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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

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SEPTEMBER 1990 NUMBER 553 - Part I

Solar-Geophysical Data prompt reports

Data for August, July 1990, and Late Data

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NATIONAL GEOPHYSICAL DATA CENTER

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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 553

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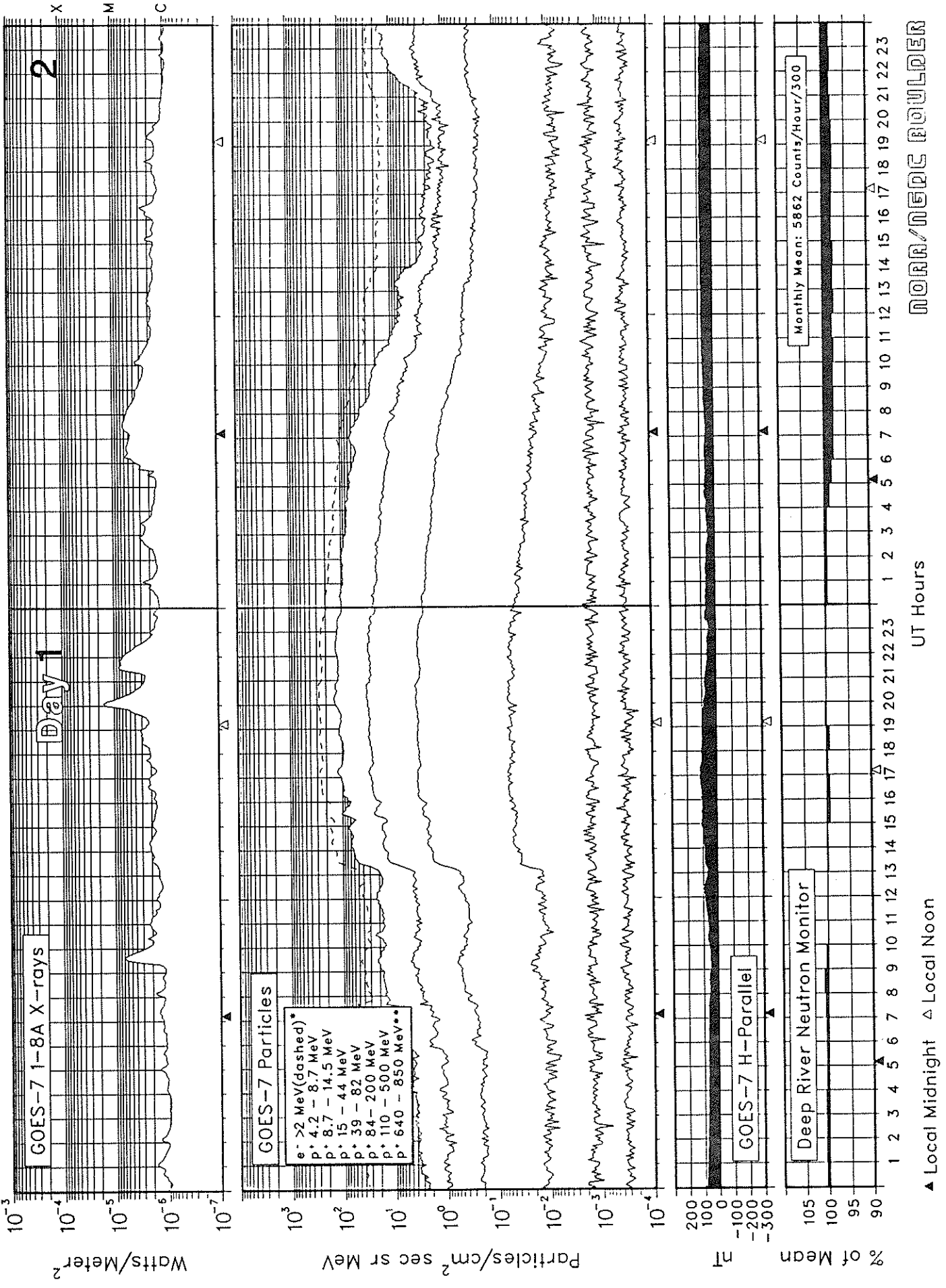
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SOLAR-TERRESTRIAL ENVIRONMENT

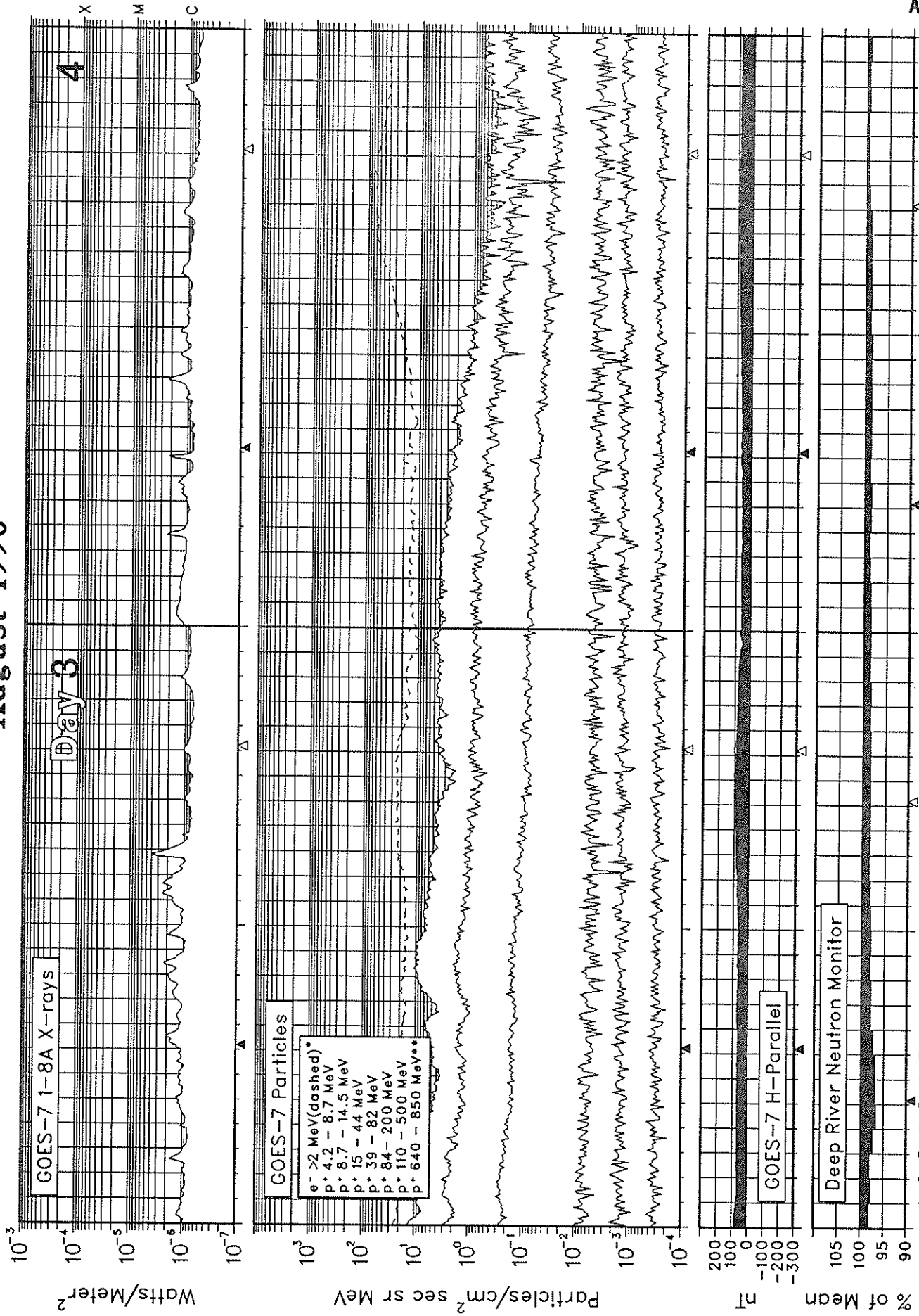
August 1990



NORR/NORDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT

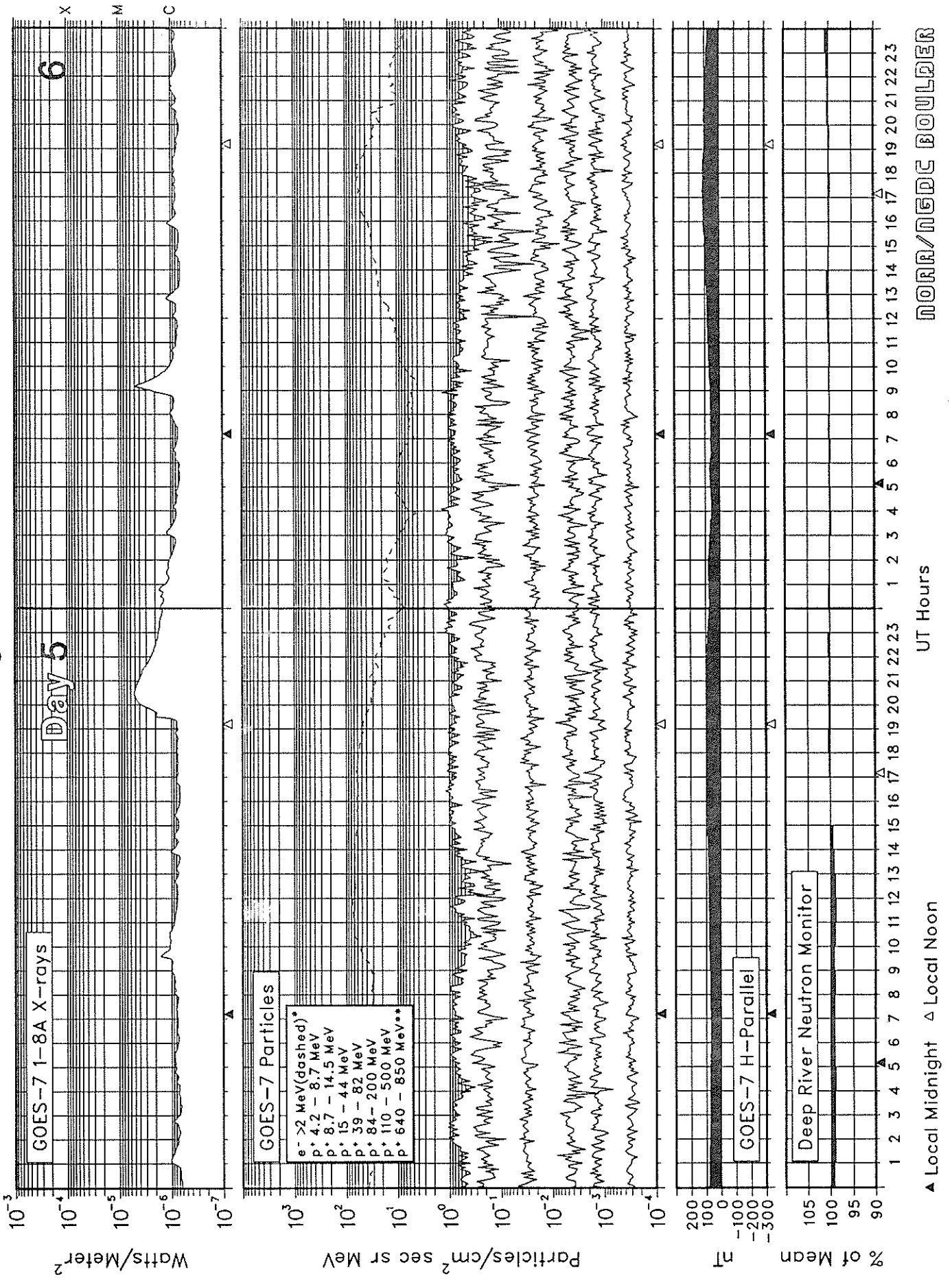
August 1990



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SOLAR-TERRESTRIAL ENVIRONMENT

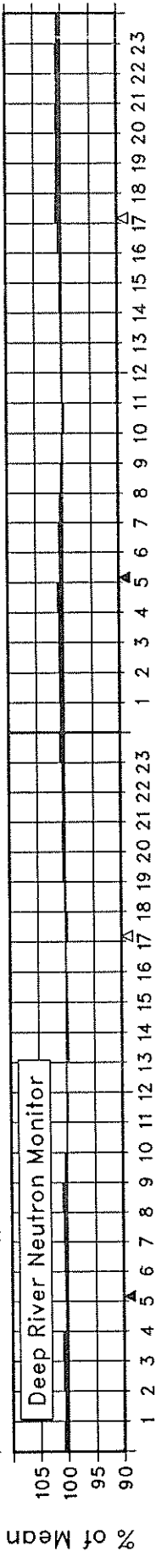
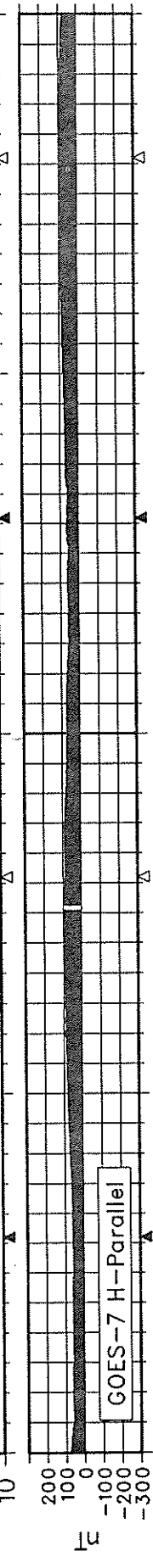
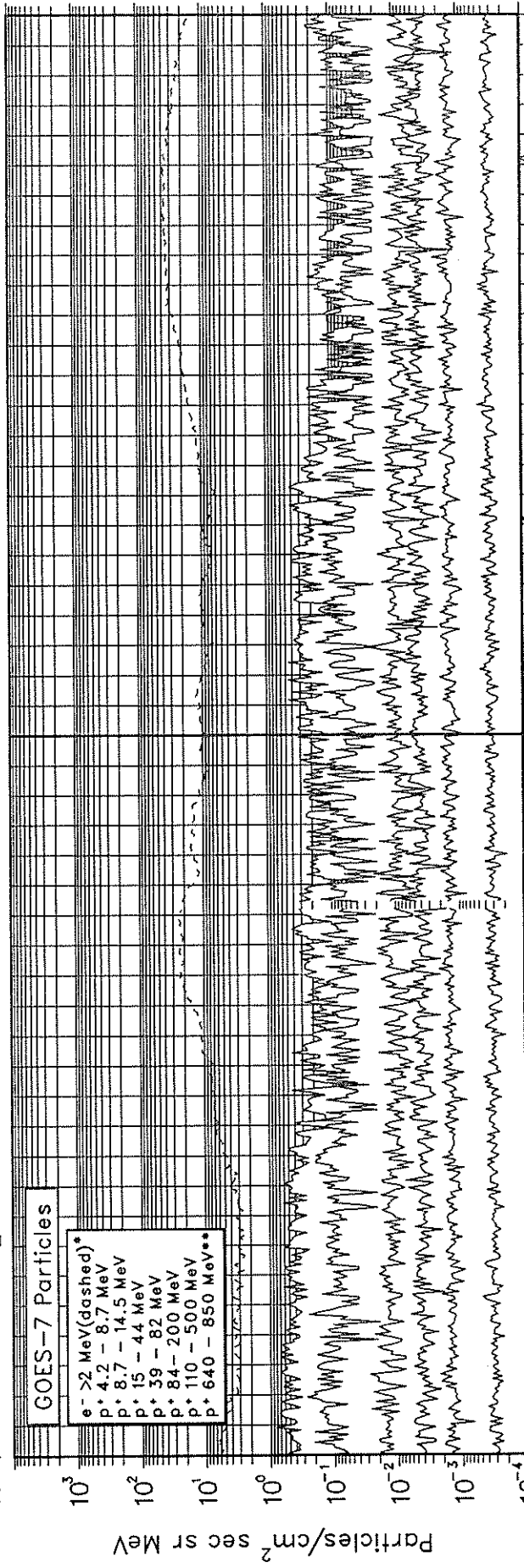
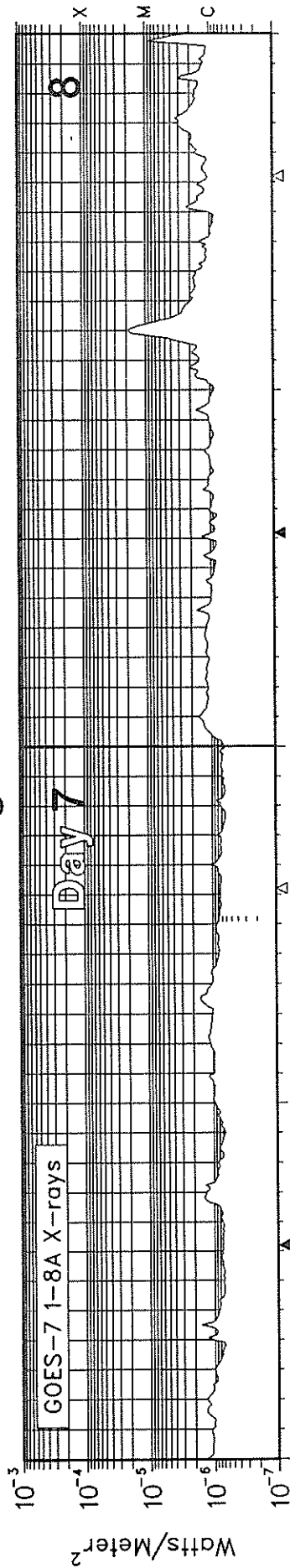
August 1990



NORR/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT

August 1990



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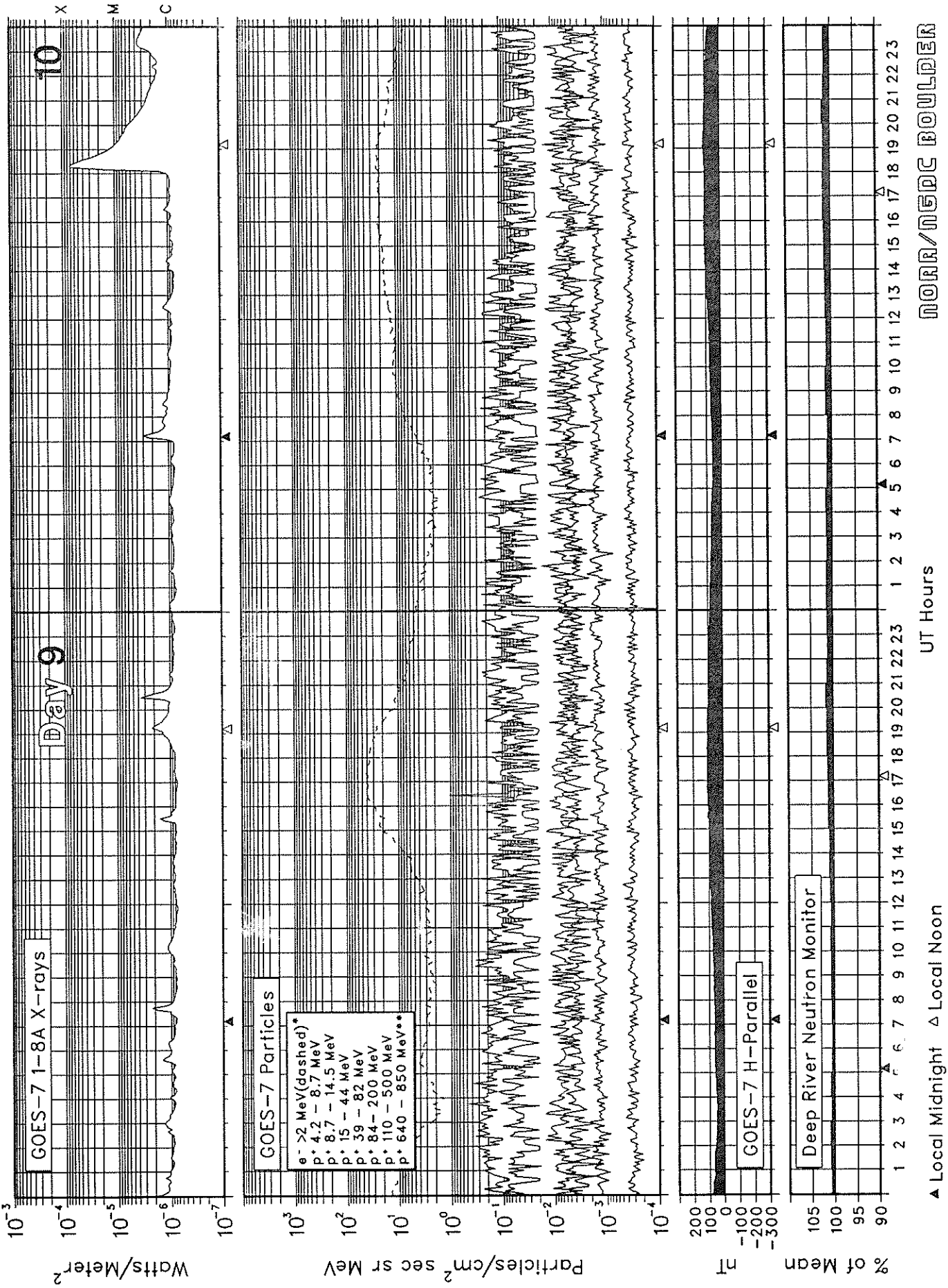
UT Hours

▲ Local Midnight Δ Local Noon

NORR/NEDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT

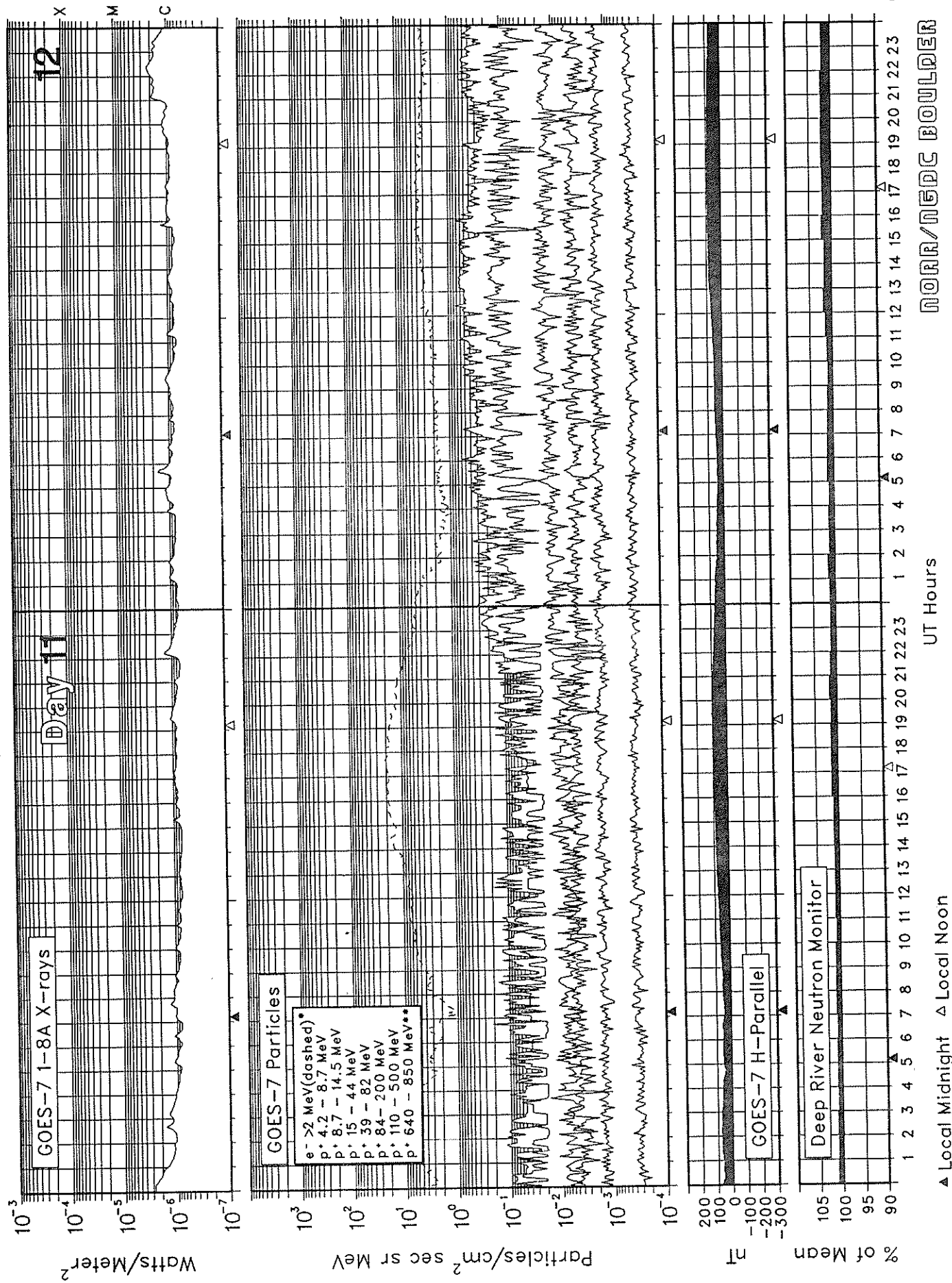
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NORR/NEDC BOULDER

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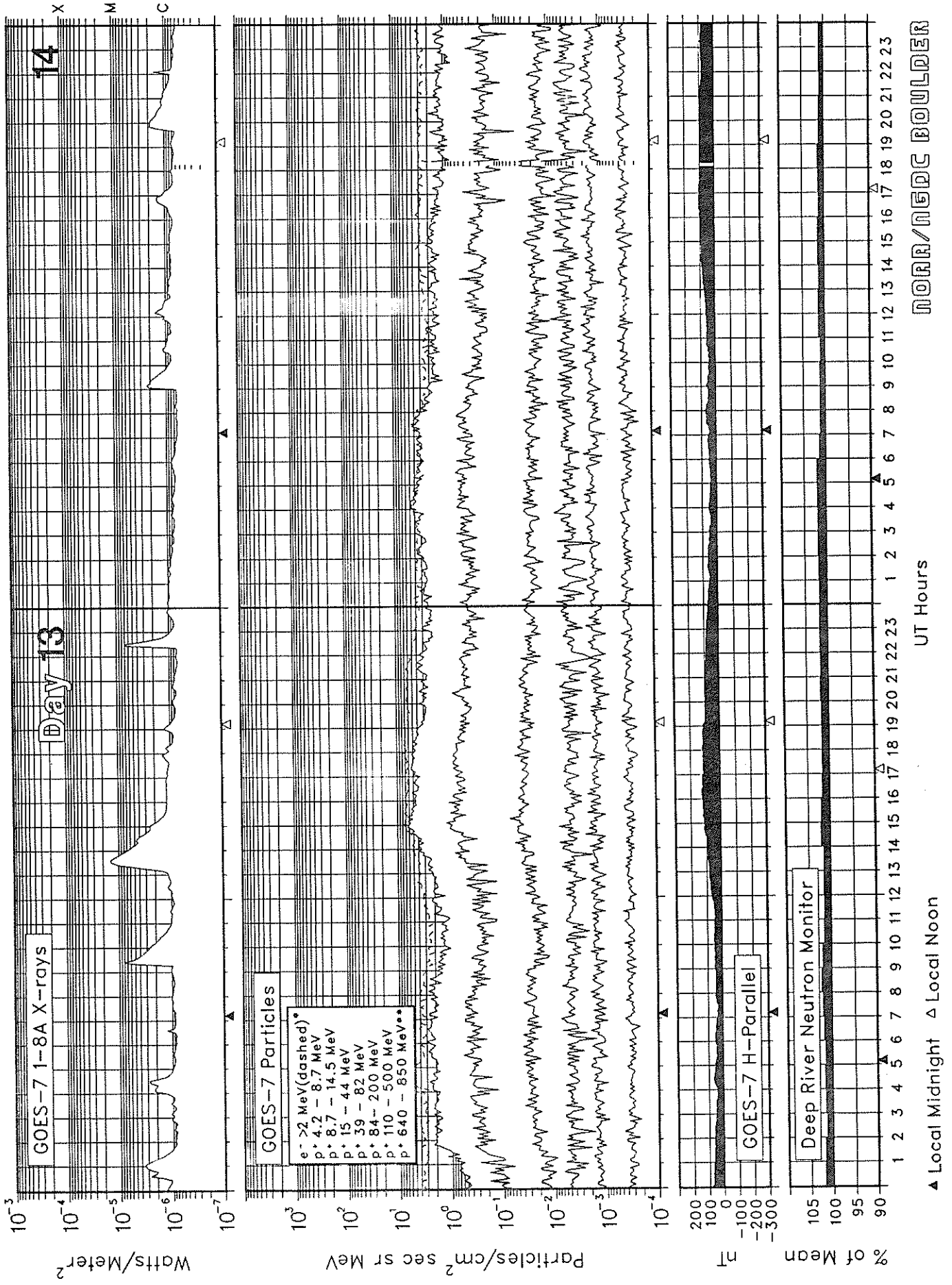
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NORR/NESDC BOULDER

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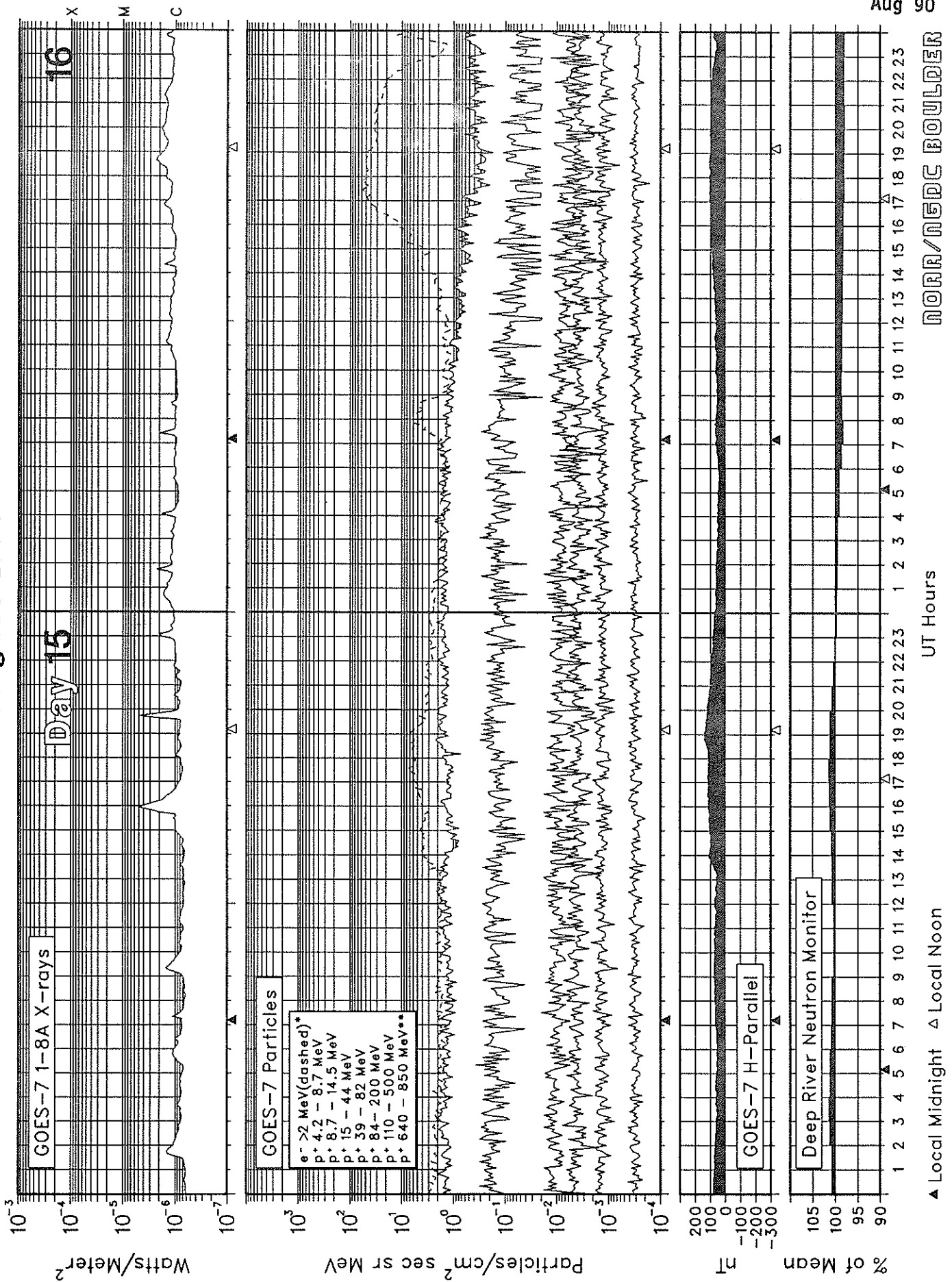
August 1990



SOLAR-TERRESTRIAL ENVIRONMENT

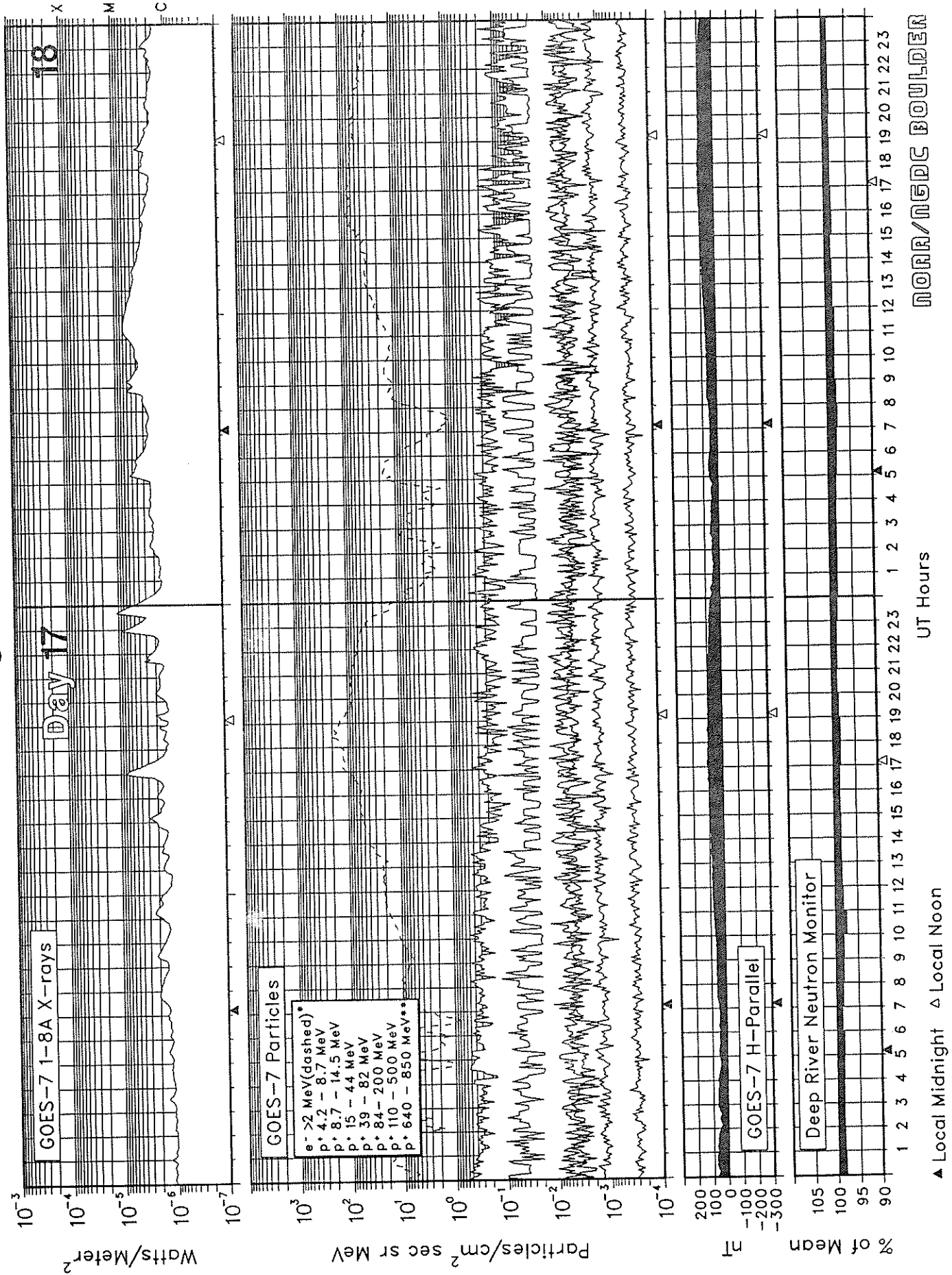
August 1990

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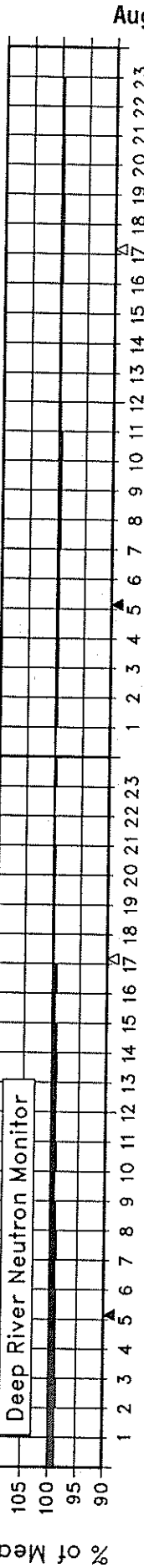
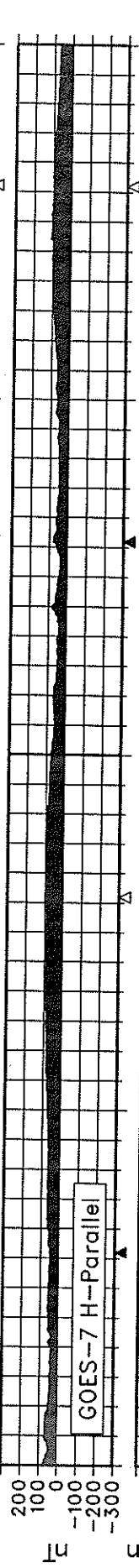
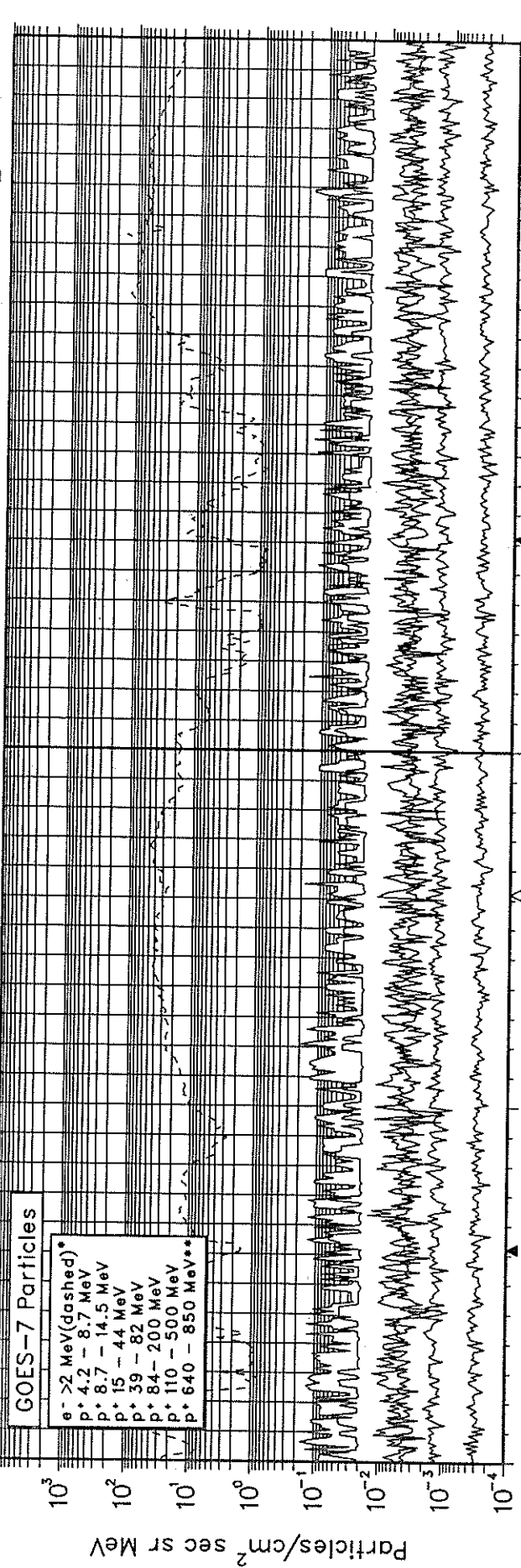
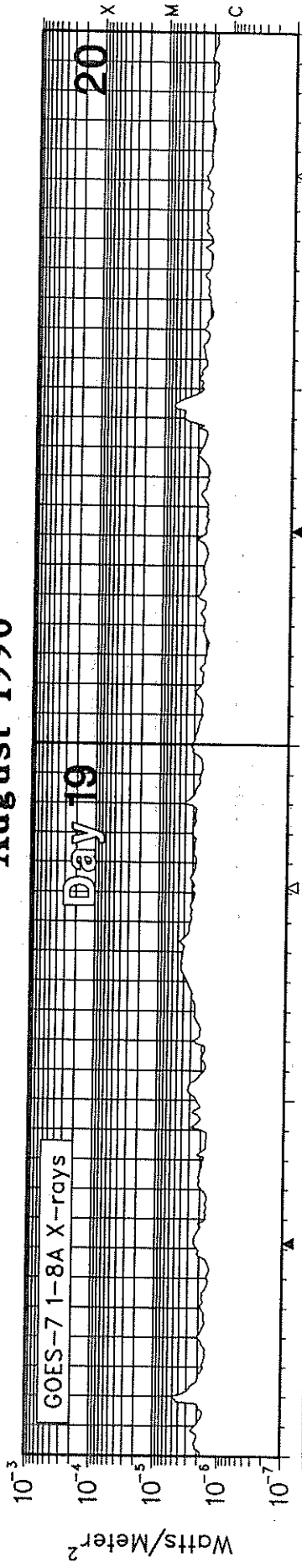
SOLAR-TERRESTRIAL ENVIRONMENT

August 1990



SOLAR-TERRESTRIAL ENVIRONMENT

August 1990

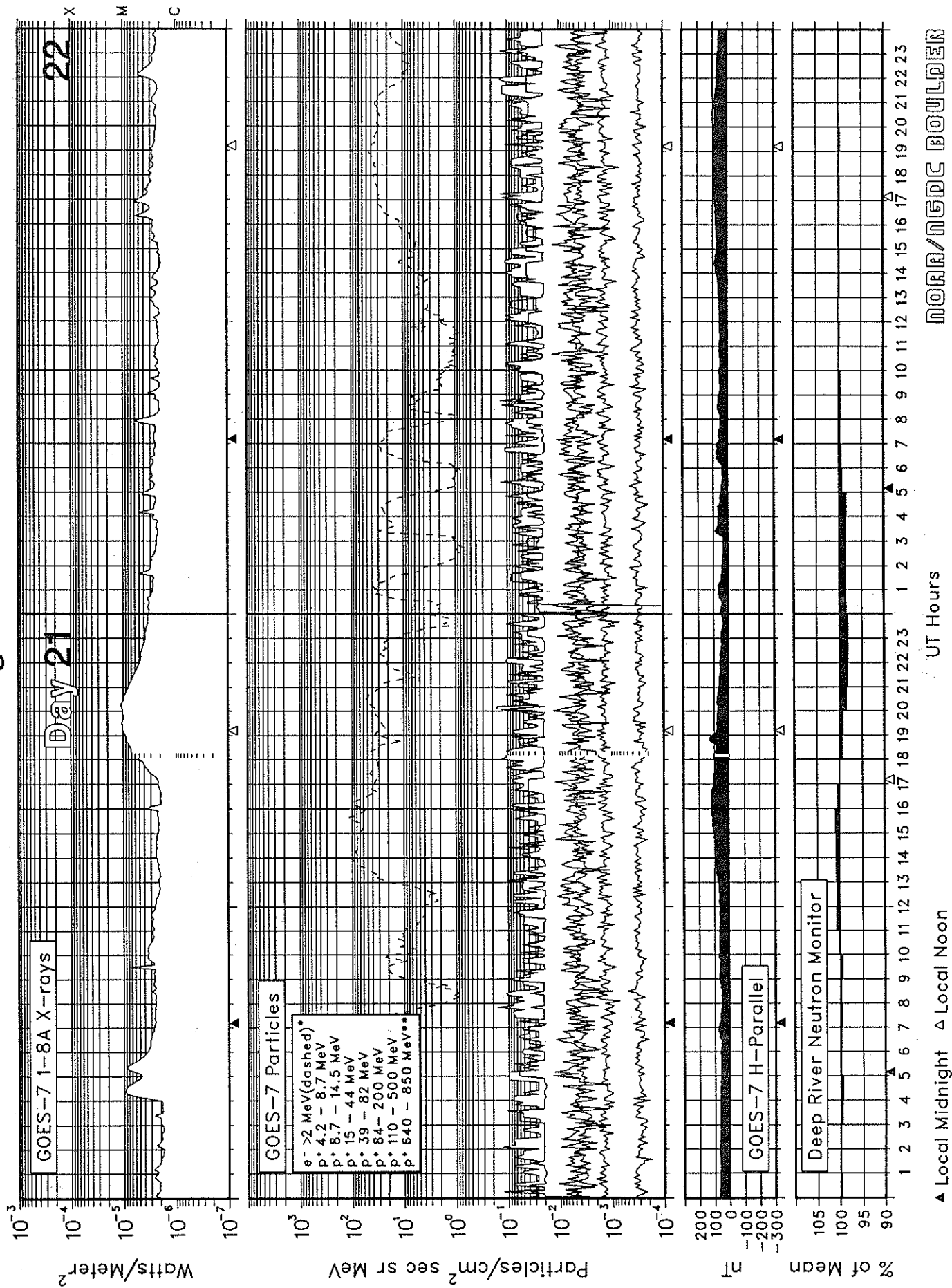


▲ Local Midnight ▲ Local Noon UT Hours

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

SOLAR-TERRESTRIAL ENVIRONMENT

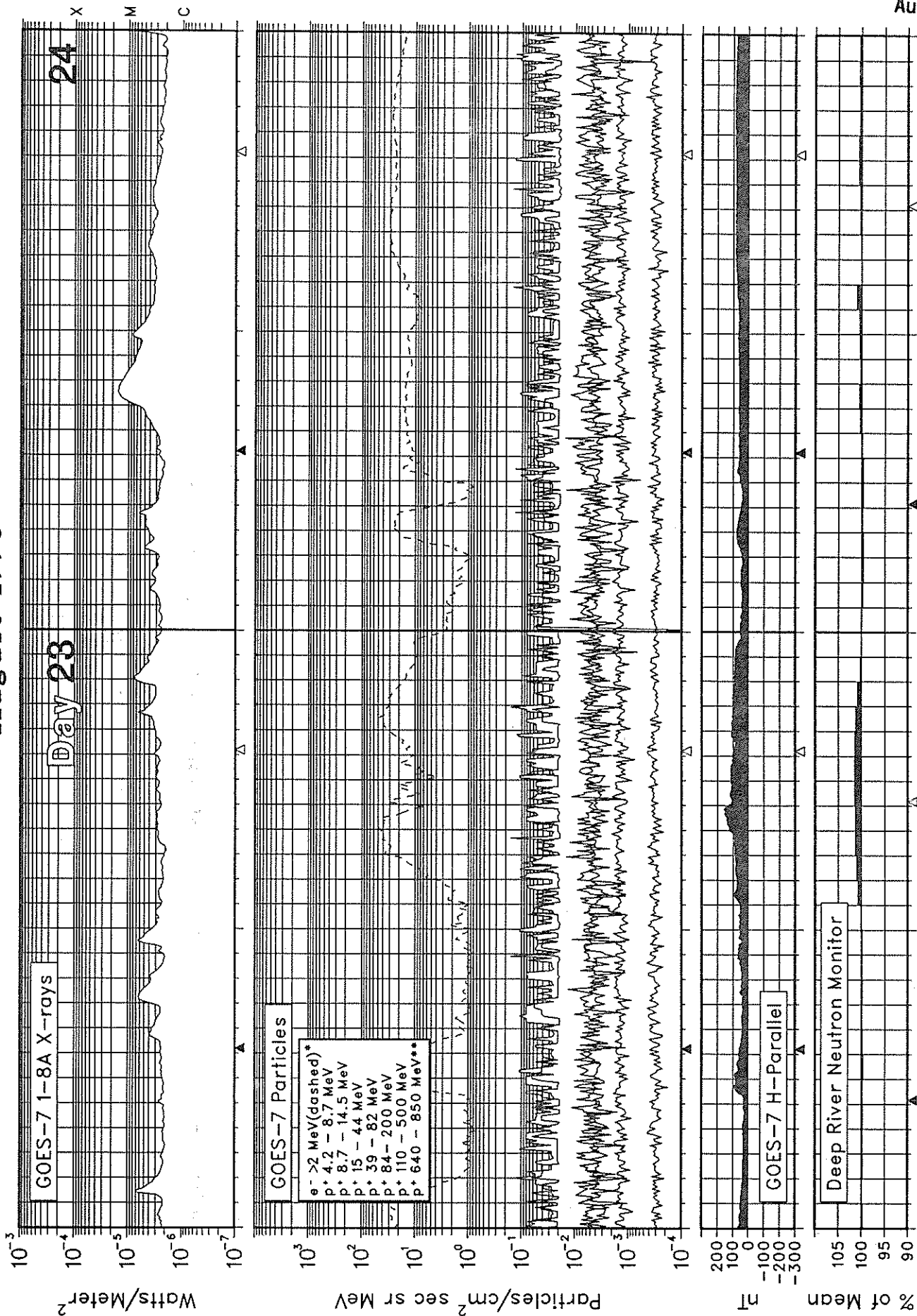
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NORR/NGDC BOULDER

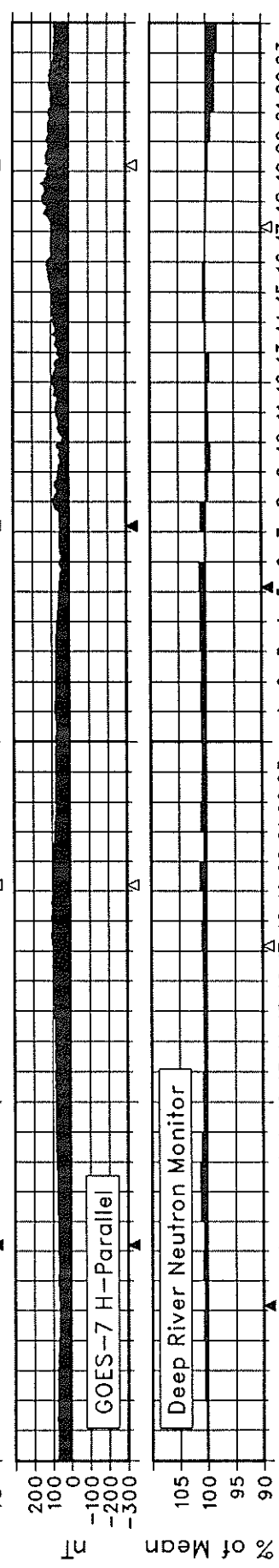
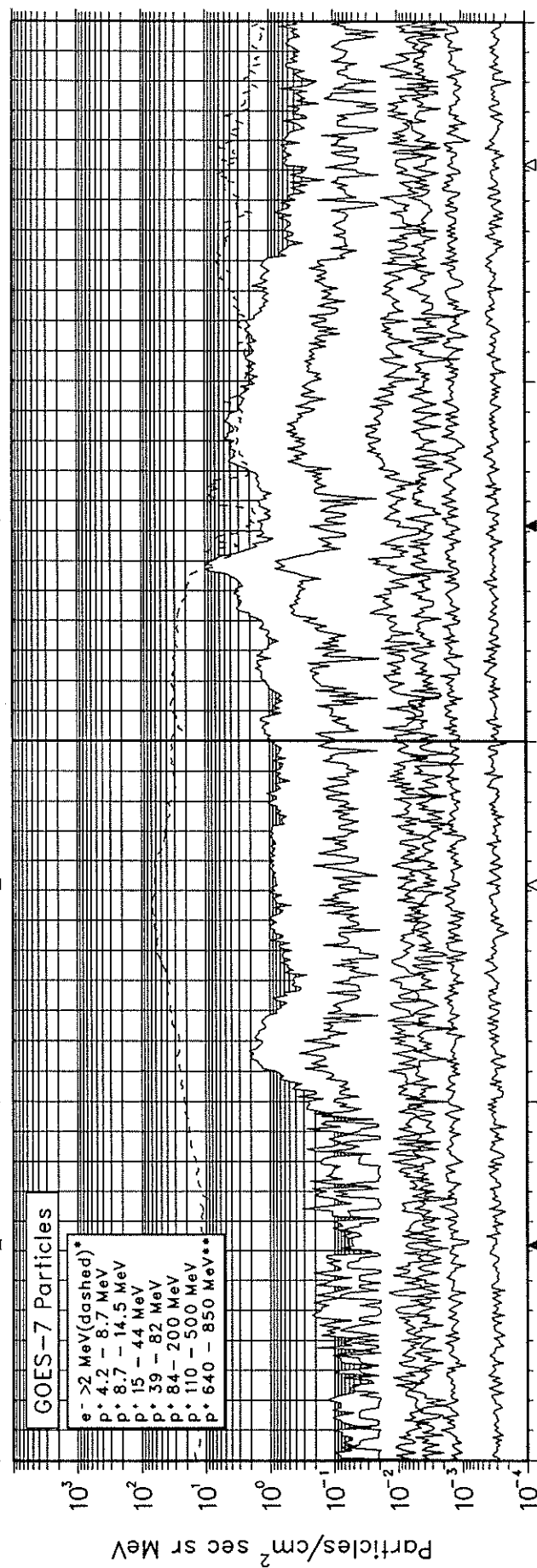
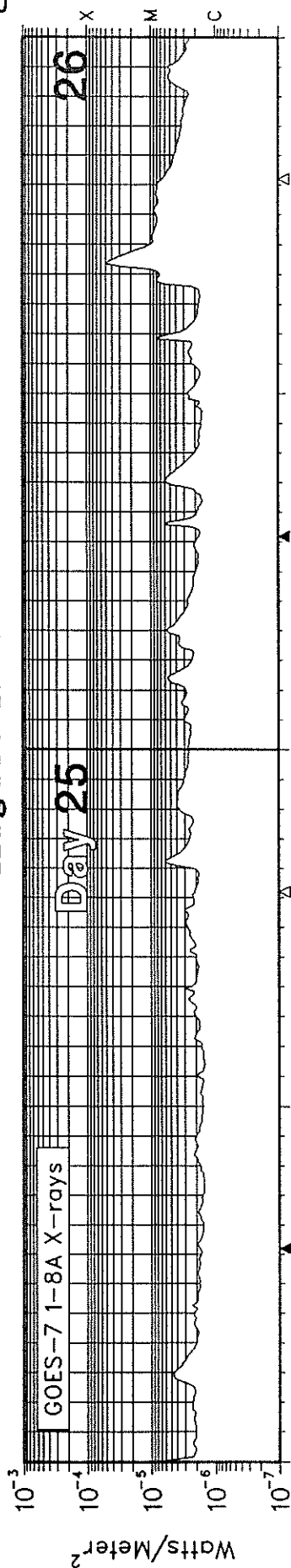
SOLAR-TERRESTRIAL ENVIRONMENT

August 1990



SOLAR-TERRESTRIAL ENVIRONMENT

August 1990



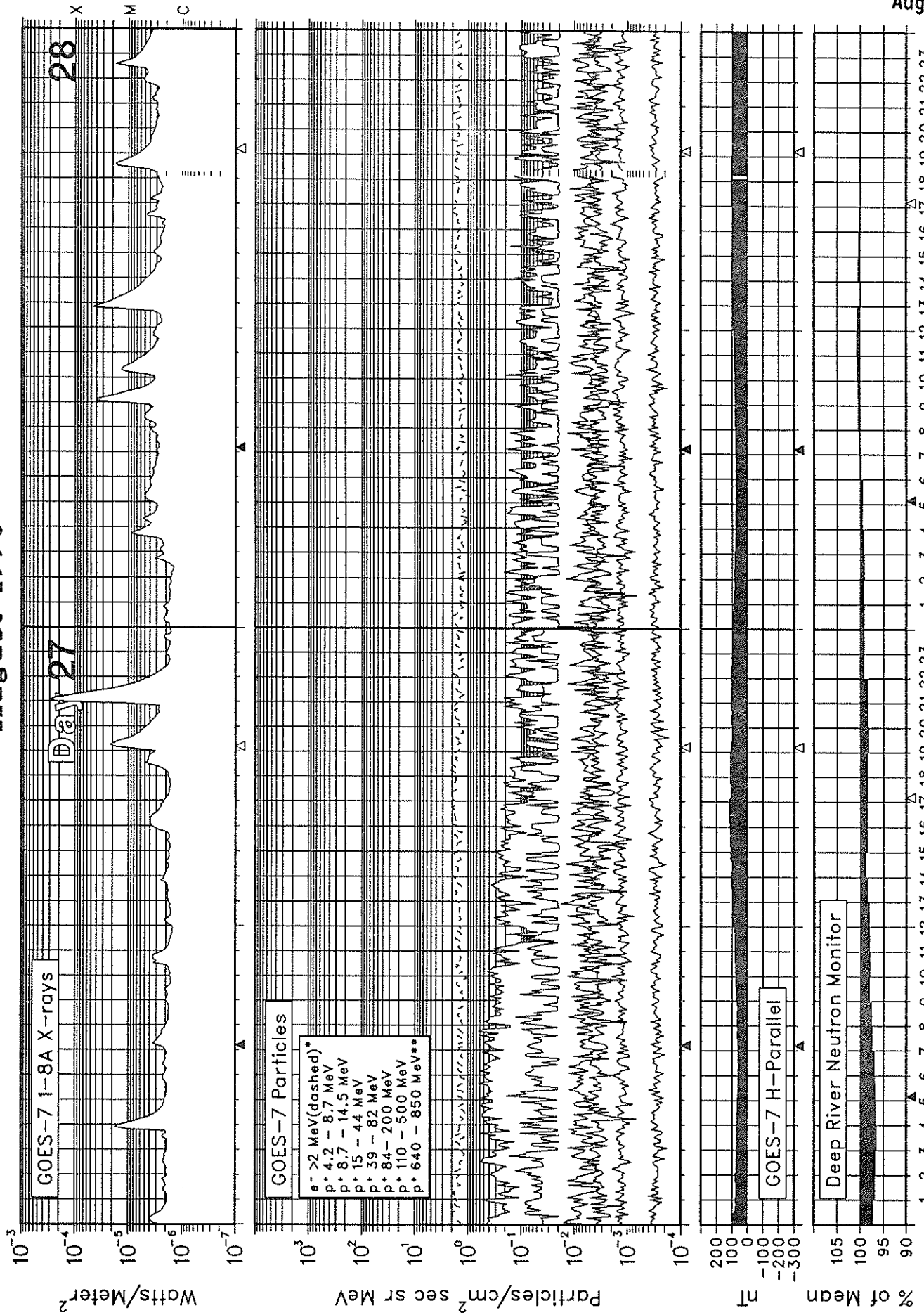
▲ Local Midnight ▲ Local Noon UT Hours

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SOLAR-TERRESTRIAL ENVIRONMENT

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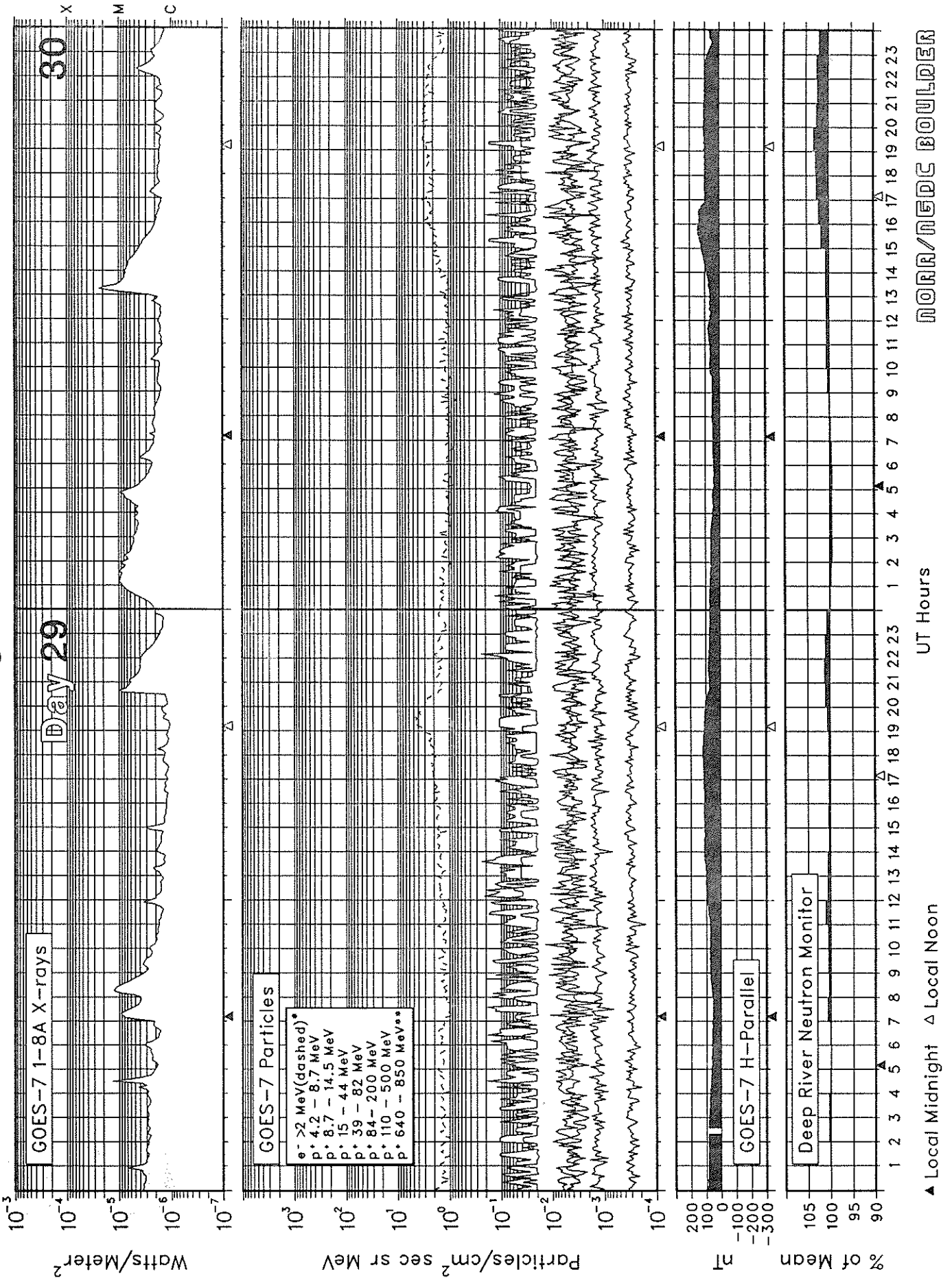
NORR/NEDC BOULDER

UT Hours

▲ Local Midnight ▲ Local Noon

SOLAR-TERRESTRIAL ENVIRONMENT

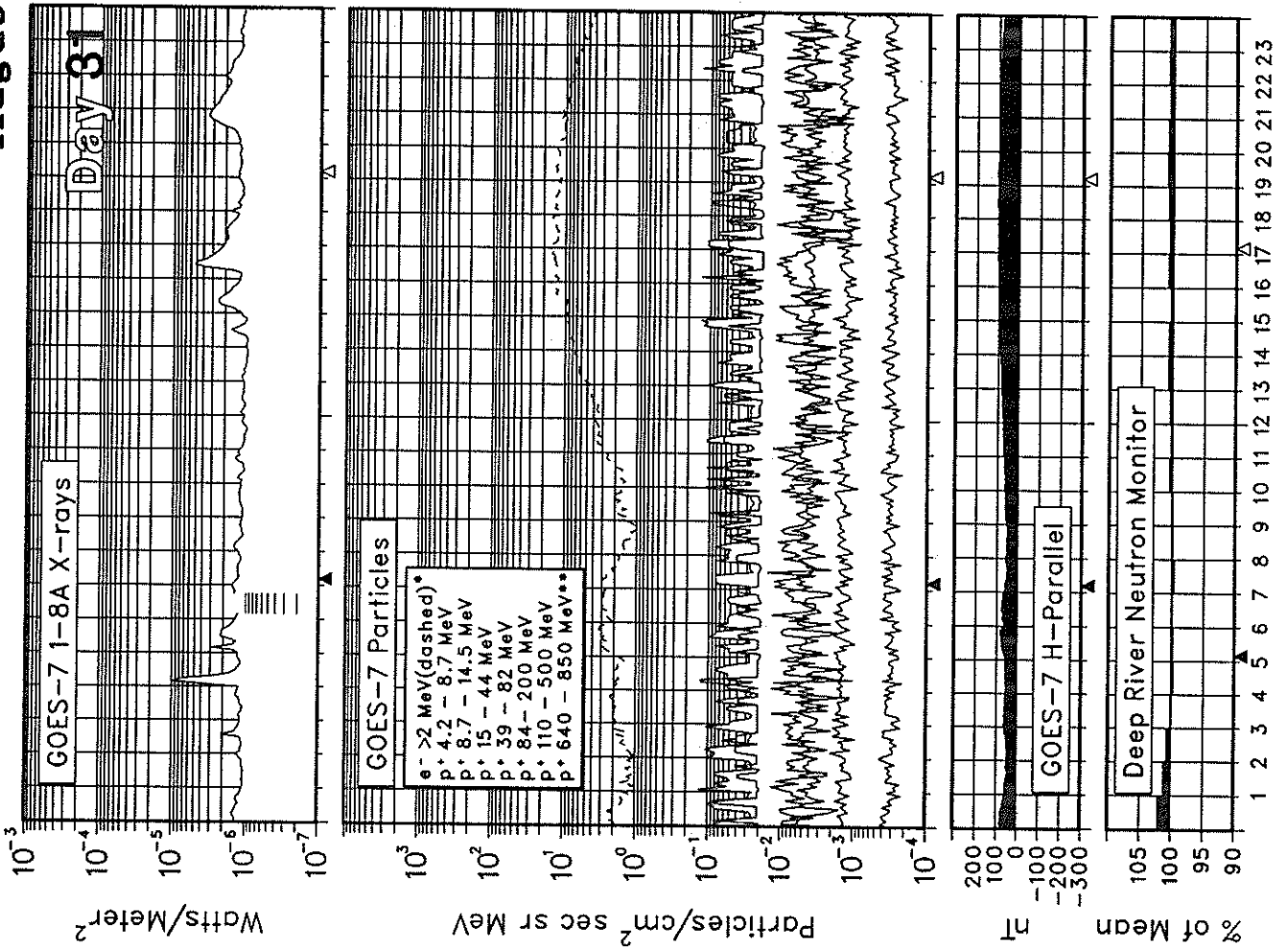
August 1990



NORR/NEEDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT

August 1990



* The y-axis units for the electron flux are Particles/cm² 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.

UT Hours

▲ Local Midnight △ Local Noon

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Aug 90

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages AUGUST 1990

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts								
						°Lat	°Long	Total	M	X		°Lat	°Long										
213	01	31	209	176	006	N11	W95	0	0	0	01	N11	W95	E	Solquiet, Magalert 01/01.								
						S21	W68	0	0	0		S21	W68	Q									
						S13	W52	0	0	0		S13	W52	Q									
						N10	W41	1	0	0		N10	W41	Q									
						S24	W30	8	0	0		S24	W30	E									
						S12	W26	2	0	0		S12	W26	E									
						S21	W17	0	0	0		S21	W17	Q									
						N16	E05	0	0	0		N16	E05	Q									
						N18	E16	0	0	0		N18	E16	E									
						S08	E06	0	0	0		S08	E06	Q									
						S09	E17	1	0	0		S09	E17	Q									
						N24	E73	1	0	0		N24	E73	E									
						N16	E74	0	0	0		N16	E74	Q									
						S07	E69	0	0	0		S07	E69	Q									
214	02	01	200	194	018	S21	W82	0	0	0	02	S21	W82	Q	Solquiet, Magalert 02/03.								
						S13	W66	0	0	0		S13	W66	Q									
						N09	W56	4	0	0		N09	W56	Q									
						S24	W44	6	1	0		S24	W44	E									
						S12	W42	1	0	0		S12	W42	Q									
						S15	W00	0	0	0		S15	W00	Q									
						N15	W08	0	0	0		N15	W08	Q									
						N18	E04	0	0	0		N18	E04	Q									
						S08	E03	1	0	0		S08	E03	E									
						N25	E60	4	0	0		N25	E60	E									
						N16	E62	1	0	0		N16	E62	E									
						S07	E53	0	0	0		S07	E53	Q									
						Presto: ²		Boulder	Proton event began 01/0005 UT, maximum of 230 particles/cm ² -s-ster at greater than 10 MeV 01/2015 UT, in progress.														
								Kakioka:	Magstorm begins 01/0741 UT.														
215	03	02	199	199	010	S13	W79	0	0	0	03	S13	W79	Q	Solquiet, Magnil.								
						N09	W69	4	0	0		N09	W69	Q									
						S25	W58	9	0	0		S25	W58	E									
						S12	W54	0	0	0		S12	W54	Q									
						N15	W22	0	0	0		N15	W22	Q									
						N18	W08	0	0	0		N18	W08	Q									
						S08	W10	0	0	0		S08	W10	Q									
						N25	E47	2	0	0		N25	E47	E									
						N16	E50	1	0	0		N16	E50	E									
						S06	E40	0	0	0		S06	E40	Q									
						N24	E67	0	0	0		N24	E67	Q									
						N07	E57	0	0	0		N07	E57	Q									
						N10	W54	0	0	0		N10	W54	Q									
						216	04	03	211	186		009	N09	W81		1	0	0	04	N09	W81	E	Solalert, Magquiet.
S26	W71	5	0	0	S26						W71		E										
S12	W68	0	0	0	S12						W68		Q										
N15	W35	0	0	0	N15						W35		Q										
N19	W22	0	0	0	N19						W22		Q										
S07	W22	0	0	0	S07						W22		Q										
N24	E35	0	0	0	N24						E35		E										
N17	E36	1	0	0	N17						E36		E										
S06	E25	0	0	0	S06						E25		Q										
N23	E56	1	0	0	N23						E56		Q										
N06	E43	0	0	0	N06						E43		Q										
S10	W34	0	0	0	S10						W34		Q										
217	05	04	176	183	008						S25		W82	2	0	0	05	S25		W82	E	Solalert, Magquiet.	
											S11		W82	0	0	0		S11		W82	Q		
						N14	W48	0	0	0	N14	W48	Q										

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Aug 90

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages AUGUST 1990

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
222	10	09				N14 E53	9	0	0	10	N14 E53	E			
						N11 E67	0	0	0		N11 E67	Q			
						S10 E47	1	0	0		S10 E47	Q			
						N15 W86	0	0	0		N15 W86	Q			
						S35 E55	2	0	0		S35 E55	Q			
						N19 E78	0	0	0		N19 E78	Q			
						S34 E39	0	0	0		S34 E39	Q			
223	11	10	212	178	007	N23 W54	1	0	0	11	N23 W54	Q	Solquiet, Magquiet.		
						N16 W55	0	0	0		N16 W55	Q			
						N22 W39	4	0	0		N22 W39	Q			
						S18 W71	0	0	0		S18 W71	Q			
						S23 W65	0	0	0		S23 W65	Q			
						S14 E10	0	0	0		S14 E10	Q			
						N14 E39	5	0	0		N14 E39	E			
						N12 E53	0	0	0		N12 E53	Q			
						S10 E36	0	0	0		S10 E36	Q			
						S36 E43	0	0	0		S36 E43	Q			
						N18 E68	3	1	0		N18 E68	E			
						S34 E27	0	0	0		S34 E27	Q			
						S18 E07	1	0	0		S18 E07	Q			
						Presto: ² Boulder Tenflare 1500 flux units 10/1808 UT duration 37 minutes.									
224	12	11	238	180	010	N22 W66	0	0	0	12	N22 W66	Q	Solalert, Magquiet.		
						N16 W67	2	0	0		N16 W67	Q			
						N22 W55	0	0	0		N22 W55	Q			
						S17 W83	0	0	0		S17 W83	Q			
						S22 W79	0	0	0		S22 W79	Q			
						S13 E09	0	0	0		S13 E09	Q			
						N14 E25	0	0	0		N14 E25	Q			
						N12 E39	1	0	0		N12 E39	Q			
						S10 E21	1	0	0		S10 E21	Q			
						N18 E57	1	0	0		N18 E57	E			
						S34 E13	0	0	0		S34 E13	Q			
						S18 W08	0	0	0		S18 W08	Q			
						S14 E68	0	0	0		S14 E68	Q			
						S06 W58	0	0	0		S06 W58	Q			
						N03 E54	0	0	0		N03 E54	Q			
						N23 E83	1	0	0		N23 E83	Q			
225	13	12	234	181	006	N22 W80	1	0	0	13	N22 W80	Q	Solnil, Magquiet.		
						N15 W82	0	0	0		N15 W82	Q			
						S12 W05	0	0	0		S12 W05	Q			
						N13 E11	1	0	0		N13 E11	Q			
						N12 E25	5	0	0		N12 E25	E			
						S09 E07	0	0	0		S09 E07	Q			
						N18 E44	3	0	0		N18 E44	E			
						S35 E02	0	0	0		S35 E02	Q			
						S18 W21	0	0	0		S18 W21	Q			
						S15 E54	0	0	0		S15 E54	Q			
						S07 W70	0	0	0		S07 W70	Q			
						N03 E40	0	0	0		N03 E40	Q			
						N23 E69	0	0	0		N23 E69	Q			
						N18 W15	0	0	0		N18 W15	Q			
						S02 E47	0	0	0		S02 E47	Q			
226	14	13	216	185	013	S12 W17	0	0	0	14	S12 W17	Q	Solalert 14/XX, Magquiet.		
						N14 W02	2	1	0		N14 W02	E			
						N12 E11	7	1	0		N12 E11	A			
						S10 W07	1	0	0		S10 W07	Q			

ALERT PERIODS
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Summary of the Geoalert Messages AUGUST 1990

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
226	14	13				N18	E31	6	0	0	14	N18	E31	E	
						S18	W35	0	0	0		S18	W35	Q	
						S15	E42	0	0	0		S15	E42	Q	
						N04	E26	0	0	0		N04	E26	Q	
						N22	E58	2	0	0		N22	E58	Q	
						S02	E32	0	0	0		S02	E32	Q	
						S27	E77	0	0	0		S27	E77	Q	
Presto: ² Meudon Majorflare N12 E19 began 13/1415 UT, in progress. Meudon Type IV radio burst at Nancay began 13/1318 UT duration 22 minutes.															
227	15	14	297	186	016	S12	W31	0	0	0	15	S12	W31	Q	Solalert 15/XX, Magalert 15/16.
						N14	W14	2	0	0		N14	W14	E	
						N12	W01	1	0	0		N12	W01	A	
						S09	W21	0	0	0		S09	W21	E	
						N18	E18	1	0	0		N18	E18	Q	
						S17	W48	0	0	0		S17	W48	Q	
						S16	E29	0	0	0		S16	E29	Q	
						N03	E13	0	0	0		N03	E13	Q	
						N22	E45	3	0	0		N22	E45	Q	
						S02	E19	1	0	0		S02	E19	Q	
						S27	E63	0	0	0		S27	E63	Q	
						N06	W30	0	0	0		N06	W30	Q	
						S10	E60	0	0	0		S10	E60	Q	
						N11	E72	0	0	0		N11	E72	E	
N10	E28	0	0	0	N10	E28	Q								
228	16	15	299	192	021	S13	W45	1	0	0	16	S13	W45	Q	Solalert 16/XX, Magalert 16/XX.
						N14	W27	0	0	0		N14	W27	E	
						N13	W16	0	0	0		N13	W16	A	
						S10	W34	0	0	0		S10	W34	Q	
						N18	E06	0	0	0		N18	E06	Q	
						S18	W56	0	0	0		S18	W56	Q	
						S16	E17	2	0	0		S16	E17	Q	
						N03	W01	0	0	0		N03	W01	Q	
						N22	E30	0	0	0		N22	E30	Q	
						S02	E04	0	0	0		S02	E04	Q	
						S27	E51	0	0	0		S27	E51	E	
						N06	W44	1	0	0		N06	W44	Q	
						S10	E46	0	0	0		S10	E46	Q	
						N11	E62	0	0	0		N11	E62	E	
N10	E15	0	0	0	N10	E15	Q								
S19	E31	0	0	0	S19	E31	Q								
229	17	16	310	204	021	S12	W58	0	0	0	17	S12	W58	Q	Solalert 17/XX, Magalert 17/XX.
						N13	W42	1	0	0		N13	W42	Q	
						N13	W29	2	0	0		N13	W29	A	
						S10	W48	0	0	0		S10	W48	Q	
						N18	W08	0	0	0		N18	W08	Q	
						S16	E04	4	0	0		S16	E04	E	
						N03	W14	1	0	0		N03	W14	Q	
						N23	E16	1	0	0		N23	E16	Q	
						S02	W09	0	0	0		S02	W09	Q	
						S27	E38	0	0	0		S27	E38	E	
						N06	W58	0	0	0		N06	W58	Q	
						S10	E33	1	0	0		S10	E33	Q	
						N11	E48	0	0	0		N11	E48	E	
						N09	E01	2	0	0		N09	E01	Q	
N22	E06	0	0	0	N22	E06	Q								
N13	E67	1	0	0	N13	E67	Q								
230	18	17	380	221	015	S13	W71	1	0	0	18	S13	W71	Q	Solalert 18/XX, Magnil.
						N13	W57	0	0	0		N13	W57	Q	

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Summary of the Geoalert Messages **AUGUST 1990**

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
233	21	20				N05	W70	0	0	0	21	N05	W70	Q	
						N23	W36	0	0	0		N23	W36	Q	
						S28	W11	0	0	0		S28	W11	Q	
						S11	W21	4	0	0		S11	W21	E	
						N12	W05	0	0	0		N12	W05	Q	
						N06	W56	2	0	0		N06	W56	E	
						N13	E16	0	0	0		N13	E16	Q	
						S18	W62	0	0	0		S18	W62	Q	
						S16	W24	0	0	0		S16	W24	Q	
						S13	E47	0	0	0		S13	E47	E	
						S34	W41	0	0	0		S34	W41	Q	
						N21	E15	1	0	0		N21	E15	Q	
						S22	E52	2	0	0		S22	E52	E	
						S27	E65	0	0	0		S26	E65	Q	
						S06	E74	0	0	0		S06	E74	Q	
						N11	W19	0	0	0		N11	W19	Q	
234	22	21	338	293	024	N16	W73	0	0	0	22	N16	W73	Q	Solalert 22/XX, Magalert 22/22 Filament.
						N23	W51	0	0	0		N23	W51	Q	
						S28	W25	0	0	0		S28	W25	Q	
						S11	W36	0	0	0		S11	W36	E	
						N11	W18	0	0	0		N11	W18	Q	
						N07	W71	5	0	0		N07	W71	E	
						N12	E02	1	0	0		N12	E02	Q	
						S18	W76	3	0	0		S18	W76	Q	
						S16	W39	0	0	0		S16	W39	Q	
						S13	E34	3	1	0		S13	E34	E	
						S33	W51	1	0	0		S33	W51	Q	
						N21	E04	0	0	0		N21	E04	Q	
						S22	E39	7	1	0		S22	E39	E	
						S26	E52	1	0	0		S26	E52	Q	
						S07	E61	0	0	0		S07	E61	Q	
						S28	E64	0	0	0		S28	E64	Q	
						Presto: ² Boulder Tenflare 320 flux units 21/0928 UT duration 2 minutes. Kakioka Magstorm begins 21/1842 UT.									
235	23	22	323	313	035	N16	W86	0	0	0	23	N16	W86	Q	Solalert 23/XX, Magalert 23/23.
						S28	W38	0	0	0		S28	W38	Q	
						S12	W48	0	0	0		S12	W48	P	
						N09	W31	1	0	0		N09	W31	Q	
						N06	W84	4	0	0		N06	W84	E	
						N13	W11	0	0	0		N13	W11	Q	
						S17	W52	0	0	0		S17	W52	Q	
						S12	E20	7	0	0		S12	E20	E	
						S34	W64	0	0	0		S34	W64	Q	
						N22	W08	0	0	0		N22	W08	Q	
						S22	E23	11	0	0		S22	E23	E	
						S25	E38	0	0	0		S25	E38	Q	
						S07	E48	0	0	0		S07	E48	Q	
						S27	E52	1	0	0		S27	E52	Q	
						N12	E63	1	0	0		N12	E63	Q	
						N12	E17	0	0	0		N12	E17	Q	
236	24	23	372	311	042	S28	W48	0	0	0	24	S28	W48	Q	Solalert, Magalert.
						S11	W61	1	0	0		S11	W61	E	
						N09	W44	0	0	0		N09	W44	Q	
						N12	W24	0	0	0		N12	W24	Q	
						S13	E05	7	0	0		S13	E05	E	
						S34	W77	0	0	0		S34	W77	Q	
						N22	W24	0	0	0		N22	W24	Q	
						S21	E09	1	0	0		S21	E09	E	
						S24	E25	0	0	0		S24	E25	Q	

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Summary of the Geolert Messages **AUGUST 1990**

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geolerts	
						°Lat	°Long	Total	M	X		°Lat	°Long			
236	24	23				S07	E35	0	0	0	24	S07	E35	Q		
						S27	E38	3	0	0		S27	E38	Q		
						N13	E49	0	0	0		N13	E49	Q		
						N13	E04	0	0	0		N13	E04	Q		
						N14	E77	2	0	0		N14	E77	Q		
237	25	24	375	314	019	S28	W62	0	0	0	25	S28	W62	Q	Solalert 25/XX, Magalert 25/25.	
						S12	W74	3	0	0		S12	W74	E		
						N09	W56	0	0	0		N09	W56	Q		
						N13	W34	0	0	0		N13	W34	Q		
						S12	W07	2	1	0		S12	W07	E		
						N22	W35	0	0	0		N22	W35	Q		
						S21	W03	1	0	0		S21	W03	E		
						S22	E12	1	0	0		S22	E12	Q		
						S07	E21	1	0	0		S07	E21	Q		
						S27	E17	6	1	0		S27	E17	E		
						N13	E44	0	0	0		N13	E44	Q		
						N12	W10	0	0	0		N12	W10	Q		
						N14	E65	7	0	0		N14	E65	Q		
						N24	W03	0	0	0		N24	W03	Q		
						S13	W20	0	0	0		S13	W20	Q		
						Presto: ² Meudon Flare S12 E02 began 24/0920 UT, in progress.										
238	26	25	361	294	006	S28	W75	0	0	0	26	S28	W75	Q	Solalert 26/XX, Magnil.	
						S12	W87	1	0	0		S12	W87	E		
						N09	W71	1	0	0		N09	W71	Q		
						N12	W49	0	0	0		N12	W49	Q		
						S12	W19	6	0	0		S12	W19	E		
						N22	W49	0	0	0		N22	W49	Q		
						S22	W16	4	0	0		S22	W16	E		
						S23	W02	1	0	0		S23	W02	Q		
						S07	E08	1	0	0		S07	E08	Q		
						S27	E07	0	0	0		S27	E07	E		
						N15	E28	0	0	0		N15	E28	Q		
						N10	W24	1	0	0		N10	W24	Q		
						N14	E51	5	0	0		N14	E51	E		
						N24	W15	0	0	0		N24	W15	Q		
						S13	W33	1	0	0		S13	W33	Q		
						N17	W68	0	0	0		N17	W68	Q		
239	27	26	314	315	040	S28	W88	0	0	0	27	S28	W88	Q	Solalert 27/XX, Magalert 27/27.	
						N09	W84	0	0	0		N09	W84	Q		
						N11	W66	0	0	0		N11	W66	Q		
						S13	W32	3	0	0		S13	W32	E		
						S22	W29	5	0	0		S22	W29	E		
						S23	W14	3	1	0		S23	W14	E		
						S08	W05	0	0	0		S08	W05	Q		
						S27	W04	2	0	0		S27	W04	E		
						N14	E14	0	0	0		N14	E14	Q		
						N14	E38	14	1	0		N14	E38	E		
						S13	W48	1	0	0		S13	W48	Q		
						N17	W81	0	0	0		N17	W81	Q		
240	28	27	268	257	017	N09	W96	0	0	0	28	N09	W96	Q		Solalert 28/XX, Magnil.
						N11	W82	0	0	0		N11	W82	Q		
						S13	W44	3	0	0		S13	W44	E		
						S22	W43	4	1	0		S22	W43	E		
						S23	W27	0	0	0		S23	W27	E		
						S08	W19	2	0	0		S08	W19	E		
						S27	W17	1	0	0		S27	W17	E		
						N14	E23	16	1	1		N14	E23	A		
						S13	W66	1	0	0		S13	W66	Q		

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Summary of the Geoalert Messages AUGUST 1990

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
240	28	27				S17 E64	0	0	0	28	S17 E64	Q			
						S11 E81	0	0	0		S11 E81	Q			
						N17 E84	0	0	0		N17 E84	Q			
		Presto: ² Toyokawa Tenflare 190 flux units 27/0359 UT duration 7 minutes. Boulder X-ray event X3/2B N14 E23 27/2054 UT duration 37 minutes. Boulder Tenflare 710 flux units 27/2056 UT duration 10 minutes. Sydney Culgoora Importance three Type II sweep began 27/2058 UT, in progress. Importance one Type IV sweep began 27/2058 UT, in progress.													
241	29	28	203	240	006	S12 W58	5	0	0	29	S12 W58	E	Solalert 29/XX,		
						S21 W55	5	0	0		S21 W55	E	Magalert.		
						S23 W42	4	0	0		S23 W42	E			
						S08 W32	1	0	0		S08 W32	Q			
						S27 W30	0	0	0		S27 W30	E			
						N13 E10	16	5	0		N13 E10	A			
						S15 E49	0	0	0		S15 E49	Q			
						S12 E64	0	0	0		S12 E64	Q			
						N16 E68	0	0	0		N16 E68	Q			
242	30	29	234	216	009	S12 W71	8	0	0	30	S12 W71	E	Solalert 30/XX,		
						S20 W66	4	1	0		S20 W66	E	Magalert 30/XX.		
						S23 W53	2	0	0		S23 W53	Q			
						S08 W45	2	0	0		S08 W45	Q			
						S26 W42	0	0	0		S26 W42	Q			
						N13 W03	5	2	0		N13 W03	A			
						S16 E37	0	0	0		S16 E37	Q			
						S13 E53	3	0	0		S13 E53	Q			
						N16 E56	0	0	0		N16 E56	Q			
						N16 E07	0	0	0		N16 E07	Q			
243	31	30	275	206	029	S12 W83	4	0	0	31	S12 W83	E	Solalert 31/XX,		
						S21 W80	7	0	0		S21 W80	E	Magalert 31/XX.		
						S24 W68	1	0	0		S24 W68	Q			
						S08 W58	4	0	0		S08 W58	Q			
						S27 W50	1	0	0		S27 W50	Q			
						N13 W42	0	0	0		N13 W42	Q			
						N13 W16	12	3	0		N13 W16	A			
						S16 E24	2	0	0		S16 E24	Q			
						S13 E38	1	0	0		S13 E38	Q			
						N16 E43	0	0	0		N16 E43	Q			
						N16 W07	0	0	0		N16 W07	Q			
						S13 E64	0	0	0		S13 E64	Q			
						S21 E32	0	0	0		S21 E32	Q			
						N05 W01	0	0	0		N05 W01	Q			
						N13 E56	1	0	0		N13 E56	Q			
244	01	31	241	182	024	S23 W93	5	1	0	01	S23 W93	E	Solalert 01/XX,		
						S23 W79	0	0	0		S23 W79	Q	Magnil.		
						S08 W73	0	0	0		S08 W73	Q			
						S27 W63	0	0	0		S27 W63	Q			
						N13 W32	6	0	0		N13 W32	A			
						S15 E11	0	0	0		S15 E11	Q			
						S13 E24	2	0	0		S13 E24	Q			
						N17 E30	0	0	0		N17 E30	Q			
						N13 W20	2	0	0		N13 W20	Q			
						S13 E51	0	0	0		S13 E51	Q			
						S21 E18	1	0	0		S21 E18	Q			
						N13 E43	4	0	0		N13 E43	E			
						S14 E35	0	0	0		S14 E35	Q			

¹Q = quiet, E = eruptive, A = active, P = proton.

²Presto message is a rapid report of a major event.

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Sep 89	Oct	Nov	Dec	Jan 90	Feb	Mar	Apr [†]	May [†]	Jun [†]	Jul [†]	Aug [†]
01	147	129	153	198	186	171	173	100	70	96	272	146
02	171	150	160	182	176	161	171	114	59	80	253	175
03	180	167	191	203	166	124	163	113	61	73	245	151
04	204	186	216	182	174	113	126	127	86	77	229	137
05	212	209	228	192	164	97	98	132	80	79	202	128
06	230	189	245	184	144	80	104	138	106	96	186	124
07	267	168	233	217	129	82	105	128	132	107	173	120
08	261	166	215	167	138	95	88	116	138	107	135	136
09	296	187	214	161	125	103	71	88	133	87	102	145
10	270	178	203	148	134	79	80	77	116	111	88	160
11	280	191	179	104	164	75	73	83	126	131	106	161
12	264	154	173	99	172	80	85	77	146	115	110	160
13	248	148	153	107	179	85	83	123	144	115	114	192
14	215	159	140	100	147	75	90	142	141	111	118	215
15	207	189	132	84	157	78	110	171	144	102	98	229
16	180	209	124	101	152	64	129	170	157	110	95	232
17	159	206	124	120	164	54	123	190	167	100	87	269
18	155	184	134	123	177	77	167	203	170	83	57	270
19	152	159	124	131	199	107	202	213	187	79	61	278
20	137	140	141	127	236	134	217	206	187	73	81	295
21	111	152	159	111	217	159	211	212	193	57	123	278
22	109	158	162	150	208	191	195	214	187	71	143	262
23	103	145	157	201	200	239	206	174	160	64	165	281
24	75	131	160	191	191	249	209	157	158	85	194	276
25	80	121	175	209	206	245	204	160	146	94	194	263
26	93	109	184	221	203	234	188	118	134	103	186	214
27	101	97	183	240	211	217	168	124	139	140	177	188
28	111	116	183	249	193	187	129	103	116	184	159	170
29	134	131	164	213	185		132	94	118	203	144	186
30	150	156	182	214	198		133	126	90	224	117	196
31		157		201	201		115		101		142	161
Mean	176.7	159.4	173.0	165.5	177.3	130.5	140.3	139.8	132.0	105.2	147.0	199.9

[†] = preliminary. The yearly mean sunspot number equaled 157.6 for 1989.

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

Day	Sep 89	Oct	Nov	Dec	Jan 90	Feb	Mar	Apr	May	Jun	Jul	Aug
01	223.8	198.4	211.4	223.7*	209.3	200.8	200.0	159.2	129.0	140.6	248.3	199.0
02	233.3	208.5	216.0	213.7	208.6	177.8	192.7	153.3	129.2	141.2	267.6	208.6
03	243.0*	222.4	217.6	205.6	192.5	157.9	176.3*	151.6	125.2	146.1	253.8	192.4
04	245.0	234.1	223.9	212.9	189.2*	154.8	168.9	148.6*	123.6	148.1	238.3*	191.2
05	273.3	223.2	235.4	209.7	187.1	150.9	161.7	156.5	130.6	153.7	231.6	180.8
06	288.4	220.5	255.3	209.7	180.9	147.5	163.8*	150.2	151.0	161.4	221.8	174.6
07	303.4	225.7	207.3*	221.5	177.1	144.3	168.1	155.0	155.5	183.6	215.7	172.1
08	302.1	210.1	270.9	203.6	170.9	142.2	157.1*	152.3	170.7	195.5	189.6	184.8
09	311.5	201.9	257.2	194.6	160.6	142.0	150.9*	146.8	174.6	203.9*	170.9	183.2
10	303.3	195.5	246.3*	177.1	167.2	148.5	149.0	149.3	195.4	207.5*	164.0	186.3
11	299.3	191.5	249.1	171.7	169.5	134.9	142.5	160.8	205.4*	217.2	160.2	187.1
12	292.2	203.2	253.5	164.9	170.0	140.0	146.1	169.9	215.2	221.8*	160.9	188.2
13	249.3	224.2	240.3	163.2	167.0	142.8	146.3	195.5*	225.8	208.8	161.5	192.5
14	244.9	225.9	243.0	161.8	165.9	149.5	149.8*	215.7	224.2*	206.8	155.4	188.2*
15	226.0	225.4	216.5	165.5	184.9	148.8	164.2*	222.9	246.6	196.3	149.1	199.6
16	233.7	237.0	216.2	164.1	187.6	148.8	178.1	226.3*	251.5	189.9	146.5	211.0
17	216.2	225.3	215.0	176.0	186.8	151.6	182.0	236.7*	248.9	187.5	147.6	228.4
18	208.6	221.3*	221.6J	185.9	217.2	161.1	196.4	243.0	271.8	169.5	144.7	246.1
19	197.0*	214.7J	229.2	188.2	233.1	180.3	216.3	244.2*	280.0	163.5	145.3	268.0*
20	173.1	205.4	223.7	189.3	238.2	189.5	223.9*	257.1	272.5	161.2	154.0	288.7
21	161.8	206.2	229.4	189.9	250.8*	211.9	227.6	239.6	259.2	155.8	159.2	298.3
22	159.3	217.8	222.0	199.9	233.7	215.7	243.1*	232.8	250.0	145.2	166.0*	322.8*
23	157.5	210.4	213.4	213.8	233.6	216.6	245.3	226.3	239.5	139.1	180.4	322.7
24	157.0	214.2	208.8	231.0	239.8	231.5	231.3	217.4	209.2	143.8	186.6	329.2
25	166.8	183.3*	216.0	248.0*	234.6	225.3	223.9*	198.3	189.1	149.3	213.6	303.9
26	182.2*	171.7	234.3	252.6	238.8	213.3	226.9	188.9*	186.3	154.5	209.9	285.1*
27	199.4	176.9	239.4	274.8	232.2	224.1	215.1	169.8	164.6	173.4*	197.2	269.2
28	194.3	173.0	231.3	246.4	230.1	222.0	206.0	152.7	159.3	187.7	193.1	250.2
29	204.7*	172.0	215.1	242.7*	227.8		184.1	140.9	144.8	210.8	180.3	225.2
30	202.0	186.3	240.9	258.2*	211.4		186.5E	136.9	142.5*	226.6	188.3	210.4
31		202.0*		236.7	209.3		172.8		142.5*		183.4	182.9*
Mean	228.4	207.4	230.0	206.3	203.4	174.1	187.0	186.6	194.0	176.3	186.6	228.1

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

DAILY SOLAR INDICES

29
Aug. 90

August 1990

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit									
			Int	Amer		PALE (15400)	PALE (8800)	PALE (4995)	Ottawa (2800)	PALE (2695)	PALE (1415)	PALE (610)	PALE (410)	PALE (245)	
01	213	23	146	149	193.2	564	324	253	199.0	193	133	65	41	18	
02	214	24	175	151	202.6	553	320	252	208.6	192	127	74	41	18	
03	215	25	151	142	186.9	543	322	245	192.4	209	122	71	40	18	
04	216	26	137	131	185.8	535	314	230	191.2	177	125	73	41	20	
05	217	27	128	125	175.8	544	305	223	180.8	173	121	73	40	18	
06	218	1	124	116	169.8	541	293	211	174.6	164	116	72	40	16	
07	219	2	120	121	167.4	543	302	229	172.1	168	118	75	42	19	
08	220	3	136	125	179.8	549	308	227	184.8	176	122	73	42	19	
09	221	4	145	145	178.3	552	309	233	183.2	178	121	74	42	20	
10	222	5	160	161	181.3	557	311	232	186.3	179	120	73	42	20	
11	223	6	161	162	182.2	551	307	229	187.1	177	116	70	40	15	
12	224	7	160	175	183.3	559	313	237	188.2	187	127	72	44	28	
13	225	8	192	182	187.5	559	309	233	192.5	183	120	63	41	23	
14	226	9	215	210	183.4*	548	289	222	188.2*	180	123	73	42	19	
15	227	10	229	218	194.6	544	319	244	199.6	195	131	84	48	19	
16	228	11	232	226	205.9	631	321	265	211.0	210	140	88	43	22	
17	229	12	269	262	222.8	573	349	284	228.4	223	143	81	53	28	
18	230	13	270	273	240.2	580	363	306	246.1	244	158	82	49	34	
19	231	14	278	277	261.7*	590	385	329	268.0*	263	167	84	56	61	
20	232	15	295	280	282.0	592	394	345	288.7	269	188	88	54	--	
21	233	16	278	262	291.5	609	428	376	298.3	292	176	100	84	48	
22	234	17	262	249	315.6*	616	437	388	322.8*	303	178	80	50	26	
23	235	18	281	266	315.7	610	436	392	322.7	310	178	86	53	50	
24	236	19	276	275	322.1	608	398	362	329.2	295	176	89	61	52	
25	237	20	263	241	297.5	605	405	364	303.9	290	180	100	56	--	
26	238	21	214	217	279.2*	605	405	364	285.1*	290	180	100	56	34	
27	239	22	188	194	263.8	577	371	322	269.2	254	152	82	53	28	
28	240	23	170	163	245.3	601	351	301	250.2	237	164	88	49	29	
29	241	24	186	172	220.8	568	352	276	225.2	213	137	86	55	--	
30	242	25	196	177	206.4	558	332	249	210.4	189	128	77	52	--	
31	243	26	161	152	179.6*	553	315	225	182.9*	176	120	79	47	35	
Mean			199.9	193.5	222.6	572	345	279	228.1	219	142	80	48	27	

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.

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
1980	164	163	161	159	156	155	153	150	150	150	148	143
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	153
1990	151	153	153 (5)	151 (8)	148 (8)	146 (8)	145 (14)	143 (19)	139 (20)	135 (22)	132 (21)	129 (20)
1991	128 (21)	127 (21)	124 (23)	124 (28)	124 (29)	123 (25)	120 (22)	118 (20)	115 (17)	114 (15)	114 (16)	114 (18)

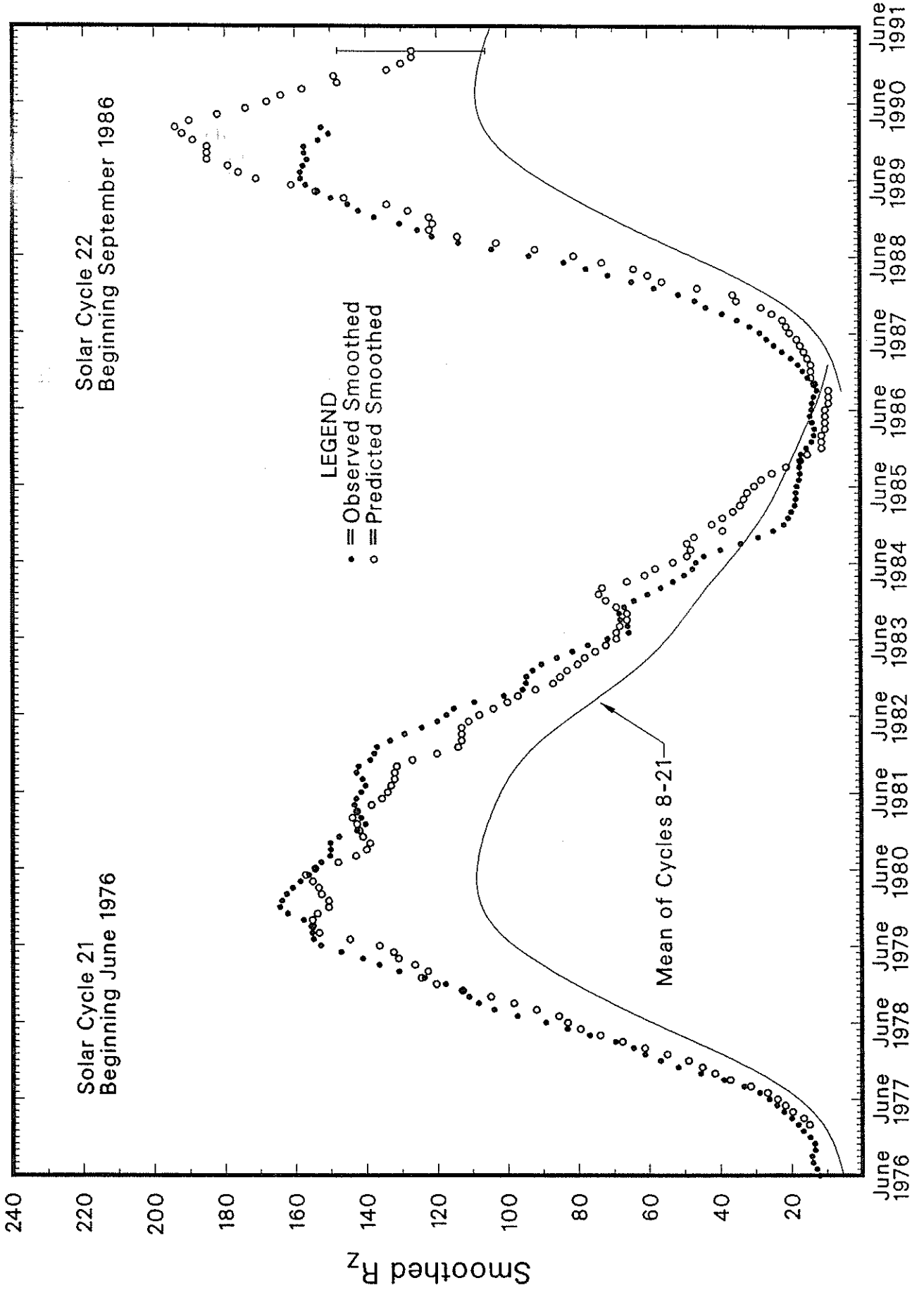
*September 1986 marks the onset of Sunspot Cycle 22.

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 March 1990 and on provisional numbers thereafter.

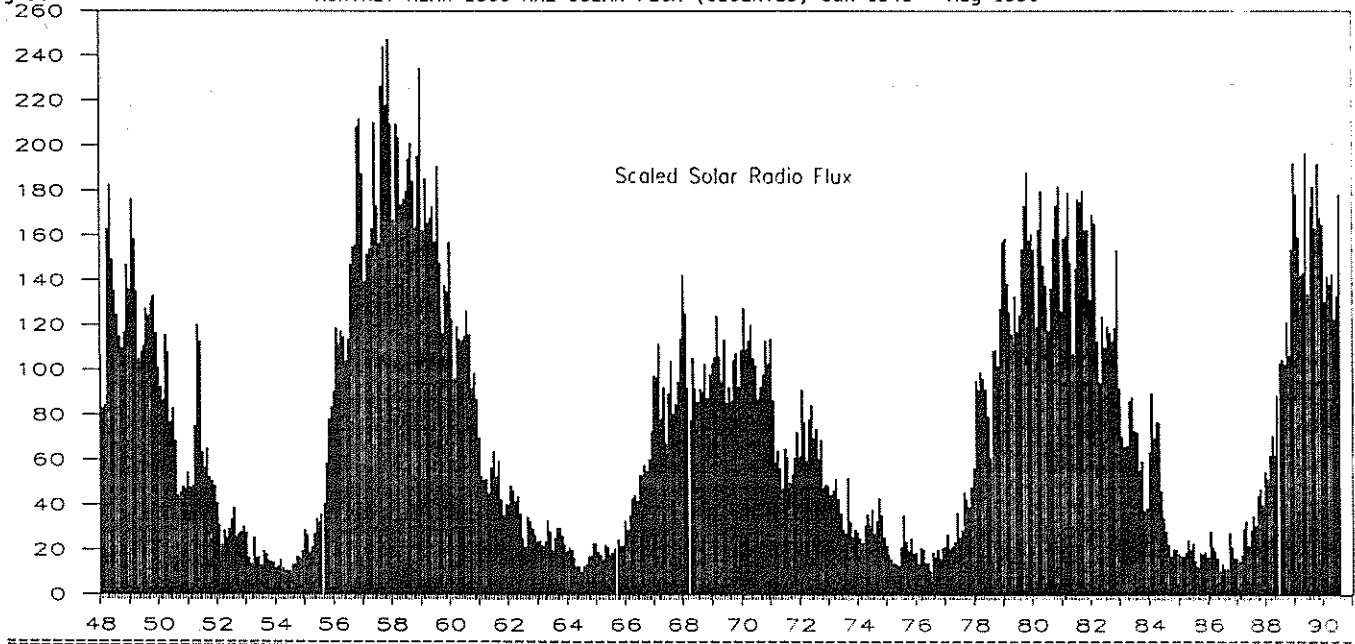
Table entries, with numbers in parentheses below them, denote predictions by the McNish-Lincoln method. (See page 9 in the July 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number from the predicted value generates the lower limit. Consider, for example, the February 1991 prediction. There exists a 90% chance that in February 1991 the actual smoothed sunspot number will fall somewhere between 106 and 148.

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



MONTHLY MEAN 2800 MHZ SOLAR FLUX (OBSERVED) Jan 1948 - Aug 1990



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1948	155.7	134.3	135.5	208.1	226.5	195.5	182.8	172.8	163.7	159.1	165.4	193.3	174.4
1949	183.5	220.2	203.9	182.5	154.9	157.5	159.9	175.2	172.5	178.2	180.4	165.2	177.8
1950	150.7	143.3	137.8	164.3	157.1	128.7	134.1	120.9	98.6	99.9	101.9	101.1	128.2
1951	107.9	101.9	102.5	127.1	168.6	161.7	116.3	109.8	117.8	106.0	104.4	102.4	118.9
1952	95.4	86.2	78.5	84.0	80.9	84.8	88.8	93.3	81.5	82.8	83.4	85.7	85.4
1953	83.2	72.8	70.4	81.0	72.5	73.0	69.8	75.5	74.3	71.9	71.4	70.8	73.9
1954	68.7	69.2	71.9	68.7	68.0	67.3	67.7	69.9	70.1	73.2	72.6	75.5	70.2
1955	84.3	82.0	74.8	77.3	82.8	88.8	87.3	90.7	91.1	111.8	130.0	134.6	95.0
1956	141.2	167.2	160.6	165.9	163.4	154.0	162.8	193.8	200.9	201.6	250.4	253.7	184.6
1957	231.2	186.7	197.8	200.0	208.5	252.1	218.0	202.3	267.1	283.1	259.2	286.5	232.7
1958	251.5	212.2	251.5	245.9	218.6	220.5	224.1	237.0	243.5	228.0	209.2	238.2	231.7
1959	274.5	207.9	229.2	210.6	212.7	217.5	203.0	234.2	194.3	165.1	184.8	182.2	209.7
1960	202.6	170.9	146.8	167.6	162.7	161.9	163.9	174.4	164.5	142.3	148.9	138.1	162.0
1961	122.0	106.4	104.8	105.0	99.3	109.9	116.5	106.2	112.7	96.7	90.3	94.8	105.4
1962	94.9	102.2	100.3	96.2	97.9	91.0	80.7	77.3	89.5	87.8	84.9	82.0	90.4
1963	79.5	79.7	77.8	79.5	87.8	83.5	75.9	80.9	85.1	85.1	81.7	78.4	81.2
1964	75.4	76.8	75.9	72.6	69.5	69.0	67.0	69.3	70.2	73.4	73.7	78.8	72.6
1965	78.6	75.2	74.1	72.0	78.2	77.0	74.3	74.8	76.6	80.2	77.7	77.8	76.4
1966	87.9	84.2	90.3	97.2	98.5	96.3	106.7	106.6	110.9	108.6	113.3	124.6	102.1
1967	147.7	147.0	160.6	129.9	143.0	120.2	140.3	153.7	132.1	136.1	145.3	163.0	143.2
1968	189.1	173.2	142.6	129.5	154.9	142.3	137.2	142.2	141.0	152.5	138.5	148.4	149.3
1969	152.7	155.2	172.3	155.5	145.4	162.2	136.6	143.0	137.3	154.0	156.7	143.6	151.2
1970	158.3	175.4	158.4	162.0	168.4	154.9	152.0	138.2	143.2	148.3	162.0	152.8	156.2
1971	162.6	137.8	111.9	116.7	109.9	101.7	117.4	114.1	104.0	107.2	114.0	124.5	118.5
1972	114.8	141.8	128.5	112.9	129.6	135.4	122.0	125.7	113.6	121.1	101.6	102.9	120.8
1973	102.2	98.7	100.4	105.0	97.0	91.2	84.5	82.9	105.6	87.7	81.5	84.2	93.4
1974	83.1	80.9	79.2	86.1	90.6	86.3	92.5	83.0	87.8	97.6	90.3	81.1	86.5
1975	77.5	74.2	72.4	70.7	70.1	69.7	77.2	90.4	79.6	75.7	80.8	74.6	76.1
1976	74.7	70.5	76.7	76.3	70.6	70.6	67.5	74.8	73.1	75.9	72.9	76.7	73.4
1977	77.4	82.3	76.6	77.6	79.6	91.5	81.1	84.3	99.9	96.9	93.7	102.1	86.9
1978	109.6	145.4	141.8	149.4	146.5	142.2	131.1	114.0	157.9	158.2	151.5	175.5	143.6
1979	203.0	204.1	185.8	173.8	165.2	180.3	165.9	172.7	200.2	217.9	231.7	203.5	192.0
1980	206.2	200.0	168.1	207.9	224.0	193.2	184.8	166.2	183.9	204.2	218.1	225.8	198.5
1981	174.6	204.5	205.3	223.2	194.6	156.9	191.9	220.6	219.5	224.3	207.8	207.8	202.6
1982	179.0	214.2	210.5	161.8	144.7	171.9	159.6	167.9	165.3	161.9	167.4	199.4	175.3
1983	142.3	122.6	118.6	118.9	137.1	138.6	125.0	124.4	109.0	112.4	92.5	93.4	119.6
1984	116.1	140.6	122.0	128.7	128.3	100.3	89.3	83.7	78.1	73.5	76.3	75.9	101.1
1985	74.5	73.7	73.3	75.1	80.2	76.1	78.7	71.5	69.5	74.7	74.2	74.8	74.7
1986	73.2	83.6	77.0	75.1	72.6	67.6	70.2	68.4	68.7	83.0	77.1	72.6	74.1
1987	72.5	71.5	74.0	84.9	87.8	77.9	84.2	90.0	86.1	98.1	101.2	94.4	85.3
1988	108.0	105.0	114.9	122.7	115.2	139.4	152.7	154.2	152.5	169.8	156.2	199.8	141.0
1989	235.4	222.4	205.1	189.6	190.1	239.6	181.9	217.1	225.9	208.7	235.1	213.0	231.7
1990	210.1	178.3	188.8	185.3	189.7	170.9	180.7	222.6					190.8*

*Preliminary Graph shows EFFECTIVE sunspot numbers--fluxes scaled by linear regression equation (1.08Flux - 62).

H α SOLAR FLARES

AUGUST 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
							Region	Day								Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	01	0026	0032U	0054	S07	E16	6184	08	2.2	28	SF		3	E		22		F
HOLL		0039	0045	0055	N26	E78	6185	08	7.1	16	SF		3	E		42		
GOES		0052	0106	0114						22		C 1.8						
GOES		0203	0209	0215						12		C 1.5						
LEAR		0500	0504	0514	N13	E74	6186	08	6.8	14	SF		3	E		17		
GOES		0804	0812	0815						11		C 1.9						
GOES		0923	0938	0953						30		C 7.0						
SVTO		1024	1028	1041	N30	E68	6185	08	6.8	17	SF		3	E		33		
RAMY		1156	1205	1218	S25	W40	6172	07	29.5	22	SF		3	E		38		F
SVTO		1203	1206	1213	S26	W38	6172	07	29.6	10	SF		3	E		18		H
SVTO		1415	1418	1421	S24	W41	6172	07	29.5	6	SF		3	E		41		
HOLL		1507	1507	1526	N08	W48	6171	07	29.1	19	SF		3	E		17		
RAMY		1546	1546	1555	S25	W41	6172	07	29.6	9	SF		3	E		23		
RAMY		1607	1706	1735	S25	W42	6172	07	29.5	88	SF		3	E		44		
HOLL		1651	1705	1740	S24	W40	6172			49	SF			E		10		K
HOLL		1651	1714	1740	S24	W40	6172	07	29.7	49	SF		3	E		50		FE
PALE		1652	1714	1736	S25	W40	6172	07	29.7	44	SF		3	E		81		F
RAMY		1708	1708	1714	N09	W52	6171	07	28.9	6	SF		3	E		23		
PALE		1802	1826	1900	S25	W40	6172	07	29.7	58	SF		3	E		69		
HOLL		1804	1826	1929	S26	W39	6172	07	29.8	85	SF		4	E		66		F
RAMY		1817	1817	1824	N10	W52	6171	07	28.9	7	SF		3	E		18		
HOLL		1853	1855	1900	N09	W51	6171	07	29.0	7	SF	C 3.3	4	E		17		
RAMY		1930	1935	1948	N27	E65	6185	08	6.9	18	SF		3	E		34		
HOLL		1931	1935	1947	N26	E68	6185	08	7.1	16	SF		4	E		48		
HOLL		1936	1943	2109	S25	W42	6172			93	SB			E		11		K
HOLL		1936	2002	2109	S25	W42	6172	07	29.7	93	SN M 1.6	4	E		79		FE	
HOLL		1937	1944	2039	S13	W36	6174	07	30.2	62	SF		4	E		32		F
RAMY		1941	1955	1959	S10	W35	6174	07	30.3	18	SF		3	E		29		F
RAMY		1949	1949	2012	N26	E67	6185	08	7.0	23	SF		3	E		35		
HOLL		1949	1955	2028	N25	E68	6185	08	7.1	39	SF		4	E		69		
PALE		2001E	2007U	2010	N26	E65	6185	08	6.9	90	SF		3	E		35		
HOLL		2120	2124	2208	S25	W42	6172			48	SN			E		37		K
HOLL		2120	2129	2208	S25	W42	6172	07	29.7	48	SN C 8.3	4	E		61		FE	
RAMY		2124	2129	2129D	S25	W44	6172	07	29.6	5D	SF		3	E		35		
GOES	02	0104	0108	0111						7		C 2.8						
LEAR		0114	0118	0207	S25	W46	6172	07	29.6	53	SF		2	E		41		
LEAR		0211	0238	0337D	S24	W47	6172	07	29.5	86D	SF		3	E		36		
LEAR		0256	0257	0305	N25	E64	6185	08	7.1	9	SF		3	E		44		
GOES		0529	0533	0536						7		C 2.4						
LEAR		0545E	0549U	0603	S26	W53	6172	07	29.2	18D	SF C 5.0	3	E		78			
GOES		0616	0619	0622						6		C 7.4						
SVTO		0801	0803	0808	S25	W50	6172	07	29.6	7	SF		3	E		24		F
SVTO		1004	1010	1019	N08	W60	6171	07	29.0	15	SF		3	E		52		
SVTO		1006	1010	1014	S27	W47	6172	07	29.8	8	SF C 4.2	3	E		33			
RAMY		1244	1245	1250	S24	W51	6172	07	29.7	6	SF		3	E		16		F
HOLL		1510	1515	1556	N18	E58	6186	08	7.0	46	SF C 2.3	3	E		78		FE	
RAMY		1518	1519	1528	N19	E57	6186	08	7.0	10	SF		3	E		16		
HOLL		1533	1535	1537	N11	W63	6171	07	29.0	4	SF		3	E		17		F
HOLL		1608	1611	1631	N09	W63	6171	07	29.0	23	SF		3	E		29		F
HOLL		1629	1629	1636	S25	W55	6172	07	29.5	7	SF C 2.9	3	E		12		F	
RAMY		1635	1635	1640	S25	W54	6172	07	29.6	5	SF		3	E		13		F
PALE		1824	1826	1844D	N24	E58	6185	08	7.2	20D	SF C 2.4	3	E		45		F	
HOLL		1825	1825	1843	N24	E58	6185	08	7.2	18	SF C 2.4	3	E		42		F	
HOLL		1828	1828	1834	S25	W51	6172	07	29.9	6	SF		3	E		13		F
HOLL		1852	1852	1857	S25	W54	6172	07	29.7	5	SF		3	E		16		F
HOLL		2321	2322	2329	N09	W66	6171	07	29.1	8	SF		3	E		14		
HOLL		2329	2331	2343	S15	E42		08	6.1	14	SF		3	E		18		
HOLL	03	0030	0031	0039	N08	W66	6171	07	29.2	9	SF		3	E		28		
GOES		0231	0237	0245						14		C 1.7						
GOES		0354	0357	0402						8		C 1.1						
GOES		0628	0631	0638						10		C 1.3						
GOES		1026	1030	1034						8		C 2.7						
RAMY		1132	1135	1148	S25	W63	6172	07	29.7	16	SF C 2.0	3	E		42			
RAMY		1303	1303	1307	N19	E45	6186	08	7.0	4	SF		3	E		15		
RAMY		1313	1317	1328	S17	E33		08	6.0	15	SF		3	E		49		FH
HOLL		1318E	1318U	1347	S15	E34		08	6.1	29D	SF C 2.6	2	E		27		H	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
														Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
RAMY	03	1330	1331	1335	S17	E33	08	6.1	5	SF		3	E		17		F
RAMY		1358	1403	1407	S25	W65 6172	07	29.6	9	SF		3	E		24		
HOLL		1443	1450	1500	S25	W67 6172	07	29.5	17	SN	C 4.5	4	E		84		
RAMY		1447	1448	1454	S25	W67 6172	07	29.5	7	SF		3	E		64		
SVTO		1447E	1452U	1503D	S26	W64 6172	07	29.7	160	SF		2	E		64		
GOES		1534	1537	1539					5		C 1.2						
RAMY		1647	1649	1652	S25	W66 6172	07	29.7	5	SF		3	E		16		
HOLL		1736	1738	1747	N25	E62 6188	08	8.5	11	SF		4	E		27		
PALE	04	0340	0342	0350	S27	W70 6172	07	29.8	10	SF	C 2.5	3	E		35		
SVTO		0648	0650	0700	S27	W73 6172	07	29.7	12	SF	C 4.9	3	E		33		
GOES		0954	0959	1003					9		C 2.3						
RAMY		1154	1155	1200	N15	E34 6186	08	7.1	6	SF		3	E		15		F
SVTO		1154	1158	1221	N16	E34 6186	08	7.1	27	SF	C 1.5	3	E		26		F
RAMY		1421	1426	1429	N16	E32 6186	08	7.0	8	SF		3	E		41		F
HOLL		1422E	1425U	1441D	N16	E33 6186	08	7.1	190	SF		2	E		66		F
SVTO		1423	1423	1438	N17	E32 6186	08	7.0	15	SF		3	E		17		F
RAMY		1558	1559	1605	N15	E32 6186	08	7.1	7	SF		3	E		14		F
HOLL		1618E	1637U	1716D	S06	E19 6187	08	6.1	580	SF		2	E		82		F
SVTO		1629	1634	1646	S06	E18 6187	08	6.0	17	SF		3	E		26		F
RAMY		1630	1633	1649	S07	E19 6187	08	6.1	19	SF		3	E		35		F
RAMY		2134	2134	2145	N28	E22 6185	08	6.6	11	SN	C 1.5	3	E		15		
PALE		2135	2137	2147	N29	E23 6185	08	6.7	12	SF		3	E		15		
SVTO	05	0935	0936	0951	N24	E38 6188	08	8.3	16	SF	C 1.7	3	E		22		F
RAMY		1118	1142	1201	S16	W55	08	1.3	43	SF		3	E		12		
RAMY		1238	1244	1301	S10	W57 6191	08	1.2	23	SF		3	E		21		
SVTO		1352	1353	1404	N26	E17 6185	08	6.9	12	SF		3	E		31		U
RAMY		1352	1354	1404	N29	E16 6185	08	6.8	12	SF		3	E		50		F
HOLL		1922	1928	1937	S17	W59 6193	08	1.3	15	SF		3	E		17		
GOES		1922	1931	1939					17		C 2.4						
HOLL		1928	1943	1949	S27	W81 6172	07	30.6	21	SF	C 5.1	3	E		19		F
HOLL		2355	2401	2425	N23	E35 6188	08	8.7	30	SF		3	E		28		F
HOLL	06	0026	0028	0114	N11	E12 6186			48	SF			E		35		K
HOLL		0026	0046	0114	N11	E12 6186	08	6.9	48	SF		3	E		58		F
HOLL		0047	0048	0050	S19	E45	08	9.5	3	SF		3	E		12		
SVTO		0850	0912	0949	N24	E24 6188	08	8.2	59	SF	C 5.1	4	E		81		F
SVTO		1209	1210	1217	N19	W50 6180	08	2.7	8	SF		3	E		14		
SVTO		1243	1246	1313	N18	W53 6180	08	2.5	30	SF		4	E		31		F
RAMY		1245	1249	1257	N23	E07 6185	08	7.1	12	SF		3	E		14		
RAMY		1247	1256	1303	N22	W52 6180	08	2.5	16	SF		3	E		41		
PALE		2129	2130	2134	S17	W16 6192	08	5.7	5	SF		3	E		23		
GOES	07	0001E	0003	0009D					80		C 2.4						
GOES		0401	0405	0408					7		C 1.8						
GOES		0427E	0430	0438D					110		C 1.8						
SVTO		0838	0844	0929	S19	W22 6192	08	5.7	51	SF		3	E		42		F
GOES		1133	1136	1138					5		C 1.2						
RAMY		1254	1254	1300	S17	W26 6192	08	5.6	6	SF	C 2.0	3	E		18		
RAMY		1526	1529	1534	N21	W65 6180	08	2.6	8	SF		3	E		39		F
RAMY		1550	1550	1554	N22	E09 6188	08	8.3	4	SF		3	E		13		F
PALE		2206	2211	2215	S18	W31 6192	08	5.6	9	SF		3	E		24		
LEAR	08	0031	0036	0050	N21	W04 6188	08	7.7	19	SF		3	E		24		FH
LEAR		0157	0159	0204	N14	E75	08	13.7	7	SF		3	E		22		
LEAR		0221	0222	0228	N17	W13 6186	08	7.1	7	SF		3	E		15		
LEAR		0433	0434	0443	S17	W35 6192	08	5.5	10	SF	C 1.7	3	E		38		
LEAR		0559	0702U	0757	N14	E72 6197	08	13.7	118	1F	C 1.4	3	E		112		
GOES		0621	0626	0632					11		C 1.3						
SVTO		0704E	0707	0712	N16	E74 6197	08	13.9	80	SF		3	E		17		
SVTO		0744	0744	0753	N16	E74 6197	08	13.9	9	SF		3	E		15		
SVTO		1058	1059	1104	N24	E00 6188	08	8.4	6	SF		3	E		20		
RAMY		1310	1315	1323	N14	E74 6197	08	14.1	13	SF		2	E		26		
HOLL		1334	1346	1440	N15	E71 6197			66	1N			E		97		K
HOLL		1334	1358	1440	N15	E71 6197	08	13.9	66	1N	M 1.9	3	E		140		EH
RAMY		1340	1346	1435	N15	E74 6197			55	SN			E		54		K
RAMY		1340	1355	1435	N15	E74 6197	08	14.2	55	SN		3	E		95		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region	Day							Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
HOLL	08	1450	1454	1459	N14	E71	6197	08	14.0	9	SN		3	E		25		
RAMY		1453E	1454	1457	N14	E71	6197	08	14.0	40	SF		2	E		18		
HOLL		1510	1517	1521	N14	E70	6197	08	13.9	11	SF		3	E		14		
HOLL		1600	1601	1608	N14	E69	6197	08	13.9	8	SF		3	E		30		
HOLL		1650	1651	1657	N14	E66	6197	08	13.7	7	SF		3	E		33		
RAMY		1651	1653	1702D	N15	E66	6197	08	13.7	110	SF C 1.5		3	E		28		
HOLL		1743	1744	1756	S18	W39	6192	08	5.8	13	SF		3	E		16		
HOLL		1801	1808	1841	N14	E68	6197	08	13.9	40	SB C 2.4		3	E		93		
PALE		1805	1808U	1824	N14	E68	6197	08	13.9	19	SF		3	E		66		
HOLL		1827	1831	1847	N14	W24	6186	08	6.9	20	SF		3	E		21		
PALE		1853	1855U	1907	N13	E68	6197	08	13.9	14	SF		3	E		75		
PALE		1929	1930	1942	N13	E67	6197	08	13.9	13	SF		3	E		18		
PALE		2005	2010	2019	N14	E68	6197	08	14.0	14	SF		3	E		26		
PALE		2021	2025	2033	N14	E66	6197	08	13.8	12	SF		3	E		28	F	
HOLL		2108E	2110U	2118	N14	E66	6197	08	13.9	100	SF		2	E		33	F	
HOLL		2157	2157	2202	N13	E65	6197	08	13.8	5	SF		3	E		23	E	
GOES		2229	2234	2239						10	C 3.6							
HOLL		2342	2347	2425	N14	E66	6197	08	14.0	43	1N C 9.6		3	E		107	E	
PALE		2343	2345	2513	N15	E65	6197	08	13.9	90	1F		3	E		102		
PALE		2343	2458	2513	N15	E65	6197			90	SF			E		43	K	
LEAR		2356E	2357U	2422	N14	E66	6197	08	14.0	260	SF		3	E		99		
HOLL	09	0027	0028	0110	N13	E64	6197			43	SN			E		31	K	
HOLL		0027	0045	0110	N13	E64	6197	08	13.8	43	SN		3	E		45		
LEAR		0040	0045	0104	N13	E62	6197	08	13.7	24	SF		3	E		51		
LEAR		0201	0205	0209	N13	E61	6197	08	13.7	8	SF		3	E		20		
LEAR		0235	0318	0342	N15	E60	6197	08	13.6	67	SF		3	E		56		
PALE		0239	0239	0254	N14	E65	6197	08	14.0	15	SF		3	E		36		
PALE		0303	0317	0326	N15	E60	6197	08	13.7	23	SF		3	E		14		
GOES		0545		0547						2	C 1.6							
SVTO		0746E	0750U	0800	N16	E61	6197	08	13.9	140	SF C 3.5		2	E		28		
SVTO		1011	1012	1020	S35	E64		08	14.5	9	SF		3	E		17		
SVTO		1113	1116	1120	N16	E58	6197	08	13.9	7	SF		3	E		18		
RAMY		1150	1208	1220	N16	E60	6197	08	14.0	30	SF		2	E		20	F	
RAMY		1242	1249	1259	S09	E54	6200	08	13.6	17	SF		3	E		13		
RAMY		1249	1249	1256	S34	E61		08	14.4	7	SF		3	E		12		
RAMY		1525	1529	1543	N16	E58	6197	08	14.0	18	SF		3	E		34	H	
SVTO		1525	1529	1547	N16	E55	6197	08	13.8	22	SF		3	E		40	F	
HOLL		1525	1530	1554	N15	E57	6197	08	13.9	29	SF C 1.8		4	E		54		
HOLL		1546	1547	1555	S08	W50	6187	08	5.9	9	SF		4	E		26		
PALE		1907	1908	1914	N25	W16	6188	08	8.5	7	SF		3	E		14		
HOLL		1913E	1914U	1928D	N14	E85		08	16.2	150	SF		3	E		36	F	
HOLL		2010	2010	2020	N23	W23	6188	08	8.1	10	SF		3	E		19		
HOLL		2028	2031	2112	N15	E50	6197	08	13.6	44	SN		3	E		94	H	
PALE		2031	2033	2057	N15	E54	6197	08	13.9	26	SF C 3.8		3	E		64	F	
GOES	10	0702E	0705	0721D						190	C 3.0							
SVTO		0747	0748	0751	N28	E82	6203	08	16.7	4	SF		3	E		22		
SVTO		0748	0831	0854	N17	E48	6197	08	14.0	66	SF		3	E		21		
SVTO		1139	1143	1158	N16	E45	6197	08	13.9	19	SF		3	E		19		
SVTO		1424	1424	1440	N16	E43	6197	08	13.9	16	SF		3	E		16		
RAMY		1429	1429	1448	N14	E43	6197	08	13.8	19	SF		2	E		10		
HOLL		1523	1548	1556	N18	E77	6203	08	16.5	33	SF		3	E		42		
HOLL		1721	1721	1732	N24	W33	6188	08	8.2	11	SF		3	E		13		
HOLL		1743	1815	2106	N18	E74	6203	08	16.4	203	2B M 7.9		3	E		401	UY	
HOLL		1743	1914	2106	N18	E74	6203			203	2B			E		307	K	
RAMY		1809	1814	1912	N20	E72	6203	08	16.3	63	2B M 7.9		3	E		339	FH	
PALE		1809	1815	1948	N19	E71	6203	08	16.2	99	2B M 7.9		3	E		311	YF	
RAMY		1809	1839	1912	N20	E72	6203			63	2N			E		258	K	
HOLL		1908	1915	1944	S11	W28	6196	08	8.7	36	SF		3	E		43	F	
PALE		1910	1912	1916	S11	W29	6196	08	8.6	6	SF		3	E		21	F	
HOLL		1932	1932	1942	N15	E42	6197	08	14.0	10	SF		3	E		11		
PALE		1953	1954	1958	N22	W38	6188	08	7.9	5	SF		3	E		11		
HOLL		1954	1954	2019	N21	W37	6188	08	8.0	25	SF		3	E		51		
HOLL		2001	2005	2025	N15	E41	6197	08	13.9	24	SF		3	E		21	F	
PALE		2001	2009	2012	N16	E42	6197	08	14.0	11	SF		3	E		13		
HOLL		2103	2107	2114	N23	W32	6188	08	8.4	11	SF		3	E		19	F	
GOES		2222E	2224	2231D						90	C 2.1							

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Sta	Day	Start (UT)	Max (UT)	End (UT)	NOAA/USAF			CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Imp See	Obs Type	Area Measurement			Remarks
					Lat	CMD	Region								Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	10	2318	2346	2406	N24	W37	6188	08	8.1	48	SF	C 3.7	3	E		77		
		HOLL	2334	2334	2424	N24	W37	6188	08	8.1	50	SF		3	E		75		F
LEAR	11	0235	0242	0247	N17	W55	6186	08	6.9	12	SF		3	E		35		
SVTO		0742	0745	0800	S09	E28	6200	08	13.4	18	SF		3	E		30		
LEAR		0744	0749	0800	S09	E29	6200	08	13.5	16	SF		3	E		21		
SVTO		1003	1004	1012	N17	W59	6186	08	6.9	9	SF		3	E		17		
HOLL		1520	1521	1527	N24	E81		08	17.9	7	SF		3	E		18		
HOLL		1742	1743	1808	N20	E60	6203	08	16.3	26	SF		3	E		33		
HOLL		2207	2211	2216	N12	E40	6199	08	14.9	9	SF	C 1.4	3	E		20		F
LEAR	12	0400	0401	0408	N23	W70	6185	08	6.8	8	SF		3	E		27		
LEAR		0400	0402	0414	N18	E55	6203	08	16.3	14	SF		3	E		30		
SVTO		0535	0542	0604	N14	E34	6199	08	14.8	29	SF	C 1.8	3	E		81		F
LEAR		0537	0542	0553	N13	E33	6199	08	14.7	16	SF	C 1.8	3	E		54		F
SVTO		1246	1247	1252	N21	W55	6188	08	8.3	6	SF		3	E		16		
GOES		1549	1554	1557						8		C 1.6						
HOLL		1714	1716	1719	N12	E28	6199	08	14.8	5	SF		3	E		17		F
PALE		1939	1953	2018	N12	E27	6199	08	14.8	39	SF		3	E		22		F
RAMY		1957	1957	2002	N12	E27	6199	08	14.9	5	SF		3	E		12		F
PALE		2025	2035	2036	N12	E27	6199	08	14.9	11	SF		3	E		16		
PALE		2030	2033	2037	N13	E16	6197	08	14.1	7	SF		3	E		17		
PALE		2101	2108	2201	N12	E28	6199	08	15.0	60	SF		3	E		31		
RAMY		2104	2105U	2200	N12	E26	6199	08	14.8	56	SF		2	E		15		
HOLL		2147E	2147U	2158D	N11	E28	6199	08	15.0	11D	SF		1	E		18		
LEAR	13	0006	0008	0011	N22	E76	6209	08	18.8	5	SF		3	E		17		
LEAR		0033	0035U	0118D	N13	E23	6199	08	14.7	45D	SF		3	E		60		
PALE		0034	0035	0047	N13	E25	6199	08	14.9	13	SF	C 3.5	3	E		55		F
PALE		0048	0055	0114	N14	E24	6199	08	14.8	26	SF	C 3.5	3	E		21		F
LEAR		0252E	0430U	0513	N19	E45	6203	08	16.5	141D	1F		3	E		116		F
PALE		0334	0336	0340	N14	E22	6199	08	14.8	6	SF		3	E		17		
PALE		0402	0409	0427	S11	E02	6200	08	13.3	25	SF		3	E		21		
LEAR		0405E	0405U	0454	S10	E03	6200	08	13.4	49D	SF		3	E		32		
PALE		0424	0428	0441	N21	E40	6203	08	16.2	17	SF	C 3.4	3	E		70		F
SVTO		0635	0636	0642	N24	E76	6209	08	19.1	7	SF	C 1.3	3	E		23		
SVTO		0921	0929	0959	N14	E17	6199	08	14.7	38	1F	M 1.0	3	E		110		
SVTO		1312	1341	1547	N14	E10	6197	08	14.3	155	1N		3	E		152		FH
RAMY		1313	1321	1535	N17	E10	6197	08	14.3	142	1B	M 1.4	3	E		137		F
RAMY		1313	1346	1535	N17	E10	6197			142	1B			E		145		K
RAMY		1410	1412	1420	N21	E34	6203	08	16.2	10	SF		3	E		28		F
SVTO		1410	1412	1421	N21	E34	6203	08	16.2	11	SF		3	E		32		F
SVTO		1421	1424	1516	N14	E14	6199	08	14.6	55	SF		3	E		28		F
RAMY		1425	1427	1440	N14	E15	6199	08	14.7	15	SF		3	E		25		F
RAMY		1502	1507	1510	N19	E39	6203	08	16.6	8	SF		3	E		24		
PALE		1813E	1815U	1823D	N13	E14	6199	08	14.8	10D	SF		3	E		28		F
PALE		1900E	1903U	1914D	N13	E13	6199	08	14.8	14D	SF		3	E		21		
PALE		2020E	2020U	2035D	N14	E02	6197	08	14.0	15D	SF		3	E		14		
HOLL		2226E	2226U	2319	N20	E31	6203	08	16.3	53D	1B		2	E		157		
PALE		2226	2227	2257	N22	E32	6203	08	16.4	31	1N	C 8.5	3	E		122		UE
SVTO	14	0907	0911	0923	N12	E05	6199	08	14.7	16	SF	C 3.3	3	E		52		F
SVTO		1047	1053	1106	N14	W06	6197	08	14.0	19	SF		3	E		25		
HOLL		1432	1432	1445	N24	E48	6209	08	18.3	13	SF		3	E		21		
HOLL		1639	1649	1717	N13	W09	6197	08	14.0	38	SF		3	E		27		F
HOLL		1706	1710	1718	N25	E47	6209	08	18.3	12	SF		3	E		85		F
RAMY		1709	1710	1717	N26	E46	6209	08	18.3	8	SF		3	E		29		
PALE		1711	1711	1714	N25	E47	6209	08	18.3	3	SF		3	E		31		
HOLL		1945	1948	2046	N20	E18	6203	08	16.2	61	1F	C 1.8	3	E		107		F
PALE		1947	1949	2013	N21	E19	6203	08	16.3	26	SF		3	E		41		
HOLL		2048	2056	2116	S02	E20	6211	08	16.4	28	SF		3	E		26		
HOLL		2205	2208	2217	N22	E43	6209	08	18.2	12	SF	C 2.3	3	E		60		E
PALE		2206E	2206U	2226D	N23	E45	6209	08	18.4	20D	SF		3	E		27		
LEAR	15	0137	0153	0210	S13	W26	6195	08	13.1	33	SF	C 1.5	3	E		21		F
GOES		0720	0724	0727						7		C 1.3						
GOES		0914	0919	0944						30		C 1.5						
RAMY		1545	1545	1618	N05	W40	6213	08	12.7	33	SF	C 4.9	3	E		37		FH

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		CMP	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region	Mo							Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
PALE	15	1941	1949	2009	S16	E21	6206	08	17.4	28	SF C 5.5	3	E		27			
RAMY		1943	1946	2001	S16	E17	6206	08	17.1	18	SF	3	E		26		F	
HOLL		1951E	1952U	2005D	S17	E19	6206	08	17.3	14D	SF	2	E		54		E	
HOLL		2257E	2307U	2336D	S17	E17	6206	08	17.2	39D	SF	2	E		48		E	
PALE		2303E	2306	2316	S16	E19	6206	08	17.4	13D	SF	3	E		25		F	
LEAR		2327	2330	2332	S18	E20	6206	08	17.5	5	SF	3	E		16			
LEAR	16	0146	0146	0156	S17	E15	6206	08	17.2	10	SF C 2.4	3	E		10			
LEAR		0402	0405	0413	S17	E14	6206	08	17.2	11	SF	3	E		28		F	
PALE		0404	0404	0416	S16	E16	6206	08	17.4	12	SF C 2.2	3	E		30			
GOES		0722	0727	0732						10	C 2.0							
SVTO		1109E	1110U	1120	S17	E11	6206	08	17.3	11D	SF	3	E		27		F	
RAMY		1212	1217	1221	N10	E07	6216	08	17.0	9	SF	3	E		38		F	
HOLL		1410	1421U	1424D	N02	W09	6208	08	15.9	14D	SF C 1.9	2	E		99		F	
HOLL		1448	1448	1459	N08	E06	6216	08	17.1	11	SF	3	E		16			
HOLL		1634	1635	1642	N12	W26	6199	08	14.7	8	SF	3	E		31			
RAMY		1640	1655	1713	S09	E37	6214	08	19.5	33	SF	2	E		29			
PALE		1654	1658	1714	S08	E39	6214	08	19.6	20	SF C 1.7	3	E		13			
PALE		1657	1702	1704	N12	W26	6197	08	14.7	7	SF	3	E		15			
RAMY		1824	1833	1902	N10	W23	6199	08	15.0	38	SF C 2.4	2	E		60		F	
PALE		1824	1834	1909D	N10	W23	6199	08	15.0	45D	SF C 2.4	3	E		60		F	
HOLL		1835E	1835U	1905D	N10	W23	6199	08	15.0	30D	1F C 2.4	1	E		162			
HOLL		2117	2119	2151	N22	E12	6209	08	17.8	34	SF C 1.6	3	E		26		F	
HOLL		2139	2140	2145	N13	E70	6219	08	22.2	6	SF	3	E		23			
LEAR		2346	2351	2357	S18	E04	6206	08	17.3	11	SF C 1.6	3	E		21			
PALE		2347	2352	2356	S17	E05	6206	08	17.4	9	SF	3	E		20		H	
LEAR	17	0333	0335	0340	S11	E33	6214	08	19.6	7	SF	3	E		22		F	
SVTO		0630	0632	0637	S18	E02	6206	08	17.4	7	SF	3	E		16			
LEAR		0631	0633	0635	S18	E01	6206	08	17.3	4	SF	3	E		12			
GOES		0739	0749	0807						28	C 2.1							
SVTO		0919	0930	1000D	S15	W65	6200	08	12.5	41D	SF C 2.3	3	E		27		F	
SVTO		0920	0928	1000D	S14	W68	6195	08	12.2	40D	SF C 2.3	3	E		19			
LEAR		0923	0929	0937	S13	W58	6200	08	13.0	14	SF	2	E		30		F	
RAMY		1125	1126	1131	N12	E62	6219	08	22.1	6	SF C 2.4	3	E		13			
RAMY		1146	1153	1215	N02	W23	6208	08	15.8	29	SF	3	E		53		F	
RAMY		1201	1201	1210	N05	W65	6213	08	12.6	9	SF	3	E		16			
SVTO		1322	1323	1327	N02	W68	6213	08	12.5	5	SF	3	E		21			
RAMY		1330	1330	1335	S11	W65	6200	08	12.7	5	SF	3	E		14			
RAMY		1527	1530	1536	S17	E00	6206	08	17.6	9	SF	3	E		16			
RAMY		1601	1602	1618	N03	W23	6208	08	15.9	17	SF	3	E		26			
GOES		1705E	1705	1711D						6D	C 7.8							
PALE		1725	1726	1732	N05	W10	6216	08	17.0	7	SF	3	E		15			
RAMY		1803	1804	1810	N20	E61		08	22.4	7	SF	3	E		12			
PALE		1824	1824	1832	N08	W10	6216	08	17.0	8	SF	3	E		19			
HOLL		1852E	1852U	1909D	S09	E20	6214	08	19.3	17D	SF	2	E		24		F	
RAMY		1852	1854	1900	S09	E22	6214	08	19.4	8	SN C 2.2	3	E		31			
PALE		1852	1855	1900	S11	E25	6214	08	19.7	8	SF	3	E		39		F	
PALE		1912	1917	1936	S18	E01	6206	08	17.9	24	SF	3	E		46		H	
RAMY		1914	1916	1939	S17	W01	6206	08	17.7	25	SF	3	E		44		H	
HOLL		1914	1919U	1949D	S17	W05	6206	08	17.4	35D	SF	2	E		31		F	
RAMY		1925	1927	1931	S11	E72	6223	08	23.2	6	SF	3	E		37			
HOLL		2103	2105	2108	S10	E21	6214	08	19.4	5	SF	3	E		21		F	
HOLL		2111	2114	2118	S10	E19	6214	08	19.3	7	SF	3	E		21		F	
HOLL		2113	2113	2117	N06	W13	6216	08	16.9	4	SF	3	E		17		F	
PALE		2140	2141	2147	S10	E20	6214	08	19.4	7	1F C 4.0	3	E		101		F	
PALE		2141	2150	2151	N05	W13	6216	08	16.9	10	SF	3	E		14			
HOLL		2157	2158	2207	N06	W14	6216	08	16.9	10	SF	3	E		18		F	
PALE		2243	2245	2302	N05	W14	6216	08	16.9	19	SF C 9.1	3	E		30			
LEAR		2331	2331	2339	N06	W15	6216	08	16.8	8	SF M 1.1	3	E		19			
PALE		2347	2352	2356	S17	E05	6206	08	18.4	9	SF	3	E		20		H	
LEAR		2358	2409	2427	N06	W15	6216	08	16.9	29	SF	4	E		23			
PALE	18	0007	0012	0019	N05	W14	6216	08	16.9	12	SF	3	E		25		F	
LEAR		0011	0017	0026	S10	E16	6214	08	19.2	15	SF	4	E		35		H	
PALE		0011	0017	0026	S10	E18	6214	08	19.4	15	SF	3	E		40		F	
PALE		0233	0234	0239	N21	E56		08	22.4	6	SF	3	E		15			
PALE		0315	0315	0320	N06	W15	6216	08	17.0	5	SF	3	E		18		F	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Imp (Min)	Opt	Xray	Obs See	Type	Area Measurement		Remarks
															Time (UT)	Apparent (10-6 Disk)		Corr (Sq Deg)
PALE	18	0342	0343	0357	S11	E16	6214	08	19.3	15	SF		3	E		25	F
PALE		0413	0414	0418	N20	E54		08	22.3	5	SF		3	E		17	
GOES		0517	0522	0533						16		C 5.6					
LEAR		0731	0732	0735	N14	W51	6197	08	14.4	4	SF		3	E		12	
GOES		0847	0854	0904						17		C 6.2					
GOES		1012	1124	1238						146		C 7.0					
RAMY		1344	1349	1409	S17	W11	6206	08	17.7	25	SF		3	E		43	
RAMY		1345	1350	1411	S16	E10	6221	08	19.3	26	SF		3	E		16	F
RAMY		1552	1555	1621	S18	W16	6206	08	17.4	29	SF		3	E		35	
HOLL		1552	1557	1624	S18	W16	6206	08	17.4	32	SF		3	E		42	F
HOLL		1651	1652	1659	S09	E10	6214	08	19.4	8	SF		3	E		20	
HOLL		1819	1820	1822	S19	E75		08	24.5	3	SF		3	E		12	
HOLL		1834	1839	1846	S18	W17	6206	08	17.5	12	SF		3	E		14	
HOLL		1834	1841	1845	S19	E75		08	24.5	11	SF		3	E		26	
HOLL		1850	1851	1904	S19	E75		08	24.5	14	SF	C 4.2	3	E		54	
HOLL		1900	1903	1911	S34	W09	6224	08	18.1	11	SF		3	E		19	
HOLL		2012	2033	2056	S14	W75	6200	08	13.2	44	SF		3	E		62	
HOLL		2048	2051	2056	S34	W11	6224	08	18.0	8	SF		3	E		20	
HOLL		2110	2113	2123	S34	W11	6224	08	18.0	13	SF		3	E		19	
HOLL		2110	2118	2205	S02	W33	6211	08	16.4	55	SF		4	E		29	
HOLL		2127	2131	2138	S34	W11	6224	08	18.0	11	SF		3	E		10	
HOLL		2139	2140	2148	S11	E66	6223	08	23.9	9	SF		4	E		25	
HOLL		2148	2148	2157	S19	E73	6226	08	24.5	9	SF		3	E		12	
HOLL		2148	2150	2156	N12	E41	6219	08	22.0	8	SF		4	E		13	
HOLL		2208	2210	2220	S21	E71	6226	08	24.4	12	SF		4	E		13	
HOLL		2222	2225	2239	S20	E75	6226	08	24.7	17	SF		4	E		37	
HOLL		2234	2241	2311	S17	W36	6220	08	16.2	37	SF		4	E		89	F
HOLL		2304	2307	2313	S11	E71	6223	08	24.3	9	SF		4	E		25	
GOES		2306E	2308	2317D						110		C 3.2					
PALE		2307	2309	2312	S23	E87	6226	08	25.7	5	SF		3	E		44	
HOLL	19	0005	0008	0019	S16	E03	6221	08	19.2	14	SF		4	E		13	
HOLL		0009	0009	0013	N14	W70	6199	08	13.7	4	SF		4	E		26	
HOLL		0013	0018	0025	S21	E74	6226	08	24.7	12	SF		4	E		16	
HOLL		0017	0024	0035	N06	W29	6216	08	16.8	18	SF		4	E		21	
PALE		0046	0047	0053	S22	E69	6226	08	24.3	7	SF		3	E		54	F
HOLL		0046	0049	0052	S19	E70	6226	08	24.4	6	SF		3	E		56	
LEAR		0047	0047	0051	S21	E73	6226	08	24.6	4	SF		3	E		25	
LEAR		0149E	0151U	0202D	S24	E82	6226	08	25.4	13D	SF		2	E		63	
PALE		0150	0152	0206	S22	E69	6226	08	24.4	16	SN	C 5.5	3	E		94	FE
PALE		0156	0158	0201	S13	E70	6223	08	24.4	5	SF		3	E		22	
LEAR		0709	0709	0711	S19	E48	6222	08	23.0	2	SF		3	E		12	F
RAMY		1056E	1108	1112	S23	E73	6226	08	25.1	16D	SF	C 2.9	2	E		29	H
RAMY		1136	1136	1146	S12	E01	6214	08	19.5	10	SF		3	E		14	F
SVTO		1136	1140	1147	S07	E59	6223	08	23.9	11	SF		3	E		64	
RAMY		1138	1140	1146	S09	E58	6223	08	23.8	8	SF		3	E		39	
SVTO		1148	1200	1240	S21	E74	6226	08	25.2	52	SF		3	E		46	
RAMY		1236	1236	1247	N06	W36	6216	08	16.8	11	SF		3	E		20	
RAMY		1326	1326	1332	S09	W02	6214	08	19.4	6	SF		3	E		24	
HOLL		1339	1345	1425	N06	W38	6216			46	SF			E		72	
HOLL		1339	1417	1425	N06	W38	6216	08	16.7	46	SF		3	E		34	F
HOLL		1344	1347	1350	S10	E66	6223	08	24.5	6	SF		2	E		19	
HOLL		1423	1426	1431	S08	E57	6223	08	23.9	8	SF		3	E		14	F
SVTO		1423	1426	1432	S08	E57	6223	08	23.9	9	SF		3	E		24	
RAMY		1426	1426	1435	S09	E57	6223	08	23.9	9	SF		3	E		13	F
HOLL		1440	1444	1452	S10	W89	6200	08	12.9	12	SF		3	E		53	F
HOLL		1503	1505	1512	N21	E35	6225	08	22.3	9	SF		3	E		18	F
HOLL		1504	1513	1517	N05	W38	6216	08	16.8	13	SF		3	E		13	F
HOLL		1524	1527	1529	N15	E34	6219	08	22.2	5	SF		3	E		14	F
HOLL		1528	1530	1537	N05	W39	6216	08	16.7	9	SF		3	E		17	F
GOES		1543	1624	1734						111		C 4.4					
HOLL		1621	1621	1627	S11	W03	6214	08	19.4	6	SF		3	E		24	F
HOLL		1705	1705	1717	N20	E36	6225	08	22.5	12	SF		3	E		10	F
HOLL		1717	1719	1723	N05	W41	6216	08	16.6	6	SF		3	E		10	F
HOLL		1734	1735	1738	S12	W04	6214	08	19.4	4	SF		3	E		18	F
HOLL		1745	1750	1814	S16	E39	6222	08	22.7	29	SF		3	E		20	
HOLL		1746	1748	1755	N05	W39	6216	08	16.8	9	SF		3	E		15	F
HOLL		1817	1817	1822	S11	W04	6214	08	19.5	5	SF		3	E		12	F

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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	Obs See Type	Area Measurement			Remarks	
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
RAMY	19	1831	1832	1836	S09	W04	6214	08 19.5	5	SF	3	E		16		
HOLL		1832	1833	1838	S12	W05	6214	08 19.4	6	SF	3	E		16	F	
HOLL		1904	1905	1918	S11	W03	6214	08 19.6	14	SF	3	E		18		
HOLL		1917	1926	2010	N10	E17	6215	08 21.1	53	SF	3	E		50		
RAMY		1921	1921	1933	N09	E18	6215	08 21.1	12	SF	3	E		33	F	
RAMY		1931	1934	1939	S11	W04	6214	08 19.5	8	SF	3	E		15		
HOLL		2054	2056	2100	S20	E62	6226	08 24.6	6	SF	3	E		17		
HOLL		2057	2100	2108	N14	E34	6219	08 22.4	11	SF	3	E		28		
HOLL		2102	2111	2119	S11	W10	6214	08 19.1	17	SF	3	E		16		
HOLL		2122	2122	2144	N04	W42	6216	08 16.7	22	SF	3	E		10		
HOLL		2155	2203	2221D	N21	E33	6225	08 22.4	26D	SN	3	E		96	FE	
HOLL		2155	2214	2221D	N21	E33	6225		26D	SN		E		25	K	
LEAR	20	0136	0149	0157	N20	E30	6225	08 22.4	21	SF	3	E		16		
LEAR		0540	0540	0550	N05	W49	6216	08 16.6	10	SF	3	E		19		
GOES		1049	1104	1117					28		C 5.1					
RAMY		1106E	1108U	1200	S21	E57	6226	08 24.8	54D	SF	1	E		18	F	
SVTO		1115E	1138U	1201D	S23	E59	6226	08 25.0	46D	SF	C 7.5	3	E		45	
RAMY		1147E	1150U	1240	S04	E70	6228	08 25.7	53D	SF		2	E		14	
RAMY		1219	1222	1235	S12	W13	6214	08 19.5	16	SF		2	E		21	
RAMY		1357	1402U	1428	S10	W13	6214	08 19.6	31	SF		2	E		38	F
HOLL		1419E	1419U	1429	S12	W15	6214	08 19.5	10D	SF		3	E		37	
RAMY		1547	1548	1559	S10	W14	6214	08 19.6	12	SF		3	E		16	F
HOLL		1658	1702	1724	N04	W53	6216	08 16.7	26	SF		3	E		13	F
HOLL		1727	1732	1734	S18	E27	6222	08 22.8	7	SF		3	E		12	
PALE		1730	1810	1817	S20	E53	6226	08 24.8	47	SF		3	E		36	
PALE		1913	1913	1950D	S12	W18	6214	08 19.4	37D	SF		3	E		16	F
LEAR	21	0050	0106	0113	S18	E22	6222	08 22.7	23	SF		3	E		66	
LEAR		0208	0210	0215	S19	W68	6220	08 15.9	7	SF		3	E		25	
GOES		0324	0327	0330					6		C 2.9					
LEAR		0407	0408	0446	N05	W57	6216		39	SF		E		56	K	
PALE		0407	0416	0444D	N04	W62	6208	08 16.5	37D	1F		3	E	178	F	
LEAR		0407	0424	0446	N05	W57	6216	08 16.9	39	SF		3	E	87	F	
PALE		0430	0431	0444D	S23	E45	6226	08 24.6	14D	SF	C 9.5	3	E	32	F	
LEAR		0455	0522	0557	S19	E48	6226	08 24.9	62	1F	C 9.2	3	E	131	F	
SVTO		0515	0526	0539	S16	E47	6223	08 24.8	24	SF		3	E	24		
SVTO		0518	0527	0536	S19	E48	6226	08 24.9	18	SF		3	E	21		
LEAR		0809	0810	0814	S18	W69	6220	08 16.1	5	SF		3	E	23		
LEAR		0912	0913	0917	S17	W70	6220	08 16.1	5	SF		3	E	19		
LEAR		0929	0931	0939	S12	E47	6223	08 24.9	10	1N		3	E	127		
SVTO		0932	0932	0940D	S11	E49	6223	08 25.1	8D	1F		3	E	125	H	
SVTO		1057	1059	1115	S38	W40	6224	08 18.2	18	SF		4	E	86		
RAMY		1147E	1150U	1240	S04	E70	6228	08 26.7	53D	SF		2	E	14		
SVTO		1551	1608	1613	N02	W66	6216	08 16.7	22	SF		3	E	16		
SVTO		1558	1605	1610	S21	E46	6226	08 25.2	12	SF	C 9.1	3	E	50		
HOLL		1604E	1604U	1605D	S25	E48	6226	08 25.4	1D	SN		1	E	30		
RAMY		1621	1622	1626	S21	E41	6226	08 24.8	5	SF		3	E	16		
RAMY		1631	1635	1646	S21	E41	6226	08 24.8	15	SF		3	E	13		
RAMY		1702	1709	1716	S20	E41	6226	08 24.8	14	SF		3	E	17		
RAMY		1713	1715	1718	S26	E58	6227	08 26.2	5	SF		3	E	23		
RAMY		1723	1737	1746	S21	E42	6226	08 24.9	23	SF		3	E	20	FE	
PALE		1723	1742	1835	N05	W69	6208	08 16.6	72	SF		3	E	20		
RAMY		1729	1729	1734	N06	W67	6216	08 16.7	5	SF		3	E	13		
HOLL		1734E	1739U	1756	S19	E40	6226	08 24.8	22D	SF		3	E	28	F	
RAMY		1755	1804	1938	N07	W62	6216	08 17.1	103	SF		3	E	32	F	
PALE		1759	1813	1842	N06	W65	6216	08 16.9	43	SF		3	E	42	F	
PALE		1800	1811	1817	S10	E37	6223	08 24.5	17	SF		3	E	17		
HOLL		1816	1823	1844	N13	E03	6219	08 22.0	28	SF		3	E	53	F	
HOLL		1817	1853	1911D	S10	E36	6223		54D	1N		E		75	K	
HOLL		1817	1908U	1911D	S10	E36	6223	08 24.5	54D	1N		2	E	137		
PALE		1819	1820	1828	N13	E05	6219	08 22.1	9	SF		3	E	29	F	
PALE		1829	1913	2215D	S19	E34	6226	08 24.4	226D	SF	M 1.1	3	E	67	T	
HOLL		1836	1843U	1912D	S18	W54	6206	08 17.7	36D	SF		3	E	96		
PALE		1842	1850	1859	S17	W55	6206	08 17.6	17	SF		3	E	35		
PALE		1843	1854	1900	N07	W61	6216	08 17.2	17	SF		3	E	25		
PALE		1937	1938	2126D	S15	E39	6223	08 24.8	109D	1F		3	E	110	FU	
RAMY		1938E	1950	1958	S15	E39	6223	08 24.8	20D	1F		3	E	140		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	NOAA/USAF			CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
					Region	Lat	Cmd							Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
RAMY	21	1938E	1951U	2108D	S21	E35	6226	08 24.5	90D	SF		3	E		61		
RAMY		1959	2022U	2108D	S15	E39	6223	08 24.8	69D	1F		3	E		152		
PALE		2014	2014	2021	N04	W65	6216	08 17.0	7	SF		3	E		12		
RAMY		2017E	2017	2041	N05	W63	6216	08 17.1	24D	SF		3	E		25		F
GOES	22	0138E	0142	0154D					16D		C 5.6						
LEAR		0200	0213	0219	S23	E36	6226	08 24.8	19	SF		2	E		16		
LEAR		0222	0222	0233	S23	E36	6226	08 24.9	11	SF		3	E		24		
LEAR		0310	0311	0316	S21	E36	6226	08 24.9	6	SF		3	E		39		
LEAR		0344	0345	0353	S11	E25	6223	08 24.0	9	SF		3	E		25		
LEAR		0355	0400	0406	N06	W71	6216	08 16.8	11	SF		3	E		42		
LEAR		0401	0411	0430	S11	E38	6223	08 25.0	29	SF	C 5.7	3	E		88		F
LEAR		0454	0459	0508	N11	W16	6215	08 21.0	14	SF		3	E		38		
SVTO		0456	0458	0508	S11	E36	6223	08 24.9	12	SF	C 5.3	1	E		46		
LEAR		0456	0458	0509	S12	E38	6223	08 25.1	13	SF	C 5.3	3	E		89		
LEAR		0625	0627	0634	N05	W74	6216	08 16.7	9	SF		3	E		32		
LEAR		0755	0757	0803	S22	E33	6226	08 24.9	8	SF	C 6.1	3	E		36		
LEAR		0857	0900	0903	N13	E73		08 27.9	6	SF	C 2.9	3	E		10		
LEAR		0905	0907	0913	S22	E31	6226	08 24.8	8	SF	C 3.4	3	E		22		
GOES		0940E	0940	0947D					7D		C 3.7						
RAMY		1356	1411	1425	S21	E29	6226	08 24.8	29	SF		3	E		27		
RAMY		1450	1451	1458	S18	E27	6226	08 24.7	8	SF		3	E		16		
RAMY		1513	1515	1517	N05	W82	6216	08 16.5	4	SF		3	E		32		
RAMY		1620	1622	1629	S10	E29	6223	08 24.8	9	SF	C 6.0	3	E		33		F
GOES		1652	1659	1703					11		C 6.4						
PALE		1735	1735	1749	S11	E25	6223	08 24.6	14	SF		3	E		16		
PALE		1811	1817	1820	S21	E28	6226	08 24.9	9	SF		3	E		11		F
PALE		1903	1906	1927	S21	E27	6226	08 24.9	24	SF		3	E		34		F
PALE		2102	2104	2109	S18	E31	6226	08 25.2	7	SF		3	E		17		F
HOLL		2154	2212	2232	S23	E27	6226	08 25.0	38	SF	C 5.3	3	E		27		F
PALE		2155	2216	2248	S21	E28	6226	08 25.0	53	SF		3	E		42		F
HOLL		2202	2204	2234	S28	E48	6230	08 26.7	32	SF		3	E		71		F
PALE		2212	2248	2301	S10	E21	6223	08 24.5	49	SF		3	E		21		
LEAR	23	0126	0129	0136	N05	W86	6216	08 16.6	10	SF	C 8.8	3	E		27		
PALE		0127	0128	0132	N05	W81	6216	08 17.0	5	SF		3	E		25		
LEAR		0253	0253	0300	S08	E11	6223	08 23.9	7	SF		3	E		15		
PALE		0253	0253	0300	S08	E12	6223	08 24.0	7	SF		3	E		15		
LEAR		0501	0503	0511	S27	E47	6230	08 26.9	10	SF		3	E		77		
LEAR		0531	0532U	0543D	S26	E47	6230	08 26.9	12D	SF		2	E		46		
LEAR		0741E	0741U	0845D	S13	E16	6223	08 24.5	64D	1N	C 3.9	2	E		118		
GOES		0856	0913	0944					48		C 6.2						
GOES		1125	1135	1141					16		C 6.5						
HOLL		1328E	1328U	1402D	S10	E14	6223	08 24.6	34D	SF		2	E		20		
RAMY		1521	1538	1546	S16	E13	6223	08 24.6	25	SF		2	E		55		F
PALE		1802	1804	1813	S27	E35	6230	08 26.5	11	SF		3	E		17		F
PALE		1820	1820	1837	S12	E10	6223	08 24.5	17	SF		3	E		12		F
GOES		1857	1903	1906					9		C 3.8						
PALE		1951	2011	2042	S15	E11	6223	08 24.6	51	SF		3	E		24		
PALE		2037	2039	2055	N15	E83	6233	08 30.1	18	SF	C 7.4	3	E		78		
HOLL		2039E	2039U	2051	N15	E82	6233	08 30.1	12D	SN	C 7.4	2	E		95		
HOLL		2039E	2043	2105	S10	E09	6223	08 24.5	26D	SF		2	E		16		
HOLL		2153	2157	2210	N15	E82	6233	08 30.1	17	SF		3	E		31		
HOLL		2154	2155	2200	S26	W87	6221	08 17.1	6	SF		3	E		23		
HOLL		2203	2203	2215	S24	E13	6226	08 24.9	12	SF	C 7.9	3	E		18		F
PALE		2244	2253	2320D	S11	E08	6223	08 24.5	36D	SF		3	E		39		F
HOLL		2245	2254	2332	S12	E07	6223	08 24.5	47	SN		3	E		39		F
LEAR	24	0009	0010	0014	N13	E82	6233	08 30.2	5	SF		3	E		33		
HOLL		0010	0011	0019	N15	E80	6233	08 30.1	9	SF		3	E		34		
LEAR		0112	0113	0118	S07	E36	6228	08 26.7	6	SF		3	E		12		
LEAR		0129	0132	0140	N13	E84	6233	08 30.4	11	SF		3	E		45		
LEAR		0134	0140	0158	S22	E10	6226	08 24.8	24	SF		3	E		34		
LEAR		0309	0326	0353D	S31	E31	6230	08 26.6	44D	SF	C 5.2	3	E		89		
LEAR		0324	0326	0333	N13	E83	6233	08 30.4	9	SF		3	E		36		
PALE		0428	0430	0443D	S30	E31	6230	08 26.6	15D	SF		3	E		43		F
PALE		0436	0439	0443D	S11	W60	6214	08 19.7	7D	SF		3	E		75		F
LEAR		0437	0439	0451	S09	W63	6214	08 19.5	14	SF	C 6.6	3	E		72		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Imp (Min)	Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
SVTO	24	0716	0719	0736	S16	W67	6214	08	19.2	20	SF		3	E		16		F
SVTO		0814	0834	0918	S22	E23	6227	08	26.1	64	SF		3	E		44		
SVTO		0830	0920	1220	S11	E03	6223	08	24.6	230	1N M	1.6	3	E		120		YFT
LEAR		0835	0911	1001D	S12	E01	6223	08	24.4	86D	1F		3	E		114		ZF
RAMY		1032E	1150	1218	S10	E00	6223	08	24.4	106D	1F		3	E		187		YF
GOES		1137	1149	1203						26		C 8.8						
SVTO		1209	1210	1214	N16	E78	6233	08	30.4	5	SF		3	E		16		
HOLL		1415	1425	1510	S14	E00	6223	08	24.6	55	SF C	4.4	3	E		16		
SVTO		1435	1435	1447	S19	W74	6221	08	19.0	12	SF		3	E		25		
HOLL		1441E	1441U	1447	S12	W68	6214	08	19.5	6D	SF		3	E		19		
RAMY		1727E	1747	1759	N11	E65	6233	08	29.6	32D	SF		2	E		17		
HOLL		1731	1738	1748	N12	E65	6233	08	29.6	17	SF		4	E		18		F
HOLL		1919	1921	1934	S27	E20	6230	08	26.4	15	SF		3	E		19		
HOLL		1946	1950	2000	S27	E21	6230	08	26.4	14	SF		3	E		20		
HOLL		2148	2148	2157	N13	E62	6233	08	29.6	9	SF		3	E		17		
PALE		2149	2149	2203	N14	E63	6233	08	29.7	14	SF		3	E		19		
PALE		2205	2230	2243	N16	E62	6233	08	29.6	38	SF		3	E		27		
HOLL		2213	2217	2223	N15	E67	6233	08	30.0	10	SF		3	E		17		
HOLL		2255E	2402U	2415	S24	E17	6230	08	26.3	80D	1N		1	E		136		EH
PALE		2325	2330	2338	S27	E20	6230	08	26.5	13	SF		3	E		30		
PALE		2351E	2401U	2414	S27	E19	6230	08	26.5	23D	SF M	1.5	3	E		96		FE
LEAR	25	0006E	0007U	0012	S27	E20	6230	08	26.6	6D	1F		1	E		174		
PALE		0100E	0117U	0127D	N14	E62	6233	08	29.7	27D	SF		3	E		52		F
LEAR		0242	0247	0251	N12	E68	6233	08	30.2	9	SF C	4.6	3	E		37		F
PALE		0318	0320	0326	S16	W10	6223	08	24.4	8	SF		3	E		22		
LEAR		0318	0321	0327	S15	W11	6223	08	24.3	9	SF		3	E		35		F
LEAR		0457	0457	0514	S10	W09	6223	08	24.5	17	SF		3	E		18		F
GOES		0516	0518	0520						4		C 2.6						
SVTO		0709	0725	0735	S13	W23	6235	08	23.6	26	SF		3	E		32		
SVTO		1020	1025	1055	S14	W12	6223	08	24.5	35	SF		3	E		17		
RAMY		1220	1227	1254	S12	W16	6223	08	24.3	34	SF		3	E		18		
GOES		1300	1304	1307						7		C 2.1						
HOLL		1553	1555	1605	S23	W10	6226	08	24.9	12	SF C	3.1	4	E		20		
SVTO		1554	1555	1559	S23	W08	6226	08	25.0	5	SF		3	E		14		
HOLL		1556	1556	1606	N16	W64	6215	08	20.8	10	SF		4	E		10		
HOLL		1617	1619	1622	S12	W78	6214	08	19.8	5	SF		4	E		29		
RAMY		1707	1714	1719	N12	E56	6233	08	29.9	12	SF C	2.7	3	E		27		F
RAMY		1727	1747	1757	S22	W11	6226	08	24.9	30	SF		3	E		51		F
HOLL		1727	1835	1844	S23	W12	6226	08	24.8	77	SF		3	E		56		F
PALE		1831	1836	1842	S18	W10	6226	08	25.0	11	SF C	3.2	3	E		37		F
RAMY		1833	1834	1840	S19	W11	6226	08	24.9	7	SF		3	E		18		F
HOLL		1850	1852	1856	N12	W16	6232	08	24.6	6	SF		3	E		45		U
RAMY		1851	1851	1854	N12	W16	6232	08	24.6	3	SF		3	E		34		U
HOLL		1908	1908	1913	N13	E60	6233	08	30.3	5	SF		3	E		16		
RAMY		1955	2022	2046	S24	E02	6227	08	26.0	51	SN		3	E		95		UF
HOLL		1958	2009	2113	S23	E02	6227	08	26.0	75	1N C	6.0	4	E		151		FE
PALE		2008E	2009U	2050	S24	E04	6227	08	26.1	42D	SF		3	E		57		F
HOLL		2017	2017	2025	S09	W25	6223	08	24.0	8	SF		4	E		24		
RAMY		2018	2018	2024	S10	W24	6223	08	24.0	6	SF		3	E		18		H
HOLL		2108	2123	2137	S11	W12	6223	08	25.0	29	SF		3	E		14		
RAMY		2110E	2110U	2155D	S07	E09	6228	08	26.5	45D	SF		2	E		15		
HOLL		2120	2124	2134	S18	W11	6226	08	25.0	14	SF		3	E		12		
HOLL		2148	2209	2302	S06	E09	6228	08	26.6	74	1F C	4.0	3	E		121		
PALE		2202	2207	2245D	S06	E10	6228	08	26.7	43D	SF C	4.0		E		51		K
PALE		2202	2214U	2245D	S06	E10	6228	08	26.7	43D	1F		3	E		155		
HOLL		2315	2315	2326	N13	E58	6233	08	30.3	11	SF		3	E		23		F
HOLL	26	0042E	0042U	0053	N13	E43	6233	08	29.3	11D	SF		2	E		16		
HOLL		0050	0051	0102	N15	W16	6234	08	24.8	12	SF C	3.1	2	E		12		
HOLL		0055	0057U	0105	S17	W17	6226	08	24.7	10	SF		2	E		64		F
LEAR		0056	0056	0100	S18	W16	6226	08	24.8	4	SF		3	E		19		F
GOES		0129	0136	0143						14		C 3.5						
PALE		0212	0226	0253	S12	W32	6235	08	23.7	41	SF C	5.5	3	E		60		
LEAR		0212	0227	0256	S11	W32	6235	08	23.7	44	1F C	5.5	3	E		107		F
GOES		0326		0355D						29D		C 3.8						
LEAR		0353	0354	0423	S19	W16	6226	08	24.9	30	SF C	5.9	3	E		50		F
PALE		0354	0405	0424D	S18	W15	6226	08	25.0	30D	SF		3	E		85		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
							USAF Region								Mo Day	Apparent (10-6 Disk)		Corr (Sq Deg)
SVTO	26	0728	0737	0753	N16	E40	6233	08	29.3	25	SN	C	6.7	3	E	56	
SVTO		0844	0907	0956D	S18	W23	6226	08	24.6	72D	1N	C	5.9	3	E	190	F
SVTO		0845	0909	0920	S15	W33	6223	08	23.9	35	SF			3	E	64	FH
LEAR		0850	0902	0934	S17	W24	6226	08	24.5	44	SF			3	E	82	
LEAR		0855	0922	0934	S10	W31	6223	08	24.0	39	SF			3	E	24	
SVTO		1027	1027	1043	N15	E37	6233	08	29.2	16	SF			3	E	15	
SVTO		1039	1041	1106	S22	W05	6227	08	26.0	27	SF			3	E	14	
SVTO		1120	1154	1230	N15	E37	6233	08	29.3	70	SF	C	2.8	3	E	39	
RAMY		1129E	1156U	1236	N13	E39	6233	08	29.4	67D	SF			3	E	39	F
RAMY		1318	1319	1344	N13	E40	6233			26	SF				E	36	K
RAMY		1318	1336	1344	N13	E40	6233	08	29.6	26	SF			2	E	30	F
RAMY		1347	1352	1445	N13	E37	6233	08	29.4	58	1N	M	1.0	3	E	193	FE
SVTO		1349	1351U	1351D	N14	E44	6233	08	29.9	20	1F			3	E	190	
HOLL		1351E	1353U	1439	N14	E42	6233	08	29.7	48D	1B			2	E	111	FH
SVTO		1443	1450	1458	S27	W01	6230	08	26.5	15	SF			3	E	22	
SVTO		1501	1502	1511	S25	W02	6230	08	26.5	10	SF			3	E	26	
RAMY		1501	1503	1507	S25	W05	6230	08	26.2	6	SF			3	E	14	
HOLL		1537	1542	1855	S18	W27	6226			198	2N				E	202	K
HOLL		1537	1619	1855	S18	W27	6226	08	24.6	198	2N			4	E	296	FE
RAMY		1538	1541	1740	S19	W26	6226	08	24.7	122	1N			3	E	131	F
RAMY		1541	1542	1556	N16	E42	6233	08	29.8	15	SF	C	8.3	3	E	32	
SVTO		1544	1546	1551	S11	W35	6235	08	24.0	7	SF			3	E	68	
HOLL		1544	1546	1552	S11	W34	6223	08	24.1	8	SF			4	E	68	FH
RAMY		1544	1546	1559	S08	W36	6223	08	23.9	15	SF			3	E	87	
HOLL		1605	1616U	1616D	S23	W06	6227	08	26.2	11D	1N			4	E	240	F
HOLL		1605	1620	1918	S24	W07	6227	08	26.1	193	2B	M	5.2	4	E	426	UF
HOLL		1605	1815	1918	S24	W07	6227			193	SN				E	47	K
RAMY		1608	1618	1741	S26	W10	6227	08	25.9	93	2B			3	E	391	UF
SVTO		1609	1618	1700D	S25	W08	6226	08	26.0	51D	2N			3	E	307	FE
PALE		1725E		1757	S24	W11	6227	08	25.9	32D	SF			3	E	54	F
HOLL		1816E	1816U	1836D	S14	W20	6223	08	25.2	20D	SF			4	E	45	F
RAMY		1857	1904	1938	N13	E33	6233	08	29.3	41	SF			3	E	57	
HOLL		1858	1903	1914	N14	E34	6233	08	29.3	16	SF			4	E	56	
PALE		1900	1903	1918	N14	E35	6233	08	29.4	18	SF			3	E	36	F
PALE		1926	1927	1937	N15	E34	6233	08	29.4	11	SF			3	E	34	F
HOLL		1927	1929	1937	N14	E33	6233	08	29.3	10	SF			4	E	48	
HOLL		2108	2111	2117	N14	E32	6233	08	29.3	9	SF			4	E	30	
PALE		2109	2112	2124D	N15	E32	6233	08	29.3	15D	SF			3	E	28	
HOLL		2217	2221	2329D	N13	E37	6233			72D	SN				E	36	K
PALE		2217	2303	2320	N14	E38	6233	08	29.8	63	SF	C	5.6	3	E	81	F
HOLL		2217	2303	2329D	N13	E37	6233	08	29.7	72D	SN	C	5.6	3	E	86	F
LEAR		2301E	2303	2307	N13	E33	6233	08	29.4	6D	SF	C	5.6	2	E	79	F
PALE		2347	2348	2352	N14	E40	6233	08	30.0	5	SF			3	E	25	F
PALE	27	0008	0010	0026	N14	E35	6233	08	29.6	18	SF			3	E	35	F
LEAR		0332	0333	0342	N13	E28	6233	08	29.2	10	SF			3	E	39	
LEAR		0350	0352U	0402D	S21	W32	6226	08	24.7	12D	2F			3	E	348	
PALE		0350	0356	0412	S19	W32	6226	08	24.7	22	2F	M	1.8	3	E	286	ZE
SVTO		0700	0715U	0715D	S09	W37	6235	08	24.5	15D	1F			3	E	101	
SVTO		0700	0716U	0716D	S14	W49	6235	08	23.6	16D	1F			3	E	168	
SVTO		0916	0920	0924	N15	E29	6233	08	29.6	8	SF			3	E	33	
SVTO		0925	0929	0937	N15	E38	6233	08	30.3	12	SF			3	E	19	
SVTO		0959	0959	1006	N15	E28	6233	08	29.5	7	SF			3	E	19	
SVTO		1028	1039	1106	N15	E26	6233	08	29.4	38	SF	C	3.5	3	E	48	
SVTO		1039	1043	1049	S21	W35	6226	08	24.8	10	SF			3	E	21	
SVTO		1109	1110	1156	S09	W09	6228	08	26.8	47	SF			3	E	19	
RAMY		1125	1125	1138	N13	E29	6233	08	29.7	13	SF			2	E	25	F
HOLL		1401	1403	1427	N16	E30	6233	08	29.8	26	SF			3	E	16	F
HOLL		1402	1422	1433	S07	W13	6228	08	26.6	31	SF			3	E	19	
RAMY		1420E	1435U	1455	N15	E32	6233	08	30.0	35D	SF			3	E	22	F
HOLL		1433	1433	1449	N13	E27	6233	08	29.6	16	SF			3	E	20	F
HOLL		1451	1452	1528	S09	W41	6223	08	24.5	37	SF			3	E	11	
HOLL		1503E	1503U	1521	N13	E13	6233	08	28.6	18D	SF			2	E	47	F
HOLL		1528E	1528U	1532	N14	E20	6233	08	29.1	4D	SF			3	E	17	
HOLL		1549	1603	1804	N13	E28	6233	08	29.8	135	SF			3	E	29	F
RAMY		1551	1603	1635	N13	E28	6233	08	29.8	44	SF			3	E	26	F
PALE		1637E	1637U	1649	N14	E27	6233	08	29.7	12D	SF			3	E	13	
HOLL		1700	1701	1710	N24	W36	6234	08	24.9	10	SF			3	E	22	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/USAF		CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							Region	Region							Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	27	1756	1800	1825	S20	W41	6226		08 24.6	29	SF		3	E		16		
HOLL		1813	1832	2207	N14	E23	6233			234	1N			E		105		KT
HOLL		1813	2120	2207	N14	E23	6233	08 29.5		234	2B		3	E		362		ZU
RAMY		1822	1832	2203D	N13	E21	6233			221D	1N			E		90		KT
RAMY		1822	2104	2203D	N13	E21	6233	08 29.3		221D	2B		3	E		277		FHT
PALE		1825	1840	1857	N14	E23	6233	08 29.5		32	SF		4	E		21		F
RAMY		1843	1843	1848	S10	W37	6223	08 25.0		5	SF		3	E		12		
HOLL		1843	1843	1852	S12	W37	6223	08 25.0		9	SF		3	E		16		
PALE		1905	1910	2026	N14	E26	6233			81	SB			E		91		K
PALE		1905	1914	2026	N14	E26	6233	08 29.8		81	SF M 2.1		4	E		64		FE
HOLL		2008	2009	2017	S27	W17	6230	08 26.5		9	SF		3	E		17		
PALE		2037	2105	2156	N14	E26	6233	08 29.8		79	2B X 3.0		3	E		331		FH
PALE		2308	2310	2331D	S19	W41	6226	08 24.8		23D	SF		3	E		13		
LEAR		2332	2338	2347	N13	E24	6233	08 29.8		15	SF		3	E		49		
LEAR	28	0338	0348	0501	N13	E18	6233			83	SF C 9.5			E		66		K
LEAR		0338	0423	0501	N13	E18	6233	08 29.5		83	1F		3	E		145		F
PALE		0342	0349	0408	N14	E20	6233	08 29.7		26	SF		3	E		46		F
PALE		0421	0423	0435D	N14	E23	6233	08 29.9		14D	1F C 6.5		3	E		112		F
LEAR		0549	0550	0554	N13	E18	6233	08 29.6		5	SF		3	E		19		
LEAR		0559	0605	0608	N13	E19	6233	08 29.7		9	SF		3	E		16		
SVTO		0817	0826	0848	N14	E16	6233	08 29.5		31	SF		3	E		36		F
SVTO		0834E	0837	0842	S15	W66	6235	08 23.4		8D	SF		3	E		42		
SVTO		0849	0910	0953	N15	E15	6233	08 29.5		64	1B M 4.5		3	E		204		F
SVTO		0849	0927	0953	N15	E15	6233			64	SB			E		62		K
LEAR		0914E	0914U	1000D	N14	E16	6233	08 29.6		46D	1F		2	E		139		F
SVTO		1013	1015	1059	N15	E17	6233	08 29.7		46	SN M 1.3		3	E		42		F
RAMY		1040E	1128	1137	N14	E18	6233	08 29.8		57D	SF		3	E		67		F
SVTO		1101	1103	1146	S14	W47	6223	08 24.9		45	SF		3	E		67		
RAMY		1107	1117	1134	S10	W45	6223	08 25.1		27	SF		3	E		60		
RAMY		1137	1140	1240	N14	E19	6233	08 29.9		63	SF		3	E		41		F
RAMY		1137	1213	1240	N14	E19	6233			63	SF			E		26		K
SVTO		1153	1155	1158	N15	E17	6233	08 29.8		5	SF		3	E		14		F
RAMY		1241	1242	1252	S15	W57	6223	08 24.2		11	SF		3	E		60		
RAMY		1241	1249	1419	N13	E17	6233	08 29.8		98	1N M 4.9		3	E		124		F
RAMY		1241	1304	1419	N13	E17	6233			98	1N			E		152		K
HOLL		1254E	1254U	1405D	N13	E16	6233	08 29.7		71D	SN		1	E		60		FE
SVTO		1337E	1340U	1416	N14	E15	6233	08 29.7		39D	SF		3	E		24		F
RAMY		1420	1425	1442	N13	E18	6233	08 29.9		22	SF		3	E		28		F
RAMY		1451	1459	1527	N13	E18	6233	08 30.0		36	SF		3	E		41		F
HOLL		1503E	1503U	1521	N13	E13	6233	08 29.6		18D	SF		2	E		47		F
HOLL		1526	1533	1623	S29	W48	6226	08 24.9		57	SF		3	E		27		
HOLL		1527	1609	1640	S26	W34	6227	08 26.0		73	SN		3	E		77		F
RAMY		1528	1533	1543	N13	E14	6233	08 29.7		15	SF		3	E		31		F
RAMY		1538	1539	1543	S28	W49	6226	08 24.8		5	SF		3	E		22		
SVTO		1609	1609	1618	S27	W34	6227	08 26.0		9	SF		2	E		21		
RAMY		1609	1609	1618	S25	W35	6227	08 26.0		9	SF		3	E		20		
HOLL		1624	1633	1635	S22	W52	6226	08 24.7		11	SF C 5.2		3	E		10		
RAMY		1627	1634	1717	N14	E15	6233	08 29.8		50	SF		3	E		45		F
SVTO		1628E	1630U	1646	N15	E15	6233	08 29.8		18D	SF		2	E		37		F
HOLL		1631	1638	1719	N14	E16	6233	08 29.9		48	SN		3	E		33		
HOLL		1709	1711	1734	S22	W52	6226	08 24.7		25	SN C 4.3		3	E		36		
HOLL		1710	1711	1726	S23	W36	6227	08 25.9		16	SF		3	E		35		
RAMY		1710	1712	1724	S23	W43	6226	08 25.4		14	SF		3	E		46		F
HOLL		1757	1831	1934	N14	E13	6233	08 29.7		97	1N		3	E		113		FE
PALE		1800	1803	1805	N14	E15	6233	08 29.9		5	SF		3	E		30		
PALE		1819	1831	1905	N15	E14	6233	08 29.8		46	1N		3	E		110		F
RAMY		1820E	1829	1925	N14	E13	6233	08 29.7		65D	SB M 1.8		3	E		92		F
RAMY		1820E	1832	1925	N14	E13	6233			65D	SN			E		84		K
HOLL		1821	1825	1828	S22	W42	6226	08 25.5		7	SF		3	E		10		F
PALE		1917	1920	1922	N14	E13	6233	08 29.8		5	SF		3	E		16		
HOLL		1928	1932	1952	S11	W50	6223	08 25.0		24	SF		3	E		19		
HOLL		1938	1939	1951	S23	W37	6227	08 26.0		13	SF		3	E		12		
HOLL		2043	2046	2056	S13	W57	6223	08 24.6		13	SF		3	E		29		F
HOLL		2052	2129	2339	N13	E13	6233			167	SN			E		12		K
HOLL		2052	2233	2339	N13	E13	6233	08 29.8		167	1N M 1.8		3	E		132		FE
RAMY		2057	2105	2114	N13	E13	6233	08 29.8		17	SF		3	E		19		F
HOLL		2111	2120	2145	S13	W56	6223	08 24.6		34	SF		3	E		31		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	NOAA/			Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
					Lat	CMD	Region						Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	28	2115	2116	2146	S07	W30	6228	08 26.6	31	SF	3	E		10		
RAMY		2144	2151	2220D	N13	E09	6233	08 29.6	36D	SF	3	E		40		F
HOLL		2221	2228	2305	S24	W56	6226	08 24.6	44	SF	3	E		45		F
LEAR		2301	2310	2358	N13	E11	6233	08 29.8	57	SF	3	E		37		
HOLL	29	0015	0016	0020	S12	W53	6223	08 25.0	5	SF	3	E		24		F
GOES		0053	0057	0101					8		C 7.4					
GOES		0413	0417	0421					8		C 4.5					
LEAR		0429	0433	0451	S23	W50	6226	08 25.3	22	1F M 1.5	3	E		215		U
LEAR		0452	0456	0500	N14	E08	6233	08 29.8	8	SF	3	E		22		
LEAR		0557	0559	0614	S22	W50	6226	08 25.4	17	SF	3	E		19		F
LEAR		0705	0713	0740	N14	E11	6233		35	SF		E		75		K
LEAR		0705	0727	0740	N14	E11	6233	08 30.1	35	SF C 9.4	3	E		58		F
SVTO		0706	0812U	0936D	N14	E12	6233	08 30.2	150D	SN	2	E		84		F
LEAR		0807	0813	0843	N13	E03	6233	08 29.6	36	SF M 1.3	3	E		64		F
LEAR		0933	0933	0940	S22	W59	6226	08 24.9	7	SF	3	E		23		
SVTO		1018	1019U	1036D	N23	E18		08 30.8	18D		2	E		39		
RAMY		1150	1154	1219	S21	W53	6226	08 25.4	29	SF	3	E		54		
SVTO		1155	1155	1200	S23	W53	6226	08 25.4	5	SF C 3.7	3	E		28		F
RAMY		1210	1213	1217	S12	W60	6223	08 25.0	7	SF	3	E		16		
HOLL		1320	1323U	1337	S13	W62	6223	08 24.9	17	SF C 2.7	3	E		25		F
HOLL		1343	1345	1351	S07	W40	6228	08 26.6	8	SF	3	E		21		F
HOLL		1355	1400	1424	S23	W48	6227	08 25.9	29	SF	3	E		37		FH
RAMY		1357	1401	1423	S23	W50	6227		26	SF		E		51		K
RAMY		1357	1421	1423	S23	W50	6227	08 25.7	26	SF	3	E		40		F
RAMY		1424	1433	1436	S22	W50	6227	08 25.7	12	SF	3	E		24		
HOLL		1456	1457	1536	S13	W65	6223	08 24.7	40	SF C 4.0	3	E		36		F
PALE		1810	1811	1816	S12	W63	6223	08 25.0	6	SF	3	E		11		
HOLL		1810	1812	1820	S12	W68	6223	08 24.6	10	SF	3	E		45		F
PALE		1815	1817	1826	S13	E54	6238	09 2.8	11	SF C 2.2	3	E		32		
HOLL		1816	1819	1825	S13	E54	6238	09 2.8	9	SF C 2.2	3	E		32		F
RAMY		1817	1817	1822	S12	E55	6238	09 2.9	5	SF C 2.2	3	E		24		
HOLL		1856	1856	1902	S09	W24		08 28.0	6	SF	3	E		13		
PALE		1932	1932	1941	S13	E53	6238	09 2.8	9	SF	3	E		35		
HOLL		1932	1932	1944	S12	E53	6238	09 2.8	12	SF	3	E		59		F
RAMY		1932	1932	1945	S12	E52	6238	09 2.7	13	SF	3	E		66		
RAMY		1948	1949	1953	S12	W65	6223	08 24.9	5	SF	3	E		26		
HOLL		1948	1949	1955	S12	W63	6223	08 25.1	7	SF	3	E		40		F
RAMY		2001	2001	2004	N13	W01	6233	08 29.7	3	SF	3	E		12		
RAMY		2036	2039	2221	N13	W02	6233	08 29.7	105	1B M 1.6	3	E		111		F
HOLL		2037	2040	2246	N13	W03	6233	08 29.6	129	1N M 1.6	3	E		118		FE
PALE		2037	2041	2233	N14	E01	6233	08 29.9	116	1N M 1.6	3	E		143		
HOLL		2103	2106	2316	S14	W73	6223	08 24.4	133	SF	3	E		52		F
RAMY		2105	2107	2118	S13	W73	6223	08 24.4	13	SF	3	E		44		F
HOLL		2214	2214	2244	S25	W49	6227	08 26.1	30	SF	3	E		20		F
HOLL		2332	2335	2339	S11	W67	6223	08 24.9	7	SF	3	E		16		F
HOLL		2347	2349	2408	S14	E46	6238	09 2.5	21	SF	3	E		21		F
HOLL		2350	2350	2401	S11	W48	6228	08 26.4	11	SF	3	E		17		F
LEAR	30	0044E	0044U	0202	S14	W71	6223	08 24.7	78D	SF	3	E		75		
LEAR		0109	0110	0118	N14	W03	6233	08 29.8	9	SF	3	E		25		F
LEAR		0157	0158	0211	N14	W12	6233	08 29.2	14	SN M 1.2	3	E		94		
LEAR		0303	0303	0308	S15	W79	6223	08 24.1	5	SF	3	E		84		
LEAR		0409	0410	0414	S24	W63	6226	08 25.3	5	SF	3	E		17		
LEAR		0422	0436	0509	N13	W06	6233		47	SF M 1.0		E		45		K
LEAR		0422	0447	0509	N13	W06	6233	08 29.7	47	SF M 1.0	3	E		58		
LEAR		0450	0452	0505	S30	W43	6227	08 26.8	15	1F	3	E		101		F
LEAR		0535	0539	0547	S24	W64	6226	08 25.3	12	SF	3	E		12		
SVTO		0612	0614U	0625D	N12	W04	6233	08 29.9	13D	SF C 1.0	2	E		36		F
LEAR		0613	0613	0620	N12	W08	6233	08 29.6	7	SF	3	E		28		F
GOES		0714	0717	0719					5		C 3.1					
SVTO		0958E	1000U	1007	S16	E30	6237	09 1.7	9D	SF	3	E		20		
RAMY		1023E	1023U	1057D	N12	W10	6233	08 29.7	34D	SF C 2.6	2	E		25		F
RAMY		1153	1154	1202	N13	W10	6233	08 29.7	9	SF	3	E		16		
RAMY		1229	1230	1232	S16	W84	6223	08 24.1	3	SF	3	E		25		
RAMY		1243	1245	1302	N13	W11	6233	08 29.7	19	SF	3	E		12		
RAMY		1303	1312	1448	N13	W10	6233		105	1B		E		106		K
RAMY		1303	1319	1448	N13	W10	6233	08 29.8	105	1B	3	E		234		F

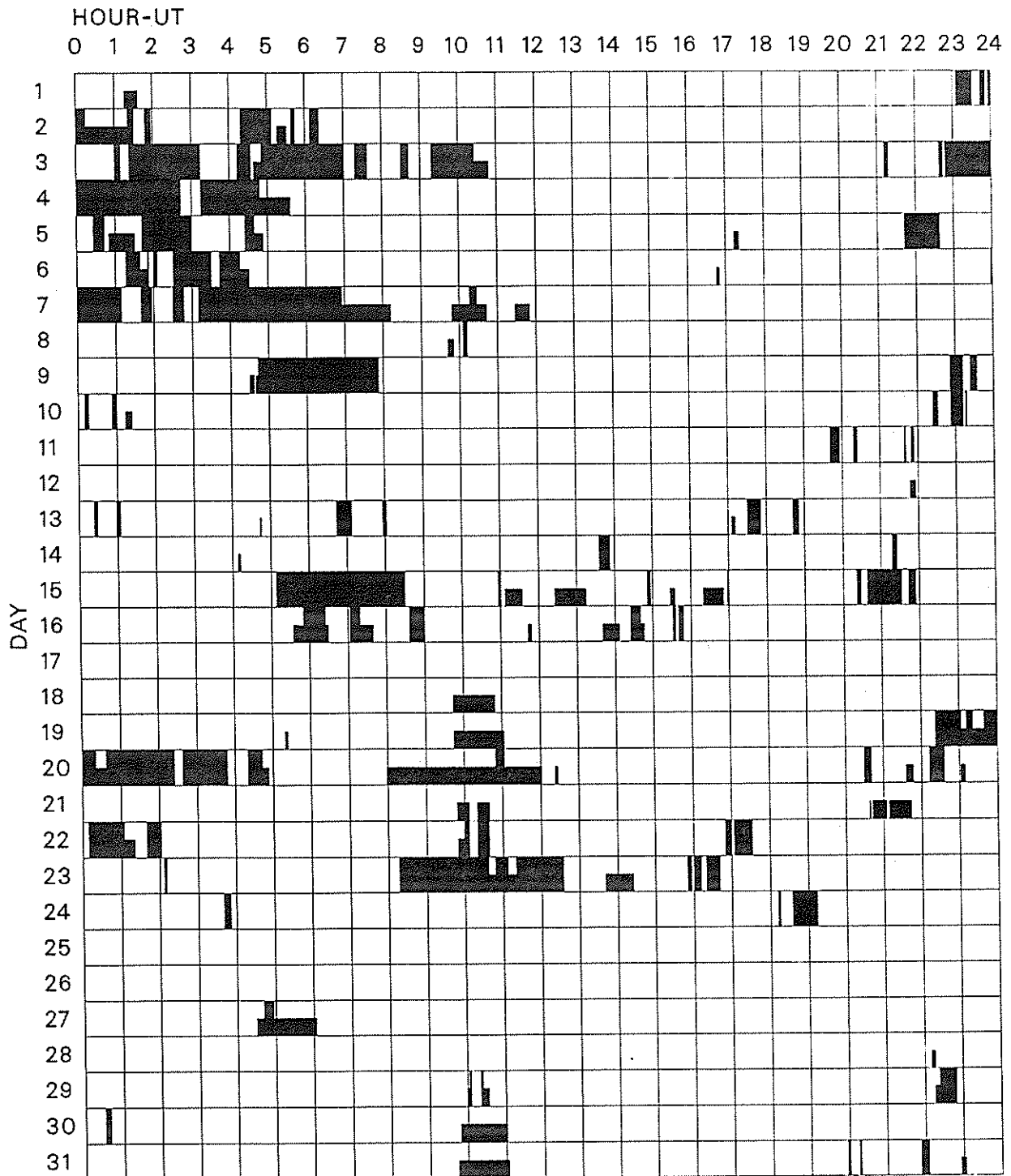
H α SOLAR FLARES

AUGUST 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks	
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
HOLL	30	1308E	1310	1449	N13	W08	6233		101D	1B		E		88		K
HOLL		1308E	1316	1449	N13	W08	6233	08 29.9	101D	1B M 2.5	3	E		125		F
SVTO		1309E	1318U	1447D	N13	W10	6233	08 29.8	98D	SN	2	E		97		F
HOLL		1426	1426	1453	S29	W48	6230	08 26.8	27	SF	3	E		22		F
HOLL		1431	1433	1444	S09	W55	6228	08 26.5	13	SF	3	E		14		
HOLL		1517	1518	1526	S24	W67	6226	08 25.5	9	SF	3	E		27		
HOLL		1550	1601	1658	S08	W57	6228		68	SF		E		21		K
HOLL		1550	1628	1658	S08	W57	6228	08 26.4	68	SF	3	E		31		F
RAMY		1600	1602	1606	S06	W56	6228	08 26.5	6	SF	3	E		14		
HOLL		1608	1616	1630	S14	E47	6238	09 3.2	22	SF	3	E		22		
RAMY		1618	1622	1645	S06	W56	6228		27	SF		E		28		K
RAMY		1618	1627	1645	S06	W56	6228	08 26.5	27	SF	3	E		25		
HOLL		1638	1643	1649	S19	E34		09 2.3	11	SF	3	E		22		
HOLL		1639	1639	1649	S20	W68	6226	08 25.5	10	SF	3	E		15		
RAMY		1639	1643	1647	S21	E35		09 2.4	8	SF	3	E		22		
HOLL		1704	1705	1723	S20	W69	6226	08 25.4	19	SN	3	E		63		
RAMY		1705	1705	1713	S24	W68	6226	08 25.4	8	SF	3	E		36		
PALE		1705	1706	1712	S26	W70	6226	08 25.3	7	SF	3	E		41		
RAMY		1711	1717	1728	S07	W56	6228	08 26.5	17	SF	3	E		59		F
PALE		1716	1717	1725	S09	W59	6228	08 26.3	9	SF	3	E		51		FH
HOLL		1719	1725	1737	N15	W12	6233	08 29.8	18	SF	3	E		18		
PALE		1726	1726	1737	N14	W13	6233	08 29.7	11	SF	4	E		13		
HOLL		1959	2002	2004	S11	W78	6223	08 25.0	5	SF	3	E		44		H
HOLL		2035	2043	2114	N14	W12	6233	08 29.9	39	SF	3	E		16		F
HOLL		2108	2108	2125	S16	E27	6237	09 1.9	17	SF	3	E		15		
HOLL		2131	2134	2142	N13	W17	6233	08 29.6	11	SF C 2.5	3	E		66		
HOLL		2152	2152	2159	S21	W78	6226	08 24.9	7	SF	3	E		20		
HOLL		2204	2216	2235	S23	W67	6226	08 25.7	31	SF	3	E		46		
HOLL		2208	2224	2306	N14	W09	6233	08 30.2	58	SF	3	E		73		F
PALE		2213	2225	2250	N12	W13	6233	08 29.9	37	SF	3	E		44		
HOLL		2254	2256	2313	N13	E57	6244	09 4.2	19	SF	3	E		43		
HOLL		2316	2318	2328	S10	W01		08 30.9	12	SF	3	E		14		
GOES	31	0233	0239	0242					9	C 2.2						
LEAR		0246	0247	0249	N12	E54	6244	09 4.2	3	SF	3	E		17		
PALE		0310	0312U	0328D	S12	W87	6223	08 24.6	18D	SF	3	E		65		
LEAR		0311	0312	0317	S09	W68	6223	08 26.0	6	SF	3	E		56		
PALE		0346	0354	0356	N13	E55	6244	09 4.3	10	1F	3	E		109		
LEAR		0353	0353	0359	N13	E55	6244	09 4.3	6	SF	3	E		11		
LEAR		0408	0415	0425	S25	W87	6226	08 24.4	17	1F M 1.0	3	E		135		F
PALE		0416E	0416U	0425	S25	W75	6226	08 25.4	9D	SF	3	E		82		F
LEAR		0509	0511	0517	N14	W28	6233	08 29.1	8	SF C 3.6	3	E		56		H
GOES		0525	0532	0549					24	C 2.3						
LEAR		0639	0640	0643	N13	E53	6244	09 4.3	4	SF	3	E		22		
SVTO		1044E	1046U	1056	S19	E22	6242	09 2.1	12D	SF C 2.0	3	E		45		
RAMY		1044	1046	1059D	S19	E24	6242	09 2.3	15D	SF C 2.0	3	E		35		H
RAMY		1150	1151	1154	N14	W30	6233	08 29.2	4	SF	3	E		15		
HOLL		1359E	1400U	1413	N14	E51	6244	09 4.4	14D	SF	3	E		38		H
HOLL		1438	1439	1457	S24	W78	6226	08 25.6	19	SF C 1.7	3	E		23		
HOLL		1506	1507	1558	N13	W22	6233	08 30.0	52	SF C 2.6	3	E		27		F
SVTO		1510E	1511U	1557	N13	W23	6233	08 29.9	47D	SF	3	E		36		F
HOLL		1515	1521	1553	N15	W16	6240	08 30.4	38	SF	3	E		24		
HOLL		1523	1525	1530	S24	W74	6226	08 25.9	7	SF	3	E		21		
RAMY		1524	1526	1530	S23	W76	6226	08 25.8	6	SF	3	E		15		
HOLL		1540	1546	1556	S11	E28	6238	09 2.7	16	SF	3	E		21		
HOLL		1549	1551	1612	S20	W81	6226	08 25.5	23	SF	3	E		25		
HOLL		1613	1624	1711	N13	W21	6233		58	1B		E		116		K
HOLL		1613	1628	1711	N13	W21	6233	08 30.1	58	1B C 5.7	3	E		151		UF
RAMY		1617	1622	1659	N14	W16	6240	08 30.5	42	SF	3	E		29		
SVTO		1620E	1621U	1631D	N13	W24	6233	08 29.9	11D	SN	3	E		74		F
HOLL		1623	1623	1639	N14	W17	6240	08 30.4	16	SF	3	E		12		
PALE		1637E		1653	N13	W22	6233	08 30.0	16D	SN	4	E		74		F
PALE		1706	1708	1715	N13	W23	6233	08 30.0	9	SF	4	E		15		F
PALE		1759	1800	1812D	S15	E39	6238	09 3.7	13D	SF C 1.9	4	E		16		F
HOLL		1759	1800	1812	S15	E38	6238	09 3.6	13	SF C 1.9	3	E		35		
HOLL		1814	1816	1824	S25	W77	6226	08 25.8	10	SF	3	E		34		
GOES		2030	2052	2110					40	C 3.5						
HOLL		2120	2123U	2135	N13	W25	6233	08 30.0	15	SF	3	E		11		
HOLL		2320	2320	2326	N13	W26	6233	08 30.0	6	SF	3	E		13		

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

AUGUST 1990



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

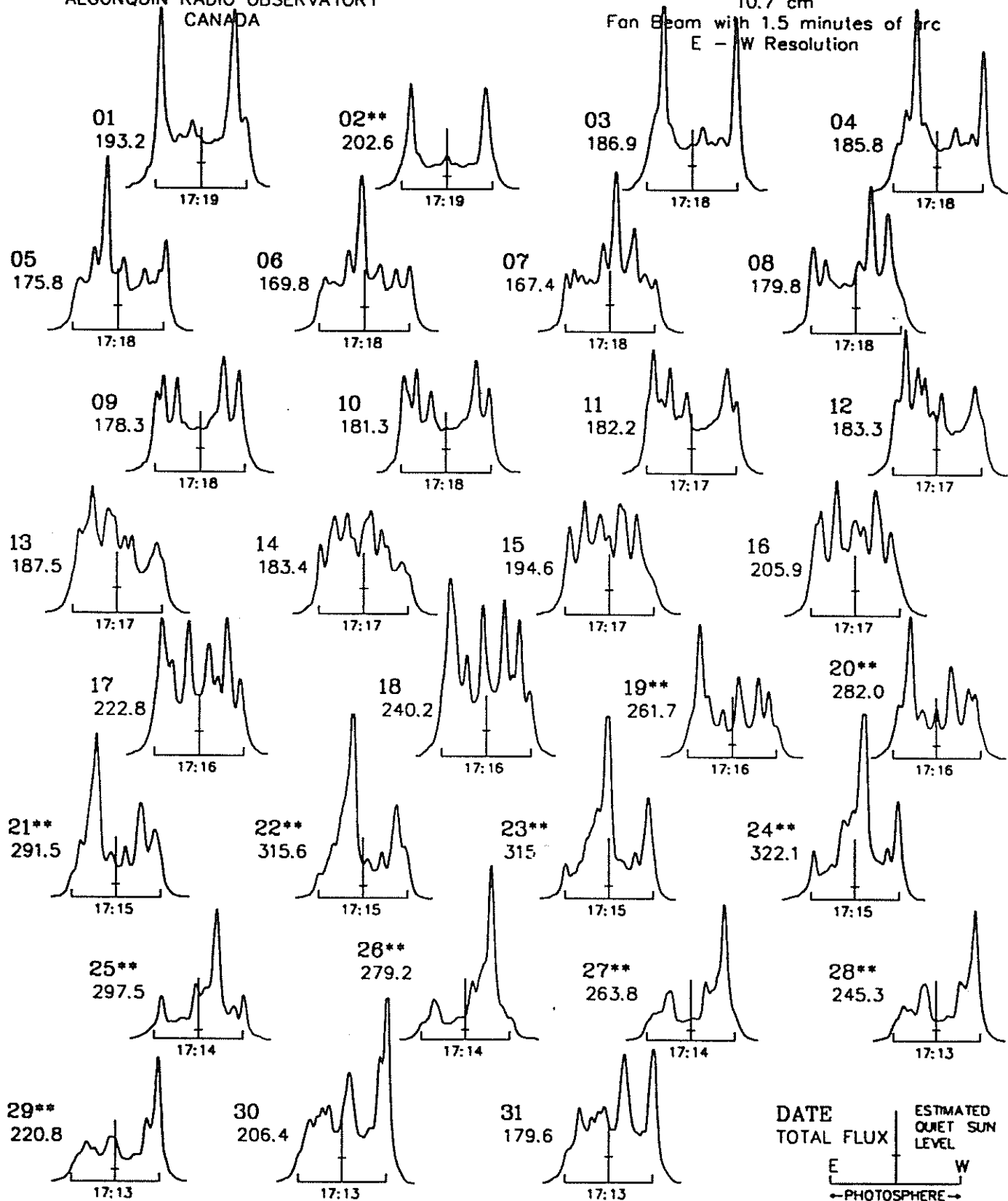
EAST - WEST SOLAR SCANS AUGUST 1990

47
Aug 90

•• 3dB attenuator in.

ALGONQUIN RADIO OBSERVATORY
CANADA

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



DATE TOTAL FLUX | ESTIMATED QUIET SUN LEVEL
E | W
← PHOTOSPHERE →
TIME U.T.

48
Aug 90

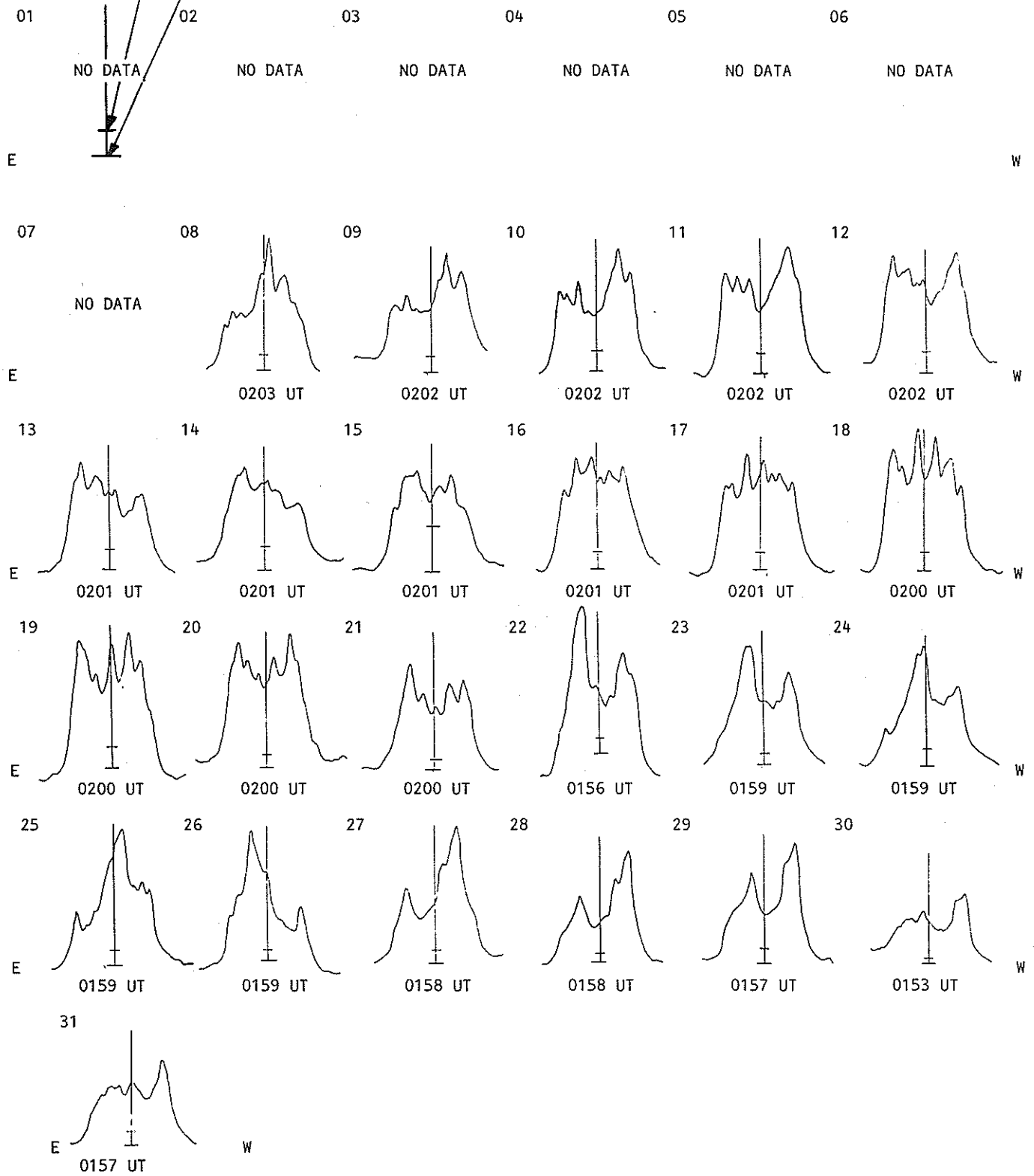
EAST - WEST SOLAR SCANS

Fleurs, Australia

AUGUST 1990

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

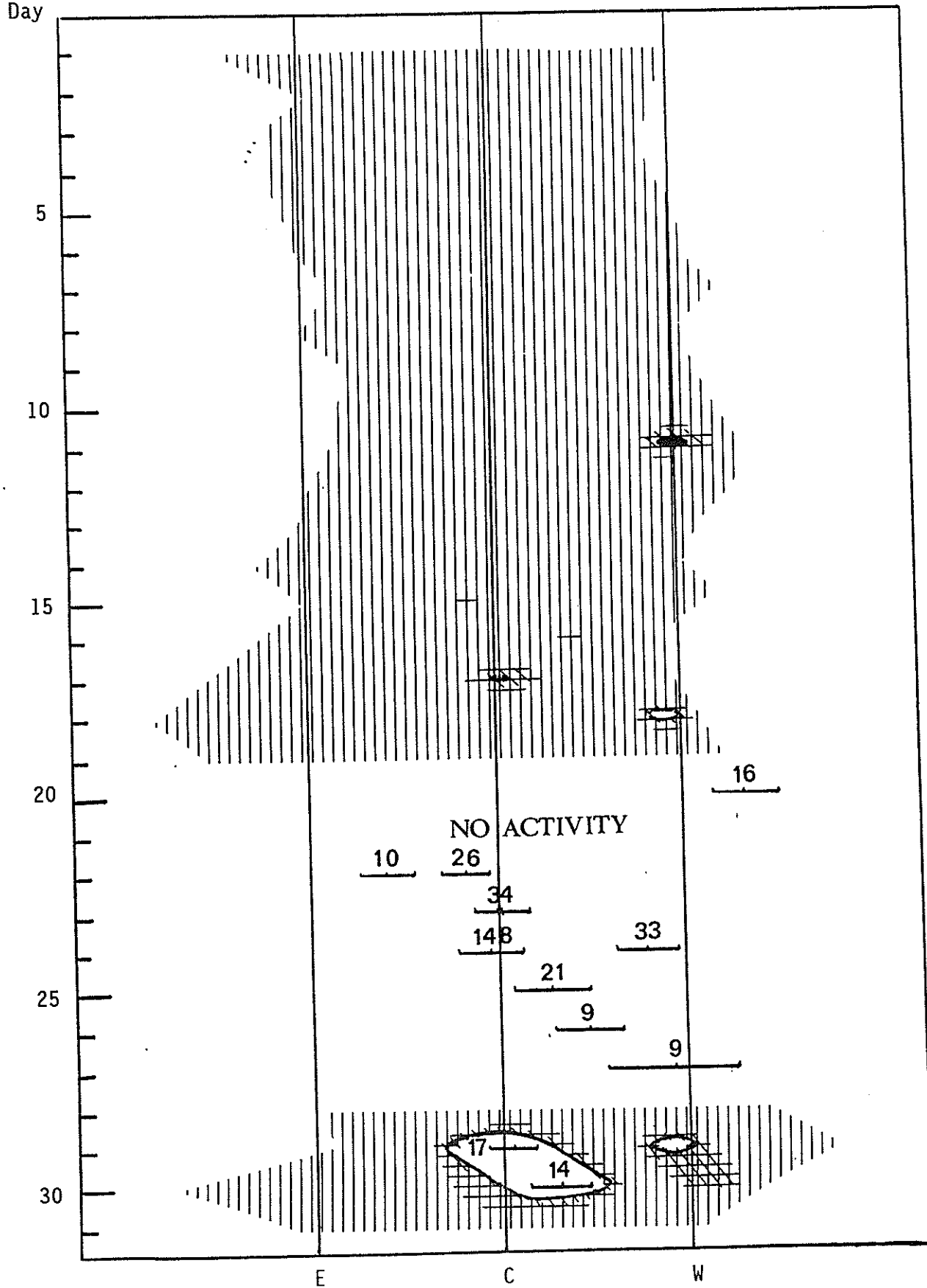
Estimated Quiet Sun Level
Cold Sky Level



SOLAR INTERFEROMETRIC OBSERVATIONS
AUGUST 1990

49
Aug 90
164 MHz

Nancay
Day



50
Aug 90

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

AUGUST 1990

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		
01	2800 OTTA	22 GRF	1920.0	1958.0	190.0	25.3	12.0		
04	2800 OTTA	4 S/F	1413.0	1413.8	5.5	13.4	3.0		
05	2800 OTTA	20 GRF	1347.0	1354.0	29.0	4.5	2.0		
08	2800 OTTA	4 S/F	1348.5	1349.8	9.3	10.2	2.0		
	2800 OTTA	20 GRF	1952.0	1958.0	37.0	6.3	3.0		
09	2800 OTTA	20 GRF	1840.0	1940.0	185.0	4.9	2.0		
	2800 OTTA	3 S	1906.3	1912.1	27.5	43.7	9.0		
	2695 SGMR	4 S/F	1911.0E	1911.0	3.0D	49.0		QL=4 ST=2 TYP=3	
	8800 SGMR	4 S/F	2028.0E	2029.0	4.0D	77.0		QL=2 ST=2 TYP=3	
10	8800 SVTO	8 S	0852.0E	0852.0	1.0D	120.0		QL=2 ST=2 TYP=3	
	2800 OTTA	47 GB	1806.5	1820.9	42.5	1861.0	372.0		
	2695 PALE	49 GB	1808.0E	1820.0	37.0D	1400.0		QL=4 ST=2 TYP=7	
	2695 SGMR	49 GB	1808.0E	1825.0	39.0D	1500.0		QL=4 ST=3 TYP=7	
	8800 PALE	49 GB	1809.0E	1817.0	38.0D	5200.0		QL=4 ST=2 TYP=7	
	8800 SGMR	49 GB	1809.0E	1817.0	38.0D	4400.0		QL=4 ST=3 TYP=7	
	2800 OTTA	29 PBI	1849.0	1849.0	180.0	32.8	16.0		
	2695 PENT	3 S	2222.0	2222.6	2.5	25.8	5.0		
	2695 PENT	20 GRF	2250.0	2319.5	52.0	9.5	4.0		
13	8800 SVTO	8 S	0922.0E	0923.0	2.0D	180.0		QL=4 ST=2 TYP=3	
	2800 OTTA	4 S/F	1309.5	1325.8	25.0	61.2	18.0		
	2695 SGMR	8 S	1320.0E	1321.0	1.0D	25.0		QL=4 ST=2 TYP=3	
	2800 OTTA	29 PBI	1334.5	1334.5	145.0	19.5	9.0		
	2800 OTTA	3 S	2224.7	2226.0	3.5	13.8	3.0		
	8800 SGMR	8 S	2225.0E	2225.0	1.0D	63.0		QL=4 ST=2 TYP=3	
14	2800 OTTA	20 GRF	1634.5	1700.0	59.0	3.5	1.0		
	2800 OTTA	20 GRF	1943.0	1947.5	37.0	6.7	3.0		
15	2800 OTTA	20 GRF	1540.5	1554.0	24.0	14.8	4.0		
	2800 OTTA	20 GRF	1937.0	1943.0	17.0	9.1	2.0		
17	2800 OTTA	4 S/F	1650.4	1651.7	3.1	8.4	2.0		
	2800 OTTA	4 S/F	2139.5	2140.8	4.5	34.0	7.0		
	2695 PENT	3 S	2336.4	2337.1	4.5	11.8	3.0		
18	8800 SVTO	4 S/F	0929.0E	0931.0	3.0D	52.0		QL=4 ST=2 TYP=3	
	2800 OTTA	3 S	1849.5	1850.1	3.4	4.7	1.0		
	2800 OTTA	3 S	1937.1	1939.3	6.3	5.7	1.0		
19	2800 OTTA	4 S/F	1354.2	1358.2	5.5D	14.0	3.0		
	2800 OTTA	20 GRF	1608.0	1717.0	165.0	15.1	6.0		
	2800 OTTA	22 GRF	1917.0	1926.0	20.0	17.3	5.0		
	2800 OTTA	3 S	2201.1	2201.4	2.2	16.2	3.0		
21	2695 SVTO	8 S	0928.0E	0930.0	2.0D	320.0		QL=4 ST=2 TYP=3	
	2695 LEAR	8 S	0929.0E	0930.0	2.0D	260.0		QL=2 ST=2 TYP=3	
	8800 LEAR	8 S	0930.0E	0930.0	1.0D	68.0		QL=2 ST=2 TYP=3	
	8800 SVTO	8 S	0930.0E	0930.0	U	210.0		QL=4 ST=2 TYP=3	
	2695 SGMR	4 S/F	1026.0E	1027.0	5.0D	61.0		QL=2 ST=2 TYP=3	
	2800 OTTA	3 S	1602.8	1603.7	6.5	90.3	18.0		
	8800 SGMR	8 S	1603.0E	1603.0	1.0D	110.0		QL=4 ST=2 TYP=3	
	2695 SGMR	8 S	1603.0E	1603.0	1.0D	83.0		QL=4 ST=2 TYP=3	
	8800 SVTO	8 S	1603.0E	1603.0	1.0D	120.0		QL=4 ST=2 TYP=3	
	2695 SVTO	8 S	1603.0E	1603.0	2.0D	84.0		QL=4 ST=2 TYP=3	
	2800 OTTA	31 ABS	1609.3	1620.0	31.0	-6.5	3.0		
	2800 OTTA	20 GRF	1700.0	1903.0	320.0	38.7	19.0		
	2695 PALE	8 S	1911.0E	1912.0	1.0D	33.0		QL=4 ST=2 TYP=3	
	22	2800 OTTA	20 GRF	1615.0	1620.0	23.5	10.7	4.0	
2800 OTTA		3 S	1651.2	1651.9	4.9	29.9	6.0		
2800 OTTA		3 S	2201.0	2203.7	5.7	41.2	8.0		
8800 SGMR		4 S/F	2236.0E	2240.0	9.0D	74.0		QL=4 ST=2 TYP=3	
2695 SGMR		4 S/F	2236.0E	2237.0	9.0D	51.0		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

51
Aug 90

AUGUST 1990

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
							Peak (10 ⁻²² W/m ² Hz)	Mean		
23	8800	LEAR	8 S	0522.0E	0522.0	U	28.0			QL=2 ST=3 TYP=3
	2695	LEAR	4 S/F	0522.0E	0522.0	3.0D	32.0			QL=2 ST=3 TYP=3
	2695	LEAR	8 S	2338.0E	2339.0	1.0D	17.0			QL=2 ST=2 TYP=3
	8800	LEAR	8 S	2338.0E	2339.0	1.0D	46.0			QL=2 ST=2 TYP=3
24	2695	SVTO	4 S/F	0905.0E	0906.0	23.0D	69.0			QL=4 ST=2 TYP=3
	2695	LEAR	4 S/F	0927.0E	0935.0	873.0D	30.0			QL=2 ST=1 TYP=5
	2800	OTTA	3 S	1324.5	1325.0	2.0	15.1	3.0		
	2800	OTTA	3 S	1946.0	1946.4	5.1	9.0	2.0		
	2695	PENT	42 SER	2355.0	2401.3	7.6				
	2695	PENT	42 SER	2355.0	2356.5	1.8	28.3	6.0		
	2695	LEAR	4 S/F	2356.0E	2356.0	3.0D	27.0			QL=2 ST=2 TYP=3
	8800	LEAR	8 S	2356.0E	2356.0	1.0D	29.0			QL=2 ST=2 TYP=3
	2695	PENT	42 SER	2357.8	2358.1	1.6	24.6	5.0		
25	2695	PENT	42 SER	0000.6	0001.3	2.4	37.9	7.0		
	8800	PALE	8 S	0306.0E	0306.0	U	66.0			QL=4 ST=2 TYP=3
	8800	LEAR	8 S	0456.0E	0457.0	1.0D	59.0			QL=2 ST=2 TYP=3
	2800	OTTA	4 S/F	1528.1	1529.9	2.6	18.3	5.0		
	2695	SGMR	4 S/F	1529.0E	1530.0	511.0D	31.0			QL=4 ST=1 TYP=3
	2800	OTTA	29 PBI	1530.7	1530.7	15.2	6.1	3.0		
	2800	OTTA	4 S/F	1534.4	1534.5	2.8	40.6	8.0		
	2800	OTTA	22 GRF	2015.0	2017.5	5.0	25.1	7.0		
	2800	OTTA	20 GRF	2030.0	2033.5	14.5	8.6	4.0		
26	2695	PALE	4 S/F	0324.0E	0325.0	6.0D	65.0			QL=4 ST=2 TYP=3
	2695	LEAR	8 S	0325.0E	0325.0	1.0D	66.0			QL=2 ST=2 TYP=3
	2695	LEAR	8 S	0353.0E	0353.0	1.0D	73.0			QL=2 ST=2 TYP=3
	2695	PALE	8 S	0353.0E	0353.0	1.0D	50.0			QL=4 ST=3 TYP=3
	8800	LEAR	8 S	0732.0E	0733.0	1.0D	42.0			QL=2 ST=2 TYP=3
	2695	LEAR	8 S	0733.0E	0733.0	U	21.0			QL=2 ST=2 TYP=3
	2695	LEAR	4 S/F	0853.0E	0854.0	3.0D	27.0			QL=2 ST=2 TYP=3
	2800	OTTA	4 S/F	1346.0	1353.0	10.0	10.7	3.0		
	2800	OTTA	31 ABS	1356.5	1416.0	41.0	9.0	4.0		
	2800	OTTA	4 S/F	1531.7	1539.9	11.8	62.7	12.0		
	2695	SVTO	4 S/F	1538.0E	1540.0	11.0D	61.0			QL=4 ST=2 TYP=3
	2800	OTTA	29 PBI	1543.5	1543.5	300.0	34.0	17.0		
	2800	OTTA	4 S/F	1611.4	1618.0	22.1	132.0	26.0		
	2695	SVTO	4 S/F	1613.0E	1618.0	14.0D	150.0			QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1615.0E	1618.0	7.0D	120.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1615.0E	1617.0	15.0D	140.0			QL=2 ST=2 TYP=3
	8800	SVTO	4 S/F	1616.0E	1617.0	9.0D	110.0			QL=4 ST=2 TYP=3
	2800	OTTA	20 GRF	1633.0	1641.6	15.7	11.3	5.0		
	2695	PALE	4 S/F	1643.0E	1644.0	4.0D	95.0			QL=4 ST=2 TYP=3
	2800	OTTA	4 S/F	1704.6	1714.0	19.1	31.2	6.0		
	2695	SVTO	8 S	1707.0E	1707.0	U	55.0			QL=4 ST=3 TYP=3
2800	OTTA	20 GRF	1811.0	1812.3	9.8	10.7	4.0			
2800	OTTA	4 S/F	2216.2	2218.0	7.1	22.7	7.0			
27	8800	LEAR	4 S/F	0350.0E	0351.0	3.0D	100.0			QL=2 ST=2 TYP=3
	2695	LEAR	8 S	0350.0E	0351.0	2.0D	190.0			QL=2 ST=2 TYP=3
	8800	SGMR	8 S	1552.0E	1552.0	1.0D	69.0			QL=2 ST=2 TYP=3
	8800	SVTO	8 S	1552.0E	1552.0	1.0D	62.0			QL=4 ST=2 TYP=3
	2800	OTTA	4 S/F	1552.0	1601.2	18.8	94.0	19.0		
	2695	SGMR	4 S/F	1559.0E	1601.0	4.0D	87.0			QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1559.0E	1601.0	3.0D	120.0			QL=4 ST=2 TYP=3
	2695	SVTO	8 S	1606.0E	1606.0	1.0D	54.0			QL=4 ST=2 TYP=3
	2800	OTTA	22 GRF	1824.5	1836.0	31.0	18.8	4.0		
	8800	PALE	4 S/F	1905.0E	1906.0	12.0D	250.0			QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1905.0E	1906.0	15.0D	240.0			QL=2 ST=2 TYP=3
	2800	OTTA	4 S/F	1905.2	1910.3	25.4	129.0	26.0		
	2695	PALE	4 S/F	1906.0E	1910.0	10.0D	130.0			QL=4 ST=2 TYP=5
	2695	SGMR	4 S/F	1906.0E	1910.0	14.0D	150.0			QL=4 ST=2 TYP=5
	2800	OTTA	47 GB	2050.6	2058.2	29.0	745.0	149.0		
	2695	PALE	49 GB	2056.0E	2058.0	10.0D	710.0			QL=4 ST=2 TYP=7
	8800	PALE	49 GB	2056.0E	2058.0	18.0D	3100.0			QL=4 ST=2 TYP=7
	2695	SGMR	49 GB	2056.0E	2058.0	10.0D	800.0			QL=4 ST=2 TYP=6
	8800	SGMR	49 GB	2056.0E	2058.0	21.0D	3300.0			QL=4 ST=2 TYP=6
2800	OTTA	3 S	2116.1	2117.1	2.2	16.7	5.0			

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

AUGUST 1990

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 ⁻²² W/m ² Hz)	Flux Density Mean (W/m ² Hz)	Int	Remarks
27	2695 PENT	3 S	2251.4	2252.2	6.6	16.7	3.0		
28	2695 PENT	4 S/F	0013.8	0014.4	2.2	31.7	6.0		
	2695 PALE	8 S	0343.0E	0344.0	1.00	62.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	0900.0E	0905.0	9.00	400.0			QL=4 ST=2 TYP=5
	8800 LEAR	4 S/F	0900.0E	0905.0	10.00	320.0			QL=2 ST=2 TYP=5
	2695 LEAR	4 S/F	0900.0E	0905.0	10.00	190.0			QL=2 ST=2 TYP=5
	2695 SVTO	4 S/F	0903.0E	0905.0	4.00	210.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1010.0E	1012.0	8.00	320.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1011.0E	1011.0	5.00	75.0			QL=4 ST=2 TYP=3
	2800 OTTA	22 GRF	1246.1	1249.9	46.5	96.5	19.0		
	8800 SVTO	4 S/F	1247.0E	1249.0	18.00	67.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1247.0E	1249.0	10.00	94.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1247.0E	1253.0	673.00	68.0			QL=4 ST=1 TYP=5
	2695 SGMR	4 S/F	1247.0E	1249.0	673.00	100.0			QL=4 ST=1 TYP=3
	2800 OTTA	3 S	1327.9	1328.3	2.5	36.8	7.0		
	8800 SGMR	8 S	1710.0E	1711.0	1.00	97.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	1711.0E	1711.0	U	79.0			QL=4 ST=2 TYP=3
	2800 OTTA	22 GRF	1825.8	1832.2	21.2	35.6	7.0		
	8800 SGMR	4 S/F	1828.0E	1828.0	6.00	50.0			QL=4 ST=2 TYP=3
	2800 OTTA	22 GRF	2229.1	2232.3	15.2	15.1	3.0		
29	8800 LEAR	4 S/F	0054.0E	0054.0	4.00	84.0			QL=2 ST=2 TYP=3
	8800 PALE	4 S/F	0054.0E	0055.0	3.00	110.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1457.0E	1458.0	1.00	140.0			QL=4 ST=3 TYP=3
	8800 SVTO	8 S	1457.0E	1457.0	1.00	120.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	2036.0E	2038.0	3.00	160.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	2036.0E	2038.0	5.00	190.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	2036.0E	2038.0	4.00	140.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	2036.0E	2038.0	204.00	180.0			QL=4 ST=1 TYP=3
	2800 OTTA	3 S	2036.3	2038.3	5.5	194.0	39.0		
	2800 OTTA	29 PBI	2041.8	2041.8	160.0	22.4	11.0		
	8800 SGMR	4 S/F	2102.0E	2103.0	8.00	78.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	2103.0E	2104.0	4.00	89.0			QL=4 ST=2 TYP=3
30	8800 LEAR	4 S/F	0136.0E	0137.0	3.00	57.0			QL=2 ST=2 TYP=3
	8800 PALE	4 S/F	0136.0E	0137.0	3.00	72.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0156.0E	0157.0	2.00	110.0			QL=2 ST=2 TYP=3
	2695 LEAR	8 S	0156.0E	0157.0	1.00	18.0			QL=2 ST=2 TYP=3
	8800 PALE	8 S	0156.0E	0157.0	1.00	110.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0212.0E	0213.0	4.00	92.0			QL=2 ST=2 TYP=3
	8800 PALE	4 S/F	0212.0E	0213.0	4.00	94.0			QL=4 ST=2 TYP=3
	2800 OTTA	4 S/F	1307.0	1315.5	13.8	53.3	16.0		
	2695 SVTO	4 S/F	1307.0E	1313.0	12.00	74.0			QL=4 ST=2 TYP=5
	2695 SGMR	4 S/F	1311.0E	1315.0	15.00	65.0			QL=4 ST=2 TYP=3
	2800 OTTA	29 PBI	1320.8	1320.8	220.0	27.1	13.0		
31	8800 LEAR	4 S/F	0407.0E	0408.0	3.00	79.0			QL=2 ST=2 TYP=3

Reports are received routinely from the following observatories:

BERN = Berne

LEAR = Learmonth
OTTA = Ottawa

PALE = Palehua
PENT = Penticton

SGMR = Sagamore Hill
SVTO = San Vito

Explanation of Type Code:

1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precursor	41 Group of Bursts	47 Great Burst
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F	
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF	
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A	
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A	

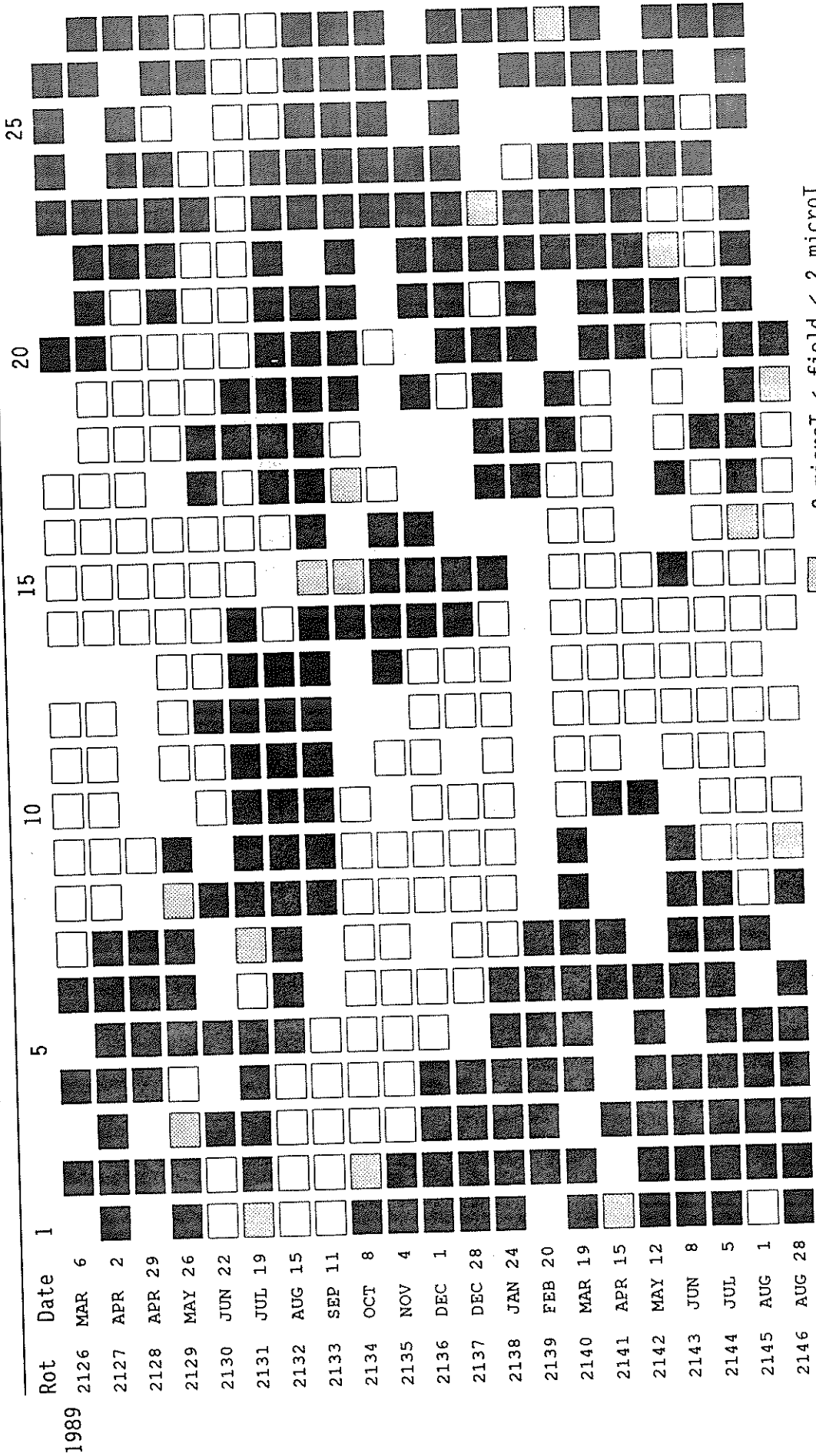
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and 200 MHz; and Toyokawa, Japan 9400, 3750, 2000 and 1000 MHz.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1989			1990								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
1	-43	-111	-113	.	128	.	84	35	-9	-4	14	-75
2	.	-125	-79	22	150	.	47	19	-8	-13	-29	-77
3	-87	-111	-46	70	344	.	33	23	-5	-34	-27	.
4	-84	-75	-11	106	99	.	4	-18	-34	-42	-38	-44
5	-35	-11	43	132	69	.	-8	-24	-33	-36	-25	-2
6	-22	44	60	129	23	.	-29	-25	-33	-36	.	19
7	-13	54	.	.	-11	.	.	-27	.	-45	-13	.
8	-5	86	84	58	.	-28	.	-38	-26	-34	3	68
9	0	97	126	23	-15	-23	-29	-33	-52	-12	26	.
10	2	103	115	-7	-8	.	-36	-15	-86	-11	43	60
11	10	107	79	-41	-14	-25	-34	-4	-83	-10	94	43
12	38	95	47	.	-9	-23	.	-9	.	-15	137	41
13	33	.	7	.	4	-11	-8	-47	-88	17	76	14
14	26	13	-35	.	-12	-15	0	-80	-58	32	25	5
15	31	.	-59	5	-2	2	-2	-82	-31	78	3	-1
16	17	-70	-62	-11	.	.	.	-80	-10	95	1	-17
17	5	-79	.	-14	.	-10	-20	-88	.	57	-34	.
18	.	-86	.	-58	.	-45	.	.	47	10	-33	.
19	.	-38	-4	-86	-78	-63	.	.	44	26	-27	.
20	.	4	.	-84	.	-108	-105	.	43	41	-22	.
21	-88	.	-32	-76	-142	.	-99	-29	11	20	-30	.
22	0	.	-70	-88	-193	-150	.	.	-4	-12	-15	.
23	.	17	-101	-124	-167	-124	.	25	.	.	-16	.
24	1	.	-103	-152	-133	-113	-21	33	-12	7	.	.
25	5	.	.	-184	-102	-74	23	16	7	25	-83	.
26	-19	-52	-103	-203	-41	-62	57	3	13	50	-82	.
27	-56	-78	.	-200	.	-34	75	.	42	10	-89	.
28	-70	-76	-130	-140	.	9	65	.	-7	-13	-107	.
29	-100	-92	-108	-62	.	45	50	.	-2	39	-131	.
30	-110	-110	-106	3	.	103	50	.	8	.	-128	.
31	-104	.	-94	46	.	94	.	-4	.	-67	-90	.

Dot symbol indicates no data available for the day.

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.

C O N T E N T S

Prompt Reports

DATA FOR JULY 1990

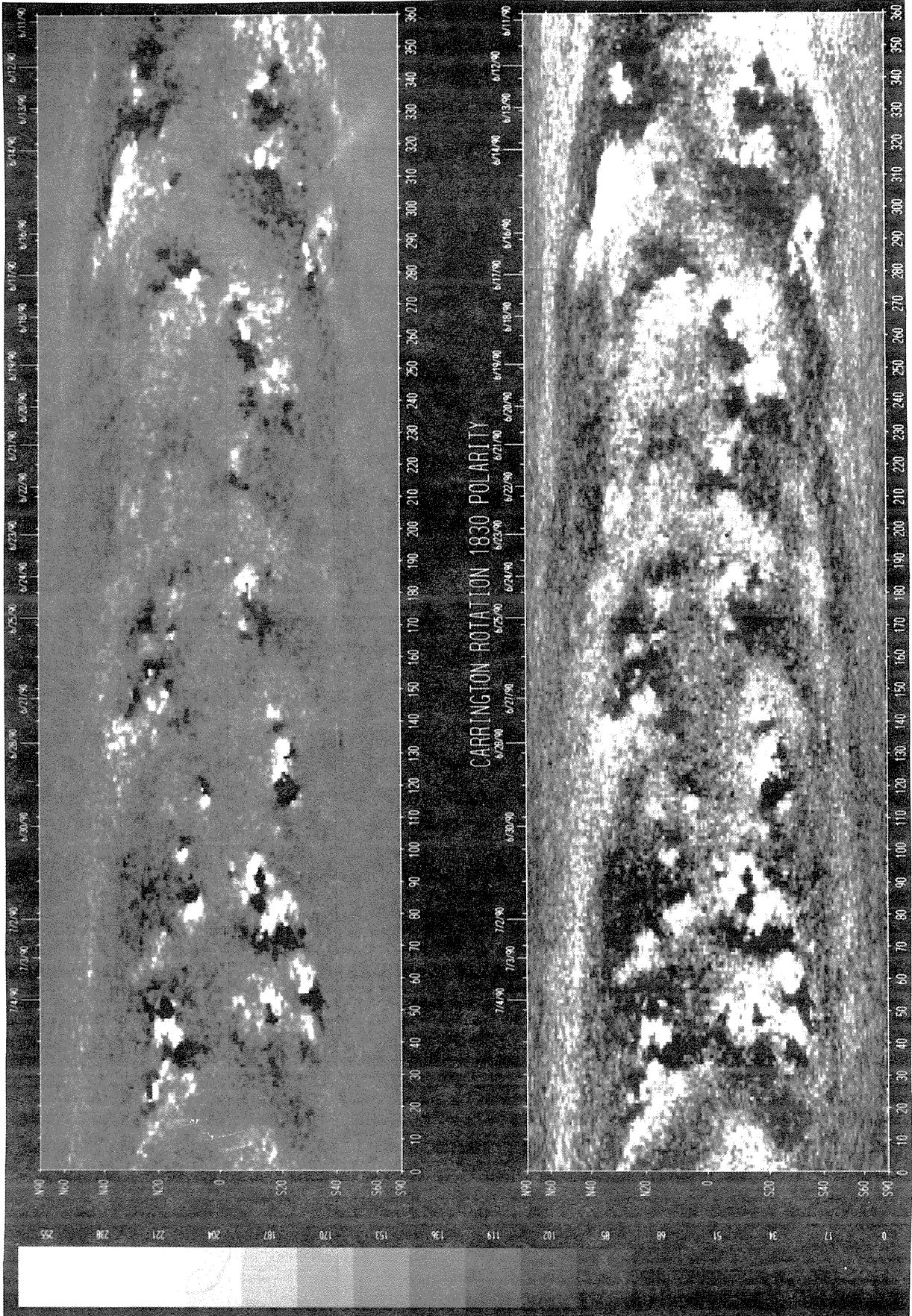
Number 553 Part I

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SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1830
(11 June to 8 July 1990)

Dates of Observation

National Solar Observatory/Kitt Peak

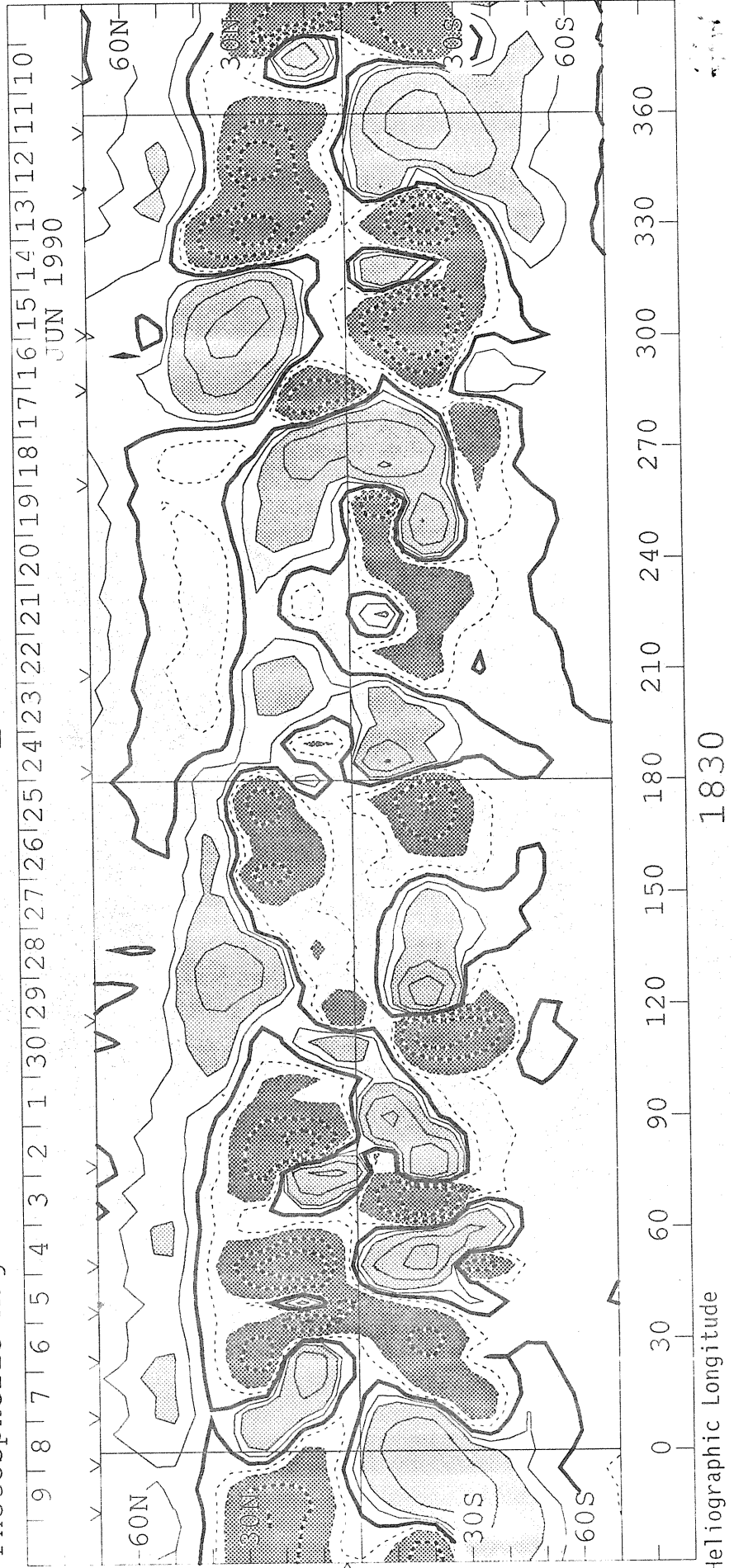


Heliographic Longitude

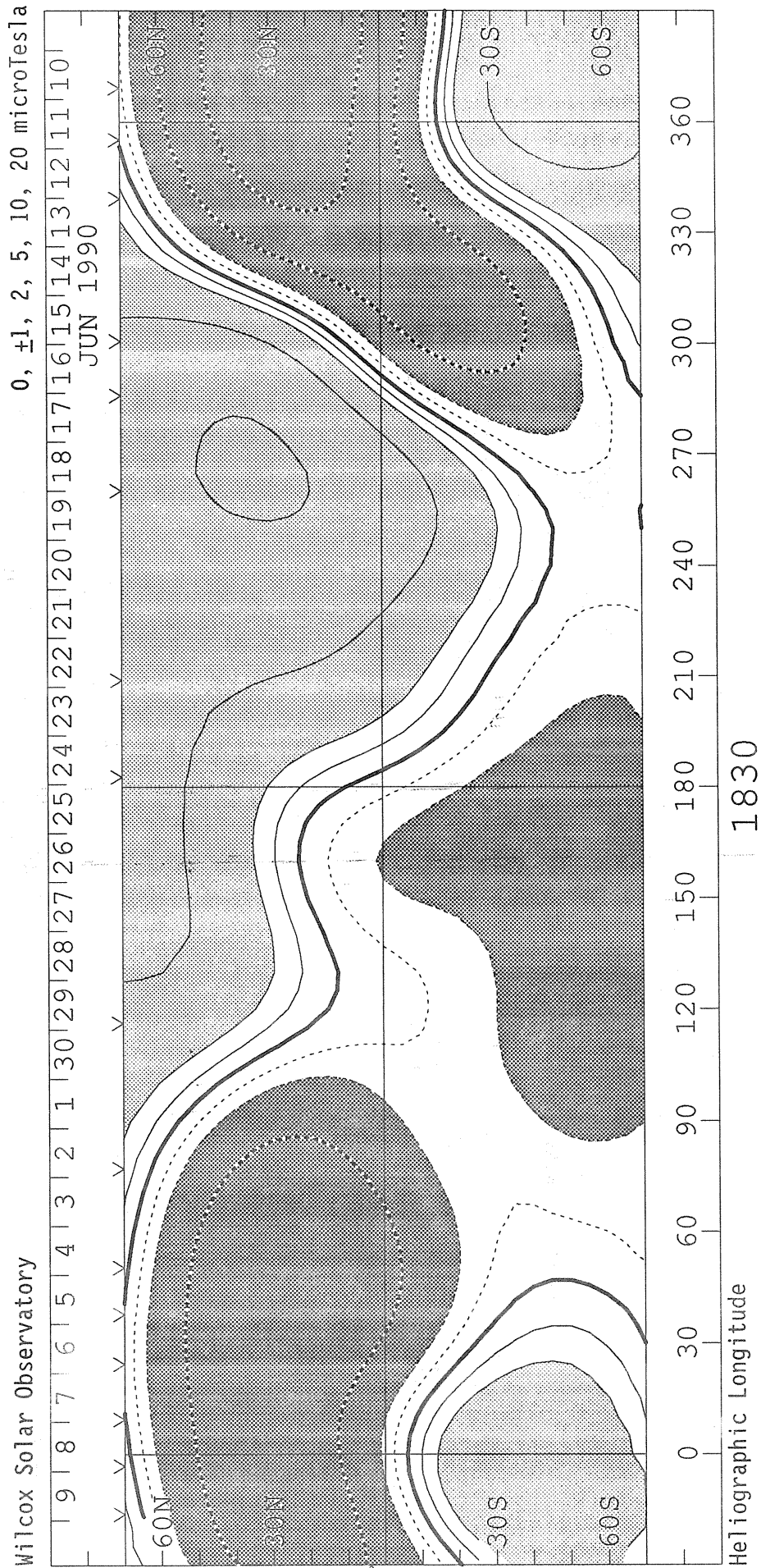
SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1830
(11 June to 8 July 1990)

WILCOX SOLAR OBSERVATORY

Photospheric Magnetic Field 0, +100, 200, 500, 1000, 2000 MicroTesla

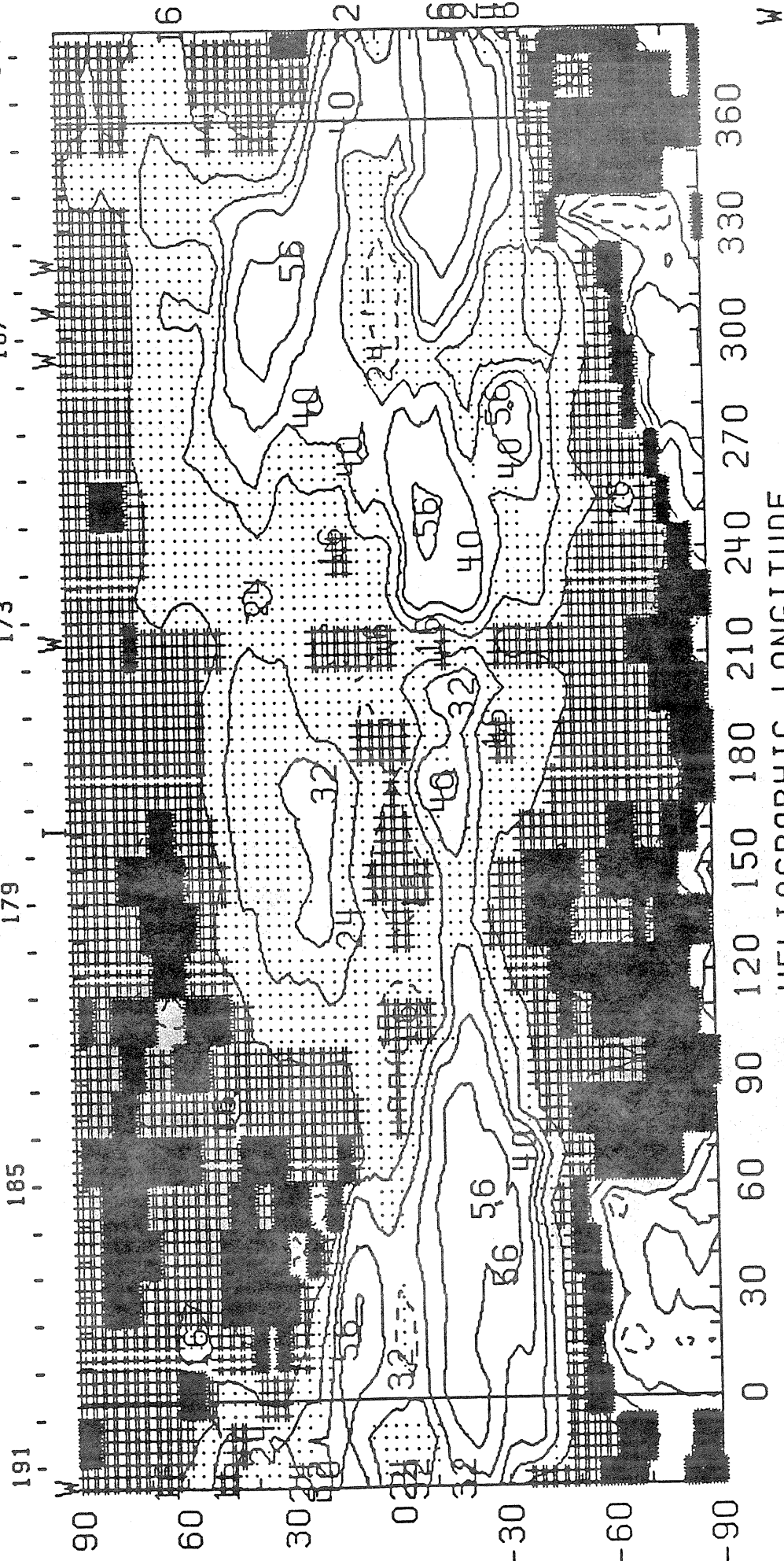


SOLAR MAGNETIC FIELD SYNOPTIC CHART
SOURCE SURFACE FIELD
 CARRINGTON ROTATION NUMBER 1830
 (11 June to 8 July 1990)



60
Jul 90

CARRINGTON ROTATION NUMBER 1830; SAC. PEAK FE XIV AT R = 1.15
DOY OF CMP 179 173 167 161

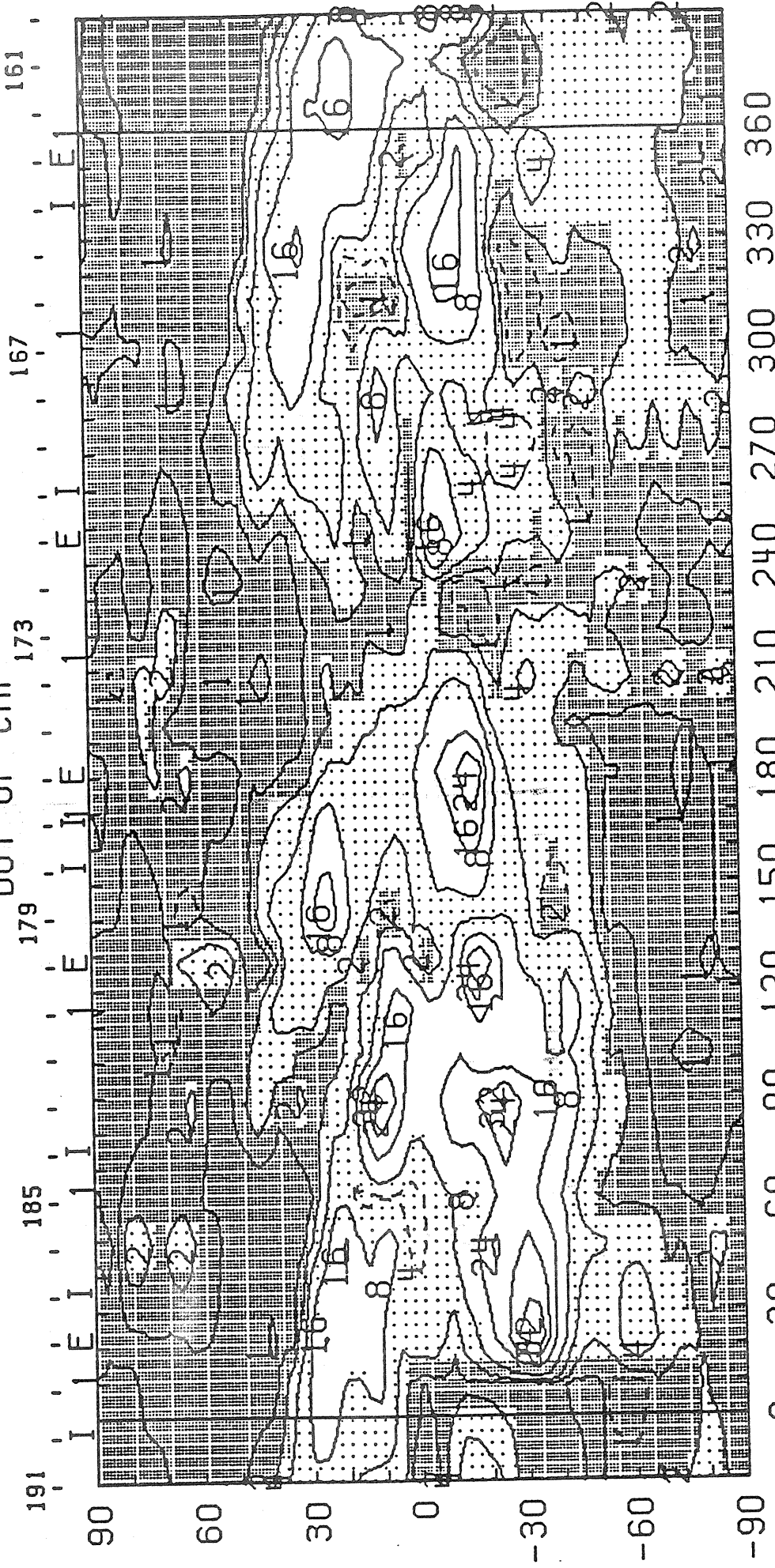


HELIOGRAPHIC LONGITUDE

E
1990 E+W LIMB CONTOURS: 1, 2, 4, 8, 16, 32, 40, 56 MILLIONTHS OF I₀
(31-Aug-90) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK

CARRINGTON ROTATION NUMBER 1830 ; SAC. PEAK FE X AT R = 1.15

DOY OF CMP



W

HELIOGRAPHIC LONGITUDE

E 1990 W+E LIMB CONTOURS: 1, 2, 4, 8, 16, 32, 40, 56 MILLIONTHS OF λ_0

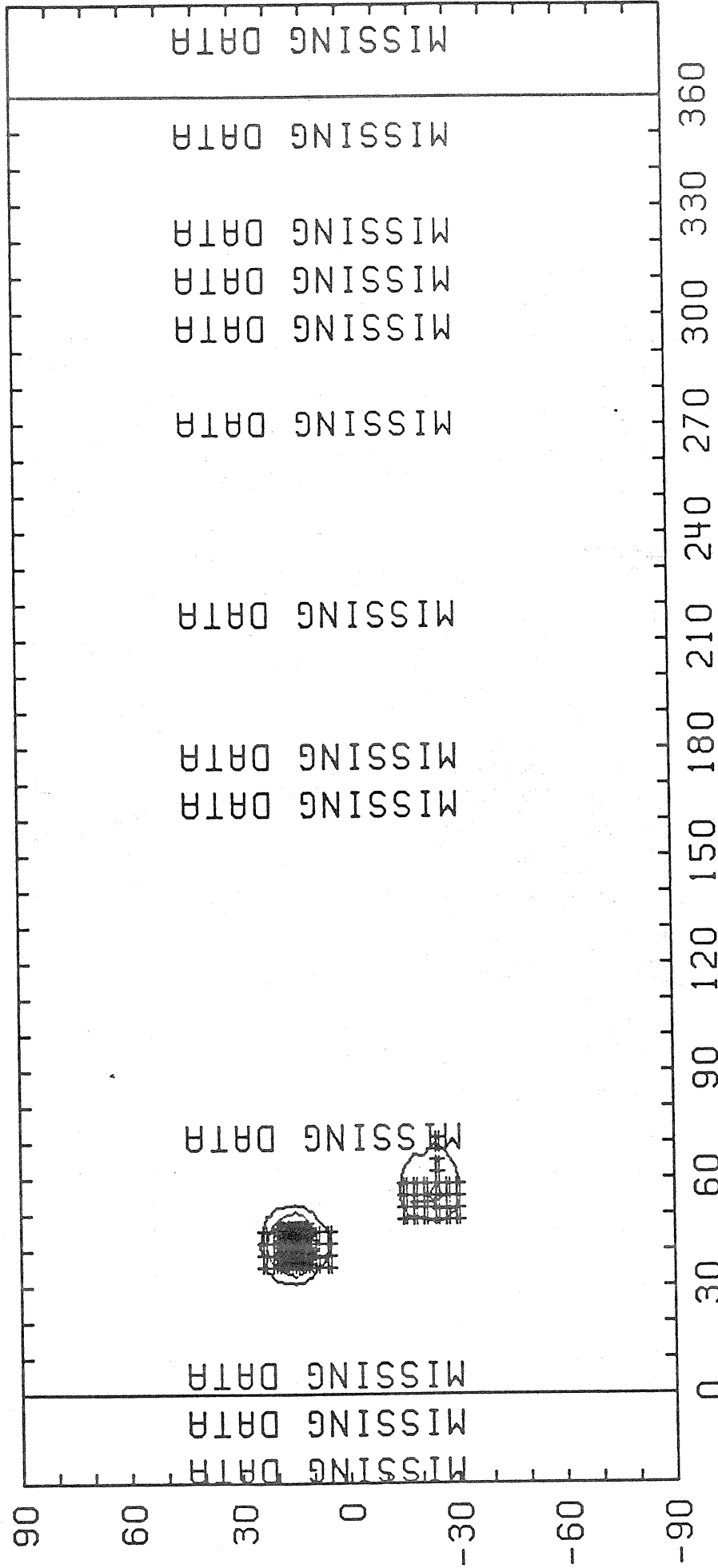
(31-Aug-90)

62
Jul 90

CARRINGTON ROTATION NUMBER 1830 ; SAC-PEAK CA XV at R = 1.13

179 DOY OF CMP₁₇₃

191 185 179 173 167 161



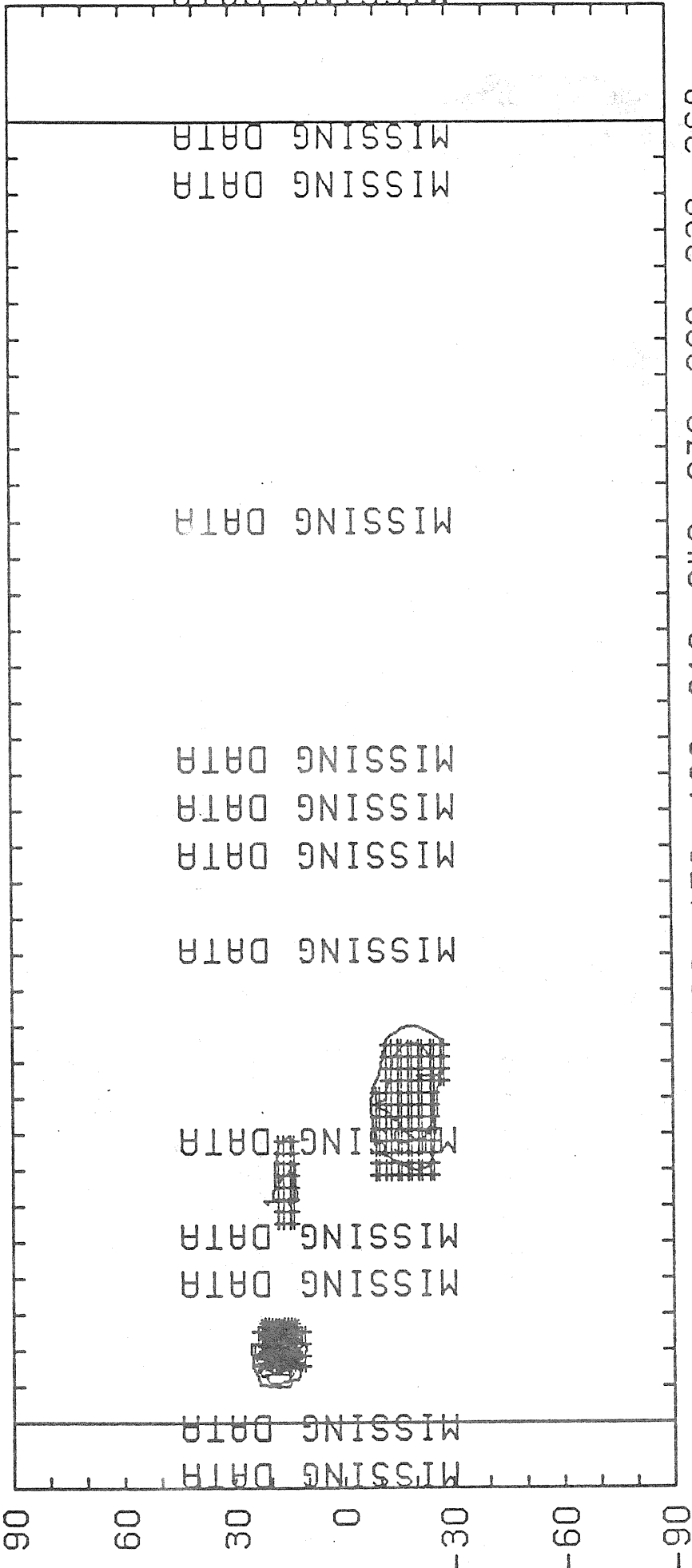
E
HELIOGRAPHIC LONGITUDE
1990 EAST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io
W

(31-Aug-90)

CARRINGTON ROTATION NUMBER 1830 ; SAC. PEAK CA XV at R = 1.13

DOY OF CMP₁₇₃

191 185 179 167 161



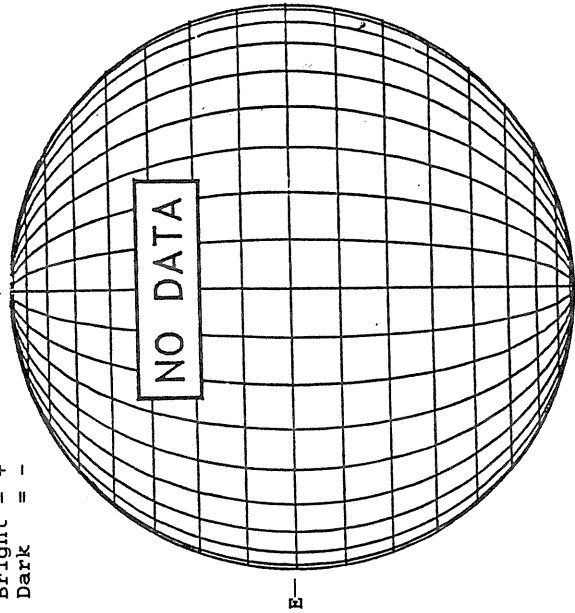
E
1990 WEST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io
(31-Aug-90)

64
Jul 90

JULY 1, 1990 (P = -2.80, B₀ = 2.85, L₀ = 101.28)

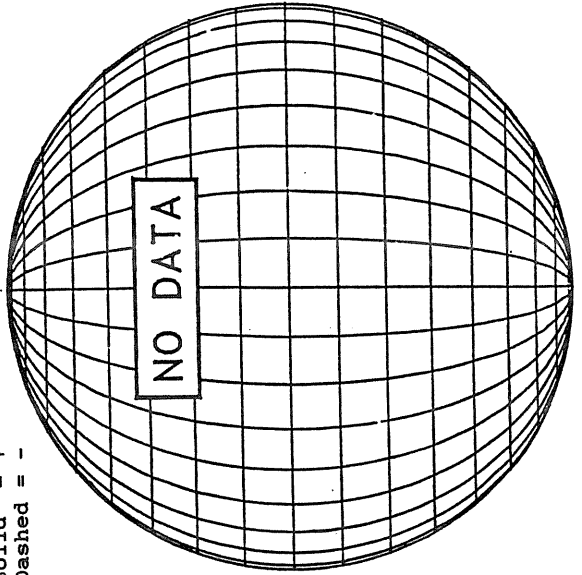
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



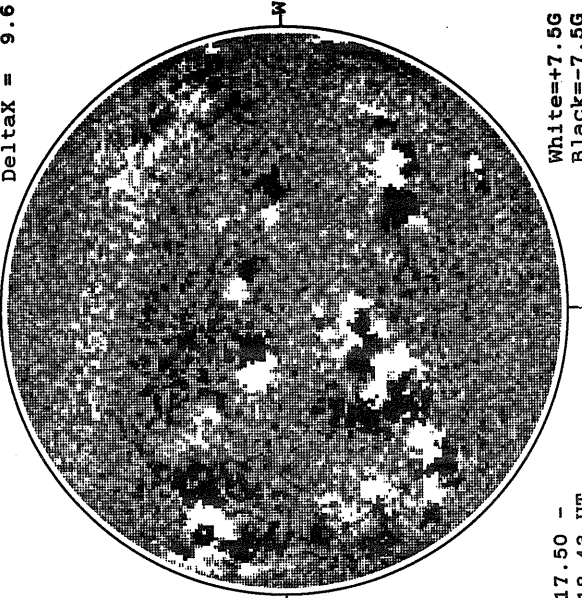
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

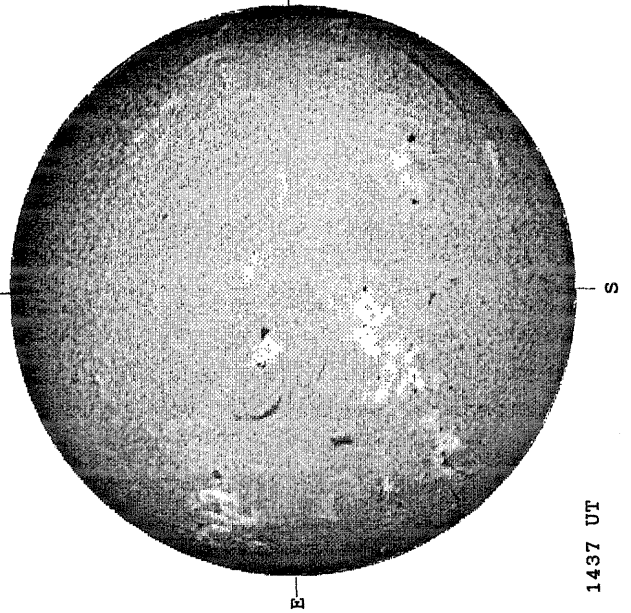
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DeltaX = 9.6



White = +7.5G
Black = -7.5G

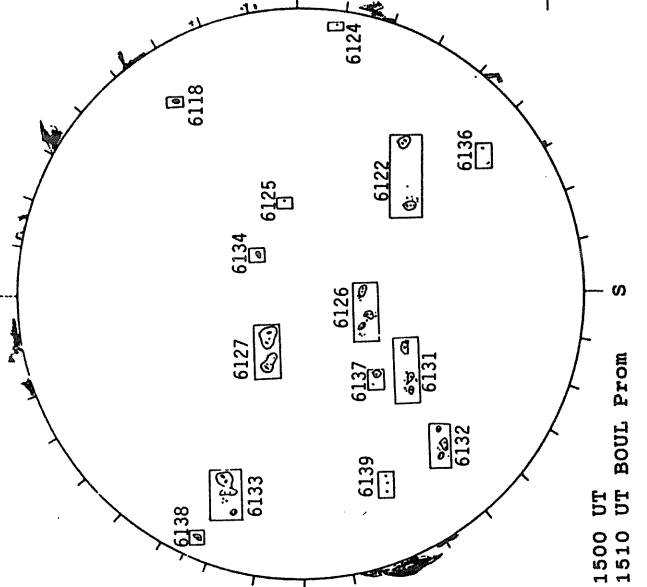
17.50 -
18.43 UT

SACRAMENTO PEAK H-ALPHA



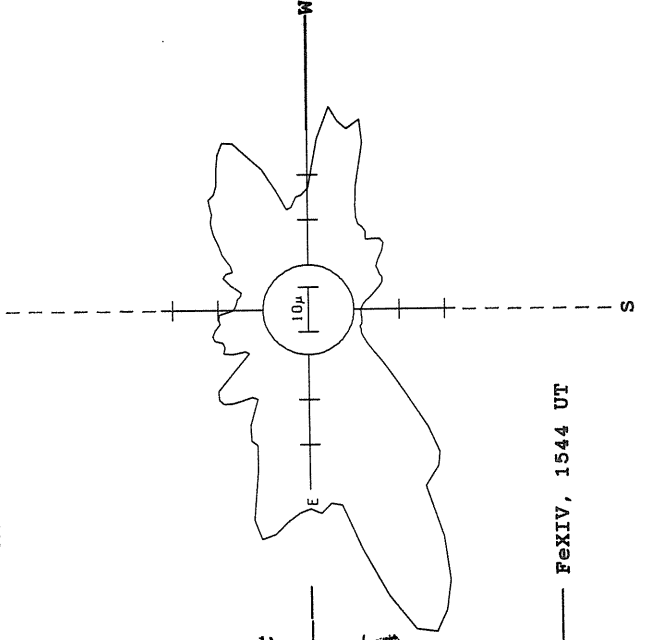
1437 UT

BOULDER SUNSPOT



1500 UT
1510 UT BOUL FROM

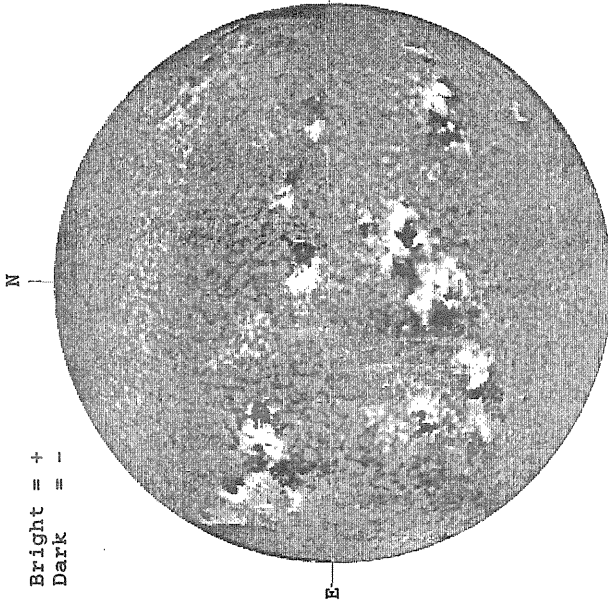
SACRAMENTO PEAK CORONA (1.15 Radii)



— FexIV, 1544 UT

JULY 2, 1990 (P = -2.35, B₀ = 2.96, L₀ = 88.05)

KITT PEAK MAGNETOGRAM



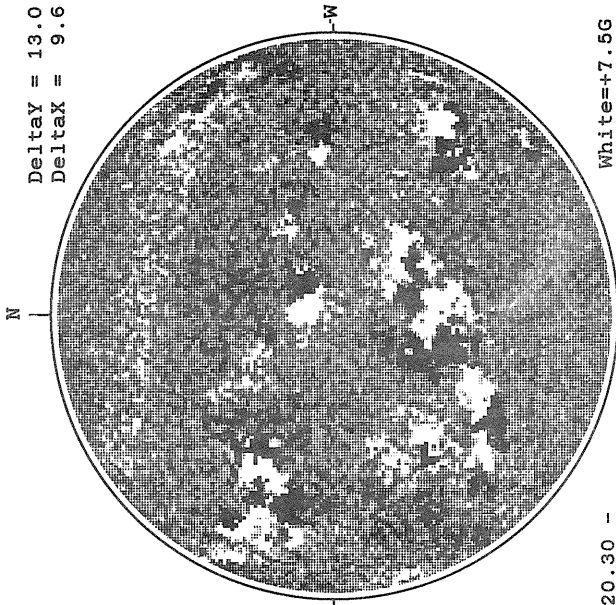
1745 UT

STANFORD MAGNETOGRAM



1959 UT

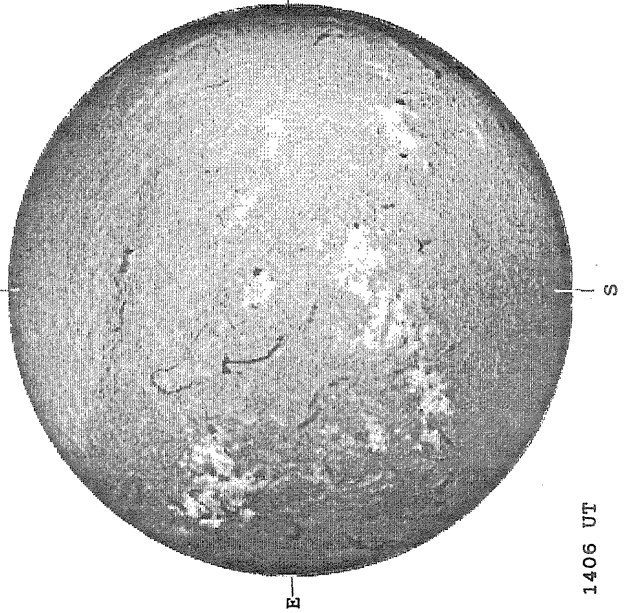
MT. WILSON MAGNETOGRAM



20.30 -
21.22 UT

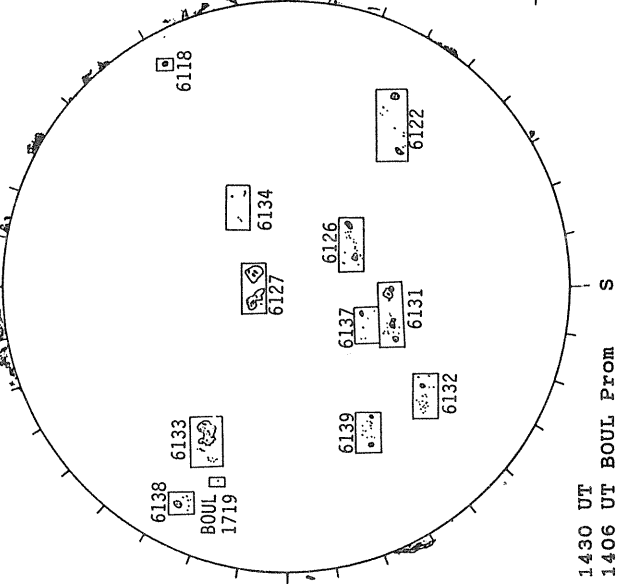
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



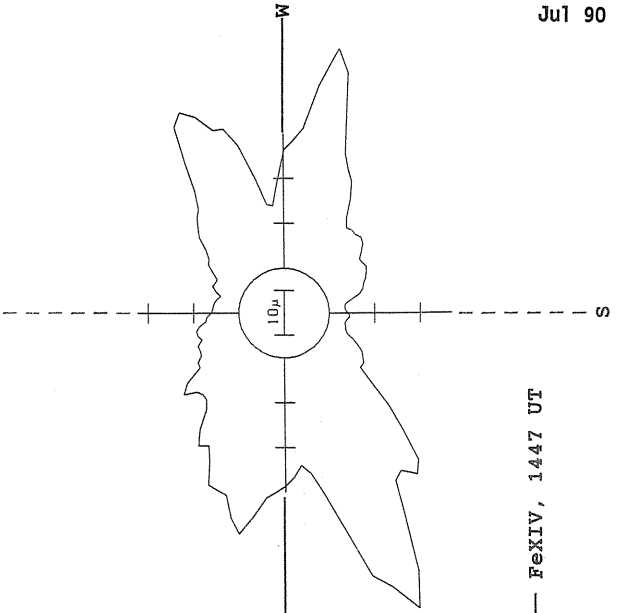
1406 UT

BOULDER SUNSPOT



1430 UT
1406 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

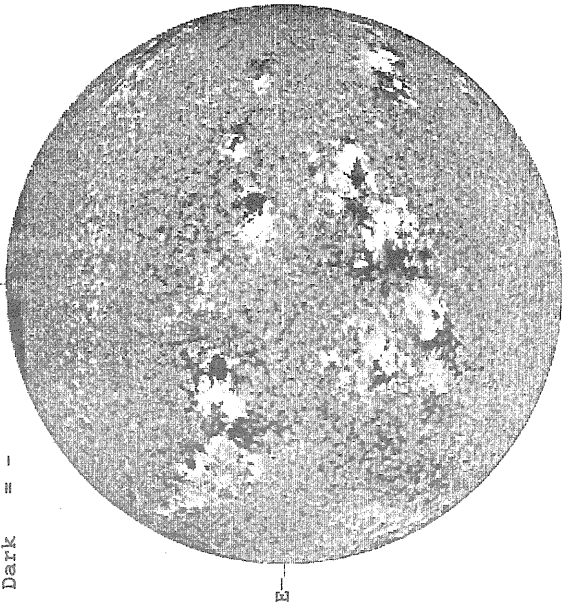


— FeXIV, 1447 UT

JULY 3, 1990 (P = -1.89, B₀ = 3.07, L₀ = 74.81)

KITT PEAK MAGNETOGRAM

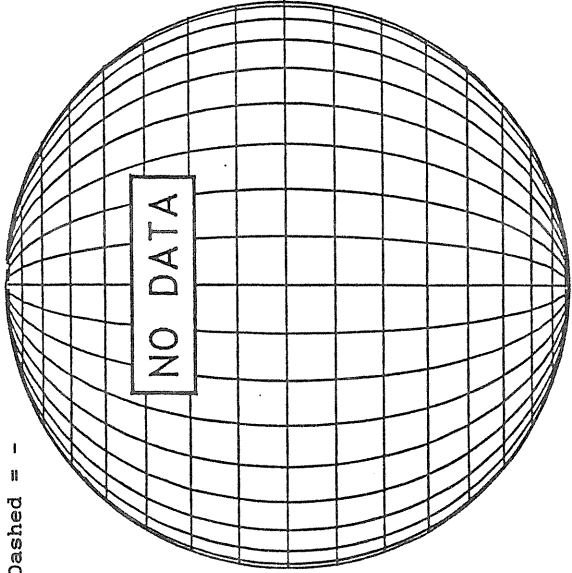
Bright = +
Dark = -



1618 UT

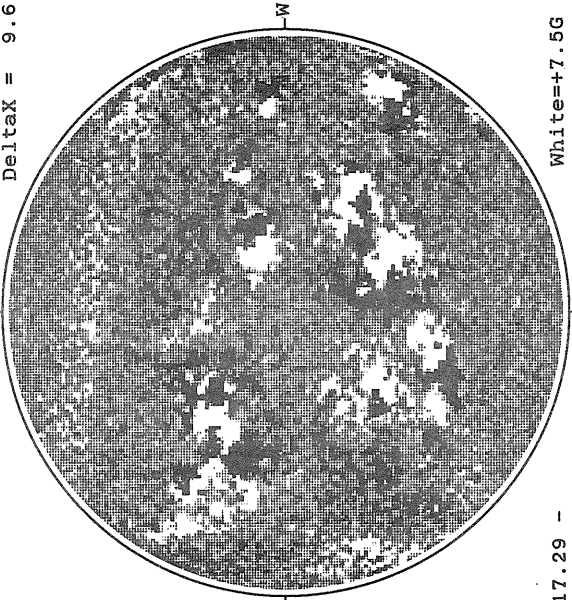
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6

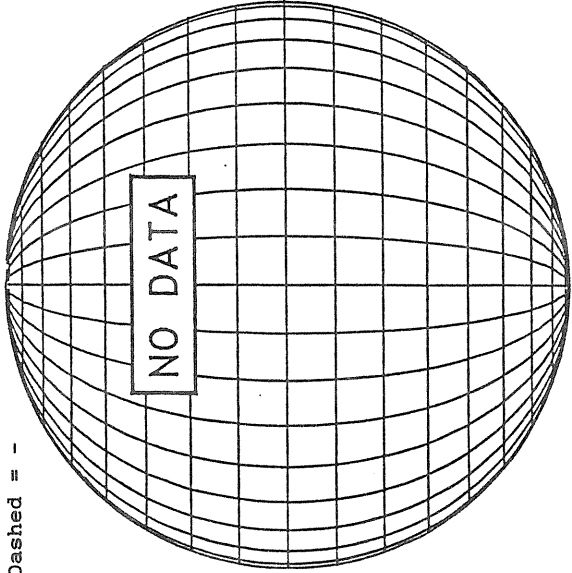


17.29 -
18.21 UT

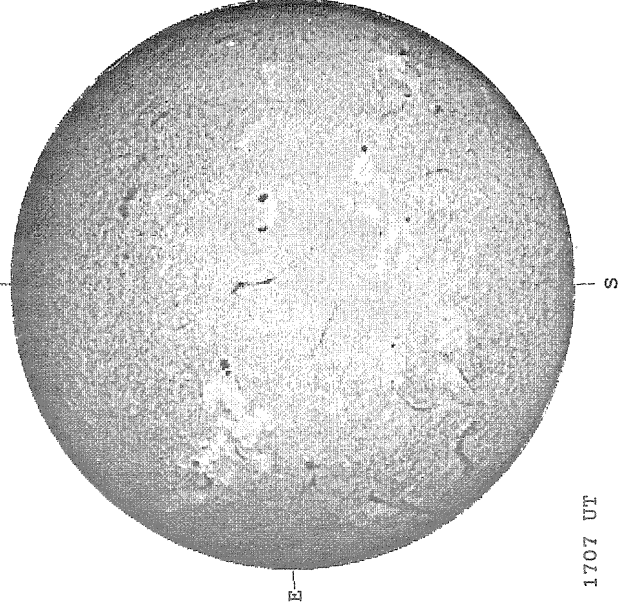
White = +7.5G
Black = -7.5G

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

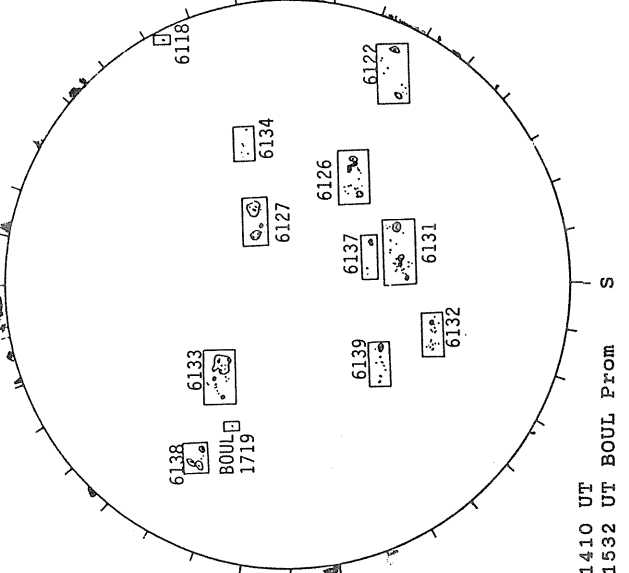


SACRAMENTO PEAK H-ALPHA



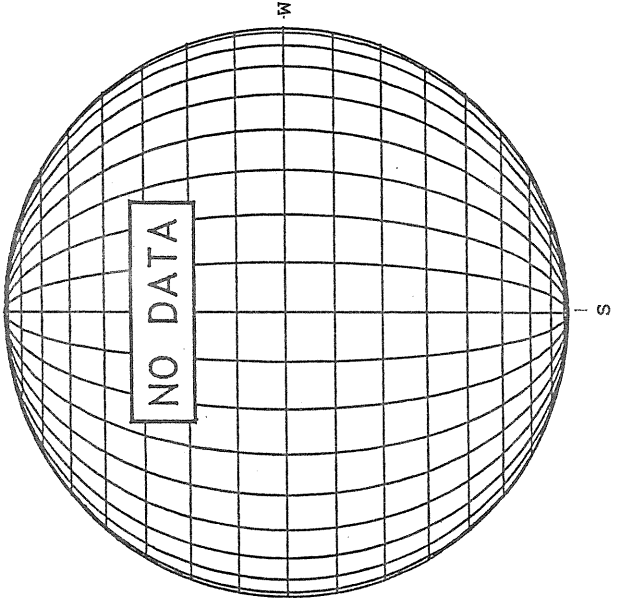
1707 UT

BOULDER SUNSPOT



1410 UT
1532 UT BOUL From S

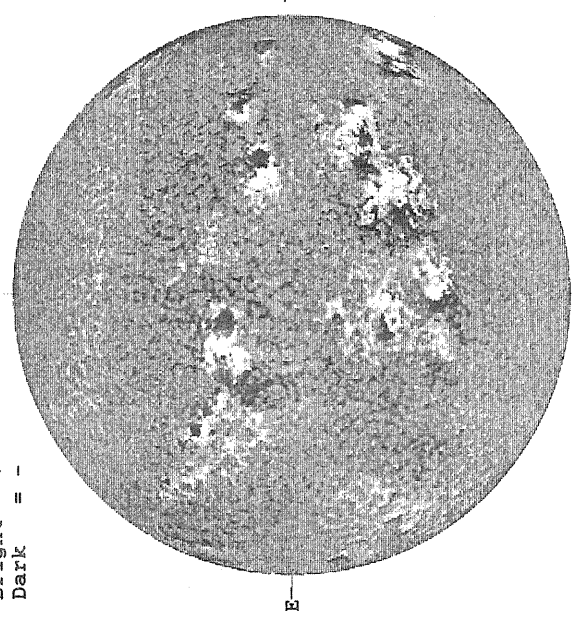
SACRAMENTO PEAK CORONA (1.15 Radii)



JULY 4, 1990 (P = -1.44, B₀ = 3.18, L₀ = 61.58)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1448 UT

STANFORD MAGNETOGRAM

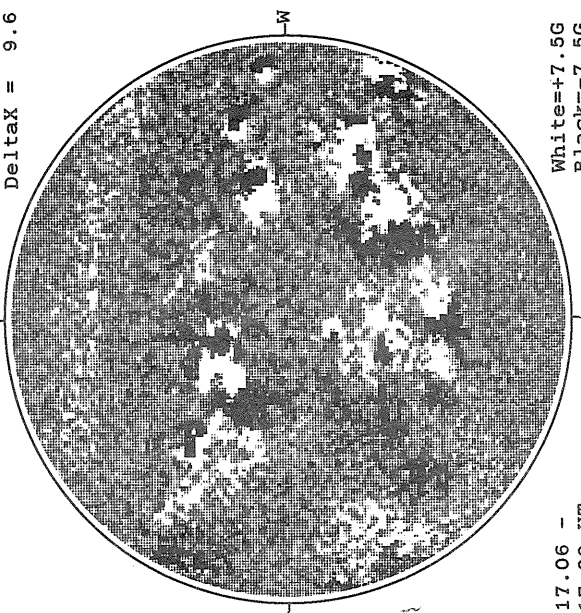
Solid = +
Dashed = -



2024 UT

MT. WILSON MAGNETOGRAM

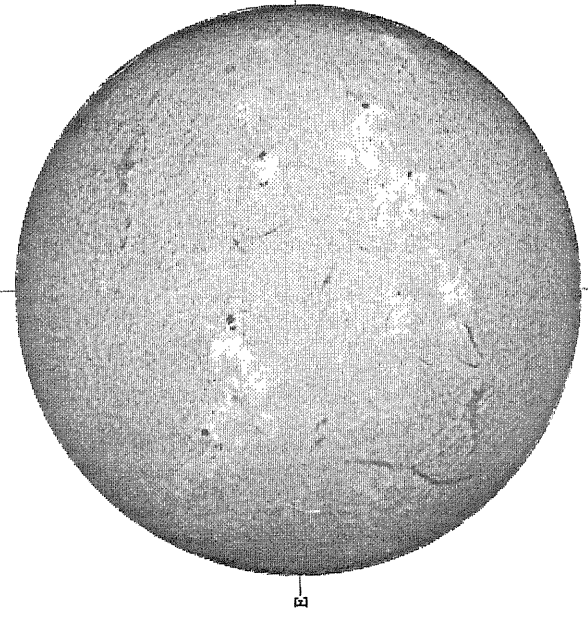
Delta_γ = 13.0
Delta_α = 9.6



White = +7.5G
Black = -7.5G

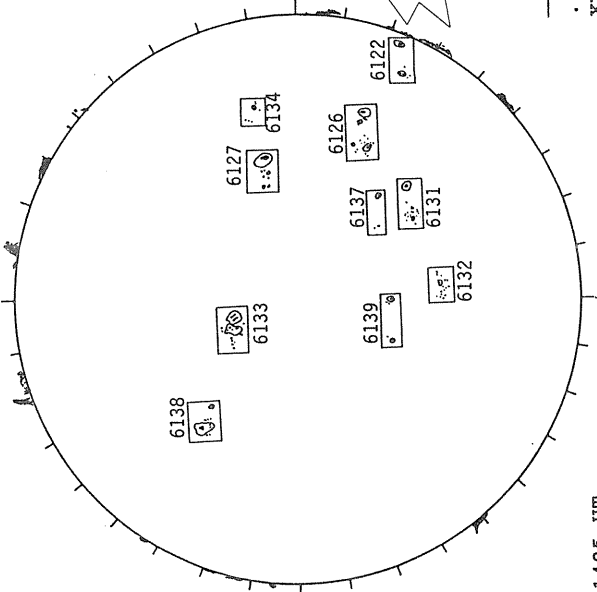
17.06 -
17.99 UT

SACRAMENTO PEAK H-ALPHA



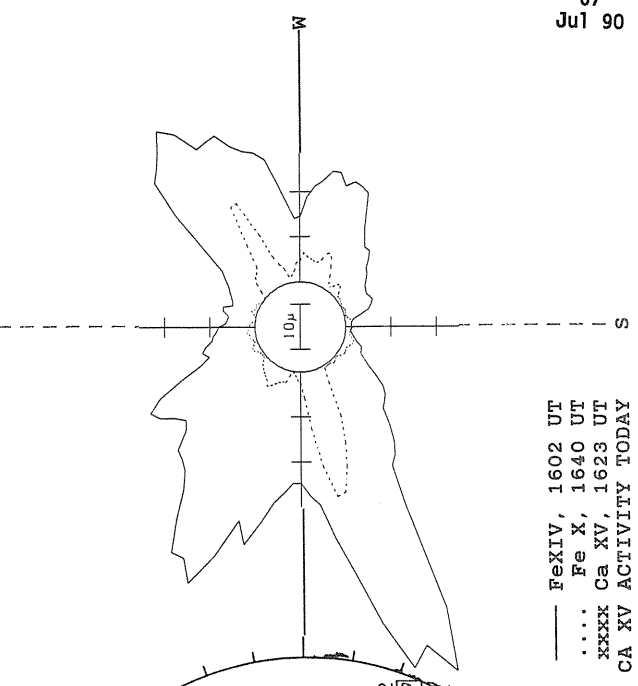
1329 UT

BOULDER SUNSPOT



1425 UT
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



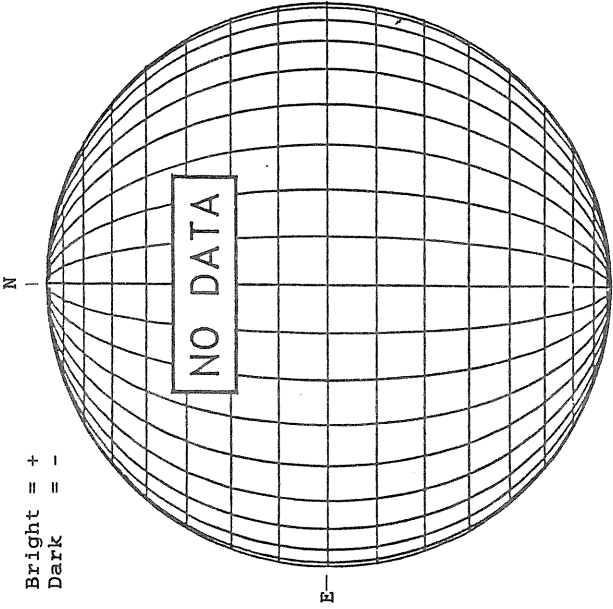
— Fe XIV, 1602 UT
.... Fe X, 1640 UT
xxxxx Ca XV, 1623 UT
NO CA XV ACTIVITY TODAY

68
Jul 90

JULY 5, 1990 (P = -0.99, B₀ = 3.29, L₀ = 48.34)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



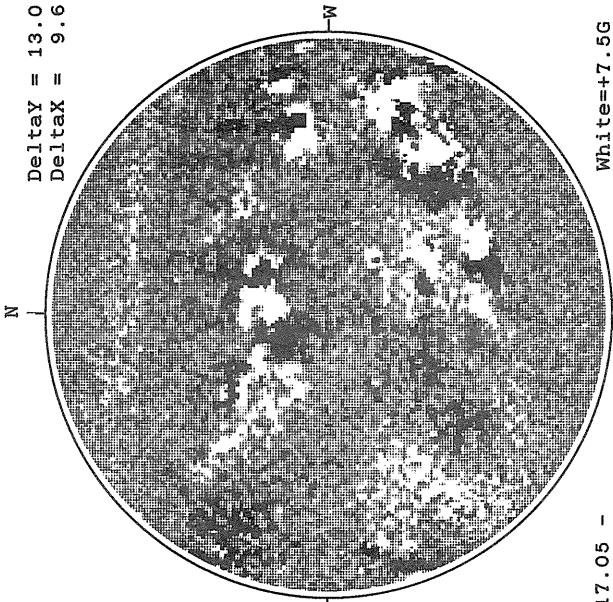
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

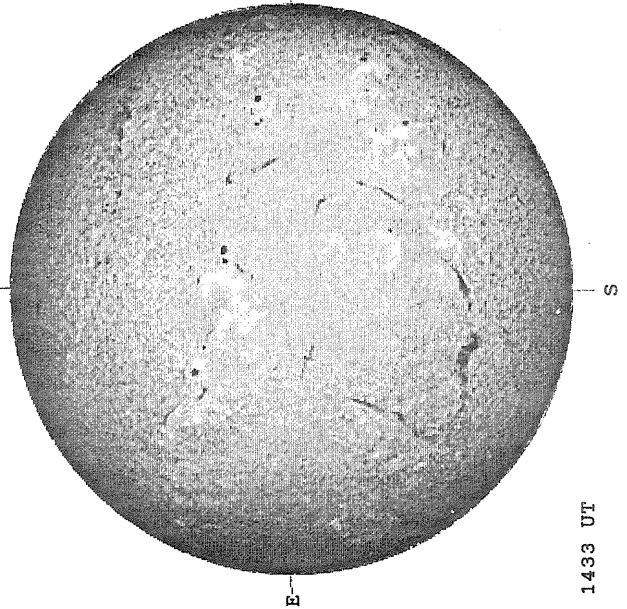
Delta_γ = 13.0
Delta_α = 9.6



17.05 -
17.98 UT

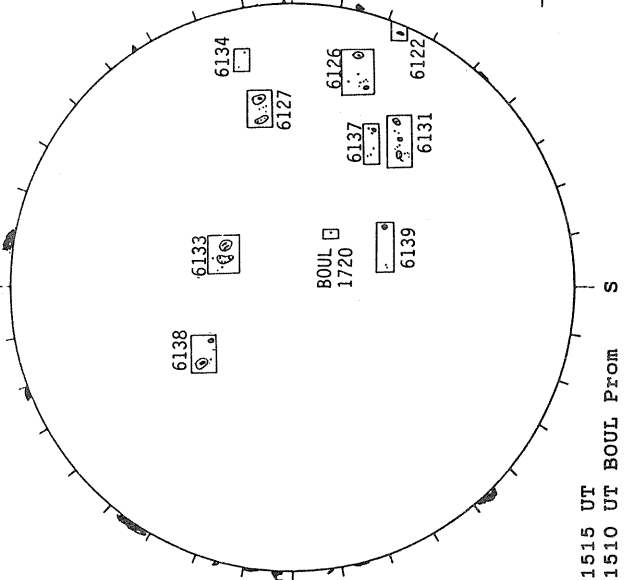
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



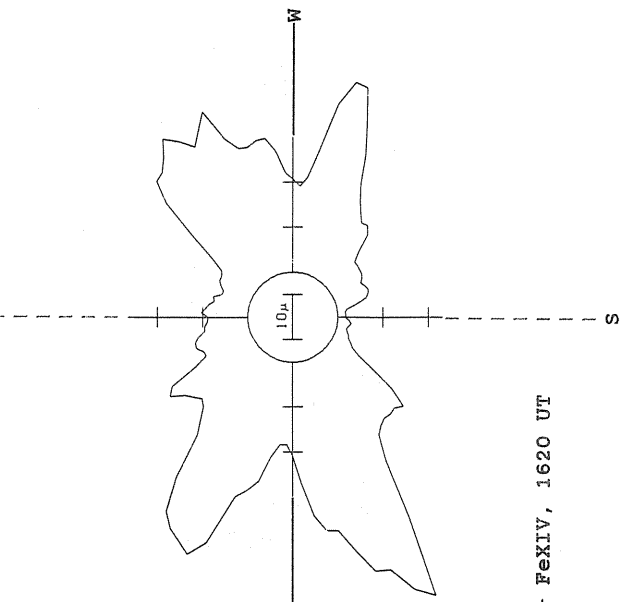
1433 UT

BOULDER SUNSPOT



1515 UT
1510 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

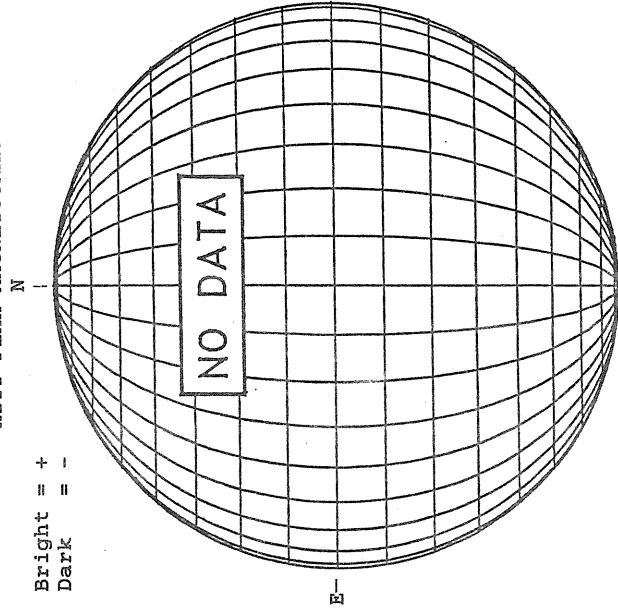


— FeXIV, 1620 UT

JULY 6, 1990 (P = -0.53, B₀ = 3.39, L₀ = 35.10)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

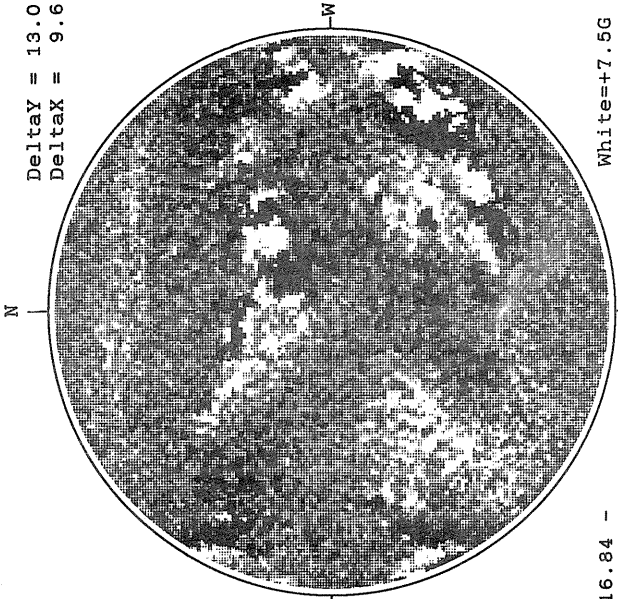
Solid = +
Dashed = -



1934 UT

MT. WILSON MAGNETOGRAM

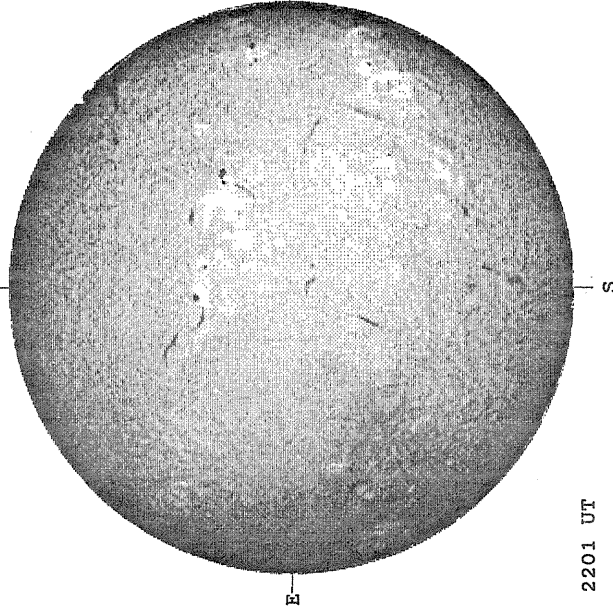
Delta γ = 13.0
Delta α = 9.6



16.84 -
17.76 UT

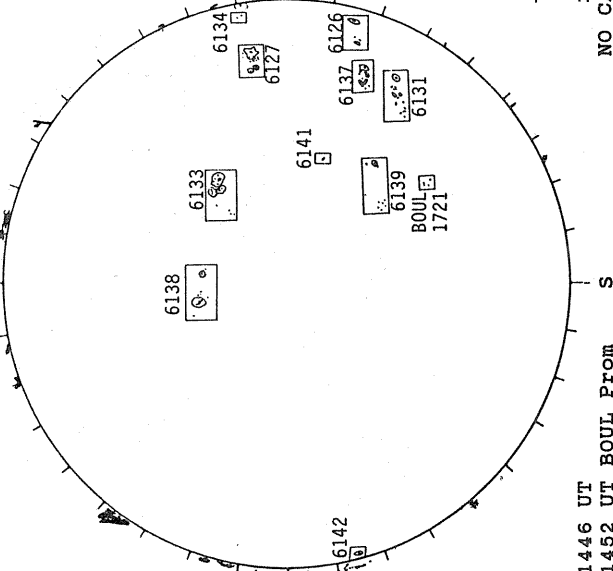
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



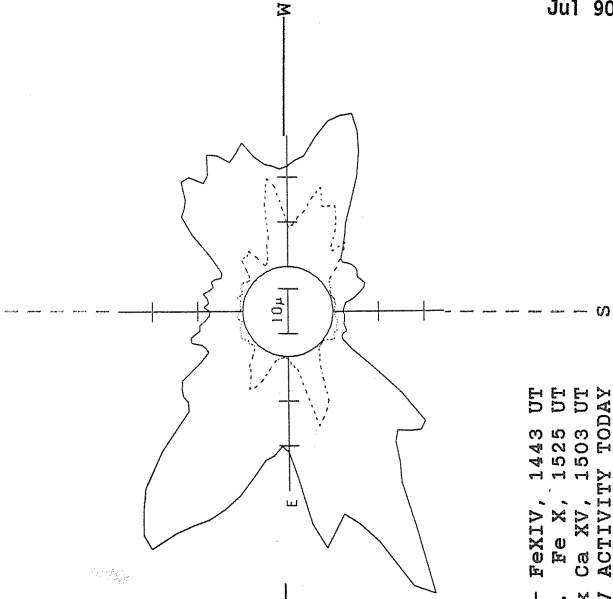
2201 UT

BOULDER SUNSPOT



1446 UT
1452 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



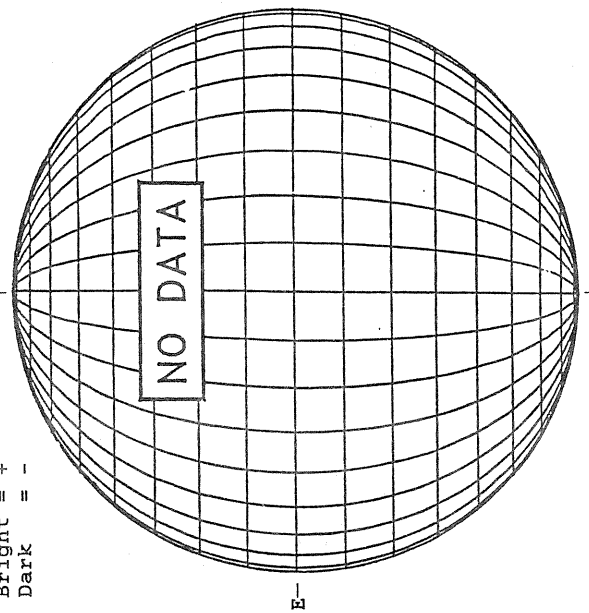
— FeXIV, 1443 UT
.... Fe X, 1525 UT
xxxxx Ca XV, 1503 UT
NO CA XV ACTIVITY TODAY

70
Jul 90

JULY 7, 1990 (P = -0.08, B₀ = 3.50, L₀ = 21.87)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



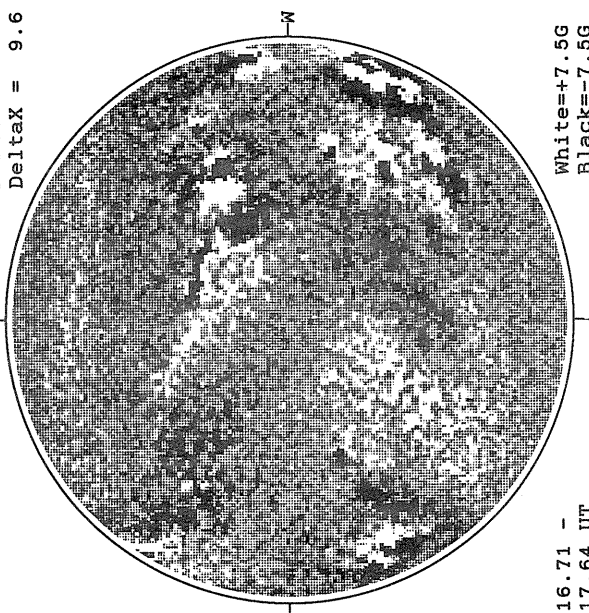
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

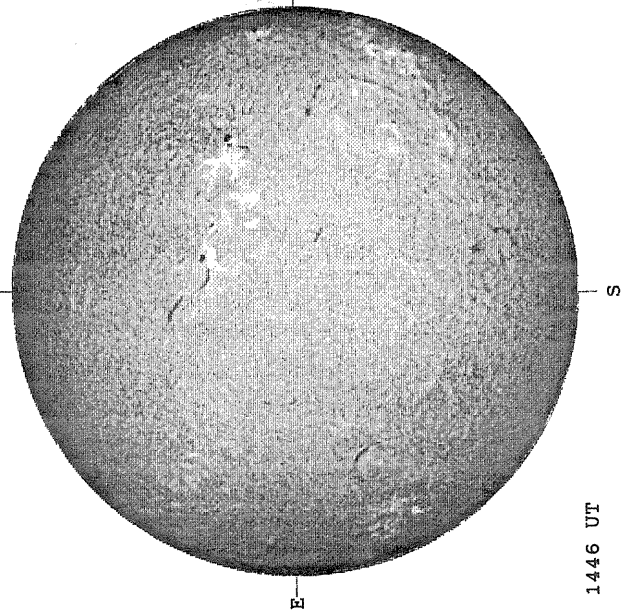
DeltaY = 13.0
DeltaX = 9.6



16.71 -
17.64 UT

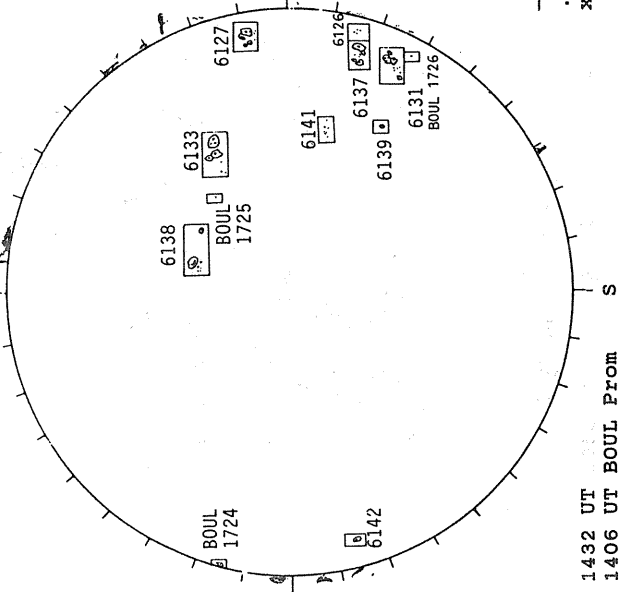
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



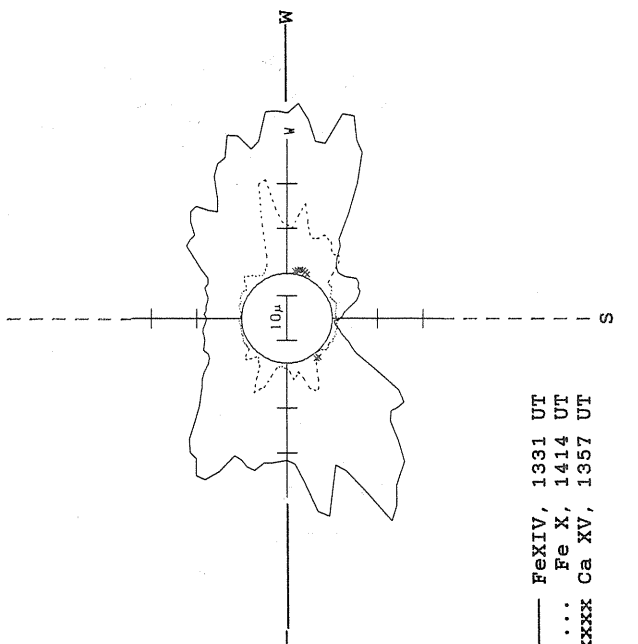
1446 UT

BOULDER SUNSPOT



1432 UT
1406 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

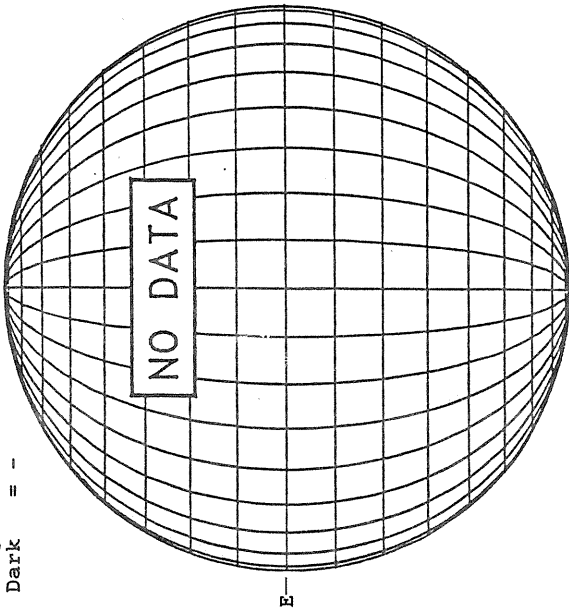


— FeXIV, 1331 UT
..... Fe X, 1414 UT
xxxxx Ca XV, 1357 UT

JULY 8, 1990 (P= 0.37, B₀ = 3.60, L₀ = 8.63)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



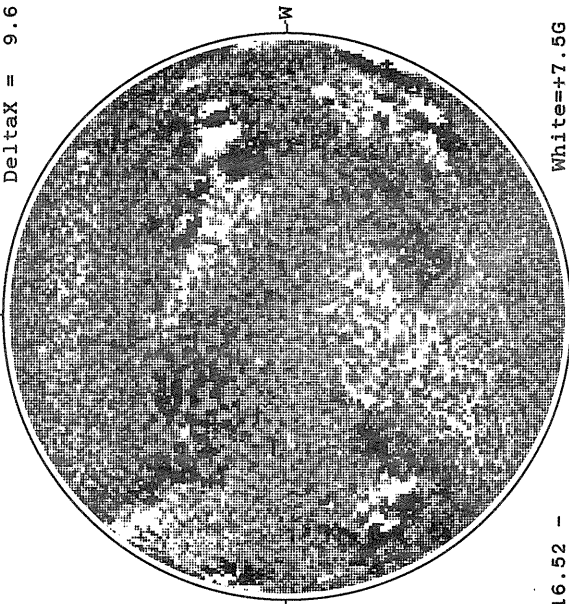
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

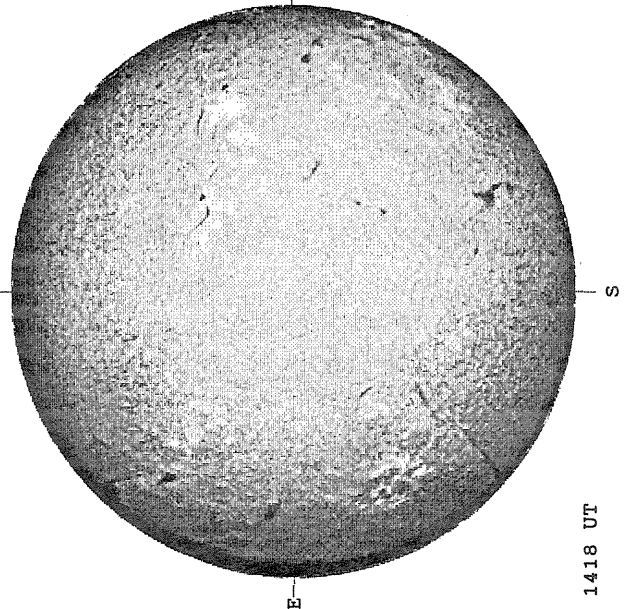
DeltaY = 13.0
DeltaX = 9.6



16.52 -
17.45 UT

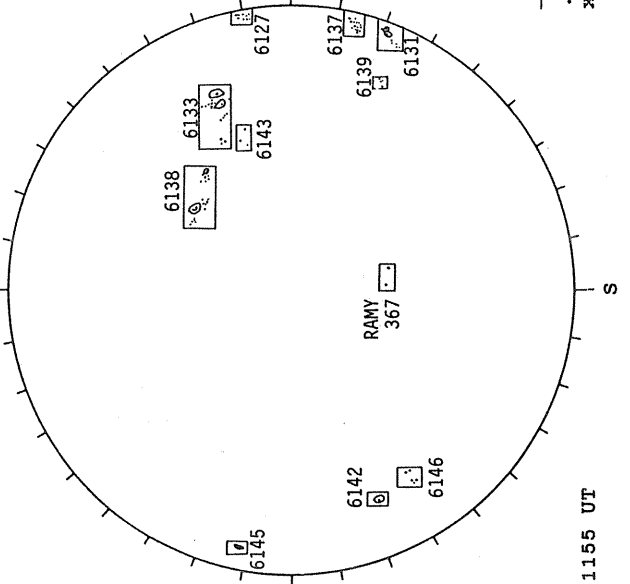
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



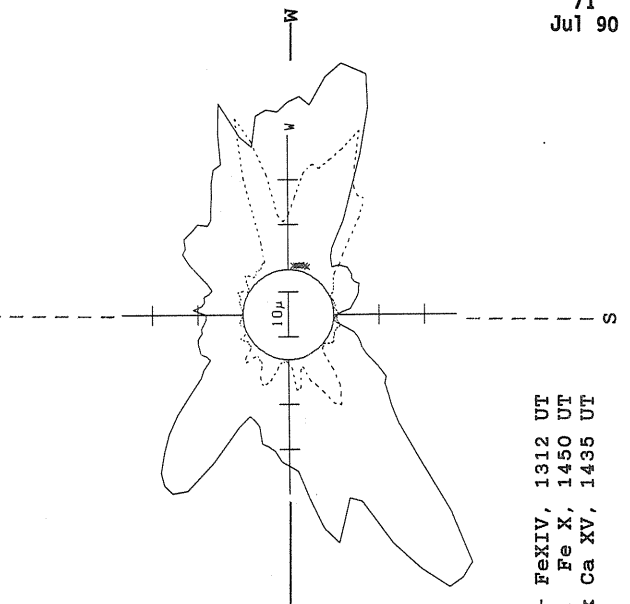
1418 UT

RAMEY SUNSPOT



1155 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



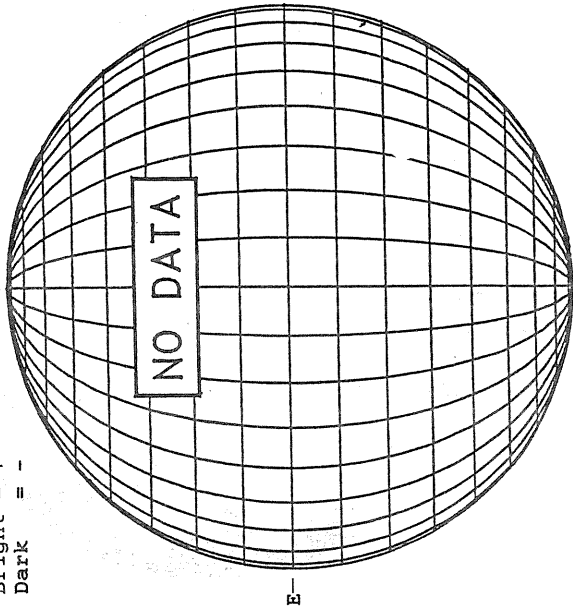
— FeXIV, 1312 UT
... Fe X, 1450 UT
xxxxx Ca XV, 1435 UT

72
Jul 90

JULY 9, 1990 (P= 0.82, B₀ = 3.71, I₀ = 355.40)

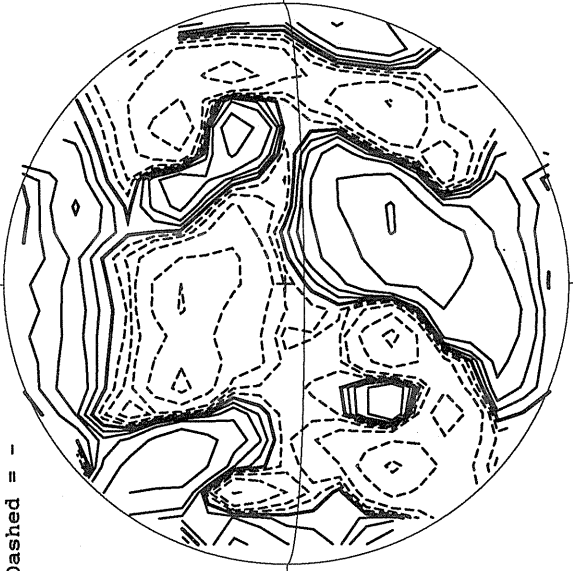
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

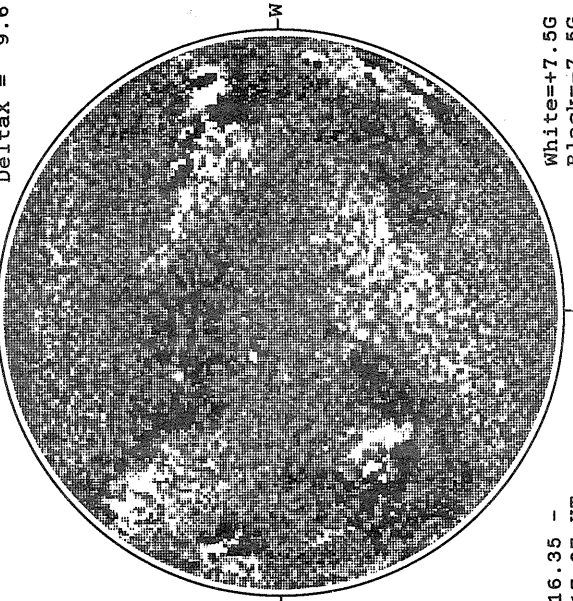
Solid = +
Dashed = -



2104 UT

MT. WILSON MAGNETOGRAM

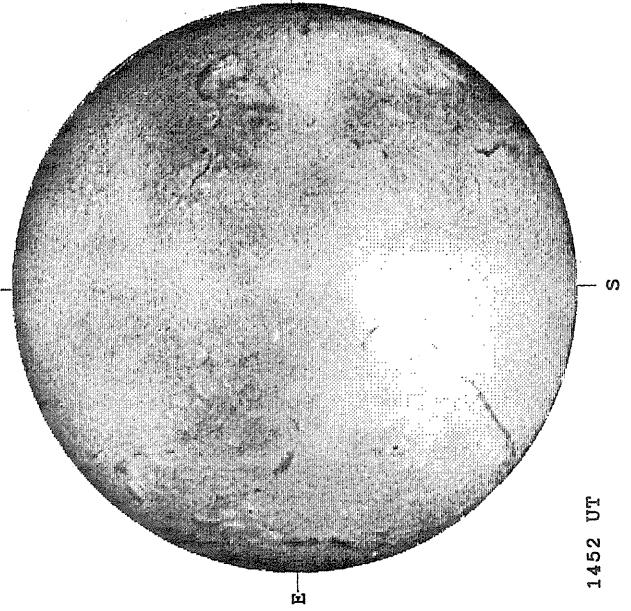
Deltay = 13.0
Deltax = 9.6



16.35 -
17.27 UT

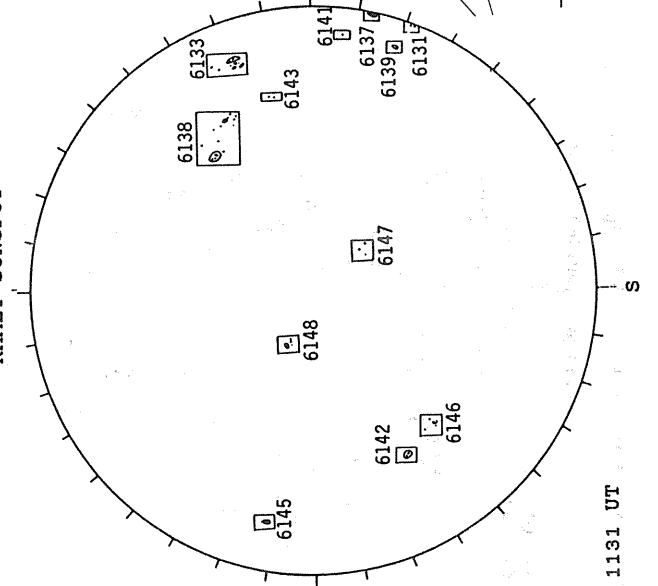
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



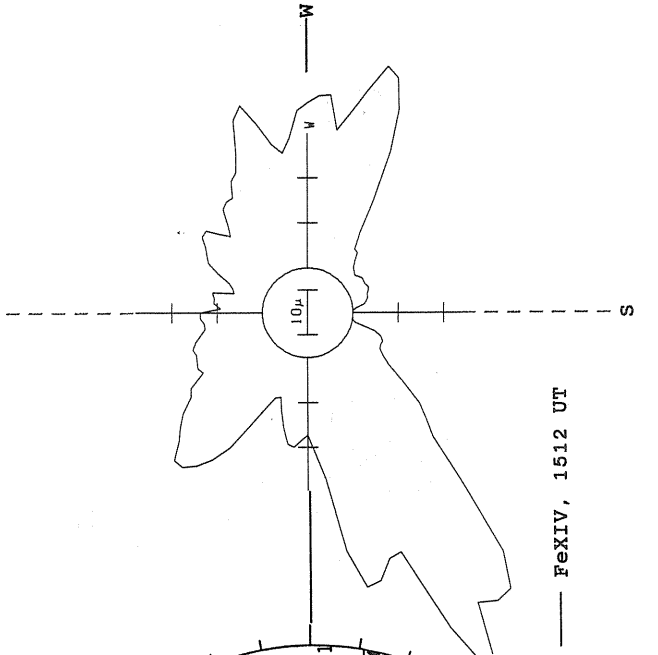
1452 UT

RAMEY SUNSPOT



1131 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

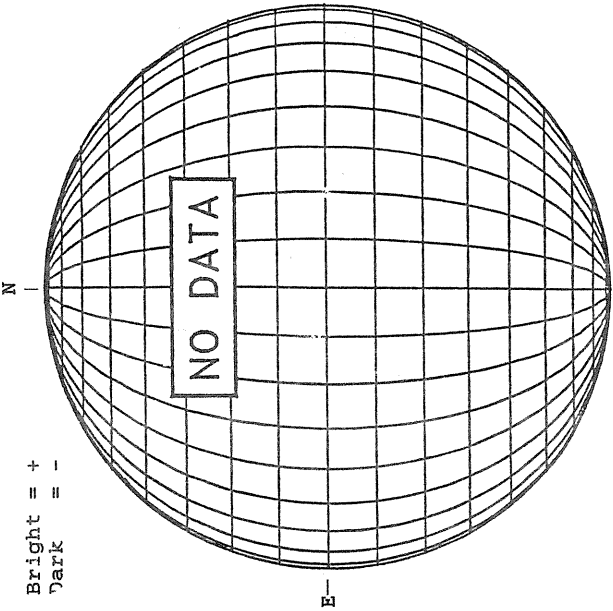


— FeXIV, 1512 UT

JULY 10, 1990 (P= 1.28, B₀ = 3.81, L₀ = 342.16)

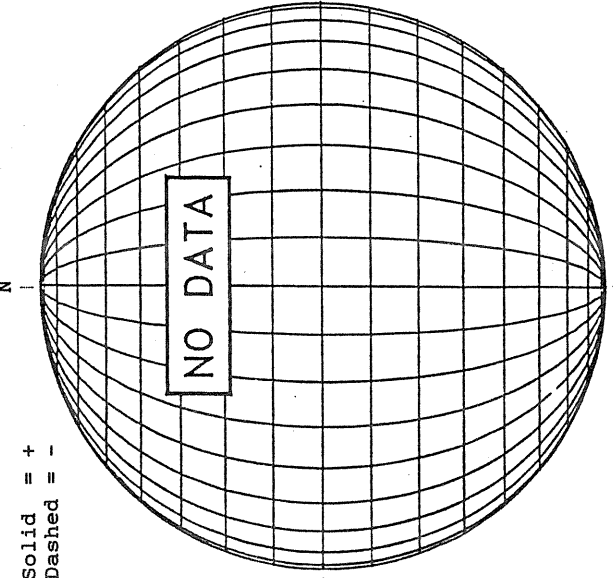
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



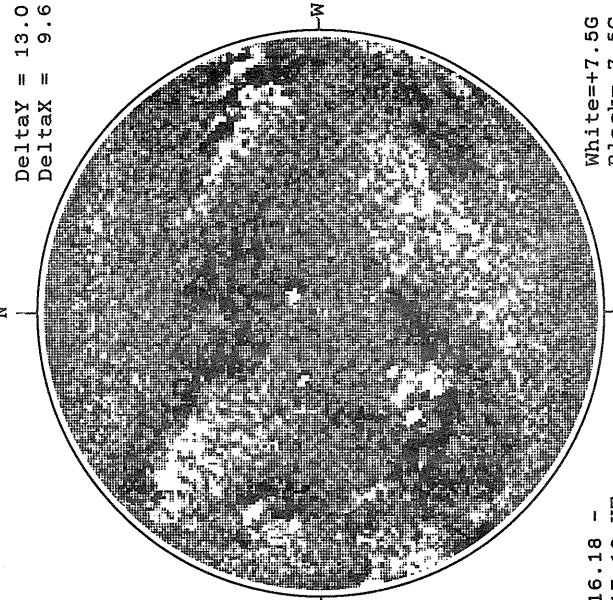
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

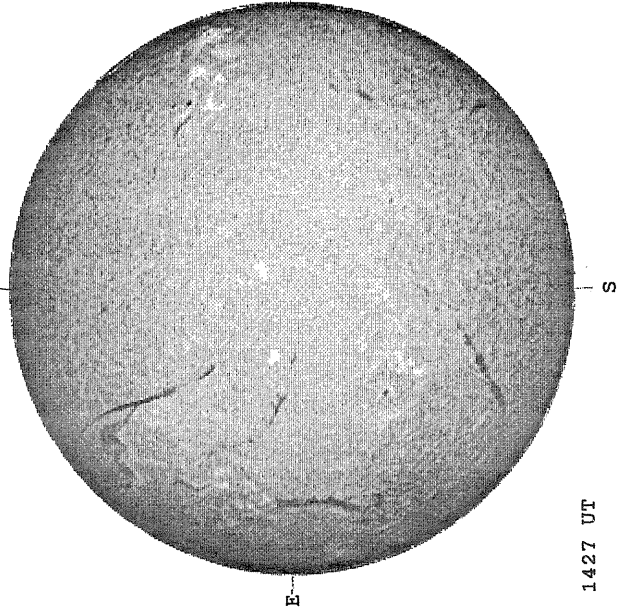
DeltaY = 13.0
DeltaX = 9.6



16.18 -
17.10 UT

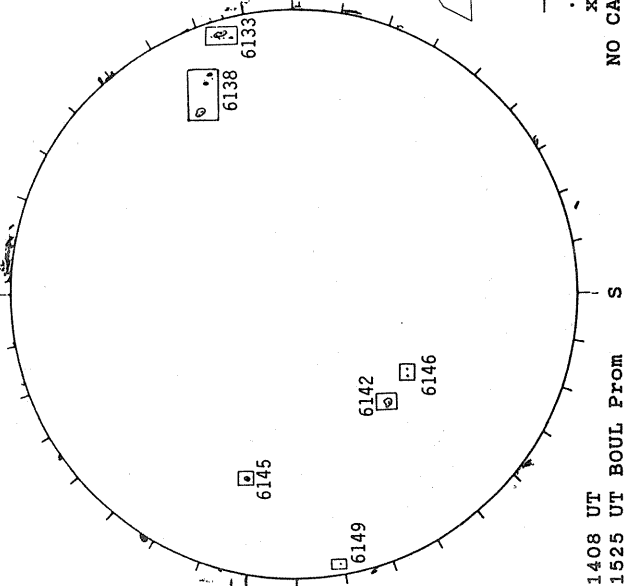
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



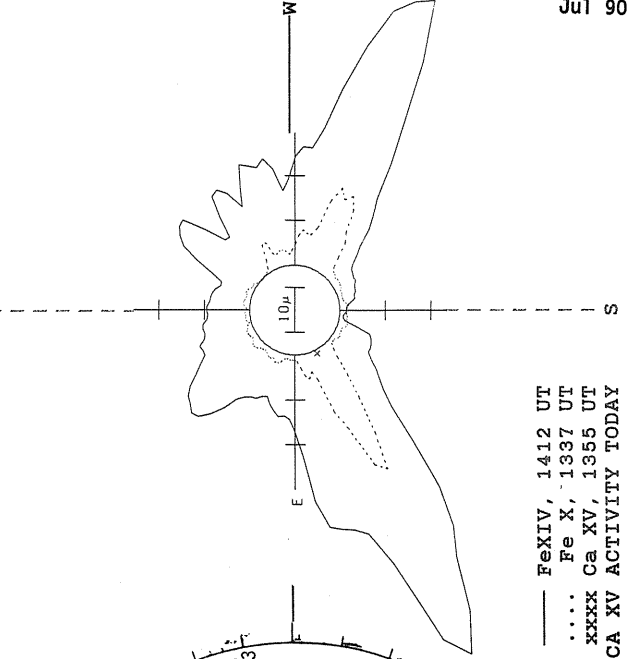
1427 UT

BOULDER SUNSPOT



1408 UT
1525 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

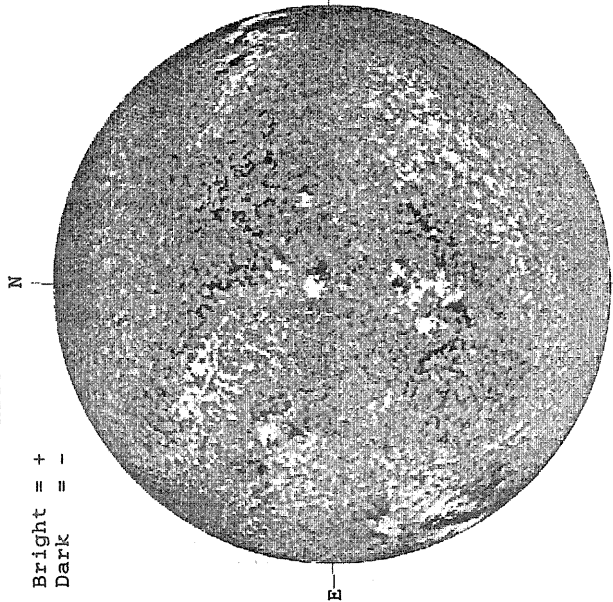


— Fe XIV, 1412 UT
..... Fe X, 1337 UT
xxxxx Ca XV, 1355 UT
NO CA XV ACTIVITY TODAY

JULY 11, 1990 (P= 1.73, B₀ = 3.91, L₀ = 328.93)

KITT PEAK MAGNETOGRAM

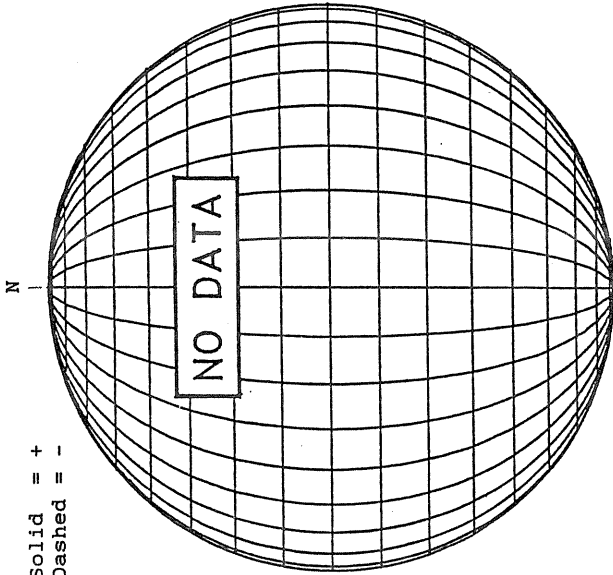
Bright = +
Dark = -



1751 UT

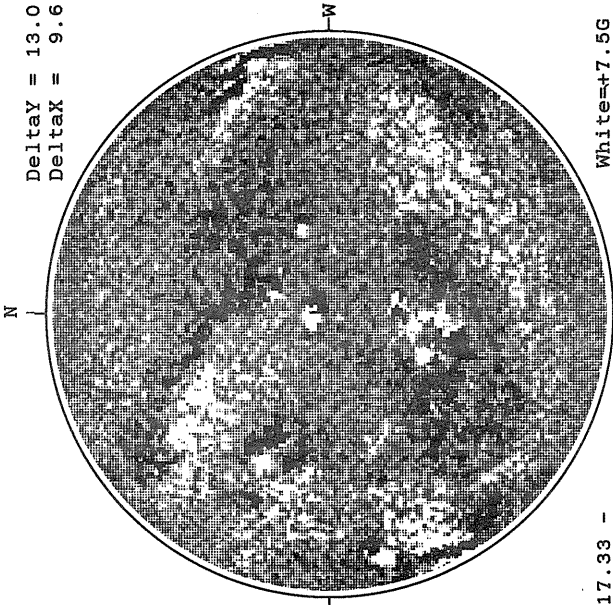
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

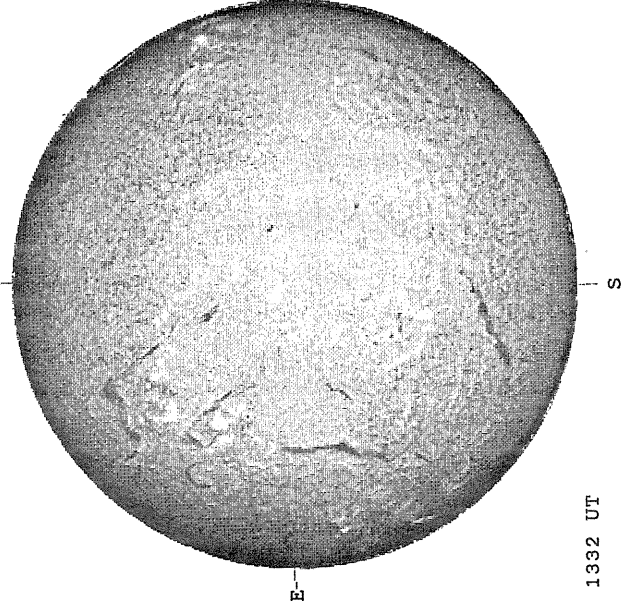
DeltaY = 13.0
DeltaX = 9.6



17.33 -
18.25 UT

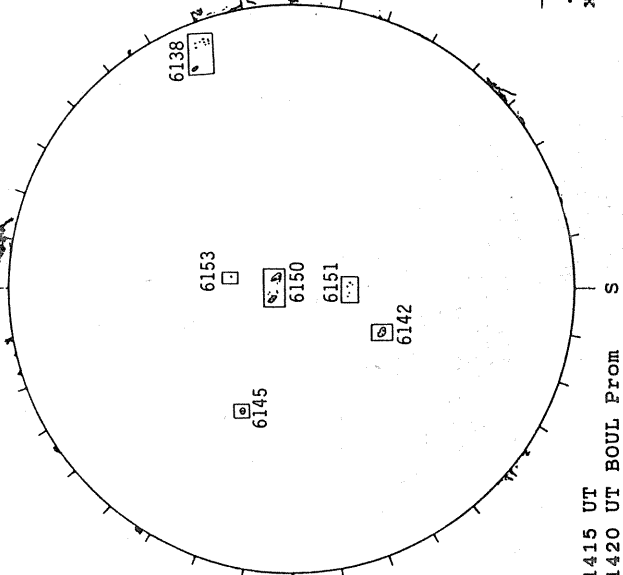
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



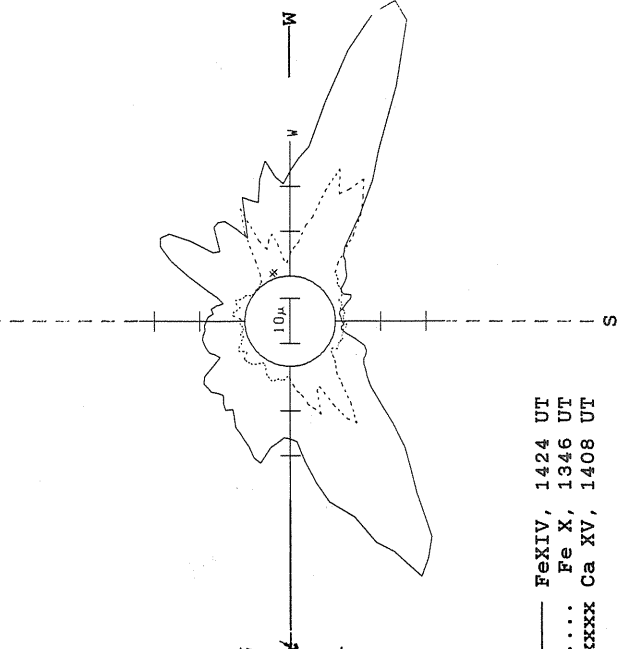
1332 UT

BOULDER SUNSPOT



1415 UT
1420 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

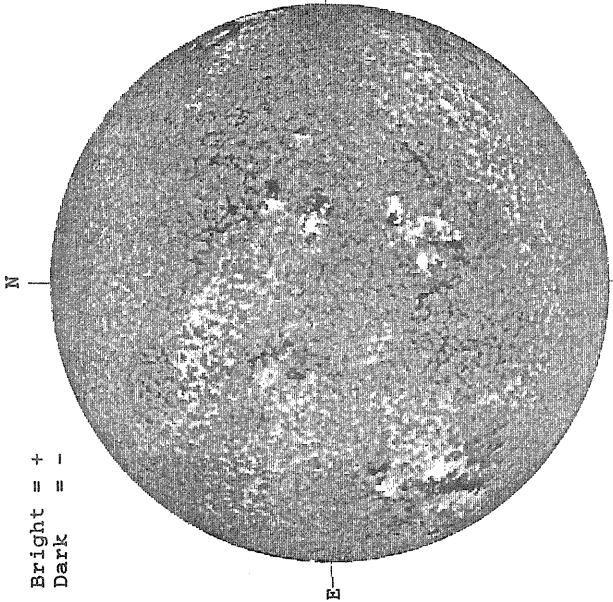


— FeXIV, 1424 UT
... Fe X, 1346 UT
xxxxx Ca XV, 1408 UT

JULY 12, 1990 (P= 2.18, B₀ = 4.01, L₀ = 315.69)

KIIT PEAK MAGNETOGRAM

Bright = +
Dark = -



1625 UT

STANFORD MAGNETOGRAM

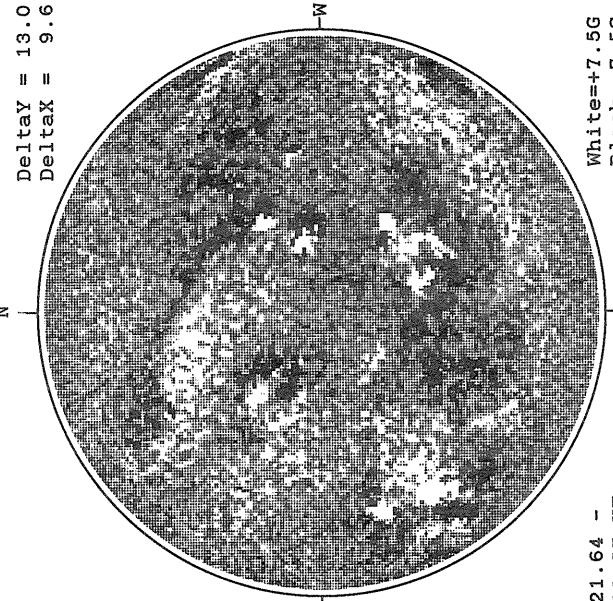
Solid = +
Dashed = -



0205 UT

MT. WILSON MAGNETOGRAM

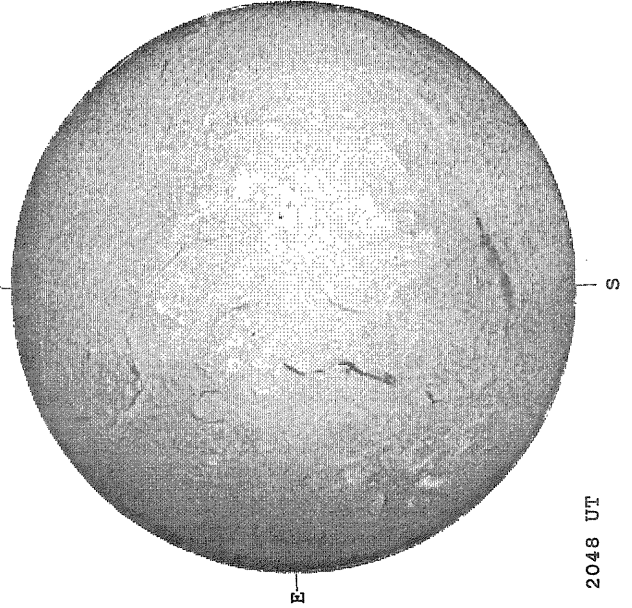
Delta α = 13.0
Delta λ = 9.6



21.64 -
22.57 UT

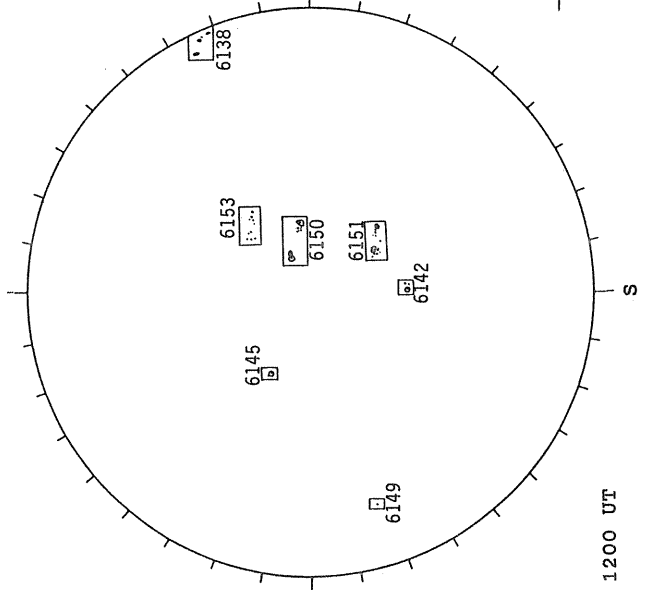
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



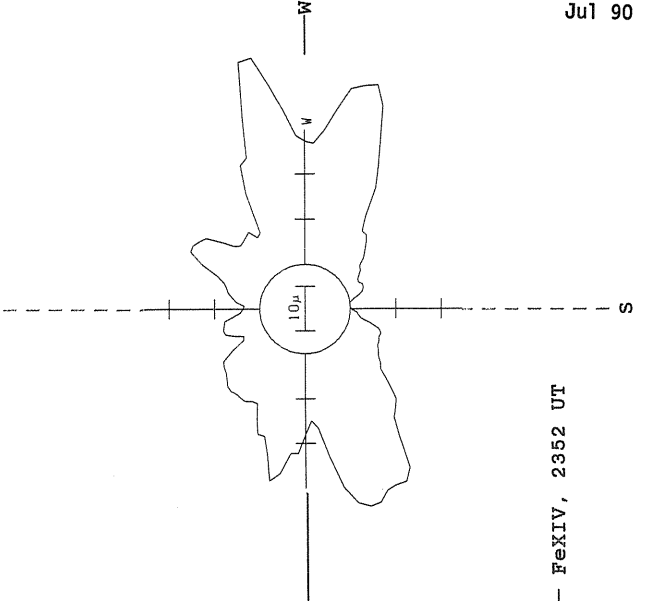
2048 UT

RAMEY SUNSPOT



1200 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

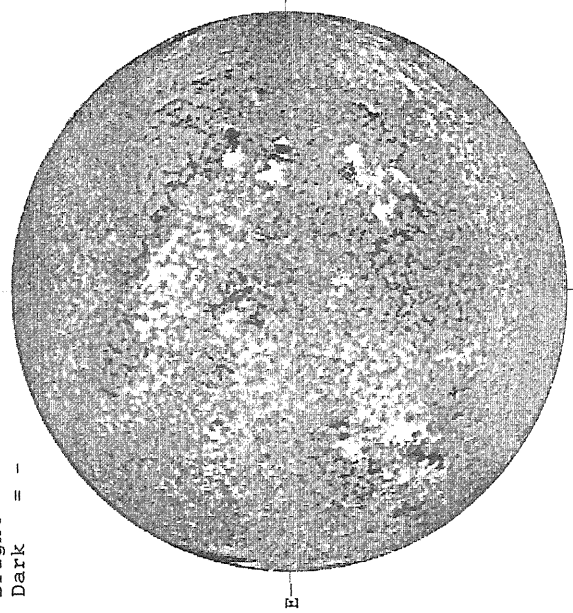


— FeXIV, 2352 UT

JULY 13, 1990 (P = 2.62, B₀ = 4.11, L₀ = 302.46)

KITT PEAK MAGNETOGRAM

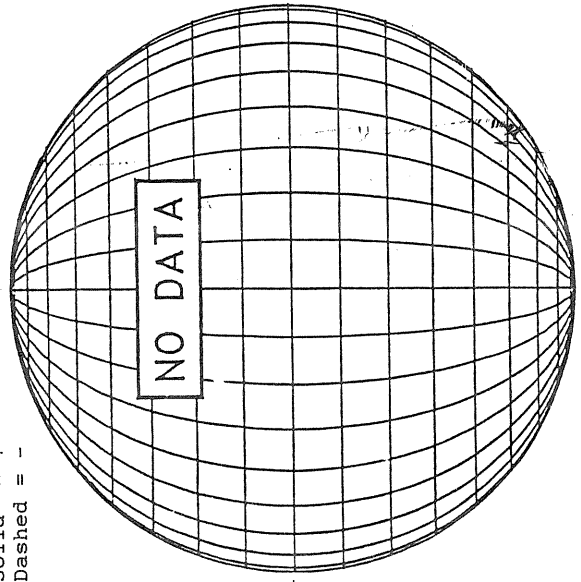
Bright = +
Dark = -



1651 UT

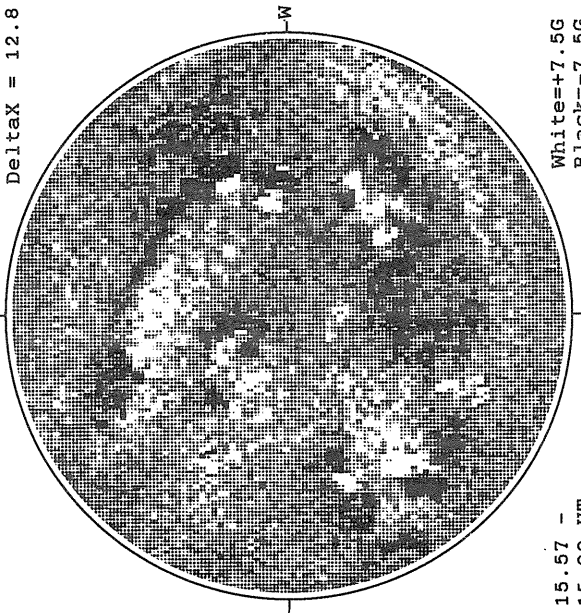
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

Delta_Y = 20.2
Delta_X = 12.8

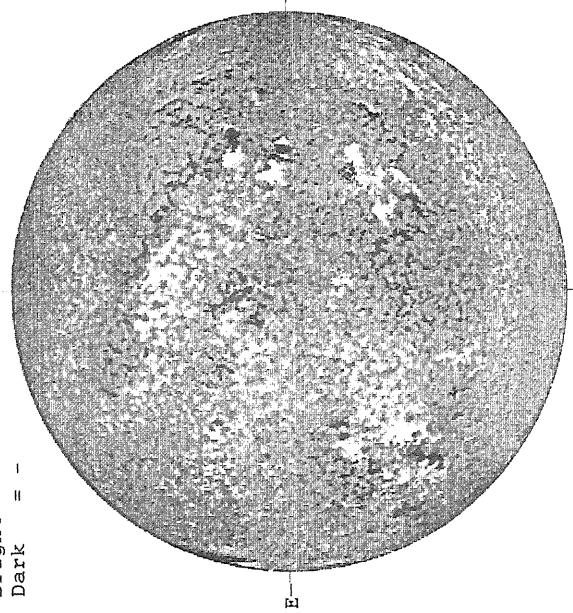


15.57 -
15.90 UT

White = +7.5G
Black = -7.5G

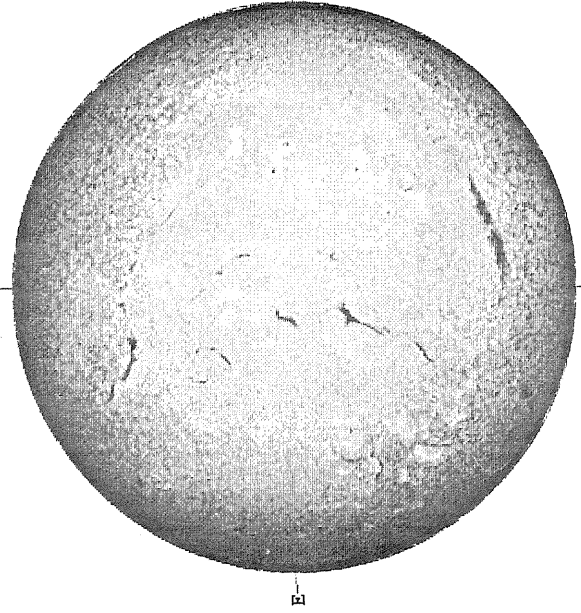
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



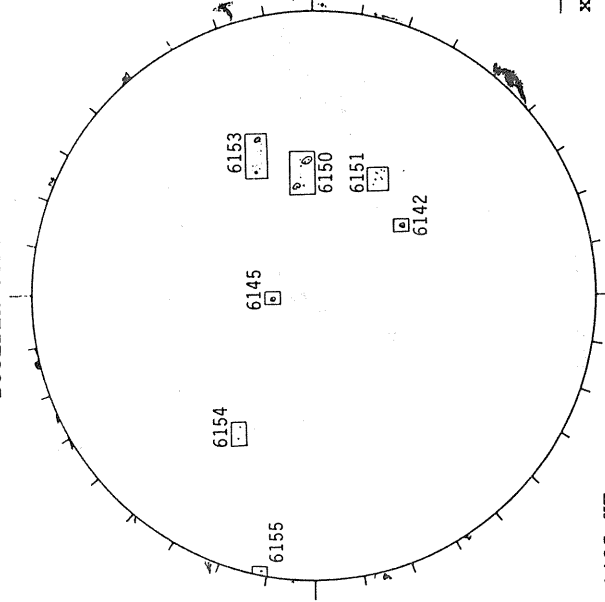
1651 UT

SACRAMENTO PEAK H-ALPHA



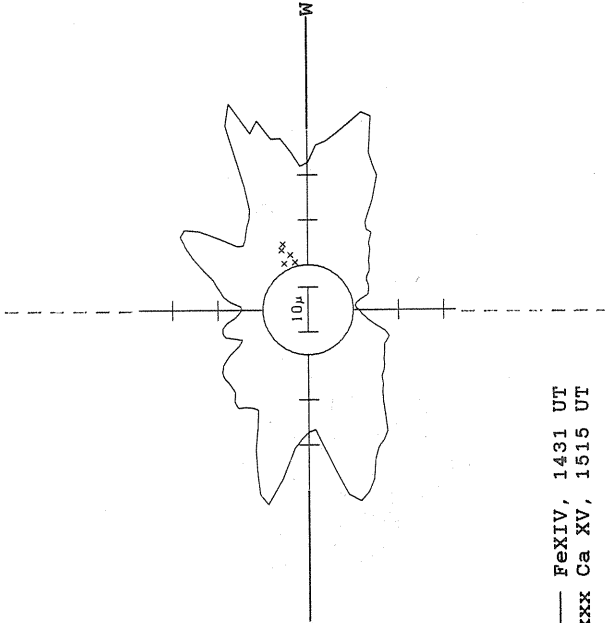
1658 UT

BOULDER SUNSPOT



1405 UT
1350 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

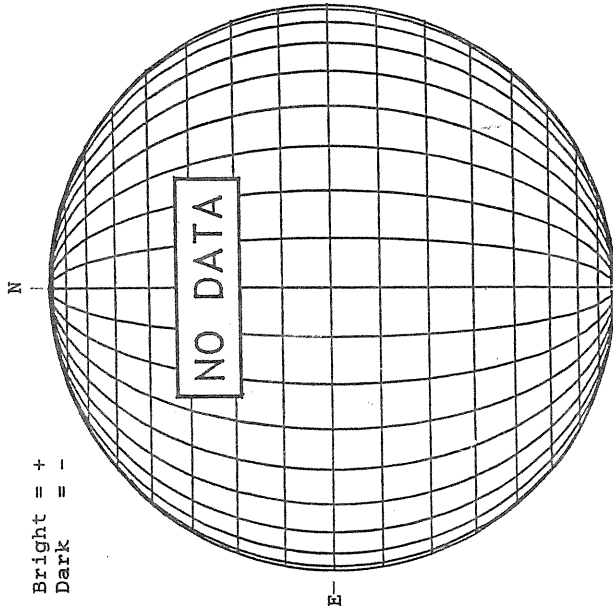


— FeXIV, 1431 UT
xxxx Ca XV, 1515 UT

JULY 14, 1990 (P= 3.07, B₀ = 4.21, L₀ = 289.23)

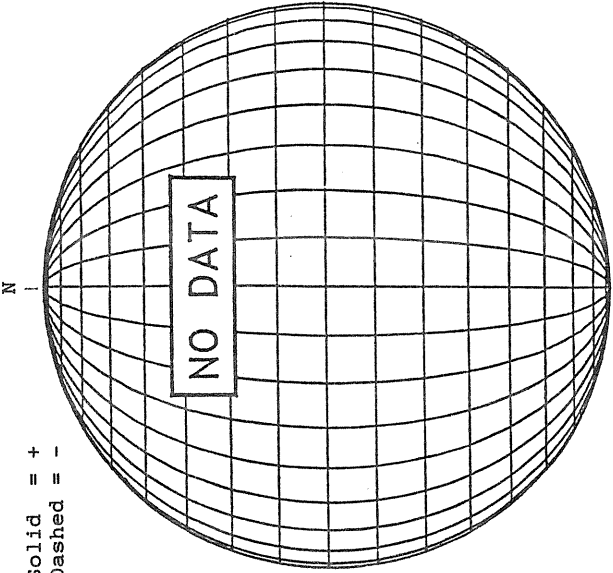
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



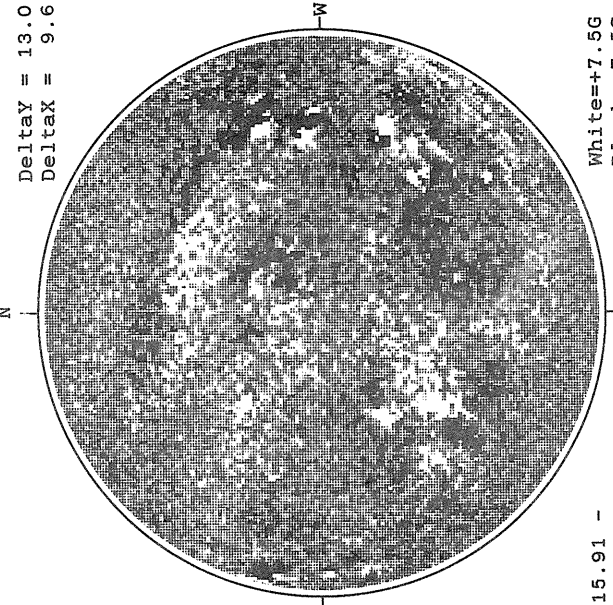
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

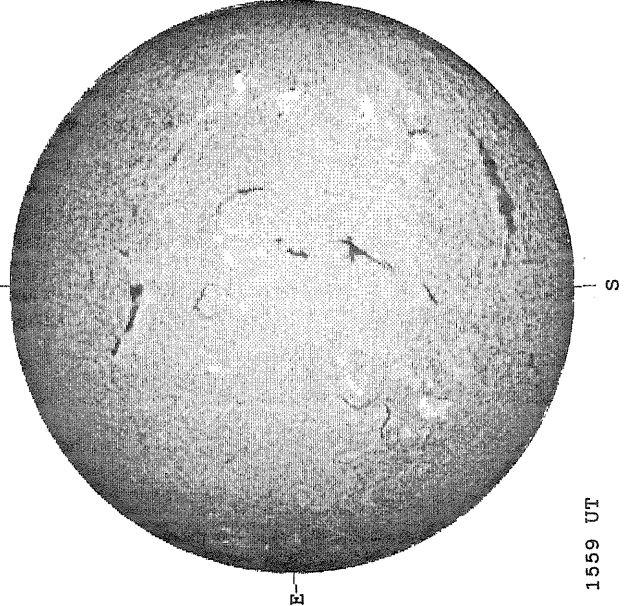
DeltaY = 13.0
DeltaX = 9.6



15.91 -
16.84 UT

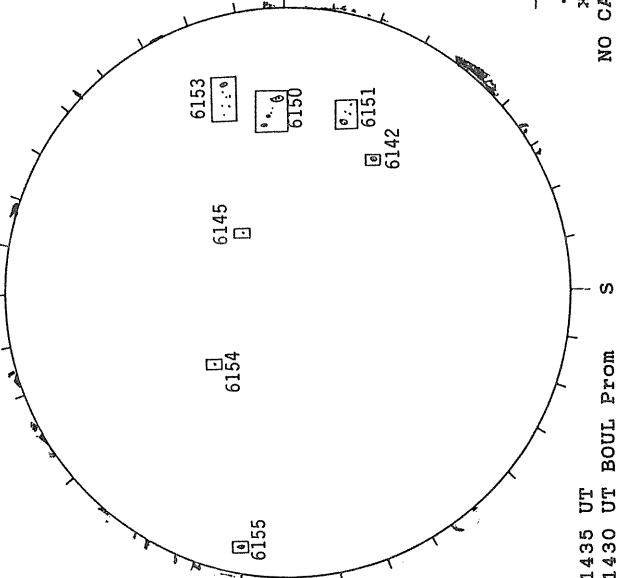
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



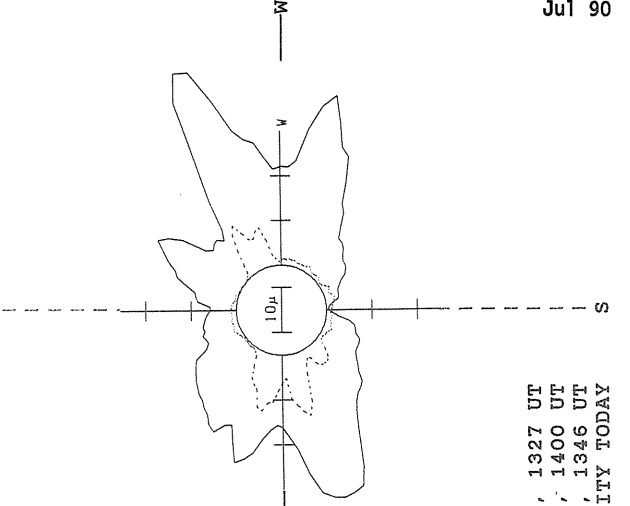
1559 UT

BOULDER SUNSPOT



1435 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

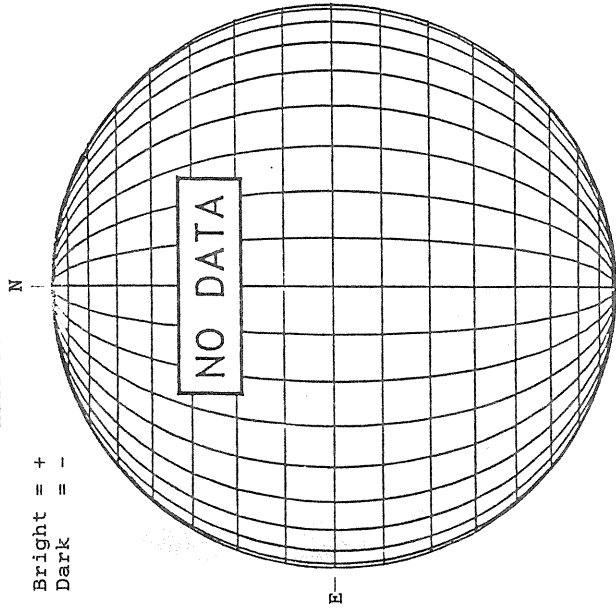


— FeXIV, 1327 UT
.... Fe X, 1400 UT
xxxxx Ca XV, 1346 UT
NO CA XV ACTIVITY TODAY

JULY 15, 1990 (P= 3.51, B₀ = 4.31, L₀ = 275.99)

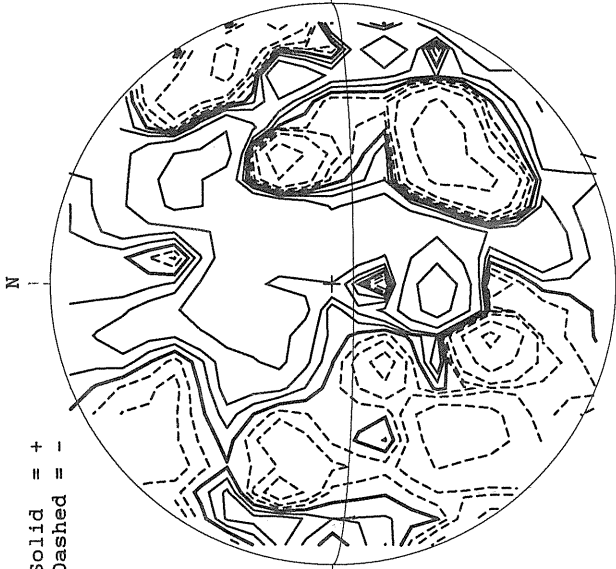
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



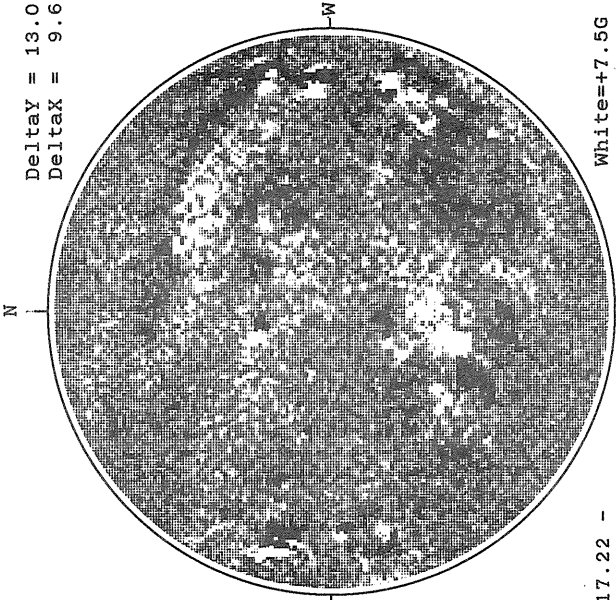
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

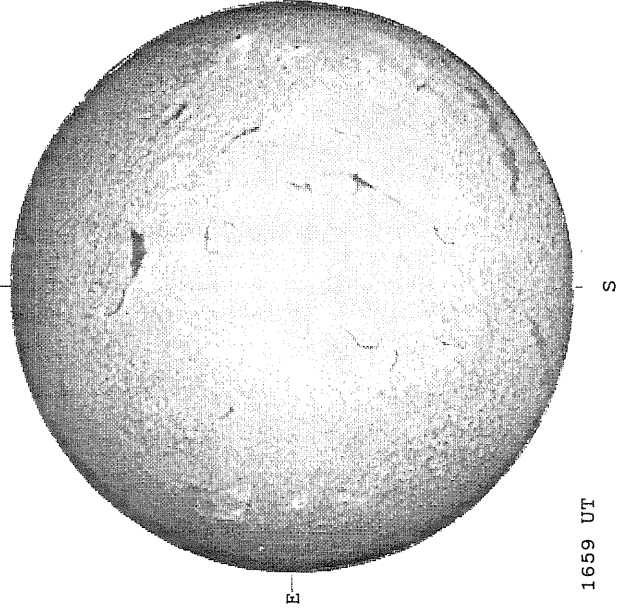
Delta_Y = 13.0
Delta_X = 9.6



17.22 -
18.15 UT

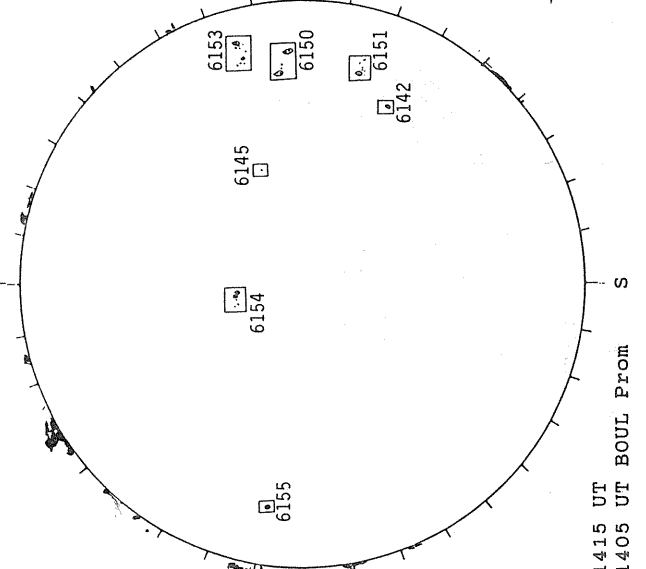
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



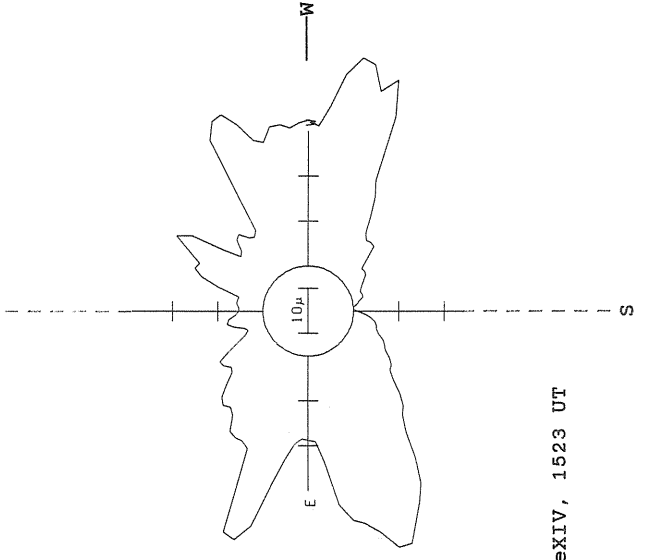
1659 UT

BOULDER SUNSPOT



1415 UT
1405 UT BOUL FROM

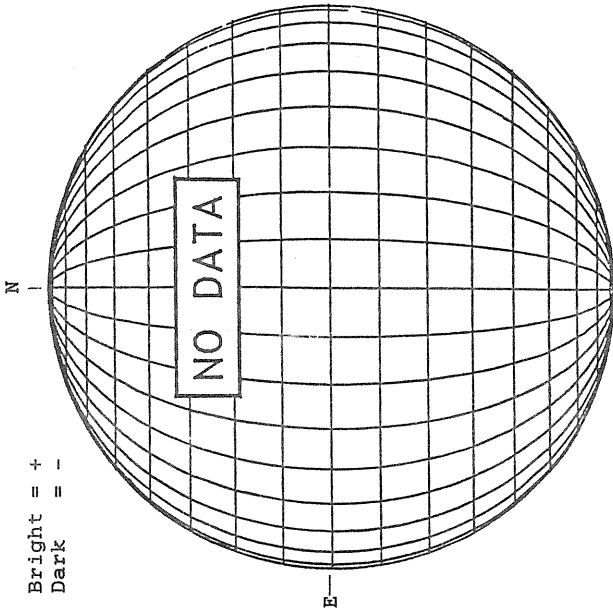
SACRAMENTO PEAK CORONA (1.15 Radii)



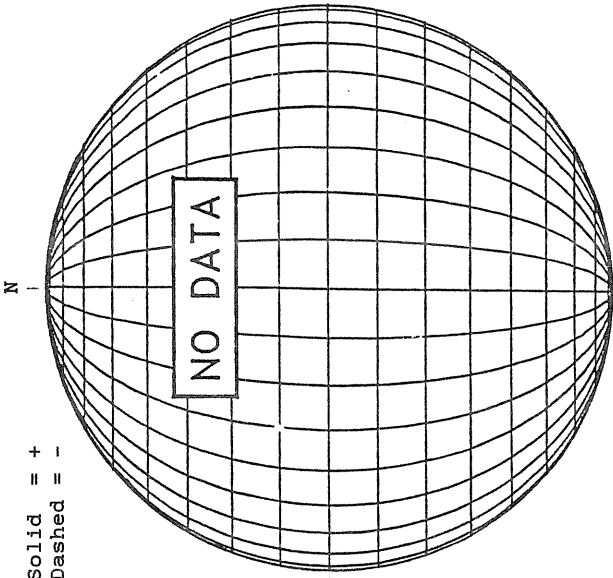
FeXIV, 1523 UT

JULY 16, 1990 (P= 3.96, B₀ = 4.40, L₀ = 262.76)

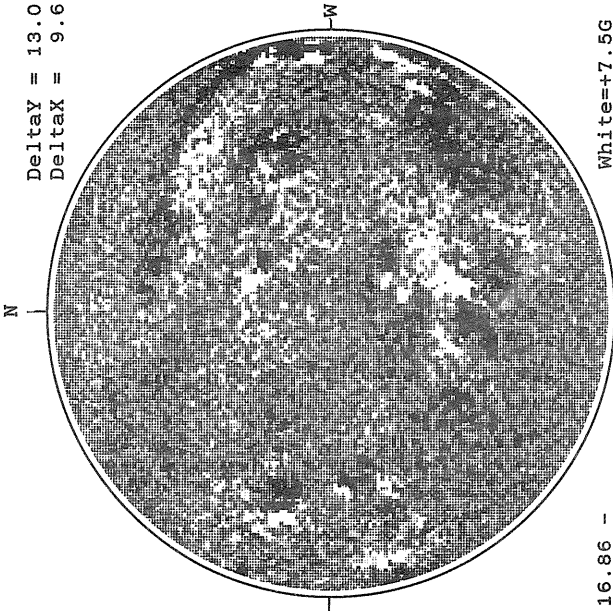
KITT PEAK MAGNETOGRAM



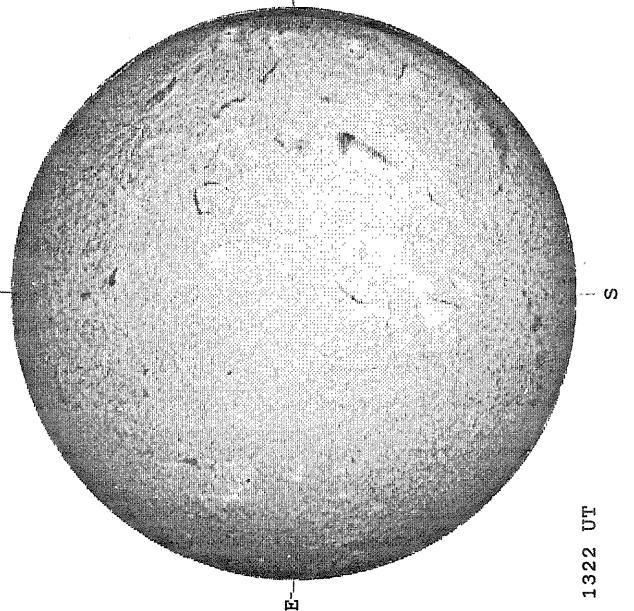
STANFORD MAGNETOGRAM



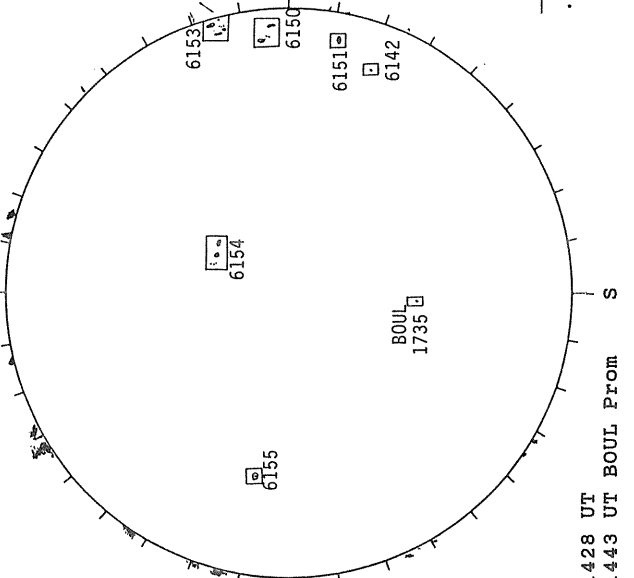
MT. WILSON MAGNETOGRAM



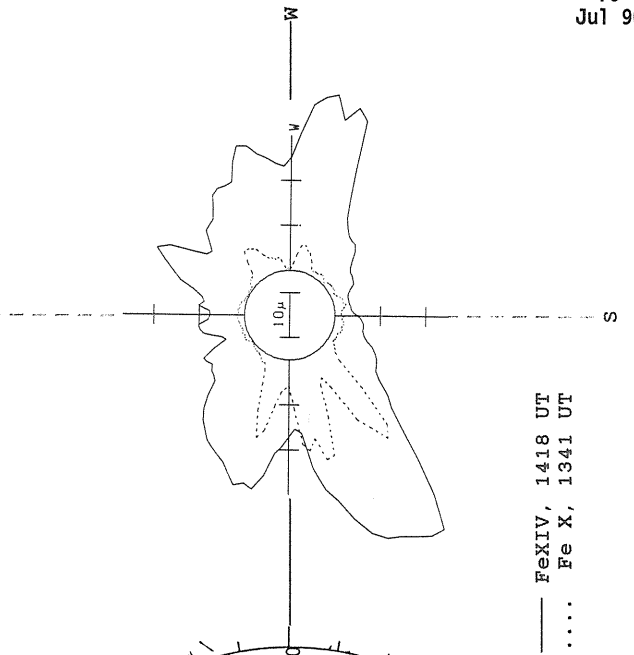
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



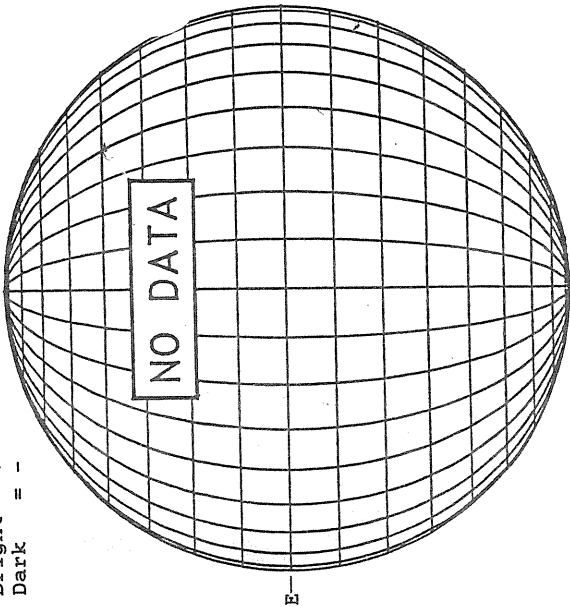
SACRAMENTO PEAK CORONA (1.15 Radii)



JULY 17, 1990 (P= 4.40, B₀ = 4.50, L₀ = 249.53)

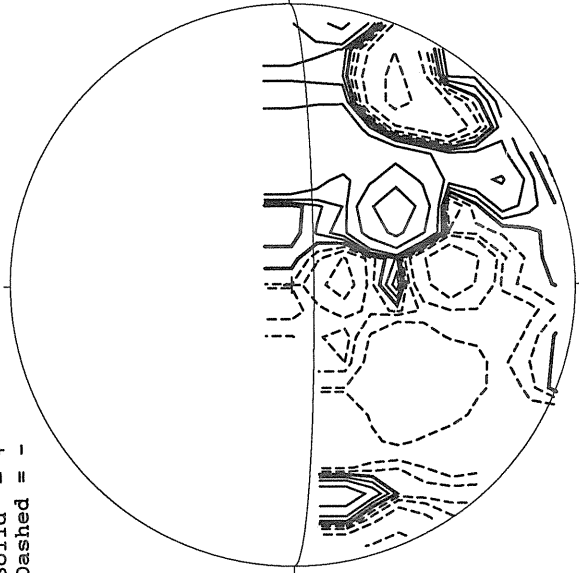
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



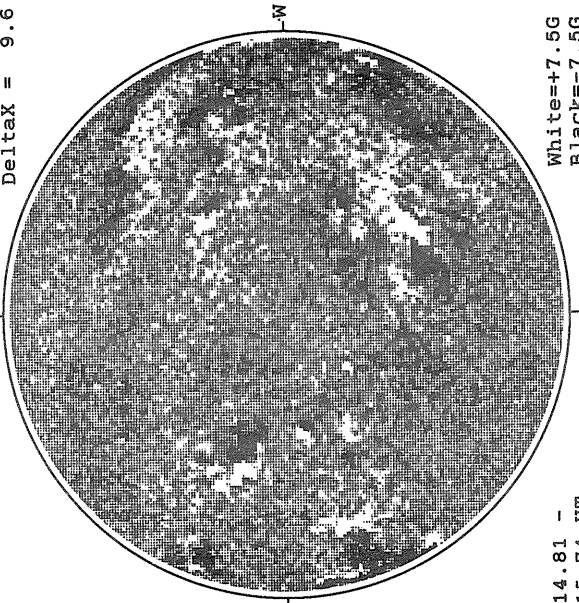
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

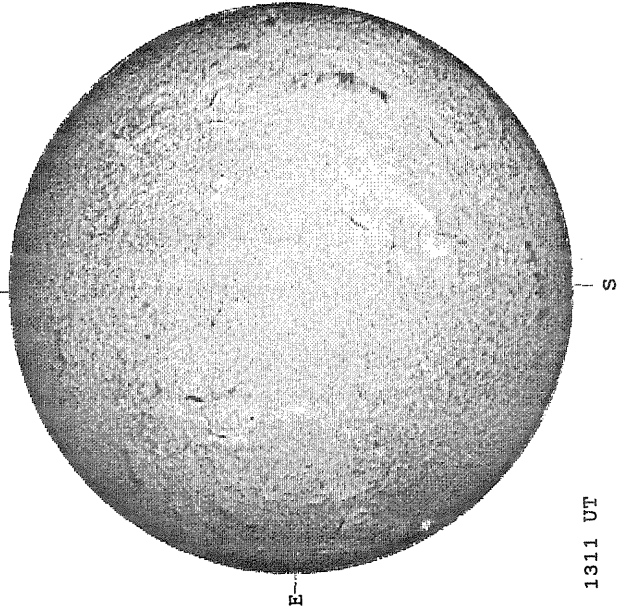
Delta_Y = 13.0
Delta_X = 9.6



White = +7.5G
Black = -7.5G

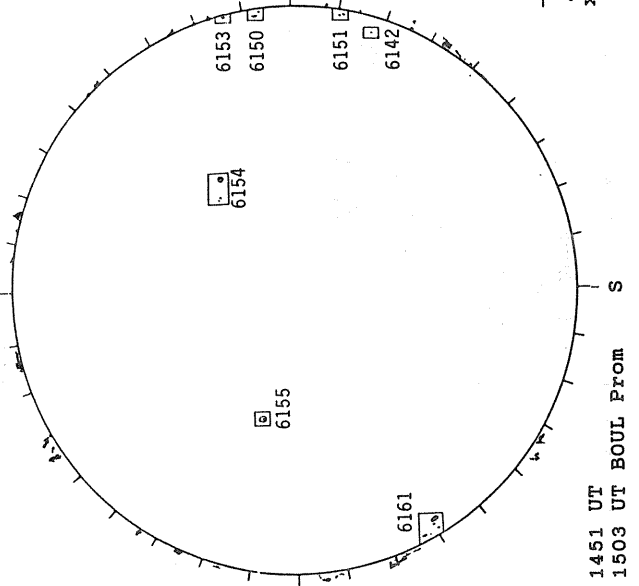
14.81 -
15.74 UT

SACRAMENTO PEAK H-ALPHA



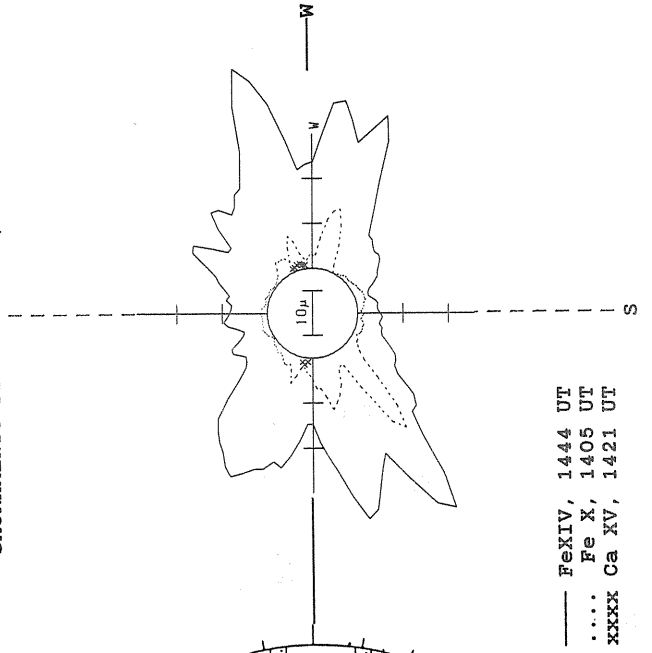
1311 UT

BOULDER SUNSPOT



1451 UT BOUL Prom
1503 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

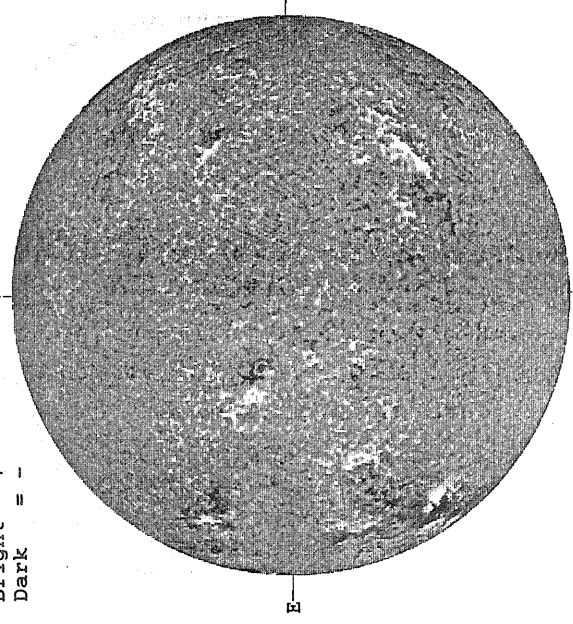


— Fe XIV, 1444 UT
.... Fe X, 1405 UT
xxxxx Ca XV, 1421 UT

JULY 18, 1990 (P= 4.84, B₀ = 4.59, L₀ = 236.30)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1547 UT

STANFORD MAGNETOGRAM

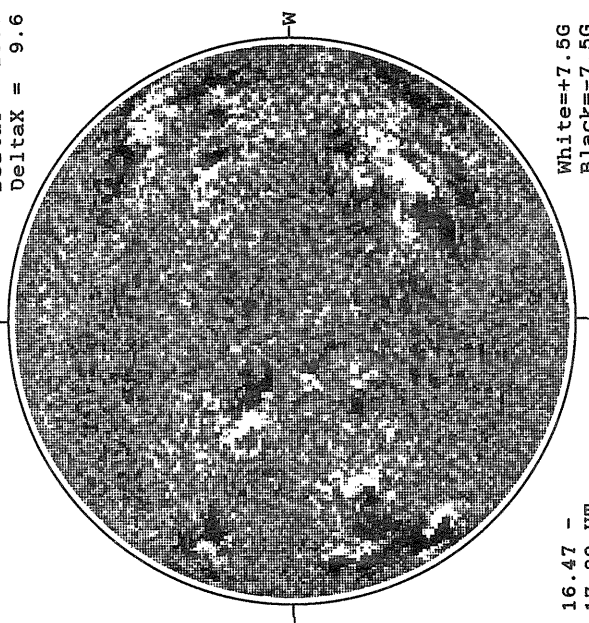
Solid = +
Dashed = -



0025 UT

MT. WILSON MAGNETOGRAM

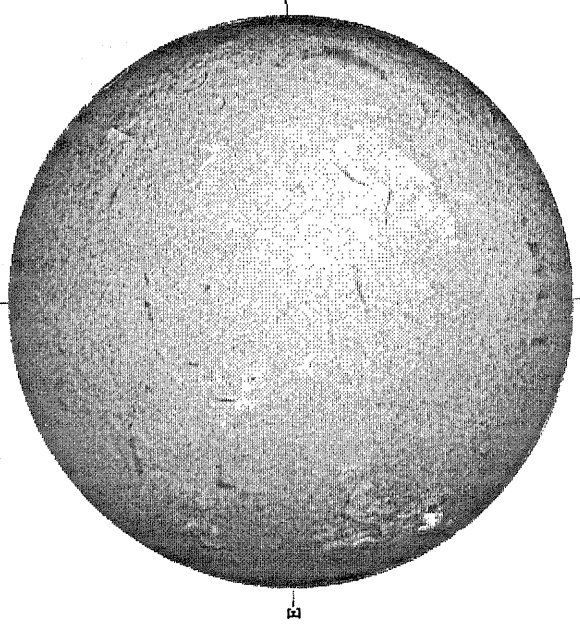
Delta Y = 13.0
Delta X = 9.6



White = +7.5G
Black = -7.5G

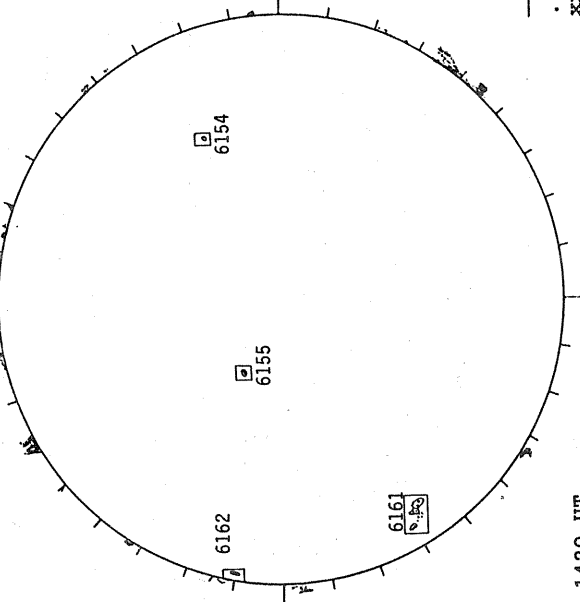
16.47 -
17.39 UT

SACRAMENTO PEAK H-ALPHA



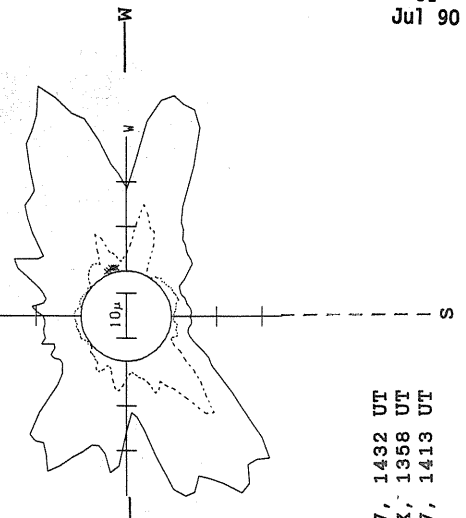
1308 UT

BOULDER SUNSPOT



1420 UT BOUL Prom
1410 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



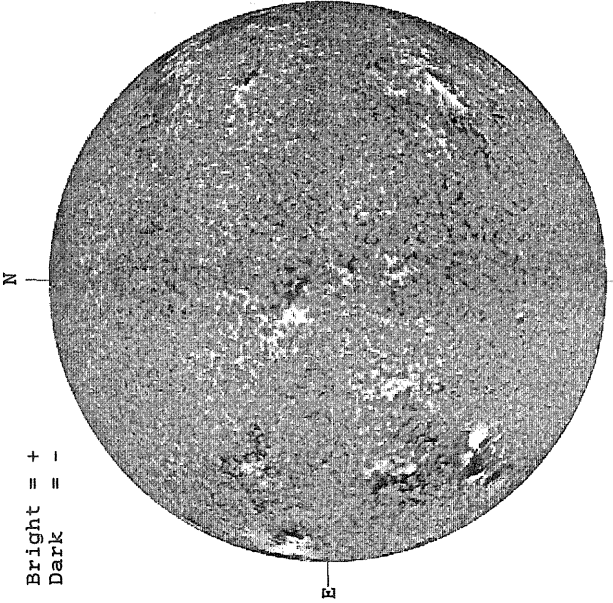
— Fe XIV, 1432 UT
... Fe X, 1358 UT
xxxx Ca XV, 1413 UT

1308 UT

JULY 19, 1990 (P= 5.26, B₀ = 4.68, L₀ = 223.07)

KITT PEAK MAGNETOGRAM

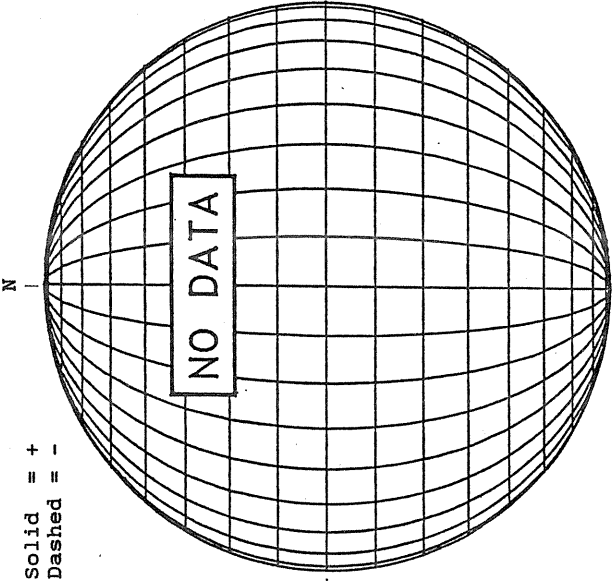
Bright = +
Dark = -



1622 UT

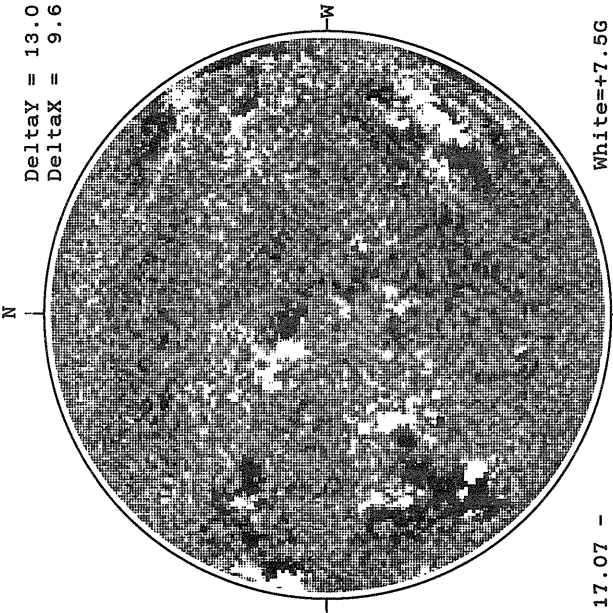
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

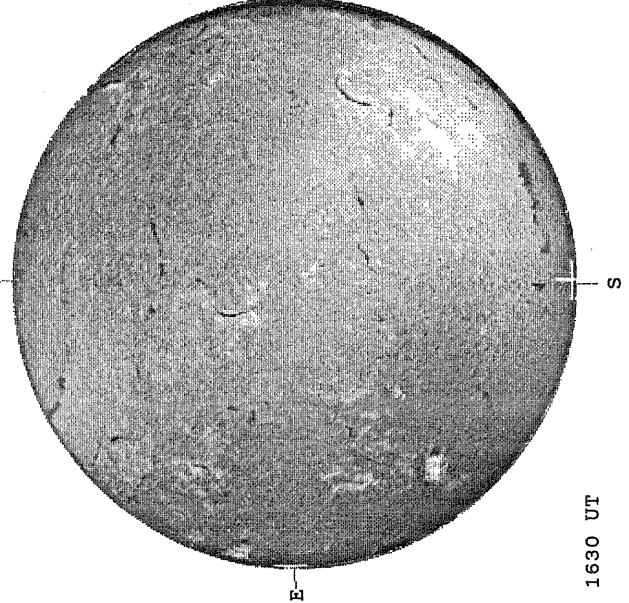
Delta_{ay} = 13.0
Delta_{ax} = 9.6



17.07 -
17.99 UT

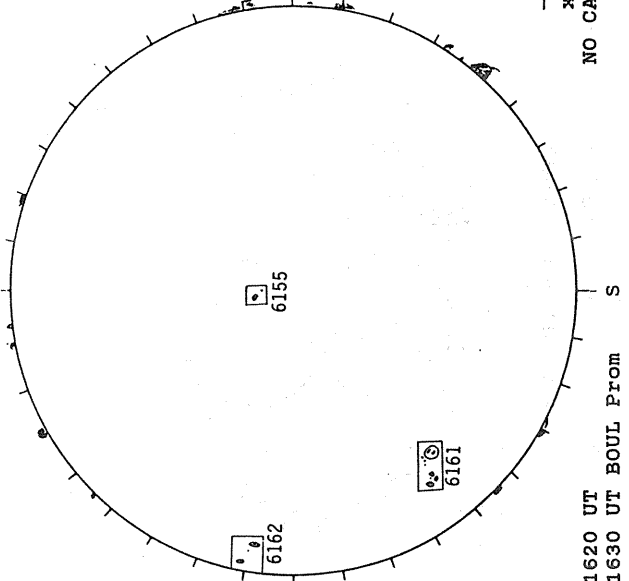
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



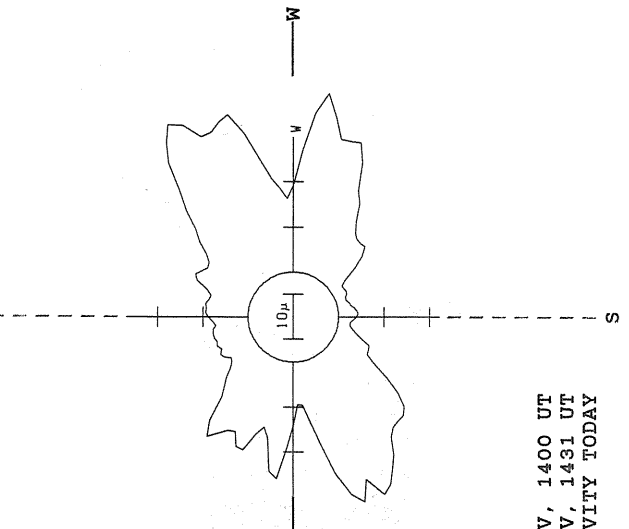
1630 UT

BOULDER SUNSPOT



1620 UT
1630 UT BOUL FROM

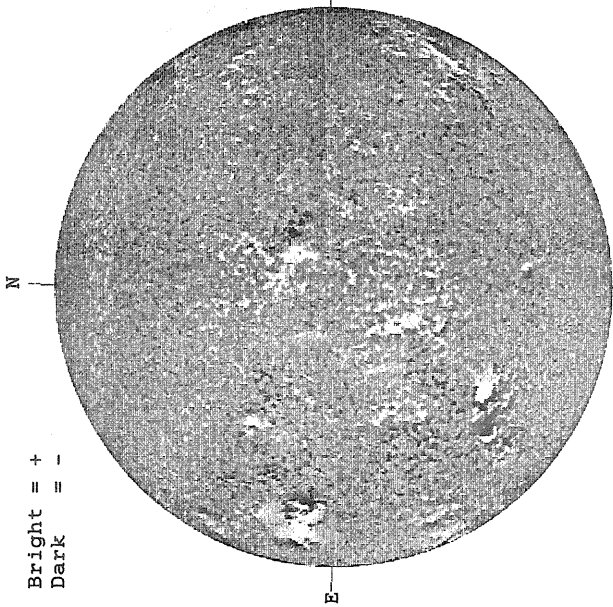
SACRAMENTO PEAK CORONA (1.15 Radii)



— FeXIV, 1400 UT
xxxx Ca XV, 1431 UT
NO CA XV ACTIVITY TODAY

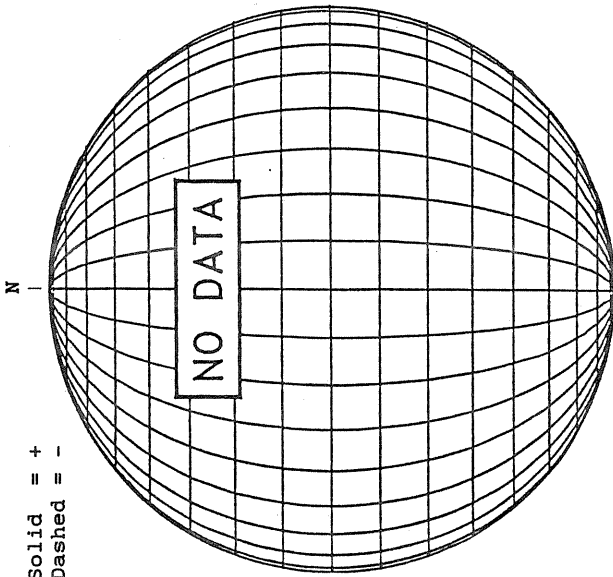
JULY 20, 1990 (P= 5.71, B₀ = 4.78, L₀ = 209.84)

KITT PEAK MAGNETOGRAM



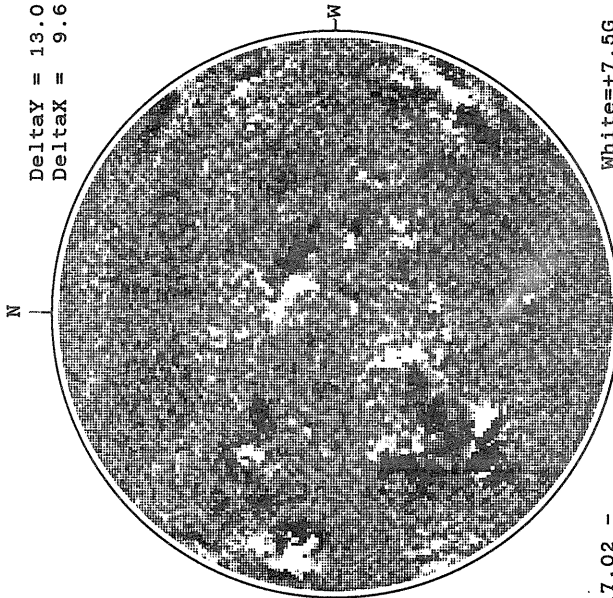
Bright = +
Dark = -

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

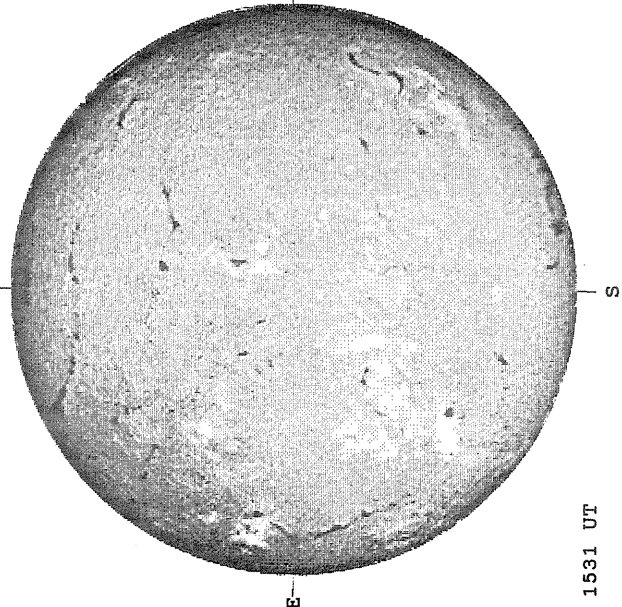
MT. WILSON MAGNETOGRAM



Delta_Y = 13.0
Delta_X = 9.6

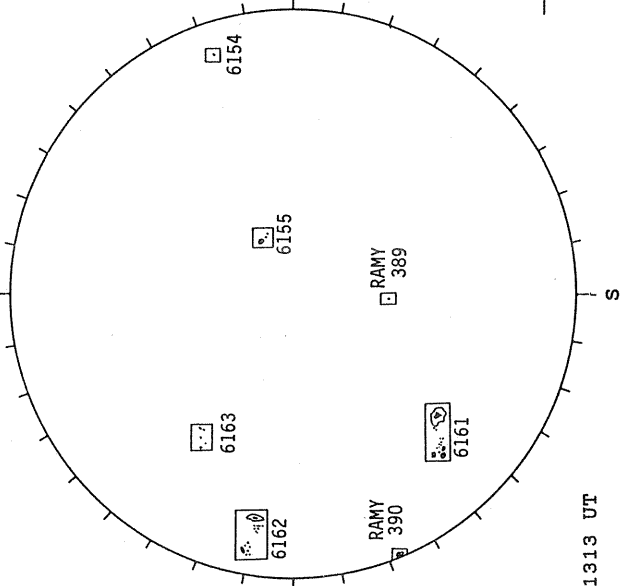
White = +7.5G
Black = -7.5G
17.02 -
17.94 UT

SACRAMENTO PEAK H-ALPHA



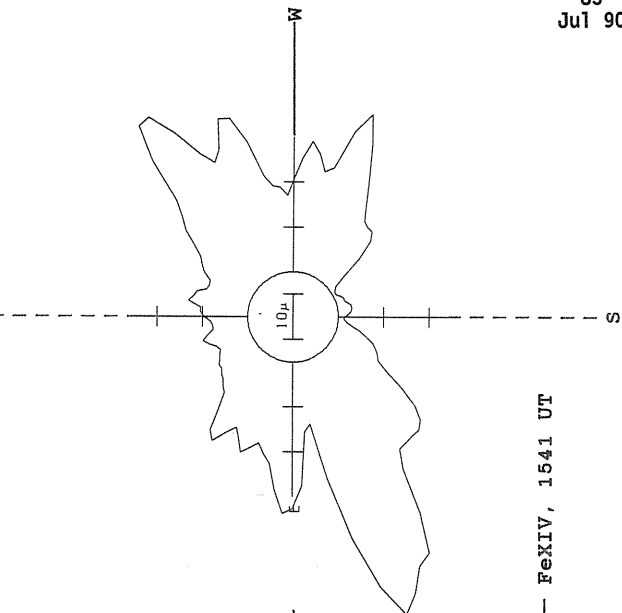
1531 UT

RAMEY SUNSPOT



1313 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

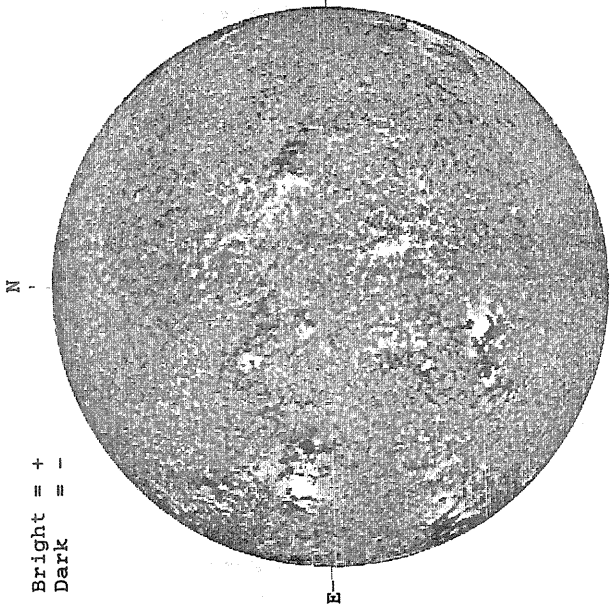


Fe XIV, 1541 UT

JULY 21, 1990 (P= 6.15, B₀ = 4.87, L₀ = 196.61)

KITT PEAK MAGNETOGRAM

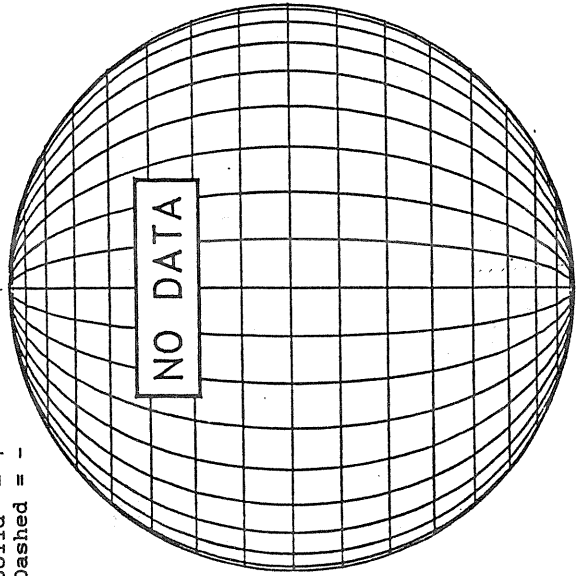
Bright = +
Dark = -



2300 UT

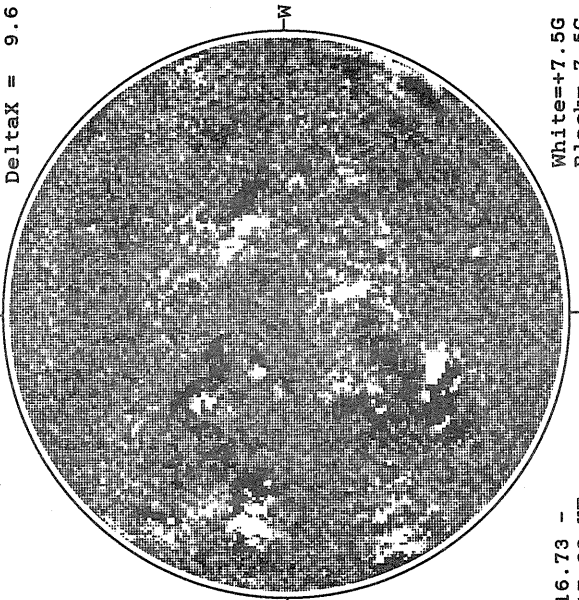
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

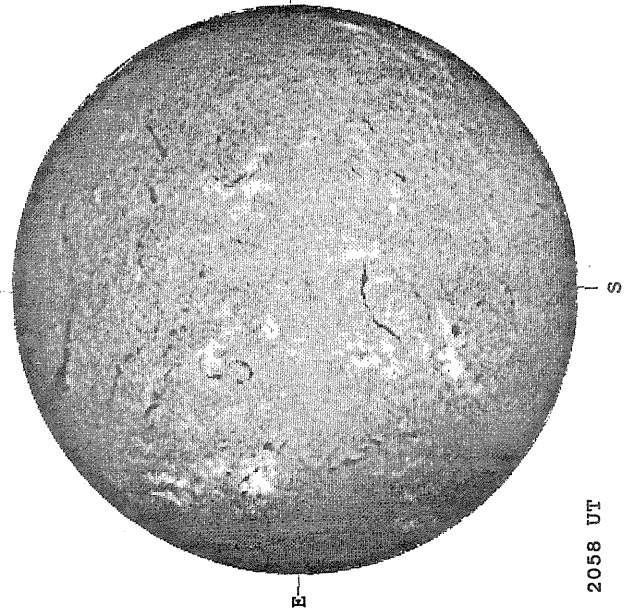
DeltaY = 13.0
DeltaX = 9.6



16.73 -
17.66 UT

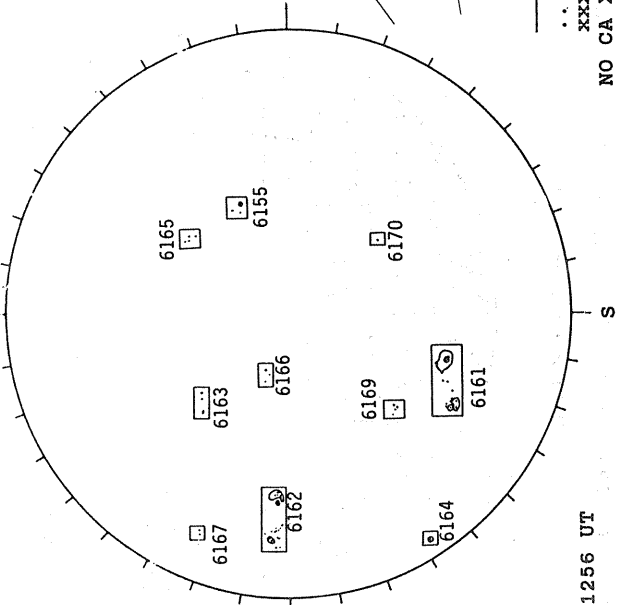
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



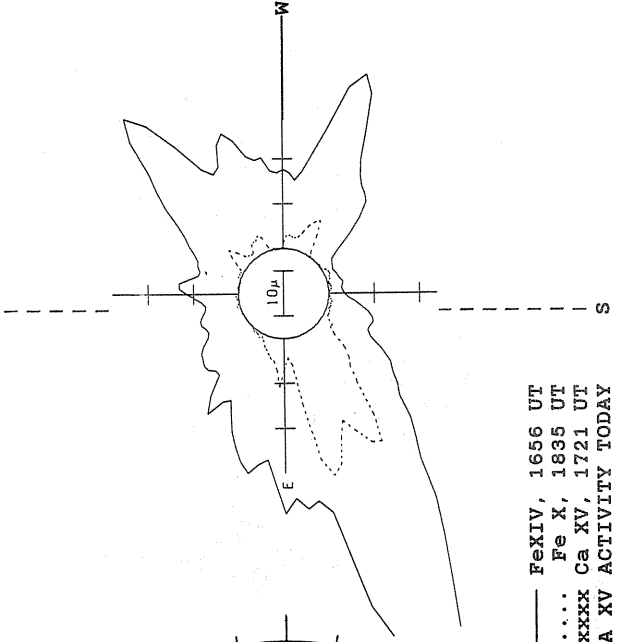
2058 UT

RAMEY SUNSPOT



1256 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

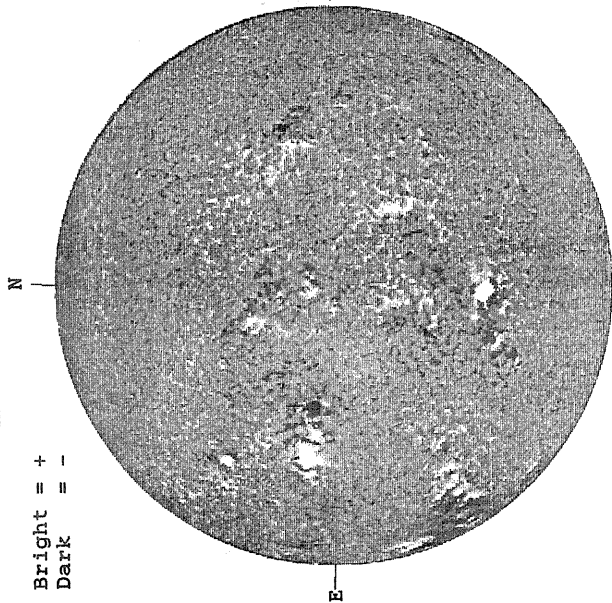


— Fe XIV, 1656 UT
- - - Fe X, 1835 UT
..... Ca XV, 1721 UT
NO CA XV ACTIVITY TODAY

JULY 22, 1990 (P = 6.58, B₀ = 4.95, L₀ = 183.38)

KITT PEAK MAGNETOGRAM

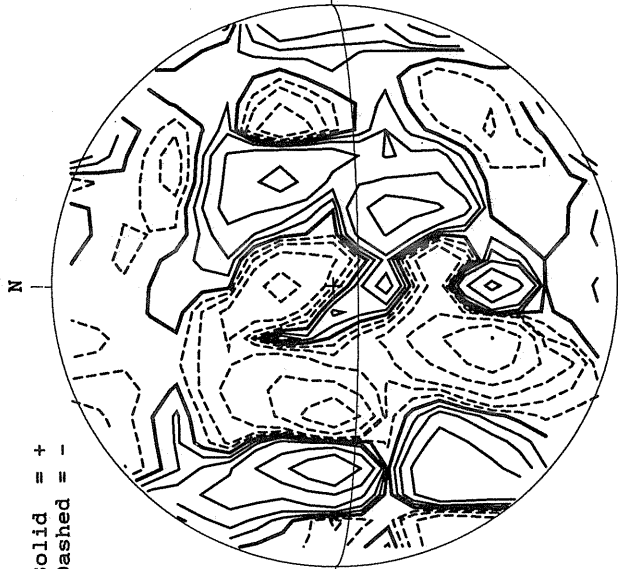
Bright = +
Dark = -



1351 UT

STANFORD MAGNETOGRAM

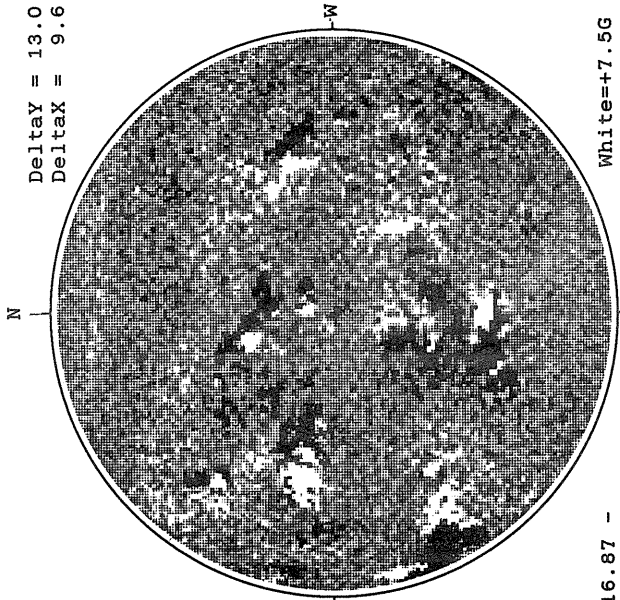
Solid = +
Dashed = -



1943 UT

MT. WILSON MAGNETOGRAM

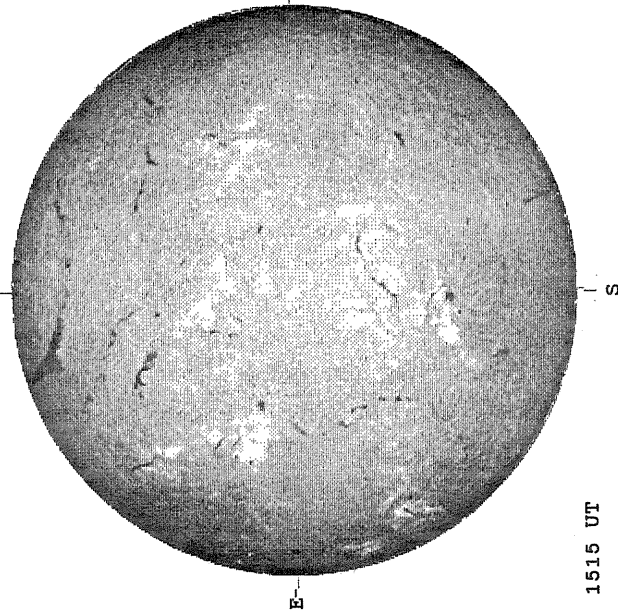
Delta_Y = 13.0
Delta_X = 9.6



16.87 -
17.80 UT

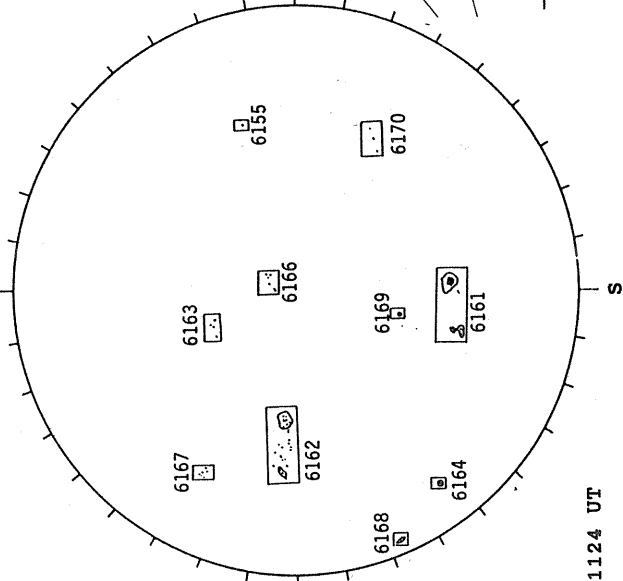
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



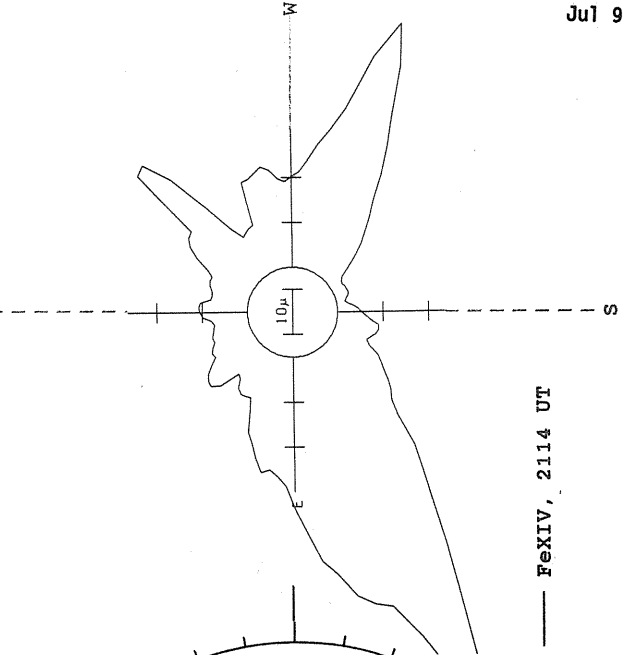
1515 UT

RAMEY SUNSPOT



1124 UT

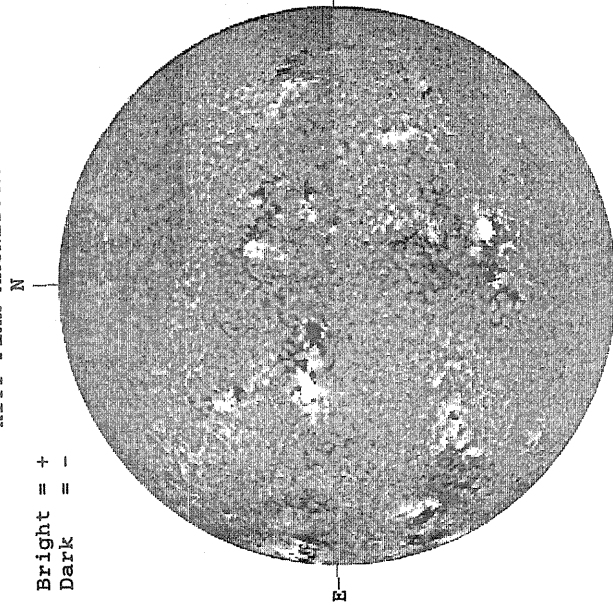
SACRAMENTO PEAK CORONA (1.15 Radii)



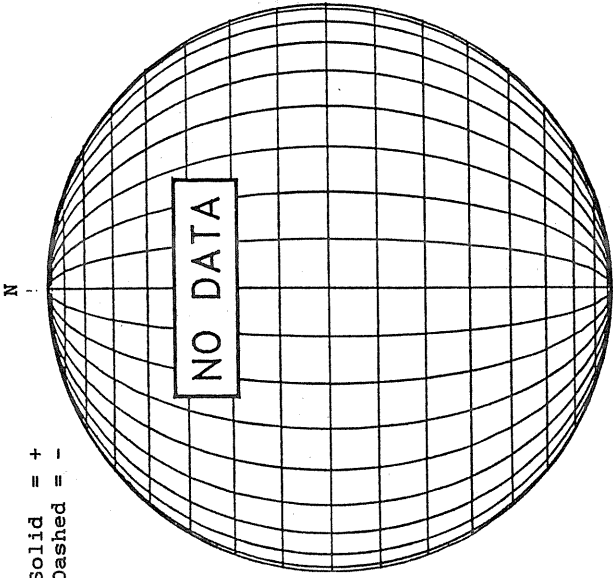
Fe XIV, 2114 UT

JULY 23, 1990 (P= 7.00, B₀ = 5.04, L₀ = 170.15)

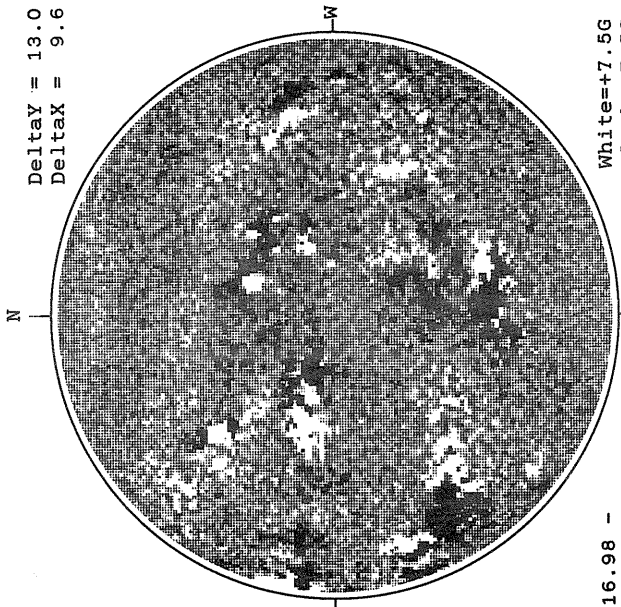
KITT PEAK MAGNETOGRAM



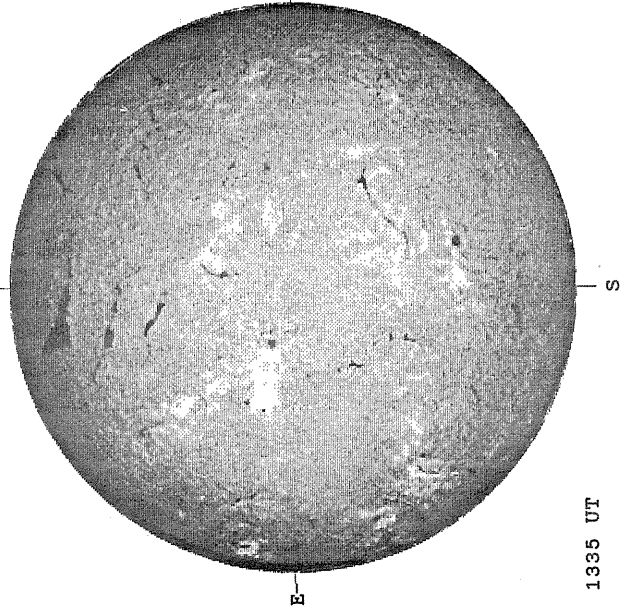
STANFORD MAGNETOGRAM



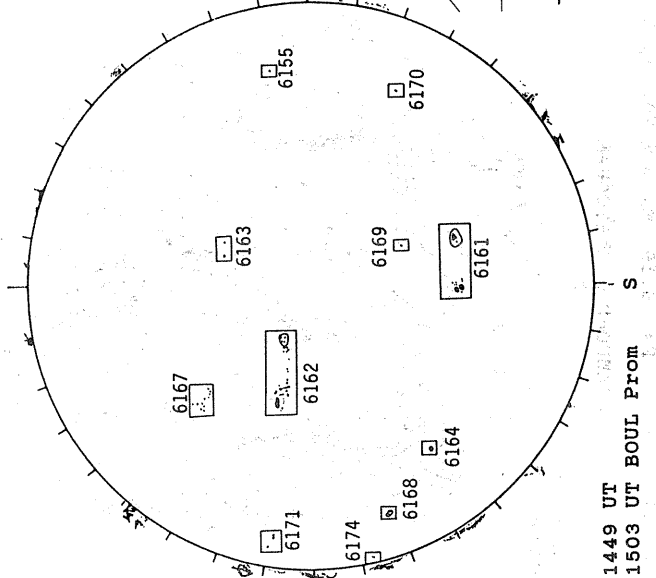
MT. WILSON MAGNETOGRAM



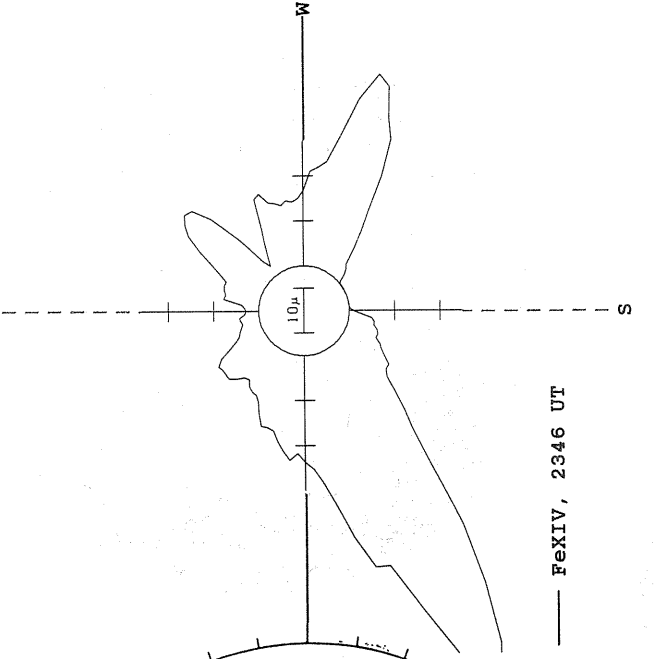
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



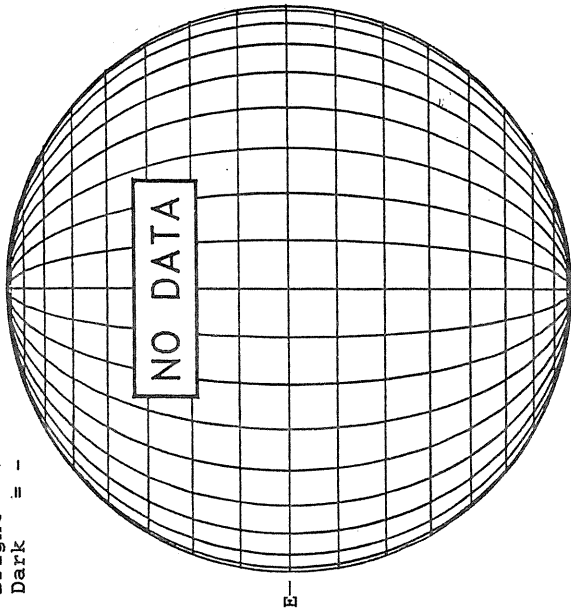
SACRAMENTO PEAK CORONA (1.15 Radii)



JULY 24, 1990 (P= 7.43 B₀ = 5.13, I₀ = 156.92)

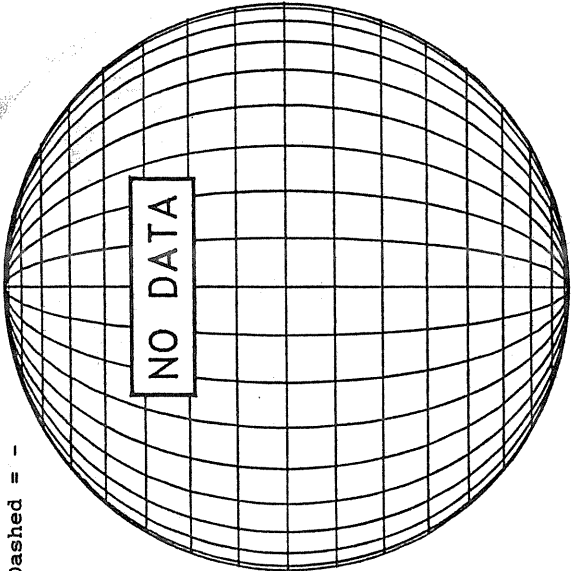
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



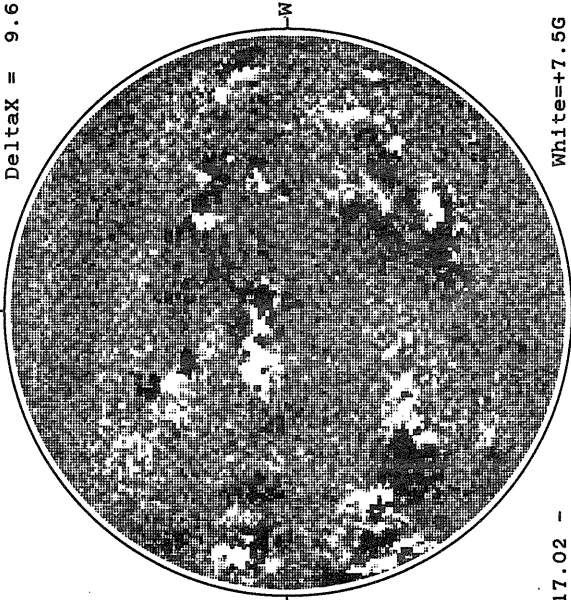
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

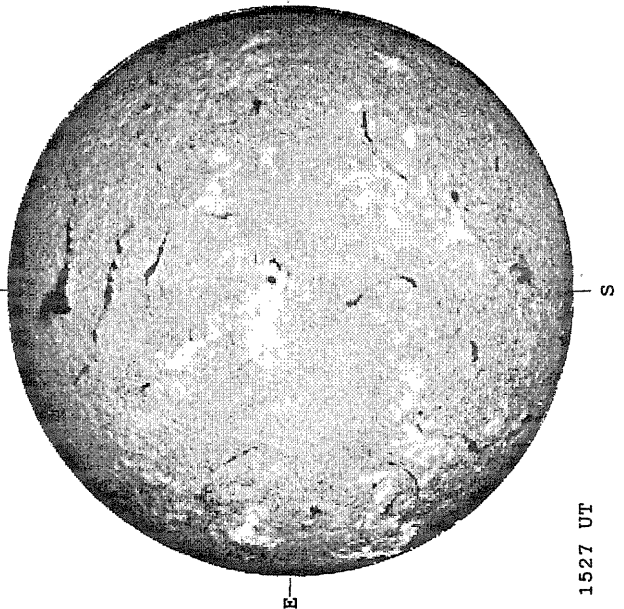
DeltaY = 13.0
DeltaX = 9.6



17.02 -
17.95 UT

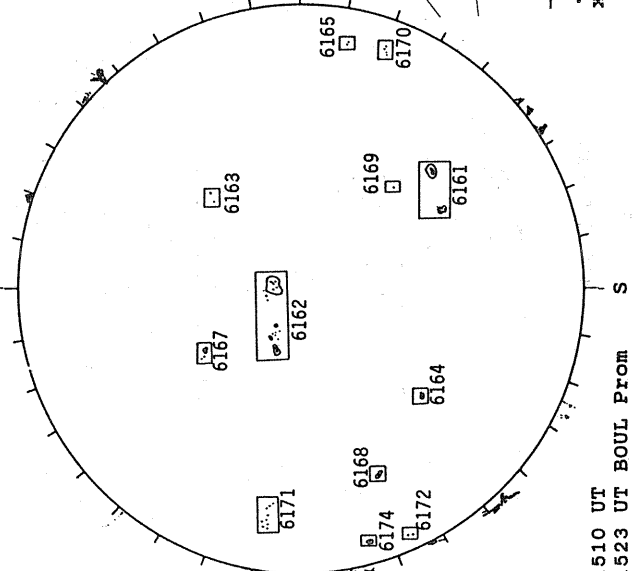
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



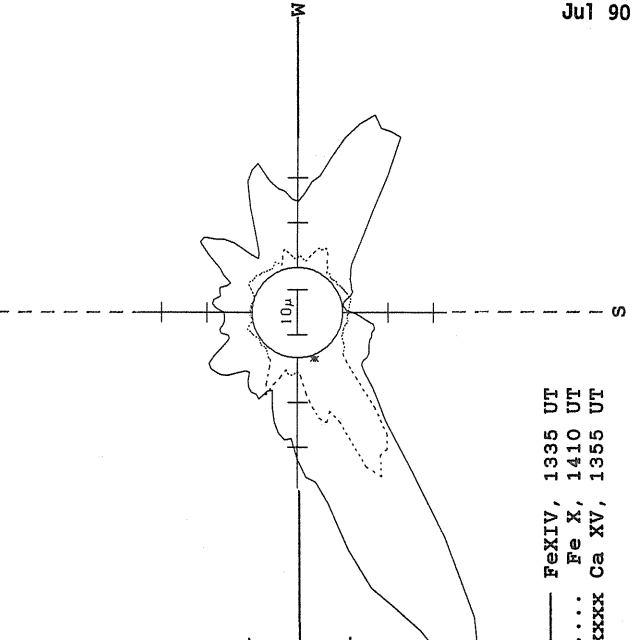
1527 UT

BOULDER SUNSPOT



1510 UT BOUL Prom
1523 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



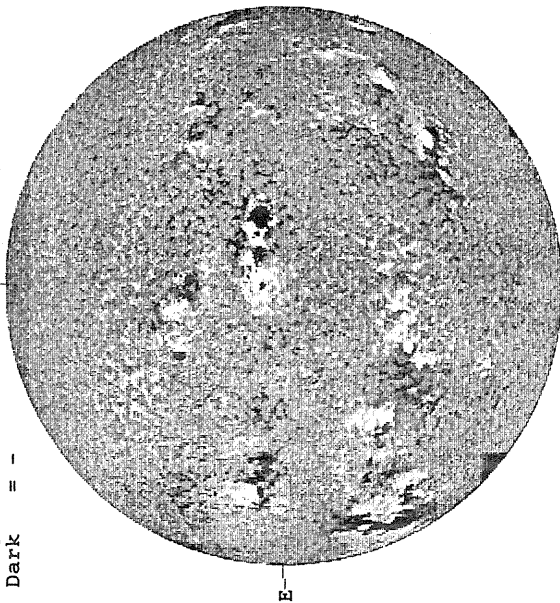
— FeXIV, 1335 UT
.... Fe X, 1410 UT
XXXXX Ca XV, 1355 UT

88
Jul 90

JULY 25, 1990 (P = 7.85, B₀ = 5.21, L₀ = 143.69)

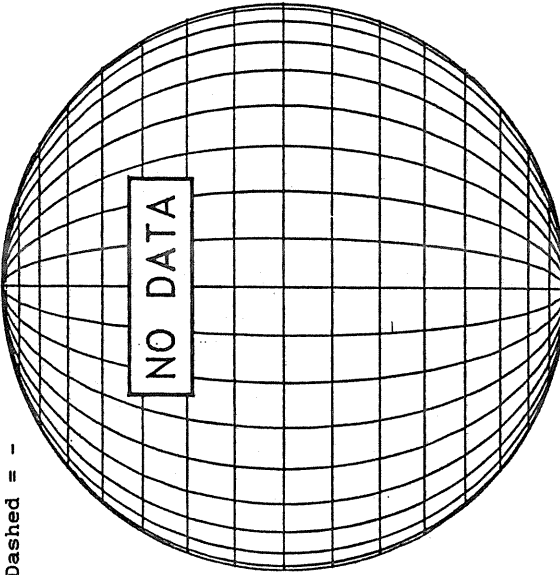
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



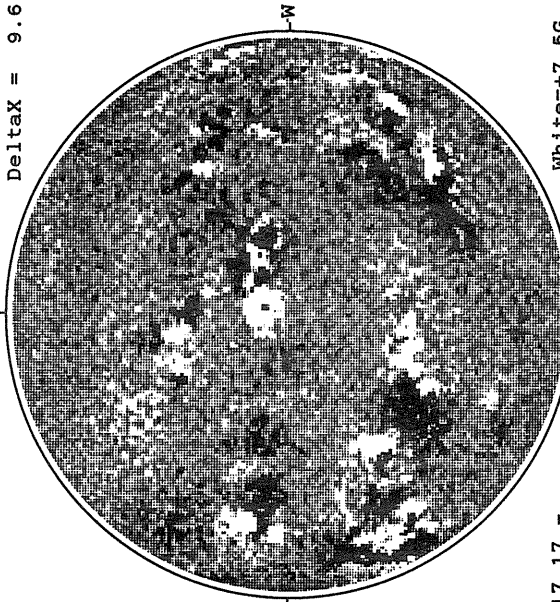
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



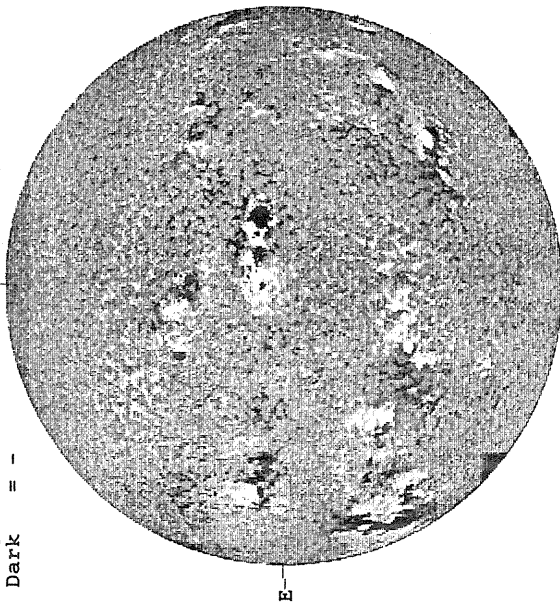
1450 UT

17.17 -
18.10 UT

White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

Bright = +
Dark = -

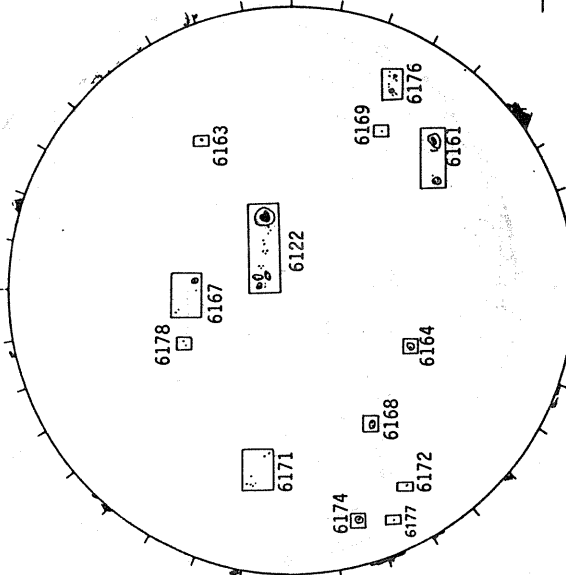


1449 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

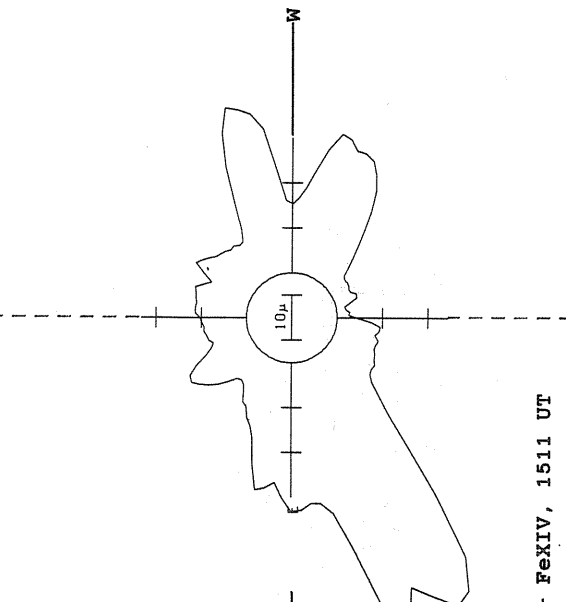


BOULDER SUNSPOT



1500 UT
1505 UT BOUL Prom

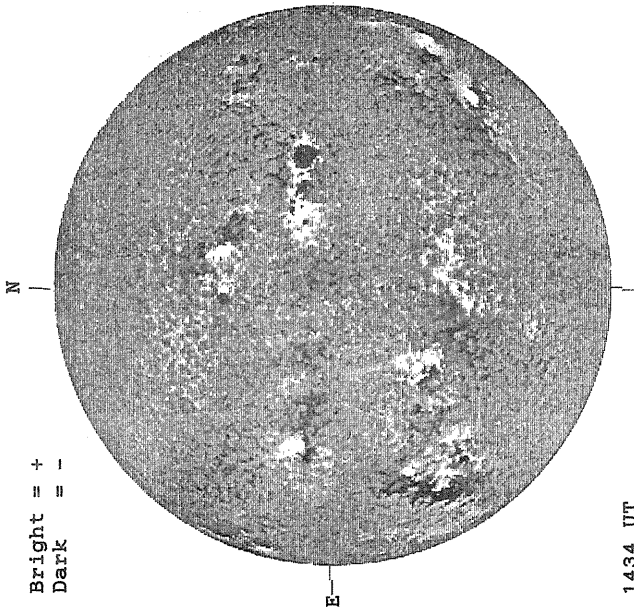
SACRAMENTO PEAK CORONA (1.15 Radii)



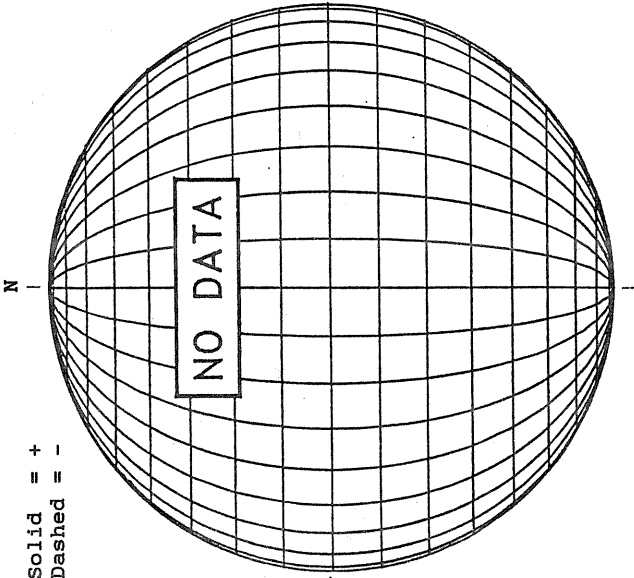
FeXIV, 1511 UT

JULY 26, 1990 (P= 8.27, P₀ = 5.29, L₀ = 130.46)

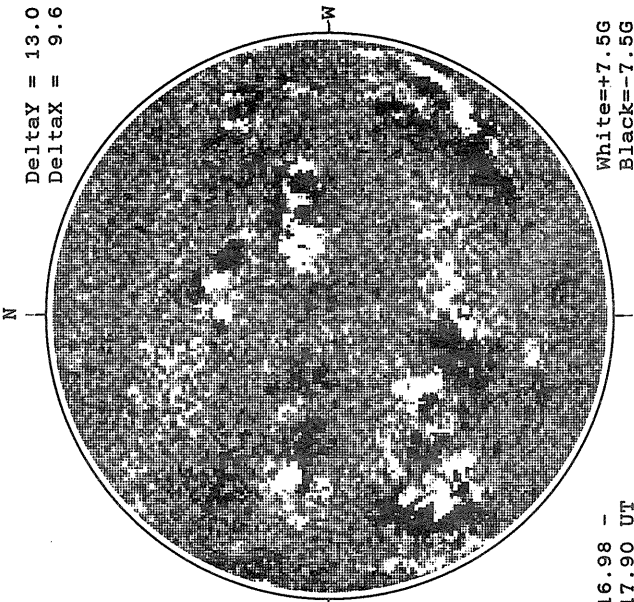
KITT PEAK MAGNETOGRAM



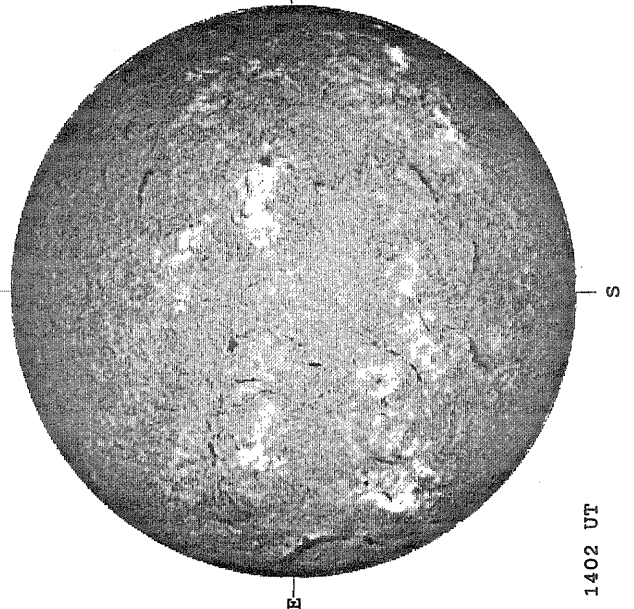
STANFORD MAGNETOGRAM



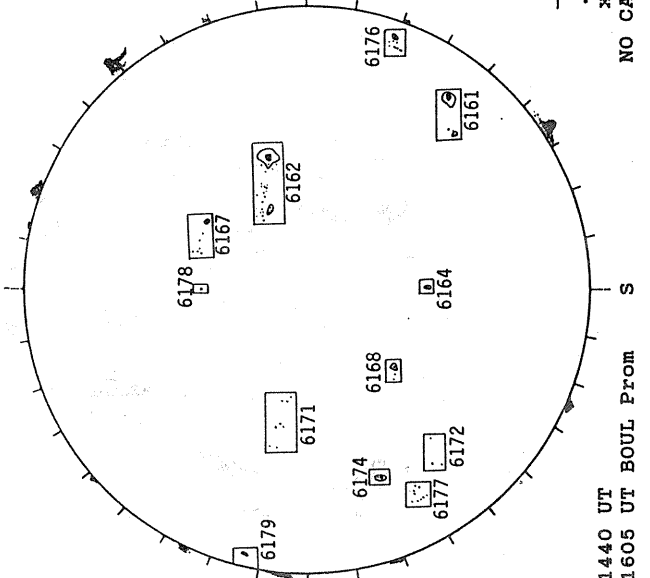
MT. WILSON MAGNETOGRAM



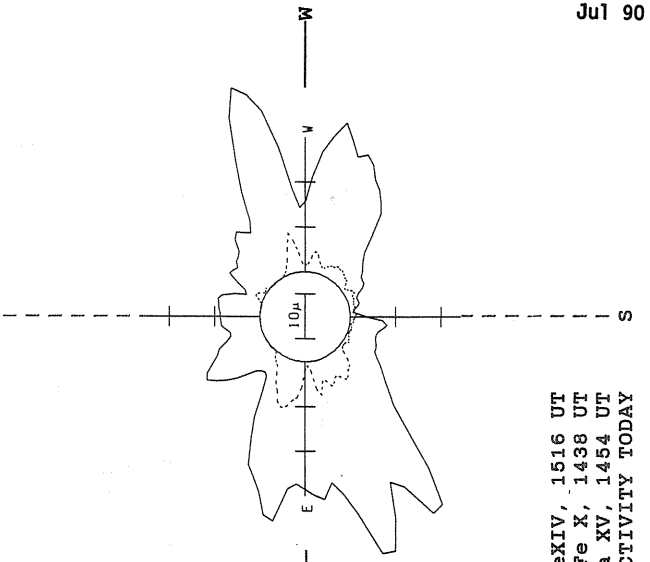
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



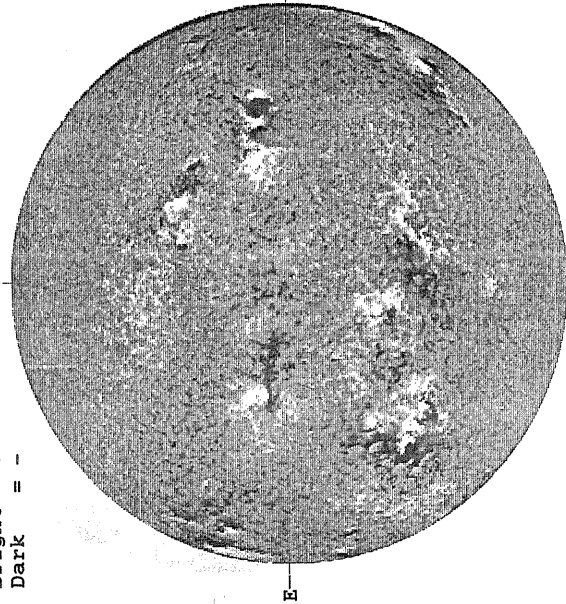
— Fe XIV, 1516 UT
.... Fe X, 1438 UT
xxxx Ca XV, 1454 UT

90
Jul 90

JULY 27, 1990 (P= 8.69, B₀ = 5.38, L₀ = 117.23)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1402 UT

STANFORD MAGNETOGRAM

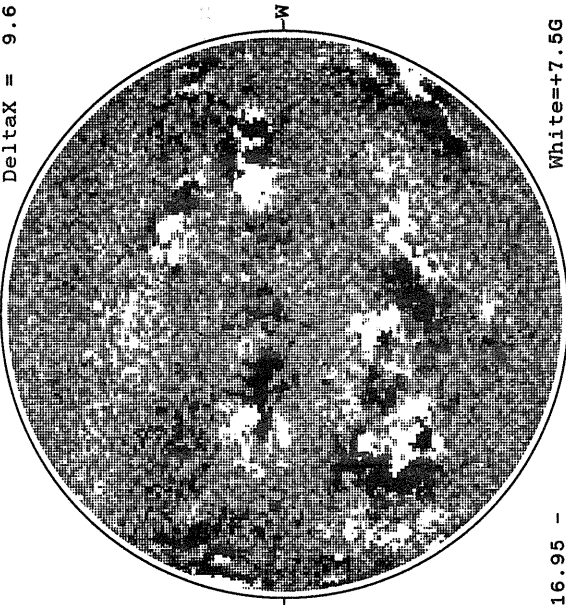
Solid = +
Dashed = -



0149 UT

MT. WILSON MAGNETOGRAM

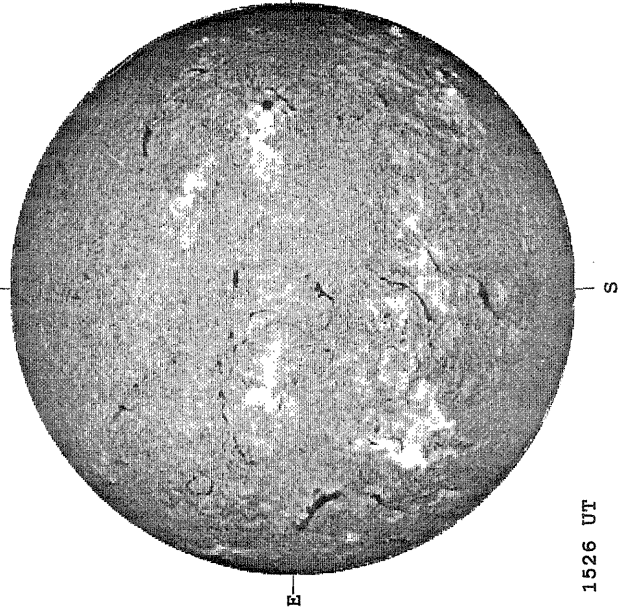
Delta Y = 13.0
Delta X = 9.6



16.95 -
17.87 UT

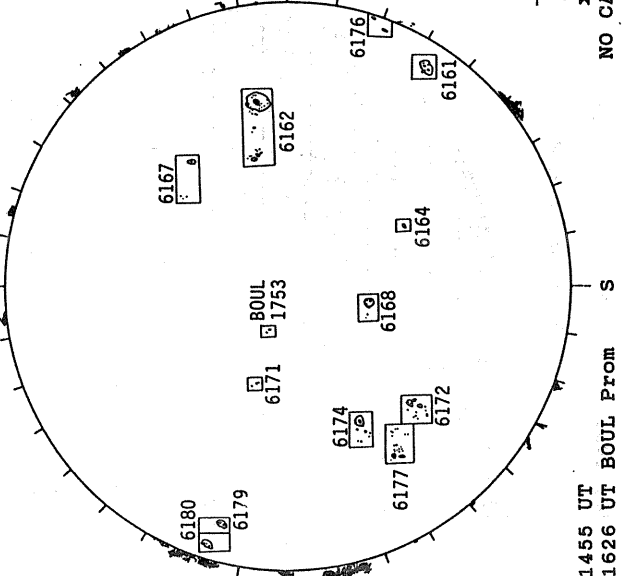
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



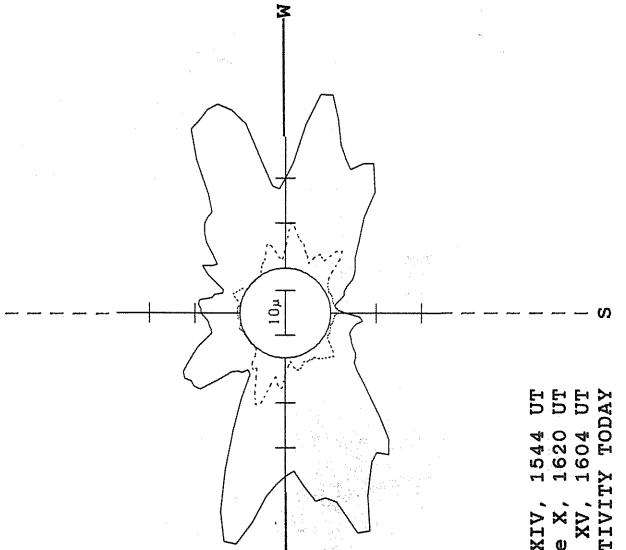
1526 UT

BOULDER SUNSPOT



1455 UT BOUL Prom
1626 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

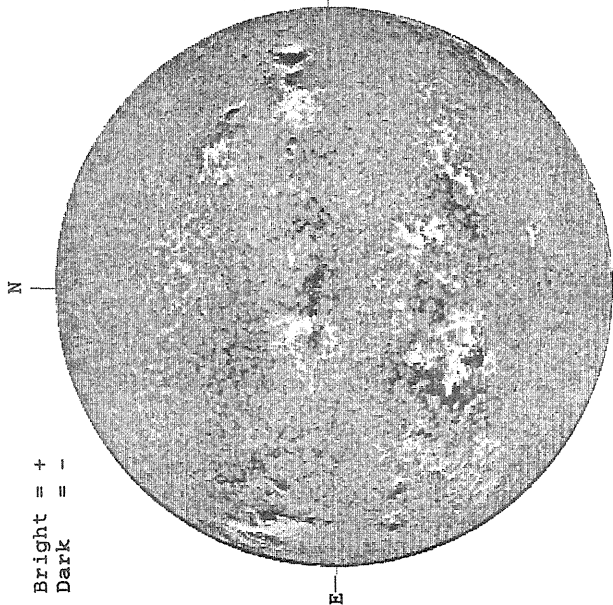


— FeXIV, 1544 UT
.... Fe X, 1620 UT
xxxx Ca XV, 1604 UT
NO CA XV ACTIVITY TODAY

JULY 28, 1990 (P= 9.10 B₀ = 5.46, I₀ = 104.00)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1437 UT

STANFORD MAGNETOGRAM

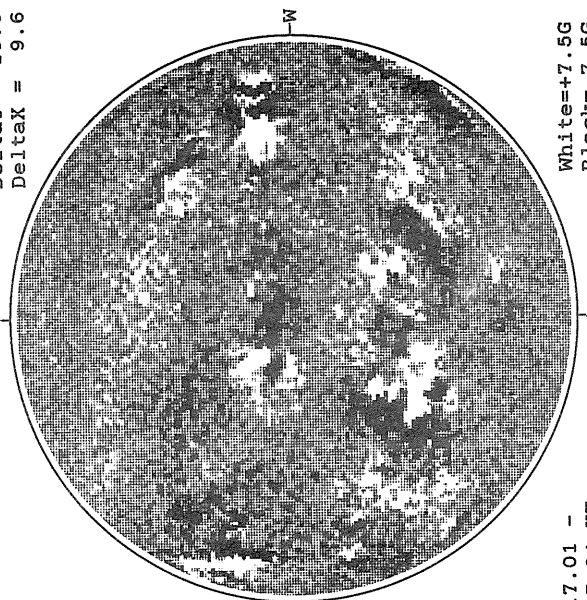
Solid = +
Dashed = -



1850 UT

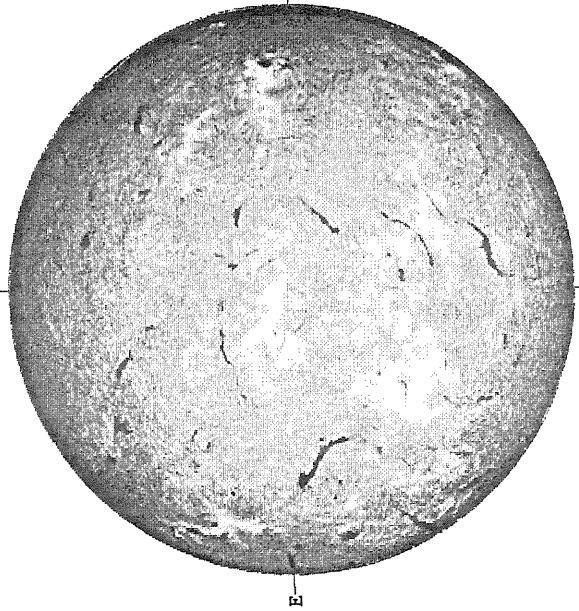
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6



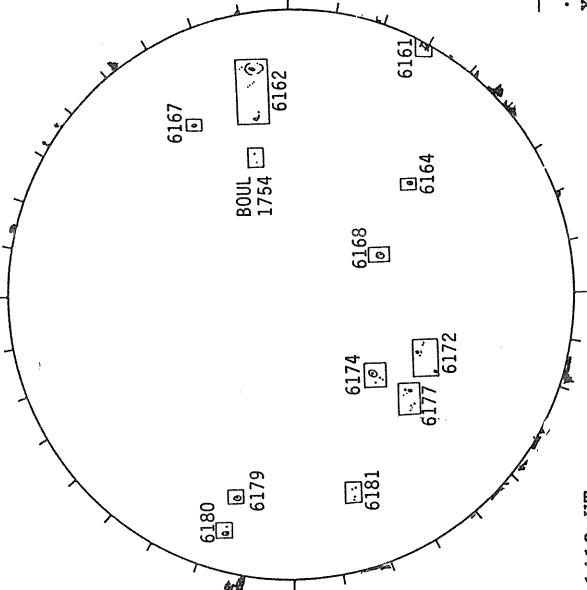
17.01 -
17.94 UT

SACRAMENTO PEAK H-ALPHA



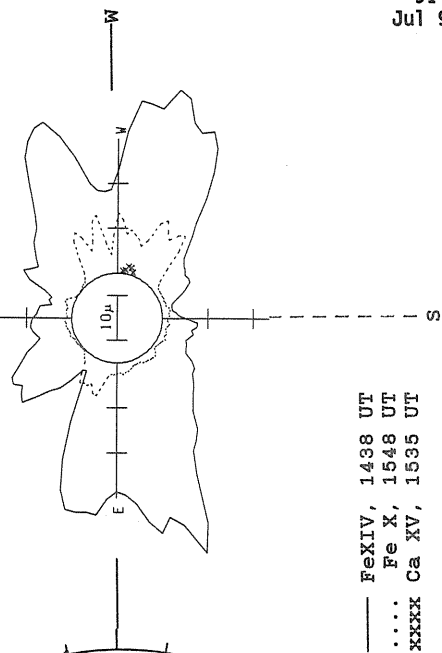
1537 UT

BOULDER SUNSPOT



1410 UT BOUL Prom
1425 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

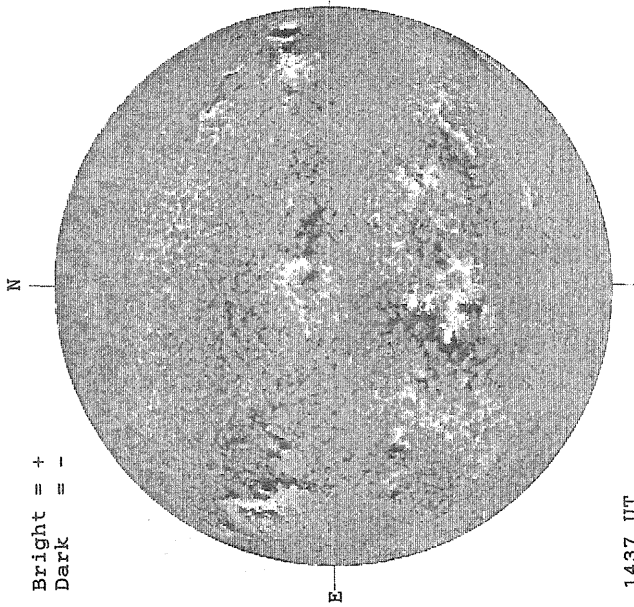


— Fe XIV, 1438 UT
... Fe X, 1548 UT
- - - Ca XV, 1535 UT

JULY 29, 1990 (P= 9.51, B₀ = 5.53, L₀ = 90.78)

KITT PEAK MAGNETOGRAM

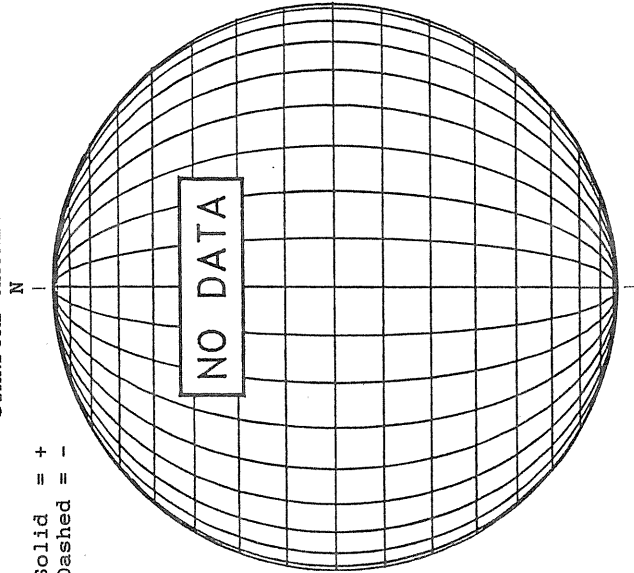
Bright = +
Dark = -



1437 UT

STANFORD MAGNETOGRAM

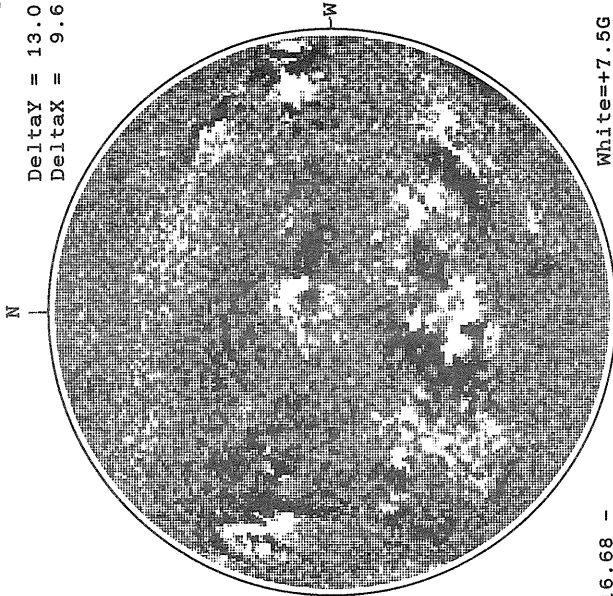
Solid = +
Dashed = -



16.68 -
17.61 UT

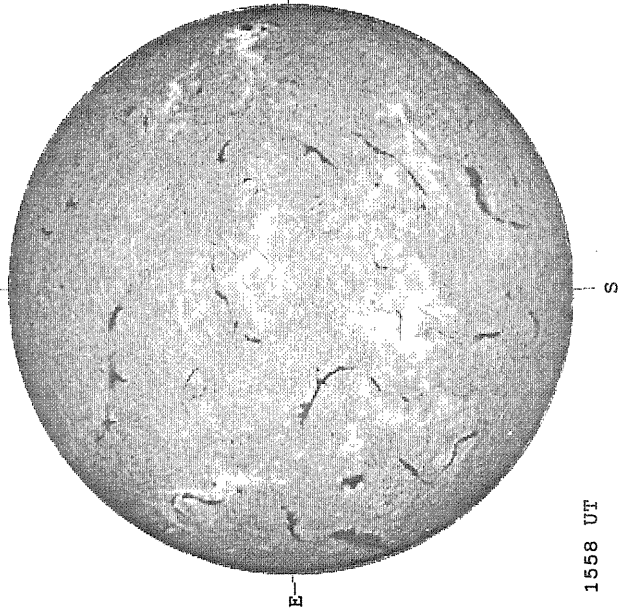
MT. WILSON MAGNETOGRAM

Delta_{ay} = 13.0
Delta_{ax} = 9.6



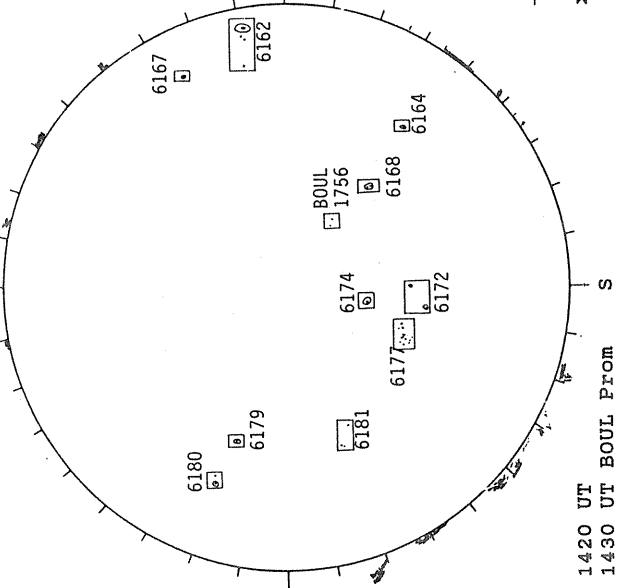
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



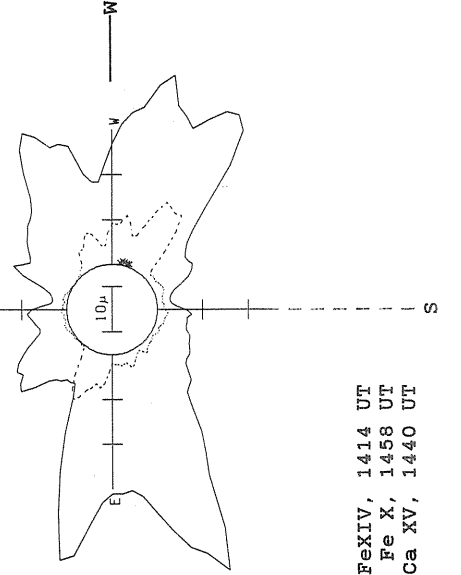
1558 UT

BOULDER SUNSPOT



1420 UT
1430 UT BOUL Prom

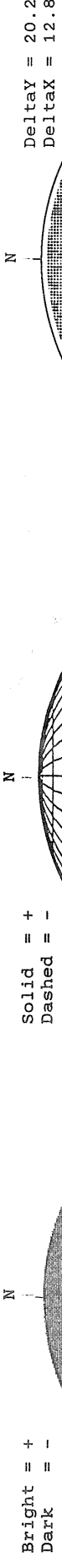
SACRAMENTO PEAK CORONA (1.15 Radii)



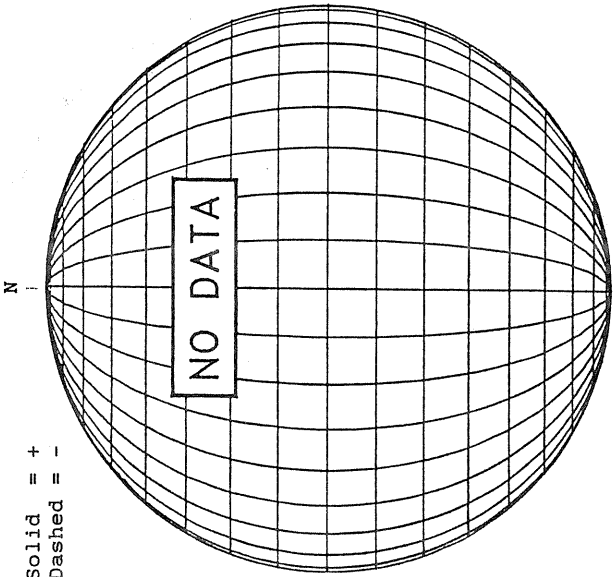
— FeXIV, 1414 UT
... Fe X, 1458 UT
xxxx Ca XV, 1440 UT

JULY 30, 1990 (P= 9.92, B₀ = 5.61, L₀ = 77.55)

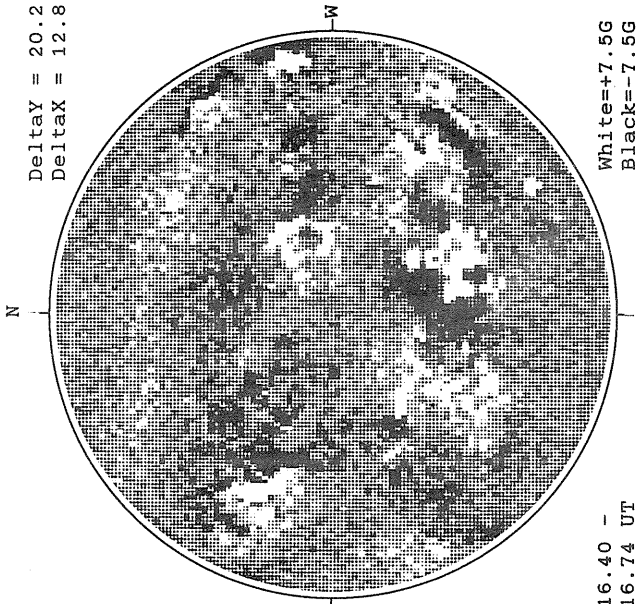
KITT PEAK MAGNETOGRAM



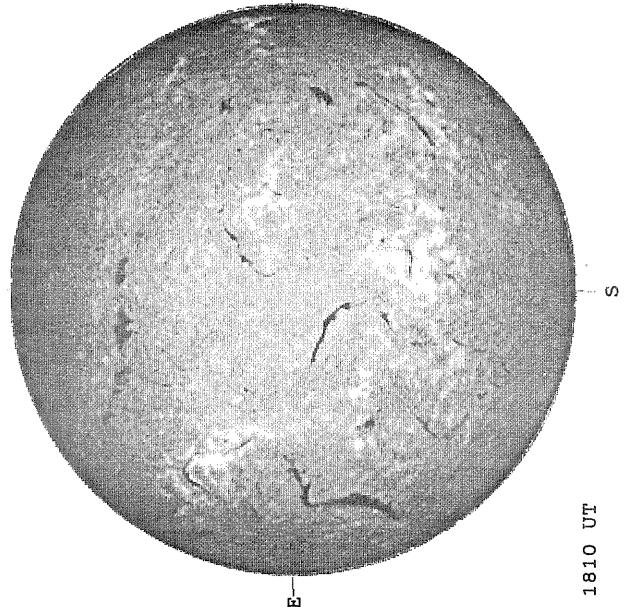
STANFORD MAGNETOGRAM



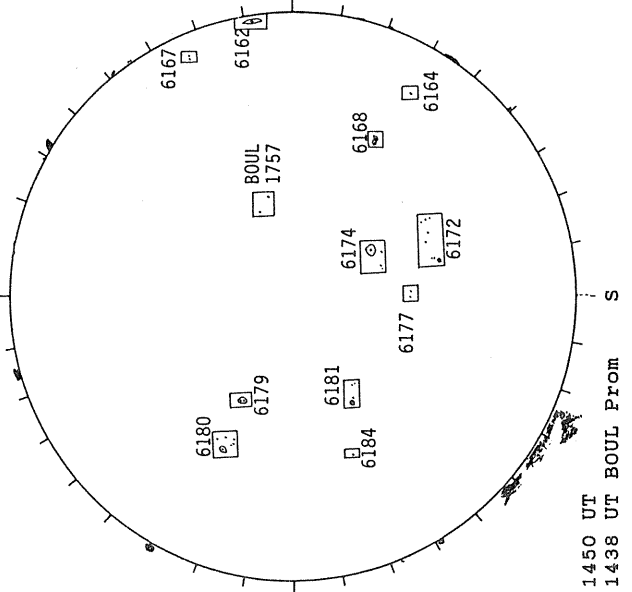
MT. WILSON MAGNETOGRAM



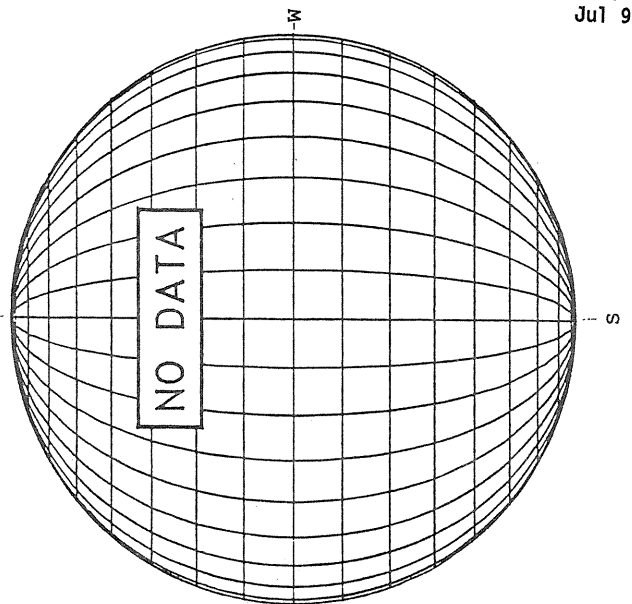
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

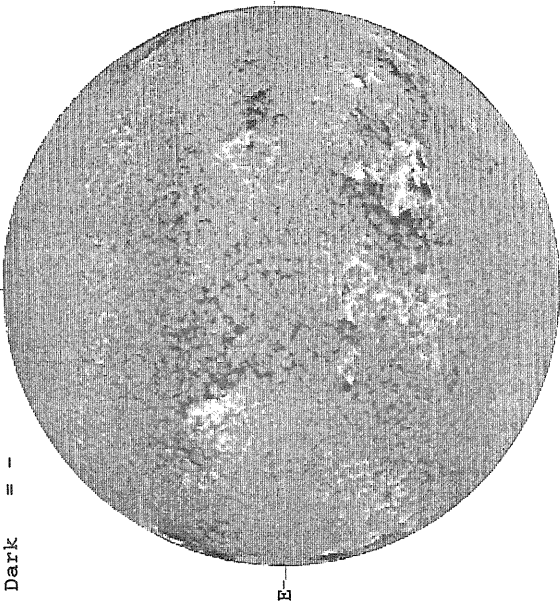


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JULY 31, 1990 (P = 10.33, B₀ = 5.69, I₀ = 64.32)

KITT PEAK MAGNETOGRAM

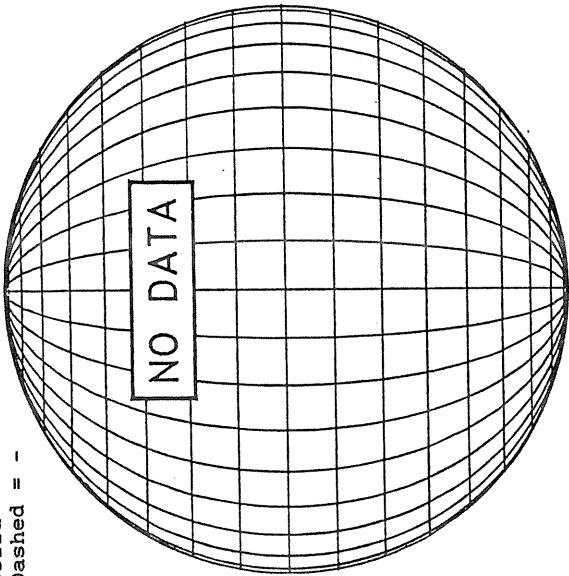
Bright = +
Dark = -



1631 UT

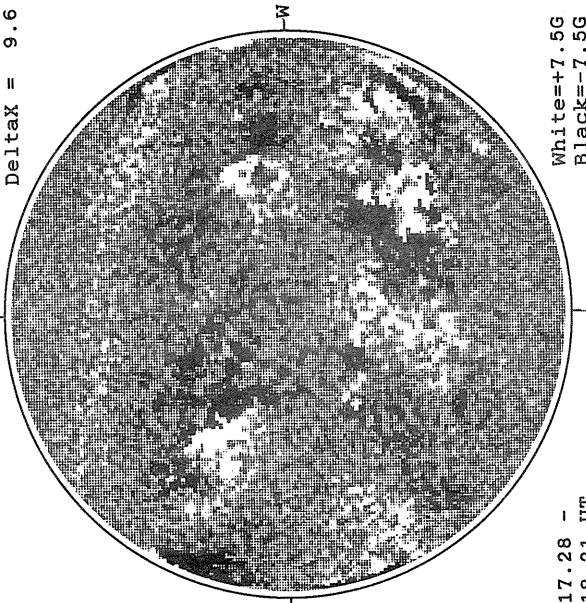
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

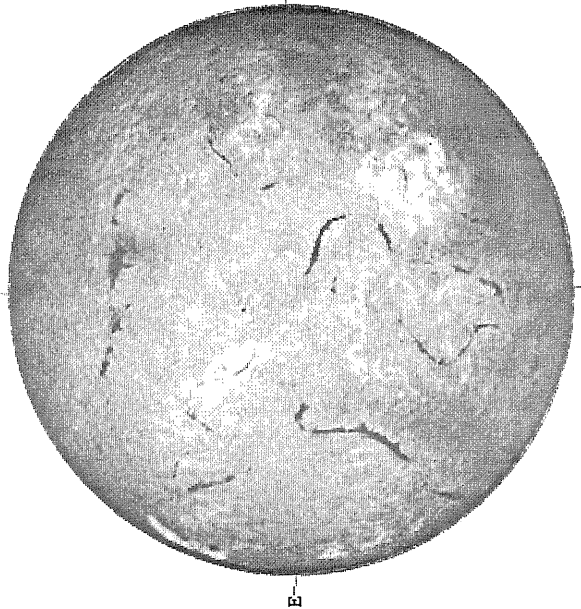
Delta_Y = 13.0
Delta_X = 9.6



17.28 -
18.21 UT

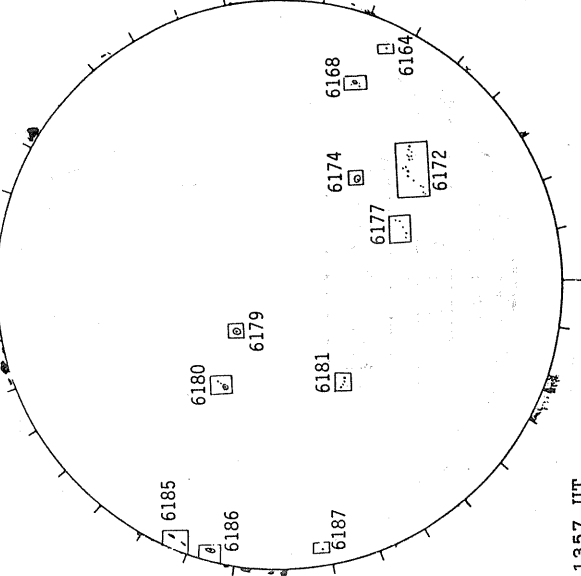
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



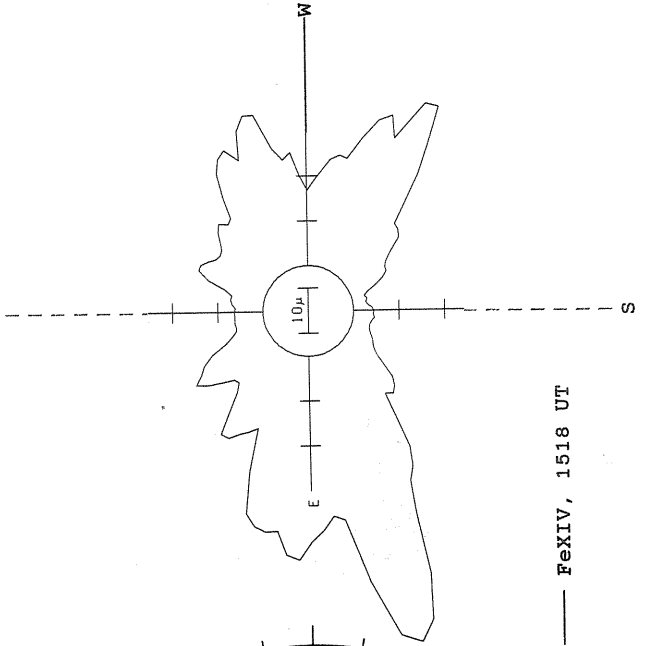
0054 UT
Aug 1

BOULDER SUNSPOT



1357 UT BOUL Prom
1423 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



— FeXIV, 1518 UT

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

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JULY 1990

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
6134		RAMY	06 27 1558	N10 E49	07 1.3		B	BXO	10	4	4	3
6134		HOLL	06 27 1715	N12 E49	07 1.4		A	AX	10	2	2	2
6134		PALE	06 27 1909	N14 E48	07 1.4		A	AX		1		3
6134		RAMY	06 28 1352	N12 E37	07 1.4		B	CRO	20	3	4	3
6134		BOUL	06 28 1430	N13 E34	07 1.2		B	CSO	20	4	3	4
6134		HOLL	06 28 1625	N12 E36	07 1.4		B	CSO	20	7	5	4
6134		PALE	06 29 0150	N12 E30	07 1.3		B	CAO	60	7	5	3
6134		CULG	06 29 0155	N11 E29	07 1.3		B	CSO	20	4	4	3
6134		SVTO	06 29 0830	N12 E26	07 1.3		B	CAO	30	7	7	3
6134		RAMY	06 29 1256	N12 E23	07 1.3		B	CAO	60	12	6	4
6134		BOUL	06 29 1435	N12 E22	07 1.3		B	DSO	90	11	6	3
6134		HOLL	06 29 1630	N11 E21	07 1.3		B	CSO	80	14	6	3
6134		LEAR	06 30 0025	N12 E17	07 1.3		B	CSO	60	12	6	3
6134		PALE	06 30 0135	N12 E16	07 1.3		B	CAO	80	9		2
6134		SVTO	06 30 0540	N11 E15	07 1.4		B	CSO	80	23	6	4
6134		RAMY	06 30 1205	N11 E11	07 1.3		B	CAO	70	16	7	2
6134		BOUL	06 30 1415	N12 E08	07 1.2		B	CAO	70	9	6	4
6134		HOLL	06 30 1615	N12 E08	07 1.3		B	CSO	50	18	7	3
6134		PALE	06 30 2235	N12 E05	07 1.3		B	CAO	50	11	6	2
6134		LEAR	07 01 0155	N11 E03	07 1.3		B	CSO	40	7	6	3
6134		SVTO	07 01 0555	N11 E00	07 1.2		B	CSO	40	18	6	3
6134		RAMY	07 01 1220	N11 W03	07 1.3		B	CAO	40	6	7	2
6134		BOUL	07 01 1500	N12 W08	07 1.0		A	HA	40	2	2	4
6134		HOLL	07 01 1715	N11 W06	07 1.3		B	CAO	40	12	7	3
6134		PALE	07 01 2033	N13 W08	07 1.2		B	CAO	40	5	6	2
6134		LEAR	07 02 0040	N11 W11	07 1.2		B	CSO	30	9	7	3
6134		SVTO	07 02 0640	N12 W14	07 1.2		B	DAO	30	7	7	3
6134		BOUL	07 02 1430	N11 W17	07 1.3		B	BXO	20	7	6	2
6134		HOLL	07 02 1452	N11 W18	07 1.3		B	BXO	30	8	6	2
6134		RAMY	07 02 1800	N11 W18	07 1.4		B	DAO	30	3	7	1
6134		PALE	07 02 2015	N12 W22	07 1.2		B	DAO	30	5	7	3
6134		SVTO	07 03 0755	N12 W28	07 1.2		B	DSO	30	6	7	3
6134		RAMY	07 03 1318	N12 W30	07 1.3		B	DAO	40	7	6	2
6134		BOUL	07 03 1410	N12 W30	07 1.3		B	BXO	20	7	7	2
6134		HOLL	07 03 1625	N11 W32	07 1.3		B	CSO	30	8	7	2
6134		PALE	07 03 2200	N08 W33	07 1.4		B	DAO	80	7	7	3
6134		CULG	07 04 0030	N11 W36	07 1.3		B	DRO	20	9	7	3
6134		SVTO	07 04 0555	N12 W40	07 1.2		B	DRO	60	9	8	4
6134		RAMY	07 04 1338	N12 W43	07 1.3		B	DAO	80	13	9	1
6134		BOUL	07 04 1425	N12 W42	07 1.4		B	CSO	40	7	5	3
6134		HOLL	07 04 1535	N11 W44	07 1.3		B	CAO	40	14	7	3
6134		PALE	07 04 1958	N11 W44	07 1.5		B	DAO	50	13	6	3
6134		CULG	07 05 0105	N11 W48	07 1.4		B	CAO	30	9	6	2
6134		SVTO	07 05 0548	N12 W51	07 1.4		B	CRO	40	6	5	3
6134		RAMY	07 05 1237	N12 W55	07 1.4		B	CAO	40	9	7	3
6134		HOLL	07 05 1443	N11 W56	07 1.4		B	BXO	20	4	6	3
6134		BOUL	07 05 1515	N12 W54	07 1.6		B	BXO	10	2	6	2
6134		PALE	07 05 1854	N11 W57	07 1.5		B	BXO	20	8	6	3
6134		CULG	07 06 0145	N12 W62	07 1.4		A	AX		2	1	2
6134		SVTO	07 06 0626	N12 W69	07 1.1		A	AX	20	2	1	2
6134		RAMY	07 06 1200	N13 W71	07 1.1		A	AX	10	2	1	2
6134		HOLL	07 06 1420	N11 W71	07 1.2		A	AX	10	2	1	3
6134		BOUL	07 06 1446	N11 W72	07 1.2		B	BXO	20	2	1	3
6134A		RAMY	06 28 1352	S20 E40	07 1.6		A	AX	10	1	1	3
6134A		BOUL	06 28 1430	S18 E39	07 1.6		A	AX	10	2	1	4
6134A		HOLL	06 28 1625	S20 E39	07 1.7		A	AX		1		4
6126		SVTO	06 26 0437	S12 E78	07 2.1		A	AX	20	2	1	4
6126		RAMY	06 26 1229	S12 E77	07 2.3		B	CAO	60	6	6	3
6126		BOUL	06 26 1518	S11 E71	07 2.0		B	BXO	20	2	2	2
6126		PALE	06 26 1915	S12 E70	07 2.1		A	AX		3		3
6126		CULG	06 27 0150	S11 E63	07 1.8		B	BXO	10	3	3	2
6126		SVTO	06 27 0530	S13 E64	07 2.0		B	CRO	40	4	5	4
6126		BOUL	06 27 1430	S10 E55	07 1.7		B	BXO	20	4	6	3
6126		RAMY	06 27 1558	S13 E59	07 2.1		B	CAO	40	6	7	3
6126		HOLL	06 27 1715	S12 E58	07 2.1		B	BXO	20	6	6	2
6126		PALE	06 27 1909	S11 E57	07 2.1		A	AX	10	4	2	3
6126		CULG	06 28 0155	S12 E53	07 2.1		A	AX		1		2

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JULY 1990

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
6126		RAMY	06 28 1352	S13 E46	07 2.0		B	CSO	40	7	5	3
6126		BOUL	06 28 1430	S12 E45	07 2.0		B	BXO	10	5	4	4
6126		HOLL	06 28 1625	S12 E44	07 2.0		B	CSO	30	8	7	4
6126		PALE	06 29 0150	S12 E39	07 2.0		B	DSO	60	8	4	3
6126		CULG	06 29 0155	S13 E38	07 1.9		B	BXO	10	8	4	3
6126		SVTO	06 29 0830	S13 E37	07 2.1		BG	CSO	40	20	10	3
6126		RAMY	06 29 1256	S13 E34	07 2.1		B	DAO	60	15	8	4
6126		BOUL	06 29 1435	S12 E31	07 1.9		B	DAO	140	16	5	3
6126		HOLL	06 29 1630	S13 E35	07 2.3		BG	EAO	130	36	12	3
6126		LEAR	06 30 0025	S12 E28	07 2.1		B	DAO	110	23	10	3
6126		PALE	06 30 0135	S12 E28	07 2.2		BG	CAO	110	10	10	2
6126		SVTO	06 30 0540	S13 E26	07 2.2		BG	EAI	170	48	13	4
6126		RAMY	06 30 1205	S11 E22	07 2.1		B	EAO	150	47	13	2
6126		BOUL	06 30 1415	S12 E17	07 1.9		B	DAI	160	12	9	4
6126		HOLL	06 30 1615	S13 E21	07 2.3		B	EAI	170	52	14	3
6126		PALE	06 30 2235	S11 E16	07 2.1		B	EAO	130	16	14	2
6126		LEAR	07 01 0155	S12 E15	07 2.2		BG	EAO	110	16	14	3
6126		SVTO	07 01 0555	S11 E12	07 2.1		BG	EAI	170	25	14	3
6126		RAMY	07 01 1220	S11 E08	07 2.1		BG	EAO	270	39	14	2
6126		BOUL	07 01 1500	S11 E04	07 1.9		BG	EKI	250	15	11	4
6126		HOLL	07 01 1715	S12 E06	07 2.2		BG	EAI	410	76	15	3
6126		PALE	07 01 2033	S12 E03	07 2.1		BG	EAI	200	27	13	2
6126		LEAR	07 02 0040	S12 W01	07 1.9		BG	EAI	240	36	12	3
6126		SVTO	07 02 0640	S12 W02	07 2.1		BG	FAI	300	44	16	3
6126		BOUL	07 02 1430	S12 W10	07 1.8		BG	DKI	260	24	10	2
6126		HOLL	07 02 1452	S12 W09	07 1.9		BG	EAI	390	30	13	2
6126		RAMY	07 02 1800	S12 W12	07 1.8		BG	EAI	350	22	11	1
6126		PALE	07 02 2015	S12 W13	07 1.9		BG	DKI	270	18	9	3
6126		SVTO	07 03 0755	S13 W20	07 1.8		BG	EAI	290	39	12	3
6126		RAMY	07 03 1318	S12 W24	07 1.7		BG	FKI	340	35	16	2
6126		BOUL	07 03 1410	S11 W23	07 1.8		BG	DKI	290	25	9	2
6126		HOLL	07 03 1625	S12 W25	07 1.8		BG	DAI	310	24	10	2
6126		PALE	07 03 2200	S17 W27	07 1.9		BG	EKI	420	26	11	3
6126		CULG	07 04 0030	S12 W27	07 2.0		BG	EKI	320	23	15	3
6126		SVTO	07 04 0555	S11 W32	07 1.8		BG	EAI	410	21	12	4
6126		RAMY	07 04 1338	S12 W36	07 1.8		BG	EAI	390	38	15	1
6126		BOUL	07 04 1425	S11 W36	07 1.9		B	EKO	350	22	13	3
6126		HOLL	07 04 1535	S13 W36	07 1.9		BG	EAI	330	41	13	3
6126		PALE	07 04 1958	S13 W39	07 1.9		B	EKI	360	30	14	3
6126		CULG	07 05 0105	S12 W43	07 1.8		BG	EKI	330	27	13	2
6126		SVTO	07 05 0548	S12 W46	07 1.8		BG	ESI	420	21	14	3
6126		RAMY	07 05 1237	S12 W49	07 1.8		BG	FAI	310	21	17	3
6126		HOLL	07 05 1443	S13 W49	07 1.9		BG	FAO	340	14	16	3
6126		BOUL	07 05 1515	S12 W51	07 1.8		B	EKI	210	9	12	2
6126		PALE	07 05 1854	S13 W53	07 1.8		B	EKO	270	16	13	3
6126		CULG	07 06 0145	S12 W56	07 1.8		BG	EAO	320	16	14	2
6126		SVTO	07 06 0626	S11 W58	07 1.9		BG	FHO	250	13	17	2
6126		RAMY	07 06 1200	S11 W64	07 1.7		BG	EAO	140	8	12	2
6126		HOLL	07 06 1420	S13 W64	07 1.8		B	ESO	200	5	11	3
6126		BOUL	07 06 1446	S13 W65	07 1.7		B	EHO	350	4	12	3
6126		CULG	07 07 0020	S12 W69	07 1.8		BG	EAO	170	9	13	2
6126		SVTO	07 07 0535	S12 W75	07 1.6		BG	EAO	150	6	12	3
6126		BOUL	07 07 1432	S14 W72	07 2.2		B	BXO	50	4	4	3
6126		HOLL	07 07 1615	S13 W73	07 2.2		A	AX	40	6	3	3
6126		PALE	07 07 1745	S14 W71	07 2.4		B	DAO	60	5	3	3
6126		LEAR	07 08 0020	S11 W75	07 2.4		B	BXO	30	3	2	3
6134B		RAMY	06 30 1205	S03 E18	07 1.8		A	AX		2	1	2
6134B		RAMY	07 01 1220	S04 E05	07 1.9		B	BXO	10	4	3	2
6126A		BOUL	07 07 1432	S25 W66	07 2.5		A	AX	10	1		3
6127		RAMY	06 26 1229	N09 E80	07 2.5		B	BXO	10	4	4	3
6127		BOUL	06 26 1518	N09 E74	07 2.2		B	BXO	50	3	3	2
6127		PALE	06 26 1915	N11 E76	07 2.5		B	BXO	20	3	5	3
6127		CULG	06 27 0150	N08 E71	07 2.4		B	CSO	30	4	4	2
6127		SVTO	06 27 0530	N08 E71	07 2.5		B	DSO	160	8	7	4
6127		BOUL	06 27 1430	N09 E62	07 2.2		B	CAO	130	3	7	3
6127		RAMY	06 27 1558	N08 E66	07 2.6		B	DAO	240	15	9	3

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6127		HOLL	06 27 1715	N08 E65	07 2.6		B	DAI	190	17	9	2
6127		PALE	06 27 1909	N10 E63	07 2.5		B	DKO	180	9	8	3
6127		CULG	06 28 0155	N08 E58	07 2.4		B	DAO	170	6	7	2
6127		RAMY	06 28 1352	N08 E53	07 2.5		B	DAI	210	16	8	3
6127		BOUL	06 28 1430	N08 E50	07 2.3		B	CAO	180	13	6	4
6127		HOLL	06 28 1625	N08 E52	07 2.6		B	DAI	280	17	8	4
6127		PALE	06 29 0150	N09 E46	07 2.5		B	DAI	220	14	9	3
6127		CULG	06 29 0155	N08 E45	07 2.4		B	DAO	190	11	8	3
6127		SVTO	06 29 0830	N09 E43	07 2.6		B	EAI	230	18	8	3
6127		RAMY	06 29 1256	N09 E40	07 2.5		B	DAO	200	20	10	4
6127		BOUL	06 29 1435	N08 E38	07 2.4		B	DKO	340	21	8	3
6127		HOLL	06 29 1630	N09 E39	07 2.6		B	DAI	380	51	9	3
6127		LEAR	06 30 0025	N08 E34	07 2.6		B	DAI	320	25	10	3
6127		PALE	06 30 0135	N09 E32	07 2.5		B	EAI	320	14	8	2
6127		SVTO	06 30 0540	N09 E30	07 2.5		B	DAI	390	47	8	4
6127		RAMY	06 30 1205	N09 E29	07 2.7		B	DKI	510	45	10	2
6127		BOUL	06 30 1415	N08 E24	07 2.4		B	DKI	530	18	10	4
6127		HOLL	06 30 1615	N08 E24	07 2.5		B	DKC	600	39	9	3
6127		PALE	06 30 2235	N10 E21	07 2.5		BG	DKI	580	27	10	2
6127		LEAR	07 01 0155	N08 E20	07 2.6		B	DKI	530	17	9	3
6127		SVTO	07 01 0555	N09 E18	07 2.6		B	DKI	570	31	10	3
6127		RAMY	07 01 1220	N09 E14	07 2.6		B	DKO	840	11	10	2
6127		BOUL	07 01 1500	N09 E12	07 2.5		B	DKO	650	7	10	4
6127		HOLL	07 01 1715	N09 E12	07 2.6		B	DKC	860	39	10	3
6127		PALE	07 01 2033	N10 E10	07 2.6		BG	EKC	900	34	11	2
6127		LEAR	07 02 0040	N09 E08	07 2.6		B	EKO	850	29	11	3
6127		SVTO	07 02 0640	N09 E05	07 2.6		B	DKI	720	25	9	3
6127		BOUL	07 02 1430	N09 W01	07 2.5		B	DKO	680	26	9	2
6127		HOLL	07 02 1452	N08 W01	07 2.5		B	DKO	830	18	8	2
6127		RAMY	07 02 1800	N09 W01	07 2.7		B	DKO	870	22	10	1
6127		PALE	07 02 2015	N08 W03	07 2.6		B	DKI	700	21	10	3
6127		SVTO	07 03 0755	N09 W11	07 2.5		B	DKO	680	16	9	3
6127		RAMY	07 03 1318	N09 W13	07 2.6		B	DKO	780	25	9	2
6127		BOUL	07 03 1410	N09 W13	07 2.6		B	DKI	480	17	9	2
6127		HOLL	07 03 1625	N08 W14	07 2.6		B	DKI	710	21	9	2
6127		PALE	07 03 2200	N04 W16	07 2.7		B	DKO	800	24	9	3
6127		CULG	07 04 0030	N09 W20	07 2.5		B	DKO	590	23	9	3
6127		SVTO	07 04 0555	N09 W22	07 2.6		B	DKI	650	16	9	4
6127		RAMY	07 04 1338	N09 W26	07 2.6		B	DKI	660	24	8	1
6127		BOUL	07 04 1425	N10 W27	07 2.6		B	DKI	590	10	10	3
6127		HOLL	07 04 1535	N08 W27	07 2.6		B	DAI	600	27	9	3
6127		PALE	07 04 1958	N08 W29	07 2.6		BG	DKI	690	28	8	3
6127		CULG	07 05 0105	N09 W32	07 2.6		B	DKI	590	35	9	2
6127		SVTO	07 05 0548	N09 W36	07 2.5		B	DKI	680	19	8	3
6127		RAMY	07 05 1237	N08 W39	07 2.6		B	DAO	670	14	8	3
6127		HOLL	07 05 1443	N08 W40	07 2.6		B	DKI	660	16	9	3
6127		BOUL	07 05 1515	N08 W38	07 2.8		B	DKO	400	8	8	2
6127		PALE	07 05 1854	N08 W40	07 2.8		B	DKO	540	13	9	3
6127		CULG	07 06 0145	N08 W47	07 2.5		B	DKO	610	23	9	2
6127		SVTO	07 06 0626	N09 W49	07 2.6		B	DKI	560	18	10	2
6127		RAMY	07 06 1200	N10 W52	07 2.6		B	DKO	440	13	10	2
6127		HOLL	07 06 1420	N08 W53	07 2.6		B	DKO	490	19	8	3
6127		BOUL	07 06 1446	N08 W53	07 2.6		B	DKI	480	22	9	3
6127		CULG	07 07 0020	N09 W58	07 2.7		B	DKO	550	13	9	2
6127		SVTO	07 07 0535	N09 W63	07 2.5		B	DKI	300	14	8	3
6127		BOUL	07 07 1432	N09 W67	07 2.6		B	DKI	590	20	10	3
6127		HOLL	07 07 1615	N09 W68	07 2.6		B	DKI	500	27	9	3
6127		PALE	07 07 1745	N08 W65	07 2.9		B	DAI	310	13	7	3
6127		LEAR	07 08 0020	N11 W70	07 2.7		B	DAO	250	10	9	3
6127		CULG	07 08 0220	N11 W79	07 2.1		B	DSO	150	3	7	2
6127		SVTO	07 08 0550	N12 W75	07 2.6		B	DKI	300	16	8	4
6127		RAMY	07 08 1155	N11 W80	07 2.5		B	EAO	180	11	12	4
6127		HOLL	07 08 1500	N09 W80	07 2.6		B	DAI	140	5	10	3
6127		PALE	07 08 1732	N09 W77	07 2.9		B	DAO	100	3	10	3
6131A		RAMY	06 27 1558	S18 E70	07 3.0		A	AX	10	3	1	3
6131A		RAMY	06 28 1352	S17 E57	07 2.9		A	AX	10	3	2	3
6131B		BOUL	06 29 1435	S26 E43	07 2.9		A	AX		1		3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
6131B		HOLL	06	29	1630	S26 E45	07 3.2		A	AX		1		3
6131		PALE	06	26	1915	S20 E75	07 2.5		A	AX		1		3
6131		CULG	06	27	0150	S20 E80	07 3.2		A	AX	10	1	1	2
6131		RAMY	06	27	1558	S23 E67	07 2.8		B	FAO	180	12	15	3
6131		HOLL	06	27	1715	S20 E70	07 3.1		B	EAO	210	15	11	2
6131		PALE	06	27	1909	S19 E69	07 3.1		B	EAO	90	5	14	3
6131		CULG	06	28	0155	S18 E64	07 2.9		B	DSO	70	5	9	2
6131		RAMY	06	28	1352	S20 E58	07 3.0		B	EAO	190	10	11	3
6131		BOUL	06	28	1430	S19 E55	07 2.8		B	DAO	130	11	10	4
6131		HOLL	06	28	1625	S20 E56	07 3.0		BG	ESO	190	17	12	4
6131		PALE	06	29	0150	S20 E52	07 3.0		B	EAO	70	9	12	3
6131		CULG	06	29	0155	S18 E52	07 3.0		B	ESO	120	9	11	3
6131		SVTO	06	29	0830	S21 E48	07 3.0		B	EAI	240	20	12	3
6131		RAMY	06	29	1256	S20 E46	07 3.0		B	EAO	240	28	14	4
6131		BOUL	06	29	1435	S20 E43	07 2.9		B	EAO	310	18	12	3
6131		HOLL	06	29	1630	S21 E43	07 3.0		BG	EAI	270	52	13	3
6131		LEAR	06	30	0025	S21 E38	07 2.9		B	EAI	250	26	11	3
6131		PALE	06	30	0135	S21 E39	07 3.0		B	EAO	210	11	12	2
6131		SVTO	06	30	0540	S20 E37	07 3.1		B	EAO	260	60	14	4
6131		RAMY	06	30	1205	S20 E33	07 3.0		B	EAO	270	47	13	2
6131		BOUL	06	30	1415	S20 E28	07 2.7		B	EKO	260	18	13	4
6131		HOLL	06	30	1615	S20 E30	07 3.0		B	EAI	330	53	14	3
6131		PALE	06	30	2235	S19 E29	07 3.1		B	EAI	220	19	12	2
6131		LEAR	07	01	0155	S22 E27	07 3.1		B	EAI	240	19	13	3
6131		SVTO	07	01	0555	S20 E25	07 3.1		B	EKO	310	30	13	3
6131		RAMY	07	01	1220	S20 E21	07 3.1		B	EKO	420	27	13	2
6131		BOUL	07	01	1500	S20 E16	07 2.8		B	EAI	300	11	12	4
6131		HOLL	07	01	1715	S21 E17	07 3.0		B	EKI	430	65	13	3
6131		PALE	07	01	2033	S21 E17	07 3.1		BG	EKI	390	33	13	2
6131		LEAR	07	02	0040	S19 E13	07 3.0		B	EAI	390	18	3	3
6131		SVTO	07	02	0640	S21 E10	07 3.0		B	EAI	280	40	13	3
6131		BOUL	07	02	1430	S19 E04	07 2.9		B	EKI	360	32	12	2
6131		HOLL	07	02	1452	S22 E04	07 2.9		B	EAI	420	29	13	2
6131		RAMY	07	02	1800	S20 E06	07 3.2		B	EAI	450	35	15	1
6131		PALE	07	02	2015	S22 E03	07 3.1		B	EAI	340	31	12	3
6131		RAMY	07	03	1318	S21 W05	07 3.2		B	EKI	410	51	13	2
6131		BOUL	07	03	1410	S20 W07	07 3.0		B	EKO	250	39	12	2
6131		HOLL	07	03	1625	S21 W08	07 3.1		B	EAI	290	38	13	2
6131		PALE	07	03	2200	S26 W10	07 3.1		B	EKI	220	20	12	3
6131		CULG	07	04	0030	S21 W13	07 3.0		B	EAO	240	39	13	3
6131		SVTO	07	04	0555	S21 W16	07 3.0		B	EAI	400	35	12	4
6131		RAMY	07	04	1338	S22 W19	07 3.1		B	EKO	680	28	12	1
6131		BOUL	07	04	1425	S21 W21	07 3.0		B	DKI	250	22	10	3
6131		HOLL	07	04	1535	S22 W22	07 2.9		B	EAI	290	48	12	3
6131		PALE	07	04	1958	S21 W21	07 3.2		B	EKI	440	28	13	3
6131		CULG	07	05	0105	S21 W26	07 3.0		B	EAI	300	34	13	2
6131		SVTO	07	05	0548	S22 W30	07 2.9		B	ESI	280	20	15	3
6131		RAMY	07	05	1237	S21 W33	07 3.0		B	EAO	260	33	12	3
6131		HOLL	07	05	1443	S22 W34	07 3.0		B	ESI	350	22	12	3
6131		BOUL	07	05	1515	S21 W33	07 3.1		B	EAI	180	15	11	2
6131		PALE	07	05	1854	S22 W36	07 3.0		B	EAI	230	25	12	3
6131		CULG	07	06	0145	S22 W40	07 3.0		B	EAI	220	26	11	2
6131		SVTO	07	06	0626	S21 W42	07 3.0		B	ESI	220	35	14	2
6131		RAMY	07	06	1200	S20 W48	07 2.8		B	EAO	210	20	12	2
6131		HOLL	07	06	1420	S22 W47	07 3.0		B	ESI	320	22	11	3
6131		BOUL	07	06	1446	S21 W45	07 3.2		B	EAO	280	20	13	3
6131		CULG	07	07	0020	S21 W52	07 3.0		B	EAI	230	22	12	2
6131		SVTO	07	07	0535	S21 W55	07 3.0		B	EAO	390	23	11	3
6131		BOUL	07	07	1432	S20 W60	07 3.0		B	EAI	420	18	12	3
6131		HOLL	07	07	1615	S21 W60	07 3.1		B	EAI	270	29	13	3
6131		PALE	07	07	1745	S23 W59	07 3.2		B	EAI	320	19	11	3
6131		LEAR	07	08	0020	S20 W64	07 3.1		B	EAI	270	14	11	3
6131		CULG	07	08	0220	S21 W72	07 2.6		B	FAO	180	7	18	2
6131		SVTO	07	08	0550	S20 W70	07 2.9		B	EAI	360	18	14	4
6131		RAMY	07	08	1155	S19 W71	07 3.1		B	EAO	260	10	12	4
6131		HOLL	07	08	1500	S22 W72	07 3.1		B	CAI	130	12	12	3
6131		PALE	07	08	1732	S21 W75	07 3.0		B	EAI	220	7	13	3
6131		LEAR	07	09	0303	S20 W77	07 3.2		B	BXO	90	4	8	4

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day			Mo	Day							
6131		SVTO	07	09	0730	S20	W84	07	2.9	B	CAO	90	5	8	3
6131		RAMY	07	09	1131	S22	W80	07	3.3	B	CAO	60	7	5	3
6137		BOUL	06	29	1435	S14	E47	07	3.1	B	BXO	10	2	1	3
6137		HOLL	06	29	1630	S13	E50	07	3.5	B	BXO	30	6	3	3
6137		LEAR	06	30	0025	S13	E43	07	3.3	B	DAO	80	8	4	3
6137		PALE	06	30	0135	S14	E43	07	3.3	B	DAO	40	4	3	2
6137		SVTO	06	30	0540	S14	E42	07	3.4	B	DAI	110	11	4	4
6137		RAMY	06	30	1205	S13	E39	07	3.4	B	DAO	100	10	5	2
6137		BOUL	06	30	1415	S14	E34	07	3.2	B	CAO	90	7	6	4
6137		HOLL	06	30	1615	S14	E36	07	3.4	B	CSO	90	15	5	3
6137		PALE	06	30	2235	S13	E32	07	3.3	B	CSO	50	6	6	2
6137		LEAR	07	01	0155	S15	E30	07	3.3	B	CSO	40	3	4	3
6137		SVTO	07	01	0555	S14	E28	07	3.4	B	CSO	30	9	5	3
6137		RAMY	07	01	1220	S14	E23	07	3.2	B	CAO	80	8	6	2
6137		BOUL	07	01	1500	S13	E17	07	2.9	B	CAO	50	2	4	4
6137		HOLL	07	01	1715	S15	E20	07	3.2	B	CAO	100	17	7	3
6137		PALE	07	01	2033	S14	E17	07	3.1	A	HA	40	2	1	2
6137		LEAR	07	02	0040	S14	E13	07	3.0	B	CSO	60	3	3	3
6137		SVTO	07	02	0640	S15	E12	07	3.2	B	CAO	50	7	5	3
6137		BOUL	07	02	1430	S14	E07	07	3.1	B	CAO	60	6	7	2
6137		HOLL	07	02	1452	S15	E07	07	3.1	B	CAO	150	12	6	2
6137		RAMY	07	02	1800	S15	E06	07	3.2	B	CAO	80	8	7	1
6137		PALE	07	02	2015	S14	E05	07	3.2	B	CSO	40	3	8	3
6137		SVTO	07	03	0755	S14	W02	07	3.2	B	CSO	80	12	9	3
6137		RAMY	07	03	1318	S14	W04	07	3.2	B	CAO	20	8	11	2
6137		BOUL	07	03	1410	S13	W06	07	3.1	B	CAO	40	5	7	2
6137		HOLL	07	03	1625	S16	W06	07	3.2	B	CAO	50	14	9	2
6137		PALE	07	03	2200	S17	W07	07	3.4	B	DAO	50	15	10	3
6137		CULG	07	04	0030	S14	W11	07	3.2	B	CSO	40	9	9	3
6137		SVTO	07	04	0555	S14	W14	07	3.2	B	CSO	50	8	9	4
6137		RAMY	07	04	1338	S14	W17	07	3.3	B	DAO	70	9	9	1
6137		BOUL	07	04	1425	S14	W18	07	3.2	B	CAO	40	3	9	3
6137		HOLL	07	04	1535	S15	W18	07	3.3	B	DSO	50	23	8	3
6137		PALE	07	04	1958	S15	W20	07	3.3	B	CAO	60	12	10	3
6137		CULG	07	05	0105	S14	W23	07	3.3	B	DAO	40	10	9	2
6137		SVTO	07	05	0548	S14	W26	07	3.3	B	CSO	30	10	8	3
6137		RAMY	07	05	1237	S13	W30	07	3.3	B	CAO	40	12	10	3
6137		HOLL	07	05	1443	S16	W32	07	3.2	B	CSO	100	11	9	3
6137		BOUL	07	05	1515	S14	W32	07	3.2	B	CSO	40	6	8	2
6137		PALE	07	05	1854	S16	W36	07	3.0	B	CAO	80	25	15	3
6137		CULG	07	06	0145	S15	W38	07	3.2	B	CAO	100	17	9	2
6137		SVTO	07	06	0626	S13	W43	07	3.0	B	DAI	170	19	10	2
6137		RAMY	07	06	1200	S12	W49	07	2.8	B	DAO	150	13	7	2
6137		HOLL	07	06	1420	S15	W48	07	3.0	B	DAI	220	12	7	3
6137		BOUL	07	06	1446	S14	W47	07	3.1	B	DAO	260	13	8	3
6137		CULG	07	07	0020	S14	W53	07	3.0	B	DAI	270	19	8	2
6137		SVTO	07	07	0535	S13	W57	07	2.9	B	DAI	270	16	7	3
6137		BOUL	07	07	1432	S13	W61	07	3.0	B	DAI	430	16	8	3
6137		HOLL	07	07	1615	S13	W62	07	3.0	B	ESI	340	25	11	3
6137		PALE	07	07	1745	S14	W60	07	3.2	B	DAI	340	16	9	3
6137		LEAR	07	08	0020	S12	W65	07	3.1	B	DAI	250	10	8	3
6137		CULG	07	08	0220	S12	W73	07	2.6	B	EAI	180	6	11	2
6137		SVTO	07	08	0550	S13	W70	07	3.0	B	DAI	400	14	7	4
6137		RAMY	07	08	1155	S11	W71	07	3.1	B	EAO	260	16	11	4
6137		HOLL	07	08	1500	S14	W78	07	2.7	B	DAI	350	12	10	3
6137		PALE	07	08	1732	S14	W74	07	3.1	B	DAO	160	5	8	3
6137		LEAR	07	09	0303	S12	W77	07	3.3	B		150	4	5	4
6137		SVTO	07	09	0730	S13	W79	07	3.3	B	CAO	90	5	6	3
6137		RAMY	07	09	1131	S13	W85	07	3.1	A	HA	120	2	5	3
6137A		HOLL	07	06	1420	N21	W32	07	4.1	A	AX	10	2	2	3
6137A		CULG	07	07	0020	N22	W38	07	4.1	B	BXO		3	3	2
6132		SVTO	06	27	0535	S28	E83	07	3.7	A	HS	120	1	2	4
6132		RAMY	06	27	1558	S29	E84	07	4.2	A	HS	120	1	3	3
6132		HOLL	06	27	1715	S27	E85	07	4.3	A	HS	90	1	3	2
6132		CULG	06	28	0155	S26	E79	07	4.2	A	HS	60	1	1	2
6132		RAMY	06	28	1352	S27	E74	07	4.3	B	DAO	180	3	9	3

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SUNSPOT GROUPS
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JULY 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
6132		BOUL	06	28	1430	S27 E73	07	4.3	B	DAO	120	4	9	4
6132		HOLL	06	28	1625	S28 E73	07	4.4	B	DSO	120	7	10	4
6132		PALE	06	29	0150	S27 E68	07	4.4	B	DSO	180	2	9	3
6132		CULG	06	29	0155	S27 E71	07	4.6	B	DSO	160	2	10	3
6132		SVTO	06	29	0830	S28 E65	07	4.4	B	DAO	180	5	10	3
6132		RAMY	06	29	1256	S27 E64	07	4.5	B	DAO	170	8	10	4
6132		BOUL	06	29	1435	S27 E61	07	4.4	B	DAO	210	5	9	3
6132		HOLL	06	29	1630	S28 E65	07	4.8	B	ESO	170	10	11	3
6132		LEAR	06	30	0025	S28 E57	07	4.5	B	DAO	140	6	10	3
6132		PALE	06	30	0135	S27 E59	07	4.7	B	DAO	100	4	9	2
6132		SVTO	06	30	0540	S29 E59	07	4.9	B	ESO	140	8	11	4
6132		RAMY	06	30	1205	S29 E55	07	4.8	B	DAO	180	9	10	2
6132		BOUL	06	30	1415	S27 E50	07	4.5	B	DAI	200	7	10	4
6132		HOLL	06	30	1615	S28 E50	07	4.6	B	DSO	160	16	10	3
6132		PALE	06	30	2235	S28 E52	07	5.0	B	FAO	120	9	16	2
6132		LEAR	07	01	0155	S27 E47	07	4.7	B	DAI	150	10	9	3
6132		SVTO	07	01	0555	S27 E45	07	4.7	B	DAO	200	17	10	3
6132		RAMY	07	01	1220	S29 E41	07	4.7	B	DAO	270	10	9	2
6132		BOUL	07	01	1500	S27 E37	07	4.5	B	DKI	260	7	10	4
6132		HOLL	07	01	1715	S29 E38	07	4.7	B	DAI	260	28	10	3
6132		PALE	07	01	2033	S28 E37	07	4.7	B	EAO	200	17	11	2
6132		LEAR	07	02	0040	S28 E33	07	4.6	B	EAO	140	15	10	3
6132		SVTO	07	02	0640	S28 E30	07	4.6	B	DAI	150	28	10	3
6132		BOUL	07	02	1430	S27 E23	07	4.4	B	DAI	110	24	9	2
6132		HOLL	07	02	1452	S29 E23	07	4.4	B	EAO	230	30	11	2
6132		RAMY	07	02	1800	S29 E28	07	4.9	B	DAI	250	18	10	1
6132		PALE	07	02	2015	S28 E23	07	4.6	B	DAO	130	32	9	3
6132		SVTO	07	03	0755	S29 E16	07	4.6	B	DAO	100	23	8	3
6132		RAMY	07	03	1318	S29 E14	07	4.6	B	DAI	100	30	8	2
6132		BOUL	07	03	1410	S28 E12	07	4.5	B	DAI	70	24	7	2
6132		HOLL	07	03	1625	S29 E13	07	4.7	B	DAO	30	22	8	2
6132		PALE	07	03	2200	S33 E10	07	4.7	B	DAO	30	20	9	3
6132		CULG	07	04	0030	S28 E07	07	4.6	B	DAO	20	17	9	3
6132		SVTO	07	04	0555	S29 E04	07	4.6	B	DSI	50	17	8	4
6132		RAMY	07	04	1338	S29 E02	07	4.7	B	DAO	60	17	10	1
6132		BOUL	07	04	1425	S27 W03	07	4.4	B	CAI	60	17	6	3
6132		HOLL	07	04	1535	S29 E00	07	4.6	B	DAI	50	24	6	3
6132		PALE	07	04	1958	S28 W01	07	4.7	B	CAO	50	12	8	3
6132		CULG	07	05	0105	S28 W06	07	4.6	B	CAO	20	13	8	2
6132		SVTO	07	05	0548	S28 W09	07	4.5	B	CRO	20	5	5	3
6132		RAMY	07	05	1237	S28 W14	07	4.4	B	BXO	20	17	10	3
6132		HOLL	07	05	1443	S28 W15	07	4.4	B	BXO	40	6	9	3
6132		PALE	07	05	1854	S27 W22	07	4.1	A	AX		1		3
6132		SVTO	07	06	0626	S27 W19	07	4.8	A	AX	10	2	1	2
6132		HOLL	07	06	1420	S28 W22	07	4.9	A	AX		1	1	3
6132		BOUL	07	06	1446	S27 W23	07	4.8	B	BXO	10	4	2	3
6132A		BOUL	06	30	1415	S15 E55	07	4.7	A	AX		1		4
6141		RAMY	07	05	1237	S06 W10	07	4.8	A	AX	10	1	2	3
6141		HOLL	07	05	1443	S07 W11	07	4.8	A	AX	10	2	2	3
6141		BOUL	07	05	1515	S05 W11	07	4.8	A	AX		1		2
6141		PALE	07	05	1854	S07 W13	07	4.8	A	AX	10	3	2	3
6141		CULG	07	06	0145	S06 W17	07	4.8	B	BXO		3	3	2
6141		SVTO	07	06	0626	S06 W20	07	4.8	A	HA	20	2	2	2
6141		RAMY	07	06	1200	S05 W23	07	4.8	A	HR	10	1	1	2
6141		HOLL	07	06	1420	S07 W25	07	4.7	A	AX	20	2	1	3
6141		BOUL	07	06	1446	S04 W26	07	4.7	A	HA	10	1	1	3
6141		CULG	07	07	0020	S06 W30	07	4.8	B	CRO	10	5	3	2
6141		SVTO	07	07	0535	S05 W33	07	4.8	B	BXO	10	5	4	3
6141		BOUL	07	07	1432	S05 W36	07	4.9	B	BXO	20	7	6	3
6141		HOLL	07	07	1615	S06 W37	07	4.9	B	BXO	20	8	7	3
6141		PALE	07	07	1745	S07 W38	07	4.9	B	BXO	10	5	6	3
6141		RAMY	07	09	1131	S06 W65	07	4.6	A	AX	10	2	1	3
6139		SVTO	06	30	0540	S16 E65	07	5.2	A	AX		1		4
6139		RAMY	06	30	1205	S16 E61	07	5.1	B	BXO	10	2	3	2
6139		HOLL	06	30	1615	S17 E57	07	5.0	A	AX		1		3
6139		PALE	06	30	2235	S16 E54	07	5.0	A	AX		1		2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation		CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo Day	Time (UT)									Lat	CMD
6139		LEAR	07 01	0155	07 5.0		A	AX	10	1	1	3
6139		SVTO	07 01	0555	07 5.2		B	CRO	20	4	6	3
6139		RAMY	07 01	1220	07 5.1		B	CAO	50	6	6	2
6139		BOUL	07 01	1500	07 5.1		B	BXO	10	3	5	4
6139		HOLL	07 01	1715	07 5.1		B	BXO	50	8	6	3
6139		PALE	07 01	2033	07 5.2		B	BXO	30	3	6	2
6139		LEAR	07 02	0040	07 5.1		B	CSO	60	11	6	3
6139		SVTO	07 02	0640	07 5.1		B	DAI	40	9	7	3
6139		BOUL	07 02	1430	07 4.9		B	DAI	70	14	7	2
6139		HOLL	07 02	1452	07 5.0		B	DAO	130	14	8	2
6139		RAMY	07 02	1800	07 5.2		B	DAO	100	17	7	1
6139		PALE	07 02	2015	07 5.1		B	DAO	110	14	8	3
6139		SVTO	07 03	0755	07 5.0				90	13	9	3
6139		RAMY	07 03	1318	07 5.0		B	DAO	140	14	10	2
6139		BOUL	07 03	1410	07 4.9		B	EAI	120	12	11	2
6139		HOLL	07 03	1625	07 5.0		B	DAO	90	17	8	2
6139		PALE	07 03	2200	07 5.1		B	DAO	80	5	9	3
6139		CULG	07 04	0030	07 5.0		B	DSO	60	8	10	3
6139		SVTO	07 04	0555	07 5.0		B	DAO	110	9	9	4
6139		RAMY	07 04	1338	07 5.0		B	DAO	90	7	9	1
6139		BOUL	07 04	1445	07 5.0		B	DAO	70	7	10	3
6139		HOLL	07 04	1535	07 5.0		B	DSO	60	12	10	3
6139		PALE	07 04	1958	07 5.0		B	EAO	60	7	11	3
6139		CULG	07 05	0105	07 5.0		B	DAO	70	12	10	2
6139		SVTO	07 05	0548	07 4.9		B	DSO	80	7	10	3
6139		RAMY	07 05	1237	07 5.0		B	CAO	50	5	10	3
6139		HOLL	07 05	1443	07 5.0		B	CAO	80	7	10	3
6139		BOUL	07 05	1515	07 4.9		B	CAO	40	3	9	2
6139		PALE	07 05	1854	07 5.1		B	CAO	40	5	10	3
6139		CULG	07 06	0145	07 5.0		B	CAO	40	6	10	2
6139		SVTO	07 06	0626	07 5.0		B	CAO	60	6	10	2
6139		RAMY	07 06	1200	07 4.9		B	CAO	60	5	10	2
6139		HOLL	07 06	1420	07 4.9		B	CAO	80	5	9	3
6139		BOUL	07 06	1446	07 5.0		B	EAO	90	9	11	3
6139		CULG	07 07	0020	07 5.0		B	CAO	60	4	9	2
6139		SVTO	07 07	0535	07 4.9		B	DSO	30	2	8	3
6139		BOUL	07 07	1432	07 4.7		A	HA	40	1	1	3
6139		HOLL	07 07	1615	07 4.7		A	HS	50	1	2	3
6139		PALE	07 07	1745	07 5.0		B	CSO	40	3	7	3
6139		LEAR	07 08	0020	07 4.7		A	HS	30	1	1	3
6139		CULG	07 08	0220	07 4.5		A	HS	60	1	1	2
6139		SVTO	07 08	0550	07 4.6		A	HA	30	1	1	4
6139		RAMY	07 08	1155	07 4.8		B	CAO	20	3	3	4
6139		HOLL	07 08	1500	07 4.6		A	HS	30	1	1	3
6139		PALE	07 08	1732	07 4.8		A	HR	20	1	1	3
6139		SVTO	07 09	0730	07 4.7		A	HA	40	1	2	3
6139		RAMY	07 09	1131	07 4.8		A	HA	40	3	2	3
6139		HOLL	07 09	1705	07 4.8		A	HS	40	1	2	2
6139		PALE	07 09	1855	07 5.0		A	HA	20	3	2	2
6139		LEAR	07 10	0040	07 4.9		A	HS	50	3	1	3
6139		SVTO	07 10	0606	07 4.8		A	AX	30	2	1	3
6139		RAMY	07 10	1127	07 4.8		A	HA	30	1	2	3
6139		HOLL	07 10	1451	07 4.8		A	AX		1		3
6133		RAMY	06 28	1352	07 4.7		A	HA	120	1	2	3
6133		BOUL	06 28	1430	07 4.8		B	HA	60	1	1	4
6133		HOLL	06 28	1625	07 4.8		A	HK	180	5	3	4
6133		PALE	06 29	0150	07 5.0		A	HK	450	6	4	3
6133		CULG	06 29	0155	07 4.9		A	HK	500	2	5	3
6133		SVTO	06 29	0830	07 5.3		B	CKO	450	8	9	3
6133		RAMY	06 29	1256	07 5.0		B	EKO	980	9	11	4
6133		BOUL	06 29	1435	07 5.0		B	CKI	860	13	11	3
6133		HOLL	06 29	1630	07 5.2		B	EAI	640	38	13	3
6133		LEAR	06 30	0025	07 5.0		B	DKI	430	18	10	3
6133		PALE	06 30	0135	07 5.2		B	DKO	380	5	11	2
6133		SVTO	06 30	0540	07 5.4		BD	FKI	700	38	16	4
6133		RAMY	06 30	1205	07 5.4		BD	FKI	880	33	19	2
6133		BOUL	06 30	1415	07 4.8		BD	DKI	740	18	8	4
6133		HOLL	06 30	1615	07 5.4		BGD	EKC	930	38	14	3

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(Ordered by Central Meridian Passage Date)

JULY 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected		Long. Extent (Deg)	Qual
			Mo	Day							Area (10-6 Hemi)	Spot Count		
6133		PALE	06	30	2235	N18 E57	07 5.3		BG	DKI	570	19	10	2
6133		LEAR	07	01	0155	N18 E53	07 5.1		BG	DKI	500	16	10	3
6133		SVTO	07	01	0555	N19 E56	07 5.5		BG	FKI	840	28	18	3
6133		RAMY	07	01	1220	N18 E49	07 5.2		B	FKC	740	35	18	2
6133		BOUL	07	01	1500	N16 E47	07 5.2		BD	EKO	750	11	12	4
6133		HOLL	07	01	1715	N17 E47	07 5.3		BD	EKC	740	59	12	3
6133		PALE	07	01	2033	N18 E45	07 5.3		BD	DKI	630	27	10	2
6133		LEAR	07	02	0040	N17 E46	07 5.5		GD	FKI	590	32	18	3
6133		SVTO	07	02	0640	N17 E40	07 5.3		BGD	EKI	600	37	12	3
6133		BOUL	07	02	1430	N17 E34	07 5.2		BD	EKO	640	33	11	2
6133		HOLL	07	02	1452	N16 E35	07 5.3		B	EKO	730	33	12	2
6133		RAMY	07	02	1800	N17 E34	07 5.3		B	FKC	740	33	16	1
6133		PALE	07	02	2015	N17 E36	07 5.6		BD	EKI	780	29	15	3
6133		SVTO	07	03	0755	N17 E27	07 5.4		BD	FKI	710	31	16	3
6133		RAMY	07	03	1318	N17 E24	07 5.4		BD	FKC	770	39	16	2
6133		BOUL	07	03	1410	N17 E21	07 5.2		BD	DKI	580	29	10	2
6133		HOLL	07	03	1625	N18 E21	07 5.3		B	DKI	580	20	10	2
6133		PALE	07	03	2200	N14 E14	07 5.0		BD	DKI	730	28	9	3
6133		CULG	07	04	0030	N19 E18	07 5.4		BD	FKI	450	23	16	3
6133		SVTO	07	04	0555	N17 E15	07 5.4		BGD	HKI	730	23	16	4
6133		RAMY	07	04	1338	N17 E13	07 5.5		BD	FKI	770	29	16	1
6133		BOUL	07	04	1425	N17 E07	07 5.1		B	DKI	460	17	8	3
6133		HOLL	07	04	1535	N17 E08	07 5.2		B	DKC	580	31	9	3
6133		PALE	07	04	1958	N18 E05	07 5.2		BD	DKI	700	37	10	3
6133		CULG	07	05	0105	N18 E04	07 5.3		BD	EKI	650	34	14	2
6133		SVTO	07	05	0548	N17 E02	07 5.4		BG	EKI	650	30	15	3
6133		RAMY	07	05	1237	N17 E00	07 5.5		B	FKI	620	28	16	3
6133		HOLL	07	05	1443	N17 W06	07 5.1		BG	DKI	570	25	10	3
6133		BOUL	07	05	1515	N17 W06	07 5.2		B	DKO	380	9	7	2
6133		PALE	07	05	1854	N17 W08	07 5.2		BD	DKI	580	23	7	3
6133		CULG	07	06	0145	N17 W13	07 5.1		BG	DKI	580	27	7	2
6133		SVTO	07	06	0626	N17 W15	07 5.1		BG	DKI	410	14	9	2
6133		RAMY	07	06	1200	N18 W17	07 5.2		B	DKO	460	9	6	2
6133		HOLL	07	06	1420	N16 W18	07 5.2		B	DKO	500	16	10	3
6133		BOUL	07	06	1446	N17 W20	07 5.1		B	DKC	490	18	8	3
6133		CULG	07	07	0020	N17 W24	07 5.2		B	DKO	430	18	9	2
6133		SVTO	07	07	0535	N17 W26	07 5.2		BG	DKO	430	18	9	3
6133		BOUL	07	07	1432	N18 W31	07 5.2		B	DKO	450	14	10	3
6133		HOLL	07	07	1615	N17 W32	07 5.2		B	DKC	520	26	9	3
6133		PALE	07	07	1745	N15 W32	07 5.3		B	EKI	460	17	11	3
6133		LEAR	07	08	0020	N18 W38	07 5.1		B	DHO	470	8	6	3
6133		CULG	07	08	0220	N19 W42	07 4.9		B	DKO	300	8	4	2
6133		SVTO	07	08	0550	N18 W42	07 5.0		BG	DKI	520	22	6	4
6133		RAMY	07	08	1155	N18 W39	07 5.5		BG	FKI	490	25	16	4
6133		HOLL	07	08	1500	N16 W45	07 5.2		BG	DHI	440	23	10	3
6133		PALE	07	08	1732	N16 W47	07 5.2		BG	DHI	320	21	5	3
6133		LEAR	07	09	0303	N18 W51	07 5.2		BG	DKO	400	12	7	4
6133		SVTO	07	09	0730	N17 W55	07 5.1		BG	DKI	410	14	8	3
6133		RAMY	07	09	1131	N18 W53	07 5.4		BG	FKO	230	21	15	3
6133		HOLL	07	09	1705	N17 W59	07 5.2		B	DAI	270	14	5	2
6133		PALE	07	09	1855	N17 W58	07 5.4		B	DKO	270	10	5	2
6133		LEAR	07	10	0040	N17 W63	07 5.2		BG	DKO	160	11	7	3
6133		SVTO	07	10	0606	N18 W70	07 4.9		BG	DKI	240	8	6	3
6133		RAMY	07	10	1127	N18 W70	07 5.1		BG	DKO	390	10	7	3
6133		BOUL	07	10	1408	N16 W73	07 5.0		B	DKO	320	12	7	3
6133		HOLL	07	10	1451	N17 W72	07 5.1		B	DAO	240	5	5	3
6133		PALE	07	10	1744	N19 W71	07 5.3		B	CAO	120	6	4	3
6133		LEAR	07	11	0015	N17 W74	07 5.4		BG	DKO	150	6	6	3
6133		CULG	07	11	0120	N17 W82	07 4.8		B	DAO	240	6	6	3
6133		SVTO	07	11	0718	N18 W85	07 4.8		A	HS	120	1	3	2
6133		RAMY	07	11	1238	N18 W88	07 4.8		A	HK	120	2	2	3
6139A		HOLL	06	30	1615	N16 E71	07 6.1		B	BXO	20	5	5	3
6139A		BOUL	07	06	1446	N14 W14	07 5.5		B	BXO	10	3	2	3
6143		HOLL	07	01	1715	N15 E57	07 6.0		B	BXO	10	4	4	3
6143		BOUL	07	02	1430	N15 E44	07 5.9		A	AX		1		2
6143		HOLL	07	02	1452	N15 E45	07 6.0		A	AX	10	1	1	2
6143		BOUL	07	03	1410	N15 E30	07 5.9		A	AX		1		2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JULY 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6143		HOLL	07 03 1625	N14 E31	07 6.0		A	AX	10	2	1	2
6143		HOLL	07 04 1535	N14 E18	07 6.0		A	AX		2	2	3
6143		HOLL	07 05 1443	N14 E04	07 5.9		A	AX	10	1	1	3
6143		RAMY	07 06 1200	N12 W05	07 6.1		A	AX	10	4	1	2
6143		HOLL	07 06 1420	N15 W07	07 6.1		A	AX	10	2	1	3
6143		CULG	07 07 0020	N13 W12	07 6.1		B	BXO		3	3	2
6143		HOLL	07 07 1615	N17 W23	07 5.9		A	AX	10	2	1	3
6143		SVTO	07 08 0550	N17 W30	07 6.0		A	AX	10	2	1	4
6143		RAMY	07 08 1155	N12 W32	07 6.1		B	BXO	10	3	4	4
6143		HOLL	07 08 1500	N15 W35	07 6.0		B	BXO		3	5	3
6143		RAMY	07 09 1131	N12 W43	07 6.2		B	BXO	10	2	2	3
6143		RAMY	07 10 1127	N19 W59	07 6.0		A	AX	10	2	1	3
6143A		PALE	07 05 1854	N04 E03	07 6.0		A	AX		2	1	3
6143A		PALE	07 10 1744	N05 W60	07 6.2		A	AX		1		3
6143B		CULG	07 07 0020	N18 W12	07 6.1		A	AX		1		2
6143B		BOUL	07 07 1432	N18 W21	07 6.0		A	AX		1		3
6143C		HOLL	07 05 1443	N10 E11	07 6.4		B	BXO	10	2	3	3
6138		SVTO	06 30 0540	N21 E88	07 7.0		A	HS	30	1	3	4
6138		RAMY	06 30 1205	N23 E85	07 7.0		A	HK	180	1	4	2
6138		BOUL	06 30 1415	N24 E80	07 6.8		A	HA	80	1	2	4
6138		HOLL	06 30 1615	N22 E79	07 6.7		A	HH	120	1	3	3
6138		PALE	06 30 2235	N22 E79	07 7.0		A	HA	120	1	2	2
6138		LEAR	07 01 0155	N19 E70	07 6.4		A	HS	120	1	2	3
6138		SVTO	07 01 0555	N24 E76	07 7.1		A	HS	150	1	3	3
6138		RAMY	07 01 1220	N29 E70	07 7.0		A	HK	170	1	4	2
6138		BOUL	07 01 1500	N24 E67	07 6.8		A	HA	140	1	3	4
6138		HOLL	07 01 1715	N20 E67	07 6.8		B	CSO	250	2	4	3
6138		PALE	07 01 2033	N23 E67	07 7.0		A	HS	160	1	2	2
6138		LEAR	07 02 0040	N23 E64	07 6.9		B	CSO	180	3	5	3
6138		SVTO	07 02 0640	N21 E62	07 7.0		B	CAO	120	4	4	3
6138		BOUL	07 02 1430	N23 E54	07 6.8		B	CKO	200	9	5	2
6138		HOLL	07 02 1452	N22 E56	07 6.9		B	CSO	260	7	5	2
6138		RAMY	07 02 1800	N23 E56	07 7.1		B	DAO	240	6	6	1
6138		PALE	07 02 2015	N23 E53	07 6.9		B	DAO	300	5	6	3
6138		SVTO	07 03 0755	N21 E44	07 6.7		B	DKO	200	9	7	3
6138		RAMY	07 03 1318	N21 E43	07 6.8		B	DKO	340	6	6	2
6138		BOUL	07 03 1410	N23 E41	07 6.7		B	DKO	380	7	7	2
6138		HOLL	07 03 1625	N21 E40	07 6.7		B	DKO	270	8	6	2
6138		PALE	07 03 2200	N20 E38	07 6.8		B	DKO	400	8	6	3
6138		CULG	07 04 0030	N24 E36	07 6.8		B	DKO	260	5	7	3
6138		SVTO	07 04 0555	N22 E33	07 6.8		B	DKO	420	7	7	4
6138		RAMY	07 04 1338	N22 E30	07 6.9		B	DKO	470	11	8	1
6138		BOUL	07 04 1425	N23 E27	07 6.7		B	DKO	390	9	9	3
6138		HOLL	07 04 1535	N22 E28	07 6.8		BD	DKI	310	15	7	3
6138		PALE	07 04 1958	N22 E26	07 6.8		B	DKO	450	15	7	3
6138		CULG	07 05 0105	N22 E23	07 6.8		B	DKO	370	19	8	2
6138		SVTO	07 05 0548	N21 E21	07 6.8		B	DKO	370	5	7	3
6138		RAMY	07 05 1237	N22 E17	07 6.8		B	DKO	430	4	7	3
6138		HOLL	07 05 1443	N21 E16	07 6.8		BD	DAO	300	7	8	3
6138		BOUL	07 05 1515	N22 E15	07 6.8		B	DKO	210	4	7	2
6138		PALE	07 05 1854	N22 E14	07 6.9		B	DKO	280	10	7	3
6138		CULG	07 06 0145	N22 E10	07 6.8		B	DKO	290	13	8	2
6138		SVTO	07 06 0626	N22 E07	07 6.8		B	DKO	260	13	8	2
6138		RAMY	07 06 1200	N20 E06	07 6.9		B	DKO	320	13	9	2
6138		HOLL	07 06 1420	N21 E03	07 6.8		B	DAO	340	14	11	3
6138		BOUL	07 06 1446	N22 E03	07 6.8		B	DKO	310	13	10	3
6138		CULG	07 07 0020	N21 W02	07 6.9		B	DKO	250	14	10	2
6138		SVTO	07 07 0535	N22 W06	07 6.8		B	EKO	270	18	12	3
6138		BOUL	07 07 1432	N23 W10	07 6.8		B	DAO	220	11	9	3
6138		HOLL	07 07 1615	N22 W12	07 6.7		B	CSO	220	14	10	3
6138		PALE	07 07 1745	N20 W11	07 6.9		B	ESO	280	10	11	3
6138		LEAR	07 08 0020	N22 W15	07 6.9		B	ESO	200	7	10	3
6138		CULG	07 08 0220	N23 W18	07 6.7		B	DSO	180	5	9	2
6138		SVTO	07 08 0550	N22 W17	07 6.9		B	EAO	230	18	11	4
6138		RAMY	07 08 1155	N21 W21	07 6.9		BG	EKO	280	27	12	4

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NOAA/ USAF Group	Mt Wilson Group	Observation Time Sta	Mo	Day	(UT)	Lat	CHD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6138		HOLL	07	08	1500	N20	W25	07	6.7		B	CSO	180	10	10	3
6138		PALE	07	08	1732	N21	W25	07	6.8		B	ESO	200	13	11	3
6138		SVTO	07	09	0730	N22	W33	07	6.8		B	ESO	180	5	11	3
6138		RAMY	07	09	1131	N21	W36	07	6.7		B	EKO	200	18	12	3
6138		HOLL	07	09	1705	N21	W38	07	6.8		B	ESO	180	7	11	2
6138		PALE	07	09	1855	N21	W37	07	6.9		B	EAO	180	11	11	2
6138		LEAR	07	10	0040	N22	W42	07	6.8		B	EHO	170	8	12	3
6138		SVTO	07	10	0606	N22	W47	07	6.6		B	ESO	220	15	13	3
6138		RAMY	07	10	1127	N21	W49	07	6.7		BG	EKO	240	15	12	3
6138		BOUL	07	10	1408	N21	W49	07	6.8		B	EAO	220	7	13	3
6138		HOLL	07	10	1451	N21	W50	07	6.8		B	ESO	210	6	11	3
6138		PALE	07	10	1744	N23	W51	07	6.8		B	EAO	140	12	12	3
6138		LEAR	07	11	0015	N21	W56	07	6.7		B	EAO	180	10	14	3
6138		CULG	07	11	0120	N21	W58	07	6.6		B	ESO	120	7	13	3
6138		SVTO	07	11	0718	N21	W61	07	6.6		B	EAO	190	7	12	2
6138		RAMY	07	11	1238	N20	W64	07	6.6		BG	EAO	190	9	12	3
6138		BOUL	07	11	1415	N20	W61	07	6.9		B	CAO	100	10	13	4
6138		HOLL	07	11	1700	N22	W64	07	6.8		BG	ESI	190	19	13	3
6138		PALE	07	11	1850	N19	W64	07	6.9		B	EAO	230	10	12	3
6138		LEAR	07	12	0015	N20	W68	07	6.8		B	EAO	100	10	11	3
6138		SVTO	07	12	0830	N21	W74	07	6.7		B	ESO	90	8	14	3
6138		RAMY	07	12	1200	N22	W76	07	6.6		B	EAO	140	4	13	1
6138		PALE	07	12	1740	N20	W70	07	7.4		A	HA	60	1	3	2
6138		LEAR	07	13	0020	N21	W78	07	7.0		A	HS	60	2	3	3
6138		CULG	07	13	0310	N20	W80	07	7.0		A	HS	30	1	2	2
6138		SVTO	07	13	0748	N23	W80	07	7.2		A	HS	30	1	3	3
6138		RAMY	07	13	1136	N22	W81	07	7.2		A	HA	60	1	2	3
6138		HOLL	07	13	1315	N22	W81	07	7.3		A	HS	30	1	2	3
6144		CULG	07	07	0020	N10	W01	07	6.9		A	HR	10	3	2	2
6144		SVTO	07	07	0535	N09	W04	07	6.9		A	AX	10	3	1	3
6144		HOLL	07	07	1615	N09	W11	07	6.8		A	AX		1		3
6144		RAMY	07	10	1127	N11	W50	07	6.7		A	AX	10	1	1	3
6138A		SVTO	07	08	0550	S12	E02	07	8.4		A	AX		1		4
6138A		RAMY	07	08	1155	S16	E00	07	8.5		B	BXO		2	3	4
6147		HOLL	07	08	1500	S08	E05	07	9.0		A	AX		1		3
6147		PALE	07	08	1732	S07	E04	07	9.0		A	AX		1	1	3
6147		RAMY	07	09	1131	S07	W08	07	8.9		B	BXO	10	5	4	3
6147		RAMY	07	10	1127	S10	W19	07	9.0		B	BXO	10	3	3	3
6147A		PALE	07	10	1744	S17	W23	07	9.0		B	BXO	20	6	7	3
6157		SVTO	07	14	0630	S21	W65	07	9.3		A	HS	50	3	2	2
6148		RAMY	07	09	1131	N09	E11	07	10.3		B	CAO	40	5	2	3
6148		HOLL	07	09	1705	N09	E08	07	10.3		B	BXO	30	8	3	2
6148		PALE	07	09	1855	N08	E08	07	10.4		B	BXO	10	8	3	2
6148		LEAR	07	10	0040	N09	E05	07	10.4		B	BXO	20	10	5	3
6148		SVTO	07	10	0606	N09	E01	07	10.3		B	CRO	20	7	4	3
6148		RAMY	07	10	1127	N09	W02	07	10.3		B	CAO	30	5	4	3
6148		HOLL	07	10	1451	N09	W04	07	10.3		B	BXO	30	5	3	3
6148		PALE	07	10	1744	N10	W03	07	10.5		B	BXO	20	11	6	3
6148		LEAR	07	11	0015	N09	W09	07	10.3		B	BXO	10	2	2	3
6148		CULG	07	11	0120	N09	W09	07	10.4		A	AX	10	2	2	3
6148		SVTO	07	11	0718	N09	W12	07	10.4		A	AX		1	1	2
6148		RAMY	07	11	1238	N09	W16	07	10.3		A	AX	10	4	2	3
6148		HOLL	07	11	1700	N09	W18	07	10.3		B	BXO	10	4	3	3
6148		PALE	07	11	1850	N09	W15	07	10.6		B	BXO	10	5	4	3
6148A		CULG	07	14	0105	S16	W44	07	10.7		A	AX		1	1	2
6148A		SVTO	07	14	0605	S14	W46	07	10.8		A	AX	10	1	2	2
6148A		RAMY	07	14	1055	S14	W49	07	10.7		A	AX	10	2	2	3
6153		RAMY	07	11	1238	N16	W01	07	11.4		A	AX		1		3
6153		BOUL	07	11	1415	N16	W02	07	11.4		A	AX		1		4
6153		HOLL	07	11	1700	N16	W04	07	11.4		B	CSO	20	5	4	3
6153		PALE	07	11	1850	N16	W04	07	11.5		A	AX	10	2	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	Long Extent (Deg)	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6153		LEAR	07 12 0015	N15 W09	07 11.3	B	BXO	20	6	5	3
6153		SVTO	07 12 0830	N16 W14	07 11.3	B	CAI	40	19	6	3
6153		RAMY	07 12 1200	N15 W14	07 11.4	B	DRO	30	12	6	1
6153		PALE	07 12 1740	N15 W19	07 11.3	B	DAO	60	15	7	2
6153		LEAR	07 13 0020	N15 W23	07 11.3	B	DRO	40	16	7	3
6153		CULG	07 13 0310	N16 W26	07 11.1	B	DAI	20	18	8	2
6153		SVTO	07 13 0748	N16 W28	07 11.2	B	DAO	60	14	8	3
6153		RAMY	07 13 1136	N15 W28	07 11.4	B	DAO	60	20	7	3
6153		HOLL	07 13 1315	N16 W31	07 11.2	B	CAI	50	17	9	3
6153		BOUL	07 13 1405	N15 W30	07 11.3	B	DAI	80	14	9	3
6153		LEAR	07 14 0030	N15 W37	07 11.2	B	CAO	70	28	9	2
6153		CULG	07 14 0105	N15 W39	07 11.1	B	DAO	50	19	10	2
6153		SVTO	07 14 0605	N16 W40	07 11.2	B	DAO	100	25	9	2
6153		RAMY	07 14 1055	N15 W41	07 11.3	B	CAO	140	18	10	3
6153		HOLL	07 14 1305	N15 W45	07 11.1	B	CAI	110	16	10	3
6153		BOUL	07 14 1435	N15 W45	07 11.2	B	CAO	100	8	10	1
6153		LEAR	07 15 0040	N15 W50	07 11.2	B	DSO	120	14	10	3
6153		BOUL	07 15 1415	N15 W57	07 11.3	B	DAI	110	10	10	3
6153		HOLL	07 15 1502	N15 W60	07 11.1	B	ESI	130	33	11	4
6153		PALE	07 15 2340	N13 W63	07 11.2	B	EAI	130	14	12	2
6153		CULG	07 16 0100	N15 W64	07 11.2	B	EAO	110	11	12	2
6153		LEAR	07 16 0130	N15 W63	07 11.3	B	EAO	200	14	12	3
6153		SVTO	07 16 0800	N14 W71	07 11.0	B	EAO	240	8	11	2
6153		RAMY	07 16 1346	N17 W73	07 11.0	B	DAO	200	12	10	2
6153		HOLL	07 16 1425	N14 W72	07 11.1	B	DAO	190	13	9	3
6153		BOUL	07 16 1428	N16 W76	07 10.8	B	EAO	280	11	11	3
6153		PALE	07 16 1800	N14 W77	07 10.9	B	DAO	140	7	10	3
6153		CULG	07 17 0005	N15 W76	07 11.2	B	EAO	140	6	12	3
6153		LEAR	07 17 0035	N15 W74	07 11.4	B	DAO	120	11	10	3
6153		SVTO	07 17 0756	N15 W75	07 11.6	B	DAO	80	4	8	2
6153		RAMY	07 17 1352	N14 W78	07 11.7	A	HA	60	1	2	2
6153		HOLL	07 17 1445	N15 W80	07 11.5	A	AX	10	1	1	3
6153		BOUL	07 17 1451	N14 W82	07 11.4	A	AX	20	1	1	3
6151		HOLL	07 10 1451	S11 E11	07 11.4	A	AX		1		3
6151		SVTO	07 11 0718	S10 E04	07 11.6	B	BXO	10	1	3	2
6151		RAMY	07 11 1238	S09 E00	07 11.5	B	BXO	10	6	4	3
6151		BOUL	07 11 1415	S08 E01	07 11.7	B	BXO	10	5	5	4
6151		HOLL	07 11 1700	S09 W02	07 11.5	B	DAO	30	10	4	3
6151		PALE	07 11 1850	S09 W02	07 11.6	B	BXO	20	10	6	3
6151		LEAR	07 12 0015	S09 W05	07 11.6	B	CAO	30	6	6	3
6151		SVTO	07 12 0830	S10 W11	07 11.5	B	DRI	40	15	4	3
6151		RAMY	07 12 1200	S10 W10	07 11.7	B	DAO	70	14	6	1
6151		PALE	07 12 1740	S11 W15	07 11.6	B	DAO	40	10	5	2
6151		LEAR	07 13 0020	S10 W18	07 11.7	B	CAO	40	17	7	3
6151		CULG	07 13 0310	S10 W20	07 11.6	B	CAO	20	12	6	2
6151		SVTO	07 13 0748	S10 W23	07 11.6	B	DAO	60	14	6	3
6151		RAMY	07 13 1136	S10 W23	07 11.7	B	DAO	50	15	5	3
6151		HOLL	07 13 1315	S10 W26	07 11.6	B	CAO	40	11	5	3
6151		BOUL	07 13 1405	S10 W24	07 11.8	B	BXO	10	7	5	3
6151		LEAR	07 14 0030	S10 W32	07 11.6	B	CAO	30	18	6	2
6151		CULG	07 14 0105	S11 W33	07 11.6	B	CAO	20	11	9	2
6151		SVTO	07 14 0605	S08 W33	07 11.8	B	DAI	60	13	6	2
6151		RAMY	07 14 1055	S10 W36	07 11.7	B	CAO	60	13	6	3
6151		HOLL	07 14 1305	S10 W38	07 11.7	B	CAO	80	12	5	3
6151		BOUL	07 14 1435	S10 W38	07 11.7	B	CAO	40	7	5	1
6151		LEAR	07 15 0040	S10 W45	07 11.6	B	CSO	70	9	6	3
6151		BOUL	07 15 1415	S10 W50	07 11.8	B	CAO	100	7	5	3
6151		HOLL	07 15 1502	S10 W52	07 11.7	B	CSO	70	10	7	4
6151		PALE	07 15 2340	S06 W57	07 11.7	B	CAO	80	6	5	2
6151		CULG	07 16 0100	S09 W56	07 11.8	B	CAO	70	7	3	2
6151		LEAR	07 16 0130	S09 W50	07 12.3	B	CSO	70	4	3	3
6151		SVTO	07 16 0800	S10 W60	07 11.8	A	HA	80	1	2	2
6151		RAMY	07 16 1346	S09 W63	07 11.8	B	CAO	90	6	3	2
6151		HOLL	07 16 1425	S09 W63	07 11.9	A	HA	70	6	3	3
6151		BOUL	07 16 1428	S09 W63	07 11.9	A	HA	60	2	3	3
6151		PALE	07 16 1800	S10 W65	07 11.9	B	CAO	50	4	3	3
6151		CULG	07 17 0005	S09 W67	07 12.0	B	CAO	50	6	3	3
6151		LEAR	07 17 0035	S11 W68	07 11.9	B	CAO	50	4	3	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6151		SVTO	07 17 0756	S08 W72	07 11.9		A	HA	30	1	2	2
6151		RAMY	07 17 1352	S09 W74	07 12.0		A	HS	40	1	2	2
6151		HOLL	07 17 1445	S08 W74	07 12.1		A	HA	30	1	2	3
6151		BOUL	07 17 1451	S09 W76	07 11.9		B	BXO	20	2	1	3
6150		HOLL	07 10 1451	N07 E13	07 11.6		A	AX	20	4	2	3
6150		PALE	07 10 1744	N07 E14	07 11.8		B	BXO	20	8	5	3
6150		LEAR	07 11 0015	N08 E09	07 11.7		B	BXO	20	12	5	3
6150		CULG	07 11 0120	N08 E07	07 11.6		B	CR1	20	9	4	3
6150		SVTO	07 11 0718	N08 E05	07 11.7		B	DA1	80	14	6	2
6150		RAMY	07 11 1238	N07 E02	07 11.7		B	DAO	80	18	6	3
6150		BOUL	07 11 1415	N07 E00	07 11.6		B	DA1	110	16	7	4
6150		HOLL	07 11 1700	N07 E00	07 11.7		B	DAO	120	27	6	3
6150		PALE	07 11 1850	N06 W01	07 11.7		B	DA1	100	23	6	3
6150		LEAR	07 12 0015	N08 W05	07 11.6		B	DAO	100	20	7	3
6150		SVTO	07 12 0830	N06 W10	07 11.6		B	DAO	140	15	6	3
6150		RAMY	07 12 1200	N06 W11	07 11.7		B	DAO	150	11	8	1
6150		PALE	07 12 1740	N06 W16	07 11.5		B	DAO	180	17	7	2
6150		LEAR	07 13 0020	N07 W18	07 11.7		B	DAO	160	22	8	3
6150		CULG	07 13 0310	N07 W20	07 11.6		B	DAO	160	10	8	2
6150		SVTO	07 13 0748	N07 W23	07 11.6		B	DSO	220	23	8	3
6150		RAMY	07 13 1136	N06 W25	07 11.6		B	DAO	210	13	8	3
6150		HOLL	07 13 1315	N07 W27	07 11.5		B	DA1	230	20	9	3
6150		BOUL	07 13 1405	N06 W25	07 11.7		B	DAO	170	10	7	3
6150		LEAR	07 14 0030	N07 W33	07 11.5		B	DAO	240	23	8	2
6150		CULG	07 14 0105	N06 W33	07 11.6		B	DAO	170	17	8	2
6150		SVTO	07 14 0605	N06 W34	07 11.7		B	DAO	200	19	8	2
6150		RAMY	07 14 1055	N07 W37	07 11.7		B	DAO	180	16	8	3
6150		HOLL	07 14 1305	N07 W39	07 11.6		B	DA1	200	15	9	3
6150		BOUL	07 14 1435	N06 W39	07 11.7		B	DA1	170	7	7	1
6150		LEAR	07 15 0040	N06 W44	07 11.7		B	DAO	210	10	8	3
6150		BOUL	07 15 1415	N06 W52	07 11.7		B	DAO	200	7	9	3
6150		HOLL	07 15 1502	N07 W54	07 11.6		B	DSO	180	14	8	4
6150		PALE	07 15 2340	N05 W58	07 11.6		B	DAO	220	8	7	2
6150		CULG	07 16 0100	N07 W58	07 11.7		B	DAO	150	8	10	2
6150		LEAR	07 16 0130	N06 W60	07 11.6		B	DAO	200	15	9	3
6150		SVTO	07 16 0800	N06 W65	07 11.5		B	DAO	160	4	8	2
6150		RAMY	07 16 1346	N06 W64	07 11.8		B	DAO	180	7	9	2
6150		HOLL	07 16 1425	N06 W67	07 11.6		B	DSO	210	8	9	3
6150		BOUL	07 16 1428	N06 W67	07 11.6		B	DAO	220	8	9	3
6150		PALE	07 16 1800	N05 W68	07 11.7		B	DAO	140	5	8	3
6150		CULG	07 17 0005	N07 W70	07 11.7		B	DAO	150	4	10	3
6150		LEAR	07 17 0035	N05 W70	07 11.8		B	EAO	130	7	13	3
6150		SVTO	07 17 0756	N08 W78	07 11.5		B	DAO	120	3	10	2
6150		RAMY	07 17 1352	N06 W76	07 11.9		B	DAO	150	2	8	2
6150		HOLL	07 17 1445	N07 W78	07 11.8		B	DSO	80	5	9	3
6150		BOUL	07 17 1451	N07 W79	07 11.7		B	DAO	90	2	8	3
6150		PALE	07 17 1745	N07 W75	07 12.1		A	HA	60	1	1	3
6150		LEAR	07 18 0025	N08 W78	07 12.2		A	HS	60	1	2	4
6150A		SVTO	07 08 0550	S23 E48	07 11.9		B	BXO	20	5	4	4
6150A		BOUL	07 10 1408	S19 E16	07 11.8		B	BXO	10	2	2	3
6150B		LEAR	07 15 0040	S33 W37	07 12.1		B	BXO	10	2	3	3
6150C		SVTO	07 14 0630	S42 W26	07 12.1		A	AX		1		2
6150C		HOLL	07 14 1305	S31 W30	07 12.2		A	AX		1		3
6146		HOLL	07 07 1615	S22 E57	07 12.0		A	AX	10	1	1	3
6146		PALE	07 07 1745	S22 E52	07 11.7		B	BXO	10	5	3	3
6146		LEAR	07 08 0020	S23 E51	07 11.9		B	BXO	20	5	3	3
6146		RAMY	07 08 1155	S22 E44	07 11.9		B	CAO	30	7	5	4
6146		HOLL	07 08 1500	S22 E44	07 12.0		B	BXO	10	4	4	3
6146		PALE	07 08 1732	S22 E41	07 11.9		B	BXO	20	4	4	3
6146		SVTO	07 09 0730	S22 E33	07 11.8		B	BXO	10	2	2	3
6146		RAMY	07 09 1131	S20 E32	07 11.9		B	CAO	30	4	3	3
6146		HOLL	07 09 1705	S22 E28	07 11.9		A	AX	10	2	2	2
6146		PALE	07 09 1855	S21 E28	07 11.9		B	BXO	10	2	2	2
6146		LEAR	07 10 0040	S21 E25	07 11.9		B	BXO	10	5	5	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
6146		SVTO	07 10 0606	S22	E23	07 12.0		B	BXO	20	8	4	3
6146		RAMY	07 10 1127	S21	E19	07 11.9		B	CAO	20	8	4	3
6146		HOLL	07 10 1451	S21	E16	07 11.8		A	AX	20	2	2	3
6146		PALE	07 10 1744	S22	E15	07 11.9		B	BXO	10	7	4	3
6146		CULG	07 11 0120	S20	E12	07 12.0		A	AX		1		3
6146		RAMY	07 11 1238	S21	E07	07 12.1		B	BXO	10	2	4	3
6146		PALE	07 11 1850	S23	E05	07 12.2		A	AX	10	2	1	3
6146		LEAR	07 17 0035	S19	W62	07 12.3		B	BXO	10	2	2	3
6142		CULG	07 06 0145	S14	E86	07 12.6		A	HS	80	1	2	2
6142		SVTO	07 06 0626	S17	E82	07 12.5		A	HS	60	1	2	2
6142		RAMY	07 06 1200	S18	E77	07 12.4		A	HS	180	1	2	2
6142		HOLL	07 06 1420	S14	E76	07 12.3		A	HS	120	1	2	3
6142		BOUL	07 06 1446	S14	E77	07 12.4		A	HA	120	1	3	3
6142		CULG	07 07 0020	S15	E72	07 12.5		A	HS	120	1	2	2
6142		SVTO	07 07 0535	S15	E67	07 12.3		A	HA	80	1	2	3
6142		BOUL	07 07 1432	S12	E61	07 12.2		A	HS	120	1	2	3
6142		HOLL	07 07 1615	S15	E60	07 12.2		A	HS	90	1	2	3
6142		PALE	07 07 1745	S15	E60	07 12.3		A	HS	120	1	2	3
6142		LEAR	07 08 0020	S16	E56	07 12.3		A	HS	120	2	2	3
6142		CULG	07 08 0220	S13	E55	07 12.2		A	HS	60	1	2	2
6142		SVTO	07 08 0550	S16	E54	07 12.3		A	HA	100	1	2	4
6142		RAMY	07 08 1155	S15	E49	07 12.2		A	HS	160	2	2	4
6142		HOLL	07 08 1500	S15	E49	07 12.3		A	HS	100	2	2	3
6142		PALE	07 08 1732	S15	E46	07 12.2		A	HS	150	1	2	3
6142		SVTO	07 09 0730	S16	E41	07 12.4		A	HA	110	3	2	3
6142		RAMY	07 09 1131	S15	E37	07 12.3		B	CAO	130	2	4	3
6142		HOLL	07 09 1705	S16	E36	07 12.4		A	HS	100	2	2	2
6142		PALE	07 09 1855	S14	E35	07 12.4		B	CAO	120	3	3	2
6142		LEAR	07 10 0040	S16	E30	07 12.3		A	HH	70	2	3	3
6142		SVTO	07 10 0606	S16	E27	07 12.3		A	HA	130	3	2	3
6142		RAMY	07 10 1127	S15	E24	07 12.3		B	CAO	120	5	4	3
6142		BOUL	07 10 1408	S16	E23	07 12.3		A	HA	110	1	3	3
6142		HOLL	07 10 1451	S16	E23	07 12.4		A	HA	110	2	2	3
6142		PALE	07 10 1744	S16	E20	07 12.2		B	CAI	150	15	6	3
6142		LEAR	07 11 0015	S15	E17	07 12.3		B	CHO	90	4	3	3
6142		CULG	07 11 0120	S14	E17	07 12.3		A	HA	100	3	2	3
6142		SVTO	07 11 0718	S15	E14	07 12.4		A	HS	110	1	2	2
6142		RAMY	07 11 1238	S16	E12	07 12.4		A	HA	80	1	2	3
6142		BOUL	07 11 1415	S15	E08	07 12.2		A	HA	50	3	2	4
6142		HOLL	07 11 1700	S16	E09	07 12.4		A	HA	80	10	4	3
6142		PALE	07 11 1850	S16	E09	07 12.5		A	HA	70	3	2	3
6142		LEAR	07 12 0015	S15	E05	07 12.4		A	HA	90	3	3	3
6142		SVTO	07 12 0830	S15	E00	07 12.3		A	HA	60	9	2	3
6142		RAMY	07 12 1200	S17	E00	07 12.5		B	DAO	40	7	2	1
6142		PALE	07 12 1740	S17	W03	07 12.5		A	CAO	70	7	3	2
6142		LEAR	07 13 0020	S16	W08	07 12.4		B	CSO	60	11	5	3
6142		CULG	07 13 0310	S17	W10	07 12.4		B	CSO	20	5	3	2
6142		SVTO	07 13 0748	S16	W14	07 12.3		B	CSO	30	4	3	3
6142		RAMY	07 13 1136	S17	W13	07 12.5		B	CSO	30	5	4	3
6142		HOLL	07 13 1315	S17	W16	07 12.3		B	CSO	30	5	6	3
6142		BOUL	07 13 1405	S14	W15	07 12.4		A	HS	20	1	1	3
6142		LEAR	07 14 0030	S16	W21	07 12.4		A	HS	20	3	1	2
6142		CULG	07 14 0105	S16	W20	07 12.5		A	HS	10	1	1	2
6142		SVTO	07 14 0630	S14	W27	07 12.2		B	CSO	30	2	4	2
6142		RAMY	07 14 1055	S15	W27	07 12.4		A	HS	20	2	2	3
6142		HOLL	07 14 1305	S17	W25	07 12.6		B	CAO	30	4	6	3
6142		BOUL	07 14 1435	S15	W28	07 12.5		A	HS	20	1	1	1
6142		LEAR	07 15 0040	S16	W33	07 12.5		A	HS	20	1	2	3
6142		BOUL	07 15 1415	S15	W40	07 12.6		A	HS	30	1	1	3
6142		HOLL	07 15 1502	S15	W42	07 12.4		A	HR	30	1	1	4
6142		PALE	07 15 2340	S17	W47	07 12.4		A	HR	30	1	2	2
6142		CULG	07 16 0100	S14	W47	07 12.5		A	HS	20	2	1	2
6142		LEAR	07 16 0130	S15	W48	07 12.4		A	HS	20	2	1	3
6142		SVTO	07 16 0800	S15	W51	07 12.5		A	HR	20	1	1	2
6142		RAMY	07 16 1346	S16	W53	07 12.5		A	HS	40	1	2	2
6142		HOLL	07 16 1425	S15	W55	07 12.4		A	HA	40	1	2	3
6142		BOUL	07 16 1428	S15	W54	07 12.5		A	HS	20	1	1	3
6142		PALE	07 16 1800	S16	W56	07 12.5		A	AX		1	1	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6142		CULG	07 17 0005	S14 W59	07 12.5		A	HR	20	1	1	3
6142		LEAR	07 17 0035	S15 W60	07 12.5		A	HS	20	1	1	3
6142		SVTO	07 17 0756	S13 W66	07 12.3		A	HR	20	1	1	2
6142		RAMY	07 17 1352	S15 W66	07 12.6		A	HA	30	1	1	2
6142		HOLL	07 17 1445	S14 W67	07 12.5		A	AX	10	1	1	3
6142		BOUL	07 17 1451	S15 W68	07 12.5		A	AX	10	1	1	3
6142		PALE	07 17 1745	S15 W70	07 12.4		A	AX	10	1	1	3
6142		LEAR	07 18 0025	S14 W71	07 12.6		A	AX	10	1	1	4
6142		SVTO	07 18 0608	S14 W76	07 12.5		A	AX	10	1	1	3
6142		HOLL	07 18 1415	S13 W80	07 12.5		A	AX	10	1	1	3
6145		BOUL	07 07 1432	N14 E79	07 13.6		A	HA	60	1	1	3
6145		HOLL	07 07 1615	N13 E77	07 13.5		A	HS	60	1	2	3
6145		PALE	07 07 1745	N13 E78	07 13.6		A	HS	60	1	2	3
6145		LEAR	07 08 0020	N12 E75	07 13.7		A	HS	60	1	1	3
6145		CULG	07 08 0220	N15 E74	07 13.7		A	HS	60	1	1	2
6145		SVTO	07 08 0550	N12 E74	07 13.8		A	HA	60	2	1	4
6145		RAMY	07 08 1155	N12 E69	07 13.7		A	HA	90	2	2	4
6145		HOLL	07 08 1500	N12 E67	07 13.7		A	HS	70	2	2	3
6145		PALE	07 08 1732	N13 E65	07 13.6		A	HA	70	2	2	3
6145		SVTO	07 09 0730	N12 E60	07 13.8		A	HA	80	2	2	3
6145		RAMY	07 09 1131	N13 E56	07 13.7		A	HA	70	2	2	3
6145		HOLL	07 09 1705	N12 E54	07 13.8		A	HS	70	2	2	2
6145		PALE	07 09 1855	N13 E53	07 13.8		A	HA	100	3	2	2
6145		LEAR	07 10 0040	N13 E49	07 13.7		A	HS	30	2	1	3
6145		SVTO	07 10 0606	N13 E47	07 13.8		A	HA	60	2	2	3
6145		RAMY	07 10 1127	N13 E42	07 13.6		B	CAO	70	4	3	3
6145		BOUL	07 10 1408	N13 E41	07 13.7		A	HS	40	1	1	3
6145		HOLL	07 10 1451	N13 E41	07 13.7		A	HS	80	2	2	3
6145		PALE	07 10 1744	N11 E39	07 13.7		A	HS	50	1	1	3
6145		LEAR	07 11 0015	N13 E36	07 13.7		A	HS	50	1	2	3
6145		CULG	07 11 0120	N14 E35	07 13.7		A	HS	40	1	1	3
6145		SVTO	07 11 0718	N13 E32	07 13.7		A	HS	40	1	1	2
6145		RAMY	07 11 1238	N13 E29	07 13.7		A	HS	40	1	2	3
6145		BOUL	07 11 1415	N14 E27	07 13.6		A	HS	40	1	2	4
6145		HOLL	07 11 1700	N13 E27	07 13.7		A	HS	50	3	2	3
6145		PALE	07 11 1850	N13 E26	07 13.7		A	HS	10	1	1	3
6145		LEAR	07 12 0015	N13 E23	07 13.7		A	HS	40	4	2	3
6145		SVTO	07 12 0830	N13 E19	07 13.8		A	HS	30	1	1	3
6145		RAMY	07 12 1200	N12 E16	07 13.7		A	HA	40	3	2	1
6145		PALE	07 12 1740	N15 E14	07 13.8		B	CSO	20	3	3	2
6145		LEAR	07 13 0020	N14 E11	07 13.8		B	CSO	30	5	3	3
6145		CULG	07 13 0310	N14 E07	07 13.7		A	HS	10	1	1	2
6145		SVTO	07 13 0748	N14 E05	07 13.7		A	HS	20	1	1	3
6145		RAMY	07 13 1136	N13 E03	07 13.7		A	HS	20	1	2	3
6145		HOLL	07 13 1315	N12 E05	07 13.9		B	CSO	30	6	8	3
6145		BOUL	07 13 1405	N12 E01	07 13.7		A	HA	20	1	1	3
6145		LEAR	07 14 0030	N14 W05	07 13.6		B	CSO	20	4	3	2
6145		CULG	07 14 0105	N13 W05	07 13.7		A	HS	10	2	1	2
6145		SVTO	07 14 0605	N13 W08	07 13.6		A	HS	20	1	1	2
6145		RAMY	07 14 1055	N12 W09	07 13.8		A	HA	20	2	2	3
6145		HOLL	07 14 1305	N12 W08	07 13.9		B	CAO	20	6	7	3
6145		BOUL	07 14 1435	N13 W12	07 13.7		A	AX	10	1	1	1
6145		LEAR	07 15 0040	N12 W17	07 13.7		A	AX	20	3	1	3
6145		BOUL	07 15 1415	N12 W24	07 13.8		A	AX	10	1	1	3
6145		HOLL	07 15 1502	N13 W25	07 13.7		A	AX	10	3	1	4
6145		PALE	07 15 2340	N12 W31	07 13.6		A	AX	10	3	2	2
6145		CULG	07 16 0100	N13 W31	07 13.7		A	HS	10	2	1	2
6145		LEAR	07 16 0130	N13 W31	07 13.7		A	AX	10	2	1	3
6145		SVTO	07 16 0800	N13 W34	07 13.8		B	BXO	10	3	3	2
6145		RAMY	07 16 1346	N14 W37	07 13.8		B	BXO	10	4	4	2
6145		HOLL	07 16 1425	N13 W37	07 13.8		B	BXO	20	6	4	3
6145		PALE	07 16 1800	N12 W39	07 13.8		A	AX	10	2	1	3
6145		CULG	07 17 0005	N13 W43	07 13.7		A	AX	10	2	2	3
6145		LEAR	07 17 0035	N13 W43	07 13.8		B	BXO	10	4	3	3
6145		RAMY	07 17 1352	N10 W50	07 13.8		A	AX	10	1	1	2
6145		PALE	07 17 1745	N13 W47	07 14.2		A	AX	10	3	1	3
6145A		HOLL	07 14 1305	N17 E08	07 15.1		A	AX	10	1	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6145B		RAMY	07 14 1055	S12 E17	07 15.7		B	BXO		2	3	3
6145B		HOLL	07 14 1305	S13 E17	07 15.8		B	BXO		4	3	3
6154		SVTO	07 13 0748	N19 E37	07 16.1		B	BXO	10	4	4	3
6154		RAMY	07 13 1136	N20 E34	07 16.1		B	BXO	10	6	4	3
6154		HOLL	07 13 1315	N20 E34	07 16.1		B	BXO	10	4	4	3
6154		BOUL	07 13 1405	N19 E30	07 15.9		B	BXO		2	3	3
6154		LEAR	07 14 0030	N19 E27	07 16.1		B	BXO	10	5	5	2
6154		CULG	07 14 0105	N21 E26	07 16.0		B	CRO	10	5	5	2
6154		RAMY	07 14 1055	N19 E20	07 16.0		B	CSO	20	3	3	3
6154		HOLL	07 14 1305	N19 E19	07 16.0		B	CAO	20	4	3	3
6154		BOUL	07 14 1435	N19 E15	07 15.7		A	AX		1		1
6154		LEAR	07 15 0040	N18 E12	07 15.9		B	BXO	20	8	4	3
6154		BOUL	07 15 1415	N17 E03	07 15.8		B	DAO	30	5	3	3
6154		HOLL	07 15 1502	N19 E04	07 15.9		B	CRO	20	14	5	4
6154		PALE	07 15 2340	N18 W02	07 15.8		B	CAO	30	4	5	2
6154		CULG	07 16 0100	N18 W01	07 16.0		B	CAO	30	6	5	2
6154		LEAR	07 16 0130	N18 W03	07 15.8		B	BXO	10	5	5	3
6154		SVTO	07 16 0800	N18 W08	07 15.7		A	HS	40	1	1	2
6154		RAMY	07 16 1346	N19 W09	07 15.9		B	DAO	70	7	6	2
6154		HOLL	07 16 1425	N19 W08	07 16.0		B	CAO	40	13	6	3
6154		BOUL	07 16 1428	N19 W08	07 16.0		B	DAO	40	6	5	3
6154		PALE	07 16 1800	N19 W11	07 15.9		B	CAO	30	9	6	3
6154		CULG	07 17 0005	N18 W13	07 16.0		B	DAO	30	10	6	3
6154		LEAR	07 17 0035	N19 W15	07 15.9		B	CAO	40	12	6	3
6154		SVTO	07 17 0756	N20 W18	07 15.9		B	CAO	50	7	6	2
6154		RAMY	07 17 1352	N19 W22	07 15.9		B	CAO	40	7	6	2
6154		HOLL	07 17 1445	N19 W22	07 15.9		B	CAO	60	5	6	3
6154		BOUL	07 17 1451	N19 W22	07 15.9		B	CSO	30	3	5	3
6154		PALE	07 17 1745	N19 W26	07 15.7		A	HS	20	1	1	3
6154		LEAR	07 18 0025	N19 W28	07 15.9		B	CSO	20	4	5	4
6154		SVTO	07 18 0608	N20 W34	07 15.6		A	AX	20	2	1	3
6154		RAMY	07 18 1243	N18 W36	07 15.8		A	HA	30	1	2	3
6154		HOLL	07 18 1415	N19 W38	07 15.7		A	AR	30	4	2	3
6154		BOUL	07 18 1420	N19 W36	07 15.8		A	HA	20	1	1	4
6154		PALE	07 18 1945	N19 W40	07 15.8		A	AX	10	2	1	3
6154		LEAR	07 19 0005	N19 W44	07 15.6		A	HR	20	3	1	3
6154		CULG	07 19 0135	N18 W45	07 15.6		A	HR	10	1	1	3
6154		SVTO	07 19 0605	N20 W46	07 15.7		A	AX	10	1		3
6154		RAMY	07 19 1204	N19 W48	07 15.8		A	AX	10	4	2	3
6154		HOLL	07 19 1520	N18 W51	07 15.7		A	AX	10	1		3
6154		PALE	07 19 1755	N19 W52	07 15.8		A	AX	10	1	1	3
6154		LEAR	07 20 0045	N19 W55	07 15.8		A	AX	10	1	1	3
6154		CULG	07 20 0222	N19 W59	07 15.6		A	AX		1		3
6154		RAMY	07 20 1313	N18 W62	07 15.8		A	AX	10	2	1	3
6154		HOLL	07 20 1505	N18 W62	07 15.9		A	AX		1		4
6154		PALE	07 20 1745	N20 W66	07 15.7		A	AX	10	1	1	3
6154		LEAR	07 21 0008	N18 W67	07 15.9		A	AX	20	1	1	4
6158		HOLL	07 10 1451	S17 E72	07 16.1		A	AX		1		3
6158		LEAR	07 11 0015	S18 E68	07 16.2		A	AX	10	1	1	3
6158		RAMY	07 11 1238	S18 E60	07 16.1		A	AX	10	2	1	3
6158		HOLL	07 14 1305	S20 E21	07 16.1		A	AX		3	1	3
6158		RAMY	07 16 1346	S19 W07	07 16.0		B	BXO	10	3	3	2
6156		HOLL	07 11 1700	S18 E58	07 16.1		A	AX	10	2	2	3
6149		SVTO	07 10 0606	S08 E79	07 16.2		A	AX	10	1	1	3
6149		RAMY	07 10 1127	S09 E75	07 16.1		B	CAO	30	2	2	3
6149		BOUL	07 10 1408	S08 E71	07 15.9		A	AX	20	1	1	3
6149		HOLL	07 10 1451	S08 E73	07 16.1		A	AX		1		3
6149		PALE	07 10 1744	S11 E71	07 16.1		A	AX		1		3
6149		LEAR	07 11 0015	S08 E68	07 16.1		A	AX	10	1	1	3
6149		SVTO	07 11 0718	S10 E65	07 16.2		A	X	10	1	1	2
6149		RAMY	07 11 1238	S08 E62	07 16.2		A	AX	10	1	1	3
6149		HOLL	07 11 1700	S08 E59	07 16.1		A	AX	10	2	1	3
6149		PALE	07 11 1850	S08 E59	07 16.2		A	AX		1		3
6149		LEAR	07 12 0015	S09 E56	07 16.2		A	AX	20	1	1	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6149		SVTO	07 12 0830	S10 E51	07 16.2		A	AX		1		3
6149		RAMY	07 12 1200	S09 E49	07 16.2		A	AX		1	1	1
6149		PALE	07 12 1740	S05 E45	07 16.1		B	BXO	10	5	7	2
6149		LEAR	07 13 0020	S07 E42	07 16.2		B	BXO	10	5	6	3
6149		CULG	07 13 0310	S07 E43	07 16.3		A	AX	10	3	1	2
6149		RAMY	07 13 1136	S07 E37	07 16.2		A	AX	10	4	2	3
6149		HOLL	07 13 1315	S09 E36	07 16.2		A	AX		3	2	3
6149		LEAR	07 14 0030	S09 E31	07 16.3		B	BXO	10	4	3	2
6149		SVTO	07 14 0630	S03 E32	07 16.7		B	BXO	10	4	1	2
6149		RAMY	07 14 1055	S08 E23	07 16.2		A	AX	10	2	2	3
6149		HOLL	07 14 1305	S09 E24	07 16.3		B	BXO		2	3	3
6152		PALE	07 10 1744	S21 E71	07 16.2		A	AX		1		3
6152		PALE	07 11 1850	S18 E58	07 16.2		A	AX		1		3
6152		CULG	07 16 0100	S20 E02	07 16.2		B	BXO		3	4	2
6152		RAMY	07 16 1346	S22 E02	07 16.7		A	AX	10	2	2	2
6152A		RAMY	07 16 1346	N40 E01	07 16.6		A	AX	10	4	2	2
6152B		HOLL	07 16 1425	S24 E03	07 16.8		A	AX		1		3
6152B		BOUL	07 16 1428	S23 E02	07 16.7		A	AX		1		3
6156A		SVTO	07 14 0605	S26 E35	07 17.0		A	AX		1		2
6156A		RAMY	07 14 1055	S27 E31	07 16.9		A	AX	10	3	2	3
6156A		HOLL	07 14 1305	S28 E32	07 17.0		A	AX		3	2	3
6156B		LEAR	07 15 0040	N14 E47	07 18.6		A	AX	10	1	1	3
6156C		SVTO	07 14 0630	S16 E70	07 19.6		A	AX	10	2	2	2
6160		RAMY	07 14 1055	N02 E65	07 19.3		A	AX	10	1	1	3
6160		HOLL	07 15 1502	N00 E52	07 19.5		B	BXO	10	2	4	4
6160		SVTO	07 16 0800	N02 E47	07 19.8		B	BXO		2	2	2
6160		HOLL	07 16 1425	N01 E39	07 19.5		B	BXO	10	4	3	3
6160		PALE	07 16 1800	N01 E38	07 19.6		B	BXO	10	3	3	3
6160		CULG	07 17 0005	N01 E35	07 19.6		A	AX		2	2	3
6160		LEAR	07 17 0035	N02 E33	07 19.5		B	BXO	10	4	3	3
6160		SVTO	07 17 0756	N01 E31	07 19.6		A	AX		1		2
6160		RAMY	07 17 1352	N02 E26	07 19.5		B	BXO	10	3	3	2
6160		PALE	07 17 1745	S01 E25	07 19.6		A	AX		3	1	3
6155		RAMY	07 13 1136	N12 E86	07 20.0		A	HA	60	1	1	3
6155		HOLL	07 13 1315	N12 E85	07 19.9		A	HS	50	2	2	3
6155		BOUL	07 13 1405	N12 E80	07 19.6		A	AX	10	1	2	3
6155		LEAR	07 14 0030	N11 E77	07 19.8		A	HA	60	2	1	2
6155		CULG	07 14 0105	N13 E80	07 20.1		A	HS	30	1	2	2
6155		SVTO	07 14 0605	N11 E73	07 19.7		A	HA	60	1	1	2
6155		RAMY	07 14 1055	N12 E68	07 19.6		A	HS	50	1	1	3
6155		HOLL	07 14 1305	N11 E70	07 19.8		A	HS	80	1	1	3
6155		BOUL	07 14 1435	N13 E66	07 19.6		A	HA	50	1	2	1
6155		LEAR	07 15 0040	N10 E63	07 19.8		A	HS	110	1	2	3
6155		BOUL	07 15 1415	N11 E52	07 19.5		A	HA	50	1	2	3
6155		HOLL	07 15 1502	N10 E55	07 19.7		A	HS	60	2	2	4
6155		PALE	07 15 2340	N11 E49	07 19.7		A	HS	60	2	2	2
6155		CULG	07 16 0100	N10 E50	07 19.8		A	HA	60	3	2	2
6155		LEAR	07 16 0130	N10 E50	07 19.8		A	HS	90	2	2	3
6155		SVTO	07 16 0800	N11 E46	07 19.8		A	HS	80	1	1	2
6155		RAMY	07 16 1346	N12 E44	07 19.9		B	CAO	70	6	5	2
6155		HOLL	07 16 1425	N10 E42	07 19.7		A	HA	60	2	2	3
6155		BOUL	07 16 1428	N10 E40	07 19.6		A	HA	60	1	2	3
6155		PALE	07 16 1800	N11 E40	07 19.7		A	HS	80	2	2	3
6155		CULG	07 17 0005	N10 E38	07 19.8		A	HS	50	3	2	3
6155		LEAR	07 17 0035	N11 E36	07 19.7		A	HS	70	2	2	3
6155		SVTO	07 17 0756	N11 E33	07 19.8		A	HS	70	2	2	2
6155		RAMY	07 17 1352	N12 E29	07 19.8		A	HA	70	1	2	2
6155		HOLL	07 17 1445	N11 E28	07 19.7		A	HS	70	2	2	3
6155		BOUL	07 17 1451	N12 E28	07 19.7		A	HA	50	1	2	3
6155		PALE	07 17 1745	N11 E27	07 19.8		A	HS	40	1	1	3
6155		LEAR	07 18 0025	N11 E22	07 19.7		B	CAO	40	6	3	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
6155		SVTO	07	18	0608	N10 E20	07 19.7		A	HS	30	2	1	3
6155		RAMY	07	18	1243	N13 E16	07 19.7		B	CAO	60	3	3	3
6155		HOLL	07	18	1415	N12 E15	07 19.7		B	CSO	50	5	3	3
6155		BOUL	07	18	1420	N12 E16	07 19.8		A	HA	40	3	2	4
6155		PALE	07	18	1945	N11 E13	07 19.8		A	HS	20	1	1	3
6155		LEAR	07	19	0005	N12 E11	07 19.8		A	HA	20	3	1	3
6155		CULG	07	19	0135	N12 E10	07 19.8		A	HS	20	5	4	3
6155		SVTO	07	19	0605	N12 E06	07 19.7		A	HS	40	1	1	3
6155		RAMY	07	19	1204	N11 E04	07 19.8		B	CSO	40	3	3	3
6155		HOLL	07	19	1520	N13 E03	07 19.9		B	CSO	50	4	4	3
6155		BOUL	07	19	1620	N12 E01	07 19.7		B	CAO	30	4	3	2
6155		PALE	07	19	1755	N10 W01	07 19.7		B	CSO	20	2	3	3
6155		LEAR	07	20	0045	N13 W03	07 19.8		B	CAO	20	7	4	3
6155		CULG	07	20	0222	N13 W05	07 19.7		B	CSO	20	8	4	3
6155		SVTO	07	20	0555	N12 W06	07 19.8		B	DSO	60	3	5	3
6155		RAMY	07	20	1313	N12 W11	07 19.7		B	CRO	30	6	3	3
6155		HOLL	07	20	1505	N12 W10	07 19.9		B	CSO	30	5	5	4
6155		PALE	07	20	1745	N12 W13	07 19.8		B	CAO	20	5	4	3
6155		LEAR	07	21	0008	N13 W16	07 19.8		B	BXO	60	9	5	4
6155		CULG	07	21	0025	N13 W16	07 19.8		B	CRO	10	7	4	4
6155		SVTO	07	21	0705	N13 W20	07 19.8		B	CRO	30	4	3	4
6155		RAMY	07	21	1256	N12 W22	07 19.9		B	CAO	50	3	4	3
6155		HOLL	07	21	1540	N13 W25	07 19.8		B	BXO	10	2	3	3
6155		PALE	07	21	1930	N12 W27	07 19.8		B	CRO	20	3	3	3
6155		LEAR	07	22	0015	N12 W30	07 19.7		A	AX	10	1	1	4
6155		CULG	07	22	0043	N10 W32	07 19.6		A	AX	10	1	1	2
6155		SVTO	07	22	0745	N11 W35	07 19.7		A	AX	10	1	1	4
6155		RAMY	07	22	1124	N11 W38	07 19.6		A	HA	10	1	1	3
6155		PALE	07	22	1725	N11 W40	07 19.7		A	HA	10	1	1	4
6155		HOLL	07	22	1725	N11 W40	07 19.7		A	HS	30	2	1	3
6155		LEAR	07	23	0145	N11 W45	07 19.7		A	AX	10	2	1	2
6155		SVTO	07	23	0750	N09 W48	07 19.7		A	AX	10	1	1	3
6155		RAMY	07	23	1113	N11 W51	07 19.6		A	HA	10	1	1	3
6155		BOUL	07	23	1449	N11 W50	07 19.8		A	AX	10	1	1	1
6155		HOLL	07	23	1545	N12 W53	07 19.7		A	AX	10	2	1	3
6155		PALE	07	23	1825	N11 W55	07 19.6		A	AX	10	1	1	3
6155		LEAR	07	24	0035	N11 W58	07 19.7		A	AX	10	1	1	4
6155		CULG	07	24	0045	N11 W58	07 19.7		A	AX	10	1	1	2
6155		SVTO	07	24	0505	N10 W60	07 19.7		A	AX	10	1	1	4
6155		PALE	07	24	1830	N10 W69	07 19.6		A	AX	10	1	1	3
6165		LEAR	07	21	0008	N23 W12	07 20.1		B	BXO	30	3	3	4
6165		CULG	07	21	0025	N22 W13	07 20.0		A	AX	10	2	1	4
6165		SVTO	07	21	0705	N23 W16	07 20.1		B	BXO	10	4	3	4
6165		RAMY	07	21	1256	N22 W18	07 20.1		B	BXO	10	4	3	3
6165		HOLL	07	21	1540	N22 W20	07 20.1		B	BXO	10	3	3	3
6165		PALE	07	21	1930	N21 W22	07 20.1		B	BXO	10	3	2	3
6165		LEAR	07	22	0015	N22 W24	07 20.2		B	BXO	30	5	3	4
6165		CULG	07	22	0043	N21 W27	07 19.9		A	AX	10	2	1	2
6170		RAMY	07	20	1313	S15 E02	07 20.7		A	AX	10	1	1	3
6170		HOLL	07	20	1505	S15 E00	07 20.6		A	AX	10	1	1	4
6170		RAMY	07	21	1256	S15 W12	07 20.6		A	AX	10	1	1	3
6170		PALE	07	21	1930	S17 W18	07 20.4		A	AX	10	1	1	3
6170		LEAR	07	22	0015	S16 W22	07 20.3		B	BXO	30	4	3	4
6170		CULG	07	22	0043	S17 W23	07 20.3		A	AX	10	2	3	2
6170		SVTO	07	22	0745	S15 W27	07 20.3		B	BXO	10	3	5	4
6170		RAMY	07	22	1124	S15 W30	07 20.2		B	BXO	10	3	7	3
6170		HOLL	07	22	1725	S15 W33	07 20.2		A	AX	10	1	1	3
6170		PALE	07	22	1725	S16 W32	07 20.3		B	BXO	10	2	4	4
6170		LEAR	07	23	0145	S15 W37	07 20.3		B	BXO	10	5	3	2
6170		SVTO	07	23	0750	S17 W40	07 20.3		B	BXO	10	3	3	3
6170		RAMY	07	23	1113	S16 W43	07 20.2		B	CRO	20	2	3	3
6170		BOUL	07	23	1449	S15 W44	07 20.3		A	AX	10	1	1	1
6170		HOLL	07	23	1545	S16 W45	07 20.2		B	BXO	20	3	3	3
6170		PALE	07	23	1825	S16 W48	07 20.1		A	AX	10	1	1	3
6170		LEAR	07	24	0035	S15 W52	07 20.1		A	AX	10	1	1	4
6170		CULG	07	24	0045	S16 W51	07 20.2		A	AX	10	1	1	2
6170		SVTO	07	24	0505	S16 W54	07 20.1		A	AX	10	1	1	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6170		HOLL	07	24	1435	S13	W60	07	20.1		A	AX	20	2	2	3
6170		BOUL	07	24	1510	S16	W60	07	20.1		B	BXO	60	4	1	1
6170		RAMY	07	24	1518	S15	W58	07	20.2		B	BXO	20	3	2	1
6170		PALE	07	24	1830	S17	W60	07	20.2		B	BXO	20	4	3	3
6170		LEAR	07	25	0105	S16	W64	07	20.2		B	BXO	30	3	4	3
6170		CULG	07	25	0110	S16	W64	07	20.2		A	AX		3	1	3
6170		SVTO	07	25	0759	S15	W70	07	20.0		A	AX	20	1	1	2
6170		RAMY	07	25	1245	S15	W70	07	20.2		A	AX	10	1	1	3
6170		HOLL	07	25	1450	S15	W69	07	20.4		A	AX		1		4
6176		HOLL	07	24	1435	S17	W36	07	21.9		B	BX	30	9	5	3
6176		RAMY	07	24	1518	S19	W37	07	21.8		B	BXO	20	4	5	1
6176		PALE	07	24	1830	S19	W38	07	21.9		B	BXO	20	5	4	3
6176		LEAR	07	25	0105	S18	W44	07	21.7		B	CAO	20	7	6	3
6176		CULG	07	25	0110	S18	W42	07	21.8		B	CAO	10	10	5	3
6176		SVTO	07	25	0759	S19	W45	07	21.9		B	DAO	80	8	7	2
6176		RAMY	07	25	1245	S19	W49	07	21.8		B	DAO	110	11	6	3
6176		HOLL	07	25	1450	S19	W49	07	21.9		B	CAO	100	9	6	4
6176		BOUL	07	25	1500	S18	W49	07	21.9		B	DAO	80	10	7	2
6176		PALE	07	25	1937	S19	W53	07	21.8		B	DAO	140	17	7	3
6176		LEAR	07	26	0030	S18	W55	07	21.8		B	DKO	190	3	9	2
6176		SVTO	07	26	0740	S19	W62	07	21.6		B	DSO	170	7	10	2
6176		RAMY	07	26	1205	S18	W62	07	21.8		B	DAO	140	8	8	3
6176		HOLL	07	26	1440	S18	W63	07	21.8		B	EAO	240	12	12	4
6176		BOUL	07	26	1440	S18	W65	07	21.7		B	DKO	160	6	9	4
6176		LEAR	07	27	0030	S18	W68	07	21.8		B	DAO	340	4	9	2
6176		SVTO	07	27	0720	S18	W73	07	21.7		B	DAO	180	8	9	3
6176		HOLL	07	27	1420	S18	W75	07	21.9		B	DSO	180	4	10	3
6176		BOUL	07	27	1455	S18	W76	07	21.8		B	DAO	150	2	10	3
6176		RAMY	07	27	1515	S18	W77	07	21.8		B	DAO	190	3	9	2
6176		LEAR	07	28	0030	S17	W78	07	22.1		A	HS	120	1	2	3
6176		CULG	07	28	0117	S20	W80	07	21.9		A	HA	20	1	3	3
6176A		CULG	07	21	0025	N22	E17	07	22.3		A	AX	10	2	1	4
6166		LEAR	07	21	0008	N12	E20	07	22.5		B	BXO	20	3	4	4
6166		CULG	07	21	0025	N12	E20	07	22.5		A	AX	10	3	3	4
6166		SVTO	07	21	0705	N11	E16	07	22.5		B	BXO	10	3	4	4
6166		RAMY	07	21	1256	N10	E12	07	22.4		B	CRO	20	5	4	3
6166		HOLL	07	21	1540	N11	E12	07	22.5		B	BXO	10	4	3	3
6166		PALE	07	21	1930	N10	E08	07	22.4		B	BXO	10	3	3	3
6166		LEAR	07	22	0015	N10	E07	07	22.5		B	BXO	40	8	4	4
6166		CULG	07	22	0043	N11	E05	07	22.4		B	BXO	10	4	3	2
6166		SVTO	07	22	0745	N10	E01	07	22.4		B	BXO	10	4	4	4
6166		RAMY	07	22	1124	N10	W02	07	22.3		B	CAO	20	6	6	3
6166		PALE	07	22	1725	N10	W04	07	22.4		B	BXO	10	7	6	4
6166		HOLL	07	22	1725	N11	W03	07	22.5		B	BXO	20	10	7	3
6166		CULG	07	23	0100	N10	W08	07	22.4		B	BXO		6	6	2
6166		LEAR	07	23	0145	N11	W08	07	22.5		B	BXO	10	5	5	2
6166		RAMY	07	23	1113	N11	W13	07	22.5		B	BXO	10	5	3	3
6173		PALE	07	22	1725	N17	W01	07	22.6		A	AX		2	2	4
6173		HOLL	07	22	1725	N17	W02	07	22.6		A	AX		2	2	3
6173		LEAR	07	23	0145	N19	W08	07	22.5		B	BXO	10	5	7	2
6173		RAMY	07	23	1113	N21	W17	07	22.2		B	CAO	20	4	3	3
6173		HOLL	07	23	1545	N21	W18	07	22.3		B	BXO	10	6	3	3
6173		PALE	07	23	1825	N21	W21	07	22.1		B	CRO	30	7	3	3
6173		LEAR	07	24	0035	N21	W23	07	22.3		B	BXO	10	7	3	4
6173		CULG	07	24	0045	N21	W23	07	22.3		B	CRO	10	7	3	2
6173		HOLL	07	24	1435	N22	W32	07	22.1		A	AX	10	1		3
6173		RAMY	07	24	1518	N20	W31	07	22.3		A	AX	10	1	1	1
6173		PALE	07	24	1830	N20	W34	07	22.2		A	AX		1		3
6173		RAMY	07	25	1245	N23	W43	07	22.2		A	AX	10	1	1	3
6173		HOLL	07	25	1450	N24	W43	07	22.3		A	AX		1		4
6163		RAMY	07	20	1313	N23	E33	07	23.1		B	BXO	20	5	5	3
6163		HOLL	07	20	1505	N22	E35	07	23.3		B	BXO	10	9	10	4
6163		PALE	07	20	1745	N22	E31	07	23.1		B	CRO	30	7	5	3
6163		LEAR	07	21	0008	N23	E27	07	23.1		B	BXO	40	6	5	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected		Long. Extent (Deg)	Qual
			Mo	Day							Area (10-6)	Hemi			Spot Count
6163		CULG	07	21	0025	N24 E26	07 23.0		B	BXO	10	5	5	4
6163		SVTO	07	21	0705	N23 E23	07 23.1		B	BXO	20	6	5	4
6163		RAMY	07	21	1256	N22 E20	07 23.1		B	CRO	20	10	5	3
6163		HOLL	07	21	1540	N23 E18	07 23.0		B	BXO	20	12	5	3
6163		PALE	07	21	1930	N22 E15	07 23.0		B	CRO	20	11	5	3
6163		LEAR	07	22	0015	N23 E13	07 23.0		B	CRO	50	8	4	4
6163		CULG	07	22	0043	N23 E11	07 22.9		B	BXO	10	6	5	2
6163		SVTO	07	22	0745	N23 E10	07 23.1		B	CRO	20	4	4	4
6163		RAMY	07	22	1124	N22 E07	07 23.0		B	DAO	30	4	5	3
6163		HOLL	07	22	1725	N23 E03	07 22.9		B	DAO	30	5	5	3
6163		PALE	07	22	1725	N23 E04	07 23.0		B	DAO	40	5	4	4
6163		CULG	07	23	0100	N23 E00	07 23.0		B	DAO	30	7	4	2
6163		LEAR	07	23	0145	N23 W01	07 23.0		B	DAO	40	5	4	2
6163		SVTO	07	23	0750	N22 W04	07 23.0		B	DSO	40	6	4	3
6163		RAMY	07	23	1113	N22 W07	07 22.9		B	DAO	70	6	5	3
6163		BOUL	07	23	1449	N23 W07	07 23.1		B	BXO	20	2	3	1
6163		HOLL	07	23	1545	N23 W07	07 23.1		B	BXO	30	9	4	3
6163		PALE	07	23	1825	N23 W10	07 23.0		B	BXO	20	5	4	3
6163		LEAR	07	24	0035	N23 W13	07 23.0		B	CRO	20	4	3	4
6163		CULG	07	24	0045	N23 W13	07 23.0		B	CAO	10	4	3	2
6163		SVTO	07	24	0505	N23 W16	07 23.0		B	BXO	10	2	4	4
6163		HOLL	07	24	1435	N23 W20	07 23.1		B	BX	20	3	3	3
6163		BOUL	07	24	1510	N23 W20	07 23.1		B	BXO	10	2	3	1
6163		RAMY	07	24	1518	N22 W20	07 23.1		B	BXO	20	3	3	1
6163		PALE	07	24	1830	N22 W22	07 23.1		B	BXO	10	2	3	3
6163		LEAR	07	25	0105	N22 W28	07 22.9		A	AX	10	1	1	3
6163		CULG	07	25	0110	N23 W28	07 22.9		A	AX		1		3
6163		SVTO	07	25	0759	N22 W32	07 22.9		A	HR	10	1	1	2
6163		RAMY	07	25	1245	N22 W33	07 23.0		A	AX	10	1	1	3
6163		BOUL	07	25	1500	N23 W34	07 23.0		A	AX		1		2
6163		PALE	07	25	1937	N23 W37	07 23.0		A	AX		1	1	3
6169		RAMY	07	21	1256	S14 E23	07 23.3		B	DRO	10	6	3	3
6169		HOLL	07	21	1540	S14 E23	07 23.4		B	BXO	10	7	3	3
6169		PALE	07	21	1930	S14 E19	07 23.2		B	DSO	20	3	3	3
6169		LEAR	07	22	0015	S14 E17	07 23.3		B	BXO	40	7	4	4
6169		CULG	07	22	0043	S14 E17	07 23.3		B	BXO	10	2	4	2
6169		SVTO	07	22	0745	S14 E13	07 23.3		B	BXO	10	2	4	4
6169		RAMY	07	22	1124	S16 E10	07 23.2		B	CRO	20	2	4	3
6169		HOLL	07	22	1725	S14 E07	07 23.2		B	CRO	10	3	6	3
6169		PALE	07	22	1725	S16 E05	07 23.1		A	HR	10	2	1	4
6169		CULG	07	23	0100	S15 E00	07 23.0					1		2
6169		LEAR	07	23	0145	S15 W01	07 23.0		A	AX	10	1	1	2
6169		SVTO	07	23	0750	S16 W03	07 23.1		A	AX	10	1	1	3
6169		RAMY	07	23	1113	S15 W06	07 23.0		A	HR	10	1	1	3
6169		BOUL	07	23	1449	S14 W07	07 23.1		A	AX	10	1		1
6169		HOLL	07	23	1545	S15 W08	07 23.0		A	AX		2	1	3
6169		PALE	07	23	1825	S15 W10	07 23.0		A	AX	10	1	1	3
6169		LEAR	07	24	0035	S15 W14	07 23.0		A	AX	10	1	1	4
6169		CULG	07	24	0045	S15 W13	07 23.0		A	AX		1		2
6169		SVTO	07	24	0505	S14 W16	07 23.0		A	AX	10	1	1	4
6169		HOLL	07	24	1435	S14 W23	07 22.9		A	AX	10	1		3
6169		BOUL	07	24	1510	S15 W21	07 23.0		A	AX		1		1
6169		RAMY	07	24	1518	S16 W21	07 23.0		A	AX	10	1	1	1
6169		PALE	07	24	1830	S16 W23	07 23.0		A	AX		1		3
6169		LEAR	07	25	0105	S16 W29	07 22.8		A	AX	10	1	1	3
6169		CULG	07	25	0110	S15 W27	07 23.0		A	AX		1		3
6169		SVTO	07	25	0759	S16 W32	07 22.9		A	AX		1		2
6169		RAMY	07	25	1245	S15 W34	07 22.9		A	AX	10	1	1	3
6169		HOLL	07	25	1450	S15 W35	07 23.0		A	AX		1		4
6169		BOUL	07	25	1500	S15 W35	07 23.0		A	AX		1		2
6169		PALE	07	25	1937	S16 W38	07 22.9		A	AX		1	1	3
6161		RAMY	07	16	1346	S29 E84	07 23.1		A	HA	60	1	3	2
6161		PALE	07	16	1800	S28 E79	07 22.9		A	HA	50	2	2	3
6161		CULG	07	17	0005	S28 E77	07 23.0		A	HA	100	1	2	3
6161		LEAR	07	17	0035	S27 E71	07 22.5		B	CAO	70	3	4	3
6161		SVTO	07	17	0756	S28 E70	07 22.8		A	HS	90	1	1	2
6161		RAMY	07	17	1352	S28 E73	07 23.3				230	0	13	2

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JULY 1990

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
6161		HOLL	07 17 1445	S28	E70	07 23.1		B	EAI	190	16	11	3
6161		BOUL	07 17 1451	S27	E72	07 23.2		B	EAO	230	5	14	3
6161		PALE	07 17 1745	S28	E73	07 23.4		B	EAO	140	7	13	3
6161		LEAR	07 18 0025	S28	E64	07 23.0		B	EAI	280	17	11	4
6161		SVTO	07 18 0608	S28	E63	07 23.2		B	EAI	310	26	13	3
6161		RAMY	07 18 1243	S28	E60	07 23.2		B	EAI	660	23	12	3
6161		HOLL	07 18 1415	S27	E58	07 23.1		B	FKI	570	24	16	3
6161		BOUL	07 18 1420	S27	E59	07 23.2		B	EKI	500	12	12	4
6161		PALE	07 18 1945	S28	E57	07 23.3		BG	EKI	560	20	14	3
6161		LEAR	07 19 0005	S28	E53	07 23.1		BD	EKI	400	29	13	3
6161		CULG	07 19 0135	S26	E55	07 23.3		BD	EKI	400	19	14	3
6161		SVTO	07 19 0605	S28	E51	07 23.2			EAI	540	25	12	3
6161		RAMY	07 19 1204	S28	E48	07 23.2		B	EAI	710	21	12	3
6161		HOLL	07 19 1520	S28	E45	07 23.1		B	EKI	700	29	14	3
6161		BOUL	07 19 1620	S27	E43	07 23.0		B	EKI	530	11	14	2
6161		PALE	07 19 1755	S28	E45	07 23.3		B	EKI	620	26	13	3
6161		LEAR	07 20 0045	S27	E41	07 23.2		B	EKO	670	14	13	3
6161		CULG	07 20 0222	S28	E38	07 23.1		B	EKO	490	33	14	3
6161		SVTO	07 20 0555	S27	E36	07 23.0		B	EKI	770	18	14	3
6161		RAMY	07 20 1313	S27	E35	07 23.3		B	EKI	740	19	13	3
6161		HOLL	07 20 1505	S27	E33	07 23.2		B	EKI	750	30	14	4
6161		PALE	07 20 1745	S28	E30	07 23.1		B	EKI	750	26	14	3
6161		LEAR	07 21 0008	S26	E27	07 23.1		B	EKO	830	23	15	4
6161		CULG	07 21 0025	S27	E29	07 23.3		B	FKO	590	26	16	4
6161		SVTO	07 21 0705	S27	E25	07 23.2		B	FKO	780	24	16	4
6161		RAMY	07 21 1256	S28	E22	07 23.2		BG	FKO	830	19	16	3
6161		HOLL	07 21 1540	S27	E20	07 23.2		B	EHO	650	20	15	3
6161		PALE	07 21 1930	S28	E17	07 23.1		B	EKO	730	17	15	3
6161		LEAR	07 22 0015	S27	E15	07 23.2		B	EKO	700	21	15	4
6161		CULG	07 22 0043	S27	E15	07 23.2		B	FKO	650	15	17	2
6161		SVTO	07 22 0745	S27	E12	07 23.2		B	FKO	800	19	16	4
6161		RAMY	07 22 1124	S28	E09	07 23.2		B	FKO	800	16	15	3
6161		HOLL	07 22 1725	S28	E06	07 23.2		B	FKO	590	27	16	3
6161		PALE	07 22 1725	S28	E07	07 23.3		B	EKO	620	22	15	4
6161		CULG	07 23 0100	S28	E02	07 23.2		B	FKO	650	14	15	2
6161		LEAR	07 23 0145	S28	E01	07 23.1		B	EHO	500	15	14	2
6161		SVTO	07 23 0750	S29	E01	07 23.4		B	EKO	650	12	14	3
6161		RAMY	07 23 1113	S28	E02	07 23.6		B	EKO	720	16	13	3
6161		BOUL	07 23 1449	S27	W04	07 23.3		B	FKO	470	14	15	1
6161		HOLL	07 23 1545	S28	W06	07 23.2		B	EKO	570	24	15	3
6161		PALE	07 23 1825	S28	W06	07 23.3		B	EKO	610	17	15	3
6161		LEAR	07 24 0035	S28	W11	07 23.2		B	EHO	470	15	14	4
6161		CULG	07 24 0045	S28	W09	07 23.3		B	EKO	590	18	14	2
6161		SVTO	07 24 0505	S27	W11	07 23.3		B	EHO	490	10	12	4
6161		HOLL	07 24 1435	S27	W19	07 23.1		B	EHO	300	15	13	3
6161		BOUL	07 24 1510	S25	W22	07 22.9		B	EKO	290	7	11	1
6161		RAMY	07 24 1518	S29	W18	07 23.2		B	EKO	470	5	14	1
6161		PALE	07 24 1830	S29	W18	07 23.3		B	EHO	500	9	13	3
6161		LEAR	07 25 0105	S28	W24	07 23.2		B	EHO	490	11	14	3
6161		CULG	07 25 0110	S28	W22	07 23.3		B	EKO	720	12	14	3
6161		SVTO	07 25 0759	S28	W27	07 23.2		B	EKO	550	14	14	2
6161		RAMY	07 25 1245	S29	W29	07 23.2		B	EKO	490	11	13	3
6161		HOLL	07 25 1450	S28	W29	07 23.3		B	EHO	390	15	13	4
6161		BOUL	07 25 1500	S25	W30	07 23.3		B	EKO	470	11	14	2
6161		PALE	07 25 1937	S28	W31	07 23.4		B	EKO	460	15	14	3
6161		LEAR	07 26 0030	S27	W36	07 23.2		B	EKO	400	3	13	2
6161		SVTO	07 26 0740	S28	W41	07 23.1		B	EKO	370	2	13	2
6161		RAMY	07 26 1205	S28	W42	07 23.2		B	EKO	490	10	13	3
6161		HOLL	07 26 1440	S27	W45	07 23.1		B	EHO	450	12	13	4
6161		BOUL	07 26 1440	S28	W45	07 23.1		B	EKO	410	5	12	4
6161		LEAR	07 27 0030	S27	W53	07 22.9		A	HK	350	1	5	2
6161		SVTO	07 27 0720	S27	W52	07 23.2		B	CKO	260	7	12	3
6161		HOLL	07 27 1420	S28	W61	07 22.8		A	HH	360	1	4	3
6161		BOUL	07 27 1455	S27	W60	07 22.9		A	HK	400	8	5	3
6161		RAMY	07 27 1515	S27	W56	07 23.3		B	CKO	230	8	11	2
6161		LEAR	07 28 0030	S26	W65	07 23.0		B	DKO	250	2	5	3
6161		CULG	07 28 0117	S30	W70	07 22.5		A	HA	270	2	9	3
6161		SVTO	07 28 0705	S27	W69	07 22.9		B	CAO	210	4	6	3
6161		RAMY	07 28 1128	S22	W69	07 23.2		B	CKO	310	8	14	3

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
6161		BOUL	07 28	1410	S27	W79	07 22.4		A	HA	190	4	4	4
6161		HOLL	07 28	1600	S27	W72	07 23.0		A	HA	190	4	4	2
6161		PALE	07 28	1815	S28	W77	07 22.7		A	HA	300	3	4	4
6161		CULG	07 29	0105	S30	W85	07 22.4		A	HS	60	1	4	3
6161		LEAR	07 29	0110	S26	W76	07 23.1		B	CSO	120	3	4	3
6161		SVTO	07 29	0625	S28	W85	07 22.6		A	HA	150	1	7	4
6161A		PALE	07 24	1830	S34	W08	07 24.1		A	AX		1		3
6161A		CULG	07 25	0110	S34	W13	07 24.0		A	AX		1		3
6162		SVTO	07 18	0608	N09	E89	07 24.9		A	HS	50	1	2	3
6162		RAMY	07 18	1243	N10	E80	07 24.5		A	HK	130	1	3	3
6162		HOLL	07 18	1415	N10	E80	07 24.6		A	HS	60	1	2	3
6162		BOUL	07 18	1420	N10	E79	07 24.5		A	HA	90	1	3	4
6162		PALE	07 18	1945	N09	E79	07 24.7		A	HA	170	1	1	3
6162		LEAR	07 19	0005	N09	E78	07 24.8		A	HS	120	2	3	3
6162		CULG	07 19	0135	N12	E78	07 24.9		A	HA	90	3	3	3
6162		SVTO	07 19	0605	N09	E74	07 24.8		A	HS	190	1	3	3
6162		RAMY	07 19	1204	N10	E74	07 25.1		BG	DKO	300	10	10	4
6162		HOLL	07 19	1520	N11	E72	07 25.0		B	EHO	450	7	15	3
6162		BOUL	07 19	1620	N10	E68	07 24.8		B	EKO	180	4	13	2
6162		PALE	07 19	1755	N09	E74	07 25.3		B	EKO	320	5	14	3
6162		LEAR	07 20	0045	N11	E66	07 25.0		B	EAO	290	11	15	3
6162		CULG	07 20	0222	N11	E67	07 25.1		B	FKO	220	14	18	3
6162		SVTO	07 20	0555	N11	E63	07 25.0		B	FKO	320	19	20	3
6162		RAMY	07 20	1313	N10	E61	07 25.1		BG	FKO	270	23	16	3
6162		HOLL	07 20	1505	N10	E60	07 25.1		B	FKI	310	25	16	4
6162		PALE	07 20	1745	N09	E58	07 25.1		B	FKI	370	21	16	3
6162		LEAR	07 21	0008	N11	E55	07 25.1		B	FKI	630	36	17	4
6162		CULG	07 21	0025	N13	E56	07 25.2		B	FKO	230	27	19	4
6162		SVTO	07 21	0705	N11	E52	07 25.2		B	FKI	480	28	18	4
6162		RAMY	07 21	1256	N10	E49	07 25.2		BG	FKO	540	35	19	3
6162		HOLL	07 21	1540	N11	E47	07 25.2		B	FKI	430	38	20	3
6162		PALE	07 21	1930	N11	E42	07 25.0		B	FKI	530	28	17	3
6162		LEAR	07 22	0015	N10	E41	07 25.1		B	FKI	660	42	18	4
6162		CULG	07 22	0043	N13	E41	07 25.1		B	FKI	490	26	18	2
6162		SVTO	07 22	0745	N11	E37	07 25.1		B	FKI	580	22	17	4
6162		RAMY	07 22	1124	N10	E31	07 24.8		B	FKO	670	36	16	3
6162		HOLL	07 22	1725	N11	E31	07 25.0		BG	FKI	530	38	17	3
6162		PALE	07 22	1725	N11	E32	07 25.1		B	FKI	530	32	17	4
6162		CULG	07 23	0100	N11	E27	07 25.1		B	FKI	490	35	18	2
6162		LEAR	07 23	0145	N11	E27	07 25.1		B	FKI	470	32	18	2
6162		SVTO	07 23	0750	N10	E22	07 25.0		BG	FKI	620	27	17	3
6162		RAMY	07 23	1113	N10	E21	07 25.0		B	FKI	650	35	18	3
6162		BOUL	07 23	1449	N10	E19	07 25.0		B	FKI	400	39	17	1
6162		HOLL	07 23	1545	N11	E19	07 25.1		BG	FKI	600	68	19	3
6162		PALE	07 23	1825	N11	E16	07 25.0		BG	FKI	490	40	19	3
6162		LEAR	07 24	0035	N10	E14	07 25.1		B	FKI	560	51	18	4
6162		CULG	07 24	0045	N11	E14	07 25.1		BG	FKI	630	53	19	2
6162		SVTO	07 24	0505	N11	E11	07 25.0		BG	FKI	640	35	20	4
6162		HOLL	07 24	1435	N10	E05	07 25.0		BG	EKI	1100	68	11	3
6162		BOUL	07 24	1510	N10	E07	07 25.1		B	FKO	480	23	16	1
6162		RAMY	07 24	1518	N10	E05	07 25.0		BG	FKI	1210	33	18	1
6162		PALE	07 24	1830	N11	E05	07 25.1		BG	FKI	970	67	19	3
6162		LEAR	07 25	0105	N10	W01	07 25.0		BG	FKI	800	45	21	3
6162		CULG	07 25	0110	N11	E00	07 25.0		BG	FKI	920	73	20	3
6162		SVTO	07 25	0759	N10	W04	07 25.0		B	FKI	880	56	18	2
6162		RAMY	07 25	1245	N11	W08	07 24.9		BG	FKI	1100	58	20	3
6162		HOLL	07 25	1450	N11	W07	07 25.1		BG	FKI	830	56	18	4
6162		BOUL	07 25	1500	N10	W08	07 25.0		BGD	FKO	650	26	17	2
6162		PALE	07 25	1937	N11	W09	07 25.1		BG	FKI	900	56	20	3
6162		LEAR	07 26	0030	N10	W14	07 25.0		BG	FKI	790	22	18	2
6162		SVTO	07 26	0740	N10	W19	07 24.9		BGD	FKI	700	36	17	2
6162		RAMY	07 26	1205	N11	W20	07 25.0		BG	FKI	790	37	18	3
6162		HOLL	07 26	1440	N10	W21	07 25.0		BG	FKI	770	81	17	4
6162		BOUL	07 26	1440	N13	W21	07 25.0		B	EKO	550	30	16	4
6162		LEAR	07 27	0030	N10	W26	07 25.1		BG	FKI	750	33	17	2
6162		SVTO	07 27	0720	N10	W29	07 25.1		BGD	FKI	670	45	20	3
6162		HOLL	07 27	1420	N10	W35	07 25.0		BG	FKO	640	43	20	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
6162		BOUL	07	27	1455	N09 W35	07 25.0		BG	FKI	760	36	16	3
6162		RAMY	07	27	1515	N11 W34	07 25.1		BG	FKI	660	27	19	2
6162		LEAR	07	28	0030	N10 W38	07 25.2		B	FKO	530	18	20	3
6162		CULG	07	28	0117	N10 W40	07 25.0		BG	F I	440	14	21	3
6162		SVTO	07	28	0705	N10 W40	07 25.3		BG	FKO	560	11	19	3
6162		RAMY	07	28	1128	N11 W45	07 25.1		BG	FKO	590	12	17	3
6162		BOUL	07	28	1410	N13 W47	07 25.0		B	FHI	470	11	18	4
6162		HOLL	07	28	1600	N11 W47	07 25.1		B	FKO	570	17	21	2
6162		PALE	07	28	1815	N10 W49	07 25.1		B	FHO	530	14	17	4
6162		CULG	07	29	0105	N09 W55	07 24.9		BG	FKO	480	10	22	3
6162		LEAR	07	29	0110	N11 W52	07 25.1		B	FHO	430	15	19	3
6162		SVTO	07	29	0625	N11 W54	07 25.2		B	CKO	540	8	17	4
6162		RAMY	07	29	1231	N11 W58	07 25.1		BG	FKO	610	14	19	3
6162		BOUL	07	29	1420	N12 W60	07 25.1		B	FHO	410	4	18	4
6162		HOLL	07	29	1440	N12 W63	07 24.9		BG	FHO	540	6	16	3
6162		PALE	07	29	1720	N11 W62	07 25.0		B	CKO	480	9	15	3
6162		LEAR	07	30	0105	N11 W65	07 25.1		B	EHO	290	7	15	3
6162		RAMY	07	30	1215	N11 W71	07 25.2		BG	FKO	700	10	16	3
6162		BOUL	07	30	1450	N09 W79	07 24.7		A	HK	330	1	3	3
6162		HOLL	07	30	1550	N10 W84	07 24.3		A	HK	300	1	3	2
6162		PALE	07	30	1740	N09 W85	07 24.3		A	HK	120	1	3	3
6162		CULG	07	31	0210	N11 W83	07 24.8		A	HK	300	1	3	2
6162A		SVTO	07	19	0605	N11 E88	07 25.9		A	HS	50	1	4	3
6162A		RAMY	07	19	1204	N11 E79	07 25.4		B	CAO	70	5	4	3
6162B		HOLL	07	23	1545	S18 E29	07 25.9		A	AX	10	2	1	3
6162B		HOLL	07	24	1435	S19 E16	07 25.8		A	AX	10	1		3
6167		LEAR	07	21	0008	N27 E61	07 25.7		A	AX	20	1	1	4
6167		RAMY	07	21	1256	N28 E57	07 26.0		A	AX	10	3	2	3
6167		HOLL	07	21	1540	N27 E54	07 25.9		A	AX		1		3
6167		LEAR	07	22	0015	N27 E49	07 25.8		B	BXO	30	4	3	4
6167		SVTO	07	22	0745	N27 E47	07 26.0		B	BXO	10	4	3	4
6167		RAMY	07	22	1124	N27 E42	07 25.7		B	BXO	10	5	4	3
6167		HOLL	07	22	1725	N27 E40	07 25.8		B	CSO	40	6	5	3
6167		PALE	07	22	1725	N28 E41	07 25.9		B	DAO	30	7	4	4
6167		CULG	07	23	0100	N27 E37	07 25.9		B	DAO	40	13	6	2
6167		LEAR	07	23	0145	N28 E35	07 25.8		B	CAO	30	9	6	2
6167		SVTO	07	23	0750	N28 E33	07 25.9		B	CSO	30	8	5	3
6167		RAMY	07	23	1113	N28 E30	07 25.8		B	DAO	90	13	8	3
6167		BOUL	07	23	1449	N27 E27	07 25.7		B	BXO	40	11	6	1
6167		HOLL	07	23	1545	N27 E28	07 25.8		B	DAI	40	18	7	3
6167		PALE	07	23	1825	N27 E26	07 25.8		B	DRO	50	16	6	3
6167		LEAR	07	24	0035	N28 E23	07 25.8		B	CAO	60	17	7	4
6167		CULG	07	24	0045	N27 E23	07 25.8		B	DAO	60	14	7	2
6167		SVTO	07	24	0505	N28 E20	07 25.8		B	CSO	50	13	8	4
6167		HOLL	07	24	1435	N27 E16	07 25.8		B	CSO	60	12	8	3
6167		BOUL	07	24	1510	N26 E15	07 25.8		B	CAO	50	3	3	1
6167		RAMY	07	24	1518	N26 E16	07 25.9		B	CAO	80	8	8	1
6167		PALE	07	24	1830	N28 E14	07 25.9		B	CAO	70	10	9	3
6167		LEAR	07	25	0105	N27 E09	07 25.7		B	CSO	50	7	9	3
6167		CULG	07	25	0110	N27 E10	07 25.8		B	DAO	80	15	8	3
6167		SVTO	07	25	0759	N28 E04	07 25.6		B	DAO	80	8	8	2
6167		RAMY	07	25	1245	N27 E03	07 25.8		B	DSO	100	12	9	3
6167		HOLL	07	25	1450	N27 E02	07 25.8		B	CSO	60	14	9	4
6167		BOUL	07	25	1500	N27 E02	07 25.8		B	CAO	50	4	8	2
6167		PALE	07	25	1937	N27 E01	07 25.9		B	DSO	90	13	10	3
6167		LEAR	07	26	0030	N27 W05	07 25.6		B	DSO	100	5	7	2
6167		SVTO	07	26	0740	N26 W09	07 25.6		B	CSO	50	9	8	2
6167		RAMY	07	26	1205	N27 W10	07 25.7		B	DSO	50	14	9	3
6167		HOLL	07	26	1440	N26 W12	07 25.7		B	CSO	110	20	10	4
6167		BOUL	07	26	1440	N27 W13	07 25.6		B	CSO	50	7	8	4
6167		LEAR	07	27	0030	N25 W22	07 25.3		A	HS	70	1	2	2
6167		SVTO	07	27	0720	N26 W22	07 25.6		B	CAO	50	6	8	3
6167		HOLL	07	27	1420	N25 W25	07 25.7		B	CSO	80	3	9	3
6167		BOUL	07	27	1455	N25 W24	07 25.8		B	CSO	60	4	9	3
6167		RAMY	07	27	1515	N27 W25	07 25.7		B	CAO	50	4	8	2
6167		LEAR	07	28	0030	N25 W33	07 25.5		A	HS	50	1	2	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
6167		CULG	07 28 0117	N26	W32	07 25.6		B	CSO	20	2	10	3
6167		SVTO	07 28 0705	N29	W35	07 25.5		A	HS	30	1	2	3
6167		RAMY	07 28 1128	N25	W41	07 25.3		A	HA	30	1	2	3
6167		BOUL	07 28 1410	N25	W41	07 25.4		A	HS	30	1	2	4
6167		HOLL	07 28 1600	N25	W43	07 25.3		A	HA	50	1	2	2
6167		PALE	07 28 1815	N25	W45	07 25.3		A	HA	60	2	2	4
6167		CULG	07 29 0105	N23	W50	07 25.2		A	HS	20	1	1	3
6167		LEAR	07 29 0110	N25	W47	07 25.4		A	HS	30	1	1	3
6167		SVTO	07 29 0625	N25	W52	07 25.2		A	HR	30	1	1	4
6167		RAMY	07 29 1231	N24	W54	07 25.3		A	HA	20	1	1	3
6167		BOUL	07 29 1420	N25	W55	07 25.3		A	HS	20	1	1	4
6167		HOLL	07 29 1440	N26	W57	07 25.2		A	AX		1	1	3
6167		PALE	07 29 1720	N24	W59	07 25.2		A	HA	30	1	1	3
6167		LEAR	07 30 0105	N26	W60	07 25.4		A	HS	20	1	1	3
6167		SVTO	07 30 0930	N26	W66	07 25.3		B	BXO	20	2	5	3
6167		RAMY	07 30 1215	N25	W69	07 25.2		A	HA	10	1	1	3
6167		BOUL	07 30 1450	N24	W67	07 25.4		B	BXO	20	2	2	3
6167		HOLL	07 30 1550	N24	W70	07 25.2		A	AX	20	2	1	2
6167		PALE	07 30 1740	N23	W71	07 25.3		A	AX	10	2	2	3
6175		CULG	07 24 0045	S20	E23	07 25.8		B	CRO	10	5	3	2
6175		RAMY	07 24 1518	S19	E18	07 26.0		B	BXO	20	4	3	1
6175		PALE	07 24 1830	S20	E18	07 26.1		B	BXO		2	4	3
6175		CULG	07 25 0110	S19	E11	07 25.9		A	AX		1		3
6175		SVTO	07 25 0759	S19	E08	07 25.9		A	AX		1		2
6175		RAMY	07 25 1245	S18	E05	07 25.9		B	BXO	10	2	3	3
6175		RAMY	07 29 1231	S21	W46	07 26.0		A	AX	10	2	1	3
6182		RAMY	07 28 1128	N12	W29	07 26.3		B	DRO	20	4	3	3
6182		PALE	07 28 1815	N12	W32	07 26.3		B	BXO	10	2	3	4
6182		CULG	07 29 0105	N12	W38	07 26.2		B	BXO	10	2	3	3
6182		LEAR	07 29 0110	N13	W36	07 26.3		B	BXO	10	2	3	3
6182		SVTO	07 29 0625	N13	W38	07 26.4		A	AX		1		4
6182		RAMY	07 29 1231	N12	W41	07 26.4		A	AX	10	2	1	3
6175A		BOUL	07 28 1410	N13	W28	07 26.5		B	BXO		2	3	4
6175A		HOLL	07 28 1600	N13	W32	07 26.2		B	BXO	10	4	3	2
6178		RAMY	07 25 1245	N27	E16	07 26.8		B	BXO	20	5	2	3
6178		HOLL	07 25 1450	N28	E12	07 26.5		B	BXO	10	5	6	4
6178		BOUL	07 25 1500	N27	E13	07 26.6		A	AX		2	2	2
6178		PALE	07 25 1937	N28	E11	07 26.7		A	AX	10	3	1	3
6178		LEAR	07 26 0030	N27	E08	07 26.6		A	AX	20	1	1	2
6178		SVTO	07 26 0740	N27	E04	07 26.6		A	AX	10	3	1	2
6178		RAMY	07 26 1205	N27	E03	07 26.7		A	AX		1		3
6178		BOUL	07 26 1440	N27	W01	07 26.5		A	AX		1	1	4
6164		RAMY	07 20 1313	S21	E78	07 26.5		A	HA	60	1	2	3
6164		HOLL	07 20 1505	S22	E80	07 26.8		A	HS	50	1	1	4
6164		LEAR	07 21 0008	S21	E71	07 26.4		A	HS	90	1	2	4
6164		CULG	07 21 0025	S21	E69	07 26.3		A	HS	30	1	3	4
6164		SVTO	07 21 0705	S21	E70	07 26.7		A	HS	60	1	2	4
6164		RAMY	07 21 1256	S22	E67	07 26.7		A	HS	110	1	2	3
6164		HOLL	07 21 1540	S21	E66	07 26.7		A	HS	60	1	2	3
6164		PALE	07 21 1930	S22	E66	07 26.9		A	HS	70	1	2	3
6164		CULG	07 22 0043	S20	E64	07 26.9		A	HS	50	1	3	2
6164		SVTO	07 22 0745	S22	E57	07 26.7		A	HS	80	1	2	4
6164		RAMY	07 22 1124	S22	E53	07 26.5		A	HA	50	1	2	3
6164		HOLL	07 22 1725	S21	E51	07 26.6		A	HS	50	1	2	3
6164		PALE	07 22 1725	S21	E52	07 26.7		A	HS	70	1	2	4
6164		CULG	07 23 0100	S21	E47	07 26.6		A	HS	100	1	2	2
6164		LEAR	07 23 0145	S21	E46	07 26.6		A	HS	60	2	2	2
6164		SVTO	07 23 0750	S22	E43	07 26.6		A	HS	90	1	2	3
6164		RAMY	07 23 1113	S21	E37	07 26.3		B	CAO	100	4	9	3
6164		BOUL	07 23 1449	S21	E38	07 26.5		A	HS	80	1	2	1
6164		HOLL	07 23 1545	S21	E39	07 26.6		A	HS	50	1	2	3
6164		PALE	07 23 1825	S20	E33	07 26.3		B	ESI	120	5	11	3
6164		LEAR	07 24 0035	S21	E30	07 26.3		B	CSO	90	6	12	4
6164		CULG	07 24 0045	S21	E32	07 26.5		A	HS	80	1	2	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat Mo Day	Cmd	CMP Mo Day	Hax H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6164		SVTO	07 24	0505	S20	E28	07 26.3		B	CSO	80	5	11	4
6164		HOLL	07 24	1435	S22	E26	07 26.6		A	HS	100	1	2	3
6164		BOUL	07 24	1510	S21	E24	07 26.5		A	HS	50	1	2	1
6164		PALE	07 24	1830	S21	E26	07 26.8		A	HS	50	1	2	3
6164		LEAR	07 25	0105	S21	E15	07 26.2		B	CSO	90	3	12	3
6164		CULG	07 25	0110	S21	E21	07 26.6		A	HS	70	1	2	3
6164		SVTO	07 25	0759	S21	E18	07 26.7		A	HS	60	1	1	2
6164		RAMY	07 25	1245	S21	E15	07 26.7		A	HA	70	1	2	3
6164		HOLL	07 25	1450	S21	E13	07 26.6		B	CSO	70	2	3	4
6164		BOUL	07 25	1500	S20	E12	07 26.5		A	HA	60	1	2	2
6164		PALE	07 25	1937	S21	E12	07 26.7		A	HS	70	1	2	3
6164		LEAR	07 26	0030	S21	E08	07 26.6		A	HS	40	1	2	2
6164		SVTO	07 26	0740	S21	E04	07 26.6		A	HS	30	1	1	2
6164		RAMY	07 26	1205	S21	E03	07 26.7		A	HA	40	1	1	3
6164		HOLL	07 26	1440	S21	E00	07 26.6		A	HS	70	2	2	4
6164		BOUL	07 26	1440	S21	W01	07 26.5		A	HA	40	1	1	4
6164		LEAR	07 27	0030	S21	W05	07 26.6		A	HS	40	1	2	2
6164		SVTO	07 27	0720	S21	W08	07 26.7		A	HS	40	2	2	3
6164		HOLL	07 27	1420	S21	W12	07 26.7		A	HS	70	2	2	3
6164		BOUL	07 27	1455	S19	W13	07 26.6		A	HA	30	1	1	3
6164		RAMY	07 27	1515	S21	W12	07 26.7		A	HS	40	1	2	2
6164		LEAR	07 28	0030	S21	W18	07 26.6		A	HS	30	1	2	3
6164		CULG	07 28	0117	S22	W17	07 26.7		A	HS	20	1	1	3
6164		SVTO	07 28	0705	S21	W21	07 26.7		A	HS	30	1	2	3
6164		RAMY	07 28	1128	S20	W26	07 26.5		B	CAO	50	3	7	3
6164		BOUL	07 28	1410	S19	W24	07 26.7		A	HS	20	1	1	4
6164		HOLL	07 28	1600	S21	W25	07 26.8		A	HA	40	1	2	2
6164		PALE	07 28	1815	S23	W23	07 27.0		B	CSO	40	3	6	4
6164		CULG	07 29	0105	S22	W31	07 26.7		A	HS	10	1	1	3
6164		LEAR	07 29	0110	S20	W30	07 26.7		A	HS	40	1	1	3
6164		SVTO	07 29	0625	S20	W33	07 26.7		A	HR	30	1	1	4
6164		RAMY	07 29	1231	S20	W37	07 26.7		A	HA	20	1	2	3
6164		BOUL	07 29	1420	S21	W37	07 26.8		A	HS	20	1	1	4
6164		HOLL	07 29	1440	S20	W38	07 26.7		A	AX	10	3	1	3
6164		PALE	07 29	1720	S21	W39	07 26.7		A	HS	80	1	1	3
6164		LEAR	07 30	0105	S21	W43	07 26.7		A	HS	30	1	1	3
6164		SVTO	07 30	0930	S21	W49	07 26.6		A	AX	20	1	1	3
6164		BOUL	07 30	1450	S21	W49	07 26.9		A	HA	20	1	1	3
6164		HOLL	07 30	1550	S21	W52	07 26.7		A	AX	10	3	1	2
6164		PALE	07 30	1740	S22	W52	07 26.7		A	AX	10	2	1	3
6164		CULG	07 31	0210	S21	W55	07 26.9		A	HS	20	3	1	2
6164		LEAR	07 31	0458	S21	W57	07 26.8		A	AX	20	1	1	2
6164		SVTO	07 31	0840	S21	W63	07 26.5		A	AX	20	2	1	2
6164		RAMY	07 31	1318	S22	W61	07 26.9		A	AX	10	2	1	3
6164		BOUL	07 31	1357	S21	W62	07 26.8		A	AX	10	1	1	1
6164		HOLL	07 31	1515	S22	W64	07 26.7		A	AX	10	1	1	3
6164		CULG	08 01	0115	S21	W69	07 26.9		A	AX	10	1	1	2
6168		HOLL	07 21	1540	S12	E89	07 28.3		A	HS	60	1	2	3
6168		PALE	07 21	1930	S13	E80	07 27.8		A	HS	90	1	2	3
6168		LEAR	07 22	0015	S13	E77	07 27.8		A	HS	120	1	2	4
6168		CULG	07 22	0043	S12	E84	07 28.3		A	HS	30	1	4	2
6168		SVTO	07 22	0745	S13	E77	07 28.1		A	HS	120	1	2	4
6168		RAMY	07 22	1124	S13	E71	07 27.8		A	HA	90	2	3	3
6168		HOLL	07 22	1725	S13	E69	07 27.9		A	HA	70	2	2	3
6168		PALE	07 22	1725	S13	E70	07 28.0		A	HA	150	2	3	4
6168		CULG	07 23	0100	S13	E66	07 28.0		A	HA	150	3	3	2
6168		LEAR	07 23	0145	S13	E62	07 27.7		A	HA	90	2	2	2
6168		SVTO	07 23	0750	S13	E62	07 28.0		A	HS	130	2	2	3
6168		RAMY	07 23	1113	S12	E59	07 27.9		B	CAO	150	4	4	3
6168		BOUL	07 23	1449	S13	E56	07 27.8		A	HA	100	2	2	1
6168		HOLL	07 23	1545	S13	E57	07 27.9		A	HA	60	4	2	3
6168		PALE	07 23	1825	S13	E56	07 28.0		A	HA	130	2	2	3
6168		LEAR	07 24	0035	S14	E52	07 27.9		B	CAO	120	5	6	4
6168		CULG	07 24	0045	S13	E52	07 27.9		A	HA	100	2	2	2
6168		SVTO	07 24	0505	S12	E49	07 27.9		A	HA	130	2	3	4
6168		HOLL	07 24	1435	S15	E43	07 27.9		B	CSO	150	4	3	3
6168		BOUL	07 24	1510	S12	E43	07 27.9		A	HA	80	2	2	1
6168		RAMY	07 24	1518	S12	E43	07 27.9		B	CAO	90	2	3	1

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NOAA/ USAF Group	Ht 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
6168		PALE	07 24 1830	S14 E43	07 28.0		B	CAO	60	5	3	3
6168		LEAR	07 25 0105	S15 E39	07 28.0		B	CAO	80	5	3	3
6168		CULG	07 25 0110	S13 E39	07 28.0		B	CAO	100	7	3	3
6168		SVTO	07 25 0759	S13 E35	07 28.0		B	CAO	70	4	3	2
6168		RAMY	07 25 1245	S14 E32	07 27.9		B	CAO	100	5	4	3
6168		HOLL	07 25 1450	S12 E31	07 27.9		B	CAO	90	4	6	4
6168		BOUL	07 25 1500	S13 E29	07 27.8		A	HA	70	2	2	2
6168		PALE	07 25 1937	S13 E29	07 28.0		A	HS	100	1	2	3
6168		LEAR	07 26 0030	S13 E26	07 28.0		A	HS	90	1	2	2
6168		SVTO	07 26 0740	S13 E23	07 28.0		B	CSO	90	6	4	2
6168		RAMY	07 26 1205	S14 E21	07 28.1		B	CAO	80	4	4	3
6168		HOLL	07 26 1440	S13 E18	07 28.0		B	CSO	120	11	5	4
6168		BOUL	07 26 1440	S13 E19	07 28.0		B	CAO	60	3	3	4
6168		LEAR	07 27 0030	S14 E13	07 28.0		A	HS	80	1	2	2
6168		SVTO	07 27 0720	S13 E10	07 28.1		B	CSO	100	4	4	3
6168		HOLL	07 27 1420	S13 E06	07 28.0		B	CAO	110	8	3	3
6168		BOUL	07 27 1455	S12 E04	07 27.9		B	CAO	100	6	4	3
6168		RAMY	07 27 1515	S13 E05	07 28.0		A	HA	60	1	2	2
6168		LEAR	07 28 0030	S13 W01	07 27.9		A	HS	80	2	2	3
6168		CULG	07 28 0117	S13 E01	07 28.1		B	CSO	100	4	5	3
6168		SVTO	07 28 0705	S13 W04	07 28.0		A	HS	90	2	2	3
6168		RAMY	07 28 1128	S12 W06	07 28.0		B	CAO	100	5	4	3
6168		BOUL	07 28 1410	S12 W08	07 28.0		A	HA	60	2	2	4
6168		HOLL	07 28 1600	S12 W08	07 28.1		A	HA	100	4	2	2
6168		PALE	07 28 1815	S12 W10	07 28.0		A	HS	100	4	2	4
6168		CULG	07 29 0105	S13 W13	07 28.1		A	HS	80	4	2	3
6168		LEAR	07 29 0110	S12 W14	07 28.0		A	HS	80	2	2	3
6168		SVTO	07 29 0625	S12 W17	07 28.0		A	HA	80	3	2	4
6168		RAMY	07 29 1231	S13 W20	07 28.0		B	CAO	110	4	2	3
6168		BOUL	07 29 1420	S12 W21	07 28.0		A	HA	90	2	2	4
6168		HOLL	07 29 1440	S12 W22	07 27.9		A	HS	80	2	2	3
6168		PALE	07 29 1720	S13 W23	07 28.0		A	HA	90	2	2	3
6168		LEAR	07 30 0105	S12 W26	07 28.1		A	HA	60	2	2	3
6168		SVTO	07 30 0930	S12 W32	07 28.0		A	HA	60	2	2	3
6168		RAMY	07 30 1215	S12 W32	07 28.1		B	DAO	80	4	3	3
6168		BOUL	07 30 1450	S12 W34	07 28.0		B	DAO	70	2	3	3
6168		HOLL	07 30 1550	S13 W36	07 27.9		A	HS	100	3	2	2
6168		PALE	07 30 1740	S15 W37	07 27.9		B	CSO	60	3	4	3
6168		CULG	07 31 0210	S13 W38	07 28.2		A	HS	60	4	2	2
6168		LEAR	07 31 0458	S12 W42	07 28.0		B	CAO	60	3	2	2
6168		SVTO	07 31 0840	S12 W46	07 27.9		A	HA	50	2	2	2
6168		RAMY	07 31 1318	S13 W45	07 28.1		B	CAO	60	5	3	3
6168		BOUL	07 31 1357	S12 W46	07 28.1		B	CAO	30	5	2	1
6168		HOLL	07 31 1515	S13 W48	07 28.0		B	CSO	70	8	3	3
6168		PALE	07 31 1900	S14 W50	07 28.0		B	CSO	50	5	3	2
6168		CULG	08 01 0115	S13 W53	07 28.1		B	CAO	40	5	3	2
6168		LEAR	08 01 0222	S12 W55	07 28.0		A	HS	30	1	1	3
6168		SVTO	08 01 0740	S13 W57	07 28.1		A	HS	30	1	1	3
6168		RAMY	08 01 1343	S13 W59	07 28.2		A	HA	30	1	2	3
6168		BOUL	08 01 1415	S13 W59	07 28.2		A	AX		1		3
6168		HOLL	08 01 1515	S13 W60	07 28.2		B	CSO	30	3	3	3
6168		PALE	08 01 1900	S14 W63	07 28.1		B	CSO	30	2	4	3
6168		LEAR	08 02 0120	S12 W65	07 28.2		A	AX	10	1	1	3
6168		SVTO	08 02 0825	S13 W72	07 28.0		A	AX	10	1	1	3
6168		RAMY	08 02 1221	S12 W71	07 28.3		A	AX	10	1	1	3
6168		HOLL	08 02 1550	S13 W75	07 28.1		A	AX	10	1		3
6168		PALE	08 02 1900	S13 W77	07 28.1		A	AX	10	1	1	3
6168A		HOLL	07 27 1420	N15 E08	07 28.2		A	AX		1		3
6168C		SVTO	07 29 0625	S24 W14	07 28.2		A	AX		1		4
6168C		RAMY	07 29 1231	S25 W17	07 28.2		A	AX	10	2	1	3
6184A		BOUL	07 27 1455	N09 E09	07 28.3		B	BXO	10	2	1	3
6171		HOLL	07 22 1725	N10 E80	07 28.7		B	BXO	20	3	3	3
6171		PALE	07 22 1725	N12 E80	07 28.7		A	HA	30	2	2	4
6171		LEAR	07 23 0145	N11 E71	07 28.4		B	CSO	60	4	3	2
6171		SVTO	07 23 0750	N12 E70	07 28.6		B	BXO	20	2	1	3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	Cmd	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6171		RAMY	07 23 1113	N11	E74	07 29.0		B	CAO	50	11	9	3
6171		BOUL	07 23 1449	N10	E67	07 28.6		B	BXO	20	3	7	1
6171		HOLL	07 23 1545	N11	E70	07 28.9		B	BXO	30	7	9	3
6171		PALE	07 23 1825	N11	E69	07 28.9		B	BXO	40	7	10	3
6171		LEAR	07 24 0035	N11	E64	07 28.8		B	BXO	40	9	8	4
6171		CULG	07 24 0045	N11	E64	07 28.8		B	BXO	40	7	8	2
6171		HOLL	07 24 1435	N08	E56	07 28.8		B	BX	50	13	11	3
6171		BOUL	07 24 1510	N10	E55	07 28.8		B	BXO	50	9	9	1
6171		RAMY	07 24 1518	N11	E57	07 28.9		B	BXO	70	7	10	1
6171		PALE	07 24 1830	N11	E56	07 29.0		B	CRO	40	11	11	3
6171		LEAR	07 25 0105	N10	E51	07 28.9		B	CRO	30	12	11	3
6171		CULG	07 25 0110	N11	E52	07 29.0		B	BXO	60	16	12	3
6171		SVTO	07 25 0759	N11	E46	07 28.8		B	EAO	60	12	12	2
6171		RAMY	07 25 1245	N10	E44	07 28.8		B	BXO	40	10	12	3
6171		HOLL	07 25 1450	N11	E43	07 28.8		B	BXO	20	15	12	4
6171		BOUL	07 25 1500	N11	E40	07 28.6		B	BXO	20	7	10	2
6171		PALE	07 25 1937	N10	E40	07 28.8		B	BXO	50	15	11	3
6171		LEAR	07 26 0030	N10	E37	07 28.8		B	CSO	70	7	11	2
6171		SVTO	07 26 0740	N10	E34	07 28.9		B	BXO	20	9	12	2
6171		RAMY	07 26 1205	N10	E31	07 28.8		B	BXO	20	14	15	3
6171		BOUL	07 26 1440	N10	E30	07 28.9		B	BXO	40	8	8	4
6171		HOLL	07 26 1440	N10	E30	07 28.9		B	BXO	30	24	13	4
6171		LEAR	07 27 0030	N09	E24	07 28.8		B	BXO	70	3	12	2
6171		SVTO	07 27 0720	N09	E20	07 28.8		B	BXO	20	5	13	3
6171		HOLL	07 27 1420	N09	E16	07 28.8		B	BXO	20	8	14	3
6171		BOUL	07 27 1455	N11	E21	07 29.2		B	BXO	10	3	1	3
6171		RAMY	07 27 1515	N10	E16	07 28.8		B	BXO	20	9	13	2
6171		LEAR	07 28 0030	N10	E11	07 28.8		B	BXO	30	5	12	3
6171		CULG	07 28 0117	N10	E10	07 28.8		B	BXO	10	5	12	3
6171		SVTO	07 28 0705	N11	E08	07 28.9		B	BXO	20	5	10	3
6171		RAMY	07 28 1128	N10	E06	07 28.9		B	BXO	10	6	10	3
6171		HOLL	07 28 1600	N10	W03	07 28.4		A	AX		2	1	2
6171		PALE	07 28 1815	N10	W03	07 28.5		A	AX		2	1	4
6171		LEAR	07 29 0110	N15	W04	07 28.7		A	AX	10	2	1	3
6171		RAMY	07 29 1231	N11	W11	07 28.7		B	BXO	10	6	6	3
6171		RAMY	07 30 1215	N11	W18	07 29.1		B	BXO	10	4	6	3
6171		CULG	07 31 0210	N11	W25	07 29.2		A	AX		2	1	2
6171		LEAR	07 31 0458	N10	W32	07 28.8		B	BXO	10	2	1	2
6171		SVTO	07 31 0840	N10	W36	07 28.6		A	AX	10	3	2	2
6171		RAMY	07 31 1318	N10	W36	07 28.8		A	AX	10	2	1	3
6171		RAMY	08 01 1343	N09	W50	07 28.9		B	BXO	30	6	4	3
6171		BOUL	08 01 1415	N09	W48	07 29.1		B	BXO	20	5	3	3
6171		HOLL	08 01 1515	N09	W52	07 28.8		B	BXO	20	9	5	3
6171		PALE	08 01 1900	N09	W53	07 28.9		B	CSO	50	8	4	3
6171		LEAR	08 02 0120	N09	W55	07 29.0		B	DAO	40	7	6	3
6171		SVTO	08 02 0825	N10	W62	07 28.8		B	DAO	80	5	6	3
6171		RAMY	08 02 1221	N10	W63	07 28.9		B	DAO	90	3	4	3
6171		BOUL	08 02 1420	N09	W61	07 29.1		B	DAO	80	4	3	4
6171		HOLL	08 02 1550	N09	W65	07 28.9		B	DAO	180	6	5	3
6171		PALE	08 02 1900	N09	W67	07 28.9		B	DAO	140	8	6	3
6171		SVTO	08 03 0750	N09	W75	07 28.8		B	DAO	140	6	8	2
6171		RAMY	08 03 1215	N10	W76	07 28.9		B	DAO	110	5	7	3
6171		BOUL	08 03 1450	N09	W78	07 28.9		B	DAO	270	11	6	3
6171		HOLL	08 03 1530	N09	W78	07 28.9		B	DAO	140	8	6	4
6171		PALE	08 03 1720	N08	W79	07 28.9		B	DAO	160	5	9	4
6171A		RAMY	07 29 1231	S03	W12	07 28.6		B	BXO	10	3	3	3
6171A		BOUL	07 29 1420	S04	W14	07 28.5		B	BXO		2	2	4
6171A		HOLL	07 29 1440	S03	W13	07 28.6		B	BXO	10	3	3	3
6171A		PALE	07 29 1720	S04	W15	07 28.6		B	BXO	10	3	3	3
61688		HOLL	08 01 1515	S18	W50	07 28.9		B	BXO	10	3	4	3
6171B		CULG	07 29 0105	N15	E04	07 29.3		A	AX	10	2	1	3
6171B		BOUL	07 30 1450	N12	W19	07 29.2		B	BXO	10	2	4	3
6171C		CULG	07 29 0105	N07	E04	07 29.3		A	AX	10	1	1	3
6172		RAMY	07 23 1113	S21	E78	07 29.4		B	BXO	10	2	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
6172		HOLL	07	23	1545	S22 E72	07 29.2		A	AX	10	2	1	3
6172		PALE	07	23	1825	S22 E76	07 29.6		A	HS	30	1	2	3
6172		LEAR	07	24	0035	S22 E69	07 29.3		A	HS	60	1	2	4
6172		CULG	07	24	0045	S22 E70	07 29.4		A	HS	20	1	1	2
6172		HOLL	07	24	1435	S24 E61	07 29.3		A	HS	50	1	1	3
6172		BOUL	07	24	1510	S21 E68	07 29.8		B	BXO	30	2	1	1
6172		RAMY	07	24	1518	S22 E62	07 29.4		A	HA	50	1	2	1
6172		PALE	07	24	1830	S21 E62	07 29.5		A	HS	20	1	2	3
6172		LEAR	07	25	0105	S23 E57	07 29.4		A	HS	20	1	1	3
6172		CULG	07	25	0110	S22 E57	07 29.4		A	HS	20	2	1	3
6172		SVTO	07	25	0759	S22 E52	07 29.3		A	HR	20	1	1	2
6172		RAMY	07	25	1245	S23 E49	07 29.3		A	HA	30	1	2	3
6172		HOLL	07	25	1450	S22 E49	07 29.4		A	HR	20	1	1	4
6172		BOUL	07	25	1500	S21 E48	07 29.3		A	AX		1		2
6172		PALE	07	25	1937	S22 E47	07 29.4		A	AX		1	1	3
6172		LEAR	07	26	0030	S22 E42	07 29.2		A	AX	20	1	2	2
6172		SVTO	07	26	0740	S23 E40	07 29.4		A	HR	10	1		2
6172		RAMY	07	26	1205	S21 E41	07 29.6		B	CRO	20	4	7	3
6172		BOUL	07	26	1440	S23 E38	07 29.5		B	BXO	10	3	7	4
6172		HOLL	07	26	1440	S25 E39	07 29.6		B	CSO	20	6	8	4
6172		LEAR	07	27	0030	S26 E34	07 29.7		B	BXO	80	5	7	2
6172		SVTO	07	27	0720	S24 E34	07 29.9		B	DSO	50	7	5	3
6172		HOLL	07	27	1420	S23 E30	07 29.9		B	DAI	80	10	5	3
6172		BOUL	07	27	1455	S23 E27	07 29.7		B	DAO	120	19	6	3
6172		RAMY	07	27	1515	S25 E29	07 29.9		B	DAO	110	10	5	2
6172		LEAR	07	28	0030	S25 E24	07 29.9		B	CSO	120	12	7	3
6172		CULG	07	28	0117	S23 E24	07 29.9		B	DRO	10	11	7	3
6172		SVTO	07	28	0705	S25 E19	07 29.8		B	DAO	70	10	7	3
6172		RAMY	07	28	1128	S24 E15	07 29.6		B	DAO	60	13	4	3
6172		BOUL	07	28	1410	S23 E15	07 29.7		B	DAO	30	7	6	4
6172		HOLL	07	28	1600	S24 E15	07 29.8		B	DAO	60	12	9	2
6172		PALE	07	28	1815	S24 E14	07 29.8		B	DAO	40	11	8	4
6172		CULG	07	29	0105	S22 E10	07 29.8		B	DAO	20	17	9	3
6172		LEAR	07	29	0110	S23 E08	07 29.7		B	DSO	60	13	9	3
6172		SVTO	07	29	0625	S24 E08	07 29.9		B	DAO	70	8	6	4
6172		RAMY	07	29	1231	S22 E05	07 29.9		B	DAO	70	13	8	3
6172		BOUL	07	29	1420	S23 E03	07 29.8		B	DSO	40	4	6	4
6172		HOLL	07	29	1440	S22 E02	07 29.8		B	CSO	70	16	12	3
6172		PALE	07	29	1720	S24 E00	07 29.7		B	CAO	40	7	10	3
6172		LEAR	07	30	0105	S24 W03	07 29.8		BG	CAO	40	5	7	3
6172		SVTO	07	30	0930	S24 W07	07 29.8		B	CAO	60	12	8	3
6172		RAMY	07	30	1215	S22 W10	07 29.7		B	DAO	60	10	8	3
6172		BOUL	07	30	1450	S24 W13	07 29.6		B	DAO	70	7	9	3
6172		HOLL	07	30	1550	S24 W12	07 29.7		B	CAO	50	10	11	2
6172		PALE	07	30	1740	S24 W13	07 29.7		B	EAO	60	19	11	3
6172		CULG	07	31	0210	S24 W17	07 29.8		B	EAO	30	16	11	2
6172		LEAR	07	31	0458	S25 W20	07 29.6		B	EAO	40	7	11	2
6172		SVTO	07	31	0840	S23 W22	07 29.7		B	EAO	120	14	12	2
6172		RAMY	07	31	1318	S23 W25	07 29.6		B	EAO	10	17	11	3
6172		BOUL	07	31	1357	S24 W26	07 29.6		B	BXO	50	17	11	1
6172		HOLL	07	31	1515	S25 W26	07 29.6		B	BXO	50	34	12	3
6172		PALE	07	31	1900	S23 W26	07 29.8		B	EAO	100	17	12	2
6172		CULG	08	01	0115	S24 W31	07 29.7		B	EAI	80	38	12	2
6172		LEAR	08	01	0222	S25 W34	07 29.6		B	ESO	170	17	12	3
6172		SVTO	08	01	0740	S25 W37	07 29.5		B	ESI	220	23	11	3
6172		RAMY	08	01	1343	S24 W39	07 29.6		B	EAO	300	23	13	3
6172		BOUL	08	01	1415	S24 W38	07 29.7		B	EAI	250	23	11	3
6172		HOLL	08	01	1515	S23 W40	07 29.6		B	EAI	500	54	14	3
6172		PALE	08	01	1900	S25 W44	07 29.5		B	EK1	450	17	13	3
6172		LEAR	08	02	0120	S25 W44	07 29.7		B	EKO	660	16	12	3
6172		SVTO	08	02	0825	S25 W50	07 29.6		B	EAI	610	20	13	3
6172		RAMY	08	02	1221	S24 W51	07 29.7		B	EAI	760	26	13	3
6172		BOUL	08	02	1420	S24 W52	07 29.7		B	EKO	540	13	11	4
6172		HOLL	08	02	1550	S25 W55	07 29.5		B	EKO	700	29	15	3
6172		PALE	08	02	1900	S26 W55	07 29.6		B	EKO	660	25	13	3
6172		SVTO	08	03	0750	S25 W61	07 29.7		B	EKO	740	16	14	2
6172		RAMY	08	03	1215	S24 W65	07 29.6		B	EK1	300	11	12	3
6172		BOUL	08	03	1450	S26 W67	07 29.5		B	EK1	890	13	13	3
6172		HOLL	08	03	1530	S26 W66	07 29.6		B	EK1	900	16	11	4

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JULY 1990

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
6172	PALE	08 03	1720	S27 W68	07 29.5		B	EKI	980	14	14	4
6172	SVTO	08 04	0545	S26 W73	07 29.7		B	EKO	720	10	11	3
6172	RAMY	08 04	1210	S25 W72	07 30.0		B	DKO	480	11	9	4
6172	BOUL	08 04	1430	S23 W79	07 29.6		B	DKO	240	2	6	4
6172	HOLL	08 04	1610	S26 W76	07 29.9		B	DKO	240	9	9	3
6172	PALE	08 04	1915	S27 W79	07 29.7		A	HS	60	1	2	3
6172A	SVTO	08 02	0825	N10 W47	07 29.9		A	AX		1		3
6172A	RAMY	08 02	1221	N10 W48	07 30.0		A	AX	10	1	1	3
6172A	HOLL	08 02	1550	N10 W50	07 30.0		A	AX		1		3
6174	BOUL	07 23	1449	S12 E80	07 29.6		A	HS	30	1	1	1
6174	HOLL	07 23	1545	S11 E79	07 29.6		A	HS	50	1	2	3
6174	PALE	07 23	1825	S11 E82	07 29.9		A	HS	60	1	2	3
6174	LEAR	07 24	0035	S12 E75	07 29.7		A	HS	90	1	2	4
6174	CULG	07 24	0045	S11 E77	07 29.8		A	HS	60	1	2	2
6174	HOLL	07 24	1435	S14 E68	07 29.7		A	HS	150	1	2	3
6174	BOUL	07 24	1510	S12 E65	07 29.5		A	HS	100	1	2	1
6174	RAMY	07 24	1518	S12 E69	07 29.8		A	HS	70	1	2	1
6174	PALE	07 24	1830	S11 E68	07 29.9		A	HA	110	1	2	3
6174	LEAR	07 25	0105	S13 E63	07 29.8		A	HS	90	1	2	3
6174	CULG	07 25	0110	S11 E64	07 29.9		A	HS	140	1	2	3
6174	SVTO	07 25	0759	S11 E60	07 29.8		A	HS	120	1	2	2
6174	RAMY	07 25	1245	S12 E57	07 29.8		A	HS	110	1	2	3
6174	HOLL	07 25	1450	S12 E56	07 29.8		A	HS	130	2	2	4
6174	BOUL	07 25	1500	S12 E55	07 29.8		A	HA	120	1	3	2
6174	PALE	07 25	1937	S11 E55	07 29.9		A	HS	140	1	2	3
6174	LEAR	07 26	0030	S12 E50	07 29.8		A	HS	110	1	2	2
6174	SVTO	07 26	0740	S11 E47	07 29.8		A	HS	120	1	2	2
6174	RAMY	07 26	1205	S12 E45	07 29.9		A	HS	110	1	2	3
6174	BOUL	07 26	1440	S12 E42	07 29.8		A	HS	120	2	2	4
6174	HOLL	07 26	1440	S12 E43	07 29.8		A	HS	140	3	2	4
6174	LEAR	07 27	0030	S13 E38	07 29.9		B	CSO	180	3	4	2
6174	SVTO	07 27	0720	S13 E36	07 30.0		B	CSO	120	5	5	3
6174	HOLL	07 27	1420	S12 E32	07 30.0		B	DSO	170	9	6	3
6174	BOUL	07 27	1455	S12 E32	07 30.0		B	DSO	180	9	6	3
6174	RAMY	07 27	1515	S12 E31	07 30.0		B	DAO	90	5	5	2
6174	LEAR	07 28	0030	S13 E26	07 30.0		B	CSO	140	5	5	3
6174	CULG	07 28	0117	S11 E25	07 29.9		B	CSO	100	1	5	3
6174	SVTO	07 28	0705	S12 E24	07 30.1		B	CSO	130	3	6	3
6174	RAMY	07 28	1128	S12 E19	07 29.9		B	CAO	120	4	7	3
6174	BOUL	07 28	1410	S12 E17	07 29.9		B	CSO	90	4	3	4
6174	HOLL	07 28	1600	S12 E17	07 29.9		B	DAO	70	8	5	2
6174	PALE	07 28	1815	S12 E16	07 30.0		B	CSO	130	9	6	4
6174	CULG	07 29	0105	S11 E12	07 29.9		B	CSO	90	4	5	3
6174	LEAR	07 29	0110	S12 E12	07 29.9		B	CAO	110	5	5	3
6174	SVTO	07 29	0625	S12 E09	07 29.9		B	CSO	110	3	4	4
6174	RAMY	07 29	1231	S12 E07	07 30.0		B	CAO	130	8	7	3
6174	BOUL	07 29	1420	S10 E03	07 29.8		A	HS	100	1	2	4
6174	HOLL	07 29	1440	S11 E03	07 29.8		B	CSO	110	4	3	3
6174	PALE	07 29	1720	S11 E06	07 30.2		B	CAO	100	7	10	3
6174	LEAR	07 30	0105	S12 W02	07 29.9		B	CAO	80	3	4	3
6174	SVTO	07 30	0930	S11 W04	07 30.1		B	CAO	100	11	8	3
6174	RAMY	07 30	1215	S10 W06	07 30.0		B	CAO	120	11	6	3
6174	BOUL	07 30	1450	S11 W08	07 30.0		B	CSO	90	4	5	3
6174	HOLL	07 30	1550	S11 W10	07 29.9		A	HS	100	1	2	2
6174	PALE	07 30	1740	S10 W09	07 30.0		B	CSO	70	8	9	3
6174	CULG	07 31	0210	S11 W14	07 30.0		B	CAO	70	8	6	2
6174	LEAR	07 31	0458	S13 W16	07 30.0		B	CSO	30	3	4	2
6174	SVTO	07 31	0840	S10 W18	07 30.0		B	CSO	80	4	5	2
6174	RAMY	07 31	1318	S13 W18	07 30.2		B	CAO	80	4	6	3
6174	BOUL	07 31	1357	S11 W22	07 29.9		A	HS	40	2	1	1
6174	HOLL	07 31	1515	S12 W23	07 29.9		A	HS	100	1	2	3
6174	PALE	07 31	1900	S12 W25	07 29.9		A	HS	70	2	2	2
6174	CULG	08 01	0115	S12 W28	07 30.0		A	HS	70	2	2	2
6174	LEAR	08 01	0222	S12 W28	07 30.1		A	HS	70	2	2	3
6174	SVTO	08 01	0740	S12 W33	07 29.9		A	HA	40	2	2	3
6174	RAMY	08 01	1343	S12 W36	07 29.9		B	CAO	70	5	3	3
6174	BOUL	08 01	1415	S11 W36	07 30.0		A	HA	50	2	2	3

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6174		HOLL	08 01 1515	S12 W38	07 29.9		B	CSO	80	5	4	3
6174		PALE	08 01 1900	S12 W38	07 30.0		A	HS	70	2	2	3
6174		LEAR	08 02 0120	S11 W41	07 30.1		A	HS	20	1	1	3
6174		SVTO	08 02 0825	S12 W48	07 29.8		A	HA	30	1	2	3
6174		RAMY	08 02 1221	S11 W49	07 29.9		B	CAO	70	4	4	3
6174		BOUL	08 02 1420	S12 W48	07 30.1		A	HA	60	2	3	4
6174		HOLL	08 02 1550	S12 W49	07 30.1		A	HS	60	3	2	3
6174		PALE	08 02 1900	S12 W51	07 30.0		A	HS	50	2	2	3
6174		SVTO	08 03 0750	S12 W58	07 30.0		A	HA	40	2	2	2
6174		RAMY	08 03 1215	S11 W61	07 30.0		A	HA	20	3	1	3
6174		BOUL	08 03 1450	S11 W63	07 30.0		A	HA	40	2	1	3
6174		HOLL	08 03 1530	S12 W62	07 30.1		A	HA	40	2	2	4
6174		PALE	08 03 1720	S13 W65	07 29.9		A	HR	20	1	1	4
6174		SVTO	08 04 0545	S11 W72	07 29.9		A	AX	10	1		3
6190		BOUL	08 02 1420	N11 W47	07 30.2		A	AX	10	1	1	4
6190		PALE	08 02 1900	N09 W51	07 30.1		A	AX		1		3
6177		HOLL	07 24 1435	S22 E75	07 30.4		A	AX	30	3	2	3
6177		RAMY	07 24 1518	S20 E74	07 30.3		A	AX	20	2	1	1
6177		PALE	07 24 1830	S19 E73	07 30.3		B	BXO	20	3	3	3
6177		LEAR	07 25 0105	S19 E69	07 30.3		B	BXO	10	2	2	3
6177		CULG	07 25 0110	S20 E69	07 30.3		B	BXO		4	3	3
6177		SVTO	07 25 0759	S19 E66	07 30.4		B	CRO	60	5	6	2
6177		RAMY	07 25 1245	S20 E62	07 30.3		B	CAO	70	4	6	3
6177		HOLL	07 25 1450	S19 E63	07 30.4		B	BXO	10	5	6	4
6177		BOUL	07 25 1500	S19 E59	07 30.1		A	AX		1		2
6177		PALE	07 25 1937	S19 E63	07 30.6		B	BXO	40	11	7	3
6177		LEAR	07 26 0030	S19 E57	07 30.4		B	BXO	60	2	5	2
6177		SVTO	07 26 0740	S20 E54	07 30.4		B	BXO	30	10	6	2
6177		RAMY	07 26 1205	S20 E52	07 30.5		B	CRO	70	21	7	3
6177		BOUL	07 26 1440	S20 E50	07 30.4		B	BXO	20	9	4	4
6177		HOLL	07 26 1440	S20 E51	07 30.5		B	DAI	130	20	6	4
6177		LEAR	07 27 0030	S21 E43	07 30.3		B	CAO	130	6	7	2
6177		SVTO	07 27 0720	S21 E42	07 30.5		B	CSO	60	17	6	3
6177		HOLL	07 27 1420	S19 E38	07 30.5		B	DAI	160	32	5	3
6177		BOUL	07 27 1455	S19 E36	07 30.4		B	DAO	160	21	8	3
6177		RAMY	07 27 1515	S20 E38	07 30.5		B	DAO	110	11	7	2
6177		LEAR	07 28 0030	S19 E31	07 30.4		B	DSO	170	20	7	3
6177		CULG	07 28 0117	S18 E33	07 30.6				20	13	7	3
6177		SVTO	07 28 0705	S21 E30	07 30.6		B	DAO	110	23	8	3
6177		RAMY	07 28 1128	S21 E26	07 30.5		B	DAI	50	18	6	3
6177		BOUL	07 28 1410	S18 E24	07 30.4		B	CSO	30	8	5	4
6177		HOLL	07 28 1600	S19 E24	07 30.5		B	DAI	110	23	7	2
6177		PALE	07 28 1815	S19 E24	07 30.6		B	CAO	40	23	8	4
6177		CULG	07 29 0105	S18 E19	07 30.5		B	BXO	10	20	5	3
6177		LEAR	07 29 0110	S19 E19	07 30.5		B	BXO	30	13	6	3
6177		SVTO	07 29 0625	S20 E17	07 30.6		B	CRI	30	10	5	4
6177		RAMY	07 29 1231	S19 E13	07 30.5		B	DAI	40	15	8	3
6177		BOUL	07 29 1420	S18 E11	07 30.4		B	BXI	30	15	5	4
6177		HOLL	07 29 1440	S20 E12	07 30.5		B	BXO	20	16	5	3
6177		PALE	07 29 1720	S20 E10	07 30.5		B	CRO	30	18	6	3
6177		LEAR	07 30 0105	S19 E07	07 30.6		B	BXO	20	8	4	3
6177		SVTO	07 30 0930	S18 E03	07 30.6		B	BXO	20	6	4	3
6177		RAMY	07 30 1215	S20 E01	07 30.6		B	CAO	20	9	5	3
6177		BOUL	07 30 1450	S18 W01	07 30.5		B	BXO	10	2	2	3
6177		HOLL	07 30 1550	S20 W01	07 30.6		A	AX	10	2	2	2
6177		PALE	07 30 1740	S20 W02	07 30.6		A	AX		2	2	3
6177		CULG	07 31 0210	S19 W05	07 30.7		B	BXO	10	13	6	2
6177		LEAR	07 31 0458	S21 W08	07 30.6		B	BXO	20	5	5	2
6177		SVTO	07 31 0840	S21 W09	07 30.7		B	CAO	30	6	4	2
6177		RAMY	07 31 1318	S21 W11	07 30.7		B	CAO	30	9	4	3
6177		BOUL	07 31 1357	S19 W12	07 30.7		B	BXO	10	5	4	1
6177		HOLL	07 31 1515	S22 W14	07 30.5		B	BXO	10	13	7	3
6177		PALE	07 31 1900	S23 W12	07 30.9		B	BXO	10	4	3	2
6177		CULG	08 01 0115	S15 W17	07 30.9		B	BXO		5	3	2
6181		LEAR	07 28 0030	S09 E55	08 1.1		B	BXO	40	2	3	3
6181		SVTO	07 28 0705	S08 E52	08 1.2		B	BXO	10	3	4	3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JULY 1990

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
6181		RAMY	07 28 1128	S09 E48	08 1.1		B	CRO	20	4	5	3
6181		BOUL	07 28 1410	S07 E46	08 1.0		B	BXO	10	4	4	4
6181		HOLL	07 28 1600	S08 E47	08 1.2		B	BXO	10	4	5	2
6181		PALE	07 28 1815	S08 E45	08 1.1		B	BXO	20	5	5	4
6181		CULG	07 29 0105	S05 E42	08 1.2		B	BXO	10	3	5	3
6181		LEAR	07 29 0110	S08 E41	08 1.1		B	CRO	30	5	5	3
6181		SVTO	07 29 0625	S09 E38	08 1.1		B	BXO	10	7	5	4
6181		RAMY	07 29 1231	S08 E34	08 1.1		B	DAO	20	6	5	3
6181		BOUL	07 29 1420	S06 E33	08 1.1		B	BXO	10	3	5	4
6181		HOLL	07 29 1440	S08 E33	08 1.1		B	BXO	20	5	6	3
6181		PALE	07 29 1720	S07 E32	08 1.1		B	CAO	20	5	6	3
6181		LEAR	07 30 0105	S09 E28	08 1.1		B	CSO	30	5	7	3
6181		SVTO	07 30 0930	S09 E25	08 1.3		B	CAO	30	6	5	3
6181		RAMY	07 30 1215	S09 E22	08 1.2		B	CAO	40	8	6	3
6181		BOUL	07 30 1450	S06 E20	08 1.1		B	CAO	20	4	5	3
6181		HOLL	07 30 1550	S08 E20	08 1.1		B	BXO	10	2	4	2
6181		PALE	07 30 1740	S08 E19	08 1.2		B	BXO	10	3	4	3
6181		CULG	07 31 0210	S08 E16	08 1.3		B	CAO	10	5	3	2
6181		LEAR	07 31 0458	S09 E14	08 1.2		A	AX	10	1	1	2
6181		SVTO	07 31 0840	S08 E12	08 1.3		A	AX	10	2	1	2
6181		LEAR	08 01 0222	S08 W10	07 31.3		A	AX	10	1	1	3
6181		RAMY	08 03 1215	S09 W28	08 1.4		B	BXO	10	6	3	3
6181		BOUL	08 03 1450	S09 W28	08 1.5		B	CAO	10	2	2	3

Stations reporting:

BOUL = Boulder
CULG = Culgoora

HOLL = Holloman
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palehua

RAMY = Ramey
SVTO = San Vito

SUDDEN IONOSPHERIC DISTURBANCES

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Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	SPA	SES			
01	0035	0045	0109	1-	1			1			0035	C5.0	6132
01	0119	0127	0141D	1-	1			1			0114	C4.1	6131
01	0141E	0157	0212	2-	5	1		1		1	0140	M1.0	6131
01	0251	0312	0348	1-	1			1			0231		6126
01	0417	0422	0435	1-	1			1			0420	C3.2	6126
01	0500	0511	0546	1-	1			1			0459	C2.8	
01	0610	0626	0727	1-	1		1	1			No flare		
01	0954	1000U	1022	1	1		1				No flare		
01	1230	1238	1322	1-	5	1		1	1	4	1225	C5.2	6126
01	1359	1403	1418	1-	5				1	2	1354	C2.5	6136
01	1623	1633	1710	1-	5	1			1	2	1626		6133
01	1833	1836	1907	2	1					1	1812	C2.7	6126
01	1938	1941	2017	1-	5			1		2	1934	C4.1	
01	2035	2039	2121	1-	5			1		3	2031E	C6.7	6126
01	2258	2315	2416	1-	5			1		1	2259	C4.7	6126
02	0451	0457	0538	1-	1			1			0453	C6.4	6129
02	0635	0644	0730	1-	5	1		1	1	2	0632	C4.9	6136
02	0820	0832	0855	1-	5	1		1	1	1	0816	C3.8	6126
02	0903	0919	1020	1	5	1	1	1	1	1	0900	C5.5	6138
02	1144	1153	1215	1-	5		1	1	1		1141	C3.6	6136
02	1216	1232	1257	1-	5	1	2	1	1	4	1217	C7.4	6124
02	1424	1515	1619	1	1		1				No flare		
02	1548	1555	1612	1	3					3	1553	C3.8	6126
02	1758	1804	1830	1+	3					2	1758E		6133
02	1842	1845	1935	2+	1					1	1843E		6120
02	1936	1940	2022	1-	5			1		7	1934	C9.0	
02	2104	2117	2214	1-	5			1		3	2102	C5.1	
03	0047	0054	0105	1-	1			1			No flare		
03	0108E	0114	0133D	1-	1			1			0107	C4.4	
03	0130E	0143	0214	1-	1			1			No flare		
03	0232	0248	0339	1-	1			1			0241	C3.3	
03	0420	0427	0538	1-	1			1			0419	C4.4	
03	0554	0606	0655	1	5			1		4	0559	C5.2	6126
03	0951	0959	1028	1-	5	1	2	1	1	2	0954	C4.9	6133
03	1319	1336	1420	1+	5	1	3		1	7	1313	C4.7	
03	1415	1445	1515	2	5					2	1411	C5.4	
03	1531	1535	1548	1-	1					1	1531		6126
04	0530	0536	0546	1	1			1			No flare		
04	0800	0820	0941	1	1			1			No flare		
04	1111	1126	1205	1-	5	1	1	1	1	2	1109		6138
04	1620	1626	1630	1-	1					1	1625		6134
04	1651	1658	1726	1-	5	5	1	1	1	7	1651E	M7.6	6138
04	1734	1746	1853	2	5	4		1	1	5	1718	M4.8	6131
04	2342	2349	2401	1-	1			1			2343	C1.9	
05	0324	0344	0530	3-	3	1		1			0346E	M1.3	6133
05	0915	0924	1014	1-	5	2	1	1	1	2	0913	C6.7	6126
05	1352	1356	1410	1-	5			1		3	1354	C3.2	6126
05	1508	1516	1550	1	1			1			1452	C2.5	6138
05	2007	2016	2036	1	3					2	2007E	C2.8	6138
06	0445	0454	0530D	1-	1			1			0436	M2.2	6133
06	0530E	0552	0635D	3	5		2	1		2	0436	M2.2	6133
06	0635E	0645	0750	1	5	4		1	1	2	0637		6138
06	1028	1035	1045	1-	1			1		1	1025	C1.8	
06	1544	1608	1654	1	1			1			No flare		
06	1828	1831	1847	1-	3					3	1826	C3.3	6137
06	2226	2232	2256	1-	1			1			2224	C2.9	
06	2329	2347	2419	1-	1			1			2339	C2.2	
07	0544	0552U	0653	1	1			1			No flare		
07	1020	1035	1106	1-	5		2	1	1		0959	C4.6	6138
07	1340	1351	1420	1+	5		3		1	5	1335	C5.5	6138
07	2318	2327	2347	1-	1			1			2317	C2.0	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

JULY 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
08	0002	0007	0026	1-	1			1			0003	C3.0	6131
08	0047	0054	0200	2	5	2		1		1	0045	M1.1	6131
08	0214	0219	0240	1-	1			1			*		
08	0356	0407	0436	1-	1			1			*		
08	0625	0634	0725	1-	5	1		1		1	0619	C2.7	6133
08	1236	1249	1330	1+	5		1			1	1242	C3.2	6131
08	1441	1455	1519	1	1		1				1447E		6131
08	2228	2326	2500	2	1	1		1			2218	M1.1	
09	0418	0438	0558	2-	1			1			0410	C6.4	
09	0628	0634	0650	1-	5		1	1			0623	C2.6	6133
09	0800	0812	0856	1-	5		1	1	1		0753E		6133
09	1005	1015	1105	1-	5	1	1	1	1	1	1001	C4.1	6133
09	1240	1247	1300	1+	5	3	3			1	1241	C7.3	
09	1615	1622	1700	1	5		1			1	1612	C4.7	
09	1817	1823	1845	1+	3						1818	C3.5	
09	2209	2221	2304	1-	5	1		1			2209	C6.1	6133
10	0037	0046	0112	1-	1			1			0036	C3.3	
10	0129	0146	0242	1-	1			1			0131E		6133
10	0300	0317	0340	1-	1			1			No flare		
10	0433	0438	0502	1-	1			1			0430	C1.8	
10	0550	0602	0634	1-	1			1			No flare		
10	0642	0650	0726	1+	5	1	2	1	1	5	0642	C5.2	
10	0920	0925	1004	1-	5			1		1	0923	C3.3	
10	1228	1233	1300	1	5	1				1	1227E	C8.3	6133
10	1418	1422	1443	1-	5					2	1407	C3.5	6133
11	0112	0130	0208	1-	1			1			0110		6138
11	0217	0222	0237	1-	1			1			0216	C3.0	6150
11	0435	0441	0508	1-	1			1			0432	C2.1	
11	0628	0630	0706	1-	5			1		1	0619	C2.9	
11	0908	0918	1030	1+	5	3	3	1	1	4	0906	C6.2	6138
11	1052	1138	1234	1	1		1				No flare		
12	0512	0525	0600	1-	1			1			No flare		
12	0611	0625	0648	1-	5			1	1	1	No flare		
12	1110	1113	1124	1-	1		1				1109		6151
12	1341	1349	1420	2	5	3	3		1	11	1341	M1.2	6151
12	1524	1542	1615	1	5	1	2		1	4	1549	C2.9	6151
12	2138	2152	2212	1-	1			1			No flare		
13	0303	0310	0343	1-	1			1			No flare		
13	0734	0744	0840	2	5	3	3	1	1	5	0735	C7.2	
13	1012	1058	1236	1+	5	3	3	1	1	3	0959	M3.1	
13	2331	2343	2401	1-	1			1			2340		6150
13	2358	2415	2437	1-	1			1			2356	C1.7	
14	0248	0256	0342	1-	1			1			0247	C1.8	
15	0117	0126	0158	1-	1			1			0113	B9.1	6153
15	0225	0245	0306	1-	1			1			0231		6153
15	0322	0332	0356	1-	1			1			*		
16	0323	0330	0356	1-	1			1			0322E	C2.1	6151
16	0636	0647	0649	1-	1		1				0636	C1.0	6151
16	1315	1324	1327	1-	1		1				1328		6151
17	1646	1649	1705	1-	3					2	1643	C1.4	
17	1709	1716	1745	1	5		1			2	1710	C1.7	6161
17	1815	1824	1850	1	1		1				No flare		
17	2213	2217	2236	1-	1			1			2211	C1.7	6161
17	2348	2358	2454	1-	1			1			No flare		
18	0302	0315	0416	1-	3	1		1			0301	C5.0	
18	0626	0634	0748	3-	5	4	3	1	1	6	0626	M1.0	6161
18	0853	0858	0912	1-	5	1	1	1	1	2	0851	C2.1	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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JULY 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
18	1028	1035	1038	1	1		1				*		
18	1106	1117	1147	1-	5	1	2	1	1	1	1103	C3.9	
18	1303	1313	1400	1	5	2	3		1	5	1259	C4.4	
18	1738	1741	1820	1-	5	1	1		1	7	1734	C6.1	6161
18	2051	2055	2103	1-	1					1	2050		6161
19	1010	1020	1030	1-	3	1	1		1		1007	C1.6	
20	0640	0648	0716	1-	1				1		No flare		
20	0725	0734	0801	1-	1				1		0726	C1.3	6162
20	1408	1414	1430	1	5				1	2	1407		6162
21	0358	0435	0604	1	1				1		0353E	C3.3	
21	2001	2014	2049	1-	5				1	2	2001	C1.7	6161
22	0444	0522	0606	1-	1				1		*		
22	1723	1725	1750	1+	1					1	1723		
22	1802	1810	1835	2	1					1	1809	C1.5	
22	2056	2110	2149	1-	1				1		2050	C2.9	6162
22	2129	2132	2145	1-	1					1	2128	C2.9	6171
22	2159	2209	2248	1-	5	1		1		3	2157	C4.7	6171
23	0003	0010	0058	1+	5	1			1		0003E	C7.1	
23	0328	0340	0411	1-	1				1		No flare		
23	0431	0441	0520	1-	1				1		0433	C2.5	6171
23	1236	1246	1315	1+	5	1	1		1	3	1233		6171
23	1919	1924	1957	2-	3					4	1920	C3.3	6162
23	2006	2011	2017	1-	1					1	2009		6171
23	2153	2204	2245	1-	5	1			1	5	2154	C6.3	6171
24	0620	0625	0642	1-	5				1	1	0618	C2.7	6171
24	0930	0941	1000	1-	3	1	1			1	0929	C2.2	6162
24	1627	1628	1642	1-	1					1	1623	C1.4	
24	1722	1724	1738	1-	3					2	1723	C2.6	6172
25	1320	1330	1410	1	5	1	1		1	6	1319	C3.8	6171
25	1437	1437	1442	1-	1					1	1429E		6162
25	1506	1521	1602	1-	3	1	2		1	2	1502		6162
25	2320E	2335	2542	2	5	2			1	2	2223	M2.3	6174
26	0222	0239	0334	1-	1				1		0224		6162
26	0658	0706	0722	1-	5		1		1	1	0655	C2.0	6177
26	0732	0737	0755	1-	5		1		1	1	0730	C2.8	6162
26	1701	1714	1745	1-	5	3	3		1	9	1659	M3.3	6162
26	2123	2129	2223	1-	5				1	1	2122E		6162
26	2330	2340	2340D	1-	1				1		2329	C2.0	6162
27	0002	0008	0044	1-	5				1	3	0001	C6.7	6162
28	0238	0247	0317	1-	1				1		0238	C2.4	6162
28	1327	1343U	1600	2	1		1				No flare		
29	0636	0644	0705	1-	1				1		No flare		
29	0807	0830	0830	1	1		1				No flare		
29	0830	0930U	1036	2	1		1				No flare		
29	1042	1051	1106	1	1		1				No flare		
29	1115	1125	1215	2	1		1				No flare		
29	1243	1308	1409	3	1		1				No flare		
29	2146	2203	2243	1-	1				1		2220E	C3.1	6180
30	0004	0018	0102	1-	1				1		0004	C1.9	
30	0300	0322	0348	1-	1				1		0327	C2.3	6162
30	0630	0648	0704D	1-	5		1		1	1	0633		6180
30	0704E	0734	1010	3	5	4	4		1	2	0706	M4.4	6180
30	1524	1539U	1558	1	1		1				1536		6172

* = no flare patrol.

OBSERVATORIES REPORTING FOR JULY 1990

Athens, Georgia, USA	SES	LaCrescenta, California, USA	SES
Boksborg, Rep of S. Africa	SES	Latrobe, Pennsylvania, USA	SES
Darmstadt, German Fed Rep	SWF	Locust Grove, Georgia, USA	SES
Edenvale, Rep of S. Africa	SES	Madison, Wisconsin, USA	SES
Euclid, Ohio, USA	SES	Manahawkin, New Jersey, USA	SES
Farsta, Sweden	SES	Maui, Hawaii, USA	SWF
Hiraiso, Japan	SWF	Nerja, Spain	SES
Houston, Texas, USA	SES	Panska Ves, Czechoslovakia	SES, SEA, SWF
Hudson, Ohio, USA	SES	San Francisco, California, USA	SES
Inubo, Japan	SPA	Sofia, Bulgaria	SES
Johannesburg, Rep of S. Africa	SES	Sunnyvale, California, USA	SES
Juliusruh, German Dem Rep	SWF	Table Mountain, California, USA	SES
Kandilli, Turkey	SEA	Upice, Czechoslovakia	SEA
Kuhlungsborn, German Dem Rep	SEA, SPA		

Observations are not necessarily continuous.

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

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Jul 90

JULY 1990

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	(UT)	(UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
01			LEAR				0028.0	0028.0	1				III	
			PALE				0028.0	0028.0	1				III	
			LEAR				0136.0	0136.0	1				III	
			PALE				0136.0	0136.0	1				III	
			LEAR				0225.0	0253.0	2				S	
			PALE				0226.0	0230.0	2				V	
			PALE				0249.0	0253.0	1				III	
			LEAR				0253.0	0753.0	1				CONT	
			SVTO				0438.0	0438.0	1				III	
	0443	1703		BLEN										
	0536	1622		ONDR										
				LEAR				0536.0	0536.0	2				III
				SVTO				0536.0	0536.0	1				III
				SVTO				0633.0	0633.0	1				III
				SVTO				0649.0	0656.0	1				III
				SVTO				0708.0	0801.0	2				CONT
				SGMR				1120.0	1121.0	1				III
				SVTO				1126.0	1127.0	2				III
				SGMR				1158.0	1159.0	1				III
				SVTO				1158.0	1158.0	2				III
			SVTO				1224.0	1225.0	3				III	
			SGMR				1225.0	1225.0	2				III	
			SGMR				1249.0	2300.0	1				CONT	
			SVTO				1455.0	1509.0	1				S	
			SVTO				1539.0	1539.0	1				III	
			SGMR				1602.0	1603.0	2				V	
			SVTO				1602.0	1603.0	3				III	
			PALE				1920.0	1927.0	1				III	
			PALE				2231.0	2231.0	1				III	
02			LEAR				0124.0	0852.0	1				CONT	
			LEAR				0456.0	0457.0	2				III	
			SVTO				0456.0	0457.0	3				III	
			SVTO				0458.0	1759.0	1				CONT	
			LEAR				0537.0	0538.0	2				III	
	0929	1810		BLEN			0941.1	0945.8	2				II H	
	0536	1624		ONDR			0941.2	0945.5	2				P	
				BLEN	0942.0	0956.5	1	0942.0	0956.5	1				IV W
				SGMR				1107.0	0000.0	1				CONT
				ONDR	1316.8	1317.0	2							III G
				SGMR				1546.0	1546.0	2				III
				SVTO				1546.0	1546.0	3				III
				PALE				1729.0	1735.0	2				III
				SGMR				1729.0	1735.0	2				III
				PALE				1835.0	1840.0	2				III
				PALE				1934.0	1938.0	3				V
				SGMR				1935.0	1938.0	3				III
				PALE				2132.0	2132.0	1				III
			PALE				2209.0	2230.0	2				S	
03			LEAR				0021.0	0025.0	2				III	
			LEAR				0052.0	0933.0	1				CONT	
			LEAR				0125.0	0126.0	2				III	
			LEAR				0136.0	0200.0	2				S	
			LEAR				0203.0	0205.0	3				III	
			PALE				0203.0	0205.0	3				V	
			LEAR				0230.0	0231.0	2				III	
			LEAR				0302.0	0313.0	2				S	
			LEAR				0419.0	0427.0	3				V	
			PALE				0419.0	0421.0	3				V	
			SVTO				0419.0	0421.0	3				V	
			SVTO				0540.0	0540.0	1				III	
			SVTO				0555.0	0555.0	2				III	
			LEAR				0605.0	0606.0	2				III	
			SVTO				0606.0	0606.0	2				III	
	0444	1810		BLEN	0643.8	0644.0	2							III G
				LEAR				0706.0	0706.0	2				III
	0536	1626		ONDR				0813.0	1626.0	2				I,N,DC
			LEAR				0844.0	0846.0	2				III	

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

JULY 1990

Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
03	LEAR			0908.0	0908.0	2				III	
	SVTO			0908.0	0908.0	3				III	
	SVTO			0945.0	1001.0	2				S	
	ONDR			0945.2	0945.4	1				IIIB	
	ONDR	1015.2	1015.3	1						UNCLF	
	SGMR				1117.0	2151.0	1				CONT
	BLEN				1258.8	1309.7	1				IIIGG
	ONDR	1258.8	1259.4	1	1258.8	1259.4	1				U,G
	ONDR	1309.5	1309.8	2	1309.5	1309.8	2				IIIG
	SVTO				1310.0	1310.0	3				III
	SGMR				1440.0	1441.0	2				III
	SGMR				1509.0	1510.0	2				III
	SVTO				1509.0	1510.0	3				III
	PALE				1922.0	1924.0	2				III
	SGMR				1922.0	1923.0	2				III
	PALE				1950.0	2002.0	2				S
	PALE				2035.0	0413.0	2				CONT
LEAR				2351.0	0933.0	2				CONT	
04	LEAR			0009.0	0013.0	2				III	
	LEAR			0039.0	0043.0	2				III	
	LEAR			0107.0	0113.0	2				III	
	SVTO			0500.0	0500.0	1				III	
	SVTO			0609.0	0609.0	2				III	
	0444 1810	BLEN	0750.8	0751.1	1	0750.8	0751.1	2			IIIG
		BLEN	0833.2	0833.4	2						IIIG
		SGMR				0956.0	0000.0	1			CONT
		SVTO				0956.0	0957.0	3			V
		BLEN	1646.9	1650.5	2	1646.9	1650.5	2			IIIGG
		PALE				1723.0	1724.0	1			III
		PALE				1738.0	0500.0	1			CONT
		LEAR				2338.0	0933.0	1			CONT
		LEAR				2351.0	2351.0	2			III
05	0444 1810	SVTO			0346.0	0000.0	2				CONT
		BLEN									
		SGMR				1059.0	2301.0	1			CONT
		PALE				1700.0	0500.0	2			CONT
		LEAR				2315.0	0934.0	2			CONT
06	SVTO			0347.0	0623.0	2					CONT
	SVTO			0347.0	0630.0	2					CONT
	0444 1810	BLEN			0530.3	1810.00	1				I,W
		BLEN	0607.4	0607.7	1	0607.4	0607.7	3			IIIGG,V
		SVTO				0623.0	1759.0	3			CONT
	0717 1623	ONDR				0800.0	1623.0	1			IN
		SGMR				1055.0	0000.0	1			CONT
		SGMR				1251.0	1251.0	2			III
		SGMR				1528.0	1530.0	3			V
		PALE				1834.0	0500.0	1			CONT
		LEAR				2339.0	0934.0	1			CONT
	07	0444 1715	LEAR			0417.0	0420.0	2			
		BLEN									
		SVTO				0447.0	1759.0	2			CONT
0536 1624		ONDR				0536.0	1624.0	1			IN
		SGMR				1128.0	2000.0	1			CONT
		SGMR				1639.0	1646.0	2			III
		SVTO				1639.0	1646.0	2			III
		PALE				1641.0	1646.0	1			III
		PALE				1759.0	1759.0	1			III
		PALE				1842.0	1842.0	1			III
	PALE				2247.0	2247.0	1			III	
08	LEAR			0016.0	0831.0	1					CONT
	PALE			0020.0	0020.0	2					III
	LEAR			0235.0	0236.0	2					III
	PALE			0235.0	0235.0	2					III
	LEAR			0510.0	0519.0	2					III

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

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Jul 90

JULY 1990

Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
08				0510.0	0517.0	2				S
				0522.0	1758.0	2				CONT
				0727.0	0727.0	1				III
				0955.0	0955.0	2				III
				1210.0	1217.0	1				III
				1210.0	1211.0	2				III
				1235.0	1239.0	2				III
				1235.0	1239.0	3				III
				1251.0	1254.0	1				II
				1251.0	1254.0	2				II
				1357.0	2358.0	1				CONT
				1512.0	1523.0	2				S
				1518.0	1520.0	2				V
0536	1625	ONDR		1519.2	1519.6	1				IIIG
		PALE		1733.0	1733.0	2				III
		PALE		1950.0	1953.0	3				V
		SGMR		1950.0	1953.0	2				V
		SGMR		2050.0	2053.0	2				V
		PALE		2131.0	2132.0	2				V
		PALE		2202.0	2209.0	3				V
		SGMR		2202.0	2208.0	2				V
09		LEAR		0151.0	0151.0	1				III
		LEAR		0154.0	0501.0	1				CONT
		LEAR		0242.0	0247.0	2				III
		PALE		0242.0	0243.0	2				III
		LEAR		0509.0	0519.0	2				III
		SVTO		0509.0	0518.0	2				III
		LEAR		0639.0	0645.0	1				III
		SVTO		0644.0	0645.0	2				III
		LEAR		0748.0	0751.0	2				III
		SVTO		0748.0	0751.0	2				III
		LEAR		0759.0	0801.0	2				III
		SVTO		0759.0	0800.0	3				III
0850	1810	BLEN		0909.0	0915.0	2				III
		SVTO		0922.0	0926.0	2				III
0837	1623	ONDR		0924.5	0925.2	1				IIIG
		SVTO		0957.0	1034.0	2				S
		SGMR		1204.0	1208.0	2				III
		SVTO		1204.0	1208.0	3				V
		SGMR		1312.0	1319.0	2				III
		SVTO		1312.0	1319.0	3				III
		SGMR		1411.0	1430.0	1				S
		SGMR		1416.0	1420.0	3				V
		SGMR		1612.0	0000.0	3				V
		SVTO		1612.0	1619.0	3				V
		SGMR		1820.0	1825.0	2				III
		SGMR		1837.0	1839.0	1				III
		SGMR		1839.0	2358.0	1				CONT
		PALE		1903.0	0035.0	2				CONT
10		LEAR		0209.0	0210.0	1				III
		PALE		0210.0	0210.0	1				III
		LEAR		0317.0	0321.0	1				III
0444	1810	BLEN								
0535	1622	ONDR		0730.0	0736.0	1				III
		LEAR		1125.0	1125.0	1				III
		SGMR		1222.0	1234.0	2				S
		SVTO		1222.0	1235.0	3				S
		SGMR		1234.0	1402.0	1				CONT
		SVTO		1235.0	1414.0	2				CONT
		SGMR		1357.0	1401.0	3				V
		SVTO		1357.0	1401.0	3				V
		SGMR		1517.0	1518.0	2				III
		SVTO		1517.0	1518.0	2				III
		SGMR		1549.0	1549.0	1				III
		PALE		1922.0	1922.0	1				III

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JULY 1990

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
10			SGMR				1922.0	1922.0	1				III
			PALE				1941.0	1947.0	1				III
			PALE				2229.0	2229.0	1				III
11			PALE				0018.0	0027.0	1				III
			LEAR				0027.0	0027.0	1				III
			LEAR				0105.0	0106.0	1				III
	0444	1810	BLEN										
	0536	1623	ONDR										
			LEAR				0540.0	0541.0	1				III
			LEAR				0715.0	0715.0	1				III
0905	1051	ONDR											
		SGMR				1433.0	1434.0	1				III	
		SVTO				1433.0	1434.0	1				III	
12	0444	1810	BLEN										
	0536	1623	ONDR										
			SGMR				1526.0	1527.0	1				V
13	0444	1810	BLEN										
	0536	1622	ONDR										
			SGMR				1104.0	1335.0	1				CONT
			PALE				2154.0	2155.0	2				III
			SGMR				2154.0	2154.0	1				III
			PALE				2226.0	2226.0	2				V
			SGMR				2226.0	2226.0	1				III
			PALE				2245.0	2246.0	1				III
14			LEAR				0024.0	0025.0	2				III
			PALE				0024.0	0025.0	1				III
			LEAR				0401.0	0404.0	2				III
			PALE				0401.0	0403.0	1				III
	0444	1745	BLEN	0611.3	0613.9	1	0611.3	0613.9	2				IIIIGG
	0535	1622	ONDR				0612.6	0613.1	1				IIIIG
			BLEN	0634.1	0634.6	1	0634.1	0634.6	2				IIIIGG
			SGMR				1315.0	1315.0	1				III
			SGMR				1445.0	1446.0	1				V
			SGMR				1745.0	1748.0	2				V
15			LEAR				0013.0	0013.0	2				III
	0536	1623	ONDR				0634.1	0634.7	1				IIIIG
	0741	1805	BLEN										II
			SGMR				1902.0	1922.0	1				II
			PALE				1903.0	1919.0	1				II
			PALE				2151.0	2200.0	2				III
16	0447	1805	BLEN	0638.6	0639.0	2	0638.6	0639.0	2				IIIIG
	0536	1623	ONDR	0638.6	0639.1	1	0638.6	0639.1	1				U,G
			BLEN	0658.4	0658.5	2							IIIIB
			BLEN	0802.0	0802.2	2	0802.0	0802.2	2				III
			SVTO				1429.0	1431.0	2				III
			BLEN	1430.0	1431.2	1	1430.0	1431.2	3				IIIIGG
	0902	0944	ONDR	1430.1	1431.2	2	1430.1	1431.2	2				IIIIG
			SGMR				1619.0	1620.0	1				III
			SVTO				1619.0	1620.0	2				III
			PALE				1642.0	1642.0	1				III
			SGMR				1642.0	1643.0	2				III
			SVTO				1642.0	1642.0	3				III
			BLEN	1642.5	1642.7	1	1642.5	1642.7	2				IIIIG
			SGMR				1844.0	1844.0	1				III
			SGMR				1945.0	1949.0	1				III
			PALE				1946.0	1948.0	2				V
		PALE				1950.0	1950.0	2				II	
		SGMR				1952.0	1959.0	1				II	
17			LEAR				0405.0	0422.0	2				S
			PALE				0413.0	0413.0	1				III
			LEAR				0614.0	0614.0	1				III
			LEAR				0642.0	0649.0	2				III

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	(UT)	(UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
17			SVTO				0643.0	0643.0	2				III
			SVTO				0648.0	0648.0	2				V
			SVTO				0707.0	0707.0	1				III
			SVTO				0736.0	0736.0	1				III
			LEAR				0800.0	0802.0	3				III
			SVTO				0800.0	0810.0	3				S
			LEAR				0806.0	0811.0	2				V
			SVTO				0906.0	0940.0	2				S
			SGMR				1124.0	1125.0	1				III
			SVTO				1124.0	1125.0	2				III
			SGMR				1158.0	1204.0	2				V
			SVTO				1158.0	1204.0	3				V
			SVTO				1412.0	1418.0	2				III
			SGMR				1413.0	1418.0	1				III
			SGMR				1442.0	1443.0	1				III
			SVTO				1442.0	1442.0	2				III
			SGMR				1501.0	1522.0	2				S
			SVTO				1501.0	1521.0	2				III
			SGMR				1559.0	1559.0	1				III
	0536	1621	ONDR				1603.8	1603.9	1				III B
			SGMR				1619.0	1626.0	1				V
			SGMR				1643.0	1644.0	1				V
	0448	1805	BLEN				1643.2	1643.6	1				III GG
			SGMR				1724.0	1725.0	1				V
			PALE				1926.0	1927.0	1				V
			PALE				2021.0	2022.0	1				III
			SGMR				2021.0	2021.0	1				III
			PALE							2056.0	2059.0	1	V
			SGMR				2056.0	2058.0	1				III
18			LEAR				0153.0	0157.0	1				III
			PALE				0154.0	0157.0	1				III
	0448	1805	BLEN										
	0552	1622	ONDR										
			LEAR				0606.0	0607.0	2				III
			LEAR				0643.0	0644.0	1				III
			SVTO				1113.0	1113.0	2				III
			SGMR				1254.0	1256.0	1				III
			SVTO				1254.0	1256.0	1				III
			PALE				2128.0	2130.0	1				III
			SGMR				2128.0	2129.0	1				III
19	0449	1805	BLEN										
	0536	1624	ONDR										
			SGMR				1608.0	1608.0	1				III
			SVTO				1608.0	1608.0	2				III
			PALE				2149.0	2149.0	2				V
			SGMR				2149.0	2149.0	1				III
			PALE				2240.0	2240.0	1				V
20			LEAR				0015.0	0015.0	1				III
			PALE				0114.0	0115.0	1				III
	0450	1650	BLEN										
			LEAR				0518.0	0519.0	2				III
			SVTO				0518.0	0519.0	3				III
	0536	1624	ONDR										
			LEAR				0600.0	0601.0	2				III
			SVTO				0600.0	0601.0	2				III
			LEAR				0617.0	0620.0	1				III
			SVTO				0617.0	0617.0	2				III
			LEAR				0619.0	0621.0	2				III
			LEAR				0639.0	0640.0	1				III
			SVTO				0711.0	0721.0	2				III
			SVTO				0739.0	0739.0	1				III
			SGMR				1029.0	1029.0	1				III
			SVTO				1029.0	1029.0	2				III
			SGMR				1137.0	1137.0	1				III
			SGMR				1223.0	1223.0	1				III
			SVTO				1223.0	1223.0	2				III

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Observation Start End Day (UT) (UT)	Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
20	SGMR				1255.0	1255.0	1				III
	SVTO				1255.0	1255.0	2				III
	SVTO				1312.0	1313.0	2				III
	SGMR				1313.0	1315.0	1				III
	SGMR				1324.0	1325.0	2				V
	SVTO				1324.0	1328.0	3				V
	SGMR				1327.0	1337.0	1				S
	SGMR				1402.0	1404.0	1				III
	SVTO				1402.0	1405.0	2				V
	SGMR				1439.0	1443.0	1				III
	SVTO				1439.0	1444.0	2				III
	SGMR				1615.0	1616.0	1				III
	SGMR				1628.0	1628.0	1				III
	SGMR				1641.0	1642.0	1				III
	SGMR				1659.0	1700.0	1				III
1731 1805	BLN										
	PALE				1823.0	1830.0	2				III
	SGMR				1823.0	1830.0	1				III
	PALE				1920.0	1925.0	3				V
	SGMR				1920.0	1925.0	2				V
	PALE				1945.0	1945.0	1				III
	SGMR				1945.0	1945.0	1				III
	PALE				2305.0	2315.0	1				S
21	PALE				0000.0	0001.0	1				III
	LEAR				0049.0	0049.0	1				III
	PALE				0049.0	0058.0	1				III
	LEAR				0058.0	0058.0	2				III
	LEAR				0123.0	0124.0	1				III
	PALE				0123.0	0124.0	1				III
	LEAR				0211.0	0211.0	1				III
	LEAR				0224.0	0231.0	1				III
	LEAR				0314.0	0315.0	2				III
	PALE				0314.0	0315.0	2				III
	LEAR				0324.0	0328.0	3				III
	PALE				0324.0	0328.0	3				V
	LEAR				0400.0	0402.0	2				III
	PALE				0400.0	0401.0	1				III
	LEAR				0409.0	0429.0	1				S
	SVTO				0427.0	0427.0	2				III
	LEAR				0533.0	0534.0	2				III
	SVTO				0533.0	0536.0	2				III
	LEAR				0555.0	0556.0	2				III
	SVTO				0555.0	0556.0	2				III
0450 1805	BLN				0555.3	0555.6	2				III G
	LEAR				0705.0	0706.0	2				III
	SVTO				0705.0	0706.0	2				III
	SVTO				0725.0	0726.0	1				III
	SGMR				1153.0	1154.0	1				III
	SVTO				1153.0	1154.0	2				III
	SGMR				1302.0	1305.0	1				III
	SGMR				1320.0	1333.0	1				S
	SVTO				1320.0	1320.0	2				III
	SVTO				1331.0	1331.0	2				III
	SGMR				1359.0	1404.0	2				III
	SVTO				1359.0	1404.0	3				III
0602 1622	ONDR				1359.4	1359.9	1				III G
	SVTO				1452.0	1455.0	3				III
	SVTO				1547.0	1547.0	2				III
	SGMR				1624.0	1636.0	1				S
	PALE				1657.0	1657.0	1				III
	SGMR				1657.0	1659.0	2				V
	SVTO				1657.0	1657.0	2				III
	SGMR				1710.0	1710.0	1				III
	SGMR				1740.0	1741.0	1				III
	SGMR				1830.0	1830.0	1				III
	PALE				1840.0	1840.0	1				III
	SGMR				1840.0	1840.0	1				III
	PALE				2010.0	2011.0	1				III

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
21			PALE				2049.0	2049.0	1				III
			PALE				2102.0	2103.0	2				V
			SGMR				2103.0	2103.0	2				III
			PALE				2243.0	2243.0	2				V
22			PALE				0002.0	0002.0	1				III
			LEAR				0032.0	0032.0	1				III
			PALE				0032.0	0032.0	1				III
			LEAR				0525.0	0532.0	1				III
	0640	1623	ONDR										
			LEAR				0707.0	0708.0	2				III
			SVTO				0707.0	0708.0	2				III
			SGMR				1420.0	1421.0	1				V
			SVTO				1420.0	1421.0	2				III
	1635	1805	BLEN										
			SGMR				1734.0	1734.0	1				III
			PALE				1800.0	1800.0	1				III
			SGMR				1800.0	1800.0	1				III
			PALE				1858.0	1859.0	1				III
			SGMR				1858.0	1859.0	1				III
			SGMR				1934.0	1958.0	1				S
		PALE				1944.0	1944.0	1				III	
		PALE				1948.0	1948.0	1				III	
		PALE				1958.0	1958.0	1				III	
		PALE				2104.0	2106.0	2				III	
		SGMR				2105.0	2105.0	1				III	
		PALE				2135.0	2137.0	1				III	
		PALE				2156.0	2204.0	3				V	
		SGMR				2156.0	2200.0	3				V	
		PALE				2208.0	2209.0	1				III	
		PALE				2317.0	2318.0	1				III	
		PALE				2356.0	2357.0	1				III	
23			LEAR				0002.0	0006.0	3				III
			PALE				0002.0	0006.0	3				V
			LEAR				0133.0	0133.0	1				III
			PALE				0133.0	0133.0	1				III
			PALE				0219.0	0219.0	1				III
			LEAR				0258.0	0259.0	1				III
			PALE				0258.0	0259.0	1				III
			LEAR				0405.0	0421.0	1				II
			PALE				0412.0	0416.0	1				III
			LEAR				0431.0	0436.0	2				V
			PALE				0431.0	0434.0	1				III
	0450	0940	BLEN										
			LEAR				0527.0	0527.0	1				III
			LEAR				0653.0	0653.0	1				III
			SVTO				0728.0	0728.0	2				III
			SVTO				0833.0	0834.0	3				III
	0640	1623	ONDR				0833.8	0834.1	1				III G
			LEAR				0834.0	0834.0	2				III
			SGMR				1235.0	1246.0	2				S
			SVTO				1235.0	1246.0	3				S
			SGMR				1314.0	1315.0	1				V
			SGMR				1432.0	1432.0	1				V
			SVTO				1432.0	1432.0	2				III
			SGMR				1444.0	1446.0	2				V
			SVTO				1444.0	1444.0	2				III
			SGMR				1516.0	1516.0	2				V
			SVTO				1516.0	1516.0	2				III
			SGMR				1531.0	1531.0	1				V
		SGMR				1614.0	1623.0	3				V	
		SVTO				1614.0	1621.0	3				III	
1307	1805	BLEN				1614.1	1614.4	1				III G	
		SGMR				1628.0	1631.0	1				V	
		SGMR				1818.0	1823.0	1				III	
		PALE				1840.0	1840.0	1				III	
		SGMR				1840.0	1840.0	1				III	
		SGMR				1854.0	1926.0	2				S	

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
23	PALE			1924.0	1925.0	1				V
	PALE						1958.0	1958.0	1	V
	PALE						2018.0	2019.0	1	III
	SGMR			2019.0	2019.0	1				III
	PALE			2057.0	2058.0	1				III
	SGMR			2058.0	2058.0	1				III
	PALE			2123.0	2124.0	1				V
	PALE			2149.0	2150.0	1				V
	PALE			2356.0	2357.0	1				III
24	LEAR			0109.0	0110.0	1				III
	PALE			0109.0	0109.0	1				III
	LEAR			0128.0	0133.0	2				III
	PALE			0128.0	0132.0	1				V
	LEAR			0147.0	0148.0	1				III
	PALE			0212.0	0218.0	1				III
	LEAR			0228.0	0231.0	3				III
	LEAR			0308.0	0319.0	2				S
	PALE			0308.0	0309.0	2				V
	LEAR			0357.0	0357.0	1				III
	PALE			0417.0	0418.0	1				III
	SVTO			0417.0	0418.0	2				III
	LEAR			0424.0	0427.0	1				III
	SVTO			0427.0	0427.0	1				III
	LEAR			0441.0	0442.0	2				III
	PALE			0441.0	0441.0	1				III
	SVTO			0441.0	0441.0	2				III
	LEAR			0558.0	0559.0	2				III
	SVTO			0558.0	0603.0	2				III
	LEAR			0616.0	0616.0	1				III
	SVTO			0616.0	0624.0	2				III
	LEAR			0624.0	0624.0	2				III
	SVTO			0647.0	0658.0	2				S
	LEAR			0649.0	0649.0	1				III
	LEAR			0657.0	0658.0	2				III
	SVTO			0716.0	0750.0	3				S
	LEAR			0721.0	0728.0	2				III
	ONDR			0721.8	0722.0	1				UNCLF
0536 1623	ONDR			0726.5	0732.3	2				IIIG
0504 1805	BLEN	0726.5	0732.3	1	0726.5	0732.3	2			IIIG
	ONDR	0726.5	0727.0	2	0726.5	0727.0	2			IIIG
	ONDR				0727.8	0728.1	1			UNCLF
	ONDR				0730.8	0731.0	1			IIIG
	ONDR				0732.2	0732.5	1			IIIG
	LEAR				0745.0	0748.0	2			III
	SVTO				0810.0	0819.0	2			III
	LEAR				0836.0	0836.0	1			III
	SVTO				0836.0	0846.0	2			S
	SVTO				0847.0	0902.0	2			CONT
	SVTO				0922.0	0923.0	2			III
	SVTO				0927.0	0934.0	3			V
	LEAR				0928.0	0931.0	2			III
	BLEN	0929.0	0932.6	2	0929.0	0932.6	2			IIIGG
	ONDR	0929.0	0930.5	3	0929.0	0930.5	3			IIIGG
	SVTO				1018.0	1042.0	2			S
	BLEN				1018.1	1019.0	1			IIIG
	ONDR				1018.5	1019.2	2			IIIG
	ONDR				1024.0	1124.0	1			I
	ONDR				1038.8	1039.4	1			IIIG
	BLEN				1038.9	1040.8	1			IIIG
	ONDR	1041.5	1041.9	1	1041.5	1041.9	1			IIIG
	SVTO				1053.0	1115.0	2			S
	SGMR				1058.0	1115.0	1			S
	BLEN				1105.0	1850.00	1			I
	SVTO				1144.0	1202.0	3			S
	SGMR				1145.0	1202.0	2			S
	ONDR	1152.2	1155.7	1	1152.2	1155.7	1			IIIGG
	BLEN	1153.7	1155.6	2	1153.7	1155.6	2			IIIG
	ONDR	1205.7	1208.2	1	1205.7	1208.2	1			I, IIIG
	BLEN	1207.5	1208.1	1	1207.5	1208.1	1			IIIG

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
24			ONDR				1216.4	1623.0	2				I,DC
			SGMR				1255.0	1308.0	2				S
			SVTO				1255.0	1330.0	2				S
			ONDR	1322.3	1322.8	2	1322.3	1322.8	2				IIIG
			BLN	1322.4	1324.2	1	1322.4	1324.2	2				IIIG
			SGMR				1325.0	1335.0	1				S
			SGMR				1346.0	1514.0	1				CONT
			SVTO				1346.0	1428.0	2				S
			BLN	1422.0	1422.8	1	1422.0	1422.8	1				IIIGG
			SGMR				1443.0	1444.0	2				III
			SVTO				1443.0	1630.0	2				CONT
			SGMR				1501.0	1502.0	2				III
			SGMR				1530.0	1630.0	2				S
			SGMR				1643.0	1743.0	1				S
			PALE				1731.0	1733.0	1				III
			PALE				1758.0	1758.0	1				III
			SGMR				1843.0	1943.0	1				S
			PALE				1845.0	1852.0	1				III
			PALE				1907.0	1907.0	1				III
			PALE				1918.0	1920.0	1				III
			PALE				1930.0	2000.0	2				S
			SGMR				1943.0	2000.0	1				S
			PALE				2015.0	2032.0	2				S
			SGMR				2015.0	0000.0	1				S
		PALE				2126.0	2129.0	1				V	
		PALE				2154.0	2221.0	1				S	
		SGMR				2154.0	2154.0	1				III	
		SGMR				2201.0	2203.0	1				III	
		PALE				2241.0	2243.0	3				V	
		SGMR				2241.0	2242.0	1				III	
		SGMR				2254.0	2254.0	1				III	
		PALE				2313.0	2313.0	1				III	
25			LEAR				0017.0	0017.0	1				III
			LEAR				0039.0	0039.0	1				III
			LEAR				0111.0	0116.0	1				III
			LEAR				0159.0	0200.0	1				III
			LEAR				0208.0	0209.0	2				III
			LEAR				0231.0	0232.0	1				III
			LEAR				0236.0	0243.0	1				III
			LEAR				0256.0	0258.0	2				V
			LEAR				0329.0	0329.0	1				III
			LEAR				0337.0	0337.0	1				III
			LEAR				0351.0	0352.0	1				III
			LEAR				0450.0	0501.0	1				S
			SVTO				0451.0	0456.0	1				III
	0505	1802	BLN	0505.0E	1802.0D	1							I
			LEAR				0546.0	0547.0	1				III
			SVTO				0547.0	0547.0	2				III
	0555	1621	ONDR				0555.0	1416.0	2				I,DC
			SVTO				0612.0	0612.0	2				III
			LEAR				0613.0	0613.0	1				III
			SVTO				0730.0	1749.0	2				CONT
			BLN	0737.5	0737.8	2	0737.5	0737.8	2				IIIGG
	0931	0935	ONDR	0737.5	0737.9	3	0737.5	0737.9	3				IIUG
			LEAR				0806.0	0942.0	1				CONT
			SGMR				1052.0	1345.0	1				CONT
		SGMR				1150.0	1151.0	2				III	
		BLN				1637.3	1637.4	1				IIIB	
		PALE				1742.0	1743.0	1				III	
		SGMR				1742.0	1743.0	1				III	
		PALE				1843.0	1843.0	1				III	
		SGMR				1843.0	1844.0	1				III	
		PALE				2140.0	2141.0	2				III	
		SGMR				2140.0	2140.0	1				III	
		PALE				2232.0	2236.0	2				V	
		PALE				2300.0	2311.0	2				S	
		PALE				2313.0	2313.0	1				III	
		PALE				2316.0	2353.0	3				S	

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
25				2318.0	2330.0	2				MWB
26				0008.0	0009.0	2				III
				0008.0	0010.0	2				V
				0056.0	0057.0	2				III
				0113.0	0115.0	3				III
				0113.0	0115.0	3				V
				0126.0	0126.0	1				III
				0126.0	0126.0	1				III
				0151.0	0151.0	1				III
				0350.0	0350.0	2				III
				0350.0	0350.0	1				III
				0501.0	0800.0	1				CONT
0505 1034				0505.0E	1802.0D	2				I,DC
				0525.0	0000.0	2				CONT
0535 1622				0535.0	0914.0	1				I
				0610.0	0614.0	3				III
				0610.0	0613.0	3				III
				0700.0	0702.0	2				III
				0720.0	0730.0	1				III
				0740.0	0740.0	1				III
				0810.0	0811.0	2				III
				0810.0	0811.0	3				III
				0922.0	0922.0	3				III
		0951.0	1048.0	1	0951.0	1142.0	1			I
					1046.0	1046.0	1			III
					1046.0	1046.0	3			III
					1104.0	1105.0	1			III
					1113.0	1113.0	1			III
					1151.0	1212.0	2			S
					1246.0	1248.0	1			III
					1254.0	1622.0	1			I,N
		1304.5	1305.0	1						UNCLF
					1314.0	1315.0	2			V
					1345.0	1349.0	1			III
		1347.0	1622.0	1						I
					1428.0	1429.0	1			V
					1448.0	1450.0	1			III
					1506.0	1508.0	1			V
					1529.0	1531.0	2			V
					1529.0	1530.0	3			III
					1551.0	1552.0	1			III
					1632.0	1635.0	2			V
					1633.0	1634.0	3			III
1329 1800		1659.3	1700.4	2	1659.3	1700.4	2			IIIIGG,U,RS
					1702.0	1704.0	2			V
					1816.0	1817.0	1			V
					1823.0	1825.0	3			III
					1823.0	1826.0	3			V
					1853.0	1855.0	3			III
					1908.0	1913.0	2			III
					1908.0	1913.0	2			III
					1933.0	1937.0	2			V
					1933.0	1938.0	2			V
					1959.0	2003.0	1			III
					1959.0	2003.0	1			III
					2021.0	2031.0	1			III
					2152.0	2204.0	2			S
					2203.0	2204.0	2			III
					2224.0	2226.0	2			III
27					0025.0	0026.0	1			III
					0025.0	0026.0	2			III
					0048.0	0050.0	2			III
					0048.0	0050.0	2			V
					0220.0	0222.0	1			III
					0220.0	0221.0	1			III
					0258.0	0301.0	3			III
					0258.0	0301.0	3			V

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
27				0358.0	0358.0	2				III
				0358.0	0358.0	1				III
				0441.0	0441.0	2				III
				0441.0	0441.0	1				III
0507 1800	0507.0E	1800.0D	1	0507.0E	1800.0D	2				I,DC
				0517.0	0517.0	1				III
				0533.0	0542.0	1				III
				0550.0	0555.0	1				III
				0556.0	0559.0	2				III
				0556.0	0559.0	3				III
0554 1623				0718.0	0739.0	1				I
				0720.0	0741.0	2				S
				0720.0	0805.0	2				S
				0800.0	0803.0	2				III
				0829.0	0830.0	1				III
				0839.0	0847.0	1				III
				0913.0	0913.0	2				III
				0937.0	0938.0	2				III
				0947.5	1623.0	1				F,N
				1027.0	1035.0	3				III
				1032.0	1033.0	1				III
				1106.0	1106.0	2				III
				1106.0	1106.0	2				III
				1141.0	1141.0	1				III
				1141.0	1141.0	1				III
				1215.0	1300.0	1				CONT
				1221.0	1221.0	2				III
				1333.0	1333.0	1				III
				1333.0	1334.0	2				III
				1345.0	1346.0	2				III
				1410.0	1418.0	2				III
				1410.0	1418.0	2				III
	1457.7	1458.7	1	1457.7	1458.7	1				III G
				1458.0	1508.0	1				III
				1458.0	1507.0	1				III
				1516.0	1531.0	2				S
				1517.0	1536.0	2				S
				1728.0	1728.0	1				V
				1817.0	1826.0	1				III
				1823.0	1823.0	1				III
				1928.0	1929.0	2				III
				1928.0	1929.0	1				V
				1944.0	1944.0	1				III
				1944.0	1945.0	1				III
				2013.0	2013.0	1				III
				2013.0	2013.0	1				III
				2050.0	2100.0	1				III
				2100.0	2100.0	1				III
				2130.0	2131.0	1				III
				2305.0	2320.0	1				S
				2358.0	2358.0	1				III
				2358.0	2358.0	1				III
28				0015.0	0016.0	1				III
				0059.0	0101.0	2				III
				0059.0	0100.0	2				V
				0118.0	0119.0	1				III
				0141.0	0144.0	2				V
				0141.0	0144.0	2				V
				0214.0	0216.0	2				III
				0214.0	0216.0	2				V
				0311.0	0320.0	2				III
				0318.0	0319.0	1				III
				0419.0	0419.0	2				III
0507 1800	0507.0E	1800.0D	1	0507.0E	1800.0D	1				I,DC
				0643.0	0646.0	1				III
				0643.0	0646.0	2				III
				0757.0	0758.0	3				III
				0758.0	0758.0	2				III

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
28				1023.0	1023.0	2				III
				1023.0	1024.0	3				III
				1044.0	1045.0	1				III
				1045.0	1045.0	2				III
				1224.0	1226.0	1				III
				1224.0	1226.0	2				III
				1307.0	1314.0	1				III
				1349.0	1354.0	1				III
				1349.0	1354.0	1				III
				1417.0	1456.0	1				S
				1426.0	1427.0	2				III
				1426.0	1427.0	2				III
			1445.1 1445.6 1	1445.1	1445.6	1				III G
				1510.0	1511.0	2				V
				1510.0	1511.0	2				III
				1549.0	1550.0	1				III
				1609.0	1613.0	1				III
				1635.0	1637.0	1				V
				1635.0	1638.0	3				V
				1635.0	1638.0	2				V
				1723.0	1724.0	1				III
				1755.0	1755.0	1				V
				1755.0	1800.0	1				V
				1814.0	1814.0	1				V
				1814.0	1814.0	1				V
				1840.0	1840.0	1				V
				1901.0	1901.0	1				V
				1901.0	1902.0	2				V
				1938.0	1952.0	1				S
				1938.0	1952.0	1				V
				2010.0	2012.0	1				V
				2012.0	2028.0	3				S
				2014.0	2015.0	3				V
				2017.0	2028.0	2				S
				2045.0	2047.0	1				III
				2103.0	2104.0	2				V
				2104.0	2104.0	1				III
				2118.0	2125.0	3				V
				2118.0	2125.0	1				III
				2209.0	2215.0	1				III
				2246.0	2246.0	1				III
29				0009.0	0019.0	1				III
				0009.0	0019.0	1				V
				0032.0	0033.0	1				III
				0033.0	0033.0	1				III
				0054.0	0055.0	1				V
				0055.0	0056.0	1				III
				0224.0	0224.0	1				III
				0224.0	0224.0	1				III
				0253.0	0253.0	2				III
				0316.0	0317.0	2				III
				0316.0	0317.0	1				III
				0336.0	0337.0	1				III
				0410.0	0411.0	2				III
				0410.0	0410.0	1				III
				0428.0	0428.0	1				III
				0437.0	0437.0	1				III
				0454.0	0454.0	1				III
	0507 1800		0507.0E 1800.0D 1	0507.0E	1800.0D	1				I,DC
				0553.0	0554.0	2				III
				0553.0	0603.0	2				III
				0602.0	0603.0	1				III
	0609 1621			0711.0	0711.2	1				III B
				0717.0	0719.0	1				III
				0717.0	0718.0	1				III
				0755.0	0755.0	2				III
				0845.0	0845.4	1				I,DC
				0901.0	0905.0	2				III

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
27			SVTO				0946.0	0958.0	2				S	
			SVTO				1016.0	1021.0	1				III	
			SVTO				1048.0	1050.0	1				III	
			SGMR				1049.0	1050.0	1				III	
			SGMR				1142.0	1143.0	1				III	
			SVTO				1142.0	1142.0	1				III	
			SGMR				1300.0	1301.0	1				III	
			SVTO				1301.0	1301.0	1				III	
			SGMR				1343.0	1345.0	1				III	
			SVTO				1343.0	1345.0	1				III	
			LEAR				1443.0	1445.0	1				III	
			SGMR				1443.0	1445.0	1				III	
			SGMR				1444.0	1444.0	1				V	
			SGMR				1521.0	1522.0	1				III	
			SGMR				1535.0	1536.0	1				V	
			SGMR				1653.0	1653.0	1				III	
			SGMR				1719.0	1727.0	1				V	
			PALE				1809.0	1810.0	1				III	
			SGMR				1809.0	1810.0	2				V	
			SGMR				1853.0	1853.0	1				III	
			SGMR				2006.0	2015.0	1				III	
			SGMR				2038.0	2038.0	1				III	
			PALE				2147.0	2147.0	1				III	
			SGMR				2147.0	2147.0	1				III	
			PALE				2218.0	2219.0	1				III	
			SGMR				2218.0	2219.0	1				III	
	30			LEAR				0051.0	0109.0	2				S
			PALE				0051.0	0109.0	1				S	
			LEAR				0130.0	0131.0	2				III	
			PALE				0130.0	0131.0	1				III	
			LEAR				0155.0	0206.0	2				S	
			LEAR				0220.0	0228.0	1				III	
			PALE				0243.0	0243.0	1				III	
			LEAR				0301.0	0308.0	1				III	
			LEAR				0506.0	0507.0	1				III	
		0509 1800		BLEN	0509.0E	1310.0	1	0509.0E	1310.0	1				I,DC
				LEAR				0554.0	0554.0	1				III
				LEAR				0715.0	0718.0	3				II
				SVTO				0716.0	0833.0	3				IV
				LEAR				0717.0	0834.0	2				IV
				BLEN				0743.5	0810.3	3				IV
		0626 1622		ONDR	0750.4	0809.0	3							IV
				LEAR				0913.0	0913.0	1				III
				SVTO				0913.0	0914.0	2				V
				SVTO				0925.0	0944.0	2				S
		1210 1221		ONDR				0940.8	0941.2	1				I
				SVTO				0943.0	0944.0	2				V
				SGMR				1231.0	1240.0	2				III
				SVTO				1231.0	1240.0	2				V
				ONDR	1238.2	1238.8	2	1238.2	1238.8	2				IIIG
				BLEN	1238.3	1238.7	1	1238.3	1238.7	2				IIIIGG
				SGMR				1307.0	1319.0	1				S
				SVTO				1307.0	1318.0	1				S
				SGMR				1540.0	1541.0	1				III
				SVTO				1540.0	1540.0	2				III
				SGMR				1559.0	1559.0	1				III
				SVTO				1559.0	1559.0	2				III
				PALE				1657.0	1700.0	1				V
				SGMR				1657.0	1701.0	2				V
			SVTO				1701.0	1700.0	2				III	
			SGMR				1725.0	1725.0	1				V	
			SGMR				1801.0	1805.0	2				III	
			SGMR				1821.0	2159.0	1				CONT	
			PALE				1853.0	1853.0	1				III	
			PALE				1926.0	1927.0	1				III	
			PALE				1933.0	1933.0	1				III	
			SGMR				1933.0	1933.0	2				III	
			PALE				2002.0	2004.0	1				V	

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

JULY 1990

Day (UT)	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
30			PALE				2035.0	2036.0	1				III
			SGMR				2035.0	2036.0	2				III
			PALE				2047.0	2048.0	2				III
			SGMR				2047.0	2048.0	2				III
			PALE				2118.0	2118.0	1				III
			PALE				2201.0	2202.0	1				III
			PALE				2210.0	2211.0	2				III
			SGMR				2210.0	2211.0	1				III
			PALE				2239.0	2246.0	1				III
			SGMR				2302.0	2302.0	1				III
			PALE				2317.0	2317.0	1				III
	31			PALE				0001.0	0005.0	2			
			LEAR				0004.0	0005.0	1				III
			LEAR				0127.0	0128.0	1				III
			PALE							0127.0	0127.0	1	III
			LEAR				0210.0	0210.0	1				III
			PALE				0210.0	0210.0	1				III
			LEAR				0230.0	0230.0	2				III
			PALE				0230.0	0241.0	1				S
			LEAR				0241.0	0245.0	2				III
			PALE				0241.0	0241.0	1				III
			PALE				0330.0	0330.0	1				III
0510		1114		BLEN									
				LEAR			0528.0	0530.0	1				III
0559		1623		ONDR									
				SVTO			0710.0	0711.0	1				III
				LEAR			0729.0	0731.0	1				III
				SVTO			0730.0	0731.0	2				III
				SVTO			0928.0	0938.0	2				S
				SGMR			1217.0	1217.0	1				III
1327		1800		BLEN									
			SGMR			1620.0	1621.0	1				V	
			SVTO			1620.0	1621.0	2				III	
			SGMR			1652.0	1652.0	1				III	

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

B = Single burst	RS = Reverse slope burst
G = Small group (< 10) of bursts	DP = Drifting pairs
GG = Large group (> 10) of burst	DC = Drifting Chains
C = Underlying continuum (particularly with Type I)	H = Herringbone
S = Storm in the sense of intermittent but apparently connected activity	W = Weak
N = Intermittent activity in this period	P = Pulsations
U = U-shaped burst of Type III	CONT = Continuum
	UNCLF = Unclassified activity
	DCIM = Fast drift

Stations Reporting:

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

C O S M I C R A Y I N D I C E S
(Neutron Monitor)

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Jul 90

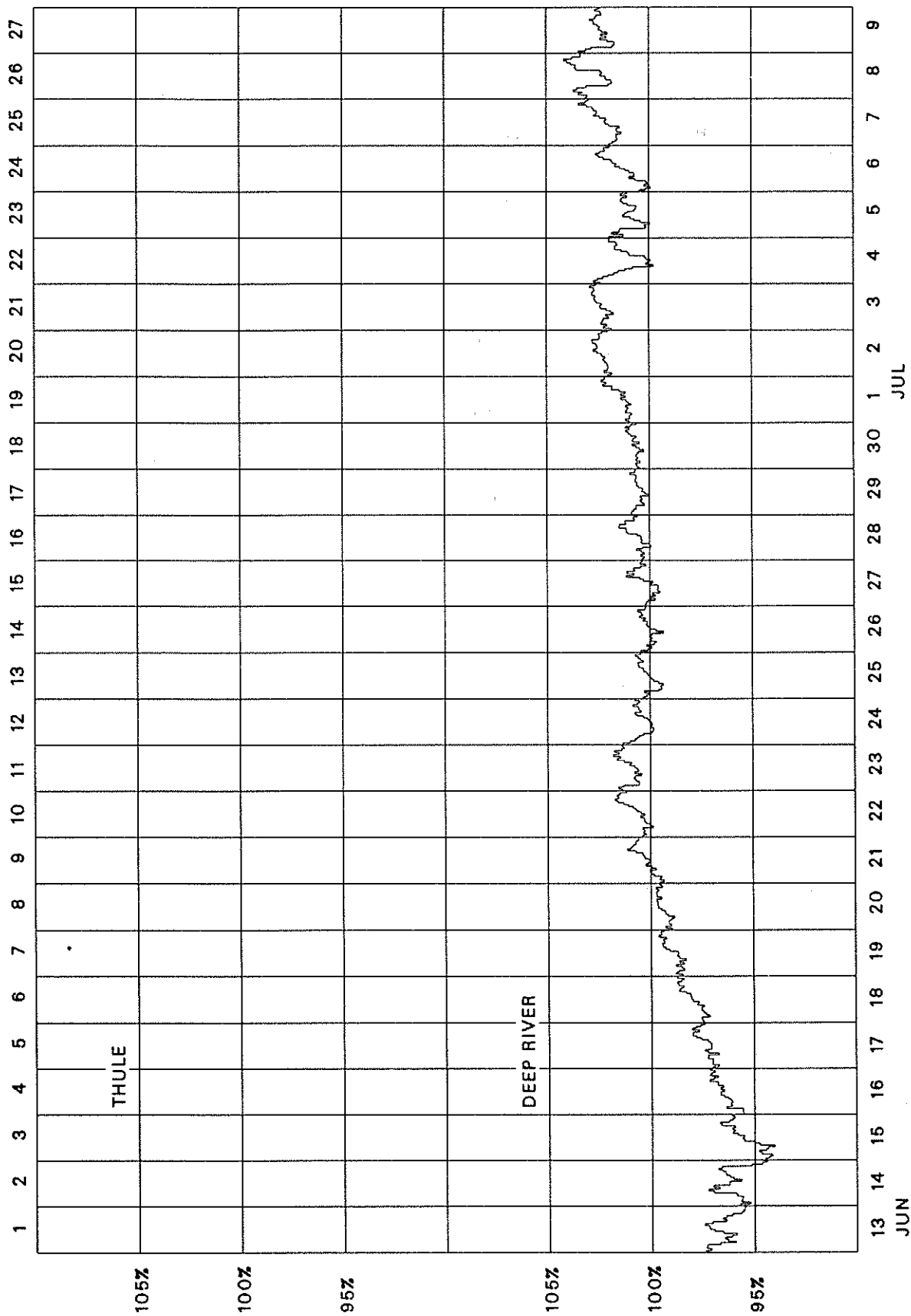
JULY 1990

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		5887.3	5316.1		3426.7	
2		5939.9	5356.2		3433.8	
3		5943.1	5382.1		3426.8	
4		5880.9	5353.4		3407.5	
5		5864.5	5273.7		3402.8	
6		5879.0	5276.5		3403.9	
7		5932.3	5331.5		3415.9	
8		5981.8	5376.7		3438.7	
9		5946.1	5365.3		3433.9	
10		5884.5	5297.9		3395.6	
11		5836.3	5254.8		3383.9	
12		5917.7	5285.4		3403.7	
13		5956.5	5321.9		3413.5	
14		5928.6	5331.2		3400.5	
15		5865.2	5316.9		3391.4	
16		5860.6	5287.6		3393.7	
17		5842.6	5258.0		3378.8	
18		5901.6	5328.1		3404.8	
19		5964.0	5392.7		3429.5	
20		5945.0	5373.9		3432.2	
21		5958.9	5366.8		3425.6	
22		5956.2	5373.2		3419.2	
23		5921.0	5360.0		3407.3	
24		5926.2	5348.2		3416.7	
25		5923.1	5353.3		3413.5	
26		5939.9	5358.4		3407.8	
27		5950.7	5379.8		3422.2	
28		5792.5	5227.1		3382.0	
29		5783.5	5226.8		3381.7	
30		5813.6	5261.7		3384.0	
31		5865.4	5298.1		3400.4	
Mean		5902.9	5323.7		3408.8	

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.

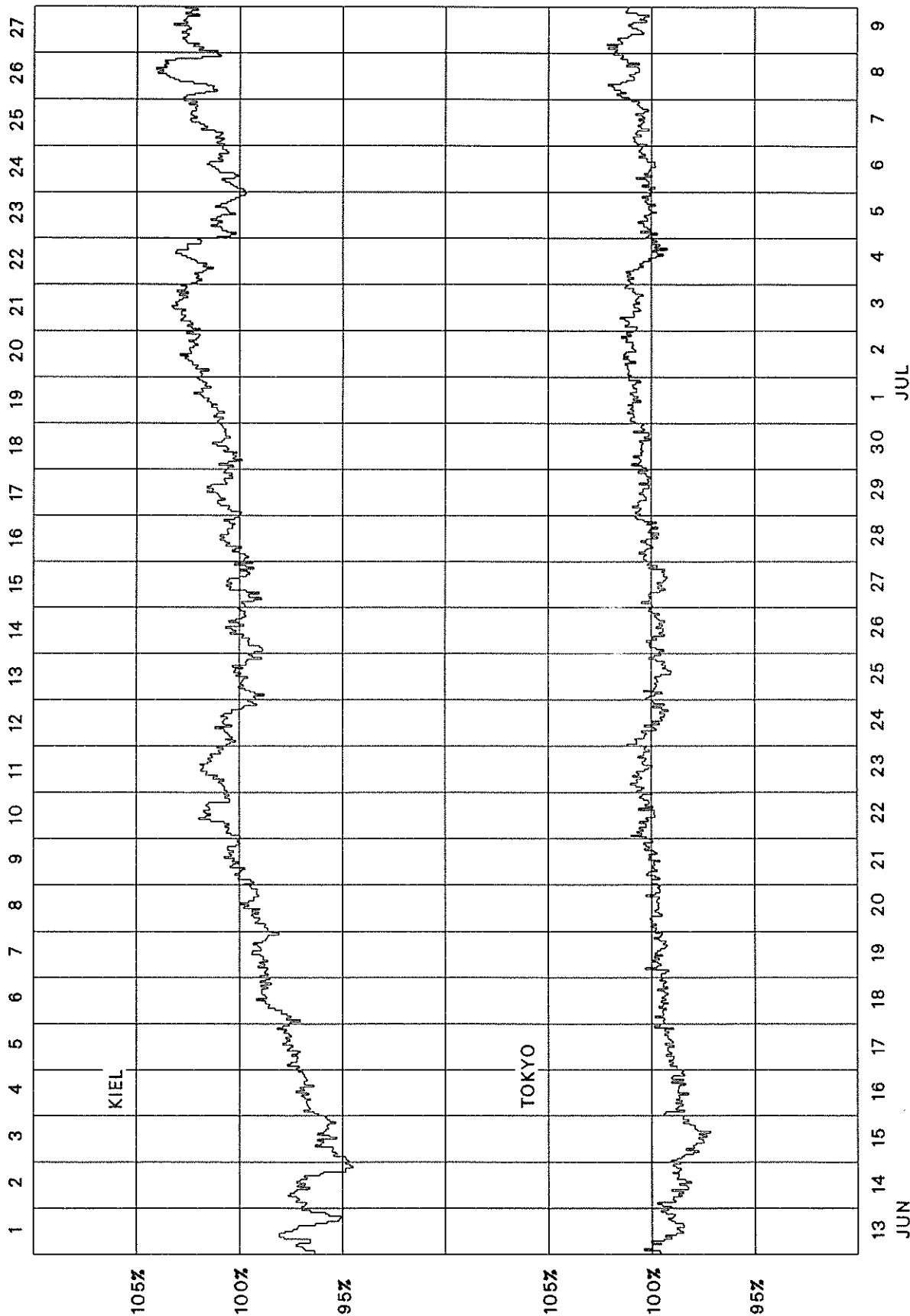
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2143 (June 1990-July 1990)



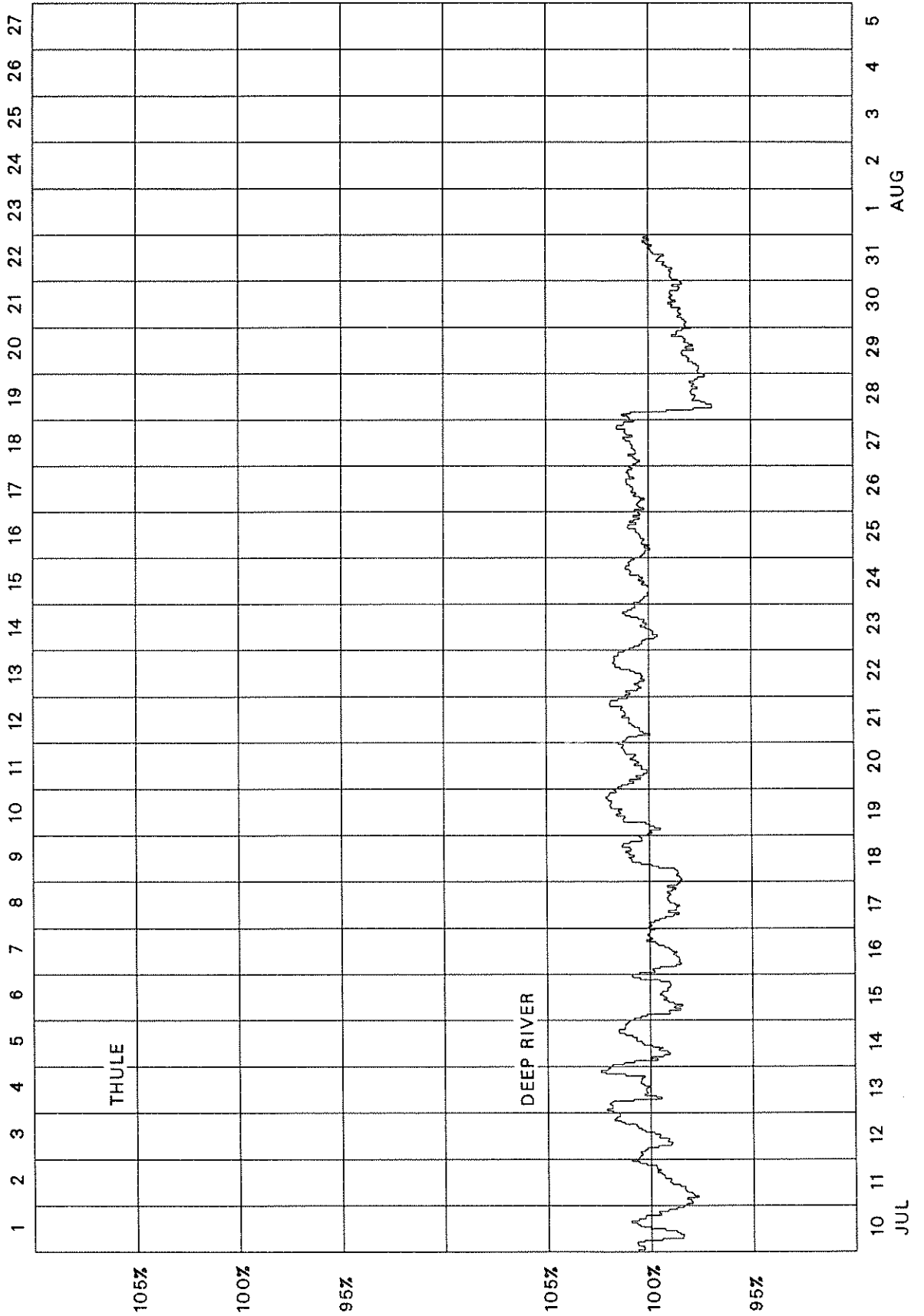
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2143 (June 1990-July 1990)



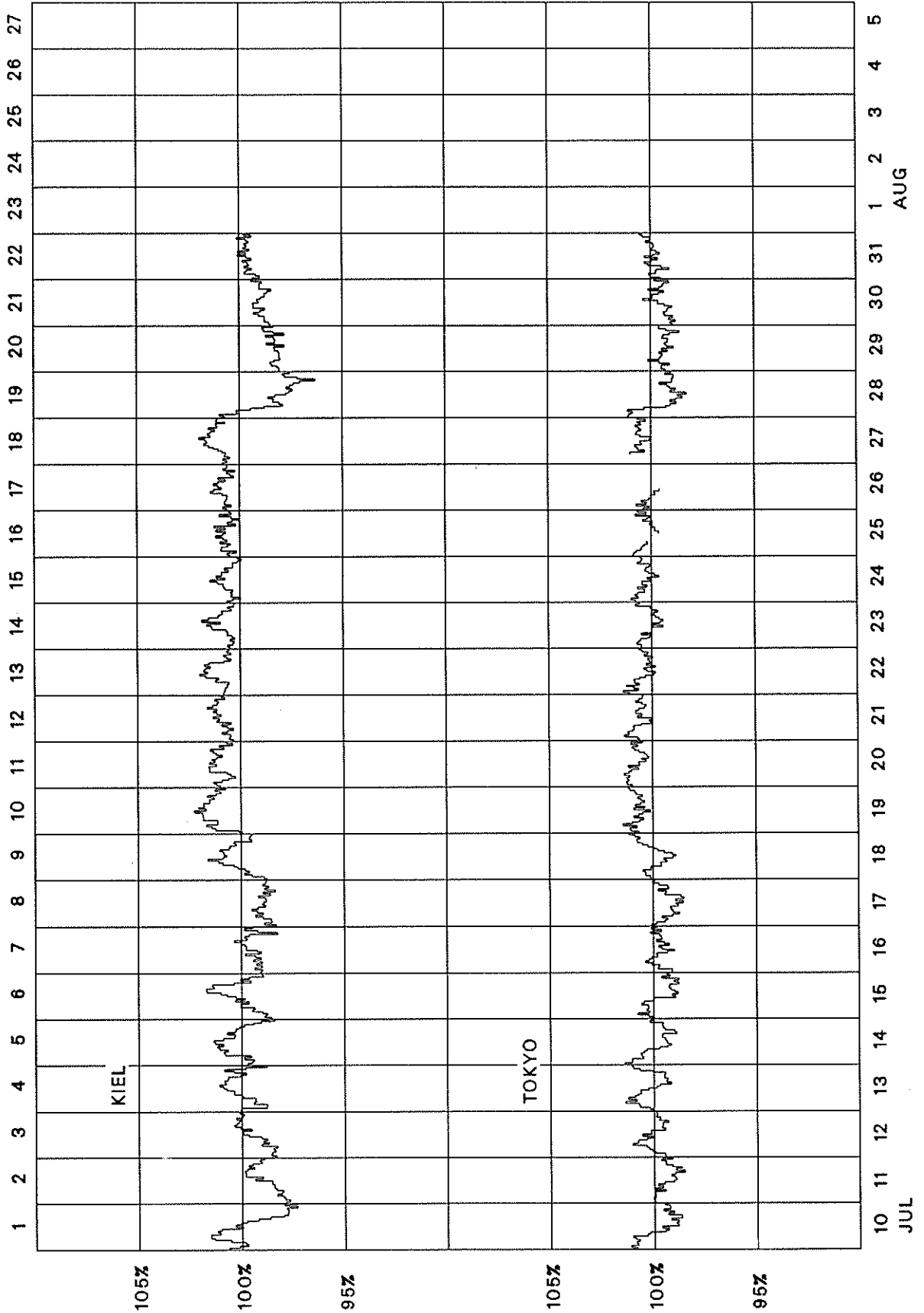
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2144 (July 1990-August 1990)



COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2144 (July 1990-August 1990)



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GEOMAGNETIC ACTIVITY INDICES

July 1990

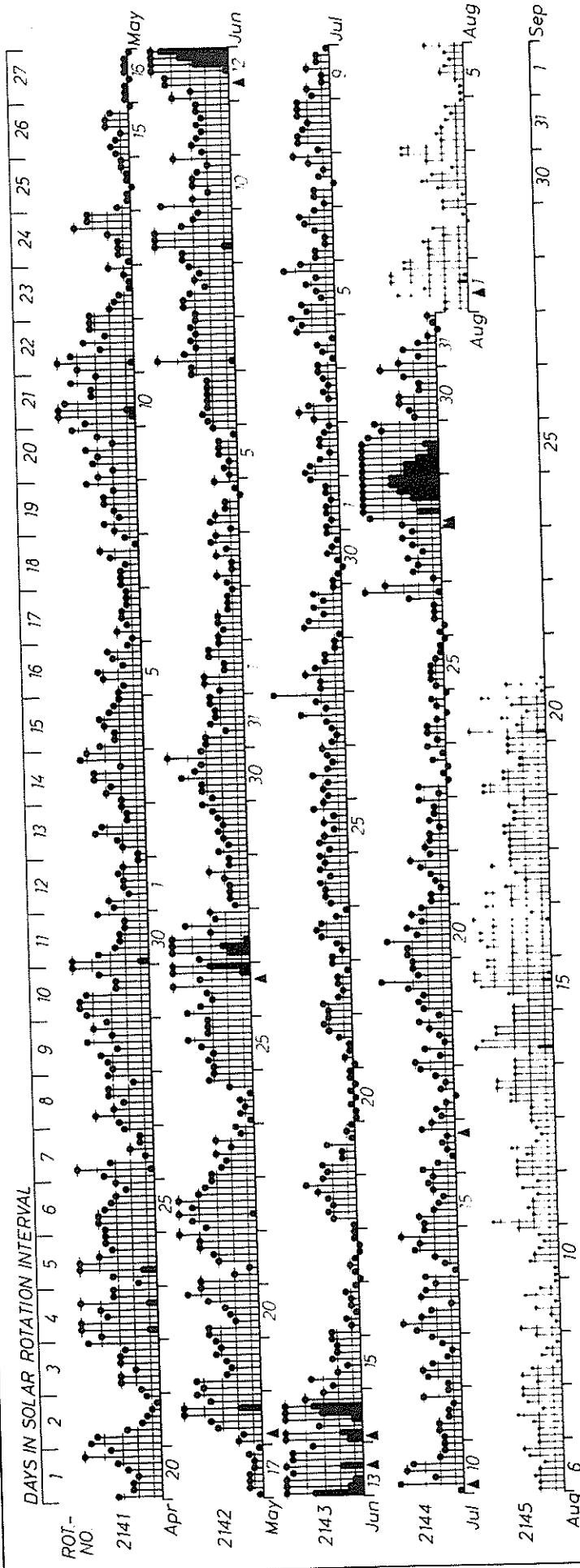
Day	Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								Am	aa Provisional			
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8		N	S	M	

Data not available at this time due to computer problems.

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

Kp through July 31, 1990

University of Göttingen



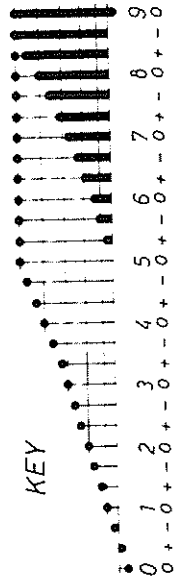
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp (after Bartels)

Kp till 1990 July 31

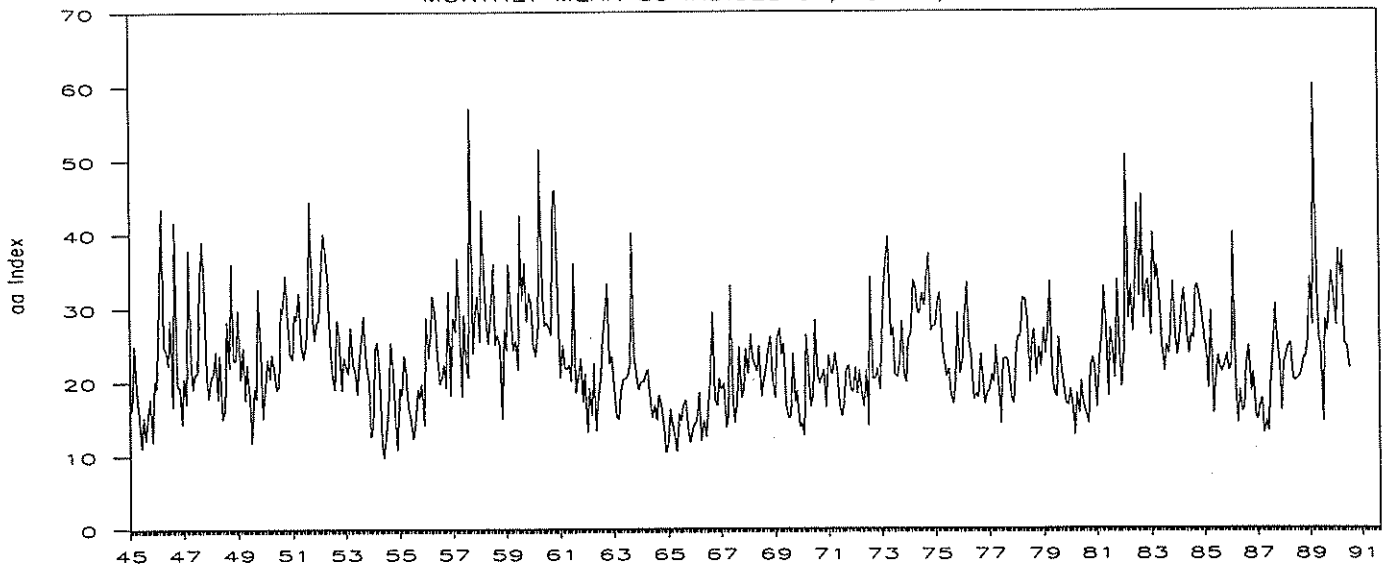
Ks (from Wingst and Göttingen) till August 21

▲ = sudden commencement

KEY



MONTHLY MEAN $\sigma\sigma$ INDICES 01/45-07/90



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						29.7

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PRINCIPAL MAGNETIC STORMS

JULY 1990

Sta	Geomag Lat	Commencement		SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	D K (Min)	Ranges			End Hour Day (UT)
		Time Day (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)			D (Min)	H (Gamma)	Z (Gamma)	
HYB	07.6N	04	0700	..	..	..	05(4,5)	5	7	131	21	05 24
HYB	07.6N	10	0400	..	..	..	10(2,5)	4	7	108	20	11 22
ETT	00.6S	10	0445	SC*	1.3	50	32	-	6	162	69	11 15
HYB	07.6N	14	0500	..	..	..	14(5)	5	9	137	37	15 21
HYB	07.6N	16	1800	SC	.2	11	- 1	-	--	--	--	-- --
ETT	00.6S	16	1800	SC	.2	12	10	-	--	--	--	-- --
HYB	07.6N	19	0000	..	..	..	19(4,5)	5	5	121	27	20 21
GUA	04.0N	19	09--	..	..	..	19(4)	5	--	80	10	19 17
ETT	00.6S	19	0000	..	..	..	..	-	4	128	46	20 22
COL	64.6N	28	0108	SC	8	111	..	-	--	--	--	-- --
COL	64.6N	28	0331	SC	32	406	- 23	8	624	2940	1800	29 23
FRD	49.6N	28	0330	SC*	.6	70	- 10	7	35	385	181	29 23
BJI	28.5N	28	0107	SC	2.6	18	1	7	19	327	70	29 23
HON	21.1N	28	0330	SC	..	..	..	7	--	--	--	-- --
KRC	16.4N	28	0112	SC	..	15	6	7	11	315	130	29 23
UJJ	13.5N	28	0330	SC	.6	49	- 11	-	10	--	76	30 23
ABG	09.5N	28	0330	SC	.8	43	- 5	7	11	358	75	30 23
HYB	07.6N	28	0108	SC	.4	16	- 2	-	--	--	--	-- --
HYB	07.6N	28	0332	SC	.5	46	- 4	7	10	368	31	29 23
GUA	04.0N	28	0108	SC*	..	39	- 10	-	--	--	--	-- --
GUA	04.0N	28	0330	SC*	.6	73	- 20	-	--	--	--	-- --
GUA	04.0N	28	0630	SC	.6	74	- 20	6	--	240	40	28 12
GUA	04.0N	28	1301	..	..	..	..	6	--	150	20	29 23
ANN	01.5N	28	0330	SC	..	..	..	-	11	319	97	30 23
ETT	00.6S	28	0108	SC	.1	18	15	-	--	--	--	-- --
ETT	00.6S	28	0332	SC*	1.7	70	52	-	14	497	201	29 23
HER	33.7S	28	0331	SC*	5 *	26	22	6	29	244	145	29 24
GNA	43.2S	28	0331	SC*	47 *	18	- 16 *	6	27	170	160	30 00
CNB	43.9S	28	0330	SC*	2.2*	40 *	10	6	33	275	95	29 23
GUA	04.0N	29	1137	..	..	..	..	6	--	150	20	29 23
GUA	04.0N	30	20--	..	..	..	..	5	10	50	10	31 03

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

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Late
Jun 90

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

JUNE 1990

Observation Day	Start End		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	(UT)	(UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
01	0542	1742	ONDR				0542.0	1143.0	1				I,N
	1015	1810	BLN				1108.2	1111.2	1				III
02	0445	1810	BLN	0633.6	0641.0	3	0633.6	0641.0	1				IV
	0540	1743	ONDR	0634.0	0639.4	2	0634.0	0639.4	2				IV
			BLN				1406.0	1407.2	3				III,V
03	0445	1820	BLN										
	0541	1744	ONDR										
04	0445	1820	BLN	0520.0	0521.2	1	0520.0	0521.2	3				III
	0557	1744	ONDR										
05	0440	1820	BLN				1006.0	1142.5	3				IV P
	0707	1745	ONDR				1008.8	1014.9	2				IV
			ONDR	1018.1	1024.8	2	1019.1	1024.8	2				IV
			ONDR				1035.5	1054.9	2				IV F
			ONDR				1107.2	1114.0	1				IV
			ONDR				1141.0	1142.2	1				IV
06	0538	1746	ONDR										
	0440	1742	BLN	1656.3	1657.0	1	1656.3	1657.0	3				III
07	0537	1747	ONDR	1347.1	1347.4	1	1347.1	1347.4	1				III
	0945	1820	BLN	1655.2	1658.6	2	1655.2	1658.6	3				III
			ONDR	1655.2	1655.5	1	1655.2	1655.5	1				U,G
			BLN				1729.2	1729.3	2				III
			BLN	1748.7	1749.1	2	1748.7	1749.1	2				III
08	0445	1820	BLN				1016.3	1026.6	2				III
	0551	1747	ONDR				1026.4	1026.6	1				III
			BLN	1551.6	1556.8	1	1551.6	1556.8	3				III
09	0443	1820	BLN	1337.0	1345.5	2	1337.0	1345.5	3				III
	0551	1748	ONDR	1339.4	1339.9	1	1339.4	1339.9	1				III
			ONDR				1344.7	1345.1	1				III
			BLN				1600.5	1601.3	1				III
			BLN	1645.5	1648.3	3	1645.5	1648.3	3				III
			ONDR	1645.5	1652.0	3	1645.5	1652.0	3				II III
			BLN	1647.2	1649.1	2	1647.2	1649.1	2				DCIM
			BLN				1649.1	1659.5	3				II
			BLN				1806.7	1806.8	2				III
10	0443	1820	BLN				0525.0	1820.00	1				I,DC
	0537	1749	ONDR				0537.0	0825.0	1				I,N
			BLN	0823.6	0847.8	2							DCIM,P
			ONDR	0825.4	0827.5	1							P
			ONDR	1334.0	1337.0	2	1334.0	1337.0	2				III,2
			BLN	1334.1	1346.5	2	1334.1	1346.5	2				III,RS
			BLN	1446.3	1525.2	2	1446.3	1525.2	3				III
			ONDR	1446.3	1446.7	2	1446.3	1446.7	2				III
			ONDR	1501.0	1505.0	2	1501.0	1505.0	2				III
			ONDR				1524.3	1525.4	1				III
			BLN	1621.5	1621.7	1	1621.5	1621.7	1				III
11	0443	1820	BLN	0943.5	0944.7	3	0943.5	0944.7	3				III
	0536	1749	ONDR	0946.0	0946.3	2	0946.0	0946.3	2				III,CONT
			BLN	0959.9	1004.2	1	0959.9	1004.2	1				III
			BLN	1026.2	1113.6	3	1026.2	1113.6	3				III,W
			ONDR				1026.5	1046.0	2				IV
			ONDR	1059.7	1059.9	1							III
			ONDR	1113.0	1113.8	2	1113.0	1113.8	2				III,U
			ONDR	1205.4	1205.7	2	1205.4	1205.7	2				III
			BLN	1205.5	1205.9	2	1205.5	1205.9	3				III
12	0443	1652	BLN	0520.7	0609.8	2	0520.7	0609.8	2				IV P
	0551	1750	ONDR	0601.0	0609.8	1							IV P,F
			BLN				1647.0	1652.00	2				I,DC
	1718	1820	BLN	1741.5	1741.8	2							III

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

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
13	0442	1820	BLEN										
	0646	1750	ONDR										
14	0442	1205	BLEN										
	0536	1623	ONDR	0935.2	0935.4	1	0935.2	0935.4	1				IIIG
	1518	1643	BLEN										
	1706	1810	BLEN										
15	0536	1623	ONDR										
	0443	1810	BLEN	0826.5	0835.0	3	0826.5	0835.0	2				IV W
16	0443	1810	BLEN										
	0536	1623	ONDR										
17	0444	0553	BLEN										
	0730	1630	ONDR										
18	0536	1624	ONDR										
	1358	1810	BLEN										
19	0443	1810	BLEN										
	0536	1622	ONDR										
20	0443	1810	BLEN										
	0536	1622	ONDR										
21	0443	1810	BLEN										
	0536	1207	ONDR										
22	0536	1627	ONDR										
23	0443	1810	BLEN										
	0536	1633	ONDR										
24	0443	0737	BLEN										
	0536	1624	ONDR										
25	0536	1625	ONDR	1349.0	1349.3	2	1349.0	1349.3	2				UNCLF
26	0443	1810	BLEN	0532.6	0543.5	2							IIIG
	0537	1620	ONDR										
			BLEN	0845.5	0845.7	1							III
27	0714	1622	ONDR										
	0443	1810	BLEN	1648.8	1649.2	1	1648.8	1649.2	2				IIIG
28	0443	1810	BLEN				0558.2	0558.5	1				IIIG
	0536	1622	ONDR				0558.2	0558.6	1				IIIG
			BLEN				1629.8	1629.9	1				III
29	0443	0830	BLEN										
	0536	1624	ONDR	1055.5	1056.0	1	1055.5	1056.0	1				IIIG
	1210	1810	BLEN	1248.0	1640.0	1	1248.0	1640.0	1				I
30	0443	1810	BLEN										
	0536	1624	ONDR										

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

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

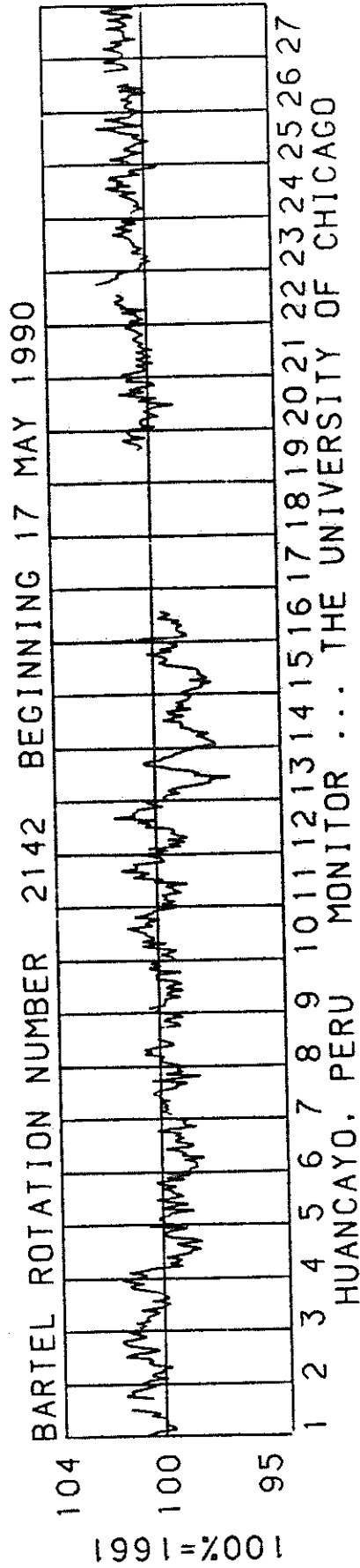
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C O S M I C R A Y I N D I C E S
(Neutron Monitor)

JUNE 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	3566	5639.8	5084.3	3169.2	3329.4	1646.4(26)
2	3593	5652.6	5107.8	3187.0	3341.6	---
3	3628	5708.6	5163.0	3216.3	3358.5	---
4	3618	5722.7	5150.4	3222.7	3362.2	1670.8(18)
5	3617	5722.6	5133.5	3212.0	3359.1	1663.3
6	3633	5707.6	5152.6	3223.5	3364.3	1666.2
7	3667	5744.7	5170.1	3246.7	3374.7	1675.4
8	3650	5731.0	5158.4	3227.3	3366.7	1668.0
9	3659	5717.2	5157.6	3230.8	3366.5	1670.2
10	3664	5717.5	5154.7	3229.2	3366.9	1670.9
11	3667	5749.2	5167.4	3239.2	3375.3	1671.6(38)
12	3654	5727.1	5163.2	3229.3	3387.9	1675.4
13	3561	5604.2	5065.7	3187.5	3370.9	1672.8
14	3582	5575.4	5056.9	3154.0	3354.8	1662.3
15	3525	5537.2	5009.9	3123.7	3330.4	1658.0
16	3581	5602.7	5070.8	3162.7	3353.1	1664.8
17	3620	5651.4	5110.6	3197.1	3368.2	1671.9
18	3660	5688.7	5156.9	3224.3	3377.7	1673.8
19	3680	5744.8	5179.9	3257.1	3383.4	1682.8
20	3682	5771.7	5198.6	3269.5	3389.3	1686.5
21	3721	5818.6	5246.6	3292.6	3396.0	1694.2
22	3752	5847.5	5289.1	3322.0	3406.5	1697.4
23	3763	5869.3	5303.1	3341.6	3413.0	1697.7
24	3736	5830.7	5259.8	3314.4	3396.2	1693.9
25	3729	5813.4	5223.2	3295.5	3386.0	1684.9(36)
26	3729	5811.2	5229.2	3295.7	3388.1	1683.1
27	3740	5817.4	5230.5	3302.4	3388.7	1685.6
28	3762	5844.1	5256.6	3307.4	3403.1	1686.8
29	3754	5838.2	5280.0	3313.7	3410.9	1686.4
30	3752	5846.8	5272.0	3324.2	3412.5	1690.5
Mean	3665	5735.2	5173.4	3244.0	3376.5	1677.5

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.



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G E O M A G N E T I C A C T I V I T Y I N D I C E S

May 1990

Day	Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								aa Provisional			
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8	Am	N	S	M

Data not available at this time due to computer problems.

G E O M A G N E T I C A C T I V I T Y I N D I C E S

June 1990

Day	Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								Am	aa Provisional		
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8		N	S	M

Data not available at this time due to computer problems.



WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS



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."