11	W35	12	5.9		B	DAO	150	22	9	4
6402		BOUL	12	08	1545	S12	W38	12	5.8		B	DSO	80	6	7	1
6402	26455	MWIL	12	08	1615	S11	W37	12	5.9	5	(BG)					
6402		HOLL	12	08	1845	S11	W38	12	5.9		B	CSO	60	19	9	2
6402		PALE	12	08	1942	S12	W38	12	5.9		B	CAI	60	14	8	3
6402		LEAR	12	09	0030	S11	W40	12	6.0		B	CAO	40	10	12	3
6402		SVTO	12	09	1126	S11	W47	12	5.9		B	DAO	80	15	9	2
6402		RAMY	12	09	1223	S11	W47	12	6.0		B	DAO	110	19	10	4
6402		HOLL	12	09	1515	S11	W49	12	5.9		B	CRO	50	16	10	3
6402		BOUL	12	09	1557	S11	W50	12	5.9		B	DAO	110	11	10	3
6402	26455	MWIL	12	09	1630	S10	W52	12	5.8	5	(D)					
6402		PALE	12	09	1956	S11	W51	12	6.0		B	CAI	50	17	7	2
6402		LEAR	12	10	0030	S11	W56	12	5.8		B	DAO	90	12	8	3

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6402		CULG	12	10	0123	S09	W61	12	5.5		B	DAO	60	10	9	2
6402		RAMY	12	10	1342	S12	W64	12	5.7		B	CAO	70	13	10	3
6402		BOUL	12	10	1548	S11	W64	12	5.8		B	CSO	90	5	10	1
6402	26455	MWIL	12	10	1615	S11	W65	12	5.8	5	(B)					
6402		HOLL	12	10	1630	S12	W65	12	5.8		B	CSO	120	15	8	3
6402		PALE	12	10	1923	S12	W65	12	5.9		B	CAO	120	5	6	2
6402		CULG	12	11	0110	S11	W76	12	5.3		B	CAO	140	6	2	2
6402		LEAR	12	11	0115	S12	W68	12	5.9		B	CAO	150	7	6	2
6402		SVTO	12	11	0845	S09	W75	12	5.7		B	CSO	120	8	8	3
6402		RAMY	12	11	1220	S10	W72	12	6.1		B	CAO	200	10	9	4
6402		BOUL	12	11	1550	S11	W79	12	5.7		B	CSO	100	3	5	1
6402	26455	MWIL	12	11	1715	S12	W78	12	5.8	4	(B)					
6402		HOLL	12	11	1748	S12	W78	12	5.9		B	CAO	240	3	10	2
6402		LEAR	12	12	0044	S12	W78	12	6.1		A	HK	260	1	2	3
6402		CULG	12	12	0100	S11	W85	12	5.6		A	HA	150	2	4	3
6402A		RAMY	12	01	1407	N05	E62	12	6.2		A	AX		1		3
6403		CULG	12	04	0045	S26	E25	12	6.0		B	BXO		2	3	2
6403		RAMY	12	04	1223	S27	E21	12	6.1		A	AX	10	4	3	3
6403		BOUL	12	04	1542	S23	E19	12	6.1		B	CSO	20	2	3	2
6403	26453	MWIL	12	04	1600	S26	E19	12	6.1	4	(B)					
6403		HOLL	12	04	1610	S25	E20	12	6.2		B	BXO	10	3	3	3
6403		CULG	12	05	0037	S26	E16	12	6.3		A	AX		1		2
6403		RAMY	12	05	1230	S26	E11	12	6.4		A	AX		2	1	1
6403		HOLL	12	05	1723	S26	E07	12	6.3		A	AX		1		3
6403		PALE	12	05	1805	S26	E06	12	6.2		A	AX		3	2	3
6403	26453	MWIL	12	05	1915	S26	E05	12	6.2	4	(AF)					
6403		CULG	12	06	0013	S26	E03	12	6.2		A	AX		2	1	3
6403		LEAR	12	06	0014	S25	E04	12	6.3		A	AX	10	1	1	3
6403		CULG	12	07	0023	S23	W08	12	6.4		A	AX		1		3
6398	26448	MWIL	12	02	1530	N15	E54	12	6.7	4	(AP)					
6398		RAMY	12	02	1550	N15	E55	12	6.8		B	CRO	10	6	5	3
6398		HOLL	12	02	1700	N16	E53	12	6.7		B	BXO	10	5	4	3
6398		PALE	12	02	2018	N15	E52	12	6.8		A	AX	10	3	1	3
6398		LEAR	12	03	0017	N15	E50	12	6.8		B	CSO	60	5	5	3
6398		CULG	12	03	0210	N16	E49	12	6.8		B	CRO	20	5	5	2
6398		BOUL	12	03	1544	N15	E39	12	6.6		B	DSO	60	4	5	1
6398	26448	MWIL	12	03	1600	N14	E41	12	6.8	5	(B)					
6398		RAMY	12	03	1730	N15	E41	12	6.8		B	DAO	80	7	7	1
6398		HOLL	12	03	1815	N15	E39	12	6.7		B	DSO	80	8	7	3
6398		PALE	12	03	2020	N16	E38	12	6.7		B	BXO	30	4	5	3
6398		LEAR	12	04	0028	N14	E37	12	6.8		B	DSO	50	7	9	3
6398		CULG	12	04	0045	N16	E35	12	6.7		B	CAO	20	8	7	2
6398		RAMY	12	04	1223	N14	E29	12	6.7		B	DAO	50	10	7	3
6398		BOUL	12	04	1542	N14	E23	12	6.4		B	DSO	30	2	3	2
6398	26448	MWIL	12	04	1600	N14	E27	12	6.7	4	(BG)					
6398		HOLL	12	04	1610	N15	E28	12	6.8		B	BXO	40	7	8	3
6398		PALE	12	04	2010	N14	E23	12	6.6		A	AX	10	2	1	3
6398		CULG	12	05	0037	N15	E22	12	6.7		B	BXO	10	3	8	2
6398		RAMY	12	05	1230	N13	E12	12	6.4		A	AX	10	3	1	1
6398		BOUL	12	05	1645	N14	E11	12	6.5		B	BXO	10	2	1	2
6398		HOLL	12	05	1723	N14	E10	12	6.5		A	AX	10	4	1	3
6398		PALE	12	05	1805	N13	E09	12	6.4		A	AX	10	3	1	3
6398	26448	MWIL	12	05	1915	N14	E08	12	6.4	4	(AP)					
6398		CULG	12	06	0013	N14	E06	12	6.5		A	AX	10	2	1	3
6398		LEAR	12	06	0014	N14	E06	12	6.5		B	BXO	10	3	1	3
6398	26448	MWIL	12	06	1530	N13	W03	12	6.4	4	(AP)					
6398		HOLL	12	06	1725	N14	W02	12	6.6		B	BXO	10	3	5	2
6398		RAMY	12	06	1759	N13	W04	12	6.4		B	BXO	10	4	3	3
6398		PALE	12	06	1800	N12	W03	12	6.5		B	BXO	10	5	5	3
6398		CULG	12	07	0023	N14	W08	12	6.4		A	AX	10	3	1	3
6398		SVTO	12	07	0915	N15	W07	12	6.8		B	BXO	10	5	5	3
6398		RAMY	12	07	1334	N13	W11	12	6.7		B	CRO	10	3	3	3
6398	26448	MWIL	12	07	1545	N14	W13	12	6.7	4	(AP)					
6398		HOLL	12	07	1745	N15	W14	12	6.7		B	BXO		3	3	2
6398		PALE	12	07	1805	N14	W14	12	6.7		B	BXO	10	5	5	4
6398		LEAR	12	08	0016	N14	W17	12	6.7		B	BXO	30	4	4	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
6398		CULG	12	08	0120	N17	W20	12	6.5		B	BXO	10	8	5	2
6398		SVTO	12	08	0920	N14	W22	12	6.7		B	CAO	40	23	7	3
6398		RAMY	12	08	1305	N14	W24	12	6.7		B	DAO	110	19	6	4
6398		BOUL	12	08	1545	N13	W25	12	6.8		B	CAO	70	4	6	1
6398	26448	MWIL	12	08	1615	N14	W26	12	6.7	5	(BG)					
6398		PALE	12	08	1942	N13	W29	12	6.6		B	DAO	110	11	6	3
6398		LEAR	12	09	0030	N13	W31	12	6.7		B	EAO	140	6	12	3
6398		SVTO	12	09	1126	N14	W37	12	6.7		B	DAO	160	7	9	2
6398		RAMY	12	09	1223	N14	W37	12	6.7		B	DAO	260	30	10	4
6398		HOLL	12	09	1515	N13	W38	12	6.8		B	EAO	160	25	11	3
6398		BOUL	12	09	1557	N14	W38	12	6.8		B	DAO	200	11	8	3
6398	26448	MWIL	12	09	1630	N14	W39	12	6.7	6	(B)					
6398		PALE	12	09	1956	N13	W41	12	6.7		B	DAO	170	21	10	2
6398		LEAR	12	10	0030	N15	W43	12	6.8		B	EAO	130	14	11	3
6398		CULG	12	10	0123	N16	W46	12	6.6		B	DAO	150	10	12	2
6398		RAMY	12	10	1342	N15	W51	12	6.7		B	DAO	270	17	10	3
6398		BOUL	12	10	1548	N15	W52	12	6.7		B	DAO	100	10	10	1
6398	26448	MWIL	12	10	1615	N15	W52	12	6.7	5	(BG)					
6398		HOLL	12	10	1630	N14	W53	12	6.7		B	DAI	150	22	10	3
6398		PALE	12	10	1923	N14	W53	12	6.8		B	DAI	160	12	10	2
6398		CULG	12	11	0110	N16	W62	12	6.3		B	EAO	130	10	12	2
6398		LEAR	12	11	0115	N14	W57	12	6.7		B	DAO	120	10	10	2
6398		SVTO	12	11	0845	N16	W62	12	6.7		B	ESO	90	11	11	3
6398		RAMY	12	11	1220	N15	W63	12	6.7		B	DAO	80	16	10	4
6398		BOUL	12	11	1550	N14	W66	12	6.7		B	BXO	10	6	7	1
6398	26448	MWIL	12	11	1715	N14	W65	12	6.8	5	(AP)					
6398		HOLL	12	11	1748	N14	W68	12	6.6		B	CRO	70	10	11	2
6398		LEAR	12	12	0044	N14	W67	12	7.0		B	DSO	230	13	6	3
6398		CULG	12	12	0100	N17	W73	12	6.5		B	CAO	60	9	11	3
6398		SVTO	12	12	0853	N14	W75	12	6.7		B	CSO	120	6	10	3
6398		BOUL	12	12	1613	N14	W76	12	6.9		B	CSO	90	3	9	3
6398		HOLL	12	12	1635	N13	W78	12	6.8		B	CAO	30	3	6	3
6398		PALE	12	12	1915	N13	W80	12	6.8		B	CAO	60	5	6	3
6398		RAMY	12	12	1933	N14	W82	12	6.6		B	CAO	70	2	10	2
6398		CULG	12	13	0010	N14	W83	12	6.7		A	HS	20	1	2	2
6398		LEAR	12	13	0205	N12	W77	12	7.3		A	HS	60	1	2	3
6399	26445	MWIL	12	01	1600	N21	E71	12	7.1	3	(AP)					
6399	26445	MWIL	12	02	1530	N21	E56	12	6.9	3	(AP)					
6399		RAMY	12	02	1550	N22	E56	12	7.0		A	AX	10	2	1	3
6399		HOLL	12	02	1700	N22	E55	12	6.9		A	AX	10	2	1	3
6399		PALE	12	02	2018	N23	E55	12	7.1		A	AX		1		3
6399		LEAR	12	03	0017	N21	E52	12	7.0		A	AX	20	1	1	3
6399		CULG	12	03	0210	N22	E51	12	7.0		A	AX		1		2
6399		BOUL	12	03	1544	N21	E42	12	6.9		B	CSO	30	2	2	1
6399	26445	MWIL	12	03	1600	N21	E45	12	7.1	4	(B)					
6399		RAMY	12	03	1730	N22	E45	12	7.2		B	CRO	30	8	6	1
6399		HOLL	12	03	1815	N22	E43	12	7.1		B	CRO	20	4	7	3
6399		PALE	12	03	2020	N22	E43	12	7.1		B	CAO	30	2	6	3
6399		LEAR	12	04	0028	N20	E41	12	7.1		B	BXO	30	5	6	3
6399		CULG	12	04	0045	N21	E39	12	7.0		B	CAO	10	5	5	2
6399		BOUL	12	04	1542	N20	E32	12	7.1		B	CSO	30	3	7	2
6399	26445	MWIL	12	04	1600	N21	E33	12	7.2	5	(B)					
6399		PALE	12	04	2010	N20	E30	12	7.1		B	BXO	10	4	6	3
6399		CULG	12	05	0037	N22	E27	12	7.1		B	CRO	10	3	6	2
6399		RAMY	12	05	1230	N21	E21	12	7.1		B	BXO		2	7	1
6399		BOUL	12	05	1645	N22	E19	12	7.1		B	CSO	20	5	9	2
6399		HOLL	12	05	1723	N21	E18	12	7.1		B	BXO	10	3	6	3
6399		PALE	12	05	1805	N21	E17	12	7.0		B	BXO	10	3	6	3
6399	26445	MWIL	12	05	1915	N21	E16	12	7.0	5	(B)					
6399		CULG	12	06	0013	N21	E15	12	7.1		B	BXO	10	2	6	3
6399		LEAR	12	06	0014	N20	E11	12	6.8		A	HA	10	1	2	3
6399	26445	MWIL	12	06	1530	N20	E04	12	6.9	4	(AP)					
6399		BOUL	12	06	1600	N22	E02	12	6.8		A	AX	10	1	1	2
6399		HOLL	12	06	1725	N20	E03	12	6.9		B	BXO	10	2	3	2
6399		RAMY	12	06	1759	N19	E02	12	6.9		B	CRO	10	3	4	3
6399		PALE	12	06	1800	N20	E02	12	6.9		B	BXO	10	3	4	3
6399		CULG	12	07	0023	N22	W01	12	6.9		B	BXO	10	7	4	3
6399		SVTO	12	07	0915	N20	W08	12	6.8		A	AX		1		3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6399		RAMY	12	07	1334	N20	W08	12	6.9		B	CRO	10	3	4	3
6399	26445	MWIL	12	07	1545	N23	W10	12	6.9	4	(AP)					
6399		HOLL	12	07	1745	N21	W13	12	6.7		A	AX		1		2
6399		PALE	12	07	1805	N20	W10	12	7.0		B	BXO	10	6	6	4
6399		LEAR	12	08	0016	N20	W15	12	6.9		B	BXO	20	2	3	3
6399		SVTO	12	08	0920	N20	W22	12	6.7		A	AX		1		3
6399		RAMY	12	08	1305	N19	W23	12	6.8		B	BXO	10	2	3	4
6399	26445	MWIL	12	08	1615	N20	W25	12	6.8	3	(AP)					
6399		HOLL	12	08	1845	N20	W28	12	6.6		A	AX	10	2	1	2
6399		PALE	12	08	1942	N19	W28	12	6.7		A	AX	10	2	2	3
6399		RAMY	12	09	1223	N22	W33	12	7.0		A	AX	10	3	2	4
6399		HOLL	12	09	1515	N21	W36	12	6.9		A	AX		2	2	3
6399	26445	MWIL	12	09	1630	N22	W36	12	6.9	4	(AP)					
6399		PALE	12	09	1956	N22	W39	12	6.8		A	AX		1		2
6399		RAMY	12	10	1342	N21	W50	12	6.7		B	CRO	30	8	5	3
6399		BOUL	12	10	1548	N23	W55	12	6.4		B	BXO	10	6	10	1
6399	26445	MWIL	12	10	1615	N22	W50	12	6.8	5	(BG)					
6399		HOLL	12	10	1630	N21	W52	12	6.7		B	DSI	40	8	5	3
6399		PALE	12	10	1923	N21	W55	12	6.6		B	DAO	100	6	5	2
6399		CULG	12	11	0110	N23	W61	12	6.3		B	DAO	90	8	8	2
6399		LEAR	12	11	0115	N21	W55	12	6.8		B	CAO	80	6	7	2
6399		SVTO	12	11	0845	N23	W60	12	6.7		B	DSO	80	10	8	3
6399		RAMY	12	11	1220	N21	W62	12	6.8		B	DAO	160	14	9	4
6399		BOUL	12	11	1550	N21	W65	12	6.7		B	DSO	120	5	10	1
6399	26445	MWIL	12	11	1715	N21	W65	12	6.7	5	(BG)					
6399		HOLL	12	11	1748	N20	W65	12	6.8		B	DAO	220	10	10	2
6399		LEAR	12	12	0044	N21	W68	12	6.8		B	DAO	430	4	5	3
6399		CULG	12	12	0100	N22	W72	12	6.5		B	DAI	110	10	8	3
6399		SVTO	12	12	0853	N21	W73	12	6.8		B	DAI	230	8	9	3
6399		BOUL	12	12	1613	N23	W76	12	6.8		B	CAO	120	7	7	3
6399		HOLL	12	12	1635	N20	W77	12	6.8		B	DAO	50	9	7	3
6399		PALE	12	12	1915	N20	W79	12	6.7		B	DAO	270	12	7	3
6399		RAMY	12	12	1933	N22	W80	12	6.7		B	DAO	160	7	10	2
6399		CULG	12	13	0010	N22	W82	12	6.7		B	DAO	20	3	3	2
6399		LEAR	12	13	0205	N21	W80	12	6.9		A	HS	30	1	1	3
6399A		SVTO	12	11	0845	S27	W52	12	7.3		A	AX		1		3
6399A	26471	MWIL	12	11	1715	S28	W55	12	7.4	4	(B)					
6399A		HOLL	12	11	1748	S29	W55	12	7.4		B	BXO	40	3	3	2
6399A		CULG	12	12	0100	S29	W64	12	7.0		B	BXO		3	6	3
6399B	26454	MWIL	12	05	1915	N11	E23	12	7.5	4	(AP)					
6395		RAMY	12	01	1407	N16	E79	12	7.6		B	DKO	270	7	7	3
6395	26446	MWIL	12	01	1600	N16	E81	12	7.8	4	BF					
6395		PALE	12	01	1820	N17	E75	12	7.5		B	FKO	420	10	18	3
6395		HOLL	12	01	1955	N16	E75	12	7.5		B	FKO	390	15	18	2
6395		LEAR	12	02	0014	N15	E78	12	7.9		B	FKO	390	8	15	3
6395		CULG	12	02	0120	N11	E75	12	7.7		B	FKO	20	10	15	2
6395	26446	MWIL	12	02	1530	N15	E68	12	7.8	4	(BF)					
6395		HOLL	12	02	1700	N16	E67	12	7.8		B	EAI	350	17	15	3
6395		PALE	12	02	2018	N18	E69	12	8.1		B	DAI	320	28	10	3
6395		LEAR	12	03	0017	N16	E65	12	7.9		B	EKO	550	23	12	3
6395		CULG	12	03	0210	N15	E60	12	7.6		B	EKO	300	17	11	2
6395		BOUL	12	03	1544	N16	E57	12	8.0		B	DKI	470	18	6	1
6395	26446	MWIL	12	03	1600	N15	E55	12	7.8	5	(BG)					
6395		RAMY	12	03	1730	N18	E58	12	8.1		B	DKO	310	31	9	1
6395		HOLL	12	03	1815	N17	E53	12	7.8		B	CAO	310	39	8	3
6395		PALE	12	03	2020	N18	E53	12	7.9		B	DKO	310	12	6	3
6395		LEAR	12	04	0028	N15	E52	12	7.9		B	DKO	680	28	10	3
6395		CULG	12	04	0045	N16	E50	12	7.8		B	DKO	220	22	8	2
6395		RAMY	12	04	1223	N16	E46	12	8.0		B	DAO	290	38	9	3
6395		BOUL	12	04	1542	N17	E44	12	8.0		B	DKI	380	32	8	2
6395	26446	MWIL	12	04	1600	N16	E43	12	7.9	5	(BG)					
6395		HOLL	12	04	1610	N18	E44	12	8.0		B	EKI	340	46	12	3
6395		PALE	12	04	2010	N17	E40	12	7.9		B	CKI	400	25	10	3
6395		CULG	12	05	0037	N19	E39	12	8.0		B	DKO	240	34	7	2
6395		BOUL	12	05	1645	N17	E29	12	7.9		B	DAI	280	28	7	2
6395		HOLL	12	05	1723	N16	E28	12	7.8		B	EAI	200	54	13	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
6395		PALE	12	05	1805	N17	E28	12	7.9		B	DAI	200	58	8	3
6395	26446	MWIL	12	05	1915	N16	E29	12	8.0	5	(BG)					
6395		CULG	12	06	0013	N17	E26	12	8.0		B	DAO	120	37	9	3
6395		LEAR	12	06	0014	N17	E25	12	7.9		B	DAO	100	20	8	3
6395	26446	MWIL	12	06	1530	N17	E18	12	8.0	5	(D)					
6395		BOUL	12	06	1600	N18	E15	12	7.8		B	DSI	110	14	8	2
6395		HOLL	12	06	1725	N18	E14	12	7.8		B	ESO	120	44	15	2
6395		RAMY	12	06	1759	N17	E15	12	7.9		B	EAO	260	81	15	3
6395		PALE	12	06	1800	N16	E13	12	7.7		B	EAI	190	72	14	3
6395		CULG	12	07	0023	N17	E11	12	7.8		B	FAI	80	53	15	3
6395		LEAR	12	07	0302	N18	E13	12	8.1		B	ESI	200	32	12	2
6395		SVTO	12	07	0915	N16	E06	12	7.8		B	DSO	90	52	9	3
6395		RAMY	12	07	1334	N15	E03	12	7.8		B	EAO	270	65	14	3
6395	26446	MWIL	12	07	1545	N18	E05	12	8.0	5	(BG)					
6395		BOUL	12	07	1550	N18	E05	12	8.0		B	DAO	210	11	9	1
6395		HOLL	12	07	1745	N18	E03	12	8.0		B	EAI	190	51	15	2
6395		PALE	12	07	1805	N16	E00	12	7.7		B	EAI	190	65	15	4
6395		LEAR	12	08	0016	N17	W03	12	7.8		B	EKI	350	38	13	3
6395		CULG	12	08	0120	N18	W02	12	7.9		B	EAI	120	30	6	2
6395		SVTO	12	08	0920	N18	W06	12	7.9		B	EAI	140	44	12	3
6395		RAMY	12	08	1305	N18	W09	12	7.8		B	EAO	390	73	15	4
6395		BOUL	12	08	1545	N18	W08	12	8.0		B	DKO	220	7	5	1
6395	26446	MWIL	12	08	1615	N19	W07	12	8.1	5	(BG)					
6395		HOLL	12	08	1845	N18	W11	12	7.9		B	EAI	300	70	12	2
6395		PALE	12	08	1942	N20	W12	12	7.9		B	CKI	250	36	10	3
6395		LEAR	12	09	0030	N18	W12	12	8.1		B	DKI	290	23	9	3
6395		SVTO	12	09	1126	N18	W19	12	8.0		B	DAI	210	23	10	2
6395		RAMY	12	09	1223	N19	W19	12	8.1		B	DAO	230	41	10	4
6395		HOLL	12	09	1515	N18	W21	12	8.0		B	DAI	160	40	10	3
6395		BOUL	12	09	1557	N17	W22	12	8.0		B	DAI	200	23	9	3
6395	26446	MWIL	12	09	1630	N18	W21	12	8.1	5	(BG)					
6395		PALE	12	09	1956	N19	W24	12	8.0		B	DKI	220	30	10	2
6395		LEAR	12	10	0030	N18	W26	12	8.0		B	DAI	140	20	10	3
6395		CULG	12	10	0123	N19	W27	12	8.0		B	EAI	180	21	6	2
6395		RAMY	12	10	1342	N18	W35	12	7.9		B	DAO	200	18	9	3
6395		BOUL	12	10	1548	N18	W35	12	8.0		B	DAI	80	11	8	1
6395	26446	MWIL	12	10	1615	N19	W34	12	8.1	5	(B)					
6395		HOLL	12	10	1630	N19	W36	12	7.9		B	DAI	170	33	10	3
6395		PALE	12	10	1923	N18	W38	12	7.9		B	DAO	160	10	9	2
6395		CULG	12	11	0110	N20	W45	12	7.6		B	DAO	120	13	10	2
6395		LEAR	12	11	0115	N19	W40	12	8.0		B	CAO	120	13	8	2
6395		SVTO	12	11	0845	N20	W46	12	7.8		B	DSO	80	13	10	3
6395		RAMY	12	11	1220	N19	W47	12	7.9		B	DAO	170	27	10	4
6395		BOUL	12	11	1550	N18	W49	12	7.9		B	CSI	70	8	9	1
6395	26446	MWIL	12	11	1715	N18	W49	12	8.0	5	(B)					
6395		HOLL	12	11	1748	N19	W51	12	7.8		B	ERO	80	10	11	2
6395		LEAR	12	12	0044	N18	W51	12	8.1		B	DSO	170	16	6	3
6395		SVTO	12	12	0853	N18	W59	12	7.9		B	DAO	80	4	10	3
6395		BOUL	12	12	1613	N19	W62	12	7.9		B	BXO	20	2	9	3
6395		HOLL	12	12	1635	N18	W63	12	7.9		B	CAO	10	3	9	3
6395		PALE	12	12	1915	N18	W65	12	7.8		B	BXO	20	6	9	3
6395		RAMY	12	12	1933	N17	W66	12	7.8		B	CRO	40	3	10	2
6395		CULG	12	13	0010	N20	W69	12	7.7		B	CRO	30	3	2	2
6395		LEAR	12	13	0205	N19	W65	12	8.1		A	HS	40	1	2	3
6395		RAMY	12	13	1339	N18	W75	12	7.8		B	BXO	10	3	6	4
6395A		PALE	12	05	1805	S22	E27	12	7.8		A	AX		3	1	3
6395B	26465	MWIL	12	10	1615	S10	W36	12	8.0	4	(AP)					
6395B		HOLL	12	10	1630	S12	W37	12	7.9		A	AX	10	2	2	3
6395C	26466	MWIL	12	10	1615	S15	W32	12	8.2	4	(AP)					
6395C		CULG	12	11	0110	S15	W40	12	8.0		A	AX		1		2
6395D		PALE	12	07	1805	N24	E10	12	8.5		B	BXO		3	5	4
6397		LEAR	12	02	0014	N08	E79	12	7.9		B	CAO	30	2	4	3
6397	26449	MWIL	12	02	1530	N09	E76	12	8.3	5	(B)					
6397		RAMY	12	02	1550	N09	E76	12	8.4		B	DAO	210	9	10	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
6397		HOLL	12	02	1700	N10	E73	12	8.2		B	DAO	170	5	10	3
6397		PALE	12	02	2018	N11	E75	12	8.5		B	DAO	160	2	10	3
6397		LEAR	12	03	0017	N10	E70	12	8.3		B	DSO	260	4	8	3
6397		CULG	12	03	0210	N09	E68	12	8.2		B	DAO	210	3	10	2
6397		BOUL	12	03	1544	N10	E62	12	8.3		B	DAO	240	2	9	1
6397	26449	MWIL	12	03	1600	N09	E62	12	8.3	5	(B)					
6397		RAMY	12	03	1730	N10	E63	12	8.5		B	EAO	290	13	12	1
6397		HOLL	12	03	1815	N10	E60	12	8.3		B	DSO	200	8	10	3
6397		PALE	12	03	2020	N11	E60	12	8.4		B	DAO	210	5	9	3
6397		LEAR	12	04	0028	N08	E56	12	8.2		B	DKO	220	8	9	3
6397		CULG	12	04	0045	N09	E56	12	8.2		B	DSO	190	7	9	2
6397		RAMY	12	04	1223	N09	E50	12	8.3		B	EAO	270	15	12	3
6397		BOUL	12	04	1542	N09	E48	12	8.2		B	DAO	270	6	8	2
6397	26449	MWIL	12	04	1600	N09	E48	12	8.3	6	(D)					
6397		HOLL	12	04	1610	N10	E50	12	8.4		B	EAO	240	11	11	3
6397		PALE	12	04	2010	N09	E49	12	8.5		B	EAO	210	8	11	3
6397		CULG	12	05	0037	N10	E44	12	8.3		B	EAO	190	9	12	2
6397		RAMY	12	05	1230	N09	E38	12	8.4		B	EAO	330	17	12	1
6397		BOUL	12	05	1645	N09	E35	12	8.3		B	EAO	240	10	12	2
6397		HOLL	12	05	1723	N10	E36	12	8.4		B	ESI	240	24	11	3
6397		PALE	12	05	1805	N10	E35	12	8.4		B	DSI	220	27	12	3
6397	26449	MWIL	12	05	1915	N09	E33	12	8.3	6	(BG)					
6397		CULG	12	06	0013	N10	E31	12	8.3		B	ESI	140	19	12	3
6397		LEAR	12	06	0014	N09	E31	12	8.3		B	EKI	170	11	12	3
6397	26449	MWIL	12	06	1530	N09	E22	12	8.3	5	(BG)					
6397		BOUL	12	06	1600	N10	E24	12	8.5		B	DAO	290	12	10	2
6397		HOLL	12	06	1725	N10	E21	12	8.3		B	EAO	330	21	12	2
6397		RAMY	12	06	1759	N10	E23	12	8.5		B	EAO	400	38	12	3
6397		PALE	12	06	1800	N10	E19	12	8.2		B	FAI	310	39	17	3
6397		CULG	12	07	0023	N11	E19	12	8.4		B	EKI	290	40	13	3
6397		LEAR	12	07	0302	N10	E15	12	8.2		B	EKI	400	25	12	2
6397		SVTO	12	07	0915	N10	E14	12	8.4		B	EKI	230	46	14	3
6397		RAMY	12	07	1334	N09	E12	12	8.5		BGD	EKO	510	45	11	3
6397	26449	MWIL	12	07	1545	N09	E08	12	8.2	6	(BP)					
6397		BOUL	12	07	1550	N10	E07	12	8.2		B	DKI	350	11	10	1
6397		HOLL	12	07	1745	N10	E09	12	8.4		B	EHI	410	56	12	2
6397		PALE	12	07	1805	N10	E08	12	8.3		B	EHI	340	66	12	4
6397		LEAR	12	08	0016	N10	E04	12	8.3		B	EKI	410	28	12	3
6397		CULG	12	08	0120	N10	E03	12	8.3		B	EKI	290	42	11	2
6397		SVTO	12	08	0920	N10	E01	12	8.5		B	EKI	310	47	13	3
6397		RAMY	12	08	1305	N11	W01	12	8.5		BGD	EKO	380	47	14	4
6397		BOUL	12	08	1545	N09	W05	12	8.3		B	DKO	230	5	10	1
6397	26449	MWIL	12	08	1615	N09	W06	12	8.2	6	(BP)					
6397		HOLL	12	08	1845	N10	W06	12	8.3		B	EKI	470	48	14	2
6397		LEAR	12	09	0030	N09	W08	12	8.4		B	DKI	290	18	10	3
6397		SVTO	12	09	1126	N09	W15	12	8.3		B	EKO	380	26	12	2
6397		RAMY	12	09	1223	N10	W15	12	8.4		B	EKO	410	33	11	4
6397		HOLL	12	09	1515	N10	W17	12	8.3		B	CKO	290	28	12	3
6397		BOUL	12	09	1557	N10	W16	12	8.5		B	EKO	320	12	11	3
6397	26449	MWIL	12	09	1630	N09	W19	12	8.3	6	(BG)					
6397		PALE	12	09	1956	N09	W20	12	8.3		B	DKO	370	17	10	2
6397		LEAR	12	10	0030	N09	W21	12	8.4		B	EKO	250	16	14	3
6397		CULG	12	10	0123	N09	W23	12	8.3		B	DKO	310	9	13	2
6397		RAMY	12	10	1342	N09	W28	12	8.5		B	EKO	330	21	12	3
6397		BOUL	12	10	1548	N09	W34	12	8.1		A	HA	230	5	3	1
6397	26449	MWIL	12	10	1615	N09	W33	12	8.2	5	(BP)					
6397		HOLL	12	10	1630	N09	W31	12	8.4		B	CKO	190	23	11	3
6397		PALE	12	10	1923	N09	W31	12	8.5		B	CKO	260	12	11	2
6397		CULG	12	11	0110	N11	W39	12	8.1		B	DKO	280	16	10	2
6397		LEAR	12	11	0115	N09	W33	12	8.6		B	EKO	210	16	11	2
6397		SVTO	12	11	0845	N10	W40	12	8.3		B	CKO	280	20	13	3
6397		RAMY	12	11	1220	N10	W41	12	8.4		B	EKO	280	23	11	4
6397		BOUL	12	11	1550	N09	W44	12	8.3		B	CAO	210	7	9	1
6397	26449	MWIL	12	11	1715	N08	W47	12	8.2	5	(BP)					
6397		HOLL	12	11	1748	N09	W45	12	8.4		B	CKO	320	14	13	2
6397		LEAR	12	12	0044	N08	W51	12	8.2		B	DKO	340	14	4	3
6397		CULG	12	12	0100	N11	W53	12	8.0		B	CKO	270	14	9	3
6397		SVTO	12	12	0853	N08	W56	12	8.2		B	CSO	260	14	8	3
6397		BOUL	12	12	1613	N08	W57	12	8.4		B	CAI	210	17	7	3

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6397		HOLL	12	12	1635	N08	W59	12	8.3		B	CAO	140	15	7	3
6397		PALE	12	12	1915	N08	W60	12	8.3		B	CAO	260	12	7	3
6397		RAMY	12	12	1933	N09	W61	12	8.2		B	CKO	270	8	7	2
6397		CULG	12	13	0010	N09	W70	12	7.7		B	CKO	220	12	7	2
6397		LEAR	12	13	0205	N09	W66	12	8.1		B	DKO	180	5	3	3
6397		RAMY	12	13	1339	N10	W70	12	8.3		B	CKO	330	14	12	4
6397	26449	MWIL	12	13	1745	N09	W74	12	8.2	4	(BP)					
6397		PALE	12	13	1920	N12	W78	12	7.9		B	CAO	80	6	9	2
6397		CULG	12	14	0010	N09	W76	12	8.3		B	CKO	230	6	5	3
6397		LEAR	12	14	0022	N09	W75	12	8.4		B	DKO	180	5	7	3
6397		RAMY	12	14	1420	N10	W82	12	8.4		B	CAO	40	3	8	3
6397	26449	MWIL	12	14	1545	N10	W82	12	8.5	4	X					
6397A		RAMY	12	04	1223	N06	E55	12	8.6		A	AX	10	3	2	3
6397B		RAMY	12	07	1334	N24	E13	12	8.6		A	AX		1		3
6404		CULG	12	06	0013	S18	E39	12	9.0		A	AX		2		3
6404	26456	MWIL	12	06	1530	S18	E30	12	8.9	4	(B)					
6404		BOUL	12	06	1600	S17	E29	12	8.9		B	CAO	60	4	3	2
6404		HOLL	12	06	1725	S18	E29	12	8.9		B	BXO	30	7	4	2
6404		RAMY	12	06	1759	S18	E29	12	8.9		B	DAO	40	7	4	3
6404		PALE	12	06	1800	S18	E28	12	8.9		B	DSO	30	7	4	3
6404		CULG	12	07	0023	S19	E25	12	8.9		B	DSO	20	8	5	3
6404		LEAR	12	07	0302	S18	E23	12	8.9		B	DAO	80	5	5	2
6404		SVTO	12	07	0915	S18	E20	12	8.9		B	DSO	70	21	5	3
6404		RAMY	12	07	1334	S18	E17	12	8.8		B	DAO	130	15	6	3
6404	26456	MWIL	12	07	1545	S18	E16	12	8.9	5	(BG)					
6404		BOUL	12	07	1550	S18	E15	12	8.8		B	DAO	140	8	6	1
6404		HOLL	12	07	1745	S18	E15	12	8.9		B	DAI	120	20	6	2
6404		PALE	12	07	1805	S18	E15	12	8.9		B	DAO	100	20	7	4
6404		LEAR	12	08	0016	S18	E12	12	8.9		B	DAO	200	17	7	3
6404		CULG	12	08	0120	S18	E08	12	8.7		B	DAO	70	11	8	2
6404		SVTO	12	08	0920	S18	E07	12	8.9		B	DAO	170	19	9	3
6404		RAMY	12	08	1305	S17	E05	12	8.9		B	DAO	220	21	9	4
6404		BOUL	12	08	1545	S17	E02	12	8.8		B	DAO	140	3	7	1
6404	26456	MWIL	12	08	1615	S18	E02	12	8.8	5	(B)					
6404		HOLL	12	08	1845	S17	E02	12	8.9		B	DSO	190	20	8	2
6404		PALE	12	08	1942	S18	E01	12	8.9		B	DAO	130	10	8	3
6404		LEAR	12	09	0030	S18	W02	12	8.9		B	DAO	150	14	8	3
6404		SVTO	12	09	1126	S18	W07	12	8.9		B	DAO	110	5	9	2
6404		RAMY	12	09	1223	S18	W09	12	8.8		B	DAO	190	13	9	4
6404		HOLL	12	09	1515	S18	W09	12	8.9		B	DSO	140	12	9	3
6404		BOUL	12	09	1557	S17	W11	12	8.8		B	DAO	150	8	10	3
6404	26456	MWIL	12	09	1630	S17	W10	12	8.9	5	(B)					
6404		PALE	12	09	1956	S18	W11	12	9.0		B	DAO	110	9	9	2
6404		LEAR	12	10	0030	S18	W14	12	8.9		B	DAO	120	5	9	3
6404		CULG	12	10	0123	S17	W15	12	8.9		B	DAO	120	11	11	2
6404		RAMY	12	10	1342	S18	W21	12	9.0		B	EKO	250	15	12	3
6404		BOUL	12	10	1548	S17	W22	12	9.0		B	CAO	60	8	9	1
6404	26456	MWIL	12	10	1615	S17	W25	12	8.8	5	(BP)					
6404		HOLL	12	10	1630	S17	W25	12	8.8		B	CSO	90	20	13	3
6404		PALE	12	10	1923	S18	W25	12	8.9		B	DAO	100	9	9	2
6404		CULG	12	11	0110	S17	W30	12	8.8		B	DAO	130	11	9	2
6404		LEAR	12	11	0115	S16	W28	12	8.9		B	CAO	90	6	9	2
6404		SVTO	12	11	0845	S16	W34	12	8.8		B	CSO	100	5	10	3
6404		RAMY	12	11	1220	S18	W34	12	8.9		B	CAO	140	8	9	4
6404		BOUL	12	11	1550	S18	W38	12	8.8		B	CAO	130	3	5	1
6404	26456	MWIL	12	11	1715	S18	W38	12	8.8	5	(BP)					
6404		HOLL	12	11	1748	S18	W40	12	8.7		A	HS	110	1	2	2
6404		CULG	12	12	0100	S17	W45	12	8.6		B	CAO	80	4	8	3
6404		SVTO	12	12	0853	S18	W49	12	8.6		A	HS	110	2	2	3
6404		BOUL	12	12	1613	S19	W50	12	8.8		A	HS	50	1	2	3
6404		HOLL	12	12	1635	S18	W53	12	8.6		A	HA	40	3	2	3
6404		PALE	12	12	1915	S18	W54	12	8.7		A	HA	50	2	2	3
6404		RAMY	12	12	1933	S18	W52	12	8.8		A	HA	70	2	2	2
6404		CULG	12	13	0010	S18	W60	12	8.4		A	HA	60	2	2	2
6404		LEAR	12	13	0205	S17	W58	12	8.7		A	HS	70	1	2	3
6404		RAMY	12	13	1339	S17	W61	12	8.9		B	CAO	30	4	7	4

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6404	26456	MWIL	12	13	1745	S18	W66	12	8.7	5	(AP)					
6404		PALE	12	13	1920	S15	W69	12	8.6		A	HA	150	2	3	2
6404		CULG	12	14	0010	S18	W71	12	8.6		A	HS	60	1	1	3
6404		LEAR	12	14	0022	S17	W68	12	8.8		A	HA	50	1	2	3
6404		RAMY	12	14	1420	S18	W79	12	8.6		A	HA	60	1	2	3
6404	26456	MWIL	12	14	1545	S18	W79	12	8.6	3	(AP)					
6404		HOLL	12	14	1720	S18	W80	12	8.6		A	HA	60	1	1	3
6404		LEAR	12	15	0006	S17	W79	12	9.0		A	HS	60	1	2	3
6404A		RAMY	12	10	1342	N11	W21	12	9.0		A	AX	10	3	2	3
6404B	26467	MWIL	12	10	1615	N12	W14	12	9.6	4	(AP)					
6404B		HOLL	12	10	1630	N11	W15	12	9.5		A	AX		1		3
6404C	26468	MWIL	12	10	1615	N20	E05	12	11.0	3	(B)					
6405	26458	MWIL	12	06	1530	S11	E62	12	11.3	4	(B)					
6405		BOUL	12	06	1600	S11	E63	12	11.4		B	BXO	30	2	1	2
6405		HOLL	12	06	1725	S10	E61	12	11.3		B	BXO	20	3	6	2
6405		RAMY	12	06	1759	S10	E61	12	11.3		B	CRO	20	5	4	3
6405		PALE	12	06	1800	S11	E61	12	11.3		B	BXO	20	4	4	3
6405		CULG	12	07	0023	S11	E58	12	11.4		B	BXO	10	2	4	3
6405		LEAR	12	07	0302	S10	E56	12	11.3		B	DSO	40	2	4	2
6405		SVTO	12	07	0915	S10	E53	12	11.4		B	BXO	10	5	4	3
6405		RAMY	12	07	1334	S10	E49	12	11.2		B	BXO	20	3	4	3
6405	26458	MWIL	12	07	1545	S10	E48	12	11.3	4	(B)					
6405		HOLL	12	07	1745	S10	E47	12	11.3		B	BXO		2	4	2
6405		PALE	12	07	1805	S10	E48	12	11.4		B	BXO	10	4	5	4
6405		LEAR	12	08	0016	S11	E43	12	11.2		B	BXO	30	2	3	3
6405		SVTO	12	08	0920	S11	E37	12	11.2		B	BXO	10	3	3	3
6405		HOLL	12	08	1845	S10	E35	12	11.4		A	AX	10	2	2	2
6406	26457	MWIL	12	06	1530	S24	E60	12	11.3	4	(AP)					
6406		RAMY	12	06	1759	S23	E59	12	11.3		A	AX		1		3
6406		PALE	12	06	1800	S25	E61	12	11.5		B	BXO	10	2	3	3
6406		CULG	12	07	0023	S23	E59	12	11.6		A	AX		1		3
6406		LEAR	12	07	0302	S27	E52	12	11.2		B	BXO	30	2	2	2
6406		SVTO	12	07	0915	S26	E50	12	11.3		B	BXO	10	3	3	3
6406		RAMY	12	07	1334	S28	E48	12	11.3		B	BXO	10	2	3	3
6406	26457	MWIL	12	07	1545	S27	E45	12	11.2	4	(AP)					
6406		PALE	12	07	1805	S27	E45	12	11.2		B	BXO	10	2	5	4
6406		LEAR	12	08	0016	S26	E42	12	11.3		B	BXO	30	2	5	3
6406		CULG	12	08	0120	S29	E36	12	10.9		B	BXO		2	5	2
6406		SVTO	12	08	0920	S27	E36	12	11.2		B	BXO	10	5	6	3
6406		RAMY	12	08	1305	S26	E37	12	11.4		B	BXO	10	5	2	4
6406	26457	MWIL	12	08	1615	S27	E36	12	11.5	4	(BP)					
6406		HOLL	12	08	1845	S27	E35	12	11.5		B	BXO	10	7	5	2
6406		PALE	12	08	1942	S26	E34	12	11.5		A	AX	10	2	1	3
6406		LEAR	12	09	0030	S27	E32	12	11.5		B	BXO	10	5	3	3
6406		SVTO	12	09	1126	S27	E27	12	11.6		B	CRO	20	5	6	2
6406		RAMY	12	09	1223	S27	E23	12	11.3		B	CRO	20	5	8	4
6406		HOLL	12	09	1515	S26	E21	12	11.3		B	BXO	10	4	7	3
6406		BOUL	12	09	1557	S26	E21	12	11.3		B	BXO	10	2	4	3
6406	26457	MWIL	12	09	1630	S27	E22	12	11.4	4	(B)					
6406		PALE	12	09	1956	S26	E20	12	11.4		B	BXO	10	2	3	2
6406		LEAR	12	10	0030	S26	E17	12	11.3		B	BXO	10	3	5	3
6406		RAMY	12	10	1342	S28	E13	12	11.6		B	BXO	10	7	4	3
6406	26457	MWIL	12	10	1615	S27	E12	12	11.6	4	(AF)					
6406		HOLL	12	10	1630	S27	E12	12	11.6		B	BXO	10	6	4	3
6406		SVTO	12	11	0845	S26	E02	12	11.5		A	AX		1		3
6406		RAMY	12	11	1220	S26	E01	12	11.6		A	AX	10	3	1	4
6406		SVTO	12	12	0853	S27	W11	12	11.5		A	AX		1		3
6405A	26460	MWIL	12	07	1545	S22	E52	12	11.6	4	(AP)					
6405A	26469	MWIL	12	10	1615	S20	E14	12	11.7	4	(AP)					
6406A	26474	MWIL	12	13	1745	N07	W12	12	12.8	4	(AP)					
6406A		CULG	12	14	0010	N06	W16	12	12.8		A	AX		1		3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6408		SVTO	12	08	0920	N26	E69	12	13.7		B	BXO	10	3	4	3
6408		RAMY	12	08	1305	N25	E62	12	13.3		B	BXO	20	3	3	4
6408	26461	MWIL	12	08	1615	N24	E64	12	13.6	4	(BP)					
6408		HOLL	12	08	1845	N26	E61	12	13.5		B	BXO	20	4	3	2
6408		LEAR	12	09	0030	N24	E58	12	13.5		B	BXO	10	2	3	3
6408		SVTO	12	09	1126	N25	E51	12	13.4		A	AX	10	1	1	2
6408		HOLL	12	09	1515	N25	E50	12	13.5		B	BXO	10	2	4	3
6408		BOUL	12	09	1557	N25	E48	12	13.4		A	AX	10	1	1	3
6408	26461	MWIL	12	09	1630	N24	E50	12	13.5	5	(B)					
6408		PALE	12	09	1956	N26	E47	12	13.5		A	AX	10	2	2	2
6408		LEAR	12	10	0030	N25	E44	12	13.4		B	BXO	20	2	1	3
6408		CULG	12	10	0123	N25	E43	12	13.4		B	BXO		1		2
6408		RAMY	12	10	1342	N24	E36	12	13.3		A	AX	10	1	1	3
6408A		PALE	12	13	1920	N09	E12	12	14.7		A	AX	40	1	1	2
6411		RAMY	12	09	1223	S23	E67	12	14.7		A	AX	10	1	1	4
6411		HOLL	12	09	1515	S23	E66	12	14.7		B	BXO	10	2	3	3
6411		BOUL	12	09	1557	S25	E66	12	14.8		A	AX	10	1	1	3
6411	26463	MWIL	12	09	1630	S24	E65	12	14.7	4	(B)					
6411		LEAR	12	10	0030	S23	E59	12	14.6		B	BXO	20	2	2	3
6411		RAMY	12	10	1342	S24	E53	12	14.7		B	BXO	10	4	5	3
6411	26463	MWIL	12	10	1615	S24	E52	12	14.7	4	(B)					
6411		HOLL	12	10	1630	S23	E53	12	14.8		B	BXO	10	5	6	3
6411		LEAR	12	11	0115	S25	E49	12	14.8		B	BXO	10	3	3	2
6411		SVTO	12	11	0845	S25	E44	12	14.8		B	BXO	20	4	5	3
6411		RAMY	12	11	1220	S22	E41	12	14.7		B	CAO	30	7	5	4
6411		BOUL	12	11	1550	S24	E40	12	14.7		B	BXO	10	2	4	1
6411	26463	MWIL	12	11	1715	S24	E39	12	14.7	5	(B)					
6411		HOLL	12	11	1748	S23	E40	12	14.8		B	BXO	30	5	4	2
6411		LEAR	12	12	0044	S25	E37	12	14.9		B	CSO	60	3	4	3
6411		CULG	12	12	0100	S24	E35	12	14.7		B	CRO	10	5	6	3
6411		SVTO	12	12	0853	S25	E31	12	14.8		B	CAO	50	7	6	3
6411		BOUL	12	12	1613	S24	E26	12	14.7		B	BXO	10	4	6	3
6411		HOLL	12	12	1635	S24	E26	12	14.7		B	BXO	10	3	6	3
6411		RAMY	12	12	1933	S22	E25	12	14.7		B	CRO	10	4	6	2
6411		CULG	12	13	0010	S23	E22	12	14.7		B	BXO	10	5	6	2
6411		LEAR	12	13	0205	S23	E21	12	14.7		B	BXO	20	3	5	3
6411		RAMY	12	13	1339	S22	E16	12	14.8		B	BXO	10	5	7	4
6411		PALE	12	13	1920	S23	E11	12	14.6		B	BXO	40	2	2	2
6411		LEAR	12	14	0022	S24	E10	12	14.8		B	BXO	10	3	4	3
6411		RAMY	12	14	1420	S24	E06	12	15.1		A	AX		1		3
6411	26463	MWIL	12	14	1545	S23	E04	12	15.0	3	(AF)					
6409	26462	MWIL	12	08	1615	N27	E85	12	15.3	5	AP					
6409		HOLL	12	08	1845	N28	E80	12	15.0		A	AX	30	1	2	2
6409		LEAR	12	09	0030	N28	E75	12	14.9		A	AX	10	1	1	3
6409		SVTO	12	09	1126	N28	E72	12	15.1		B	CAO	60	3	6	2
6409		RAMY	12	09	1223	N28	E71	12	15.1		B	CAO	120	4	6	4
6409		HOLL	12	09	1515	N29	E69	12	15.0		A	HA	60	2	1	3
6409		BOUL	12	09	1557	N28	E72	12	15.3		B	CAO	90	2	4	3
6409	26462	MWIL	12	09	1630	N27	E70	12	15.1	5	(AP)					
6409		PALE	12	09	1956	N29	E69	12	15.2		A	HA	50	1	1	2
6409		LEAR	12	10	0030	N28	E65	12	15.1		A	HA	50	1	2	3
6409		CULG	12	10	0123	N28	E64	12	15.0		A	HS	40	1	1	2
6409		RAMY	12	10	1342	N28	E60	12	15.3		B	CAO	90	3	4	3
6409		BOUL	12	10	1548	N28	E59	12	15.3		A	HS	40	1	2	1
6409	26462	MWIL	12	10	1615	N27	E58	12	15.2	5	(AP)					
6409		HOLL	12	10	1630	N29	E57	12	15.1		A	HA	80	3	2	3
6409		PALE	12	10	1923	N29	E57	12	15.3		A	HS	80	1	1	2
6409		CULG	12	11	0110	N29	E53	12	15.2		A	HA	70	2	2	2
6409		LEAR	12	11	0115	N28	E52	12	15.1		A	HA	40	1	1	2
6409		SVTO	12	11	0845	N26	E50	12	15.2		A	HA	60	3	2	3
6409		RAMY	12	11	1220	N28	E47	12	15.2		B	CAO	80	7	3	4
6409		BOUL	12	11	1550	N28	E44	12	15.1		A	HS	50	1	1	1
6409	26462	MWIL	12	11	1715	N27	E44	12	15.1	5	(BG)					
6409		HOLL	12	11	1748	N28	E44	12	15.2		B	CSO	80	5	4	2
6409		LEAR	12	12	0044	N29	E41	12	15.2		A	HS	80	0	1	3
6409		CULG	12	12	0100	N29	E40	12	15.2		A	HA	60	3	2	3

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6409		SVTO	12	12	0853	N28	E37	12	15.3		A	HA	70	2	1	3
6409		BOUL	12	12	1613	N29	E32	12	15.2		A	HA	50	1	2	3
6409		HOLL	12	12	1635	N27	E32	12	15.2		A	HA	30	2	2	3
6409		PALE	12	12	1915	N29	E30	12	15.1		A	HS	50	3	2	3
6409		RAMY	12	12	1933	N29	E29	12	15.1		A	HA	50	2	2	2
6409		CULG	12	13	0010	N29	E28	12	15.2		A	HA	30	2	2	2
6409		LEAR	12	13	0205	N29	E27	12	15.2		A	HS	20	2	1	3
6409		RAMY	12	13	1339	N29	E20	12	15.1		A	HS	70	2	2	4
6409	26462	MWIL	12	13	1745	N28	E18	12	15.1	5	(AP)					
6409		PALE	12	13	1920	N28	E18	12	15.2		A	HS	60	2	5	2
6409		CULG	12	14	0010	N28	E13	12	15.0		A	HS	50	2	1	3
6409		LEAR	12	14	0022	N27	E15	12	15.2		A	HA	50	2	2	3
6409		RAMY	12	14	1420	N28	E07	12	15.1		A	HA	40	2	2	3
6409	26462	MWIL	12	14	1545	N28	E06	12	15.1	5	(AP)					
6409		HOLL	12	14	1720	N28	E05	12	15.1		A	HA	30	2	2	3
6409		BOUL	12	14	1721	N28	E06	12	15.2		A	HA	20	1	1	1
6409		PALE	12	14	2130	N30	E08	12	15.5		A	HA	150	2	2	2
6409		LEAR	12	15	0006	N28	E02	12	15.2		A	HS	20	2	2	3
6409		BOUL	12	15	1540	N28	W07	12	15.1		A	HA	20	1	1	2
6409	26462	MWIL	12	15	1545	N28	W07	12	15.1	4	(AP)					
6409		PALE	12	15	1829	N27	W08	12	15.1		A	HR	10	2	1	3
6409		LEAR	12	16	0015	N30	W11	12	15.1		B	CSO	40	2	3	4
6409		CULG	12	16	0050	N31	W12	12	15.1		A	HA	20	3	1	2
6409		RAMY	12	16	1253	N24	W18	12	15.1		B	CAO	20	4	2	4
6409		BOUL	12	16	1530	N28	W17	12	15.3		A	AX	10	1	1	3
6409	26462	MWIL	12	16	1545	N28	W19	12	15.2	3	(AP)					
6409		PALE	12	16	1916	N27	W21	12	15.2		A	HA	20	1	1	3
6409		CULG	12	17	0010	N29	W25	12	15.0		A	AX		1		2
6409		LEAR	12	17	0015	N28	W24	12	15.1		B	CRO	10	2	2	3
6409		SVTO	12	17	1100	N28	W31	12	15.0		A	AX		1		2
6409		RAMY	12	17	1155	N29	W29	12	15.2		B	BXO	10	4	2	3
6409		HOLL	12	17	1510	N28	W32	12	15.1		A	AX		2	2	2
6410		LEAR	12	09	0030	N05	E80	12	15.0		B	BXO	10	2	3	3
6410		SVTO	12	09	1126	N06	E80	12	15.5		B	DAO	210	7	10	2
6410		RAMY	12	09	1223	N05	E78	12	15.3		B	DAO	300	4	6	4
6410		HOLL	12	09	1515	N05	E76	12	15.3		B	DKO	240	11	9	3
6410		BOUL	12	09	1557	N05	E77	12	15.4		B	DKO	330	8	8	3
6410	26464	MWIL	12	09	1630	N04	E75	12	15.3	5	(B					
6410		PALE	12	09	1956	N06	E75	12	15.4		B	DKO	330	8	7	2
6410		LEAR	12	10	0030	N05	E70	12	15.2		B	DKO	240	6	7	3
6410		CULG	12	10	0123	N04	E71	12	15.4		B	DAO	180	6	7	2
6410		RAMY	12	10	1342	N05	E64	12	15.3		B	DKO	510	15	9	3
6410		BOUL	12	10	1548	N05	E63	12	15.4		B	DKO	390	9	8	1
6410	26464	MWIL	12	10	1615	N04	E62	12	15.3	6	(D)					
6410		HOLL	12	10	1630	N05	E63	12	15.4		B	DKI	380	16	10	3
6410		PALE	12	10	1923	N05	E60	12	15.3		B	EKO	300	8	12	2
6410		CULG	12	11	0110	N05	E59	12	15.5		B	DKC	310	8	9	2
6410		LEAR	12	11	0115	N05	E57	12	15.3		B	DKI	380	8	10	2
6410		SVTO	12	11	0845	N04	E55	12	15.5		B	DKO	540	27	10	3
6410		RAMY	12	11	1220	N05	E52	12	15.4		B	DKI	460	33	10	4
6410		BOUL	12	11	1550	N04	E50	12	15.4		B	DKO	310	9	10	1
6410	26464	MWIL	12	11	1715	N04	E47	12	15.2	5	(D)					
6410		HOLL	12	11	1748	N06	E50	12	15.5		B	DKI	490	27	10	2
6410		LEAR	12	12	0044	N05	E46	12	15.5		B	DKI	420	19	8	3
6410		CULG	12	12	0100	N05	E45	12	15.4		B	EKI	450	18	11	3
6410		SVTO	12	12	0853	N04	E40	12	15.4		B	EKO	950	29	12	3
6410		BOUL	12	12	1613	N04	E36	12	15.4		B	EKO	1010	20	11	3
6410		HOLL	12	12	1635	N04	E36	12	15.4		B	DAI	380	18	10	3
6410		PALE	12	12	1915	N05	E35	12	15.4		B	DKI	490	36	11	3
6410		RAMY	12	12	1933	N06	E36	12	15.5		B	EKI	550	30	12	2
6410		CULG	12	13	0010	N05	E32	12	15.4		B	EKI	470	35	11	2
6410		LEAR	12	13	0205	N06	E30	12	15.3		B	EKI	590	20	11	3
6410		RAMY	12	13	1339	N05	E25	12	15.4		B	EKI	500	32	13	4
6410	26464	MWIL	12	13	1745	N04	E20	12	15.2	5	BG					
6410		PALE	12	13	1920	N05	E20	12	15.3		B	DKI	580	13	6	2
6410		CULG	12	14	0010	N05	E19	12	15.4		B	CKO	360	23	12	3
6410		LEAR	12	14	0022	N05	E20	12	15.5		B	EKO	320	38	13	3
6410		RAMY	12	14	1420	N04	E13	12	15.6		B	EKI	410	44	13	3

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6410	26464	MWIL	12	14	1545	N04	E10	12	15.4	5	(BP)					
6410		HOLL	12	14	1720	N05	E11	12	15.5		B	EHI	500	28	11	3
6410		BOUL	12	14	1721	N04	E09	12	15.4		B	DKO	320	5	9	1
6410		PALE	12	14	2130	N05	E10	12	15.6		B	EHI	400	12	11	2
6410		LEAR	12	15	0006	N04	E07	12	15.5		B	EKO	430	27	12	3
6410		RAMY	12	15	1221	N03	E01	12	15.6		B	EKO	610	50	13	4
6410		BOUL	12	15	1540	N04	W03	12	15.4		B	EKO	250	7	12	2
6410	26464	MWIL	12	15	1545	N04	W02	12	15.5	5	(BG)					
6410		PALE	12	15	1829	N03	W02	12	15.6		B	EKO	400	36	13	3
6410		LEAR	12	16	0015	N07	W04	12	15.7		B	FKO	580	34	16	4
6410		CULG	12	16	0050	N07	W07	12	15.5		B	EKO	390	34	14	2
6410		SVTO	12	16	1159	N04	W12	12	15.6		B	EKO	420	17	15	2
6410		RAMY	12	16	1253	N04	W11	12	15.7		B	FKO	550	32	16	4
6410		BOUL	12	16	1530	N04	W15	12	15.5		B	EAI	320	16	13	3
6410	26464	MWIL	12	16	1545	N04	W16	12	15.5	5	(BG)					
6410		PALE	12	16	1916	N03	W16	12	15.6		B	EHO	280	22	15	3
6410		CULG	12	17	0010	N04	W20	12	15.5		B	EKO	370	28	15	2
6410		LEAR	12	17	0015	N04	W17	12	15.7		B	EKO	300	24	14	3
6410		SVTO	12	17	1100	N04	W23	12	15.7		B	EKO	330	16	15	2
6410		RAMY	12	17	1155	N02	W25	12	15.6		B	EKO	370	21	15	3
6410		HOLL	12	17	1510	N03	W27	12	15.6		B	FHO	300	24	16	2
6410	26464	MWIL	12	17	1615	N04	W29	12	15.5	5	(BP)					
6410		LEAR	12	18	0025	N04	W31	12	15.7		B	EKO	190	17	15	3
6410		CULG	12	18	0045	N05	W32	12	15.6		B	CAO	290	10	15	3
6410		SVTO	12	18	1015	N04	W37	12	15.7		B	FAO	290	23	18	3
6410		RAMY	12	18	1210	N03	W38	12	15.7		B	EKO	330	13	14	2
6410		HOLL	12	18	1515	N02	W39	12	15.7		B	FKO	260	18	16	3
6410	26464	MWIL	12	18	1615	N04	W42	12	15.5	5	(B)					
6410		BOUL	12	18	1728	N04	W41	12	15.7		B	EAO	160	6	15	1
6410		PALE	12	18	2030	N03	W41	12	15.8		B	EAO	190	5	15	1
6410		LEAR	12	19	0023	N06	W45	12	15.6		B	EKO	260	17	15	3
6410		CULG	12	19	0030	N03	W45	12	15.6		B	EAO	270	15	15	3
6410		SVTO	12	19	0845	N04	W50	12	15.6		B	FAO	150	13	17	2
6410		RAMY	12	19	1250	N04	W49	12	15.9		B	EAO	190	12	14	4
6410		HOLL	12	19	1610	N03	W53	12	15.7		B	CSO	100	16	16	3
6410		PALE	12	19	1915	N02	W55	12	15.7		B	EAO	350	12	11	3
6410		CULG	12	20	0015	N03	W59	12	15.6		B	FAO	50	12	16	2
6410		SVTO	12	20	0830	N04	W65	12	15.5		B	CAO	60	5	16	3
6410		RAMY	12	20	1310	N04	W64	12	15.8		B	CAO	80	9	13	3
6410	26464	MWIL	12	20	1615	N05	W74	12	15.1	5	(AP)					
6410		HOLL	12	20	1700	N04	W68	12	15.6		B	CSO	90	5	14	3
6410		CULG	12	21	0023	N03	W74	12	15.5		A	HA	20	2	6	2
6410		LEAR	12	21	0220	N04	W75	12	15.5		A	HS	60	1	2	3
6410		SVTO	12	21	0844	N04	W81	12	15.3		A	HS	60	1	3	3
6410		RAMY	12	21	1244	N05	W82	12	15.4		B	CAO	60	2	11	3
6415		SVTO	12	11	0845	N06	E70	12	16.6		A	AX	10	3	2	3
6415		RAMY	12	11	1220	N09	E68	12	16.6		B	BXO	40	9	4	4
6415	26472	MWIL	12	11	1715	N08	E65	12	16.6	4	(AP)					
6415		LEAR	12	13	0205	N08	E47	12	16.6		B	BXO	10	2	1	3
6415		RAMY	12	13	1339	N11	E41	12	16.6		B	BXO	30	5	3	4
6415	26472	MWIL	12	13	1745	N09	E38	12	16.6	4	(AP)					
6415		PALE	12	13	1920	N08	E38	12	16.6		A	AX	40	1	1	2
6415		CULG	12	14	0010	N08	E32	12	16.4		A	AX		4	2	3
6415		LEAR	12	14	0022	N08	E34	12	16.6		B	BXO	10	3	2	3
6415		RAMY	12	14	1420	N09	E25	12	16.5		B	BXO	10	5	3	3
6415	26472	MWIL	12	14	1545	N09	E25	12	16.5	4	(AP)					
6415		RAMY	12	15	1221	N07	E13	12	16.5		A	AX	10	3	2	4
6415	26472	MWIL	12	15	1545	N06	E12	12	16.5	2	(AP)					
6415		LEAR	12	16	0015	N10	E08	12	16.6		B	BXO	10	2	3	4
6415		CULG	12	16	0050	N11	E04	12	16.3		A	AX		2	1	2
6415		SVTO	12	16	1159	N13	E04	12	16.8		B	DRO	50	5	7	2
6415		RAMY	12	16	1253	N09	E01	12	16.6		B	CAO	20	11	3	4
6415		BOUL	12	16	1530	N11	W01	12	16.6		B	BXO	20	7	3	3
6415	26472	MWIL	12	16	1545	N07	W01	12	16.6	3	(AP)					
6415	26475	MWIL	12	16	1545	N13	E02	12	16.8	5	(B)					
6415		PALE	12	16	1916	N12	W01	12	16.7		B	DAO	70	10	4	3
6415		CULG	12	17	0010	N14	W04	12	16.7		B	DAO	90	22	5	2
6415		LEAR	12	17	0015	N13	E03	12	17.2		B	DAO	80	15	4	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
6415		SVTO	12	17	1100	N13	W08	12	16.8		B	DAI	330	25	7	2
6415		RAMY	12	17	1155	N12	W09	12	16.8		B	DAI	450	29	7	3
6415		HOLL	12	17	1510	N13	W12	12	16.7		BD	DKC	420	28	7	2
6415	26475	MWIL	12	17	1615	N13	W12	12	16.8	5	(D)					
6415		CULG	12	18	0045	N13	W18	12	16.7		B	DAC	360	24	6	3
6415		SVTO	12	18	1015	N13	W23	12	16.7		B	DAI	480	33	7	3
6415		RAMY	12	18	1210	N12	W23	12	16.8		B	DKC	620	44	9	2
6415		HOLL	12	18	1515	N12	W26	12	16.7		B	DKC	460	31	9	3
6415	26475	MWIL	12	18	1615	N13	W25	12	16.8	5	(D)					
6415		BOUL	12	18	1728	N14	W27	12	16.7		B	DAI	250	10	7	1
6415		PALE	12	18	2030	N12	W28	12	16.7		B	DAI	360	23	7	1
6415		LEAR	12	19	0023	N14	W29	12	16.8		B	DKC	520	33	7	3
6415		CULG	12	19	0030	N13	W31	12	16.7		B	DAC	380	26	9	3
6415		SVTO	12	19	0845	N14	W36	12	16.6		B	DKI	440	39	10	2
6415		RAMY	12	19	1250	N14	W36	12	16.8		B	EKO	360	40	11	4
6415		HOLL	12	19	1610	N13	W40	12	16.6		BGD	EKC	810	35	12	3
6415		PALE	12	19	1915	N15	W42	12	16.6		B	DAI	580	19	8	3
6415		CULG	12	20	0015	N13	W45	12	16.6		B	DKO	360	29	8	2
6415		SVTO	12	20	0830	N13	W50	12	16.6		BGD	DKI	270	23	10	3
6415		RAMY	12	20	1310	N14	W51	12	16.7		B	EKI	390	23	13	3
6415	26475	MWIL	12	20	1615	N13	W53	12	16.7	5	(D)					
6415		HOLL	12	20	1700	N12	W51	12	16.9		B	DAI	450	18	8	3
6415		CULG	12	21	0023	N12	W59	12	16.6		B	DKO	420	21	9	2
6415		LEAR	12	21	0220	N14	W56	12	16.9		B	DKO	400	9	9	3
6415		SVTO	12	21	0844	N12	W61	12	16.8		B	DKO	320	16	9	3
6415		RAMY	12	21	1244	N12	W62	12	16.8		B	DAO	350	19	8	3
6415		HOLL	12	21	1716	N13	W67	12	16.7		B	DAO	290	11	8	2
6415		CULG	12	22	0007	N13	W74	12	16.4		B	EKO	290	15	11	3
6415		SVTO	12	22	1043	N13	W77	12	16.6		B	DAO	300	6	4	1
6415	26475	MWIL	12	22	1545	N14	W78	12	16.8	4	(BP)					
6415		RAMY	12	22	1555	N13	W75	12	17.0		B	DAO	140	6	6	1
6415		HOLL	12	22	1822	N12	W72	12	17.3		B	CAO	120	5	5	2
6415		CULG	12	23	0030	N13	W87	12	16.4		B	DAO	80	3	5	2
6413A		SVTO	12	16	1159	N01	E03	12	16.7		B	CRO	20	3	4	2
6413		BOUL	12	11	1550	N20	E72	12	17.2		B	DKO	360	3	7	1
6413	26473	MWIL	12	11	1715	N22	E66	12	16.8	5	(AF)					
6413		CULG	12	12	0100	N22	E63	12	16.9		A	HS	40	1	2	3
6413		SVTO	12	12	0853	N21	E58	12	16.8		A	HS	100	2	1	3
6413		BOUL	12	12	1613	N23	E55	12	16.9		A	HA	80	2	2	3
6413		PALE	12	12	1915	N23	E52	12	16.8		A	HA	70	3	2	3
6413		RAMY	12	12	1933	N23	E52	12	16.8		B	CAO	90	4	4	2
6413		CULG	12	13	0010	N23	E53	12	17.1		B	CAO	100	4	8	2
6413		RAMY	12	13	1339	N23	E43	12	16.9		B	DAO	100	4	4	4
6413	26473	MWIL	12	13	1745	N21	E40	12	16.8	5	(BP)					
6413		PALE	12	13	1920	N20	E40	12	16.9		A	HA	180	4	2	2
6413		CULG	12	14	0010	N21	E36	12	16.8		B	CAO	50	4	3	3
6413		RAMY	12	14	1420	N22	E28	12	16.7		B	CAO	50	4	4	3
6413	26473	MWIL	12	14	1545	N22	E28	12	16.8	5	(AF)					
6413		HOLL	12	14	1720	N21	E25	12	16.6		B	CSO	50	1	6	3
6413		BOUL	12	14	1721	N21	E25	12	16.6		A	HA	50	1	2	1
6413		PALE	12	14	2130	N21	E27	12	17.0		A	HS	10	1	2	2
6413		LEAR	12	15	0006	N23	E23	12	16.8		B	CSO	40	4	3	3
6413		RAMY	12	15	1221	N22	E17	12	16.8		B	CAO	20	5	2	4
6413		BOUL	12	15	1540	N21	E14	12	16.7		A	HA	40	1	1	2
6413	26473	MWIL	12	15	1545	N23	E15	12	16.8	4	(AF)					
6413		PALE	12	15	1829	N22	E13	12	16.8		A	HR	20	3	2	3
6413		LEAR	12	16	0015	N26	E11	12	16.9		B	CSO	40	4	4	4
6413		CULG	12	16	0050	N26	E10	12	16.8		A	HA	10	4	2	2
6413		RAMY	12	16	1253	N22	E03	12	16.8		B	CRO	20	2	1	4
6413		BOUL	12	16	1530	N21	E01	12	16.7		A	AX	10	2	1	3
6413	26473	MWIL	12	16	1545	N23	E02	12	16.8	3	(AF)					
6413		PALE	12	16	1916	N21	E00	12	16.8		A	HA	20	2	1	3
6413		CULG	12	17	0010	N24	W04	12	16.7		A	HS	10	2	1	2
6413		SVTO	12	17	1100	N23	W11	12	16.6		A	HS	10	1	1	2
6413		RAMY	12	17	1155	N22	W09	12	16.8		A	HR	10	1	1	3
6413		HOLL	12	17	1510	N22	W12	12	16.7		A	AX		1		2
6413	26473	MWIL	12	17	1615	N23	W12	12	16.7	4	(AF)					

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6413		RAMY	12	19	1250	N25	W31	12	17.1		B	BXO	10	4	2	4
6412	26470	MWIL	12	10	1615	N18	E87	12	17.3	5	AP					
6412		HOLL	12	10	1630	N19	E84	12	17.1		A	HH	300	2	5	3
6412		CULG	12	11	0110	N20	E80	12	17.2		B	EKO	410	5	11	2
6412		LEAR	12	11	0115	N20	E77	12	16.9		B	CKO	190	2	4	2
6412		SVTO	12	11	0845	N18	E75	12	17.1		B	DHO	360	4	8	3
6412		RAMY	12	11	1220	N19	E73	12	17.1		B	DKO	470	10	9	4
6412	26470	MWIL	12	11	1715	N18	E79	12	17.7	5	(B					
6412		HOLL	12	11	1748	N20	E70	12	17.1		B	EHO	440	4	15	2
6412		LEAR	12	12	0044	N20	E69	12	17.3		B	DKO	380	4	8	3
6412		CULG	12	12	0100	N19	E67	12	17.1		A	HK	380	5	4	3
6412		SVTO	12	12	0853	N19	E65	12	17.3		B	CHO	660	5	4	3
6412		BOUL	12	12	1613	N17	E66	12	17.7		B	FKO	1950	11	18	3
6412		PALE	12	12	1915	N19	E64	12	17.7		B	FKO	930	20	16	3
6412		RAMY	12	12	1933	N18	E62	12	17.5		B	FKO	850	20	17	2
6412		CULG	12	13	0010	N18	E63	12	17.8		B	FKO	1120	18	18	2
6412		LEAR	12	13	0205	N18	E56	12	17.3		B	FKO	1220	9	20	3
6412		RAMY	12	13	1339	N19	E53	12	17.6		B	FKO	1380	49	17	4
6412	26470	MWIL	12	13	1745	N18	E52	12	17.7	5	(B)					
6412		PALE	12	13	1920	N18	E50	12	17.6		B	FKO	1200	13	20	2
6412		CULG	12	14	0010	N18	E49	12	17.7		B	FKO	1540	30	18	3
6412		LEAR	12	14	0022	N18	E47	12	17.6		B	FKO	810	34	20	3
6412		RAMY	12	14	1420	N18	E40	12	17.6		B	FKO	1480	42	16	3
6412	26470	MWIL	12	14	1545	N17	E39	12	17.6	5	(D)					
6412		HOLL	12	14	1720	N15	E37	12	17.5		B	FKI	1560	71	20	3
6412		BOUL	12	14	1721	N17	E37	12	17.5		B	FKO	1320	9	19	1
6412		PALE	12	14	2130	N15	E40	12	17.9		B	FKI	1800	25	20	2
6412		LEAR	12	15	0006	N16	E35	12	17.6		B	EKI	1500	42	15	3
6412		RAMY	12	15	1221	N17	E26	12	17.5		BG	FKO	1700	63	18	4
6412		BOUL	12	15	1540	N17	E25	12	17.5		B	FKO	1020	13	18	2
6412	26470	MWIL	12	15	1545	N17	E27	12	17.7	6	(BG)					
6412		PALE	12	15	1829	N16	E25	12	17.7		B	FKO	1270	46	18	3
6412		LEAR	12	16	0015	N17	E24	12	17.8		B	FKI	1120	38	19	4
6412		CULG	12	16	0050	N20	E23	12	17.8		B	FKO	1380	53	18	2
6412		SVTO	12	16	1159	N17	E15	12	17.6		B	FKI	1310	24	18	2
6412		RAMY	12	16	1253	N17	E14	12	17.6		B	FKO	1680	69	16	4
6412		BOUL	12	16	1530	N17	E16	12	17.9		B	FKI	1450	29	18	3
6412	26470	MWIL	12	16	1545	N18	E14	12	17.7	5	(D)					
6412		PALE	12	16	1916	N17	E13	12	17.8		BG	FKI	1460	44	17	3
6412		CULG	12	17	0010	N19	E09	12	17.7		B	FKO	1320	51	16	2
6412		LEAR	12	17	0015	N17	E10	12	17.8		B	FKI	1660	40	18	3
6412		SVTO	12	17	1100	N17	E04	12	17.8		B	FKI	1270	35	18	2
6412		RAMY	12	17	1155	N17	E03	12	17.7		B	FKO	1440	57	19	3
6412	26470	MWIL	12	17	1615	N18	E01	12	17.7	6	(D)					
6412		LEAR	12	18	0025	N18	W04	12	17.7		B	FKI	1290	48	22	3
6412		CULG	12	18	0045	N17	W04	12	17.7		B	FKO	1270	39	19	3
6412		SVTO	12	18	1015	N18	W09	12	17.7		B	FKI	1220	41	20	3
6412		RAMY	12	18	1210	N18	W10	12	17.7		B	FKO	1230	68	23	2
6412		HOLL	12	18	1515	N18	W10	12	17.9		B	FHI	1230	60	22	3
6412	26470	MWIL	12	18	1615	N17	W12	12	17.8	6	(D)					
6412		BOUL	12	18	1728	N17	W14	12	17.7		B	EKO	570	13	14	1
6412		PALE	12	18	2030	N17	W13	12	17.9		B	FHO	1230	29	16	1
6412		LEAR	12	19	0023	N18	W16	12	17.8		B	FKI	1090	49	20	3
6412		CULG	12	19	0030	N18	W18	12	17.6		B	FKI	1340	31	18	3
6412		SVTO	12	19	0845	N17	W22	12	17.7		B	FKO	1430	69	20	2
6412		RAMY	12	19	1250	N18	W22	12	17.8		B	FKO	1390	84	19	4
6412		HOLL	12	19	1610	N19	W25	12	17.8		BGD	FKI	1310	71	18	3
6412		CULG	12	20	0015	N17	W30	12	17.7		B	FKI	1140	58	18	2
6412		LEAR	12	20	0017	N22	W27	12	17.9		B	FKI	1270	52	18	3
6412		SVTO	12	20	0830	N18	W36	12	17.6		BG	FKI	1330	70	17	3
6412		RAMY	12	20	1310	N18	W37	12	17.7		BG	FKI	1290	97	19	3
6412	26470	MWIL	12	20	1615	N17	W37	12	17.9	5	(D)					
6412		HOLL	12	20	1700	N17	W38	12	17.8		BG	FKI	1090	68	18	3
6412		CULG	12	21	0023	N17	W44	12	17.7		BG	FKO	1080	62	20	2
6412		LEAR	12	21	0220	N18	W43	12	17.8		BG	FKI	810	37	20	3
6412		SVTO	12	21	0844	N17	W46	12	17.9		BG	FKI	1470	60	21	3
6412		RAMY	12	21	1244	N17	W48	12	17.9		BG	FKI	1870	70	19	3
6412		HOLL	12	21	1716	N16	W52	12	17.8		BG	FKI	1070	39	20	2

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6412		CULG	12	22	0007	N17	W58	12	17.6		BG	FKI	1180	53	23	3
6412		LEAR	12	22	0035	N15	W54	12	17.9		BG	FKI	970	26	19	3
6412		SVTO	12	22	1043	N18	W60	12	17.9		BG	FKI	1540	40	17	1
6412	26470	MWIL	12	22	1545	N17	W63	12	17.9	5	(B)					
6412		RAMY	12	22	1555	N18	W59	12	18.2		BG	FKO	1260	46	17	1
6412		HOLL	12	22	1822	N16	W65	12	17.8		BG	EKI	1200	29	14	2
6412		LEAR	12	23	0027	N15	W63	12	18.2		BG	DKO	950	11	9	2
6412		CULG	12	23	0030	N17	W68	12	17.8		BG	FKI	1210	16	19	2
6412		RAMY	12	23	1405	N16	W72	12	18.1		BG	FKO	1180	20	17	2
6412	26470	MWIL	12	23	1615	N17	W76	12	17.9	5	(B)					
6412		HOLL	12	23	1630	N16	W77	12	17.8		B	FKC	1260	14	20	3
6412		LEAR	12	24	0015	N15	W85	12	17.6		B	DKO	390	5	10	2
6412		CULG	12	24	0040	N16	W85	12	17.6		BG	EKI	720	4	11	3
6412		HOLL	12	24	1520	N16	W85	12	18.2		A	HA	120	2	4	3
6412	26470	MWIL	12	24	1615	N17	W89	12	17.9	5	AF					
6412		RAMY	12	24	1705	N17	W88	12	18.0		A	HH	30	1	3	3
6412A		RAMY	12	11	1220	N17	E85	12	18.0		A	HA	60	1	2	4
6412A		HOLL	12	11	1748	N17	E85	12	18.2		B	DAI	180	3	3	2
6412A		LEAR	12	12	0044	N18	E80	12	18.1		A	HK	1110	1	5	3
6412A		CULG	12	12	0100	N17	E85	12	18.5		A	HK	500	3	9	3
6412A		SVTO	12	12	0853	N16	E78	12	18.3		B	CHO	480	5	10	3
6412A		HOLL	12	12	1635	N16	E70	12	18.0		A	HK	500	5	6	3
6412A		PALE	12	12	1915	N17	E69	12	18.0		B	DKO	600	12	7	3
6412A		RAMY	12	12	1933	N17	E68	12	18.0		B	DKO	700	11	7	2
6412B		CULG	12	20	0015	N25	W23	12	18.2		A	AX		1		2
6412C		PALE	12	19	1915	S13	W18	12	18.4		A	AX	10	1	1	3
6416		SVTO	12	16	1159	S05	E29	12	18.7		B	DRO	40	3	3	2
6416		RAMY	12	16	1253	S06	E28	12	18.6		B	DRO	20	5	3	4
6416		BOUL	12	16	1530	S07	E26	12	18.6		B	CRO	30	4	3	3
6416	26476	MWIL	12	16	1545	S06	E27	12	18.7	4	(B)					
6416		CULG	12	17	0010	S05	E22	12	18.6		B	CAO	30	17	6	2
6416		LEAR	12	17	0015	S06	E24	12	18.8		B	DAO	40	10	6	3
6416		SVTO	12	17	1100	S06	E17	12	18.7		B	DAO	70	11	7	2
6416		RAMY	12	17	1155	S06	E16	12	18.7		B	DAO	110	8	5	3
6416		HOLL	12	17	1510	S04	E15	12	18.7		B	DSO	100	10	6	2
6416	26476	MWIL	12	17	1615	S06	E13	12	18.6	5	(B)					
6416		CULG	12	18	0045	S06	E09	12	18.7		B	DAO	80	11	4	3
6416		SVTO	12	18	1015	S05	E04	12	18.7		B	DAO	70	15	7	3
6416		RAMY	12	18	1210	S05	E03	12	18.7		B	DAO	100	15	6	2
6416		HOLL	12	18	1515	S05	E01	12	18.7		B	DAI	90	16	5	3
6416	26476	MWIL	12	18	1615	S06	E01	12	18.7	5	(B)					
6416		BOUL	12	18	1728	S07	W01	12	18.6		B	CRI	50	7	5	1
6416		PALE	12	18	2030	S07	W02	12	18.7		B	DAO	60	11	5	1
6416		LEAR	12	19	0023	S06	W04	12	18.7		B	DAO	80	15	5	3
6416		CULG	12	19	0030	S06	W03	12	18.8		B	DAO	70	15	5	3
6416		SVTO	12	19	0845	S04	W08	12	18.8		B	CAO	60	32	6	2
6416		RAMY	12	19	1250	S05	W10	12	18.8		B	DAO	80	20	6	4
6416		HOLL	12	19	1610	S05	W13	12	18.7		B	BXO	20	21	5	3
6416		PALE	12	19	1915	S05	W15	12	18.7		B	DAC	120	6	5	3
6416		CULG	12	20	0015	S05	W17	12	18.7		B	CAO	20	24	5	2
6416		LEAR	12	20	0017	S03	W17	12	18.7		B	CSO	60	11	4	3
6416		SVTO	12	20	0830	S05	W23	12	18.6		B	CRO	20	9	5	3
6416		RAMY	12	20	1310	S04	W25	12	18.7		B	BXO	30	14	4	3
6416	26476	MWIL	12	20	1615	S05	W26	12	18.7	4	(B)					
6416		HOLL	12	20	1700	S06	W26	12	18.8		B	BXO	10	7	5	3
6416		CULG	12	21	0023	S07	W31	12	18.7		A	AX		2	1	2
6416		LEAR	12	21	0220	S07	W29	12	18.9		A	AX	10	1	1	3
6416		SVTO	12	21	0844	S07	W33	12	18.9		A	AX	10	2	1	3
6416		RAMY	12	22	1555	S05	W49	12	19.0		A	AX	10	5	2	1
6417	26477	MWIL	12	18	1615	N17	E02	12	18.8	4	(AF)					
6417		CULG	12	19	0030	N19	W02	12	18.9		B	BXO	10	6	6	3
6417		SVTO	12	19	0845	N16	W06	12	18.9		B	BXO	10	6	4	2
6417		RAMY	12	19	1250	N17	W08	12	18.9		B	BXO	10	5	3	4
6417		HOLL	12	19	1610	N17	W12	12	18.8		B	BXO	10	8	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
6417		PALE	12	19	1915	N15	W15	12	18.7		A	AX	40	2	2	3
6417		RAMY	12	20	1310	N18	W21	12	18.9		A	AX		1		3
6419		CULG	12	20	0015	S16	W10	12	19.2		A	AX	10	2	1	2
6419		LEAR	12	20	0017	S13	W11	12	19.2		B	BXO	20	2	3	3
6419		SVTO	12	20	0830	S14	W15	12	19.2		B	BXO	10	2	3	3
6419		RAMY	12	20	1310	S14	W16	12	19.3		A	AX		1		3
6419	26479	MWIL	12	20	1615	S16	W18	12	19.3	3	(AP)					
6419		HOLL	12	20	1700	S16	W19	12	19.3		A	AX		1		3
6419		SVTO	12	21	0844	S16	W19	12	19.9		A	AX		1		3
6421		CULG	12	18	0045	N20	E23	12	19.8		A	AX		1		3
6421	26478	MWIL	12	18	1615	N22	E08	12	19.3	4	(AF)					
6421		SVTO	12	20	0830	N20	W10	12	19.6		A	AX		1		3
6421		RAMY	12	20	1310	N18	W11	12	19.7		A	AX		1		3
6421		CULG	12	21	0023	N19	W17	12	19.7		A	AX		3	3	2
6421		LEAR	12	21	0220	N18	W17	12	19.8		B	CSO	40	3	4	3
6421		SVTO	12	21	0844	N18	W21	12	19.8		B	CRO	20	6	4	3
6421		RAMY	12	21	1244	N18	W23	12	19.8		B	DAO	30	7	5	3
6421		HOLL	12	21	1716	N18	W27	12	19.7		B	BXO	20	3	5	2
6421		CULG	12	22	0007	N18	W30	12	19.7		B	BXO	10	5	5	3
6421		LEAR	12	22	0035	N18	W27	12	20.0		A	HS	20	1	1	3
6421		SVTO	12	22	1043	N22	W34	12	19.8		A	AX	10	1	1	1
6421	26482	MWIL	12	22	1545	N20	W36	12	19.9	3	(AF)					
6421		RAMY	12	22	1555	N20	W35	12	20.0		B	CAO	20	5	3	1
6421		HOLL	12	22	1822	N19	W37	12	19.9		A	AX	10	1	1	2
6421		LEAR	12	23	0027	N19	W40	12	20.0		A	AX	10	1	1	2
6421		CULG	12	23	0030	N18	W41	12	19.9			HR	10	2		2
6421		RAMY	12	23	1405	N20	W50	12	19.8		B	BXO	10	2	3	2
6421	26482	MWIL	12	23	1615	N17	W53	12	19.6	4	(B)					
6421		HOLL	12	23	1630	N17	W54	12	19.6		B	BXO	10	2	3	3
6421A		SVTO	12	21	0844	N29	W07	12	20.8		A	AX	10	2	1	3
6421B		RAMY	12	24	1705	S12	W28	12	22.6		A	AX		1		3
6421B		CULG	12	25	0040	S12	W37	12	22.2		A	AX		1		3
6421B		PALE	12	25	0220	S11	W35	12	22.5		A	AX		1		3
6421B		RAMY	12	25	1222	S11	W40	12	22.5		A	AX	10	1	1	4
6421C	26485	MWIL	12	23	1615	S11	E03	12	23.9	3	(AP)					
6421C		HOLL	12	23	1630	S10	E04	12	24.0		A	AX		1		3
6418		SVTO	12	19	0845	N19	E69	12	24.6		A	AX		1		2
6418		RAMY	12	19	1250	N18	E64	12	24.4		B	BXO	20	4	2	4
6418		CULG	12	20	0015	N20	E59	12	24.5		A	AX	10	2	1	2
6418		SVTO	12	20	0830	N20	E54	12	24.5		A	AX	10	1	1	3
6418		RAMY	12	20	1310	N19	E49	12	24.3		A	HR	20	1	1	3
6418	26480	MWIL	12	20	1615	N19	E49	12	24.4	4	(AP)					
6418		HOLL	12	20	1700	N19	E48	12	24.4		A	AX	10	1	1	3
6418		CULG	12	21	0023	N20	E45	12	24.4		A	AX	10	1	1	2
6418		LEAR	12	21	0220	N19	E43	12	24.4		A	AX	20	1	1	3
6418		SVTO	12	21	0844	N19	E39	12	24.3		A	AX	20	1	1	3
6418		RAMY	12	21	1244	N19	E37	12	24.3		A	HA	10	1	1	3
6418		HOLL	12	21	1716	N18	E34	12	24.3		A	AX	10	2	2	2
6418		CULG	12	22	0007	N19	E31	12	24.4		B	BXO	10	2	3	3
6418		LEAR	12	22	0035	N18	E30	12	24.3		A	AX	10	1	1	3
6418		SVTO	12	22	1043	N18	E25	12	24.3		B	BXO	20	2	4	1
6418	26480	MWIL	12	22	1545	N18	E22	12	24.3	4	(AP)					
6418		RAMY	12	22	1555	N19	E22	12	24.3		B	CAO	20	10	5	1
6418		HOLL	12	22	1822	N18	E20	12	24.3		A	AX	10	1		2
6418		LEAR	12	23	0027	N19	E16	12	24.2		A	AX	20	1	1	2
6418		CULG	12	23	0030	N19	E18	12	24.4		A	AX		1		2
6418		RAMY	12	23	1405	N19	E13	12	24.6		B	CRO	20	12	4	2
6418	26480	MWIL	12	23	1615	N18	E10	12	24.4	5	(B)					
6418		HOLL	12	23	1630	N18	E10	12	24.4		B	BXO	20	7	4	3
6418		LEAR	12	24	0015	N17	E06	12	24.5		B	DAO	30	6	4	2
6418		CULG	12	24	0040	N22	E05	12	24.4		B	EAO	60	8	6	3
6418		HOLL	12	24	1520	N19	W04	12	24.3		B	DAI	40	13	6	3
6418		BOUL	12	24	1540	N18	W04	12	24.3		B	DAO	90	2	6	1

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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
6418	26480	MWIL	12	24	1615	N17	W03	12	24.4	5	(B)					
6418		RAMY	12	24	1705	N18	W04	12	24.4		B	DAO	60	13	5	3
6418		LEAR	12	25	0040	N17	W09	12	24.3		B	DAO	50	7	5	3
6418		CULG	12	25	0040	N18	W11	12	24.2		B	DSO	50	5	5	3
6418		PALE	12	25	0220	N17	W09	12	24.4		B	DAO	80	6	6	3
6418		RAMY	12	25	1222	N18	W15	12	24.4		B	DAO	60	6	6	4
6418	26480	MWIL	12	25	1600	N18	W17	12	24.4	4	(B)					
6418		HOLL	12	25	1715	N18	W18	12	24.3		B	DAO	40	9	6	2
6418		CULG	12	26	0120	N19	W26	12	24.1		B	DSO	50	4	6	2
6418		LEAR	12	26	0145	N18	W22	12	24.4		B	DSO	40	4	6	3
6418		RAMY	12	26	1318	N18	W28	12	24.4		B	DAO	40	11	8	3
6418	26480	MWIL	12	26	1600	N17	W31	12	24.3	4	(B)					
6418		BOUL	12	26	1645	N17	W30	12	24.4		B	DSO	40	3	6	2
6418		LEAR	12	27	0020	N18	W32	12	24.6		B	CSO	20	3	7	3
6418		RAMY	12	27	1228	N17	W41	12	24.4		B	BXO	10	3	6	2
6418		HOLL	12	27	1616	N17	W44	12	24.3		B	BXO	10	3	6	3
6418		PALE	12	27	2013	N17	W44	12	24.5		A	AX		1		3
6418	26480	MWIL	12	27	2030	N17	W45	12	24.4	3	(AF)					
6418		LEAR	12	28	0010	N18	W46	12	24.5		A	AX		1	1	3
6418		CULG	12	28	0035	N16	W48	12	24.4		A	AX		1		2
6418		RAMY	12	28	1345	N18	W50	12	24.8		A	AX	10	3	2	1
6418	26480	MWIL	12	28	1600	N18	W56	12	24.4	4	(AP)					
6418		PALE	12	28	1830	N17	W57	12	24.4		B	BXO		2	3	4
6418		LEAR	12	29	0025	N17	W60	12	24.4		B	BXO	10	2	1	2
6425		RAMY	12	24	1705	N08	E11	12	25.5		B	CSO	20	7	3	3
6425		CULG	12	25	0040	N08	E03	12	25.2		B	DSO	20	2	2	3
6425		PALE	12	25	0220	N07	E05	12	25.5		B	BXO	10	5	3	3
6425		RAMY	12	25	1222	N07	W02	12	25.4		B	BXO	10	5	3	4
6425		CULG	12	26	0120	N09	W11	12	25.2		A	HS	20	1		2
6425		RAMY	12	26	1318	N09	W16	12	25.3		B	BXO	10	6	5	3
6425		LEAR	12	27	0020	N08	W20	12	25.5		A	AX		1	1	3
6425		LEAR	12	28	0010	N08	W32	12	25.6		B	BXO	10	2	3	3
6425A		HOLL	12	24	1520	N09	E11	12	25.5		B	BXO		3	3	3
6425A	26487	MWIL	12	24	1615	N08	E11	12	25.5	5	(B)					
6425A		CULG	12	28	0035	N06	W34	12	25.5		B	BXO		2	3	2
6425A	26491	MWIL	12	28	1600	N08	W41	12	25.6	4	(B)					
6425B		RAMY	12	24	1705	N22	E11	12	25.5		B	BXO		2	3	3
6423	26481	MWIL	12	20	1615	S20	E80	12	26.8	4	AP					
6423	26481	MWIL	12	22	1545	S22	E56	12	27.0	4	(BP)					
6423		RAMY	12	23	1405	S18	E44	12	26.9		B	DKO	280	8	7	2
6423	26481	MWIL	12	23	1615	S21	E42	12	26.9	5	(BP)					
6423		HOLL	12	23	1630	S20	E43	12	27.0		B	EAO	250	12	7	3
6423		LEAR	12	24	0015	S20	E37	12	26.8		B	DAO	190	9	7	2
6423		CULG	12	24	0040	S17	E38	12	26.9		B	DA	210	7	7	3
6423		HOLL	12	24	1520	S19	E29	12	26.8		B	DAO	230	10	9	3
6423		BOUL	12	24	1540	S22	E28	12	26.8		B	DAO	290	4	8	1
6423	26481	MWIL	12	24	1615	S22	E27	12	26.7	5	(BG)					
6423		RAMY	12	24	1705	S19	E28	12	26.8		B	DAO	220	14	9	3
6423		CULG	12	25	0040	S19	E22	12	26.7		B	DAO	170	14	7	3
6423		LEAR	12	25	0040	S19	E24	12	26.8		B	DAO	140	6	7	3
6423		PALE	12	25	0220	S19	E23	12	26.8		B	DAO	150	16	8	3
6423		RAMY	12	25	1222	S19	E16	12	26.7		B	DAO	210	21	8	4
6423	26481	MWIL	12	25	1600	S21	E15	12	26.8	5	(BG)					
6423		HOLL	12	25	1715	S22	E15	12	26.9		B	ESI	300	42	11	2
6423		CULG	12	26	0120	S19	E09	12	26.7		B	DAO	220	22	8	2
6423		LEAR	12	26	0145	S18	E11	12	26.9		B	DAO	120	10	7	3
6423		RAMY	12	26	1318	S21	E06	12	27.0		BG	EAO	290	54	11	3
6423	26481	MWIL	12	26	1600	S20	E03	12	26.9	5	(BG)					
6423		BOUL	12	26	1645	S21	E03	12	26.9		B	DAI	240	18	9	2
6423		LEAR	12	27	0020	S21	W02	12	26.9		B	DAO	190	27	9	3
6423		CULG	12	27	0115	S17	W03	12	26.8		B	DAO	230	21	11	3
6423		RAMY	12	27	1228	S21	W08	12	26.9		B	EAO	300	53	12	2
6423		HOLL	12	27	1616	S21	W10	12	26.9		BG	ESI	200	46	11	3
6423		PALE	12	27	2013	S20	W12	12	26.9		B	ESO	90	16	11	3
6423	26481	MWIL	12	27	2030	S22	W12	12	26.9	5	(BG)					

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6423		CULG	12	28	0035	S22	W15	12	26.9		B	EAO	180	32	12	2
6423		RAMY	12	28	1345	S22	W20	12	27.0		B	ESO	290	37	12	1
6423		BOUL	12	28	1540	S22	W22	12	27.0		B	DAO	220	4	10	1
6423	26481	MWIL	12	28	1600	S21	W24	12	26.8	5	(BG)					
6423		PALE	12	28	1830	S24	W25	12	26.8		B	EAO	290	39	12	4
6423		CULG	12	29	0010	S23	W28	12	26.8		B	EAO	180	18	13	3
6423		LEAR	12	29	0025	S23	W27	12	26.9		BG	EAO	360	19	13	2
6423		SVTO	12	29	0845	S22	W32	12	26.9		BG	FAI	140	14	16	3
6423		RAMY	12	29	1527	S24	W31	12	27.2		B	FAO	210	20	18	3
6423		PALE	12	29	1810	S23	W37	12	26.9		B	ESO	250	14	12	3
6423		LEAR	12	30	0008	S22	W39	12	27.0		B	EKO	210	8	11	3
6423		CULG	12	30	0038	S23	W41	12	26.9		B	ESO	120	15	13	2
6423		SVTO	12	30	0801	S23	W45	12	26.9		B	EAO	130	10	12	3
6423		RAMY	12	30	1225	S21	W47	12	26.9		B	EAO	230	16	11	3
6423	26481	MWIL	12	30	1545	S21	W51	12	26.7	4	(BP)					
6423		HOLL	12	30	1615	S22	W49	12	26.9		B	EAO	120	19	13	3
6423		PALE	12	30	1925	S22	W50	12	27.0		B	EAO	160	18	12	4
6423		LEAR	12	31	0009	S21	W54	12	26.9		B	DAO	120	6	8	3
6423		CULG	12	31	0040	S22	W53	12	26.9		B	ESO	80	6	12	2
6423		SVTO	12	31	0738	S21	W58	12	26.9		B	DAO	130	7	9	2
6423		RAMY	12	31	1309	S18	W61	12	26.9		B	DAO	150	11	9	3
6423		BOUL	12	31	1540	S23	W65	12	26.6		B	DSO	110	3	7	1
6423	26481	MWIL	12	31	1545	S20	W62	12	26.9	5	(BP)					
6423		HOLL	12	31	1656	S21	W64	12	26.8		B	CSO	120	5	12	4
6423		PALE	12	31	1830	S21	W65	12	26.8		B	DAO	170	6	9	4
6423		LEAR	01	01	0039	S18	W67	12	27.0		B	DAO	170	4	7	3
6423		CULG	01	01	0040	S22	W75	12	26.4		B	DSO	140	5	1	3
6423		RAMY	01	01	1235	S22	W71	12	27.2		B	CAO	120	4	5	3
6423		HOLL	01	01	1715	S22	W76	12	27.0		B	CSO	60	2	9	3
6423		BOUL	01	01	1755	S22	W77	12	26.9		B	BXO	40	2	5	1
6423	26481	MWIL	01	01	1900	S22	W76	12	27.0	4	(AP)					
6423		PALE	01	01	2017	S23	W76	12	27.1		B	CAO	70	4	6	2
6423		LEAR	01	02	0017	S22	W78	12	27.1		B	CAO	30	2	3	3
6423		CULG	01	02	0040	S21	W85	12	26.6		B	CAO	110	3	2	2
6423A		CULG	12	23	0030	S27	E55	12	27.3		A	AX		2		2
6423A		RAMY	12	23	1405	S29	E49	12	27.4		A	AX	10	2	1	2
6424		RAMY	12	22	1555	S13	E70	12	27.9		A	AX	10	2	1	1
6424		HOLL	12	22	1822	S12	E68	12	27.9		A	AX		1		2
6424		RAMY	12	23	1405	S12	E60	12	28.1		A	AX		1		2
6424		HOLL	12	23	1630	S12	E57	12	28.0		A	AX	10	1		3
6424		LEAR	12	24	0015	S09	E43	12	27.2		B	BXO	10	5	4	2
6424		HOLL	12	24	1520	S11	E36	12	27.3		B	DAI	60	17	7	3
6424		BOUL	12	24	1540	S10	E36	12	27.3		B	DAO	130	3	6	1
6424	26488	MWIL	12	24	1615	S09	E36	12	27.4	5	(B)					
6424		RAMY	12	24	1705	S09	E35	12	27.3		B	DAO	100	25	6	3
6424		LEAR	12	25	0040	S09	E32	12	27.4		B	DSO	100	14	8	3
6424		CULG	12	25	0040	S10	E29	12	27.2		B	DAO	90	16	7	3
6424		PALE	12	25	0220	S09	E29	12	27.3		B	DAO	110	18	8	3
6424		RAMY	12	25	1222	S10	E24	12	27.3		B	DAO	130	28	9	4
6424	26488	MWIL	12	25	1600	S10	E22	12	27.3	4	(B)					
6424		HOLL	12	25	1715	S10	E23	12	27.4		B	DAI	170	26	9	2
6424		CULG	12	26	0120	S07	E17	12	27.3		B	DAO	140	16	8	2
6424		LEAR	12	26	0145	S09	E18	12	27.4		B	DAO	120	11	9	3
6424		RAMY	12	26	1318	S10	E11	12	27.4		B	DAO	90	36	10	3
6424	26488	MWIL	12	26	1600	S09	E10	12	27.4	5	(B)					
6424		BOUL	12	26	1645	S09	E07	12	27.2		B	DAO	80	8	6	2
6424		LEAR	12	27	0020	S08	E05	12	27.4		B	DAO	100	17	10	3
6424		CULG	12	27	0115	S06	E06	12	27.5		B	DAO	120	24	10	3
6424		RAMY	12	27	1228	S10	E00	12	27.5		B	EAO	90	52	11	2
6424		HOLL	12	27	1616	S10	W04	12	27.4		B	EAI	140	42	12	3
6424		PALE	12	27	2013	S10	W07	12	27.3		B	EAO	140	26	13	3
6424	26488	MWIL	12	27	2030	S09	W06	12	27.4	5	(B)					
6424		LEAR	12	28	0010	S10	W08	12	27.4		B	DAO	150	20	10	3
6424		CULG	12	28	0035	S10	W09	12	27.3		B	EAO	120	26	11	2
6424		RAMY	12	28	1345	S11	W12	12	27.7		B	EAO	240	40	12	1
6424		BOUL	12	28	1540	S11	W17	12	27.4		B	DAO	270	6	10	1
6424	26488	MWIL	12	28	1600	S10	W16	12	27.5	5	(B)					

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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
6424		PALE	12	28	1830	S11	W19	12	27.3		B	DAI	330	50	11	4
6424		CULG	12	29	0010	S11	W22	12	27.3		B	EAI	320	31	12	3
6424		LEAR	12	29	0025	S11	W21	12	27.4		BG	EAI	450	43	11	2
6424		SVTO	12	29	0845	S10	W26	12	27.4		B	EAO	240	29	12	3
6424		RAMY	12	29	1527	S11	W28	12	27.5		B	EAO	370	48	11	3
6424		PALE	12	29	1810	S11	W33	12	27.3		B	EAI	330	35	13	3
6424		LEAR	12	30	0008	S11	W35	12	27.4		B	EKI	310	29	13	3
6424		CULG	12	30	0038	S11	W37	12	27.2		B	EAO	170	40	13	2
6424		SVTO	12	30	0801	S11	W38	12	27.5		B	EAO	240	21	13	3
6424		RAMY	12	30	1225	S09	W41	12	27.4		B	EAO	290	24	12	3
6424	26488	MWIL	12	30	1545	S09	W45	12	27.3	4	(BG)					
6424		HOLL	12	30	1615	S11	W42	12	27.5		B	EAI	180	10	12	3
6424		PALE	12	30	1925	S11	W45	12	27.4		B	EAI	250	35	11	4
6424		LEAR	12	31	0009	S09	W48	12	27.4		B	EAI	170	15	14	3
6424		CULG	12	31	0040	S11	W50	12	27.3		B	EAO	150	14	14	2
6424		RAMY	12	31	1309	S10	W54	12	27.5		B	FAO	190	19	16	3
6424		BOUL	12	31	1540	S10	W59	12	27.2		B	DAO	140	2	6	1
6424	26488	MWIL	12	31	1545	S10	W56	12	27.4	5	(BP)					
6424		HOLL	12	31	1656	S10	W59	12	27.3		B	ESO	180	15	12	4
6424		PALE	12	31	1830	S10	W58	12	27.4		B	ESO	140	18	13	4
6424		LEAR	01	01	0039	S08	W62	12	27.5		B	DAO	180	6	7	3
6424		CULG	01	01	0040	S10	W68	12	27.0		B	EAO	150	7	15	3
6424		RAMY	01	01	1235	S09	W70	12	27.4		B	DAO	130	9	9	3
6424		HOLL	01	01	1715	S09	W75	12	27.2		B	CSO	80	6	6	3
6424		BOUL	01	01	1755	S09	W70	12	27.6		B	BXO	90	2	13	1
6424	26488	MWIL	01	01	1900	S09	W75	12	27.3	5	(AP)					
6424		PALE	01	01	2017	S11	W72	12	27.5		B	CAO	60	11	8	2
6424		LEAR	01	02	0017	S10	W80	12	27.1		B	CAO	60	3	5	3
6424		SVTO	01	02	0846	S09	W80	12	27.5		A	HR	30	2	3	2
6424		PALE	01	02	1928	S12	W85	12	27.5		A	AX		1		3
6426	26486	MWIL	12	23	1615	S13	E57	12	28.0	4	(AP)					
6426		CULG	12	24	0040	S08	E55	12	28.1		A	AX		2	1	3
6426		HOLL	12	24	1520	S12	E44	12	27.9		A	AX		1		3
6426	26486	MWIL	12	24	1615	S13	E44	12	28.0	5	(AP)					
6426		RAMY	12	24	1705	S13	E43	12	27.9		A	HS	10	1	1	3
6426		CULG	12	25	0040	S12	E38	12	27.9		A	AX		1		3
6426		PALE	12	25	0220	S13	E37	12	27.9		A	AX		1		3
6426		RAMY	12	25	1222	S12	E31	12	27.8		B	CRO	20	3	2	4
6426	26486	MWIL	12	25	1600	S12	E31	12	28.0	4	(AP)					
6426		HOLL	12	25	1715	S12	E30	12	28.0		A	AX	10	4	2	2
6426		CULG	12	26	0120	S11	E24	12	27.9		A	HS	20	1		2
6426		RAMY	12	26	1318	S12	E19	12	28.0		B	CAO	20	12	3	3
6426	26486	MWIL	12	26	1600	S12	E17	12	27.9	4	(B)					
6426		BOUL	12	26	1645	S12	E16	12	27.9		B	DAO	90	8	4	2
6426		RAMY	12	27	1228	S12	E06	12	28.0		A	AX	10	5	1	2
6426		HOLL	12	27	1616	S12	E03	12	27.9		A	AX	10	5	2	3
6426		LEAR	12	28	0010	S13	W01	12	27.9		B	BXO	10	3	2	3
6426		CULG	12	28	0035	S12	W01	12	27.9		A	AX		2	1	2
6420		SVTO	12	20	0830	S20	E88	12	27.1		A	HR	10	1	2	3
6420		RAMY	12	20	1310	S21	E85	12	27.1		A	HS	60	1	3	3
6420		HOLL	12	20	1700	S21	E81	12	26.9		A	HS	120	1	2	3
6420		CULG	12	21	0023	S20	E77	12	26.9		B	DSO	70	2	8	2
6420		LEAR	12	21	0220	S22	E74	12	26.8		B	DSO	90	2	2	3
6420		SVTO	12	21	0844	S22	E75	12	27.1		B	ESI	280	15	14	3
6420		RAMY	12	21	1244	S22	E75	12	27.3		B	FAO	420	24	21	3
6420		HOLL	12	21	1716	S23	E72	12	27.3		B	FAI	260	14	16	2
6420		CULG	12	22	0007	S21	E68	12	27.2		B	FSO	220	16	22	3
6420		LEAR	12	22	0035	S22	E68	12	27.2		B	FAO	440	11	17	3
6420		SVTO	12	22	1043	S23	E64	12	27.4		B	FAO	420	24	17	1
6420	26483	MWIL	12	22	1545	S26	E67	12	27.9	4	(B)					
6420		RAMY	12	22	1555	S23	E60	12	27.3		BG	FKO	680	33	19	1
6420		HOLL	12	22	1822	S22	E55	12	27.0		B	FKO	600	33	20	2
6420		LEAR	12	23	0027	S25	E55	12	27.3		B	EAO	540	15	13	2
6420		CULG	12	23	0030	S22	E55	12	27.2		B	FKO	460	15	19	2
6420		RAMY	12	23	1405	S22	E50	12	27.4		B	FAO	610	30	21	2
6420	26483	MWIL	12	23	1615	S25	E56	12	28.0	5	(D)					
6420		HOLL	12	23	1630	S24	E50	12	27.5		B	FAO	260	23	17	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
6420		LEAR	12	24	0015	S25	E44	12	27.4		B	EAO	160	5	14	2
6420		HOLL	12	24	1520	S24	E37	12	27.5		B	EAO	180	17	14	3
6420		BOUL	12	24	1540	S27	E43	12	28.0		B	DAO	210	2	3	1
6420	26483	MWIL	12	24	1615	S26	E43	12	28.0	5	(D)					
6420		RAMY	12	24	1705	S24	E38	12	27.6		B	FAO	280	20	20	3
6420		CULG	12	25	0040	S23	E31	12	27.4		B	EAO	160	22	15	3
6420		LEAR	12	25	0040	S24	E33	12	27.6		B	FSO	130	8	16	3
6420		PALE	12	25	0220	S24	E31	12	27.5		B	FAO	220	17	18	3
6420		RAMY	12	25	1222	S24	E23	12	27.3		B	EAO	250	23	14	4
6420	26483	MWIL	12	25	1600	S26	E30	12	28.0	5	(D)					
6420		HOLL	12	25	1715	S25	E30	12	28.0		B	CSO	80	12	3	2
6420		CULG	12	26	0120	S22	E24	12	27.9		B	CSO	80	11	3	2
6420		LEAR	12	26	0145	S25	E17	12	27.4		B	FAO	130	12	16	3
6420		RAMY	12	26	1318	S27	E18	12	27.9		B	DAO	150	17	6	3
6420	26483	MWIL	12	26	1600	S25	E18	12	28.1	5	(D)					
6420		BOUL	12	26	1645	S26	E17	12	28.0		B	DAO	120	12	4	2
6420		LEAR	12	27	0020	S23	E06	12	27.5		B	FAO	190	20	17	3
6420		CULG	12	27	0115	S25	E12	12	28.0		B	CAO	120	6	4	3
6420		RAMY	12	27	1228	S25	E08	12	28.1		B	DAO	60	15	9	2
6420		HOLL	12	27	1616	S26	E04	12	28.0		B	CAI	30	16	5	3
6420		PALE	12	27	2013	S24	W04	12	27.5		BG	FSO	90	19	16	3
6420	26483	MWIL	12	27	2030	S25	E01	12	27.9	5	(B)					
6420		CULG	12	28	0035	S26	E00	12	28.0		B	CAO	100	6	3	2
6420		RAMY	12	28	1345	S26	W06	12	28.1		B	BXO	10	8	4	1
6420		BOUL	12	28	1540	S25	W12	12	27.7		A	HS	20	1	1	1
6420	26483	MWIL	12	28	1600	S27	W10	12	27.9	4	(B)					
6420		PALE	12	28	1830	S27	W11	12	27.9		B	BXO	10	4	3	4
6420		SVTO	12	29	0845	S26	W21	12	27.7		A	AX		3	3	3
6420		RAMY	12	29	1527	S26	W17	12	28.3		B	BXO	10	6	10	3
6420		PALE	12	29	1810	S26	W15	12	28.6		A	AX		2	1	3
6420		LEAR	12	30	0008	S23	W26	12	28.0		A	AX	10	1	1	3
6420		CULG	12	30	0038	S29	W27	12	27.9		A	AX		2	1	2
6420		RAMY	12	30	1225	S28	W31	12	28.1		B	BXO	10	4	3	3
6420	26496	MWIL	12	30	1545	S26	W28	12	28.5	3	(B)					
6420		PALE	12	30	1925	S26	W29	12	28.5		A	AX		2	1	4
6420		PALE	12	31	1830	S28	W43	12	28.4		A	AX		3	2	4
6420		RAMY	01	01	1235	S28	W52	12	28.6		A	HR	10	1	1	3
6420		HOLL	01	01	1715	S28	W54	12	28.6		A	AX	10	2	1	3
6420		BOUL	01	01	1755	S29	W57	12	28.4		A	AX		1		1
6420	26496	MWIL	01	01	1900	S27	W55	12	28.6	4	(AF)					
6420		PALE	01	01	2017	S29	W55	12	28.6		A	AX		1		2
6420		LEAR	01	02	0017	S28	W57	12	28.6		A	AX		1	1	3
6420		RAMY	01	02	1225	S28	W61	12	28.8		A	AX	10	2	1	4
6420		HOLL	01	02	1600	S28	W68	12	28.4		A	AX	30	3	2	2
6420		PALE	01	02	1928	S27	W65	12	28.8		A	AX		1		3
6420		LEAR	01	03	0008	S27	W69	12	28.7		A	AX		1	1	3
6420		CULG	01	03	0152	S30	W70	12	28.7		A	AX		1		3
6422		HOLL	12	21	1716	S18	E85	12	28.2		A	HS	120	1	5	2
6422		CULG	12	22	0007	S17	E81	12	28.2		A	HS	70	1	4	3
6422		LEAR	12	22	0035	S18	E80	12	28.1		A	HA	60	1	2	3
6422		SVTO	12	22	1043	S18	E76	12	28.2		A	HS	180	1	3	1
6422	26484	MWIL	12	22	1545	S19	E73	12	28.2	4	(BP)					
6422		RAMY	12	22	1555	S18	E75	12	28.4		B	DAO	300	7	9	1
6422		HOLL	12	22	1822	S17	E72	12	28.2		B	CSO	300	6	11	2
6422		LEAR	12	23	0027	S17	E70	12	28.3		B	DKO	390	2	6	2
6422		CULG	12	23	0030	S17	E72	12	28.5		B	DSO	250	3	9	2
6422		RAMY	12	23	1405	S18	E63	12	28.4		B	DKO	430	11	10	2
6422	26484	MWIL	12	23	1615	S18	E62	12	28.4	6	(BP)					
6422		HOLL	12	23	1630	S17	E65	12	28.6		B	CHO	340	6	10	3
6422		LEAR	12	24	0015	S15	E56	12	28.2		B	CAO	200	10	9	2
6422		CULG	12	24	0040	S13	E62	12	28.7		B	CAO	370	15	10	3
6422		HOLL	12	24	1520	S18	E50	12	28.4		B	CHO	270	7	10	3
6422		BOUL	12	24	1540	S19	E46	12	28.2		A	HK	330	1	5	1
6422	26484	MWIL	12	24	1615	S17	E49	12	28.4	5	(BP)					
6422		RAMY	12	24	1705	S17	E50	12	28.5		B	DKO	290	9	9	3
6422		LEAR	12	25	0040	S17	E43	12	28.3		B	DKO	140	5	10	3
6422		CULG	12	25	0040	S17	E45	12	28.4		B	CSO	250	4	9	3
6422		PALE	12	25	0220	S17	E45	12	28.5		B	DHO	250	5	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
6422		RAMY	12	25	1222	S18	E39	12	28.5		B	DKO	140	7	8	4
6422	26484	MWIL	12	25	1600	S18	E37	12	28.5	6	(BP)					
6422		HOLL	12	25	1715	S17	E38	12	28.6		B	CHO	330	7	8	2
6422		CULG	12	26	0120	S16	E32	12	28.5		B	DHO	190	5	8	2
6422		RAMY	12	26	1318	S18	E26	12	28.5		B	DKO	280	15	9	3
6422	26484	MWIL	12	26	1600	S17	E22	12	28.3	5	(BP)					
6422		BOUL	12	26	1645	S18	E23	12	28.4		B	DKO	290	4	9	2
6422		LEAR	12	27	0020	S15	E17	12	28.3		B	EAO	250	10	11	3
6422		CULG	12	27	0115	S18	E19	12	28.5		B	DKO	180	6	8	3
6422		RAMY	12	27	1228	S18	E14	12	28.6		B	ESO	230	19	11	2
6422		HOLL	12	27	1616	S18	E11	12	28.5		B	CSO	180	11	9	3
6422		PALE	12	27	2013	S17	E09	12	28.5		B	DSO	140	7	9	3
6422	26484	MWIL	12	27	2030	S18	E06	12	28.3	5	(BP)					
6422		CULG	12	28	0035	S17	E07	12	28.5		B	CSO	170	5	10	2
6422		RAMY	12	28	1345	S19	E01	12	28.6		B	DSO	240	7	10	1
6422		BOUL	12	28	1540	S19	W06	12	28.2		B	DAO	160	2	4	1
6422	26484	MWIL	12	28	1600	S19	W05	12	28.3	5	(BP)					
6422		CULG	12	29	0010	S18	W06	12	28.5		B	CSO	220	7	10	3
6422		LEAR	12	29	0025	S18	W06	12	28.6		B	ESO	150	7	13	2
6422		SVTO	12	29	0845	S20	W09	12	28.7		B	CSO	180	12	12	3
6422		RAMY	12	29	1527	S19	W11	12	28.8		B	CKO	220	15	14	3
6422		PALE	12	29	1810	S16	W16	12	28.5		B	CSO	200	10	8	3
6422		LEAR	12	30	0008	S19	W20	12	28.5		B	CHO	190	5	6	3
6422		CULG	12	30	0038	S18	W18	12	28.6		B	ESO	150	11	13	2
6422		SVTO	12	30	0801	S18	W22	12	28.6		B	CSO	150	11	13	3
6422		RAMY	12	30	1225	S19	W23	12	28.8		B	CKO	340	16	14	3
6422	26484	MWIL	12	30	1545	S18	W32	12	28.2	5	(BP)					
6422		HOLL	12	30	1615	S19	W29	12	28.5		B	CSO	160	6	8	3
6422		PALE	12	30	1925	S19	W32	12	28.4		B	CSO	180	10	8	4
6422		LEAR	12	31	0009	S18	W37	12	28.2		B	DKO	170	3	4	3
6422		CULG	12	31	0040	S19	W37	12	28.2		A	HS	200	4	4	2
6422		SVTO	12	31	0738	S18	W38	12	28.4		B	CAO	140	7	7	2
6422		RAMY	12	31	1309	S19	W42	12	28.3		B	DAO	240	10	8	3
6422		BOUL	12	31	1540	S20	W47	12	28.0		A	HA	140	1	4	1
6422	26484	MWIL	12	31	1545	S18	W45	12	28.2	5	(AP)					
6422		HOLL	12	31	1656	S18	W44	12	28.3		B	CAO	210	8	5	4
6422		PALE	12	31	1830	S19	W46	12	28.3		B	CAO	180	13	6	4
6422		LEAR	01	01	0039	S15	W48	12	28.5		B	DAO	120	3	4	3
6422		CULG	01	01	0040	S20	W52	12	28.1		B	CAO	130	4	3	3
6422		RAMY	01	01	1235	S19	W57	12	28.3		B	CAO	150	6	4	3
6422		HOLL	01	01	1715	S19	W59	12	28.3		B	CAO	150	4	3	3
6422		BOUL	01	01	1755	S20	W59	12	28.3		B	CAO	150	3	4	1
6422	26484	MWIL	01	01	1900	S18	W61	12	28.2	5	(AP)					
6422		PALE	01	01	2017	S21	W60	12	28.3		B	CAO	80	5	4	2
6422		LEAR	01	02	0017	S19	W60	12	28.5		B	CAO	110	4	4	3
6422		SVTO	01	02	0846	S19	W64	12	28.6		B	CSO	110	3	11	2
6422		RAMY	01	02	1225	S19	W68	12	28.4		B	CAO	110	2	3	4
6422		HOLL	01	02	1600	S20	W71	12	28.3		B	CSO	180	2	3	2
6422		BOUL	01	02	1617	S20	W73	12	28.2		A	HA	120	1	2	1
6422		PALE	01	02	1928	S19	W70	12	28.6		B	CAO	120	2	3	3
6422		LEAR	01	03	0008	S20	W75	12	28.4		A	HA	60	1	2	3
6422		CULG	01	03	0152	S22	W75	12	28.4		B	CSO	120	2	5	3
6422		SVTO	01	03	0850	S20	W85	12	28.0		A	HS	30	1	3	4
6422		RAMY	01	03	1318	S19	W81	12	28.5		A	HA	120	1	2	3
6422		HOLL	01	03	1542	S19	W85	12	28.3		A	HA	30	1	3	3
6422A		RAMY	12	31	1309	N10	W31	12	29.2		B	CRO	20	5	3	3
6422B	26489	MWIL	12	25	1600	S16	E48	12	29.3	4	(AP)					
6422B		HOLL	12	25	1715	S16	E48	12	29.3		A	AX		1		2
6433		BOUL	12	31	1540	S01	W32	12	29.3		A	HA	40	1	2	1
6433	26499	MWIL	12	31	1545	N01	W33	12	29.2	5	(B)					
6433		HOLL	12	31	1656	N04	W32	12	29.3		B	BXO	20	5	3	4
6433		PALE	12	31	1830	N01	W35	12	29.1		B	CRO	20	9	3	4
6433		LEAR	01	01	0039	N06	W38	12	29.3		B	CSO	70	6	5	3
6433		CULG	01	01	0040	N01	W39	12	29.2		B	CRO	10	9	3	3
6433		RAMY	01	01	1235	N01	W44	12	29.3		B	CAO	10	2	4	3
6433		HOLL	01	01	1715	N01	W49	12	29.1		B	BXO	20	2	4	3

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

DECEMBER 1990

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
6433	26499	MWIL	01	01	1900	N02	W48	12	29.3	5	(B)					
6433		PALE	01	01	2017	N01	W47	12	29.4		A	AX	10	1		2
6433		LEAR	01	02	0017	N02	W50	12	29.4		A	HR	30	1	1	3
6433		SVTO	01	02	0846	N02	W56	12	29.3		A	HR	30	1	1	2
6433		RAMY	01	02	1225	N02	W56	12	29.4		A	HA	20	1	1	4
6433		HOLL	01	02	1600	N02	W60	12	29.3		A	AX	10	1		2
6433		PALE	01	02	1928	N02	W60	12	29.4		A	AX		1		3
6433		LEAR	01	03	0008	N02	W63	12	29.4		A	AX		1	1	3
6433		CULG	01	03	0152	N02	W66	12	29.2		A	AX	10	1	1	3
6433		SVTO	01	03	0850	N02	W70	12	29.2		A	AX		1		4
6433A		HOLL	12	30	1615	S25	W08	12	30.0		B	BXO		3	3	3
6433A		CULG	12	31	0040	S25	W12	12	30.1		B	BXO	10	2	3	2
6436		RAMY	01	01	1235	N14	W24	12	30.8		B	BXO	10	3	3	3
6436		HOLL	01	01	1715	N16	W27	12	30.8		A	AX		1		3
6436	26502	MWIL	01	01	1900	N16	W27	12	30.8	3	(AF)					
6436		PALE	01	01	2017	N15	W27	12	30.9		A	AX		1		2
6430		RAMY	12	28	1345	S14	E34	12	31.1		B	DRO	40	13	7	1
6430		BOUL	12	28	1540	S12	E33	12	31.1		B	DAO	50	2	2	1
6430	26493	MWIL	12	28	1600	S12	E33	12	31.1	4	(B)					
6430		PALE	12	28	1830	S13	E31	12	31.1		B	CRO	30	8	6	4
6430		CULG	12	29	0010	S13	E28	12	31.1		B	BXO	10	9	7	3
6430		LEAR	12	29	0025	S13	E25	12	30.9		B	CAO	30	10	7	2
6430		SVTO	12	29	0845	S14	E23	12	31.1		B	BXO	10	5	8	3
6430		RAMY	12	29	1527	S13	E20	12	31.1		B	CRO	20	8	9	3
6430		PALE	12	29	1810	S12	E18	12	31.1		B	BXO	10	3	6	3
6430		LEAR	12	30	0008	S13	E15	12	31.1		B	BXO	20	2	6	3
6430		CULG	12	30	0038	S13	E15	12	31.1		B	BXO	10	5	7	2
6430		HOLL	12	31	1656	S13	W09	12	31.0		A	AX		5	2	4
6430		PALE	12	31	1830	S14	W11	12	30.9		A	AX		1		4
6430		RAMY	01	01	1235	S07	W18	12	31.2		B	BXO	10	3	3	3
6430		HOLL	01	01	1715	S08	W22	12	31.1		A	AX	10	2	1	3
6430	26503	MWIL	01	01	1900	S07	W23	12	31.1	4	(AP)					
6430		SVTO	01	03	0850	S07	W43	12	31.1		B	BXO	20	11	5	4
6430		RAMY	01	03	1318	S06	W45	12	31.2		A	AX	10	6	4	3
6430		HOLL	01	03	1542	S07	W46	12	31.2		B	BXO	10	6	5	3
6430		LEAR	01	04	0018	S07	W50	12	31.3		B	BXO	60	5	4	3
6430		SVTO	01	04	0855	S06	W56	12	31.2		B	BXO	30	10	8	2
6430		RAMY	01	04	1310	S05	W57	12	31.3		B	BXO	20	17	6	4
6430		PALE	01	04	2055	S06	W63	12	31.1		B	CRO	60	16	6	3
6430		LEAR	01	05	0031	S08	W65	12	31.1		B	BXO	200	10	4	3
6430		BOUL	01	05	1713	S07	W79	12	30.9		B	CSO	150	2	7	1
6430		LEAR	01	06	0017	S08	W76	12	31.3		B	DSO	210	2	7	3
6430		CULG	01	06	0210	S08	W78	12	31.2		A	HS	30	1	1	3
6430		SVTO	01	06	1155	S09	W84	12	31.2		B	CAO	120	3	8	3
6430		RAMY	01	06	1225	S06	W86	12	31.1		B	DAO	120	6	9	4
6430	26503	MWIL	01	06	1730	S07	W85	12	31.4	5	AP					
6430		PALE	01	06	1840	S08	W87	12	31.2		A	HA	60	2	2	4
6430		HOLL	01	06	2130	S08	W85	12	31.5		A	HA	60	1	2	3
6433B	26492	MWIL	12	28	1600	S18	E29	12	30.9	4	(AP)					
6433B		PALE	12	28	1830	S18	E28	12	30.9		A	AX	20	1	1	4
6433B		PALE	12	29	1810	S18	E21	12	31.3		A	AX		1		3

Stations reporting:

BOUL = Boulder HOLL = Holloman MWIL = Mt. Wilson RAMY = Ramey
CULG = Culgoora LEAR = Learmonth PALE = Palehua SVTO = San Vito

SUDDEN IONOSPHERIC DISTURBANCES

DECEMBER 1990

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	0048	0106	0257	2+	3	1		1	1		0047	M1.2	
01	0545	0608	0728	1+	5			1	1	1	No flare		
01	1117	1130	1155	1	1					1	No flare		
01	1202	1210	1230	1	1					1	No flare		
01	1402	1406	1425	1	1					1	1405	C1.7	6383
01	1605	1614	1631	1+	1					1	1609	C2.2	
01	1638	1645	1700U	1	1					1	1645	C1.7	6388
01	1706	1708	1725	1	1					1	1706	C1.8	6388
01	2306	2317	2350	1-	1			1			2251	C1.8	
02	0036	0052	0148	1-	3	1		1			0031	C4.1	6388
02	0915	0925	0950	1+	1					1	No flare		
02	1005	1010	1020	1-	1					1	1014	C1.5	
02	1028	1037	1058	1	1					1	*		
02	1120	1125	1150	1-	5			1	1	1	1114	C4.0	
02	1238	1244	1300	1	1					1	*		
02	1547	1552	1602	1-	5					3	No flare		
02	1609	1614	1617	1-	1					1	No flare		
02	1855	1856	1957	2+	1					1	No flare		
02	2055	2055	2123	1+	1					1	No flare		
03	0331	0336	0352	1-	1				1		0328	C2.1	
03	1222	1225	1240	1	1		1				*		
03	1709	1713	1729	1-	3					4	1705	C3.5	
03	1733	1737	1800	1	3					2	1733	C3.4	
03	1823	1825	1837	1-	1					1	1825	C1.7	6399
03	1918	1922	1957	2-	3					5	1918	M1.0	6397
03	2005	2015	2037	1+	3					2	1954	C3.9	6397
03	2256	2305	2328	1-	1			1			2251	C1.7	6397
04	0011	0022	0026D	1-	1			1			No flare		
04	0024E	0030	0130	1-	1			1			No flare		
04	0157	0207	0350	3	5	2		1	1	1	0158	M6.6	6397
04	0734	0740	0809	1-	5			1	1	2	0733	C4.3	6397
04	1150	1158	1210	1	1		1				No flare		
04	1244	1252	1417	3	1					1	1246	C1.8	6397
04	1319	1322	1332	1-	1		1				No flare		
04	1429	1438	1445	1-	5	1	2		1	7	1420	M1.8	6397
05	0537	0544	0623	1-	3			1	1		0536E	C3.3	
05	0721	0732	0910	3	5		1	1	1	1	0722	M2.7	6397
05	1511	1515	1531	1	1					1	1511	C1.9	6395
05	1715	1730	1735	1	1					1	1718	C2.3	6400
05	1815	1830	1949	2	3					2	1826	C2.3	6400
05	2100	2111	2132	1-	5			1		3	2054	C8.9	6397
06	0257	0304	0317	1-	3			1	1		No flare		
06	0630	0638	0718	1-	3			1	1		0628E	C4.5	
06	0835	0844	0904	1-	1			1			*		
06	1531	1533	1546	1-	3					2	1531	C3.5	
07	0020	0026	0042	1-	1			1			0021E	C2.8	
07	0427	0438	0506	1-	3			1	1		0425	C3.4	6397
07	0728	0736	0800	1-	3			1	1		0727	C4.0	
07	0929	0938	1002	1-	5			1		1	0929	C2.8	6387
07	1312	1321	1336	1	1					1	1312		6395
07	1409	1416	1430	1-	5		1		1	11	1408	M1.0	6397
07	1759	1804	1855	2	3					7	1819	C3.3	6397
07	1806	1819	1901	2+	1					1	1819	C3.3	6387
07	1952	1954	2010	1-	1					1	1951		6397
08	0140	0147	0207	1-	1			1			0141E	C2.2	
08	0643	0650	0811	2	5			1	1	4	0643	C7.3	6402
08	1002	1010	1030	1-	5			1		2	1004		6398
08	1142	1148	1215	2-	1					1	1141	C4.5	6398
08	1807	1809	1812	1-	1					1	No flare		
08	1814	1831	1850	2	3					2	1814		6402
08	2250	2315	2359	2+	1					1	2252	C2.7	6398

* = no flare patrol.

DECEMBER 1990

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
09	0122	0147	0230U	1-	1				1		No flare		
09	0309	0322	0351D	1-	3			1	1		0311	C4.9	6398
09	0353E	0403	0432	1-	3			1	1		No flare		
09	0504	0516	0534D	1-	3			1	1		0503		
09	0534E	0547	0608	1-	1			1			0544		6408
09	0618	0632	0645D	1-	3			1	1		No flare		
09	0645E	0653	0725	1-	1			1			No flare		
09	0816	0827	0923D	3	5	1	3	1	2	4	0815	M2.8	
09	0923E	0932	1002	1-	5			1		4	0921	M1.0	6397
09	1122	1130	1154	1-	5			1		1	1125	C4.9	6398
09	1420	1423	1443	1+	5					2	1409	C3.2	6398
09	2000	2004	2016	1-	3					3	1959	C4.2	6387
09	2302	2312	2332	1-	1			1			2254		6398
10	0020	0029	0040U	1-	1				1		0023	C2.6	6387
10	0050	0058	0108U	1-	1				1		0052		6398
10	0122	0134	0136U	1-	1				1		0125	C2.6	6398
10	0200	0212	0222	1-	1				1		No flare		
10	0417	0428	0519	1-	3			1	1		0421E	C3.4	
10	0538	0543	0552D	1-	1			1			0534	C2.6	
10	0552E	0615	0642	1-	1			1			0551E	C3.1	
10	0655	0703	0727D	1-	3			1	1		0657	M5.8	6398
10	0727E	0734	0742D	1-	3			1	1		0657	M5.8	6398
10	0742E	0759	0911	3	5	2	2	1	2	5	0657	M5.8	6398
10	0921	0944	0955D	2	1					1	0932	C3.4	6398
10	0955	1000	1010	1-	1					1	0954	C3.6	6398
10	1304	1314	1344	2-	5					4	1306	C6.8	6398
10	1515	1519	1545	2-	5					3	1515E	C3.7	6397
10	1755	1758	1835	2-	3					6	1749	C6.8	6399
10	1822	1833	1859	1-	1			1			No flare		
10	1946	1947	2002	1-	1					1	1945	C3.0	6398
10	2150	2211	2300D	1-	5			1		1	2210E	C8.6	6398
10	2300E	2306	2324D	1-	1			1			2239	C5.2	6402
10	2324E	2351	2450	1-	1			1			2339	C5.7	6399
11	0156	0202	0214	1-	3			1	1		0149	C4.8	
11	0258	0319	0430	1+	3			1	1		0252	C5.4	6399
11	0501	0514	0620D	2+	5	1	1	1	1	1	0502	M1.1	6387
11	0620E	0634	0708D	1-	3			1	1		0621	C4.3	6399
11	0708E	0715	0741D	1-	5			1	1	1	0708	C5.1	6395
11	0741E	0746	0808	1-	5			1		1	0727	C3.8	6410
11	1030	1050	1100	1+	1		1				No flare		
11	1130	1200U	1211	1	3	1	1				1132	M1.3	6398
11	1224	1242	1255	1+	1					1	No flare		
11	1808	1814	1858	2	3					6	1815	M1.3	6398
11	2042	2054	2156	3-	5	2		1		4	2046	M6.5	6402
11	2256	2319	2429	2	5	2		1		1	2257	M1.1	6398
12	0156	0213	0224	1-	3			1	1		0151	C2.9	
12	0254	0304	0318D	1-	3			1	1		0253	C4.0	6399
12	0318E	0348	0457D	3	5			1	1	1	0324E	M1.7	
12	0457E	0505	0558	1	1			1			0457	C4.6	
12	0626	0641	0651D	1-	1			1			0625	M1.6	6399
12	0648E	0711	0754D	1+	1			1			0700E		6399
12	0747E	0805	0924	3	5	3	2	1	2	5	0753	M5.1	6399
12	1025	1039	1104	1+	3		1			1	1021	C5.8	
12	1107	1113	1215	1	5	2	3	1	1	2	1058	M1.6	6399
12	1245	1252	1305	2	5	1	1		1	3	1244	C8.2	
12	1332	1337	1357	1	1					1	1339		6399
12	1403	1410	1437	1-	5	3	3	1	1	7	1413E	M8.9	6398
12	1541	1548	1600	1-	3					3	1508	C4.7	6399
12	1642	1652	1736	2	3					7	1638	C8.2	
12	1816	1820	1835	1-	3					6	1821	C5.2	6410
12	1857	1859	1911	1-	3					5	1857	C8.3	6410
12	1913	1930	2003	2	3					6	1921	M1.6	
12	2019	2021	2055	2	1					1	2018	C5.7	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

DECEMBER 1990

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
13	0007	0012	0026	1-	1			1			0008	C3.6	6412
13	0112	0133	0212D	2	5	1		1	1	1	0111	C7.3	
13	0212E	0215	0254	1-	5	1		1		1	0210	C5.6	
13	0342	0352	0412D	1-	1			1			0356	C3.1	6412
13	0412E	0418	0527	1+	5	1		1	1	1	0408E	C6.6	
13	0610	0619	0719	1-	1			1			0610	C3.2	6397
13	1018	1037	1125	1-	5		1	1		1	0952	C6.8	6412
13	1302	1320	1345	2-	1					1	1315	C6.1	6410
13	1353	1358	1410	1	5	1	1		1	7	1344	M1.1	6410
13	1615	1627	1706	2	5					9	1615	M1.5	6398
13	1741	1748	1826	2-	3					7	1749	C8.2	6412
13	1902	1910	1957	2	3					6	1903	C6.5	
13	2303	2315	2340U	2	1					1	2313	C2.5	
14	0159E	0205	0236	1-	3			1	1		0146	C3.1	6412
14	0316	0325	0345D	1-	3			1	1		0316		6412
14	0345E	0351	0404D	1-	1			1			0345	C3.0	6412
14	0402	0419	0455	1-	1			1			0404	C2.5	6410
14	0634	0640	0653	1-	1			1			0630	C2.3	6413
14	0832	0843	0906	1-	5			1		2	0827	C4.9	6410
14	0953	0955	1010	1-	1					1	*		
14	1053	1055	1110	1-	1					1	*		
14	1120	1128	1212	1-	5	2	2	1	1	3	1116	M1.0	
14	1147	1151	1157	1-	3					2	1147	C4.2	
14	1219	1221	1230	1-	1					1	*		
14	1244	1250	1301	1+	3		1			1	1246	C3.0	6410
14	1331	1336	1420	1-	5	1	3	1	1	8	1339E	M3.9	6412
14	1405	1410	1430	1-	5	1	1		1	9	1406E	C7.5	6412
14	1445	1449	1501	1-	5					6	1446	C2.9	
14	1640	1643	1708	1	3					6	1641E	C6.5	6412
14	1947	1950	2008	1	3					7	1949E	C4.7	6412
14	2112	2116	2135	1	1					1	2113	C2.5	6412
14	2215	2219	2244	1-	1			1			2218	C3.9	6412
15	0050	0116	0135U	2	1				1		No flare		
15	0200	0216	0323	1+	3			1	1		0201	C3.2	
15	0348	0352	0405	1-	3			1	1		0349	C2.0	
15	0412	0423	0444	1-	3			1	1		0412	C2.4	6412
15	0540	0547	0712D	3	5	1		1	1	1	0540	M1.8	6412
15	0712E	0719	0758	1-	1			1			No flare		
15	1153	1158	1233	1-	5			1		1	1144	C1.9	
15	1236	1244	1301	1	5					3	*		
15	1355	1415	1520	3-	1					1	No flare		
15	1605	1607	1621	1-	1					1	No flare		
15	1915	1917	1930	1-	1					1	1915	C1.8	6412
15	2000	2011	2030	1+	1					1	No flare		
15	2356	2405	2417	1-	1			1			2359	C1.7	6412
16	0043	0052	0108D	1-	1			1			0027		6412
16	0108	0115	0134	1-	1			1			No flare		
16	0205	0214	0256	1-	3	1		1	1		0202	C3.4	6412
16	0423	0430	0442D	1-	1			1			No flare		
16	0444	0449	0532D	1+	5	1		1	1	1	0445	C8.1	6412
16	0532E	0543	0609D	1-	3			1	1		0529	C2.4	6412
16	0609E	0611	0639D	1-	1			1			0608	C2.8	6412
16	0639E	0646	0705	1-	1			1			0639	C2.3	
16	1113	1119	1145	1-	5			1		1	1107	C4.0	
17	0313	0321	0331D	1-	3	1		1	1		0315	C3.5	6412
17	0334E	0346	0431D	2	3	1		1	1		0315	C6.0	6412
17	0431E	0445	0507D	1-	1			1			0433	C2.5	6412
17	0507E	0516	0535D	1-	1			1			No flare		
17	0535E	0538	0603	1-	1			1			No flare		
17	0637	0645	0824	2+	5	1		1	1	1	0630	M1.1	6412
17	0925	0927	0945	1-	1			1			No flare		
17	1436	1440	1500	1	1		1				No flare		
17	1522	1528	1607	2-	5		1			8	1520	M2.4	6412

* = no flare patrol.

DECEMBER 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
18	0016	0026	0050	1-	3			1	1		No flare		
18	0108	0116	0125	1-	1			1			No flare		
18	0148	0158	0253D	3-	3	1		1	1		0149	M1.8	6415
18	0251E	0256	0340	2	5	1		1	1	1	0253	C9.9	6412
18	0433	0436	0443	1-	1			1			0422	C2.4	
18	0508	0523	0634	2	5	1		1	1	1	0513	C9.3	6415
18	1029	1042	1127	1	5	3	2	1	1	4	1029E	M1.5	6415
18	1303	1310	1355	2+	1					1	No flare		
18	1304	1325	1409	2	1		1				1316	C6.4	6415
18	1439	1441	1456	1	1		1				No flare		
18	1637	1650	1722	2-	3					2	1632	C3.6	6415
18	2039	2048	2124	1	5			1		3	2036	M1.0	6415
18	2335	2344	2401D	1-	1			1			2324		6415
19	0002	0008	0027	1-	1			1			0004		6412
19	0046	0145	0402D	2-	3			1	1		0112	M1.1	6415
19	0402E	0445	0628D	3	5	1		1	1	1	0403	M1.7	6415
19	0628	0635	0715	1-	1			1			No flare		
19	1120	1126	1156	1-	5			1	1	1	1122	C6.2	6415
19	1452	1502	1520	1	5	1	2		1	7	1451	M3.0	6412
19	1707	1724	1751	2	3					5	1708	C6.5	6410
19	1801	1814	1905	2+	3					7	1748	C9.1	6415
20	0100	0115	0145D	1	3			1	1		0056	C4.8	
20	0145E	0149	0206	1-	1			1			0147		6410
20	0211E	0221	0255	1-	1			1			0152		6415
20	0351	0413	0507D	1-	3			1	1		No flare		
20	0507E	0513	0609	1	5			1	1	1	0505	C5.6	
20	0706	0728	0856	3	5	2	1	1	1	2	0705	M3.7	6415
20	0933	0948	1100	1-	5	1	1	1	1	3	0932	C8.4	
20	1123	1125	1140	1	1					1	No flare		
20	1209	1215	1243	1+	3					2	1206	C3.1	6412
20	1417	1421	1437	1-	5					6	1424	C5.1	6412
20	2037	2046	2145	1-	5			1		5	2034	M1.2	6412
21	0156	0212	0212D	1	3			1	1		0150E	C5.5	
21	0319	0336	0548	3-	5	1		1	1	3	0318	M1.4	
21	0627	0634	0643	1-	1			1			0627	C2.5	
21	0941	0950	0957	1-	1					1	0942	C3.5	6420
21	1452	1456	1515	1	5		1			4	1455	C4.4	6420
21	1553	1600	1629	1+	3					4	*		
21	1611	1630	1718	2+	3					4	1608E	M1.0	6420
21	1819	1826	1843	1	3					4	1819	C3.5	
21	1849	1851	1909	1-	3					4	1849	C3.1	6412
21	2224	2235	2338	1+	5	2		1		1	2228	C9.1	6412
22	0018	0033	0105	1-	3			1	1		0010	C4.4	
22	0150	0203	0257	1	3			1	1		No flare		
22	0314	0337	0438D	2+	5	1		1	1	1	0333	C9.8	6420
22	0438E	0447	0512D	1-	1			1			0439	C4.4	
22	0512E	0525	0558	1-	1			1			0512	C3.9	
22	0632	0639	0747	1+	5			1	1	1	0633	C5.5	6420
22	1113	1117	1145	1+	1					1	1112	C4.1	6420
22	1154	1156	1202	1-	1					1	1153	C3.6	
22	1210	1215	1230	1	1					1	1210	C3.8	
22	1323	1334	1405	2-	1					1	1321	C2.4	
22	1538	1544	1626	2-	5					10	1544	M1.2	6420
22	2029	2037	2118	2	3					5	2031E	C7.5	6420
22	2217	2251	2314D	3-	5	2		1		1	2217		6420
22	2314E	2325	2357D	3-	5			1		1	2312E	M4.3	
22	2357E	2401	2440D	1+	1			1			2357E	M1.4	
23	0040E	0044	0121D	1-	3			1	1		0038	C8.5	6412
23	0121E	0129	0205	1-	3			1	1		No flare		
23	0303	0308	0322	1-	1			1			0259		6412
23	0548	0557	0625	1-	5			1		1	No flare		
23	0615	0626	0645	1+	1					1	No flare		

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

DECEMBER 1990

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
23	0932	0954	1149	3	5	2	3	1	1	6	0943E	X1.0	6412
23	1147	1150	1158	1-	1					1	*		
23	1202	1208	1220	1-	1					1	1202	C2.3	
23	2006	2008	2025	1-	3					4	2007	C3.3	6420
23	2235	2243	2317	1-	1			1			2232	C3.9	6418
23	2351	2356	2404	1-	1			1			No flare		
24	0056	0111	0233	2-	3	1		1	1		0056	M1.0	6420
24	0252	0305	0405	1-	3			1	1		0306	C4.9	6420
24	0410	0421	0454	1-	3			1	1		No flare		
24	0559	0619	0738	2	5			1	1	1	0558	C7.5	6418
24	0747	0754	0805	1-	5			1	1	1	No flare		
24	0808	0812	0840	1+	1					1	No flare		
24	0950	0958	1020	1	1					1	0952		6420
24	1237	1245	1305	1	3		1		1	2	1237	C4.3	
24	1322	1330	1401	1-	5	3	2	1	1	5	1322E	M2.2	6420
24	1405	1414	1432	1	1					1	*		
24	1534	1539	1555	1-	5	2	2		1	8	1533	X1.8	6412
24	2239	2241	2249D	1-	1			1			2232	M1.0	6420
24	2250E	2306	2422	1+	5	1		1		1	No flare		
25	0050	0104	0134D	1-	3			1	1		0051	C5.0	6420
25	0134E	0137	0155D	1-	3			1	1		0133	C3.3	
25	0155E	0206	0234D	1-	3			1	1		0154	C4.4	
25	0234E	0237	0250D	1-	1			1			No flare		
25	0246E	0255	0327	1-	3			1	1		0249	C3.5	6420
25	0429	0443	0500	1-	1			1			0428	C1.9	
25	0521	0535	0614	1-	1			1			0458	C2.9	
25	0645	0653	0722	1-	1			1			0627	C1.8	
25	0739	0742	0807	1-	1			1			0738	C2.4	6422
25	0828	0834	0858	1-	5			1		1	0819	C2.1	
25	0947	0953	1022	1+	3					2	0935	C2.8	
25	1052	1109	1131	2	1					1	1052	C2.6	
25	1428	1430	1447	1-	5					2	1428	C3.3	6424
25	2159	2243	2300	1-	5			1		1	2158	C5.9	6420
26	0000	0015	0041	1-	1			1			0019		6423
26	0128	0140	0200U	1-	1				1		No flare		
26	0206	0243	0358	3	3	1		1	1		0204	M1.8	6420
26	0701	0724	0810	1	3			1	1		0650	C2.1	6420
26	1118	1130	1219	1	5	1	1	1	1	1	1133E	M1.7	6420
26	1358	1403	1421	1-	5	2	3	1	1	8	1355	X1.9	6420
27	0119	0125	0159	1-	3			1	1		0117	C2.2	
27	0650	0701	0731	1-	1			1			0649	C2.2	6420
27	0733	0800	0830	2-	1					1	No flare		
27	1740	1745	1831	2	3					6	1744	C6.3	6420
27	1747	1750	1815	1+	1					1	1744	C6.3	6420
27	2215	2223	2254	1-	1			1			2215	C3.7	6423
28	0138	0149	0212	1-	1			1			0125	C1.9	
28	0640E	0700U	0730	2-	1		1				No flare		
28	0733	0739	0759	1-	5			1		1	0729	C3.2	6424
29	0818	0833	0910	1	1				1		No flare		
29	1002	1009	1034	1-	5			1		1	0944	C3.6	6427
30	0922	0927	0945	1-	1					1	0921	C2.0	6424
30	1144	1149	1222	1-	5		1	1	1	3	1144	C5.5	6424
30	1208	1213	1230	1	1					1	1208	C2.6	6424
30	1318	1322	1348	1-	5		2	1	1	5	1318	M1.7	6424
30	1513	1517	1535	1	5	1	3		1	10	1447	M4.0	6424
30	1829	1832	1910	2-	3					4	1829	M1.2	6424
31	0222	0226	0239	1-	1			1			0221	C2.0	6429
31	1954	2000	2015	1	1					1	1951	C2.4	6422

* = no flare patrol.

OBSERVATORIES REPORTING FOR DECEMBER 1990

Amherst, New Hampshire, USA	SES	LaCrescenta, California, USA	SES
Athens, Georgia, USA	SES	Latrobe, Pennsylvania, USA	SES
Boksburg, Rep of S. Africa	SES	Lintong, People's Rep of China	SPA
Cleveland, Ohio, USA	SES	Locust Grove, Georgia, USA	SES
Darmstadt, Germany	SWF	Madison, Wisconsin, USA	SES
Edenvale, Rep of S. Africa	SES	Manahawkin, New Jersey, USA	SES
Hiraiso, Japan	SWF	Maui, Hawaii, USA	SWF
Houston, Texas, USA	SES	Nerja, Spain	SES
Hudson, Ohio, USA	SES	Panska Ves, Czechoslovakia	SES, SEA, SWF
Inubo, Japan	SPA	Paterson, New Jersey, USA	SES
Johannesburg, Rep of S. Africa	SES	San Francisco, California, USA	SES
Juliusruh, Germany	SWF	Shaker Heights, Ohio, USA	SES
Kandilli, Turkey	SEA	Sofia, Bulgaria	SES
Kuhlungsborn, Germany	SEA, SPA	Uccle, Belgium	SEA

Observations are not necessarily continuous.

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 1990

Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
01			LEAR				0022.0	0030.0	1				III
			LEAR				0128.0	0130.0	3				III
			PALE				0128.0	0129.0	1				V
			LEAR				0157.0	0201.0	2				III
			LEAR				0311.0	0316.0	3				III
			LEAR				0401.0	0403.0	3				III
			LEAR				0429.0	0431.0	3				III
			LEAR				0626.0	0632.0	2				III
			LEAR				0702.0	0704.0	1				III
			LEAR				0723.0	0724.0	2				III
	0649	1439	POTS				0723.7	0724.2	2				IIIG,C
			POTS				0745.3	0745.5	2				IIIG
	0811	1329	ONDR										
			POTS				0811.4	0811.6	1				IIIG
	0830	1440	BLEN										
			POTS				0835.3	0838.0	1				IIIG
			POTS				0907.6	0907.8	1				IIIG
			SVTO				0933.0	0934.0	2				III
			POTS				0933.3	0938.5	3				IIIG
			POTS				1009.2	1009.4	1				UNCLF
			POTS				1113.7	1113.9	1				IIIG
			POTS				1250.4	1254.3	2				IIIG
			POTS				1259.5	1259.8	1				UNCLF
			POTS				1308.7	1312.2	2				IIIG
			POTS				1325.1	1325.5	1				UNCLF
			POTS				1347.2	1439.0U	1				I,S,C
			PALE				1737.0	1739.0	1				III
			SGMR				1737.0	1739.0	1				III
			PALE				1810.0	1810.0	1				III
			SGMR				1810.0	1810.0	1				III
			LEAR				2242.0	2242.0	1				III
			LEAR				2250.0	2251.0	2				III
			PALE				2250.0	2250.0	1				III
02			LEAR				0037.0	0043.0	2				III
			LEAR				0134.0	0134.0	2				III
			LEAR				0230.0	0232.0	2				III
			LEAR				0506.0	0509.0	2				III
			LEAR				0617.0	0617.0	2				III
	0643	1415	POTS				0643.0E	0758.0	1				I,S,C
			LEAR				0652.0	0652.0	1				III
			LEAR				0704.0	0707.0	2				III
			POTS				0705.3	0707.3	2				IIIGG
	0812	0839	ONDR										
	0830	1440	BLEN										
			POTS				0837.3	0837.4	1				IIIB
			LEAR				0842.0	0843.0	2				III
			SVTO				0842.0	0843.0	2				III
			POTS				1033.8	1034.9	2				IIIG
			POTS				1056.8	1056.9	1				IIIB
			POTS				1143.9	1144.0	1				UNCLF
			LEAR				2241.0	2244.0	2				III
			PALE				2243.0	2243.0	2				III
03			LEAR				0043.0	0043.0	2				III
			LEAR				0322.0	0322.0	1				III
			LEAR				0541.0	0542.0	1				III
			LEAR				0612.0	0612.0	1				III
	0653	1441	POTS				0744.5	0744.6	1				IIIB
			POTS				0812.9	0813.7	1				IIIG
	0830	1440	BLEN										
			POTS				0834.9	0835.7	2				IIIG,C
			POTS				1120.4	1120.5	1				IIIB
			POTS				1240.9	1241.0	1				UNCLF
			POTS				1247.6	1247.7	1				UNCLF
			POTS				1304.0	1304.1	1				IIIB
			POTS				1410.3	1410.5	1				UNCLF
04			LEAR				0207.0	0208.0	2				III

SOLAR RADIO EMISSION
Spectral Observations

DECEMBER 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
04	0649	1439	POTS				0724.7	1439.0U	3				I,S,C,DC
	0830	1440	BLEN										
			POTS				0922.9	0923.0	2				IIIB
			POTS				1347.5	1351.1	3				IIIGG
05			LEAR				0020.0	0020.0	2				III
			LEAR				0222.0	0225.0	2				III
			LEAR				0354.0	0355.0	1				III
	0651	1417	POTS				0708.0	0859.0	2				I,S,DC
			POTS				0815.1	0819.1	3				IIIGG
			LEAR				0816.0	0819.0	1				III
	0830	1440	BLEN										
			POTS				0842.9	0843.1	1				IIIG
			POTS				0853.7	0853.8	1				IIIG
			POTS				0912.4	0913.8	2				IIIG
			POTS				1021.2	1021.3	1				IIIB
			POTS				1100.8	1143.0	1				I,S
			POTS				1123.5	1123.6	2				IIIG
			POTS				1206.3	1206.8	1				IIIG
			POTS				1246.7	1246.9	1				IIIG
			POTS				1326.7	1327.2	1				IIIG
			POTS				1334.2	1334.3	1				IIIB
			POTS				1339.5	1339.7	1				IIIG
	2022	2400	CULG				2225.0	2238.0	1				IIIPAIR
06	0000	0722	CULG										
			LEAR				0535.0	0535.0	1				III
	0705	1409	POTS				0705.0E	1409.0U	3				I,S,C,DC
			LEAR				0725.0	0726.0	1				III
			POTS				0757.3	0757.7	1				IIIG
	0830	1440	BLEN										
			POTS				0951.1	0951.7	1				IIIG
			POTS				1010.0	1010.5	1				IIIG
			POTS				1051.9	1052.1	2				IIIG
			POTS				1104.0	1104.1	2				RS
			POTS				1123.3	1125.3	2				IIIGG
			POTS				1216.7	1217.0	1				IIIG
			POTS				1247.8	1248.7	2				IIIG
			POTS				1312.3	1313.0	1				IIIG
			POTS				1318.7	1325.6	2				IIIGG
			SGMR				1444.0	1445.0	1				V
	2022	2400	CULG										
07			LEAR				0034.0	0034.0	1				III
			LEAR				0246.0	0246.0	1				III
	0000	0723	CULG				0350.0	0350.0	1				IIIB
			CULG				0646.0	0647.0	1				IIIG
			LEAR				0646.0	0646.0	1				III
	0657	1311	POTS				0730.0	0824.0	1				I,S,C
			POTS				0744.3	0751.2	2				IIIGG
			POTS				0806.1	0808.0	1				IIIGG
			POTS				0815.9	0816.4	2				IIIG
	0830	1440	BLEN										
			POTS				1058.6	1058.8	1				IIIG
			POTS				1134.0	1227.0	1				I,S
	2023	2400	CULG				2056.5	2057.0	1				IIIG
			PALE				2057.0	2057.0	1				III
08			LEAR				0253.0	0253.0	1				III
	0000	0723	CULG				0253.5	0253.5	1				IIIB
			CULG				0324.0	0326.5	1				IIIG
			LEAR				0551.0	0555.0	2				III
			CULG				0551.5	0552.0	1				IIIG
			LEAR				0619.0	0626.0	1				III
			LEAR				0633.0	0639.0	2				III
			CULG				0633.5	0633.5	2				IIIB
			CULG				0639.5	0639.5	1				IIIB
			LEAR				0701.0	0719.0	2				S
			CULG				0702.0	0702.0	2				IIIPAIR

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08			CULG				0707.0	0709.0	1				IIIG
			LEAR				0753.0	0754.0	1				III
	0647	1403	POTS				0806.3	0806.4	2				UNCLF
			POTS				0814.7	0814.8	1				IIIB
	0830	1440	BLEN										
			LEAR				0842.0	0842.0	1				III
			POTS				0842.3	0842.5	1				IIIB
			POTS				1001.3	1003.4	2				IIIG
			POTS				1044.2	1044.4	1				IIIG
			POTS				1052.2	1053.3	1				IIIGG
			POTS				1131.0	1131.2	2				IIIG
			SVTO				1131.0	1200.0	2				S
			POTS				1140.4	1147.1	3				IIIGG
			POTS				1152.1	1152.2	1				IIIB
			POTS				1200.1	1200.2	1				IIIG
			POTS				1225.1	1225.5	2				IIIG
			POTS				1243.5	1244.3	1				IIIG
			SGMR				1602.0	1609.0	1				III
			PALE				1957.0	1957.0	2				III
			SGMR				1957.0	1957.0	2				III
			PALE				2022.0	2023.0	2				III
			PALE				2051.0	2052.0	1				III
	2023	2400	CULG				2228.0	2228.0	1				IIIB
			LEAR				2233.0	2234.0	2				III
			PALE				2233.0	2334.0	2				III
			CULG				2234.0	2234.0	1				IIIB
			LEAR				2250.0	2253.0	2				III
			LEAR				2259.0	2301.0	2				III
			LEAR				2308.0	2309.0	1				III
			LEAR				2323.0	2323.0	1				III
			LEAR				2351.0	2352.0	1				III
09			LEAR				0006.0	0015.0	2				III
			PALE				0007.0	0009.0	2				III
			LEAR				0045.0	0049.0	1				III
	0000	0723	CULG				0103.0	0314.0	1				IIIS
			LEAR				0103.0	0103.0	1				III
			LEAR				0233.0	0233.0	2				III
			LEAR				0250.0	0257.0	2				III
			LEAR				0311.0	0314.0	3				V
			CULG				0312.5	0313.0	1				V
			LEAR				0349.0	0359.0	1				III
			CULG				0456.0	0456.0	1				IIIB
			CULG				0508.0	0510.0	1				IIIG
			LEAR				0509.0	0510.0	2				III
			LEAR				0613.0	0616.0	2				V
			CULG				0614.0	0614.0	1				IIIB
			BLEN				0829.5	0829.7	2				IIIU
	0702	1426	POTS				0837.3	0838.3	2				IIIG
			LEAR				0838.0	0838.0	1				III
			POTS				0917.9	0920.4	3				IIIGG
			POTS				0922.3	0922.8	1				RS
			POTS				0949.0	0949.2	3				IIIG,U
			POTS				1057.3	1426.0U	2				I,S,DC
	0830	1440	BLEN	1116.5	1119.6	2	1116.5	1119.6	1				DCIM,P
			POTS				1118.8	1119.2	1				IIIG
			POTS				1132.9	1133.6	2				IIIG
			SVTO				1148.0	1149.0	2				III
			POTS				1148.4	1149.7	3				IIIG
			BLEN	1148.5	1149.5	1	1148.5	1149.5	2				IIIG
			POTS				1205.6	1205.7	1				IIIB
			POTS				1241.5	1241.7	1				IIIG
			POTS				1357.9	1358.1	2				U
			BLEN				1436.1	1436.2	1				IIIB
			SGMR				1533.0	1543.0	2				III
			SGMR				1920.0	1921.0	1				III
	2024	2400	CULG				2127.0	2127.0	1				IIIB
			PALE				2127.0	2127.0	2				III
			CULG				2131.0	2131.0	1				IIIB

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09			LEAR				2242.0	2344.0	3				III
			CULG				2243.0	2243.0	1				IIIB
			PALE				2243.0	2244.0	2				V
10			LEAR				0002.0	0002.0	2				III
	0000	0724	CULG				0002.5	0002.5	1				IIIG
			CULG				0028.0	0028.0	1				IIIG
			LEAR				0028.0	0029.0	2				III
			LEAR				0201.0	0207.0	3				III
			PALE				0201.0	0203.0	1				III
			CULG				0202.0	0203.0	1				IIIG
			LEAR				0223.0	0226.0	1				III
			CULG				0513.0	0513.0	1				IIIB
			LEAR				0513.0	0521.0	1				III
			LEAR				0600.0	0604.0	2				III
			LEAR				0648.0	0648.0	1				III
			CULG				0711.0	0711.0	1				IIIG
			LEAR				0711.0	0726.0	3				S
			SVTO				0711.0	0713.0	3				III
	0647	1435	POTS				0711.4	0712.8	3				IIIG
			CULG				0712.0	0712.0	1				IIIB
			LEAR				0733.0	0733.0	1				III
			LEAR				0741.0	0746.0	2				III
			POTS				0741.6	0745.3	2				IIIG
			LEAR				0749.0	0801.0	3				II
			POTS				0749.0	0758.0U	3				II H
			POTS				0749.8	0750.2	2				IIIG
			SVTO				0750.0	0752.0	2				V
			SVTO				0752.0	0804.0	2				II
			LEAR				0801.0	0832.0	3				IV
			POTS				0801.0	0849.0	2				I,S,DC
			SVTO				0808.0	0820.0	2				IV
			SVTO				0829.0	0829.0	2				III
			LEAR				0903.0	0904.0	2				III
	0830	1440	BLEN	0903.7	0905.2	1							DCIM,P
			BLEN				0911.9	0912.0	2				IIIB
			POTS				0911.9	0912.6	3				IIIG
			LEAR				0912.0	0912.0	1				III
			SVTO				0912.0	0912.0	2				III
			LEAR				0926.0	0927.0	1				III
			SVTO				0927.0	0927.0	2				III
			SVTO				0944.0	0944.0	3				III
			BLEN	0944.1	0945.2	2							DCIM,P
			BLEN				0944.3	0944.7	2				IIIU
			POTS				0944.3	0945.5	3				UNCLF
			LEAR				0945.0	0946.0	2				III
			POTS				0953.4	0957.2	3				IIIGG
			BLEN				0953.6	0956.1	2				IIIGG
			LEAR				0954.0	0955.0	2				III
			SVTO				0955.0	0955.0	3				III
			LEAR				1039.0	1040.0	1				III
			POTS				1143.2	1144.5	3				IIIG
			BLEN				1143.3	1143.8	2				IIIGG
			POTS				1154.5	1214.7	3				IIIGG
			BLEN				1155.4	1213.7	2				IIIGG
			POTS				1326.0	1334.2	3				IIIGG
			BLEN	1328.0	1329.3	2	1328.0	1329.3	3				IIIGG
			SGMR				1328.0	1329.0	2				III
			SVTO				1328.0	1329.0	2				III
			POTS				1346.0	1346.5	1				IIIG
			POTS				1401.3	1402.5	2				UNCLF
			BLEN				1401.4	1401.7	1				IIIGG
			POTS				1409.5	1409.7	1				IIIG
			SGMR				1532.0	1532.0	1				III
	2025	2400	CULG				2202.0	2202.0	3				IIIG
			LEAR				2304.0	2307.0	1				III
	2025	2400	CULG				2308.0	2308.0	2				IIIG
			PALE				2313.0	2316.0	2				V
			CULG				2314.0	2316.0	3				II

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10			CULG				2318.0	2318.0	1				IIIB
			CULG				2321.0	2321.0	1				IIIG
			CULG				2340.0	2340.0	1				IIIG
11	0000	0725	CULG				0043.0	0043.0	1				IIIB
			LEAR				0043.0	0043.0	1				III
			LEAR				0050.0	0051.0	2				III
			CULG				0051.0	0051.0	1				IIIG
			CULG				0051.0	0051.0	2				IIIB
			CULG				0128.0	0128.0	1				IIIB
			LEAR				0128.0	0128.0	1				III
			CULG				0141.0	0141.0	2				IIIPAIR
			CULG				0144.0	0144.0	1				IIIPAIR
			CULG				0144.0	0144.0	2				IIIB
			CULG				0229.0	0229.0	3				IIIB
			LEAR				0229.0	0230.0	3				III
			CULG				0233.0	0233.0	1				IIIG
			CULG				0258.0	0258.0	3				IIIG
			LEAR				0258.0	0300.0	2				III
			CULG				0308.0	0309.0	1				IIIG
			LEAR				0308.0	0309.0	1				III
			CULG				0411.0	0411.0	2				IIIB
			LEAR				0435.0	0436.0	1				III
			LEAR				0448.0	0448.0	1				III
			CULG				0449.0	0449.0	1				IIIB
			LEAR				0519.0	0520.0	2				III
			CULG				0520.0	0520.0	2				IIIG
			CULG				0622.0	0622.0	2				IIIB
			LEAR				0622.0	0622.0	2				III
			LEAR				0721.0	0724.0	2				III
			CULG				0722.0	0722.0	2				IIIG
			LEAR				0746.0	0749.0	3				III
	0655	1425	POTS				0746.9	0748.2	3				IIIG,C
			POTS				0815.7	0815.9	2				U
			LEAR				0901.0	0902.0	2				III
			POTS				0901.1	0901.7	2				IIIG
	0830	1440	BLEN				0901.2	0901.6	2				IIIGG
			POTS				1129.3	1132.7	2				IIIGG
			BLEN				1130.7	1132.4	1				IIIGG
			SVTO				1131.0	1132.0	2				III
			POTS				1137.0	1141.9	1				I,W
			PALE				1822.0	1824.0	1				V
	2025	2400	CULG				2132.0	2132.0	1				IIIG
			CULG				2258.0	2300.0	2				IIIGG
			LEAR				2258.0	2300.0	3				III
			PALE				2258.0	2300.0	2				III
			LEAR				2309.0	2311.0	1				III
			CULG				2323.0	2323.0	2				IIIG
			LEAR				2323.0	2324.0	1				III
12	0000	0725	CULG				0125.0	0125.0	1				IIIG
			LEAR				0146.0	0147.0	1				III
			LEAR				0257.0	0300.0	3				III
			CULG				0258.0	0300.0	3				IIIGG
			CULG				0316.0	0318.0	2				IIIGG
			LEAR				0316.0	0318.0	2				III
			CULG				0321.0	0321.0	1				IIIB
			CULG				0339.0	0341.0	1				IIIGG
			LEAR				0339.0	0342.0	3				III
			CULG				0340.0	0340.0	3				IIIG
			CULG				0415.0	0415.0	3				IIIG
			LEAR				0415.0	0416.0	2				III
			CULG				0457.0	0457.0	1				IIIB
			CULG				0539.0	0539.0	3				IIIB
			LEAR				0539.0	0540.0	2				III
			CULG				0602.0	0602.0	1				IIIB
			LEAR				0602.0	0602.0	2				III
			CULG				0701.0	0701.0	1				IIIG
			LEAR				0701.0	0703.0	2				III

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12			LEAR				0713.0	0718.0	2				III
			CULG				0715.0	0715.0	2				IIIPAIR
			CULG				0716.0	0716.0	2				IIIG
	0734	1425	POTS				0734.0E	0813.0	1				I,W,S,DC
			POTS				0751.1	0751.2	2				IIIB
			POTS				0759.0	0759.1	2				IIIG
			POTS				0906.9	0907.2	1				UNCLF
			LEAR				0918.0	0928.0	1				S
			POTS				0918.2	0919.0	1				IIIG
			SVTO				0926.0	0926.0	2				III
			POTS				0926.4	0926.7	1				IIIG
	0846	1322	ONDR	0944.5	0945.0	2							IIIG
			POTS				0944.6	0945.1	2				IIIG,U
			SVTO				1133.0	1134.0	2				II
			POTS				1133.2	1134.4	1				IIIG,DCIM
			POTS				1134.2	1134.3	1				UNCLF
			SVTO				1216.0	1217.0	3				III
			POTS				1216.4	1217.0	2				IIIG
			POTS				1336.2	1336.4	2				IIIG
			POTS				1346.6	1349.8	1				I,W
			POTS				1346.8	1346.9	1				IIIG
			POTS				1405.4	1405.6	2				IIIB
			SGMR				1415.0	1415.0	1				III
			POTS				1415.1	1415.7	2				IIIG,C
			SGMR				1444.0	1444.0	1				III
			SGMR				1812.0	1819.0	2				III
			PALE				1817.0	1819.0	2				V
			PALE				1856.0	1907.0	1				S
			SGMR				1856.0	1856.0	1				III
			PALE				1919.0	1920.0	1				III
	2026	2400	CULG				2047.0	2042.0	1				IIIB
			CULG				2122.0	2122.0	2				IIIB
			CULG				2208.0	2208.0	1				IIIB
			CULG				2214.0	2214.0	1				IIIG
			CULG				2219.0	2219.0	2				IIIB
			LEAR				2221.0	2225.0	3				III
			CULG				2222.0	2222.0	2				IIIB
			CULG				2224.0	2224.0	2				IIIG
			CULG				2224.0	2224.0	3				IIIB
			PALE				2224.0	2224.0	2				III
			CULG				2300.0	2303.0	1				IIIG
			LEAR				2301.0	2306.0	2				III
			PALE				2301.0	2303.0	1				III
			CULG				2306.0	2306.0	1				IIIB
			LEAR				2313.0	2313.0	1				III
			CULG				2314.0	2314.0	1				IIIB
13			LEAR				0009.0	0016.0	1				III
	0000	0725	CULG				0012.0	0016.0	1				IIIG
			LEAR				0049.0	0051.0	1				III
			LEAR				0104.0	0108.0	2				III
			CULG				0105.0	0107.0	2				IIIGG
			LEAR				0116.0	0136.0	3				S
			CULG				0117.0	0117.0	2				IIIB
			CULG				0120.0	0137.0	1				IIIN
			CULG				0121.0	0121.0	3				IIIB
			PALE				0121.0	0131.0	1				S
			CULG				0129.0	0129.0	2				IIIB
			CULG				0130.0	0132.0	1				IIIG
			CULG				0135.0	0135.0	1				IIIPAIR
			CULG				0210.0	0210.0	3				IIIB
			LEAR				0210.0	0219.0	3				III
			PALE				0210.0	0210.0	1				III
			CULG				0212.0	0212.0	3				V
			CULG				0218.0	0218.0	2				IIIB
			CULG				0358.0	0358.0	1				IIIB
			LEAR				0402.0	0403.0	1				III
			CULG				0403.0	0403.0	1				IIIG
			LEAR				0413.0	0413.0	1				III

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Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
13			CULG				0427.0	0703.0	1				IIIN
			LEAR				0427.0	0900.0	2				CONT
			CULG				0437.0	0437.0	2				IIIB
			CULG				0453.0	0453.0	3				IIIB
			LEAR				0453.0	0454.0	3				III
			LEAR				0645.0	0650.0	2				III
			CULG				0646.0	0647.0	1				IIIG
	0659	1417	POTS				0747.6	0748.0	2				IIIG
			POTS				0751.0	1409.0U	1				I,S,C,DC
			POTS				0755.1	0757.0	1				IIIG
	0829	1321	ONDR										
			POTS				0835.2	0835.6	1				IIIG
			POTS				1003.3	1003.7	2				IIIG
			POTS				1049.8	1051.2	1				UNCLF
			POTS				1147.7	1148.2	2				IIIG
			POTS	1148.0	1148.7	2							DCIM
			SVTO				1205.0	1345.0	2				CONT
			POTS				1304.2	1306.0	3				IIIG
			SGMR				1454.0	1455.0	1				III
	2026	2400	CULG										
14			LEAR				0129.0	0131.0	1				III
			LEAR				0256.0	0256.0	1				III
			LEAR				0601.0	0601.0	1				III
			LEAR				0623.0	0626.0	2				III
	0000	0726	CULG				0624.0	0625.5	1				IIIG
			CULG				0645.0	0645.0	1				IIIB
			LEAR				0645.0	0645.0	2				III
	0653	1421	POTS				0653.0E	1421.0U	2				I,S,C,DC
			CULG				0656.0	0656.0	1				IIIB
			SVTO				0738.0	0738.0	2				III
			POTS				0752.8	0753.2	3				IIIG
			POTS				0809.8	0809.9	1				IIIB
			LEAR				0810.0	0810.0	2				III
			SVTO				0830.0	0839.0	2				III
			LEAR				0837.0	0839.0	2				III
			POTS				0837.4	0839.1	2				IIIG
			POTS				0851.7	0852.2	3				IIIG
			LEAR				0859.0	0901.0	3				III
			SVTO				0859.0	0901.0	3				V
			POTS				0859.3	0859.7	3				IIIG
			LEAR				0910.0	0910.0	1				III
			POTS				0910.4	0910.7	1				IIIB
			POTS				0939.9	0940.0	1				IIIG
			POTS				0958.4	0958.5	2				IIIB
	0830	1321	ONDR	1029.7	1029.9	1							V
			POTS				1029.7	1029.9	3				IIIG
			POTS				1053.4	1053.7	2				IIIG
			POTS				1124.8	1125.7	3				IIIG
			POTS				1132.5	1132.8	1				IIIG
			POTS				1140.0	1140.1	1				U
			POTS	1140.0	1148.2	2							DCIM
			POTS				1156.3	1156.4	1				IIIB
			POTS				1218.9	1219.6	3				IIIG
			POTS				1240.8	1241.5	1				IIIG
			SVTO				1241.0	1241.0	2				III
			POTS	1330.2	1330.7	1							IIIG
			POTS				1333.9E	1343.3	3				II HARM
			POTS				1403.3	1405.1	3				IIIG
			PALE				1749.0	1749.0	2				III
			SGMR				1749.0	1750.0	1				III
			PALE				1941.0	1942.0	2				III
			SGMR				1941.0	1942.0	1				III
			LEAR				2241.0	2250.0	1				III
	2027	2400	CULG				2242.0	2242.0	1				IIIB
			CULG				2250.0	2250.0	1				IIIB
			LEAR				2330.0	0256.0	1				CONT
15			LEAR				0000.0	0006.0	1				III

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15	0000	0727	CULG				0118.0	0118.0	1				IIIG
			LEAR				0118.0	0119.0	2				III
			CULG				0126.0	0201.0	2				IDC,C
			CULG				0200.0	0204.0	3				IIIG
			LEAR				0200.0	0205.0	2				V
			CULG				0201.0	0353.0	1				IC
			CULG				0204.0	0215.0	3				II
			CULG				0209.0	0211.0	2				UNCLF
			LEAR				0256.0	1044.0	2				IV
			CULG				0410.0	0410.0	3				IIIB
			LEAR				0410.0	0412.0	3				III
			CULG				0427.0	0427.0	3				IIIB
			CULG				0429.0	0429.0	1				IIIB
			LEAR				0429.0	0430.0	2				III
			LEAR				0447.0	0447.0	2				III
			LEAR				0536.0	0537.0	2				III
			CULG				0537.0	0537.0	2				IIIB
			CULG				0545.0	0547.0	1				IIIG
			LEAR				0545.0	0546.0	2				III
			LEAR				0645.0	0649.0	1				II
			CULG				0655.0	0655.0	1				IIIB
			LEAR				0655.0	0655.0	2				III
			CULG				0703.0	0709.0	1				IIIG
			LEAR				0703.0	0709.0	2				III
			CULG				0718.0	0718.0	3				IIIB
			LEAR				0718.0	0718.0	1				III
			SVTO				0718.0	0718.0	2				III
			SVTO				0732.0	1310.0	2				CONT
	0818	1352	POTS				0818.0E	1352.0U	3				I,S,C,DC
	0831	1321	ONDR										
			POTS	1049.1	1049.4	1							IIIG
			POTS				1137.5	1139.1	1				UNCLF
			POTS	1139.0	1139.4	2							DCIM
			POTS	1242.9	1243.0	1							IIIB
			POTS				1309.2	1310.5	1				UNCLF
			POTS	1326.9	1327.0	1							IIIG
			POTS				1329.6	1329.7	1				IIIB
			SGMR				1824.0	1825.0	1				III
	2027	2400	CULG				2120.0	2158.0	1				IIIN
			CULG				2123.0	2127.0	2				IIIG
			CULG				2204.0	2204.0	1				IIIB
			CULG				2228.0	2230.0	1				UNCLF
			CULG				2228.0	2232.0	1				IIIG
			CULG				2238.0	2238.0	1				UNCLF
			LEAR				2354.0	0600.0	1				CONT
16	0000	0727	CULG				0337.0	0337.0	3				IIIB
			LEAR				0337.0	0338.0	3				III
			CULG				0359.0	0359.0	1				IIIB
			LEAR				0359.0	0359.0	1				III
	0705	1411	POTS	0726.8	0726.9	2							IIIB
			POTS	0727.7	0728.0	2							DCIM
			POTS	0732.6	0732.7	1							IIIB
			POTS				0741.0	1026.0	1				I,W,S,DC
	0831	1321	ONDR										
			POTS	0906.7	0906.9	2							IIIB,DCIM
			POTS	0908.5	0908.6	1							IIIB
			POTS	1114.0	1114.2	2							IIIG
			POTS				1201.6	1205.8	2				IIIGG
			POTS				1201.6	1223.0	1				I,S,DC
			SVTO				1203.0	1205.0	2				V
			SVTO				1218.0	1252.0	1				CONT
			POTS	1234.5	1235.0	2							IIIG
			SGMR				1237.0	1242.0	1				III
			PALE				1718.0	1718.0	2				III
			PALE				1748.0	1749.0	2				III
	2028	2400	CULG										
17	0000	0728	CULG										

SOLAR RADIO EMISSION
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17			LEAR				0054.0	0056.0	2				III
			LEAR				0153.0	0154.0	1				III
			LEAR				0235.0	0245.0	1				S
			LEAR				0336.0	0337.0	2				III
			LEAR				0459.0	0459.0	2				III
			LEAR				0511.0	0514.0	1				III
			LEAR				0607.0	0608.0	2				III
			LEAR				0628.0	0657.0	3				S
	0719	1415	POTS				0719.0E	1415.0U	3				I,S,DC
			LEAR				0725.0	0729.0	1				III
			LEAR				0805.0	0821.0	1				S
	0833	1321	ONDR										
			LEAR				0857.0	0858.0	2				III
			POTS				0944.4	0944.9	1				IIIG
			POTS				1140.7	1140.8	1				IIIB
			SVTO				1201.0	1205.0	2				III
			POTS				1201.4	1204.4	2				IIIG
			PALE				1932.0	1933.0	1				III
			LEAR				2228.0	2230.0	2				III
	2028	2400	CULG				2229.0	2230.0	1	2229.0	2230.0	1	IIIG
			PALE				2229.0	2230.0	2				III
			LEAR				2237.0	0915.0	2				CONT
18			LEAR				0027.0	0034.0	2				III
			PALE				0032.0	0032.0	1				III
			PALE				0049.0	0052.0	1				III
			LEAR				0050.0	0057.0	3				III
	0000	0220	CULG				0051.0	0053.0	1	0051.0	0053.0	1	IIIG
			LEAR				0125.0	1026.0	3				III
			CULG				0126.0	0126.0	1	0126.0	0126.0	1	IIIB
			PALE				0126.0	0126.0	1				III
			LEAR				0138.0	0139.0	3				III
			PALE				0138.0	0139.0	1				III
			CULG				0139.0	0139.0	1	0139.0	0139.0	1	IIIB
			LEAR				0211.0	0215.0	3				III
			LEAR				0226.0	0231.0	3				III
			LEAR				0242.0	0243.0	3				III
	0708	1427	POTS				0708.0E	1427.0U	3				I,S,C,DC
			POTS				0741.0	0741.3	2				UNCLF
			SVTO				1148.0	1157.0	2				III
			POTS				1148.6	1149.3	2				IIIG
	0834	1321	ONDR				1258.5	1321.0	1				I N
			SGMR				1300.0	1313.0	2				IV
			SVTO				1300.0	1414.0	3				IV
			POTS				1300.5	1308.7	3				IIIG,C
			POTS				1308.7	1411.0U	3				II HARM,P
			POTS				1308.7	1411.0U	3				IV
			SGMR				1322.0	1536.0	1				CONT
			SGMR				1536.0	1558.0	2				CONT
			SGMR				1558.0	2046.0	1				CONT
			PALE				1946.0	0256.0	1				CONT
			PALE				2024.0	2029.0	2				III
			PALE				2104.0	2106.0	2				III
	2028	2400	CULG				2106.0	2106.0	1				IIIB
			LEAR				2202.0	2205.0	1				MWB
			LEAR				2209.0	0000.0	2				CONT
19	0000	0728	CULG				0102.0	0103.0	1				IIIG
			LEAR				0435.0	0437.0	2				III
			CULG				0436.0	0437.0	2				IIIG
			LEAR				0518.0	0519.0	2				III
			CULG				0616.0	0627.0	1				IIIN
			SVTO				0646.0	0649.0	2				III
	0655	1207	POTS				0655.0E	1207.0U	3				I,S,C,DC
			SVTO				0658.0	0851.0	2				CONT
			LEAR				0759.0	0759.0	2				III
	0835	1332	ONDR				0854.1	1322.0	1				I N
			LEAR				0855.0	0859.0	2				III
			POTS				0856.0	0858.4	1				IIIG

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19			SVTO				0856.0	0859.0	3				V
			SVTO				0909.0	1234.0	2				CONT
			SVTO				1116.0	1133.0	3				S
			POTS				1118.0	1127.1	3				IIIGG
			ONDR				1120.0	1120.1	1				IIIG
			ONDR	1122.8	1123.8	3	1122.8	1123.8	3				IIIGG
			POTS				1123.7	1136.0	3				II ?
			SGMR				1500.0	1501.0	1				III
			SGMR				1749.0	1811.0	2				S
			PALE				1758.0	1801.0	1				III
			SGMR				1829.0	1830.0	1				III
	2028	2400	CULG				2151.0	2400.0	1				IIIS
			LEAR				2200.0	2201.0	2				III
			CULG				2221.0	2223.0	2				IIIG
			LEAR				2221.0	2223.0	2				III
			LEAR				2258.0	0500.0	1				CONT
20	0000	0729	CULG				0000.0	0300.0	1				IIIS
			LEAR				0018.0	0018.0	2				III
			CULG				0408.0	0450.0	1				IIIN
			CULG				0630.0	0632.0	1				IIIG
			CULG				0706.0	0707.0	3	0706.0	0707.0	1	IIIB
			CULG				0706.0	0719.0	1				IIIN
			LEAR				0706.0	0739.0	3				S
	0706	1403	POTS				0706.0E	1403.0U	3				I,S,C,DC
			SVTO				0706.0	0719.0	2				S
			CULG				0713.0	0717.0	2				IIIGG
			POTS				0716.7	0717.2	1				RS
			CULG				0722.0	0729.0	3				II
			LEAR				0722.0	0739.0	3				II
			POTS				0722.8U	0743.7	3				II P
			POTS				0722.8U	0743.7	3				IV
			SVTO				0723.0	0733.0	2				II
			POTS				0800.3	0800.4	1				IIIB
			LEAR				0823.0	0823.0	2				III
			POTS				0823.7	0824.3	2				IIIG
			LEAR				0837.0	0838.0	2				III
			POTS				0837.7	0838.0	2				UNCLF
			LEAR				0917.0	0918.0	2				III
			POTS				0917.8	0918.0	2				IIIB
			LEAR				1027.0	1028.0	1				III
			POTS				1027.4	1031.7	2				UNCLF
	0835	1322	ONDR				1101.2	1101.6	1				IIIG
			POTS				1102.9	1103.1	2				IIIB
			ONDR				1107.4	1107.5	2				IIIG
			POTS				1148.8	1149.4	1				IIIG
			ONDR				1220.5	1220.6	2				IIIG
			SGMR				1417.0	1419.0	2				V
			PALE				1957.0	1959.0	3				V
			SGMR				1957.0	1959.0	2				III
			PALE				2012.0	2019.0	2				III
			SGMR				2019.0	2019.0	1				III
	2029	2400	CULG				2055.0	2058.0	1	2055.0	2056.0	1	IIIG
			PALE				2132.0	2134.0	1				III
			LEAR				2314.0	2315.0	1				III
			PALE				2343.0	2348.0	1				III
21	0000	0729	CULG				0006.0	0006.0	1	0006.0	0006.0	1	IIIB
			LEAR				0006.0	0010.0	3				III
			PALE				0006.0	0007.0	2				III
			CULG				0038.0	0038.0	1	0038.0	0038.0	1	IIIB
			LEAR				0039.0	0040.0	2				III
			CULG				0052.0	0053.0	2	0052.0	0053.0	1	IIIG
			PALE				0052.0	0053.0	2				III
			LEAR				0145.0	0145.0	1				III
			CULG				0224.0	0224.0	1	0224.0	0224.0	1	IIIB
			LEAR				0432.0	0432.0	1				III
			LEAR				0709.0	0710.0	2				III
	0836	1322	ONDR										

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21	0646	1409	POTS				1000.0U	1409.0U	1				I,S
			LEAR				1010.0	1010.0	2				III
			POTS				1010.0	1010.2	1				IIIB
			POTS	1242.6	1242.9	1							IIIG
			SGMR				1559.0	1559.0	1				III
	2029	2400	CULG										
			LEAR				2343.0	2351.0	2				III
22			LEAR				0000.0	0008.0	1				III
	0000	0729	CULG				0002.0	0037.0	1				IIIN
			LEAR				0021.0	0031.0	2				III
			CULG				0120.0	0120.0	1				IIIB
			LEAR				0139.0	0139.0	1				III
	0837	1323	ONDR										
	0711	1419	POTS				1039.7	1323.0	1				I,W,S
			LEAR				2229.0	2229.0	2				III
			PALE				2311.0	2316.0	3				V
	2031	2400	CULG				2312.0	2314.5	2	2312.0	2314.0	1	IIIG
			LEAR				2318.0	2324.0	2				III
			CULG				2320.0	2331.0	2				II
			LEAR				2322.0	2330.0	2				II
			PALE				2323.0	2330.0	1				II
			LEAR				2330.0	0100.0	1				IV
			PALE				2336.0	2336.0	1				III
			LEAR				2337.0	2338.0	2				III
23	0000	0731	CULG										
			LEAR				0043.0	0044.0	1				III
			LEAR				0545.0	0546.0	1				III
			LEAR				0819.0	0853.0	1				CONT
	0700	1417	POTS				0846.1	0846.3	3				U
			POTS				0926.3	0928.3	1				IIIGG
			POTS				0942.1	0947.5	3				IV U,C,II
			SVTO				0943.0	0949.0	3				II
			POTS				0947.5	1000.0	3				II HARM
	0837	1323	ONDR				0948.9	0950.6	3				II
			LEAR				0953.0	1003.0	2				II
			SVTO				0953.0	1006.0	2				II
			POTS				1023.8	1023.9	1				IIIB
			POTS	1024.0	1024.2	3							DCIM
			PALE				1848.0	1855.0	1				III
			SGMR				1848.0	1855.0	1				III
			PALE				1906.0	1906.0	1				III
			SGMR				1906.0	1906.0	1				III
	2031	2400	CULG										
24			LEAR				0134.0	0134.0	2				III
			LEAR				0237.0	0330.0	1				CONT
			LEAR				0618.0	0845.0	1				CONT
	0000	0731	CULG				0635.0	0637.5	1				IIIG
			LEAR				0638.0	0644.0	3				III
			SVTO				0641.0	0643.0	1				III
	0801	1419	POTS				0801.0E	1359.0U	2				I,S,C,DC
	0837	1324	ONDR										
			POTS				1337.2	1337.3	2				RS
			SGMR				1540.0	1545.0	1				V
			SGMR				1755.0	1756.0	1				III
			PALE				1905.0	1905.0	1				III
			PALE				1941.0	1950.0	1				III
			PALE				2020.0	2038.0	1				S
	2031	2400	CULG				2120.0	2121.0	1	2120.0	2120.0	1	IIIG
			LEAR				2251.0	2305.0	2				S
			CULG				2258.0	2258.0	1	2258.0	2258.0	1	III
			LEAR				2319.0	2322.0	1				III
			LEAR				2337.0	2338.0	1				III
			LEAR				2347.0	2347.0	1				III
25			LEAR				0006.0	0014.0	3				III
			PALE				0011.0	0012.0	1				III

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Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
25	0000	0731	CULG				0012.0	0012.0	1				IIIB
			LEAR				0040.0	0040.0	1				III
			LEAR				0046.0	0059.0	3				S
			PALE				0048.0	0058.0	2				V
			CULG				0053.0	0053.0	1	0053.0	0053.0	1	IIIB
			LEAR				0110.0	0116.0	2				III
			LEAR				0145.0	0149.0	2				III
			LEAR				0220.0	0221.0	2				III
			PALE				0220.0	0220.0	1				III
			LEAR				0232.0	0242.0	3				III
			PALE				0233.0	0239.0	1				III
			LEAR				0251.0	0257.0	2				III
			LEAR				0311.0	0321.0	2				III
			CULG				0314.0	0716.0	1	0314.0	0716.0	1	IIIN
			LEAR				0332.0	0338.0	2				III
			CULG				0342.0	0342.0	1	0342.0	0342.0	1	IIIB
			LEAR				0342.0	0349.0	3				III
			LEAR				0359.0	0404.0	2				III
			LEAR				0410.0	0418.0	2				III
			LEAR				0422.0	0426.0	2				III
			LEAR				0432.0	0445.0	2				S
			LEAR				0505.0	0526.0	2				S
			LEAR				0531.0	0536.0	3				III
			LEAR				0546.0	0546.0	2				III
			LEAR				0600.0	0600.0	2				III
			LEAR				0604.0	0621.0	3				S
			LEAR				0634.0	0639.0	2				III
			LEAR				0647.0	0656.0	2				III
			LEAR				0707.0	0730.0	3				S
			SVTO				0711.0	0716.0	2				III
	0656	1407	POTS				0733.1	0733.3	1				UNCLF
			LEAR				0742.0	0742.0	1				III
			POTS				0809.7	0810.1	1				IIIG
			LEAR				0817.0	0817.0	1				III
			LEAR				0819.0	0848.0	3				S
			POTS				0819.8E	0849.0	3				IIIGG
			SVTO				0820.0	0846.0	2				S
			POTS				0840.4	0840.8	1				I,W
			LEAR				0853.0	0858.0	1				III
			LEAR				0903.0	0914.0	3				S
			SVTO				0903.0	0914.0	2				S
			POTS				0903.4	0914.9	3				IIIG
			LEAR				0927.0	0931.0	3				III
			POTS				0927.3	0931.0	3				IIIGG
			SVTO				0928.0	0930.0	3				V
	0837	1325	ONDR				0928.4	0928.7	2				V
			LEAR				0935.0	0942.0	2				III
			POTS				0936.1	0944.0	1				IIIG
			POTS				1016.7	1017.0	1				I,W
			LEAR				1024.0	1024.0	1				III
			SVTO				1024.0	1024.0	2				III
			POTS				1024.1	1024.2	2				IIIB
			POTS				1034.9	1035.0	1				IIIB
			SVTO				1105.0	1111.0	2				V
			POTS				1132.4	1133.3	1				IIIG
			POTS				1152.0	1407.0U	1				I,W,S
			SVTO				1201.0	1203.0	2				III
			POTS				1201.4	1201.5	1				IIIB
			POTS				1203.2	1203.7	1				IIIG,RS
			POTS				1238.5	1238.6	1				IIIB
			SGMR				1320.0	1320.0	1				III
			SGMR				1338.0	1340.0	3				III
			POTS				1338.4	1339.7	1				IIIG
			POTS				1356.7	1401.6	3				IIIGG
			SGMR				1358.0	1401.0	1				III
			SVTO				1358.0	1401.0	2				III
			SGMR				1430.0	1437.0	2				III
			SVTO				1436.0	1436.0	1				III
			SGMR				1533.0	1546.0	1				S

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DECEMBER 1990

Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
25			SGMR				1736.0	1750.0	1				S
			SGMR				1832.0	1832.0	1				III
			SGMR				1904.0	1908.0	1				V
			SGMR				1912.0	1917.0	1				V
			SGMR				1933.0	1933.0	1				III
			SGMR				2025.0	2029.0	1				III
	2031	2400	CULG				2044.0	2047.0	2	2044.0	2047.0	1	IIIG
			CULG				2125.0	2125.0	1				IIIB
			LEAR				2219.0	2220.0	2				III
			CULG				2220.0	2220.0	1	2220.0	2220.0	1	IIIB
			LEAR				2243.0	2258.0	2				S
			CULG				2248.0	2248.0	1	2248.0	2248.0	1	IIIB
			LEAR				2307.0	2317.0	3				III
			CULG				2315.0	2315.0	1	2315.0	2315.0	1	IIIB
			LEAR				2321.0	2329.0	2				III
			CULG				2322.0	2322.0	1	2322.0	2322.0	1	IIIB
			PALE				2329.0	2349.0	2				S
			LEAR				2336.0	2338.0	1				III
			LEAR				2343.0	2350.0	3				III
			LEAR				2354.0	2354.0	1				III
26	0000	0732	CULG				0014.0	0019.0	1	0014.0	0019.0	1	IIIG
			LEAR				0014.0	0022.0	2				V
			PALE				0014.0	0023.0	2				V
			LEAR				0029.0	0038.0	2				III
			PALE				0038.0	0038.0	1				III
			LEAR				0055.0	0055.0	1				III
			LEAR				0101.0	0105.0	3				III
			CULG				0102.0	0105.0	1				IIIG
			PALE				0102.0	0120.0	1				S
			LEAR				0111.0	0121.0	2				III
			CULG				0112.0	0112.0	1	0112.0	0112.0	1	IIIB
			CULG				0142.0	0218.0	1	0142.0	0218.0	1	IIIN
			LEAR				0142.0	0208.0	3				S
			PALE				0142.0	0207.0	2				S
			LEAR				0212.0	0213.0	1				III
			LEAR				0218.0	0218.0	3				III
			PALE				0218.0	0218.0	1				III
			LEAR				0219.0	0234.0	2				S
			CULG				0220.0	0620.0	1	0220.0	0620.0	1	IIIN
			LEAR				0238.0	0240.0	1				III
			LEAR				0248.0	0254.0	2				III
			LEAR				0312.0	0313.0	1				III
			LEAR				0321.0	0335.0	2				S
			LEAR				0351.0	0404.0	3				S
			LEAR				0415.0	0434.0	2				S
			LEAR				0441.0	0450.0	1				III
			LEAR				0458.0	0519.0	3				S
			CULG				0510.0	0513.0	2	0510.0	0513.0	2	IIIG
			LEAR				0535.0	0628.0	2				S
			LEAR				0630.0	0714.0	2				S
	0645	1415	POTS				0645.0E	1401.0U	1				I,S,DC
			LEAR				0722.0	0816.0	3				S
			SVTO				0755.0	0800.0	1				III
			POTS				0800.4	0801.4	2				IIIG
			POTS				0809.3	0809.4	1				IIIG
			LEAR				0820.0	0833.0	2				S
			SVTO				0827.0	0830.0	1				III
			LEAR				0848.0	0911.0	3				S
			POTS				0854.0	0855.6	2				IIIG
			SVTO				0854.0	0904.0	2				S
			POTS				0904.3	0904.4	3				IIIG
			LEAR				0923.0	0939.0	2				S
			POTS				0923.5	0923.7	1				UNCLF
			POTS				0926.2	0926.4	1				UNCLF
			SVTO				0932.0	0933.0	2				V
			POTS				0933.0	0933.5	2				IIIG
			POTS				0933.7	0933.9	1				UNCLF
			LEAR				1019.0	1040.0	2				S

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DECEMBER 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
26			POTS				1019.7	1020.6	2				IIIG
			POTS				1032.2	1032.4	1				IIIG
			POTS				1039.3	1041.8	3				IIIGG
			POTS				1250.0	1250.4	2				UNCLF
			SVTO				1256.0	1303.0	2				III
			POTS				1256.9	1257.1	1				IIIB
			POTS				1257.3	1257.8	2				IIIG
			POTS				1302.7	1303.8	3				IIIGG
	0837	1326	ONDR	1302.8	1303.5	1	1302.8	1303.5	1				IIIGG
			SGMR				1303.0	1303.0	1				III
			POTS				1308.9	1310.4	1				IIIG
			POTS				1344.9	1345.0	2				IIIB
			POTS				1349.5	1349.7	1				IIIB
			POTS				1354.7	1355.8	2				IIIG
			POTS	1358.8	1359.0	1							UNCLF
			SGMR				1430.0	1517.0	1				S
			PALE				1848.0	1848.0	1				III
			SGMR				1848.0	1930.0	1				S
			PALE				1914.0	1915.0	1				III
			PALE				1930.0	1930.0	1				III
			PALE				2048.0	2056.0	2				III
	2032	2400	CULG				2049.0	2052.0	2				IIIG
			SGMR				2052.0	2053.0	1				III
			PALE				2329.0	2349.0	2				S
			CULG				2335.0	2335.0	1	2335.0	2335.0	1	IIIG
			LEAR				2335.0	2335.0	2				III
			PALE				2335.0	2335.0	1				III
27			LEAR				0003.0	0004.0	2				III
			PALE				0003.0	0003.0	1				III
			LEAR				0023.0	0024.0	2				III
			LEAR				0040.0	0040.0	1				III
	0000	0732	CULG				0059.0	0059.0	1	0059.0	0059.0	1	IIIG
			LEAR				0059.0	0100.0	3				III
			PALE				0059.0	0059.0	1				III
			LEAR				0145.0	0145.0	1				III
			LEAR				0217.0	0218.0	1				III
			LEAR				0233.0	0235.0	3				III
			CULG				0234.0	0234.0	1				IIIB
			LEAR				0243.0	0245.0	2				III
			LEAR				0245.0	0315.0	1				CONT
			LEAR				0410.0	0415.0	2				III
	0659	1417	POTS				0659.0E	1417.0U	2				I,S,DC
			POTS				0744.6	0744.8	1				IIIG
	0838	1326	ONDR										
			POTS				1347.3	1347.5	1				UNCLF
			POTS				1355.0	1355.2	1				IIIG
			PALE				2020.0	2020.0	1				III
	2033	2400	CULG				2120.5	2121.0	1	2120.5	2121.0	1	IIIB
			PALE				2146.0	2147.0	1				III
28			LEAR				0009.0	0010.0	2				III
			PALE				0009.0	0010.0	1				III
			LEAR				0423.0	0424.0	2				III
	0000	0733	CULG				0638.0	0638.0	1	0638.0	0638.0	1	IIIB
			LEAR				0638.0	0639.0	3				III
			LEAR				0750.0	0756.0	3				III
	0725	1416	POTS				0750.3	0750.7	2				IIIG
			POTS				0751.1	0751.2	3				IIIB
			SVTO				0756.0	0756.0	2				III
			POTS				0756.3	0756.8	3				IIIG,RS
	0838	1327	ONDR										
			POTS				1249.8	1250.1	1				I
			SGMR				1356.0	1357.0	1				III
			POTS				1356.6	1357.8	1				IIIG
	2033	2400	CULG										
29	0000	0733	CULG										
			LEAR				0726.0	0726.0	1				III

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Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
29	0705	1401	POTS				0727.4	0727.5	1				IIIB
			LEAR				0752.0	0753.0	1				III
			LEAR				0809.0	0810.0	1				III
			POTS				0932.0	0932.1	1				IIIB
			LEAR				1009.0	1010.0	2				III
			POTS				1009.0	1011.0	2				IIIGG
			SVTO				1009.0	1010.0	2				III
	0839	1329	ONDR	1009.4	1010.2	1	1009.4	1010.2	1				IIIGG
			POTS				1014.6	1014.7	1				IIIB
			POTS				1048.0	1051.0	1				I
			POTS				1109.9	1110.3	1				IIIG
			POTS				1240.2	1240.3	1				UNCLF
	2033	2400	CULG										
30	0000	0734	CULG										
			LEAR				0016.0	0016.0	1				III
	0712	1417	POTS				0712.0E	1417.0U	1				I,W,S
			POTS	0843.6	0844.5	3							DCIM
			POTS				0922.8	0922.9	1				IIIB
			POTS	0939.7	0944.1	2							DCIM
			POTS	0956.5	0956.6	2							IIIB
			POTS	1040.9	1041.9	2							DCIM
			POTS	1046.8	1047.9	2							DCIM
			POTS	1112.5	1112.6	1							IIIB
			POTS	1117.6	1117.8	1							DCIM
			POTS				1143.9	1145.8	2			IV	IIIG
	0838	1330	ONDR	1144.0	1145.1	2	1144.0	1145.1	2				IIIGG
			POTS				1147.1	1153.0	1			II	U
			ONDR	1250.1	1252.1	1	1250.1	1252.1	1				IIIGG
			POTS	1250.2	1250.3	3							IIIG
			POTS	1308.6	1309.3	2							DCIM
			POTS	1312.4	1313.3	2							IIIG
			ONDR	1312.6	1313.2	2	1312.6	1313.2	2				IIIGG
			ONDR	1316.0	1319.2	3	1316.0	1319.2	3				IIIGG
			POTS	1316.0	1320.0	3						IV	IIIGG
			POTS				1320.6	1325.0U	3			II	HARM
			ONDR				1321.3	1324.2	3			II	
			SGMR				1509.0	1516.0	3				V
	2034	2400	CULG										
31	0000	0734	CULG				0100.0	0104.0	1				IIIN
			CULG				0713.0	0713.0	1				IIIG
			LEAR				0713.0	0713.0	2				III
	0838	1328	ONDR										
	0709	1347	POTS				1315.0U	1347.0U	1				I,W,S
	2034	2400	CULG										

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

Stations Reporting:

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

COSMIC RAY INDICES
(Neutron Monitor)

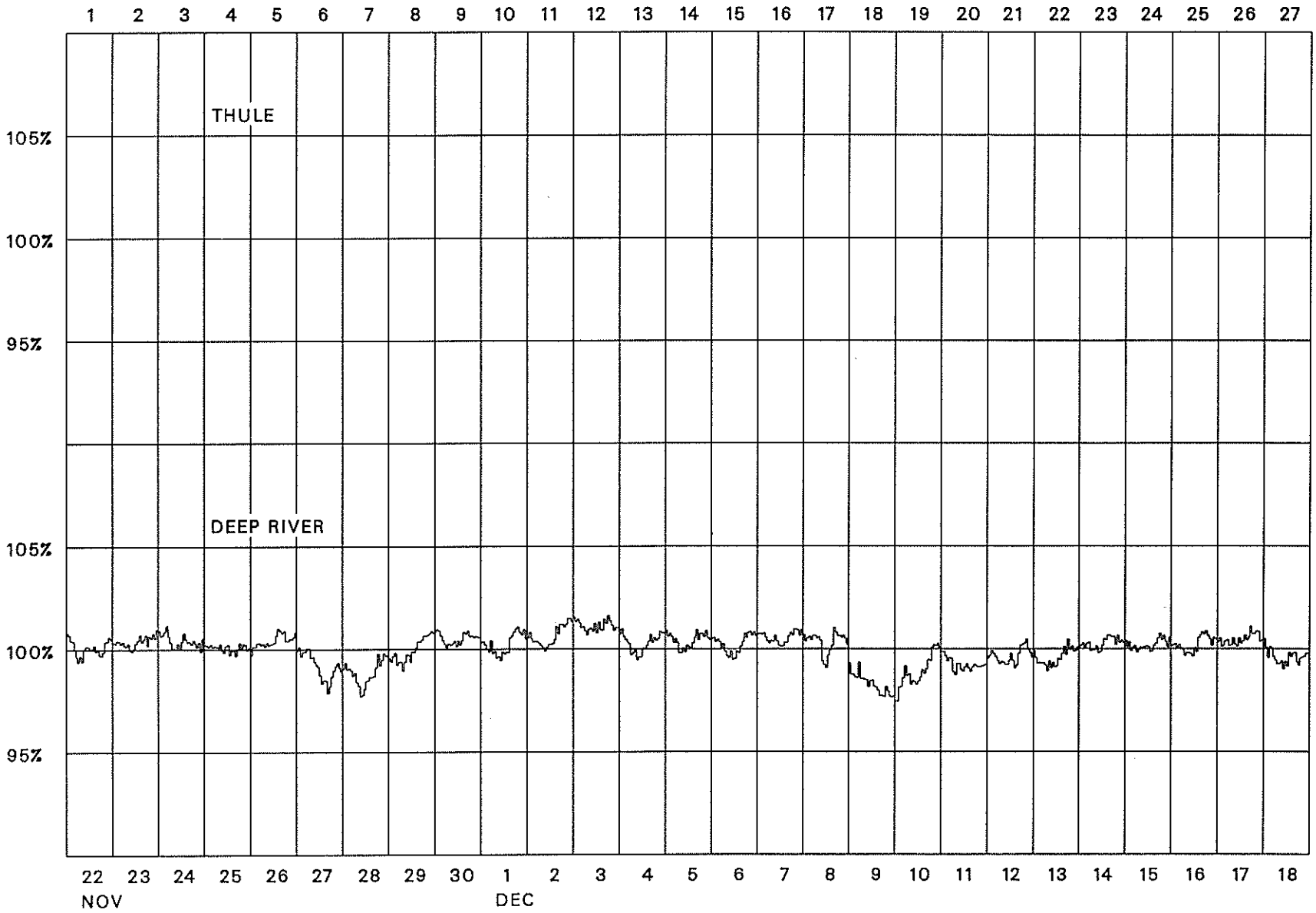
DECEMBER 1990

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1		6229.3	5600.9	3586.4	3474.2	
2		6254.0	5590.7	3598.5	3485.8	
3		6284.2	5601.1	3597.4	3490.7	
4		6232.2	5624.8	3601.0	3492.0	
5		6240.2	5615.3	3597.1	3480.6	
6		6228.8	5612.6	3603.6	3483.9	
7		6249.2	5611.6	3587.7	3477.2	
8		6235.0	5611.5	3578.9	3465.5	
9		6108.6	5503.5	3493.3	3456.9	
10		6145.2	5540.0	3517.9	3452.0	
11		6166.7	5539.9	3518.8	3465.5	
12		6192.3	5579.9	3556.1	3476.7	
13		6188.1	5589.9	3575.2	3482.5	
14		6230.2	5586.3	3573.6	3473.3	
15		6226.4	5580.5	3576.3	3481.4	
16		6228.2	5589.2	3582.6	3494.2	
17		6242.7	5596.7	3589.9	3495.9	
18		6190.3	5599.9	3583.5	3502.2	
19		6210.0	5591.5	3581.9	3486.7	
20		6254.0	5593.4	3605.5	3480.7	
21		6239.5	5614.8	3590.6	3481.7	
22		6158.5	5534.6	3562.8	3463.1	
23		6117.2	5478.8	3527.8	3458.0	
24		6179.8	5532.9	3544.4	3487.2	
25		6214.2	5564.8	3556.5	3493.2	
26		6238.8	5566.5	3565.9	3491.4	
27		6271.4	5597.6	3578.9	3495.8	
28		6291.7	5618.2	3612.3	3506.3	
29		6273.5	5632.6	3675.3(12)	3524.3	
30		6222.7	5598.7	3598.4	3502.1	
31		6260.1	5585.6	3580.3	3486.2	
Mean		6219.5	5583.4	3574.7	3483.4	

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.
* = A&B includes only hours when both A&B sections are available.

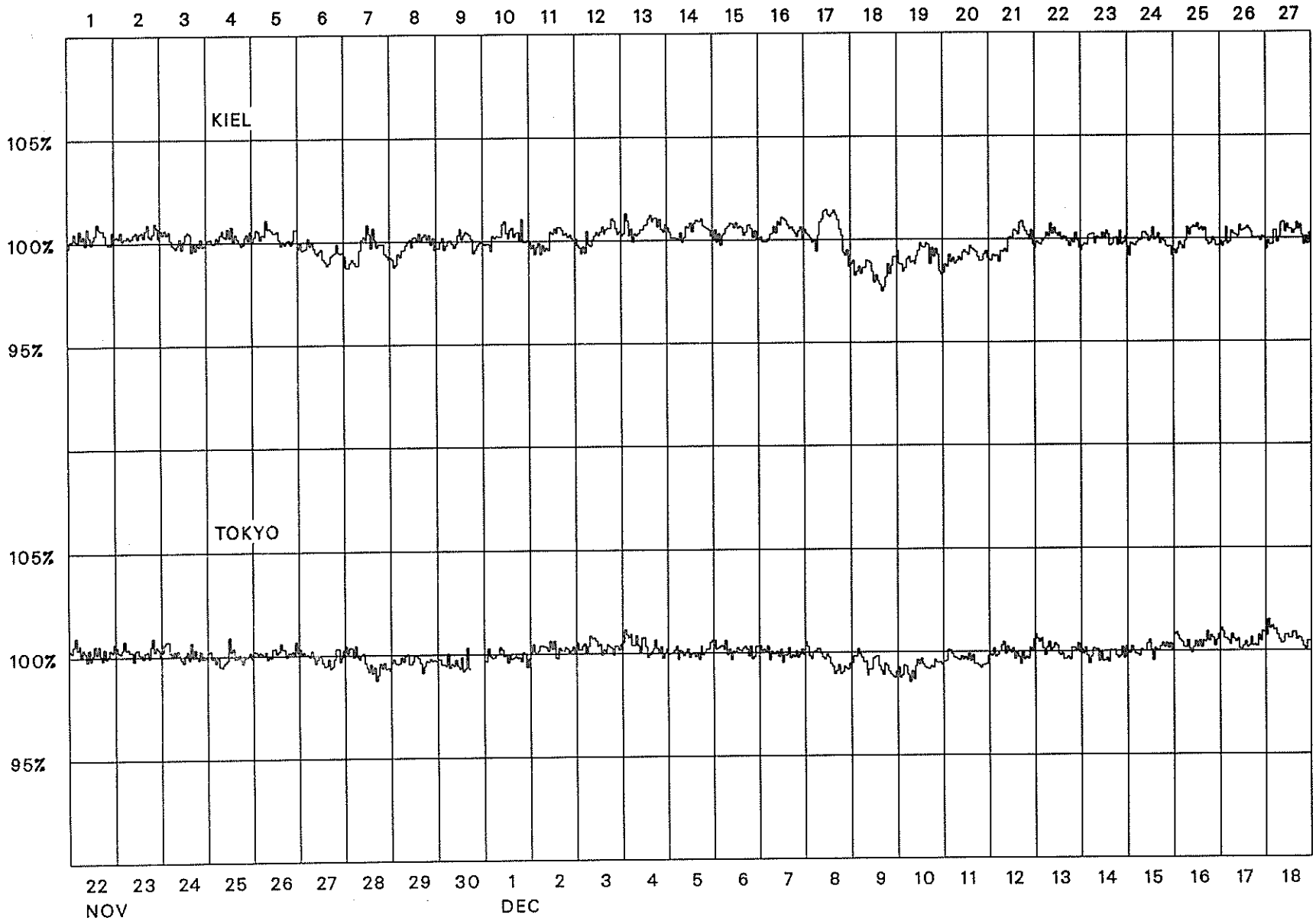
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2149 (November 1990-December 1990)



COSMIC RAY INDICES
(Neutron Monitor)

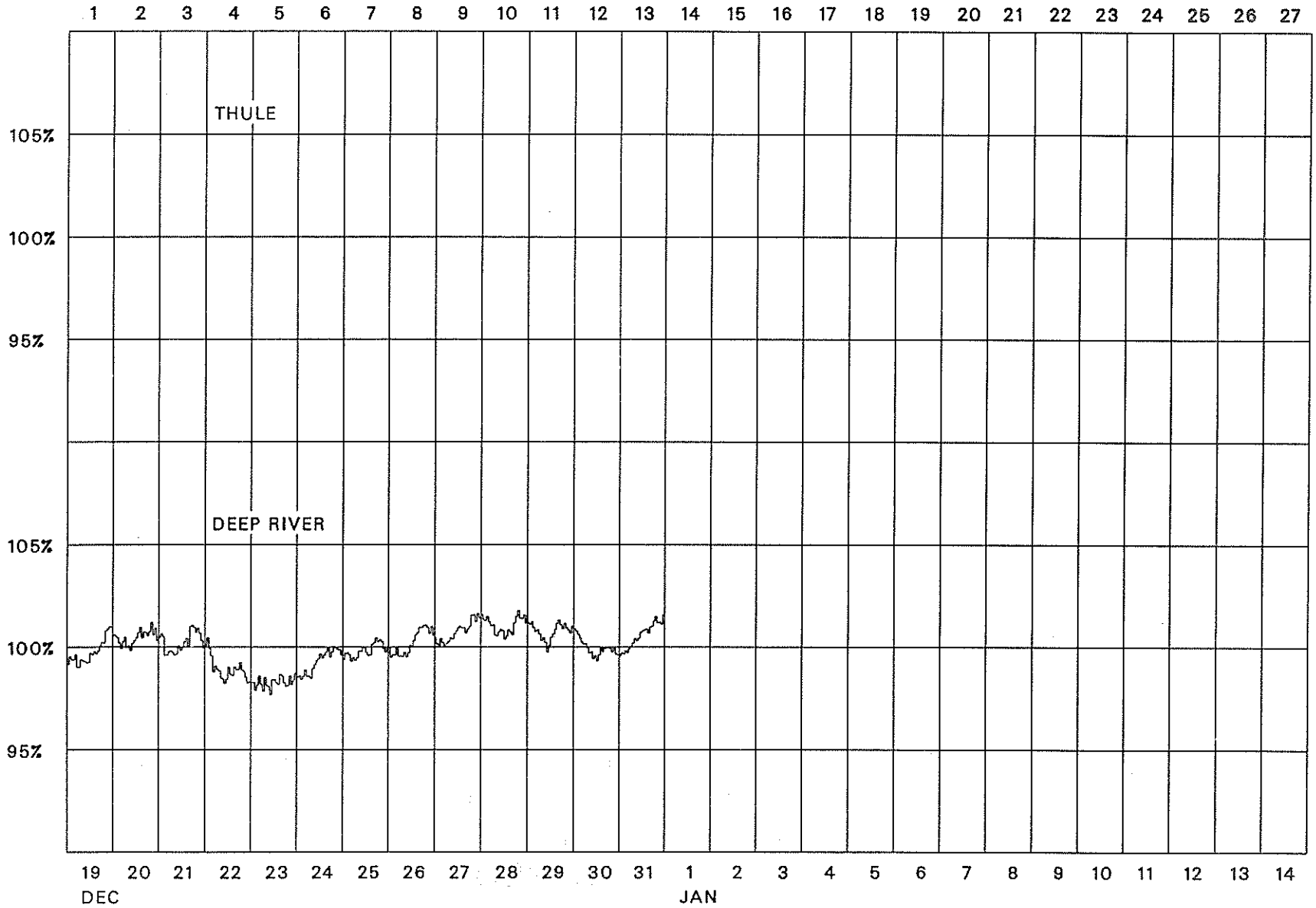
Bartels Rotation 2149 (November 1990-December 1990)



147
Dec 90

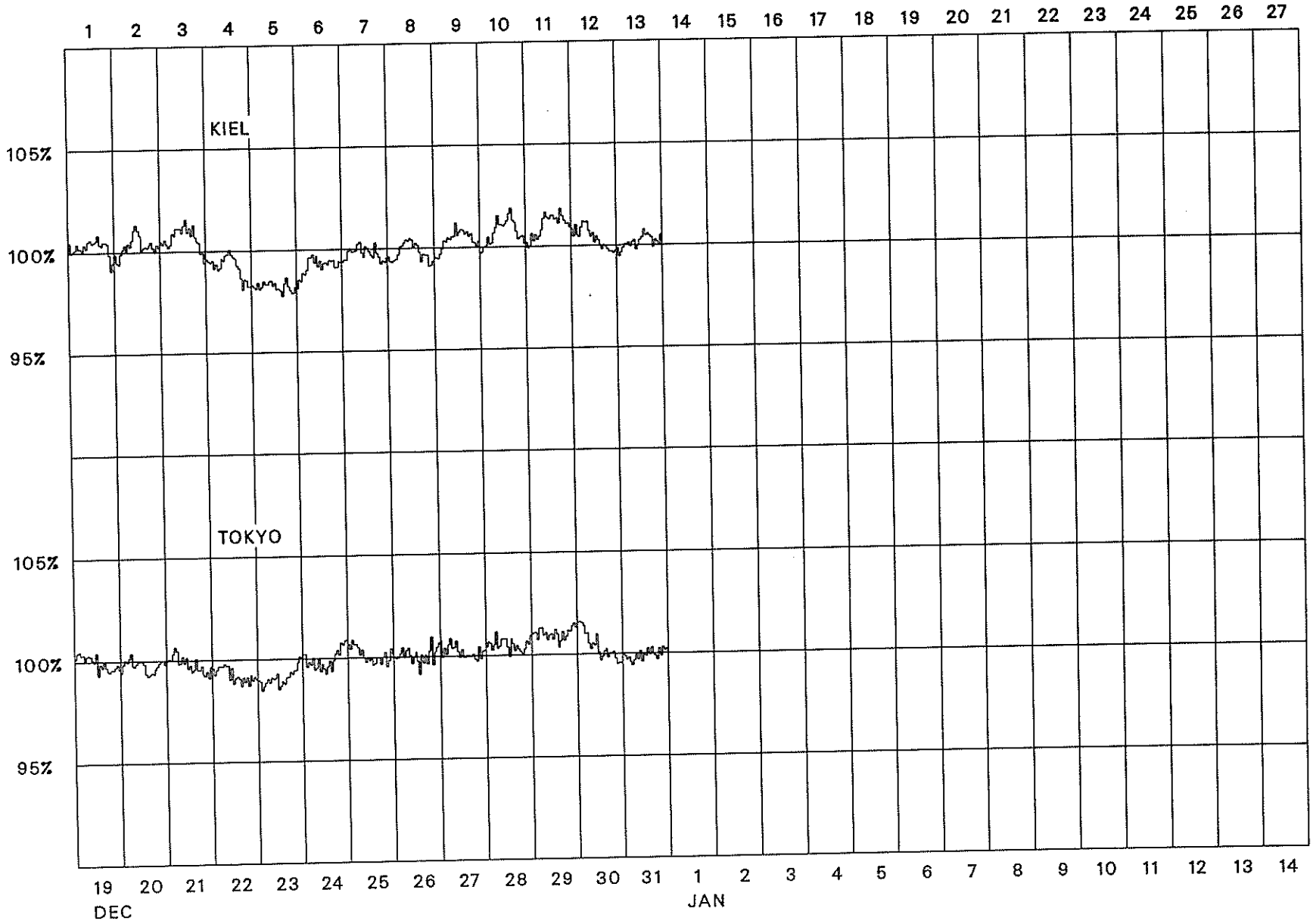
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2150 (December 1990-January 1991)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2150 (December 1990-January 1991)



GEOMAGNETIC ACTIVITY INDICES

December 1990

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		2+	3-	0+	0+	1	2-	1-	1-	10-	5	0.2	2+	2	1-	1	2	3-	3	3-	17	13	9	12	10	CK
2	Q10	0+	1-	1-	1+	2	1+	2	1+	10-	5	0.2	2-	2-	1+	2	2-	2-	2	2-	13	11	8	7	13	CC
3		2-	1	1-	0+	1	2+	2+	3	12+	6	0.3	2-	1+	1+	2+	2-	3-	3-	3-	17	17	13	8	22	
4	D1*	3+	4+	2+	3+	3	3	2+	4-	25+	17	0.9	4-	3+	2+	3	3	3-	3-	4-	31	36	28	31	33	
5	D4*	3	2-	3-	3	3-	4-	3-	2	21+	13	0.7	3-	1+	3-	3	3-	3	3-	2	22	23	22	21	24	
6		2+	2-	2-	3-	2	1+	2-	1+	15-	7	0.4	2	1+	1+	2+	2	2-	2-	2	13	12	15	13	14	C
7	Q9	2	2	2-	1-	0+	1	1+	0+	9+	4	0.2	2	1+	2-	1+	0+	1+	2-	1+	10	10	9	13	6	CC
8		0	1	2+	2-	3-	3-	3-	2+	15+	8	0.4	0+	1+	2	2-	3-	3-	3	3-	17	16	19	9	26	K
9		2-	1+	1	2-	2	2	1	1-	11+	5	0.2	2	2-	1	2-	2+	2-	2-	1	12	10	14	10	14	CK
10	Q1	0	0+	0+	1-	0+	1-	1-	0+	3+	2	0.0	0	0	0+	1-	0+	0+	1	1-	3	5	4	3	5	CC
11	Q3	1-	0+	0+	0+	0+	1+	0+	0	4-	2	0.0	1-	1-	1	1-	1+	2	1+	1-	7	5	5	4	6	CC
12		0+	0+	0+	1-	2	3	3-	3	12+	7	0.4	0+	1-	1	1+	2	3	3	3+	17	15	20	4	32	
13	D3*	4+	4-	4	3+	2-	1+	2-	1+	21+	15	0.9	3+	3	4-	3-	2	2	2+	1+	23	23	26	38	11	
14		3+	2+	2-	1	2	2+	1+	0+	14+	8	0.4	2+	2-	1+	2-	3-	3-	2-	1-	14	15	17	17	15	K
15		1+	2+	2+	1+	1-	2-	2-	1+	13-	6	0.3	1+	2-	2+	2-	1+	2	2	1+	12	12	10	10	11	CK
16		2	2	1+	2	3+	2+	2	2-	17-	8	0.4	2-	1+	2-	3-	3	3	2+	2+	19	17	20	15	22	
17		2	3-	1	1	1-	2-	2	1+	12+	6	0.3	2	3-	2-	2	1+	2	2+	2-	15	11	15	14	12	C
18		2	1-	0+	2	2	2-	1-	0+	10-	5	0.2	2-	1-	1-	2+	2+	2-	1+	1+	11	10	10	9	12	CC
19	Q2	0+	0+	0+	0+	1-	1	0+	0+	4-	2	0.0	1	1	1-	1-	1+	1+	1	1-	7	5	7	4	7	CC
20		1	1+	1	2-	2+	3	3	2-	15	8	0.4	1	2-	2-	2+	3-	3	3-	2-	17	17	17	11	23	K
21	Q7	1	1+	1-	0	0	2-	1	1	7-	3	0.1	1+	1+	1	0+	0+	2-	2-	1+	8	7	8	6	9	CK
22	Q5	1-	1-	1	1	0+	0	0+	2	6	3	0.1	1+	1+	2	2	2+	1+	3-	3-	16	7	12	9	10	CK
23		0+	0+	3	2+	1	2-	1	3	13-	7	0.4	1+	2-	4-	3	2-	2	2-	3	20	12	28	23	17	
24	D2*	1-	3-	2	3	3	3+	4	4-	22+	15	0.8	2-	2+	2	3	3	3+	4-	3+	27	30	34	22	42	
25		3-	3+	1+	2+	2+	3	2+	2-	19	10	0.6	3-	3-	2-	2+	2+	3-	3	2+	21	21	18	16	23	
26	Q4	1+	1-	1	1-	1+	1-	1-	1-	7	4	0.1	1+	1-	2-	2-	2	1+	2+	2-	12	9	8	9	8	C
27		1	3	1	1+	2-	2-	1+	1-	12-	6	0.3	2	3-	1+	2-	3-	2+	1+	1+	14	14	12	14	12	CC
28	Q8	1+	1+	1	1	1-	1-	1+	1	8+	4	0.1	1+	2	1	1+	1+	1	1	2	10	9	9	9	8	CC
29	Q6	1-	1	0+	1-	1-	1+	2-	1-	7	4	0.1	1	1+	1+	2-	2	3-	3-	2+	15	9	6	7	8	C
30	D5*	3-	3+	3	3	2	2-	3-	2	20+	12	0.7	3-	3	3+	3	2+	3-	3+	3	28	22	53	47	28	
31		1-	1-	1	2+	3	3+	2+	3-	16	9	0.5	2	2-	2	3	3+	3+	3	2+	25	19	23	15	27	
Mean											7	0.34									15.9	14.3	16.2		15.2	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	1+	2	0	0+	1+	2	1-	1	8	3-	2+	1+	2-	2+	3+	4	3+	26	172.6	127	137	124	
2	0	0+	0+	1+	2	2-	2+	1+	8	3-	3-	2	3-	2-	2-	2	2	17	178.0	160	174	130	
3	1-	1-	1-	0+	1+	3-	3-	2+	11	2+	2	2	3	2	3	3-	3	23	187.6	171	184	141	
4	4-	3+	2	3	3	3-	2+	3	28	3+	4-	2+	3-	3+	3-	3-	4	33	199.3	186	196	153	
5	2+	1	3	3+	3-	3+	2+	2	24	3	2-	2+	3-	2+	3	3	2-	21	207.0*	167	195	162	
6	2	1	1+	3-	2	2-	2-	1+	12	2	1+	2-	2-	2	1+	2-	2+	13	221.0	169	202	177	
7	2	1+	2-	1	0+	1+	1-	0+	8	2+	1+	2-	2-	0+	2-	2	2	12	222.0	182	216	178	
8	0	1	2	1+	3	2+	3	2	15	1-	1+	2	2+	3-	3-	3	3	19	223.6	177	229	179	
9	2-	2-	1	2-	3-	2	1+	1-	11	2+	2-	1	2-	2	2-	2	1+	12	230.3	176	206	187	
10	0	0	0+	1-	0+	1-	1-	0	2	0	0+	1-	1-	0	0+	1+	1	4	233.4	157	198	190	
11	0	0+	0+	0	1-	2-	1	0+	4	1+	1+	1+	1+	2-	2+	1+	1	10	233.4	157	170	190	
12	0	0+	0+	1-	2+	3	3	3	14	1	1	2-	2-	2-	3-	3	4-	19	228.0	138	144	184	
13	3+	3	3+	3-	2-	2-	2	1+	23	3+	3	4-	3-	2	2	2+	1+	24	219.5	117	139	175	
14	2+	2	1+	1	2	3-	1+	0	12	2+	1+	1+	2	3	3-	2+	1+	16	195.3	98	106	149	
15	1	1+	2+	1	1+	2	2	1	11	1+	2-	2	2	1+	2	2	2-	13	193.2	88	102	147	
16	1+	1+	2-	2	3	3	2	2-	16	2-	2-	2-	3+	3	3	3-	3	23	186.2	99	121	139	
17	2-	2+	1	1	1	2+	2	2-	12	2+	3	2	3-	2	2	2+	2-	18	192.5	112	123	146	
18	1+	1-	0	2	3-	2-	1-	0+	9	2-	1-	2-	2+	2	1+	2-	2	12	201.6	121	124	156	
19	0	0+	0	0+	1	1+	1-	0+	4	2-	1+	1	1+	2	1+	1+	1+	9	191.2	134	150	144	
20	0+	2-	1+	2	3-	3+	3-	1+	17	1+	2-	2	3-	3-	3-	3-	2-	17	181.6	124	129	134	
21	1-	1	0+	0	0	2-	1+	1+	5	2	2-	1+	1-	1	2-	2	2-	10	185.8	125	110	139	
22	0+	1-	1	1	1	0	0	2	5	2	2	3-	3-	3	2+	4	3	26	178.1	99	106	130	
23	1-	0+	3	3-	2+	2	1+	2+	14	2-	3-	4	3+	2	2	2	3+	25	185.6	91	97	138	
24	1+	2	2-	3-	3	3+	4-	4-	26	2	3-	2+	3	3	3	4-	3+	28	184.9	95	105	138	
25	3-	3-	1+	2+	2+	3	3-	2-	20	3	3-	2	3-	2	3-	3	3-	22	185.0	98	106	138	
26	1+	1-	1	1+	2	1	1-	1-	7	1+	1	2	2	2	2	3	3-	16	188.1	91	116	141	
27	1+	2+	1	1+	2+	2-	1+	1-	11	2+	3-	2-	2	3-	3-	2-	2	18	191.9	104	122	145	
28	1+	2-	1	1	1	1-	1+	1+	7	2-	2+	1+	1+	1+	1	1	3-	12	192.4	111	129	146	
29	1	1	0+	1	1+	2	1+	1	8	1+	1+	2+	3-	3-	3+	3+	3	22	195.5	109	126	149	
30	2+	3	3-	3	2+	2+	3	2-	22	3	3+	4-	3	3-	3-	3+	4-	35	189.6	103	120	143	
31	1+	2-	1+	3	3+	3	3-	2	21	3-	2	2+	3	3	4-	3	3-	28	180.6	96	142	133	
Mean									12.7									18.8	198.5	128.5	145.9	152.4	

D A I L Y A V E R A G E I N D I C E S Ap

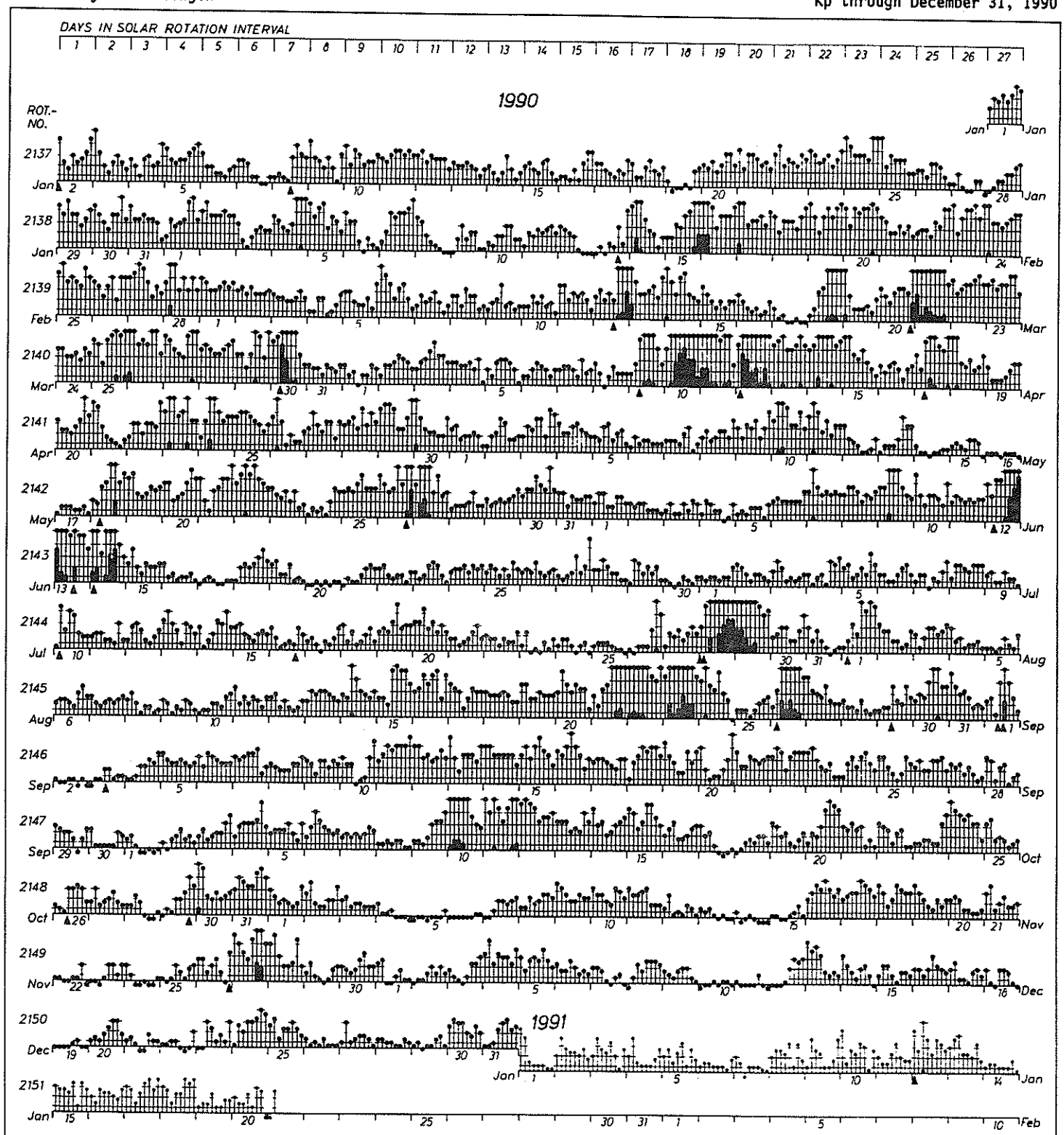
January 1990 to December 1990

DAY	1990 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	16	22	20	6	8	10	5	26	26	2	9	5
2	17	25	14	11	10	6	6	9	2	5	10	5
3	15	8	10	17	18	6	7	11	4	10	6	6
4	12	28	6	10	12	5	8	6	8	16	3	17
5	17	24	11	10	10	5	10	5	11	10	2	13
6	7	10	21	7	5	10	7	9	12	12	2	7
7	6	25	8	8	7	22	6	7	14	8	6	4
8	11	8	10	6	11	16	10	6	8	4	8	8
9	14	7	8	34	16	32	5	5	10	12	12	5
10	16	8	8	124	33	17	14	6	11	48	12	2
11	18	10	14	64	24	11	7	9	25	42	12	2
12	15	6	42	99	7	89	8	7	19	31	5	7
13	9	9	29	38	11	70	13	12	19	16	3	15
14	8	30	26	45	3	79	12	19	19	17	1	8
15	9	36	11	24	5	9	8	26	22	26	3	6
16	10	50	7	10	3	5	7	25	23	10	17	8
17	9	33	3	40	4	3	6	15	12	5	16	6
18	8	23	35	24	31	10	8	12	19	5	15	5
19	4	33	16	9	18	6	16	14	16	9	10	2
20	14	38	30	18	20	2	16	19	16	23	7	8
21	17	16	76	13	22	5	7	38	15	11	10	3
22	19	21	28	16	32	6	6	49	20	10	3	3
23	20	36	29	37	11	7	4	77	13	10	4	7
24	32	29	18	30	8	8	4	24	13	25	2	15
25	19	29	39	19	20	7	4	6	11	9	4	10
26	10	19	41	16	47	7	14	63	12	10	9	4
27	4	26	34	15	45	12	9	15	8	8	45	6
28	7	31	24	20	7	7	102	6	9	4	18	4
29	24		27	30	10	8	75	11	7	10	5	4
30	24		69	19	23	4	12	26	5	20	8	12
31	18		7		11		6	16		25		9
MEAN	14	23	23	27	16	16	14	19	14	15	9	7

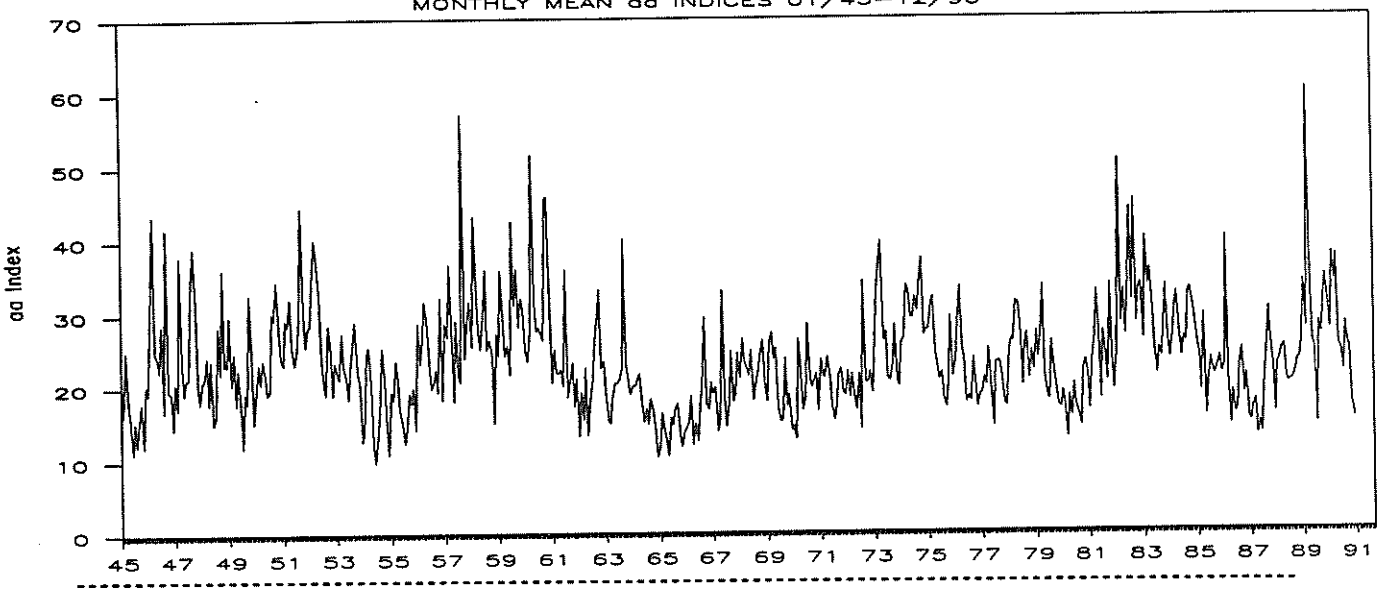
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Göttingen

Kp through December 31, 1990



MONTHLY MEAN aa INDICES 01/45–12/90



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1945	16.1	16.4	25.0	19.1	15.4	11.1	15.3	12.1	15.6	17.9	12.0	20.2	16.3
1946	19.2	30.2	43.5	25.0	24.1	22.3	28.6	16.7	41.7	19.6	19.3	14.3	25.4
1947	20.6	17.1	37.9	23.3	19.1	21.1	21.4	32.9	39.1	31.3	20.7	17.9	25.2
1948	20.8	21.0	24.2	17.7	23.7	15.0	16.2	28.3	22.0	36.1	23.1	23.0	22.6
1949	29.8	20.4	24.7	17.6	22.4	17.9	11.8	19.2	17.8	32.7	24.6	15.1	21.2
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

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

DECEMBER 1990

Sta	Geomag Lat	Commencement Day	Commencement Time (UT)	Type	SC Amplitudes D (Min)	SC Amplitudes H (Gamma)	SC Amplitudes Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	Ranges H (Gamma)	Ranges Z (Gamma)	End Day	End Hour (UT)
HYB	07.6N	03	1500	..	..	..	..	04(4) 05(3,6)	4	3	98	20	05	20
GUA	04.0N	03	23--	..	..	..	..	04(1)	5	--	120	30	04	05
ETT	00.6S	03	1530	..	..	..	..		-	5	167	52	05	19
HYB	07.6N	08	1426	SC	- .2	9	- 1	08(5,6,7,8) 09(1,5,6)	3	2	61	20	09	20
ETT	00.6S	08	1425	SC	- .3	11	9		-	3	91	38	09	20
KGL	56.5S	08	1425	SC*	3	30	10	08(5)	4	10	64	28	09	04
ETT	00.6S	12	1100	..	..	..	..		-	4	101	60	13	12
HYB	07.6N	16	0500	..	..	..	..	16(5,6)	4	3	90	17	17	21
ETT	00.6S	16	0200	..	..	..	..		-	4	141	37	17	10
HYB	07.6N	22	0517	SC	- .2	4	0		-	--	--	--	--	--
HYB	07.6N	22	2000	..	..	..	..	23(3) 24(5,6,7,8)	4	3	145	30	25	19
ETT	00.6S	22	1930	..	..	..	..		-	4	186	58	25	20
HYB	07.6N	30	0100	..	..	..	..	30(2,3)	5	3	155	23	31	20
GUA	04.0N	30	03--	..	..	..	..	30(2)	5	--	70	30	30	22
ETT	00.6S	30	0100	..	..	..	..		-	4	243	63	31	21
ETT	00.6S	30	1016	SC	- .3	23	15		-	--	--	--	--	--
CNB	43.9S	30	03--	..	..	..	..	30(1,2)	5	18	92	14	30	22

Stations:

ABG = ALIBAG
ANN = ANNAMALAINAGAR
API = APIA
BJI = BEIJING
CNB = CANBERRA
COL = COLLEGE
ETT = ETAIYAPURAM
FRD = FREDERICKSBURG
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS
HON = HONOLULU
HYB = HYDERABAD
JAI = JAIPUR
KAK = KAKIOKA
KNY = KANOYA
KGL = KERGUELEN
KRC = KARACHI
MMB = MEMAMBETSU
PMG = PORT MORESBY
SHL = SHILLONG
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN

C O N T E N T S

'rompt Reports LATE DATA Number 558 Part I

GEOMAGNETIC ACTIVITY INDICES

November 1990

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	H	
1		3	2+	2-	2	2-	1+	2-	3+	17	9	0.5	2	2	1+	2	2-	1+	2	3	15	19	15	17	17	
2		3-	4-	2-	1+	1+	2	2	3+	18	10	0.6	3-	3	1+	1+	1+	2	2+	3	17	24	17	19	22	
3		2	2+	1+	2-	2-	1+	1+	1+	13	6	0.3	2-	1+	1+	2+	2+	1+	1+	1+	12	13	10	12	11	CK
4	Q4	2-	1-	1-	1	0+	0+	0+	0	5	3	0.0	1+	1-	1	1	0+	0+	1-	0+	5	7	3	7	3	CC
5	Q2	0	0+	0+	0	0+	0+	0+	1	3-	2	0.0	1-	0+	1-	0+	0+	0	0+	1	3	3	2	2	3	CC
6	Q1	0+	0+	0+	0+	0+	0+	1-	1-	3+	2	0.0	0+	1	0+	0+	0+	0+	1+	1-	4	4	3	3	4	CC
7		0+	0+	1	2	2	2-	2	2+	12-	6	0.2	0+	0	1+	2	2+	2+	1+	2-	11	11	14	11	15	KK
8		1+	1+	2+	2-	2	3-	3-	2+	16+	8	0.4	1	1+	3-	2	2+	3-	3-	2	16	20	21	15	26	
9		4-	3+	3-	2	2	3-	2+	2+	21	12	0.7	3	2+	3-	2	2+	3-	3-	2	21	26	19	21	24	
10		3+	3-	3-	2	2-	3+	3	2+	21	12	0.7	3-	2	3-	2+	2	3	3+	3-	23	25	21	23	23	
11		3+	3-	3-	3	3+	2-	2-	2-	20	12	0.7	2+	2	2+	3-	3+	2-	2+	2-	19	21	19	22	18	
12		1+	3-	1-	1	1-	2-	1+	1-	10	5	0.2	1+	3	1-	1+	1	2	2-	1+	12	9	18	17	10	KK
13	Q6	1+	1	1+	1-	0+	1-	0+	0+	6	3	0.1	1+	1+	1+	1-	1-	1	1-	1-	7	5	6	8	2	CC
14	Q3	1	0	0+	1-	0+	0	0	0	2+	1	0.0	1	0	0	1-	0+	0	0	0+	3	4	2	4	2	CC
15	Q7	1-	1-	0+	0+	1-	1	2-	1-	6	3	0.1	1	1-	0+	1-	1	1	2-	1	7	7	6	4	9	CK
16	D2*	2+	3	4-	3+	4	3+	3-	3+	26-	17	0.9	3	3-	3+	4-	4	3	3-	3	34	29	39	33	35	
17	D4*	2+	3-	3	3	4	4-	3+	3-	25-	16	0.9	1+	2	3-	3+	4-	4-	3+	3-	29	29	30	22	37	
18	D5*	4-	3	2-	2+	4-	3+	3	3	24-	15	0.9	3+	3-	1+	2+	3+	4-	3	3	28	34	28	22	40	
19		4-	3	2+	2-	1+	2+	2-	2+	18+	10	0.6	3	3-	2-	2-	1+	2+	2-	2	17	20	16	21	15	
20		2+	3-	2+	1+	1+	1	1	1+	13+	7	0.3	2-	2+	2+	1+	2-	1	1+	1+	12	11	14	16	9	C
21		3	4-	1+	2	3-	2-	2-	2	18	10	0.6	2+	3	2-	2	3-	2-	2	2+	18	20	23	19	24	
22	Q8	1-	1-	0+	0+	1-	1-	2	0	5+	3	0.1	1	1	0+	0+	1	0+	2-	0+	6	6	8	7	7	CK
23	Q9	0+	0+	0	1-	2	2	1	2	8+	4	0.1	1-	1-	0+	1	2	2	1	2-	8	11	9	4	16	CC
24	Q5	2	1	0	0	0+	0	0	1-	4	2	0.0	1+	1	0	0	1-	0+	0+	1	4	5	5	6	4	CC
25	Q10	1-	0+	1-	2	1+	1-	2-	2	9+	4	0.2	1	1-	1-	2+	1+	1	2-	2	10	14	9	9	15	CK
26		3-	3-	1+	2	3-	1+	0+	3+	16+	9	0.5	2+	2-	2	2+	3-	2-	1-	4-	18	20	22	19	23	
27	D1	5-	4	3+	3-	4+	7-	6+	4	36	45	1.5	5-	3+	3	3	4+	6	6-	4	74	79	75	46	108	
28	D3*	4	5-	3	2	2	2+	4+	2	24+	18	1.0	4-	4-	3-	2-	2	2+	4	2	28	34	27	32	29	
29		1+	2+	1	1-	0+	1-	2-	2	10	5	0.2	1+	2-	1	1	0+	1	2-	2	9	11	8	10	9	C
30		2	2-	1+	2-	3-	3+	2	2	17-	8	0.5	2-	1+	1+	1+	2+	3	2+	2	16	21	15	13	23	
Mean											9	0.43									16.2	18.2	16.9	17.4	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	2	2	1+	2+	2	1+	2-	3	15	2	2-	1+	2	1+	1+	2+	3	15	141.6*	77	77	91	
2	3-	3	1+	1+	1+	2+	2	3	18	2+	3-	2-	1+	1+	2	2+	3	17	138.5	81	84	88	
3	2-	2-	1+	2-	2+	2-	1+	2-	12	2-	1	2-	3-	2	1+	1+	1+	12	150.2	108	117	100	
4	1+	0+	1	1	0+	1-	1-	0	5	2-	1	1	1	1-	0+	1	1-	6	154.7	146	140	105	
5	0+	0	0+	0	0+	0	0+	1	3	1	0+	1-	0+	0+	0+	1-	1	4	169.7	154	169	121	
6	0+	1-	0+	0	0	0+	1+	1-	3	1-	1	0+	0+	1-	0+	1+	1-	5	196.4	197	192	150	
7	0	0	1	2	3-	3-	1+	2-	11	0+	0+	2-	2	2+	2	1+	2-	11	214.3	209	197	169	
8	1+	1+	2+	2-	2+	3	3-	2+	17	1	1+	3-	2	2+	2	3-	2	16	211.8	208	204	167	
9	3	2+	3	2	2+	3+	3	2+	24	3-	2	3-	2-	2+	2	2	2	17	201.2	188	200	155	
10	3-	2	3	2+	2-	3+	4-	3-	26	3-	2-	2+	2+	2	3-	3-	2	19	191.1	163	167	144	
11	2+	2	2+	3-	3+	2	2	1+	19	2	2	2+	3	3	2-	3-	2	19	195.0	167	141	149	
12	1	3-	1-	1+	1+	2+	2-	1-	12	2-	3	1-	1+	1	1+	2-	2-	12	191.0	151	143	144	
13	1+	1-	1+	0+	1	1+	1-	1-	6	1+	1+	1+	1	1-	1-	1-	1-	7	181.5	129	127	134	
14	1-	0	0	1-	0+	0	0	0	2	1	0+	0	1-	1-	0+	0+	1-	3	198.0	106	142	152	
15	1	0+	0	1-	1+	1-	2-	1	6	1+	1	1-	1	1	1+	2-	1+	8	207.3	107	113	162	
16	3-	3	3	4	4	4-	3-	3	37	3+	2+	3+	3+	4-	2+	3	2+	31	207.3	95	98	162	
17	1+	2	3-	3+	4	4	3	3-	31	2-	2	3-	3	4-	3+	3+	3-	28	217.1	103	121	172	
18	3+	3-	2-	2+	4-	4-	3-	3	30	3	3-	1	2+	3	4-	3	3-	25	198.9	97	102	153	
19	3	3-	2-	2-	1+	3-	2	2-	17	3-	3	2	2-	1	2+	2-	2	16	191.2	104	109	144	
20	2-	2+	2+	1+	2-	1	1+	1+	12	2	3-	2	2-	2-	1+	2-	2-	13	186.8	98	109	140	
21	2	3	2-	2	3-	1+	2-	2+	18	3-	3	1+	2	3	2	2+	2	18	177.6	102	120	130	
22	1-	1-	0	0+	1-	0+	2-	0+	4	1+	1+	1	1-	1	1-	2-	1-	7	177.4	125	131	130	
23	0+	0	0+	1-	2	2+	1	2	8	1-	1	0+	1	2	2	1-	1+	8	171.7	114	130	123	
24	1+	1	0	0	0+	0	0	1-	3	1+	1	0	0	1	0+	0+	1+	5	167.2	118	120	119	
25	1-	0+	0+	2-	1+	1	2-	2+	9	1	1	1	3-	1+	1+	1+	2	11	162.3	110	114	113	
26	3-	2-	2-	2-	3-	2	0+	3+	17	2	2	2	3-	2+	1	1-	4+	20	153.2	111	109	103	
27	4+	3+	3	3	4	6+	6-	4	73	5-	3+	3	3+	5-	6-	6-	4+	75	155.0	109	106	105	
28	3+	3+	2+	2-	2	2+	4+	2	27	4-	4-	3-	2-	2	3-	4-	2+	29	167.1	134	132	118	
29	1	2-	1	1-	0+	1	2-	2-	8	2-	2-	1+	1+	0+	1-	2	2	10	163.2	152	152	114	
30	2-	1+	1	1+	2	3+	2+	2	15	2	1+	1+	2-	3-	3	2+	2+	17	169.6	153	142	121	
Mean									16.3									16.1	180.3	130.5	133.6	132.7	

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
JAN90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	—				
2	0251	10.1	414.	18.1	.209
3	0302		425.	11.9	.047
4	—				
5	0339		422.	2.2	.089
6	0259		331.	24.5	.019
7	0258		352.	58.9	.205
8	0021		376.	14.2	.334
9	2020		499.	13.4	.271
10	—				
11	—				
12	—				
13	—				
14	—				
15	0404	3.0	423.	22.4	.141
16	0253		292.	108.3	.050
17	0252		416.	22.7	.216
18	0029		324.	51.1	.015
19	0249		456.	43.8	.281
20	—				
21	—				
22	1206		546.	15.7	.152
23	1210		687.	11.6	.538
24	1154		652.	4.7	.169
25	—				
26	1234		328.	16.3	.029
27	1204		316.	70.7	.106
28	1202		402.	34.3	.102
29	—				
30	1151		474.	13.5	.196
31	1204	8.0	576.	5.3	.282

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
FEB90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	1200	8.6	536.	12.7	.227
2	—				
3	1207		408.	19.3	.068
4	1206		612.	19.8	.293
5	1200		611.	9.4	.502
6	1206		355.	9.3	.067
7	1204		442.	10.7	.108
8	1209		375.	24.4	.108
9	1159		424.	25.1	.084
10	1205		426.	20.8	.136
11	1201		423.	24.0	.047
12	1201		381.	17.3	.081
13	1209		378.	93.5	.046
14	1206		358.	44.3	.025
15	1200	16.9	459.	30.7	.062
16	1205		639.	2.4	1.08
17	1203		417.	6.2	.234
18	1209		544.	15.5	.812
19	1207		610.	15.0	.247
20	—				
21	1207		587.	9.5	.253
22	1204		519.	10.1	.249
23	1202		442.	26.8	.214
24	1202		578.	13.4	.527
25	1207		480.	22.3	.265
26	1209		382.	7.7	.015
27	1205		475.	11.9	.198
28	1158	24.8	522.	12.2	.220

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Late
Mar-Apr 90

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
MAR90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	1157	25.4	625.	1.1	.259
2	1157		518.	5.8	.141
3	1203		465.	15.0	.206
4	—				
5	1202		336.	32.7	.066
6	1201		333.	27.5	.112
7	1200		451.	16.8	.148
8	1209		375.	23.5	.070
9	1204		384.	18.9	.167
10	1158		431.	10.6	.171
11	1202		407.	22.9	.239
12	1201		437.	16.9	.041
13	1157		397.	12.7	.092
14	—				
15	1158	33.8	393.	17.9	.236
16	1203		389.	41.9	.080
17	1200		379.	54.5	.038
18	1157		317.	67.7	.033
19	1201		405.	33.7	.291
20	1156		748.	6.8	.466
21	1203		540.	6.6	.068
22	1200		511.	11.4	.252
23	1158		571.	32.9	.196
24	1158		586.	8.1	.305
25	1158		545.	5.8	.286
26	1201		460.	30.3	.247
27	1203		536.	8.5	.127
28	—				
29	1202		1034.	15.9	.074
30	1201		606.	13.7	.012
31	1203	43.5	446.	17.5	.062

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
APR90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	—	44.1			
2	1204		329.	17.1	.048
3	1202		301.	21.5	.050
4	1202		338.	29.3	.029
5	1200		323.	19.9	.062
6	—				
7	—				
8	1207		465.	10.7	.238
9	1202		405.	12.7	.059
10	1201		392.	17.9	.093
11	1205		384.	13.7	.063
12	1159		388.	14.1	.048
13	1200		345.	28.6	.094
14	1153		372.	19.4	.072
15	1203	52.6	378.	61.7	.193
16	1208		616.	5.6	.085
17	1206		569.	11.1	.461
18	—				
19	1200		404.	15.1	.137
20	1202		382.	15.9	.114
21	1206		434.	24.4	.084
22	1200		419.	22.7	.188
23	1209		347.	15.9	.028
24	1205		369.	14.4	.117
25	1201		428.	38.2	.101
26	—				
27	—				
28	1200		319.	26.5	.112
29	—				
30	1209	61.8	349.	24.9	.207

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
MAY90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	1203	62.4	332.	15.8	.099
2	1204		285.	22.4	.028
3	1201		309.	44.7	.018
4	1209		376.	21.6	.278
5	1201		388.	27.2	.167
6	1207		406.	13.3	.053
7	—				
8	0351		446.	15.7	.177
9	0205		528.	14.1	.275
10	0215		444.	12.5	.142
11	0142		357.	26.9	.059
12	0208		349.	14.1	.050
13	0130		350.	26.3	.062
14	0202		373.	69.9	.075
15	0205	70.96	545.	11.8	.511
16	0627		562.	2.6	.112
17	0210		489.	5.4	.077
18	0158		486.	11.6	.382
19	0125		512.	9.9	.234
20	0159		428.	10.2	.071
21	—				
22	0209		331.	15.4	.048
23	0107		331.	18.8	.054
24	0205		381.	20.9	.204
25	0059		402.	6.9	.118
26	0133		491.	3.8	.351
27	—				
28	—				
29	0144		383.	21.4	.299
30	0213		406.	54.9	.212
31	0051		422.	13.9	.048

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
JUN90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	0552		428.	19.5	.157
2	0201	82.1	608.	42.	.204
3	—				
4	—				
5	0103		445.	28.4	.195
6	—				
7	0024		427.	11.9	.095
8	—				
9	0200		369.	24.1	.154
10	0149		313.	23.9	.022
11	0130		378.	49.5	.037
12	0125		477.	15.7	.259
13	0154		373.	4.7	.020
14	0144		472.	22.5	.316
15	—				
16	0207	90.76	554.	19.2	.219
17	0140		454.	11.5	.062
18	0415		381.	16.4	.059
19	0943		336.	5.3	.063
20	0326		513.	16.3	.186
21	0314		306.	4.2	.208
22	0715		366.	4.1	.099
23	—				
24	0633		396.	26.8	.150
25	0138		381.	17.2	.106
26	—				
27	0134		323.	14.9	.032
28	0202		282.	30.8	.055
29	—				
30	0202	99.9	300.	80.8	.044

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Late
Jul-Aug 90

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
JUL90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	0057	100.5	444.	22.9	.262
2	—				
3	0206		414.	14.5	.182
4	0055		301.	31.8	.026
5	0546		413.	11.1	.140
6	—				
7	0322		311.	66.5	.167
8	0309		379.	33.4	.050
9	0431		334.	48.0	.293
10	0331		341.	104.3	.193
11	0043		306.	23.2	.038
12	0147		304.	17.9	.057
13	0016		291.	53.3	.145
14	0143	108.9	407.	13.1	.145
15	—				
16	—				
17	0108		462.	4.0	.090
18	0803		506.	56.4	.223
19	0124		808.	4.8	.434
20	0847		450.	2.3	.121
21	—				
22	—				
23	—				
24	—				
25	—				
26	—				
27	—				
28	—				
29	—				
30	—				
31	—				

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
AUG90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	—				
2	—				
3	0325	121.9	305.	75.9	.274
4	0232		394.	44.2	2.11
5	0217		356.	32.4	.089
6	—				
7	—				
8	0022		475.	10.5	.209
9	0204		317.	36.7	.107
10	2355		468.	12.7	.154
11	—				
12	0151		569.	9.9	.185
13	0903		444.	9.4	.129
14	—				
15	0031	129.8	555.	10.1	.082
16	—				
17	2142		317.	29.7	.151
18	—				
19	0157		459.	12.1	.636
20	0138		357.	14.5	.031
21	2321		493.	10.6	063
22	—				
23	0200		381.	28.2	.022
24	0204		351.	57.5	.056
25	—				
26	0230		401.	3.9	.043
27	—				
28	0111		464.	32.6	.055
29	0142		455.	17.8	.207
30	1204		378.	13.0	.017
31	1159		378.	16.9	.161

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
SEP90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	1203	140.9	428.	12.3	.426
2	—				
3	—				
4	1204		410.	16.2	.134
5	—				
6	—				
7	1155		430.	37.6	.031
8	—				
9	1200		653.	9.3	.058
10	—				
11	—				
12	1204		406.	11.3	.133
13	1158	148.7	408.	8.4	.064
14	—				
15	—				
16	—				
17	—				
18	1209		444.	14.2	.207
19	—				
20	1201		446.	5.5	.164

No data 21-30 September 1990.

Pioneer Venus					
DATE	TIME	ESV	Uh+	Nh+	Th+
OCT90	(UT)	(deg)	(km/sec)	(N/cc)	(x10E6 deg/K)
1	—				
2	1158	160.8	318.	41.3	.109
3	—				
4	—				
5	1155		461.	11.8	.172
6	—				
7	—				
8	—				
9	1205		435.	12.1	.136
10	1203		429.	9.2	.099
11	—				
12	1208		417.	20.6	.028
13	1209		322.	22.4	.045
14	—				
15	—				
16	—				
17	—				
18	—				
19	days 19-31:superior conjunction				

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The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."