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**NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE**

Thomas N. Pyke, Jr., Assistant Administrator

JANUARY 1991 NUMBER 557 - Part I

# **Solar-Geophysical Data prompt reports**

Data for December, November 1990, and Late Data

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**NATIONAL GEOPHYSICAL DATA CENTER**

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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 557

(Issued in Two Parts)

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<b>H. MISCELLANEOUS</b>									
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The entry "551A 60" under May 1990, for example, means that the sunspot drawings for May 1990 appear in SOLAR-GEOPHYSICAL DATA No. 551, Part I, and that they begin on page 60. "A" denotes Part I and "B", Part II. Blanks indicate data not yet received and dashes mark unavailable data.

C O N T E N T S

Prompt Reports

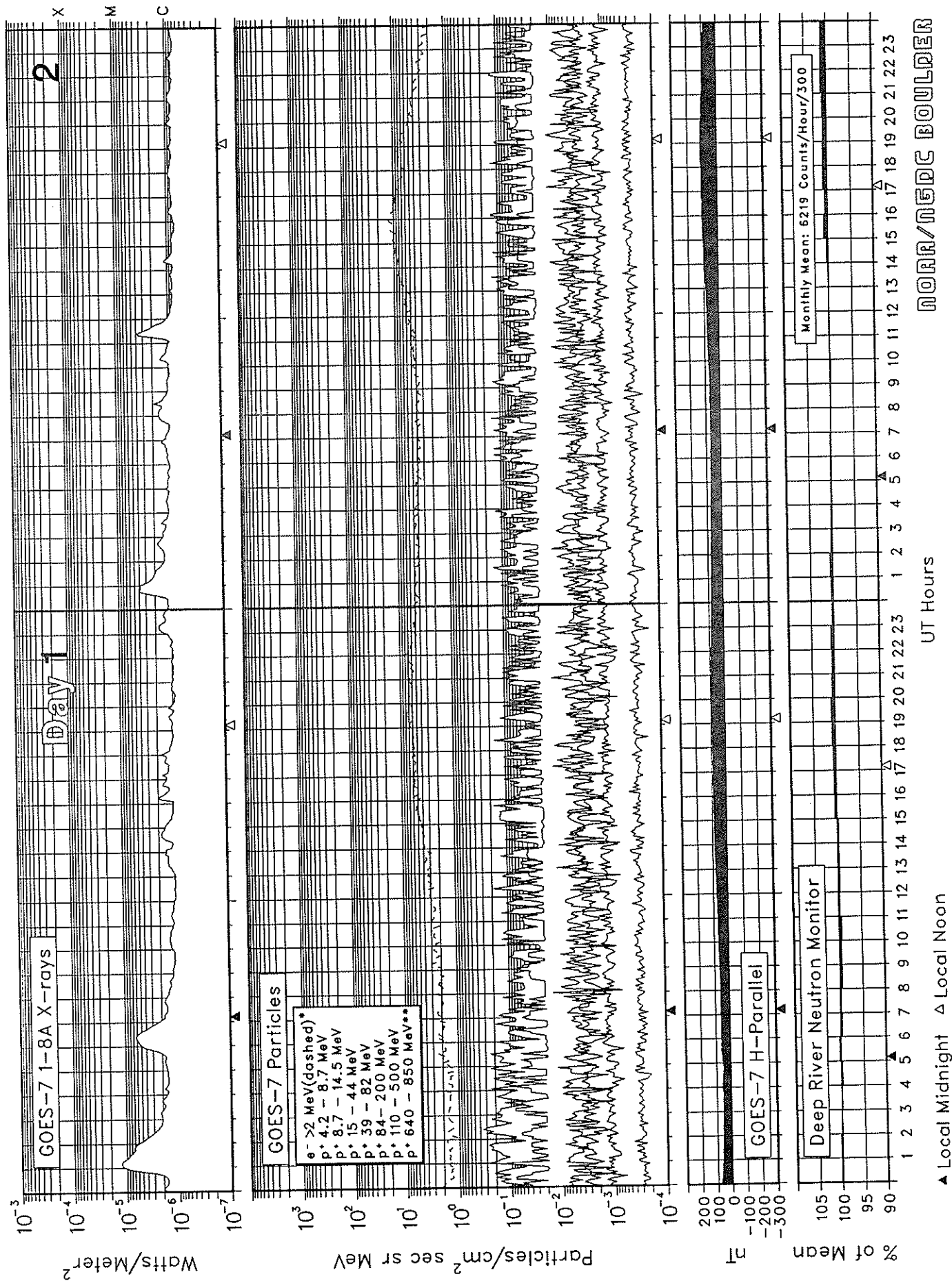
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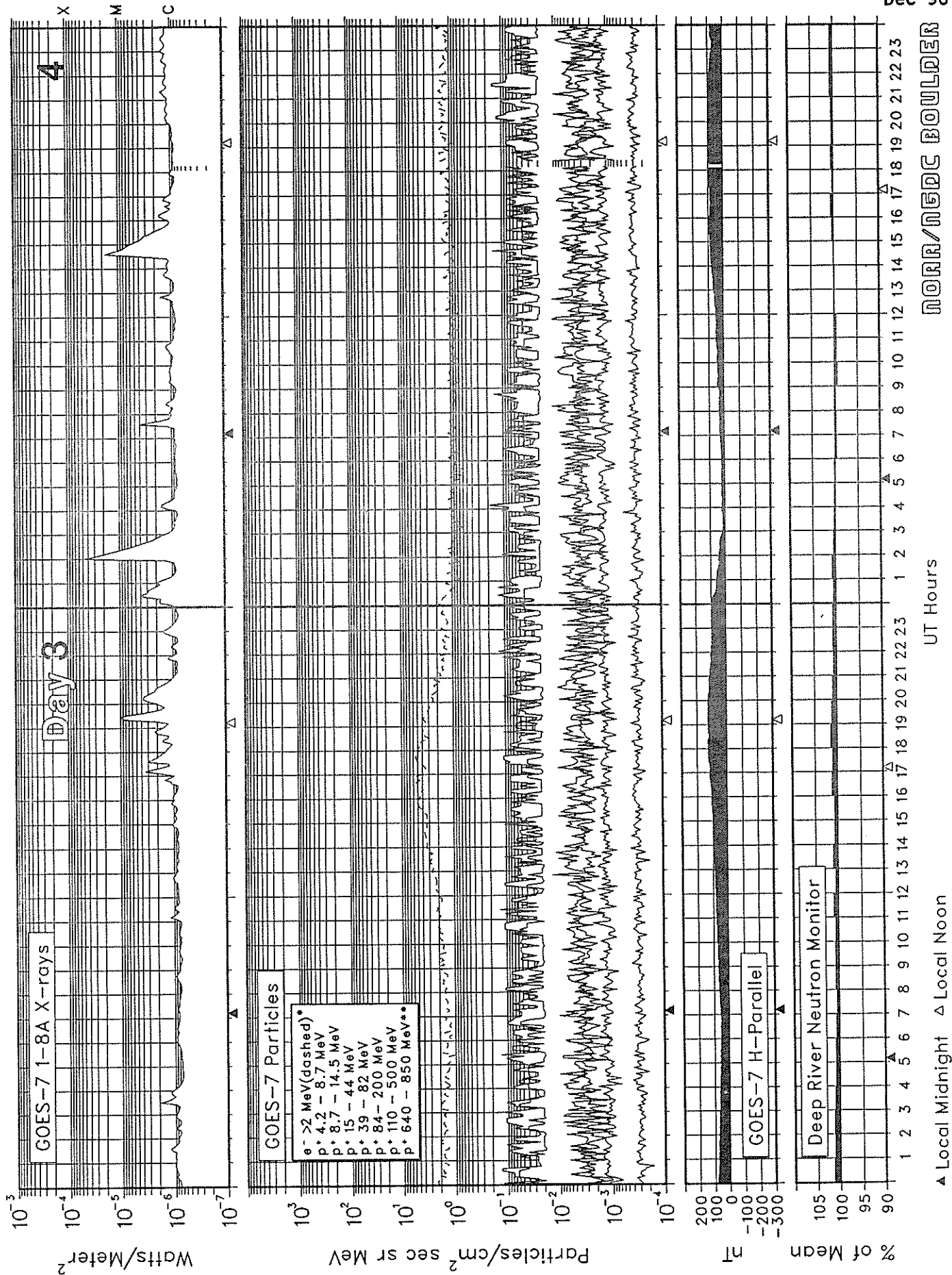
# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990

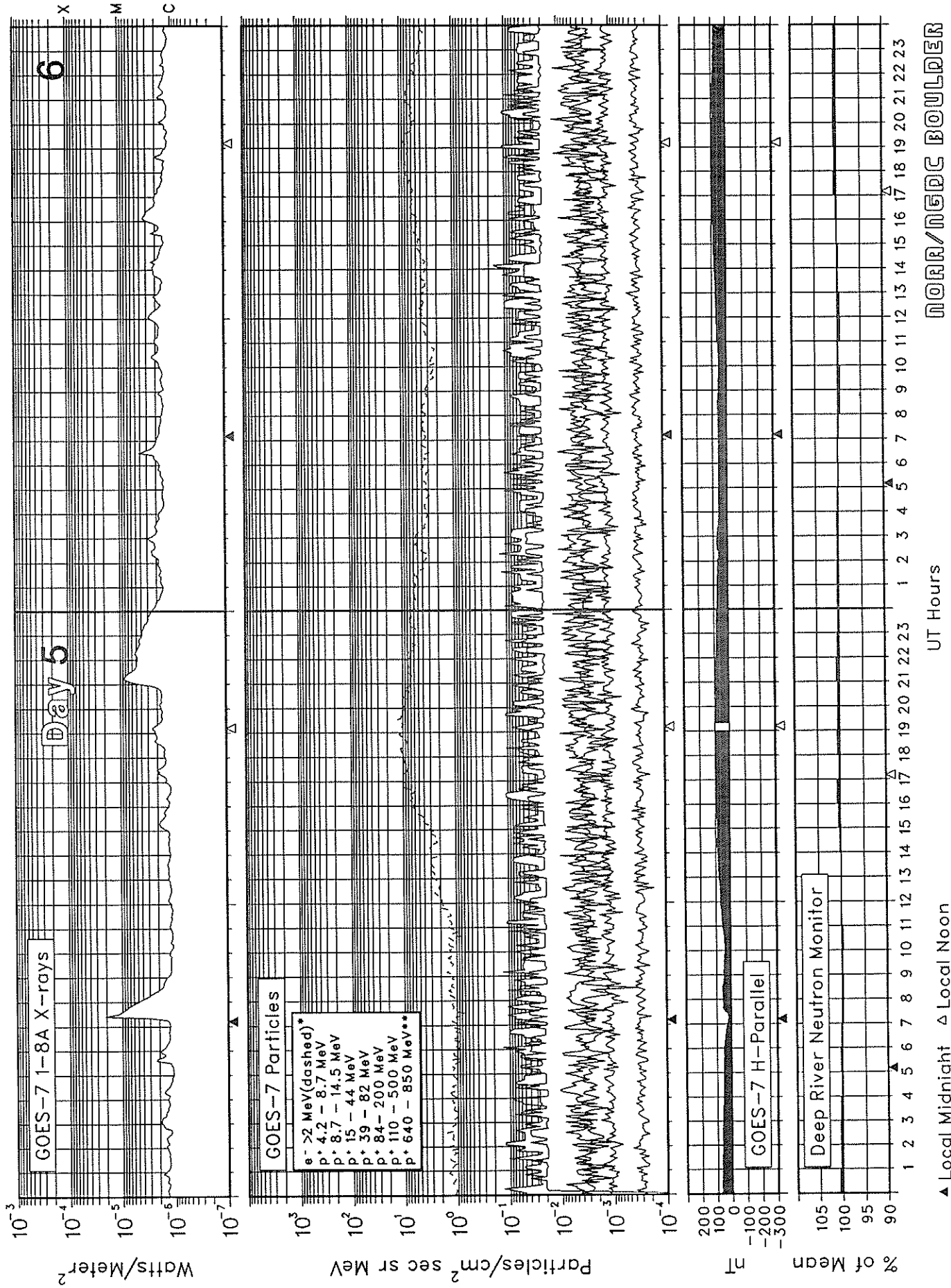


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December 1990

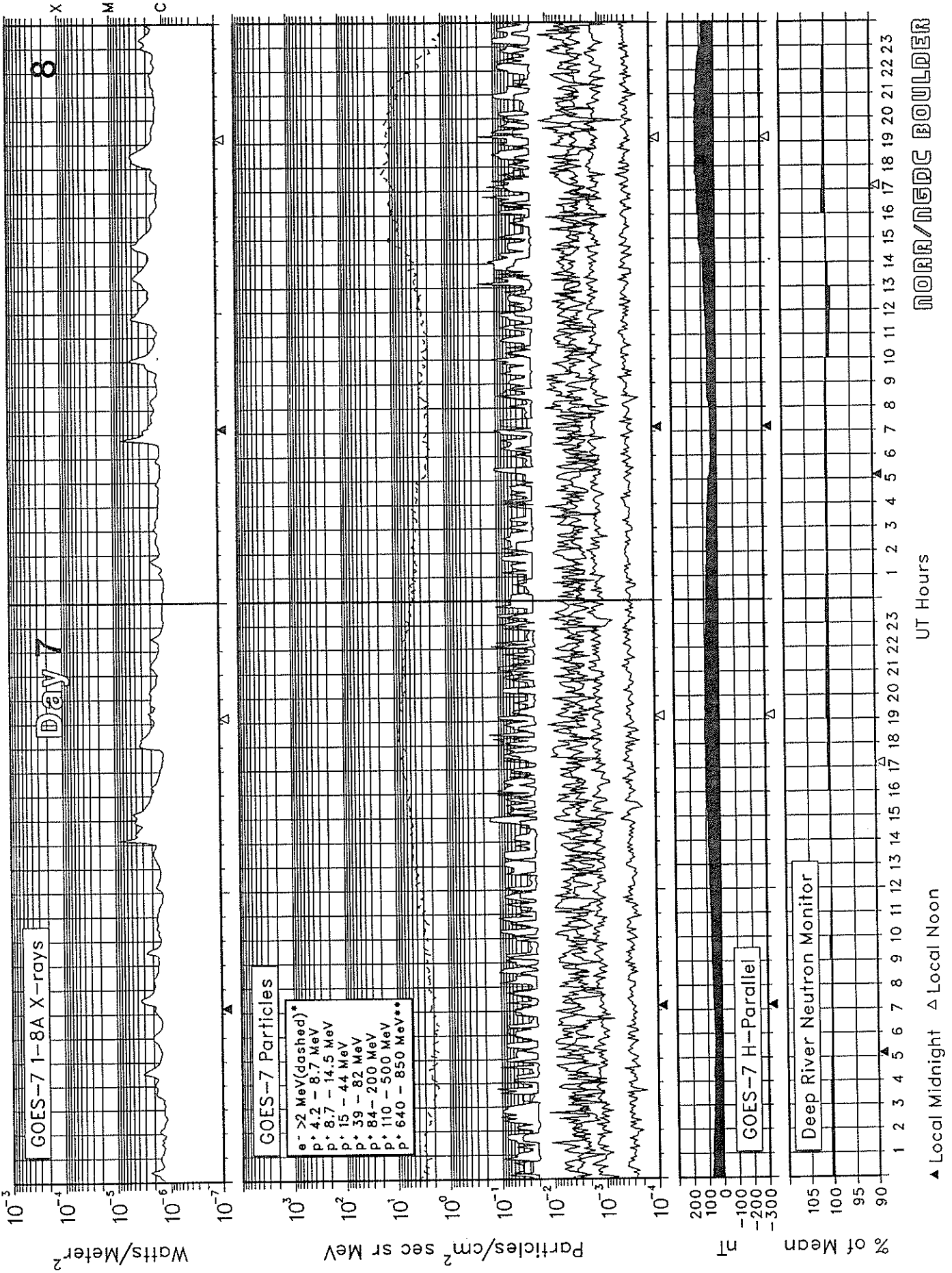


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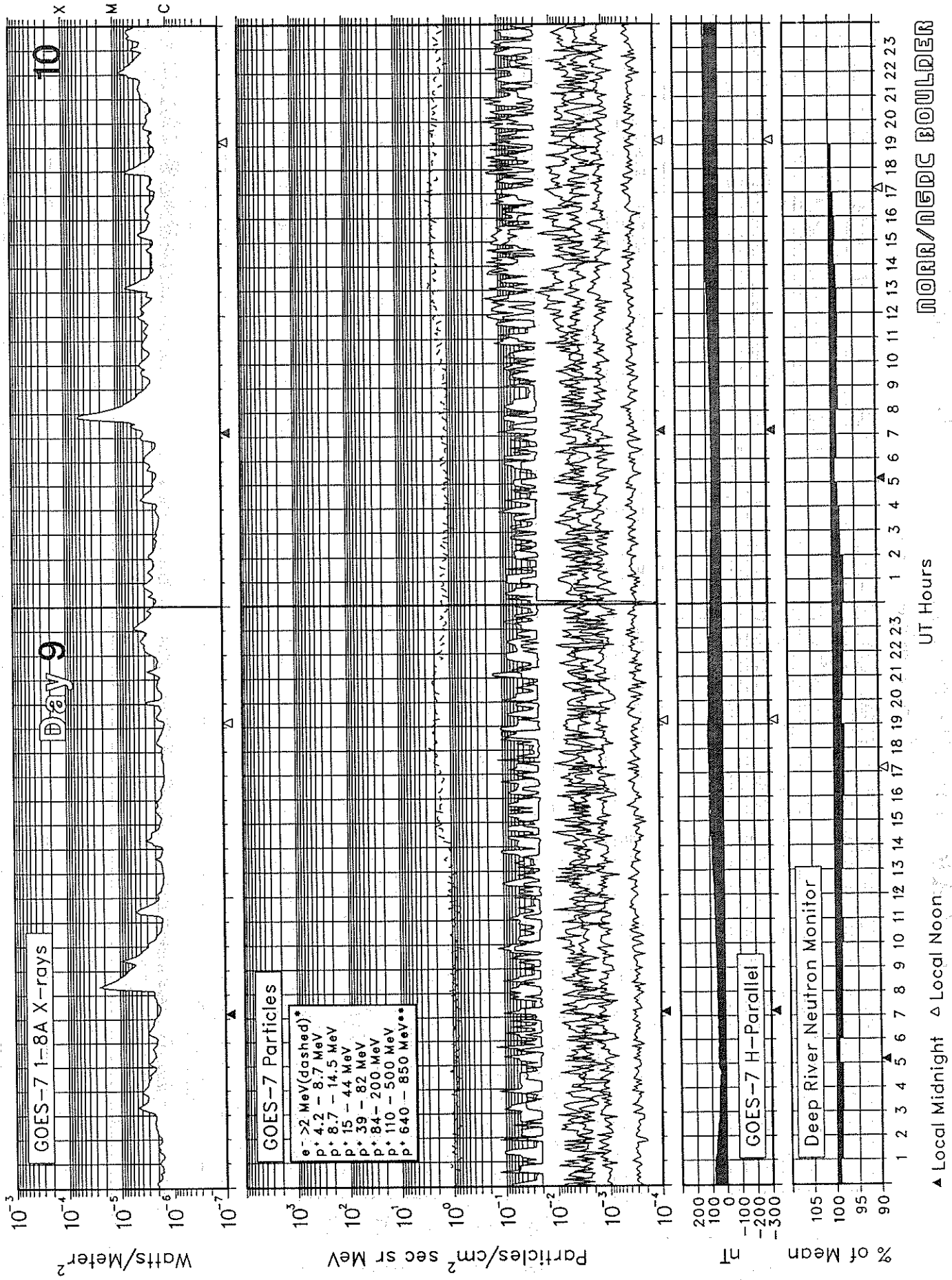


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## December 1990



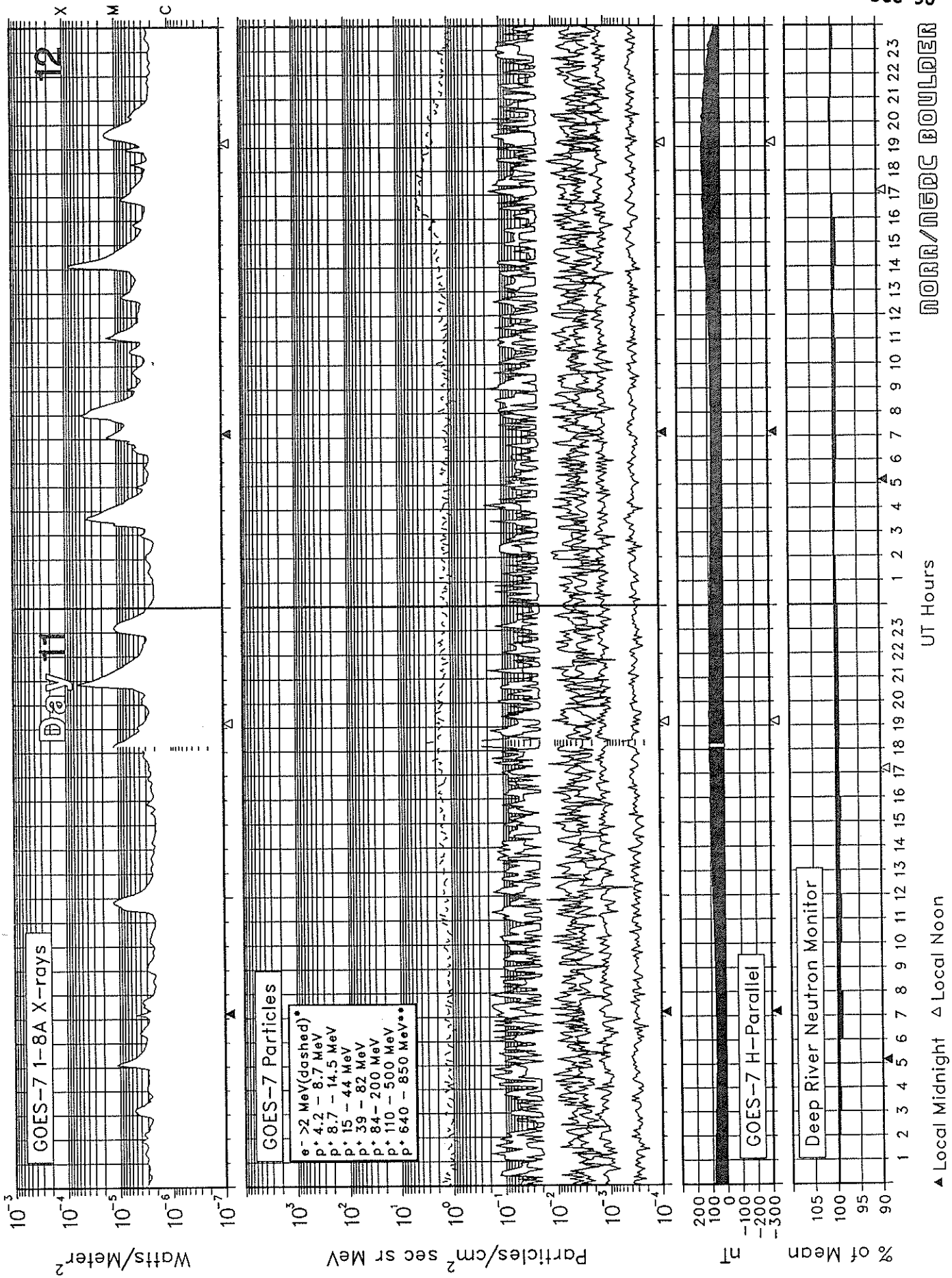
# SOLAR-TERRESTRIAL ENVIRONMENT December 1990





# SOLAR-TERRESTRIAL ENVIRONMENT

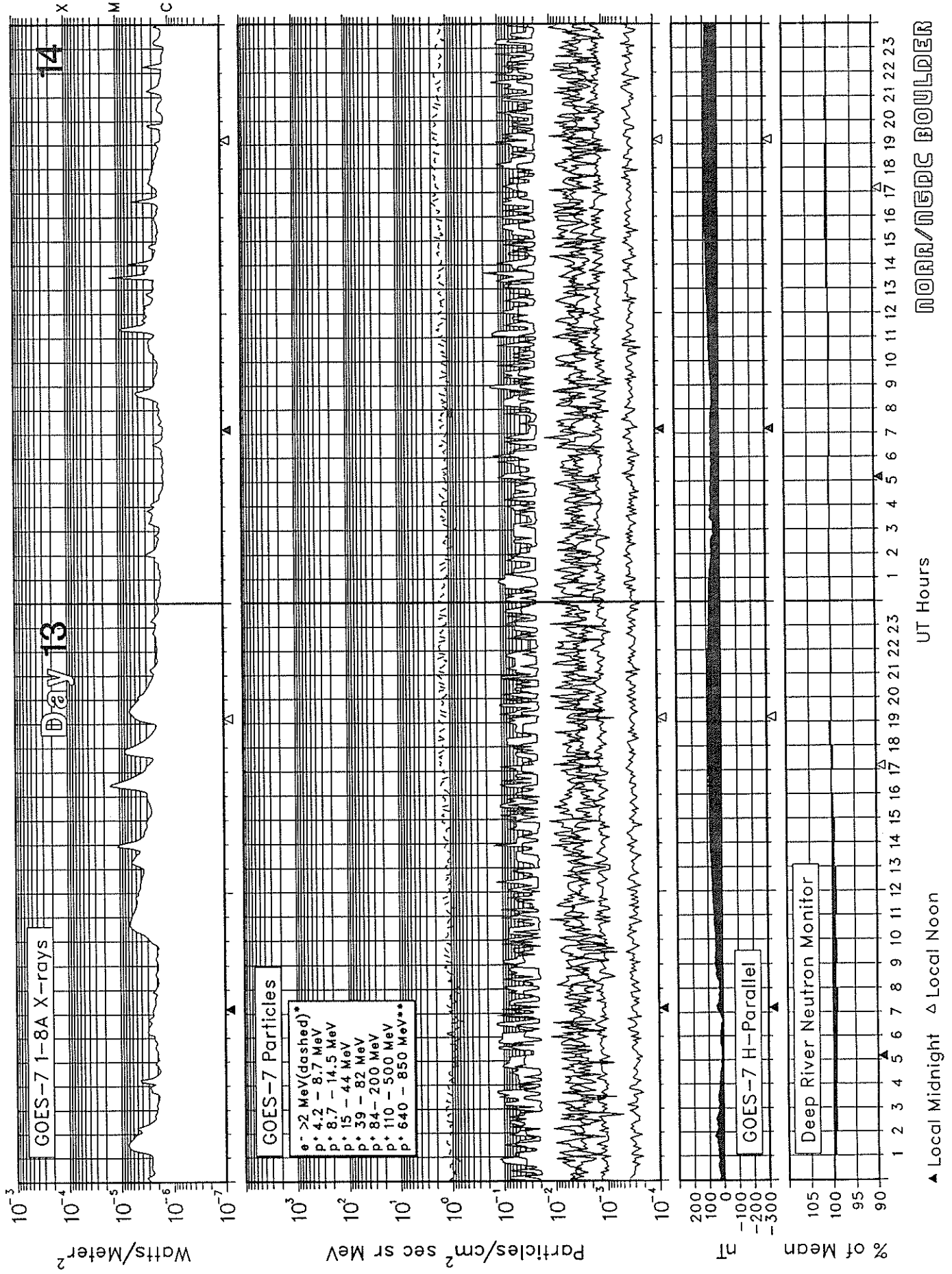
## December 1990





# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990



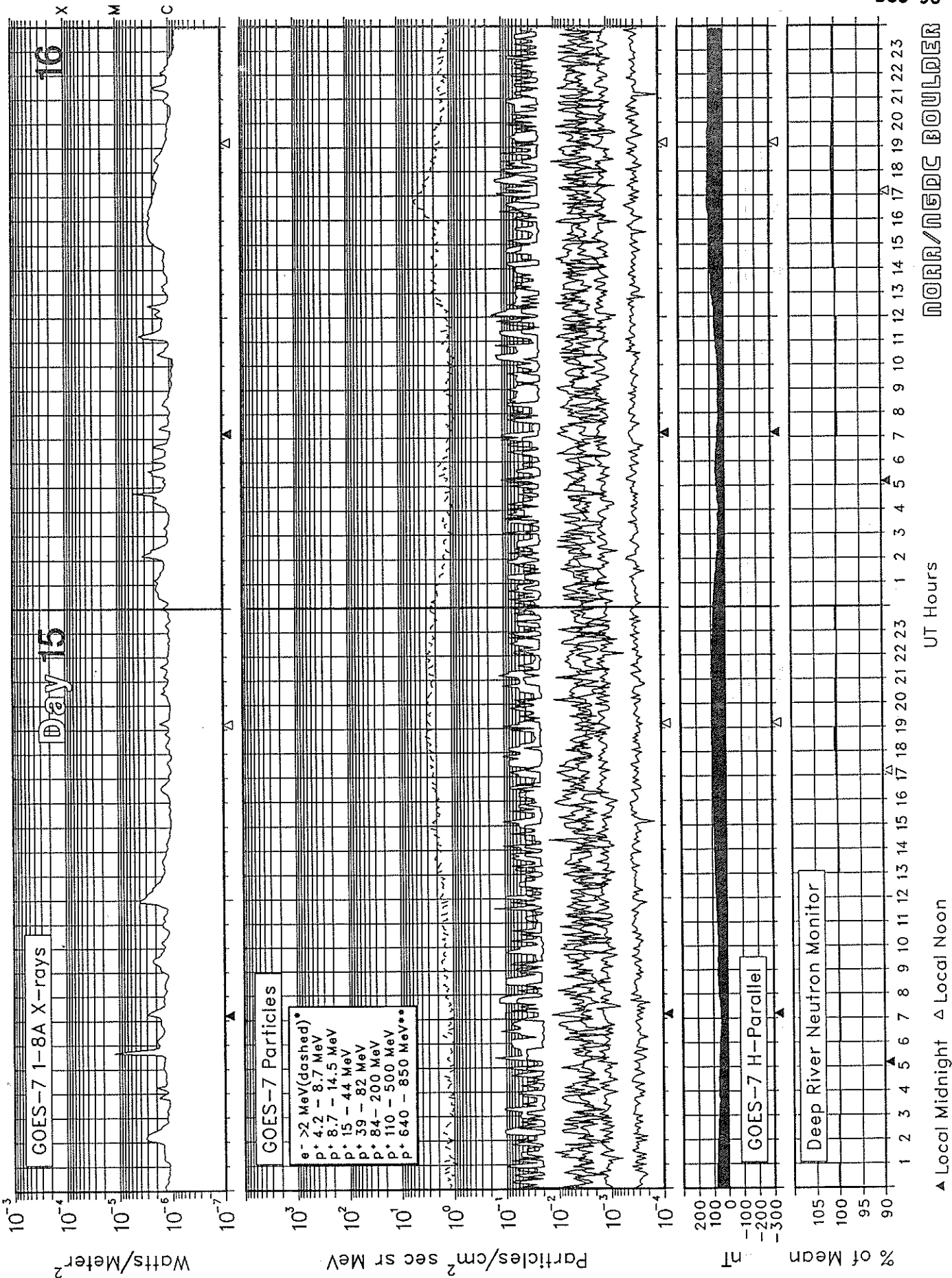
NORR/NEDC BOULDER

14

Day 13

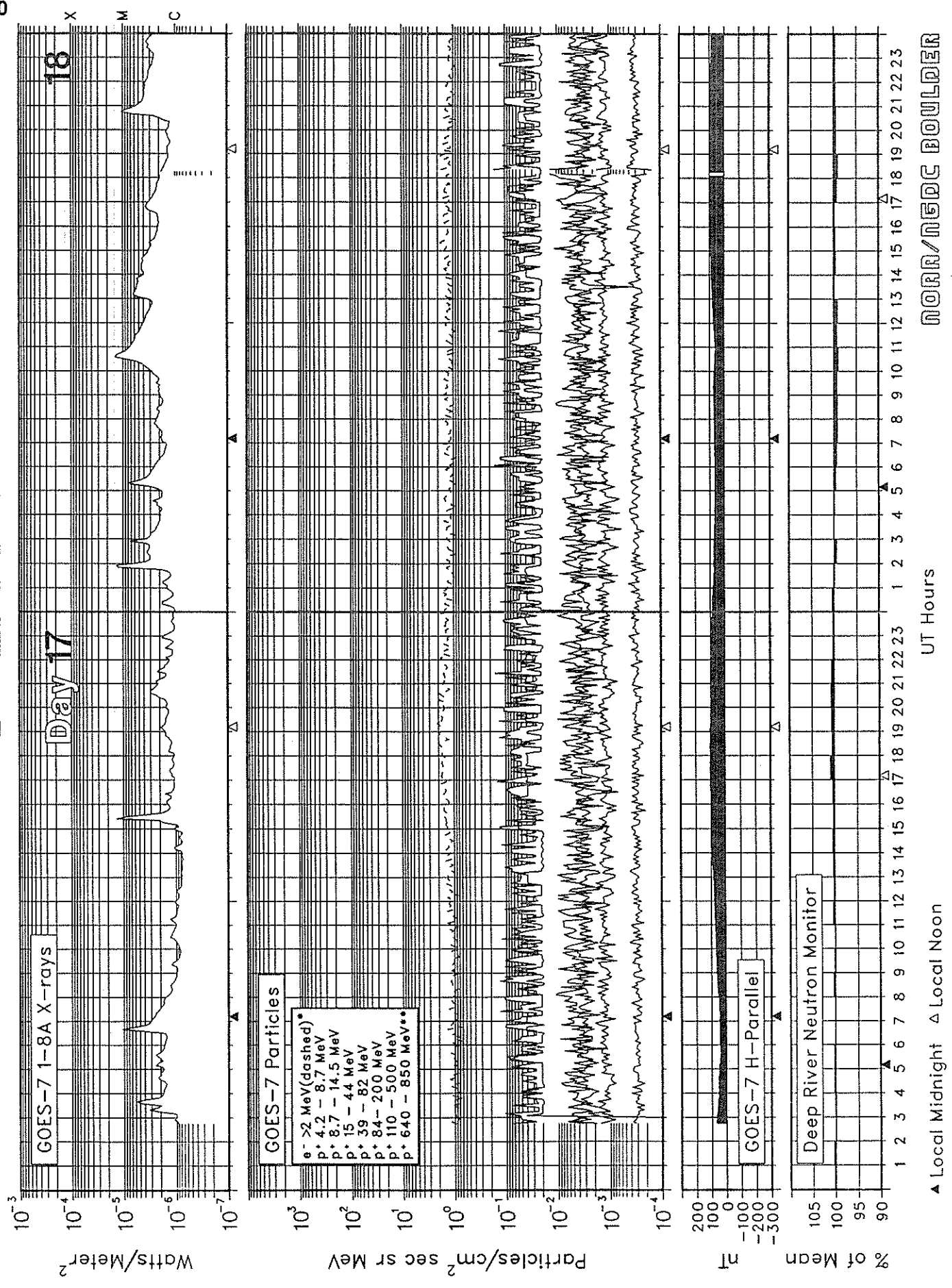
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December 1990



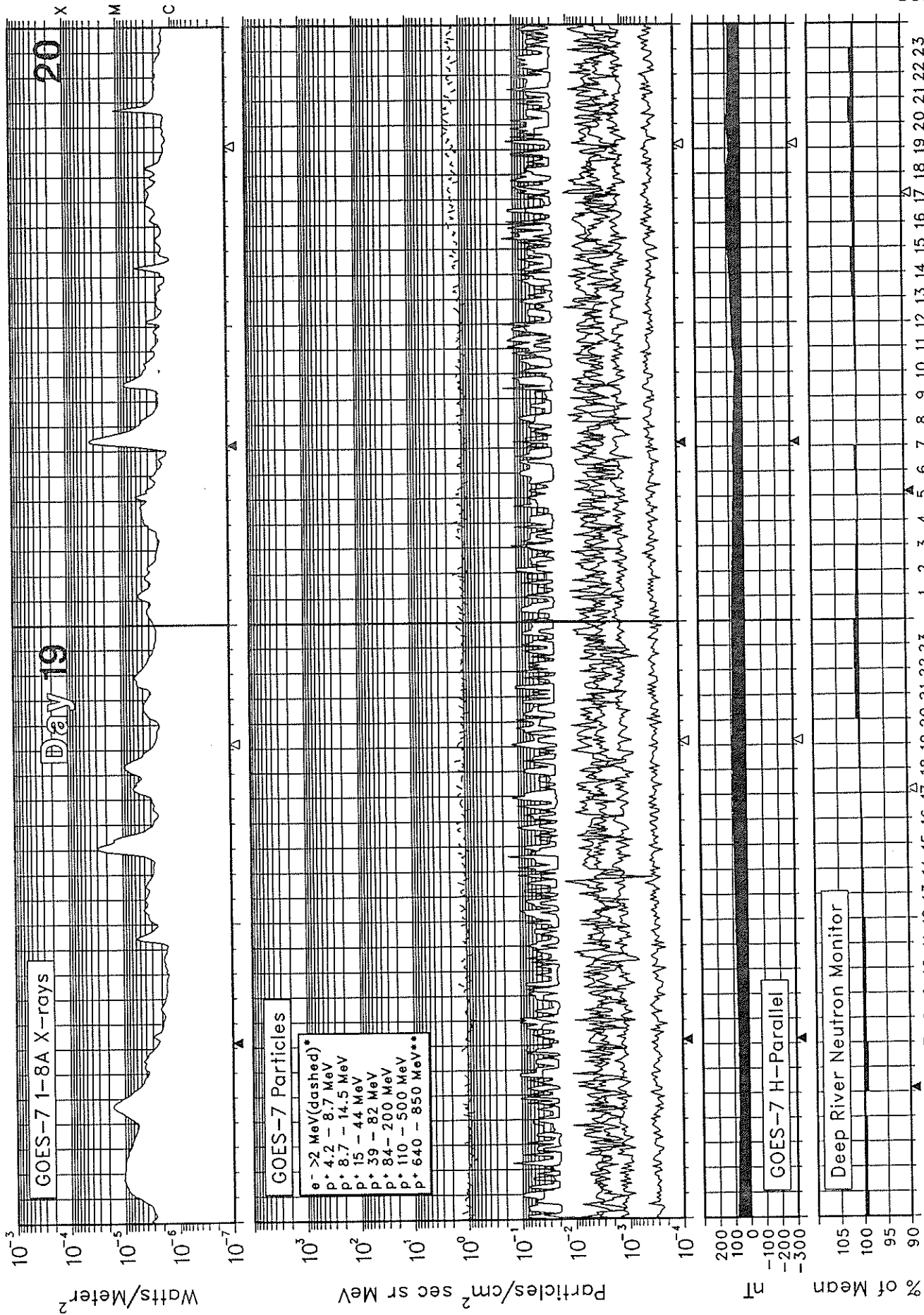
# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990



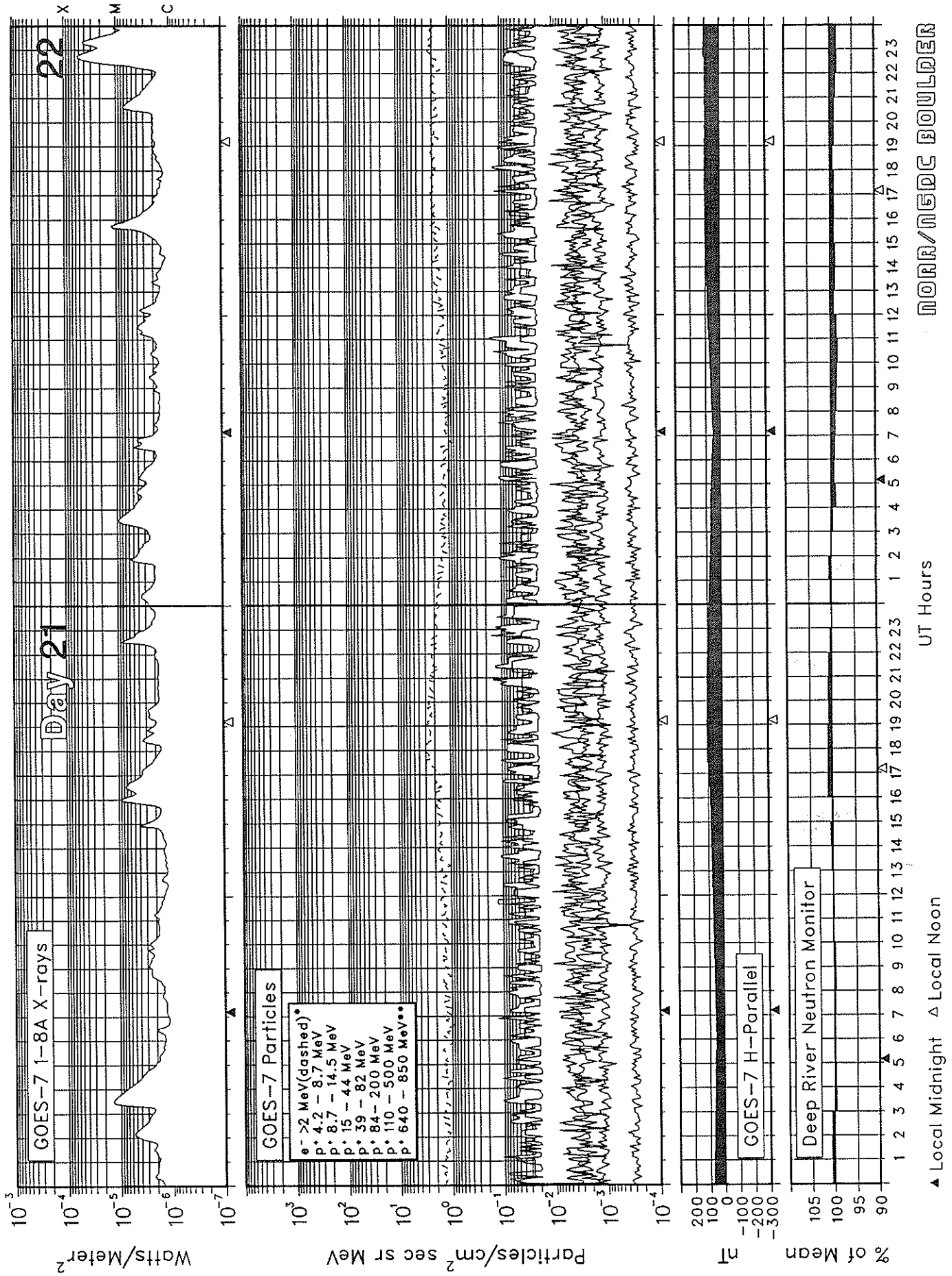
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December 1990



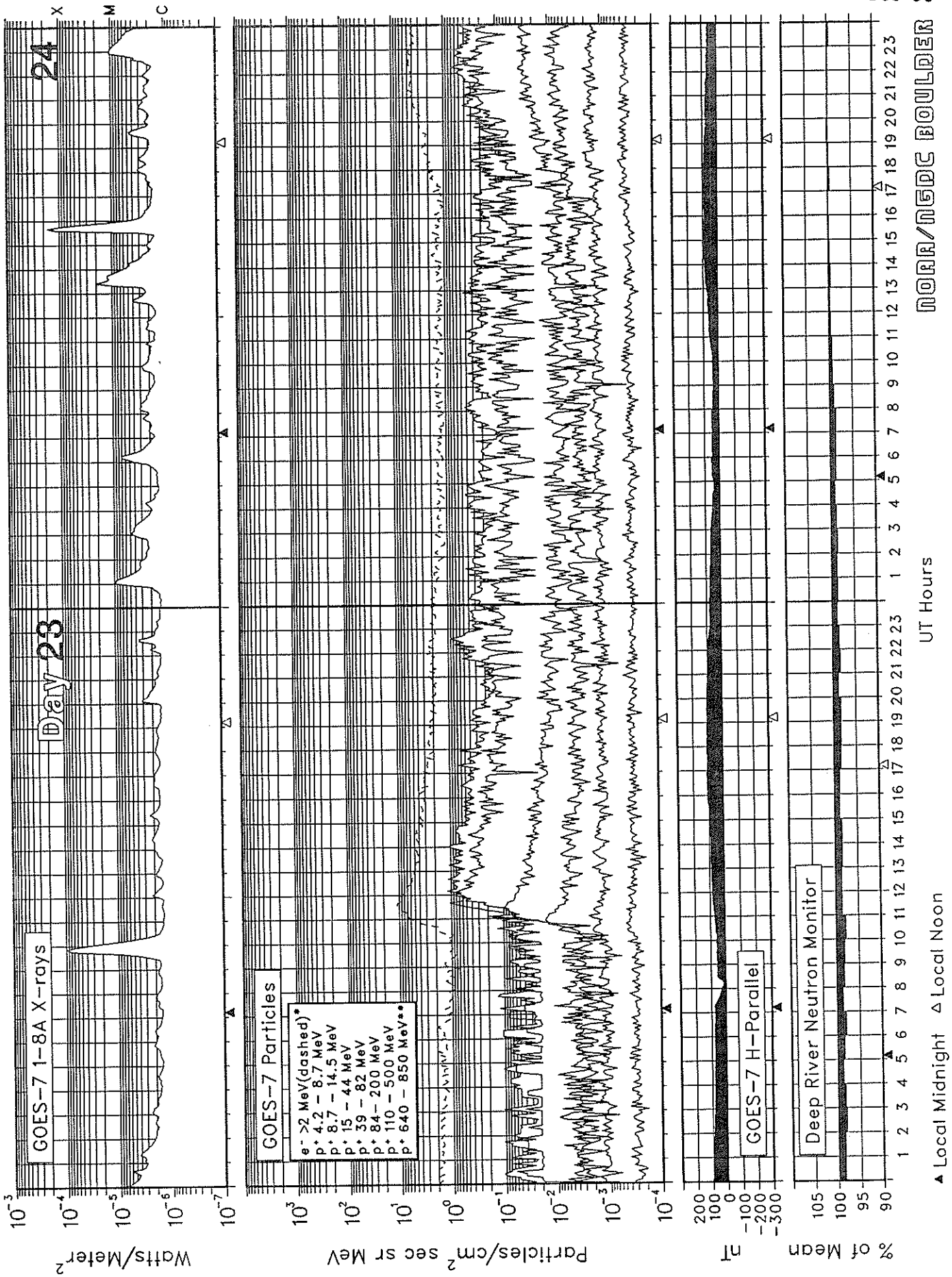
# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990



# SOLAR-TERRESTRIAL ENVIRONMENT

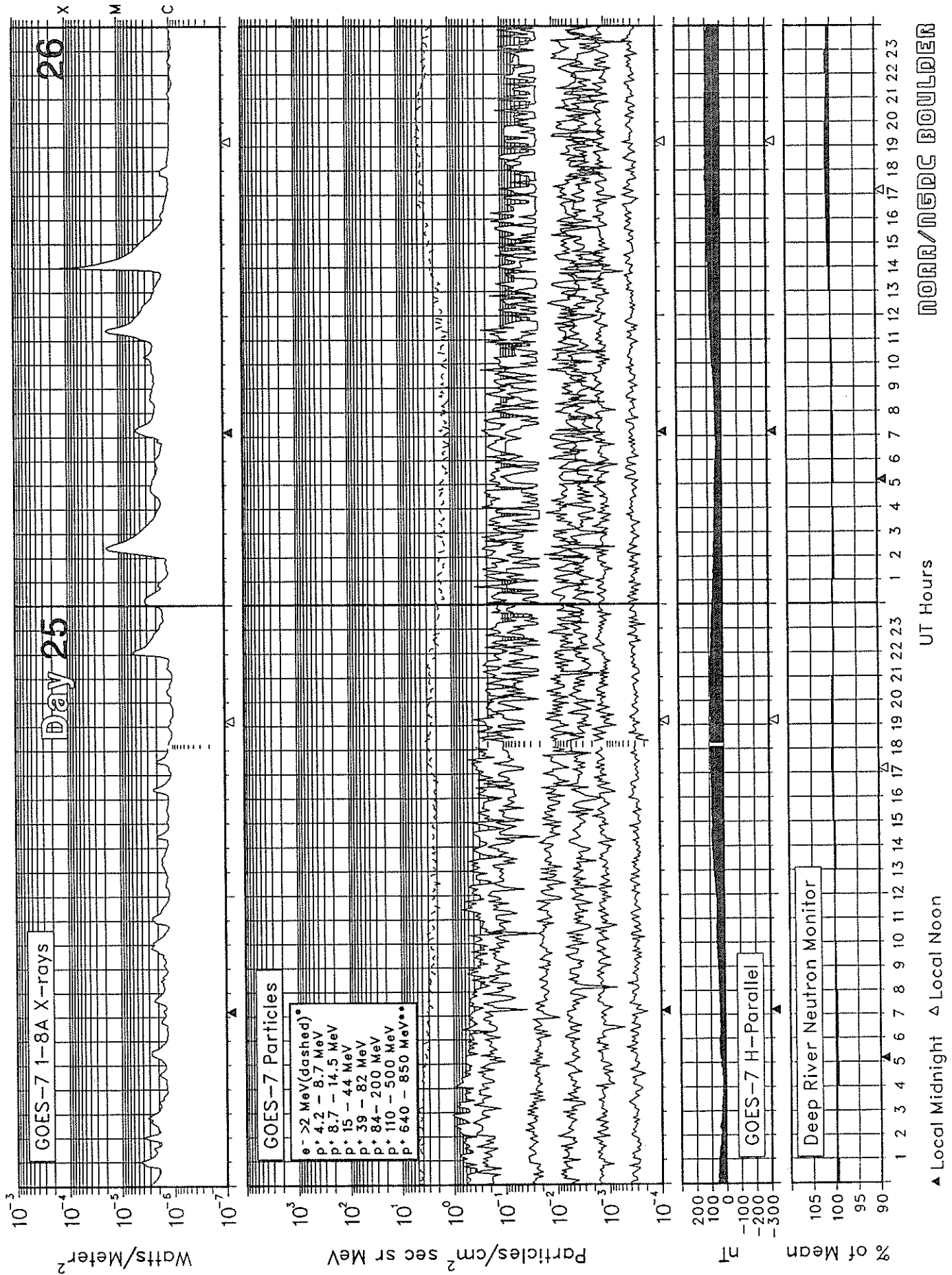
## December 1990





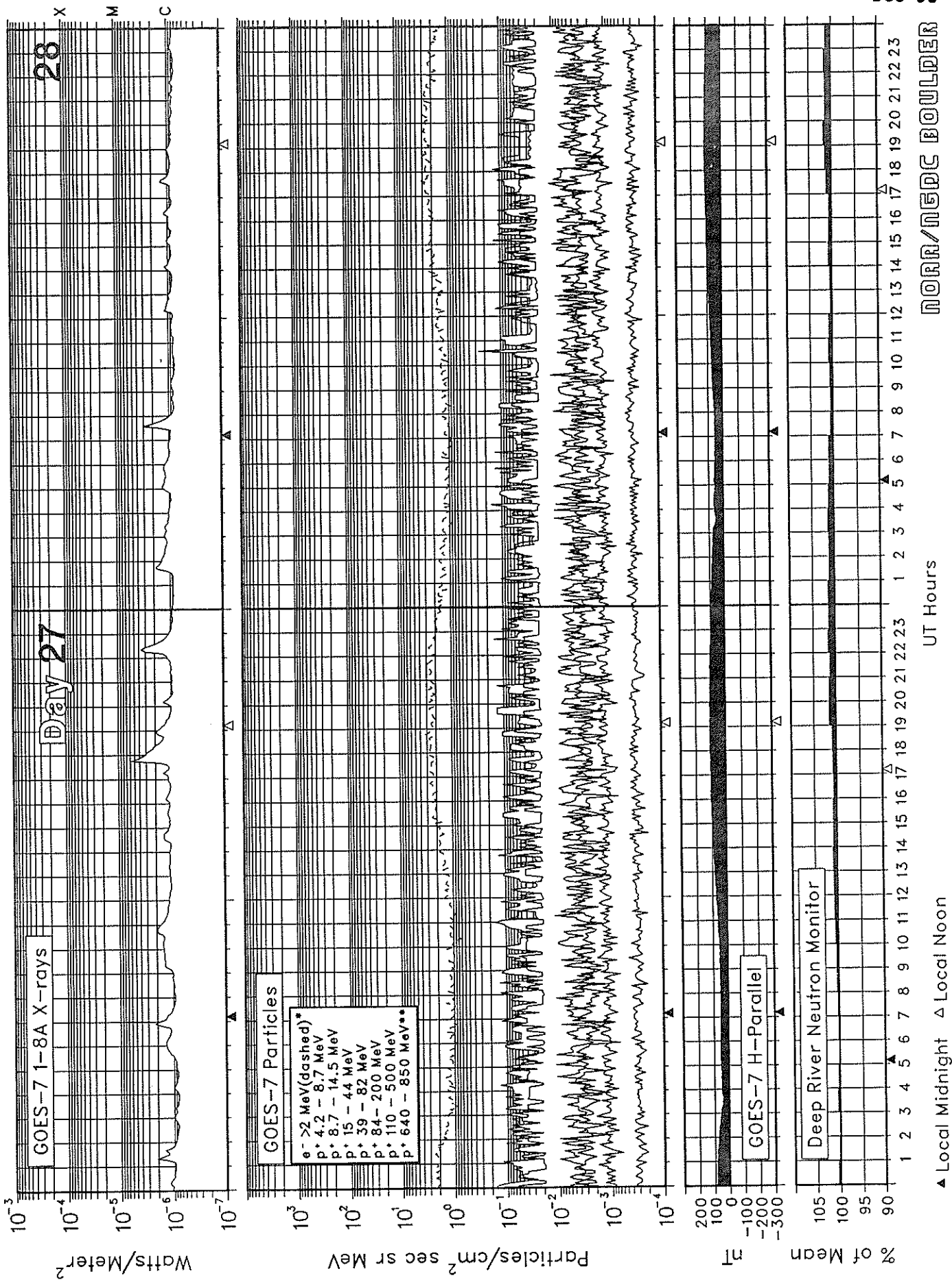
# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990



# SOLAR-TERRESTRIAL ENVIRONMENT

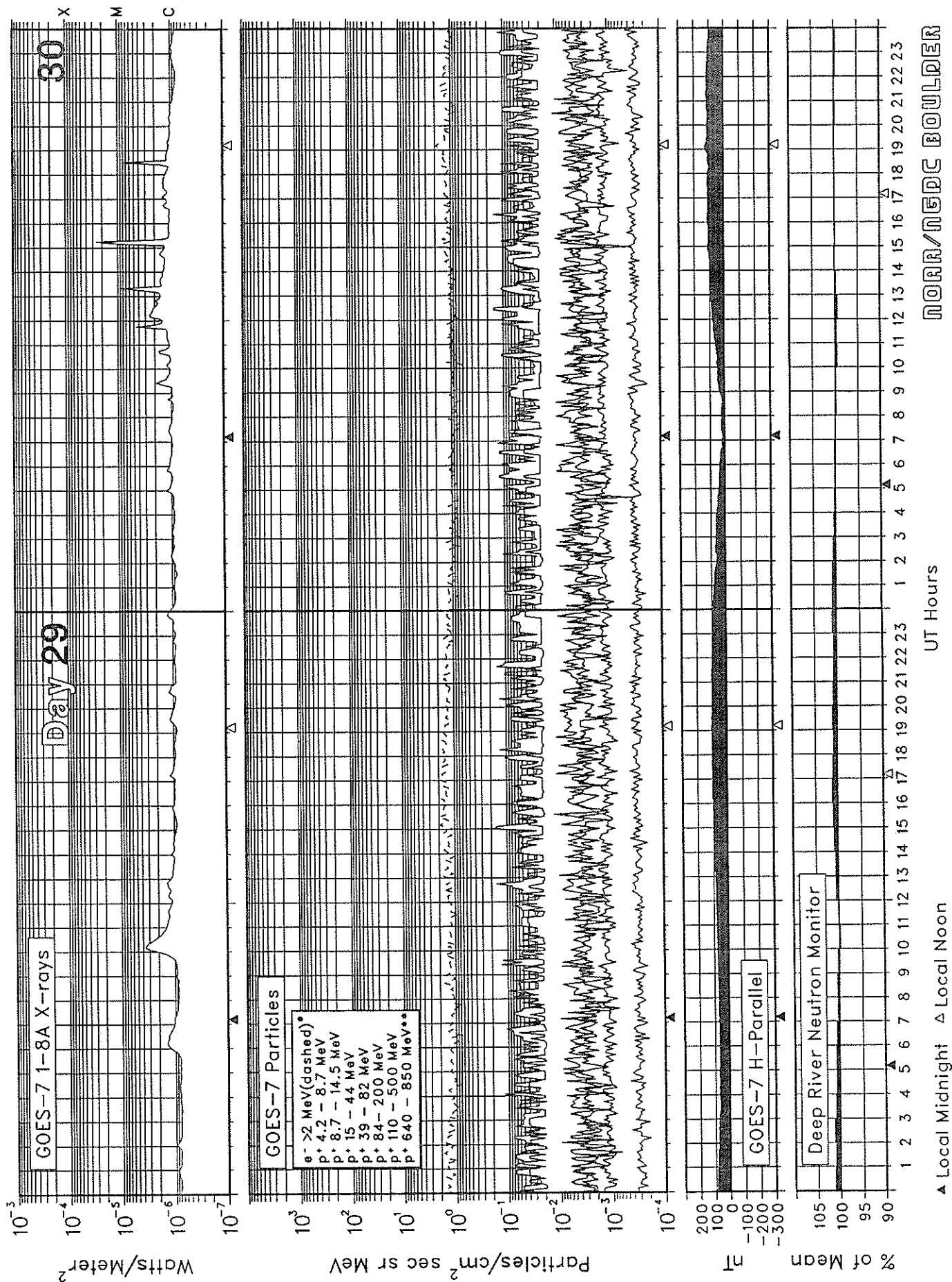
## December 1990





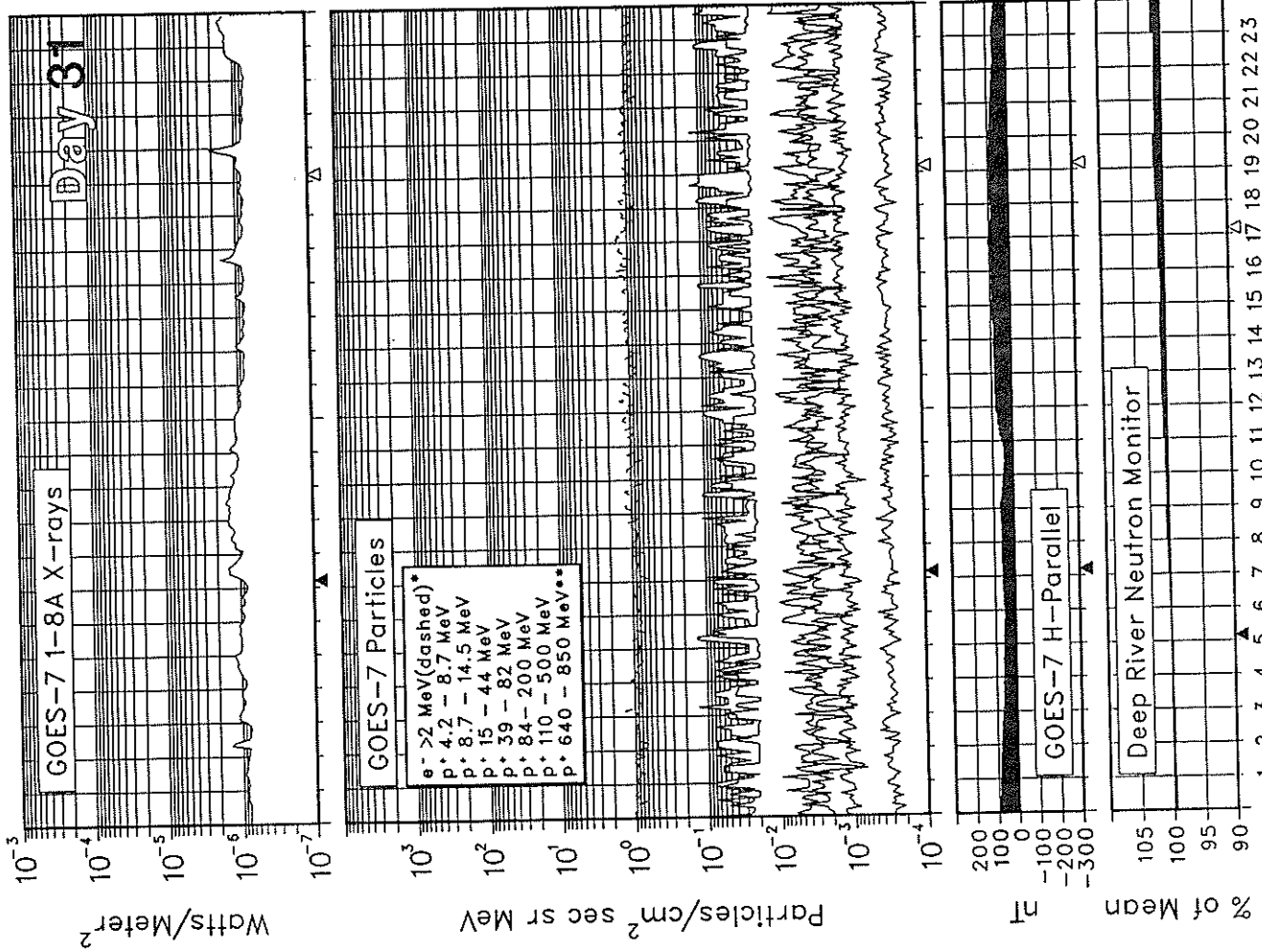
# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990



# SOLAR-TERRESTRIAL ENVIRONMENT

## December 1990



\* The y-axis units for the electron flux are Particles/cm<sup>2</sup> 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.

**ALERT PERIODS**  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages

DECEMBER 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 <sup>1</sup>	Geoalerts
						° Lat	° Long	Total	M	X	° Lat		° Long	Forecast			
335	01	30	219	172	007	S05	W83	3	0	0	01	S05	W83	E	Solquiet, Magquiet.		
						S08	W78	0	0	0		S08	W78	Q			
						S06	W23	0	0	0		S06	W23	Q			
						S04	W05	0	0	0		S04	W05	Q			
						S20	E09	0	0	0		S20	E09	Q			
						N15	E18	0	0	0		N15	E18	E			
						N12	W16	0	0	0		N12	W16	Q			
						S15	E32	0	0	0		S15	E32	Q			
						S24	E46	8	0	0		S24	E46	E			
						S07	E03	3	0	0		S07	E03	Q			
						N02	W13	0	0	0		N02	W13	Q			
						N35	E60	2	0	0		N35	E60	Q			
						N09	E38	0	0	0		N09	E38	Q			
						S26	W25	0	0	0		S26	W25	Q			
						S21	E27	0	0	0		S21	E27	Q			
336	02	01	211	176	003	S06	W35	0	0	0	02	S06	W35	Q	Solquiet, Magquiet.		
						S04	W18	0	0	0		S04	W18	Q			
						S20	W04	0	0	0		S20	W04	Q			
						N15	E05	1	0	0		N15	E05	E			
						N12	W29	0	0	0		N12	W29	Q			
						S16	E18	0	0	0		S16	E18	Q			
						S24	E35	0	0	0		S24	E35	E			
						S07	W10	2	0	0		S07	W10	Q			
						N35	E48	3	0	0		N35	E48	E			
						N10	E25	0	0	0		N10	E25	Q			
						S26	W39	0	0	0		S26	W39	Q			
						S20	E14	0	0	0		S20	E14	Q			
						N05	W59	0	0	0		N05	W59	Q			
						N16	E73	3	0	0		N16	E73	E			
						S22	W34	0	0	0		S22	W34	Q			
337	03	02	262	182	003	S06	W48	4	0	0	03	S06	W48	E	Solquiet, Magquiet.		
						S03	W31	0	0	0		S03	W31	Q			
						S20	W18	0	0	0		S20	W18	Q			
						N16	W07	1	0	0		N16	W07	E			
						S15	E07	0	0	0		S15	E07	Q			
						S23	E25	0	0	0		S23	E25	Q			
						S07	W26	1	0	0		S07	W26	Q			
						N35	E36	0	0	0		N35	E36	Q			
						N10	E11	0	0	0		N10	E11	Q			
						S25	W52	0	0	0		S25	W52	Q			
						S21	E02	1	0	0		S21	E02	Q			
						N06	W72	0	0	0		N06	W72	Q			
						N15	E61	0	0	0		N15	E61	E			
						S21	W47	0	0	0		S21	W47	Q			
						N09	E69	1	0	0		N09	E69	Q			
N16	E50	0	0	0	N16	E50	Q										
N22	E52	0	0	0	N22	E52	Q										
S24	W33	0	0	0	S24	W33	Q										

ALERT PERIODS  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages

DECEMBER 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 <sup>1</sup>	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
338	04	03	273	193	004	S06	W65	2	0	0	04	S06	W65	E	Solquiet, Magquiet.
						S04	W44	0	0	0		S04	W44	Q	
						S20	W30	0	0	0		S20	W30	Q	
						N16	W21	0	0	0		N16	W21	Q	
						S15	W07	0	0	0		S15	W07	Q	
						S24	E12	0	0	0		S24	E12	Q	
						N35	E24	0	0	0		N35	E24	Q	
						N09	W05	2	0	0		N09	W05	Q	
						S20	W12	0	0	0		S20	W12	Q	
						N06	W86	0	0	0		N06	W86	Q	
						N17	E51	1	0	0		N17	E51	E	
						S22	W59	1	0	0		S22	W59	Q	
						N10	E57	6	1	0		N10	E57	E	
						N15	E36	0	0	0		N15	E36	Q	
						N22	E40	1	0	0		N22	E40	Q	
						S24	W48	0	0	0		S24	W48	Q	
						S34	E03	0	0	0		S34	E03	Q	
S11	E28	0	0	0	S11	E28	Q								
339	05	04	284	203	015	S07	W81	0	0	0	05	S07	W81	Q	Solquiet, Magquiet.
						S04	W58	0	0	0		S04	W58	Q	
						S21	W43	0	0	0		S21	W43	Q	
						N17	W35	0	0	0		N17	W35	Q	
						S16	W21	0	0	0		S16	W21	Q	
						S25	W00	0	0	0		S25	W00	Q	
						N34	E10	1	0	0		N34	E10	Q	
						N09	W19	0	0	0		N09	W19	Q	
						S21	W28	1	0	0		S21	W28	Q	
						N16	E39	2	0	0		N16	E39	E	
						S22	W73	1	0	0		S22	W73	Q	
						N09	E45	9	2	0		N09	E45	A	
						N14	E22	0	0	0		N14	E22	Q	
						N20	E25	1	0	0		N20	E25	Q	
						S24	W63	10	0	0		S24	W63	Q	
						S34	W10	0	0	0		S34	W10	Q	
						S11	E13	0	0	0		S11	E13	Q	
S25	E14	0	0	0	S25	E14	Q								
Presto: <sup>2</sup> Boulder Tenflare 310 flux units 04/0158 UT duration 7 minutes.															
Toyokawa Tenflare 430 flux units 04/0159 UT duration 5 minutes.															
340	06	05	282	218	010	S04	W72	0	0	0	06	S04	W72	Q	Solalert 06/XX, Magquiet.
						S21	W58	0	0	0		S21	W58	Q	
						N15	W48	0	0	0		N15	W48	Q	
						S16	W34	0	0	0		S16	W34	Q	
						S25	W13	2	0	0		S25	W13	E	
						N34	W03	0	0	0		N34	W03	Q	
						S21	W42	1	0	0		S21	W42	Q	
						N17	E25	7	0	0		N17	E25	E	
						S22	W79	4	0	0		S22	W79	Q	
						N10	E32	8	1	0		N10	E32	A	
						N14	E07	0	0	0		N14	E07	Q	
						N21	E14	0	0	0		N21	E14	Q	
						S25	W76	11	0	0		S25	W76	E	
						S33	W24	0	0	0		S33	W24	Q	
						S26	E03	0	0	0		S26	E03	Q	
Presto: Toyokawa Tenflare 140 flux units 05/0722 UT duration 3 minutes.															



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Summary of the Geoalert Messages

DECEMBER 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 <sup>1</sup>	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
344	10	09	288	235	005	S15	W86	1	0	0	10	S15	W86	Q	Solalert 10/XX, Magquiet.
						S25	W67	6	0	0		S25	W67	Q	
						N35	W54	0	0	0		N35	W54	Q	
						N18	W26	3	0	0		N18	W26	E	
						N10	W21	4	1	0		N10	W21	E	
						N14	W43	9	0	0		N14	W43	E	
						N22	W40	0	0	0		N22	W40	Q	
						S11	W53	2	0	0		S11	W53	E	
						S18	W14	0	0	0		S18	W14	Q	
						S27	E18	0	0	0		S27	E18	Q	
						S15	W74	0	0	0		S15	W74	Q	
						N25	E45	2	0	0		N25	E45	Q	
						N28	E65	0	0	0		N28	E65	Q	
						N05	E71	2	1	0		N05	E71	E	
						S24	E61	0	0	0		S24	E61	Q	
345	11	10	273	239	002	S23	W79	4	0	0	11	S23	W79	Q	Solalert 11/XX, Magquiet.
						N35	W67	0	0	0		N35	W67	Q	
						N18	W40	1	0	0		N18	W40	Q	
						N09	W35	2	0	0		N09	W35	E	
						N15	W57	20	1	0		N15	W57	E	
						N21	W56	4	0	0		N21	W56	Q	
						S11	W70	9	0	0		S11	W70	Q	
						S18	W28	0	0	0		S18	W28	Q	
						S27	E06	0	0	0		S27	E06	Q	
						S14	W86	1	0	0		S14	W86	Q	
						N25	E31	1	0	0		N25	E31	Q	
						N28	E53	0	0	0		N28	E53	Q	
						N05	E58	0	0	0		N05	E58	E	
						S23	E47	0	0	0		S23	E47	Q	
						N19	E80	3	0	0		N19	E80	Q	
346	12	11	242	239	002	S23	W93	4	1	0	12	S23	W93	E	Solalert 12/XX, Magalert 12/13 Flare.
						N35	W80	0	0	0		N35	W80	Q	
						N19	W55	6	0	0		N19	W55	E	
						N10	W52	2	0	0		N10	W52	E	
						N15	W71	8	3	0		N15	W71	E	
						N21	W69	7	0	0		N21	W69	E	
						S11	W83	12	1	0		S11	W83	E	
						S18	W42	0	0	0		S18	W42	Q	
						S25	W05	0	0	0		S25	W05	Q	
						N28	E41	0	0	0		N28	E41	Q	
						N05	E46	3	0	0		N05	E46	E	
						S23	E36	0	0	0		S23	E36	Q	
						N20	E73	7	0	0		N20	E73	Q	
						N24	E66	0	0	0		N24	E66	Q	
						347	13	12	208	236		004	N19	W67	
N09	W63	0	0	0	N09						W63		Q		
N14	W82	1	1	0	N14						W82		E		
N20	W82	10	5	0	N20						W82		E		
S12	W94	1	0	0	S12						W94		E		
S18	W53	1	0	0	S18						W53		Q		
S27	W19	0	0	0	S27						W19		Q		
N28	E28	0	0	0	N28						E28		Q		
N05	E32	10	0	0	N05						E32		E		
S24	E22	0	0	0	S24						E22		Q		
N18	E61	3	0	0	N18						E61		E		
N22	E50	0	0	0	N22	E50	Q								

Presto:<sup>2</sup> Sydney Sudden Impulse 12/2334 UT 27 nanoteslas.

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Summary of the Geoalert Messages      **DECEMBER 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 <sup>1</sup>	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
348	14	13	191	221	011	N19	W80	1	0	0	14	N19	W80	Q	Solalert 14/XX, Magnil.
						N10	W79	4	0	0		N10	W79	Q	
						N13	W92	2	1	0		N13	W92	E	
						N21	W93	2	0	0		N21	W93	E	
						S17	W70	0	0	0		S17	W70	Q	
						N29	E15	1	0	0		N29	E15	Q	
						N05	E18	5	1	0		N05	E18	E	
						S23	E09	0	0	0		S23	E09	Q	
						N18	E47	7	0	0		N18	E47	E	
						N22	E38	0	0	0		N22	E38	Q	
					N09	E35	0	0	0		N09	E35	Q		
Presto: <sup>2</sup> Boulder Tenflare 560 flux units 13/1021 UT duration 17 minutes.															
349	15	14	167	204	005	N09	W88	0	0	0	15	N09	W88	Q	Solalert 15/XX, Magquiet.
						S18	W83	0	0	0		S18	W83	Q	
						N28	E02	0	0	0		N28	E02	Q	
						N05	E07	4	0	0		N05	E07	E	
						S24	W01	0	0	0		S24	W01	Q	
						N17	E34	16	1	0		N17	E34	A	
						N21	E23	2	0	0		N21	E23	Q	
						N07	E21	0	0	0		N07	E21	Q	
Presto: Boulder Tenflare 510 flux units 14/1332 UT duration 9 minutes.															
350	16	15	136	198	004	N28	W11	0	0	0	16	N28	W11	Q	Solalert 16/XX, Magquiet.
						N03	W06	3	0	0		N03	W06	E	
						N17	E21	15	1	0		N17	E21	A	
						N22	E10	2	0	0		N22	E10	Q	
						N07	E07	0	0	0		N07	E07	Q	
351	17	16	160	191	007	S16	W73	0	0	0	17	S16	W73	Q	Solalert 17/XX, Magquiet.
						N27	W24	0	0	0		N27	W24	Q	
						N05	W18	9	0	0		N05	W18	Q	
						N17	E10	14	0	0		N17	E10	A	
						N23	W03	0	0	0		N23	W03	Q	
						N10	W05	1	0	0		N10	W05	Q	
						S06	E22	0	0	0		S06	E22	Q	
352	18	17	170	200	005	N28	W37	0	0	0	18	N28	W37	Q	Solalert 18/XX, Magquiet.
						N03	W31	4	0	0		N03	W31	E	
						N18	W04	12	2	0		N18	W04	A	
						N23	W15	0	0	0		N23	W15	Q	
						N13	W16	5	0	0		N13	W16	E	
S06	E10	0	0	0	S06	E10	E								
353	19	18	144	208	004	N04	W44	3	0	0	19	N04	W44	E	Solalert 19/XX, Magquiet.
						N18	W17	3	0	0		N18	W17	A	
						N13	W31	13	3	0		N13	W31	A	
						S06	W04	1	0	0		S06	W04	E	
354	20	19	205	198	002	N03	W57	4	0	0	20	N03	W57	E	Solalert 20/XX, Magquiet.
						N18	W28	10	1	0		N18	W28	A	
						N25	W37	1	0	0		N25	W37	Q	
						N14	W43	11	2	0		N14	W43	A	
						S05	W17	2	0	0		S05	W17	Q	
						N17	W16	0	0	0		N17	W16	Q	
						N18	E59	0	0	0		N18	E59	Q	

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Summary of the Geolert Messages

DECEMBER 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 <sup>1</sup>	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
355	21	20	186	186	007	N04	W72	1	0	0	21	N04	W72	Q	Solalert 21/XX, Magquiet.
						N18	W43	7	1	0		N18	W43	A	
						N13	W56	6	1	0		N13	W56	A	
						S05	W31	1	0	0		S05	W31	Q	
						N19	E45	0	0	0		N19	E45	Q	
						S15	W23	0	0	0		S15	W23	Q	
						S21	E78	3	0	0		S21	E78	Q	
356	22	21	160	192	004	N04	W88	0	0	0	22	N04	W88	Q	Solalert 22/XX, Magquiet.
						N17	W55	6	0	0		N17	W55	A	
						N13	W69	1	0	0		N13	W69	E	
						S07	W42	0	0	0		S07	W42	Q	
						N19	E31	0	0	0		N19	E31	Q	
						S22	E66	4	1	0		S22	E66	E	
						N18	W29	0	0	0		N18	W29	E	
357	23	22	146	184	004	N17	W68	2	0	0	23	N17	W68	A	Solalert 23/XX, Magquiet.
						N13	W81	1	1	0		N13	W81	E	
						N18	E18	0	0	0		N18	E18	Q	
						S22	E55	9	3	0		S22	E55	E	
						N19	W41	0	0	0		N19	W41	Q	
						S18	E68	1	0	0		S18	E68	E	
358	24	23	126	191	007	N16	W79	5	0	1	24	N16	W79	A	Solalert 24/XX, Magquiet.
						N19	E06	1	0	0		N19	E06	Q	
						S24	E46	6	0	0		S24	E46	E	
						N18	W55	0	0	0		N18	W55	Q	
						S18	E59	1	0	0		S18	E59	E	
						S20	E40	2	0	0		S20	E40	E	
Presto:		Boulder Boulder	X-ray event X1/2B N11 W68 23/0933 UT duration 40 minutes. Tenflare 250 flux units 23/0942 UT duration 14 minutes.												
359	25	24	138	189	010	N16	W94	3	0	1	25	N16	W94	A	Solalert 25/XX, Magquiet.
						N19	W08	5	0	0		N19	W08	E	
						S24	E34	6	3	0		S24	E34	E	
						S17	E46	0	0	0		S17	E46	E	
						S19	E24	0	0	0		S19	E24	E	
						S08	E31	1	0	0		S08	E31	E	
						N09	E07	0	0	0		N09	E07	Q	
Presto:		Boulder Boulder	X-ray event X1/1B N12 W72 24/1530 UT duration 18 minutes. Tenflare 310 flux units 24/1534 UT duration 7 minutes.												
360	26	25	139	190	011	N18	W22	0	0	0	26	N18	W22	Q	Solalert 26/XX, Magalert 26/27.
						S25	E26	6	0	0		S25	E26	A	
						S17	E32	4	0	0		S17	E32	E	
						S19	E10	11	0	0		S19	E10	E	
						S10	E18	4	0	0		S10	E18	E	
						N07	W08	0	0	0		N07	W08	Q	
						S12	E25	0	0	0		S12	E25	Q	
361	27	26	174	192	003	N18	W35	0	0	0	27	N18	W35	Q	Solalert 27/XX, Magnil.
						S26	E12	6	2	1		S26	E12	A	
						S17	E20	1	0	0		S17	E20	E	
						S20	W01	9	0	0		S20	W01	E	
						S09	E05	1	0	0		S09	E05	E	
						N09	W22	0	0	0		N09	W22	Q	
						S12	E12	0	0	0		S12	E12	Q	
						S11	E72	0	0	0		S11	E72	Q	
Presto:		Boulder Boulder	X-ray event X1/2B S25 E19 26/1356 UT duration 12 minutes. Tenflare 270 flux units 26/1358 UT duration 4 minutes.												



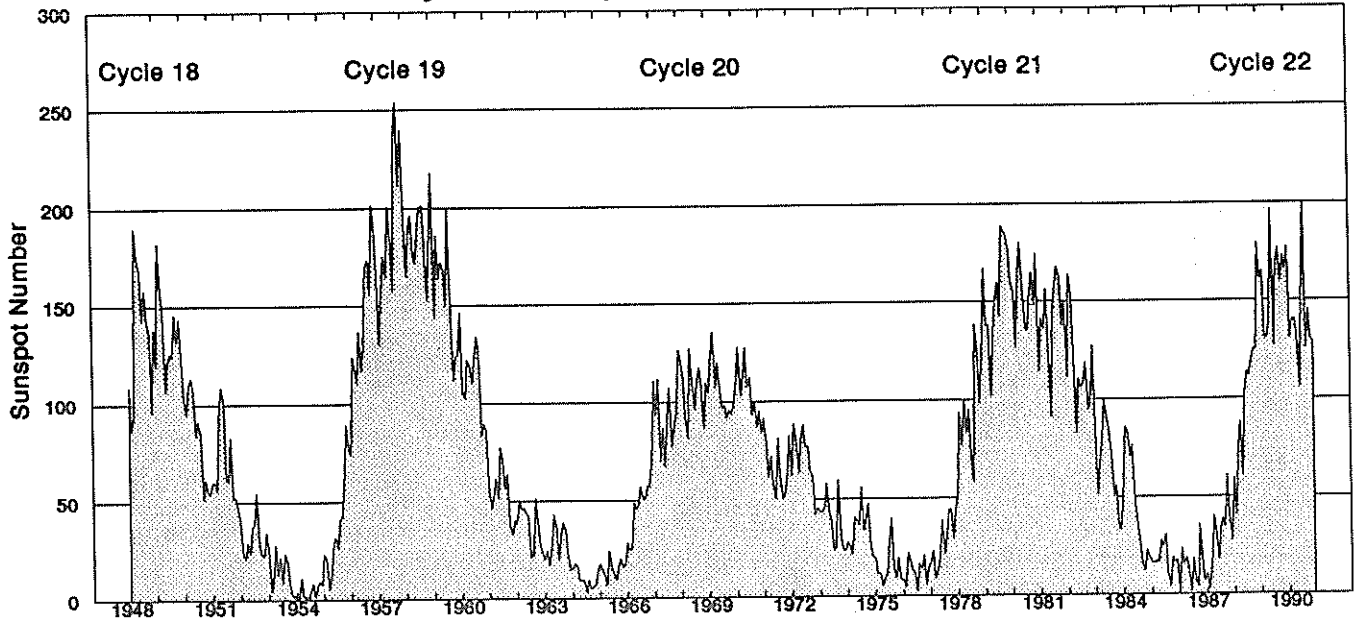
**ALERT PERIODS**  
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

**Summary of the Geoalert Messages      DECEMBER 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 <sup>1</sup>	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
362	28	27	171	197	005	N18	W48	1	0	0	28	N18	W48	E	Solalert 28, Magquiet.
						S25	W00	4	0	0		S25	W00	E	
						S17	E06	1	0	0		S17	E06	E	
						S20	W15	7	0	0		S20	W15	E	
						S08	W07	4	0	0		S08	W07	E	
						S12	W01	0	0	0		S12	W01	Q	
						S11	E56	0	0	0		S11	E56	Q	
363	29	28	181	193	003	N17	W59	3	0	0	29	N17	W59	Q	Solnil, Magquiet.
						S26	W14	1	0	0		S26	W14	E	
						S17	W07	1	0	0		S17	W07	E	
						S23	W28	2	0	0		S23	W28	E	
						S11	W21	2	0	0		S11	W21	E	
						S11	E46	0	0	0		S11	E46	Q	
						N19	E65	0	0	0		N19	E65	Q	
						S25	E53	0	0	0		S26	E53	Q	
						S13	E28	0	0	0		S13	E28	Q	
364	30	29	178	200	002	S26	W28	0	0	0	30	S26	W28	Q	Solquiet, Magquiet.
						S19	W18	0	0	0		S19	W18	E	
						S23	W39	1	0	0		S23	W39	E	
						S11	W34	4	0	0		S11	W34	E	
						S12	E33	1	0	0		S12	E33	Q	
						N18	E53	0	0	0		N18	E53	Q	
						S27	E40	0	0	0		S27	E40	Q	
						S13	E15	0	0	0		S13	E15	Q	
						N08	E67	0	0	0		N08	E67	Q	
365	31	30	173	196	011	S26	W36	0	0	0	31	S26	W36	Q	Solquiet, Magquiet.
						S19	W32	0	0	0		S19	W32	E	
						S22	W53	1	0	0		S22	W53	E	
						S11	W48	8	3	0		S11	W48	A	
						S11	E19	2	0	0		S11	E19	E	
						N19	E40	0	0	0		N19	E40	Q	
						S24	E24	0	0	0		S24	E24	Q	
						N08	E55	0	0	0		N08	E55	Q	
						S09	E41	1	0	0		S09	E41	Q	
Presto:		Boulder	Tenflare	330 flux units	30/1144	UT duration	4 minutes.								
		Boulder	Tenflare	230 flux units	30/1318	UT duration	2 minutes.								
01	01	31	213	184	011	S19	W49	1	0	0	01	S19	W49	Q	Solquiet, Magquiet.
						S21	W67	0	0	0		S21	W67	Q	
						S10	W61	3	0	0		S10	W61	E	
						S11	E07	3	0	0		S11	E07	E	
						S25	E12	3	0	0		S25	E12	E	
						S14	W13	0	0	0		S14	W13	Q	
						N08	E41	0	0	0		N08	E41	Q	
						S10	E26	1	0	0		S10	E26	Q	
						N01	W37	0	0	0		N01	W37	Q	
						S24	E01	0	0	0		S24	E01	Q	
						S25	E22	0	0	0		S25	E22	Q	

<sup>1</sup>Q = quiet, E = eruptive, A = active, P = proton.  
<sup>2</sup>Presto message is a rapid report of a major event.

Monthly Mean Sunspot Numbers Jan 1948 – Dec 1990



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0	136.3
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6	134.7
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1	83.9
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4 m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2 M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	112.3
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2 m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9 M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6 m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4 M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4 m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2
1989	161.3	165.1	131.4	130.6	138.5	196.2	126.9	168.9	176.7	159.4	173.0	165.5	157.6
1990	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.2	130.5	128.5	142.1

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

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Jan 90	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct <sup>†</sup>	Nov <sup>†</sup>	Dec <sup>†</sup>
01	186	171	173	103	70	96	272	146	120	115	77	127
02	176	161	171	114	59	80	253	175	116	117	81	160
03	166	124	163	113	61	73	264	151	126	140	108	171
04	174	113	126	127	86	77	241	137	134	134	146	186
05	164	97	98	132	80	79	213	128	118	123	154	167
06	144	80	104	138	106	101	186	124	118	124	197	169
07	129	82	105	128	132	107	173	120	112	135	209	182
08	138	95	88	128	138	99	135	136	112	141	208	177
09	125	103	71	88	133	87	102	145	113	148	188	176
10	134	79	80	82	116	107	88	160	121	153	163	157
11	164	75	73	88	126	126	106	161	116	195	167	157
12	172	80	85	77	146	115	110	167	124	192	151	138
13	179	85	83	123	144	122	114	192	142	201	129	117
14	147	75	90	142	141	118	118	215	178	202	106	98
15	157	78	110	171	144	102	98	229	162	227	107	88
16	152	64	129	170	157	110	95	232	156	192	95	99
17	164	54	123	199	167	100	87	269	137	182	103	112
18	177	77	167	203	170	83	57	270	136	181	97	121
19	199	107	202	213	187	79	61	290	151	181	104	134
20	236	134	217	206	187	68	81	295	145	169	98	124
21	217	159	211	212	193	57	123	278	150	136	102	125
22	208	191	195	207	187	71	143	262	141	140	125	99
23	200	239	206	174	160	64	165	281	117	134	114	91
24	191	249	209	157	158	88	201	276	101	131	118	95
25	206	245	204	160	146	94	204	263	94	125	110	98
26	203	234	188	118	134	103	196	220	93	102	111	91
27	211	217	168	124	139	140	177	188	77	104	109	104
28	193	187	129	103	121	184	165	176	113	114	134	111
29	185		132	94	118	203	144	186	119	98	152	109
30	198		133	114	90	230	117	181	115	87	153	103
31	201		115		101		142	155		77		96
Mean	177.3	130.5	140.3	140.3	132.2	105.4	149.4	200.3	125.2	145.2	130.5	128.5

<sup>†</sup> = preliminary. The preliminary yearly mean sunspot number equals 142.4 for 1990.

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

Day	Jan 90	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	209.3	200.8	200.0	159.2	129.0	140.6	248.3	199.0	171.4	160.5	141.6*	172.6
02	208.6	177.8	192.7	153.3	129.2	141.2	267.6	208.6	168.9	162.8	138.5	178.0
03	192.5	157.9	176.3*	151.6	125.2	146.1	253.8	192.4	162.6	177.4*	150.2	187.6
04	189.2*	154.8	168.9	148.6*	123.6	148.1	238.3*	191.2	158.2*	186.8	154.7	199.3
05	187.1	150.9	161.7	156.5	130.6	153.7	231.6	180.8	157.5	170.0	169.7	207.0*
06	180.9	147.5	163.8*	150.2	151.0	161.4	221.8	174.6	157.6	170.0	196.4	221.0
07	177.1	144.3	168.1	155.0	155.5	183.6	215.7	172.1	165.1	169.3	214.3	222.0
08	170.9	142.2	157.1*	152.3	170.7	195.5	189.6	184.8	163.5	175.9*	211.8	223.6
09	160.6	142.0	150.9*	146.8	174.6	203.9*	170.9	183.2	170.4	183.9	201.2	230.3
10	167.2	148.5	149.0	149.3	195.4	207.5*	164.0	186.3	171.2	194.7	191.1	233.4
11	169.5	134.9	142.5	160.8	205.4*	217.2	160.2	187.1	180.6	205.1	195.0	233.4
12	170.0	140.0	146.1	169.9	215.2	221.8*	160.9	188.2	193.3	200.6	191.0	228.0
13	167.0	142.8	146.3	195.5*	225.8	208.8	161.5	192.5	198.0	209.4	181.5	219.5
14	165.9	149.5	149.8*	215.7	224.2*	206.8	155.4	188.2*	209.4*	220.6	198.0	195.3
15	184.9	148.8	164.2*	222.9	246.6	196.3	149.1	199.6	207.3	231.6	207.3	193.2
16	187.6	148.8	178.1	226.3*	251.5	189.9	146.5	211.0	205.2	224.6	207.3	186.2
17	186.8	151.6	182.0	236.7*	248.9	187.5	147.6	228.4	210.7	193.7	217.1	192.5
18	217.2	161.1	196.4	243.0	271.8	169.5	144.7	246.1	207.5	198.2	198.9	201.6
19	233.1	180.3	216.3	244.2*	280.0	163.5	145.3	268.0*	213.8	214.2*	191.2	191.2
20	238.2	189.5	223.9*	257.1	272.5	161.2	154.0	288.7	204.0	201.7	186.8	181.6
21	250.8*	211.9	227.6	239.6	259.2	155.8	159.2	298.3	203.2	188.7	177.6	185.8
22	233.7	215.7	243.1*	232.8	250.0	145.2	166.0*	322.8*	195.3	167.9	177.4	178.1
23	233.6	216.6	245.3	226.3	239.5	139.1	180.4	322.7	185.4	164.0	171.7	185.6
24	239.8	231.5	231.3	217.4	209.2	143.8	186.6	329.2	178.7	157.5	167.2	184.9
25	234.6	225.3	223.9*	198.3	189.1	149.3	213.6	303.9	167.1	161.8	162.3	185.0
26	238.8	213.3	226.9	188.9*	186.3	154.5	209.9	285.1*	159.6	153.5	153.2	188.1
27	232.2	224.1	215.1	169.8	164.6	173.4*	197.2	269.2	152.6	162.5	155.0	191.9
28	230.1	222.0	206.0	152.7	159.3	187.7	193.1	250.2	152.1	150.9	167.1	192.4
29	227.8		184.1	140.9	144.8	210.8	180.3	225.2	150.1	155.9	163.2	195.5
30	211.4		186.5E	136.9	142.5*	226.6	188.3	210.4	157.8	151.1*	169.6	189.6
31	209.3		172.8		142.5*		183.4	182.9*		141.6		180.6
Mean	203.4	174.1	187.0	186.6	194.0	176.3	186.6	228.1	179.3	180.9	180.3	198.5

\* = corrected for burst in progress; E = corrected for snow on antenna; yearly mean equals 189.8 for 1990.

## DAILY SOLAR INDICES

December 1990

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit								
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	335	10	127	137	177.5	562	275	206	172.6	157	109	73	39	19
02	336	11	160	174	183.1	555	275	216	178.0	168	113	73	39	16
03	337	12	171	184	193.1	561	282	225	187.6	178	119	77	40	17
04	338	13	186	196	205.2	450	250	210	199.3	185	124	66	36	21
05	339	14	167	195	213.2*	570	300	246	207.0*	204	135	87	44	26
06	340	15	169	202	227.7	575	307	256	221.0	211	137	87	45	26
07	341	16	182	216	228.8	566	296	245	222.0	209	142	89	44	19
08	342	17	177	229	230.4	510	285	245	223.6	217	139	80	43	21
09	343	18	176	206	237.4	575	303	255	230.3	212	146	87	47	22
10	344	19	157	198	240.7	577	313	269	233.4	218	145	86	44	18
11	345	20	157	170	240.8	589	317	268	233.4	218	143	93	49	25
12	346	21	138	144	235.2	579	314	267	228.0	217	143	90	49	23
13	347	22	117	139	226.5	553	315	270	219.5	208	137	88	63	--
14	348	23	98	106	201.5	574	309	252	195.3	187	131	92	55	36
15	349	24	88	102	199.4	522	294	241	193.2	183	123	96	68	--
16	350	25	99	121	192.2	479	278	222	186.2	178	121	70	43	19
17	351	26	112	123	198.7	551	290	240	192.5	181	121	76	48	26
18	352	27	121	124	208.2	525	281	236	201.6	189	122	81	54	50
19	353	1	134	150	197.5	563	---	---	191.2	---	---	82	54	--
20	354	2	124	129	187.6	572	319	241	181.6	187	122	78	44	30
21	355	3	125	110	191.9	558	315	251	185.8	175	113	76	44	23
22	356	4	99	106	184.1	557	303	245	178.1	171	107	72	43	31
23	357	5	91	97	191.9	551	296	231	185.6	176	112	75	44	21
24	358	6	95	105	191.2	549	280	220	184.9	173	115	78	48	35
25	359	7	98	106	191.2	573	296	228	185.0	183	120	81	45	28
26	360	8	91	116	194.5	568	285	217	188.1	173	121	79	46	31
27	361	9	104	122	198.4	564	286	218	191.9	183	126	84	46	20
28	362	10	111	129	199.0	515	236	198	192.4	224	120	69	41	13
29	363	11	109	126	202.2	496	---	---	195.5	---	---	80	44	17
30	364	12	103	120	196.1	543	308	224	189.6	200	148	80	43	18
31	365	13	96	142	186.8	562	279	207	180.6	175	132	82	43	16
Mean			128.5	145.9	204.9	550	293	236	198.5	191	127	81	46	24

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 Sagamore Hill (SGMR) observations.

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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	120	117	115	109	101	96	95	95
1983	93	90	86	82	77	70	66	66	68	68	67	64
1984	60	56	53	50	48	46	44	40	34	29	25	22
1985	20	20	19	18	18	18	17	17	17	17	17	15
1986	14	13	13	14	14	14	14	13	12*	13	15	16
1987	18	20	22	24	26	28	31	35	39	44	47	51
1988	58	65	71	78	84	94	104	114	121	125	130	138
1989	142	145	150	154	157	158	159	158	157	157	158	154
1990	151	153	152	149	147	144	143	142	138	135	131	129
							( 7)	(12)	(15)	(18)	(18)	(17)
1991	128	127	124	124	124	123	120	118	115	113	113	113
	(18)	(19)	(21)	(26)	(27)	(24)	(21)	(19)	(16)	(15)	(16)	(18)
1992	112	109	106	103	100	98	95	93	91	87	82	77
	(19)	(15)	(10)	( 5)	( 8)	( 5)	( 8)	(11)	(12)	(14)	(19)	(24)

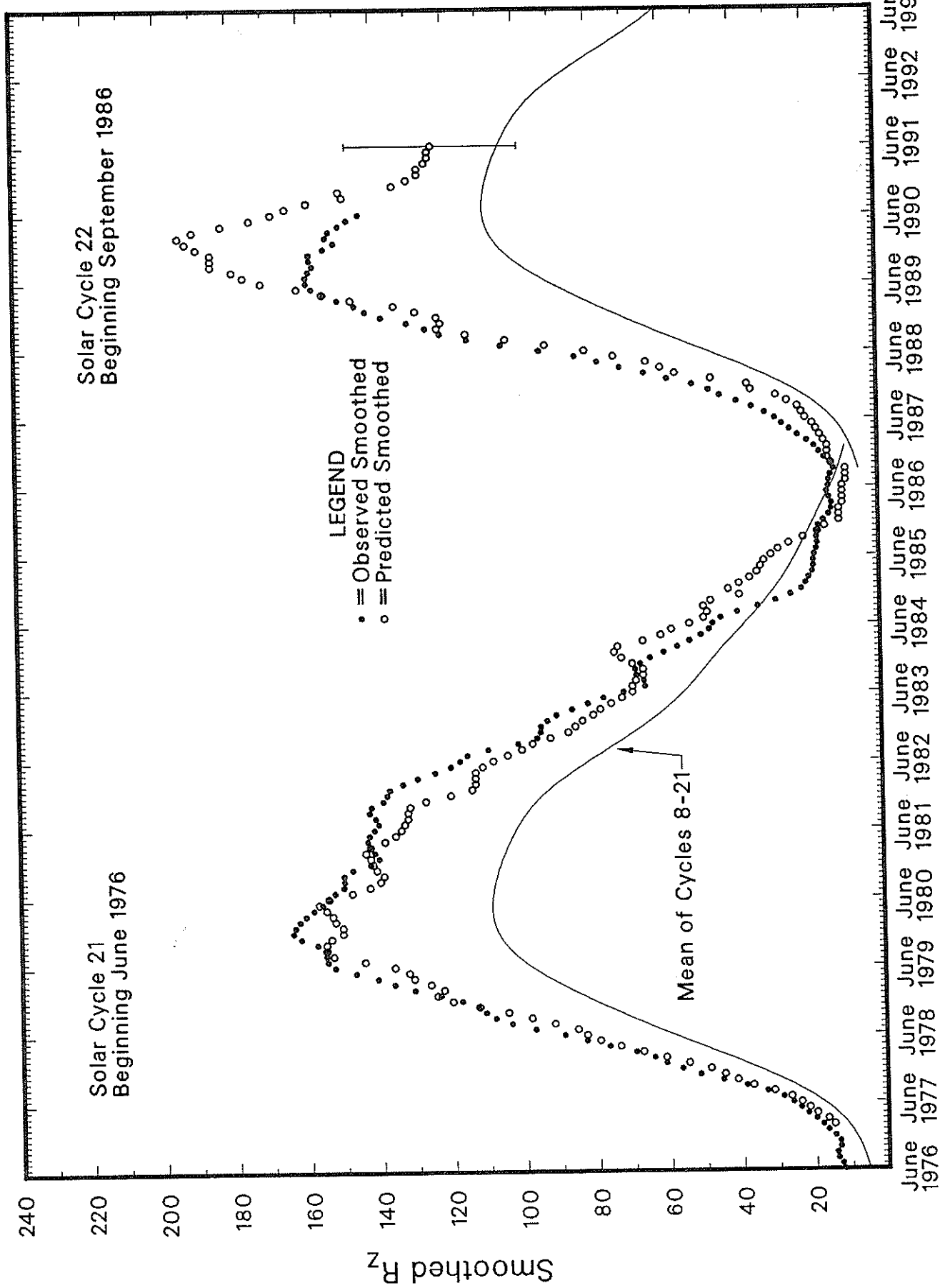
\*September 1986 marks the onset of Sunspot Cycle 22.

For the end of Solar Cycle 21, and the beginning of 22, the table gives observed smoothed sunspot numbers up to the one calculated from the most recently available monthly mean. These smoothed observed values are based on final, monthly means through September 1990 and on provisional numbers thereafter.

Table entries, with numbers in parentheses below them, denote predictions by the McNish-Lincoln method. (See page 9 in the July 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number from the predicted value generates the lower limit. Consider, for example, the June 1991 prediction. There exists a 90% chance that in June 1991 the actual smoothed sunspot number will fall somewhere between 99 and 147.

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



H $\alpha$  SOLAR FLARES

DECEMBER 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	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)	
GOES	01	0047	0111	0210						83		M 1.2						
LEAR		0414	0414	0420	N33	E58	6390	12	5.8	6	SF		3	E		17		
GOES		0626E		0630D						4D		C 6.3						
RAMY		1405	1412	1432	N14	E11	6383	12	2.4	27	SF	C 1.7	3	E		11		
GOES		1430	1446	1517						47		C 1.8						
RAMY		1555	1555	1601	N15	E69		12	6.9	6	SF		3	E		26		
GOES		1609	1615	1624						15		C 2.2						
RAMY		1645	1649	1700	S08	W07	6388	12	1.2	15	SF	C 1.7	3	E		35		F
PALE		1702	1713	1721	N20	E70		12	7.1	19	SF		3	E		31		
RAMY		1706	1708	1745	S08	W06	6388	12	1.3	39	SF	C 1.8	3	E		22		F
RAMY		1710	1713	1721	N18	E69		12	7.0	11	SF		3	E		21		F
PALE		1711	1713	1721	N20	E70		12	7.1	10	SF		3	E		31		
RAMY		1734	1735	1741	N22	E70		12	7.1	7	SF		3	E		13		
PALE		1741	1742	1752	N35	E53	6390	12	6.0	11	SF	C 1.5	3	E		35		
RAMY		1741	1742	1755	N34	E50	6390	12	5.7	14	SF	C 1.5	3	E		32		F
GOES		1759	1802	1807						8		C 1.7						
PALE		1924	1924	1945	N36	E53	6390	12	6.1	21	SF		3	E		10		
GOES		2251	2310	2335						44		C 1.8						
LEAR	02	0031	0048	0143	S08	W11	6388	12	1.2	72	1F	C 4.1	3	E		106		UF
PALE		0033	0044	0126	S08	W09	6388	12	1.3	53	SF		3	E		55		UF
LEAR		0829	0830	0842	S22	E10	6393	12	3.1	13	SF	C 2.0	3	E		38		
GOES		1014	1022	1033						19		C 1.5						
GOES		1114	1125	1136						22		C 4.0						
GOES		1421	1425	1428						7		C 1.2						
RAMY		1704	1704	1709	S05	W49	6379	11	29.1	5	SF		3	E		15		
RAMY		1714	1716	1719	S05	W50	6379	11	29.1	5	SF		3	E		13		
RAMY		1754	1756	1803	S05	W50	6379	11	29.1	9	SF		3	E		17		
HOLL		2023	2024	2031	N14	W09	6383	12	2.2	8	SF		3	E		19		
HOLL		2243	2248	2253	N10	E71	6397	12	8.3	10	SF		2	E		31		
PALE		2342	2343	2346	S07	W49	6379	11	29.4	4	SF		3	E		16		
GOES	03	0129	0134	0138						9		C 1.4						
LEAR		0227	0227	0230	N10	E76	6397	12	8.8	3	SF		3	E		19		
LEAR		0254	0254	0322	N09	E11	6391	12	3.9	28	SF		3	E		10		
GOES		0328	0333	0337						9		C 2.1						
GOES		1108	1113	1116						8		C 1.3						
HOLL		1651E	1651U	1658	N20	E57	6395	12	8.1	7D	SF	C 1.6	2	E		13		
GOES		1705	1713	1720						15		C 3.5						
GOES		1733	1738	1745						12		C 3.4						
HOLL		1825	1826	1849	N22	E45	6399	12	7.2	24	SF	C 1.7	3	E		57		
PALE		1825	1827	1831	N22	E44	6399	12	7.1	6	SF	C 1.7	3	E		25		
HOLL		1827	1831	1903	S06	W63	6379	11	29.1	36	SF		3	E		31		F
HOLL		1843	1845	1920	S21	W58	6396	11	29.4	37	SF	C 2.3	3	E		42		
HOLL		1843	1855	1920	S21	W58	6396			37	SN			E		35		K
PALE		1844	1849	1903	S22	W58	6396	11	29.4	19	SF		3	E		31		
RAMY		1844	1850	1904	S21	W56	6396	11	29.6	20	SF		2	E		22		
HOLL		1918	1923	1952	N12	E67	6397			34	SB	M 1.0		E		67		K
HOLL		1918	1930	1952	N12	E67	6397	12	8.8	34	SF		3	E		84		F
RAMY		1920	1922	1944	N11	E66	6397	12	8.8	24	SN	M 1.0	3	E		63		
PALE		1925	1931	1943	N10	E55	6397	12	7.9	18	SF		3	E		31		
HOLL		1954	2019	2042	N08	E65	6397	12	8.7	48	SF	C 3.9	3	E		85		F
PALE		2005	2011	2027	N12	E66	6397	12	8.8	22	SF		3	E		32		
RAMY		2007	2011	2027	N08	E64	6397			20	SF			E		32		K
RAMY		2007	2020	2027	N08	E64	6397	12	8.6	20	SF		3	E		36		F
HOLL		2027	2028	2032	S06	W63	6379	11	29.2	5	SF		3	E		10		F
HOLL		2034	2038	2058	N09	E01	6391	12	3.9	24	SF		3	E		19		F
HOLL		2149	2149	2159	N12	E67	6397	12	8.9	10	SF	C 1.3	3	E		19		F
HOLL		2230	2231	2235	N11	E63	6397	12	8.7	5	SF		3	E		17		F
HOLL		2251	2251	2305	N08	E58	6397	12	8.3	14	SF	C 1.7	3	E		13		F
PALE	04	0039	0039	0043	S21	W11	6393	12	3.2	4	SF	C 4.4	3	E		26		
LEAR		0039	0039U	0051	S21	W10	6393	12	3.3	12	SF	C 4.4	3	E		33		
LEAR		0158	0202	0246	N08	E56	6397	12	8.3	48	1F	M 6.6	3	E		156		F
PALE		0200	0204	0249	N09	E56	6397	12	8.3	49	SF	M 6.6	3	E		98		F
LEAR		0331	0331	0337	N10	E62	6397	12	8.8	6	SF	C 1.2	3	E		18		
LEAR		0406	0415	0421	N08	E54	6397	12	8.2	15	SF	C 1.6	3	E		29		
LEAR		0733	0735	0743	N10	E58	6397	12	8.7	10	SF	C 4.3	3	E		76		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	NOAA/ USAF CMD Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
											Time (UT)	Apparent (10-6 Disk)	Corr. (Sq Deg)	
LEAR	04	0824	0825	0841	N19 E44	6395	12 7.7	17	SF C 1.4	3	E	19		
LEAR		0920	0921	0925	N36 E14	6390	12 5.5	5	SF	3	E	13		
RAMY		1246	1252	1319	N10 E55	6397	12 8.7	33	1N C 1.8	3	E	150		F
RAMY		1333	1335	1338	S21 W65	6396	11 29.7	5	SF	3	E	25		
RAMY		1337	1346	1417	N09 E53	6397	12 8.5	40	SF	3	E	43		F
RAMY		1404	1409	1430	N21 E34	6399	12 7.2	26	SF	3	E	16		
RAMY		1420	1435	1547D	N08 E51	6397	12 8.4	87D	1B M 1.8	3	E	206		FH
HOLL		1435E	1439U	1540D	N08 E50	6397	12 8.3	65D	1B M 1.8	1	E	108		F
RAMY		1600	1606	1615	S23 W61	6400	11 30.0	15	SF	3	E	15		
HOLL		1604	1605	1628	N17 E43	6395	12 7.9	24	SF	3	E	27		
RAMY		1604	1611	1651	N10 E37	6397	12 7.4	47	SF C 1.7	3	E	49		
RAMY		1621	1624	1658	S23 W61	6400	11 30.0	37	SF C 1.4	3	E	15		
RAMY		1702	1710	1712	S23 W59	6400	11 30.2	10	SF	3	E	14		
RAMY		1853	1859	1907	S22 W62	6400	11 30.0	14	SF	3	E	11		
RAMY		1927	1932	1941	S22 W63	6400	11 30.0	14	SF	3	E	16		
HOLL		1927	1933	1937	S24 W60	6400	11 30.2	10	SF	3	E	22		F
PALE		1948	2000	2003	S24 W60	6400	11 30.2	15	SF	3	E	39		
RAMY		1957	1958	2006	S22 W64	6400	11 30.0	9	SF	3	E	15		
RAMY		2003	2004	2015	N11 E44	6397	12 8.1	12	SF	3	E	18		
HOLL		2005	2005	2012	N12 E44	6397	12 8.1	7	SF	3	E	17		
RAMY		2009	2011	2026	S21 W63	6400	11 30.0	17	SF	3	E	20		
PALE		2026	2030	2036	S24 W61	6400	11 30.1	10	SF	3	E	19		
GOES		2109	2120	2123				14	C 1.7					
GOES		2300	2304	2307				7	C 1.7					
LEAR		2309	2314	2324	S23 W64	6400	11 30.0	15	SF	3	E	34		
LEAR	05	0012	0019	0031	S24 W60	6400	11 30.4	19	SF	3	E	34		
GOES		0053E	0055	0104D				11D	C 1.9					
LEAR		0054	0056	0100	N19 E37	6395	12 7.9	6	SF	3	E	34		
LEAR		0120	0205	0212	S23 W67	6400	11 30.0	52	SF	3	E	30		
LEAR		0301	0325	0340	S25 W71	6396	11 29.7	39	SF C 1.9	3	E	30		
LEAR		0344	0406	0420	S24 W68	6396	11 30.0	36	SF	3	E	39		
LEAR		0417	0419	0423	N18 E35	6395	12 7.8	6	SF C 1.8	3	E	21		
LEAR		0433	0444	0452	S22 W74	6396	11 29.6	19	SF	3	E	20		
GOES		0536E	0539	0547D				11D	C 3.3					
LEAR		0537	0542	0549	N18 E35	6395	12 7.9	12	SF	3	E	86		F
LEAR		0555	0559	0611	S26 W05	6387	12 4.8	16	SF C 2.0	3	E	40		
LEAR		0722	0726	0820	N08 E43	6397	12 8.5	58	2N M 2.7	3	E	314		F
LEAR		0809	0824	0835	S25 W05	6387	12 4.9	26	SF	3	E	23		
SVTO		0817E	0818U	0844D	N09 E38	6397	12 8.2	27D	SF	2	E	58		
LEAR		0938	0945	0950	S23 W71	6396	11 30.0	12	SF	3	E	80		F
HOLL		1435	1452	1523	S24 W69	6400	11 30.3	48	SF	2	E	41		
HOLL		1507	1507	1526	N09 E36	6397	12 8.3	19	SF	2	E	25		F
RAMY		1507	1507	1536	N07 E37	6397	12 8.4	29	SF	3	E	22		
RAMY		1511	1516	1531	N15 E33	6395	12 8.1	20	SF C 1.9	3	E	44		F
HOLL		1544	1545	1551	S23 W70	6400	11 30.3	7	SF C 1.6	3	E	39		
HOLL		1559	1607	1615	S24 W75	6400	11 30.0	16	SF	3	E	11		F
HOLL		1657	1658	1706	S25 W75	6400	11 30.0	9	SF	3	E	15		
HOLL		1702	1702	1716	N10 E35	6397	12 8.3	14	SF	3	E	10		
HOLL		1718	1730	1738	S25 W72	6400	11 30.1	20	SF C 2.3	3	E	72		F
HOLL		1749	1750	1754	S23 W73	6400	11 30.1	5	SF	3	E	16		
PALE		1804	1805	1810	S24 W75	6400	11 30.0	6	SF	3	E	20		
HOLL		1818	1820	1852	S22 W34	6393		34	SN		E	11		K
HOLL		1818	1829	1852	S22 W34	6393	12 3.1	34	SF	3	E	17		F
HOLL		1821	1826	1836	N18 E29	6395	12 8.0	15	SF	3	E	33		
PALE		1826	1838	1846	S25 W74	6400	11 30.0	20	SF C 2.3	3	E	77		F
HOLL		1827	1838	1854	S25 W73	6400	11 30.1	27	SF C 2.3	3	E	51		F
HOLL		1855	1857	1937	N12 E25	6395	12 7.7	42	SF	3	E	41		F
HOLL		1855	1908	1937	N12 E25	6395		42	SB		E	68		K
HOLL		1856	1900	1906	S24 W73	6400	11 30.1	10	SF C 2.6	3	E	23		
PALE		1901	1907	1927	N14 E25	6395	12 7.7	26	SF	3	E	49		
RAMY		2048	2107	2114D	N14 E33	6397	12 8.4	26D	SF	3	E	93		F
PALE		2053	2110	2205	N15 E29	6395	12 8.1	72	SF	3	E	74		F
PALE		2054	2114	2200	N10 E32	6397	12 8.3	66	SF C 8.9	3	E	97		F
HOLL		2058	2108	2130D	N11 E33	6397	12 8.3	32D	1F	2	E	128		F
HOLL		2100	2100	2130D	S23 W75	6400	11 30.1	30D	SF	2	E	14		
LEAR	06	0100	0112	0120	S25 W79	6396	11 30.0	20	SF	3	E	30		



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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)	
[ PALE	06	0216	0219	0239	N20	E23	6395	12	7.8	23	SF	3	E		27		F	
[ LEAR		0217	0219	0248	N19	E22	6395	12	7.8	31	SF	3	E		30			
LEAR		0230	0232	0243	S21	W42	6393	12	2.9	13	SF	3	E		44			
LEAR		0239	0245	0248	N10	E30	6397	12	8.4	9	SF	3	E		23			
GOES		0628E	0630	0643D						15D		C 4.5						
HOLL		1518	1622U	1658D	N09	E26	6397	12	8.6	100D	SF	2	E		42		F	
GOES		1531	1534	1536						5		C 3.5						
RAMY		1610E		1633	N11	E24	6397	12	8.5	23D	SF	C 3.5	3	E			F	
RAMY		1610E	1614	1625	S23	W22	6387	12	5.0	15D	SF	3	E		21		F	
HOLL		1834	1842	1858	S18	E28		12	8.9	24	SF	C 2.2	3	E	34			
HOLL		1839	1841	1846	N17	E15	6395	12	7.9	7	SF	3	E		28			
PALE		1840	1842	1851	S18	E28		12	8.9	11	SF	3	E		18			
RAMY		1901	1903	1912	S18	E28		12	8.9	11	SF	3	E		14			
[ HOLL		2002	2007	2015	N17	E14	6395	12	7.9	13	SF	3	E		51			
[ PALE		2006	2006	2011	N20	E16	6395	12	8.1	5	SF	3	E		15			
[ HOLL		2105	2108	2116	S18	E26	6404	12	8.8	11	SF	C 2.1	3	E	22			
[ RAMY		2106	2108	2113	S18	E26	6404	12	8.8	7	SF	C 2.1	3	E	15			
HOLL		2211	2226	2311	N18	E14	6395	12	8.0	60	SF	3	E		42		F	
GOES	07	0021E	0024	0031D						10D		C 2.8						
[ LEAR		0133	0133	0148	S26	W29	6387	12	4.8	15	SF	3	E		31			
[ PALE		0134	0135	0140	S26	W28	6387	12	4.9	6	SF	3	E		25			
PALE		0207	0209	0214	S26	W29	6387	12	4.8	7	SF	3	E		45		F	
LEAR		0425	0428	0440	N09	E20	6397	12	8.7	15	SF	C 3.4	3	E	42		F	
LEAR		0524	0525	0641	S23	W33	6387	12	4.7	77	SF	3	E		19			
GOES		0727	0730	0743						16		C 4.0						
[ LEAR		0929	0939	0949	S26	W34	6387	12	4.7	20	SF	C 2.8	3	E	31		F	
[ SVTO		0934	0938	0947	S26	W32	6387	12	4.9	13	SF	C 2.8	3	E	16			
RAMY		1218	1218	1227	S11	W19	6402	12	6.1	9	SF	3	E		10			
RAMY		1250	1250	1255	N09	E14	6397	12	8.6	5	SF	3	E		16		F	
RAMY		1312	1327	1330	N14	E03	6395	12	7.8	18	SF	3	E		23		F	
[ RAMY		1408	1410	1436	N09	E16	6397	12	8.8	28	1F	M 1.0	3	E	128		F	
[ HOLL		1420E	1420U	1430D	N09	E14	6397	12	8.6	10D	1B		1	E	110		FE	
RAMY		1422	1425	1447	N20	E06	6395	12	8.0	25	SF	3	E		17		F	
HOLL		1819	1819	1830	S23	W38	6387	12	4.8	11	SF	C 3.3	3	E	18		F	
RAMY		1829	1834	1838	S25	W35	6387	12	5.0	9	SF	3	E		23			
[ RAMY		1915	1918	1924	S26	W37	6387	12	4.9	9	SF	3	E		29		F	
[ HOLL		1915	1919	1935	S24	W38	6387			20	SB		E		39		K	
[ HOLL		1915	1925	1935	S24	W38	6387	12	4.9	20	SF	3	E		34			
[ PALE		1916	1926	1931	S24	W38	6387	12	4.9	15	SF	3	E		25			
[ RAMY		1924	1926	1938	S24	W36	6387	12	5.0	14	SF	3	E		26		F	
[ RAMY		1932	1949	2027	N12	E09	6397	12	8.5	55	SF	3	E		36		F	
[ HOLL		1933	1956	2021	N09	E08	6397	12	8.4	48	SF	3	E		34			
[ PALE		1951	1955	1958	N13	E07	6397	12	8.3	7	SF	3	E		20		F	
[ LEAR		2227	2231	2248	N19	W02	6395	12	7.8	21	SF	C 2.2	3	E	24			
[ HOLL		2230	2232	2239	N19	E00	6395	12	7.9	9	SF	C 2.2	3	E	15			
LEAR	08	0108	0108	0117	S15	W49	6407	12	4.3	9	SF	3	E		22			
LEAR		0114	0116	0119	N19	W01	6395	12	8.0	5	SF	3	E		14			
GOES		0141E	0145	0146						5D		C 2.2						
PALE		0232	0238	0241	S16	W51		12	4.2	9	SF	3	E		27			
LEAR		0254	0259	0308	S13	W55	6407	12	4.0	14	SF	3	E		13			
LEAR		0302	0303	0310	N19	W04	6395	12	7.8	8	SF	3	E		20			
[ LEAR		0643	0645	0715	S12	W32	6402	12	5.9	32	SF	C 7.3	3	E	44		UE	
[ SVTO		0655E	0656U	0705	S13	W31	6402	12	5.9	10D	SF	2	E		39			
[ SVTO		0701	0713	0725	N13	W21	6398	12	6.7	24	SF	3	E		94		FH	
[ LEAR		0702	0713	0736	N14	W22	6398	12	6.6	34	SF	3	E		59		FH	
LEAR		0734	0740	0744D	N24	E67		12	13.5	10D	SF	3	E		42			
[ LEAR		0942	0942	1016	S13	W57	6407	12	4.1	34	SF	3	E		12			
[ SVTO		0945	0949	1010	S16	W54	6407	12	4.3	25	SF	3	E		21			
[ SVTO		0955	1001	1031	N09	E03	6397	12	8.6	36	SN	C 4.9	3	E	76		F	
[ LEAR		0956	1002	1025	N09	E02	6397	12	8.6	29	1N	C 4.9	3	E	106		F	
[ LEAR		1004	1007	1017	N15	W23	6398	12	6.7	13	SF	3	E		23			
[ SVTO		1006	1007	1015	N15	W23	6398	12	6.7	9	SF	3	E		20			
[ RAMY		1139	1145	1205	N13	W22	6398	12	6.8	26	SF	C 4.5	3	E	31			
[ SVTO		1141	1144	1203	N13	W24	6398	12	6.7	22	SF	C 4.5	3	E	27			
RAMY		1208	1210	1245	S11	W32	6402	12	6.1	37	SF	3	E		13		F	
RAMY		1246	1249	1257	N15	W22	6398	12	6.9	11	SF	3	E		21		F	

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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	Time (UT)	Area Measurement		Remarks
							Region	Mo								Apparent (10-6 Disk)	Corr (Sq Deg)	
SVTO	08	1325	1332	1350	N19	W08	6395	12	7.9	25	SF	C 3.8	3	E		19		
		1326	1328	1347	N20	W05	6395	12	8.2	21	SF		3	E		12		F
		1435	1439	1501	N15	W22	6398	12	6.9	26	SF		3	E		20		F
		1437	1448	1510	N09	E02	6397	12	8.7	33	SF		3	E		25		F
		1438	1441	1528	N14	W24	6398	12	6.8	50	SF		3	E		71		F
		1438	1506	1531	S14	W56	6407	12	4.4	53	SF		3	E		30		F
		1439	1442	1445	S27	E36	6406	12	11.4	6	SF		3	E		11		F
		1440	1441	1449	S27	E35	6406	12	11.3	9	SF		3	E		20		F
		1441	1446	1504	N09	E00	6397	12	8.6	23	SF		3	E		22		F
		1500	1501	1512	S27	E35	6406	12	11.3	12	SF	C 4.4	3	E		13		F
		1529	1541	1546	N14	W23	6398	12	6.9	17	SF		3	E		35		F
		1541	1543	1550	S15	W58	6407	12	4.3	9	SF		3	E		12		F
		1548	1556	1612	S11	W35	6402	12	6.0	24	SF		3	E		22		F
		1554	1605	1625	S15	W58	6407	12	4.3	31	SF		3	E		23		F
		1602	1604	1617	N14	W25	6398	12	6.8	15	SF		3	E		17		F
		1726	1732	1744	N15	W25	6398	12	6.8	18	SF		3	E		17		F
		1814	1816	1835	N15	W24	6398	12	6.9	21	SF		3	E		15		F
		1814	1818	1837	S11	W37	6402			23	SN				E	10		K
		1814	1828	1837	S11	W37	6402	12	6.0	23	SF			3	E	12		F
		1816	1816	1821	N16	W23	6398	12	7.0	5	SF			3	E	20		F
		1844	1847	1851	N14	W25	6398	12	6.9	7	SF	C 4.3	3	E		19		F
		1855	1855	1913	N12	W11	6397	12	7.9	18	SF			3	E	11		F
		1943	1946	1954	N15	W28	6398	12	6.7	11	SF			3	E	16		F
		2108	2109	2145	S11	W39	6402	12	5.9	37	SF			3	E	13		F
		2153	2154	2158	S26	E31	6406	12	11.3	5	SF			3	E	16		F
		2153	2154	2202	S27	E30	6406	12	11.2	9	SF			3	E	34		F
		2252	2301	2302	N15	W27	6398	12	6.9	10	SF			3	E	22		F
		2252	2314	2334	N14	W30	6398	12	6.7	42	SF	C 2.7	3	E		16		F
		2252	2315	2326D	N14	W30	6398	12	6.7	34D	SF	C 2.7	3	E		21		F
		2305	2319	2337	N13	W30	6398	12	6.7	32	SF	C 2.7	3	E		18		F
		2356		2409	N15	W27	6398	12	6.9	13	1F	C 2.6	3	E		129		F
		2358E	2359U	2425D	N15	W27	6398	12	6.9	27D	SF	C 2.6	3	E		27		F
LEAR	09	0010	0014	0024	N14	W29	6398	12	6.8	14	SF		3	E		40		
LEAR	0047	0049	0107	N13	W33	6398	12	6.5	20	SF		3	E		27			
LEAR	0224	0232	0257	S11	W45	6402	12	5.7	33	SF		3	E		21			
LEAR	0311	0315	0326	N13	W32	6398	12	6.7	15	1F	C 4.9	3	E		105			
LEAR	0503	0504	0520	N02	E80		12	15.2	17	SF		3	E		29			
LEAR	0544	0544	0554	N24	E55	6408	12	13.5	10	SF		3	E		27			
LEAR	0815	0818	0836	N02	E79		12	15.2	21	1N	M 2.8	3	E		109		E	
SVTO	0817E	0818U	0839	N05	E76		12	15.0	22D	1N		2	E		108			
LEAR	0921	0926	1003	N09	W11	6397	12	8.6	42	1F	M 1.0	3	E		131		F	
SVTO	0923E	0926U	0947	N08	W13	6397	12	8.4	24D	1F	M 1.0	3	E		114			
RAMY	1125	1133	1141	N16	W33	6398	12	7.0	16	SF	C 4.9	3	E		23		F	
GOES	1333	1337	1339						6		C 2.4							
HOLL	1409E	1410U	1426	N13	W37	6398	12	6.8	17D	SF		1	E		25			
RAMY	1409	1410	1431	N15	W36	6398			22	SN			E		18		K	
RAMY	1409	1424U	1431	N15	W36	6398	12	6.9	22	SN	C 3.2	3	E		36			
RAMY	1525	1530	1537	N08	W16	6397	12	8.4	12	SF		3	E		22			
HOLL	1552	1552	1612	N09	W24	6397	12	7.8	20	SF		3	E		32		F	
RAMY	1552	1600	1613	N10	W23	6397	12	7.9	21	SF		3	E		33		F	
HOLL	1626	1626	1629	N14	W40	6398	12	6.7	3	SF		4	E		15		F	
HOLL	1817	1818	1859	N13	W41	6398			42	SN			E		23		K	
HOLL	1817	1825	1859	N13	W41	6398	12	6.7	42	SF		4	E		33		F	
PALE	1826E	1828	1830	S12	W53	6402	12	5.8	4D	SF		3	E		11			
RAMY	1924	1928	1932	N09	W25	6397	12	7.9	8	SF		3	E		20			
RAMY	1956	2002	2026	S25	W60	6387	12	5.2	30	SF		3	E		54		F	
HOLL	1959	2004	2016	S25	W63	6387	12	4.9	17	SF	C 4.2	4	E		64		F	
PALE	2001	2002	2013	S27	W64	6387	12	4.8	12	SF		3	E		74		F	
PALE	2037	2037	2045	S28	W62	6387	12	5.0	8	SF		3	E		12			
RAMY	2037	2039	2047	S25	W59	6387	12	5.3	10	SF		3	E		22			
HOLL	2038	2041	2048	S26	W62	6387	12	5.0	10	SF		3	E		14			
RAMY	2046	2046	2056	N19	W28	6395	12	7.7	10	SF		3	E		12			
HOLL	2046	2046	2102	N18	W27	6395	12	7.8	16	SF		4	E		20		F	
RAMY	2048	2058	2105	S25	W60	6387	12	5.2	17	SF		3	E		16			
PALE	2055	2056	2109	S28	W62	6387	12	5.0	14	SF		3	E		13			
HOLL	2055	2113	2146	S26	W62	6387	12	5.0	51	SF		3	E		53			
GOES	2108E	2117	2134D						26D		C 3.0							

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	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)	
PALE	09	2114	2116	2126D	S28	W62	6387	12	5.0	12D	SF		3	E		32		
HOLL		2203	2230	2339	N14	W42	6398			96	SF			E		36		K
HOLL		2203	2307	2339	N14	W42	6398	12	6.7	96	1N	C 5.1	3	E		157		FE
HOLL		2207	2212	2232	N25	E49	6408	12	13.7	25	SF		3	E		51		
PALE		2210E	2213	2221D	N27	E48	6408	12	13.7	11D	SF		3	E		17		
PALE		2210E	2214	2229D	N11	W43	6398	12	6.7	19D	SF		3	E		47		
LEAR		2212	2237	2333	N13	W43	6398			81	1F			E		102		K
LEAR		2212	2309	2333	N13	W43	6398	12	6.7	81	1F		3	E		114		F
LEAR		2227	2231	2315	S24	W67	6387	12	4.7	48	SF		3	E		44		
HOLL		2228	2231	2239	S26	W64	6387	12	5.0	11	SF		3	E		25		
PALE		2230	2231	2234	S27	W62	6387	12	5.1	4	SF		3	E		21		
PALE		2232	2236	2244	N12	W43	6398	12	6.7	12	SF		3	E		26		
PALE		2244	2248	2255	S25	W68	6393	12	4.7	11	SF		3	E		29		
PALE		2254	2309	2335	N13	W44	6398	12	6.6	41	1F		3	E		152		
LEAR		2311	2319	2338	N19	W28	6395	12	7.8	27	SF		3	E		53		
HOLL		2315	2315	2330	N19	W26	6395	12	8.0	15	SF		3	E		20		F
LEAR		2327	2328	2333	S23	W62	6387	12	5.2	6	SF		3	E		22		
LEAR	10	0016	0019	0027	N14	W45	6398	12	6.6	11	SF		3	E		35		
LEAR		0023	0025	0054	S26	W67	6387	12	4.8	31	SF	C 2.6	3	E		31		
PALE		0024	0024	0031	S28	W66	6387	12	4.8	7	SF	C 2.6	3	E		13		
PALE		0037	0040	0043	N15	W41	6398	12	6.9	6	SF		3	E		11		
LEAR		0041	0047	0111	N13	W44	6398	12	6.7	30	SF	C 3.3	3	E		26		
PALE		0050	0050	0059	S12	W56	6402	12	5.8	9	SF		3	E		21		
PALE		0052	0059	0106	N13	W46	6398	12	6.6	14	SF		3	E		31		
PALE		0108	0111	0117	S11	W54	6402	12	6.0	9	SF		3	E		73		
LEAR		0125	0126	0144	N15	W41	6398	12	6.9	19	SF	C 2.6	3	E		26		
LEAR		0251	0251	0257	N14	W48	6398	12	6.5	6	SF		3	E		28		
GOES		0421E	0433	0444D						23D		C 3.4						
GOES		0534	0542	0553						19		C 2.6						
GOES		0551E	0602	0609						18D		C 3.1						
LEAR		0654	0657	0717	N16	W32	6395	12	7.9	23	SF		3	E		77		F
LEAR		0657	0730	0913	N15	W47	6398			136	2F			E		259		K
LEAR		0657	0755	0913	N15	W47	6398	12	6.7	136	2B	M 5.8	3	E		422		FH
LEAR		0932	0943	0948	N13	W50	6398	12	6.6	16	SF	C 3.4	3	E		34		
LEAR		0954	0955	1005	N12	W49	6398	12	6.7	11	SF	C 3.6	3	E		26		H
GOES		1157	1201	1203						6		C 4.0						
GOES		1250	1254	1258						8		C 2.8						
RAMY		1301	1302	1318	S12	W68	6407	12	5.4	17	SF		3	E		34		F
RAMY		1306	1306	1331	S24	W80	6387	12	4.4	25	SF		3	E		23		F
RAMY		1306	1311	1318	N14	W51	6398	12	6.7	12	SF	C 6.8	3	E		24		
RAMY		1320	1321	1334	N14	W55	6398			14	SF			E		21		K
RAMY		1320	1330	1334	N14	W55	6398	12	6.4	14	SF		3	E		29		
HOLL		1445E	1446U	1532	N21	W50	6399	12	6.8	47D	SF	C 2.5	2	E		24		F
HOLL		1513	1517	1538	N09	W26	6397	12	8.7	25	SF		3	E		72		FH
RAMY		1515E	1521	1536	N09	W28	6397	12	8.5	21D	SF	C 3.7	3	E		54		FH
RAMY		1620	1629	1646	N14	W53	6398	12	6.7	26	SF	C 2.5	3	E		21		
RAMY		1621	1624	1642	S09	W63	6402	12	5.9	21	SF		3	E		31		
HOLL		1621	1626	1645	S10	W63	6402	12	5.9	24	SF		3	E		23		
HOLL		1626	1629	1638	N14	W52	6398	12	6.7	12	SF	C 2.5	3	E		17		
RAMY		1647	1648	1652	N14	W53	6398	12	6.7	5	SF		3	E		28		F
RAMY		1654	1656	1704	N15	W53	6398	12	6.7	10	SF		3	E		17		
HOLL		1659	1702	1713	S10	W68	6402	12	5.6	14	SF		3	E		47		
RAMY		1659	1703	1710	S10	W66	6402	12	5.7	11	SF		3	E		39		
RAMY		1713	1719	1725	N14	W54	6398	12	6.6	12	SF	C 2.6	3	E		36		
HOLL		1714	1719	1728	N13	W54	6398	12	6.6	14	SN	C 2.6	3	E		45		
PALE		1717E	1719U	1724	N14	W53	6398	12	6.7	7D	SF	C 2.6	2	E		50		
RAMY		1749	1759	1828	N21	W52	6399	12	6.7	39	SN	C 6.8	3	E		64		
RAMY		1752	1753	1757	N14	W54	6398	12	6.7	5	SF		3	E		22		
HOLL		1754	1801	1823	N20	W52	6399	12	6.8	29	SF		3	E		49		F
PALE		1755	1756	1758	N14	W53	6398	12	6.7	3	SF		3	E		38		
PALE		1756	1800	1811	N20	W52	6399	12	6.8	15	SF		3	E		27		F
HOLL		1807	1807	1819	S11	W65	6402	12	5.9	12	SF		3	E		15		
PALE		1815	1816	1819	N21	W51	6399	12	6.8	4	SF		3	E		15		
RAMY		1855	1918	1934	S10	W66	6402	12	5.8	39	SF		3	E		23		
HOLL		1903	1919	1935	S11	W66	6402	12	5.8	32	SF		3	E		37		
RAMY		1927	1932	1937	N09	W29	6397	12	8.6	10	SF		3	E		20		
PALE		1931	1931	1934	N08	W30	6397	12	8.6	3	SF		3	E		14		FH

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	NOAA/ USAF CMD Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement Time Apparent (UT) (10-6 Disk)	Corr (Sq Deg)	Remarks
HOLL	10	1937	2021	2123	N23 E82		12 17.1	106	SF	3	E	67	
RAMY		1941	1952	2000	N22 E82		12 17.1	19	SF	3	E	47	
RAMY		1945	1947	1958	N14 W55 6398		12 6.7	13	SF	3	E	22	
HOLL		1945	1951	1959	N13 W55 6398		12 6.7	14	SF C 3.0	3	E	41	
PALE		1948	1950	1953	N12 W57 6398		12 6.5	5	SF C 3.0	3	E	20	
RAMY		2010	2027	2031	N22 E82		12 17.1	21	SF	3	E	30	
RAMY		2016	2017	2031	S10 W67 6402			15	SF		E	14	K
RAMY		2016	2028	2031	S10 W67 6402		12 5.8	15	SF	3	E	31	
HOLL		2036	2051	2103	N14 W53 6398		12 6.8	27	SF	3	E	18	
HOLL		2037	2058	2126	S11 W67 6402		12 5.8	49	SF	3	E	27	
HOLL		2042	2044	2055	S22 W80 6387		12 4.7	13	SF	3	E	18	
HOLL		2123	2134	2137	N21 E76 6412		12 16.7	14	SF	3	E	12	
LEAR		2210E	2210U	2309	N15 W52 6398		12 7.0	59D	1N C 8.6	2	E	147	F
LEAR		2239	2304	2316	S10 W69 6402		12 5.7	37	SF C 5.2	3	E	83	F
LEAR		2249	2251	2301	N24 E37 6408		12 13.8	12	SF	3	E	15	
LEAR		2326	2331	2339	S27 W83 6387		12 4.5	13	SF	3	E	12	
LEAR		2339	2342	2426	N20 W56 6399		12 6.7	47	SF C 5.7	3	E	55	
PALE		2343	2351U	2425D	N19 W57 6399		12 6.6	42D	SF	3	E	39	
PALE		2349	2349		S16 W90 6407		12 4.2	11	SF	3	E	59	
LEAR	11	0019	0020	0038	N15 W44 6395		12 7.7	19	SF	3	E	11	
LEAR		0035	0041	0056	N22 E77 6412		12 16.9	21	SF	3	E	23	
GOES		0149	0158	0202				13	C 4.8				
PALE		0240	0240	0251	N21 W56 6399		12 6.8	11	SF	3	E	17	
PALE		0252	0310	0334	N21 W56 6399		12 6.8	42	SF C 5.4	3	E	37	
LEAR		0259	0309	0332	N20 W58 6399		12 6.7	33	SF	3	E	41	
LEAR		0316	0331	0342	N21 E73 6412		12 16.7	26	SF	3	E	51	
GOES		0341	0342	0343				2	C 3.4				
LEAR		0434	0436	0449	N16 W45 6395		12 7.8	15	SF	3	E	26	F
LEAR		0502	0504	0516	S25 W88 6387		12 4.4	14	SF M 1.1	3	E	64	
LEAR		0621	0630	0649	N20 W60 6399		12 6.7	28	SF C 4.3	3	E	33	F
SVTO		0706E	0708U	0733D	N14 W46 6395		12 7.8	27D	SF	2	E	68	
LEAR		0708	0710	0730	N20 W43 6395		12 8.0	22	SF C 5.1	3	E	57	F
SVTO		0727	0728U	0743	N04 E60 6410		12 15.8	16	SF	2	E	20	
LEAR		0727	0733	0749	N03 E58 6410		12 15.6	22	SF C 3.8	3	E	48	F
LEAR		0830	0838	0846	N20 W43 6395		12 8.1	16	SF	3	E	21	
SVTO		0832	0912	1108	N14 W63 6398		12 6.6	156	SF C 3.1	3	E	93	
LEAR		0851	0917	0948	N15 W59 6398		12 6.9	57	SF	3	E	75	F
GOES		1003	1013	1031				28	C 2.7				
SVTO		1111	1132	1228	N11 W61 6398		12 6.9	77	1N M 1.3	3	E	104	F
SVTO		1111	1144	1228	N11 W61 6398			77	1N		E	84	K
RAMY		1132	1133	1214	N13 W62 6398		12 6.8	42	SN M 1.3	3	E	82	F
RAMY		1132	1154	1214	N13 W62 6398			42	SN		E	77	K
RAMY		1308	1309	1311	S10 W79 6402		12 5.6	3	SF	3	E	18	
RAMY		1324	1336	1342	S10 W82 6402		12 5.4	18	SF	3	E	11	
RAMY		1411	1418	1421	S10 W76 6402		12 5.9	10	SF C 2.5	3	E	15	
RAMY		1419	1419	1424	N07 E72		12 17.0	5	SF	3	E	13	
RAMY		1422	1426	1433	S10 W76 6402		12 5.9	11	SF	3	E	17	
HOLL		1511	1523	1533	S13 W79 6407		12 5.7	22	SF C 2.5	3	E	40	
HOLL		1543	1553	1603	S14 W96 6407		12 4.4	20	1F	3	E	107	
RAMY		1547	1549	1603	S08 W79 6402		12 5.7	16	SF C 2.9	3	E	41	
RAMY		1550	1550	1558	N13 W68 6398		12 6.5	8	SF	3	E	19	
RAMY		1618	1621	1656	N08 W43 6397		12 8.4	38	SF	3	E	27	F
HOLL		1620	1624	1654	N12 W45 6397		12 8.3	34	SF	3	E	22	
RAMY		1626	1627	1632	S12 W80 6402		12 5.6	6	SF	3	E	18	
RAMY		1728	1800	1810	N20 W51 6395		12 7.8	42	SF	3	E	53	F
RAMY		1813	1815	1827	S10 W78 6402		12 5.9	14	SF	3	E	15	
RAMY		1815	1821	1831	N12 W66 6398		12 6.8	16	SF M 1.3	3	E	25	F
RAMY		1842	1842	1846	N15 E80		12 17.8	4	SF	3	E	16	F
HOLL		1842	1843	1847	N15 E78		12 17.7	5	SF	3	E	15	
HOLL		1853	1902	1909	S10 W80 6402		12 5.8	16	SF	3	E	25	
RAMY		1858	1858	1911	S10 W81 6402		12 5.7	13	SF	3	E	13	
HOLL		1948	1950	2013	N15 E81		12 17.9	25	SF	3	E	82	
HOLL		1948	2006	2013	N15 E81			25	SF		E	62	K
RAMY		1951	1954	1959	N16 W54 6395		12 7.7	8	SF	3	E	55	
HOLL		1958	2004	2012	N14 W67 6398		12 6.8	14	SF C 3.7	3	E	89	F
RAMY		1959	2005	2008	N13 W71 6398		12 6.5	9	SF	3	E	34	F
RAMY		2010	2013	2017	N05 E48 6410		12 15.4	7	SF	3	E	17	

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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)	
HOLL	11	2011	2017	2027	S25	W90	6387	12	4.9	16	SF		3	E		21		
PALE		2013E	2016U	2026D	S10	W80	6402	12	5.8	13D	SF		3	E		62		
HOLL		2014	2017	2022	S13	W81	6402	12	5.7	8	SN		3	E		43		
RAMY		2016	2017	2025	S10	W81	6402	12	5.7	9	SF		3	E		38		
RAMY		2036	2037	2043	N09	W44	6397	12	8.5	7	SF		3	E		10		
HOLL		2036	2038	2046	N09	W43	6397	12	8.6	10	SF		3	E		16		
HOLL		2039	2100	2112	S25	W90	6387	12	4.9	33	SN		3	E		69	E	
HOLL		2046	2047	2053	S11	W80	6402	12	5.8	7	SF M	6.5	3	E		37		
PALE		2212E	2310U	2336	N17	W68	6399	12	6.7	84D	SF		3	E		57	F	
HOLL		2213	2214	2223	N07	E50	6410	12	15.7	10	SF		3	E		13		
HOLL		2220	2221	2228	N16	W66	6398	12	6.9	8	SF		3	E		50		
HOLL		2223	2230	2349D	N20	W66	6399			86D	SN		3	E		63	K	
HOLL		2223	2302	2349D	N20	W66	6399	12	6.9	86D	SN		3	E		58	FE	
HOLL		2257	2306	2318	N13	W72	6398	12	6.5	21	SN M	1.1	3	E		31	E	
LEAR	12	0013	0018	0040	N20	W67	6399	12	6.9	27	SF		3	E		17		
LEAR		0116	0129	0150	N20	W67	6399	12	6.9	34	SF		3	E		14		
GOES		0151	0208	0217						26	C	2.9						
LEAR		0253	0259	0308	N23	W69	6399	12	6.8	15	SF C	4.0	3	E		86		
PALE		0254	0258	0311	N19	W70	6399	12	6.8	17	SF		2	E		20	F	
GOES		0324E	0326	0432D						68D	M	1.7						
GOES		0336	0344	0438						62	M	4.0						
GOES		0457	0503	0506						9	C	4.6						
GOES		0538	0551	0554						16	C	3.1						
LEAR		0625	0627	0723	N20	W73	6399			58	SF			E		37	K	
LEAR		0625	0703	0723	N20	W73	6399	12	6.7	58	1B M	1.6	3	E		192		
SVTO		0700E	0704U	0725D	N19	W66	6399	12	7.2	25D	SN		2	E		80	Y	
LEAR		0742	0745	0820	N05	E42	6410	12	15.5	38	SF		3	E		75		
SVTO		0743	0745	0810	N05	E45	6410	12	15.7	27	SF		3	E		54		
LEAR		0753	0758	0848	N21	W72	6399			55	1F			E		96	K	
LEAR		0753	0810	0848	N21	W72	6399	12	6.8	55	1N M	5.1	3	E		188		
LEAR		0757	0758	0830	N19	W60	6395			33	SF			E		29	K	
LEAR		0757	0813	0830	N19	W60	6395	12	7.7	33	SF		3	E		66		
LEAR		0831	0834	0843	N19	W57	6395	12	8.0	12	SF		3	E		19		
LEAR		0849	0858	0908	N20	W71	6399	12	6.9	19	SF C	8.2	3	E		42		
SVTO		0905	0908	0916	N20	E78				12	18.3	11	SN		3	E	65	
LEAR		0941	0948	0952	N19	W58	6395	12	8.0	11	SF C	4.9	3	E		35		
LEAR		0948	0952	0953	N05	E41	6410	12	15.5	5	SF		3	E		51		
GOES		1021	1038	1047						26	C	5.8						
SVTO		1058	1102	1201	N19	W74	6399	12	6.8	63	SF M	1.6	3	E		21		
SVTO		1101E	1101U	1108	S27	W90	6387	12	5.4	7D	SF		3	E		12		
SVTO		1128	1128	1139	S11	W90	6402	12	5.7	11	SF		3	E		15		
SVTO		1229	1230U	1239D	S11	W90	6402	12	5.7	10D	SF		2	E		34		
GOES		1244	1252	1303						19	C	8.2						
SVTO		1339	1347	1352	N19	W78	6399	12	6.6	13	SF		3	E		39		
HOLL		1413E	1413U	1425	N10	W72	6398	12	7.2	12D	SF M	8.9	2	E		54		
RAMY		1508		1629D	N22	W75	6399	12	6.9	81D	SF C	4.7	3	E				
RAMY		1531	1645	1659	N22	E69				12	17.9	88	SF		3	E	125	F
HOLL		1638	1638	1657	N21	E69				12	18.0	19	SF C	8.2	2	E	18	
HOLL		1718	1719	1739	S19	W51	6404	12	8.8	21	SF		3	E		51		
RAMY		1719	1719	1731	S17	W50	6404	12	8.9	12	SF		3	E		23		
HOLL		1735	1735	1744	N05	E37	6410	12	15.5	9	SF		4	E		16		
HOLL		1759	1800	1811	N05	E37	6410	12	15.5	12	SF		3	E		12		
RAMY		1803	1806	1821	N21	W74	6399	12	7.1	18	SF		3	E		26		
HOLL		1803	1807	1815	N19	W64	6395	12	7.9	12	SF		4	E		24		
HOLL		1804	1807	1815	N20	W74	6399	12	7.1	11	SF		4	E		28		
HOLL		1821	1822	1825	N05	E36	6410	12	15.4	4	SF C	5.2	3	E		21		
RAMY		1857	1857	1900	N05	E30	6410	12	15.0	3	SF C	8.3	3	E		41		
GOES		1921	1939	2014						53	M	1.6						
HOLL		2018	2019	2054	N02	E09				12	13.5	36	SF C	5.7	3	E	88	F
HOLL		2200	2201	2258	N03	E36	6410	12	15.6	58	SF		3	E		41	F	
HOLL		2253	2254	2307	N17	E66	6412	12	18.0	14	SF		3	E		14	F	
LEAR		2335	2336	2341	N06	E30	6410	12	15.2	6	SF		3	E		15	F	
LEAR	13	0008	0011	0022	N18	E63	6412	12	17.8	14	SF C	3.6	3	E		11		
LEAR		0030	0030	0048	N16	E66	6412	12	18.0	18	SF		3	E		17	F	
GOES		0111	0132	0201						50	C	7.3						
LEAR		0155	0156	0201	N13	W64	6397	12	8.2	6	SF		3	E		29		

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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)	
GOES	13	0210	0215	0219					9		C 5.6			
LEAR		0218	0220	0223	N05 E30	6410		12 15.3	5	SF		3	E	18
LEAR		0356	0359	0405	N18 E63	6412		12 18.0	9	SF C 3.1		3	E	48
GOES		0408E	0412	0425D							C 6.6			
LEAR		0610	0612	0618	N08 W65	6397		12 8.4	8	SF C 3.2		3	E	16
LEAR		0626	0637	0642	N01 E24	6410		12 15.1	16	SF		3	E	14
GOES		0634E	0644	0653D							C 3.2			
SVTO		0756	0756	0921D	N08 E27	6410		12 15.3	85D	SF		3	E	34
LEAR		0756	0757	0809	N07 E27	6410		12 15.3	13	SF		3	E	42
LEAR		0952	1024	1047D	N15 E50	6412		12 17.2	55D	1F C 6.8		3	E	136
RAMY		1126	1129	1150	N17 E55	6412		12 17.6	24	SF		2	E	43
GOES		1148	1149	1151					3		C 5.9			
RAMY		1315	1324	1333	N01 E22	6410		12 15.2	18	SF C 6.1		3	E	11
RAMY		1344	1354	1440	N03 E27	6410		12 15.6	56	1N M 1.1		3	E	135
RAMY		1410	1415	1419	N14 W69	6397		12 8.4	9	SF		3	E	14
RAMY		1615	1616	1629	N16 W78	6398		12 7.8	14	SF M 1.5		3	E	17
RAMY		1658	1700	1702	N15 W81	6398		12 7.6	4	SF		3	E	25
RAMY		1740	1744	1800	N09 W70	6397		12 8.5	20	SF		3	E	33
RAMY		1740	1747	1800	N09 W70	6397			20	SF			E	42
PALE		1745E	1745U	1801D	N09 W72	6397		12 8.3	160	SF		3	E	23
PALE		1748E	1801U	1804D	N17 E59	6412		12 18.2	160	SF		3	E	35
RAMY		1749	1750	1821	N17 E55	6412		12 17.9	32	SF C 8.2		3	E	30
GOES		1903	1933	2003					60		C 6.5			
PALE		2009	2009	2020D	N20 E58	6412		12 18.3	11D	SF C 5.4		3	E	10
GOES		2110	2112	2118					8		C 2.6			
PALE		2151E	2153	2158	N20 E28	6409		12 16.0	7D	SF		2	E	18
GOES		2313	2318	2322					9		C 2.5			
LEAR	14	0146	0206	0227	N18 E50	6412		12 17.9	41	SF C 3.1		3	E	74
PALE		0210E	0210U	0241D	N19 E49	6412		12 17.8	31D	SF		2	E	52
LEAR		0316	0316	0340	N16 E47	6412		12 17.7	24	SF		3	E	23
LEAR		0345	0352	0406	N15 E48	6412		12 17.8	21	SF C 3.0		3	E	41
LEAR		0404	0408	0423	N03 E19	6410		12 15.6	19	SF C 2.5		3	E	31
LEAR		0630	0636	0643	N20 E32	6413		12 16.7	13	SF C 2.3		3	E	20
LEAR		0631	0631	0640	N18 E47	6412		12 17.8	9	SF		3	E	11
LEAR		0827	0846	0906	N01 E08	6410		12 14.9	39	SF C 4.9		3	E	42
LEAR		0832	0846	0906	N16 E46	6412		12 17.8	34	SF		3	E	31
LEAR		0846	0846	0856	N20 E32	6413		12 16.8	10	SF		3	E	45
GOES		1116	1124	1133					17		M 1.0			
GOES		1147	1150	1152					5		C 4.2			
RAMY		1246	1247	1309	N05 E10	6410		12 15.3	23	SF C 3.0		3	E	49
SVTO		1339E	1339U	1339D	N16 E32	6412		12 17.0	23D	SF M 3.9		2	E	50
SVTO		1406E	1406U	1418D	N16 E32	6412		12 17.0	12D	SF C 7.5		2	E	45
GOES		1446	1451	1453					7		C 2.9			
RAMY		1641E	1641U	1651D	N16 E43	6412		12 17.9	10D	SN C 6.5		3	E	40
HOLL		1717	1742	1754	N17 E42	6412		12 17.9	37	SF C 2.4		3	E	29
HOLL		1727	1728	1731	N04 E12	6410		12 15.6	4	SF		3	E	16
HOLL		1755	1756	1810	N17 E42	6412		12 17.9	15	SF		3	E	12
HOLL		1900	1907	1911	N14 E44	6412		12 18.1	11	SF C 1.8		3	E	20
HOLL		1949E	1949U	1958D	N13 E44	6412		12 18.1	9D	SF C 4.7		2	E	32
GOES		2023	2028	2040					17		C 1.6			
PALE		2113	2114	2156	N21 E41	6412		12 18.0	43	SF C 2.5		3	E	40
PALE		2216	2219	2229	N15 E44	6412		12 18.2	13	SF		3	E	59
LEAR		2218	2219	2228	N12 E41	6412		12 18.0	10	SN C 3.9		3	E	56
HOLL		2220E	2220U	2220D	N13 E43	6412		12 18.2	10D	SF		1	E	28
GOES		2306E	2314	2328D					22D		C 1.8			
LEAR		2310	2312	2338	N19 E36	6412		12 17.7	28	SF		3	E	57
PALE		2311	2311	2327	N18 E36	6412		12 17.7	16	SF		3	E	32
GOES		2355	2358	0000					5		C 2.0			
LEAR	15	0113	0115	0144	N18 E36	6412		12 17.8	31	SF		3	E	18
LEAR		0137	0141	0202	N05 E06	6410		12 15.5	25	SF		3	E	25
GOES		0201	0212	0229					28		C 3.2			
LEAR		0210	0220	0234	N18 E33	6412		12 17.6	24	SF		3	E	22
PALE		0219	0219	0226	N19 E35	6412		12 17.8	7	SF		3	E	15
GOES		0349	0354	0358					9		C 2.0			
LEAR		0351	0354	0403	N12 E36	6412		12 17.9	12	SF		3	E	19
LEAR		0412	0415	0424	N12 E36	6412		12 17.9	12	SF C 2.4		3	E	15

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	15	0540	0543	0556	N12	E35	6412	12	17.9	16	1N	M 1.8	3	E		100		FE
LEAR		0650	0653	0716	N17	W17	6408	12	14.0	26	SF	C 3.0	3	E		17		F
LEAR		0858	0926	0957	N16	E29	6412	12	17.6	59	SF		3	E		45		F
GOES		0917	0927	0946						29		C 2.3						
SVTO		0950	0955	1006D	N21	E31	6412	12	17.8	16D	SF		3	E		39		U
SVTO		1012	1012U	1020D	N03	E03	6410	12	15.6	8D	SF		3	E		12		F
LEAR		1012	1013	1024	N02	E03	6410	12	15.6	12	SF		3	E		33		F
SVTO		1056	1056U	1101D	N22	E34	6412	12	18.1	5D	SF		3	E		12		U
GOES		1144	1147	1149						5		C 1.9						
RAMY		1205	1213	1258D	N04	E01	6410	12	15.6	53D	SF	C 4.3	3	E		69		
RAMY		1428	1428	1442	N16	E30	6412	12	17.9	14	SF		3	E		20		F
RAMY		1532	1532	1536	N16	E29	6412	12	17.8	4	SF		3	E		15		F
RAMY		1613	1613	1618	N19	E30	6412	12	18.0	5	SF		3	E		10		
RAMY		1623	1634	1651	N25	E13	6413	12	16.7	28	SF	C 1.6	3	E		21		F
RAMY		1736	1737	1746	N20	E13	6413	12	16.7	10	SF		3	E		19		
RAMY		1819	1820	1835	N17	E24	6412	12	17.6	16	SF		3	E		15		F
PALE		1821	1821	1828	N19	E16	6412	12	17.0	7	SF		3	E		12		F
PALE		1915	1916	1927	N15	E29	6412	12	18.0	12	SF		3	E		17		
RAMY		1915	1916	1931	N13	E27	6412	12	17.8	16	SF	C 1.8	3	E		22		
GOES		2135	2139	2142						7		C 1.6						
LEAR		2317	2318	2325	N13	E26	6412	12	17.9	8	SF		3	E		20		
PALE		2359	2359	2406	N18	E25	6412	12	17.9	7	SF	C 1.7	3	E		14		
PALE	16	0025	0027	0038	N03	W03	6410	12	15.8	13	SF		3	E		16		
LEAR		0027	0032	0120	N13	E26	6412	12	18.0	53	SF		3	E		26		K
LEAR		0027	0045	0120	N13	E26	6412	12	18.0	53	SF		3	E		31		F
PALE		0028	0055	0139	N15	E26	6412	12	18.0	71	SF		3	E		26		
LEAR		0126	0130	0142	N17	E21	6412	12	17.6	16	SF		3	E		30		
PALE		0202	0214	0251	N19	E23	6412	12	17.8	49	SF	C 3.4	3	E		65		F
LEAR		0207	0213	0245	N17	E22	6412	12	17.8	38	SF		3	E		51		F
LEAR		0445	0445	0450	N12	E24	6412	12	18.0	5	SF	C 8.1	3	E		98		F
LEAR		0529	0531	0537	N13	E23	6412	12	18.0	8	SF	C 2.4	3	E		26		F
LEAR		0538	0541	0545	N13	E22	6412	12	17.9	7	SF		3	E		24		F
LEAR		0608	0609	0611	N12	E24	6412	12	18.1	3	SF	C 2.8	3	E		28		UF
GOES		0639	0643	0647						8		C 2.3						
LEAR		0728	0729	0735	N12	E23	6412	12	18.0	7	SF	C 2.0	3	E		34		F
LEAR		1027	1027	1033	N15	E17	6412	12	17.7	6	SF	C 1.7	3	E		19		
GOES		1107	1119	1124						17		C 4.0						
SVTO		1206	1208U	1211D	N07	W15	6410	12	15.4	5D	SF		2	E		36		F
RAMY		1215E	1218U	1221	N08	W16	6410	12	15.3	6D	SF		3	E		35		
RAMY		1225	1227	1229	N03	W11	6410	12	15.7	4	SF		3	E		15		
RAMY		1227	1228	1236	N16	E14	6412	12	17.6	9	SF	C 2.8	3	E		15		
RAMY		1309	1312	1318	N16	E13	6412	12	17.5	9	SF		3	E		20		
RAMY		1322	1322	1332	N18	E19	6412	12	18.0	10	SF		3	E		15		F
RAMY		1338	1341	1348	N07	W17	6410	12	15.3	10	SF		3	E		14		
RAMY		1415	1420	1422	N03	W12	6410	12	15.7	7	SF		3	E		15		
RAMY		1422	1434	1437	N03	W13	6410	12	15.6	15	SF		3	E		13		
GOES		1500	1528	1649						109		C 2.5						
RAMY		1509	1511	1530	N00	W22	6410	12	15.0	21	SF		3	E		24		F
PALE		1826	1833	1845	N03	W13	6410	12	15.8	19	SF		3	E		26		
PALE		1839	1839	1845	N12	E00	6415	12	16.8	6	SF		3	E		13		
PALE		2053	2102	2114	N15	E14	6412	12	17.9	21	SF		3	E		20		
PALE		2124	2128	2147	N15	E14	6412	12	17.9	23	SF	C 2.2	3	E		26		
LEAR	17	0256	0259	0302	N17	W01	6412	12	17.0	6	SF		3	E		21		
LEAR		0315	0317	0404	N14	E08	6412	12	17.7	49	1F	C 3.5	3	E		112		F
PALE		0315	0320U	0334D	N16	E05	6412	12	17.5	19D	SF		3	E		45		
LEAR		0315	0337	0404	N14	E08	6412	12	17.9	49	SF	C 6.0	3	E		81		K
LEAR		0433	0509	0557	N13	E09	6412	12	17.9	84	SF	C 2.5	3	E		36		F
LEAR		0630	0639	0655	N16	E04	6412	12	17.6	25	1N	M 1.1	3	E		108		FE
GOES		1112	1116	1119						7		C 1.4						
SVTO		1412	1414	1422	N14	E04	6412	12	17.9	10	SF		2	E		17		
RAMY		1413	1413	1421	N14	E06	6412	12	18.0	8	SF		3	E		12		F
RAMY		1459	1459	1507	N22	W03	6412	12	17.4	8	SF	C 1.2	3	E		18		
HOLL		1500E	1500U	1515D	N21	W04	6412	12	17.3	15D	SF		1	E		30		
RAMY		1516	1517	1552	N14	E05	6412	12	18.0	36	SF		3	E		17		K
RAMY		1516	1528	1552	N14	E05	6412	12	18.0	36	1B	M 2.4	3	E		121		
HOLL		1520	1529	1552	N14	E04	6412	12	17.9	32	1B	M 2.4	3	E		206		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
RAMY	17	1558	1611	1624	N14	E03	6412	12	17.9	26	SF		3	E		21		F
RAMY		1625	1625	1630	N11	W12	6415	12	16.8	5	SF	C 1.7	3	E		22		F
RAMY		1747	1813	1823	N19	W08	6412	12	17.1	36	SF		3	E		26		F
HOLL		1849E	1853U	1856D	N04	W14	6415	12	16.7	7D	SF		2	E		25		
RAMY		1851	1911	1920	N12	W13	6415	12	16.8	29	SF	C 2.0	3	E		14		F
HOLL		1906	1923	2009	N17	W06	6412	12	17.3	63	SF		3	E		75		
RAMY		1921	1932	2054	N03	W25	6410			93	SB			E		36		K
RAMY		1921	1956	2054	N03	W25	6410	12	15.9	93	SF		3	E		37		F
HOLL		2013	2015	2020	N02	W25	6410	12	16.0	7	SF		3	E		14		
RAMY		2023	2028	2044	N17	W01	6412	12	17.8	21	SF		3	E		39		
RAMY		2024	2024	2058	N12	W13	6415	12	16.9	34	SF		3	E		14		F
HOLL		2031	2035	2102	N11	W13	6415	12	16.9	31	SF	C 3.1	3	E		47		
RAMY		2059	2101	2114	N04	W28	6410	12	15.8	15	SF		3	E		14		F
HOLL		2101	2108	2118	N02	W28	6410	12	15.8	17	SF		3	E		43		F
GOES		2130	2133	2138						8		C 2.5						
HOLL		2145	2146	2154	N11	W14	6415	12	16.8	9	SF		3	E		28		F
HOLL		2205	2205	2214	N10	W16	6415	12	16.7	9	SF		3	E		20		F
LEAR		2214	2304	2321	N11	W16	6415	12	16.7	67	SF		3	E		42		F
HOLL		2230	2238U	2244	N04	W39	6410	12	15.0	14	SF		3	E		28		H
LEAR		2231	2233	2249	N04	W40	6410	12	14.9	18	SF	C 1.8	3	E		55		
LEAR		2254	2300	2326	N03	W27	6410	12	15.9	32	SF	C 2.0	3	E		56		
LEAR	18	0053	0054	0058	N04	W41	6410	12	15.0	5	SF		3	E		32		
LEAR		0149	0152	0214	N10	W18	6415	12	16.7	25	SF	M 1.8	3	E		66		FE
LEAR		0227	0229	0239	N11	W17	6415	12	16.8	12	SF		3	E		15		
LEAR		0227	0229	0243	N07	W37	6410	12	15.3	16	SF		3	E		33		
LEAR		0253	0258	0319	N12	W03	6412	12	17.9	26	1F	C 9.9	3	E		156		F
GOES		0422	0425	0429						7		C 2.4						
LEAR		0513	0521	0536	N12	W18	6415	12	16.9	23	SF	C 9.3	3	E		78		
LEAR		0800	0809	0852	N12	W20	6415			52	SN			E		22		K
LEAR		0800	0829	0852	N12	W20	6415	12	16.8	52	SF		3	E		46		
LEAR		0932	0934	0943	N12	W21	6415	12	16.8	11	SF	C 2.8	3	E		40		
SVTO		1029E	1034	1136	N11	W22	6415	12	16.8	67D	1N	M 1.5	3	E		112		F
RAMY		1216	1220	1223	N10	W23	6415	12	16.8	7	SF		3	E		10		
RAMY		1316	1327	1353	N15	W23	6415	12	16.8	37	SF	C 6.4	3	E		25		
RAMY		1322	1327	1353	N15	W23	6415	12	16.8	31	SF	C 6.4	3	E		25		
SVTO		1329E	1338U	1346	N12	W25	6415	12	16.7	17D	SF		3	E		14		F
SVTO		1409	1409	1445	N12	W24	6415	12	16.8	36	SF		3	E		37		F
RAMY		1413	1424	1516	N12	W23	6415			63	SF			E		55		K
RAMY		1413	1435	1516	N12	W23	6415	12	16.8	63	SF		2	E		45		
HOLL		1416E	1422U	1447D	N12	W26	6415	12	16.6	31D	SF		1	E		30		
RAMY		1632	1640	1739	N13	W24	6415			67	SF			E		49		K
RAMY		1632	1655	1739	N13	W24	6415	12	16.9	67	SF	C 3.6	3	E		58		F
HOLL		1641	1647	1705	N12	W24	6415	12	16.9	24	SF		3	E		26		F
RAMY		1828	1833	1849	N18	W12	6412	12	17.8	21	SF		3	E		10		
HOLL		1838	1839	1844	S06	E00	6416	12	18.8	6	SF		3	E		16		F
RAMY		1910	1923	1931	N11	W27	6415	12	16.8	21	SF		3	E		11		F
RAMY		1942	1958	2014	N19	W17	6412	12	17.5	32	SF		3	E		13		F
RAMY		2024	2027	2049	N22	W27	6413	12	16.8	25	SF		3	E		28		FH
HOLL		2025	2027	2059	N20	W25	6413	12	16.9	34	SF		3	E		71		F
PALE		2026	2027	2043	N22	W25	6413	12	16.9	17	SF		3	E		34		FH
PALE		2035E	2040U	2122D	N14	W26	6415	12	16.9	47D	SN		2	E		40		FH
HOLL		2036	2043	2120	N13	W26	6415	12	16.9	44	SN	M 1.0	3	E		82		FE
RAMY		2040	2048	2115D	N14	W27	6415	12	16.8	35D	SF		3	E		58		F
RAMY		2058	2059	2107	N03	W40	6410	12	15.9	9	SF		3	E		10		F
HOLL		2324	2327	2336	N12	W28	6415	12	16.9	12	SF		3	E		22		F
LEAR		2324	2340	2353	N14	W27	6415	12	16.9	29	SF		3	E		16		F
LEAR	19	0004	0008	0013	N15	W14	6412	12	17.9	9	SF		3	E		35		F
LEAR		0103	0107	0111	N12	W30	6415	12	16.8	8	SF		3	E		20		F
LEAR		0112	0119	0133	N12	W31	6415	12	16.7	21	SF	M 1.1	3	E		32		F
LEAR		0403	0416	0527	N14	W31	6415			84	SF			E		82		K
LEAR		0403	0433	0527	N14	W31	6415	12	16.8	84	SF	M 1.7	3	E		84		F
LEAR		0610	0612	0701	N20	W16	6412	12	18.0	51	SF		3	E		76		F
LEAR		0728	0730	0739	N15	W20	6412	12	17.8	11	SF		3	E		27		F
LEAR		0825	0840	0900	N12	W35	6415	12	16.7	35	SF		3	E		26		F
LEAR		1000	1010	1025	N12	W36	6415	12	16.7	25	SF		3	E		22		F
RAMY		1122	1127	1156	N12	W36	6415	12	16.8	34	1N	C 6.2	2	E		167		FH



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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							USAF Region							Mo	Day	Time (UT)	
RAMY	19	1139	1140	1147	N21	W28	6412	12	17.3	8	SF	2	E		24		
RAMY		1212	1236	1309	N17	W28	6412	12	17.4	57	SF	3	E		86		
RAMY		1212	1302	1309	N17	W28	6412			57	SF		E		55		K
SVTO		1216	1234	1243	N16	W29	6412	12	17.3	27	1F	3	E		150		
RAMY		1328	1329	1358	N18	W21	6412	12	18.0	30	SF	3	E		18		
RAMY		1447	1501	1616	N16	W27	6412			89	1B		E		190		K
RAMY		1447	1506	1616	N16	W27	6412	12	17.6	89	1B	3	E		244		F
HOLL		1451	1505	1609	N15	W23	6412	12	17.9	78	2B M 3.0	3	E		294		FH
HOLL		1451	1518	1609	N15	W23	6412			78	2B		E		279		K
HOLL		1504	1509	1519	N10	W36	6415	12	16.9	15	SF	3	E		30		F
HOLL		1538	1540	1542	N21	W30	6413	12	17.3	4	SF	3	E		12		
RAMY		1544	1549	1602	N03	W52	6410	12	15.8	18	SF	3	E		54		
HOLL		1545	1549	1557	N01	W53	6410	12	15.7	12	SF	3	E		26		F
RAMY		1708	1712	1718	N10	W58	6410	12	15.3	10	SF C 6.5	3	E		31		
RAMY		1748	1804	1922	N14	W39	6415			94	SN		E		47		K
RAMY		1748	1818	1922	N14	W39	6415	12	16.8	94	SN C 9.1	3	E		41		F
HOLL		1759	1801	1905	N11	W40	6415			66	SN		E		31		K
HOLL		1759	1826	1905	N11	W40	6415	12	16.7	66	SF	3	E		48		FE
PALE		1840E	1853U	1853D	N12	W41	6415	12	16.7	13D	SF	3	E		31		F
HOLL		1847	1850	1900	N02	W55	6410	12	15.7	13	SF	3	E		85		F
RAMY		1848	1848	1903	N04	W56	6410	12	15.6	15	SF	3	E		40		FH
PALE		1848	1851	1853D	N02	W56	6410	12	15.6	5D	SF	3	E		36		FH
HOLL		1944	1946	1953	N02	W53	6410	12	15.9	9	SF	3	E		15		
RAMY		2045	2049	2104	N20	W20	6412	12	18.3	19	SF C 3.9	3	E		24		
HOLL		2154E	2155U	2209	N11	W42	6415	12	16.7	15D	SF	3	E		18		
HOLL		2154E	2156U	2209	S03	W16	6416	12	18.7	15D	SF	3	E		15		F
HOLL		2154E	2157U	2214	N18	W37	6412	12	17.1	20D	SF C 5.8	3	E		25		
LEAR		2239	2239	2245	N13	W41	6415	12	16.8	6	SF	3	E		20		
HOLL		2239	2240	2250	N13	W42	6415	12	16.8	11	SF	3	E		26		
HOLL		2256	2257	2316	N19	W22	6412	12	18.3	20	SF	3	E		40		
GOES	20	0056	0113	0132						36	C 4.8						
LEAR		0147	0149	0159	N03	W54	6410	12	16.0	12	SF	3	E		19		F
LEAR		0152	0155	0213	N11	W46	6415	12	16.6	21	SF	3	E		25		F
LEAR		0435	0436	0443	N11	W45	6415	12	16.8	8	SF	3	E		24		
GOES		0505	0511	0517						12	C 5.6						
LEAR		0705	0721	0824	N14	W47	6415	12	16.7	79	1N M 3.7	3	E		170		FE
SVTO		0707	0715	0821	N13	W47	6415	12	16.7	74	SN	2	E		86		F
LEAR		0814	0814	0830	N17	W32	6412	12	17.9	16	SF	3	E		18		F
GOES		0932	0945	0957						25	C 8.4						
RAMY		1206	1210	1319D	N17	W33	6412	12	18.0	73D	SF C 3.1	3	E		39		F
SVTO		1208	1218	1246	N15	W35	6412	12	17.8	38	SF	3	E		25		F
GOES		1323	1326	1328						5	C 4.2						
HOLL		1424	1425	1439	N16	W36	6412	12	17.9	15	SF C 5.1	1	E		37		F
GOES		1522	1525	1528						6	C 3.3						
HOLL		1608	1611	1620	N13	W34	6412	12	18.1	12	SF	3	E		12		
HOLL		1720	1723	1752	N25	W49	6413	12	16.9	32	SF	3	E		32		F
RAMY		1722	1727	1748	N25	W51	6413	12	16.8	26	SN	3	E		42		FH
HOLL		1818	1821	1827	N11	W53	6415	12	16.8	9	SF	3	E		31		F
HOLL		1930	1934	1942	S24	E87	6420	12	27.5	12	SF	3	E		22		
HOLL		1956	2004	2020	S06	W28	6416	12	18.7	24	SF	3	E		28		
HOLL		1958	1958	2006	N14	W32	6412	12	18.4	8	SF	3	E		20		
HOLL		2033	2036	2043	S18	E81	6420	12	27.0	10	SF	3	E		30		
HOLL		2034	2040	2055	N12	W39	6412	12	17.9	21	1N M 1.2	3	E		154		
HOLL		2151	2156	2202	N17	W39	6412	12	17.9	11	SF	2	E		31		
LEAR		2225	2239	2259	N12	W55	6415	12	16.8	34	SF	3	E		28		
HOLL		2232	2241	2254	N12	W56	6415	12	16.7	22	SF	2	E		54		F
HOLL		2250	2250	2254	S19	E77	6420	12	26.8	4	SF	2	E		12		
GOES	21	0150E	0157	0200D						100	C 5.5						
GOES		0318	0331	0420						62	M 1.4						
GOES		0627	0630	0633						6	C 2.5						
LEAR		0838	0848	0902	N16	W46	6412	12	17.9	24	SF	3	E		15		F
SVTO		0925	0926	0933	N17	W45	6412	12	18.0	8	SF	3	E		29		
LEAR		0925	0927	0940	N17	W47	6412	12	17.8	15	SF	3	E		38		F
LEAR		0941	0941	0948	N16	W47	6412	12	17.8	7	SF	3	E		21		F
LEAR		0942	0947	0952	S24	E80	6420	12	27.6	10	SF C 3.5	3	E		56		
SVTO		0943	0944	1037	S22	E79	6420	12	27.5	54	SF	3	E		38		

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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						Mo	Day	
HOLL	21	1455	1456	1511	S22	E73	6420	12	27.2	16	SF C 4.4	2	E	65	
RAMY		1608E	1622U	1700	S19	E69	6420	12	26.9	52D	SF M 1.0	2	E	35	F
GOES		1819	1828	1841						22	C 3.5				
HOLL		1849	1851	1912	N18	W50	6412	12	18.0	23	SF C 3.1	3	E	72	
RAMY		1920	1921	1933	N14	W69	6415	12	16.6	13	SF	3	E	14	
LEAR		2228	2232	2248	N19	W50	6412	12	18.1	20	1F C 9.1	3	E	146	F
GOES	22	0010	0025	0041						31	C 4.4				
LEAR		0221	0221	0240	N17	W57	6412	12	17.8	19	SF C 5.7	3	E	13	F
LEAR		0333	0333	0344	S23	E65	6420	12	27.1	11	SF C 9.8	3	E	11	
GOES		0439	0445	0505						26	C 4.4				
GOES		0512	0520	0605						53	C 3.9				
LEAR		0633	0633	0640	S26	E76	6420	12	28.2	7	SF C 5.5	3	E	10	F
GOES		0648	0655	0705						17	C 4.5				
LEAR		0732	0732	0737	S19	E61	6420	12	27.0	5	SF	3	E	21	
LEAR		0855	0858	0910	S24	E69	6420	12	27.7	15	SF	3	E	35	
SVTO		1112	1114	1118D	S21	E72	6420	12	28.0	6D	SF C 4.1	2	E	40	
GOES		1153	1156	1158						5	C 3.6				
GOES		1210	1216	1223						13	C 3.8				
GOES		1321	1326	1330						9	C 2.4				
RAMY		1544	1545	1645	S25	E66	6420	12	27.8	61	SF M 1.2	2	E	78	
RAMY		2020	2038	2138	S22	E61	6420	12	27.5	78	SF	2	E	67	F
HOLL		2031E	2040U	2130D	S23	E63	6420	12	27.7	59D	SF C 7.5	3	E	59	F
HOLL		2126	2134	2145D	S29	E56		12	27.3	19D	SF	3	E	12	
HOLL		2152	2205	2324D	S25	E63	6420			92D	SF		E	17	K
HOLL		2152	2234	2324D	S25	E63	6420	12	27.8	92D	2B M 5.3	3	E	395	F
LEAR		2217	2225U	2523	S19	E51	6420	12	26.8	186	2N	3	E	496	T
LEAR		2217	2225	2523	S19	E51	6420			186	2N		E	269	KT
LEAR		2229	2237	2242	N13	W63	6412	12	18.2	13	SF	3	E	20	
HOLL		2229	2238	2240	N18	W67	6412	12	17.8	11	SF	3	E	21	
LEAR		2243	2244	2249	N18	W68	6412	12	17.8	6	SF	3	E	36	
GOES		2312E	2314	2332D						20D	M 4.3				
GOES		2357E	2358	2400						3D	M 1.4				
LEAR	23	0038	0040	0048	N18	W66	6412	12	18.0	10	1N C 8.5	3	E	134	
LEAR		0039	0039	0043	N13	W88	6415	12	16.4	4	SF	3	E	26	
LEAR		0138	0138	0146	S23	E56	6420	12	27.4	8	SF	3	E	19	
LEAR		0149	0152	0219	S23	E56	6420	12	27.4	30	SF	3	E	26	
LEAR		0259	0301	0307	N18	W70	6412	12	17.8	8	SF	3	E	34	
LEAR		0339	0345	0403	S23	E55	6420	12	27.4	24	SF	3	E	30	
LEAR		0521	0524	0529	S19	E49	6420	12	27.0	8	SF	3	E	13	
SVTO		0943E	1001	1029	N11	W68	6412	12	18.3	46D	2B X 1.0	3	E	291	
GOES		1202	1207	1218						16	C 2.3				
GOES		1352	1355	1357						5	C 2.9				
GOES		1514	1527	1551						37	C 2.4				
RAMY		1711	1713	1728	N13	W73	6412	12	18.2	17	SF	3	E	22	F
HOLL		1714	1719	1722	N12	W71	6412	12	18.4	8	SF	3	E	11	F
HOLL		1717	1718	1724	S20	E45	6423	12	27.2	7	SF	3	E	15	
RAMY		1852	1902	1904	N12	W70	6412	12	18.5	12	SF	3	E	21	FH
HOLL		1854	1857	1904	N12	W71	6412	12	18.4	10	SF	3	E	16	F
HOLL		2004	2006	2020	S23	E53	6420	12	27.9	16	SF	3	E	78	
RAMY		2007	2008	2025	S23	E55	6420	12	28.1	18	SF C 3.3	3	E	36	F
HOLL		2124	2125	2130	S19	E43	6423	12	27.2	6	SF	3	E	16	
HOLL		2211	2215	2227	S15	E60	6422	12	28.5	16	SF C 2.3	3	E	60	
HOLL		2232	2236	2252	N17	E06	6418	12	24.4	20	SF C 3.9	3	E	34	F
HOLL		2232	2241	2252	N17	E06	6418			20	SF		E	55	K
LEAR		2242	2247	2316	N18	E07	6418	12	24.5	34	SF	3	E	67	F
HOLL		2323	2327	2340	S24	E46	6420	12	27.5	17	SF	3	E	25	
LEAR		2326	2327	2334	S24	E45	6420	12	27.4	8	SF	3	E	21	F
LEAR	24	0017	0017	0021	N15	W79	6412	12	18.0	4	SF	3	E	25	
LEAR		0044	0045	0054	N18	E05	6418	12	24.4	10	SF	3	E	23	F
LEAR		0056	0101	0131	S25	E44	6420	12	27.4	35	SF M 1.0	3	E	40	F
LEAR		0156	0157	0204	N13	W75	6412	12	18.4	8	SF	3	E	52	
LEAR		0306	0316	0336	S25	E53	6420	12	28.2	30	SF C 4.9	3	E	48	F
LEAR		0558	0611	0640	N17	E03	6418	12	24.5	42	SF C 7.5	3	E	94	
LEAR		0558	0623	0640	N17	E03	6418			42	SF		E	60	K
LEAR		0952	0954	0959	S25	E41	6420	12	27.6	7	SF	3	E	17	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	6420							Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	24	1055	1059	1101						6		C 2.5						
GOES		1218	1221	1223						5		C 2.4						
GOES		1237	1244	1254						17		C 4.3						
RAMY		1322E	1327	1330D	S24	E47	6420	12	28.2	80	1F	M 2.2	3	E		116	F	
HOLL		1533	1537	1606	N10	W80	6412			33	1B			E		118	K	
HOLL		1533	1546	1606	N10	W80	6412	12	18.6	33	1B	X 1.8	3	E		140		
HOLL		1542	1545	1552	N18	W03	6418	12	24.4	10	SF		3	E		44	F	
HOLL		1702	1707	1720D	N17	E00	6418	12	24.7	18D	SF		3	E		27		
RAMY		1703	1706	1725	N17	E00	6418	12	24.7	22	SF		3	E		25		
HOLL		1805	1806	1823	N17	W05	6418	12	24.4	18	SF		3	E		34		
RAMY		1805	1808	1825	N18	W04	6418	12	24.4	20	SF		3	E		29		
GOES		1930	1943	1949						19		C 4.8						
HOLL		2113E	2113U	2125D	S10	E35	6424	12	27.5	12D	SF		2	E		26	F	
HOLL		2123E	2138U	2147D	S25	E42	6420	12	28.1	24D	SF		2	E		59	F	
LEAR		2232	2256	2329	S27	E39	6420	12	28.0	57	1F	M 1.0	3	E		155	F	
LEAR	25	0050	0051	0058	S19	E19	6423	12	26.5	8	SF		3	E		42		
LEAR		0051	0057	0109	S25	E39	6420	12	28.0	18	SF	C 5.0	3	E		28		
GOES		0133	0136	0138						5		C 3.3						
GOES		0154	0203	0309						75		C 4.4						
LEAR		0249	0251	0257	S28	E37	6420	12	28.0	8	SF	C 3.5	3	E		36		
LEAR		0323	0323	0327	S21	E44	6422	12	28.5	4	SF	C 2.0	3	E		32	F	
PALE		0323	0324U	0337D	S26	E37	6420	12	28.0	14D	SN		3	E		55	F	
LEAR		0330	0330	0333	S26	E32	6420	12	27.6	3	SF		3	E		16		
GOES		0428	0438	0447						19		C 1.9						
GOES		0458	0534	0541						43		C 2.9						
GOES		0627	0650	0700						33		C 1.8						
LEAR		0714	0719	0723	S19	E15	6423	12	26.4	9	SF		3	E		23		
LEAR		0738	0741	0756	S21	E42	6422	12	28.5	18	SF	C 2.4	3	E		43	F	
GOES		0819	0830	0832						13		C 2.1						
LEAR		0841	0842	0847	S25	E34	6420	12	28.0	6	SF		3	E		19	F	
LEAR		0929	0930	0937	S18	E16	6423	12	26.6	8	SF		3	E		41	F	
GOES		0935	0954	1012						37		C 2.8						
GOES		1052	1106	1119						27		C 2.6						
RAMY		1214	1226	1233	S10	E26	6424	12	27.5	19	SF		3	E		18	F	
RAMY		1420	1420	1423	S18	E11	6423	12	26.4	3	SF		3	E		15		
RAMY		1428	1430	1436	S10	E24	6424	12	27.4	8	SN	C 3.3	3	E		36	F	
RAMY		1434	1435	1442	S19	E11	6423	12	26.4	8	SF		3	E		27		
HOLL		1528	1529	1538	S10	E25	6424	12	27.5	10	SF		3	E		22	F	
HOLL		1609	1619	1641	S20	E36	6422	12	28.4	32	SN		3	E		63	FE	
RAMY		1611	1625	1634	S18	E10	6423	12	26.4	23	SF	C 2.4	3	E		25		
HOLL		1612	1627	1633	S19	E11	6423	12	26.5	21	SF		3	E		34		
RAMY		1615	1620	1648	S19	E35	6422	12	28.3	33	SF		3	E		61	F	
HOLL		1618	1621	1624	S09	E23	6424	12	27.4	6	SF		3	E		20		
HOLL		1729	1730	1735	S20	E37	6422	12	28.5	6	SF		3	E		25		
RAMY		1729	1737	1743	S19	E36	6422	12	28.5	14	SF	C 2.1	3	E		26	F	
RAMY		1748	1753	1803	S18	E09	6423	12	26.4	15	SF		3	E		13	F	
RAMY		1916	1919	1928	S18	E08	6423	12	26.4	12	SF		3	E		22	F	
RAMY		1945	1947	1953	S19	E09	6423	12	26.5	8	SF		3	E		14	F	
RAMY		2046	2048	2051	S18	E08	6423	12	26.5	5	SF		3	E		22		
HOLL		2047	2048	2051	S18	E09	6423	12	26.5	4	SF		3	E		25		
HOLL		2158	2203	2228	S28	E28	6420	12	28.1	30	1N	C 5.9	3	E		140	F	
LEAR		2204E		2229	S27	E27	6420	12	28.0	25D	1N		3	E		130		
LEAR		2315	2315	2319	S20	E11	6423	12	26.8	4	SF		3	E		12	F	
LEAR		2358	2406	2427	S24	E27	6420	12	28.1	29	SF	C 3.3	3	E		50	F	
LEAR	26	0019	0019	0024	S19	E06	6423	12	26.5	5	SF		3	E		16		
LEAR		0053	0054	0058	S25	E25	6420	12	28.0	5	SF	C 1.9	3	E		14		
LEAR		0147	0152	0201	S20	E10	6423	12	26.8	14	SF		3	E		37	F	
LEAR		0204	0213	0318	S26	E25	6420	12	28.0	74	1N		3	E		132	K	
LEAR		0204	0222	0318	S26	E25	6420	12	28.0	74	1N	M 1.8	3	E		204	FE	
LEAR		0220	0223	0235	S20	E09	6423	12	26.8	15	SF		3	E		14		
GOES		0434	0452	0520						46		C 2.5						
LEAR		0650	0716	0736	S26	E22	6420	12	28.0	46	SF	C 2.1	3	E		40	F	
LEAR		0719	0720	0723	S18	E04	6423	12	26.6	4	SF		3	E		18	F	
GOES		1017	1023	1025						8		C 3.4						
RAMY		1133E	1135	1206	S26	E25	6420	12	28.4	33D	1F	M 1.7	3	E		101	F	
RAMY		1207	1210	1212	S18	E01	6423	12	26.6	5	SF		3	E		34		

H $\alpha$  SOLAR FLARES

DECEMBER 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks	
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)		
RAMY	26	1259E	1300U	1326D	S17	W01	6423	12	26.5	27D	SF		3	E		33			
RAMY		1351	1352	1356	S20	W02	6423	12	26.4	5	SF		3	E		19			
RAMY		1355	1401	1528	S26	E21	6420	12	28.2	93	2B X 1.9		3	E		332			UY
RAMY		1400	1401	1432	S20	E19	6422	12	28.0	32	SN		3	E		42			
RAMY		1401	1402	1519	S20	E03	6423	12	26.8	78	SF		3	E		27			
RAMY		1608	1609	1626	S09	E10	6424	12	27.4	18	SF		3	E		21			F
GOES		1749	1800	1806						17	C 1.6								
RAMY		2053	2053	2058	S18	W04	6423	12	26.6	5	SF		3	E		13			F
RAMY		2114	2115	2118	S24	E14	6420	12	28.0	4	SF		3	E		12			F
LEAR	27	0018	0019	0023	S25	E13	6420	12	28.0	5	SF		3	E		29			F
GOES		0117	0122	0127						10	C 2.2								
GOES		0138	0141	0144						6	C 1.7								
LEAR		0428	0429	0434	S20	W03	6423	12	26.9	6	SF		3	E		21			
LEAR		0554	0557	0602	S24	W02	6423	12	27.1	8	SF		3	E		21			
LEAR		0556	0600	0604	N17	W39	6418	12	24.3	8	SF		3	E		17			
LEAR		0649	0652	0712	S26	E11	6420	12	28.1	23	SF C 2.2		3	E		34			
LEAR		0713	0716	0718	S18	W02	6423	12	27.1	5	SF		3	E		18			
RAMY		1259	1305	1315	S10	W02	6424	12	27.4	16	SF		3	E		24			
HOLL		1429E	1433U	1445	S19	E13	6422	12	28.6	16D	SF		1	E		53			F
HOLL		1519	1610	1636	S09	W02	6424	12	27.5	77	SF		3	E		24			F
HOLL		1527	1536	1610	S19	W06	6423	12	27.2	43	SF		3	E		49			F
HOLL		1614	1616	1700	S12	W66		12	22.7	46	SF		3	E		10			
RAMY		1619	1620	1623	S08	W01	6424	12	27.6	4	SF		3	E		18			
RAMY		1619	1626	1646	S11	W64		12	22.9	27	SF		3	E		16			
RAMY		1625	1625	1639	S09	W01	6424	12	27.6	14	SF		3	E		21			
HOLL		1654	1654	1720	S12	E02	6424	12	27.8	26	SF		3	E		18			F
HOLL		1713	1716	1731	S27	E05	6420	12	28.1	18	SF		3	E		40			F
HOLL		1738	1743	1807	S19	W08	6423	12	27.1	29	SF		3	E		33			F
RAMY		1739	1747	1802	S18	W07	6423	12	27.2	23	SF		3	E		26			
RAMY		1744	1746	1814	S26	E04	6420	12	28.0	30	SN C 6.3		3	E		84			H
HOLL		1744	1747	1827	S27	E06	6420	12	28.2	43	1N C 6.3		3	E		137			FH
HOLL		1850	1851	1911	S09	W04	6424	12	27.5	21	SF		3	E		22			F
RAMY		1852	1852	1919	S09	W03	6424	12	27.6	27	SF		3	E		18			F
HOLL		2007	2011	2024	S19	W09	6423	12	27.1	17	SF		3	E		44			F
RAMY		2008	2014	2024	S19	W09	6423	12	27.1	16	SF		3	E		19			F
LEAR		2215	2223	2336	S18	W09	6423	12	27.2	81	SF C 3.7		3	E		74			F
GOES	28	0125	0145	0201						36	C 1.9								
LEAR		0259	0303	0332	N15	W51	6418	12	24.3	33	SF		3	E		42			
LEAR		0324	0325	0337	S26	E00	6420	12	28.1	13	SF		3	E		38			
GOES		0451	0507	0526						35	C 1.4								
LEAR		0729	0735	0812	S11	W13	6424	12	27.3	43	1F C 3.2		3	E		130			F
LEAR		0735	0751	0805	S22	W19	6423	12	26.8	30	SF		3	E		17			F
SVTO		0736E	0737U	0746D	S10	W10	6424	12	27.6	10D	1F		1	E		103			
GOES		1220	1223	1229						9	C 1.2								
RAMY		1511	1511	1528	S17	W01	6422	12	28.5	17	SF C 1.0		3	E		13			F
RAMY		1552	1555	1558	N18	W56	6418	12	24.4	6	SF		3	E		11			
RAMY		1743	1745	1753	S14	W13	6424	12	27.7	10	SF C 1.4		3	E		16			FH
RAMY		1745	1748	1800	S17	W17	6423	12	27.4	15	SF		3	E		13			F
HOLL		2143	2146	2152	N17	W59	6418	12	24.4	9	SF		3	E		41			F
LEAR	29	0558	0614	0644	S12	E67		01	3.3	46	SF C 1.4		3	E		74			
SVTO		0944	1009	1117	S11	E36	6427	01	1.1	93	1F C 3.6		3	E		100			U
RAMY		1249	1253	1323	S10	W28	6424	12	27.4	34	SF		3	E		21			F
RAMY		1400	1400	1411	S24	W28	6423	12	27.4	11	SF		3	E		10			F
RAMY		1426	1428	1459	S10	W30	6424	12	27.3	33	SF		3	E		19			F
LEAR		2235	2252	2304	S10	W34	6424	12	27.4	29	SF		3	E		33			
LEAR		2314	2351	2423	S10	W35	6424	12	27.3	69	SF		3	E		25			
PALE		2344	2348	2412	S11	W36	6424	12	27.3	28	SF		3	E		19			
SVTO	30	0901	0903	0907	S21	W44	6423	12	27.0	6	SF		3	E		14			
SVTO		0921	0923	0945	S12	W39	6424	12	27.4	24	SF C 2.0		3	E		40			F
LEAR		0921	0923	0956	S11	W39	6424	12	27.4	35	SF C 2.0		3	E		60			F
SVTO		1041	1042	1053	S09	W42	6424	12	27.3	12	SF C 1.9		3	E		26			
SVTO		1144	1145	1204	S10	W43	6424	12	27.2	20	SN C 5.5		3	E		36			FH
RAMY		1148	1153	1158	S08	W42	6424	12	27.3	10	SF		2	E		25			H
SVTO		1208	1210	1249	S12	W41	6424	12	27.4	41	SF C 2.6		3	E		32			

H $\alpha$  SOLAR FLARES

DECEMBER 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/		Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
							USAF Region	CMP Mo Day						Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
L-RAMY	30	1209	1209	1237	S10	W40	6424	12	27.5	28	SF	3	E		19		F
RAMY		1244	1245	1254	S09	W42	6424	12	27.4	10	SF	3	E		21		F
RAMY		1313	1319	1327	S07	W43	6424	12	27.3	14	SB M 1.7	3	E		50		
SVTO		1318	1319	1326	S10	W43	6424	12	27.3	8	SB M 1.7	3	E		63		H
HOLL		1447	1514	1543	S09	W45	6424	12	27.2	56	1B M 4.0	3	E		154		H
RAMY		1455E	1518U	1533	S10	W43	6424	12	27.4	38D	SN	3	E		39		
HOLL		1641	1643	1722	S10	E18	6427	01	1.0	41	SF C 1.7	3	E		26		F
RAMY		1642	1647	1721	S14	E23	6427	01	1.4	39	SF	3	E		30		F
HOLL		1726	1728	1805	S12	E18	6427	01	1.1	39	SF	3	E		12		F
PALE		1730E	1735U	1805D	S13	E20	6427	01	1.2	35D	SF	3	E		36		F
PALE		1744	1746U	1801D	S10	W45	6424	12	27.3	17D	SF	3	E		25		F
HOLL		1747	1750	1754	S09	W46	6424	12	27.3	7	SF	3	E		26		
HOLL		1817	1818	1828	S09	E45	6432	01	3.1	11	SF	3	E		16		
HOLL		1829	1830	1843	S09	W47	6424	12	27.2	14	SN M 1.2	3	E		35		
LEAR	31	0127	0129	0136	S23	E24	6429	01	1.9	9	SF	3	E		28		
PALE		0221	0222	0237	S24	E25	6429	01	2.0	16	SF C 2.0	4	E		32		F
LEAR		0623	0624	0629	S12	E19	6427	01	1.7	6	SF	3	E		31		
LEAR		0713	0736	0806	S15	E15	6427	01	1.4	53	1F	3	E		129		F
SVTO		0721	0724	0729	S24	E21	6429	01	1.9	8	SF	3	E		19		
SVTO		0721	0730	0844D	S13	E14	6427	01	1.4	83D	SF	3	E		41		F
SVTO		1106	1108	1116	S23	E18	6429	01	1.8	10	SF	3	E		18		
SVTO		1158	1158	1204	S12	W59	6424	12	27.0	6	SF	3	E		11		
RAMY		1158E	1158U	1218D	S09	W56	6424	12	27.3	20D	SF	3	E		26		
SVTO		1407	1408	1414	S09	E31	6432	01	2.9	7	SF	3	E		20		
GOES		1637	1640	1644						7	C 1.9						
HOLL		1951	1952	2014	S20	W45	6422	12	28.4	23	SN C 2.4	3	E		57		F
LEAR		2244	2248	2354	S11	E01	6427	01	1.0	70	SF	3	E		53		
HOLL		2253E	2257U	2338D	S14	E02	6427	01	1.1	45D	SF	3	E		30		F
LEAR		2323	2342	2352	S10	W63	6424	12	27.2	29	SF	3	E		24		

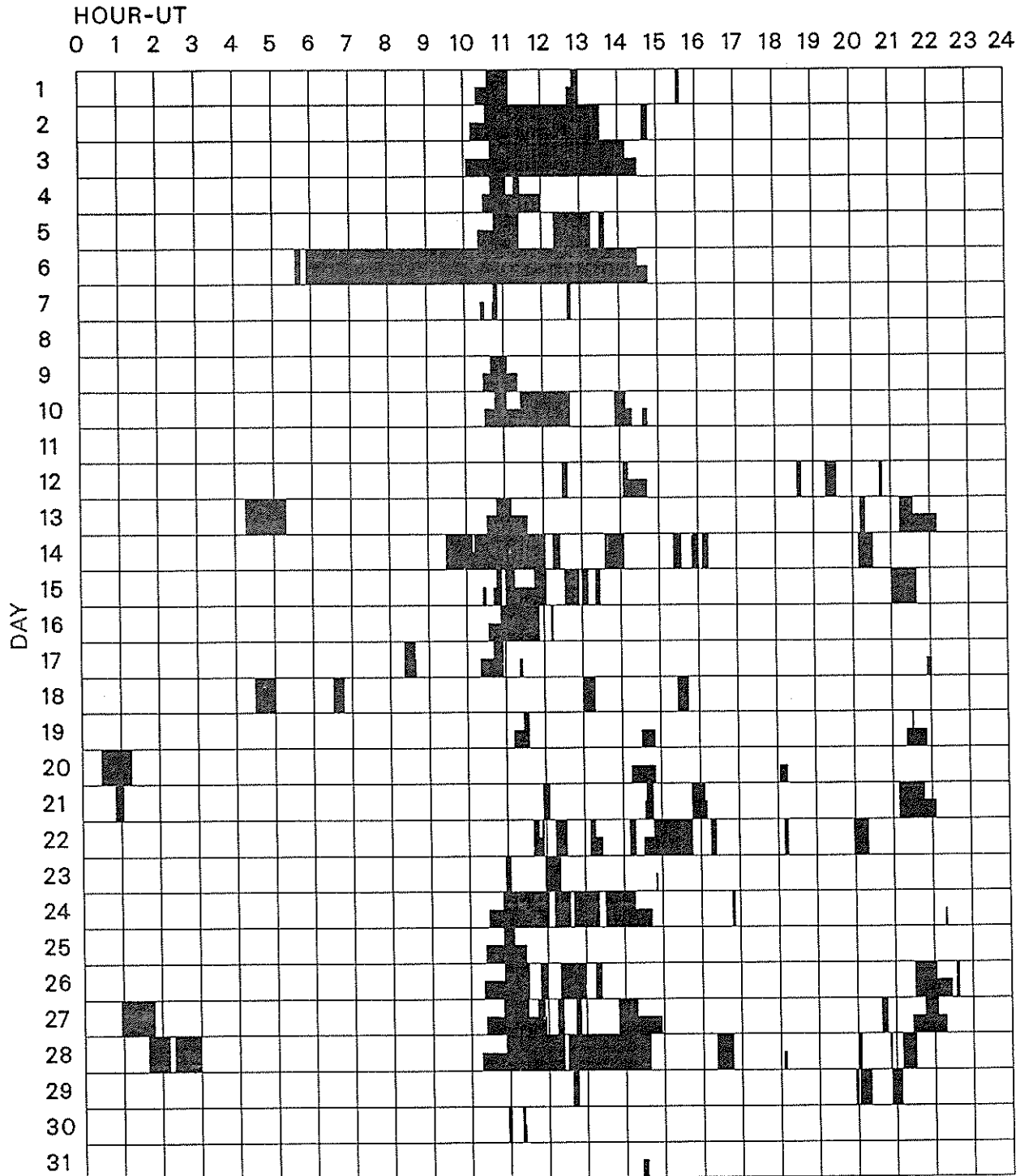
"Remarks"

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

# INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

47  
Dec 90

## DECEMBER 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

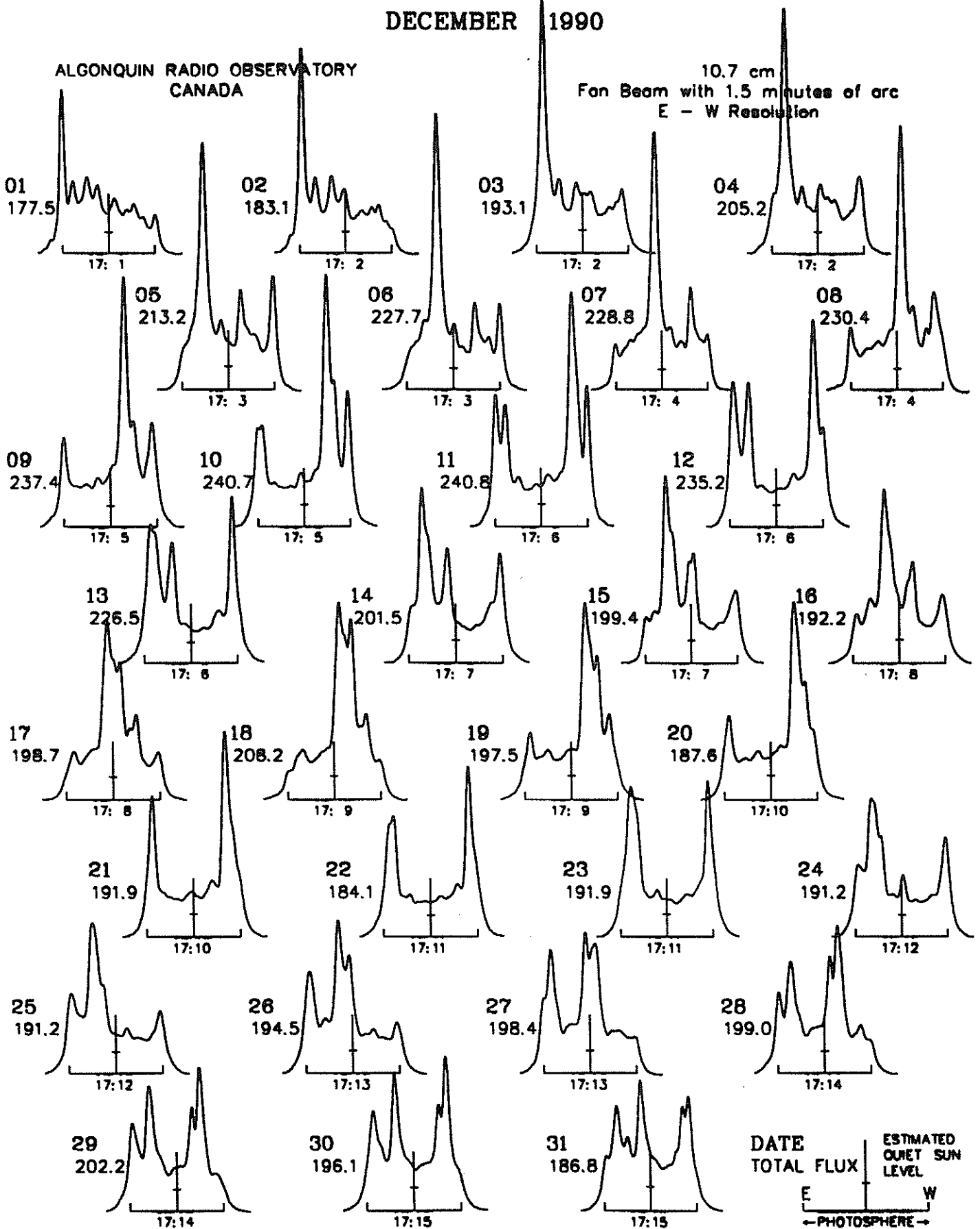
Ramey

San Vito

EAST - WEST SOLAR SCANS  
DECEMBER 1990

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.

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

49  
Dec 90

DECEMBER 1990

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m <sup>2</sup> Hz)	Mean		
03	2800 OTTA	20 GRF	1603.0	1604.5	12.0	4.6	2.0		
	8800 SGMR	8 S	1650.0E	1650.0	U	34.0			QL=4 ST=2 TYP=3
	2800 OTTA	20 GRF	1733.0	1735.5	24.0	7.2	3.0		
	2800 OTTA	20 GRF	1824.5	1826.5	10.0	5.0	2.0		
	2800 OTTA	22 GRF	1844.0	1850.5	14.0	8.1	3.0		
	2800 OTTA	20 GRF	1918.5	1922.5	23.0	4.6	2.0		
	2695 PENT	20 GRF	2005.0	2014.0	63.0	7.5	3.0		
04	8800 LEAR	4 S/F	0158.0E	0200.0	9.00	350.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	0158.0E	0202.0	7.00	310.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	0158.0E	0200.0	8.00	370.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	0159.0E	0202.0	6.00	310.0			QL=4 ST=2 TYP=3
	2800 OTTA	4 S/F	1430.4	1435.9	9.6	72.6	29.0		
	2695 SGMR	4 S/F	1432.0E	1435.0	5.00	72.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1433.0E	1435.0	4.00	110.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1433.0E	1435.0	4.00	68.0			QL=2 ST=2 TYP=3
	8800 SVTO	4 S/F	1433.0E	1435.0	4.00	120.0			QL=2 ST=2 TYP=3
	2800 OTTA	29 PBI	1440.5	1440.5	128.0	12.0	6.0		
	2800 OTTA	3 S	1602.5	1604.8	6.3	29.5	6.0		
05	8800 LEAR	4 S/F	0722.0E	0725.0	6.00	360.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	0722.0E	0725.0	6.00	170.0			QL=4 ST=2 TYP=5
	2695 SVTO	4 S/F	0722.0E	0725.0	6.00	200.0			QL=4 ST=2 TYP=5
	8800 SVTO	4 S/F	0723.0E	0725.0	5.00	390.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	1658.9	1659.8	5.0	8.8	3.0		
	2800 OTTA	20 GRF	1720.0	1900.0	155.0	14.5	7.0		
	2695 PENT	22 GRF	2047.0	2107.0	120.00	32.9	13.0		
06	8800 LEAR	8 S	0628.0E	0629.0	2.00	33.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	0629.0E	0629.0	3.00	26.0			QL=4 ST=2 TYP=3
	2800 OTTA	20 GRF	1549.0	1603.0	53.0	13.1	6.0		
07	2695 SGMR	8 S	1408.0E	1409.0	2.00	87.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1408.0E	1409.0	2.00	76.0			QL=4 ST=2 TYP=3
08	2695 LEAR	8 S	0643.0E	0644.0	2.00	31.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0643.0E	0644.0	1.00	24.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	0644.0E	0644.0	1.00	38.0			QL=2 ST=2 TYP=3
09	2695 LEAR	8 S	0009.0E	0010.0	1.00	16.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	0618.0E	0618.0	U	13.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	0816.0E	0816.0	8.00	180.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0816.0E	0816.0	8.00	330.0			QL=2 ST=3 TYP=3
	8800 SVTO	4 S/F	0816.0E	0816.0	4.00	240.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	0816.0E	0816.0	6.00	190.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	0922.0E	0923.0	2.00	41.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	0922.0E	0923.0	2.00	48.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0925.0E	0925.0	U	18.0			QL=2 ST=2 TYP=3
	2800 OTTA	3 S	1533.6	1534.0	2.8	16.5	4.0		
10	2695 LEAR	4 S/F	0741.0E	0744.0	10.00	120.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0741.0E	0743.0	22.00	87.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1328.0E	1328.0	U	42.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1519.0E	1520.0	1.00	23.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1519.0E	1519.0	U	24.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	1519.4	1519.9	2.6	20.2	4.0		
	2800 OTTA	3 S	1754.1	1756.1	5.3	10.6	2.0		
11	2695 SVTO	4 S/F	1128.0E	1130.0	7.00	91.0			QL=4 ST=3 TYP=3
	8800 SVTO	4 S/F	1129.0E	1130.0	751.00	27.0			QL=4 ST=1 TYP=3
	8800 PALE	8 S	2049.0E	2049.0	U	28.0			QL=4 ST=2 TYP=3
	2695 PALE	8 S	2049.0E	2050.0	1.00	27.0			QL=4 ST=2 TYP=3
12	2695 LEAR	8 S	0257.0E	0258.0	2.00	30.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0257.0E	0258.0	2.00	40.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0325.0E	0326.0	3.00	120.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	0326.0E	0327.0	1.00	30.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0336.0E	0342.0	9.00	100.0			QL=4 ST=2 TYP=5
	2695 LEAR	4 S/F	0337.0E	0342.0	8.00	45.0			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

DECEMBER 1990

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 <sup>-22</sup> W/m <sup>2</sup> Hz)	Mean		
12	2695 LEAR	4 S/F	0757.0E	0758.0	6.00	37.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	0757.0E	0757.0	7.00	47.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0759.0E	0802.0	4.00	36.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	0759.0E	0802.0	4.00	42.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	2016.0	2018.3	6.3	17.1	4.0		
	2695 PENT	4 S/F	2138.3	2144.4	9.2	27.7	6.0		
13	2695 LEAR	4 S/F	1016.0E	1025.0	24.00	490.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	1021.0E	1024.0	8.00	140.0			QL=4 ST=2 TYP=3
	2695 SVTO	49 GB	1021.0E	1025.0	17.00	560.0			QL=4 ST=2 TYP=6
	8800 SVTO	4 S/F	1021.0E	1024.0	17.00	270.0			QL=4 ST=2 TYP=3
	2800 OTTA	4 S/F	1614.1	1622.2	12.7	106.9	21.0		
14	8800 LEAR	8 S	0158.0E	0159.0	2.00	34.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	0159.0E	0159.0	1.00	42.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	1331.9	1332.7	23.5	300.4	60.0		
	8800 SGMR	8 S	1332.0E	1332.0	1.00	430.0			QL=4 ST=2 TYP=3
	8800 SVTO	8 S	1332.0E	1332.0	1.00	430.0			QL=2 ST=2 TYP=3
	2695 SVTO	49 GB	1332.0E	1332.0	9.00	510.0			QL=4 ST=2 TYP=6
	8800 LEAR	4 S/F	2217.0E	2218.0	6.00	31.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	2218.0E	2218.0	U	20.0			QL=4 ST=2 TYP=3
15	2695 LEAR	4 S/F	0200.0E	0202.0	6.00	96.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0535.0E	0536.0	1.00	13.0			QL=2 ST=2 TYP=3
	8800 LEAR	8 S	0731.0E	0731.0	U	17.0			QL=2 ST=2 TYP=3
16	8800 LEAR	8 S	0426.0E	0427.0	2.00	8.0			QL=2 ST=2 TYP=3
	2695 LEAR	8 S	0444.0E	0444.0	2.00	54.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0444.0E	0444.0	1.00	52.0			QL=2 ST=2 TYP=3
	2695 LEAR	8 S	0514.0E	0515.0	1.00	23.0			QL=4 ST=2 TYP=3
	2695 LEAR	8 S	0603.0E	0603.0	U	17.0			QL=4 ST=3 TYP=3
17	2695 LEAR	4 S/F	0315.0E	0317.0	3.00	34.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0316.0E	0317.0	2.00	38.0			QL=2 ST=2 TYP=3
	8800 SVTO	4 S/F	0636.0E	0638.0	3.00	77.0			QL=2 ST=2 TYP=3
	2695 LEAR	8 S	0637.0E	0638.0	2.00	31.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0637.0E	0638.0	3.00	78.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	0638.0E	0640.0	7.00	50.0			QL=2 ST=2 TYP=3
	8800 SGMR	8 S	1526.0E	1527.0	2.00	240.0			QL=2 ST=2 TYP=3
	2695 SGMR	8 S	1526.0E	1527.0	1.00	58.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	1526.6	1527.1	8.9	58.8	12.0		
	18	8800 LEAR	4 S/F	0149.0E	0151.0	6.00	180.0		
2695 LEAR		4 S/F	0149.0E	0151.0	4.00	50.0			QL=4 ST=2 TYP=3
8800 PALE		4 S/F	0149.0E	0151.0	4.00	140.0			QL=4 ST=2 TYP=3
2695 PALE		4 S/F	0149.0E	0151.0	1331.00	47.0			QL=4 ST=1 TYP=3
2695 SGMR		4 S/F	1301.0E	1303.0	7.00	52.0			QL=4 ST=2 TYP=3
2800 OTTA		3 S	1522.0	1522.1	1.1	42.3	9.0		
2800 OTTA		3 S	2023.5	2027.1	7.2	33.5	10.0		
2800 OTTA		4 S/F	2036.0	2042.9	18.8	45.0	13.0		
8800 PALE		8 S	2038.0E	2039.0	1.00	25.0			QL=4 ST=2 TYP=3
2695 PALE		4 S/F	2042.0E	2042.0	4.00	44.0			QL=4 ST=2 TYP=3
19	2695 LEAR	20 GRF	0428.0E	0436.0	9.00	34.0			QL=4 ST=2 TYP=2
	2800 OTTA	20 GRF	1443.0	1501.5	80.0	24.0	11.0		
	2800 OTTA	20 GRF	1750.5	1802.5	72.0	14.9	7.0		
20	8800 LEAR	8 S	0506.0E	0506.0	1.00	87.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	0705.0E	0707.0	3.00	47.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	0713.0E	0715.0	6.00	79.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	0717.0E	0717.0	13.00	110.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	0717.0E	0717.0	13.00	86.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1417.0E	1417.0	1.00	21.0			QL=4 ST=3 TYP=3
	8800 SGMR	8 S	1424.0E	1424.0	U	59.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	2034.5	2039.9	11.4	79.4	16.0		
	2695 PALE	8 S	2039.0E	2039.0	1.00	76.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	2039.0E	2039.0	1.00	51.0			QL=4 ST=2 TYP=3
21	2800 OTTA	22 GRF	1545.7	1557.5	17.4	22.2	4.0		

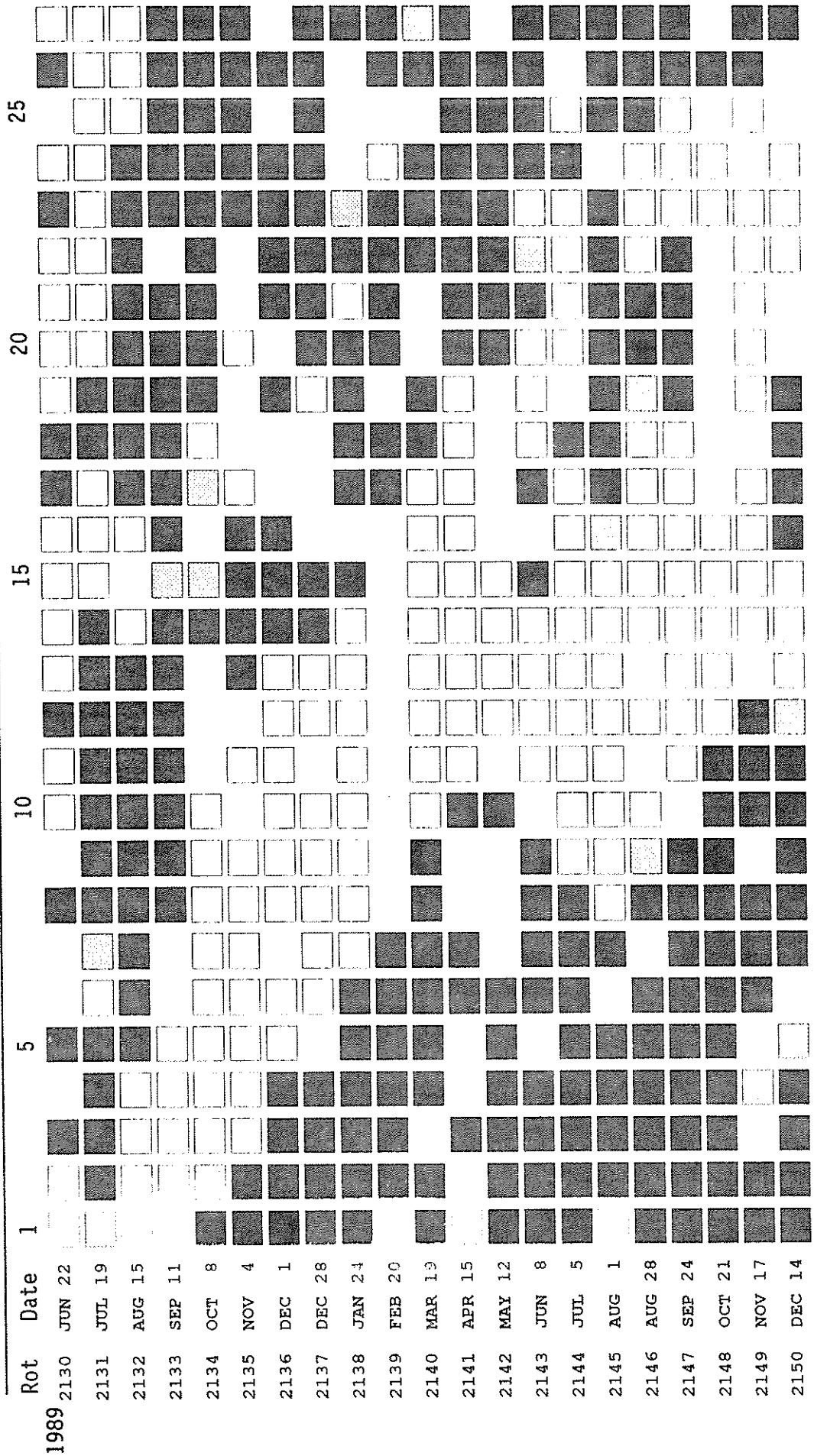
S O L A R R A D I O E M I S S I O N  
Selected Fixed Frequency Events

51  
Dec 90

DECEMBER 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		
21	2695 SGMR	8 S	1556.0E	1557.0	2.00	28.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1556.0E	1557.0	2.00	30.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1849.0E	1850.0	1.00	39.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	1849.2	1850.1	4.5	22.6	6.0		
	2800 OTTA	3 S	1917.3	1920.8	12.1	29.0	6.0		
	2695 SGMR	4 S/F	1918.0E	1920.0	4.00	25.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1920.0E	1920.0	1.00	28.0			QL=4 ST=2 TYP=3
22	8800 SGMR	8 S	1538.0E	1538.0	1.00	69.0			QL=4 ST=2 TYP=3
	2800 OTTA	3 S	1538.0	1538.9	3.0	23.6	7.0		
	2800 OTTA	3 S	1642.0	1647.7	6.4	37.1	8.0		
	2695 SGMR	8 S	1647.0E	1647.0	1.00	25.0			QL=4 ST=2 TYP=3
	2800 OTTA	20 GRF	2025.5	2030.0	12.1	13.3	4.0		
	2695 PENT	4 S/F	2219.0	2233.5	32.00	115.7	35.0		
	2695 LEAR	4 S/F	2232.0E	2233.0	7.00	86.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	2232.0E	2233.0	5.00	50.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	2232.0E	2233.0	3.00	70.0			QL=4 ST=2 TYP=3
	8800 LEAR	4 S/F	2233.0E	2233.0	3.00	45.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	2311.0E	2313.0	4.00	94.0			QL=4 ST=2 TYP=3
	2695 PALE	4 S/F	2311.0E	2313.0	4.00	99.0			QL=4 ST=2 TYP=3
	8800 PALE	4 S/F	2311.0E	2312.0	4.00	87.0			QL=4 ST=2 TYP=3
23	2695 LEAR	8 S	0039.0E	0039.0	1.00	40.0			QL=4 ST=2 TYP=3
	8800 LEAR	8 S	0039.0E	0039.0		43.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	0042.0E	0947.0	1398.00	250.0			QL=4 ST=1 TYP=5
	8800 LEAR	49 GB	0941.0E	0944.0	17.00	1400.0			QL=4 ST=2 TYP=6
	8800 SVTO	49 GB	0941.0E	1002.0	859.00	1500.0			QL=4 ST=1 TYP=7
	2695 LEAR	4 S/F	0942.0E	0944.0	14.00	250.0			QL=4 ST=2 TYP=5
	2695 SVTO	4 S/F	0942.0E	0947.0	858.00	250.0			QL=4 ST=1 TYP=5
	2800 OTTA	20 GRF	2003.0	2005.5	42.0	10.5	3.0		
24	2695 SGMR	8 S	1322.0E	1323.0	1.00	35.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1322.0E	1323.0	638.00	40.0			QL=4 ST=1 TYP=3
	2800 OTTA	3 S	1532.0	1537.0	20.2	275.2	55.0		
	8800 SGMR	49 GB	1533.0E	1537.0	10.00	2100.0			QL=2 ST=2 TYP=7
	2695 SGMR	49 GB	1534.0E	1536.0	7.00	310.0			QL=4 ST=2 TYP=7
	8800 LEAR	8 S	2248.0E	2248.0	1.00	91.0			QL=4 ST=2 TYP=3
	2695 LEAR	4 S/F	2248.0E	2248.0	4.00	99.0			QL=4 ST=2 TYP=3
25	2695 LEAR	8 S	0928.0E	0928.0	1.00	20.0			QL=4 ST=2 TYP=3
	2800 OTTA	20 GRF	1615.0	1618.5	31.0	11.4	4.0		
	2695 PENT	3 S	2157.0	2159.4	7.2	20.3	6.0		
26	2800 OTTA	3 S	1357.8	1400.3	4.5	245.4	50.0		
	2695 SGMR	4 S/F	1358.0E	1400.0	4.00	260.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1358.0E	1400.0	6.00	290.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1358.0E	1400.0	4.00	270.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1358.0E	1400.0	8.00	300.0			QL=2 ST=2 TYP=3
	2800 OTTA	29 PBI	1402.3	1402.3	15.3	26.8	13.0		
27	2800 OTTA	20 GRF	1744.0	1745.5	21.0	8.5	2.0		
28	2800 OTTA	20 GRF	1736.5	1738.0	97.0	17.8	4.0		
30	8800 SVTO	8 S	1040.0E	1041.0	2.00	87.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1144.0E	1145.0	4.00	170.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1144.0E	1145.0	4.00	330.0			QL=4 ST=2 TYP=3
	2695 SGMR	8 S	1318.0E	1319.0	2.00	190.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1318.0E	1318.0	1.00	190.0			QL=4 ST=2 TYP=3
	2695 SVTO	8 S	1318.0E	1319.0	2.00	230.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1318.0E	1318.0	3.00	240.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1512.0E	1514.0	3.00	150.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1512.0E	1513.0	5.00	61.0			QL=2 ST=2 TYP=3
	2800 OTTA	3 S	1512.2	1514.7	9.1	183.0	55.0		
	2695 PALE	4 S/F	1828.0E	1829.0	4.00	130.0			QL=4 ST=2 TYP=3
	8800 PALE	8 S	1828.0E	1829.0	2.00	84.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1828.0E	1829.0	3.00	130.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1828.0E	1828.0	2.00	61.0			QL=2 ST=2 TYP=3
2800 OTTA	3 S	1828.7	1830.0	11.2	142.1	28.0			

STANFORD MEAN SOLAR MAGNETIC FIELD



Mean Solar Magnetic Field Polarity:  = field > 2 microT;  = -2 microT ≤ field ≤ 2 microT  
 = field < -2 microT; No box = no data available

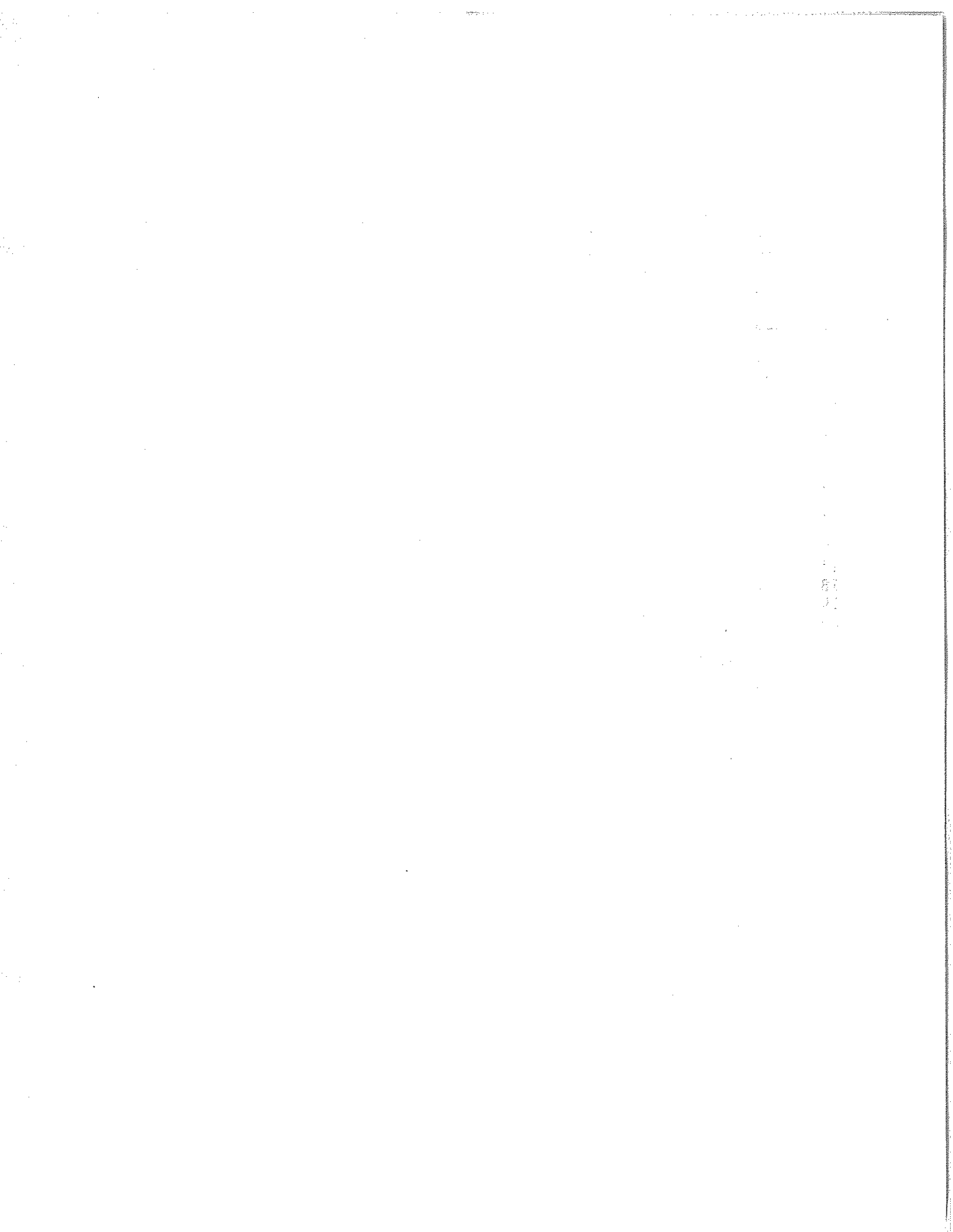
Observations are taken at 2000 UT. Rotation numbers given are the Bartels series, but the dates are not; these dates mark times of occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

## STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1990											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	.	128	.	84	35	-9	-4	14	-75	-80	3	57
2	22	150	.	47	19	-8	-13	-29	-77	-49	25	58
3	70	344	.	33	23	-5	-34	-27	.	.	45	34
4	106	99	.	4	-18	-34	-42	-38	-44	22	45	.
5	132	69	.	-8	-24	-33	-36	-25	-2	44	29	11
6	129	23	.	-29	-25	-33	-36	.	19	57	.	7
7	.	-11	.	.	-27	.	-45	-13	.	51	.	47
8	58	.	-28	.	-38	-26	-34	3	68	36	.	58
9	23	-15	-23	-29	-33	-52	-12	26	.	41	.	82
10	-7	-8	.	-36	-15	-86	-11	43	60	33	.	.
11	-41	-14	-25	-34	-4	-83	-10	94	43	8	.	46
12	.	-9	-23	.	-9	.	-15	137	41	-10	68	-7
13	.	4	-11	-8	-47	-88	17	76	14	-25	52	-83
14	.	-12	-15	0	-80	-58	32	25	5	-43	.	-126
15	5	-2	2	-2	-82	-31	78	3	-1	-9	-4	-62
16	-11	.	.	.	-80	-10	95	1	-17	24	.	-51
17	-14	.	-10	-20	-88	.	57	-34	-9	12	-46	-20
18	-58	.	-45	.	.	47	10	-33	30	0	-8	0
19	-86	-78	-63	.	.	44	26	-27	35	-62	.	.
20	-84	.	-108	-105	.	43	41	-22	23	-91	-1	-9
21	-76	-142	.	-99	-29	11	20	-30	-20	-89	.	-23
22	-88	-193	-150	.	.	-4	-12	-15	-78	-87	-24	-41
23	-124	-167	-124	.	25	.	.	-16	-96	-69	-47	-55
24	-152	-133	-113	-21	33	-12	7	.	-112	-56	-50	-37
25	-184	-102	-74	23	16	7	25	-83	-121	-44	.	-1
26	-203	-41	-62	57	3	13	50	-82	-107	-52	-69	36
27	-200	.	-34	75	.	42	10	-89	-90	-54	-56	45
28	-140	.	9	65	.	-7	-13	-107	-82	-65	-11	31
29	-62	.	45	50	.	-2	39	-131	-86	-66	.	-18
30	3	.	103	50	.	8	.	-128	-103	-54	48	-59
31	46	.	94	.	-4	.	-67	-90	.	-31	.	-48

Dot symbol indicates no data available for the day.

Note: Data from 21 June to 15 August 1990 are of poorer quality due to instrument problems.



C O N T E N T S

Prompt Reports

DATA FOR NOVEMBER 1990

Number 557 Part I

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**P R E L I M I N A R Y   H - A L P H A   S O L A R   S Y N O P T I C   C H A R T**  
CARRINGTON ROTATION NUMBER 1834  
(28 September to 25 October 1990)

Dates of Observations Below                      Days of Year:                      100                      95                      90

Data not available at time of publication.

Heliographic Longitude

P R E L I M I N A R Y   H - A L P H A   S O L A R   S Y N O P T I C   C H A R T  
CARRINGTON ROTATION NUMBER 1835  
(25 October to 21 November 1990)

Dates of Observations Below                      Days of Year:                      360                      355                      350

Data not available at time of publication.

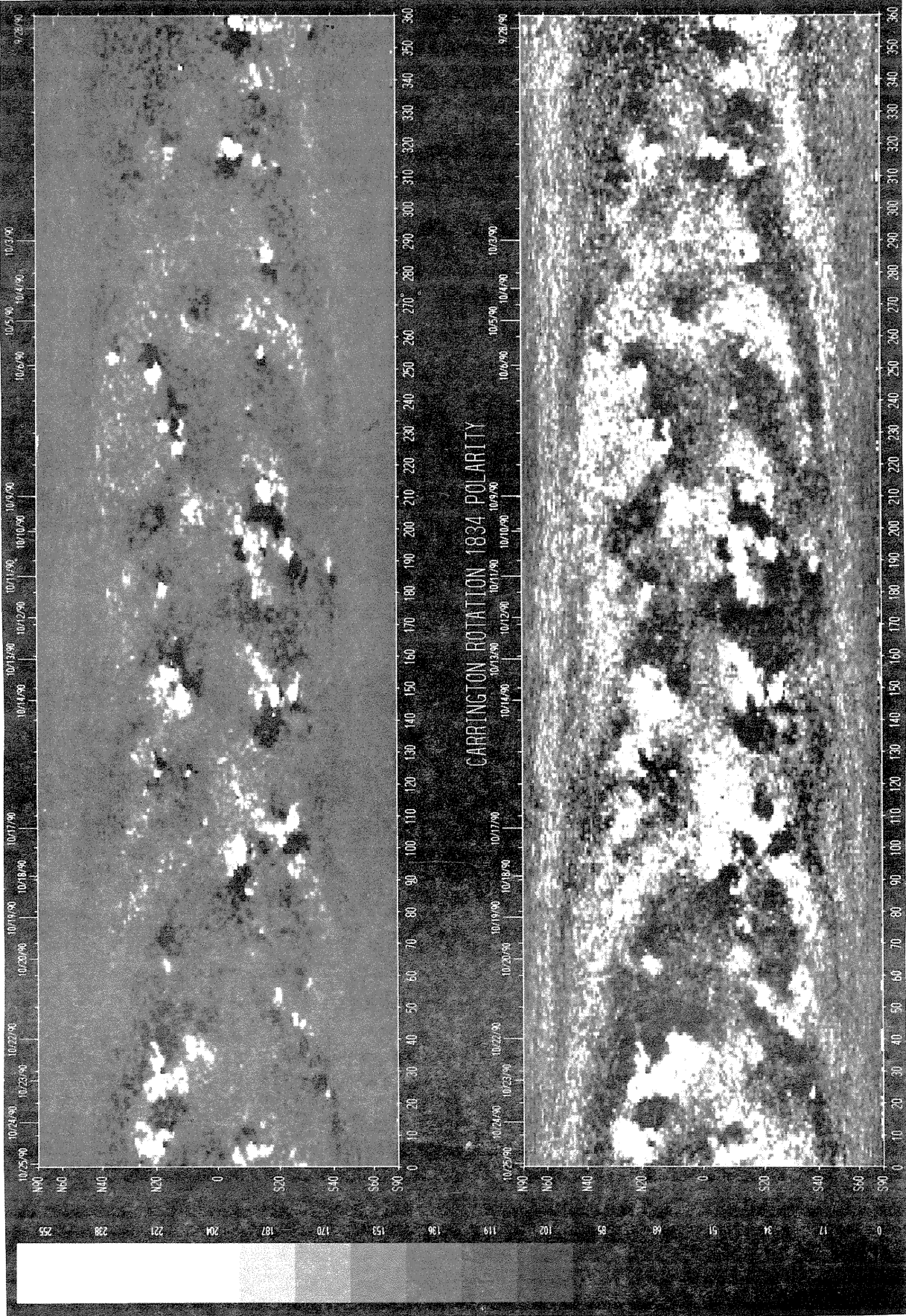
Heliographic Longitude



SOLAR MAGNETIC FIELD SYNOPTIC CHART  
CARRINGTON ROTATION NUMBER 1834  
(28 September to 25 October 1990)

National Solar Observatory/Kitt Peak

Dates of Observation

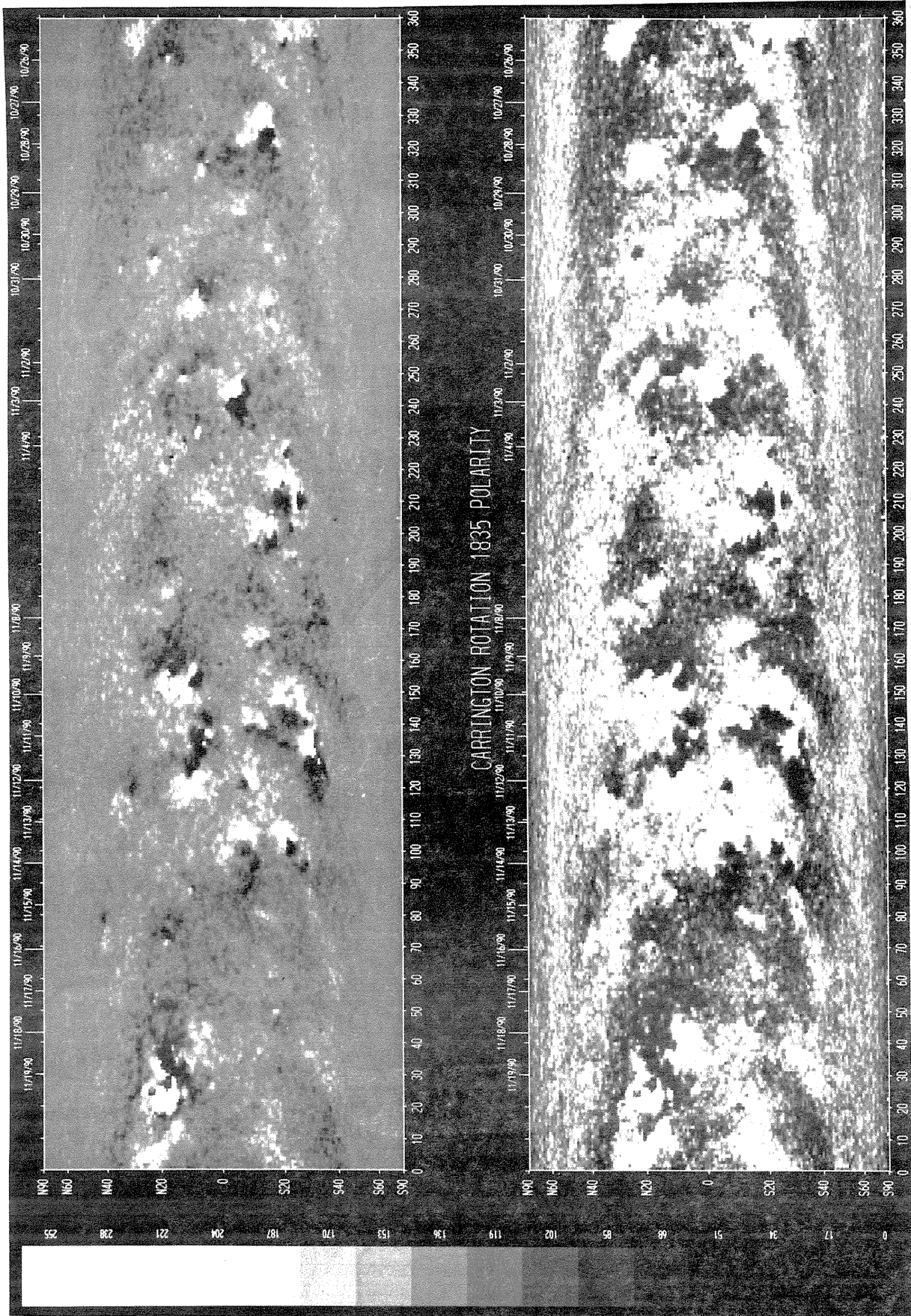


Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART  
CARRINGTON ROTATION NUMBER 1835  
(25 October to 21 November 1990)

Kitt Peak National Observatory

Dates of Observation



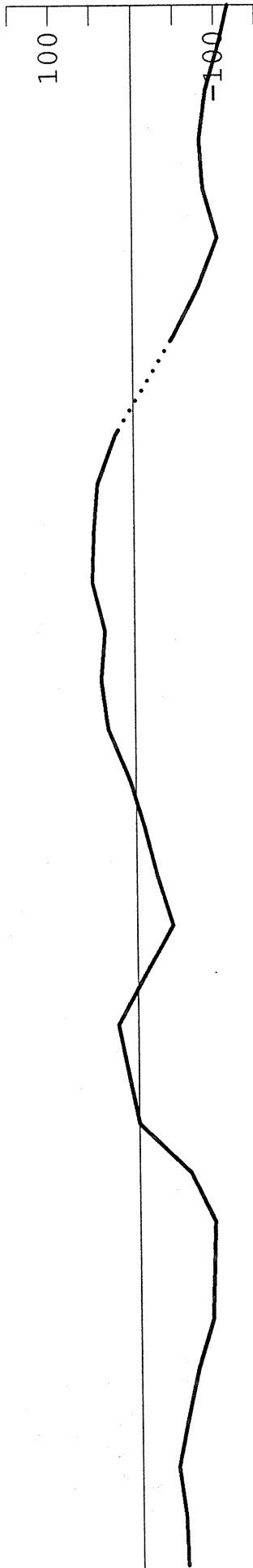
Heliographic Longitude



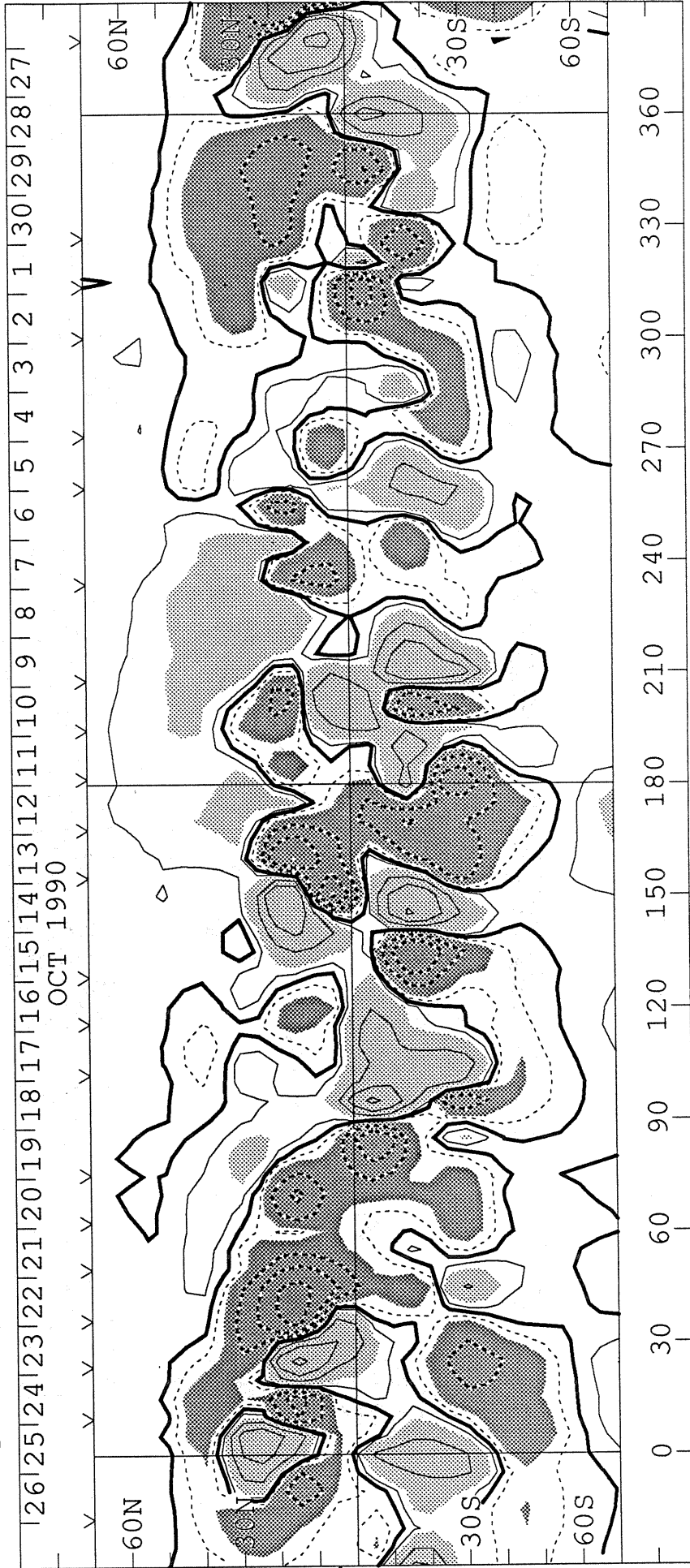
SOLAR MAGNETIC FIELD SYNOPSIS CHART  
CARRINGTON ROTATION NUMBER 1834  
(28 September to 25 October 1990)

WILCOX SOLAR OBSERVATORY

Mean Field



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



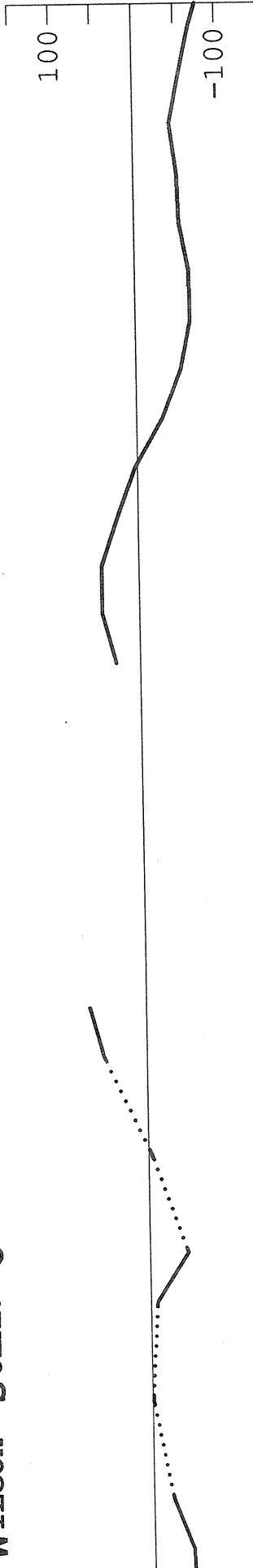
Heliographic Longitude

1834

**SOLAR MAGNETIC FIELD SYNOPSIS CHART**  
 CARRINGTON ROTATION NUMBER 1835  
 (25 October to 21 November 1990)

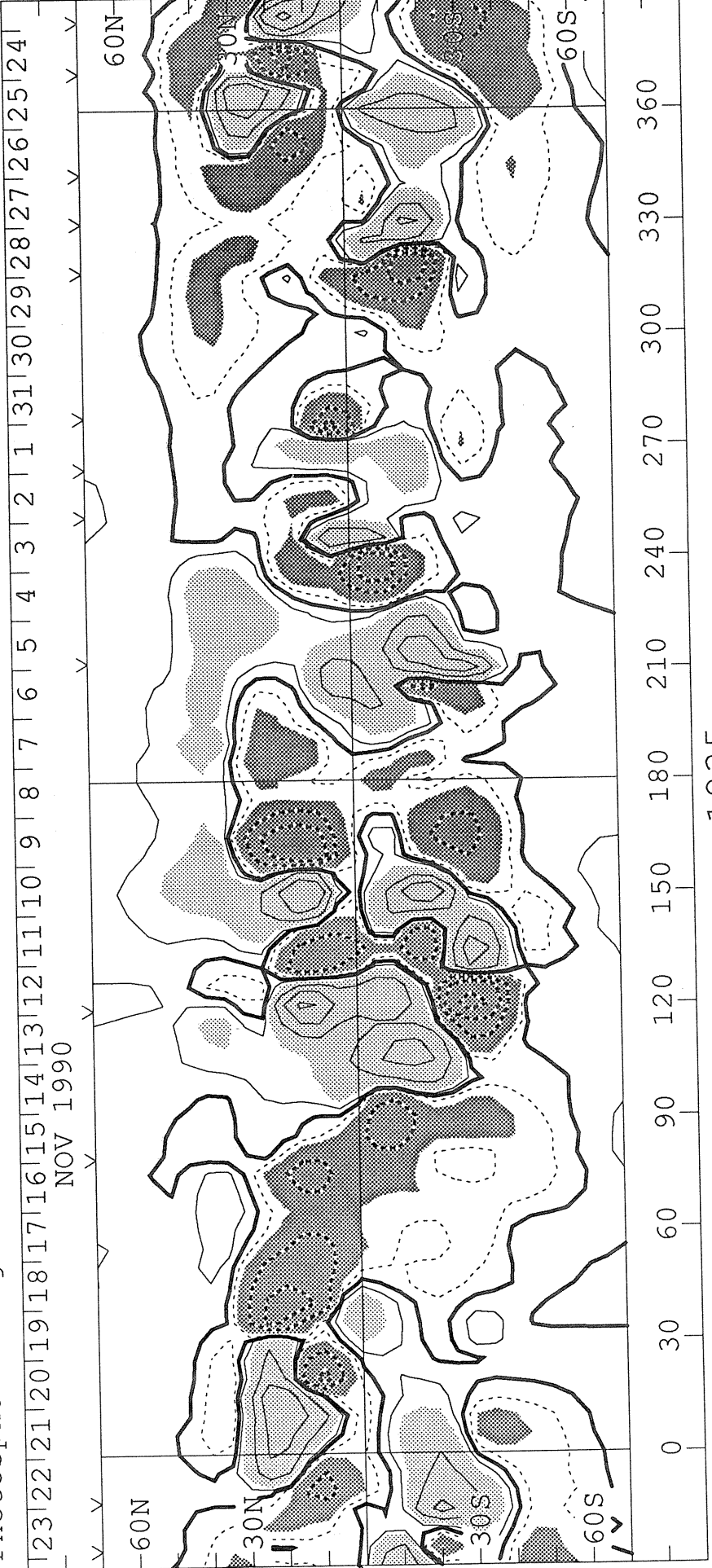
**WILCOX SOLAR OBSERVATORY**

Mean Field



0, +100, 500, 1000, 2000 MicroTesla

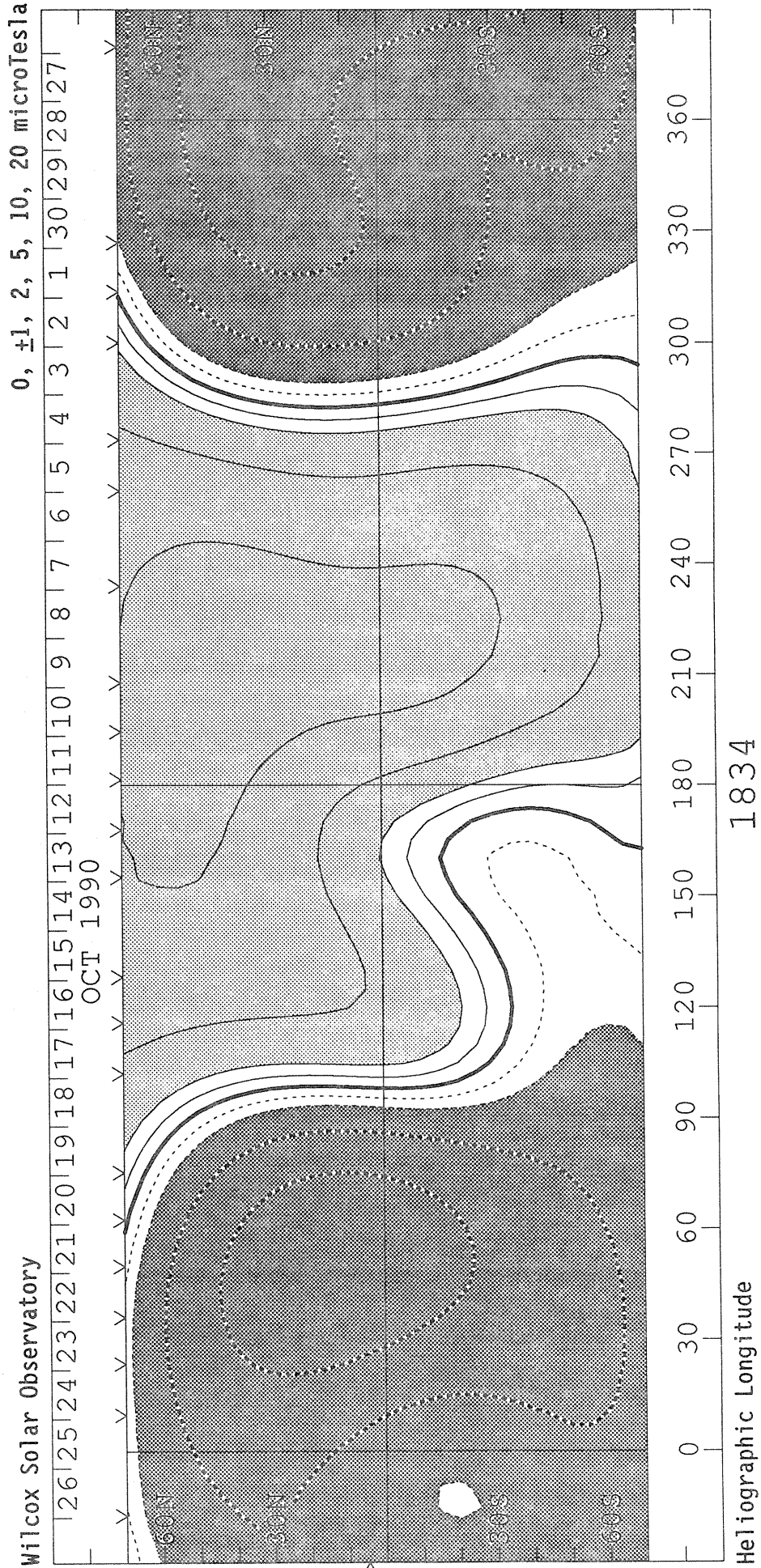
Photospheric Magnetic Field



1835

Heliographic Longitude

S O L A R   M A G N E T I C   F I E L D   S Y N O P T I C   C H A R T  
SOURCE SURFACE FIELD  
CARRINGTON ROTATION NUMBER 1834  
(28 September to 25 October 1990)

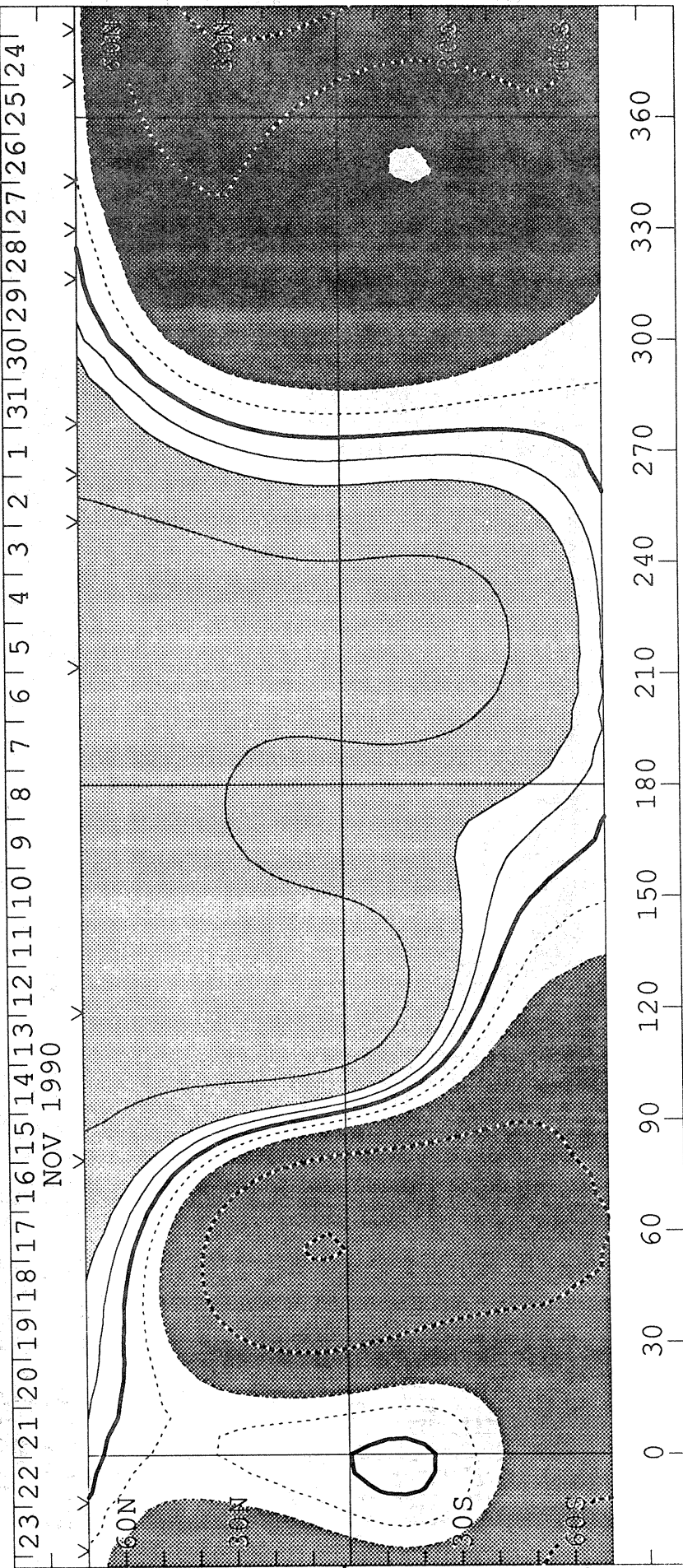


SOLAR MAGNETIC FIELD SYNOPSIS CHART

SOURCE SURFACE FIELD  
CARRINGTON ROTATION NUMBER 1835  
(25 October to 21 November 1990)

0, ±1, 2, 5, 10, 20 microTesla

Wilcox Solar Observatory



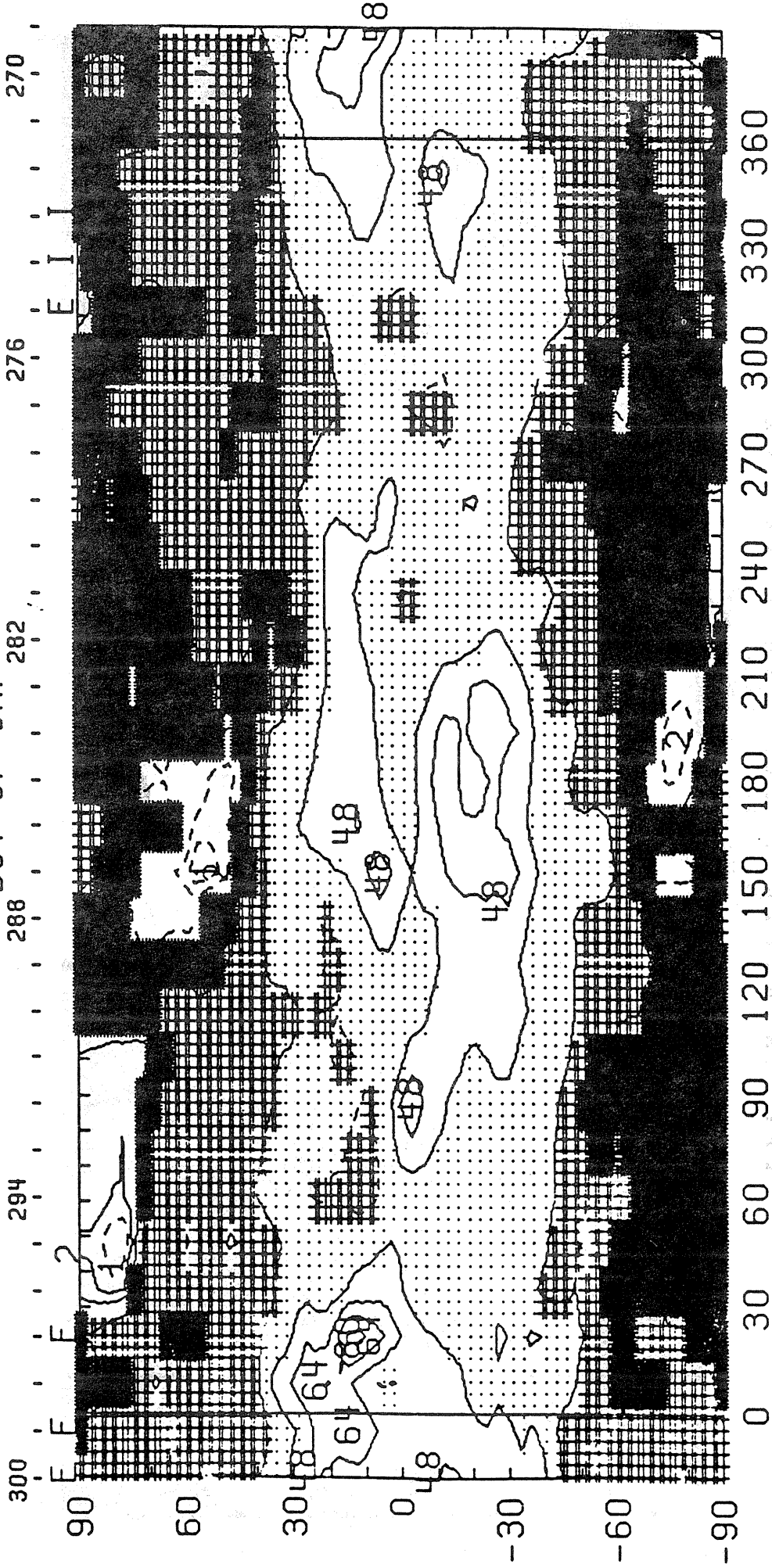
1835

Heliographic Longitude



64  
Nov 90

CARRINGTON ROTATION NUMBER 1834 ; SAC. PEAK FE XIV AT R = 1.15  
DOY OF CMP 282



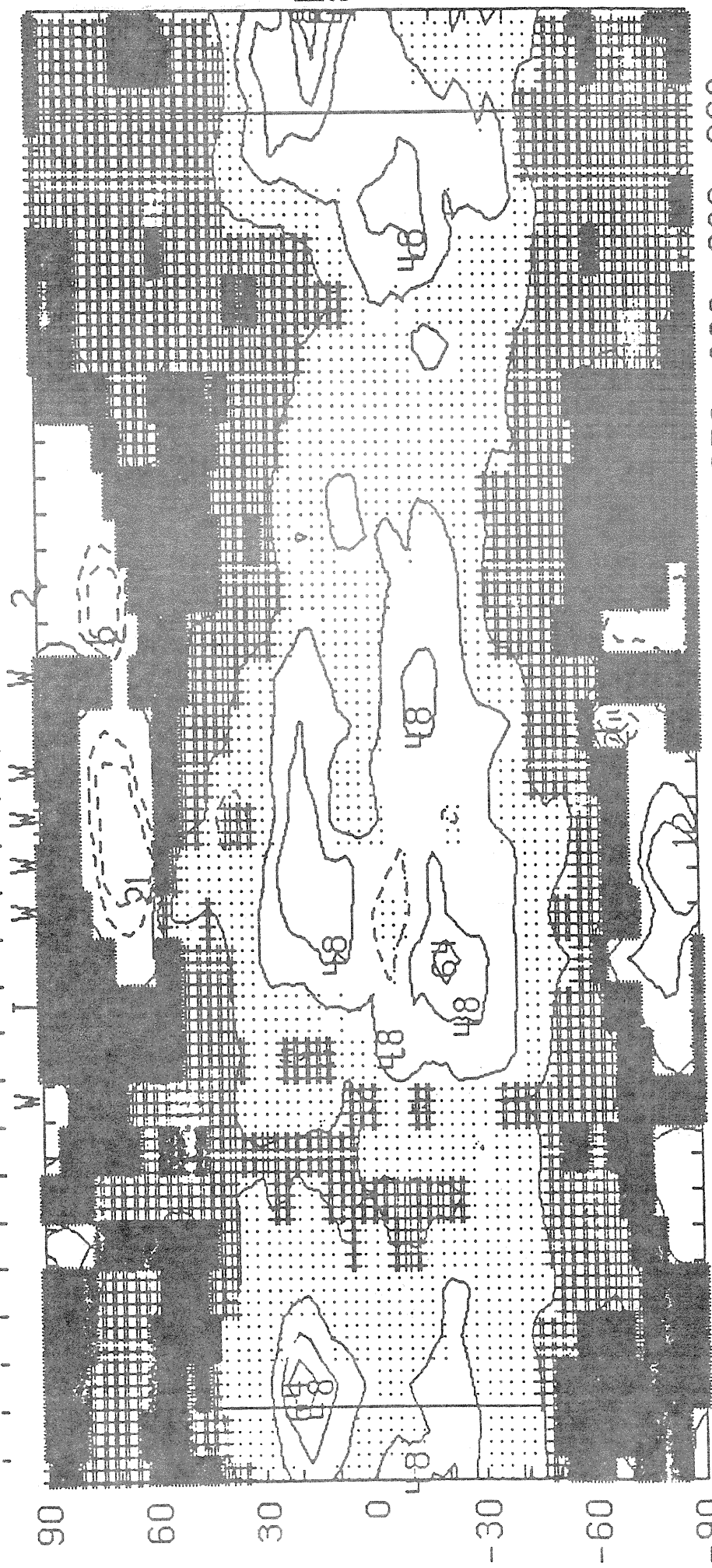
E HELIOGRAPHIC LONGITUDE W

1990 W+E LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF Io  
(16-Jan-91) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK

CARRINGTON ROTATION NUMBER 1835 ; SAC. PEAK FE XIV AT R = 1.15

DOY OF CMP

327 . . . . . 321 . . . . . 315 . . . . . 309 . . . . . 297

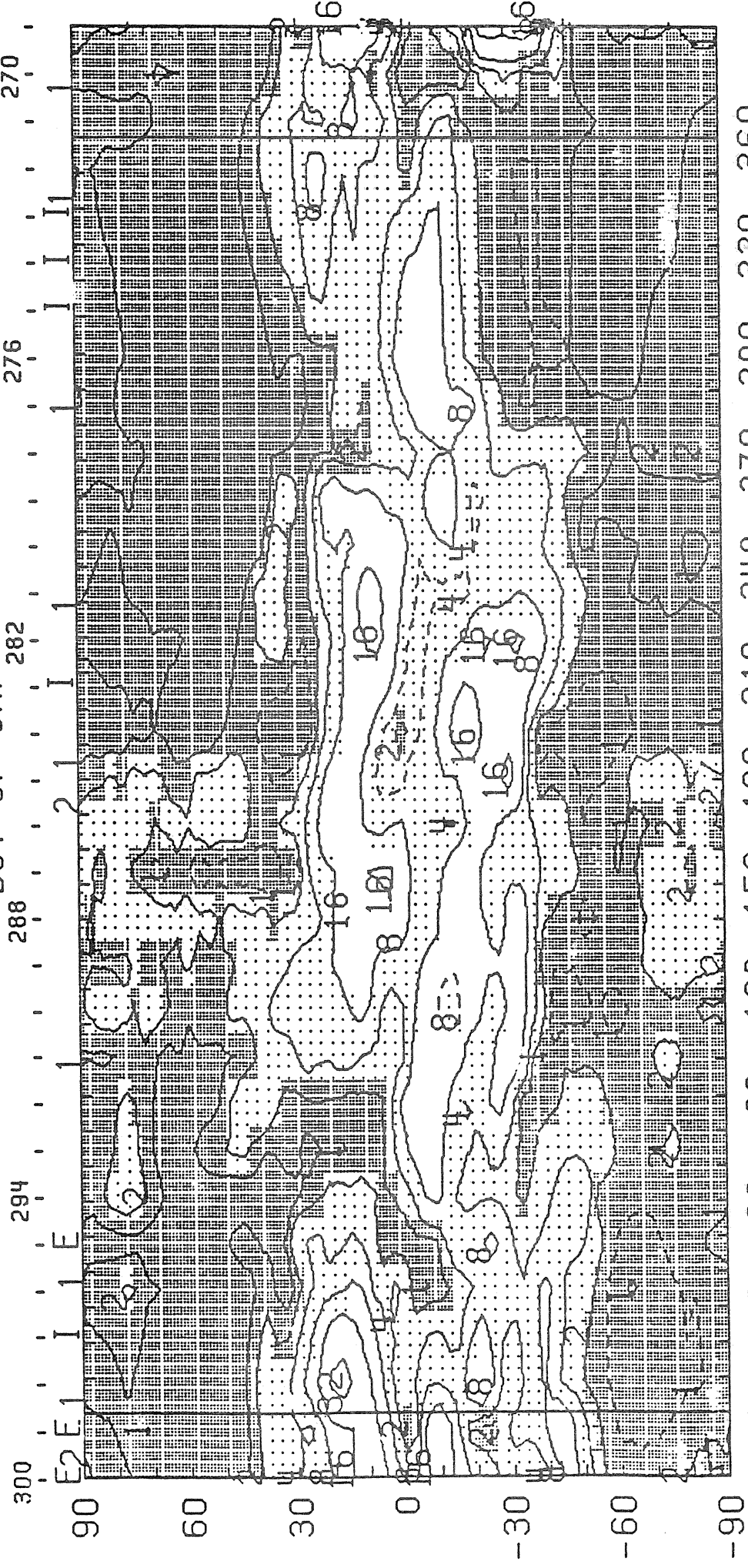


E HELIOGRAPHIC LONGITUDE W

1990 E+W LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF Io  
( 9-Jan-91) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK



CARRINGTON ROTATION NUMBER 1834 ; SAC. PEAK FE X AT R = 1.15  
DOY OF CMP



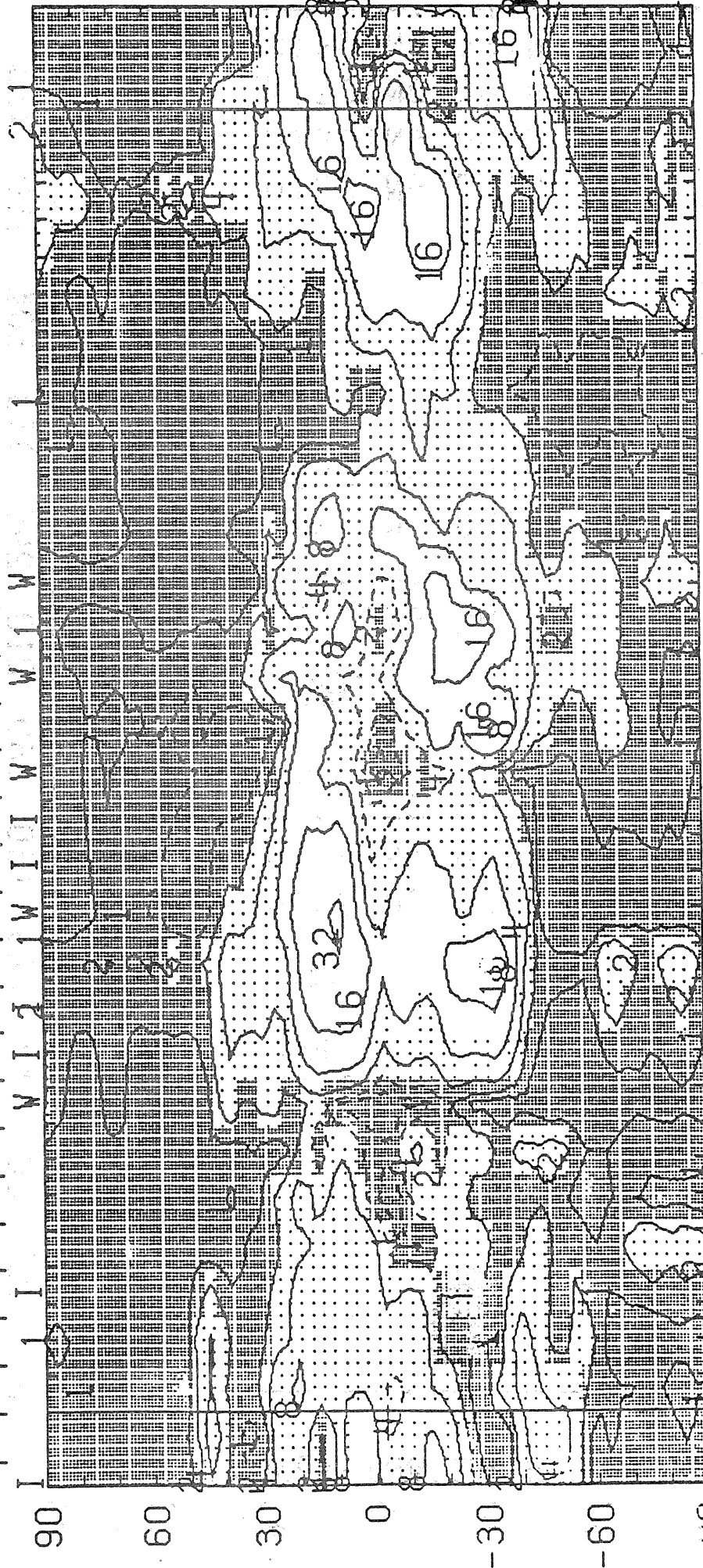
E 0 30 60 90 120 150 180 210 240 270 300 330 360 W  
HELIOGRAPHIC LONGITUDE

1990 W+E LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF Io  
( 9-Jan-91)

CARRINGTON ROTATION NUMBER 1835 : SAC. PEAK FE X AT R = 1.15

DOY OF CMP

327 321 315 309 303 297



0 30 60 90 120 150 180 210 240 270 300 330 360

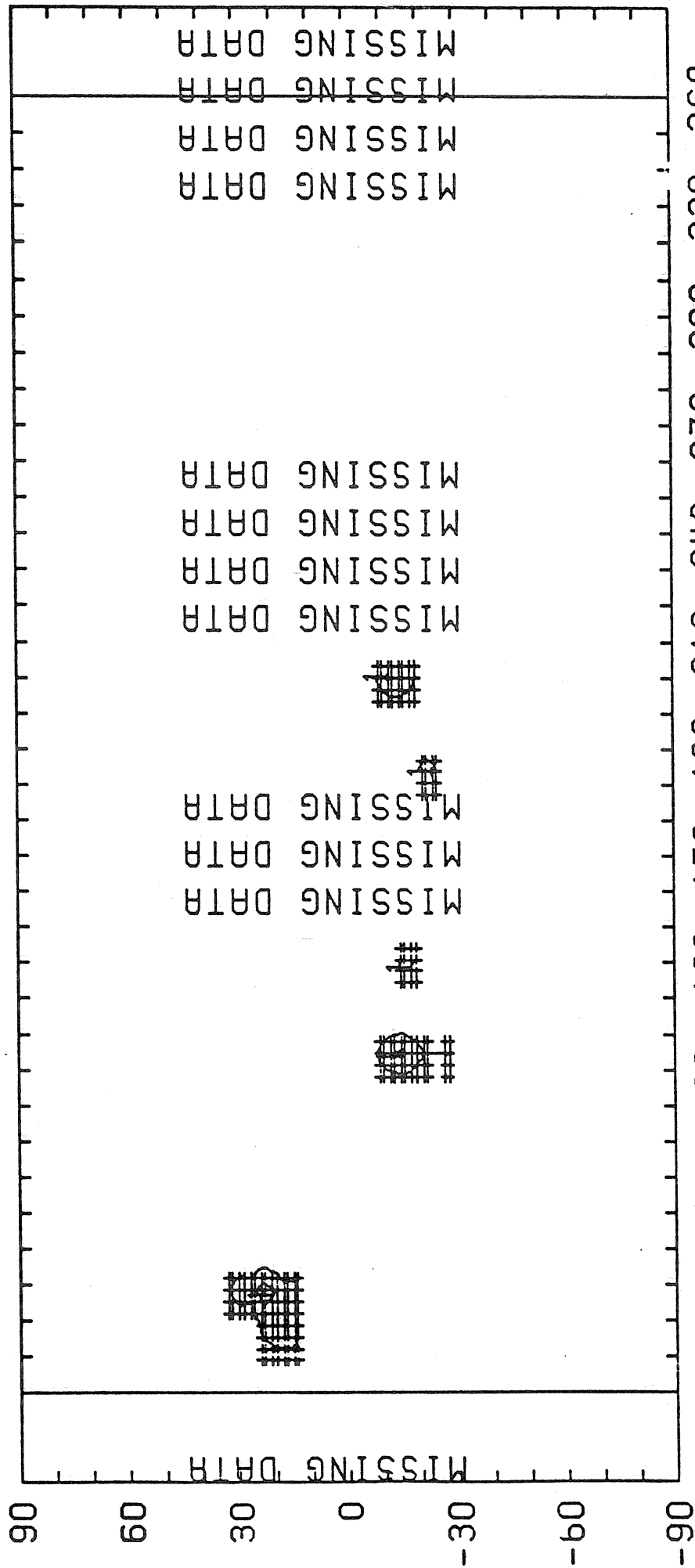
HELIOGRAPHIC LONGITUDE

E 1990 E+W LIMB CONTOURS: 1,2,4,8,16,32,48,64,80 MILLIONTHS OF I<sub>o</sub>

(16-Jan-91)

CARRINGTON ROTATION NUMBER 1834 ; SAC. PEAK CA XV at R = 1.13

DOY OF CMP<sub>282</sub> 288 294 276 270



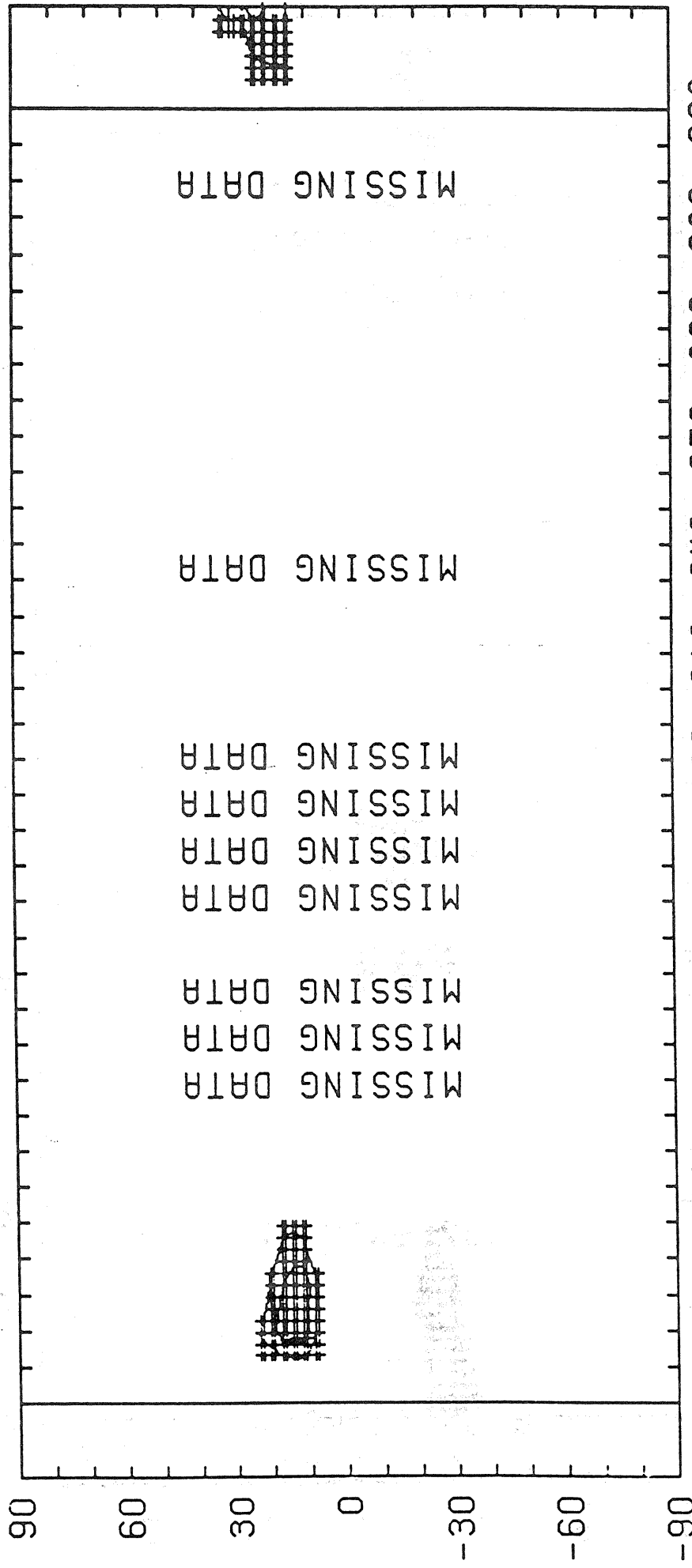
E HELIOGRAPHIC LONGITUDE W

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

(10-Jan-91)

CARRINGTON ROTATION NUMBER 1835 ; SAC. PEAK CA XV at R = 1.13

327 . . . . . 321 . . . . . 315 DOY OF CMP<sub>309</sub> . . . . . 303 . . . . . 297



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

70  
Nov 90

CARRINGTON ROTATION NUMBER 1834 ; SAC. PEAK CA XV at R = 1.13

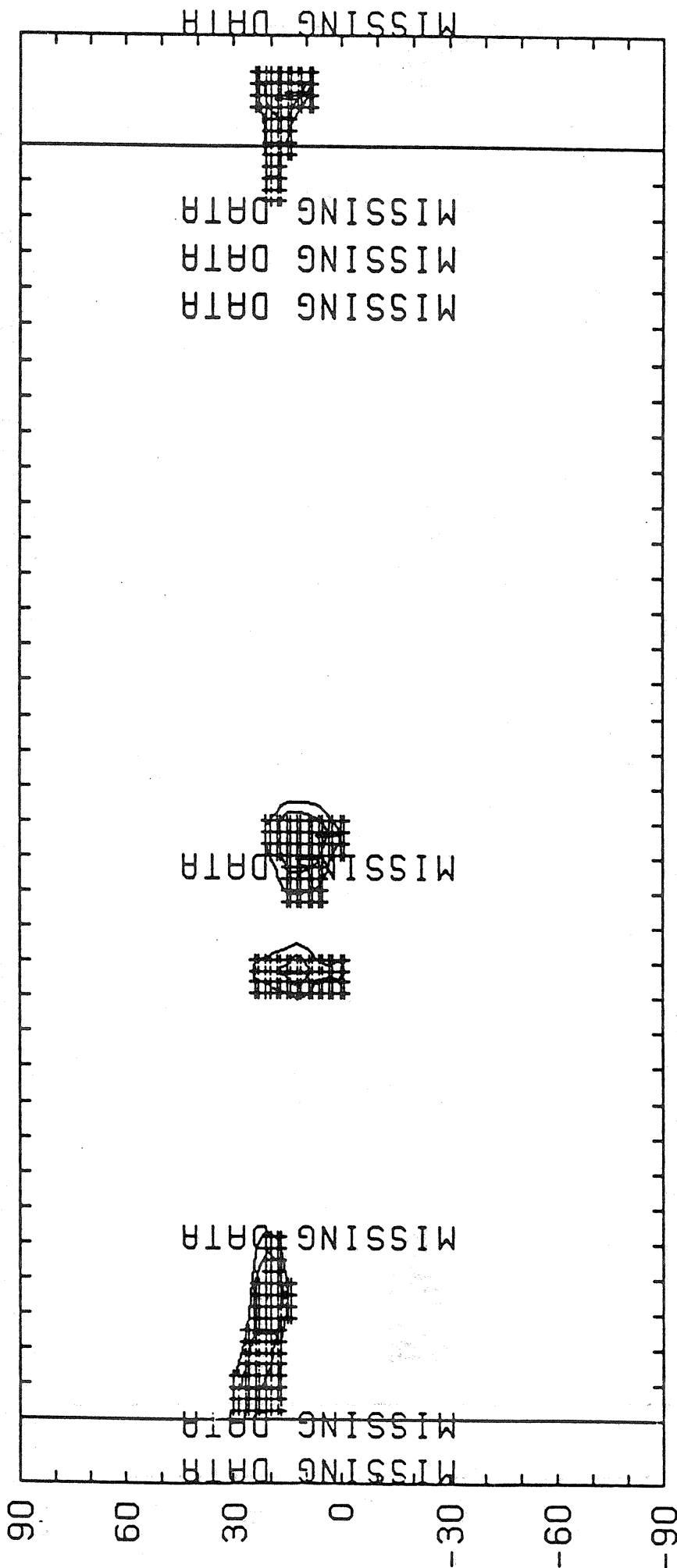
DOY OF CMP<sub>282</sub>

276

288

294

300



E W  
HELIOGRAPHIC LONGITUDE

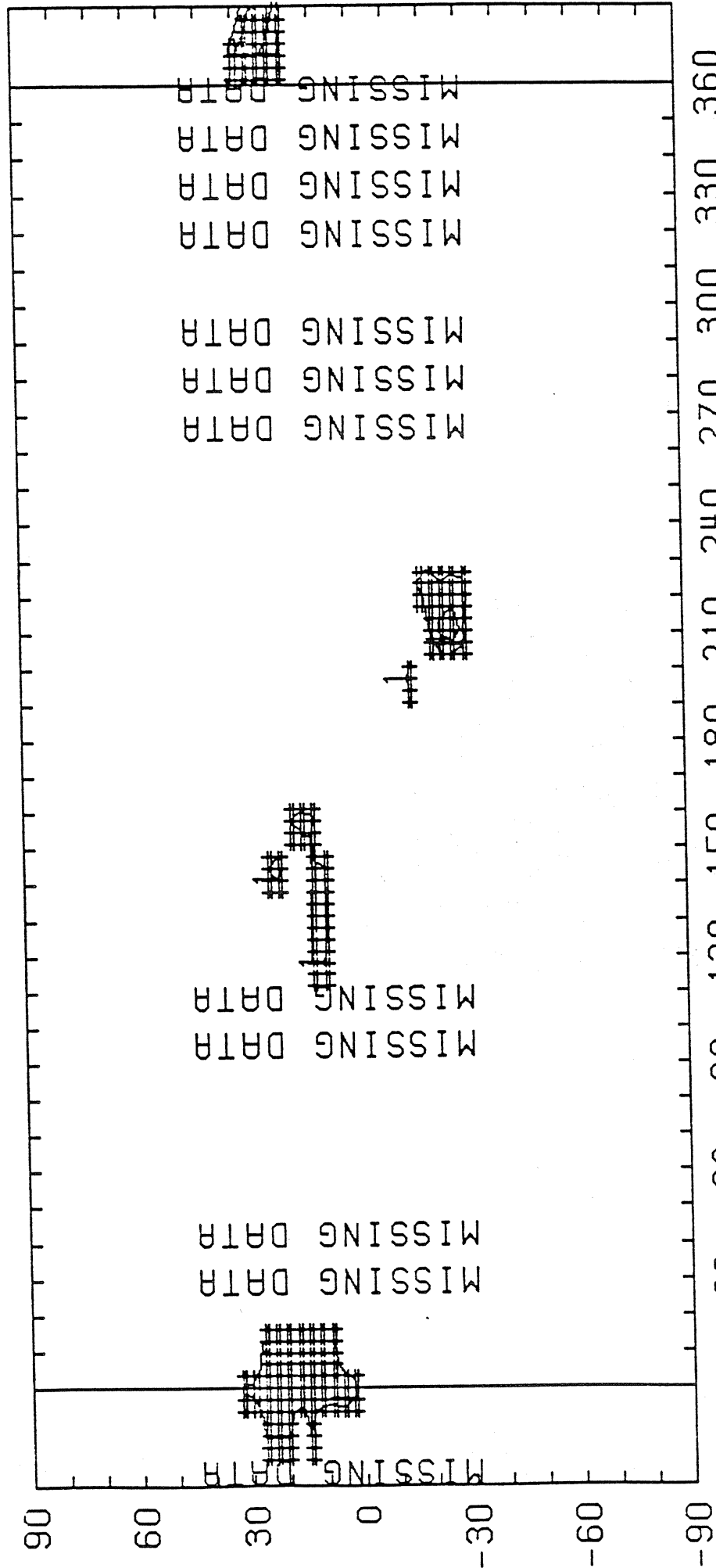
1990 WEST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF I<sub>o</sub>

(10-Jan-91)

CARRINGTON ROTATION NUMBER 1835 ; SAC. PEAK CA XV at R = 1.13

DOY OF CMP

328 . . . . . 322 . . . . . 316 . . . . . 310 . . . . . 304 . . . . . 298



HELIOGRAPHIC LONGITUDE

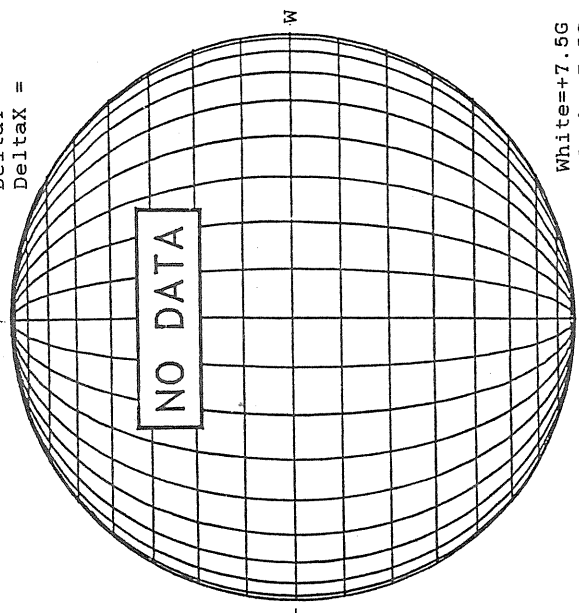
E 1990 WEST LIMB CONTOURS: YELLOW-MINIMUM, 1,2,4,8 MILLIONTHS OF Io

(10-Jan-91)

NOVEMBER 1, 1990 ( P= 24.55, Bo = 4.38, Lo = 276.37 )

MT. WILSON MAGNETOGRAM

Delta<sub>y</sub> =  
Delta<sub>x</sub> =



White=+7.5G  
Black=-7.5G

STANFORD MAGNETOGRAM

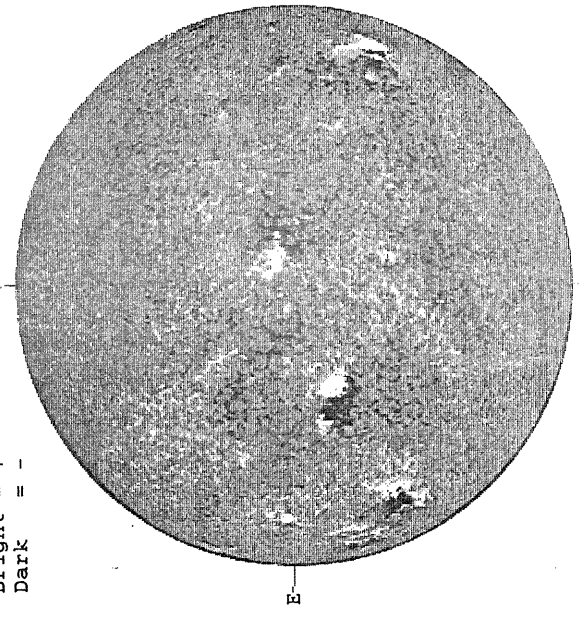
Solid = +  
Dashed = -



2302 UT

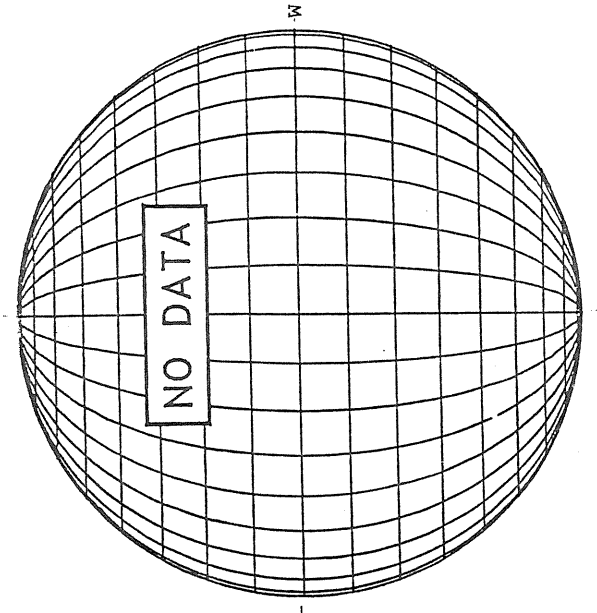
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -

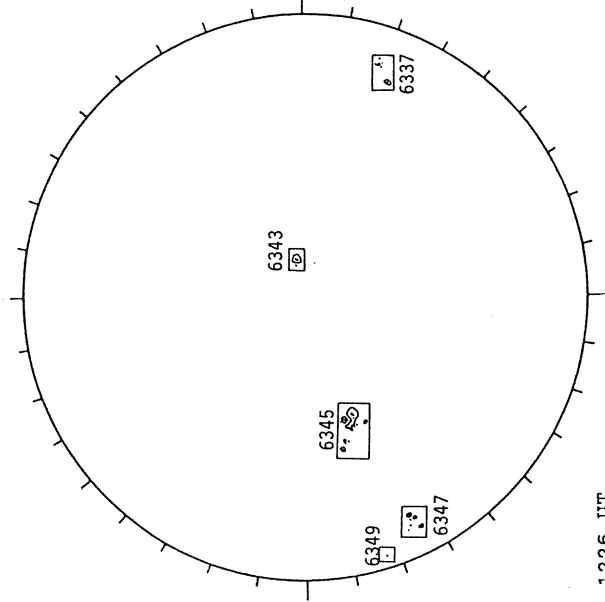


1755 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

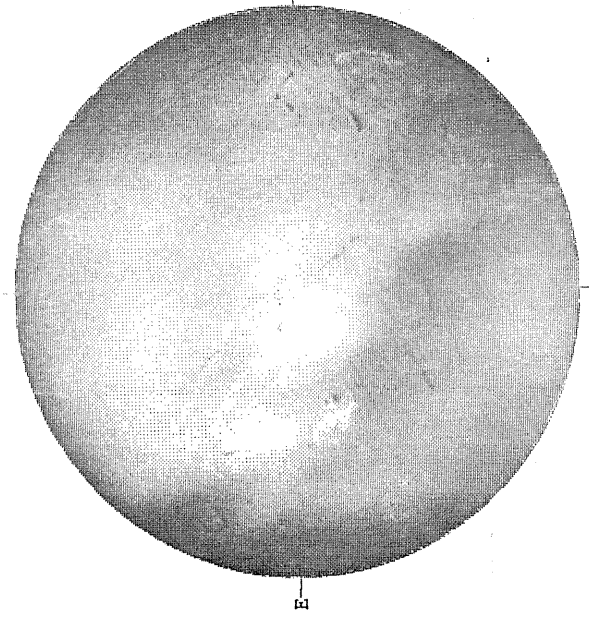


RAMEY SUNSPOT



1226 UT

SACRAMENTO PEAK H-ALPHA



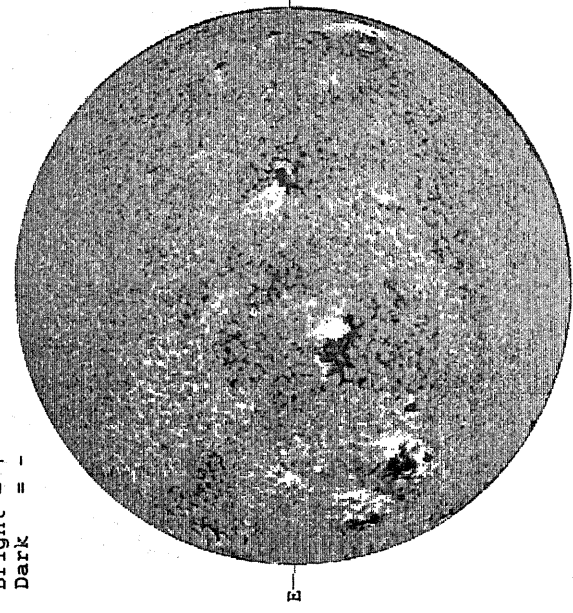
1522 UT



NOVEMBER 2, 1990 ( P = 24.38, B<sub>0</sub> = 4.28, L<sub>0</sub> = 263.18 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1853 UT

STANFORD MAGNETOGRAM

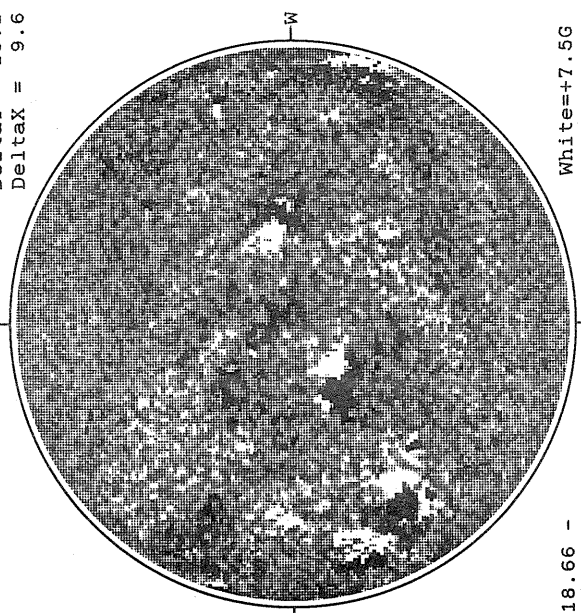
Solid = +  
Dashed = -



2216 UT

MT. WILSON MAGNETOGRAM

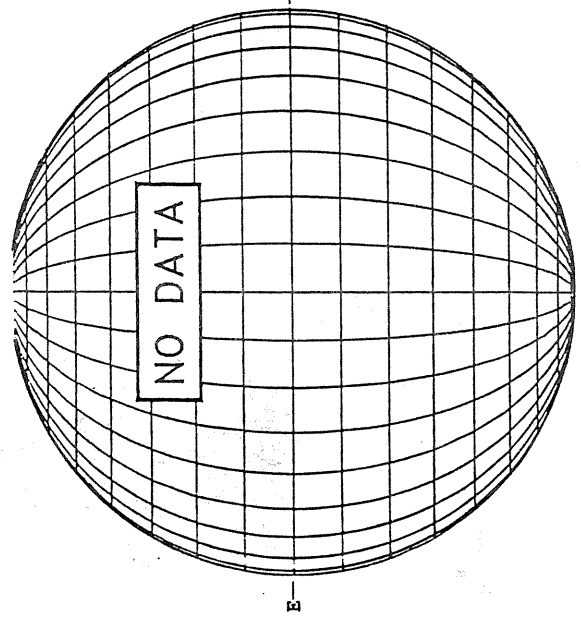
DeltaY = 13.1  
DeltaX = 9.6



18.66 -  
19.62 UT

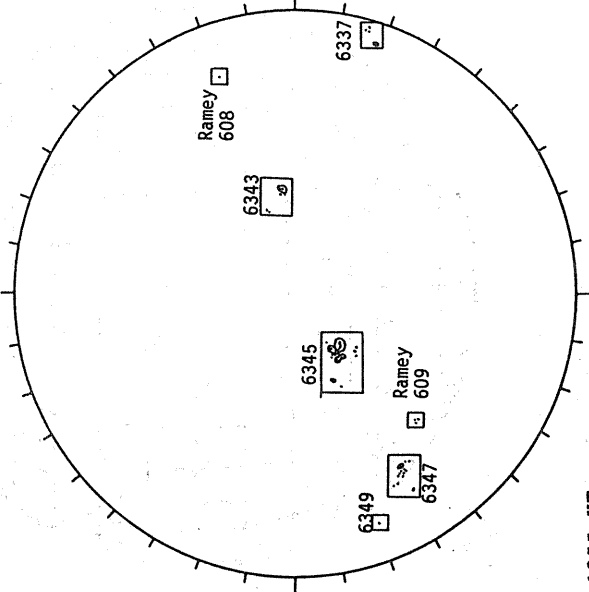
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



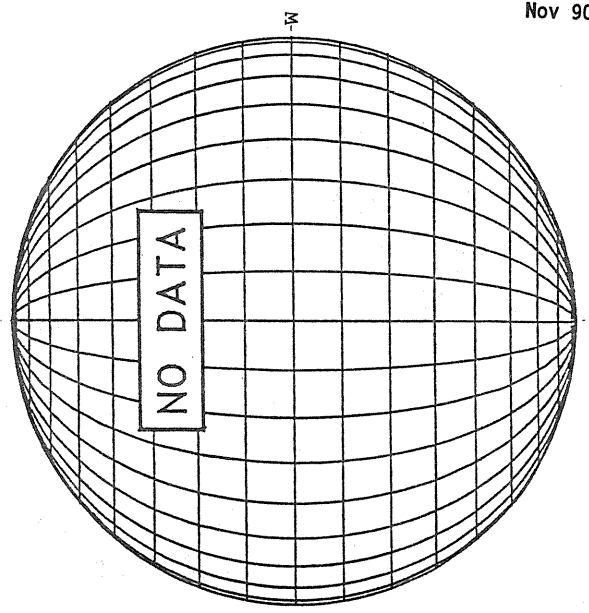
E

RAMEY SUNSPOT



1255 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



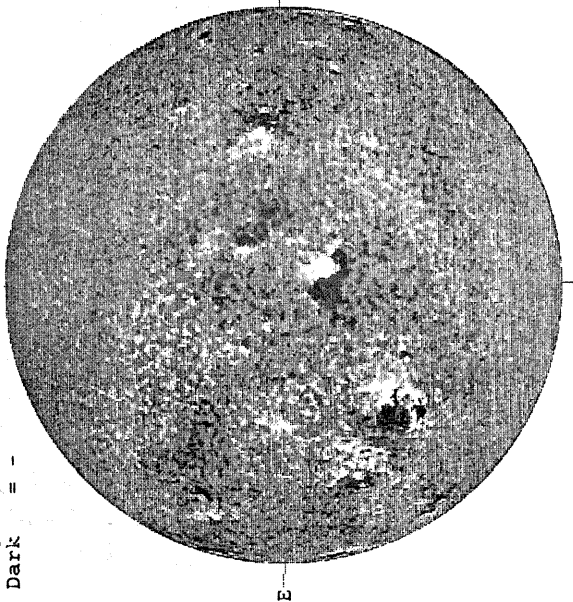
S



NOVEMBER 3, 1990 ( P= 24.21, B<sub>0</sub> = 4.18, L<sub>0</sub> = 249.99 )

KITT PEAK MAGNETOGRAM

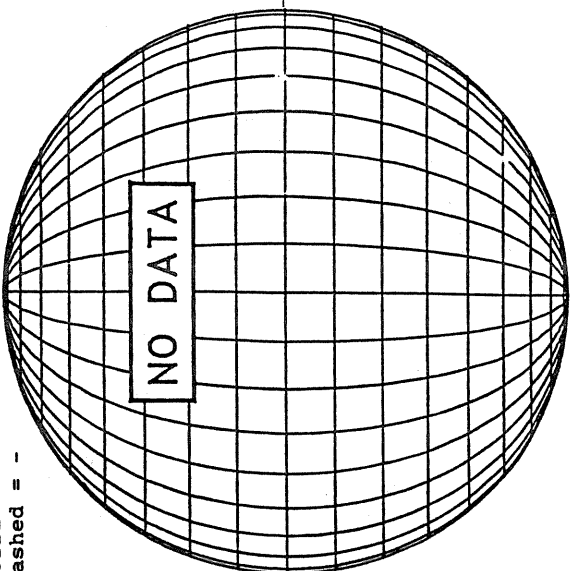
Bright = +  
Dark = -



1712 UT

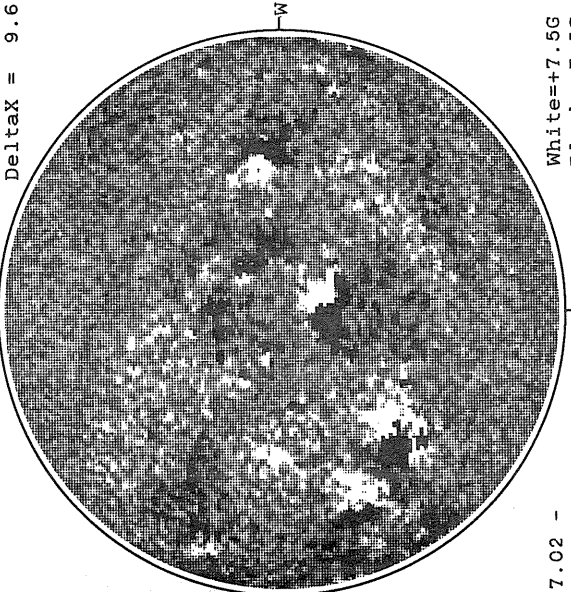
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

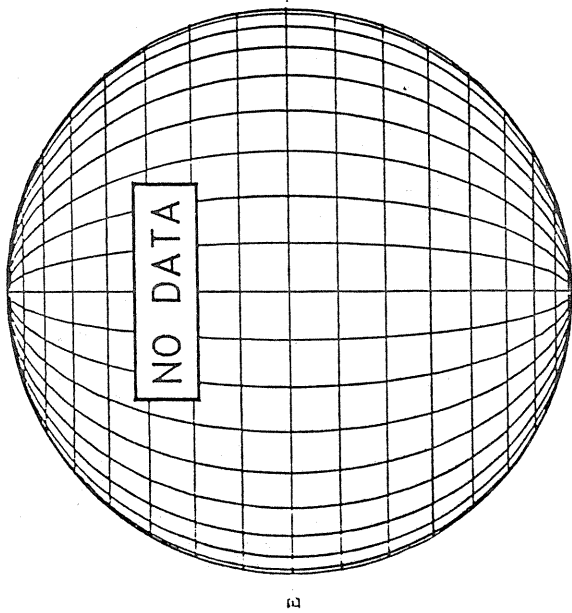
DeltaY = 13.1  
DeltaX = 9.6



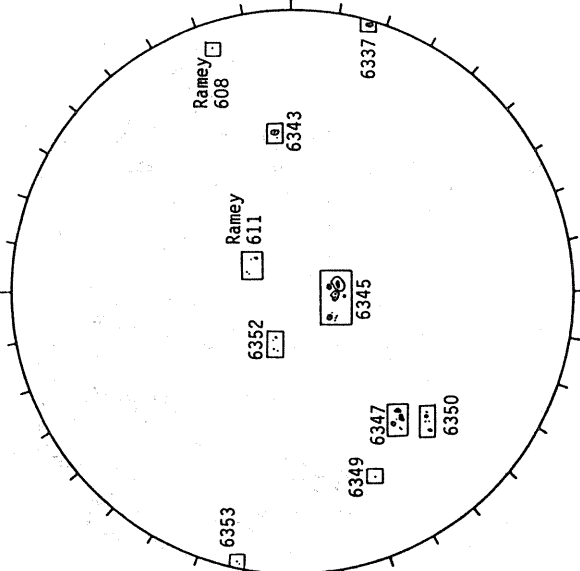
17.02 -  
17.98 UT

White=+7.5G  
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

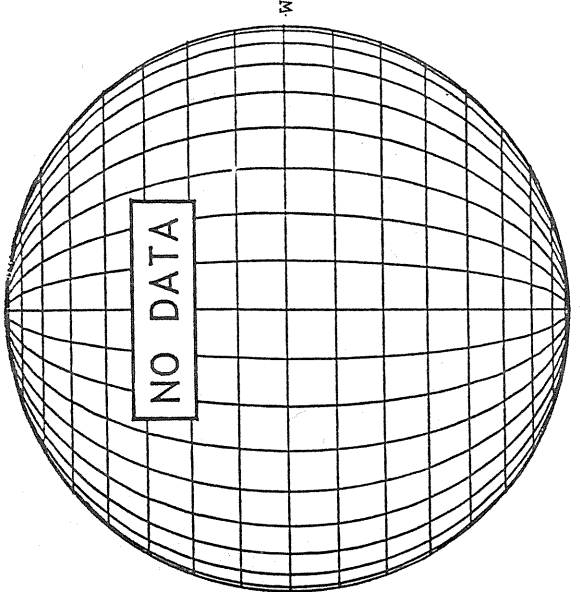


RAMEY SUNSPOT



1133 UT

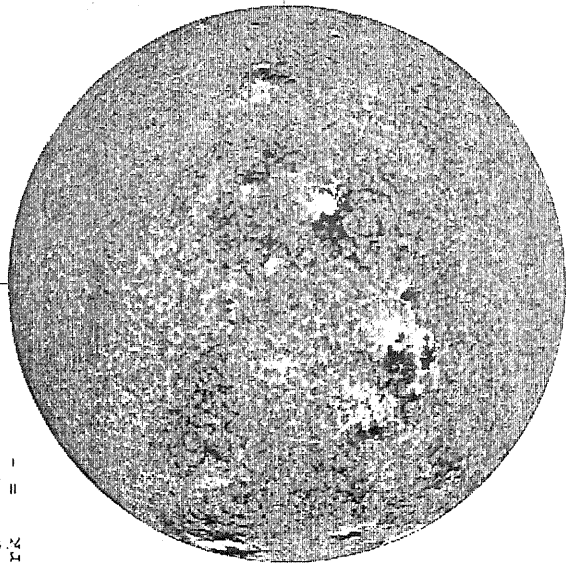
SACRAMENTO PEAK CORONA (1.15 Radii)



NOVEMBER 4, 1990 ( P = 24.02, B<sub>0</sub> = 4.08, I<sub>0</sub> = 236.81 )

KITT PEAK MAGNETOGRAM

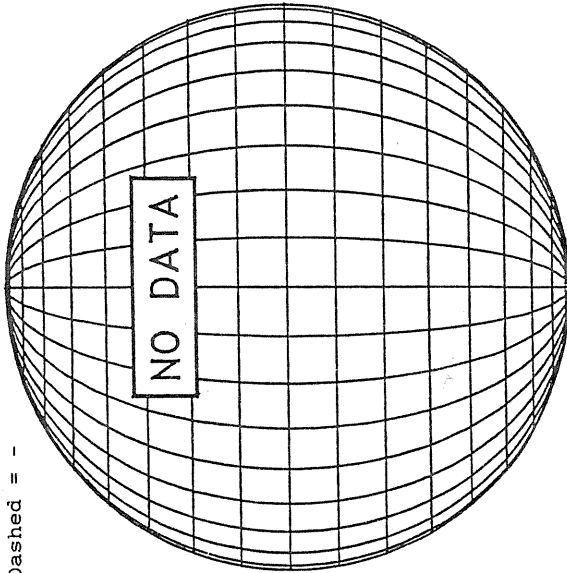
Bright = +  
Dark = -



1724 UT

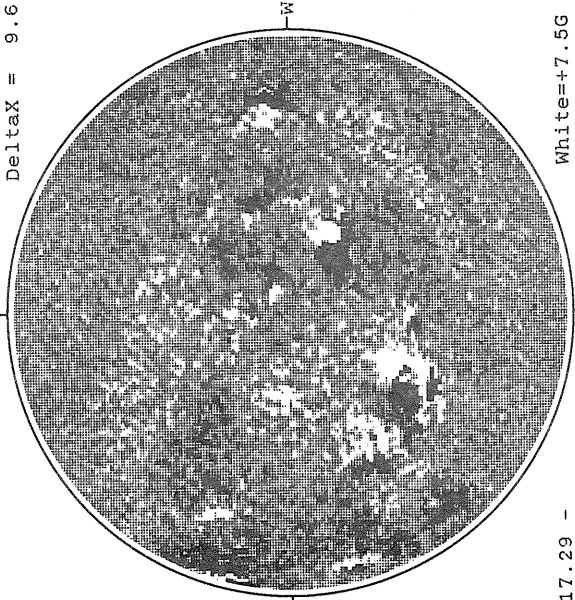
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

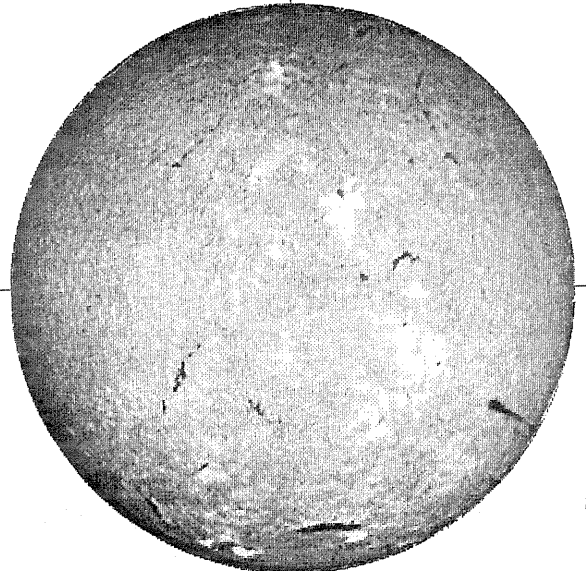
DeltaY = 13.1  
DeltaX = 9.6



17.29 -  
18.25 UT

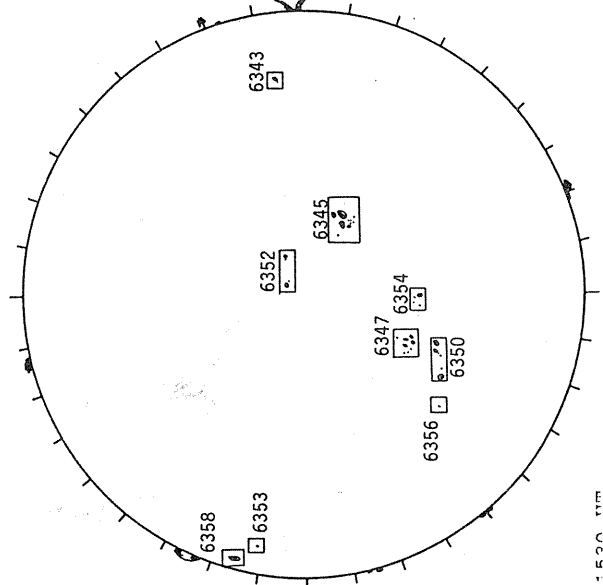
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



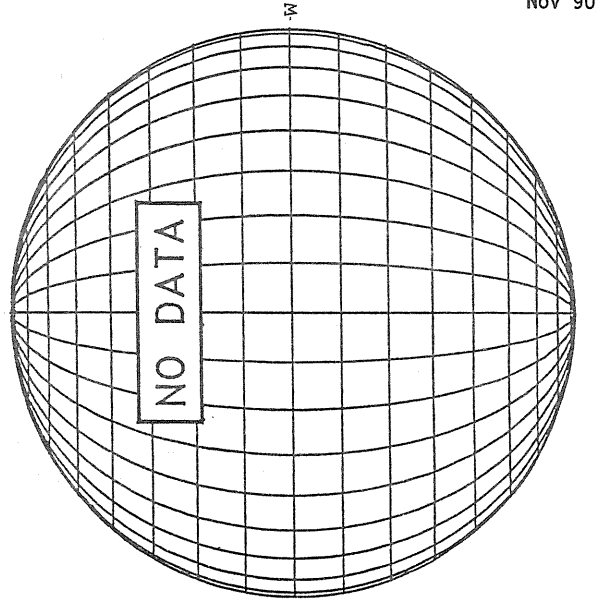
2059 UT

BOULDER SUNSPOT



1530 UT  
1540 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



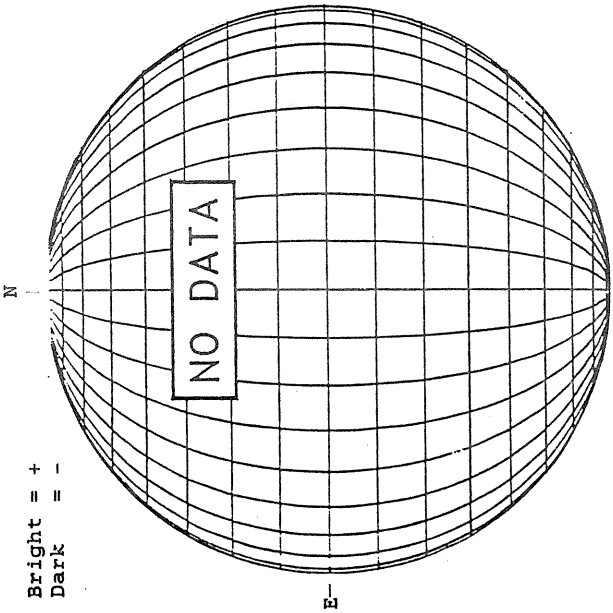
S

S

NOVEMBER 5, 1990 ( P = 23.83, B<sub>0</sub> = 3.97, L<sub>0</sub> = 223.62 )

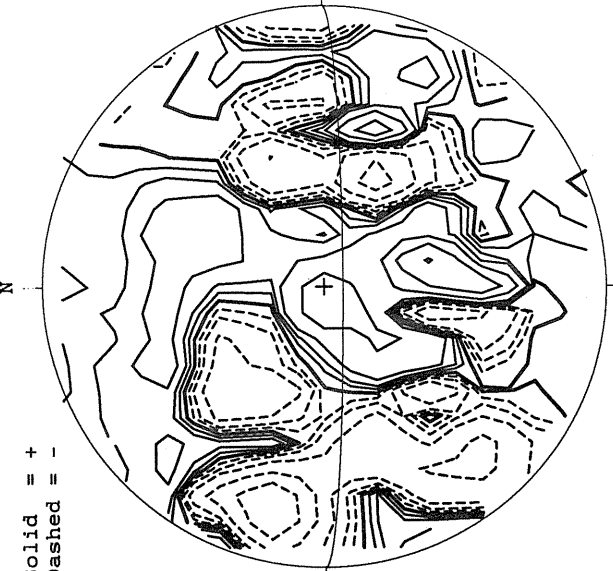
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



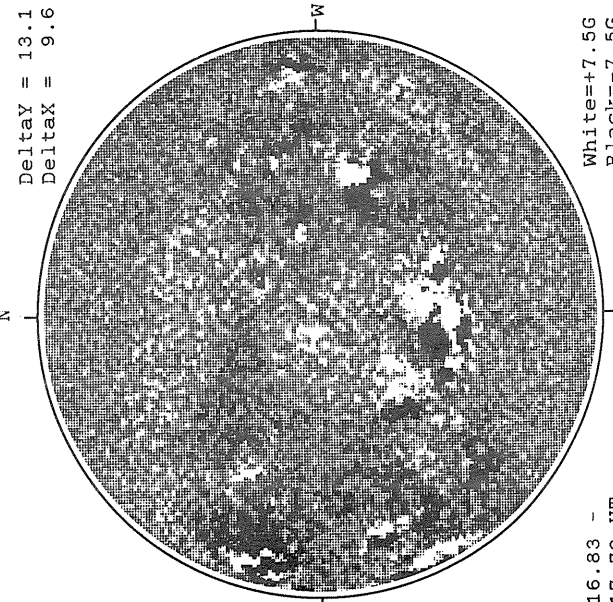
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

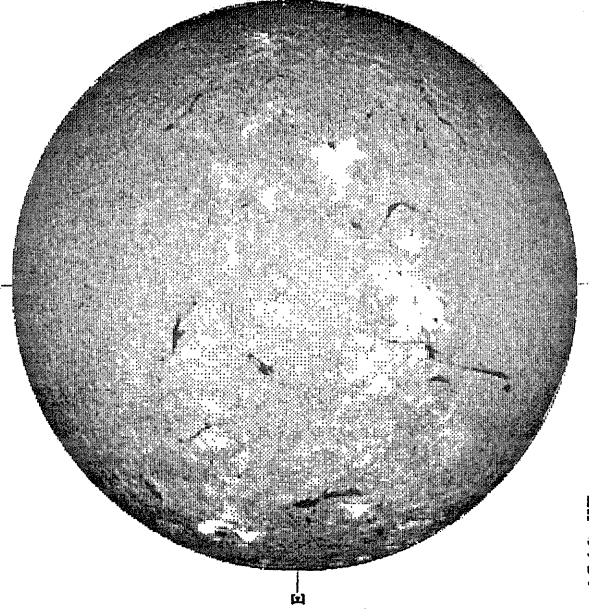
Delta<sub>Y</sub> = 13.1  
Delta<sub>X</sub> = 9.6



White = +7.5G  
Black = -7.5G

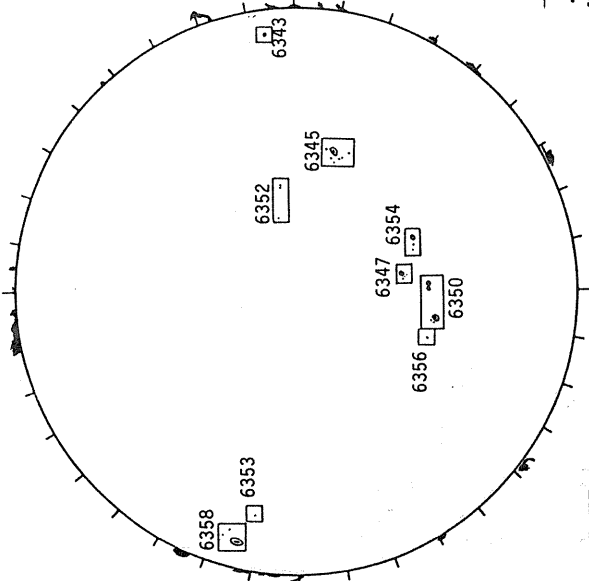
16.83 -  
17.79 UT

SACRAMENTO PEAK H-ALPHA



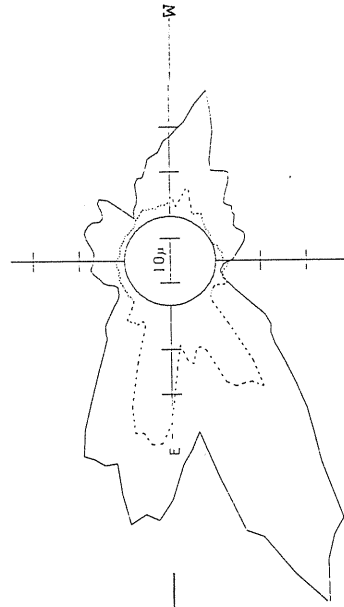
1541 UT

BOULDER SUNSPOT



1507 UT  
1507 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



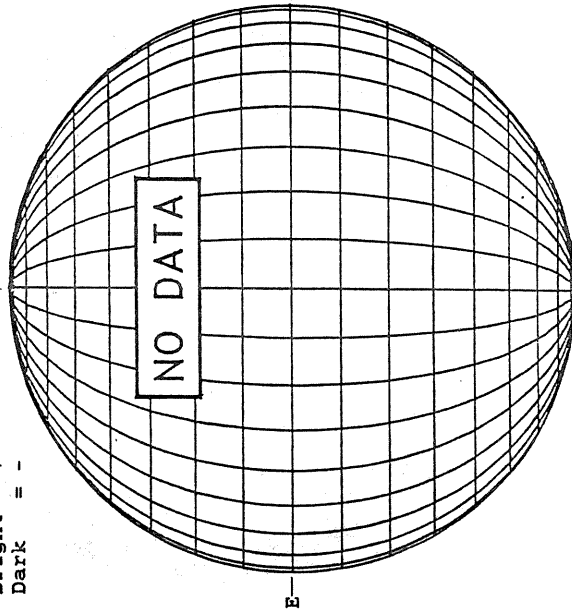
— FeXIV, 1443 UT  
.... Fe X, 1421 UT  
xxxx Ca XV, 1427 UT  
NO CA XV ACTIVITY TODAY

S

NOVEMBER 6, 1990 ( P = 23.63, B<sub>0</sub> = 3.86, I<sub>0</sub> = 210.44 )

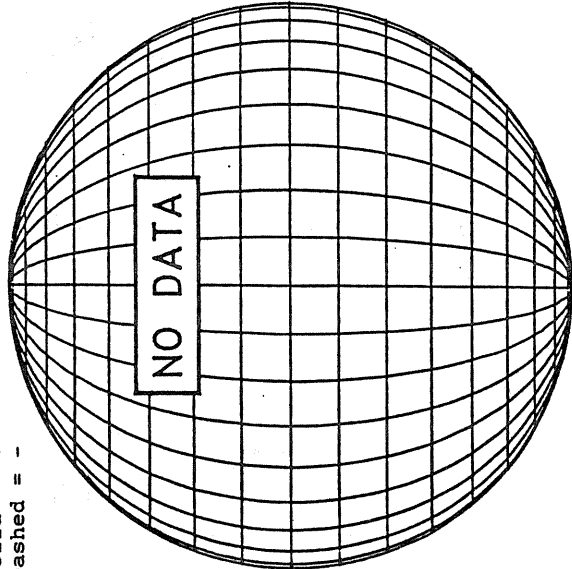
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



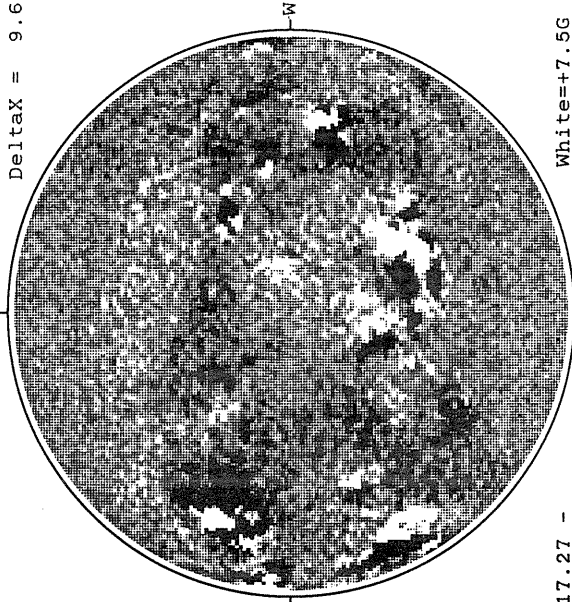
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

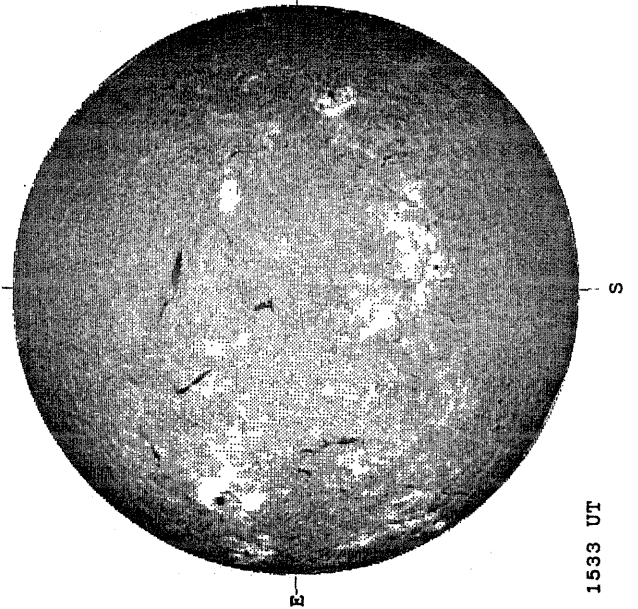
DeltaY = 13.1  
DeltaX = 9.6



17.27 -  
18.23 UT

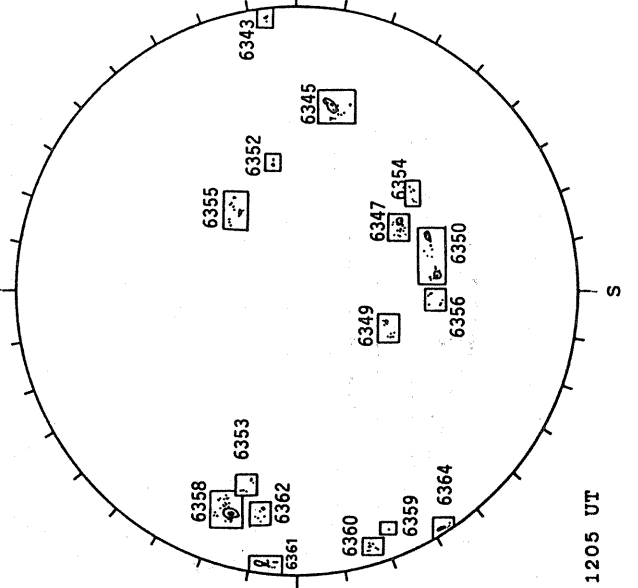
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



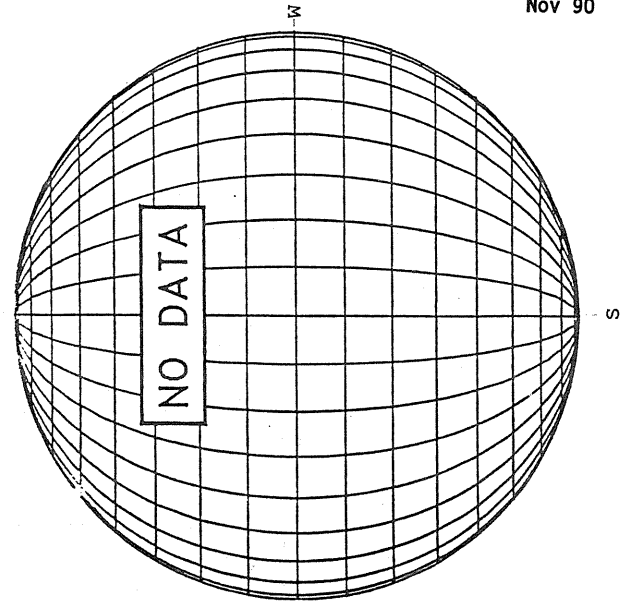
1533 UT

RAMEY SUNSPOT



1205 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

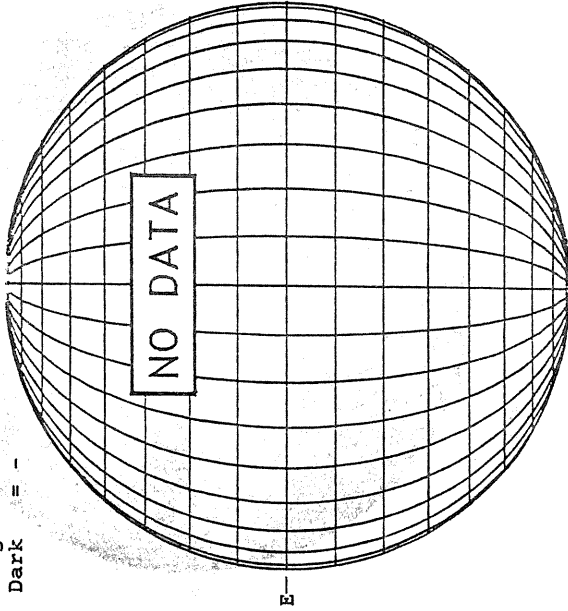


NOVEMBER 7, 1990 ( P = 23.42, B<sub>0</sub> = 3.76, I<sub>0</sub> = 197.25 )

78  
NOV 90

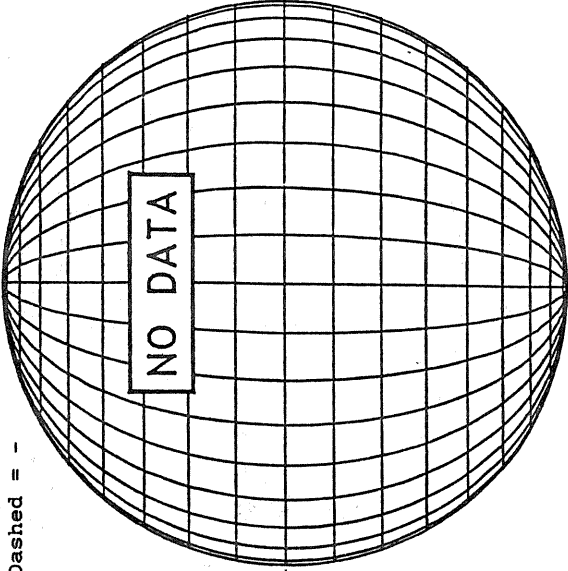
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



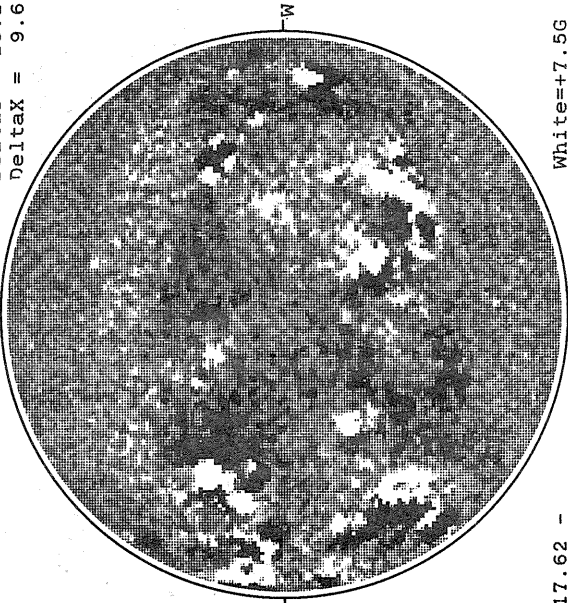
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

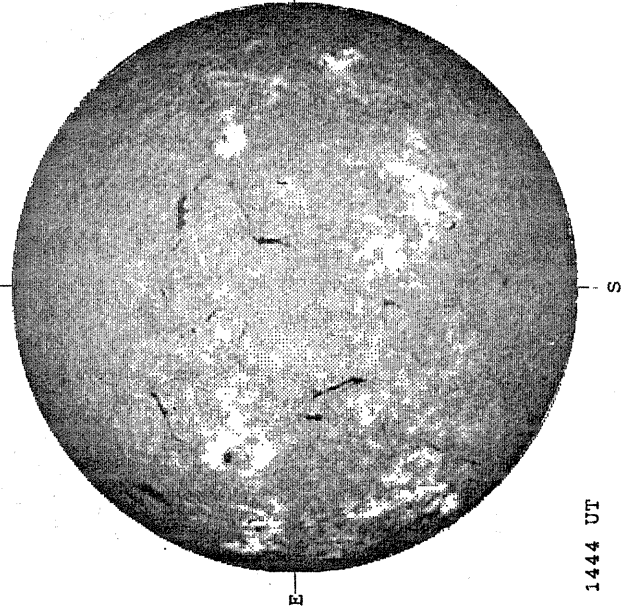
Delta<sub>Y</sub> = 13.1  
Delta<sub>X</sub> = 9.6



17.62 -  
18.58 UT

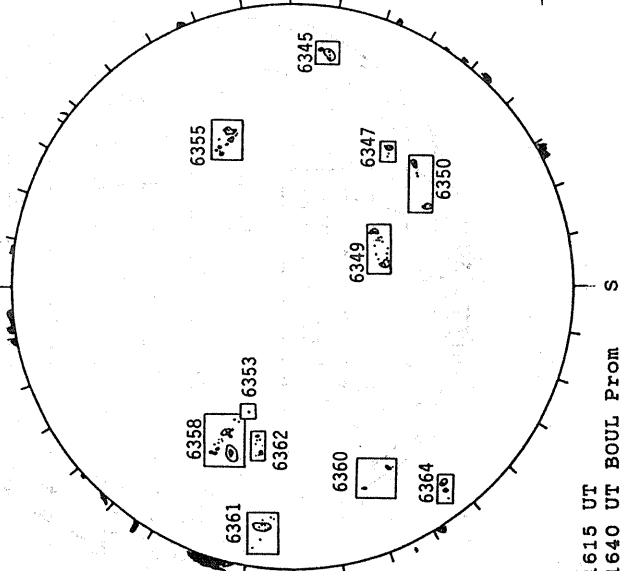
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



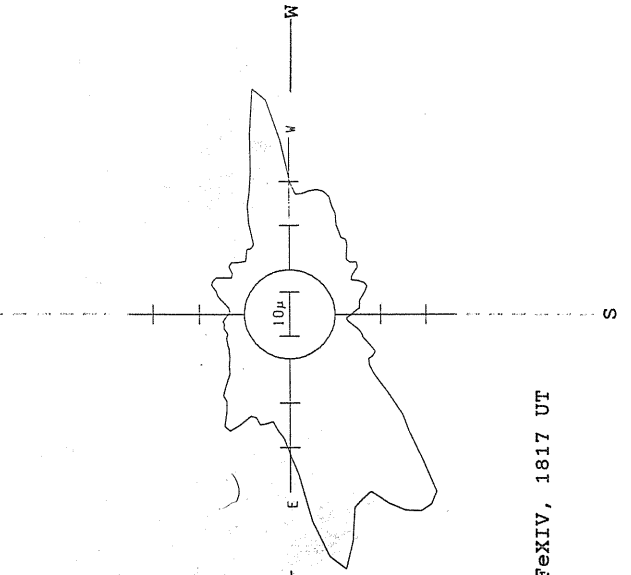
1444 UT

BOULDER SUNSPOT



1615 UT  
1640 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



— FeXIV, 1817 UT

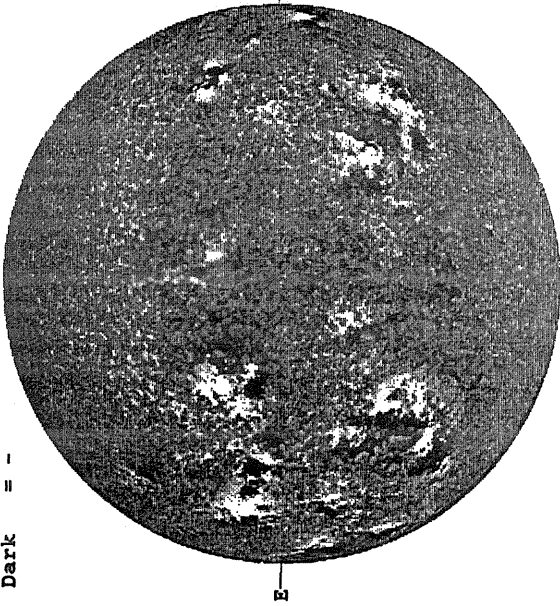


NOVEMBER 8, 1990 ( P= 23.21, B<sub>0</sub> = 3.65, L<sub>0</sub> = 184.07 )

KITT PEAK MAGNETOGRAM

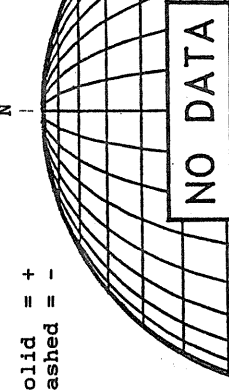
Bright = +  
Dark = -

Solid = +  
Dashed = -

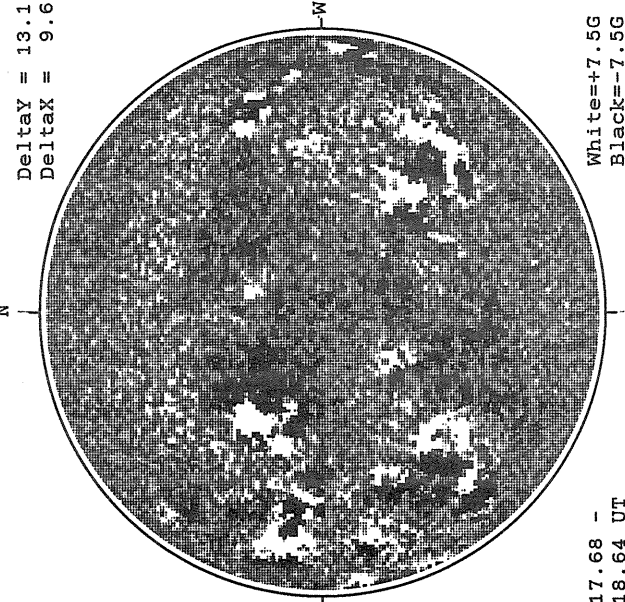


1940 UT

STANFORD MAGNETOGRAM



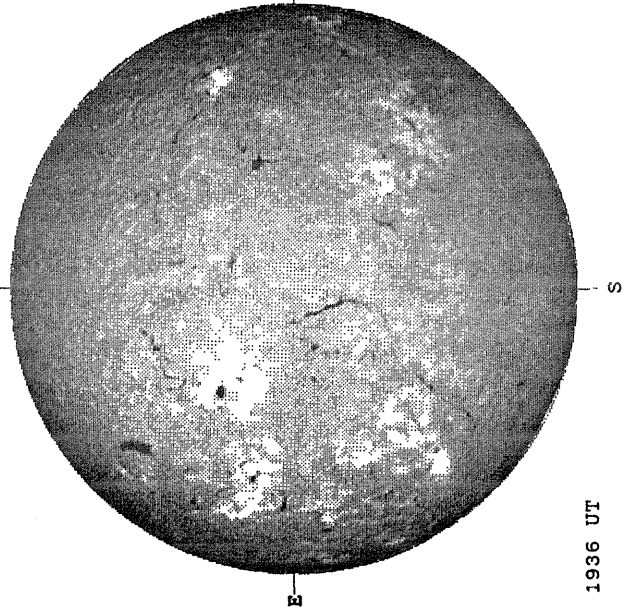
MT. WILSON MAGNETOGRAM



17.68 -  
18.64 UT

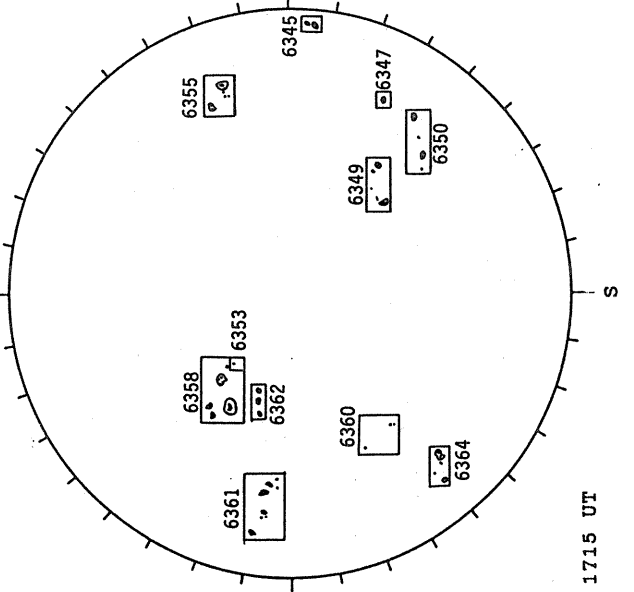
White=+7.5G  
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



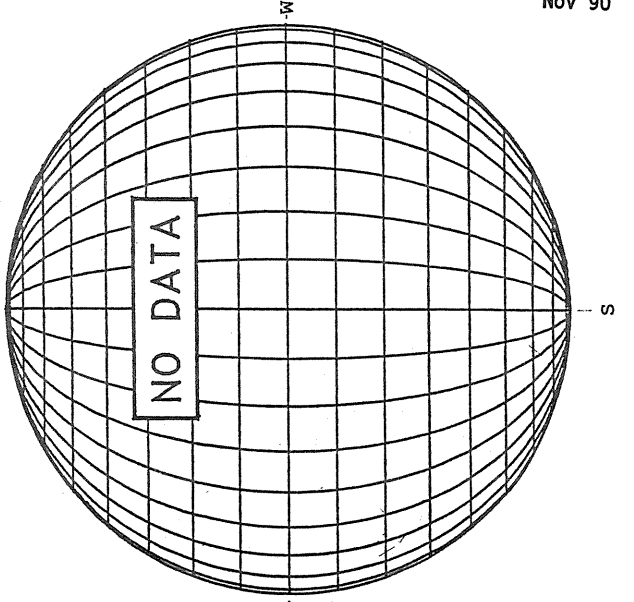
1936 UT

BOULDER SUNSPOT



1715 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



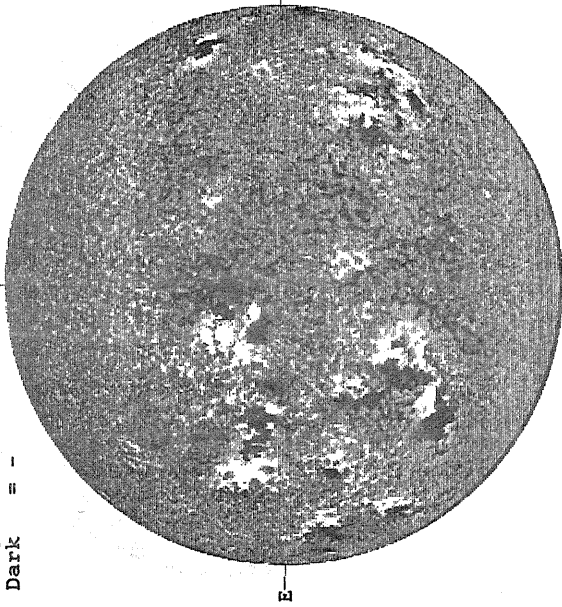
NOVEMBER 9, 1990 ( P = 22.98, B<sub>0</sub> = 3.54, I<sub>0</sub> = 170.88 )

80  
Nov 90

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -

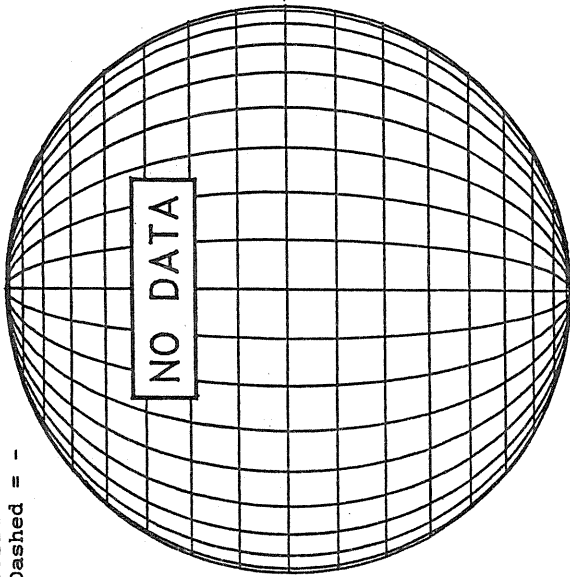
Solid = +  
Dashed = -



1827 UT

STANFORD MAGNETOGRAM

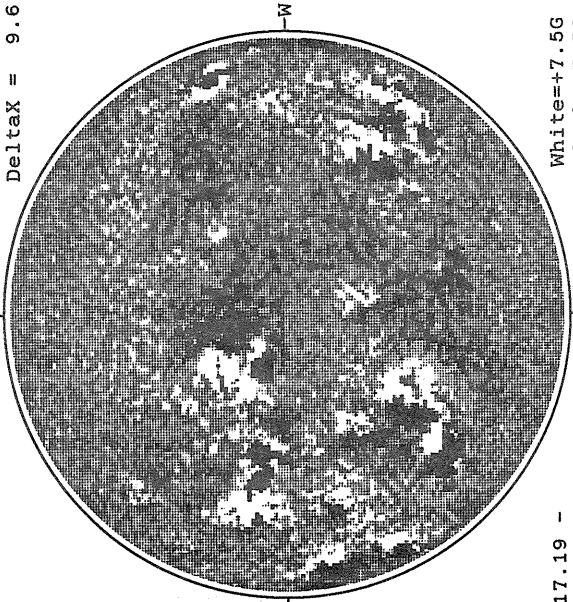
NO DATA



17.19 -  
18.15 UT

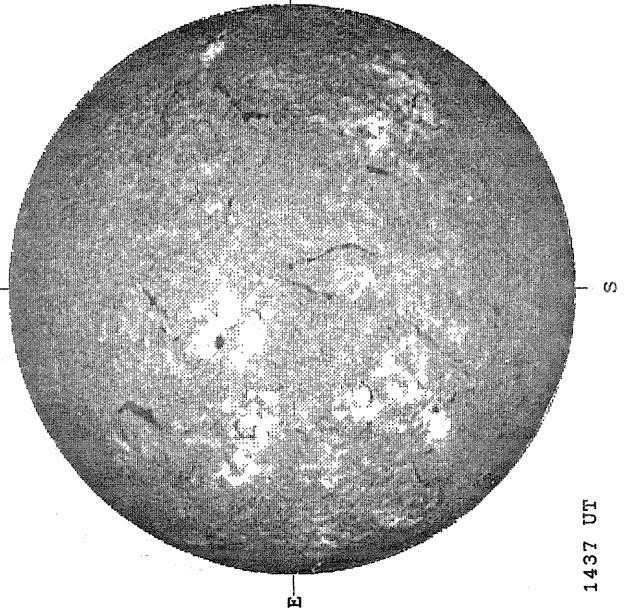
MT. WILSON MAGNETOGRAM

DeltaY = 13.1  
DeltaX = 9.6



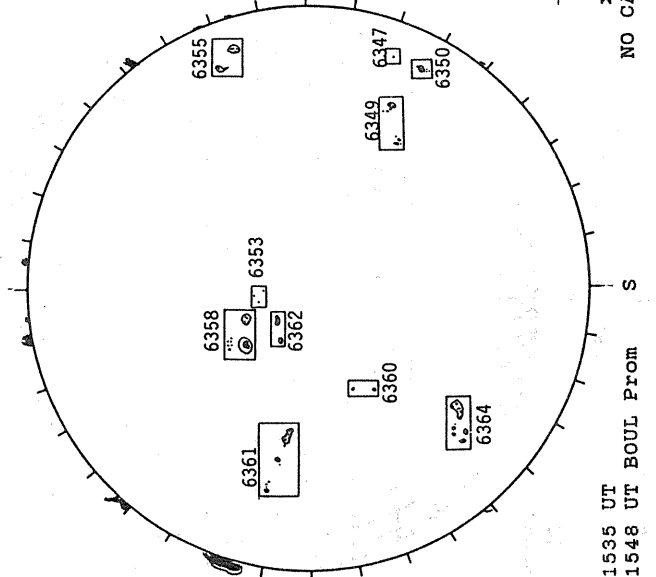
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



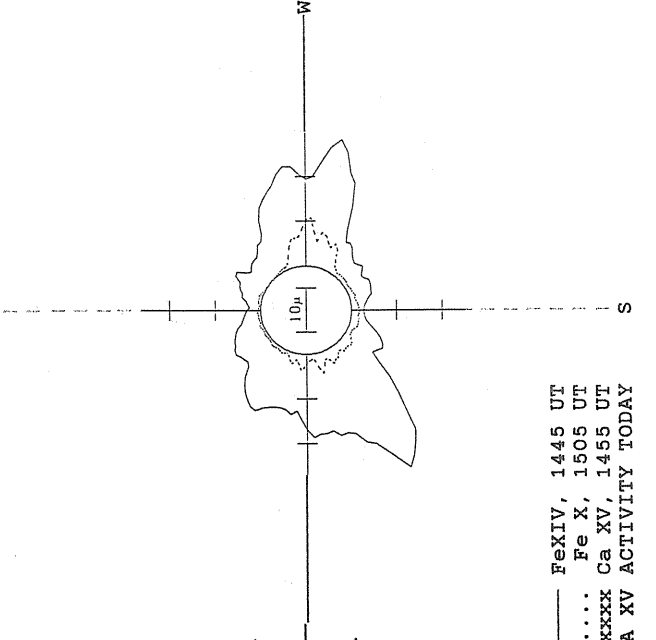
1437 UT

BOULDER SUNSPOT



1535 UT BOUL Prom  
1548 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

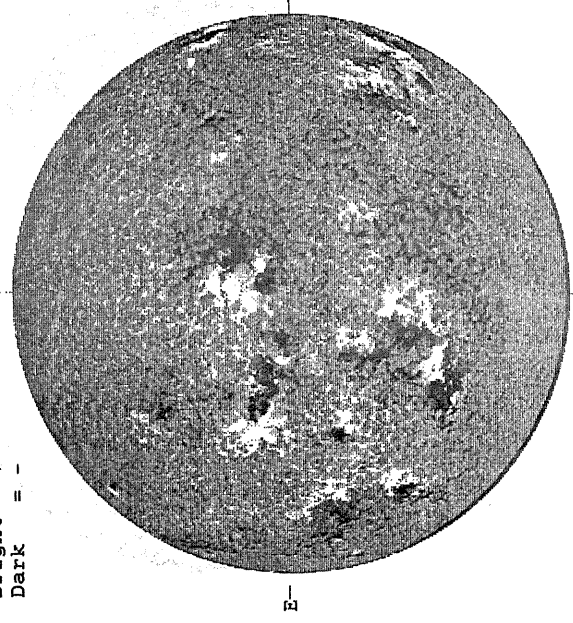


— Fe XIV, 1445 UT  
.... Fe X, 1505 UT  
xxxx Ca XV, 1455 UT  
NO CA XV ACTIVITY TODAY

NOVEMBER 10, 1990 ( P = 22.75, B<sub>0</sub> = 3.43, L<sub>0</sub> = 157.70 )

KITT PEAK MAGNETOGRAM

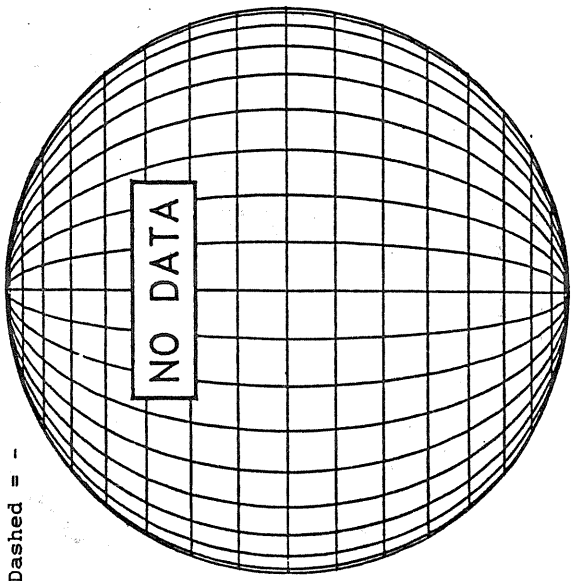
Bright = +  
Dark = -



1615 UT

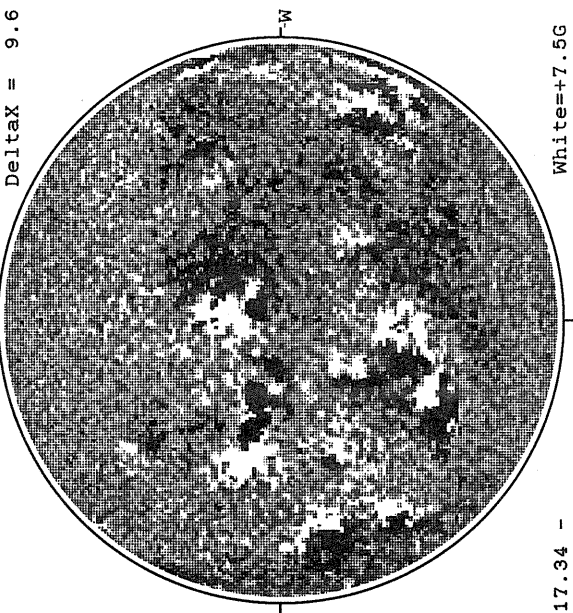
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

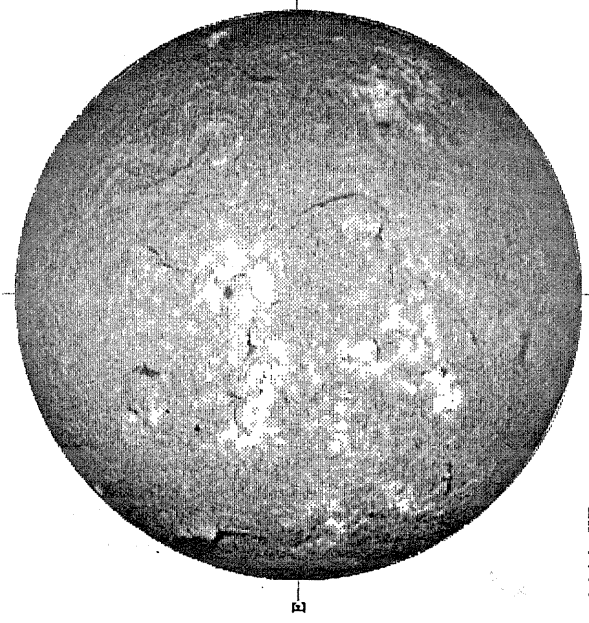
Delta<sub>Y</sub> = 13.1  
Delta<sub>X</sub> = 9.6



17.34 -  
18.31 UT

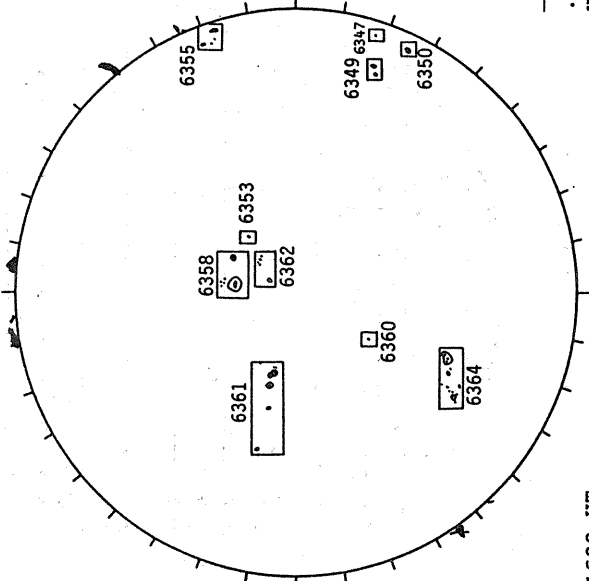
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



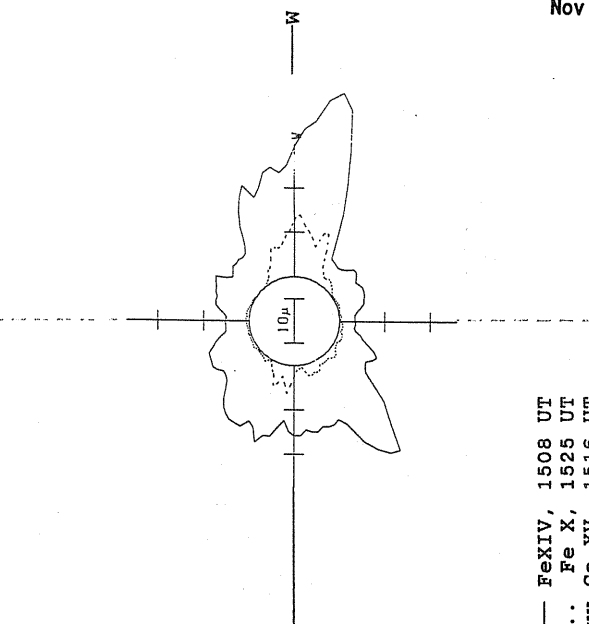
1444 UT

BOULDER SUNSPOT



1620 UT  
1710 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



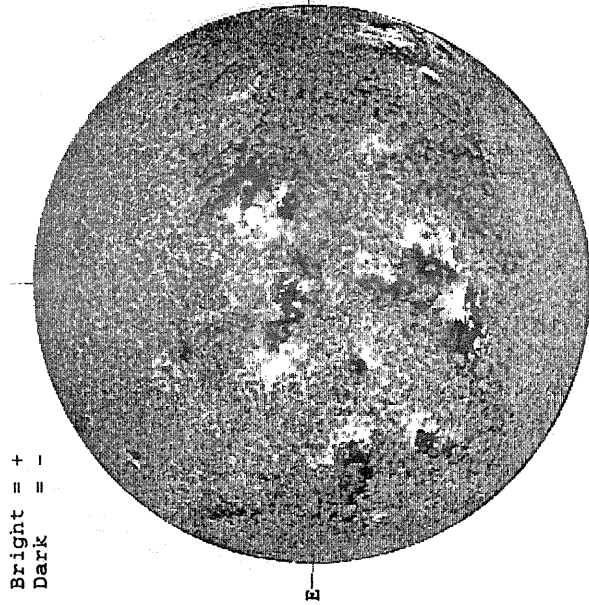
— FeXIV, 1508 UT  
... Fe X, 1525 UT  
xxxx Ca XV, 1516 UT  
NO CA XV ACTIVITY TODAY



NOVEMBER 11, 1990 ( P= 22.51, B<sub>0</sub> = 3.32, L<sub>0</sub> = 144.51 )

KITT PEAK MAGNETOGRAM

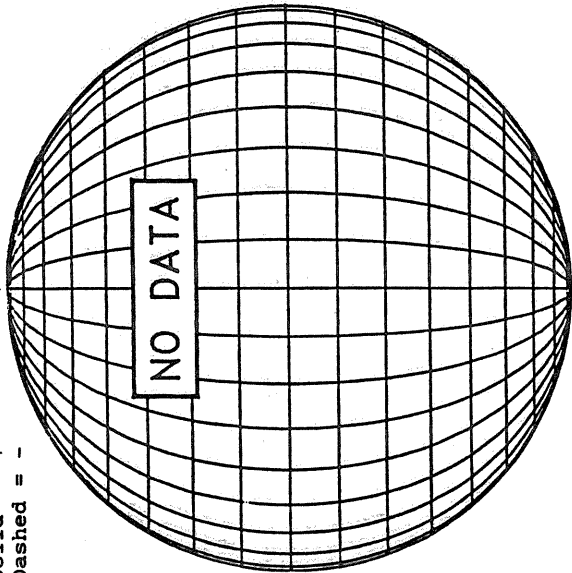
Bright = +  
Dark = -



1618 UT

STANFORD MAGNETOGRAM

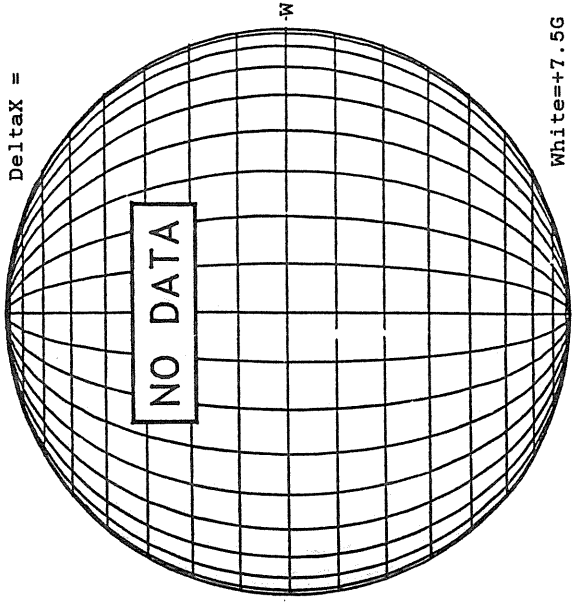
Solid = +  
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM

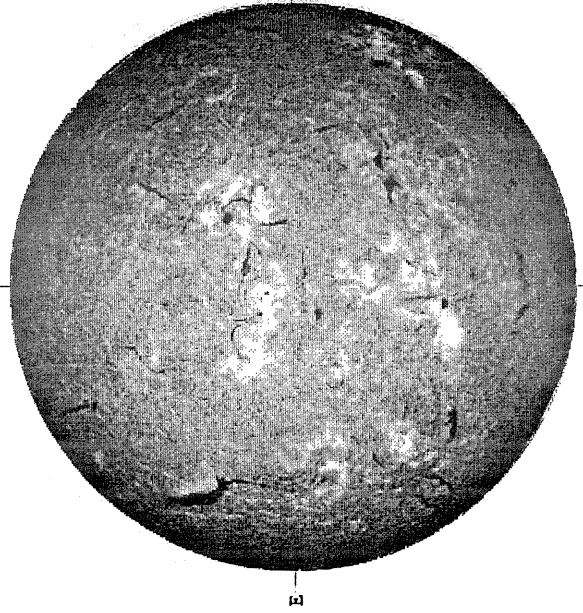
Deltaγ =  
Deltaα =



NO DATA

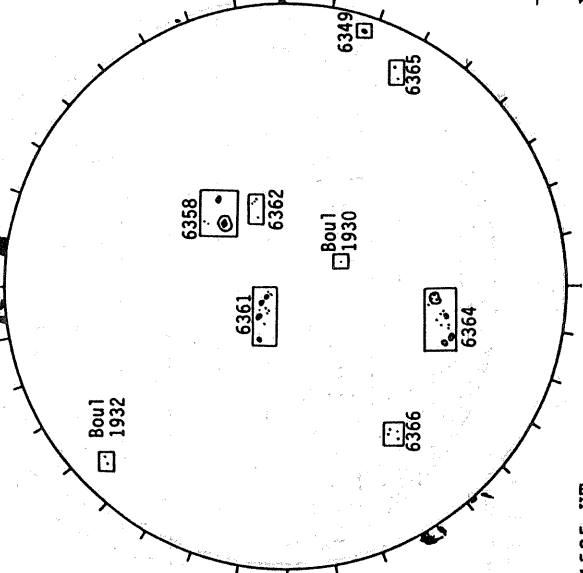
White=+7.5G  
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



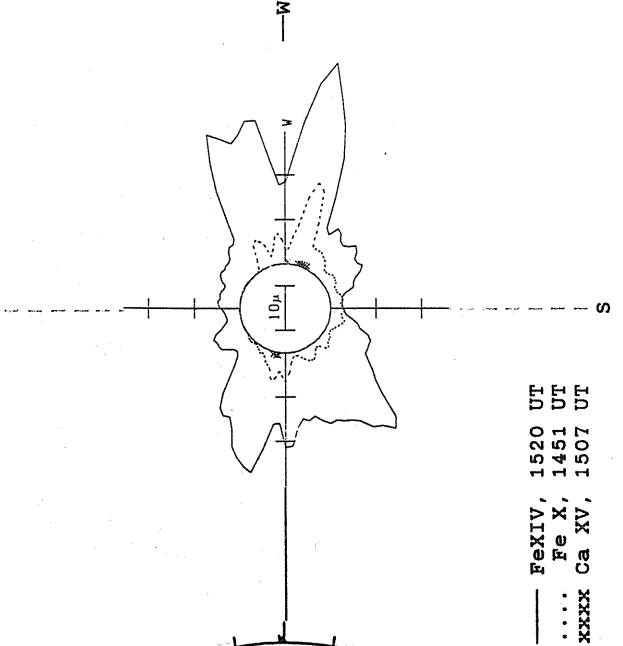
1507 UT

BOULDER SUNSPOT



1525 UT  
1540 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

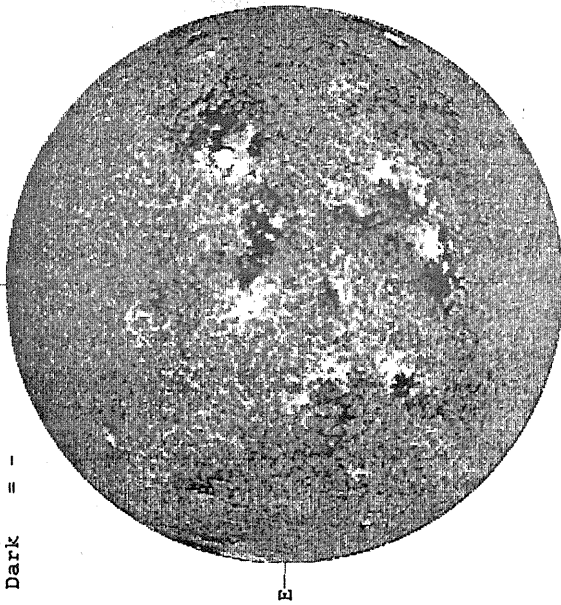


— Fe XIV, 1520 UT  
.... Fe X, 1451 UT  
- - - - Ca XV, 1507 UT

NOVEMBER 12, 1990 ( P= 22.27, B<sub>0</sub> = 3.20, L<sub>0</sub> = 131.33 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1639 UT

STANFORD MAGNETOGRAM

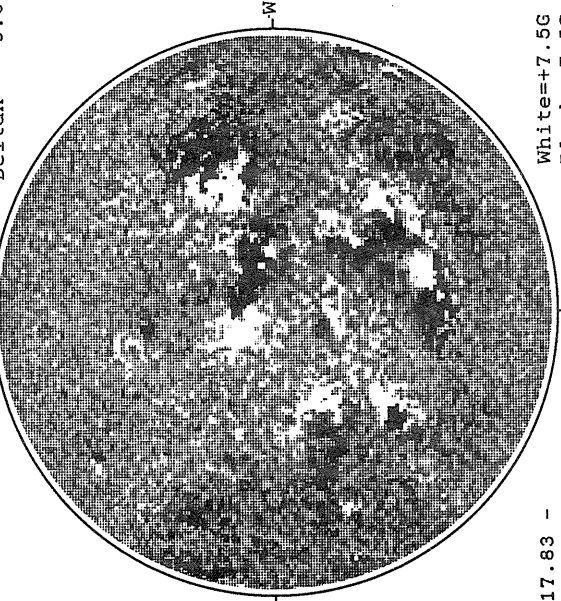
Solid = +  
Dashed = -



2250 UT

MT. WILSON MAGNETOGRAM

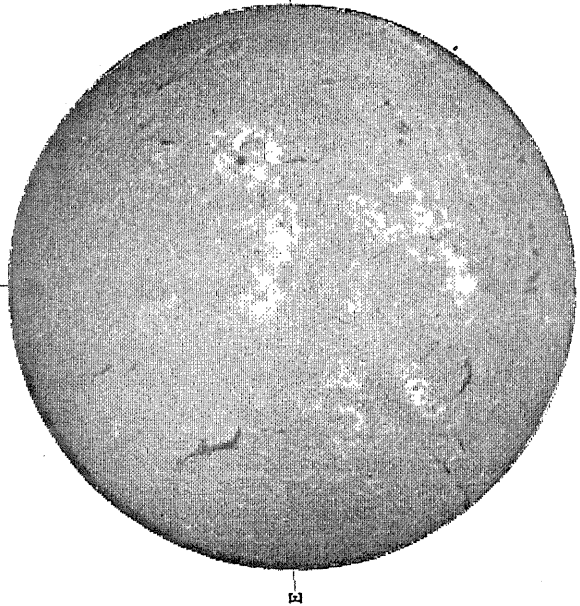
Delta<sub>Y</sub> = 13.1  
Delta<sub>X</sub> = 9.6



White = +7.5G  
Black = -7.5G

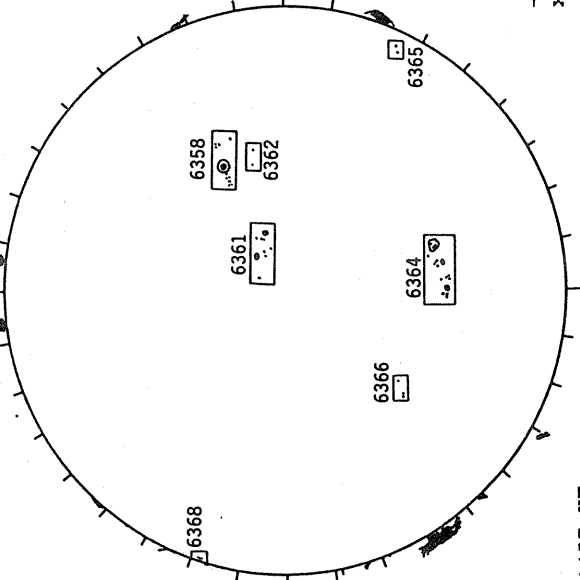
17.83 -  
18.80 UT

SACRAMENTO PEAK H-ALPHA



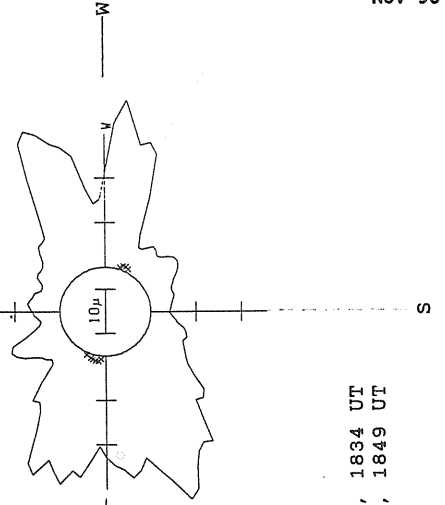
1531 UT

BOULDER SUNSPOT



1457 UT  
1635 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

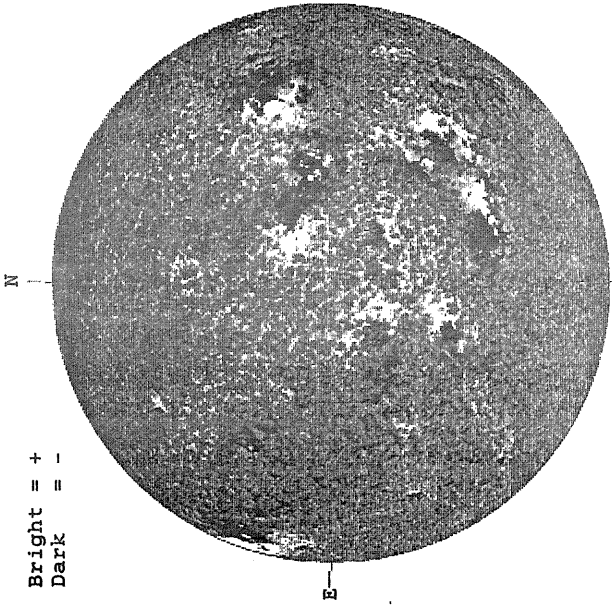


— FeXIV, 1834 UT  
xxxx Ca XV, 1849 UT

NOVEMBER 13, 1990 ( P= 22.01, B<sub>0</sub> = 3.09, L<sub>0</sub> = 118.15 )

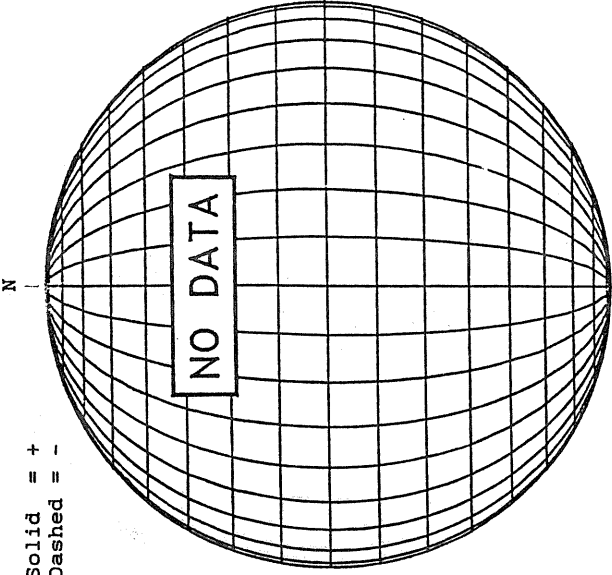
84  
Nov 90

KITT PEAK MAGNETOGRAM

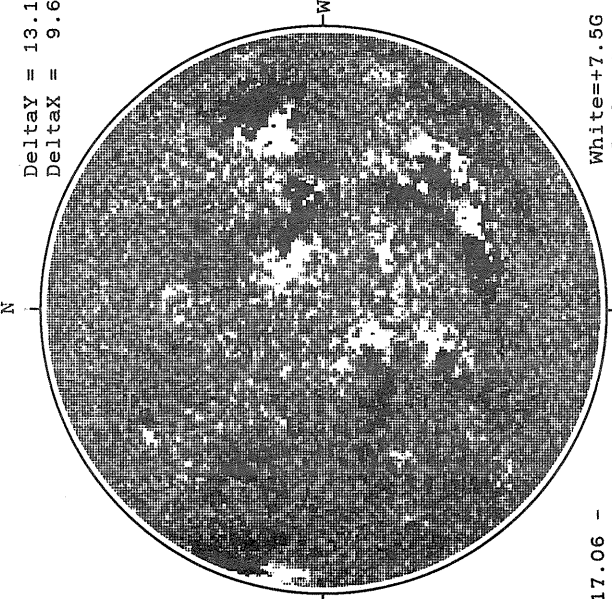


1647 UT

STANFORD MAGNETOGRAM

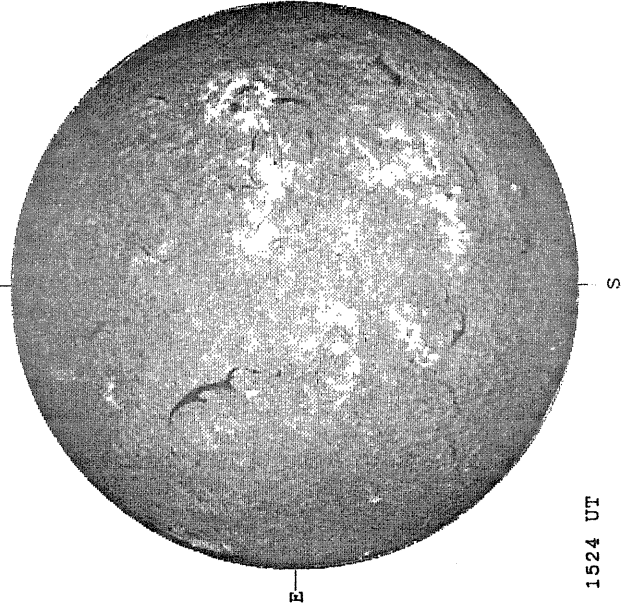


MT. WILSON MAGNETOGRAM



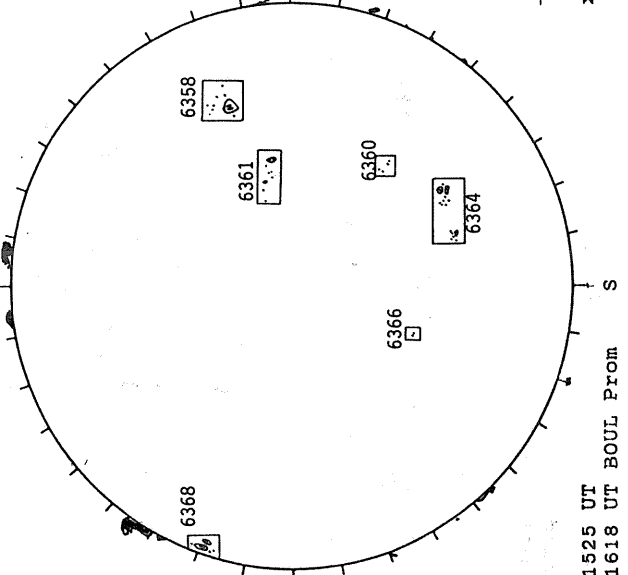
17.06 -  
18.02 UT

SACRAMENTO PEAK H-ALPHA



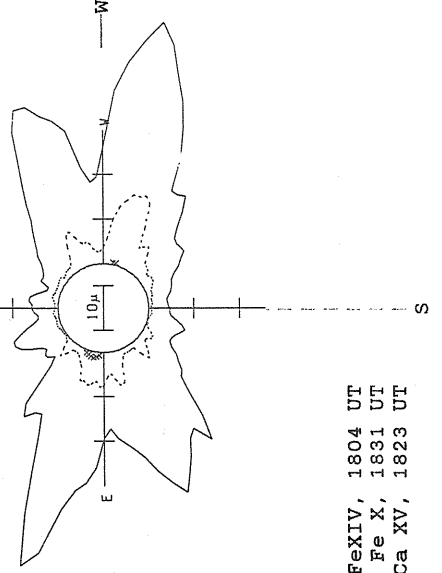
1524 UT

BOULDER SUNSPOT



1525 UT  
1618 UT BOUL Prom

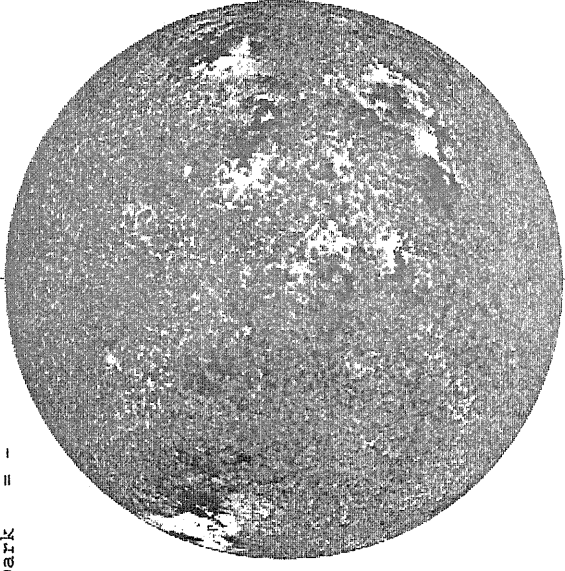
SACRAMENTO PEAK CORONA (1.15 Radii)



NOVEMBER 14, 1990 ( P = 21.75, B<sub>0</sub> = 2.97, L<sub>0</sub> = 104.96 )

KITT PEAK MAGNETOGRAM

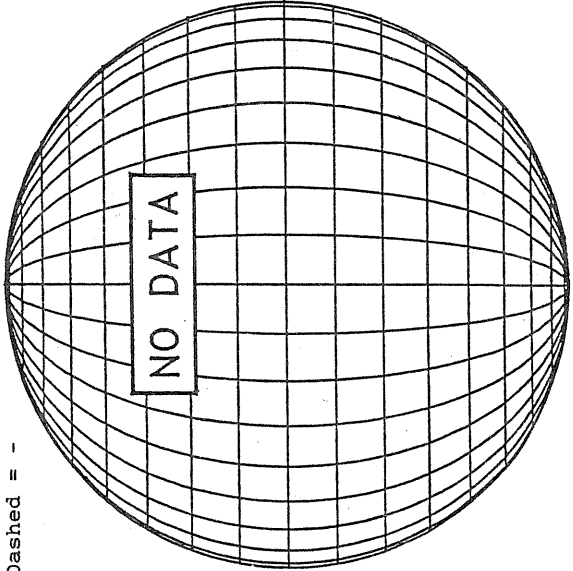
Bright = +  
Dark = -



1633 UT

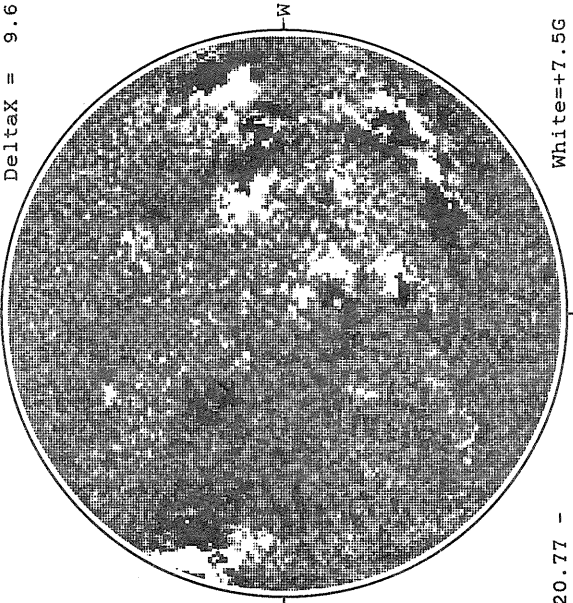
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

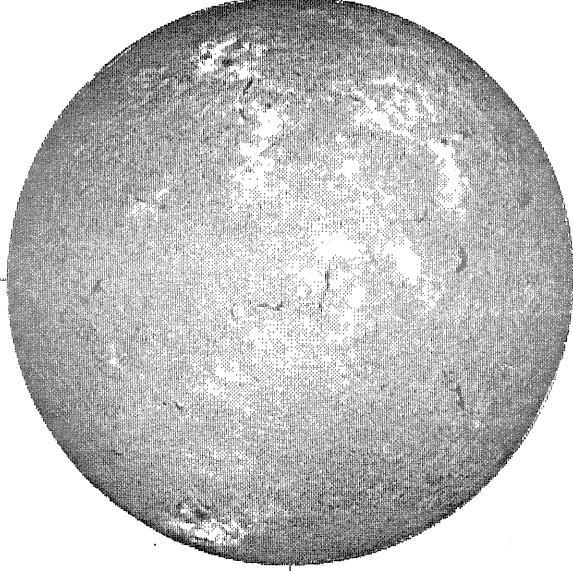
DeltaY = 13.1  
DeltaX = 9.6



20.77 -  
21.73 UT

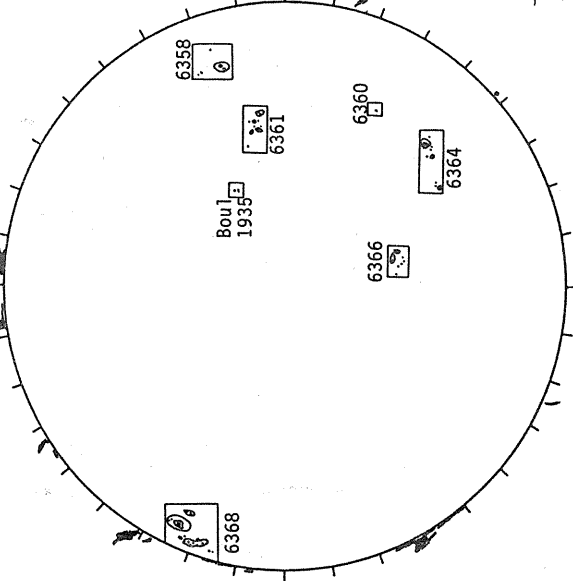
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



1536 UT

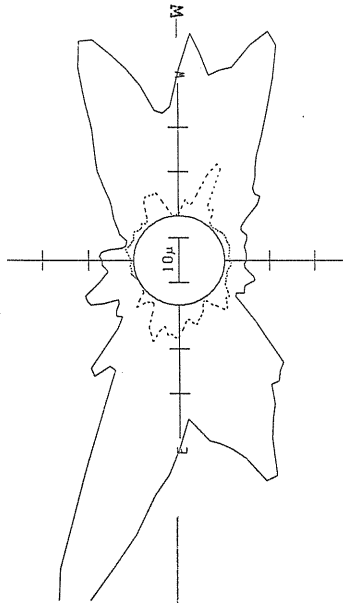
BOULDER SUNSPOT



1530 UT

1537 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



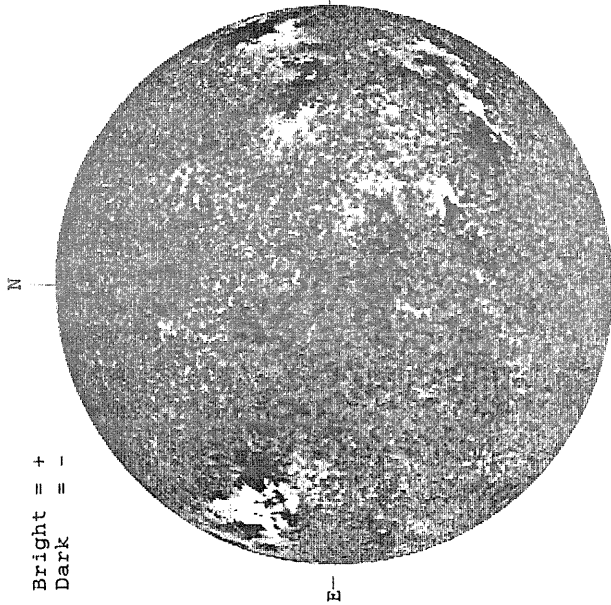
— FeXIV, 1619 UT  
.... Fe X, 1647 UT  
xxxxx Ca XV, 1633 UT  
NO CA XV ACTIVITY TODAY



NOVEMBER 15, 1990 ( P = 21.48, B<sub>0</sub> = 2.86, L<sub>0</sub> = 91.78 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1651 UT

STANFORD MAGNETOGRAM

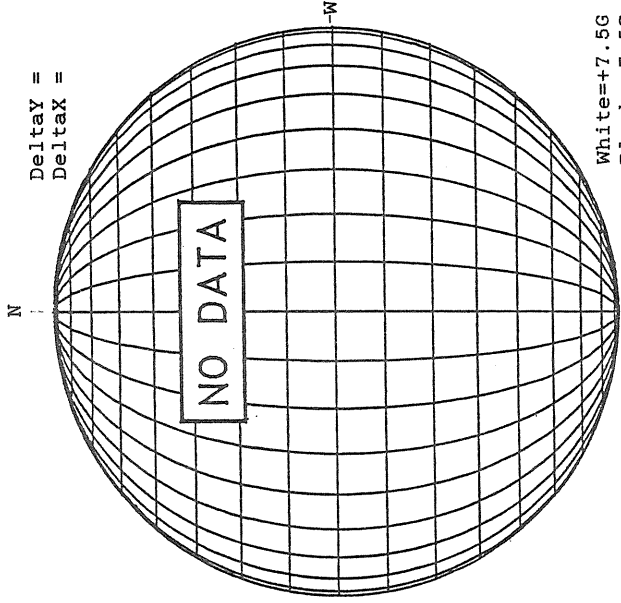
Solid = +  
Dashed = -



2305 UT

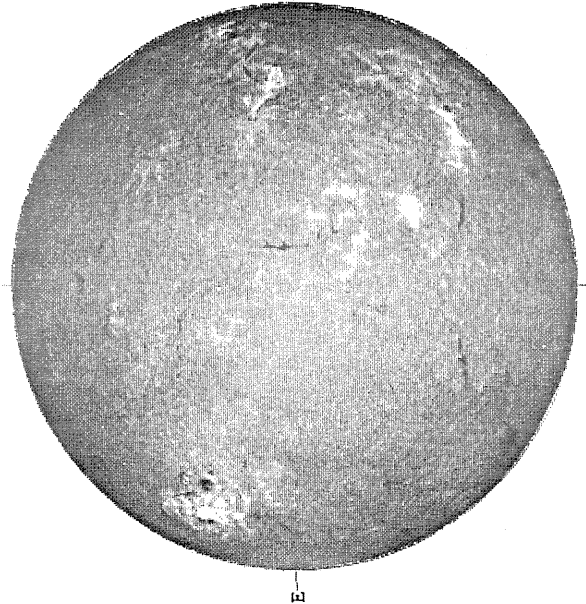
MT. WILSON MAGNETOGRAM

Delta<sub>γ</sub> =  
Delta<sub>α</sub> =



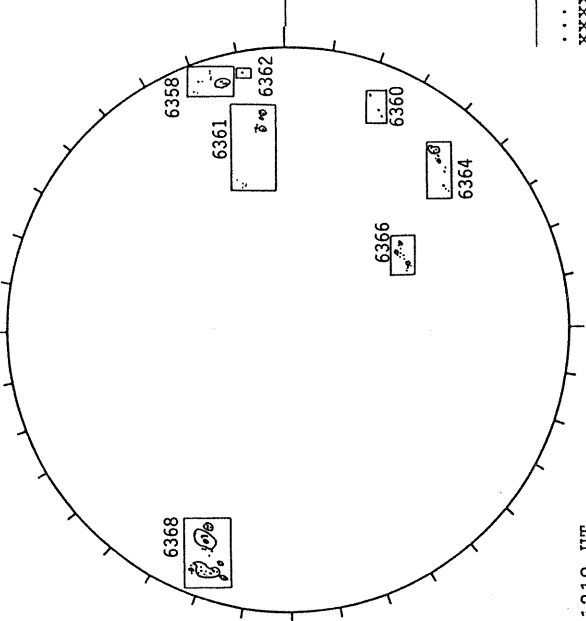
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



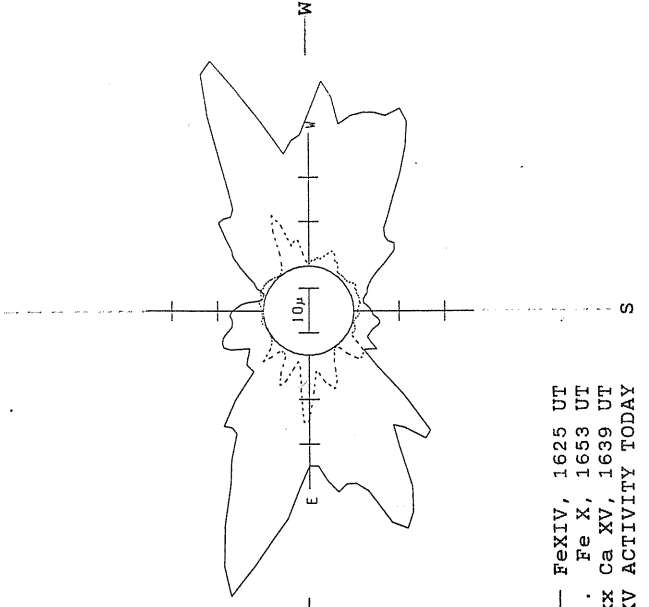
1537 UT

RAMEY SUNSPOT



1219 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

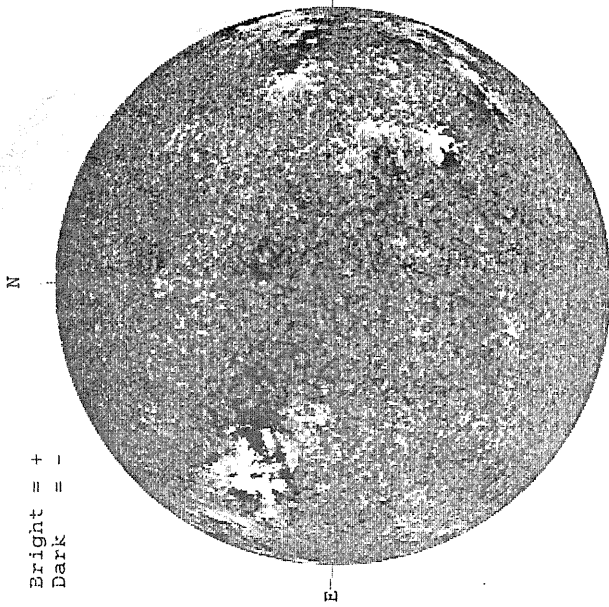


— FeXIV, 1625 UT  
 ..... Fe X, 1653 UT  
 xxxxx Ca XV, 1639 UT  
 NO CA XV ACTIVITY TODAY

NOVEMBER 16, 1990 ( P= 21.20, B<sub>0</sub> = 2.74, L<sub>0</sub> = 78.60 )

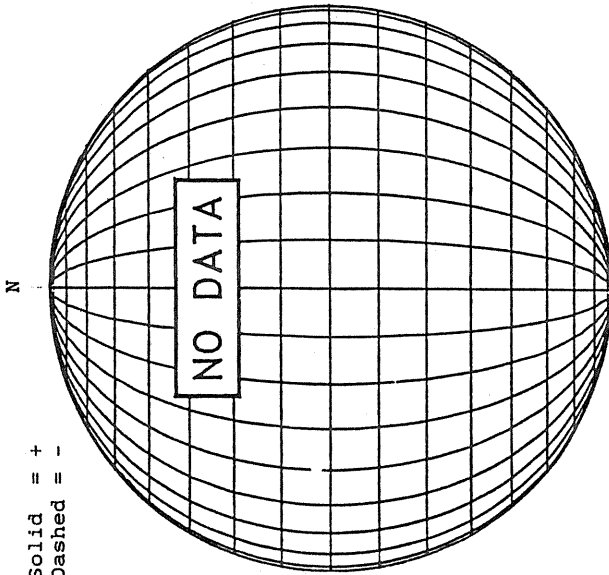
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



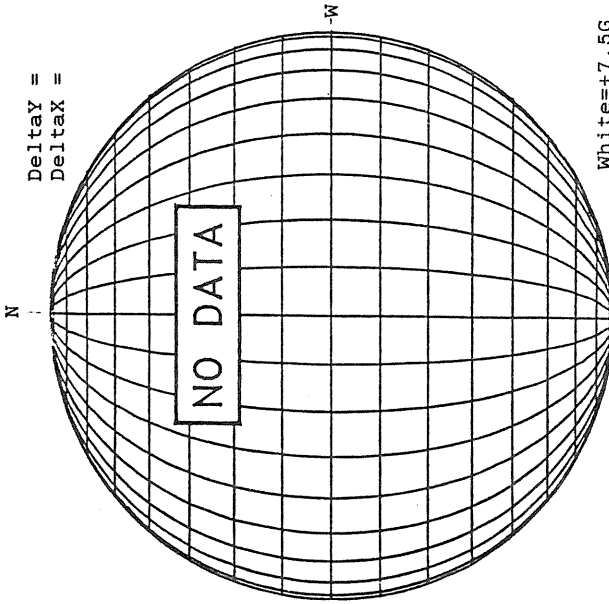
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



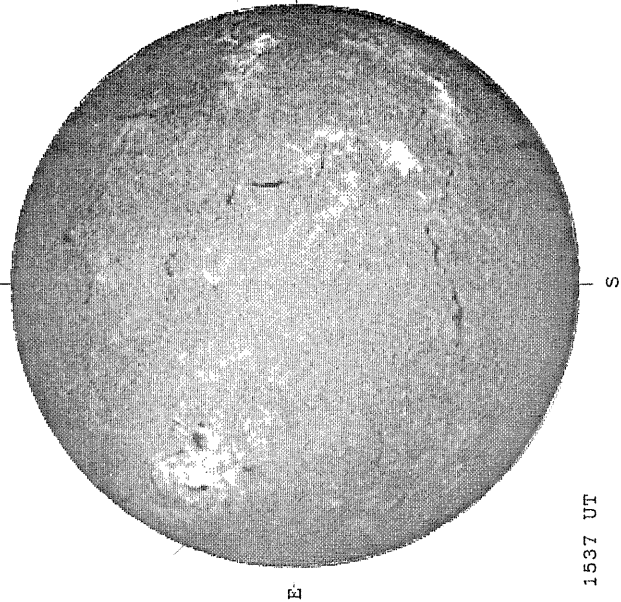
MT. WILSON MAGNETOGRAM

Delta Y =  
Delta X =

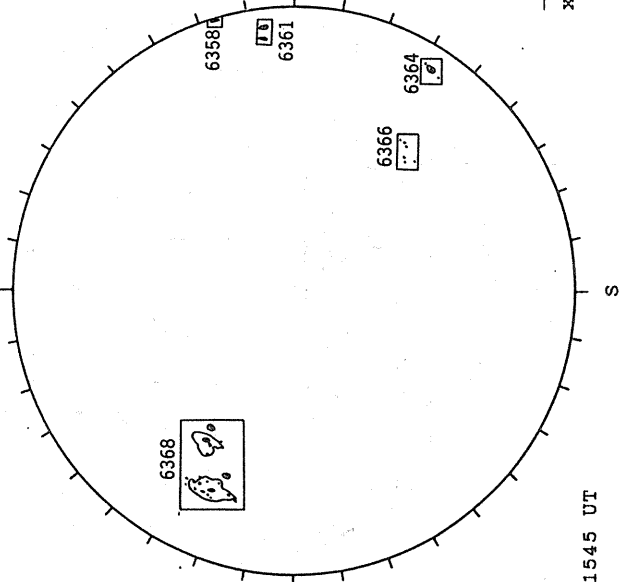


White = +7.5G  
Black = -7.5G

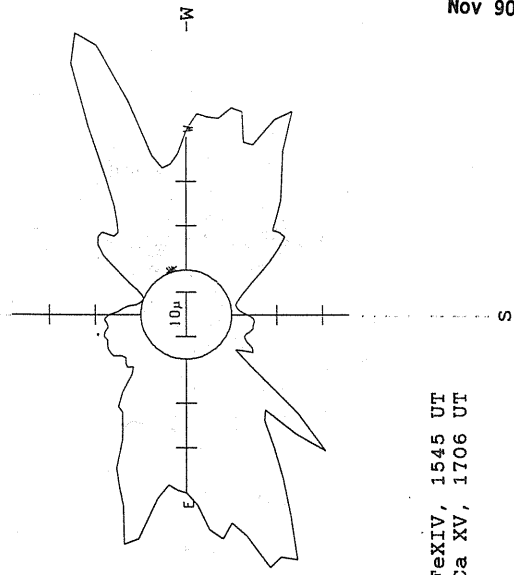
SACRAMENTO PEAK R-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

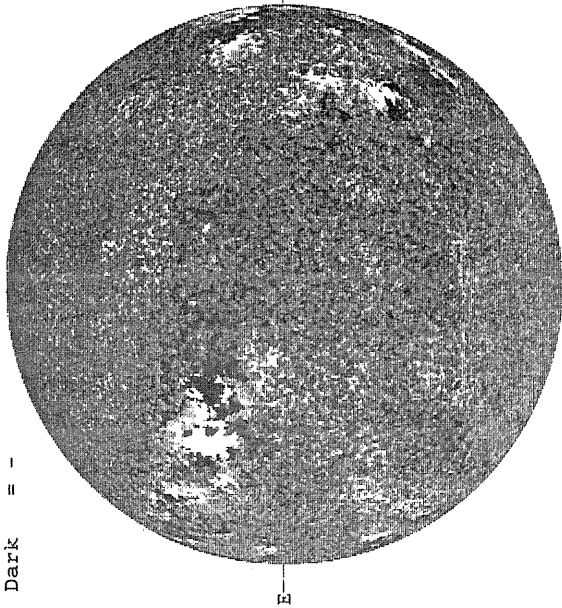


— FeXIV, 1545 UT  
xxxx Ca XV, 1706 UT

NOVEMBER 17, 1990 ( P= 20.92, B<sub>0</sub> = 2.62, L<sub>0</sub> = 65.42 )

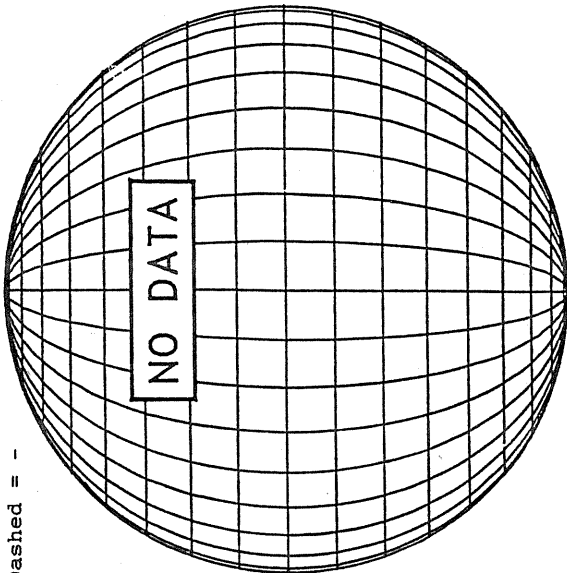
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



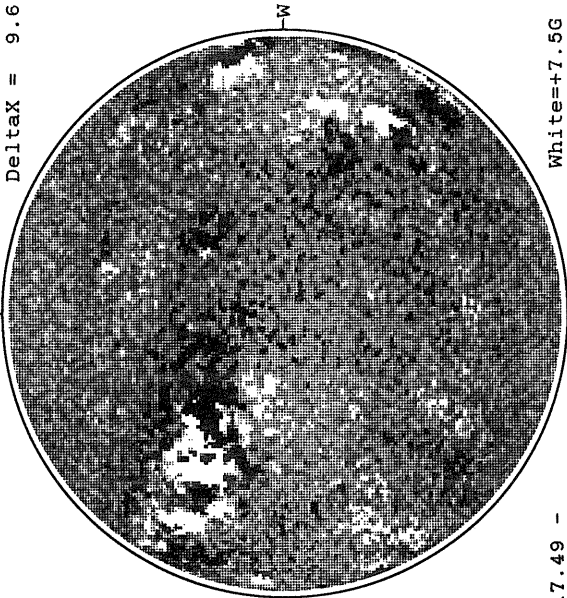
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

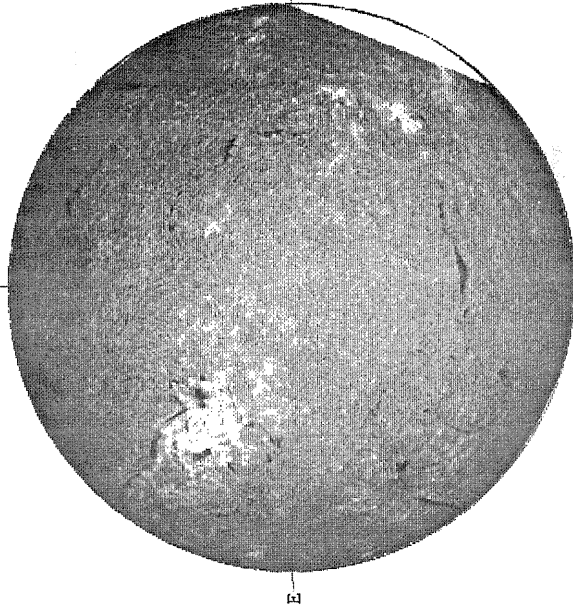


MT. WILSON MAGNETOGRAM

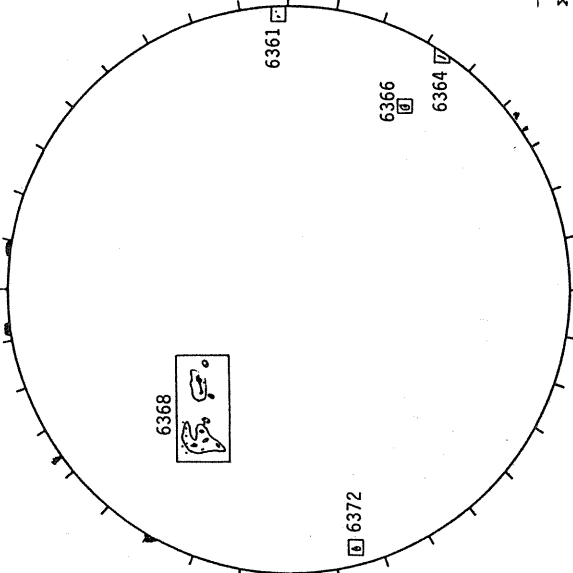
DeltaY = 13.1  
DeltaX = 9.6



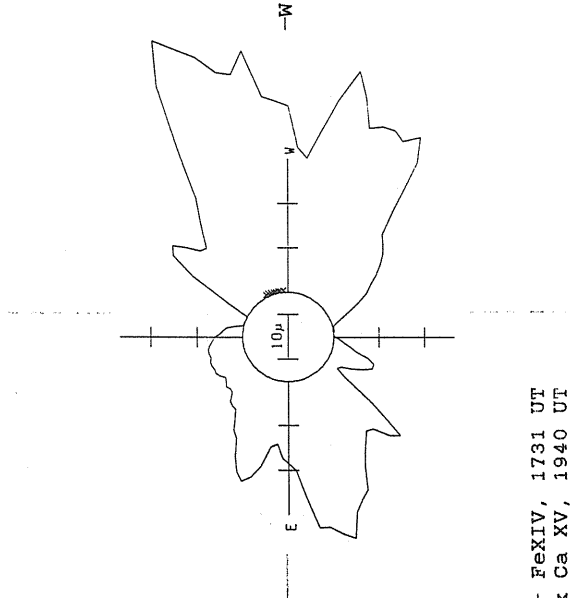
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



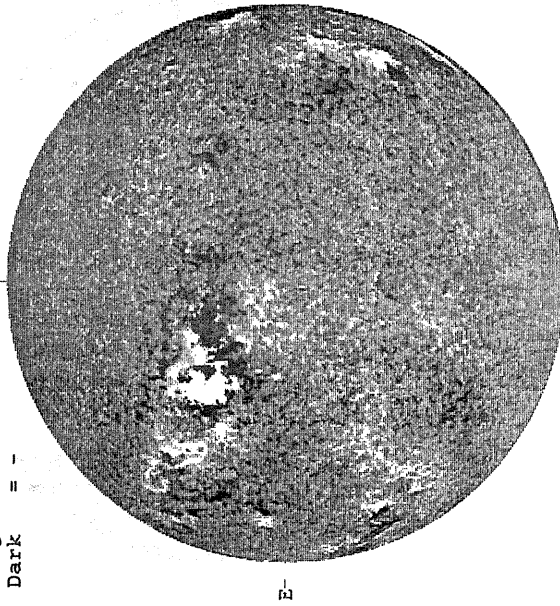
SACRAMENTO PEAK CORONA (1.15 Radii)



NOVEMBER 18, 1990 (  $P = 20.63$ ,  $B_0 = 2.50$ ,  $I_0 = 52.24$  )

KITT PEAK MAGNETOGRAM

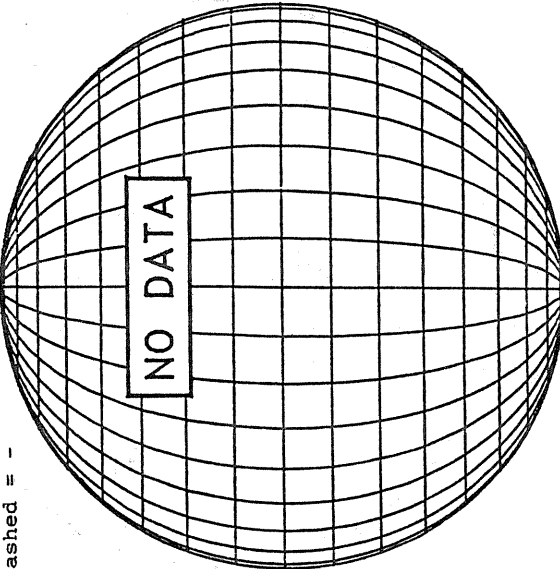
Bright = +  
Dark = -



1613 UT

STANFORD MAGNETOGRAM

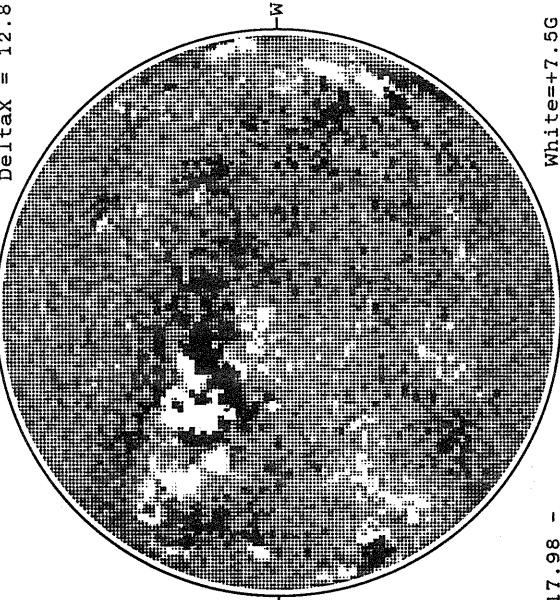
Solid = +  
Dashed = -



17.98 -  
18.33 UT

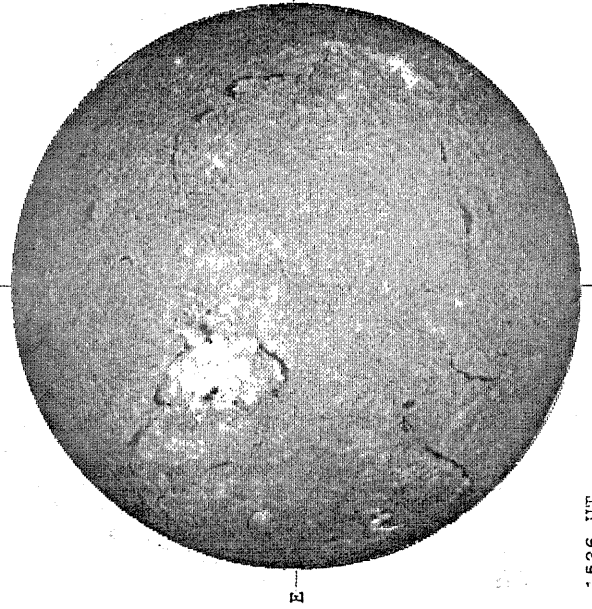
MT. WILSON MAGNETOGRAM

Delta Y = 19.8  
Delta X = 12.8



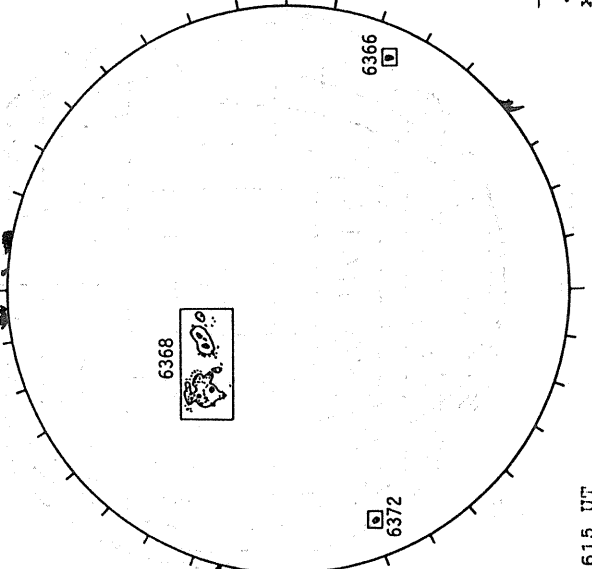
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



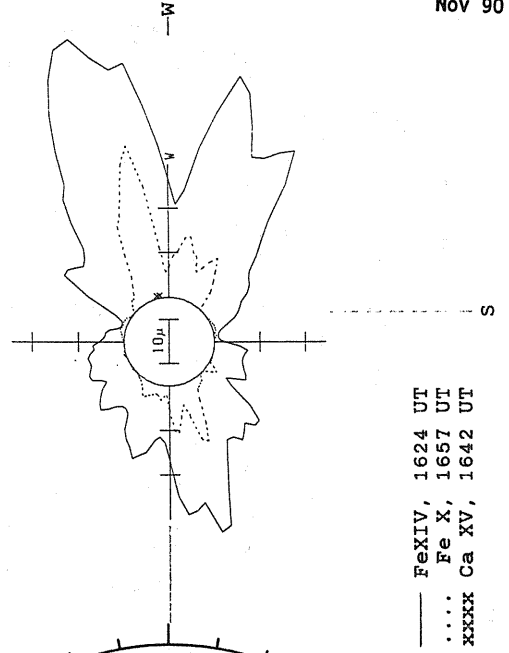
1536 UT

BOULDER SUNSPOT



1615 UT  
1625 UT BOUL PROM

SACRAMENTO PEAK CORONA (1.15 Radii)



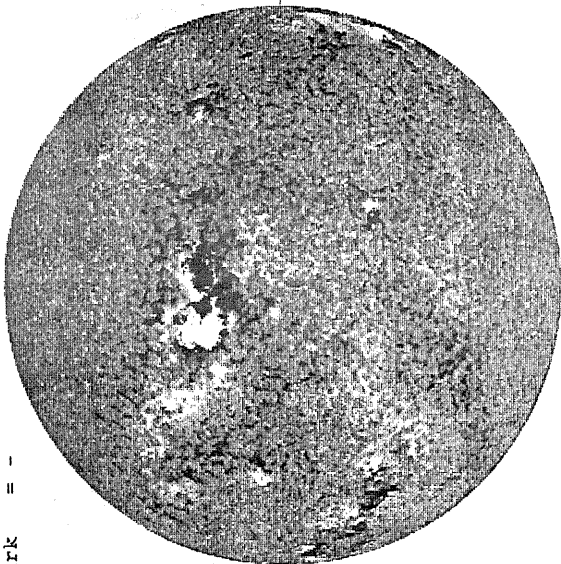
— FeXIV, 1624 UT  
.... Fe X, 1657 UT  
xxxxx Ca XV, 1642 UT



NOVEMBER 19, 1990 ( P= 20.33, B<sub>0</sub> = 2.38, L<sub>0</sub> = 39.05 )

KITT PEAK MAGNETOGRAM  
N

Bright = +  
Dark = -

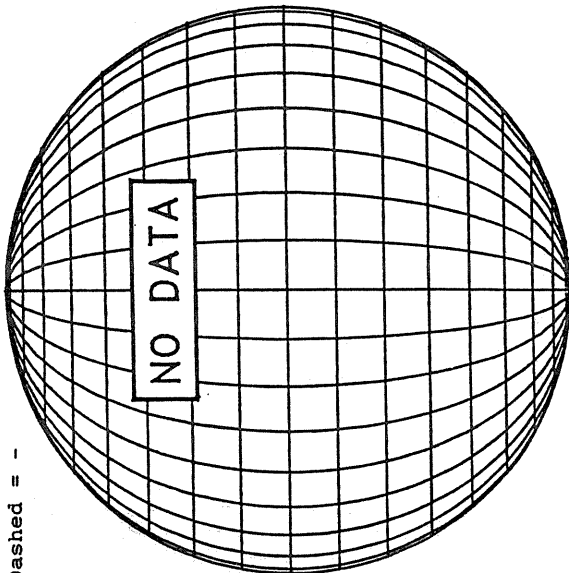


E

1631 UT

STANFORD MAGNETOGRAM  
N

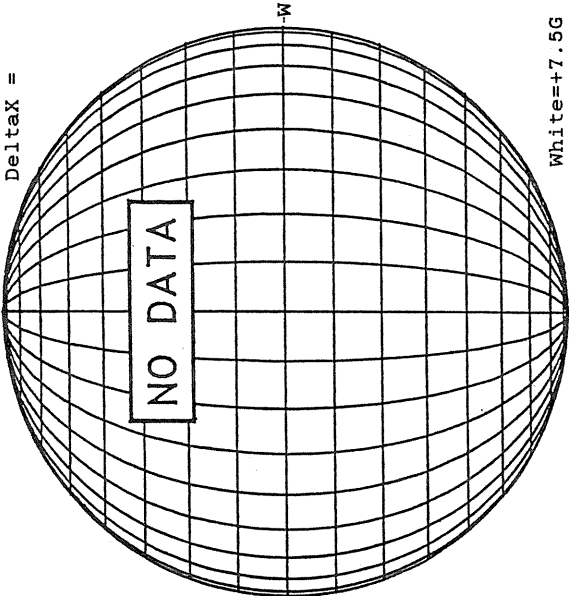
Solid = +  
Dashed = -



NO DATA

MT. WILSON MAGNETOGRAM  
N

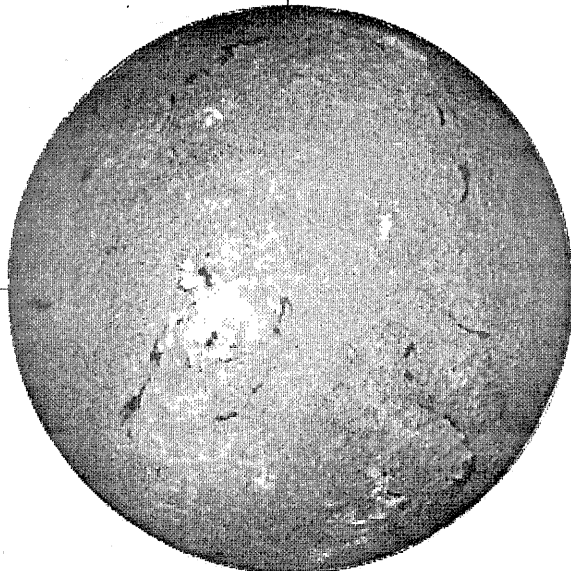
DeltaY =  
DeltaX =



NO DATA

White=+7.5G  
Black=-7.5G

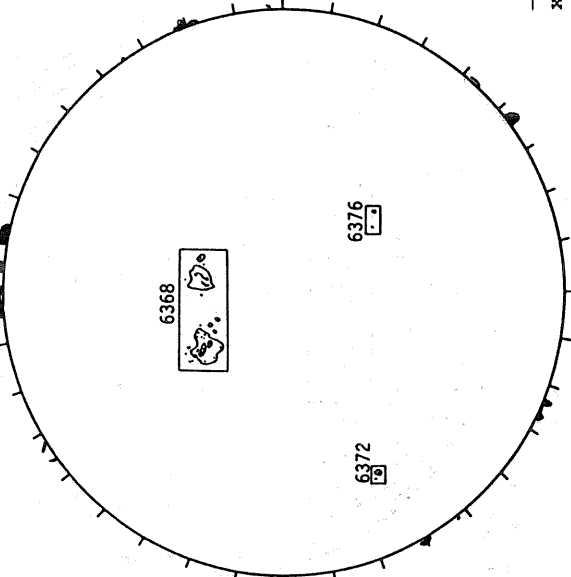
SACRAMENTO PEAK H-ALPHA



E

1532 UT

BOULDER SUNSPOT

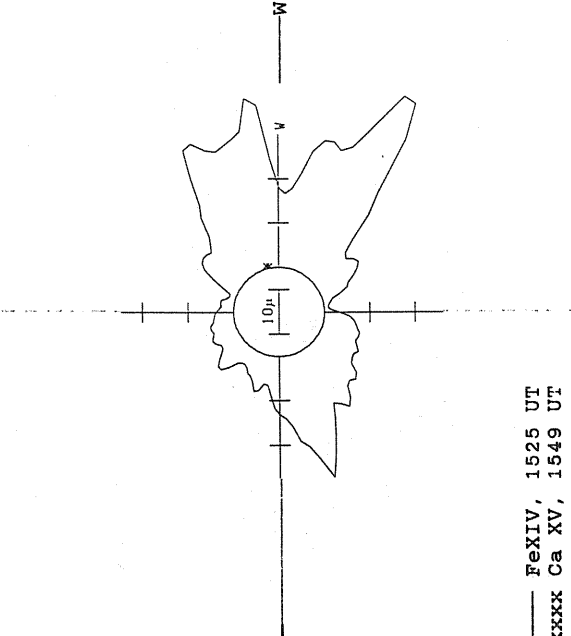


1534 UT

1632 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)



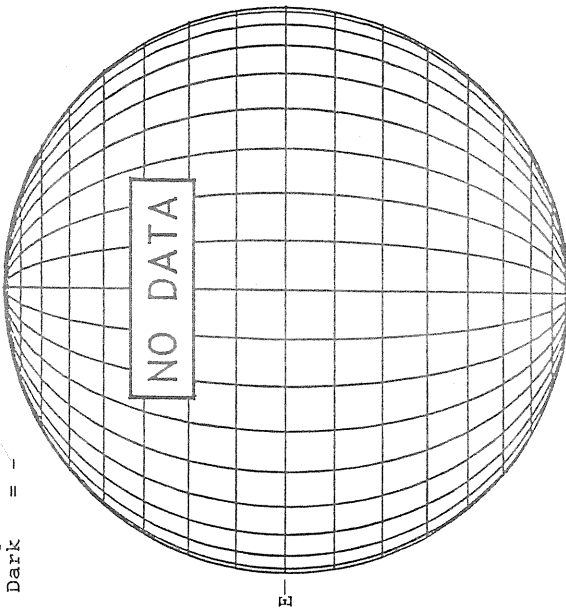
— FeXIV, 1525 UT  
xxxx Ca XV, 1549 UT

S

NOVEMBER 20, 1990 ( P= 20.02, B<sub>0</sub> = 2.26, L<sub>0</sub> = 25.87 )

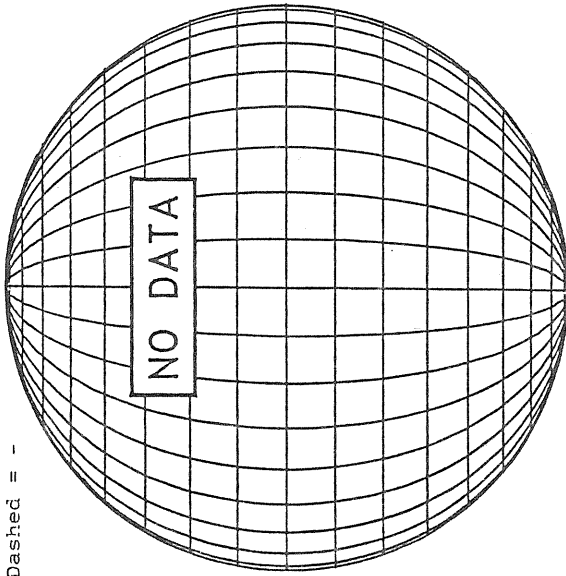
KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



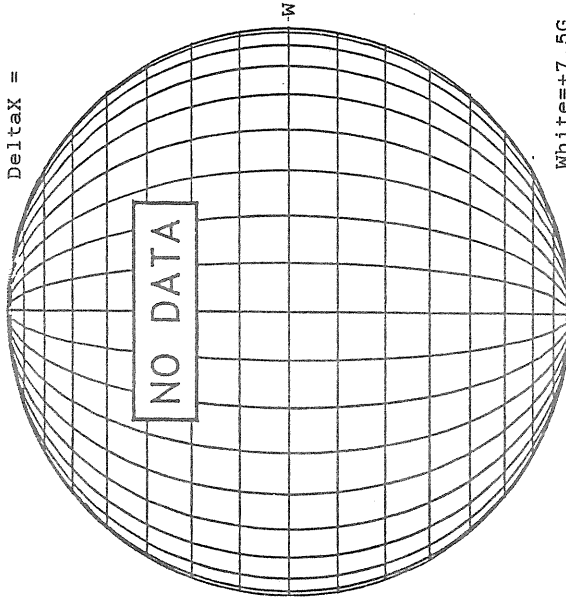
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



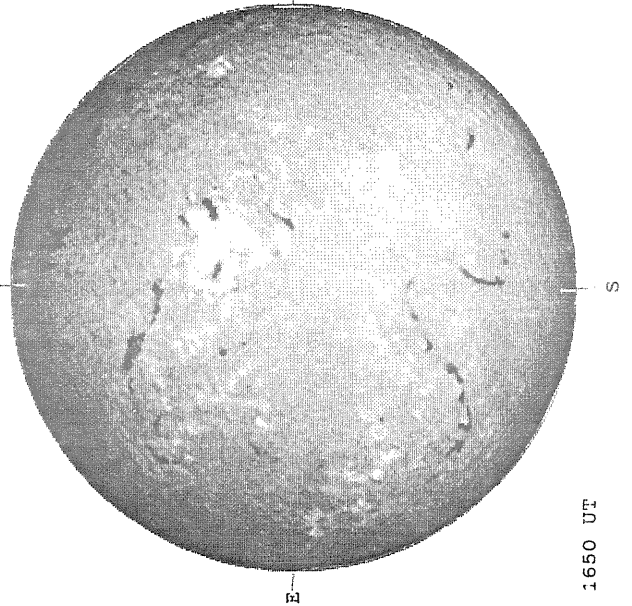
MT. WILSON MAGNETOGRAM

Delta<sub>1</sub> =  
Delta<sub>2</sub> =



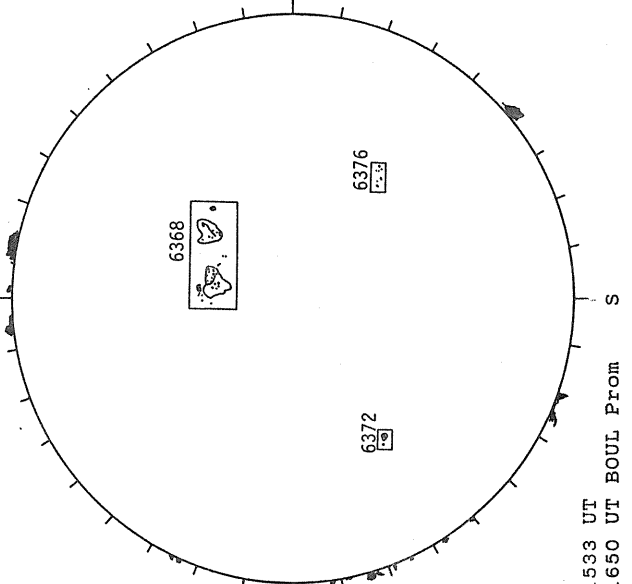
White = +7.5G  
Black = -7.5G

BOULDER H-ALPHA



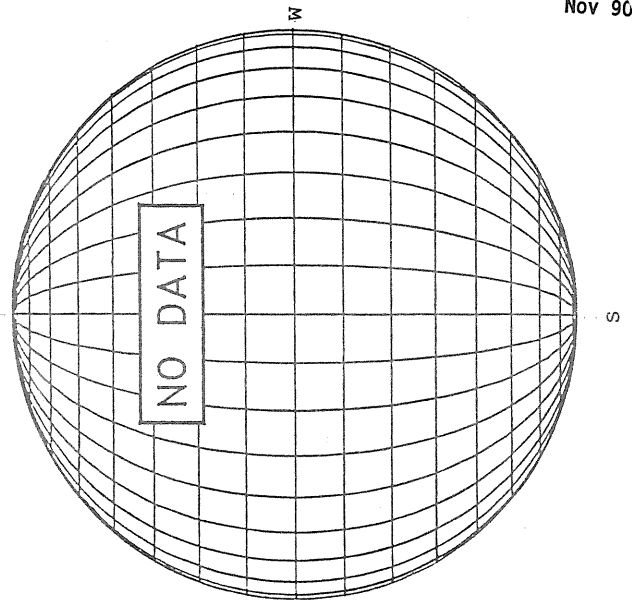
1650 UT

BOULDER SUNSPOT



1533 UT  
1650 UT BOUL Prom

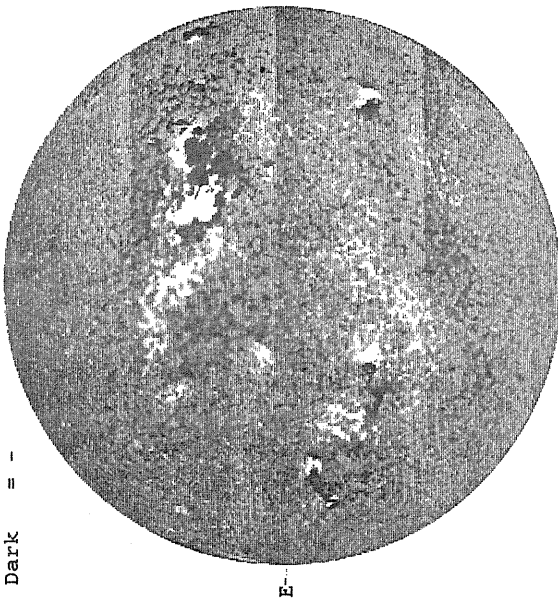
SACRAMENTO PEAK CORONA (1.15 Radii)



NOVEMBER 21, 1990 ( P= 19.71, Bo = 2.14, Lo = 12.69 )

KITT PEAK MAGNETOGRAM

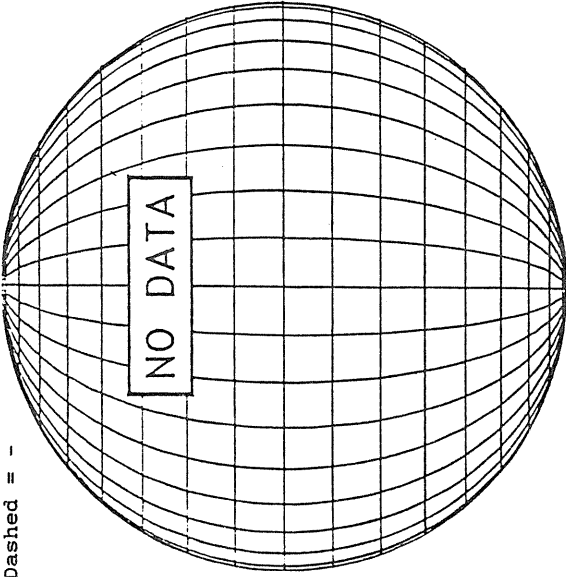
Bright = +  
Dark = -



2050 UT

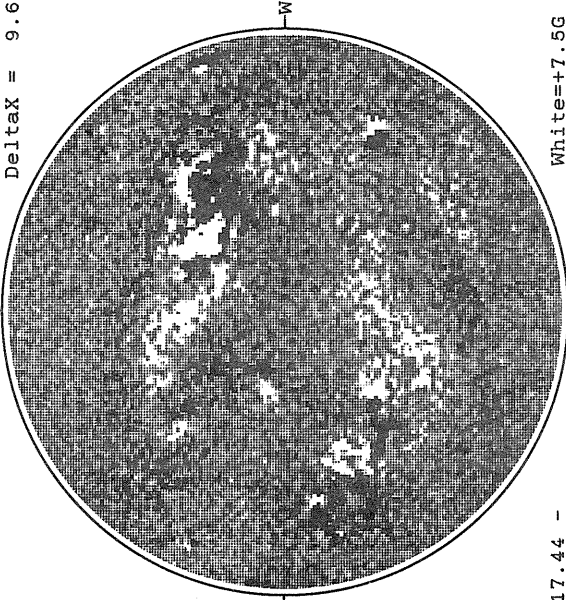
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

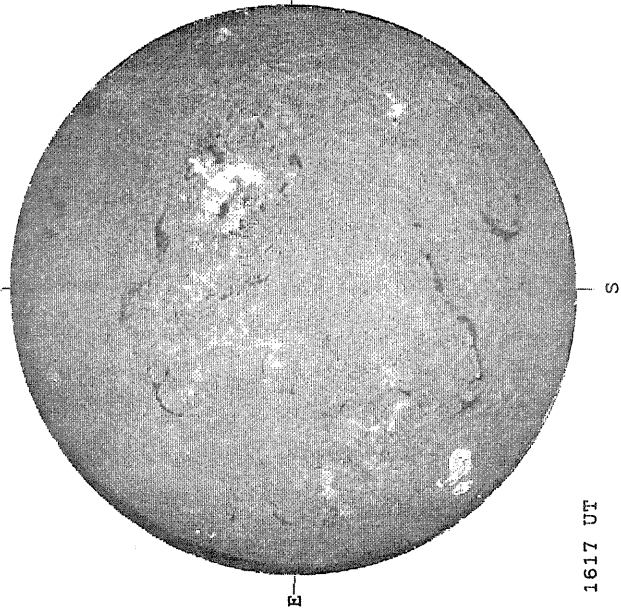
DeltaY = 13.1  
DeltaX = 9.6



17.44 -  
18.40 UT

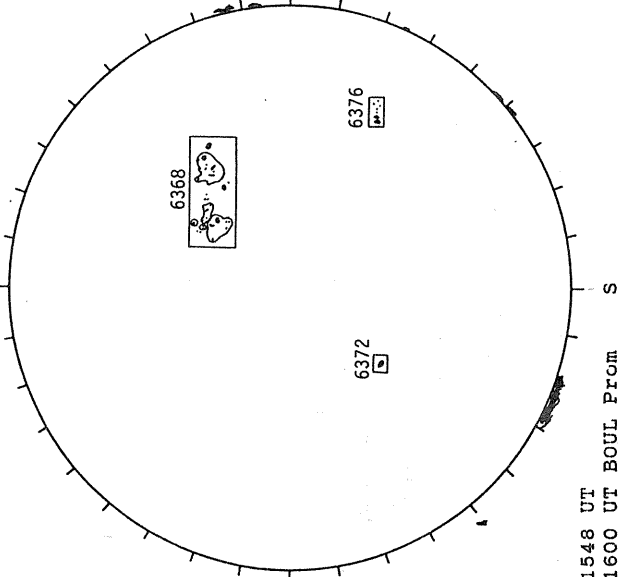
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



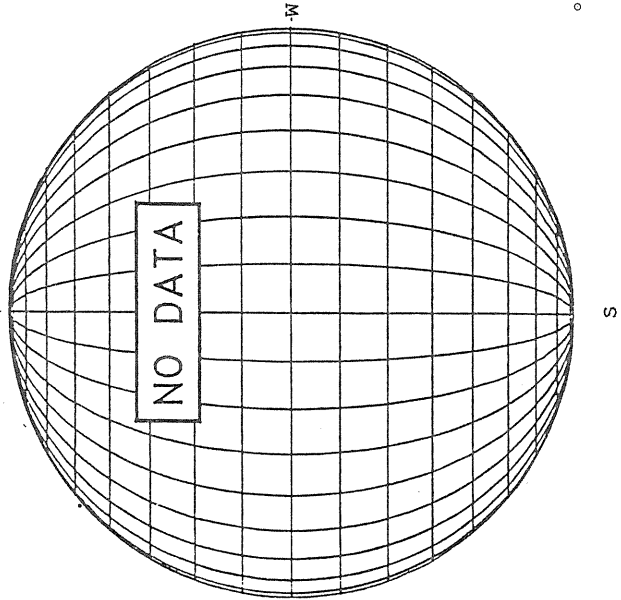
1617 UT

BOULDER SUNSPOT



1548 UT  
1600 UT BOUL PROM

SACRAMENTO PEAK CORONA (1.15 Radii)

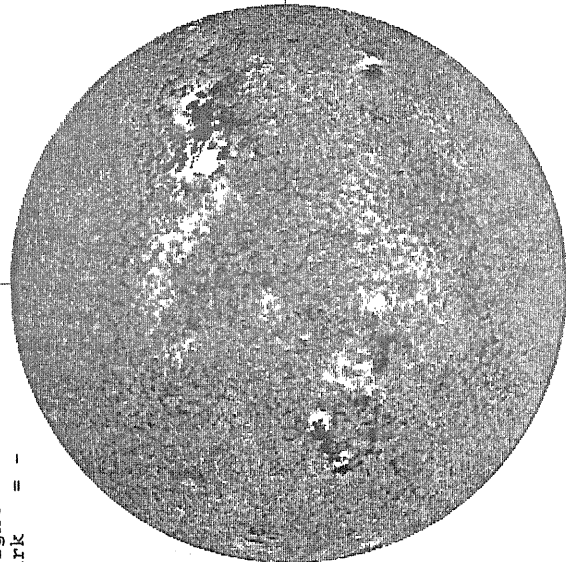


NOVEMBER 22, 1990 ( P= 19.39, B<sub>0</sub> = 2.02, L<sub>0</sub> = 359.51 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -

N



1605 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

N

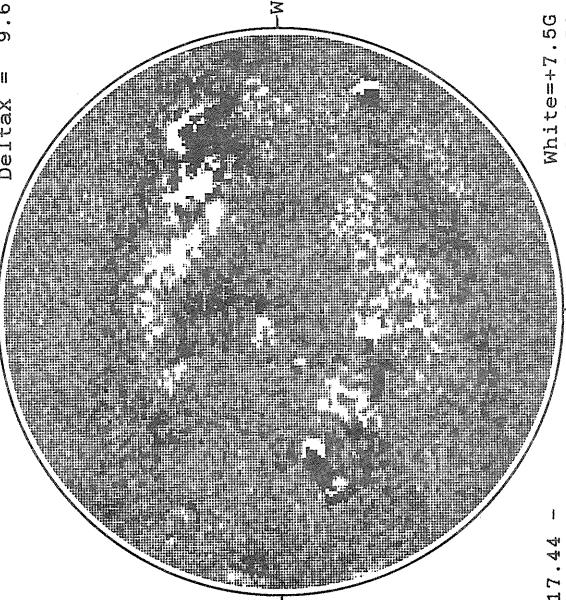


2221 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1  
DeltaX = 9.6

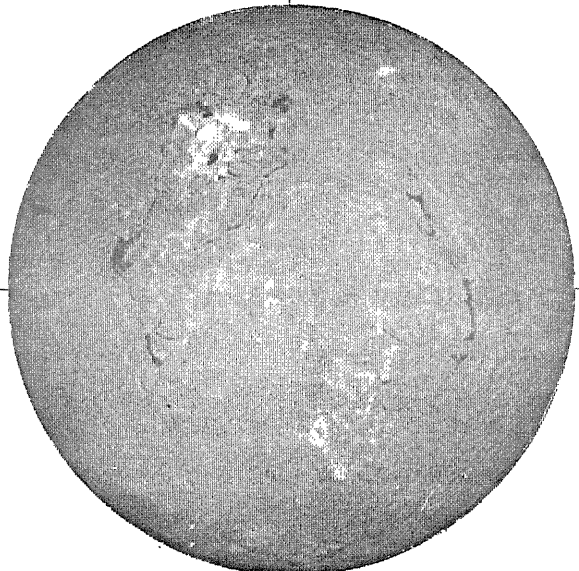
N



17.44 -  
18.40 UT

White=+7.5G  
Black=-7.5G

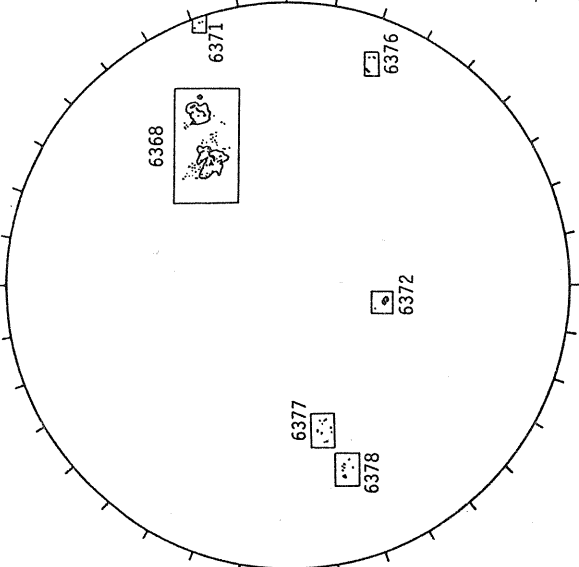
SACRAMENTO PEAK H-ALPHA



1629 UT

S

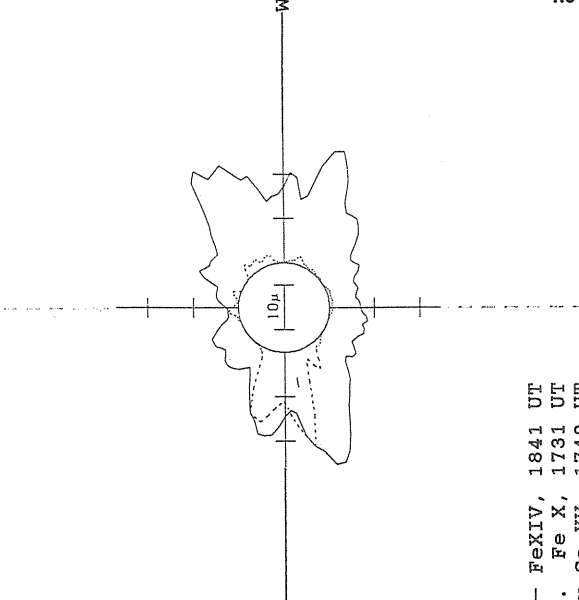
RAMEY SUNSPOT



1630 UT

S

SACRAMENTO PEAK CORONA (1.15 Radii)

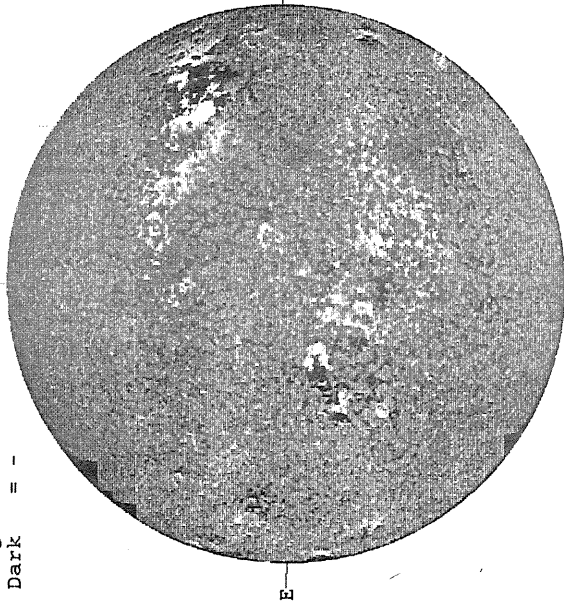


— Fe XIV, 1841 UT  
.... Fe X, 1731 UT  
xxxxx Ca XV, 1742 UT  
NO CA XV ACTIVITY TODAY

NOVEMBER 23, 1990 ( P= 19.06, B<sub>0</sub> = 1.90, L<sub>0</sub> = 346.33 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1634 UT

STANFORD MAGNETOGRAM

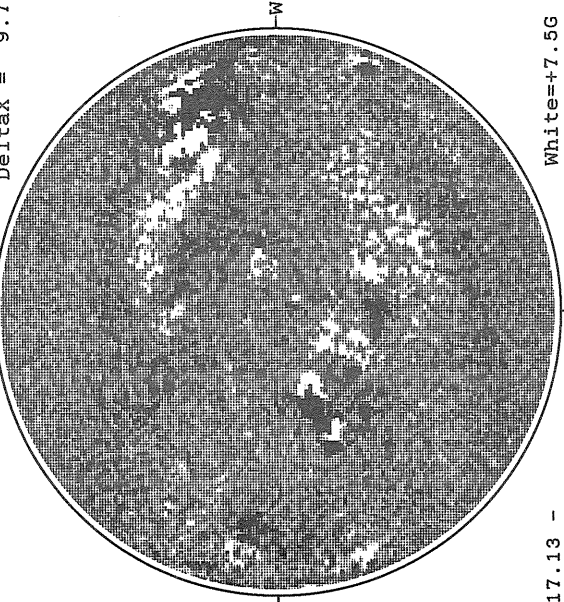
Solid = +  
Dashed = -



2135 UT

MT. WILSON MAGNETOGRAM

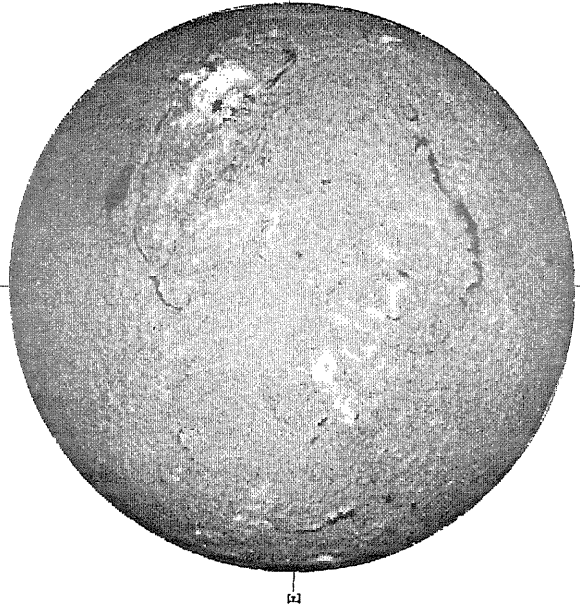
DeltaY = 13.1  
DeltaX = 9.7



17.13 -  
18.10 UT

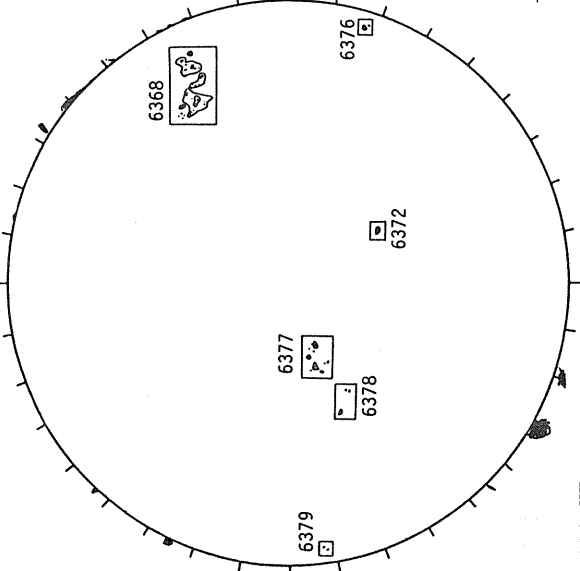
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



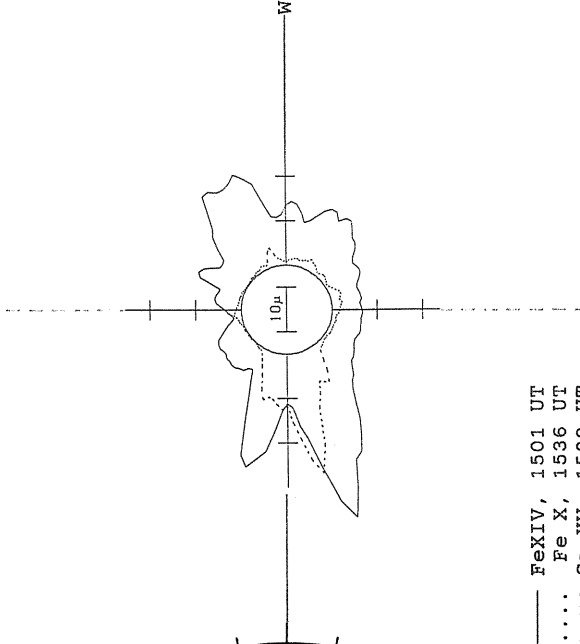
1613 UT

BOULDER SUNSPOT



1544 UT BOUL Prom  
1559 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



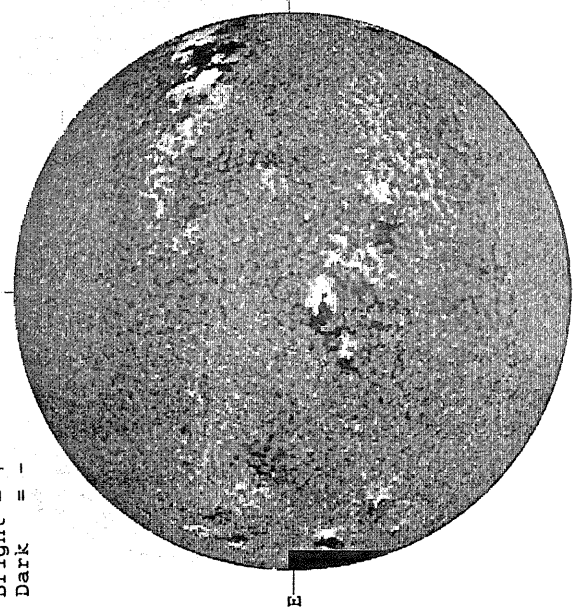
— Fe XIV, 1501 UT  
... Fe X, 1536 UT  
xxxxx Ca XV, 1523 UT  
NO CA XV ACTIVITY TODAY



NOVEMBER 24, 1990 ( P = 18.72 B<sub>0</sub> = 1.77, L<sub>0</sub> = 393.15 )

KITT PEAK MAGNETOGRAM

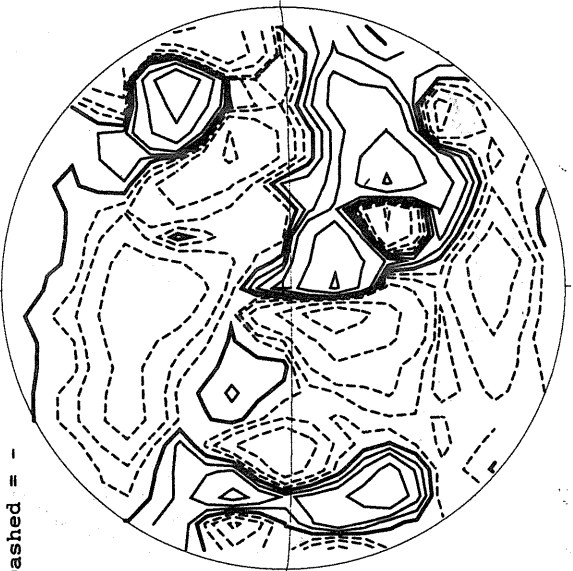
Bright = +  
Dark = -



1718 UT

STANFORD MAGNETOGRAM

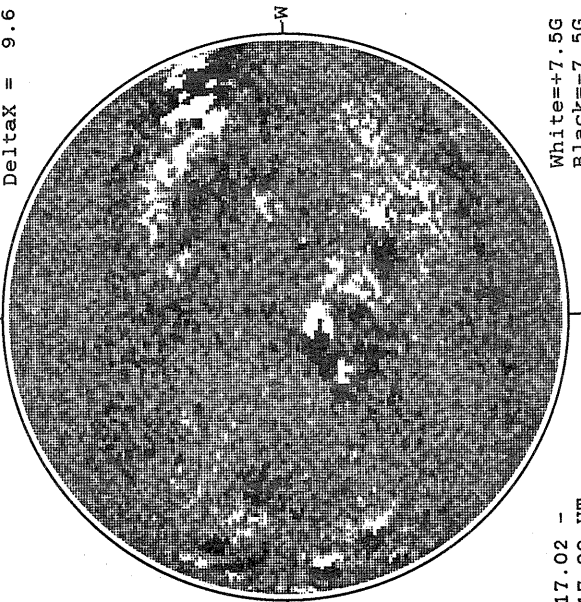
Solid = +  
Dashed = -



1928 UT

MT. WILSON MAGNETOGRAM

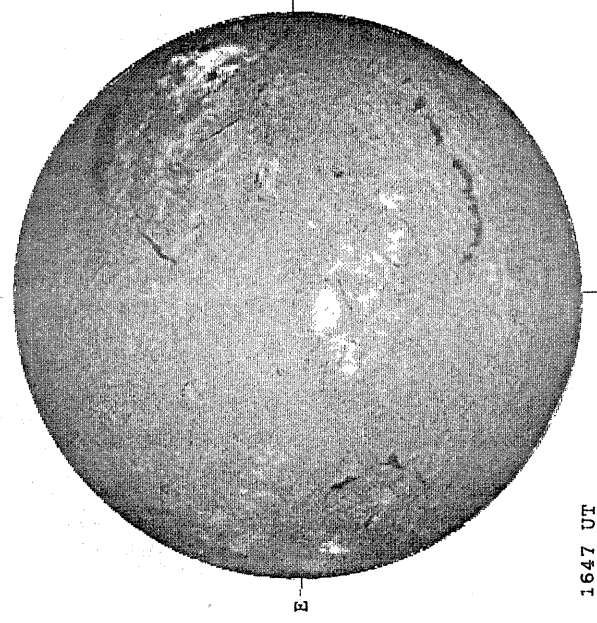
DeltaY = 13.1  
DeltaX = 9.6



17.02 -  
17.99 UT

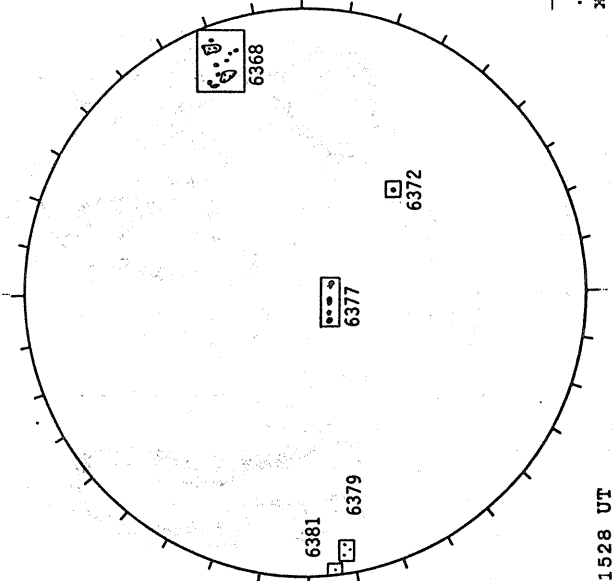
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



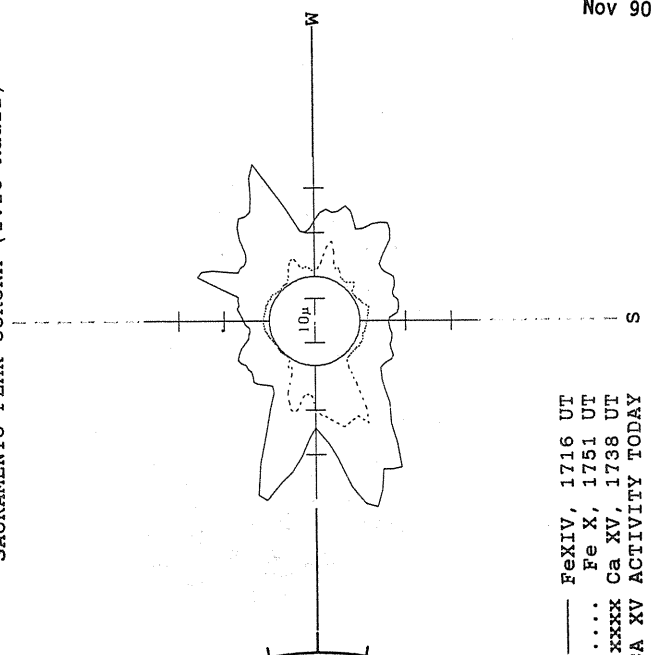
1647 UT

BOULDER SUNSPOT



1528 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

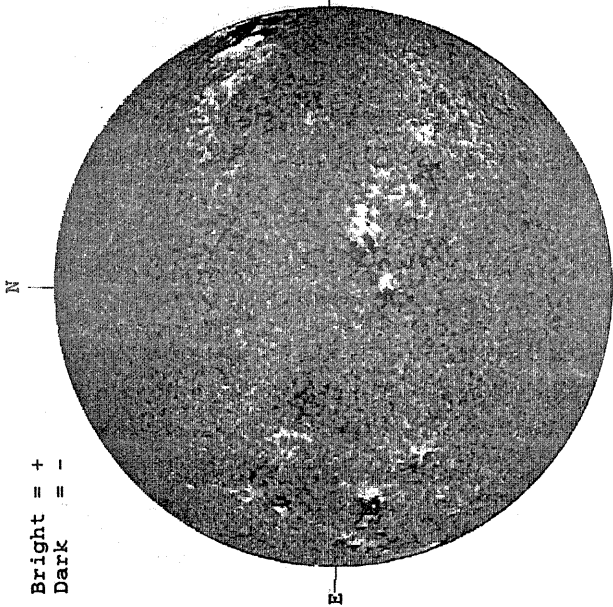


— FeXIV, 1716 UT  
.... Fe X, 1751 UT  
xxxx Ca XV, 1738 UT  
NO CA XV ACTIVITY TODAY

NOVEMBER 25, 1990 ( P= 18.38, B<sub>0</sub> = 1.65, L<sub>0</sub> = 319.97 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



1645 UT

STANFORD MAGNETOGRAM

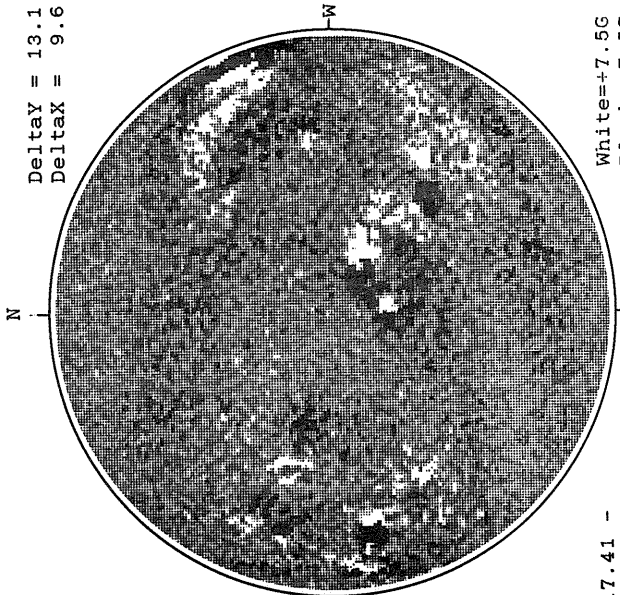
Solid = +  
Dashed = -



2346 UT  
Nov 24

MT. WILSON MAGNETOGRAM

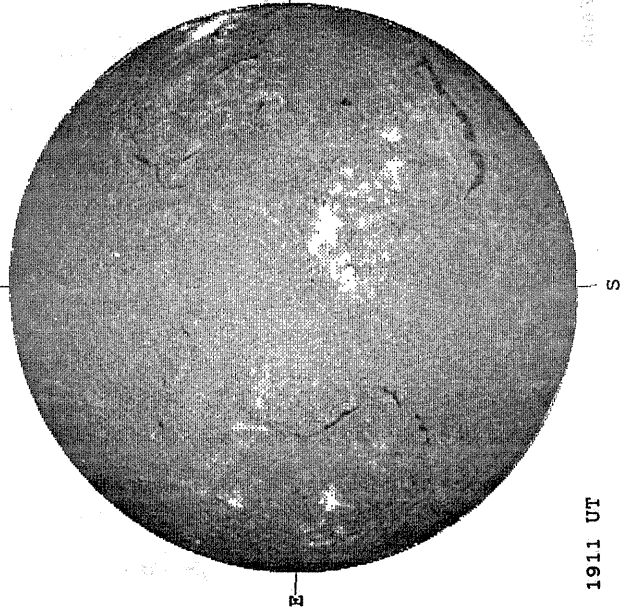
Delta<sub>Y</sub> = 13.1  
Delta<sub>X</sub> = 9.6



17.41 -  
18.37 UT

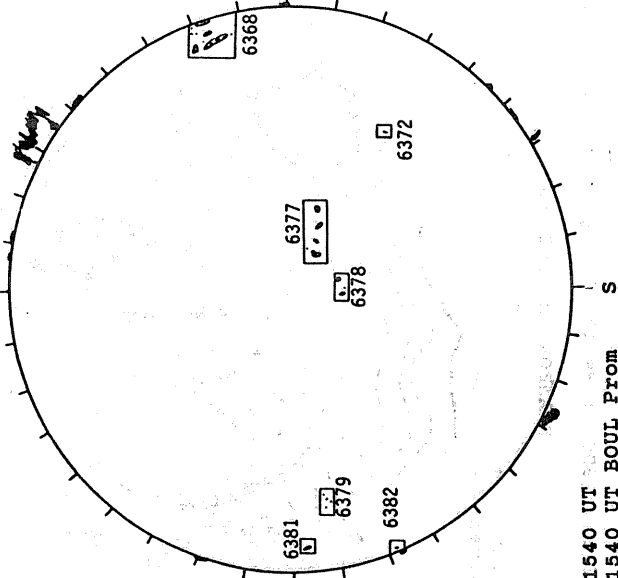
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



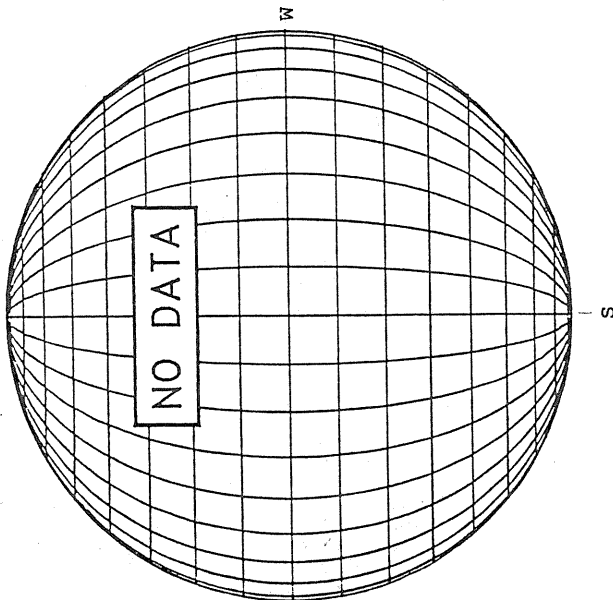
1911 UT

BOULDER SUNSPOT



1540 UT  
1540 UT BOUL FROM

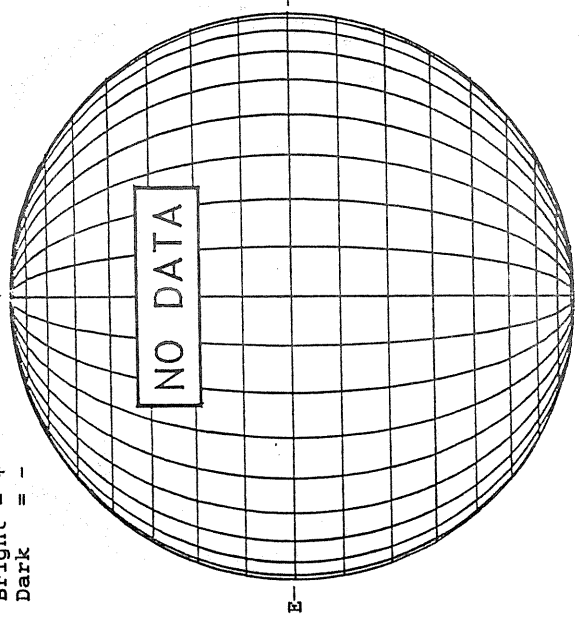
SACRAMENTO PEAK CORONA (1.15 Radii)



NOVEMBER 26, 1990 ( P= 18.03, B<sub>0</sub> = 1.53, L<sub>0</sub> = 306.79 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -



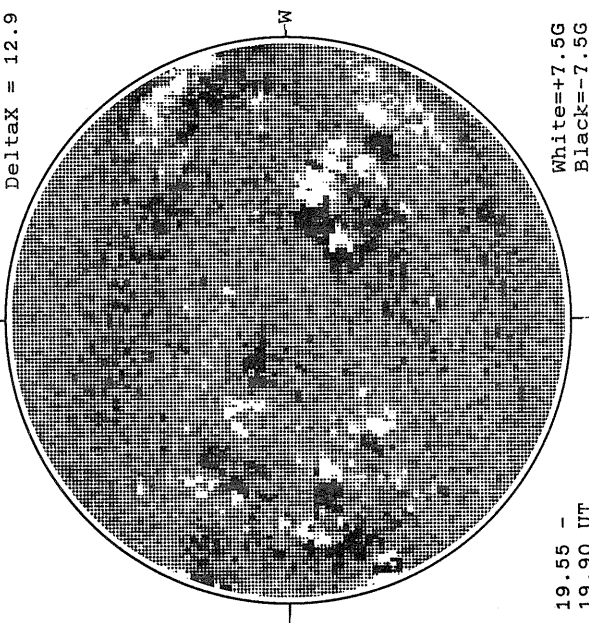
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

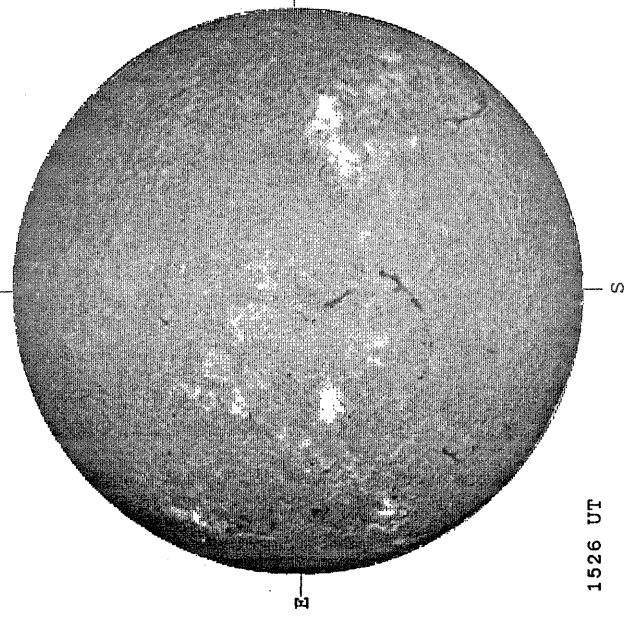
Delta<sub>y</sub> = 20.2  
Delta<sub>x</sub> = 12.9



White = +7.5G  
Black = -7.5G

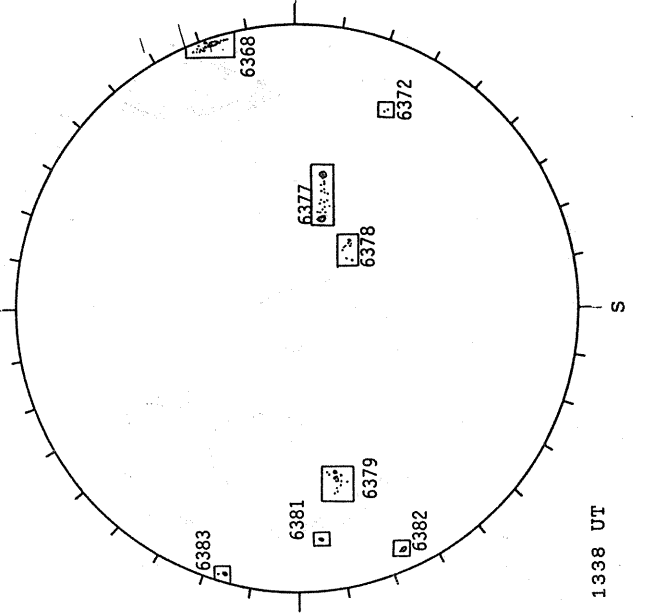
19.55 -  
19.90 UT

SACRAMENTO PEAK H-ALPHA



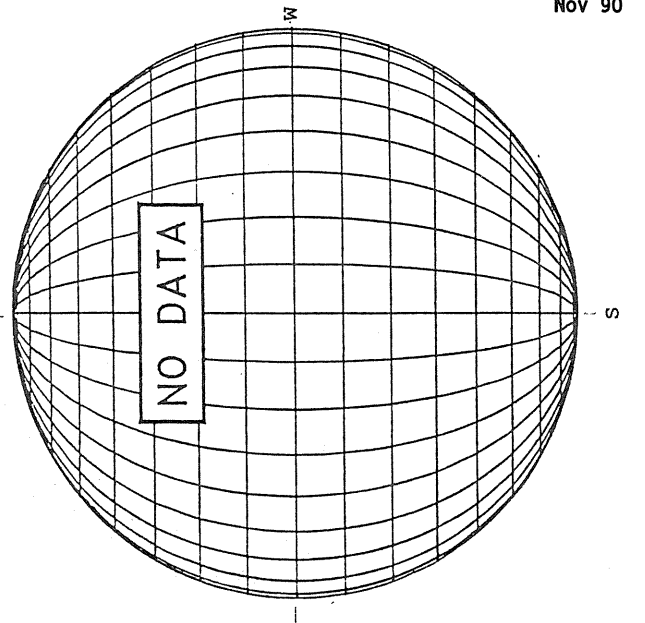
1526 UT

RAMEY SUNSPOT



1338 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



19.55 -  
19.90 UT

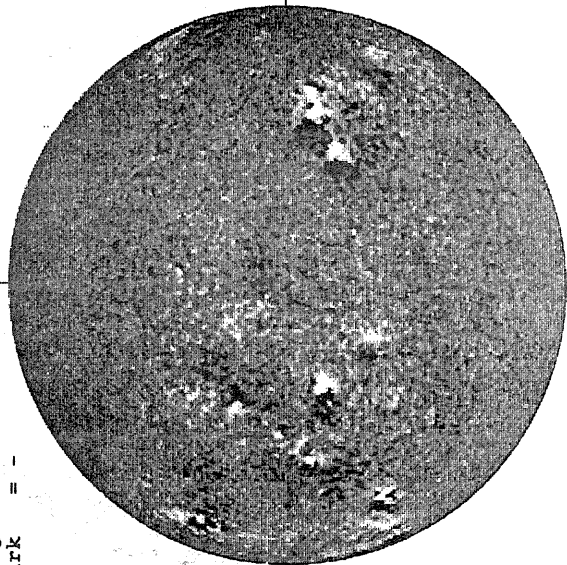


NOVEMBER 27, 1990 ( P= 17.68, B<sub>0</sub> = 1.40, I<sub>0</sub> = 293.61 )

KITT PEAK MAGNETOGRAM

Bright = +  
Dark = -

N



1708 UT

STANFORD MAGNETOGRAM

Solid = +  
Dashed = -

N

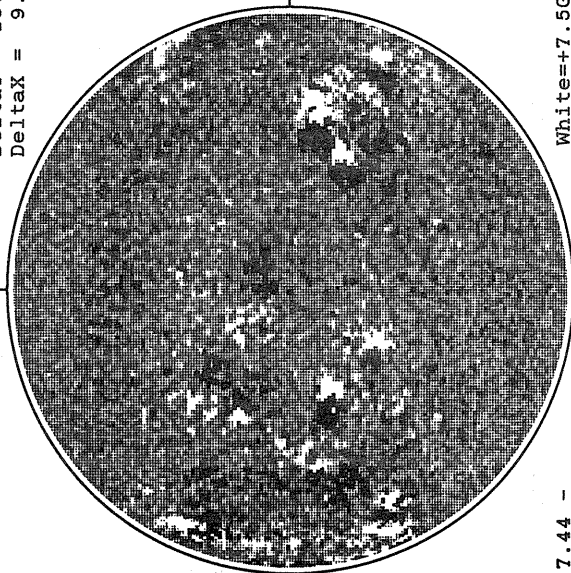


2245 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.0  
DeltaX = 9.6

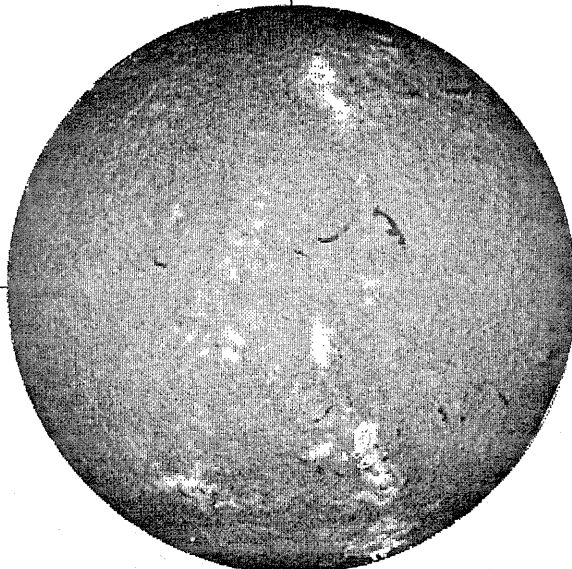
N



17.44 -  
18.41 UT

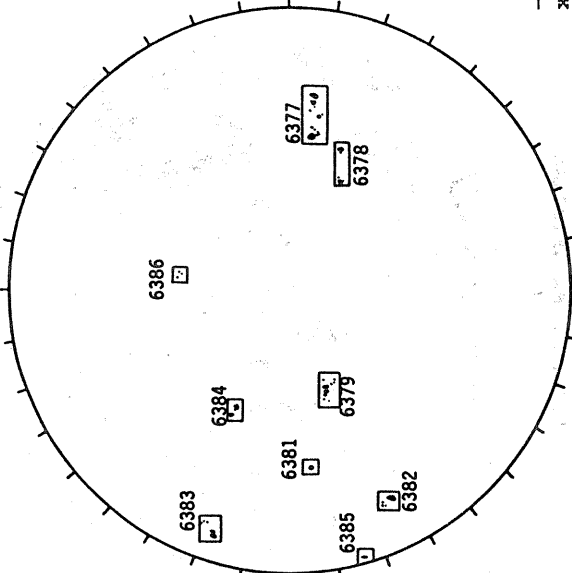
White=+7.5G  
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



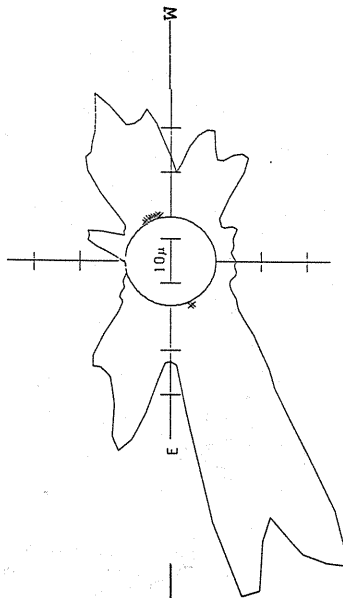
1604 UT

BOULDER SUNSPOT



1625 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



— FeXIV, 1701 UT  
xxxx Ca XV, 1603 UT

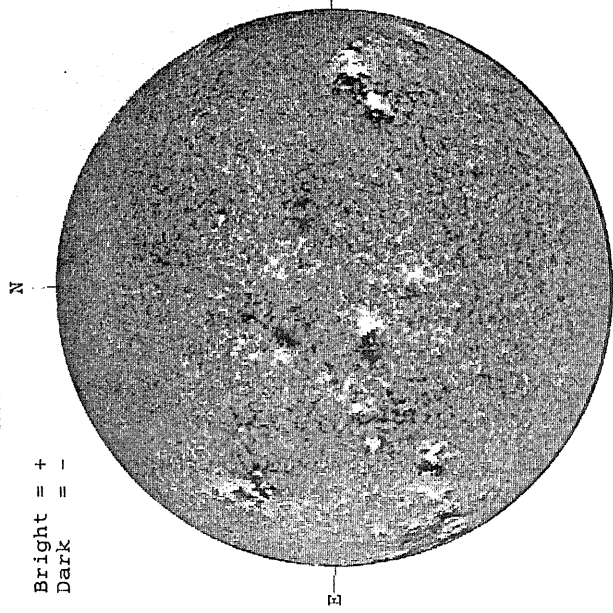
S

S

NOVEMBER 28, 1990 ( P = 17.32 B<sub>0</sub> = 1.28, L<sub>0</sub> = 280.43 )

KITT PEAK MAGNETOGRAM

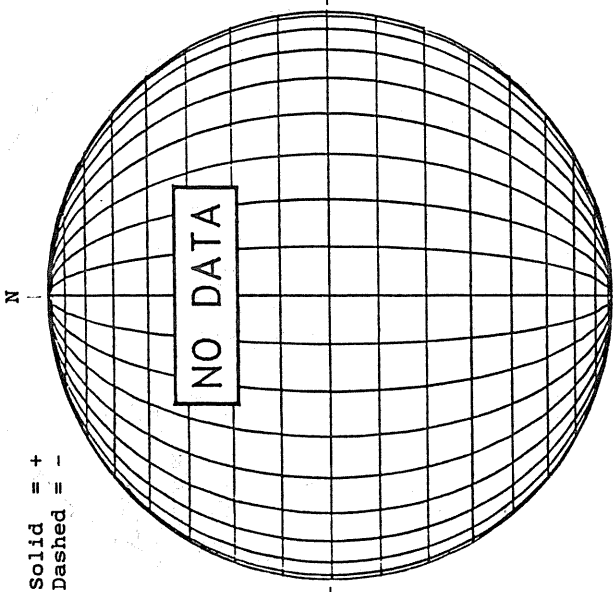
Bright = +  
Dark = -



1626 UT

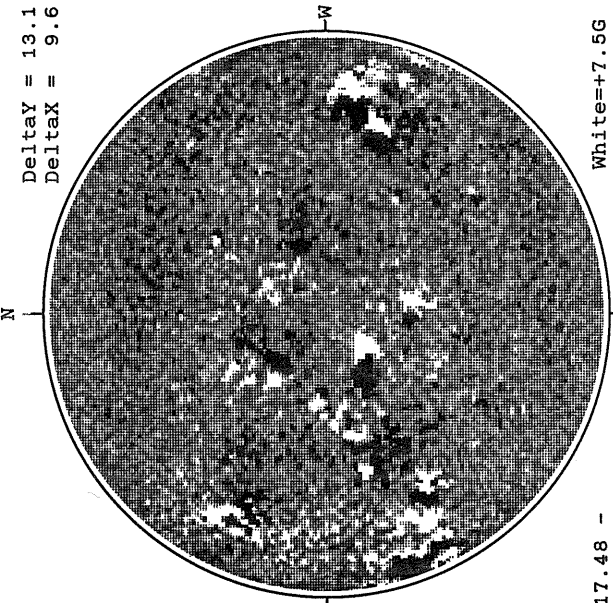
STANFORD MAGNETOGRAM

Solid = +  
Dashed = -



MT. WILSON MAGNETOGRAM

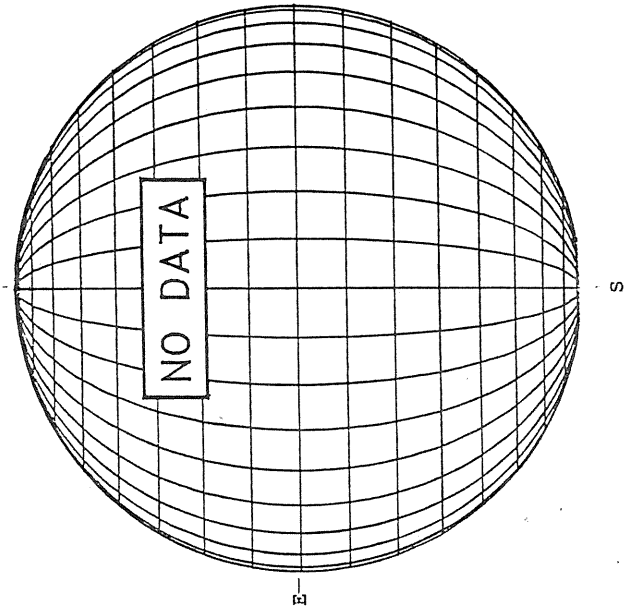
DeltaY = 13.1  
DeltaX = 9.6



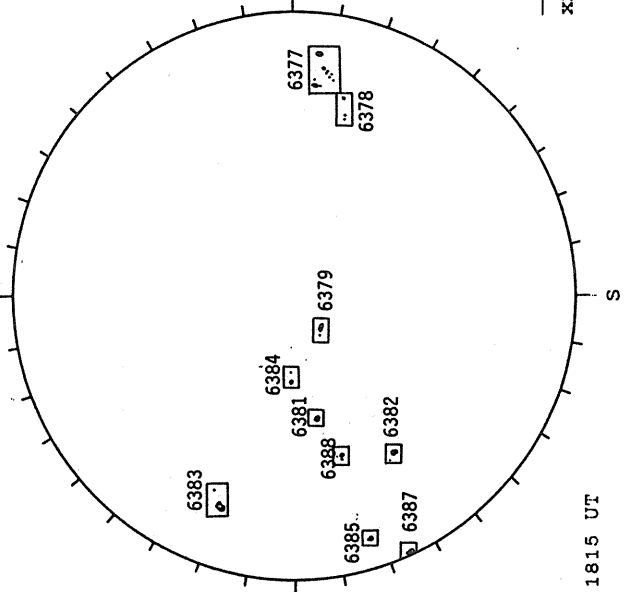
17.48 -  
18.45 UT

White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA

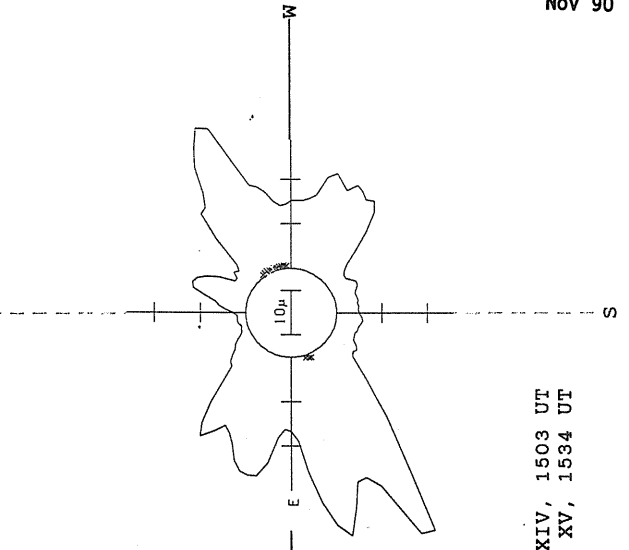


BOULDER SUNSPOT



1815 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



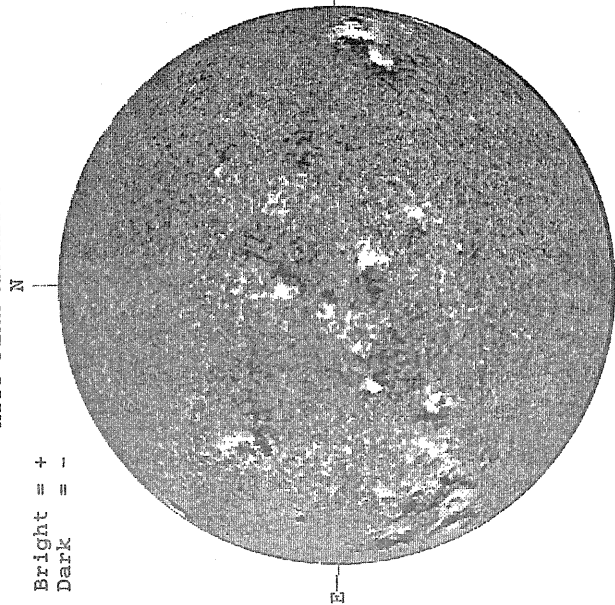
— FeXIV, 1503 UT  
xxxxx Ca XV, 1534 UT

NOVEMBER 29, 1990 ( P= 16.95, B<sub>0</sub> = 1.15, L<sub>0</sub> = 267.25 )

100  
Nov 90

KITT PEAK MAGNETOGRAM

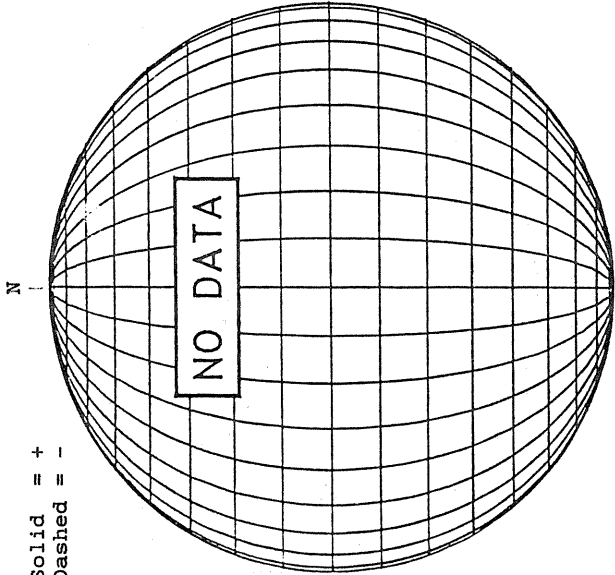
Bright = +  
Dark = -



1612 UT

STANFORD MAGNETOGRAM

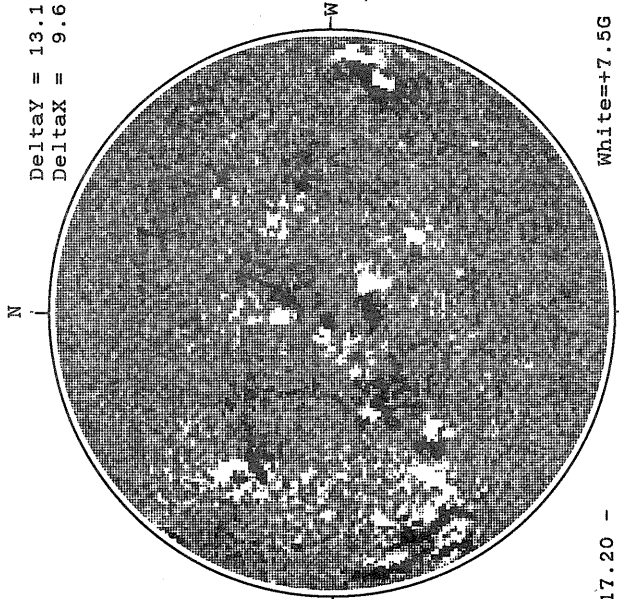
Solid = +  
Dashed = -



17.20 -  
18.17 UT

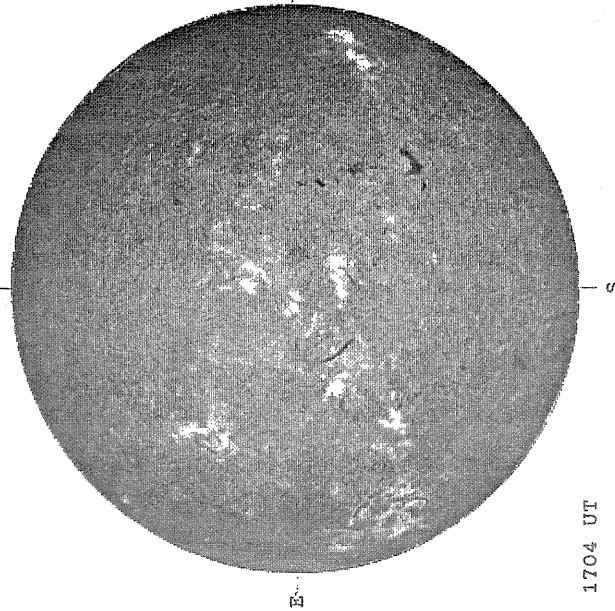
MT. WILSON MAGNETOGRAM

DeltaY = 13.1  
DeltaX = 9.6



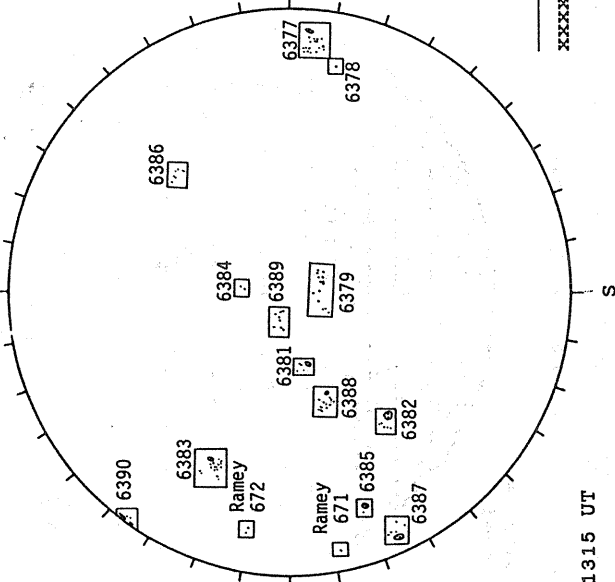
White=+7.5G  
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



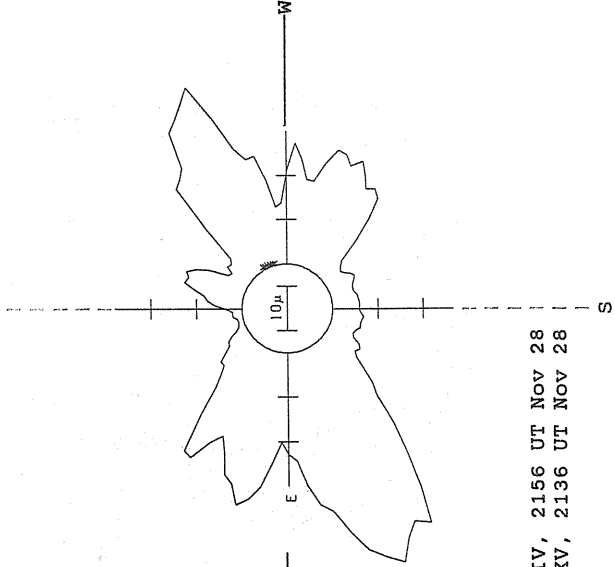
1704 UT

RAMEY SUNSPOT



1315 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

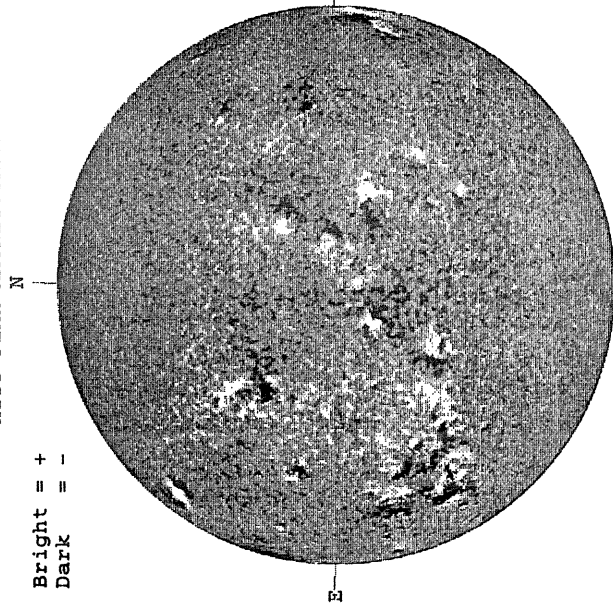


— FeXIV, 2156 UT Nov 28  
xxxxx Ca XV, 2136 UT Nov 28

NOVEMBER 30, 1990 ( P= 16.58, B<sub>0</sub> = 1.02, I<sub>0</sub> = 254.07 )

KITT PEAK MAGNETOGRAM

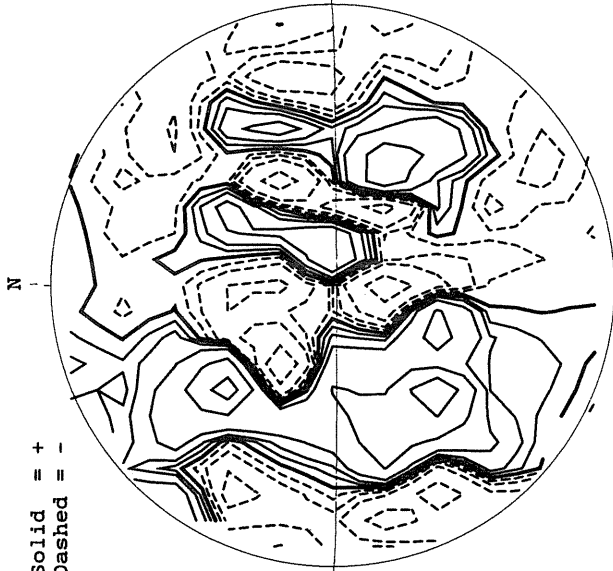
Bright = +  
Dark = -



1633 UT

STANFORD MAGNETOGRAM

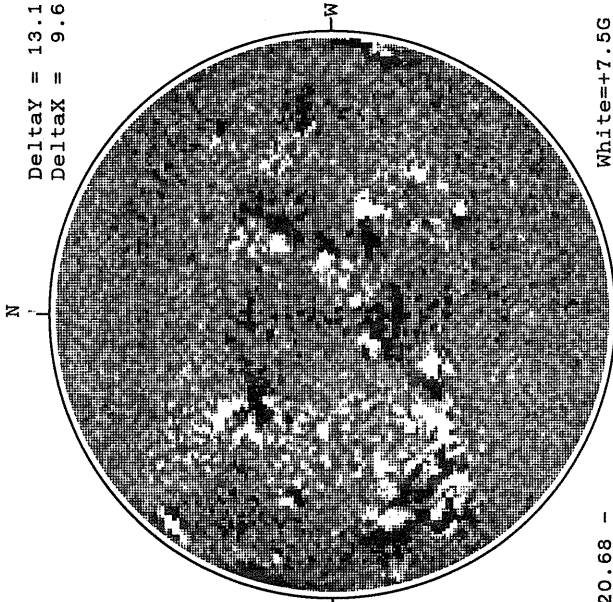
Solid = +  
Dashed = -



2218 UT

MT. WILSON MAGNETOGRAM

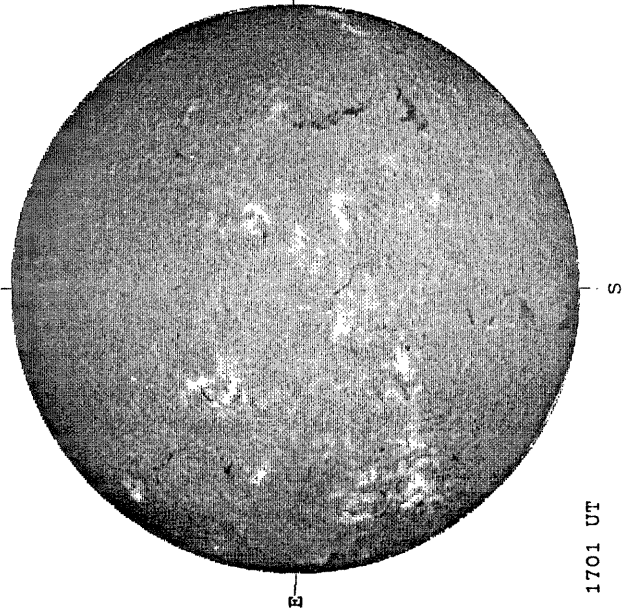
DeltaY = 13.1  
DeltaX = 9.6



20.68 -  
21.65 UT

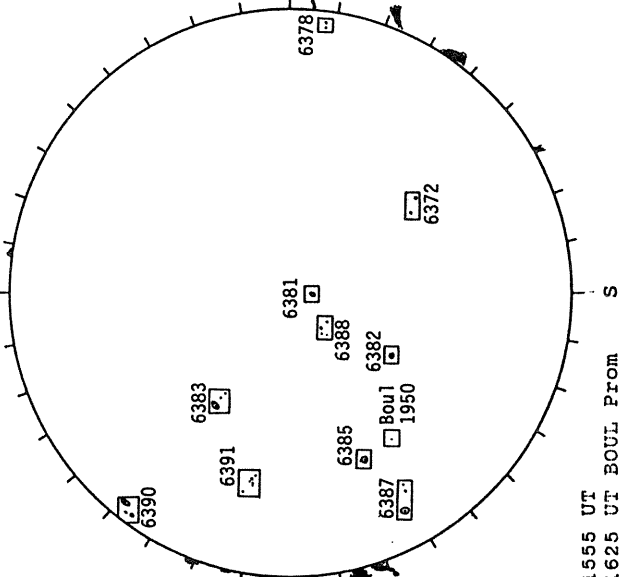
White = +7.5G  
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



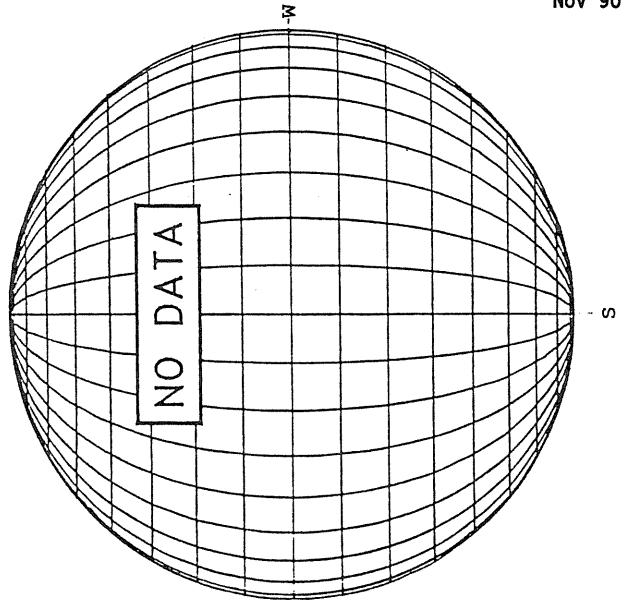
1701 UT

BOULDER SUNSPOT



1555 UT  
1625 UT BOUL PROM

SACRAMENTO PEAK CORONA (1.15 Radii)



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

NOVEMBER 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
6343		RAMY	10 26 1228	N08 E74	11 1.1		A	AX	10	1	1	3
6343	26385	MWIL	10 26 1500	N08 E73	11 1.1	3	(AP)					
6343		BOUL	10 26 1500	N08 E74	11 1.2		A	AX	10	1	1	3
6343		PALE	10 26 1922	N10 E75	11 1.4		A	AX		1		3
6343		CULG	10 27 0010	N09 E73	11 1.5		B	BXO	10	4	5	3
6343		LEAR	10 27 0015	N08 E70	11 1.2		B	BXO	50	7	4	3
6343		SVTO	10 27 0835	N09 E69	11 1.5		B	BXO	20	6	4	1
6343	26385	MWIL	10 27 1515	N08 E62	11 1.3	4	(B)					
6343		HOLL	10 27 1545	N08 E62	11 1.3		B	BXO	40	9	7	2
6343		PALE	10 27 1742	N07 E62	11 1.4		B	BXO	20	5	7	4
6343		LEAR	10 28 0008	N08 E57	11 1.3		B	CRO	30	17	7	3
6343		CULG	10 28 0310	N06 E56	11 1.3		B	BXO	10	9	7	3
6343		SVTO	10 28 0958	N08 E51	11 1.2		B	DRO	60	7	5	2
6343	26385	MWIL	10 28 1515	N08 E48	11 1.2	5	(B)					
6343		BOUL	10 28 1600	N07 E48	11 1.3		B	DAO	100	6	6	2
6343		HOLL	10 28 1615	N08 E49	11 1.3		B	DAI	80	29	6	3
6343		PALE	10 28 2210	N08 E46	11 1.4		B	DAO	150	9	8	2
6343		LEAR	10 29 0008	N08 E44	11 1.3		B	DAO	210	13	8	3
6343		CULG	10 29 0100	N07 E44	11 1.3		B	DAO	280	14	8	2
6343		SVTO	10 29 0752	N09 E40	11 1.3		B	DAI	280	7	7	4
6343		RAMY	10 29 1232	N08 E37	11 1.3		B	CAO	120	17	8	3
6343		BOUL	10 29 1443	N07 E34	11 1.2		B	DAO	110	4	5	1
6343		HOLL	10 29 1500	N09 E36	11 1.3		B	DAO	110	7	7	4
6343	26385	MWIL	10 29 1515	N08 E35	11 1.2	5	(BP)					
6343		PALE	10 29 1930	N08 E33	11 1.3		B	DAO	120	2	6	1
6343		LEAR	10 30 0020	N08 E30	11 1.3		B	DAO	120	10	7	3
6343		CULG	10 30 0110	N08 E31	11 1.4		B	DAO	130	13	8	3
6343		SVTO	10 30 1151	N08 E24	11 1.3		B	DAO	160	11	8	2
6343		RAMY	10 30 1357	N08 E23	11 1.3		B	DAO	100	11	9	2
6343		BOUL	10 30 1455	N08 E21	11 1.2		B	CAO	140	17	8	3
6343		HOLL	10 30 1510	N08 E22	11 1.3		B	CAO	70	17	10	4
6343	26385	MWIL	10 30 1515	N07 E20	11 1.1	5	(BP)					
6343		PALE	10 30 1817	N07 E20	11 1.2		B	CAO	130	8	8	3
6343		LEAR	10 31 0038	N06 E16	11 1.2		B	DAO	100	5	8	3
6343		SVTO	10 31 0753	N07 E11	11 1.1		B	DAO	110	9	10	2
6343		RAMY	10 31 1237	N07 E09	11 1.2		B	DAO	130	14	9	3
6343		BOUL	10 31 1528	N07 E06	11 1.1		B	CAO	100	7	7	1
6343	26385	MWIL	10 31 1535	N07 E05	11 1.0	5	(BP)					
6343		HOLL	10 31 1750	N07 E06	11 1.2		B	CSO	160	8	8	1
6343		PALE	10 31 1906	N07 E06	11 1.2		B	CAO	100	11	8	3
6343		LEAR	11 01 0008	N07 E02	11 1.1		B	CSO	110	6	8	4
6343		SVTO	11 01 0747	N06 W05	10 31.9		A	HA	90	2	2	2
6343		RAMY	11 01 1226	N06 W07	11 1.0		A	HA	100	2	3	4
6343		PALE	11 01 1903	N06 W11	11 1.0		A	HS	100	1	2	4
6343		LEAR	11 02 0008	N07 W11	11 1.2		B	CAO	80	8	7	3
6343		CULG	11 02 0015	N07 W10	11 1.3		B	CAO	80	13	9	3
6343		SVTO	11 02 0825	N06 W21	10 31.8		A	HS	50	1	1	3
6343		RAMY	11 02 1255	N08 W19	11 1.1		B	CAO	80	7	7	2
6343	26385	MWIL	11 02 1515	N06 W23	10 31.9	4	(AP)					
6343		PALE	11 02 1918	N07 W24	11 1.0		B	CSO	80	4	3	3
6343		LEAR	11 03 0016	N07 W27	11 1.0		B	CAO	80	4	6	3
6343		CULG	11 03 0020	N07 W27	11 1.0		A	HA	70	4	2	2
6343		SVTO	11 03 0957	N06 W32	11 1.0		A	HA	70	2	1	1
6343		RAMY	11 03 1133	N07 W34	10 31.9		B	CAO	20	5	2	3
6343	26385	MWIL	11 03 1500	N07 W36	10 31.9	4	(AP)					
6343		PALE	11 03 1800	N07 W37	11 1.0		B	CAO	60	4	4	3
6343		HOLL	11 03 2055	N07 W40	10 31.9		A	HS	40	3	2	2
6343		CULG	11 04 0005	N07 W41	10 31.9		A	HA	50	3	3	3
6343		LEAR	11 04 0010	N08 W41	10 31.9		B	CAO	50	3	2	3
6343		RAMY	11 04 1313	N08 W49	10 31.9		B	CAO	20	3	2	3
6343	26385	MWIL	11 04 1515	N07 W49	11 1.0	5	(AP)					
6343		BOUL	11 04 1530	N07 W49	11 1.0		A	HS	20	2	1	1
6343		HOLL	11 04 1615	N07 W51	10 31.8		A	HA	60	2	2	3
6343		PALE	11 04 2036	N06 W53	10 31.9		A	HA	60	2	1	4
6343		LEAR	11 05 0110	N10 W55	10 31.9		A	HS	30	1	1	3
6343		SVTO	11 05 0915	N08 W60	10 31.9		A	HA	30	5	2	3
6343		RAMY	11 05 1440	N09 W63	10 31.9		A	HS	30	1	1	2
6343	26385	MWIL	11 05 1500	N07 W64	10 31.8	4	(AP)					
6343		BOUL	11 05 1507	N07 W65	10 31.8		A	HS	40	1	1	1



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(Ordered by Central Meridian Passage Date)

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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
6343		HOLL	11	05	1835	N08	W67	10	31.7		B	CSO	90	2	3	3
6343		PALE	11	05	1940	N07	W66	10	31.9		A	AX	30	3	2	2
6343		CULG	11	06	0030	N07	W70	10	31.8		A	HA	110	3	1	2
6343		LEAR	11	06	0040	N08	W70	10	31.8		A	HS	110	1	2	2
6343		SVTO	11	06	0815	N07	W75	10	31.7		A	HR	30	1	1	4
6343		RAMY	11	06	1205	N08	W79	10	31.6		A	HS	40	2	2	3
6343		PALE	11	06	2205	N07	W80	10	31.9		A	AX		1		4
6346		SVTO	10	28	0958	S15	E53	11	1.4		A	AX	10	2	2	2
6346	26388	MWIL	10	28	1515	S15	E50	11	1.4	4	(B)					
6346		HOLL	10	28	1615	S15	E50	11	1.5		B	BXO	10	3	3	3
6346		HOLL	10	29	1500	S14	E37	11	1.4		A	AX		2	2	4
6351		PALE	11	02	1918	N12	E05	11	3.2		A	AX	20	3	2	3
6351		LEAR	11	03	0016	N12	E03	11	3.2		B	BXO	10	3	4	3
6351		CULG	11	03	0020	N12	E02	11	3.2		B	BXO		4	3	2
6351		SVTO	11	03	0957	N12	W04	11	3.1		B	DRO	40	5	4	1
6351		RAMY	11	03	1133	N12	W05	11	3.1		B	CRO	20	6	5	3
6351	26394	MWIL	11	03	1500	N12	W08	11	3.0	3	(B)					
6351		PALE	11	03	1800	N12	W08	11	3.1		B	BXO	20	6	3	3
6351		HOLL	11	03	2055	N12	W10	11	3.1		B	BXO	20	7	3	2
6351		CULG	11	04	0005	N12	W11	11	3.2		B	BXO	10	4	4	3
6351		LEAR	11	04	0010	N11	W12	11	3.1		B	BXO	10	4	4	3
6351		RAMY	11	04	1313	N12	W19	11	3.1		B	BXO	10	3	3	3
6351	26394	MWIL	11	04	1515	N12	W19	11	3.2	3	(AP)					
6351		HOLL	11	04	1615	N12	W18	11	3.3		B	BXO	10	5	4	3
6345		LEAR	10	28	0008	S04	E80	11	3.0		A	HK	120	1	6	3
6345		CULG	10	28	0310	S08	E85	11	3.5		A	HK	70	1	5	3
6345		SVTO	10	28	0958	S04	E82	11	3.5		B	EKO	360	2	12	2
6345	26389	MWIL	10	28	1515	S05	E78	11	3.5	5	(B)					
6345		BOUL	10	28	1600	S04	E76	11	3.3		B	DHO	290	3	10	2
6345		HOLL	10	28	1615	S05	E79	11	3.6		B	DHO	440	13	9	3
6345		PALE	10	28	2210	S03	E74	11	3.4		B	DKO	540	6	10	2
6345		LEAR	10	29	0008	S05	E73	11	3.5		B	DKO	570	11	10	3
6345		CULG	10	29	0100	S06	E74	11	3.6		B	DKO	400	3	10	2
6345		SVTO	10	29	0752	S05	E70	11	3.6		B	DKI	290	11	9	4
6345		RAMY	10	29	1232	S05	E65	11	3.4		B	DKO	620	15	10	3
6345		BOUL	10	29	1443	S04	E64	11	3.4		B	DKO	440	9	10	1
6345		HOLL	10	29	1500	S04	E66	11	3.5		B	EKO	600	20	12	4
6345	26389	MWIL	10	29	1515	S04	E65	11	3.5	6	(B)					
6345		PALE	10	29	1930	S05	E64	11	3.6		B	DKO	420	4	10	1
6345		LEAR	10	30	0020	S04	E61	11	3.6		B	EKO	530	11	11	3
6345		CULG	10	30	0110	S05	E60	11	3.5		B	DKO	530	18	10	3
6345		SVTO	10	30	1151	S05	E55	11	3.6		B	EKI	650	17	11	2
6345		RAMY	10	30	1357	S04	E54	11	3.6		B	DKO	660	17	10	2
6345		BOUL	10	30	1455	S04	E52	11	3.5		B	DKI	580	19	10	3
6345		HOLL	10	30	1510	S04	E54	11	3.7		B	EKI	660	26	11	4
6345	26389	MWIL	10	30	1515	S04	E51	11	3.4	6	(B)					
6345		PALE	10	30	1817	S05	E52	11	3.6		B	DAO	450	16	10	3
6345		LEAR	10	31	0038	S05	E47	11	3.5		B	DKO	520	15	10	3
6345		SVTO	10	31	0753	S04	E44	11	3.6		B	EKO	640	17	11	2
6345		RAMY	10	31	1237	S06	E42	11	3.7		B	EKI	600	26	11	3
6345		BOUL	10	31	1528	S04	E39	11	3.5		B	DKO	490	14	10	1
6345	26389	MWIL	10	31	1535	S05	E38	11	3.5	6	(BG)					
6345		HOLL	10	31	1750	S05	E39	11	3.7		B	DKO	460	22	10	1
6345		PALE	10	31	1906	S06	E39	11	3.7		B	EKI	490	22	11	3
6345		CULG	11	01	0005	S06	E36	11	3.7		B	EKO	370	15	11	2
6345		LEAR	11	01	0008	S05	E34	11	3.5		B	DKO	490	26	10	4
6345		SVTO	11	01	0747	S04	E32	11	3.7		B	DKO	410	20	10	2
6345		RAMY	11	01	1226	S05	E28	11	3.6		B	DKO	590	13	10	4
6345		PALE	11	01	1903	S06	E25	11	3.7		B	DKI	520	17	10	4
6345		LEAR	11	02	0008	S06	E21	11	3.6		B	DKO	310	32	10	3
6345		CULG	11	02	0015	S05	E22	11	3.6		B	EKO	450	36	11	3
6345		SVTO	11	02	0825	S05	E16	11	3.5		B	DKO	450	31	8	3
6345		RAMY	11	02	1255	S05	E15	11	3.7		B	EKO	440	23	11	2
6345	26389	MWIL	11	02	1515	S05	E13	11	3.6	5	(BP)					
6345		PALE	11	02	1918	S05	E13	11	3.8		B	DKI	400	15	10	3
6345		LEAR	11	03	0016	S05	E09	11	3.7		B	DKO	340	25	8	3

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NOVEMBER 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
6345		CULG	11 03 0020	S05 E08	11 3.6		B	DKO	370	20	9	2
6345		SVTO	11 03 0957	S04 E03	11 3.6		B	DAI	400	17	9	1
6345		RAMY	11 03 1133	S03 E02	11 3.6		BG	DKI	510	25	9	3
6345	26389	MWIL	11 03 1500	S05 W01	11 3.5	5	(B )					
6345		HOLL	11 03 2055	S05 W03	11 3.6		B	DSO	360	28	8	2
6345		CULG	11 04 0005	S05 W03	11 3.8		B	DKO	290	29	10	3
6345		LEAR	11 04 0010	S05 W05	11 3.6		B	DKI	300	28	8	3
6345		RAMY	11 04 1313	S05 W12	11 3.6		B	DKI	510	27	9	3
6345	26389	MWIL	11 04 1515	S05 W14	11 3.6	5	(BG)					
6345		BOUL	11 04 1530	S04 W14	11 3.6		B	DHI	200	13	7	1
6345		HOLL	11 04 1615	S05 W15	11 3.5		B	DKI	410	37	9	3
6345		PALE	11 04 2036	S06 W17	11 3.6		B	DKI	320	31	10	4
6345		LEAR	11 05 0110	S04 W19	11 3.6		B	DAI	270	11	7	3
6345		SVTO	11 05 0915	S05 W23	11 3.7		B	DAI	320	30	9	3
6345		RAMY	11 05 1440	S04 W28	11 3.5		B	DAO	330	28	6	2
6345	26389	MWIL	11 05 1500	S05 W29	11 3.4	6	(BG)					
6345		BOUL	11 05 1507	S04 W28	11 3.5		B	DAI	190	8	4	1
6345		HOLL	11 05 1835	S06 W31	11 3.4		B	DSO	270	26	8	3
6345		PALE	11 05 1940	S05 W31	11 3.5		B	DKO	210	15	6	2
6345		CULG	11 06 0030	S05 W34	11 3.5		B	DKO	280	23	7	3
6345		LEAR	11 06 0040	S05 W33	11 3.5		B	DAI	480	8	7	2
6345		SVTO	11 06 0815	S05 W38	11 3.5		B	DAI	300	14	6	4
6345		RAMY	11 06 1205	S05 W40	11 3.5		B	CKO	290	14	6	3
6345	26389	MWIL	11 06 1530	S05 W43	11 3.4	5	(BP)					
6345		PALE	11 06 2205	S06 W44	11 3.6		B	DKO	150	10	5	4
6345		LEAR	11 07 0025	S05 W47	11 3.5		B	DSO	260	9	6	3
6345	26389	MWIL	11 07 0100	S05 W47	11 3.5		B	DAO	290	8	6	2
6345		BOUL	11 07 1600	S04 W57	11 3.4	5	(AP)					
6345		BOUL	11 07 1615	S05 W56	11 3.5		B	DAO	260	5	4	1
6345		RAMY	11 07 1835	S03 W57	11 3.5		B	DAO	270	13	8	1
6345		PALE	11 07 2210	S05 W59	11 3.5		B	DAO	230	3	5	3
6345		CULG	11 08 0020	S05 W60	11 3.5		B	DAO	100	6	5	3
6345		LEAR	11 08 0105	S08 W61	11 3.5		B	DSO	160	3	5	3
6345		SVTO	11 08 1105	S04 W66	11 3.5		A	HA	100	4	3	2
6345		RAMY	11 08 1326	S03 W68	11 3.5		B	DAO	130	4	3	4
6345	26389	MWIL	11 08 1545	S04 W70	11 3.4	5	(AP)					
6345		BOUL	11 08 1715	S04 W70	11 3.5		B	DAO	190	3	4	1
6345		PALE	11 08 1915	S05 W73	11 3.3		B	DAO	150	3	5	2
6345		HOLL	11 08 2200	S03 W69	11 3.8		B	DAO	150	9	10	3
6345		CULG	11 09 0040	S05 W76	11 3.3		B	DAO	70	5	3	2
6345		LEAR	11 09 0143	S04 W74	11 3.5		B	DAO	90	5	7	3
6345		SVTO	11 09 0800	S04 W80	11 3.3		A	HS	80	2	3	3
6345		RAMY	11 09 1236	S02 W80	11 3.5		B	CAO	90	7	5	4
6345		HOLL	11 09 1520	S04 W86	11 3.2		B	CSO	60	2	10	3
6345	26389	MWIL	11 09 1545	S04 W83	11 3.4	5	AP					
6345		PALE	11 09 1745	S05 W88	11 3.1		B	BXO	30	3	4	3
6445		PALE	11 03 1800	S05 W01	11 3.7		B	DHI	430	31	9	3
6352		SVTO	11 03 0957	N07 E12	11 4.3		B	BXO	10	2	4	1
6352		RAMY	11 03 1133	N08 E11	11 4.3		B	CRO	10	4	4	3
6352	26395	MWIL	11 03 1500	N08 E09	11 4.3	3	(B )					
6352		PALE	11 03 1800	N08 E08	11 4.3		B	CRO	20	5	5	3
6352		HOLL	11 03 2055	N07 E06	11 4.3		B	BXO	20	7	5	2
6352		CULG	11 04 0005	N08 E04	11 4.3		B	DAO	20	12	5	3
6352		LEAR	11 04 0010	N08 E05	11 4.4		B	BXO	30	7	6	3
6352		RAMY	11 04 1313	N08 W03	11 4.3		B	DAO	30	8	6	3
6352	26395	MWIL	11 04 1515	N07 W05	11 4.3	4	(B )					
6352		BOUL	11 04 1530	N07 W04	11 4.3		B	DSO	30	4	6	1
6352		HOLL	11 04 1615	N06 W08	11 4.1		B	BXO	30	6	6	3
6352		PALE	11 04 2036	N07 W06	11 4.4		B	CAO	50	11	7	4
6352		LEAR	11 05 0110	N08 W10	11 4.3		B	BXO	50	8	7	3
6352		SVTO	11 05 0915	N07 W14	11 4.3		B	DAO	20	3	7	3
6352		RAMY	11 05 1440	N09 W18	11 4.3		B	CRO	20	6	8	2
6352	26395	MWIL	11 05 1500	N08 W18	11 4.3	4	(B )					
6352		BOUL	11 05 1507	N07 W17	11 4.3		B	BXO	20	3	6	1
6352		HOLL	11 05 1835	N08 W20	11 4.3		B	BXO	30	4	8	3
6352		PALE	11 05 1940	N07 W21	11 4.2		B	BXO	20	4	7	2
6352		CULG	11 06 0030	N08 W25	11 4.1		B	BXO	10	3	8	3



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NOVEMBER 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time			CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	(UT)								
6352		LEAR	11	06	0040	N08 W24	11 4.2	B	BXO	20	2	7	2
6352		SVTO	11	06	0815	N08 W27	11 4.3	B	BXO	10	2	7	4
6352		RAMY	11	06	1205	N09 W27	11 4.5	A	HA	10	3	2	3
6352	26395	MWIL	11	06	1530	N07 W28	11 4.5	4	(AF)				
6352		PALE	11	06	2205	N07 W33	11 4.4	A	AX		1		4
6352		LEAR	11	07	0025	N08 W33	11 4.5	A	AX	10	1	1	3
6354		RAMY	11	02	1255	S22 E29	11 4.8	A	AX	10	3	2	2
6354		LEAR	11	03	0016	S21 E23	11 4.8	A	AX	10	1	1	3
6354		CULG	11	03	0020	S22 E23	11 4.8	A	AX		1		2
6354		PALE	11	03	1800	S22 E15	11 4.9	B	BXO		3	3	3
6354		HOLL	11	03	2055	S21 E13	11 4.9	B	BXO	10	4	3	2
6354		CULG	11	04	0005	S21 E12	11 4.9	B	BXO	10	4	3	3
6354		LEAR	11	04	0010	S22 E11	11 4.8	B	BXO	10	4	3	3
6354		RAMY	11	04	1313	S21 E04	11 4.8	B	DAO	30	11	4	3
6354	26397	MWIL	11	04	1515	S21 E03	11 4.9	4	(BP)				
6354		BOUL	11	04	1530	S20 E02	11 4.8	A	CSO	30	4	3	1
6354		HOLL	11	04	1615	S21 E03	11 4.9	B	BXO	30	17	4	3
6354		PALE	11	04	2036	S21 E00	11 4.8	A	AX	10	6	2	4
6354		LEAR	11	05	0110	S19 W04	11 4.7	B	BXO	40	6	5	3
6354		SVTO	11	05	0915	S21 W07	11 4.8	B	BXO	20	9	5	3
6354		RAMY	11	05	1440	S20 W10	11 4.8	B	DAO	70	10	4	2
6354	26397	MWIL	11	05	1500	S21 W10	11 4.8	5	(B )				
6354		BOUL	11	05	1507	S20 W10	11 4.9	B	CSO	80	6	4	1
6354		PALE	11	05	1940	S21 W12	11 4.9	B	CAO	40	3	4	2
6354		CULG	11	06	0030	S21 W14	11 4.9	B	DSO	50	8	4	3
6354		LEAR	11	06	0040	S21 W13	11 5.0	B	CSO	30	3	3	2
6354		SVTO	11	06	0815	S21 W18	11 5.0	B	CRI	20	7	5	4
6354		RAMY	11	06	1205	S20 W21	11 4.9	B	CRO	20	10	5	3
6354	26397	MWIL	11	06	1530	S22 W24	11 4.8	4	(B )				
6354		PALE	11	06	2205	S21 W25	11 5.0	B	BXO	10	3	4	4
6354		LEAR	11	07	0025	S21 W28	11 4.9	B	CSO	30	3	4	3
6354		CULG	11	07	0100	S21 W27	11 5.0	B	CRO	10	5	4	2
6355		RAMY	11	04	1313	N16 E07	11 5.1	A	AX	10	3	2	3
6355	26398	MWIL	11	04	1515	N16 E06	11 5.1	3	(B )				
6355		HOLL	11	04	1615	N16 E06	11 5.1	B	BXO	10	4	3	3
6355		PALE	11	04	2036	N15 E03	11 5.1	B	BXO		4	5	4
6355		SVTO	11	05	0915	N15 W03	11 5.1	B	BXO	10	4	4	3
6355		RAMY	11	05	1440	N17 W07	11 5.1	B	BXO	10	5	3	2
6355	26398	MWIL	11	05	1500	N15 W08	11 5.0	4	(B )				
6355		HOLL	11	05	1835	N16 W08	11 5.2	B	BXO	20	7	5	3
6355		PALE	11	05	1940	N16 W08	11 5.2	A	AX		4	2	2
6355		CULG	11	06	0030	N16 W12	11 5.1	B	BXO	10	7	4	3
6355		LEAR	11	06	0040	N16 W11	11 5.2	B	BXO	30	5	5	2
6355		SVTO	11	06	0815	N15 W15	11 5.2	B	DRI	60	0	5	4
6355		RAMY	11	06	1205	N17 W17	11 5.2	B	DAO	50	17	7	3
6355	26398	MWIL	11	06	1530	N16 W20	11 5.1	5	(B )				
6355		PALE	11	06	2205	N16 W23	11 5.2	B	BXO	40	12	6	4
6355		LEAR	11	07	0025	N16 W25	11 5.1	B	DAI	130	18	8	3
6355		CULG	11	07	0100	N16 W24	11 5.2	B	DAI	80	20	7	2
6355	26398	MWIL	11	07	1600	N17 W33	11 5.1	5	(BG)				
6355		BOUL	11	07	1615	N17 W33	11 5.2	B	DKI	250	19	7	1
6355		RAMY	11	07	1835	N18 W32	11 5.3	B	DAI	250	31	9	1
6355		PALE	11	07	2210	N17 W36	11 5.2	B	DSI	340	11	8	3
6355		CULG	11	08	0020	N17 W37	11 5.2	B	DAI	300	34	8	3
6355		LEAR	11	08	0105	N18 W38	11 5.1	B	DSO	400	14	10	3
6355		SVTO	11	08	1105	N16 W42	11 5.3	B	DAO	270	16	8	2
6355		RAMY	11	08	1326	N17 W43	11 5.3	B	DKO	270	29	9	4
6355	26398	MWIL	11	08	1545	N17 W46	11 5.2	5	(BG)				
6355		BOUL	11	08	1715	N17 W47	11 5.1	B	DKO	320	9	8	1
6355		PALE	11	08	1915	N18 W50	11 5.0	B	DAO	330	18	9	2
6355		HOLL	11	08	2200	N17 W48	11 5.3	B	DKO	340	24	9	3
6355		CULG	11	09	0040	N17 W52	11 5.1	BG	DAO	260	23	9	2
6355		LEAR	11	09	0143	N17 W51	11 5.2	BG	DAO	180	16	9	3
6355		SVTO	11	09	0800	N17 W55	11 5.1	B	DAO	240	10	9	3
6355		RAMY	11	09	1236	N18 W55	11 5.3	B	DKO	320	21	9	4
6355		HOLL	11	09	1520	N17 W59	11 5.1	B	ESO	290	9	11	3
6355		BOUL	11	09	1535	N18 W58	11 5.2	B	DKO	380	7	9	1

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 1990

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
6355	26398	MWIL	11	09	1545	N17	W59	11	5.2	5	(B )					
6355		PALE	11	09	1745	N17	W61	11	5.1		B	EHO	270	15	11	3
6355		CULG	11	10	0014	N19	W67	11	4.9		BG	DAO	150	7	10	2
6355		LEAR	11	10	0025	N17	W63	11	5.2		B	DAO	230	10	9	3
6355		SVTO	11	10	0815	N17	W68	11	5.2		B	DAO	340	8	9	3
6355		RAMY	11	10	1246	N18	W70	11	5.2		B	DAO	260	12	10	4
6355	26398	MWIL	11	10	1545	N17	W72	11	5.2	5	(BP)					
6355		BOUL	11	10	1620	N18	W70	11	5.3		B	DAO	170	4	8	2
6355		HOLL	11	10	1700	N15	W71	11	5.3		B	CAO	270	7	11	2
6355		PALE	11	10	1830	N17	W75	11	5.1		B	DAO	220	7	7	3
6355		CULG	11	11	0016	N17	W77	11	5.1		B	DKO	210	7	9	2
6355		SVTO	11	11	0814	N16	W80	11	5.3		B	CAO	210	3	12	3
6355		RAMY	11	11	1205	N17	W82	11	5.3		B	DAO	80	4	10	4
6347		RAMY	10	30	1357	S18	E83	11	5.9		A	HR	10	1	1	2
6347		BOUL	10	30	1455	S18	E79	11	5.6		A	AX	20	1	1	3
6347		HOLL	10	30	1510	S18	E81	11	5.8		A	HR	30	2	1	4
6347		LEAR	10	31	0038	S19	E73	11	5.6		A	HA	60	1	3	3
6347		SVTO	10	31	0753	S18	E74	11	6.0		B	CSO	90	2	6	2
6347		RAMY	10	31	1237	S19	E73	11	6.1		B	CAO	80	3	7	3
6347		BOUL	10	31	1528	S18	E68	11	5.8		B	CAO	120	3	4	1
6347	26392	MWIL	10	31	1535	S18	E67	11	5.7	5	(AP)					
6347		HOLL	10	31	1750	S18	E65	11	5.7		B	CSO	80	3	3	1
6347		PALE	10	31	1906	S20	E68	11	6.0		B	CAO	50	7	6	3
6347		CULG	11	01	0005	S19	E65	11	6.0		B	DRO	50	4	5	2
6347		LEAR	11	01	0008	S19	E64	11	5.9		B	DSO	220	10	7	4
6347		SVTO	11	01	0747	S19	E61	11	6.0		B	DSO	90	7	8	2
6347		RAMY	11	01	1226	S19	E58	11	5.9		B	DSO	150	8	7	4
6347		PALE	11	01	1903	S19	E52	11	5.8		B	DHO	120	4	8	4
6347		LEAR	11	02	0008	S20	E50	11	5.8		B	DAO	100	6	9	3
6347		CULG	11	02	0015	S19	E51	11	5.9		B	DSO	80	6	8	3
6347		SVTO	11	02	0825	S18	E46	11	5.8		B	DSO	90	8	8	3
6347		RAMY	11	02	1255	S20	E43	11	5.8		B	DAO	140	16	10	2
6347	26392	MWIL	11	02	1515	S20	E41	11	5.8	3	(BP)					
6347		PALE	11	02	1918	S19	E41	11	5.9		B	DRO	170	9	8	3
6347		LEAR	11	03	0016	S19	E38	11	5.9		B	DAO	70	13	6	3
6347		CULG	11	03	0020	S19	E37	11	5.8		B	DAO	130	13	10	2
6347		SVTO	11	03	0957	S19	E30	11	5.7		B	DAO	120	8	9	1
6347		RAMY	11	03	1133	S19	E30	11	5.8		B	DAO	140	18	10	3
6347	26392	MWIL	11	03	1500	S20	E28	11	5.8	3	(BP)					
6347		PALE	11	03	1800	S19	E28	11	5.9		B	DAO	170	22	10	3
6347		HOLL	11	03	2055	S18	E23	11	5.6		B	DSO	160	22	7	2
6347		CULG	11	04	0005	S18	E25	11	5.9		B	EAO	70	22	11	3
6347		LEAR	11	04	0010	S19	E24	11	5.8		B	DAO	90	20	7	3
6347		RAMY	11	04	1313	S18	E18	11	5.9		B	EAO	90	32	12	3
6347	26392	MWIL	11	04	1515	S19	E14	11	5.7	5	(BP)					
6347		BOUL	11	04	1530	S16	E10	11	5.4		B	DSI	110	10	4	1
6347		HOLL	11	04	1615	S19	E12	11	5.6		B	CAI	80	28	5	3
6347		PALE	11	04	2036	S19	E09	11	5.5		B	DAI	80	19	4	4
6347		LEAR	11	05	0110	S18	E06	11	5.5		B	CSO	100	14	6	3
6347		SVTO	11	05	0915	S18	E03	11	5.6		B	CAO	50	13	7	3
6347		RAMY	11	05	1440	S19	W01	11	5.5		B	CAO	80	10	5	2
6347	26392	MWIL	11	05	1500	S19	W02	11	5.5	5	(BP)					
6347		BOUL	11	05	1507	S17	W03	11	5.4		B	DSI	40	4	3	1
6347		HOLL	11	05	1835	S18	W03	11	5.5		B	CSO	50	13	5	3
6347		PALE	11	05	1940	S19	W04	11	5.5		B	CAO	40	10	3	2
6347		CULG	11	06	0030	S18	W07	11	5.5		B	DAO	70	11	3	3
6347		LEAR	11	06	0040	S18	W07	11	5.5		B	CSO	60	5	3	2
6347		SVTO	11	06	0815	S17	W12	11	5.4		B	DAI	80	9	4	4
6347		RAMY	11	06	1205	S18	W15	11	5.4		B	CAO	70	18	4	3
6347	26392	MWIL	11	06	1530	S18	W16	11	5.4	5	(AP)					
6347		PALE	11	06	2205	S18	W19	11	5.5		B	CAO	40	9	3	4
6347		LEAR	11	07	0025	S17	W21	11	5.4		B	CSO	50	9	3	3
6347		CULG	11	07	0100	S18	W21	11	5.4		B	DAO	70	12	3	2
6347	26392	MWIL	11	07	1600	S18	W31	11	5.3	4	(AP)					
6347		BOUL	11	07	1615	S17	W30	11	5.4		B	CAO	80	4	3	1
6347		RAMY	11	07	1835	S17	W29	11	5.6		B	DAO	50	7	5	1
6347		PALE	11	07	2210	S18	W33	11	5.4		B	CAO	50	2	3	3
6347		CULG	11	08	0020	S17	W34	11	5.4		B	CAO	30	9	3	3

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 Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day										
6347		LEAR	11	08	0105	S17 W34	11	5.5	B	CSO	90	9	4	3
6347		SVTO	11	08	1105	S17 W40	11	5.4	A	AX	20	5	3	2
6347		RAMY	11	08	1326	S17 W41	11	5.4	B	CAO	60	11	5	4
6347	26392	MWIL	11	08	1545	S17 W44	11	5.3	5	(BP)				
6347		BOUL	11	08	1715	S17 W45	11	5.3	A	HS	30	1	1	1
6347		PALE	11	08	1915	S18 W46	11	5.3	A	HS	30	1	1	2
6347		HOLL	11	08	2200	S17 W46	11	5.4	B	CAO	30	5	4	3
6347		CULG	11	09	0040	S17 W48	11	5.4	B	CSO	10	2	3	2
6347		LEAR	11	09	0143	S17 W48	11	5.4	A	HA	30	1	2	3
6347		SVTO	11	09	0800	S17 W52	11	5.4	A	HR	20	2	3	3
6347		RAMY	11	09	1236	S18 W54	11	5.4	B	CAO	40	4	3	4
6347		HOLL	11	09	1520	S18 W57	11	5.3	A	AX	10	1	1	3
6347		BOUL	11	09	1535	S16 W58	11	5.2	A	HS	20	1	1	1
6347	26392	MWIL	11	09	1545	S17 W57	11	5.3	5	(AP)				
6347		PALE	11	09	1745	S18 W59	11	5.2	A	AX	20	2	1	3
6347		CULG	11	10	0014	S17 W64	11	5.1	A	AX	10	1	1	2
6347		LEAR	11	10	0025	S18 W62	11	5.3	A	AX	20	2	2	3
6347		SVTO	11	10	0815	S17 W67	11	5.2	A	AX	20	1	1	3
6347		RAMY	11	10	1246	S17 W68	11	5.4	B	CRO	10	5	2	4
6347	26392	MWIL	11	10	1545	S17 W69	11	5.4	4	(AP)				
6347		BOUL	11	10	1620	S16 W69	11	5.4	A	AX	10	1	1	2
6347		HOLL	11	10	1700	S18 W71	11	5.3	A	AX	10	2	1	2
6347		PALE	11	10	1830	S18 W73	11	5.2	A	AX	30	1	1	3
6347		CULG	11	11	0016	S18 W76	11	5.2	A	AX		1		2
6347A		RAMY	11	05	1440	S08 E01	11	5.7	B	BXO		2	3	2
6347A	26403	MWIL	11	05	1500	S09 E01	11	5.7	4	(B )				
6347A		HOLL	11	05	1835	S08 W02	11	5.6	A	AX	10	1	1	3
6347A		CULG	11	08	0020	S08 W31	11	5.7	A	AX		1		3
6350		PALE	11	02	1918	S26 E40	11	5.9	B	BXO	20	2	4	3
6350		LEAR	11	03	0016	S25 E38	11	5.9	B	BXO	10	5	6	3
6350		CULG	11	03	0020	S26 E37	11	5.9	B	CRO	10	6	5	2
6350		SVTO	11	03	0957	S24 E31	11	5.8	B	DRO	70	6	6	1
6350		RAMY	11	03	1133	S25 E31	11	5.9	B	DAO	70	12	6	3
6350	26396	MWIL	11	03	1500	S26 E29	11	5.9	3	(B )				
6350		PALE	11	03	1800	S26 E29	11	6.0	B	DAO	70	12	7	3
6350		HOLL	11	03	2055	S25 E27	11	6.0	B	BXO	40	13	7	2
6350		CULG	11	04	0005	S25 E26	11	6.0	B	DRO	20	12	7	3
6350		LEAR	11	04	0010	S26 E25	11	5.9	B	DAO	60	10	8	3
6350		RAMY	11	04	1313	S26 E17	11	5.9	B	DAI	190	18	8	3
6350	26396	MWIL	11	04	1515	S26 E16	11	5.9	6	(BG)				
6350		BOUL	11	04	1530	S24 E15	11	5.8	B	DSO	120	8	10	1
6350		HOLL	11	04	1615	S25 E16	11	5.9	B	DKO	210	17	8	3
6350		PALE	11	04	2036	S25 E14	11	5.9	B	DAO	110	18	8	4
6350		LEAR	11	05	0110	S26 E10	11	5.8	B	DAO	180	12	9	3
6350		SVTO	11	05	0915	S24 E06	11	5.8	B	DAO	170	12	9	3
6350		RAMY	11	05	1440	S25 E03	11	5.8	B	EAO	240	15	11	2
6350	26396	MWIL	11	05	1500	S25 E03	11	5.8	5	(BG)				
6350		BOUL	11	05	1507	S24 E03	11	5.9	B	DSO	170	6	8	1
6350		HOLL	11	05	1835	S25 E01	11	5.8	B	EAO	210	17	11	3
6350		PALE	11	05	1940	S26 E00	11	5.8	B	EAO	120	11	11	2
6350		CULG	11	06	0030	S25 W02	11	5.9	B	DAO	200	22	10	3
6350		LEAR	11	06	0040	S24 W02	11	5.9	B	EAO	120	5	11	2
6350		SVTO	11	06	0815	S24 W05	11	5.9	B	DAI	190	11	10	4
6350		RAMY	11	06	1205	S24 W09	11	5.8	B	EAO	240	23	11	3
6350	26396	MWIL	11	06	1530	S25 W10	11	5.9	5	(B )				
6350		PALE	11	06	2205	S25 W11	11	6.1	B	EAO	150	10	12	4
6350		LEAR	11	07	0025	S26 W17	11	5.7	B	EAO	160	9	12	3
6350		CULG	11	07	0100	S24 W15	11	5.9	B	EAO	180	13	11	2
6350	26396	MWIL	11	07	1600	S25 W24	11	5.8	5	(B )				
6350		BOUL	11	07	1615	S24 W24	11	5.8	B	EAO	150	9	11	1
6350		RAMY	11	07	1835	S25 W23	11	6.0	B	EAO	190	15	12	1
6350		PALE	11	07	2210	S24 W31	11	5.5	B	CAO	130	3	3	3
6350		CULG	11	08	0020	S24 W29	11	5.8	B	EAO	150	14	11	3
6350		LEAR	11	08	0105	S24 W31	11	5.6	B	EAO	180	6	11	3
6350		SVTO	11	08	1105	S24 W34	11	5.8	B	ESO	90	6	12	2
6350		RAMY	11	08	1326	S25 W35	11	5.8	B	EAO	110	10	12	4
6350	26396	MWIL	11	08	1545	S24 W37	11	5.8	5	(B )				

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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
6350		BOUL	11 08 1715	S24	W37	11 5.9		B	EAO	120	4	11	1
6350		PALE	11 08 1915	S25	W37	11 5.9		B	CAO	80	6	12	2
6350		HOLL	11 08 2200	S25	W39	11 5.9		B	DSO	110	11	13	3
6350		CULG	11 09 0040	S26	W41	11 5.8		B	CAO	60	7	13	2
6350		LEAR	11 09 0143	S25	W42	11 5.8		B	CAO	90	8	11	3
6350		SVTO	11 09 0800	S24	W51	11 5.4		A	HS	40	3	3	3
6350		RAMY	11 09 1236	S24	W52	11 5.5		B	CAO	150	11	5	4
6350		HOLL	11 09 1520	S24	W55	11 5.4		B	CAO	120	3	5	3
6350		BOUL	11 09 1535	S23	W57	11 5.2		B	CAO	90	4	2	1
6350	26396	MWIL	11 09 1545	S23	W55	11 5.4	5	(AP)					
6350		PALE	11 09 1745	S24	W56	11 5.4		B	CAO	120	3	5	3
6350		CULG	11 10 0014	S23	W62	11 5.2		A	HA	60	4	2	2
6350		LEAR	11 10 0025	S23	W59	11 5.5		B	CAO	90	4	3	3
6350		SVTO	11 10 0815	S23	W65	11 5.3		A	HA	100	4	2	3
6350		RAMY	11 10 1246	S23	W66	11 5.4		B	CAO	20	7	3	4
6350	26396	MWIL	11 10 1545	S23	W68	11 5.4	5	(AP)					
6350		BOUL	11 10 1620	S23	W66	11 5.6		A	HS	50	1	3	2
6350		HOLL	11 10 1700	S24	W70	11 5.3		A	HS	120	2	2	2
6350		PALE	11 10 1830	S23	W70	11 5.4		B	CAO	70	3	3	3
6350		CULG	11 11 0016	S24	W71	11 5.5		A	HS	60	1	2	2
6350		SVTO	11 11 0814	S23	W77	11 5.4		A	HS	90	1	2	3
6350		RAMY	11 11 1205	S22	W79	11 5.4		A	HA	30	2	2	4
6350	26396	MWIL	11 11 1600	S23	W81	11 5.4	5	AP					
6350		HOLL	11 11 1615	S23	W79	11 5.6		A	HS	50	1	2	3
6356		RAMY	11 04 1313	S23	E29	11 6.8		B	BXO	10	5	3	3
6356	26399	MWIL	11 04 1515	S24	E25	11 6.6	3	(B )					
6356		BOUL	11 04 1530	S24	E26	11 6.6		A	AX		1		1
6356		HOLL	11 04 1615	S22	E27	11 6.7		B	BXO	10	7	3	3
6356		PALE	11 04 2036	S24	E25	11 6.8		A	AX		4	2	4
6356		LEAR	11 05 0110	S24	E19	11 6.5		A	AX	10	1	1	3
6356		SVTO	11 05 0915	S23	E17	11 6.7		B	BXO	10	3	3	3
6356		RAMY	11 05 1440	S24	E11	11 6.5		B	BXO	130	4	3	2
6356	26399	MWIL	11 05 1500	S24	E12	11 6.5	4	(AP)					
6356		BOUL	11 05 1507	S24	E10	11 6.4		A	AX		1		1
6356		HOLL	11 05 1835	S23	E12	11 6.7		B	BXO	20	4	4	3
6356		PALE	11 05 1940	S24	E09	11 6.5		A	AX		2		2
6356		SVTO	11 06 0815	S24	E03	11 6.6		A	AX		1		4
6356		RAMY	11 06 1205	S25	E01	11 6.6		B	BXO	10	6	3	3
6356		PALE	11 07 2210	S22	W16	11 6.7		A	HS	50	2	1	3
6356		RAMY	11 08 1326	S22	W31	11 6.2		A	AX		1		4
6356		SVTO	11 11 0814	S23	W50	11 7.5		B	BXO	20	4	4	3
6356		RAMY	11 11 1205	S22	W52	11 7.5		B	DRO	30	5	5	4
6349		LEAR	11 01 0008	S15	E77	11 6.8		A	AX	30	1	1	4
6349		SVTO	11 01 0747	S14	E75	11 7.0		A	AX		1		2
6349		RAMY	11 01 1226	S15	E69	11 6.7		A	AX	10	1	1	4
6349		PALE	11 01 1903	S15	E67	11 6.9		A	AX	30	1	1	4
6349		LEAR	11 02 0008	S15	E63	11 6.8		A	AX	20	1	1	3
6349		CULG	11 02 0015	S15	E64	11 6.8		A	AX		2		3
6349		SVTO	11 02 0825	S14	E59	11 6.8		A	AX	10	1		3
6349		RAMY	11 02 1255	S15	E57	11 6.8		A	HR	10	1	1	2
6349	26393	MWIL	11 02 1515	S15	E55	11 6.8	2	(AP)					
6349		PALE	11 02 1918	S14	E51	11 6.6		A	AX	10	1	1	3
6349		LEAR	11 03 0016	S13	E49	11 6.7		A	AX	20	1	1	3
6349		CULG	11 03 0020	S15	E50	11 6.8		A	AX		1		2
6349		RAMY	11 03 1133	S12	E42	11 6.6		A	AX	10	1	1	3
6349		PALE	11 03 1800	S13	E39	11 6.7		A	AX		1		3
6349		HOLL	11 03 2055	S13	E37	11 6.7		A	AX	20	1	1	2
6349		CULG	11 04 0005	S13	E37	11 6.8		A	AX		1		3
6349		PALE	11 05 1940	S16	E17	11 7.1		A	AX	10	2		2
6349		CULG	11 06 0030	S15	E16	11 7.2		B	BXO	10	7	3	3
6349		LEAR	11 06 0040	S17	E14	11 7.1		B	BXO	20	4	3	2
6349		RAMY	11 06 1205	S15	E08	11 7.1		B	DAO	30	9	4	3
6349	26406	MWIL	11 06 1530	S16	E05	11 7.0	5	(B )					
6349		PALE	11 06 2205	S16	E03	11 7.1		B	DSO	50	14	6	4
6349		LEAR	11 07 0025	S16	E00	11 7.0		B	DAI	150	18	7	3
6349		CULG	11 07 0100	S16	E02	11 7.2		B	DAO	80	18	6	2
6349	26406	MWIL	11 07 1600	S15	W09	11 7.0	5	(B )					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	ChP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6349		BOUL	11	07	1615	S14	W08	11	7.1		B	DAI	150	19	8	1
6349		RAMY	11	07	1835	S15	W09	11	7.1		B	DAO	100	17	9	1
6349		PALE	11	07	2210	S16	W12	11	7.0		B	DSI	120	10	9	3
6349		CULG	11	08	0020	S16	W12	11	7.1		B	DAO	150	19	10	3
6349		LEAR	11	08	0105	S16	W14	11	7.0		B	DAO	130	0	9	3
6349		RAMY	11	08	1326	S16	W21	11	7.0		B	DAO	150	19	9	4
6349	26406	MWIL	11	08	1545	S15	W23	11	6.9	5	(B )					
6349		BOUL	11	08	1715	S15	W23	11	7.0		B	DAO	130	6	10	1
6349		PALE	11	08	1915	S16	W24	11	7.0		B	DAO	120	13	10	2
6349		HOLL	11	08	2200	S15	W26	11	6.9		B	DSO	150	22	10	3
6349		CULG	11	09	0040	S16	W26	11	7.0		B	DAO	60	16	10	2
6349		LEAR	11	09	0143	S16	W27	11	7.0		B	DAO	120	14	10	3
6349		RAMY	11	09	1236	S17	W33	11	7.0		B	EAO	100	21	12	4
6349		HOLL	11	09	1520	S17	W36	11	6.9		B	CSO	80	9	11	3
6349		BOUL	11	09	1535	S15	W36	11	6.9		B	EAO	120	9	11	1
6349	26406	MWIL	11	09	1545	S16	W36	11	6.9	5	(B )					
6349		PALE	11	09	1745	S17	W37	11	6.9		B	DAO	70	16	11	3
6349		CULG	11	10	0014	S16	W42	11	6.8		B	EAO	30	10	11	2
6349		LEAR	11	10	0025	S17	W40	11	7.0		B	EAO	120	11	12	3
6349		SVTO	11	10	0815	S16	W46	11	6.8		B	EAO	80	5	12	3
6349		RAMY	11	10	1246	S17	W46	11	7.0		B	EAO	90	14	12	4
6349	26406	MWIL	11	10	1545	S16	W54	11	6.6	5	(BP)					
6349		BOUL	11	10	1620	S15	W54	11	6.6		B	DSO	50	2	4	2
6349		HOLL	11	10	1700	S16	W55	11	6.5		B	CSO	60	6	6	2
6349		PALE	11	10	1830	S16	W55	11	6.6		B	CAO	50	5	8	3
6349		CULG	11	11	0016	S17	W59	11	6.5		B	CSO	50	3	7	2
6349		SVTO	11	11	0814	S16	W64	11	6.5		B	CSO	60	2	3	3
6349		RAMY	11	11	1205	S16	W67	11	6.4		B	CAO	30	2	3	4
6349		BOUL	11	11	1525	S16	W69	11	6.4		A	HS	60	1	1	2
6349	26406	MWIL	11	11	1600	S16	W71	11	6.3	5	(AP)					
6349		HOLL	11	11	1615	S16	W69	11	6.4		A	HS	50	1	2	3
6349		PALE	11	11	2023	S15	W73	11	6.3		A	AX	20	1		1
6349		CULG	11	12	0010	S16	W72	11	6.5		B	CSO	60	3	12	3
6349		LEAR	11	12	0108	S16	W65	11	7.1		B	CSO	780	2	10	3
6349		RAMY	11	12	1220	S16	W77	11	6.7		B	CAO	30	2	9	3
6349	26406	MWIL	11	12	1545	S17	W75	11	6.9	4	(AP)					
6363		SVTO	11	06	0815	S16	E10	11	7.1		B	DRI	40	8	4	4
6363		SVTO	11	08	1105	S15	W20	11	6.9		B	DAO	120	12	9	2
6363		SVTO	11	09	0800	S16	W32	11	6.9		B	ESO	80	15	11	3
6365		CULG	11	10	0014	S24	W35	11	7.3		A	AX		1		2
6365		RAMY	11	11	1205	S22	W52	11	7.5		B	DRO	30	5	5	4
6365		BOUL	11	11	1525	S22	W53	11	7.6		B	BXO	10	2	4	2
6365	26412	MWIL	11	11	1600	S23	W55	11	7.4	5	(B )					
6365		HOLL	11	11	1615	S23	W53	11	7.6		B	BXO	20	4	5	3
6365		CULG	11	12	0010	S23	W59	11	7.5		B	BXO		4	4	3
6365		LEAR	11	12	0108	S23	W57	11	7.6		B	BXO	30	3	5	3
6365		SVTO	11	12	1052	S23	W63	11	7.6		B	BXO	20	3	7	2
6365		RAMY	11	12	1220	S22	W65	11	7.5		B	BXO	30	4	5	3
6365		BOUL	11	12	1457	S23	W65	11	7.6		B	BXO	10	2	4	1
6365	26412	MWIL	11	12	1545	S24	W68	11	7.4	4	(B )					
6365		HOLL	11	12	1620	S24	W68	11	7.4		B	BXO	10	3	4	4
6365A		RAMY	11	08	1326	N22	W12	11	7.6		A	AX		1		4
6365C		RAMY	11	08	1326	S02	W09	11	7.9		A	AX		1		4
6365B		LEAR	11	07	0025	S08	E12	11	7.9		A	AX	10	1	1	3
6365B		RAMY	11	07	1835	S08	E03	11	8.0		A	AX	10	2	1	1
6365D		SVTO	11	10	0815	N13	W30	11	8.1		B	BXO	10	3	3	3
6365D		RAMY	11	10	1246	N13	W32	11	8.1		A	AX	10	1	1	4
6365E		RAMY	11	08	1326	S10	E02	11	8.7		A	AX	10	2	2	4
6365F		LEAR	11	07	0025	N21	E23	11	8.8		A	AX	10	1	1	3
6357		CULG	11	04	0004	S10	E64	11	8.8		B	BXO	10	3	4	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6357		LEAR	11 04 0010	S12 E75	11 9.6		B	BXO	30	2	1	3
6357		RAMY	11 04 1313	S11 E68	11 9.7		B	BXO	10	5	3	3
6357	26401	MWIL	11 04 1515	S12 E66	11 9.6	3	(B)					
6357		HOLL	11 04 1615	S11 E66	11 9.6		B	BXO	20	3	3	3
6357		PALE	11 04 2036	S10 E64	11 9.7		A	AX		3	2	4
6357		LEAR	11 05 0110	S12 E58	11 9.4		B	BXO	60	4	3	3
6357		SVTO	11 05 0915	S10 E54	11 9.4		B	BXO	20	6	3	3
6357		RAMY	11 05 1440	S11 E51	11 9.4		A	AX	20	5	2	2
6357	26401	MWIL	11 05 1500	S11 E52	11 9.5	4	(AP)					
6357		HOLL	11 05 1835	S10 E50	11 9.5		A	AX	20	2	2	3
6357		PALE	11 05 1940	S10 E48	11 9.4		A	AX		2		2
6357		CULG	11 06 0030	S11 E47	11 9.5		A	AX		3	1	3
6357		HOLL	11 09 1520	S15 W02	11 9.5		A	AX	10	2	1	3
6357		PALE	11 09 1745	S14 W04	11 9.4		A	AX		2	1	3
6357		CULG	11 10 0014	S15 W09	11 9.3		A	AX		1		2
6357		LEAR	11 10 0025	S15 W08	11 9.4		A	AX	10	1	1	3
6353		RAMY	11 03 1133	N12 E82	11 9.6		A	AX	10	2	2	3
6353		PALE	11 03 1800	N12 E79	11 9.7		A	AX	20	1	1	3
6353		HOLL	11 03 2055	N12 E78	11 9.7		A	AX	20	1	1	2
6353		CULG	11 04 0005	N13 E75	11 9.7		A	AX		1		3
6353		LEAR	11 04 0010	N12 E75	11 9.6		A	AX	30	1	1	3
6353		RAMY	11 04 1313	N12 E67	11 9.6		A	HA	10	1	1	3
6353	26400	MWIL	11 04 1515	N12 E66	11 9.6	3	(AP)					
6353		BOUL	11 04 1530	N13 E66	11 9.6		A	AX	10	1	1	1
6353		HOLL	11 04 1615	N12 E68	11 9.8		A	AX	20	1	1	3
6353		PALE	11 04 2036	N12 E65	11 9.7		A	AX	10	1		4
6353		LEAR	11 05 0110	N10 E63	11 9.8		A	AX	20	1	1	3
6353		SVTO	11 05 0915	N12 E57	11 9.7		A	HR	20	1	1	3
6353		RAMY	11 05 1440	N12 E56	11 9.8		B	CAO	30	2	3	2
6353	26400	MWIL	11 05 1500	N12 E54	11 9.7	4	(AP)					
6353		BOUL	11 05 1507	N12 E53	11 9.6		A	AX	10	1		1
6353		HOLL	11 05 1835	N13 E54	11 9.8		B	BXO	30	3	4	3
6353		PALE	11 05 1940	N12 E53	11 9.8		A	AX	10	1		2
6353		CULG	11 06 0030	N12 E49	11 9.7		B	CSO	20	5	3	3
6353		LEAR	11 06 0040	N13 E49	11 9.7		A	AX	20	1	1	2
6353		SVTO	11 06 0815	N12 E45	11 9.7		A	AX	10	1	1	4
6353		RAMY	11 06 1205	N13 E43	11 9.7		B	CRO	30	8	5	3
6353	26400	MWIL	11 06 1530	N13 E41	11 9.7	3	(AP)					
6353		PALE	11 06 2205	N11 E44	11 10.2		B	BXO	40	6	13	4
6353		LEAR	11 07 0025	N13 E35	11 9.6		A	AX	10	1	1	3
6353		CULG	11 07 0100	N12 E36	11 9.7		B	CRO	10	8	4	2
6353	26400	MWIL	11 07 1600	N12 E27	11 9.7	4	(AP)					
6353		BOUL	11 07 1615	N13 E27	11 9.7		A	HS	10	1	1	1
6353		RAMY	11 07 1835	N13 E28	11 9.9		B	CAO	20	5	5	1
6353		PALE	11 07 2210	N15 E25	11 9.8		B	BXO	310	5	4	3
6353		CULG	11 08 0020	N13 E23	11 9.7		B	BXO	10	7	4	3
6353		LEAR	11 08 0105	N12 E23	11 9.8		A	AX	10	1	1	3
6353		RAMY	11 08 1326	N15 E17	11 9.8		B	CRO	30	14	4	4
6353	26400	MWIL	11 08 1545	N13 E16	11 9.9	4	(B)					
6353		BOUL	11 08 1715	N16 E14	11 9.8		A	AX	10	1	1	1
6353		PALE	11 08 1915	N15 E13	11 9.8		B	BXO	20	10	3	2
6353		HOLL	11 08 2200	N13 E13	11 9.9		B	BXO	20	8	4	3
6353		CULG	11 09 0040	N14 E11	11 9.8		B	BXO	10	11	4	2
6353		LEAR	11 09 0143	N13 E09	11 9.7		A	AX	10	1	1	3
6353		RAMY	11 09 1236	N14 E05	11 9.9		B	CSO	20	18	5	4
6353		HOLL	11 09 1520	N13 E03	11 9.9		B	BXO	20	6	5	3
6353		BOUL	11 09 1535	N13 E02	11 9.8		B	BXO	10	3	3	1
6353	26400	MWIL	11 09 1545	N13 E03	11 9.9	4	(BG)					
6353		PALE	11 09 1745	N13 E03	11 10.0		B	BXO	10	5	4	3
6353		CULG	11 10 0014	N14 W02	11 9.8		B	BXO	10	5	3	2
6353		LEAR	11 10 0025	N12 W03	11 9.8		A	AX	10	1	1	3
6353		RAMY	11 10 1246	N14 W09	11 9.8		B	CAO	20	5	5	4
6353	26400	MWIL	11 10 1545	N13 W10	11 9.9	4	(AP)					
6353		BOUL	11 10 1620	N13 W11	11 9.8		A	AX		1		2
6353		HOLL	11 10 1700	N13 W12	11 9.8		B	BXO	10	5	5	2
6353		PALE	11 10 1830	N13 W11	11 9.9		B	BXO	10	6	5	3
6353		RAMY	11 11 1205	N15 W22	11 9.8		B	BXO	20	9	3	4
6353	26400	MWIL	11 11 1600	N15 W24	11 9.8	4	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Observation Time (UT)	Mo	Day	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6353		PALE	11	11	2023	N15 W26	11	9.9		B	BXO	10	9	3	1
6353		RAMY	11	12	1220	N12 W32	11	10.1		B	BXO	10	5	3	3
6353	26400	MWIL	11	12	1545	N15 W36	11	9.9	4	(AP)					
6353		RAMY	11	13	1336	N13 W49	11	9.9		B	BXO	10	2	3	3
6358		RAMY	11	04	1313	N17 E79	11	10.5		B	CKO	210	4	4	3
6358	26402	MWIL	11	04	1515	N15 E78	11	10.5	6	(BF)					
6358		BOUL	11	04	1530	N16 E76	11	10.4		A	HH	240	1	5	1
6358		HOLL	11	04	1615	N16 E79	11	10.7		B	CSO	250	3	4	3
6358		PALE	11	04	2036	N16 E78	11	10.8		B	CSO	200	2	4	4
6358		LEAR	11	05	0110	N14 E73	11	10.6		B	CHO	300	3	8	3
6358		SVTO	11	05	0915	N15 E67	11	10.4		B	CSO	290	2	6	3
6358		RAMY	11	05	1440	N16 E65	11	10.5		B	CKO	370	7	7	2
6358	26402	MWIL	11	05	1500	N15 E66	11	10.6	6	(BF)					
6358		BOUL	11	05	1507	N16 E63	11	10.4		B	CAO	240	3	7	1
6358		HOLL	11	05	1835	N17 E64	11	10.6		B	CHO	350	10	11	3
6358		PALE	11	05	1940	N16 E61	11	10.4		B	CHO	220	8	8	2
6358		CULG	11	06	0030	N17 E58	11	10.4		B	DHO	480	1	9	3
6358		LEAR	11	06	0040	N18 E61	11	10.7		B	CHO	250	6	7	2
6358		SVTO	11	06	0815	N17 E55	11	10.5		B	DAI	350	18	9	4
6358		RAMY	11	06	1205	N18 E51	11	10.4		B	DKO	4240	28	9	3
6358	26402	MWIL	11	06	1530	N16 E52	11	10.6	5	(BF)					
6358		PALE	11	06	2205	N18 E46	11	10.4		B	EHO	210	24	12	4
6358		LEAR	11	07	0025	N18 E45	11	10.4		B	CHO	410	12	9	3
6358		CULG	11	07	0100	N18 E45	11	10.5		B	DHO	420	22	10	2
6358	26402	MWIL	11	07	1600	N16 E38	11	10.5	5	(BG)					
6358		BOUL	11	07	1615	N18 E34	11	10.3		B	EHI	510	18	11	1
6358		RAMY	11	07	1835	N18 E37	11	10.6		B	DKO	590	19	9	1
6358		PALE	11	07	2210	N16 E33	11	10.4		B	DHO	600	13	10	3
6358		CULG	11	08	0020	N18 E32	11	10.4		B	DHO	490	27	10	3
6358		LEAR	11	08	0105	N17 E31	11	10.4		B	EHI	500	17	13	3
6358		SVTO	11	08	1105	N15 E23	11	10.2		B	EHO	470	31	14	2
6358		RAMY	11	08	1326	N17 E26	11	10.5		B	EHO	540	30	12	4
6358	26402	MWIL	11	08	1545	N16 E25	11	10.5	6	(D)					
6358		BOUL	11	08	1715	N18 E21	11	10.3		B	EHO	530	13	12	1
6358		PALE	11	08	1915	N18 E21	11	10.4		B	DHO	530	29	10	2
6358		HOLL	11	08	2200	N17 E21	11	10.5		B	EHI	620	34	11	3
6358		CULG	11	09	0040	N18 E19	11	10.5		B	EHO	480	40	13	2
6358		LEAR	11	09	0143	N17 E18	11	10.4		B	FKO	470	20	16	3
6358		SVTO	11	09	0800	N16 E12	11	10.2		B	EHO	470	25	15	3
6358		RAMY	11	09	1236	N17 E12	11	10.4		B	EKO	550	46	12	4
6358		HOLL	11	09	1520	N17 E12	11	10.5		B	DHO	420	31	9	3
6358		BOUL	11	09	1535	N17 E10	11	10.4		B	DHO	490	11	8	1
6358	26402	MWIL	11	09	1545	N16 E12	11	10.6	6	(BG)					
6358		PALE	11	09	1745	N17 E09	11	10.4		B	DHO	510	35	9	3
6358		CULG	11	10	0014	N18 E05	11	10.4		B	EHO	340	22	11	2
6358		LEAR	11	10	0025	N16 E06	11	10.5		B	DHO	390	20	9	3
6358		SVTO	11	10	0815	N15 E00	11	10.3		B	EHO	570	24	14	3
6358		RAMY	11	10	1246	N17 W01	11	10.4		B	DKO	500	27	10	4
6358	26402	MWIL	11	10	1545	N16 W02	11	10.5	6	(BF)					
6358		BOUL	11	10	1620	N16 W04	11	10.4		B	DHO	320	5	8	2
6358		HOLL	11	10	1700	N17 W04	11	10.4		B	DHO	590	15	9	2
6358		PALE	11	10	1830	N16 W04	11	10.5		B	EHO	480	19	12	3
6358		CULG	11	11	0016	N17 W07	11	10.5		B	DHO	400	9	9	2
6358		SVTO	11	11	0814	N16 W12	11	10.4		B	DHO	500	19	10	3
6358		RAMY	11	11	1205	N15 W14	11	10.4		B	EKO	460	21	11	4
6358		BOUL	11	11	1525	N16 W16	11	10.4		B	DHO	350	5	7	2
6358	26402	MWIL	11	11	1600	N16 W16	11	10.4	6	(BF)					
6358		HOLL	11	11	1615	N17 W16	11	10.5		B	DHO	370	12	8	3
6358		PALE	11	11	2023	N15 W18	11	10.5		B	DHO	380	3	10	1
6358		CULG	11	12	0010	N16 W21	11	10.4		B	DHO	430	7	8	3
6358		LEAR	11	12	0108	N14 W21	11	10.5		B	EHO	360	10	13	3
6358		SVTO	11	12	1052	N16 W26	11	10.5		B	DHO	540	13	10	2
6358		RAMY	11	12	1220	N16 W25	11	10.6		B	EKO	410	28	11	3
6358		BOUL	11	12	1457	N15 W27	11	10.6		B	DHO	290	8	10	1
6358	26402	MWIL	11	12	1545	N15 W27	11	10.6	6	(D)					
6358		HOLL	11	12	1620	N16 W28	11	10.5		B	EHO	450	19	11	4
6358		LEAR	11	13	0040	N16 W33	11	10.5		B	EHO	310	11	11	3
6358		RAMY	11	13	1336	N15 W39	11	10.6		B	CKO	410	19	10	3



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NOVEMBER 1990

NOAA/ USAF Group	Mt Wilson Group	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
6358		BOUL 11 13 1525	N16 W42	11 10.4		B	DHO	340	10	10	1
6358	26402	MWIL 11 13 1545	N15 W40	11 10.6	6	(BG)					
6358		HOLL 11 13 1630	N16 W42	11 10.5		B	DHO	430	10	10	3
6358		LEAR 11 14 0014	N15 W45	11 10.6		B	DKO	280	9	10	3
6358		CULG 11 14 0150	N18 W45	11 10.6		B	CHO	600	4	7	3
6358		SVTO 11 14 0820	N15 W50	11 10.6		B	DHO	350	8	10	2
6358		RAMY 11 14 1249	N16 W52	11 10.6		B	CKO	350	18	10	4
6358	26402	MWIL 11 14 1545	N15 W53	11 10.6	6	(BF)					
6358		HOLL 11 14 1620	N16 W57	11 10.3		B	CHO	400	4	10	2
6358		PALE 11 14 2255	N15 W58	11 10.6		B	DKO	540	3	8	2
6358		LEAR 11 15 0002	N16 W57	11 10.7		B	CHO	290	4	8	3
6358		CULG 11 15 0100	N18 W57	11 10.7		B	CHO	380	2	3	2
6358		RAMY 11 15 1219	N16 W67	11 10.4		B	CKO	480	11	8	4
6358		HOLL 11 15 1540	N17 W68	11 10.5		B	CKO	330	6	15	3
6358		PALE 11 15 1745	N16 W70	11 10.4		B	CKO	390	4	7	2
6358	26402	MWIL 11 15 1915	N15 W68	11 10.6	5	B )					
6358		LEAR 11 16 0045	N16 W68	11 10.9		B	CHO	260	2	3	4
6358		CULG 11 16 0300	N18 W78	11 10.2		A	HS	150	2	5	2
6358		BOUL 11 16 1545	N17 W80	11 10.6		A	HS	120	1	3	1
6358		HOLL 11 16 1620	N13 W77	11 10.9		A	HS	150	1	2	3
6358		RAMY 11 16 1830	N14 W80	11 10.7		A	HK	180	1	3	1
6358		PALE 11 16 1922	N11 W78	11 10.9		B	CAO	220	4	5	3
6358		LEAR 11 17 0024	N14 W80	11 11.0		A	HA	300	1	5	3
6362		RAMY 11 05 1440	N09 E64	11 10.4		A	AX	10	2	2	2
6362		HOLL 11 05 1835	N10 E63	11 10.5		B	BXO	10	2	4	3
6362		SVTO 11 06 0815	N09 E54	11 10.4		B	BXO	10	3	4	4
6362		RAMY 11 06 1205	N10 E51	11 10.3		B	CAO	40	7	6	3
6362	26407	MWIL 11 06 1530	N11 E49	11 10.3	4	(B )					
6362		LEAR 11 07 0025	N10 E43	11 10.2		B	CSO	60	6	6	3
6362		CULG 11 07 0100	N10 E44	11 10.3		B	DRO	40	7	6	2
6362	26407	MWIL 11 07 1600	N10 E36	11 10.4	4	(B )					
6362		BOUL 11 07 1615	N11 E35	11 10.3		B	DSO	50	8	6	1
6362		RAMY 11 07 1835	N10 E34	11 10.3		B	DAO	50	8	5	1
6362		PALE 11 07 2210	N09 E32	11 10.3		B	DSO	70	5	6	3
6362		CULG 11 08 0020	N10 E31	11 10.3		B	DAO	90	13	6	3
6362		LEAR 11 08 0105	N09 E31	11 10.4		B	CAO	80	9	6	3
6362		SVTO 11 08 1105	N10 E25	11 10.3		B	DAO	70	11	6	2
6362		RAMY 11 08 1326	N09 E23	11 10.3		B	DAO	80	21	6	4
6362	26407	MWIL 11 08 1545	N09 E23	11 10.4	5	(B )					
6362		BOUL 11 08 1715	N11 E22	11 10.4		B	DAO	90	4	6	1
6362		PALE 11 08 1915	N09 E21	11 10.4		B	DAO	60	13	5	2
6362		HOLL 11 08 2200	N10 E20	11 10.4		B	DAI	90	26	7	3
6362		CULG 11 09 0040	N11 E18	11 10.4		B	DAO	30	23	6	2
6362		LEAR 11 09 0143	N09 E18	11 10.4		B	DAO	70	11	7	3
6362		SVTO 11 09 0800	N09 E14	11 10.4		B	DSO	40	13	6	3
6362		RAMY 11 09 1236	N09 E11	11 10.3		B	DAO	80	25	8	4
6362		HOLL 11 09 1520	N09 E10	11 10.4		B	CSO	50	9	6	3
6362		BOUL 11 09 1535	N09 E09	11 10.3		B	DAO	80	6	6	1
6362	26407	MWIL 11 09 1545	N08 E09	11 10.3	5	(B )					
6362		PALE 11 09 1745	N09 E09	11 10.4		BG	DHO	50	17	6	3
6362		CULG 11 10 0014	N09 E06	11 10.4		B	DAO	30	12	7	2
6362		LEAR 11 10 0025	N09 E04	11 10.3		B	DAO	90	16	6	3
6362		SVTO 11 10 0815	N08 E01	11 10.4		B	CAO	70	16	6	3
6362		RAMY 11 10 1246	N09 W02	11 10.4		B	DAO	60	19	9	4
6362	26407	MWIL 11 10 1545	N09 W04	11 10.3	5	(B )					
6362		BOUL 11 10 1620	N09 W05	11 10.3		B	CAO	30	6	6	2
6362		HOLL 11 10 1700	N09 W05	11 10.3		B	DAO	70	8	5	2
6362		PALE 11 10 1830	N09 W06	11 10.3		B	DAO	40	9	6	3
6362		CULG 11 11 0016	N10 W08	11 10.4		B	DAO	40	8	6	2
6362		SVTO 11 11 0814	N08 W12	11 10.4		B	CRO	50	17	7	3
6362		RAMY 11 11 1205	N09 W15	11 10.4		B	CRO	40	17	5	4
6362		BOUL 11 11 1525	N08 W16	11 10.4		B	BXO	10	4	4	2
6362	26407	MWIL 11 11 1600	N09 W17	11 10.4	4	(B )					
6362		HOLL 11 11 1615	N08 W17	11 10.4		B	CAI	70	13	6	3
6362		PALE 11 11 2023	N04 W19	11 10.4		B	BXO	10	10	5	1
6362		CULG 11 12 0010	N09 W21	11 10.4		B	DRO	20	7	5	3
6362		LEAR 11 12 0108	N08 W22	11 10.4		B	BXO	20	3	4	3
6362		SVTO 11 12 1052	N08 W23	11 10.7		B	BXO	20	5	11	2

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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
6362		RAMY	11	12	1220	N10	W25	11	10.6		B	BXO	30	16	11	3
6362		BOUL	11	12	1457	N09	W29	11	10.4		B	BXO		2	3	1
6362	26407	MWIL	11	12	1545	N10	W28	11	10.5	4	(B)					
6362		HOLL	11	12	1620	N08	W29	11	10.5		B	BXO	10	4	4	4
6362		RAMY	11	13	1336	N08	W38	11	10.7		B	BXO	10	6	10	3
6362	26407	MWIL	11	13	1545	N09	W43	11	10.4	4	(B)					
6362		RAMY	11	14	1249	N08	W52	11	10.6		A	AX	10	2	1	4
6362		RAMY	11	15	1219	N09	W67	11	10.5		A	AX	10	2	1	4
6359		LEAR	11	05	0110	S18	E75	11	10.7		B	BXO	60	2	4	3
6359		SVTO	11	05	0915	S17	E70	11	10.7		A	AX		1		3
6359		RAMY	11	05	1440	S18	E70	11	10.9		B	CAO	30	3	3	2
6359	26404	MWIL	11	05	1500	S18	E70	11	10.9	4	AP					
6359		HOLL	11	05	1835	S17	E67	11	10.9		B	BXO	20	3	8	3
6359		PALE	11	05	1940	S17	E68	11	11.0		A	AX	10	1		2
6359		CULG	11	06	0030	S18	E67	11	11.1		A	HS	30	14	1	3
6359		LEAR	11	06	0040	S17	E64	11	10.9		A	AX	20	1	1	2
6359		SVTO	11	06	0815	S17	E61	11	11.0		A	AX	20	1	1	4
6359		RAMY	11	06	1205	S16	E60	11	11.0		A	AX	10	1	1	3
6359	26404	MWIL	11	06	1530	S17	E58	11	11.0	4	(AP)					
6359		PALE	11	06	2205	S16	E55	11	11.1		A	AX	20	1		4
6359		LEAR	11	07	0025	S17	E52	11	11.0		B	CAO	30	2	2	3
6359		CULG	11	07	0100	S17	E53	11	11.1		A	HS	20	2	1	2
6359	26404	MWIL	11	07	1600	S17	E43	11	10.9	4	(BP)					
6359		RAMY	11	07	1835	S17	E43	11	11.0		B	CAO	30	6	3	1
6359		PALE	11	07	2210	S18	E40	11	11.0		A	HS	40	2	1	3
6359		CULG	11	08	0020	S17	E40	11	11.0		A	HS	10	4	2	3
6359		LEAR	11	08	0105	S17	E38	11	10.9		B	CSO	40	2	1	3
6359		SVTO	11	08	1105	S16	E32	11	10.9		A	HR	10	2	1	2
6359		RAMY	11	08	1326	S18	E32	11	11.0		B	CRO	10	3	3	4
6359	26404	MWIL	11	08	1545	S17	E31	11	11.0	4	(AP)					
6359		PALE	11	08	1915	S18	E28	11	10.9		A	AX	10	4	2	2
6359		HOLL	11	08	2200	S18	E28	11	11.0		B	CAO	20	8	3	3
6359		CULG	11	09	0040	S17	E26	11	11.0		A	AX	10	5	3	2
6359		LEAR	11	09	0143	S18	E26	11	11.0		B	CSO	20	3	2	3
6359		SVTO	11	09	0800	S19	E22	11	11.0		A	AX		2		3
6359		RAMY	11	09	1236	S19	E19	11	11.0		B	BXO	10	6	3	4
6359		CULG	11	10	0014	S19	E11	11	10.8		A	AX	10	7	4	2
6359		LEAR	11	10	0025	S19	E11	11	10.8		B	BXO	20	4	4	3
6359		SVTO	11	10	0815	S19	E08	11	10.9		A	AX	10	3	2	3
6359		RAMY	11	10	1246	S19	E04	11	10.8		B	BXO	10	9	7	4
6359	26404	MWIL	11	10	1545	S18	E03	11	10.9	4	(AP)					
6359		PALE	11	10	1830	S19	E01	11	10.8		B	BXO	10	4	3	3
6359		CULG	11	11	0016	S19	W01	11	10.9		B	BXO	10	5	4	2
6359		SVTO	11	11	0814	S18	W05	11	11.0		A	AX	10	5	3	3
6359		RAMY	11	11	1205	S19	W08	11	10.9		B	BXO	20	7	4	4
6359	26404	MWIL	11	11	1600	S18	W09	11	11.0	4	(AP)					
6359		HOLL	11	11	1615	S18	W10	11	10.9		B	BXO	10	4	4	3
6359		CULG	11	12	0010	S19	W17	11	10.7		B	BXO		6	4	3
6359C	26416	MWIL	11	12	1545	N10	W21	11	11.1	4	(AF)					
6369		RAMY	11	10	1246	S28	E09	11	11.2		A	AX	10	2	1	4
6369		RAMY	11	12	1220	S28	W16	11	11.3		A	AX	10	3	2	3
6369	26415	MWIL	11	12	1545	S25	W16	11	11.4	4	(B)					
6369		HOLL	11	12	1620	S28	W19	11	11.2		A	AX	10	2	1	4
6369		RAMY	11	13	1336	S27	W30	11	11.2		A	AX	10	2	2	3
6369	26415	MWIL	11	13	1545	S26	W31	11	11.2	4	(AP)					
6369		HOLL	11	13	1630	S24	W30	11	11.4		B	BXO	30	3	6	3
6369		CULG	11	15	0100	S17	W49	11	11.3		A	AX		1		2
6359A		CULG	11	10	0014	S09	E18	11	11.4		A	AX		3	1	2
6359A		BOUL	11	11	1525	S09	W05	11	11.3		A	AX		1		2
6359A		HOLL	11	11	1615	S08	W05	11	11.3		A	AX		1		3
6359A		CULG	11	12	0010	S09	W11	11	11.2		A	AX		1		3
6359A		LEAR	11	12	0108	S09	W09	11	11.4		B	BXO	10	2	2	3
6359B		RAMY	11	08	1326	N05	E39	11	11.5		A	AX		1		4
6359B		RAMY	11	09	1236	N03	E27	11	11.5		A	AX	40	4	2	4

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 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
6359B	26411	MWIL	11 09 1545	N03 E24	11 11.4	4	(AP)					
6359B		SVTO	11 11 0814	N05 E01	11 11.4		A	AX	10	3	1	3
6359B		RAMY	11 11 1205	N05 W01	11 11.4		A	AX	10	4	1	4
6359B	26411	MWIL	11 11 1600	N05 W04	11 11.4	4	(AP)					
6359B		CULG	11 12 0010	N05 W09	11 11.3		A	AX		1		3
6359B		RAMY	11 12 1220	N05 W16	11 11.3		A	AX	10	4	2	3
6359B	26411	MWIL	11 12 1545	N06 W18	11 11.3	4	(AP)					
6359B		RAMY	11 13 1336	N06 W30	11 11.3		A	AX		1		3
6360		RAMY	11 05 1440	S14 E79	11 11.6		B	BXO	20	3	3	2
6360	26405	MWIL	11 05 1500	S13 E78	11 11.5	4	AP					
6360		HOLL	11 05 1835	S13 E76	11 11.5		A	AX	10	2	1	3
6360		PALE	11 05 1940	S13 E72	11 11.2		A	AX		2		2
6360		CULG	11 06 0030	S14 E73	11 11.5		A	HS	60	1	1	3
6360		LEAR	11 06 0040	S12 E70	11 11.3		A	AX	30	1	1	2
6360		SVTO	11 06 0815	S14 E68	11 11.5		B	CSO	60	3	4	4
6360		RAMY	11 06 1205	S13 E65	11 11.4		B	CRO	60	8	5	3
6360	26405	MWIL	11 06 1530	S12 E62	11 11.3	4	(B )					
6360		PALE	11 06 2205	S13 E61	11 11.5		B	CAO	40	3	5	4
6360		LEAR	11 07 0025	S13 E57	11 11.3		B	CAO	60	4	4	3
6360		CULG	11 07 0100	S13 E60	11 11.6		B	CSO	40	4	3	2
6360	26405	MWIL	11 07 1600	S12 E48	11 11.3	4	(AP)					
6360		BOUL	11 07 1615	S14 E45	11 11.1		B	DSO	80	3	6	1
6360		RAMY	11 07 1835	S12 E48	11 11.4		B	CAO	30	4	2	1
6360		PALE	11 07 2210	S13 E45	11 11.3		A	HS	50	2	2	3
6360		CULG	11 08 0020	S13 E44	11 11.3		A	HS	20	3	1	3
6360		LEAR	11 08 0105	S12 E43	11 11.3		A	HCO	30	1	1	3
6360		SVTO	11 08 1105	S11 E37	11 11.2		A	HA	20	1	1	2
6360		RAMY	11 08 1326	S13 E39	11 11.5		B	CAO	30	5	6	4
6360	26405	MWIL	11 08 1545	S12 E36	11 11.4	5	(AP)					
6360		BOUL	11 08 1715	S14 E31	11 11.1		B	DSO	40	3	5	1
6360		PALE	11 08 1915	S11 E33	11 11.3		A	HS	20	1	1	2
6360		HOLL	11 08 2200	S12 E33	11 11.4		A	HA	50	3	2	3
6360		CULG	11 09 0040	S11 E32	11 11.4		A	HA	10	3	1	2
6360		LEAR	11 09 0143	S12 E30	11 11.3		B	CSO	20	2	2	3
6360		SVTO	11 09 0800	S11 E27	11 11.4		A	AX	20	3	1	3
6360		RAMY	11 09 1236	S12 E28	11 11.6		B	BXO	10	5	7	4
6360		HOLL	11 09 1520	S12 E23	11 11.4		A	AX	20	2	1	3
6360		BOUL	11 09 1535	S08 E22	11 11.3		B	DSO	30	2	2	1
6360	26405	MWIL	11 09 1545	S11 E22	11 11.3	5	(AP)					
6360		PALE	11 09 1745	S12 E22	11 11.4		A	AX	10	3	1	3
6360		CULG	11 10 0014	S13 E19	11 11.4		A	AX		3	1	2
6360		LEAR	11 10 0025	S12 E18	11 11.4		A	AX	10	2	1	3
6360		SVTO	11 10 0815	S12 E15	11 11.5		A	AX	10	1	1	3
6360		RAMY	11 10 1246	S11 E15	11 11.7		B	BXO	10	3	3	4
6360	26405	MWIL	11 10 1545	S12 E10	11 11.4	4	(AP)					
6360		BOUL	11 10 1620	S12 E10	11 11.4		A	AX		1		2
6360		HOLL	11 10 1700	S12 E10	11 11.5		A	AX	10	3	2	2
6360		PALE	11 10 1830	S13 E08	11 11.4		A	AX	10	2	2	3
6360		SVTO	11 11 0814	S15 E05	11 11.7		A	AX		1		3
6360		RAMY	11 11 1205	S12 W01	11 11.4		B	BXO	20	9	5	4
6360	26405	MWIL	11 11 1600	S09 W05	11 11.3	4	(AP)					
6360		BOUL	11 13 1525	S16 W26	11 11.7		B	BXO	10	4	3	1
6360	26419	MWIL	11 13 1545	S16 W25	11 11.8	4	(B )					
6360		HOLL	11 13 1630	S17 W25	11 11.8		B	BXO	20	7	4	3
6360		LEAR	11 14 0014	S17 W32	11 11.6		B	CAO	10	2	2	3
6360		SVTO	11 14 0820	S18 W36	11 11.6		A	AX	10	2	1	2
6360		RAMY	11 14 1249	S17 W37	11 11.7		B	CRO	20	4	4	4
6360	26419	MWIL	11 14 1545	S16 W39	11 11.7	4	(B )					
6360		HOLL	11 14 1620	S16 W39	11 11.7		B	BXO	20	3	5	2
6360		LEAR	11 15 0002	S18 W45	11 11.6		A	AX	20	1	1	3
6360		RAMY	11 15 1219	S18 W53	11 11.5		B	CRO	10	3	3	4
6360		HOLL	11 15 1540	S18 W55	11 11.5		A	AX	10	1	1	3
6360		PALE	11 15 1745	S19 W53	11 11.7		A	AX		1		2
6364C		RAMY	11 13 1336	S32 W25	11 11.6		B	EAO	320	36	14	3
6364C		CULG	11 14 0150	S29 W30	11 11.7		B	EAO	240	10	14	3
6364C		CULG	11 15 0100	S29 W42	11 11.7		B	CSO	140	7	6	2
6364C		CULG	11 16 0300	S29 W60	11 11.4		B	CAO	220	3	3	2

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

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Nov-90

NOVEMBER 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
6361		RAMY	11 05 1440	N08 E87	11 12.1		B	CAO	70	3	204.4	2
6361		HOLL	11 05 1835	N07 E86	11 12.2		B	CSO	150	4	10	3
6361		PALE	11 05 1940	N08 E80	11 11.8		A	AX	30	1		2
6361		CULG	11 06 0030	N07 E80	11 12.0		B	DSO	350	4	10	3
6361		LEAR	11 06 0040	N08 E78	11 11.9		B	DAO	240	2	5	2
6361		SVTO	11 06 0815	N07 E75	11 12.0		B	DKI	280	7	5	4
6361		RAMY	11 06 1205	N08 E75	11 12.1		B	CKO	300	12	5	3
6361	26409	MWIL	11 06 1530	N09 E72	11 12.0	5	(BF)					
6361		PALE	11 06 2205	N09 E70	11 12.2		B	CAO	180	4	204.6	4
6361		LEAR	11 07 0025	N07 E67	11 12.0		B	CKO	280	9	4	3
6361		CULG	11 07 0100	N08 E67	11 12.1		B	DKO	400	9	6	2
6361	26409	MWIL	11 07 1600	N08 E58	11 12.0	5	(BF)					
6361		BOUL	11 07 1615	N08 E63	11 12.4		B	EKO	460	11	14	1
6361		RAMY	11 07 1835	N08 E65	11 12.6		B	FKO	510	19	17	1
6361		PALE	11 07 2210	N08 E59	11 12.3		B	FKO	480	7	18	3
6361		CULG	11 08 0020	N08 E56	11 12.2		B	CKO	290	12	6	3
6361		LEAR	11 08 0105	N07 E58	11 12.4		B	FKO	420	9	17	3
6361		SVTO	11 08 1105	N09 E52	11 12.4		BG	FAO	270	24	16	2
6361		RAMY	11 08 1326	N07 E51	11 12.4		B	EAO	440	34	14	4
6361	26409	MWIL	11 08 1545	N07 E45	11 12.0	5	(BG)					
6361		BOUL	11 08 1715	N08 E49	11 12.4		B	FAO	310	8	19	1
6361		PALE	11 08 1915	N08 E48	11 12.4		B	EAO	240	14	204.4	2
6361		HOLL	11 08 2200	N08 E48	11 12.5		BG	FAI	350	17	18	3
6361		CULG	11 09 0040	N10 E43	11 12.2		BG	FAO	200	24	22	2
6361		LEAR	11 09 0143	N08 E48	11 12.7		BG	FKO	200	14	18	3
6361		SVTO	11 09 0800	N08 E43	11 12.5		BG	FAO	220	17	204.8	3
6361		RAMY	11 09 1236	N07 E39	11 12.4		BG	FAO	290	33	28	4
6361		HOLL	11 09 1520	N09 E39	11 12.6		BG	FAO	290	25	16	3
6361		BOUL	11 09 1535	N08 E38	11 12.5		B	FAO	230	10	17	1
6361	26409	MWIL	11 09 1545	N07 E33	11 12.1	6	(BG)					
6361		PALE	11 09 1745	N09 E37	11 12.5		BG	FAO	260	30	18	3
6361		CULG	11 10 0014	N09 E34	11 12.6		BG	FAO	170	18	18	2
6361		LEAR	11 10 0025	N08 E32	11 12.4		B	FAO	300	17	17	3
6361		SVTO	11 10 0815	N08 E28	11 12.4		BG	FAO	220	17	204.9	3
6361		RAMY	11 10 1246	N07 E25	11 12.4		BG	FAO	3300	35	20	4
6361	26409	MWIL	11 10 1545	N07 E19	11 12.1	5	(BG)					
6361		BOUL	11 10 1620	N09 E25	11 12.5		B	FSO	170	11	19	2
6361		HOLL	11 10 1700	N09 E25	11 12.6		B	FSO	250	15	20	2
6361		PALE	11 10 1830	N08 E24	11 12.6		B	FAO	200	16	19	3
6361		CULG	11 11 0016	N10 E20	11 12.5		BG	FAO	150	16	19	2
6361		SVTO	11 11 0814	N08 E14	11 12.4		BG	FAO	250	31	20	3
6361		RAMY	11 11 1205	N08 E11	11 12.3		BG	FAO	270	53	20	4
6361		BOUL	11 11 1525	N07 E07	11 12.2		B	DSI	130	14	10	2
6361	26409	MWIL	11 11 1600	N08 E04	11 12.0	5	(BG)					
6361		HOLL	11 11 1615	N07 E06	11 12.1		B	EAI	180	38	12	3
6361		PALE	11 11 2023	N08 E03	11 12.1		B	EAO	150	18	11	1
6361		CULG	11 12 0010	N08 E06	11 12.4		BG	FAO	130	31	20	3
6361		LEAR	11 12 0108	N08 E00	11 12.0		BG	FSO	240	21	24	3
6361		SVTO	11 12 1052	N08 W01	11 12.4		BG	FAO	220	16	20	2
6361		RAMY	11 12 1220	N08 W02	11 12.4		BG	FAO	190	36	20	3
6361		BOUL	11 12 1457	N08 W07	11 12.1		B	DAI	120	10	9	1
6361	26409	MWIL	11 12 1545	N08 W09	11 12.0	5	(BG)					
6361		HOLL	11 12 1620	N07 W07	11 12.1		B	CSO	180	28	12	4
6361		LEAR	11 13 0040	N04 W08	11 12.4		B	FSO	160	18	19	3
6361		RAMY	11 13 1336	N08 W15	11 12.4		B	FAO	160	30	20	3
6361		BOUL	11 13 1525	N08 W22	11 12.0		B	DAI	110	11	9	1
6361	26409	MWIL	11 13 1545	N08 W23	11 11.9	5	(BG)					
6361		HOLL	11 13 1630	N08 W18	11 12.3		B	CSO	230	22	19	3
6361		LEAR	11 14 0014	N09 W22	11 12.3		BG	FAO	100	18	19	3
6361		CULG	11 14 0150	N09 W28	11 12.0		BG	CAO	100	9	10	3
6361		SVTO	11 14 0820	N08 W26	11 12.4		BG	FAO	210	19	20	2
6361		RAMY	11 14 1249	N09 W27	11 12.5		B	FKO	220	38	19	4
6361	26409	MWIL	11 14 1545	N07 W36	11 11.9	5	(B )					
6361		HOLL	11 14 1620	N09 W30	11 12.4		BG	FAO	170	21	20	2
6361		LEAR	11 15 0002	N09 W33	11 12.5		B	CAO	120	11	20	3
6361		RAMY	11 15 1219	N08 W41	11 12.4		B	FAO	210	21	19	4
6361		HOLL	11 15 1540	N09 W42	11 12.5		BG	FAO	140	14	18	3
6361		PALE	11 15 1745	N05 W53	11 11.8		B	DAO	150	7	6	2

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	Mo	Day	CHP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6361	26409	MWIL	11	15	1915	N07	W52	11	11.9	5		(B )					
6361		CULG	11	16	0300	N08	W58	11	11.8			B	DAO	300	3	8	2
6361		BOUL	11	16	1545	N08	W65	11	11.8			B	DAO	140	2	9	1
6361		HOLL	11	16	1620	N07	W62	11	12.0			B	DAO	110	7	7	3
6361		RAMY	11	16	1830	N08	W59	11	12.3			B	FAO	180	6	17	1
6361		PALE	11	16	1922	N04	W63	11	12.1			B	DAO	80	3	6	3
6361		LEAR	11	17	0024	N08	W65	11	12.1			B	CAO	190	2	4	3
6361		SVTO	11	17	1140	N07	W75	11	11.9			B	DAO	180	3	7	2
6361		RAMY	11	17	1240	N06	W76	11	11.8			B	DAO	60	8	8	4
6361	26409	MWIL	11	17	1500	N07	W76	11	11.9	4		(B )					
6361		BOUL	11	17	1535	N02	W75	11	12.0			B	BXO	30	2	8	1
6361		HOLL	11	17	2026	N06	W79	11	11.9			B	CSO	90	7	8	3
6361		LEAR	11	18	0012	N08	W75	11	12.4			A	HA	30	2	2	3
6361		CULG	11	18	0016	N08	W80	11	12.0			B	DAO	60	2	7	3
6361A		RAMY	11	13	1336	S23	W17	11	12.2			B	CRO	20	6	4	3
6364		HOLL	11	05	1835	S29	E80	11	12.0			B	BXO	90	3	8	3
6364		CULG	11	06	0030	S30	E80	11	12.3			A	HS	60	1	1	3
6364		LEAR	11	06	0040	S28	E74	11	11.8			A	HS	60	1	2	2
6364		SVTO	11	06	0815	S29	E71	11	11.9			A	HA	90	1	2	4
6364		RAMY	11	06	1205	S29	E71	11	12.1			B	CAO	80	4	9	3
6364	26408	MWIL	11	06	1530	S28	E69	11	12.0	4		(AP)					
6364		PALE	11	06	2205	S28	E65	11	12.0			A	HS	100	1	2	4
6364		LEAR	11	07	0025	S28	E62	11	11.9			A	HA	100	2	2	3
6364		CULG	11	07	0100	S30	E67	11	12.3			B	CSO	80	5	7	2
6364	26408	MWIL	11	07	1600	S30	E56	11	12.1	4		(B )					
6364		BOUL	11	07	1615	S30	E56	11	12.1			B	DAO	170	4	10	1
6364		RAMY	11	07	1835	S29	E57	11	12.2			B	DAO	150	13	10	1
6364		PALE	11	07	2210	S29	E54	11	12.1			B	DAO	180	4	10	3
6364		CULG	11	08	0020	S29	E52	11	12.1			B	DAO	110	12	10	3
6364		LEAR	11	08	0105	S30	E52	11	12.1			B	DAO	140	11	9	3
6364		SVTO	11	08	1105	S28	E45	11	12.0			B	DAO	140	8	10	2
6364		RAMY	11	08	1326	S30	E48	11	12.3			B	EAO	260	20	12	4
6364	26408	MWIL	11	08	1545	S30	E44	11	12.1	5		(BP)					
6364		BOUL	11	08	1715	S29	E44	11	12.2			B	EAO	220	5	11	1
6364		PALE	11	08	1915	S29	E43	11	12.2			B	EAO	160	10	11	2
6364		HOLL	11	08	2200	S30	E43	11	12.3			B	EAO	310	18	12	3
6364		CULG	11	09	0040	S29	E42	11	12.3			B	EAO	220	21	12	2
6364		LEAR	11	09	0143	S29	E40	11	12.2			B	EKO	170	14	12	3
6364		SVTO	11	09	0800	S30	E38	11	12.3			B	ESO	230	14	11	3
6364		RAMY	11	09	1236	S31	E36	11	12.4			BG	EKI	420	32	12	4
6364		HOLL	11	09	1520	S30	E34	11	12.3			B	EAO	290	18	12	3
6364		BOUL	11	09	1535	S28	E34	11	12.3			B	EKO	410	12	13	1
6364	26408	MWIL	11	09	1545	S30	E32	11	12.2	5		(BG)					
6364		PALE	11	09	1745	S30	E33	11	12.3			B	EAI	320	29	12	3
6364		CULG	11	10	0014	S30	E29	11	12.3			B	EAO	230	25	12	2
6364		LEAR	11	10	0025	S31	E29	11	12.3			B	EAO	350	18	11	3
6364		SVTO	11	10	0815	S31	E24	11	12.2			BG	EAI	510	25	13	3
6364		RAMY	11	10	1246	S30	E22	11	12.3			B	DKO	390	31	10	4
6364	26408	MWIL	11	10	1545	S30	E20	11	12.2	5		(BP)					
6364		BOUL	11	10	1620	S30	E20	11	12.2			B	EAO	260	15	13	2
6364		HOLL	11	10	1700	S30	E20	11	12.3			B	EHO	440	31	15	2
6364		PALE	11	10	1830	S31	E20	11	12.3			B	EKI	350	27	14	3
6364		CULG	11	11	0016	S30	E18	11	12.4			B	EHO	220	20	14	2
6364		SVTO	11	11	0814	S31	E12	11	12.3			B	EAI	460	34	14	3
6364		RAMY	11	11	1205	S31	E10	11	12.3			B	EKO	350	57	15	4
6364		BOUL	11	11	1525	S30	E08	11	12.3			B	EKO	330	17	13	2
6364	26408	MWIL	11	11	1600	S30	E06	11	12.1	5		(BP)					
6364		HOLL	11	11	1615	S32	E09	11	12.4			B	EKI	410	52	15	3
6364		PALE	11	11	2023	S31	E06	11	12.3			B	EKO	280	17	14	1
6364		CULG	11	12	0010	S31	E04	11	12.3			B	EKO	470	31	13	3
6364		LEAR	11	12	0108	S31	E04	11	12.4			B	EAO	350	19	13	3
6364		SVTO	11	12	1052	S31	W02	11	12.3			B	ESI	420	29	15	2
6364		RAMY	11	12	1220	S31	W02	11	12.3			B	EKO	380	39	14	3
6364		BOUL	11	12	1457	S30	W05	11	12.2			B	EKI	330	21	13	1
6364	26408	MWIL	11	12	1545	S31	W05	11	12.3	5		(BG)					
6364		HOLL	11	12	1620	S32	W03	11	12.4			B	EHO	490	49	14	4
6364		LEAR	11	13	0040	S31	W07	11	12.5			B	EAO	260	20	13	3

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

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NOVEMBER 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
6364	26408	BOUL	11 13 1525	S30 W17	11 12.3		B	EAI	280	17	14	1
6364		MWIL	11 13 1545	S30 W18	11 12.2	5	(BG)					
6364		HOLL	11 13 1630	S32 W17	11 12.3		B	ESI	240	26	16	3
6364		LEAR	11 14 0014	S30 W22	11 12.3		B	EAO	170	25	15	3
6364		SVTO	11 14 0820	S32 W27	11 12.2		B	CAO	210	13	15	2
6364		RAMY	11 14 1249	S32 W27	11 12.4		B	FKO	320	27	16	4
6364	26408	MWIL	11 14 1545	S30 W31	11 12.2	5	(BP)					
6364		HOLL	11 14 1620	S30 W30	11 12.3		B	EAO	210	14	15	2
6364		PALE	11 14 2255	S32 W34	11 12.3		B	EAO	270	8	12	2
6364		LEAR	11 15 0002	S30 W36	11 12.2		B	CSO	200	9	14	3
6364		RAMY	11 15 1219	S31 W40	11 12.3		B	EAO	180	14	12	4
6364		HOLL	11 15 1540	S30 W41	11 12.4		B	EAO	190	9	15	3
6364		PALE	11 15 1745	S32 W45	11 12.2		B	CAO	150	7	14	2
6364	26408	MWIL	11 15 1915	S30 W47	11 12.1	5	BP					
6364		LEAR	11 16 0045	S31 W46	11 12.4		B	CAO	190	4	12	4
6364		BOUL	11 16 1545	S28 W62	11 11.8		B	CAO	170	3	5	1
6364		HOLL	11 16 1620	S30 W59	11 12.0		A	HA	190	6	3	3
6364		RAMY	11 16 1830	S29 W60	11 12.1		B	CAO	140	4	4	1
6364		PALE	11 16 1922	S32 W58	11 12.2		B	CAO	90	4	7	3
6364		LEAR	11 17 0024	S29 W62	11 12.1		B	CAO	220	4	4	3
6364		SVTO	11 17 1140	S28 W71	11 11.9		A	HA	150	2	3	2
6364		RAMY	11 17 1240	S30 W70	11 12.0		B	CAO	120	4	4	4
6364	26408	MWIL	11 17 1500	S29 W71	11 12.0	4	(AP)					
6364		BOUL	11 17 1535	S32 W79	11 11.4		B	BXO	60	1	4	1
6364		HOLL	11 17 2026	S31 W76	11 11.8		A	HS	120	1	2	3
6364		LEAR	11 18 0012	S28 W71	11 12.4		A	HA	60	1	2	3
6364		CULG	11 18 0016	S29 W78	11 11.9		A	HS	70	1	3	3
6364		SVTO	11 18 0828	S29 W82	11 11.9		A	HS	120	1	3	5
6364		RAMY	11 18 1210	S29 W88	11 11.6		A	HA	60	1	2	4
6364A		26410	MWIL	11 07 1600	N08 E68	11 12.8	4	(B )				
6364A		CULG	11 08 0020	N08 E61	11 12.6		A	HS	20	1	1	3
6364A	26410	MWIL	11 08 1545	N08 E55	11 12.8	5	(B )					
6364A	26410	MWIL	11 09 1545	N08 E43	11 12.9	5	(B )					
6364A	26410	MWIL	11 10 1545	N08 E29	11 12.8	5	(B )					
6364A	26410	MWIL	11 11 1600	N09 E13	11 12.6	5	(B )					
6364A	26410	MWIL	11 12 1545	N09 W00	11 12.6	5	(B )					
6364A	26410	MWIL	11 13 1545	N10 W13	11 12.7	4	(B )					
6364A	26410	MWIL	11 14 1545	N10 W26	11 12.7	5	(B )					
6370		LEAR	11 07 0025	S07 E73	11 12.5		A	AX	30	2	2	3
6370		RAMY	11 07 1835	S07 E67	11 12.8		A	AX	10	1	1	1
6370		CULG	11 08 0020	S10 E61	11 12.6		A	AX		1		3
6370		LEAR	11 08 0105	S09 E62	11 12.7		A	AX	20	1	1	3
6370		RAMY	11 08 1326	S10 E59	11 13.0		A	AX		1		4
6370		RAMY	11 12 1220	S09 E03	11 12.7		B	BXO	40	4	3	3
6370	26417	MWIL	11 12 1545	S08 E01	11 12.7	4	(AP)					
6370		HOLL	11 12 1620	S09 E01	11 12.7		A	AX	10	3	2	4
6370		RAMY	11 13 1336	S08 W11	11 12.7		B	BXO	10	4	3	3
6364B		CULG	11 08 0020	N09 E67	11 13.0		A	HS	30	4	1	3
6366		SVTO	11 09 0800	S20 E63	11 14.1		A	AX	10	3	3	3
6366		RAMY	11 09 1236	S21 E61	11 14.2		A	AX	10	3	2	4
6366		RAMY	11 10 1246	S20 E48	11 14.2		A	AX	10	1	1	4
6366		SVTO	11 11 0814	S21 E39	11 14.3		B	CRO	20	4	3	3
6366		RAMY	11 11 1205	S21 E37	11 14.3		B	CRO	30	9	5	4
6366		BOUL	11 11 1525	S20 E34	11 14.2		B	BXO	10	4	3	2
6366	26413	MWIL	11 11 1600	S21 E35	11 14.4	4	(B )					
6366		HOLL	11 11 1615	S22 E35	11 14.4		B	CRO	30	5	5	3
6366		PALE	11 11 2023	S22 E34	11 14.5		B	BXO		4	4	1
6366		CULG	11 12 0010	S21 E30	11 14.3		B	BXO		5	4	3
6366		LEAR	11 12 0108	S21 E30	11 14.3		B	BXO	30	5	2	3
6366		SVTO	11 12 1052	S22 E28	11 14.6		B	CRO	40	4	6	2
6366		RAMY	11 12 1220	S21 E25	11 14.4		B	CAO	30	10	8	3
6366		BOUL	11 12 1457	S21 E22	11 14.3		B	BXO	10	3	3	1
6366	26413	MWIL	11 12 1545	S21 E22	11 14.3	4	(B )					
6366		HOLL	11 12 1620	S23 E22	11 14.4		B	CAO	40	6	4	4
6366		LEAR	11 13 0040	S22 E21	11 14.6		B	CSO	20	2	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
6366		RAMY	11 13 1336	S22 E13	11 14.6		B	BXO	10	6	2	3
6366		BOUL	11 13 1525	S22 E11	11 14.5		A	AX		2	1	1
6366	26413	MWIL	11 13 1545	S21 E10	11 14.4	4	(B )					
6366		HOLL	11 13 1630	S22 E12	11 14.6		A	AX	20	5	2	3
6366		LEAR	11 14 0014	S22 E07	11 14.5		B	CAO	20	2	2	3
6366		SVTO	11 14 0820	S21 E00	11 14.3		B	CAO	30	8	6	2
6366	26413	RAMY	11 14 1249	S22 W03	11 14.3		B	DAO	90	24	7	4
6366		MWIL	11 14 1545	S21 W05	11 14.3	5	(D )					
6366		HOLL	11 14 1620	S21 W04	11 14.4		B	BXO	50	20	6	2
6366		PALE	11 14 2255	S22 W08	11 14.3		B	CSO	100	7	6	2
6366		LEAR	11 15 0002	S22 W09	11 14.3		B	DSO	50	10	5	3
6366		CULG	11 15 0100	S21 W09	11 14.3		B	BXO		4	5	2
6366		RAMY	11 15 1219	S21 W17	11 14.2		B	DAO	100	20	7	4
6366		HOLL	11 15 1540	S21 W18	11 14.3		B	CRO	40	16	7	3
6366	26413	PALE	11 15 1745	S21 W19	11 14.3		B	CRO	30	10	6	2
6366		MWIL	11 15 1915	S21 W20	11 14.3	4	B					
6366		LEAR	11 16 0045	S22 W22	11 14.3		B	DAO	50	15	7	4
6366		CULG	11 16 0300	S19 W28	11 14.0		B	BXO		7	7	2
6366		BOUL	11 16 1545	S20 W30	11 14.4		B	BXI	30	6	7	1
6366		HOLL	11 16 1620	S22 W31	11 14.3		B	DAI	110	24	7	3
6366		RAMY	11 16 1830	S20 W30	11 14.5		B	DAO	90	16	9	1
6366		PALE	11 16 1922	S23 W31	11 14.4		B	DAO	60	12	7	3
6366		LEAR	11 17 0024	S21 W35	11 14.3		B	DAO	250	12	6	3
6366		SVTO	11 17 1140	S21 W43	11 14.2		B	DAI	110	6	6	2
6366	26413	RAMY	11 17 1240	S21 W41	11 14.4		B	CAO	90	12	8	4
6366		MWIL	11 17 1500	S21 W45	11 14.2	5	(BP)					
6366		BOUL	11 17 1535	S23 W43	11 14.3		A	HA	90	1	3	1
6366		HOLL	11 17 2026	S22 W46	11 14.3		B	CAO	230	9	9	3
6366		LEAR	11 18 0012	S20 W49	11 14.3		B	CAO	80	8	8	3
6366		CULG	11 18 0016	S19 W49	11 14.3		B	CAO	60	5	6	3
6366		SVTO	11 18 0828	S23 W53	11 14.3		B	CAO	100	8	7	5
6366	26413	RAMY	11 18 1210	S21 W57	11 14.1		B	CAO	110	6	4	4
6366		MWIL	11 18 1515	S21 W60	11 14.0	4	(BP)					
6366		HOLL	11 18 1535	S23 W56	11 14.3		B	CAO	80	6	9	4
6366		BOUL	11 18 1615	S21 W60	11 14.1		A	HA	80	3	2	3
6366		CULG	11 19 0050	S20 W69	11 13.7		A	HA	60	2	3	2
6366		LEAR	11 19 0102	S20 W65	11 14.1		B	CSO	60	2	2	3
6366		SVTO	11 19 0820	S20 W69	11 14.1		B	CSO	110	2	3	5
6366		RAMY	11 19 1356	S22 W74	11 13.9		B	CAO	70	4	3	2
6366		HOLL	11 19 1630	S20 W78	11 13.7		A	HS	90	1	2	1
6366		PALE	11 19 2300	S22 W80	11 13.8		A	AX	60	2	1	2
6366A		RAMY	11 08 1326	S32 E78	11 14.7		A	AX		1		4
6366B		RAMY	11 14 1249	N09 E12	11 15.4		A	AX		1		4
6366C		CULG	11 22 0230	N20 W75	11 16.4		B	BXO	10	3	3	2
6367		RAMY	11 10 1246	N40 E71	11 16.3		A	AX	10	1	1	4
6367		CULG	11 11 0016	N42 E67	11 16.5		A	AX		1		2
6367		SVTO	11 11 0814	N40 E61	11 16.3		B	BXO	20	2	4	3
6367		RAMY	11 11 1205	N40 E58	11 16.2		B	CRO	20	5	3	4
6367	26414	BOUL	11 11 1525	N42 E55	11 16.1		B	BXO	10	2	3	2
6367		MWIL	11 11 1600	N41 E58	11 16.4	4	(B )					
6367		HOLL	11 11 1615	N40 E59	11 16.5		B	BXO	10	3	4	3
6367		CULG	11 12 0010	N41 E52	11 16.2		B	BXO		3	3	3
6367		LEAR	11 12 0108	N41 E55	11 16.5		A	AX	20	1	1	3
6367		SVTO	11 12 1052	N40 E49	11 16.4		A	AX	10	1	1	2
6367		RAMY	11 12 1220	N40 E48	11 16.4		A	AX	10	1	1	3
6371	26420	SVTO	11 17 1140	N18 W11	11 16.6		A	AX		1		2
6371		RAMY	11 17 1240	N18 W11	11 16.7		B	BXO	10	8	4	4
6371		MWIL	11 17 1500	N18 W13	11 16.6	2	(B )					
6371		RAMY	11 18 1210	N18 W26	11 16.5		B	BXO		2	2	4
6371		HOLL	11 18 1535	N17 W29	11 16.4		A	AX		1		4
6371		CULG	11 19 0050	N17 W33	11 16.5		A	AX		2	1	2
6371		SVTO	11 19 0820	N17 W36	11 16.6		B	BXO	10	5	3	5
6371		RAMY	11 19 1356	N17 W38	11 16.7			CRO	10	4	3	2
6371		HOLL	11 19 1630	N17 W40	11 16.6		B	BXO	20	4	4	1



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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
6371		LEAR	11 20 0030	N17 W46	11 16.5		A	AX	20	1	1	3
6371		SVTO	11 20 1020	N16 W50	11 16.6		B	BXO	10	5	4	3
6371		RAMY	11 20 1634	N18 W51	11 16.8		B	BXO	10	4	3	2
6371	26420	MWIL	11 20 1800	N17 W54	11 16.6	4	(B)					
6371		LEAR	11 21 0012	N17 W56	11 16.7		A	AX	20	4	6	3
6371		RAMY	11 21 1230	N17 W67	11 16.4		B	BXO	10	4	4	4
6371	26420	MWIL	11 21 1600	N17 W68	11 16.5	4	(AP)					
6371		LEAR	11 22 0125	N18 W70	11 16.7		A	AX	30	1	1	2
6371		SVTO	11 22 0920	N17 W78	11 16.5		B	CSO	30	2	5	1
6371	26420	MWIL	11 22 1545	N17 W80	11 16.6	4	AP					
6371		RAMY	11 22 1630	N19 W85	11 16.2		B	CSO	30	3	9	2
6371		HOLL	11 22 1730	N17 W79	11 16.7		B	BXO	10	2	3	4
6371A		HOLL	11 17 2026	N12 W02	11 17.7		B	BXO	20	3	3	3
6371A		CULG	11 18 0016	N11 W03	11 17.8		A	AX		2	2	3
6371A		RAMY	11 18 1210	N10 W11	11 17.7		A	AX		1	1	4
6371B		RAMY	11 18 1210	N20 W07	11 18.0		B	BXO	10	4	6	4
6371B	26422	MWIL	11 18 1515	N22 W07	11 18.1	3	(AF)					
6371B		HOLL	11 18 1535	N22 W08	11 18.0		A	AX		1		4
6376		CULG	11 19 0050	S18 W05	11 18.6		B	BXO	10	6	3	2
6376		LEAR	11 19 0102	S17 W06	11 18.6		B	BXO	20	5	6	3
6376		SVTO	11 19 0820	S18 W10	11 18.6		B	CRI	30	8	7	5
6376		RAMY	11 19 1356	S13 W18	11 18.2		B	DAO	40	10	5	2
6376		BOUL	11 19 1534	S17 W16	11 18.4		B	CAO	40	2	4	1
6376		HOLL	11 19 1630	S17 W15	11 18.5		B	BXO	30	8	4	1
6376		PALE	11 19 2300	S19 W20	11 18.4		B	DSI	40	5	4	2
6376		LEAR	11 20 0030	S18 W19	11 18.6		B	DSO	50	8	5	3
6376		CULG	11 20 0130	S17 W21	11 18.5		B	CSO	50	3	6	3
6376		SVTO	11 20 1020	S17 W25	11 18.5		B	CRO	50	12	6	3
6376		BOUL	11 20 1533	S16 W26	11 18.7		B	BXI	40	7	4	1
6376		RAMY	11 20 1634	S17 W28	11 18.6		B	DAO	70	18	6	2
6376	26424	MWIL	11 20 1800	S17 W28	11 18.6	5	(B)					
6376		LEAR	11 21 0012	S17 W32	11 18.6		B	DSO	70	10	6	3
6376		CULG	11 21 0100	S18 W36	11 18.3		B	CSI	70	9	6	1
6376		SVTO	11 21 0815	S16 W37	11 18.5		B	DAO	90	11	6	3
6376		RAMY	11 21 1230	S17 W39	11 18.5		B	DAO	100	19	7	4
6376		BOUL	11 21 1548	S16 W41	11 18.5		B	DAO	100	8	7	1
6376	26424	MWIL	11 21 1600	S17 W41	11 18.5	5	(B)					
6376		HOLL	11 21 1615	S17 W42	11 18.5		B	CSO	90	15	7	3
6376		PALE	11 21 1903	S16 W43	11 18.5		B	CSO	70	8	6	3
6376		LEAR	11 22 0125	S17 W47	11 18.5		B	CSO	50	4	7	2
6376		CULG	11 22 0230	S16 W49	11 18.4		B	CSO	50	6	5	2
6376		SVTO	11 22 0920	S17 W54	11 18.3		B	CAO	40	8	13	1
6376	26424	MWIL	11 22 1545	S17 W53	11 18.6	5	(BF)					
6376		RAMY	11 22 1630	S16 W54	11 18.6		B	CAO	50	5	6	2
6376		HOLL	11 22 1730	S17 W55	11 18.5		B	CAO	60	5	7	4
6376		PALE	11 22 2200	S17 W56	11 18.7		A	HA	40	1	1	2
6376		LEAR	11 23 0030	S17 W58	11 18.6		B	CSO	50	3	7	3
6376		CULG	11 23 0115	S14 W65	11 18.1		A	HS	50	2	2	1
6376		RAMY	11 23 1205	S15 W60	11 19.0		A	HA	30	3	2	3
6376		BOUL	11 23 1544	S16 W66	11 18.6		B	CSO	50	2	2	1
6376	26424	MWIL	11 23 1545	S16 W64	11 18.8	4	(AF)					
6376		HOLL	11 23 1610	S18 W64	11 18.8		A	HR	70	4	3	3
6376		LEAR	11 24 0030	S15 W69	11 18.8		B	CSO	60	2	8	3
6376		PALE	11 24 0206	S18 W70	11 18.7		A	AX	10	1		3
6376		RAMY	11 24 1145	S15 W75	11 18.8		A	AX		1	1	3
6376		PALE	11 24 1903	S18 W81	11 18.6		A	AX		1		3
6376A		SVTO	11 19 0820	N05 E08	11 19.9		A	AX	10	1	1	5
6368		RAMY	11 12 1220	N19 E85	11 19.0		A	HA	60	1	2	3
6368		BOUL	11 12 1457	N19 E80	11 18.7		A	HS	30	1	2	1
6368	26418	MWIL	11 12 1545	N18 E86	11 19.2	5	AP					
6368		HOLL	11 12 1620	N18 E82	11 18.9		A	HS	60	1	2	4
6368		LEAR	11 13 0040	N21 E80	11 19.2		B	DHO	480	2	5	3
6368		RAMY	11 13 1336	N18 E74	11 19.2		B	DKO	790	5	8	3
6368		BOUL	11 13 1525	N20 E76	11 19.4		B	DKO	500	5	8	1

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NOAA/ USAF Group	Mt Wilson Group	Observation Sta	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
6368	26418	MWIL	11 13 1545	N18 E76	11 19.4	6	(BP					
6368		HOLL	11 13 1630	N20 E79	11 19.7		B	EHO	790	11	15	3
6368		LEAR	11 14 0014	N18 E73	11 19.6		B	FKI	680	6	23	3
6368		SVTO	11 14 0820	N17 E72	11 19.8		B	FKI	1380	20	18	2
6368		RAMY	11 14 1249	N18 E70	11 19.9		B	FKI	1520	30	22	4
6368	26418	MWIL	11 14 1545	N19 E67	11 19.8	6	(B )					
6368		HOLL	11 14 1620	N19 E69	11 19.9		BG	EKC	2180	32	20	2
6368		PALE	11 14 2255	N22 E68	11 20.2		B	FKO	2340	9	20	2
6368		LEAR	11 15 0002	N17 E63	11 19.8		B	FKI	2510	17	19	3
6368		CULG	11 15 0100	N18 E61	11 19.7		B	FKO	2200	9	23	2
6368		RAMY	11 15 1219	N18 E58	11 19.9		BG	FKI	2250	61	23	4
6368		HOLL	11 15 1540	N19 E56	11 19.9		B	FKC	2460	64	23	3
6368		PALE	11 15 1745	N20 E55	11 19.9		B	FKO	2380	18	20	2
6368	26418	MWIL	11 15 1915	N19 E54	11 19.9	6	(B )					
6368		LEAR	11 16 0045	N18 E52	11 20.0		B	FKI	2470	33	23	4
6368		BOUL	11 16 1545	N20 E41	11 19.8		B	FKO	2630	18	23	1
6368		HOLL	11 16 1620	N19 E43	11 20.0		BGD	FKI	2810	0	22	3
6368		RAMY	11 16 1830	N19 E42	11 20.0		BGD	FKO	2830	49	22	1
6368		PALE	11 16 1922	N21 E41	11 19.9		BGD	FKC	2270	38	22	3
6368		LEAR	11 17 0024	N20 E39	11 20.0		BGD	FKO	3360	28	17	3
6368		SVTO	11 17 1140	N19 E32	11 19.9		BGD	FKI	2600	80	22	2
6368		RAMY	11 17 1240	N19 E32	11 20.0		BGD	FKI	3040	0	22	4
6368	26418	MWIL	11 17 1500	N19 E31	11 20.0	6	(D )					
6368		BOUL	11 17 1535	N20 E26	11 19.6		B	FKO	2580	20	24	1
6368		HOLL	11 17 2026	N19 E26	11 19.8		BGD	FKI	3100	0	24	3
6368		LEAR	11 18 0012	N19 E27	11 20.1		BGD	FKI	3100	68	25	3
6368		CULG	11 18 0016	N19 E26	11 20.0		BGD	F I	2390	0	24	3
6368		SVTO	11 18 0828	N18 E20	11 19.9		BGD	FKI	4180	97	23	5
6368		RAMY	11 18 1210	N18 E19	11 19.9		BGD	FKI	2870	0	23	4
6368	26418	MWIL	11 18 1515	N18 E17	11 19.9	5	(D )					
6368		HOLL	11 18 1535	N18 E19	11 20.1		BGD	FKI	2810	0	22	4
6368		BOUL	11 18 1615	N19 E17	11 20.0		B	FKI	2520	98	22	3
6368		CULG	11 19 0050	N18 E11	11 19.9		BGD	FKI	2250	95	23	2
6368		LEAR	11 19 0102	N17 E12	11 19.9		BGD	FKI	2800	77	24	3
6368		SVTO	11 19 0820	N18 E06	11 19.8		BGD	FKI	2700	94	25	5
6368		RAMY	11 19 1356	N19 E04	11 19.9		BGD	FKI	2370	0	25	2
6368		BOUL	11 19 1534	N19 E05	11 20.0		B	FKI	1880	34	22	1
6368		HOLL	11 19 1630	N19 E04	11 20.0		BG	FKC	2600	94	23	1
6368		PALE	11 19 2300	N17 E01	11 20.0		BGD	EKI	3500	57	13	2
6368		LEAR	11 20 0030	N17 W01	11 19.9		BG	FKI	2640	66	24	3
6368		CULG	11 20 0130	N18 W02	11 19.9		B	FKI	2350	88	26	3
6368		SVTO	11 20 1020	N16 W04	11 20.1		BGD	FKI	2920	0	28	3
6368		BOUL	11 20 1533	N19 W07	11 20.1		B	FKI	1810	35	21	1
6368		RAMY	11 20 1634	N18 W09	11 20.0		BGD	FKI	2770	0	24	2
6368	26418	MWIL	11 20 1800	N18 W10	11 20.0	6	(D )					
6368		LEAR	11 21 0012	N18 W14	11 19.9		B	FKO	2520	64	23	3
6368		CULG	11 21 0100	N19 W14	11 20.0		B	FKI	2070	80	24	1
6368		SVTO	11 21 0815	N20 W18	11 20.0		BGD	FKI	2290	0	22	3
6368		RAMY	11 21 1230	N19 W20	11 20.0		BGD	FKI	2530	0	22	4
6368		BOUL	11 21 1548	N18 W21	11 20.0		BGD	FKI	2350	31	23	1
6368	26418	MWIL	11 21 1600	N18 W22	11 20.0	6	(D )					
6368		HOLL	11 21 1615	N18 W22	11 20.0		BGD	FKC	2470	96	23	3
6368		PALE	11 21 1903	N19 W24	11 20.0		BGD	FKI	2050	0	22	3
6368		LEAR	11 22 0125	N18 W26	11 20.1		B	FKO	2260	48	22	2
6368		CULG	11 22 0230	N19 W28	11 20.0		BD	FKO	2050	50	19	2
6368		SVTO	11 22 0920	N18 W31	11 20.0		BGD	FKI	2160	54	22	1
6368	26418	MWIL	11 22 1545	N18 W33	11 20.1	6	(D )					
6368		RAMY	11 22 1630	N19 W32	11 20.2		BGD	FKI	2300	0	26	2
6368		HOLL	11 22 1730	N17 W36	11 20.0		BGD	FKI	2280	0	27	4
6368		PALE	11 22 2200	N18 W37	11 20.1		BGD	EKI	2180	34	12	2
6368		LEAR	11 23 0030	N18 W38	11 20.1		B	FKO	2200	49	22	3
6368		CULG	11 23 0115	N20 W43	11 19.8		BGD	FKI	1580	47	25	1
6368		RAMY	11 23 1205	N19 W44	11 20.1		BGD	FKI	2230	60	22	3
6368		BOUL	11 23 1544	N19 W47	11 20.1		B	FKI	2100	45	21	1
6368	26418	MWIL	11 23 1545	N18 W46	11 20.1	6	(D )					
6368		HOLL	11 23 1610	N16 W47	11 20.1		BGD	FKI	2750	0	22	3
6368		LEAR	11 24 0030	N18 W51	11 20.1		B	FKI	2180	35	20	3
6368		CULG	11 24 0120	N18 W54	11 19.9		BG	FKI	2400	40	29	3
6368		PALE	11 24 0206	N16 W54	11 20.0		BGD	FKI	1310	46	19	3

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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)								
6368		RAMY	11	24	1145	N19 W57	11 20.1		BGD FKI	1680	58	22	3
6368		BOUL	11	24	1528	N18 W58	11 20.2		B FKI	1290	15	21	1
6368		HOLL	11	24	1740	N15 W60	11 20.2		BGD FKI	2220	61	27	3
6368	26418	MWIL	11	24	1845	N18 W59	11 20.3	6	(D )				
6368		PALE	11	24	1903	N18 W65	11 19.8		BGD FKI	1310	42	20	3
6368		CULG	11	25	0035	N18 W64	11 20.1		BGD FKI	1410	45	26	3
6368		LEAR	11	25	0110	N19 W63	11 20.2		BGD FKO	2000	24	21	2
6368		SVTO	11	25	0835	N17 W68	11 20.2		BGD FKI	1530	40	21	2
6368		RAMY	11	25	1336	N17 W72	11 20.1		BGD FKI	1390	28	23	3
6368	26418	MWIL	11	25	1530	N17 W70	11 20.3	6	(D )				
6368		BOUL	11	25	1540	N16 W72	11 20.2		B FKI	1150	17	28	2
6368		HOLL	11	25	1645	N18 W69	11 20.4		BGD FKI	1780	11	19	1
6368		PALE	11	25	1950	N18 W74	11 20.2		BGD FKI	1320	10	20	3
6368		LEAR	11	26	0210	N18 W73	11 20.5		B DKO	450	3	10	1
6368		SVTO	11	26	1139	N17 W80	11 20.4		BGD FKI	900	13	16	2
6368		RAMY	11	26	1338	N18 W80	11 20.5		BGD EKI	470	15	14	2
6368	26418	MWIL	11	26	1815	N17 W78	11 20.8	5	(AF)				
6368		PALE	11	26	1925	N16 W80	11 20.7		A HK	300	1	2	3
6368		HOLL	11	26	2115	N17 W79	11 20.9		B CKI	240	9	6	1
6368		LEAR	11	27	0028	N17 W77	11 21.2		BGD CKO	570	1	4	2
6368		PALE	11	27	2130	N21 W78	11 21.9		A AX	30	1		3
6375	26423	MWIL	11	18	1515	N21 E38	11 21.5	3	(AF)				
6375		HOLL	11	18	1535	N21 E39	11 21.6		A AX	10	4	1	4
6375		RAMY	11	23	1205	N25 W22	11 21.8		B BXO	10	4	4	3
6375A		RAMY	11	21	1230	N30 E11	11 22.4		A AX	10	3	1	4
6375A	26425	MWIL	11	21	1600	N25 E03	11 21.9	4	(AF)				
6375B		RAMY	11	24	1145	N07 W22	11 22.8		A AX		2	1	3
6372		SVTO	11	17	1140	S17 E73	11 23.0		A HA	120	2	2	2
6372		RAMY	11	17	1240	S18 E72	11 23.0		A HA	60	1	2	4
6372	26421	MWIL	11	17	1500	S18 E70	11 22.9	4	(AP)				
6372		HOLL	11	17	2026	S17 E68	11 23.0		A HS	160	5	3	3
6372		LEAR	11	18	0012	S18 E66	11 23.0		A HS	100	1	2	3
6372		CULG	11	18	0016	S17 E67	11 23.1		A HS	70	1	2	3
6372		SVTO	11	18	0828	S18 E61	11 23.0		A HS	120	2	2	5
6372		RAMY	11	18	1210	S19 E58	11 22.9		A HA	110	2	2	4
6372	26421	MWIL	11	18	1515	S18 E58	11 23.0	5	(AP)				
6372		HOLL	11	18	1535	S18 E59	11 23.1		A HS	80	3	2	4
6372		BOUL	11	18	1615	S17 E58	11 23.1		A HA	110	2	2	3
6372		CULG	11	19	0050	S19 E53	11 23.1		A HA	80	1	3	2
6372		LEAR	11	19	0102	S19 E51	11 22.9		A HS	80	2	3	3
6372		SVTO	11	19	0820	S18 E47	11 22.9		A HA	100	1	2	5
6372		RAMY	11	19	1356	S18 E46	11 23.1		B CAO	100	4	3	2
6372		BOUL	11	19	1534	S17 E43	11 22.9		B CAO	80	2	3	1
6372		HOLL	11	19	1630	S18 E42	11 22.9		A HS	90	3	2	1
6372		PALE	11	19	2300	S19 E39	11 22.9		B CAO	70	2	3	2
6372		LEAR	11	20	0030	S19 E39	11 23.0		B CAO	60	2	3	3
6372		CULG	11	20	0130	S20 E36	11 22.8		A HS	80	3	3	3
6372		SVTO	11	20	1020	S18 E34	11 23.0		A HS	60	3	3	3
6372		BOUL	11	20	1533	S17 E31	11 23.0		B CAO	80	2	3	1
6372		RAMY	11	20	1634	S18 E31	11 23.0		B CAO	70	10	4	2
6372	26421	MWIL	11	20	1800	S17 E29	11 22.9	5	(AP)				
6372		LEAR	11	21	0012	S18 E25	11 22.9		B CAO	50	4	3	3
6372		CULG	11	21	0100	S21 E24	11 22.9		A HS	50	2	3	1
6372		SVTO	11	21	0815	S18 E22	11 23.0		A HS	40	4	3	3
6372		RAMY	11	21	1230	S18 E19	11 23.0		B CAO	90	10	3	4
6372		BOUL	11	21	1548	S17 E16	11 22.9		A HA	70	2	2	1
6372	26421	MWIL	11	21	1600	S17 E16	11 22.9	5	(AP)				
6372		HOLL	11	21	1615	S18 E17	11 23.0		A HA	60	5	3	3
6372		PALE	11	21	1903	S18 E15	11 22.9		A HA	50	2	2	3
6372		LEAR	11	22	0125	S18 E12	11 23.0		B CSO	50	3	3	2
6372		CULG	11	22	0230	S18 E09	11 22.8		A HS	30	1	1	2
6372		SVTO	11	22	0920	S18 E08	11 23.0		A HS	50	6	2	1
6372	26421	MWIL	11	22	1545	S17 E03	11 22.9	5	(AP)				
6372		RAMY	11	22	1630	S18 E03	11 22.9		B CAO	60	4	3	2
6372		HOLL	11	22	1730	S17 E03	11 22.9		A HA	70	5	3	4

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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
6372		PALE	11 22 2200	S18 E00	11 22.9		A	HA	40	2	1	2
6372		LEAR	11 23 0030	S18 W01	11 22.9		A	HS	40	2	2	3
6372		CULG	11 23 0115	S18 W06	11 22.6		A	HS	40	2	2	1
6372		RAMY	11 23 1205	S18 W08	11 22.9		B	CAO	50	7	3	3
6372	26421	BOUL	11 23 1544	S17 W09	11 23.0		A	HA	40	2	2	1
6372		MWIL	11 23 1545	S17 W09	11 23.0	5	(AP)					
6372		HOLL	11 23 1610	S18 W09	11 23.0		A	HA	70	6	3	3
6372		LEAR	11 24 0030	S17 W13	11 23.0		A	HS	40	2	2	3
6372		CULG	11 24 0120	S19 W18	11 22.7		A	HA	50	2	2	3
6372		PALE	11 24 0206	S18 W13	11 23.1		A	HA	30	2	1	3
6372		RAMY	11 24 1145	S18 W19	11 23.0		B	CAO	60	7	3	3
6372		BOUL	11 24 1528	S17 W22	11 23.0		A	HA	30	1	1	1
6372	26421	HOLL	11 24 1740	S19 W24	11 22.9		B	CAO	40	4	3	3
6372		MWIL	11 24 1845	S18 W22	11 23.1	5	(BP)					
6372		PALE	11 24 1903	S18 W23	11 23.0		A	HA	20	3	2	3
6372		CULG	11 25 0035	S19 W27	11 23.0		A	HA	10	4	1	3
6372		LEAR	11 25 0110	S18 W27	11 23.0		B	CSO	40	3	2	2
6372		SVTO	11 25 0835	S18 W32	11 22.9		B	CRO	10	4	2	2
6372	26421	RAMY	11 25 1336	S18 W32	11 23.1		A	HA	30	4	2	3
6372		MWIL	11 25 1530	S18 W35	11 23.0	4	(AP)					
6372		BOUL	11 25 1540	S18 W38	11 22.7		A	HS	30	1	1	2
6372		HOLL	11 25 1645	S19 W32	11 23.2		A	HS	60	1	2	1
6372		PALE	11 25 1950	S19 W38	11 22.9		A	HS	30	2	1	3
6372		SVTO	11 26 1139	S19 W46	11 23.0		A	HR	30	1	1	2
6372		RAMY	11 26 1338	S17 W46	11 23.1		A	AX	10	2	1	2
6372		HOLL	11 26 2115	S17 W49	11 23.2		A	AX		1		1
6372A		HOLL	11 22 1730	S03 E11	11 23.5		A	AX		1		4
6372B		HOLL	11 23 1610	S18 E02	11 23.8		A	AX	30	4	3	3
6380	26429	RAMY	11 24 1145	S07 W04	11 24.2		A	AX		1	1	3
6380		HOLL	11 24 1740	S07 W08	11 24.1		A	AX		2	1	3
6380		MWIL	11 24 1845	S07 W07	11 24.2	3	(AP)					
6380		PALE	11 24 1903	S07 W08	11 24.2		A	AX	10	1		3
6377	26426	SVTO	11 19 0820	S05 E75	11 24.9		A	AX	10	1	1	5
6377		SVTO	11 21 0815	S05 E49	11 25.0		A	AX		1		3
6377		RAMY	11 21 1230	S05 E48	11 25.1		B	BXO	10	4	7	4
6377		MWIL	11 21 1600	S05 E44	11 24.9	4	(AP)					
6377		HOLL	11 21 1615	S04 E43	11 24.9		B	BXO	10	2	3	3
6377		PALE	11 21 1903	S06 E41	11 24.9		A	AX	10	4	1	3
6377		CULG	11 22 0230	S08 E41	11 25.2		B	BXO	10	4	11	2
6377	26426	SVTO	11 22 0920	S07 E39	11 25.3		BG	CSO	30	10	16	1
6377		MWIL	11 22 1545	S04 E32	11 25.0	4	(B)					
6377		RAMY	11 22 1630	S06 E30	11 24.9		B	DSO	60	11	6	2
6377		HOLL	11 22 1730	S05 E30	11 25.0		B	DAI	80	17	6	4
6377		PALE	11 22 2200	S04 E27	11 24.9		B	DSO	70	5	6	2
6377		LEAR	11 23 0030	S05 E27	11 25.0		B	DAO	80	6	6	3
6377		CULG	11 23 0115	S07 E25	11 24.9		B	BXO	10	9	16	1
6377		RAMY	11 23 1205	S05 E19	11 24.9		B	DAO	70	29	8	3
6377	26426	BOUL	11 23 1544	S04 E17	11 24.9		B	DAO	100	17	7	1
6377		MWIL	11 23 1545	S05 E17	11 24.9	5	(B)					
6377		HOLL	11 23 1610	S05 E16	11 24.9		B	DAI	290	35	10	3
6377		LEAR	11 24 0030	S05 E13	11 25.0		B	DAO	140	20	8	3
6377		CULG	11 24 0120	S05 E11	11 24.9		B	DAI	140	24	9	3
6377		PALE	11 24 0206	S05 E11	11 24.9		B	DAI	130	24	8	3
6377		RAMY	11 24 1145	S04 E06	11 24.9		B	DAO	260	42	9	3
6377		BOUL	11 24 1528	S03 E03	11 24.9		B	DAO	160	8	8	1
6377	26426	HOLL	11 24 1740	S03 E02	11 24.9		B	DAI	210	50	9	3
6377		MWIL	11 24 1845	S04 E03	11 25.0	5	(BG)					
6377		PALE	11 24 1903	S05 E01	11 24.9		B	DAI	210	28	10	3
6377		CULG	11 25 0035	S04 W02	11 24.9		B	EAO	190	26	11	3
6377		LEAR	11 25 0110	S04 W03	11 24.8		B	ESO	190	14	11	2
6377		SVTO	11 25 0835	S04 W07	11 24.8		B	EAI	260	33	11	2
6377	26426	RAMY	11 25 1336	S03 W08	11 25.0		B	EAI	240	34	12	3
6377		MWIL	11 25 1530	S04 W10	11 24.9	5	(B)					
6377		BOUL	11 25 1540	S04 W13	11 24.7		B	DKO	200	8	10	2
6377		HOLL	11 25 1645	S04 W09	11 25.0		B	EAO	280	11	12	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6377		PALE	11 25 1950	S03 W12	11 24.9		B	ESI	210	11	12	3
6377		LEAR	11 26 0210	S04 W17	11 24.8		B	ESO	150	11	11	1
6377		SVTO	11 26 1139	S04 W22	11 24.8		B	ESI	240	18	12	2
6377		RAMY	11 26 1338	S04 W23	11 24.8		B	ESI	200	26	11	2
6377	26426	MWIL	11 26 1815	S04 W25	11 24.9	5	(B )					
6377		PALE	11 26 1925	S04 W26	11 24.9		B	EAI	210	12	11	3
6377		HOLL	11 26 2115	S03 W26	11 24.9		B	ESO	210	26	12	1
6377		LEAR	11 27 0028	S05 W27	11 25.0		B	EKO	340	13	12	2
6377		SVTO	11 27 1110	S05 W36	11 24.8		B	EAI	260	14	12	3
6377	26426	MWIL	11 27 1545	S04 W38	11 24.8	5	(B )					
6377		RAMY	11 27 1625	S04 W38	11 24.8		B	EAO	190	18	12	1
6377		HOLL	11 27 1713	S04 W37	11 24.9		B	ESO	380	27	11	1
6377		PALE	11 27 2130	S06 W39	11 25.0		B	ESI	300	10	12	3
6377		LEAR	11 28 0045	S05 W42	11 24.9		B	EAO	220	12	12	3
6377		SVTO	11 28 1040	S05 W50	11 24.7		B	EAO	110	19	11	4
6377		RAMY	11 28 1226	S04 W49	11 24.8		B	EAO	190	18	12	2
6377	26426	MWIL	11 28 1545	S04 W52	11 24.8	5	(BG)					
6377		HOLL	11 28 1700	S07 W51	11 24.9		B	ESO	120	21	12	3
6377		BOUL	11 28 1815	S06 W54	11 24.7		B	EAO	210	11	12	2
6377		LEAR	11 29 0040	S05 W55	11 24.9		B	EAO	110	10	11	3
6377		CULG	11 29 0135	S05 W58	11 24.7		B	EAO	60	14	12	2
6377		SVTO	11 29 0810	S05 W60	11 24.8		B	ESO	110	13	12	4
6377		RAMY	11 29 1315	S05 W61	11 25.0		B	EAO	200	21	11	3
6377	26426	MWIL	11 29 1540	S05 W64	11 24.9	5	(B )					
6377		HOLL	11 29 1540	S05 W65	11 24.8		B	EAI	200	22	12	3
6377		LEAR	11 30 0019	S05 W67	11 25.0		B	DSO	160	5	8	2
6377		RAMY	11 30 1318	S05 W78	11 24.7		B	DAO	100	5	9	3
6377		HOLL	11 30 1700	S05 W80	11 24.7		B	CSO	60	4	11	3
6377		PALE	11 30 1830	S06 W79	11 24.8		B	EAO	90	4	13	3
6377	26426	MWIL	11 30 1900	S07 W79	11 24.9	4	X					
6378	26427	MWIL	11 22 1545	S08 E41	11 25.7	5	(BG)					
6378		RAMY	11 22 1630	S10 E40	11 25.7		B	DSO	40	8	5	2
6378		HOLL	11 22 1730	S10 E39	11 25.6		B	CRO	30	6	6	4
6378		PALE	11 22 2200	S09 E36	11 25.6		B	DSO	60	3	5	2
6378		LEAR	11 23 0030	S10 E35	11 25.6		B	DAO	40	5	6	3
6378		RAMY	11 23 1205	S09 E29	11 25.7		B	DSO	30	13	6	3
6378		BOUL	11 23 1544	S09 E27	11 25.7		B	CAO	20	3	6	1
6378	26427	MWIL	11 23 1545	S09 E27	11 25.7	4	(B )					
6378		HOLL	11 23 1610	S09 E26	11 25.6		B	BXO	60	19	6	3
6378		LEAR	11 24 0030	S09 E23	11 25.7		B	CAO	40	3	6	3
6378		PALE	11 24 0206	S08 E25	11 26.0		A	AX		3	1	3
6378		RAMY	11 24 1145	S09 E17	11 25.8		B	BXO	10	6	4	3
6378		HOLL	11 24 1740	S10 E15	11 25.9		B	BXO	10	4	3	3
6378	26427	MWIL	11 24 1845	S09 E14	11 25.8	4	(B )					
6378		PALE	11 24 1903	S08 E12	11 25.7		A	AX		1		3
6378		CULG	11 25 0035	S08 E10	11 25.8		A	AX	10	5	3	3
6378		LEAR	11 25 0110	S08 E09	11 25.7		B	CSO	20	2	2	2
6378		SVTO	11 25 0835	S07 E06	11 25.8		B	BXO	10	7	3	2
6378		RAMY	11 25 1336	S08 E03	11 25.8		B	DAO	40	8	4	3
6378	26427	MWIL	11 25 1530	S08 E01	11 25.7	4	(B )					
6378		BOUL	11 25 1540	S08 W02	11 25.5		B	CSO	50	3	3	2
6378		HOLL	11 25 1645	S09 E03	11 25.9		B	CSO	30	4	3	1
6378		PALE	11 25 1950	S09 W02	11 25.7		B	CSO	20	2	3	3
6378		LEAR	11 26 0210	S09 W06	11 25.6		B	CSO	20	6	5	1
6378		SVTO	11 26 1139	S10 W11	11 25.6		B	DAO	60	9	5	2
6378		RAMY	11 26 1338	S08 W12	11 25.7		B	DAO	60	13	5	2
6378	26427	MWIL	11 26 1815	S08 W14	11 25.7	4	(B )					
6378		PALE	11 26 1925	S10 W16	11 25.6		B	DSO	120	6	6	3
6378		HOLL	11 26 2115	S08 W15	11 25.8		B	DSO	60	12	6	1
6378		LEAR	11 27 0028	S11 W18	11 25.7		B	DSO	90	8	6	2
6378		SVTO	11 27 1110	S10 W25	11 25.6		B	DAO	70	12	6	3
6378	26427	MWIL	11 27 1545	S09 W27	11 25.6	5	(B )					
6378		RAMY	11 27 1625	S10 W26	11 25.7		B	DAO	40	5	6	1
6378		HOLL	11 27 1713	S10 W27	11 25.7		B	CSO	120	9	6	1
6378		PALE	11 27 2130	S10 W31	11 25.6		B	DAO	80	8	6	3
6378		LEAR	11 28 0045	S09 W32	11 25.6		B	CSO	70	5	7	3
6378		SVTO	11 28 1040	S09 W37	11 25.7		B	CAO	40	10	7	4
6378		RAMY	11 28 1226	S10 W38	11 25.7		B	DAO	70	10	7	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6378	26427	MWIL	11 28 1545	S09	W40	11 25.6	5	(B)					
6378		HOLL	11 28 1700	S11	W40	11 25.7		B	CAO	50	6	7	3
6378		BOUL	11 28 1815	S09	W42	11 25.6		B	CSO	20	3	6	2
6378		LEAR	11 29 0040	S10	W48	11 25.4		A	AX	10	1	1	3
6378		CULG	11 29 0135	S10	W50	11 25.3		A	HR	10	1	1	2
6378		SVTO	11 29 0810	S10	W53	11 25.3		A	AX		3	2	4
6378		RAMY	11 29 1315	S10	W55	11 25.4		A	AX		1	1	3
6378		HOLL	11 29 1540	S08	W62	11 25.0		A	HS	40	1	1	3
6378		LEAR	11 30 0019	S08	W64	11 25.2		A	HS	40	1	2	2
6378		BOUL	11 30 1555	S07	W74	11 25.1		B	CSO	40	3	3	1
6378		HOLL	11 30 1700	S08	W75	11 25.1		A	HS	30	1	1	3
6378A		RAMY	11 28 1226	S31	W27	11 26.4		A	AX	10	3	2	2
6378B		PALE	11 27 2130	S14	W15	11 26.8		A	AX	10	1		3
6378B		LEAR	11 28 0045	S13	W16	11 26.8		B	CSO	20	2	2	3
6386	26433	MWIL	11 27 1545	N23	W03	11 27.4	4	(B)					
6386		RAMY	11 27 1625	N23	W02	11 27.5		A	AX	10	3	2	1
6386		HOLL	11 27 1713	N24	W04	11 27.4		A	AX	20	3	2	1
6386		LEAR	11 28 0045	N23	W08	11 27.4		A	AX	10	1	1	3
6386		RAMY	11 28 1226	N22	W16	11 27.3		A	AX	10	3	2	2
6386	26433	MWIL	11 28 1545	N24	W16	11 27.4	4	(B)					
6386		HOLL	11 28 1700	N23	W17	11 27.4		B	BXO	10	3	3	3
6386		LEAR	11 29 0040	N20	W23	11 27.3		B	BXO	10	2	3	3
6386		CULG	11 29 0135	N24	W22	11 27.4		B	BXO	10	2	4	2
6386		SVTO	11 29 0810	N24	W26	11 27.3		B	BXO	10	3	5	4
6386		RAMY	11 29 1315	N24	W27	11 27.5		B	BXO	10	7	5	3
6386		HOLL	11 29 1540	N25	W28	11 27.5		B	BXO	10	4	3	3
6386	26433	MWIL	11 29 1540	N25	W28	11 27.5	4	(B)					
6386		RAMY	11 30 1318	N25	W38	11 27.6		A	AX	10	6	1	3
6386		LEAR	12 01 0114	N05	W44	11 27.9		B	CSO	30	4	4	2
6394	26441	MWIL	11 30 1900	N06	W42	11 27.6	3	(AF)					
6394		SVTO	12 01 1222	N05	W53	11 27.6		B	BXO	20	4	5	3
6394		RAMY	12 01 1407	N05	W54	11 27.6		B	BXO	10	3	3	3
6394	26441	MWIL	12 01 1600	N06	W54	11 27.7	4	(B)					
6394		PALE	12 01 1820	N04	W56	11 27.7		B	BXO		2	4	3
6394		HOLL	12 01 1955	N05	W56	11 27.7		B	BXO	10	3	3	2
6394		LEAR	12 02 0014	N06	W58	11 27.8		A	AX	20	1	1	3
6394	26441	MWIL	12 02 1530	N05	W69	11 27.6	2	(AP)					
6394		RAMY	12 02 1550	N05	W69	11 27.6		A	AX	10	1	1	3
6394		HOLL	12 02 1700	N05	W70	11 27.6		A	AX	10	1	1	3
6394		PALE	12 02 2018	N04	W71	11 27.6		A	AX		2	2	3
6394		LEAR	12 03 0017	N06	W73	11 27.6		A	AX	30	1	1	3
6386A		LEAR	11 23 0030	S17	E70	11 28.3		B	BXO	30	2	2	3
6386A		SVTO	11 28 1040	S15	E02	11 28.6		A	AX		1		4
6386A		PALE	12 02 2018	S18	W56	11 28.7		A	AX		1		3
6392		LEAR	11 30 0019	S26	W12	11 29.1		B	DSO	40	2	3	2
6392		RAMY	11 30 1318	S26	W19	11 29.1		B	BXO	10	6	4	3
6392		BOUL	11 30 1555	S25	W21	11 29.0		B	DS	40	2	5	1
6392		HOLL	11 30 1700	S26	W21	11 29.1		B	BXO	10	5	5	3
6392		PALE	11 30 1830	S27	W22	11 29.0		B	BXO	10	4	4	3
6392	26442	MWIL	11 30 1900	S27	W23	11 29.0	4	(B)					
6392		LEAR	12 01 0114	S26	W25	11 29.2		B	DSO	20	2	5	2
6392		RAMY	12 01 1407	S25	W32	11 29.2		B	BXO	10	2	6	3
6392	26442	MWIL	12 01 1600	S26	W37	11 28.9	3	(AP)					
6392		PALE	12 01 1820	S27	W38	11 28.9		A	AX		1		3
6392		LEAR	12 02 0014	S25	W39	11 29.1		A	AX	20	1	1	3
6392		CULG	12 02 0120	S19	W39	11 29.2		B	BXO	30	5	4	2
6379		RAMY	11 23 1205	S07	E77	11 29.3		B	BXO	30	4	5	3
6379		BOUL	11 23 1544	S06	E75	11 29.3		B	BXO	10	2	2	1
6379	26428	MWIL	11 23 1545	S06	E76	11 29.3	4	(B)					
6379		HOLL	11 23 1610	S06	E77	11 29.4		B	BXO	50	11	7	3
6379		LEAR	11 24 0030	S06	E71	11 29.3		B	DSO	120	4	8	3
6379		CULG	11 24 0120	S07	E75	11 29.7		B	BXO	10	3	6	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	Chp Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6379		PALE	11 24 0206	S05 E70	11 29.3		B	BXO	10	4	5	3
6379		RAMY	11 24 1145	S07 E64	11 29.3		B	CAO	80	11	6	3
6379		BOUL	11 24 1528	S06 E65	11 29.5		B	BXO	50	3	6	1
6379		HOLL	11 24 1740	S06 E63	11 29.4		B	DSO	80	14	7	3
6379	26428	MWIL	11 24 1845	S06 E63	11 29.5	4	(B )					
6379		PALE	11 24 1903	S06 E62	11 29.4		B	DAO	60	4	7	3
6379		CULG	11 25 0035	S05 E60	11 29.5		B	DSO	50	3	7	3
6379		LEAR	11 25 0110	S06 E56	11 29.2		B	DSO	50	3	6	2
6379		SVTO	11 25 0835	S07 E55	11 29.5		B	DSO	80	12	7	2
6379		RAMY	11 25 1336	S06 E53	11 29.5		B	DAO	110	18	8	3
6379	26428	MWIL	11 25 1530	S06 E50	11 29.4	5	(B )					
6379		BOUL	11 25 1540	S06 E48	11 29.2		B	CSO	50	4	5	2
6379		HOLL	11 25 1645	S06 E52	11 29.6		B	DSO	100	5	7	1
6379		PALE	11 25 1950	S08 E47	11 29.3		B	DSO	130	5	6	3
6379		LEAR	11 26 0210	S06 E43	11 29.3		B	DAO	60	6	7	1
6379		SVTO	11 26 1139	S08 E40	11 29.5		B	DAI	100	11	7	2
6379		RAMY	11 26 1338	S06 E37	11 29.3		B	DAO	60	20	6	2
6379	26428	MWIL	11 26 1815	S06 E35	11 29.4	4	(B )					
6379		PALE	11 26 1925	S07 E34	11 29.3		B	DSO	1320	6	6	3
6379		HOLL	11 26 2115	S07 E33	11 29.3		B	DAO	70	10	4	1
6379		LEAR	11 27 0028	S09 E30	11 29.3		B	DAO	150	18	7	2
6379		SVTO	11 27 1110	S07 E28	11 29.6		B	DRI	60	13	7	3
6379	26428	MWIL	11 27 1545	S06 E23	11 29.4	4	(B )					
6379		RAMY	11 27 1625	S07 E22	11 29.3		B	DAO	60	11	5	1
6379		HOLL	11 27 1713	S07 E23	11 29.4		B	CSO	120	20	7	1
6379		PALE	11 27 2130	S07 E20	11 29.4		B	DSO	110	9	9	3
6379		LEAR	11 28 0045	S06 E19	11 29.4		B	EAO	110	17	11	3
6379		SVTO	11 28 1040	S06 E15	11 29.6		B	BXO	20	20	9	4
6379		RAMY	11 28 1226	S07 E12	11 29.4		B	CRO	20	15	8	2
6379	26428	MWIL	11 28 1545	S06 E12	11 29.5	4	(B )					
6379		HOLL	11 28 1700	S07 E12	11 29.6		B	BXO	30	14	8	3
6379		BOUL	11 28 1815	S04 E07	11 29.3		B	DAO	40	4	3	2
6379		LEAR	11 29 0040	S06 E03	11 29.2		B	CRO	20	2	3	3
6379		CULG	11 29 0135	S06 E03	11 29.3		B	CRO	10	3	3	2
6379		SVTO	11 29 0810	S05 E00	11 29.3		A	AX		4	2	4
6379		RAMY	11 29 1315	S05 W01	11 29.5		B	BXO	40	25	9	3
6379	26428	MWIL	11 29 1540	S06 W02	11 29.5	4	(B )					
6379		HOLL	11 29 1540	S06 W03	11 29.4		B	BXO	20	17	8	3
6379		LEAR	11 30 0019	S06 W09	11 29.3		B	BXO	60	8	4	2
6379		RAMY	11 30 1318	S05 W19	11 29.1		B	BXO	10	12	6	3
6379		HOLL	11 30 1700	S05 W21	11 29.1		B	BXO	10	8	6	3
6379		PALE	11 30 1830	S08 W18	11 29.4		B	BXO	10	6	11	3
6379	26428	MWIL	11 30 1900	S07 W18	11 29.4	4	(B )					
6379		LEAR	12 01 0114	S08 W25	11 29.3		B	CSO	20	2	3	2
6379		SVTO	12 01 1222	S06 W32	11 29.2		A	AX	10	3	2	3
6379		RAMY	12 01 1407	S02 W28	11 29.6		B	BXO	20	10	8	3
6379	26428	MWIL	12 01 1600	S06 W32	11 29.4	4	(AP)					
6379		PALE	12 01 1820	S07 W31	11 29.5		B	CAO	20	5	7	3
6379		HOLL	12 01 1955	S07 W32	11 29.5		B	CRO	10	3	7	2
6379		LEAR	12 02 0014	S06 W32	11 29.7		B	BXO	20	8	8	3
6379	26428	MWIL	12 02 1530	S06 W46	11 29.3	4	(B )					
6379		RAMY	12 02 1550	S05 W44	11 29.5		B	CRO	10	8	8	3
6379		HOLL	12 02 1700	S06 W44	11 29.5		B	BXO	20	10	9	3
6379		PALE	12 02 2018	S06 W49	11 29.3		B	CAO	20	3	4	3
6379		LEAR	12 03 0017	S06 W51	11 29.3		B	CSO	50	2	3	3
6379		CULG	12 03 0210	S06 W52	11 29.3		B	CRO	20	4	4	2
6379		BOUL	12 03 1544	S07 W62	11 29.1		B	CAO	90	6	6	1
6379	26428	MWIL	12 03 1600	S06 W61	11 29.2	4	(B )					
6379		RAMY	12 03 1730	S07 W58	11 29.5		B	CAO	70	7	5	1
6379		HOLL	12 03 1815	S06 W60	11 29.4		B	CAO	80	7	5	3
6379		PALE	12 03 2020	S07 W66	11 29.0		A	HA	20	2	2	3
6379		LEAR	12 04 0028	S08 W65	11 29.2		A	HA	130	5	3	3
6379		CULG	12 04 0045	S06 W66	11 29.2		B	CAO	30	5	5	2
6379		RAMY	12 04 1223	S07 W77	11 28.8		B	CAO	60	3	2	3
6379		BOUL	12 04 1542	S07 W80	11 28.8		A	HA	60	1	2	2
6379	26428	MWIL	12 04 1600	S06 W73	11 29.3	4	AP					
6379		HOLL	12 04 1610	S08 W78	11 28.9		A	HS	60	1	1	3
6379		PALE	12 04 2010	S07 W78	11 29.1		B	BXO	30	2	4	3



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SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Time (UT)	Lat	CMD	CMP No	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6384		HOLL	11	23	1610	N12	E81	11	29.8		B	BXO	30	8	4	3
6384		HOLL	11	26	2115	N12	E36	11	29.6		B	CRO	20	3	3	1
6384		LEAR	11	27	0028	N10	E33	11	29.5		A	AX	20	2	3	2
6384		SVTO	11	27	1110	N10	E29	11	29.6		B	DRO	40	4	4	3
6384	26434	MWIL	11	27	1545	N11	E26	11	29.6	4	(B)					
6384		RAMY	11	27	1625	N12	E26	11	29.6		B	DAO	40	6	4	1
6384		HOLL	11	27	1713	N11	E25	11	29.6		B	DSO	40	6	3	1
6384		PALE	11	27	2130	N11	E22	11	29.5		B	DSO	80	2	3	3
6384		LEAR	11	28	0045	N11	E22	11	29.7		B	DSO	30	4	3	3
6384		SVTO	11	28	1040	N10	E16	11	29.6		B	BXO	10	3	4	4
6384		RAMY	11	28	1226	N11	E12	11	29.4		B	SO	10	6	5	2
6384	26434	MWIL	11	28	1545	N11	E13	11	29.6	4	(B)					
6384		HOLL	11	28	1700	N11	E12	11	29.6		B	BXO	10	4	5	3
6384		CULG	11	29	0135	N10	E07	11	29.6		A	AX		1		2
6384		RAMY	11	29	1315	N10	W01	11	29.5		A	AX	10	3	2	3
6384		HOLL	11	29	1540	N10	W03	11	29.4		A	AX	10	3	2	3
6384		RAMY	11	30	1318	N11	W11	11	29.7		A	AX	10	4	1	3
6384		HOLL	11	30	1700	N12	W14	11	29.6		A	AX		2	1	3
6384		PALE	11	30	1830	N14	W11	11	29.9		A	AX		3	2	3
6384		RAMY	12	01	1407	N13	W23	11	29.9		B	BXO	10	4	2	3
6384		PALE	12	01	1820	N12	W26	11	29.9		A	AX		2	1	3
6384		HOLL	12	01	1955	N12	W28	11	29.8		A	AX		2	1	2
6396		SVTO	12	01	1222	S21	W28	11	29.5		B	BXO	10	6	4	3
6396		RAMY	12	01	1407	S22	W28	11	29.5		B	BXO	10	5	3	3
6396	26444	MWIL	12	01	1600	S22	W30	11	29.5	4	(B)					
6396		PALE	12	01	1820	S22	W32	11	29.4		B	BXO	10	4	3	3
6396		HOLL	12	01	1955	S22	W31	11	29.5		B	BXO	10	6	4	2
6396		LEAR	12	02	0014	S22	W33	11	29.6		B	BXO	10	6	5	3
6396	26444	MWIL	12	02	1530	S22	W44	11	29.4	3	(B)					
6396		RAMY	12	02	1550	S21	W44	11	29.4		A	AX	10	2	1	3
6396		HOLL	12	02	1700	S21	W43	11	29.5		B	BXO	10	2	4	3
6396		PALE	12	02	2018	S22	W47	11	29.3		A	AX		3	1	3
6396		LEAR	12	03	0017	S22	W46	11	29.6		A	AX	10	1	1	3
6396		BOUL	12	03	1544	S21	W57	11	29.4		B	DSO	60	2	4	1
6396	26444	MWIL	12	03	1600	S22	W55	11	29.5	4	(B)					
6396		RAMY	12	03	1730	S22	W52	11	29.8		B	DRO	40	3	4	1
6396		HOLL	12	03	1815	S22	W56	11	29.5		B	DRO	40	5	3	3
6396		PALE	12	03	2020	S23	W57	11	29.5		B	BXO	40	4	4	3
6396		LEAR	12	04	0028	S22	W60	11	29.5		B	DAO	150	4	6	3
6396		CULG	12	04	0045	S21	W60	11	29.5		B	DAO	70	5	5	2
6396		RAMY	12	04	1223	S22	W66	11	29.5		B	DAO	170	7	8	3
6396		BOUL	12	04	1542	S22	W68	11	29.5		B	DAO	80	4	5	2
6396	26444	MWIL	12	04	1600	S22	W68	11	29.5	5	(B)					
6396		HOLL	12	04	1610	S23	W68	11	29.5		B	CSO	120	3	7	3
6396		PALE	12	04	2010	S22	W71	11	29.5		B	BXO		2	3	3
6396		CULG	12	05	0037	S23	W67	11	30.0		B	FAO	140	13	18	2
6396		SVTO	12	05	1145	S24	W71	11	30.0		B	DKI	420	17	10	2
6396		BOUL	12	05	1645	S22	W76	11	29.9		B	CSO	210	2	5	2
6396	26444	MWIL	12	05	1915	S23	W75	11	30.0	5	(B)					
6396		CULG	12	06	0013	S23	W76	11	30.1		B	EHO	300	5	13	3
6396		LEAR	12	06	0014	S22	W71	11	30.5		B	DKO	270	6	10	3
6396	26444	MWIL	12	06	1530	S24	W80	11	30.5	5	AF					
6389		HOLL	11	27	1713	N02	E31	11	30.0		A	AX	10	1	1	1
6389		SVTO	11	28	1040	N02	E21	11	30.0		A	AX		2	2	4
6389		RAMY	11	28	1226	N02	E19	11	29.9		B	SO	10	7	3	2
6389	26436	MWIL	11	28	1545	N02	E17	11	29.9	5	(B)					
6389		HOLL	11	28	1700	N02	E17	11	30.0		B	DRO	30	5	3	3
6389		BOUL	11	28	1815	N02	E16	11	29.9		B	CSO	30	2	3	2
6389		LEAR	11	29	0040	N02	E12	11	29.9		B	BXO	20	7	4	3
6389		CULG	11	29	0135	N03	E11	11	29.9		B	BXO	10	6	4	2
6389		SVTO	11	29	0810	N03	E08	11	29.9		B	BXO	10	7	4	4
6389		RAMY	11	29	1315	N02	E06	11	30.0		B	DRO	30	13	5	3
6389		HOLL	11	29	1540	N02	E04	11	29.9		B	BXO	20	5	5	3
6389	26436	MWIL	11	29	1540	N02	E04	11	29.9	4	(B)					
6389		LEAR	11	30	0019	N03	W01	11	29.9		B	BXO	20	2	4	2
6389		RAMY	11	30	1318	N02	W07	11	30.0		B	BXO		2	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
6400	26447	MWIL	12 02 1530	S25 W30	11 30.3	4	(B)					
6400		RAMY	12 02 1550	S23 W28	11 30.5		B	DRO	20	3	5	3
6400		HOLL	12 02 1700	S24 W31	11 30.3		B	CRO	20	2	5	3
6400		PALE	12 02 2018	S25 W32	11 30.4		B	BXO	10	4	6	3
6400		LEAR	12 03 0017	S23 W35	11 30.3		B	BXO	30	5	5	3
6400		CULG	12 03 0210	S24 W35	11 30.4		B	CRO	10	6	7	2
6400		BOUL	12 03 1544	S21 W46	11 30.1		B	BXO	20	2	5	1
6400	26447	MWIL	12 03 1600	S24 W45	11 30.2	4	(B)					
6400		HOLL	12 03 1815	S24 W44	11 30.4		B	BXO	30	8	8	3
6400		PALE	12 03 2020	S24 W47	11 30.2		B	BXO	10	5	5	3
6400		LEAR	12 04 0028	S25 W50	11 30.1		B	BXO	30	4	6	3
6400		CULG	12 04 0045	S24 W50	11 30.2		B	BXO	10	7	7	2
6400		RAMY	12 04 1223	S23 W54	11 30.3		B	CAO	50	15	8	3
6400		BOUL	12 04 1542	S23 W58	11 30.2		B	DAO	120	10	5	2
6400	26447	MWIL	12 04 1600	S23 W58	11 30.2	5	(B)					
6400		HOLL	12 04 1610	S24 W58	11 30.2		B	CRO	70	1	11	3
6400		PALE	12 04 2010	S25 W64	11 30.0		B	DAO	150	11	10	3
6400		RAMY	12 05 1230	S22 W70	11 30.1		B	EKO	440	16	13	1
6400		BOUL	12 05 1645	S26 W72	11 30.1		B	DAO	220	5	8	2
6400		HOLL	12 05 1723	S24 W74	11 30.0		B	EAI	450	21	12	3
6400		PALE	12 05 1805	S24 W77	11 29.9		B	EKO	270	21	15	3
6400		BOUL	12 06 1600	S25 W80	11 30.5		A	HA	120	1	4	2
6400		HOLL	12 06 1725	S25 W80	11 30.5		B	CSO	100	3	2	2
6400		RAMY	12 06 1759	S24 W85	11 30.2		B	CAO	110	6	11	3
6400		PALE	12 06 1800	S25 W87	11 30.0		B	CAO	130	5	7	3
6400		CULG	12 07 0023	S25 W84	11 30.5		B	BXO	10	2	6	3
6381		RAMY	11 24 1145	S04 E79	11 30.4		A	HA	80	2	3	3
6381		BOUL	11 24 1528	S05 E79	11 30.5		A	AX	20	1	1	1
6381		HOLL	11 24 1740	S03 E77	11 30.5		A	HS	40	1	1	3
6381	26430	MWIL	11 24 1845	S04 E79	11 30.7	4	AP					
6381		PALE	11 24 1903	S04 E77	11 30.6		A	HA	60	1	1	3
6381		CULG	11 25 0035	S04 E78	11 30.8		A	HS	10	1	1	3
6381		LEAR	11 25 0110	S09 E71	11 30.4		A	HSO	30	1	2	2
6381		SVTO	11 25 0835	S04 E70	11 30.6		A	HA	40	1	1	2
6381		RAMY	11 25 1336	S04 E68	11 30.6		A	HA	50	1	2	3
6381		RAMY	11 25 1336	S08 E64	11 30.4		A	AX		1		3
6381	26430	MWIL	11 25 1530	S03 E66	11 30.6	4	(AP)					
6381		BOUL	11 25 1540	S03 E65	11 30.5		A	HS	60	1	2	2
6381		HOLL	11 25 1645	S03 E67	11 30.7		A	HS	70	1	1	1
6381		PALE	11 25 1950	S06 E63	11 30.5		A	HS	80	1	1	3
6381		LEAR	11 26 0210	S03 E59	11 30.5		A	HS	50	1	2	1
6381		SVTO	11 26 1139	S05 E56	11 30.7		A	HA	70	1	1	2
6381		RAMY	11 26 1338	S04 E54	11 30.6		A	HA	30	1	1	2
6381	26430	MWIL	11 26 1815	S03 E52	11 30.6	4	(AP)					
6381		PALE	11 26 1925	S04 E50	11 30.5		A	HS	60	1	1	3
6381		HOLL	11 26 2115	S03 E48	11 30.5		A	HS	50	1	2	1
6381		LEAR	11 27 0028	S05 E47	11 30.5		A	HS	80	1	1	2
6381		SVTO	11 27 1110	S05 E42	11 30.6		A	HS	50	1	1	3
6381	26430	MWIL	11 27 1545	S04 E39	11 30.6	5	(AP)					
6381		RAMY	11 27 1625	S03 E39	11 30.6		A	HA	20	2	1	1
6381		HOLL	11 27 1713	S03 E38	11 30.5		A	HS	50	1	2	1
6381		PALE	11 27 2130	S05 E36	11 30.6		A	HS	50	1	1	3
6381		LEAR	11 28 0045	S04 E33	11 30.5		A	HS	20	1	1	3
6381		SVTO	11 28 1040	S04 E29	11 30.6		A	HS	20	2	1	4
6381		RAMY	11 28 1226	S03 E27	11 30.5		A	HS	50	1	1	2
6381	26430	MWIL	11 28 1545	S04 E26	11 30.6	5	(AP)					
6381		HOLL	11 28 1700	S03 E26	11 30.6		A	HS	50	1	2	3
6381		BOUL	11 28 1815	S04 E25	11 30.6		A	HS	40	1	1	2
6381		LEAR	11 29 0040	S03 E21	11 30.6		A	HS	20	1	1	3
6381		CULG	11 29 0135	S03 E20	11 30.6		A	HS	10	1	1	2
6381		SVTO	11 29 0810	S04 E17	11 30.6		A	HS	20	2	1	4
6381		RAMY	11 29 1315	S02 E15	11 30.7		B	CAO	50	6	3	3
6381		HOLL	11 29 1540	S03 E13	11 30.6		A	HS	40	1	1	3
6381	26430	MWIL	11 29 1540	S04 E13	11 30.6	5	(AP)					
6381		LEAR	11 30 0019	S04 E08	11 30.6		A	HS	40	1	2	2
6381		RAMY	11 30 1318	S03 E01	11 30.6		A	HS	40	1	2	3
6381		BOUL	11 30 1555	S04 W01	11 30.6		A	HA	40	1	1	1
6381		HOLL	11 30 1700	S03 W01	11 30.6		A	HS	40	1	1	3

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Nov 90

SUNSPOT GROUPS  
(Ordered by Central Meridian Passage Date)

NOVEMBER 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CHP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6381		PALE	11 30 1830	S04 W02	11 30.6		A	HS	20	1	1	3
6381	26430	MWIL	11 30 1900	S04 W02	11 30.6	4	(AP)					
6381		LEAR	12 01 0114	S04 W05	11 30.7		A	HS	20	1	1	2
6381		SVTO	12 01 1222	S04 W12	11 30.6		A	HA	40	1	1	3
6381		RAMY	12 01 1407	S03 W12	11 30.7		A	HA	10	1	1	3
6381	26430	MWIL	12 01 1600	S03 W14	11 30.6	4	(AP)					
6381		PALE	12 01 1820	S04 W15	11 30.6		A	HS	20	1	1	3
6381		HOLL	12 01 1955	S03 W16	11 30.6		A	HR	20	1	1	2
6381		LEAR	12 02 0014	S03 W17	11 30.7		A	HA	30	1	2	3
6381		CULG	12 02 0120	S04 W20	11 30.6		A	HS	20	1	1	2
6381	26430	MWIL	12 02 1530	S04 W26	11 30.7	4	(AP)					
6381		RAMY	12 02 1550	S03 W27	11 30.6		A	HA	20	1	2	3
6381		HOLL	12 02 1700	S03 W28	11 30.6		A	HS	10	1	1	3
6381		PALE	12 02 2018	S04 W28	11 30.7		A	AX	10	1		3
6381		LEAR	12 03 0017	S04 W31	11 30.7		A	HS	20	1	2	3
6381		CULG	12 03 0210	S03 W32	11 30.7		A	HS	20	1	1	2
6381		BOUL	12 03 1544	S03 W38	11 30.8		A	HS	20	1	1	1
6381	26430	MWIL	12 03 1600	S04 W40	11 30.7	5	(AP)					
6381		RAMY	12 03 1730	S03 W38	11 30.9		B	CAO	30	4	3	1
6381		HOLL	12 03 1815	S03 W42	11 30.6		A	HR	30	1	1	3
6381		PALE	12 03 2020	S04 W43	11 30.6		A	AX		1		3
6381		LEAR	12 04 0028	S05 W43	11 30.8		A	AX	10	1	1	3
6381		CULG	12 04 0045	S03 W45	11 30.7		A	AX	10	1		2
6381		RAMY	12 04 1223	S03 W51	11 30.7		A	HA	10	1	1	3
6381		BOUL	12 04 1542	S04 W54	11 30.6		A	HA	20	2	1	2
6381	26430	MWIL	12 04 1600	S04 W54	11 30.6	5	(AP)					
6381		HOLL	12 04 1610	S04 W54	11 30.6		A	AX	10	1		3
6381		PALE	12 04 2010	S04 W56	11 30.6		A	AX	10	1		3
6381		CULG	12 05 0037	S04 W61	11 30.5		A	AX		1		2
6381		SVTO	12 05 1145	S05 W65	11 30.6		A	AX		1		2
6381		RAMY	12 05 1230	S02 W62	11 30.9		A	AX	10	2	2	1
6381		HOLL	12 05 1723	S04 W68	11 30.6		A	AX		1		3
6381		PALE	12 05 1805	S04 W69	11 30.6		A	AX		1		3

Stations reporting:

BOUL = Boulder  
CULG = Culgoora

HOLL = Holloman  
LEAR = Learmonth

MWIL = Mt. Wilson  
PALE = Palehua

RAMY = Ramey  
SVTO = San Vito

NOVEMBER 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			
01	0759	0806	0816	1	1		1				0802	C1.1	6347
01	1800	1824	1850	2+	1					1	1804		6345
02	0802	0840	0855	2-	1		1				No flare		
03	0323	0338	0405	1-	1			1			0320	C1.9	6350
03	0653	0657	0719	1-	1			1			0649	B9.2	
03	0944	0955	1024	1+	3		2				No flare		
03	1054	1106	1150	1	1		1				No flare		
03	1210	1211	1220	1-	1					1	No flare		
03	2353	2401	2430	1-	1			1			2353		6437
04	0507	0517	0544	1-	1			1			0505	C1.7	6347
04	0733	0749	0811	1-	1			1			0724	C1.3	6350
04	1329	1420	1514	2+	3		2				No flare		
04	1736	1740	1845	2+	3					8	1736	M2.1	6347
04	2334	2343	2420	1-	1			1			2346E	C1.8	6350
05	0031	0041	0106	1-	1			1			0027	C3.9	6350
05	0700	0703	0725	1-	1			1			0658	C1.3	
05	0825	0831	0851	1-	1			1			0811	C1.3	
05	1013	1021	1034	2	1		1				No flare		
05	1106	1114	1130	1-	1					1	1116	C1.2	6347
05	1256	1259	1319	1	5					2	No flare		
05	1302	1312	1352	1+	5					2	1304	C4.5	6358
05	1326	1336	1436	2	1		1				1321	C1.5	
05	1451	1454	1512	1-	5					3	1451	C2.1	6358
05	1530	1535	1604	1+	5					2	1530	C2.9	6358
05	1533	1549	1558	1	1					1	1530	C2.9	6358
05	1603	1609	1625	1	1					1	1609		6350
05	1623	1628	1636U	1-	1					1	1622	C1.1	6358
05	1727	1730	1745	1-	3					5	1727	C2.9	6347
05	2115	2122	2200U	2	1					1	2138E	C1.7	6347
05	2307	2318	2450	2-	5	1		1		1	2307	M1.0	6350
06	0014	0024	0036	1-	1	1					0010		6358
06	0434	0438	0516	1-	1			1			0433	C1.5	6347
06	0815	0827	0910	1	1					1	0806	C3.2	6358
06	1012	1019	1052	1-	5			1		3	1008	C6.1	
06	1526	1527	1536	1-	1					1	1526		6358
06	1753	1759	1821	1	3					7	1749	C5.7	
06	1823	1830	1835	1-	1					1	1823		
06	1900	1904	1921	1-	3					5	1900	C3.9	
06	2041	2058	2221	2+	5	2		1		7	2041	M3.1	6361
07	0352	0357	0411	1-	1			1			*		
07	0448	0458	0533	1-	1			1			0448	C2.1	
07	0632	0637	0705	1-	5			1		1	0632	C2.8	6355
07	0821	0827	0847	1-	5			1		1	0819	C2.8	
07	0946	0948	1000	1-	1					1	0951	C3.3	
07	0952	1015	1025	1-	1					1	0951	C3.3	
07	1304	1306	1325	1	1					1	1305	C3.5	6361
07	1750	1753	1829	2-	3					6	1750	C8.9	
07	1850	1852	1913	1	3					5	1847	C6.0	
07	2003	2005	2019	1-	3					3	2001	C3.3	
07	2221	2232	2249	1-	1			1			2225	C3.2	6355
08	0302	0330	0439	1+	1			1			0258	C7.5	6350
08	0356E	0409	0451	1-	1			1			0337		6361
08	0548	0552	0621	1-	1			1			0545E	C3.8	
08	0824	0829	0835	1-	1					1	0817	C2.2	
08	0857	0908	0941	1-	5			1		1	0855	C3.8	6355
08	1134	1135	1345	3-	1					1	No flare		
08	1350	1401	1424	1	1		1				1357		6362
08	1509	1516	1620	2+	5		2			8	1510	M1.6	6355
08	1722	1728	1737	1-	1					1	1723	C1.6	

\* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

NOVEMBER 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	1956	1957	2018	1	3						1955	C2.5	6358
08	2113	2118	2137	1-	1			1			2115	C2.6	6355
08	2303	2310	2334	1-	1			1			2304	C2.6	6347
09	0000	0009	0027	1+	5	1				1	No flare		
09	0248	0257	0334D	1+	3	1		1			0249	C6.1	6361
09	0334E	0354	0422	1-	1			1			0333E	C4.8	
09	0942	0950	1027	1+	3					2	0943	C3.5	6355
09	1624	1628	1641	1-	1					1	1627	C1.2	6355
09	1714	1714	1721D	1-	1					1	1711		6361
09	1721	1744	1746	1	1					1	1741	C1.9	6355
09	1942	1945	2000	1-	3					2	1933	C1.8	
09	2355	2416	2531	2-	1			1			No flare		
10	0558	0616	0703	1-	1			1			No flare		
10	0923	0927	0953	1-	5			1		2	0923	C2.7	6364
10	1200	1205	1230	1-	5		2	1		2	1156	C6.4	6361
11	0421	0439	0800	3	5	1		1		2	0446E	M2.1	
11	1406	1407	1416	1-	1					1	1408		6362
11	1427	1430	1447	1	5					2	1427	C2.3	6364
11	2200	2204	2255D	1	5	1		1		1	2153	C9.8	6361
11	2255E	2300	2317	1-	1			1			2253	C2.5	6364
12	0009	0027	0111	1-	1			1			0006	C3.3	6361
12	0147	0155	0226	1-	1			1			0147	C2.3	6361
12	0509E	0513	0534D	1-	1			1			0510	C3.1	6361
12	0534E	0631	0923	2+	5			1		1	0543	C6.4	
12	1015	1018	1035	1	1					1	1024	C2.5	
12	1310	1340	1430	1	3		2				No flare		
12	1428	1441	1453	1+	3					2	1423	C3.4	
12	1639	1644	1653	1-	3					2	1632	C3.1	6361
12	1705	1715	1730	1	1					1	1708		6364
12	1857	1901	1912	1-	3					3	1908	C2.2	6361
12	1919	1924	2005	1-	5			1		8	1920	C6.9	6361
13	0157	0210	0235	1-	1			1			No flare		
13	0310	0324	0357	1-	1			1			0312	C2.9	
13	0441	0447	0552	2+	3	1		1			0432	M1.6	6361
13	0705	0708	0744	1-	1			1			0728	C2.7	6361
13	1110	1118	1145	2	1					1	No flare		
13	1124	1130	1156	1-	3	2	2			3	1119	C7.2	6358
14	0358	0404	0435	1-	1			1			No flare		
14	0751	0808	0814	1-	3		1			1	0749	C2.3	6366
14	0846	0857	0929	1+	3		1			1	No flare		
14	0927	0931	0940	1-	1					1	0925	C3.0	6366
14	1041	1104U	1156	1	1		1				No flare		
14	1630	1634	1646	1-	3					3	1633	C2.4	6366
14	1721	1729	1746	1	3					3	1724	C2.3	6366
15	0251	0257	0322	1-	1			1			0253	C3.0	6366
15	0523	0534	0638D	1+	1			1			0524	C5.6	6358
15	0638E	0643	0724	1-	1			1			0637	C1.5	
15	0750	0817U	0830	1	1		1				0738	C3.2	6366
15	0830	0834	0844	1-	1					1	0738		6366
15	0848	0851	0858	1-	1					1	No flare		
15	0905	0907	0925	1	1					1	No flare		
15	0914	0926	1000	1	5			1		2	0914E	C3.3	
15	1014	1031	1041	1+	3		2				*		
15	1112	1114	1130	1-	1					1	1116	C4.3	
15	1117	1121	1143	1-	5			1		2	1116	C4.3	
15	1245	1247	1300	1-	3					2	1245E	C2.7	
15	1412	1416	1440	1+	1					1	1427	C2.0	6366
15	1511	1516	1554	2-	5		1			9	1511	C6.2	6368

\* = no flare patrol.

NOVEMBER 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			
15	2046	2047	2117D	1+	1					1	2040	C2.6	6368
15	2121	2125	2202	1-	5			1		7	2121	C6.6	6368
15	2322	2332	2404	1-	5			1		1	2323		6368
16	0025	0034	0139	1	1			1			0023E	C4.9	6368
16	0201	0227	0346	2	3	1		1			0203	C7.7	6368
16	0357	0400	0422	1-	1			1			0355	C3.2	6368
16	0815	0818	0826	1-	3					2	0817	C2.2	6368
16	1306	1311	1325	1-	3		2			1	1313	C4.7	6368
16	1313	1317	1343	1	5					4	1313	C4.7	6368
16	1514	1515U	1552	2	1					1	1512	C1.7	6368
16	1805	1811	1828	1	3					4	1806	C2.4	6361
16	1936	1938	1951	1-	3					4	1938	C2.2	6368
16	2043	2053	2114	1+	3					2	2050	C2.6	6368
16	2317	2326	2332D	1-	3	1		1			2323	C3.8	6368
16	2332E	2337	2345D	1-	5	1		1		1	2325E	M1.2	6368
16	2345E	2351	2505	2	5	2		1		3	2325E	M1.2	6368
17	0216	0240	0349	1	3	1		1			0208	C7.1	6368
17	0410	0417	0437	1-	5			1		1	0359	C3.6	6368
17	0500	0505	0525	1-	1			1			No flare		6368
17	0539	0547	0645D	1+	5			1		3	0539	C7.1	6368
17	0610	0611	0621	1-	1					1	0607		6368
17	0645E	0700	0721D	1+	5			1		3	0645	C4.4	6368
17	0721E	0729	0818	1+	5	1		1		1	No flare		6368
17	0800	0803	0807	1-	1					1	No flare		6368
17	0822	0826	0840	1-	1					1	No flare		6368
17	0900	0911	0951	1-	5			1		2	0902	C3.6	6368
17	0930	0932	1000	1+	1					1	0929		6368
17	1009	1016	1035	1+	3					2	1017	C3.2	6368
17	1042	1046	1051	1-	3					2	1050	C3.9	6368
17	1105	1112	1154	1-	5	1	2	1		5	1102E	C9.2	6368
17	1150	1200	1220	1+	1					1	1150	C6.1	6368
17	1156	1214	1251	2-	3			1		2	1150	C6.1	6368
17	1234	1237	1303	1+	1					1	1234		6364
17	1309	1314	1337	1	5			2		8	1309	C8.5	6361
17	1445	1450	1512	1	5					7	1446	C4.5	6368
17	1559	1601	1616	1-	5					5	1600	C3.2	6368
17	1642	1645	1655	1-	3					2	1638	C3.3	6368
17	1720	1738	1815	2	3					5	1726		6368
17	1729	1742	1816	2-	3					4	1727	C8.8	6368
17	1843	1846	1921	2-	3					10	1842	M1.1	6368
17	1934	1948	2021	1-	5	1		1		9	No flare		6368
17	2006	2015	2116	2+	1					1	2001	M2.4	6368
17	2147	2147	2200	1-	1					1	2147	C3.2	6368
17	2239	2247	2348	2-	5	2		1		2	2239	M1.1	6368
18	0010	0023	0129D	2+	5	2		1		1	0010	M1.4	6368
18	0131E	0134	0156	1-	1			1			0129	C2.3	6368
18	0201	0208	0255	1-	1			1			0245E	C2.3	6368
18	0354	0359	0432	1-	1			1			0356E	C2.4	6368
18	0534	0541	0555	1-	1			1			0533	C2.8	6368
18	0600	0614	0634	1-	1			1			0601	C2.7	6368
18	0810	0813	0822	1-	1					1	0813E	C1.9	6368
18	0850	0852	0858	1-	3					2	0851	C2.2	6368
18	0958	1005	1012	1-	1					1	0948	C1.8	6368
18	1038	1039	1055	1	3					2	1042	C2.3	6368
18	1236	1238	1300	1	5					3	1240	C4.2	6368
18	1313	1319	1328	1-	5					4	1317	C2.4	6368
18	1410	1415	1445	2	1					1	1415		6368
18	1434	1441	1500	1	5					3	1434	C2.1	6368
18	1457	1458	1500	1-	1					1	No flare		6368
18	1525	1528	1542	1-	5					5	1528	C2.7	6368
18	1550	1553	1603	1-	5					4	1551	C2.2	6368
18	1634	1637	1648	1-	3					3	1635	C2.2	6368
18	1802	1809	1857	2	3					10	1738	C3.1	6368
18	1945	1951	2010	1	3					5	1945	C3.9	6368
18	2304	2309	2403	1-	5			1		1	2304	C4.9	6368

\* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

NOVEMBER 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			
19	0214	0222	0251	1-	3	1		1			No flare		
19	0337	0343	0425	1-	1			1			0337	C2.3	6368
19	0451	0457	0514	1-	1			1			0452	C1.6	6368
19	0622	0628	0647D	1-	5			1		1	0607	C4.0	6368
19	0647E	0653	0726	1-	1			1			0639	C2.7	
19	0925	0938	0947D	2+	5	3	2	1		5	0921	M2.4	
19	0947E	0953	1146	3-	5	3	1	1		4	0952E	M3.5	6368
19	1108	1112	1134	1+	3		2			3	1109	C4.6	
19	1122	1124	1126	1-	3					2	1120E	C3.9	6368
19	1158	1201	1218D	1	1					1	1154		6368
19	1218	1218	1250	1+	1					1	1218	C3.1	6368
19	1338	1348	1412	1-	5	2	4	1		8	1338E	M3.2	6368
19	1535	1541	1555	1	1					1	1535	C1.4	
19	1649	1659	1716U	1+	1					1	1647	C1.6	
19	1936	1938	2000	1	1					1	1935	C2.5	6368
19	2221	2227	2256	1-	1			1			2216	C2.2	6368
19	2312	2320	2349D	1-	1			1			2316	C2.8	6368
19	2348	2400	2400D	1-	1			1			2349	C2.1	6368
20	0031	0038	0051D	1-	1			1			0034	C2.1	6368
20	0048E	0058	0134	1-	5			1		1	0049	C2.7	6368
20	0204	0213	0243D	1-	1			1			0203	C2.0	
20	0243E	0246	0316	1-	1			1			0241	C1.4	
20	0451	0509	0617	1-	5			1		1	0443	C3.2	6368
20	0701	0706	0733	1-	1			1			0706	C1.8	6368
20	0953	1002	1123	2-	5	2	4	1		4	0945	M1.8	6368
20	1400	1413	1435	2-	3					2	1403	C3.0	6368
20	1721	1724	1740	1-	3					7	1725	C2.5	6368
20	1744	1749	1812	1	3					9	1742	C4.2	
20	1823	1826	1843	1-	3					10	1823	C6.8	
20	1847	1850	1914	1	3					8	1847	C6.3	
20	2032	2041	2107	1+	3					2	2030		6368
20	2144	2151	2204D	1-	1			1			2145	C1.8	
20	2204E	2211	2252	1-	5			1		1	2204E	C4.9	6368
21	0007	0014	0042	1-	1			1			No flare		
21	0242	0300	0401	1	1			1			0244	C2.9	6368
21	0458	0504	0528D	1+	5	1		1		2	0456	C7.1	6368
21	0528E	0538	0629D	2+	5	1		1		2	*		
21	0629E	0638	0738	2	5			1		2	0628	C7.6	
21	0817	0827	0849	1-	5		1	1		2	0821	C2.4	6368
21	0938	0946	1023	1-	3			1		1	0939	C3.9	
21	1253	1254	1308	1-	1					1	1252	C2.1	
21	1723	1729	1755	1+	3					6	No flare		
21	1833	1837	1855	1	3					3	1838E	C4.1	6368
21	1914	1916	1932	1-	3					3	1910	C3.6	6368
22	0147	0152	0247	1-	3	1		1			0142E	C4.7	
22	0407	0410	0422	1-	1			1			0404	C1.5	
22	0823	0833	0926	1+	5		1	1		3	0813	C9.3	6371
22	0852	0858	0902U	1-	1					1	0855		6368
22	1124	1130	1149	1-	5			1		1	1119	C5.5	
22	1242	1302	1340	1	1		1				*		
22	1419	1424	1451	1+	5		1			8	1417	C1.1	
22	1835	1836	1846	1-	1					1	1834	C2.1	
23	0011	0027	0052	1-	1			1			0009	C1.7	6368
23	0151	0159	0219	1-	1			1			0152	C1.4	6368
23	0401	0407	0422	1-	1			1			0401	C1.8	6368
23	0440	0453	0504D	1-	1			1			No flare		
23	0459E	0507	0558	1+	3	1		1			0503E	C5.9	
23	0705	0725	0735	1	1		1				No flare		
23	0903	0909	0939	1-	5			1		2	0856	C2.9	6368
23	1636	1639	1652	1-	3					5	1555	C2.7	6368
23	2058	2117	2158	1-	5			1		2	2058	C3.0	6368

\* = no flare patrol.



SUDDEN IONOSPHERIC DISTURBANCES

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NOVEMBER 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			
24	0219	0245	0432	2	3	1		1			0221	C8.5	6377
24	0800	0812U	0830	1	1		1				No flare		
24	0925	0926	0932	1-	1					1	0926	C1.7	
24	1413	1421	1526	2+	5		2			10	1409	M3.1	
24	1809	1813	1826	1-	3					4	1808	C2.9	6368
24	1826	1831	1856	1+	3					4	1827		6377
24	2000	2007	2038	2-	3					4	2002	C3.5	6377
24	2145	2151	2203	1-	1			1			2145E	C3.5	
24	2205	2220	2240	1-	1			1			2212	C3.9	6368
24	2321	2350	2526	2	5	1		1		1	2326E	M1.2	
25	0158	0210	0210D	1-	1			1			0200	C3.3	6377
25	0215	0222	0300	2-	1	1					No flare		
25	0314	0325	0457	2+	5			1		1	0316	M1.1	6377
25	0615	0621	0658	1-	1			1			0615	C2.3	
25	0810	0818	0852	1	5			1		3	0810		6368
25	1015	1025	1048	1-	5			1		1	0954	C3.5	6368
25	1706	1710	1748	2-	3					3	1705	C3.1	6368
25	1854	1901	1959	2	3					8	1904E	M1.5	6368
25	2120	2128	2149	1-	5			1		3	2119E	C4.8	6368
25	2219E	2231	2334	2+	5	2		1		1	2209	M1.8	6368
25	2345	2353	2401	1-	1	1					No flare		
26	0118	0127	0217	2-	3	1		1			0117	C6.3	6368
26	0631	0650	0744	1+	5			1		1	0630	C4.1	
26	0725	0740	0805	1+	1		1				*		
26	0934	0939	1029	1-	5			1		1	0929	C3.0	
26	1221	1228	1251	1	3		2			4	1221	C5.6	
26	1445	1448	1509	1	5					3	*		
26	1651	1654	1739	2	3					7	1651	M1.4	6368
26	1813	1823	1837	1	1					1	No flare		
26	2005	2008	2030	1	1					1	No flare		
26	2035	2039	2110	1+	3					3	2035	C4.2	6368
26	2156	2159	2210D	1-	1			1			2155	C2.5	
26	2210E	2214	2232	1-	1			1			2209	C3.0	6377
26	2312	2319	2502D	3	5	2		1		1	2313E	M7.5	
27	0017	0030	0119	1	1			1			No flare		
27	0102E	0108	0136	1-	1			1			0102	C1.7	
27	0248	0255	0311	1-	1			1			0248	C2.0	
27	0325	0341	0414	1-	1			1			*		
27	0436	0446	0459D	1-	1			1			*		
27	0459E	0513	0538D	3	5	1		1		2	0459	M1.5	
27	0538E	0545	0734	2	5			1		1	0537	C6.1	
27	0750	0816	0836	2-	1		1				No flare		
27	1229	1231	1253	1	1					1	No flare		
27	1320	1323	1336	1-	1					1	1320	C1.6	
27	1413	1419	1444D	1+	1					1	1410	C2.3	
27	1444	1459	1515	1+	1					1	1444	C3.3	
27	1554	1556	1618	1	5					4	1552	C3.0	
27	1818	1828	1859	2	3					3	1816	C3.9	
27	1901	1906	1929	1	3					4	No flare		
27	1943	1946	2025	1+	1					1	1943		6383
27	2222	2236	2321	1+	5			1		1	2221	C6.9	
28	0137	0153	0319	1	3	1		1			0132	C4.6	
28	0417	0436	0542	1-	1			1			0413	C2.1	
28	0621	0644	0802	2+	5	1		1		3	No flare		
28	0813	0820	0841D	1-	5			1		1	0812	C3.9	
28	0841E	0854	1004	1-	5			1		1	0841	C4.9	
28	1143	1157	1215	2	1		1				No flare		
28	1223	1231	1249	1	1					1	1230	C4.3	
28	1320	1325	1350	1+	1					1	No flare		
28	1405	1415	1447	2-	5		2			4	1405	C6.8	
28	1943	1951	2020	2-	3					2	1939		6377
28	2252	2315	2411	1-	1			1			2257		6377

\* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

NOVEMBER 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				
29	0145	0153	0207D	1-	3									
29	0207E	0234	0344	1	1	1		1			0147	C4.2	6383	
29	0945	0954	1039	1-	5	1	2	1		3	0947	C9.9	6387	
29	1324	1329	1407	1+	5		1			4	1326	M1.1		
29	1330	1343	1410	1	5	1	2			1	1326	M1.1		
30	0400	0418	0508	1-	1			1			0358	C3.4	6387	
30	0547	0557	0637D	1+	5	1		1		2	0544	C6.2	6387	
30	0637	0653	0730	1-	1			1			*			
30	1751	1758	1815	1	1					1	1752	C3.2		

\* = no flare patrol.

OBSERVATORIES REPORTING FOR NOVEMBER 1990

Amherst, New Hampshire, USA	SES	LaCrescenta, California, USA	SES
Athens, Georgia, USA	SES	Latrobe, Pennsylvania, USA	SES
Boksburg, Rep of S. Africa	SES	Locust Grove, Georgia, USA	SES
Cleveland, Ohio, USA	SES	Madison, Wisconsin, USA	SES
Cypress, Texas, USA	SES	Manahawkin, New Jersey, USA	SES
Darmstadt, Germany	SWF	Mau, Hawaii, USA	SWF
Edenvale, Rep of S. Africa	SES	Nerja, Spain	SES
Euclid, Ohio, USA	SES	Panska Ves, Czechoslovakia	SES, SEA, SWF
Farsta, Sweden	SES	Rochester, New York, USA	SES
Hiraiso, Japan	SWF	San Francisco, California, USA	SES
Houston, Texas, USA	SES	Shaker Heights, Ohio, USA	SES
Hudson, Ohio, USA	SES	Sofia, Bulgaria	SES
Humain, Belgium	SEA	Uccle, Belgium	SEA
Inubo, Japan	SPA	Upice, Czechoslovakia	SEA
Johannesburg, Rep of S. Africa	SES	Vlasim, Czechoslovakia	SEA
Kandilli, Turkey	SEA		

Observations are not necessarily continuous.

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

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Nov 90

NOVEMBER 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)	
01	LEAR			0012.0	1017.0	1				CONT
	LEAR			0112.0	0113.0	2				III
	LEAR			0408.0	0410.0	3				III
	LEAR			0502.0	0506.0	2				III
	SVTO			0557.0	0558.0	2				III
	LEAR			0646.0	0647.0	2				III
0710 1403	ONDR									
	LEAR			0712.0	0713.0	2				III
0720 1545	BLEN									
	LEAR			0728.0	0739.0	2				S
	LEAR			0751.0	0753.0	2				III
	LEAR			0800.0	0807.0	2				III
	LEAR			0908.0	0909.0	2				III
	SGMR			1413.0	1414.0	1				III
	SGMR			1644.0	1644.0	1				III
	SGMR			1753.0	1754.0	1				V
	SGMR			1815.0	1819.0	1				V
	PALE			1951.0	1956.0	2				III
	SGMR			1954.0	1957.0	1				III
	PALE			2026.0	2026.0	1				III
	PALE			2055.0	2055.0	2				III
	SGMR			2055.0	2055.0	1				III
	PALE			2104.0	2105.0	2				V
	SGMR			2104.0	2105.0	1				III
	LEAR			2234.0	2234.0	1				III
	LEAR			2355.0	0002.0	3				III
	PALE			2355.0	2359.0	2				III
02	LEAR			0024.0	0025.0	1				III
	LEAR			0053.0	0053.0	2				III
	LEAR			0119.0	0119.0	1				III
	LEAR			0129.0	0132.0	3				III
	PALE			0130.0	0136.0	3				III
	PALE			0130.0	0136.0	3				V
	LEAR			0133.0	0134.0	3				III
	LEAR			0136.0	0136.0	2				III
	LEAR			0148.0	0149.0	2				III
	PALE			0228.0	0228.0	1				III
	LEAR			0329.0	0330.0	2				III
	LEAR			0336.0	0337.0	3				III
	LEAR			0408.0	0419.0	3				S
	LEAR			0525.0	0526.0	3				III
	LEAR			0541.0	0542.0	2				III
	LEAR			0551.0	0551.0	2				III
0710 1402	ONDR	0856.0	0856.9	2	0856.0	0856.9	2			IIIGG
0720 1545	BLEN	0856.2	0856.8	3	0856.2	0856.8	3			IIIGG,RS
	SGMR				1825.0	1826.0	1			III
	LEAR				2237.0	2243.0	2			III
	PALE				2302.0	2302.0	1			III
03	LEAR			0052.0	0052.0	1				III
	LEAR			0107.0	1017.0	1				III
	LEAR			0133.0	0134.0	2				III
	LEAR			0206.0	0211.0	2				III
	LEAR			0223.0	0226.0	2				III
	LEAR			0246.0	0246.0	1				III
	LEAR			0321.0	0321.0	1				III
	LEAR			0348.0	0350.0	3				III
	LEAR			0410.0	0411.0	2				III
	LEAR			0439.0	0439.0	2				III
	LEAR			0457.0	0458.0	2				III
	LEAR			0507.0	0508.0	2				III
	LEAR			0548.0	0550.0	2				III
	LEAR			0602.0	0604.0	1				III
	LEAR			0643.0	0644.0	2				III
	LEAR			0701.0	0703.0	2				III
0715 1401	ONDR									
0720 1545	BLEN									
	LEAR			0735.0	0735.0	1				III

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

NOVEMBER 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				1950.0	1951.0	1				III
				2335.0	2335.0	1				III
				2352.0	2358.0	3				III
04				0011.0	0012.0	2				III
0730 1535										III
0715 1403	1154.7	1156.5	1	1154.7	1156.5	1				IIIIG
				1452.0	1453.0	1				III
				1737.0	1742.0	2				V
				1737.0	1746.0	3				V
05				0338.0	0338.0	1				III
				0346.0	0346.0	3				III
				0654.0	0654.0	1				III
0717 1403										III
0730 1535										III
				0735.0	0736.0	1				III
				1536.0	1543.0	1				III
				2037.0	2038.0	1				III
				2120.0	2122.0	2				III
				2308.0	2313.0	1				III
				2315.0	2317.0	1				MWB
06				0116.0	0117.0	2				III
				0430.0	0438.0	3				III
				0646.0	0647.0	2				III
				0659.0	0659.0	1				III
0719 1042	0745.9	0746.0	1	0745.9	0746.0	1				IIIIB
				0746.9	0747.0	2				IIIU
1127 1402				1448.0	1449.0	2				V
0730 1530				1448.1	1449.0	2				IIIIG
							1754.0	1754.0	1	III
				1754.0	1755.0	1				III
				2040.0	2051.0	2				S
				2040.0	2044.0	2				V
				2323.0	2325.0	2				III
				2323.0	2324.0	2				III
07				0004.0	0009.0	3				III
				0004.0	0007.0	2				III
				0106.0	0106.0	1				III
				0126.0	0126.0	2				III
				0154.0	0155.0	1				III
				0200.0	0415.0	1				CONT
				0234.0	0234.0	2				III
				0302.0	0303.0	2				III
				0320.0	0325.0	2				III
				0331.0	0333.0	2				III
				0400.0	0400.0	2				III
				0414.0	0414.0	2				III
				0514.0	0517.0	2				III
				0616.0	0624.0	2				III
				0659.0	0718.0	2				S
0730 1151	0815.4	0823.6	1	0815.4	0823.6	2				IIIIG,RS
				0819.0	0821.0	3				III
				0820.0	0824.0	2				V
				0823.0	0824.0	3				III
										IIIIB,U
				1102.2	1102.3	2				III
				1255.0	1255.0	1				III
				1255.0	1309.0	2				S
				1304.0	1309.0	2				III
				1407.0	1411.0	1				III
				1629.0	1630.0	1				V
				2218.0	2219.0	1				V
				2219.0	2220.0	2				III
				2229.0	2231.0	2				III
				2256.0	2256.0	1				III
				2301.0	2301.0	2				III

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Observation Day (UT)	Start (UT)	End (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)		
07			PALE				2318.0	2319.0	1				V	
			PALE				2331.0	2331.0	1				III	
			LEAR				2355.0	2355.0	1				III	
08			LEAR				0005.0	0006.0	1				III	
			LEAR				0008.0	0008.00	1				CONT	
			LEAR				0128.0	0128.0	1				III	
			LEAR				0210.0	0210.0	2				III	
			LEAR				0236.0	0236.0	1				III	
			LEAR				0240.0	0240.0	1				III	
			LEAR				0247.0	0248.0	1				III	
			LEAR				0431.0	0432.0	2				III	
			LEAR				0540.0	0547.0	2				III	
	0941	1530		BLEN										
	1237	1403		ONDR										
				SGMR				1346.0	1346.0	1				III
				PALE				1924.0	1925.0	1				III
			PALE				2022.0	2022.0	1				III	
			PALE				2107.0	2109.0	2				V	
			LEAR				2303.0	2305.0	3				III	
			PALE				2304.0	2312.0	2				V	
			LEAR				2310.0	2314.0	2				III	
09			LEAR				0141.0	0141.0	2				III	
			LEAR				0156.0	0156.0	1				III	
			LEAR				0239.0	0257.0	2				S	
			LEAR				0304.0	0615.0	1				CONT	
			LEAR				0333.0	0348.0	2				S	
			SVTO				0624.0	0626.0	2				III	
			SVTO				0702.0	0702.0	2				III	
			LEAR				0705.0	0706.0	2				III	
	0725	1403		ONDR										
	0740	1500		BLEN										
			SGMR				1411.0	1611.0	1				CONT	
10			LEAR				0142.0	0142.0	1				III	
			LEAR				0414.0	0415.0	1				III	
	0740	1500	BLEN											
			SVTO				1150.0	1150.0	3				III	
	0728	1402	ONDR	1157.1	1157.5	1	1157.1	1157.5	1				IIIG	
		ONDR	1159.0	1159.3	2	1159.0	1159.3	2				IIIG		
11			LEAR				0423.0	0433.0	2				V	
			LEAR				0433.0	0530.0	1				CONT	
			LEAR				0730.0	0731.0	1				III	
	0740	1500	BLEN	0746.6	0746.7	2							III	
	0730	1400	ONDR	0746.7	0746.8	2							IIIB	
			BLEN	1032.1	1032.8	1	1032.1	1032.8	2				IIIG	
			ONDR	1032.2	1032.8	2	1032.2	1032.8	2				IIIGG	
			BLEN				1214.8	1216.2	1				IIIG	
			ONDR	1214.9	1215.3	1	1214.9	1215.3	1				IIIG	
12			LEAR				0329.0	0330.0	1				III	
			LEAR				0344.0	0346.0	2				III	
			LEAR				0617.0	0635.0	1				CONT	
	0732	1358	ONDR											
	0740	1500	BLEN											
		PALE				2058.0	2059.0	1				III		
13	0735	1356	ONDR											
	0740	1500	BLEN											
			LEAR				0742.0	0742.0	1				III	
		SVTO				0742.0	0742.0	1				III		
14			LEAR				0340.0	0340.0	1				III	
	0738	1355	ONDR											
	0740	1500	BLEN											
15			LEAR				0156.0	0156.0	1				III	

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	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
15				0611.0	0611.0	1				III
	0739	1353	ONDR							
	0740	1500	BLEN							
			SGMR		1542.0	1543.0	2			V
			LEAR		2321.0	2321.0	1			III
16			LEAR		0015.0	0314.0	1			CONT
			LEAR		0147.0	0152.0	2			III
			LEAR		0221.0	0221.0	2			III
			LEAR		0539.0	0540.0	1			III
			LEAR		0646.0	0755.0	1			CONT
	0740	1500	BLEN	1310.8	1319.3	3	1310.8	1319.3	2	IIIGG,RS,U,C
	0742	1351	ONDR	1310.8	1311.5	3	1310.8	1311.5	3	IIIGG,U,RS
			ONDR	1314.3	1316.5	2	1314.3	1316.5	2	IIIGG
			ONDR	1319.3	1319.4	1				IIIB
			BLEN				1417.0	1417.2	1	III
			LEAR				2327.0	1026.0	2	CONT
17			LEAR				0342.0	0351.0	2	III
			LEAR				0452.0	0459.0	2	V
			LEAR				0519.0	0520.0	3	III
			LEAR				0625.0	0625.0	2	III
			SVTO				0801.0	0802.0	2	III
	0743	1349	ONDR				0822.9	0823.3	1	I
			LEAR				0919.0	0922.0	2	III
			SVTO				0919.0	0923.0	2	III
			LEAR				1016.0	1019.0	2	III
			SVTO				1016.0	1020.0	3	III
	0740	1500	BLEN	1049.6	1051.5	2	1049.6	1051.5	1	DCIM
			ONDR	1049.7	1051.6	1	1049.7	1051.6	1	IIIG
			BLEN	1149.9	1150.3	1				DCIM
			ONDR				1211.0	1349.0	1	1,N
			SGMR				1317.0	1321.0	1	III
			SGMR				1355.0	2055.0	1	CONT
			SGMR				1459.0	1504.0	3	V
			SVTO				1500.0	1501.0	3	III
			PALE				1843.0	1844.0	1	III
			PALE				1902.0	1903.0	1	III
			PALE				1941.0	1946.0	1	III
			PALE				1958.0	2023.0	2	V
			PALE				2020.0	2021.0	1	III
			PALE				2033.0	2034.0	1	III
			PALE				2050.0	2054.0	1	III
			PALE				2135.0	2135.0	1	III
			LEAR				2149.0	2150.0	1	III
			PALE				2149.0	2159.0	2	III
			LEAR				2221.0	2222.0	2	III
			PALE				2221.0	2225.0	1	III
18			LEAR				0049.0	0053.0	2	III
			PALE				0049.0	0050.0	1	III
			LEAR				0120.0	0130.0	2	III
			PALE				0120.0	0129.0	1	III
			LEAR				0153.0	0153.0	2	III
			LEAR				0201.0	0208.0	2	III
			LEAR				0244.0	0316.0	2	S
			LEAR				0352.0	0352.0	2	III
			LEAR				0408.0	0411.0	2	III
			LEAR				0414.0	0415.0	3	III
			LEAR				0549.0	0554.0	2	III
			LEAR				0558.0	0601.0	2	III
			LEAR				0637.0	0648.0	2	S
			SVTO				0639.0	0640.0	2	III
			LEAR				0711.0	0711.0	2	III
	0740	1154	BLEN				0740.0E	1154.0D	1	I,W
	0745	1348	ONDR	0745.0	1348.0	1	0745.0	1348.0	1	I,N
			LEAR				0747.0	0750.0	2	III
			SVTO				0748.0	0748.0	2	III
			LEAR				0831.0	0832.0	2	III

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	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
18				0831.0	0849.0	2				S
				0840.0	0841.0	2				III
				0848.0	0848.0	2				III
				0855.0	0902.0	3				III
				0855.0	0858.0	2				III
				0938.0	0939.0	3				III
				0938.0	0939.0	3				V
				0938.1	0938.3	1				III
				0938.2	0938.3	2				IIIIB
				1046.6	1047.0	2				IIIIG
				1129.0	1146.0	3				S
				1228.0	1229.0	1				III
				1250.0	1256.0	1				III
				1306.0	1616.0	1				CONT
		1317.0	1318.0	3	1317.0	1318.0	3			IIIIGG
				1317.0	1318.0	3				III
				1317.0	1318.0	3				III
				1346.0	1349.0	1				II
				1402.0	1403.0	2				V
				1402.0	1403.0	3				III
				1635.0	1635.0	3				V
				1739.0	1757.0	2				S
				1739.0	1742.0	2				III
				1828.0	1838.0	2				III
				1828.0	1829.0	1				III
				1946.0	1947.0	1				III
				2127.0	2131.0	2				V
				2153.0	2157.0	1				III
				2215.0	1028.0	2				CONT
				2235.0	2235.0	2				III
				2235.0	2235.0	1				III
				2303.0	2304.0	3				III
				2303.0	2303.0	2				III
				2326.0	2330.0	2				III
				2333.0	2333.0	2				V
				2346.0	2347.0	3				III
				2346.0	2346.0	2				III
19				0046.0	0055.0	3				III
				0046.0	0047.0	1				III
				0106.0	0110.0	3				III
				0106.0	0106.0	1				III
				0152.0	0157.0	2				III
				0216.0	0219.0	3				III
				0216.0	0217.0	2				III
				0533.0	0536.0	3				III
				0554.0	0558.0	2				III
				0620.0	0624.0	3				III
				0621.0	0624.0	2				III
				0624.0	0630.0	3				V
				0714.0	0714.0	2				III
				0718.0	0719.0	3				III
				0719.0	0719.0	2				III
				0727.0	0728.0	2				III
				0748.0	1346.0	1				I,N
0748 1346				0753.0	0757.0	2				III
				0754.0	0757.0	1				III
				0806.0	0809.0	2				III
				0808.0	0810.0	1				III
				0838.0	0843.0	2				III
				0926.0	0927.0	2				III
				0927.0	0927.0	2				III
				1000.0	1004.0	2				III
				1028.8	1030.6	2				IIIIGG
				1126.0	1130.0	3				V
				1126.1	1126.5	3				V
0852 1500		1126.1	1126.5	3	1126.1	1126.5	3			IIIIG,V
		1126.2	1126.5	3	1141.0	1150.0	2			V
					1228.0	1228.1	2			V



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				Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
19			ONDR				1251.1	1252.0	2				II
			SGMR				1332.0	1336.0	1				III
			SGMR				1409.0	1410.0	1				III
			SGMR				1427.0	1529.0	1				CONT
			SGMR				1523.0	1526.0	3				III
			PALE				1745.0	1846.0	1				CONT
			LEAR				2208.0	2208.0	2				III
			LEAR				2243.0	0945.0	2				CONT
			LEAR				2317.0	2317.0	2				III
20			LEAR				0014.0	0015.0	2				III
			LEAR				0030.0	0036.0	3				III
			LEAR				0112.0	0113.0	2				III
			LEAR				0146.0	0146.0	2				III
			LEAR				0409.0	0409.0	2				III
			LEAR				0445.0	0446.0	2				III
			LEAR				0453.0	0509.0	3				S
			LEAR				0513.0	0528.0	2				S
			LEAR				0549.0	0608.0	2				S
			LEAR				0631.0	0634.0	3				III
			SVTO				0631.0	0632.0	2				III
			LEAR				0716.0	0718.0	2				III
			SVTO				0716.0	0721.0	2				III
			LEAR				0721.0	0721.0	3				III
			LEAR				0726.0	0728.0	2				III
0749 1345			ONDR				0749.0	1345.0	1				I,N
0800 1500			BLEN				0800.0E	1500.0D	1				I,DC,W
			LEAR				0832.0	0834.0	3				III
			SVTO				0832.0	0834.0	2				III
			SVTO				0935.0	0935.0	3				III
			ONDR				1015.0	1015.6	2				IIIG
			ONDR				1101.8	1102.0	2				IIIG
			SVTO				1132.0	1253.0	2				CONT
			SGMR				1202.0	1204.0	1				III
			SGMR				1231.0	1603.0	1				CONT
			SGMR				1312.0	1313.0	2				III
			SVTO				1313.0	1313.0	3				III
			ONDR				1333.3	1333.4	2				IIIG
			SGMR				1423.0	1425.0	2				V
			BLEN	1423.8	1434.3	1	1423.8	1434.3	3				IIIGG
			SVTO				1424.0	1425.0	3				III
			SGMR				1700.0	1833.0	1				CONT
			SGMR				1900.0	1905.0	2				III
			LEAR				2236.0	2237.0	2				III
			PALE				2248.0	2248.0	2				III
21			LEAR				0100.0	0101.0	2				III
			LEAR				0133.0	0133.0	2				III
			LEAR				0159.0	0202.0	3				V
			PALE				0159.0	0201.0	2				III
			LEAR				0247.0	0248.0	2				III
			LEAR				0259.0	0300.0	2				II
			LEAR				0424.0	0425.0	2				III
			LEAR				0528.0	0530.0	2				III
			LEAR				0559.0	0600.0	2				III
			LEAR				0628.0	0628.0	2				III
			LEAR				0756.0	0757.0	2				III
0800 1500			BLEN				0800.0E	1500.0D	1				I,W
			LEAR				0828.0	0829.0	1				III
			SVTO				0829.0	0829.0	2				III
			LEAR				0842.0	0845.0	2				III
0752 1343			ONDR				0907.5	1343.0	1				I,N
			LEAR				0921.0	0921.0	2				III
			ONDR				0945.1	0945.3	2				IIIG
			SGMR				1242.0	1243.0	1				III
			SGMR				1420.0	1608.0	1				CONT
			SGMR				1753.0	1757.0	1				III
			PALE				1757.0	1757.0	1				III
			PALE				1813.0	1818.0	1				III

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				Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
21			PALE				1941.0	1948.0	2				V
			SGMR				1943.0	1947.0	2				V
			PALE				2000.0	0331.0	1				CONT
			SGMR				2038.0	2042.0	3				V
			PALE				2039.0	2042.0	3				V
			LEAR				2149.0	1030.0	2				CONT
22			SVTO				0739.0	1313.0	1				CONT
	0753	1341	ONDR	0940.0	1341.0	1	0940.0	1341.0	1				I,N
			ONDR				1018.2	1018.9	2				IIIG
	0800	1500	BLN	1201.5	1208.4	1	1201.5	1208.4	2				IIIGG
			ONDR	1201.5	1202.0	2	1201.5	1202.0	2				IIIGG
			SVTO				1202.0	1202.0	3				III
			ONDR	1208.0	1208.5	2	1208.0	1208.5	2				IIIGG
			SGMR				1233.0	2000.0	1				CONT
			ONDR	1242.3	1242.4	1							IIIB
			BLN	1412.7	1412.9	2							III
			PALE				1745.0	1745.0	1				III
			PALE				1758.0	0000.0	1				CONT
			PALE				2148.0	2150.0	2				III
			LEAR				2149.0	2150.0	2				III
			LEAR				2224.0	2230.0	3				III
23			LEAR				0108.0	0109.0	3				III
			LEAR				0255.0	0304.0	3				III
			LEAR				0338.0	0340.0	3				III
			LEAR				0349.0	0401.0	2				S
			LEAR				0714.0	0715.0	2				II
			SVTO				0714.0	0716.0	1				II
	0753	1339	ONDR				0753.0	1339.1	1				I,N
	0800	1500	BLN				0800.0E	1500.0D	1				I
			LEAR				0830.0	0835.0	2				III
			ONDR	0830.1	0831.1	3	0830.1	0831.1	3				IIIGG
			SVTO				0831.0	0835.0	2				V
			LEAR				0845.0	0850.0	3				III
			SVTO				0846.0	0847.0	3				III
			SVTO				0852.0	1502.0	2				CONT
			LEAR				0856.0	0858.0	3				III
			ONDR	0856.0	0856.6	3	0856.0	0856.6	3				IIIGG
			SGMR				1151.0	1320.0	1				CONT
			SGMR				1320.0	1527.0	2				CONT
			SGMR				1527.0	2050.0	1				CONT
			PALE				1848.0	0331.0	1				CONT
			PALE				2001.0	2003.0	2				V
			SGMR				2001.0	2003.0	2				III
			PALE				2031.0	2033.0	2				V
			LEAR				2232.0	1030.0	2				CONT
			LEAR				2327.0	2329.0	3				III
24			LEAR				0457.0	0459.0	3				III
	0758	1338	ONDR				0758.0	1338.0	1				I,N
	0800	1500	BLN				0800.0E	1500.0D	2				I,DC
			SVTO				0918.0	0944.0	2				CONT
			ONDR				1022.8	1023.0	2				IIIG
			SVTO				1233.0	1236.0	3				III
			SGMR				1234.0	1235.0	1				III
			SGMR				1332.0	1332.0	1				III
			SGMR				1339.0	1340.0	1				III
			SVTO				1339.0	1340.0	2				III
			BLN	1339.2	1339.6	3	1339.2	1339.6	3				IIIG,V
			BLN	1426.9	1431.6								DCIM,P
			SGMR				1458.0	1502.0	2				V
			SGMR				1502.0	2050.0	1				CONT
			PALE				2000.0	2000.0	1				III
			PALE				2022.0	2037.0	2				S
			LEAR				2208.0	2208.0	1				III
			PALE				2208.0	2208.0	1				III
			LEAR				2226.0	2227.0	1				III
			LEAR				2244.0	2245.0	1				III

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		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
24	PALE				2244.0	2245.0	1				III	
	LEAR				2332.0	1031.0	1				CONT	
25	LEAR				0014.0	0015.0	2				III	
	LEAR				0110.0	0111.0	2				III	
	PALE				0110.0	0110.0	1				III	
	LEAR				0127.0	0127.0	2				III	
	LEAR				0205.0	0211.0	2				III	
	LEAR				0248.0	0205.0	3				III	
	LEAR				0259.0	0300.0	2				III	
	LEAR				0310.0	0311.0	2				III	
	LEAR				0538.0	0538.0	2				III	
	LEAR				0557.0	0557.0	2				III	
	LEAR				0613.0	0616.0	2				III	
	LEAR				0624.0	0626.0	2				III	
	LEAR				0639.0	0642.0	2				III	
	SVTO				0641.0	0642.0	2				III	
	LEAR				0731.0	0734.0	3				III	
	SVTO				0731.0	0734.0	3				III	
	0759 1337	ONDR				0759.0	1337.0	1				I,N
		LEAR				0828.0	0828.0	2				III
		ONDR				1106.2	1106.3	3				V
	0807 1500	BLEN				1257.9	1258.6	2				III
		ONDR	1257.9	1258.8	3	1257.9	1258.8	3				V
		SGMR				1534.0	1534.0	2				III
		PALE				1842.0	1842.0	1				III
		SGMR				1842.0	1842.0	1				III
		PALE				1940.0	1941.0	1				III
	SGMR				1940.0	1941.0	1				III	
	PALE				1947.0	1947.0	1				III	
	PALE				2115.0	2116.0	2				III	
	LEAR				2257.0	2259.0	3				III	
	PALE				2258.0	2259.0	2				V	
	LEAR				2316.0	2317.0	1				III	
	PALE				2316.0	2314.0	1				III	
	LEAR				2332.0	2333.0	1				III	
	LEAR				2344.0	1014.0	2				CONT	
26	LEAR				0116.0	0117.0	2				V	
	PALE				0116.0	0116.0	1				III	
	LEAR				0325.0	0326.0	2				III	
	LEAR				0455.0	0456.0	3				V	
	LEAR				0538.0	0540.0	2				III	
	LEAR				0547.0	0548.0	2				III	
	LEAR				0620.0	0621.0	2				III	
	LEAR				0634.0	0637.0	3				III	
	SVTO				0635.0	0636.0	2				III	
	LEAR				0712.0	0713.0	3				III	
	SVTO				0712.0	0713.0	3				III	
	LEAR				0829.0	0829.0	2				III	
	SVTO				0829.0	0829.0	2				III	
	ONDR				0851.0	1335.0	1				I,N	
	0803 1335	ONDR				0851.0	0851.1	2				V
	0810 1500	BLEN				1010.0	1010.3	1				III
		ONDR				1010.0	1010.4	2				IIIIG
		ONDR				1330.1	1330.2	2				V
		BLEN				1349.0	1351.1	2				III
		SGMR				1349.0	1351.0	2				V
		SVTO				1350.0	1351.0	3				III
		SGMR				1419.0	1419.0	2				III
		SGMR				1701.0	1702.0	1				III
		PALE				1856.0	1857.0	1				III
		SGMR				1856.0	1856.0	1				III
	PALE				2103.0	2103.0	1				III	
	LEAR				2310.0	2313.0	1				III	
	LEAR				2348.0	2353.0	2				III	
27	LEAR				0033.0	0815.0	2				CONT	
	LEAR				0311.0	0313.0	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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Nov 90

NOVEMBER 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)		
27			LEAR				0443.0	0515.0	3				S	
			LEAR				0653.0	0656.0	3				III	
			SVTO				0653.0	0656.0	3				V	
		0810 1500		BLEN										
				LEAR				0829.0	0829.0	2				III
		0803 1334		ONDR	1105.5	1107.5	2	1105.5	1107.5	2				IIIIGG
				SVTO				1107.0	1107.0	2				III
			LEAR				2356.0	2358.0	2				III	
28			LEAR				0028.0	0030.0	2				III	
			PALE				0029.0	0029.0	1				V	
			LEAR				0145.0	0146.0	1				III	
			LEAR				0215.0	0218.0	2				III	
			LEAR				0337.0	0339.0	1				III	
			LEAR				0349.0	0359.0	2				III	
		0805 1333		ONDR										
		0810 1500		BLEN										
				LEAR				0841.0	1033.0	1				CONT
				SVTO				0923.0	1300.0	2				CONT
			PALE				2140.0	2141.0	1				III	
			LEAR				2333.0	2346.0	1				S	
29			LEAR				0027.0	0044.0	2				S	
			LEAR				0207.0	0213.0	1				III	
			LEAR				0317.0	0324.0	1				III	
			LEAR				0522.0	0525.0	2				III	
			LEAR				0605.0	0608.0	3				III	
			LEAR				0614.0	0837.0	1				CONT	
		0805 1332		ONDR										
				LEAR				1011.0	1012.0	2				III
				SVTO				1011.0	1011.0	2				III
		0810 1500		BLEN				1207.2	1208.0	1				III
				SVTO				1235.0	1235.0	2				III
				BLEN				1235.1	1235.7	1				IIIIG
				LEAR				2332.0	2333.0	1				III
			LEAR				2339.0	2340.0	3				III	
			LEAR				2349.0	2349.0	2				III	
30			LEAR				0423.0	0423.0	1				III	
			LEAR				0449.0	0450.0	2				III	
			LEAR				0458.0	0459.0	2				III	
			LEAR				0536.0	0537.0	1				III	
			LEAR				0603.0	0603.0	2				III	
			LEAR				0634.0	0635.0	3				III	
			SVTO				0634.0	0634.0	3				III	
			LEAR				0710.0	0714.0	2				III	
			LEAR				0733.0	0741.0	3				III	
			SVTO				0733.0	0737.0	3				V	
			LEAR				0805.0	0806.0	1				III	
		0809 1324		ONDR										
		0815 1121		BLEN										
				LEAR				0824.0	0825.0	2				III
				LEAR				0837.0	0837.0	1				III
				LEAR				0843.0	0844.0	2				III
				LEAR				0914.0	0915.0	1				III
				LEAR				0959.0	1000.0	2				III
				SVTO				0959.0	1021.0	2				CONT
				SVTO				1141.0	1146.0	2				III
				SVTO				1204.0	1208.0	3				V
				SGMR				1207.0	1208.0	1				III
				SGMR				1249.0	1300.0	1				S
				SVTO				1256.0	1300.0	2				III
				SGMR				1351.0	1358.0	2				III
				SGMR				1415.0	1415.0	1				III
				SGMR				1449.0	1456.0	2				V
				SGMR				1705.0	1705.0	1				III
				SGMR				1717.0	1718.0	1				III
				SGMR				1736.0	1737.0	1				III
			PALE				2029.0	2030.0	1				V	

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Nov. 90

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

NOVEMBER 1990

Day (UT)	Observation Start End (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)	
30	SGMR				2029.0	2029.0	1				III
	LEAR				2246.0	2248.0	2				III
	PALE				2246.0	2248.0	1				V
	LEAR				2327.0	2336.0	2				III
	PALE				2327.0	2327.0	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<br>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
POTS = Potsdam	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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Nov 90

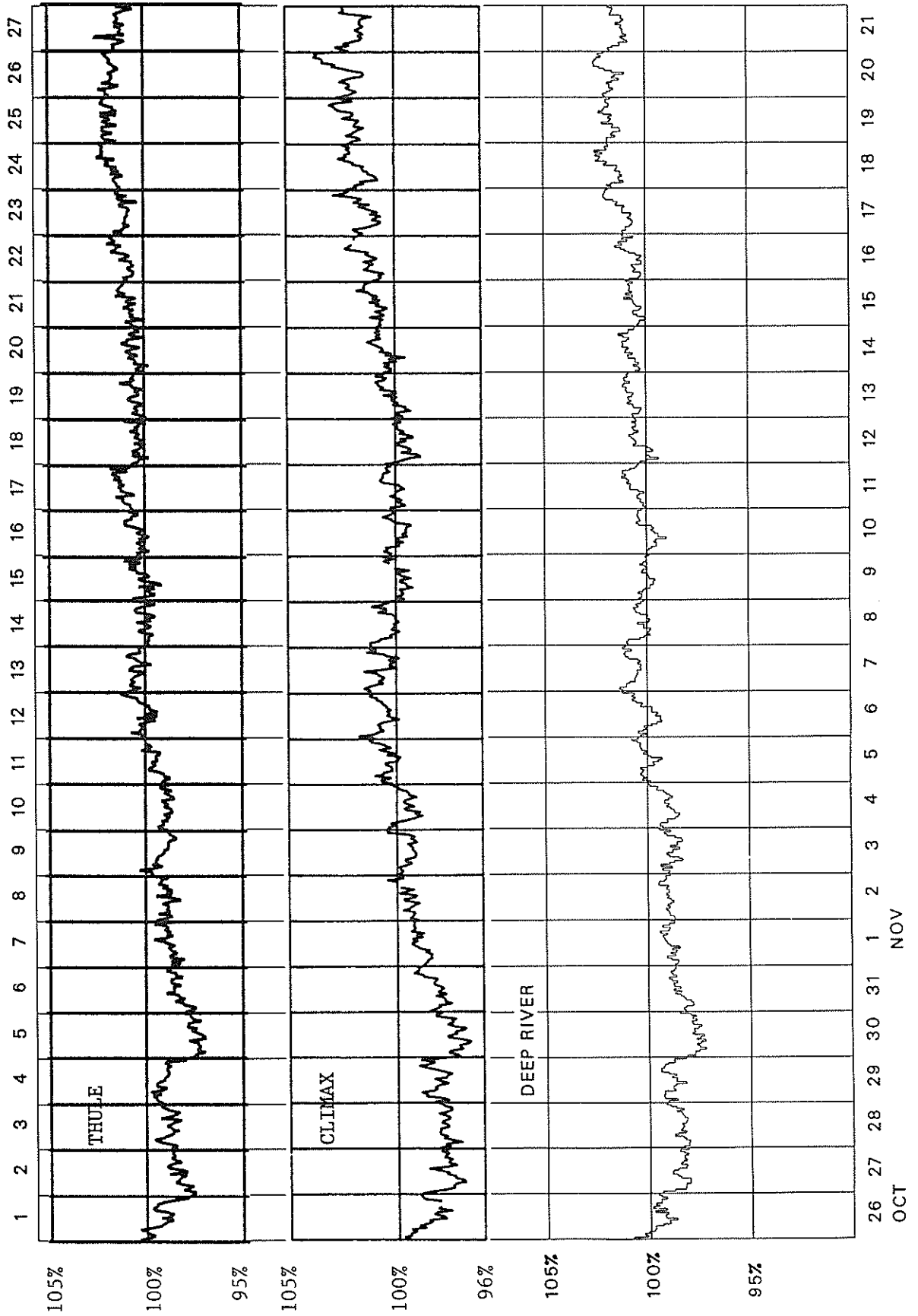
NOVEMBER 1990

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	3868	6103.5	5455.5	3499.7	3468.5	
2	3875	6108.4	5498.1	3519.0	3482.5	
3	3883	6096.3	5501.8	3519.9	3476.2	
4	3873	6113.5	5503.6	3522.9	3476.2	
5	3896	6176.7	5532.2	3553.6	3479.8	
6	3922	6174.7	5541.0	3561.6	3484.7	
7	3933	6215.5	5531.7	3563.5	3483.7	
8	3915	6186.7	5522.0	3551.4	3479.7	
9	3922	6171.7	5509.5	3531.0	3469.2	
10	3932	6164.0	5526.2	3535.6	3486.9	
11	3959	6206.5	5536.3	3541.8	3495.0	
12	3929	6189.0	5522.0	3524.7	3488.4	
13	3935	6218.1	5543.2	3543.9	---	
14	3936	6217.4	5568.9	3556.4	---	
15	3949	6204.2	5577.7	3569.5	3489.5	
16	3959	6211.5	5572.6	3581.9	3496.2	
17	3956	6246.1	5597.3	3587.4	3491.1	
18	3984	6277.2	5621.2	3598.5	3483.2	
19	3989	6278.0	5649.4	3609.3	3481.3	
20	3983	6287.7	5659.2	3623.1	3473.5	
21	3966	6249.9	5625.1	3601.6	3486.4	
22	3973	6219.3	5603.1	3590.5	3487.4	
23	3987	6237.8	5609.6	3578.5	3487.7	
24	3989	6239.7	5592.5	3573.6	3483.2	
25	3973	6218.8	5600.4	3575.5	3476.1	
26	3967	6239.7	5606.2	3607.3	3484.0	
27	3945	6164.3	5562.0	3590.7	3474.7	
28	3926	6143.7	5566.0	3584.7	3466.7	
29	3935	6211.7	5576.3	3562.6	3467.7	
30	3950	6246.1	5587.3	3573.9	3463.9	
Mean	3940	6200.6	5563.3	3564.6	3480.9	

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)

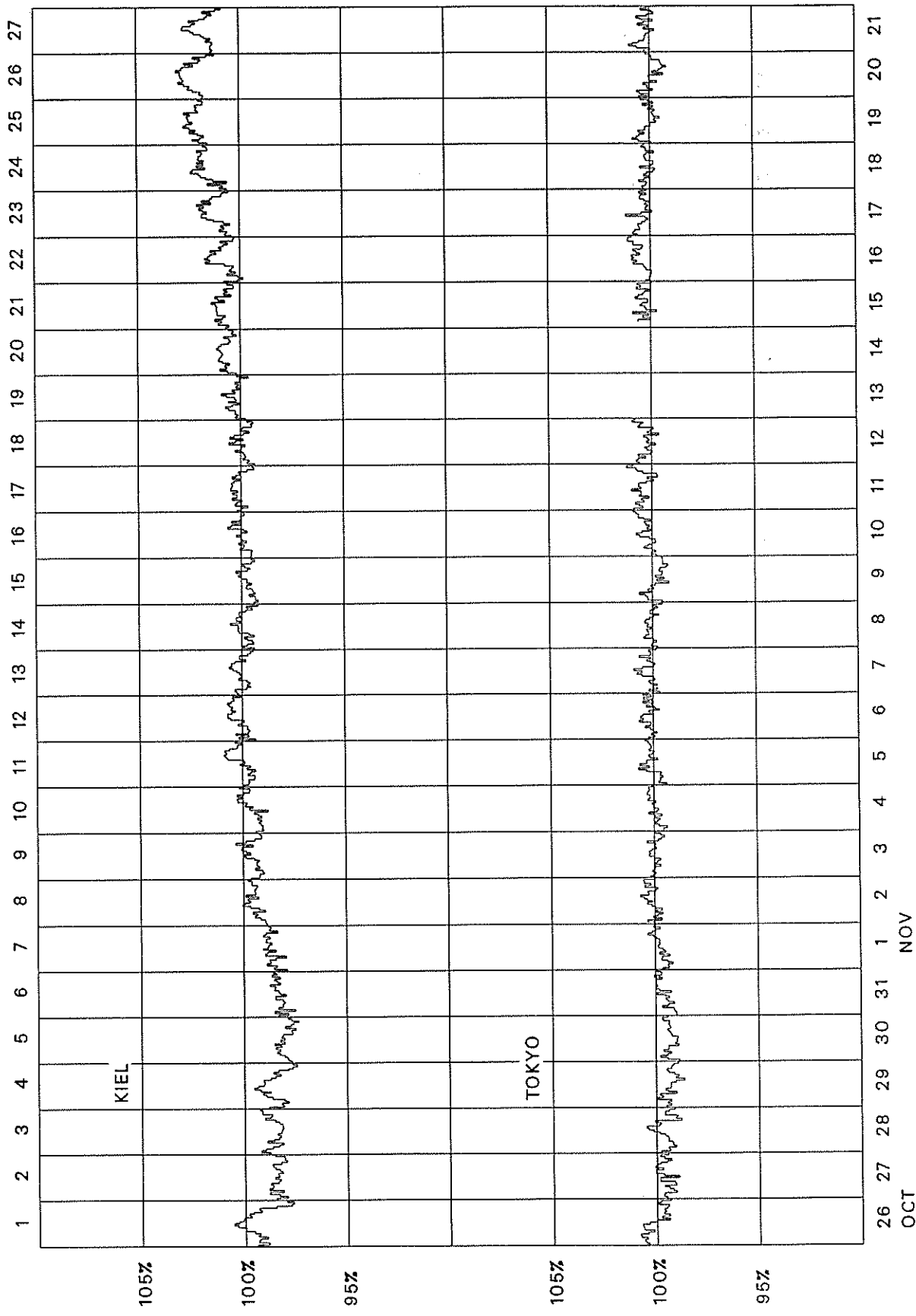
Bartels Rotation 2148 (October 1990-November 1990)





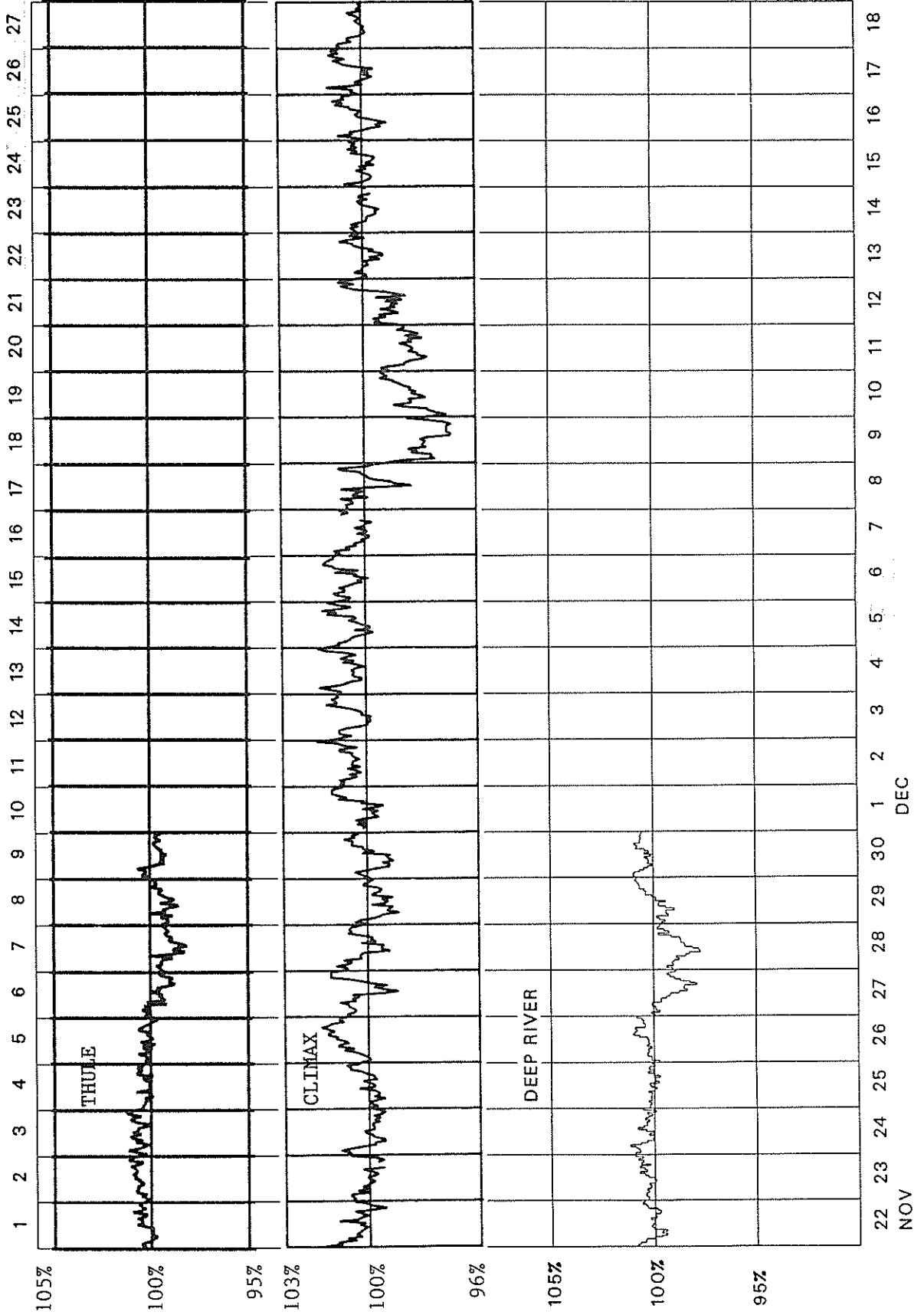
# COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2148 (October 1990-November 1990)



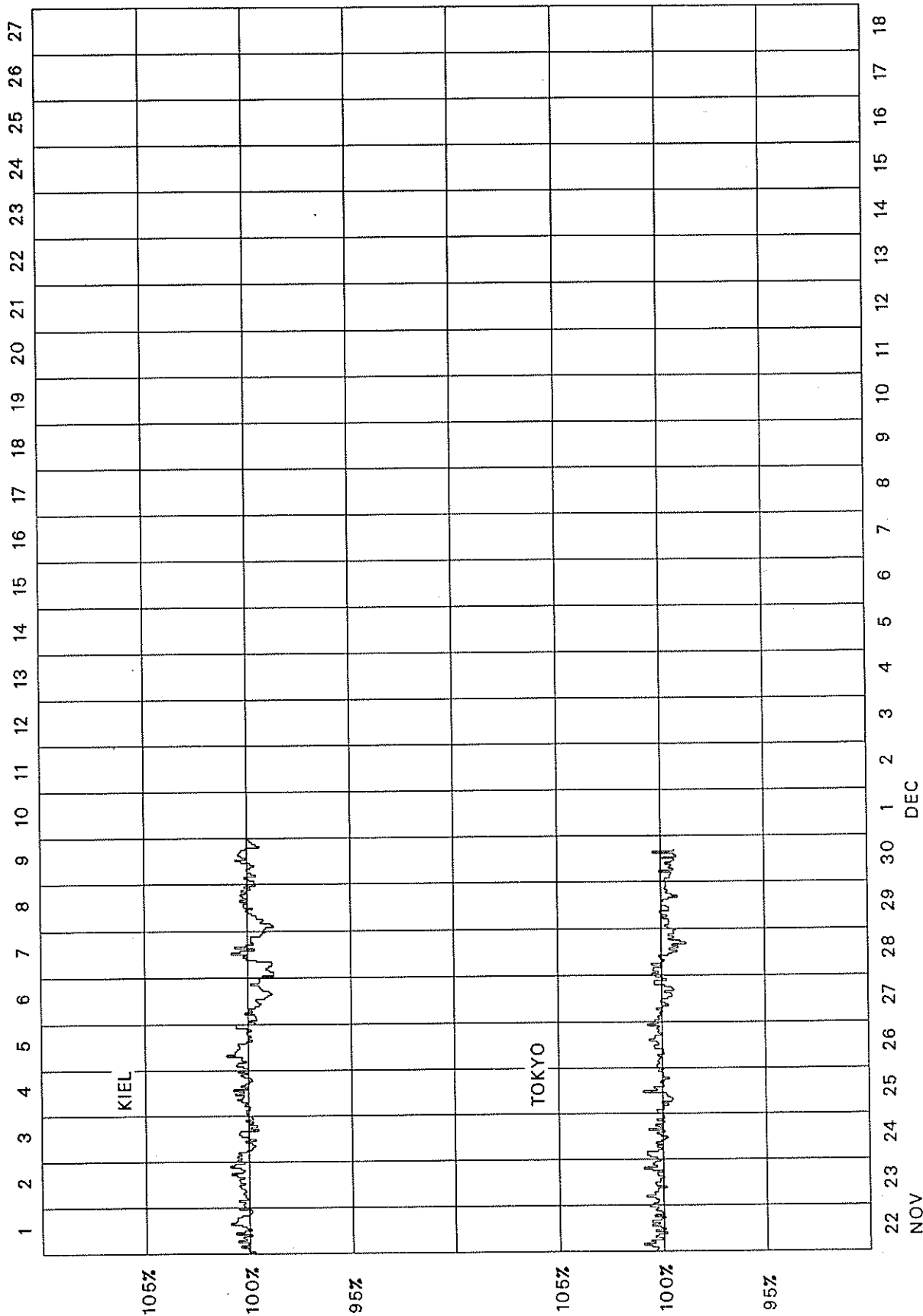
# COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2149 (November 1990-December 1990)



# COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2149 (November 1990-December 1990)



NOV  
DEC

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

November 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
1	3	2+	2-	2	2-	1+	2-	3+	17	9	0.5												
2	3-	4-	2-	1+	1+	2	2	3+	18	10	0.6												
3	2	2+	1+	2-	2-	1+	1+	1+	13	6	0.3												
4	Q4	2-	1-	1-	1	0+	0+	0+	5	3	0.0												
5	Q2	0	0+	0+	0	0+	0+	0+	3-	2	0.0												
6	Q1	0+	0+	0+	0+	0+	0+	1-	3+	2	0.0												
7		0+	0+	1	2	2	2-	2	12-	6	0.2												
8		1+	1+	2+	2-	2	3-	3-	16+	8	0.4												
9		4-	3+	3-	2	2	3-	2+	21	12	0.7												
10		3+	3-	3-	2	2-	3+	3	21	12	0.7												
11		3+	3-	3-	3	3+	2-	2-	20	12	0.7												
12		1+	3-	1-	1	1-	2-	1+	10	5	0.2												
13	Q6	1+	1	1+	1-	0+	1-	0+	6	3	0.1												
14	Q3	1	0	0+	1-	0+	0	0	2+	1	0.0												
15	Q7	1-	1-	0+	0+	1-	1	2-	6	3	0.1												
16	D2*	2+	3	4-	3+	4	3+	3-	26-	17	0.9												
17	D4*	2+	3-	3	3	4	4-	3+	25-	16	0.9												
18	D5*	4-	3	2-	2+	4-	3+	3	24-	15	0.9												
19		4-	3	2+	2-	1+	2+	2-	18+	10	0.6												
20		2+	3-	2+	1+	1+	1	1+	13+	7	0.3												
21		3	4-	1+	2	3-	2-	2-	18	10	0.6												
22	Q8	1-	1-	0+	0+	1-	1-	2	5+	3	0.1												
23	Q9	0+	0+	0	1-	2	2	1	8+	4	0.1												
24	Q5	2	1	0	0	0+	0	0	4	2	0.0												
25	Q10	1-	0+	1-	2	1+	1-	2-	9+	4	0.2												
26		3-	3-	1+	2	3-	1+	0+	16+	9	0.5												
27	D1	5-	4	3+	3-	4+	7-	6+	36	45	1.5												
28	D3*	4	5-	3	2	2	2+	4	24+	18	1.0												
29		1+	2+	1	1-	0+	1-	2-	10	5	0.2												
30		2	2-	1+	2-	3-	3+	2	17-	8	0.5												
Mean									9	0.43													
Day	Kn Three-Hourly Indices								An	Ks Three-Hourly Indices								As	Sa	Prov Ri	Ra	Rs	IMF
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8						
1																	141.6*	77	77	91			
2																	138.5	81	84	88			
3																	150.2	108	117	100			
4																	154.7	146	140	105			
5																	169.7	154	169	121			
6																	196.4	197	192	150			
7																	214.3	209	197	169			
8																	211.8	208	204	167			
9																	201.2	188	200	155			
10																	191.1	163	167	144			
11																	195.0	167	141	149			
12																	191.0	151	143	144			
13																	181.5	129	127	134			
14																	198.0	106	142	152			
15																	207.3	107	113	162			
16																	207.3	95	98	162			
17																	217.1	103	121	172			
18																	198.9	97	102	153			
19																	191.2	104	109	144			
20																	186.8	98	109	140			
21																	177.6	102	120	130			
22																	177.4	125	131	130			
23																	171.7	114	130	123			
24																	167.2	118	120	119			
25																	162.3	110	114	113			
26																	153.2	111	109	103			
27																	155.0	109	106	105			
28																	167.1	134	132	118			
29																	163.2	152	152	114			
30																	169.6	153	142	121			
Mean																	180.3	130.5	133.6	132.7			

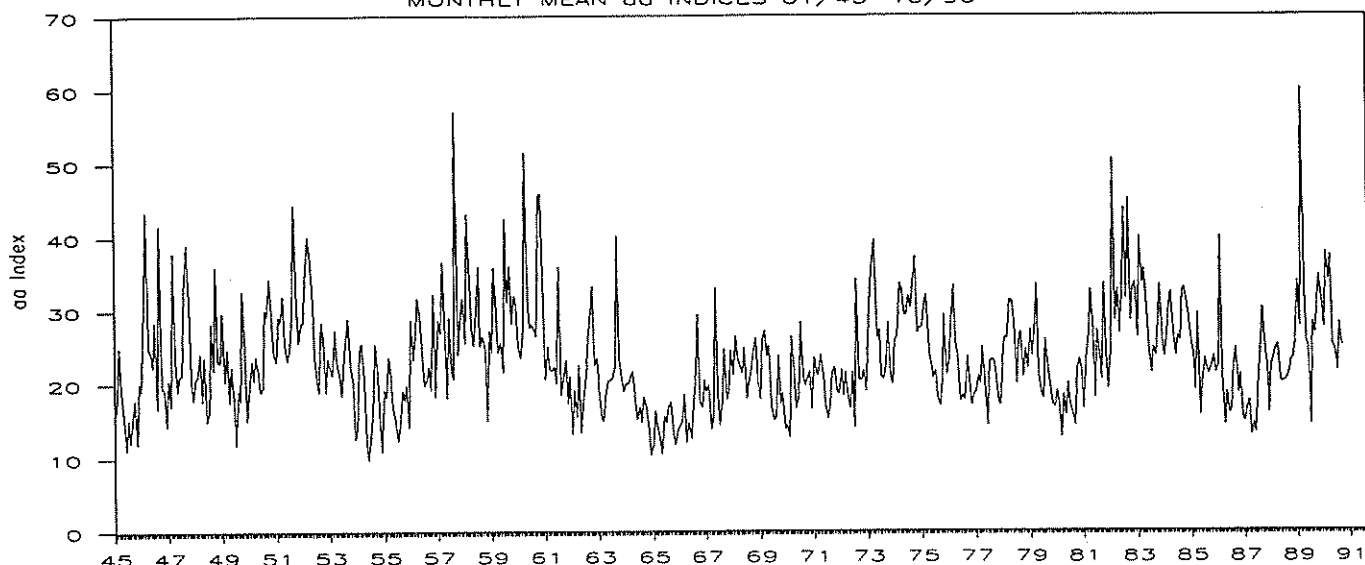
DAILY AVERAGE INDICES Ap

December 1989 to November 1990

DAY	1989 DEC	1990 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	38	16	22	20	6	8	10	5	26	26	2	9
2	22	17	25	14	11	10	6	6	9	2	5	10
3	26	15	8	10	17	18	6	7	11	4	10	6
4	31	12	28	6	10	12	5	8	6	8	16	3
5	14	17	24	11	10	10	5	10	5	11	10	2
6	5	7	10	21	7	5	10	7	9	12	12	2
7	10	6	25	8	8	7	22	6	7	14	8	6
8	6	11	8	10	6	11	16	10	6	8	4	8
9	4	14	7	8	34	16	32	5	5	10	12	12
10	3	16	8	8	124	33	17	14	6	11	48	12
11	6	18	10	14	64	24	11	7	9	25	42	12
12	8	15	6	42	99	7	89	8	7	19	31	5
13	7	9	9	29	38	11	70	13	12	19	16	3
14	12	8	30	26	45	3	79	12	19	19	17	1
15	10	9	36	11	24	5	9	8	26	22	26	3
16	16	10	50	7	10	3	5	7	25	23	10	17
17	11	9	33	3	40	4	3	6	15	12	5	16
18	7	8	23	35	24	31	10	8	12	19	5	15
19	6	4	33	16	9	18	6	16	14	16	9	10
20	6	14	38	30	18	20	2	16	19	16	23	7
21	8	17	16	76	13	22	5	7	38	15	11	10
22	26	19	21	28	16	32	6	6	49	20	10	3
23	15	20	36	29	37	11	7	4	77	13	10	4
24	20	32	29	18	30	8	8	4	24	13	25	2
25	16	19	29	39	19	20	7	4	6	11	9	4
26	22	10	19	41	16	47	7	14	63	12	10	9
27	25	4	26	34	15	45	12	9	15	8	8	45
28	10	7	31	24	20	7	7	102	6	9	4	18
29	50	24		27	30	10	8	75	11	7	10	5
30	30	24		69	19	23	4	12	26	5	20	8
31	35	18		7		11		6	16		25	
MEAN	16	14	23	23	27	16	16	14	19	14	15	9



MONTHLY MEAN  $\alpha\alpha$  INDICES 01/45-10/90



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1945	16.1	16.4	25.0	19.1	15.4	11.1	15.3	12.1	15.6	17.9	12.0	20.2	16.3
1946	19.2	30.2	43.5	25.0	24.1	22.3	28.6	16.7	41.7	19.6	19.3	14.3	25.4
1947	20.6	17.1	37.9	23.3	19.1	21.1	21.4	32.9	39.1	31.3	20.7	17.9	25.2
1948	20.8	21.0	24.2	17.7	23.7	15.0	16.2	28.3	22.0	36.1	23.1	23.0	22.6
1949	29.8	20.4	24.7	17.6	22.4	17.9	11.8	19.2	17.8	32.7	24.6	15.1	21.2
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1			28.6

PRINCIPAL MAGNETIC STORMS

NOVEMBER 1990

Sta	Geomag Lat	Commencement			SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour Day (UT)	
		Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		D (Min)	H (Gamma)	Z (Gamma)		
HYB	07.6N	12	0304	SC	- .1	26	- 4		-	--	--	--	--
ETT	00.6S	12	0304	SC	- 1.3	44	28		-	--	--	--	--
BJI	28.5N	15	22--	..	..	..	..	16(4)	5	9	140	39	16 23
HYB	07.6N	15	1100	..	..	..	..	16(4)	6	3	157	30	16 23
ETT	00.6S	15	0130	..	..	..	..		-	5	232	79	16 23
UJJ	13.5N	16	0200	..	..	..	..		-	--	--	--	18 23
ABG	09.5N	16	0200	..	..	..	..	17(6) 18(5)	5	4	149	37	18 23
GUA	04.0N	16	01--	..	..	..	..	16(1)	5	--	210	30	16 16
TRD	01.1S	16	0200	..	..	..	..		-	4	239	113	18 23
HYB	07.6N	17	0300	..	..	..	..	17(5,6,7)	4	4	124	21	19 23
ETT	00.6S	17	0200	..	..	..	..		-	5	156	51	19 23
FRD	49.6N	26	1132	SC*	1.8	19	- 3	27(6)	6	22	230	75	28 08
BJI	28.5N	26	2332	SC	1.6	25	3	27(7)	7	10	195	31	28 21
UJJ	13.5N	26	2331	SC	- .8	27	- 6		-	5	214	22	28 21
ABG	09.5N	26	2331	SC	- .9	23	- 8	27(7)	6	6	227	27	28 21
HYB	07.6N	26	2300	..	..	..	..	28(6,7)	7	5	235	19	28 21
GUA	04.0N	26	2352	SC	- .2	18	- 5	27(1)	5	--	90	20	27 06
ETT	00.6S	26	2300	..	..	..	..		5	5	269	86	28 22
TRD	01.1S	26	2331	SC	- .4	18	26		-	3	260	141	28 21
HER	33.7S	26	2332	SC	1	34	20	27(6)	6	52	181	243	27 21
GNA	43.2S	26	23--	..	..	..	..	27(6,7)	6	24	140	150	28 06
CNB	43.9S	26	23--	..	..	..	..	27(6)	6	20	185	68	28 08
COL	64.6N	27	11--	..	..	..	..	27(6)	8	460	2220	1800	27 23
GUA	04.0N	27	08--	..	..	..	..	27(7)	5	--	130	20	28 08

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

Prompt Reports

LATE DATA

Number 557 Part I

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156  
Late  
Jul 90

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

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	3768	5887.3	5316.1	3346.7	3426.7	1700.2(24)
2	3799	5939.9	5356.2	3383.0	3433.8	1707.2(38)
3	3814	5943.1	5382.1	3390.6	3426.8	1712.3
4	3778	5880.9	5353.4	3372.2	3407.5	1699.9(22)
5	3750	5864.5	5273.7	3346.1	3402.8	1696.7(38)
6	3738	5879.0	5276.5	3338.9	3403.9	1694.2
7	3780	5932.3	5331.5	3373.0	3415.9	1699.8
8	3822	5981.8	5376.7	3406.6	3438.7	1713.2
9	3821	5946.1	5365.3	3398.3	3433.9	1701.9(38)
10	3763	5884.5	5297.9	3341.6	3395.6	1688.4(38)
11	3723	5836.3	5254.8	3305.9	3383.9	1686.6
12	3763	5917.7	5285.4	3359.0	3403.7	1696.1
13	3771	5956.5	5321.9	3389.2	3413.5	1698.7
14	3782	5928.6	5331.2	3374.5	3400.5	1693.4
15	3768	5865.2	5316.9	3350.8	3391.4	1693.6(38)
16	3743	5860.6	5287.6	3370.1	3393.7	1686.7(38)
17	3737	5842.6	5258.0	3330.1	3378.8	1686.1
18	3779	5901.6	5328.1	3367.0	3404.8	1706.3
19	3813	5964.0	5392.7	3408.9	3429.5	1715.1
20	3806	5945.0	5373.9	3404.7	3432.2	1714.1
21	3800	5958.9	5366.8	3407.7	3425.6	1707.2
22	3802	5956.2	5373.2	3404.4	3419.2	1704.2
23	3789	5921.0	5360.0	3381.0	3407.3	1700.2(24)
24	3793	5926.2	5348.2	3384.2	3416.7	1702.2
25	3786	5923.1	5353.3	3374.8	3413.5	1701.5
26	3797	5939.9	5358.4	3375.8(26)	3407.8	1705.3
27	3805	5950.7	5379.8	3386.4(36)	3422.2	1709.8
28	3725	5792.5	5227.1	3295.6	3382.0	1678.0
29	3716	5783.5	5226.8	3301.7	3381.7	1687.9
30	3722	5813.6	5261.7	3316.5	3384.0	1690.3
31	3727	5865.4	5298.1	3344.6	3400.4	1702.0
Mean	3774	5902.9	5323.7	3365.0	3408.8	1699.4

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

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

157  
Late  
Aug 90

AUGUST 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	3743	5872.6	5322.8	3331.9	3393.7	1694.1*(32)
2	3661	5753.0	5178.5	3261.4	3349.9	1670.5*(36)
3	3682	5738.0	5194.9	3251.4	3350.0	1669.6
4	3710	5797.5	5247.1	3292.4	3363.0	1676.3
5	3729	5832.8	5294.1	3329.2	3380.0	1687.4
6	3778	5870.4	5357.6	3338.8	3388.8	1693.3
7	3763	5884.2	5330.5	3348.3(34)	3390.2	1698.8
8	3766	5900.8	5321.0	3346.8	3390.7	1702.2
9	3783	5923.7	5346.4	3367.4	3401.5	1710.3
10	3787	5946.0	5355.6	3376.6	3404.7	1706.8
11	3793	5935.2	5353.8	3383.0	3403.3	1709.8
12	3807	5965.2	5380.4	3397.8	3412.5	1718.5
13	3819	5973.1	5402.1	3419.9	3432.3	1721.5
14	3793	5950.3	5359.7	3393.1	3416.2	1710.1
15	3786	5911.2	5350.0	3387.9	3418.9	1708.1(38)
16	3694	5779.1	5235.4	3299.9	3372.3	1686.4
17	3697	5768.1	5227.2	3278.3	3365.5	1680.1
18	3693	5766.4	5229.7	3282.4	3366.5	1679.0
19	3705	5813.8	5251.6	3301.3	3374.4	1683.9
20	3708	5841.6	5260.9	3311.4	3382.1	--- *
21	3697	5847.1	5216.3	3319.5	3379.6	--- *
22	3713	5832.9	5237.3	3308.4	3382.2	--- *
23	3754	5886.6	5306.3	3367.7	3401.5	--- *
24	3745	5875.7	5297.8	3349.9	3398.0	--- *
25	3799	5909.8	5339.8	3374.8	3409.3	--- *
26	3754	5860.7	5276.5	3344.5	3410.9	--- *
27	3687	5739.8	5212.6	3267.4	3382.3	--- *
28	3766	5862.4	5298.5	3332.3	3391.2	1687.8(12)
29	3780	5894.0	5344.0	3335.9	3382.6	1696.9
30	3776	5922.8	5338.7	3366.5	3391.5	1698.3
31	3758	5892.7	5326.2	3362.5	3385.3	1685.0
Mean	3746	5862.9	5296.6	3336.8	3389.3	1694.6

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

158  
Late  
Sep 90

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

SEPTEMBER 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	3754	5870.8	5317.3	3337.1	3390.2	1709.3
2	3760	5894.5	5320.6	3355.6	3396.9	1711.3
3	3776	5916.5	5319.4	3350.0	3391.4	1715.8(10)
4	3765	5907.2	5333.4	3350.4	3383.1	1716.0(14)
5	3795	5936.3	5360.4	3380.9	3394.4	1715.4
6	3792	5937.7	5359.3	3379.5	3395.7	---
7	3795	5934.5	5366.6	3385.4	3404.7	---
8	3798	5969.7	5365.7	3386.3	3416.7	---
9	3808	5985.5	5380.2	3409.1	3419.7	---
10	3808	5981.0	5389.8	3415.2	3415.2	1721.6(10)
11	3790	5941.8	5352.9	3391.3	3400.3	1721.1
12	3800	5933.9	5345.9	3383.0	3397.2	1720.3
13	3816	5960.2	5377.0	3402.6	3404.4	1724.5
14	3812	5965.2	5385.5	3412.5	3411.5	1726.0*(36)
15	3811	5964.7	5378.3	3413.1	3412.2	1728.2
16	3824	5994.4	5384.4	3413.7	3408.3	1727.7
17	3837	6020.7	5396.2	3428.5	3407.5	1727.3
18	3811	6014.5	5397.6	3428.1	3416.1	1726.8(34)
19	3817	5967.5	5363.2	3409.8	3408.3	1721.5
20	3818	5963.5	5364.5	3398.9	3421.1	1713.4
21	3814	5972.5	5369.7	3401.5	3432.5	1704.9*(34)
22	3815	5975.2	5382.6	3413.4	3435.0	---
23	3831	6008.2	5399.1	3417.5	3433.2	---
24	3849	6029.4	5413.4	3434.8	3439.7	1719.1*(14)
25	3862	6038.2	5437.1	3447.1	3436.0	1715.8
26	3856	6033.4	5432.3	3442.0	3437.7	1708.8(38)
27	3870	6031.1	5427.4	3447.2	3439.0	1707.9
28	3873	6042.0	5422.6	3456.3	3438.7	1710.7
29	3886	6085.2	5446.1	3479.8	3444.9	1717.4
30	3898	6103.6	5469.5	3494.8	3445.6	1721.2
Mean	3818	5979.3	5381.9	3409.2	3415.9	1718.0

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

\* = A&B includes only hours when both A&B sections are available.

COSMIC RAY INDICES  
(Neutron Monitor)

159  
Late  
Oct 90

OCTOBER 1990

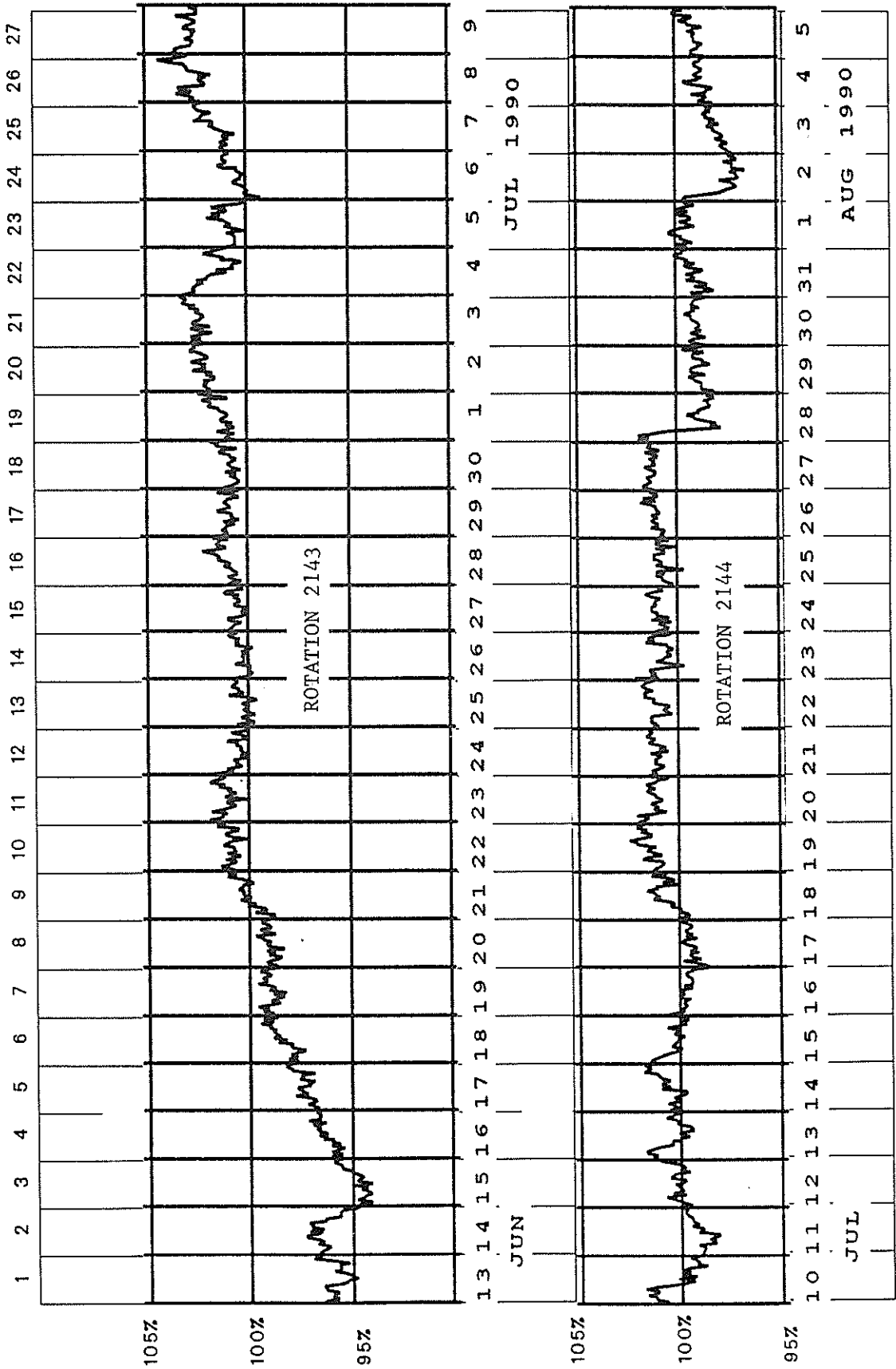
Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	3909	6147.2	5493.9	3513.9	3455.9	1725.7
2	3916	6146.5	5497.4	3515.5	3466.3	1727.6*(28)
3	3918	6133.9	5492.2	3513.9	3455.7	1720.7*(12)
4	3902	6073.5	5470.1	3478.1	3434.0	1711.0
5	3902	6082.1	5443.6	3477.4	3429.9	1715.4
6	3902	6062.6	5438.5	3485.5	3435.7	1717.1
7	3896	6073.4	5456.1	3487.2	3437.7	1718.4
8	3895	6087.7	5453.1	3485.5	3440.6	1715.2
9	3867	6043.5	5420.9	3461.5	3443.4	1707.8(38)
10	3829	5978.3	5362.8	3431.7	3438.1	1704.9
11	3828	5972.7	5359.9	3437.0	3434.8	1706.4
12	3826	6001.7	5378.2	3448.9	3434.0	1708.4
13	3860	6029.4	5418.6	3463.4	3430.0	1710.1
14	3873	6059.0	5429.6	3487.8	3433.5	1711.6
15	3897	6091.4	5470.0	3499.5	3452.3	1719.3
16	3911	6139.1	5488.7	3528.3	3457.1	1718.4
17	3903	6143.2	5508.2	3534.9	3458.2	1722.0
18	3905	6129.2	5518.1	3527.2	3464.6	1721.6
19	3927	6186.5	5538.0	3554.9	3476.6	1724.3
20	3927	6190.0	5543.4	3558.5	3481.3	1726.3*
21	3945	6190.7	5548.9	3566.7	3494.0	1730.5
22	3932	6192.2	5564.4	3565.8	3502.6	1733.8
23	3893	6165.7	5518.0	3529.2	3483.9	1724.1
24	3915	6175.5	5551.1	3542.0	3490.8	1727.9(26)
25	3920	6170.6	5538.6	3518.5	3484.7	---
26	3886	6143.3	5494.2	3491.1	3480.3	1717.1(20)
27	3849	6071.4	5440.7	3456.4	3462.6	1702.0
28	3869	6071.9	5451.1	3459.1	3461.3	1704.0
29	3879	6103.1	5447.3	3475.0	3452.7	1702.1
30	3816	6026.2	5417.0	3444.0	3453.4	1699.0
31	3851	6076.5	5434.7	3476.5	3462.9	1703.1
Mean	3889	6101.9	5470.6	3497.2	3457.7	1715.4

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

\* = A&B includes only hours when both A&B sections are available.

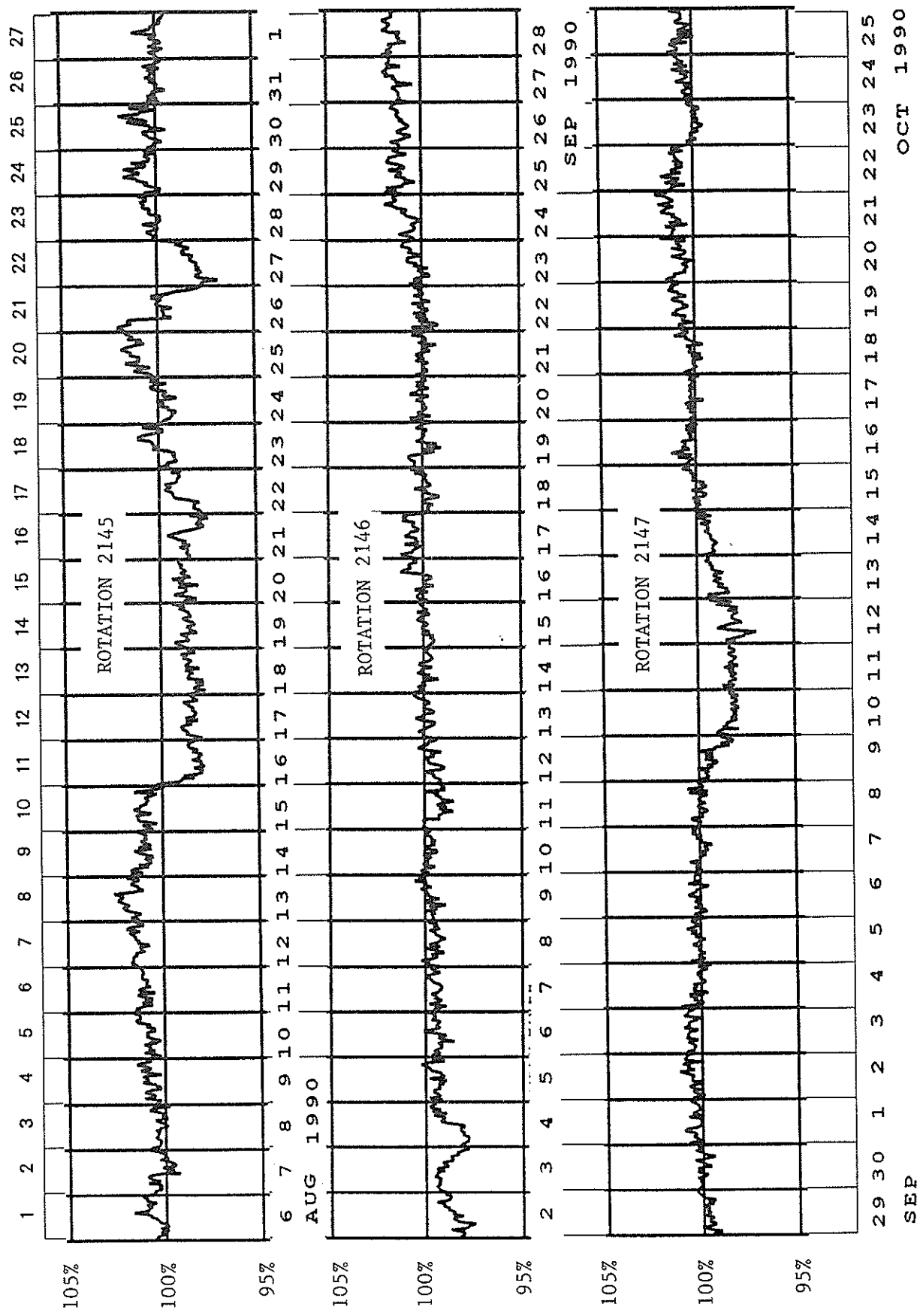
# COSMIC RAY INDICES (Neutron Monitor)

THULE

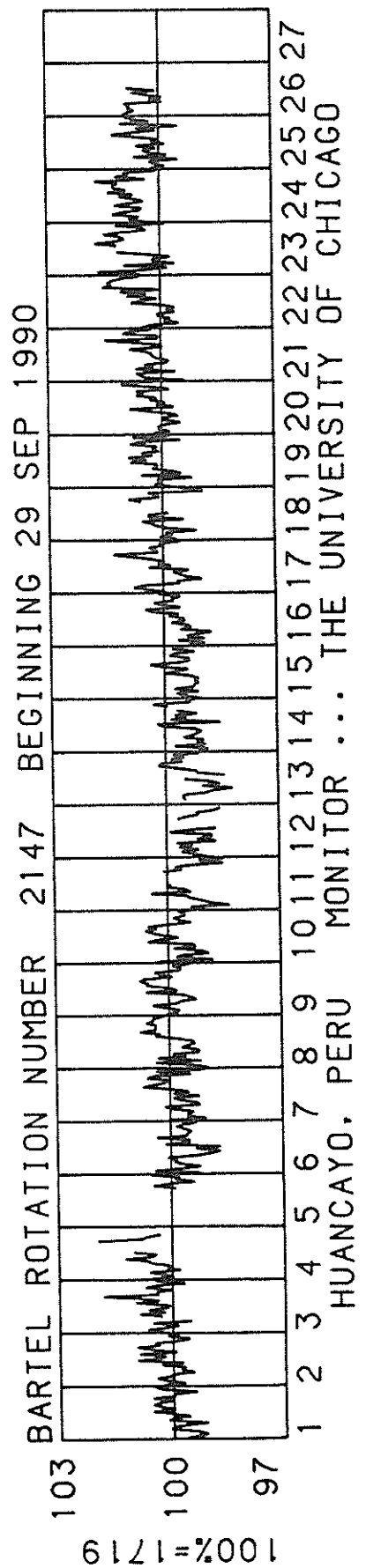
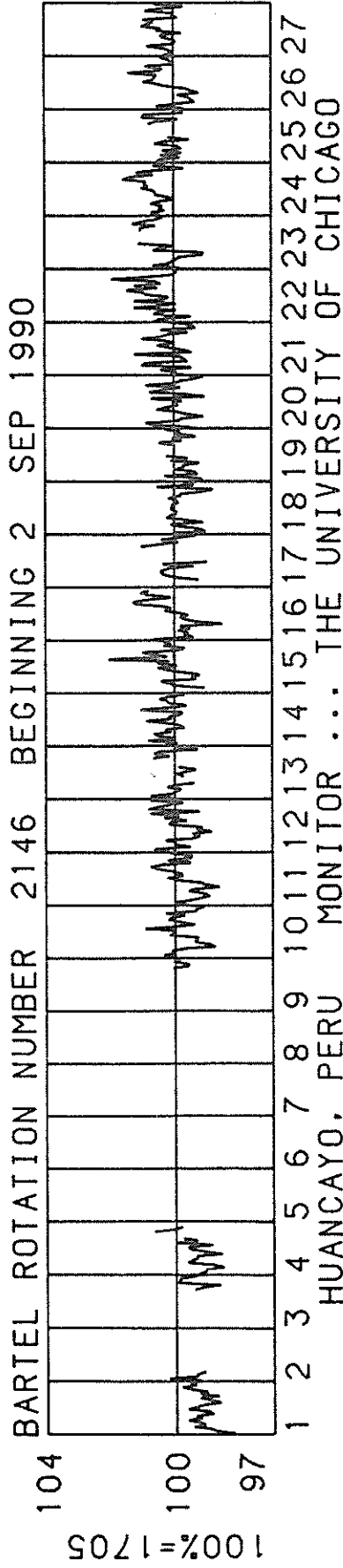
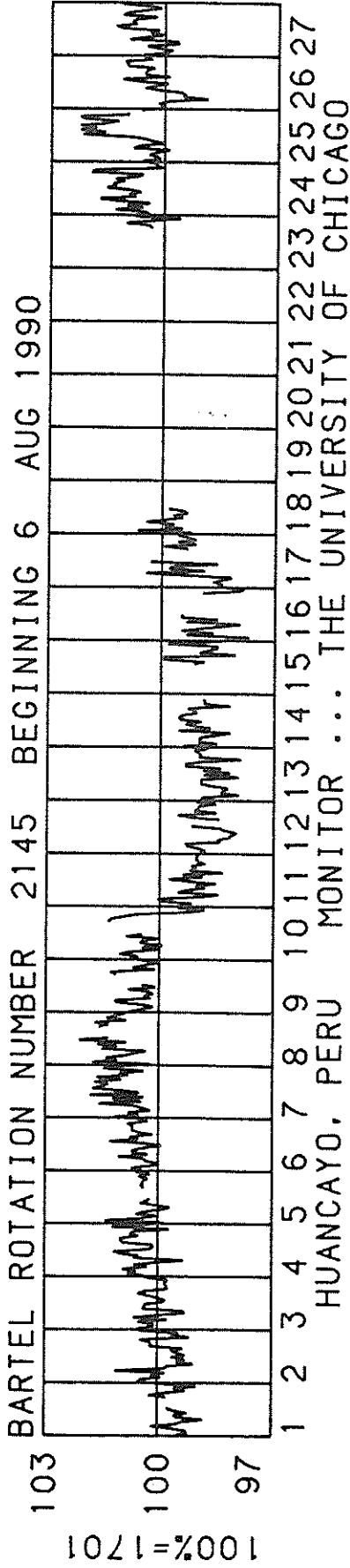


# COSMIC RAY INDICES (Neutron Monitor)

THULE



# COSMIC RAY INDICES (Neutron Monitor)

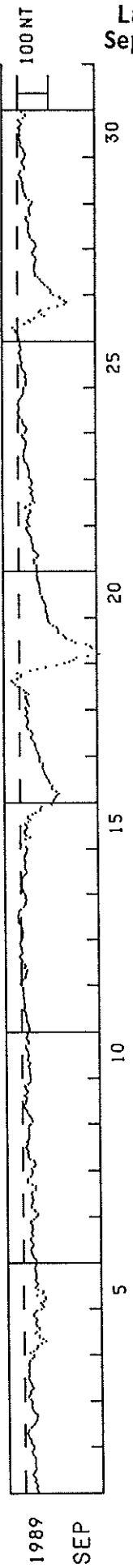




HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

SEPTEMBER 1989

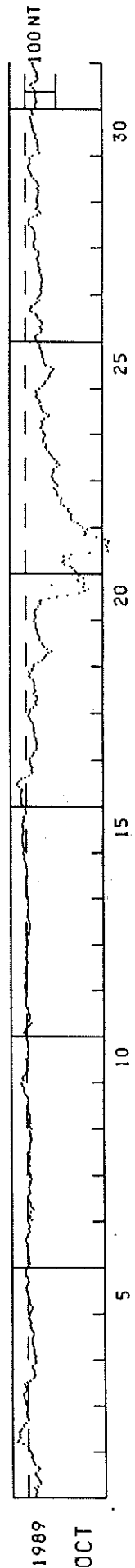
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
UNIT=NT																								U.T.
1	-41	-37	-36	-39	-35	-31	-34	-33	-27	-23	-29	-33	-36	-33	-32	-32	-32	-33	-31	-26	-22	-22	-27	-29
2	-26	-21	-19	-18	-14	-11	-9	-10	-12	-18	-24	-30	-34	-37	-39	-41	-39	-32	-27	-23	-22	-22	-23	-23
3	-19	-12	-14	-18	-19	-22	-29	-24	-22	-18	-16	-12	-14	-15	-14	-14	-15	-16	-14	-16	-17	-23	-30	-30
4	-18	-29	-39	-42	-42	-56	-70	-61	-49	-49	-35	-41	-49	-50	-41	-38	-39	-42	-39	-33	-31	-35	-41	-56
5	-64	-59	-55	-65	-71	-69	-42	-61	-63	-45	-38	-42	-45	-41	-38	-40	-40	-41	-39	-37	-36	-37	-41	-43
6	-43	-38	-33	-31	-27	-26	-24	-27	-31	-32	-28	-23	-24	-30	-29	-26	-29	-31	-28	-29	-24	-25	-34	-40
7	-45	-47	-39	-36	-28	-25	-29	-30	-32	-29	-31	-25	-29	-41	-41	-40	-29	-15	-15	-15	-24	-29	-30	-30
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17	-60	-57	-53	-52	-50	-49	-47	-43	-37	-36	-40	-41	-35	-28	-22	-22	-25	-28	-26	-23	-19	-24	-26	-20
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19	-161	-174	-184	-221	-257	-250	-247	-234	-229	-215	-182	-169	-150	-148	-142	-127	-125	-125	-121	-110	-100	-95	-93	-90
20	-92	-90	-87	-86	-85	-86	-84	-81	-78	-75	-75	-68	-68	-68	-68	-66	-65	-65	-61	-60	-59	-57	-59	-59
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27	-107	-107	-105	-98	-88	-83	-77	-73	-66	-58	-57	-54	-53	-55	-55	-55	-58	-60	-59	-56	-50	-48	-53	-55
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1989  
SEP

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)  
OCTOBER 1989

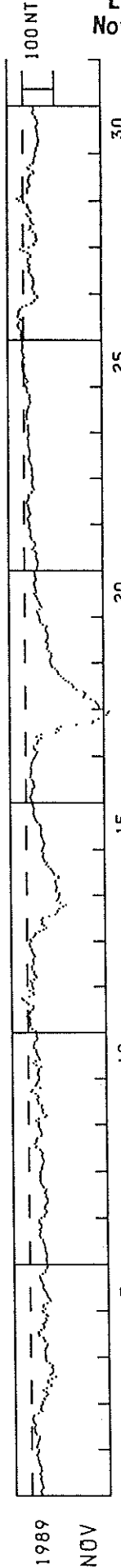
DAY	OCTOBER 1989																														U.T.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1	-23	-23	-29	-25	-18	-30	-39	-39	-35	-32	-27	-22	-23	-32	-38	-33	-22	-18	-16	-13	-11	-15	-11	-11	-7						
2	-4	0	1	17	35	31	23	28	27	29	24	20	14	13	7	-2	-1	3	4	5	4	2	2	5							
3	8	6	10	12	13	14	10	5	6	6	12	4	-7	-16	-20	-23	-20	-21	-18	-14	-14	-23	-26	-23							
4	-22	-25	-20	-19	-20	-18	-17	-15	-13	-13	-13	-15	-18	-19	-15	-10	-8	-7	-11	-9	-5	-2	-5	-6							
5	-9	-12	-14	-13	-8	-6	-6	-5	-3	0	4	5	5	5	2	-1	-2	-1	2	7	7	7	5	1							
6	-3	-7	-6	-5	-5	-3	-1	-2	-4	-1	3	0	4	7	5	1	0	-6	-7	-3	-8	-5	-3	-2							
7	-14	-9	-9	-3	-11	-20	-17	-11	-10	-8	-5	-4	-7	-3	-8	-7	-5	-4	-7	-11	-9	-14	-9	-11							
8	-8	-4	-3	-4	-9	-3	-5	-9	-9	-7	-4	-7	-6	-8	-9	-9	-11	-12	-14	-11	-11	-10	-7	-13							
9	-9	-5	-11	-9	-9	-10	-10	-7	-6	-5	-2	-1	-4	-4	-5	-2	2	6	10	11	9	15	17	18							
10	11	15	11	7	3	-3	-1	0	-3	-2	-1	4	-6	-3	-4	-3	-6	-3	-4	-4	-3	0	1	3							
11	5	10	7	3	-6	-10	-15	-9	-8	-10	-10	-7	-6	-4	-2	4	4	4	2	4	0	0	2	4							
12	6	9	7	2	0	1	3	4	8	2	3	2	0	-1	-2	1	1	0	-1	1	0	-1	1	-4							
13	-4	-3	-2	-2	-8	-9	-9	-11	-12	-12	-11	-9	-7	-4	-4	-4	-5	-6	-7	-5	-6	-7	-6	-4							
14	-3	-1	-2	-2	-1	1	1	0	1	0	-2	-3	-2	-2	-1	0	0	1	3	6	7	7	10	10							
15	8	8	10	11	11	13	13	14	11	10	9	10	11	12	13	10	9	9	9	1	0	4	4	5							
16	12	17	17	15	19	18	16	13	14	23	30	29	23	15	4	-10	-19	-21	-17	-21	-17	-14	-13	-11							
17	-14	-21	-26	-26	-32	-36	-34	-35	-36	-32	-32	-27	-28	-29	-26	-25	-26	-24	-20	-17	-14	-10	-9	-12							
18	-14	-13	-25	-34	-32	-33	-37	-38	-34	-25	-30	-33	-27	-27	-27	-25	-23	-15	-11	-13	-9	-20	-25								
19	-27	-41	-52	-57	-63	-66	-73	-83	-69	-59	-54	-53	-44	-42	-45	-43	-38	-37	-35	-32	-32	-32	-28	-27							
20	-33	-33	-29	-29	-30	-34	-40	-47	-48	-49	-77	-102	-136	-172	-191	-203	-187	-85	-189	-171	-170	-188	-173	-154							
21	-165	-160	-150	-146	-127	-120	-126	-142	-123	-149	-208	-268	-245	-264	-259	-267	-270	-258	-231	-194	-197	-193	-202	-187							
22	-178	-170	-160	-149	-148	-149	-149	-141	-138	-141	-125	-115	-116	-115	-119	-105	-103	-104	-98	-94	-105	-103	-96	-92							
23	-88	-85	-87	-92	-91	-92	-103	-110	-101	-103	-95	-90	-85	-79	-77	-69	-67	-66	-68	-58	-58	-60	-64	-62							
24	-58	-58	-49	-53	-56	-54	-52	-61	-75	-78	-68	-58	-53	-51	-51	-44	-50	-45	-39	-34	-39	-35	-34	-45							
25	-56	-61	-65	-66	-73	-79	-78	-83	-88	-91	-83	-67	-61	-59	-60	-56	-56	-53	-54	-49	-48	-47	-42	-39							
26	-36	-33	-34	-41	-51	-55	-49	-48	-55	-52	-47	-40	-39	-34	-21	-15	-18	-21	-32	-37	-46	-39	-44	-49							
27	-52	-50	-49	-53	-51	-52	-55	-54	-51	-51	-46	-44	-48	-44	-41	-44	-40	-37	-39	-44	-44	-43	-33	-27							
28	-27	-25	-28	-32	-33	-33	-31	-30	-28	-25	-21	-12	-10	-10	-14	-26	-39	-49	-45	-36	-39	-41	-40	-37							
29	-37	-37	-41	-43	-42	-43	-38	-44	-42	-39	-34	-27	-21	-20	-17	-13	-12	-9	-11	-15	-13	-15	-13	-23							
30	-47	-45	-41	-43	-41	-41	-39	-40	-34	-33	-36	-29	-25	-25	-23	-24	-21	-20	-19	-16	-23	-23	-22	-26							
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HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

NOVEMBER 1989

DAY	UNIT=NT																								U.T.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	-31	-27	-31	-35	-34	-32	-30	-29	-28	-31	-26	-28	-30	-29	-30	-25	-22	-23	-19	-20	-16	-19	-22	-22	
2	-16	-17	-20	-21	-24	-26	-26	-16	-12	-11	-8	-10	-13	-9	-6	-3	-5	-8	-22	-34	-29	-31	-30	-35	
3	-35	-43	-40	-47	-53	-47	-39	-50	-64	-62	-54	-55	-66	-79	-61	-68	-72	-69	-67	-70	-60	-49	-48	-48	
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21	-39	-40	-42	-42	-42	-39	-37	-37	-39	-34	-26	-31	-35	-36	-31	-24	-20	-20	-20	-21	-20	-16	-17	-17	
22	-16	-12	-11	-16	-21	-18	-15	-15	-13	-13	-8	-10	-14	-15	-16	-23	-26	-33	-29	-27	-25	-25	-28	-29	
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26	7	8	8	6	8	13	16	18	13	7	10	18	15	15	13	10	4	-10	-28	-36	-38	-45	-44	-36	
27	-36	-30	-29	-33	-34	-33	-32	-32	-29	-25	-18	-18	-22	-17	-22	-16	-15	-16	-24	-24	-15	-2	8	-19	
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166  
Late  
Dec 89

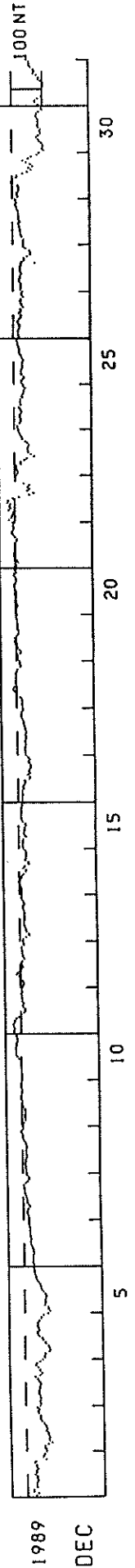
WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

DECEMBER 1989

U.T.

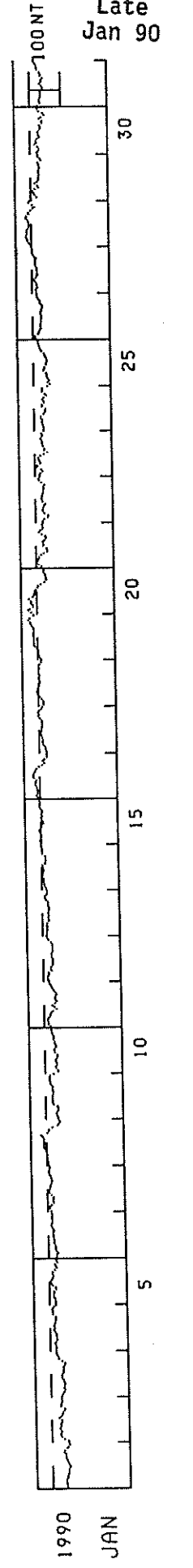
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2	-64	-60	-59	-72	-83	-75	-75	-76	-72	-71	-65	-68	-64	-63	-58	-51	-46	-48	-48	-41	-39	-43	-38	-45
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HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

JANUARY 1990

DAY	UNIT=NT																														U.T.		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
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3	-36	-39	-42	-45	-42	-44	-45	-42	-41	-36	-36	-38	-40	-41	-42	-40	-45	-46	-38	-28	-25	-22	-19	-18									
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25	-52	-46	-51	-46	-42	-42	-40	-33	-34	-35	-41	-41	-44	-43	-40	-38	-34	-28	-24	-20	-18	-17	-16	-10									
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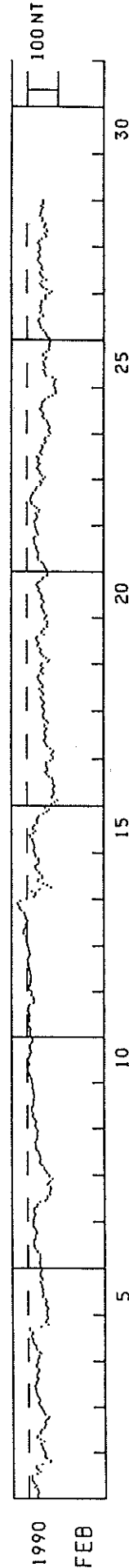


HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

FEBRUARY 1990

168  
Late  
Feb 90

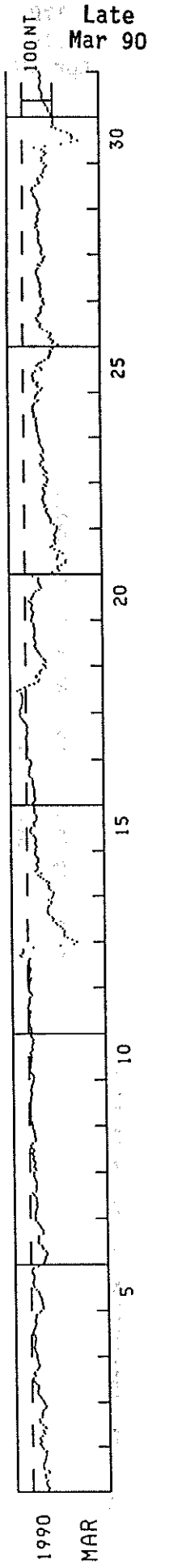
DAY	U.T.																							
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HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

MARCH 1990

DAY	U.T.																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
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14	-85	-84	-77	-70	-71	-66	-72	-63	-52	-44	-36	-46	-27	-32	-35	-33	-30	-35	-36	-35	-30	-25	-25	-29	
15	-28	-32	-29	-27	-29	-29	-27	-22	-15	-11	-12	-15	-25	-24	-24	-30	-33	-33	-30	-25	-25	-26	-24	-23	
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19	-58	-67	-62	-57	-51	-45	-42	-39	-34	-30	-31	-34	-32	-29	-28	-30	-30	-31	-31	-30	-28	-27	-20	-19	
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21	-90	-112	-106	-106	-119	-132	-133	-105	-106	-109	-123	-113	-97	-85	-91	-100	-98	-96	-102	-99	-97	-101	-105	-106	
22	-105	-96	-87	-87	-85	-81	-78	-73	-72	-75	-67	-69	-62	-62	-60	-62	-62	-68	-68	-63	-62	-73	-67	-75	
23	-77	-78	-73	-67	-74	-71	-64	-62	-54	-53	-57	-64	-62	-58	-56	-64	-63	-63	-57	-55	-51	-53	-52	-49	
24	-48	-48	-45	-42	-44	-43	-42	-40	-40	-43	-34	-36	-34	-30	-30	-30	-34	-38	-46	-50	-39	-40	-44	-49	
25	-58	-63	-47	-44	-47	-36	-33	-33	-30	-34	-41	-62	-57	-46	-53	-61	-72	-84	-86	-89	-92	-90	-99	-116	
26	-115	-96	-101	-93	-87	-91	-92	-81	-66	-57	-56	-60	-53	-48	-45	-52	-56	-61	-61	-59	-65	-71	-69	-66	
27	-68	-59	-61	-57	-57	-62	-57	-60	-59	-54	-54	-53	-50	-46	-44	-47	-53	-59	-53	-65	-70	-69	-74	-64	
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30	-65	-67	-66	-73	-80	-73	-64	-40	-77	-128	-161	-182	-162	-162	-160	-147	-129	-112	-99	-103	-101	-102	-101	-100	
31	-95	-94	-89	-86	-84	-80	-77	-72	-69	-66	-67	-68	-67	-62	-60	-58	-60	-62	-62	-60	-59	-62	-60	-58	

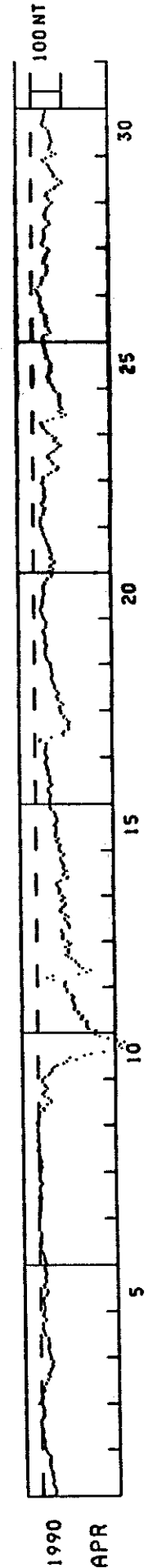


HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

APRIL 1990

U.T. 24

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-41	-42	-43	-41	-38	-34	-32	-35	-35	-33	-31	-32	-31	-28	-26	-24	-25	-24	-25	-28	-25	-19	-15	-10
2	-10	-7	-6	-9	-8	-7	0	-4	-4	-4	-4	2	2	2	3	2	-6	-8	-7	-5	-9	-5	-3	9
3	3	-1	-6	-4	-1	-6	-10	-8	-6	-13	-15	-22	-22	-29	-23	-26	-30	-32	-37	-37	-38	-40	-32	-32
4	-30	-27	-27	-24	-25	-25	-28	-26	-26	-24	-15	-14	-12	-9	-7	-9	-7	-9	-17	-17	-11	-9	-10	-12
5	-13	-13	-11	-10	-9	-9	-12	-18	-22	-23	-22	-13	-10	-14	-18	-18	-17	-17	-21	-19	-15	-15	-16	-16
6	-18	-16	-14	-13	-12	-11	-7	-1	-2	-4	-7	-5	-4	-3	-6	-6	-3	3	2	1	2	2	2	1
7	-1	1	1	-3	-4	-4	-4	-6	-4	-7	-7	-6	-5	-2	-2	-4	-6	-10	-6	-2	-2	-2	-4	-6
8	-7	-10	-10	-7	-8	-8	-6	-3	-2	0	5	2	0	-3	0	3	2	0	1	2	3	4	1	4
9	6	4	1	-1	-3	-2	-7	-19	-17	-6	-29	-43	-41	-32	-21	-13	-18	-23	-31	-26	-21	-14	-14	-16
10	-22	-34	-39	-46	-46	-53	-62	-83	-94	-125	-104	-150	-171	-211	-245	-270	-261	-266	-278	-256	-227	-200	-186	-187
11	-188	-165	-159	-157	-158	-160	-141	-144	-145	-132	-131	-119	-121	-121	-118	-115	-112	-114	-117	-111	-97	-95	-97	-89
12	-89	-90	-91	-53	-33	-51	-134	-160	-172	-148	-138	-134	-127	-123	-112	-102	-94	-103	-101	-101	-94	-103	-111	-100
13	-84	-83	-84	-86	-80	-82	-106	-107	-103	-100	-94	-92	-104	-95	-82	-76	-81	-87	-94	-95	-83	-83	-92	-85
14	-75	-77	-76	-76	-71	-67	-70	-79	-101	-104	-89	-91	-100	-91	-86	-91	-88	-83	-80	-80	-88	-92	-81	-74
15	-77	-75	-80	-69	-67	-74	-64	-64	-65	-67	-67	-66	-60	-65	-70	-69	-68	-63	-64	-59	-51	-48	-46	-45
16	-45	-46	-47	-49	-49	-44	-40	-42	-49	-55	-47	-46	-48	-48	-41	-42	-42	-39	-39	-35	-32	-34	-39	-39
17	-36	-32	-33	-36	-37	-37	-37	-15	-19	-54	-94	-90	-96	-111	-111	-108	-111	-112	-105	-95	-96	-89	-83	-84
18	-82	-83	-94	-86	-77	-76	-72	-77	-79	-73	-67	-64	-65	-61	-57	-55	-54	-57	-58	-56	-56	-55	-53	-53
19	-48	-42	-39	-38	-36	-35	-35	-35	-39	-41	-36	-34	-35	-35	-34	-32	-29	-30	-37	-39	-39	-41	-36	-33
20	-31	-28	-26	-22	-21	-26	-28	-29	-28	-29	-31	-33	-35	-32	-30	-31	-33	-37	-35	-44	-45	-58	-61	-53
21	-52	-64	-54	-57	-66	-69	-59	-55	-61	-60	-53	-53	-54	-50	-46	-43	-43	-40	-36	-34	-32	-28	-30	-26
22	-23	-23	-24	-25	-25	-32	-33	-35	-37	-37	-31	-28	-33	-35	-37	-38	-35	-35	-37	-35	-32	-28	-32	-32
23	-33	-34	-50	-60	-76	-81	-81	-66	-65	-60	-52	-49	-50	-60	-68	-77	-83	-92	-83	-72	-71	-74	-65	-52
24	-47	-43	-36	-33	-31	-28	-49	-68	-95	-107	-93	-87	-96	-93	-88	-90	-89	-89	-89	-88	-86	-76	-70	-69
25	-67	-63	-55	-56	-55	-49	-54	-57	-61	-58	-59	-60	-63	-56	-50	-46	-49	-45	-43	-42	-40	-36	-37	-33
26	-37	-34	-39	-50	-59	-54	-55	-46	-47	-50	-46	-46	-45	-41	-33	-33	-34	-28	-27	-26	-27	-29	-27	-20
27	-21	-17	-12	-24	-30	-32	-35	-36	-37	-48	-50	-53	-51	-51	-49	-41	-41	-42	-46	-48	-51	-56	-59	-52
28	-39	-32	-35	-39	-43	-42	-42	-43	-39	-43	-49	-58	-61	-56	-48	-45	-44	-44	-48	-51	-51	-60	-67	-69
29	-59	-54	-48	-52	-53	-64	-76	-82	-91	-101	-99	-87	-75	-74	-73	-70	-64	-61	-58	-53	-42	-38	-49	-68
30	-81	-70	-60	-61	-63	-65	-69	-66	-64	-62	-61	-58	-57	-51	-41	-35	-38	-41	-43	-42	-43	-47	-48	-44

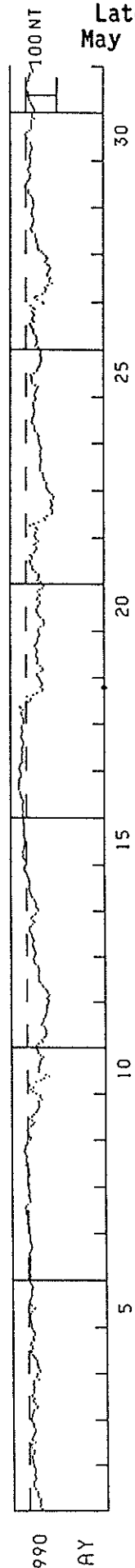




HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

MAY 1990

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-39	-32	-36	-34	-34	-35	-29	-25	-28	-26	-19	-19	-14	-14	-14	-19	-21	-18	-15	-19	-19	-19	-15	-13
2	-12	-11	-10	-9	-11	-16	-16	-15	-8	-3	-9	-18	-11	-8	-12	-15	-18	-20	-18	-16	-14	-14	-8	-7
3	-9	-10	-11	-13	-15	-25	-28	-20	-15	-12	-17	-11	-10	-15	-15	-16	-17	-14	-16	-16	-31	-24	-26	-28
4	-36	-35	-30	-29	-28	-28	-25	-21	-16	-12	-7	-7	-12	-12	-6	-8	-16	-15	-14	-18	-19	-15	-11	-11
5	-8	-8	-7	-5	-6	-5	-7	-10	-19	-20	-11	-5	-2	-5	-8	-11	-11	-9	-10	-14	-12	-8	-4	-3
6	-6	-7	-6	-3	-3	-6	-5	-5	-5	-7	-7	-6	-4	-3	-7	-11	-12	-10	-7	-7	-6	-7	-5	-3
7	-4	-4	-4	0	3	3	-1	3	4	6	6	7	10	7	1	-7	-7	-5	-4	-2	-5	-4	-1	-1
8	-4	-1	1	1	-1	-5	-3	-1	-1	2	6	3	5	5	4	5	9	11	8	9	6	2	1	-8
9	-11	-5	-1	-1	1	-2	-10	-17	-22	-13	-5	-14	-21	-27	-30	-34	-37	-36	-35	-36	-45	-40	-40	-28
10	-17	-11	-18	-7	-5	-27	-43	-53	-70	-59	-36	-38	-38	-36	-39	-40	-40	-46	-51	-43	-35	-34	-30	-27
11	-29	-36	-49	-45	-55	-59	-61	-59	-61	-57	-54	-46	-50	-52	-53	-57	-59	-61	-63	-63	-65	-63	-67	-70
12	-69	-64	-69	-71	-66	-62	-59	-53	-49	-44	-39	-39	-38	-38	-38	-39	-39	-38	-35	-28	-24	-22	-21	-24
13	-28	-28	-25	-23	-21	-19	-18	-22	-22	-18	-16	-16	-11	-8	-8	-14	-21	-26	-20	-14	-18	-28	-31	-37
14	-25	-31	-29	-31	-28	-23	-18	-16	-14	-11	-9	-9	-8	-10	-9	-8	-7	-3	-2	2	6	7	6	2
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20	-41	-48	-58	-59	-58	-54	-45	-40	-38	-34	-34	-37	-39	-46	-44	-36	-38	-44	-42	-38	-44	-52	-57	-60
21	-47	-38	-41	-43	-40	-32	-24	-21	-20	-16	-13	-13	-21	-19	-13	-28	-31	-36	-32	-25	-32	-41	-34	-30
22	-28	-30	-31	-37	-32	-14	-26	-40	-63	-59	-68	-83	-86	-84	-80	-83	-84	-81	-79	-88	-90	-84	-77	-72
23	-68	-64	-66	-66	-60	-58	-56	-54	-54	-46	-46	-46	-45	-47	-50	-50	-46	-46	-48	-46	-50	-50	-46	-43
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25	-28	-30	-33	-36	-39	-30	-21	-19	-18	-18	-16	-25	-36	-38	-41	-46	-45	-50	-50	-50	-46	-47	-48	-47
26	-40	-31	-34	-37	-34	-35	-32	-25	-23	-25	-18	-17	-13	-26	-21	-22	-27	-25	-21	-29	-23	-15	-57	-56
27	-37	-29	-36	-54	-63	-67	-62	-72	-85	-76	-76	-79	-70	-69	-74	-76	-80	-75	-69	-63	-68	-69	-65	-58
28	-51	-42	-39	-39	-39	-34	-35	-32	-30	-30	-22	-19	-16	-21	-22	-23	-25	-25	-22	-19	-19	-20	-21	-23
29	-26	-24	-23	-24	-20	-15	-8	-9	-8	1	1	-1	-5	-11	-14	-14	-15	-11	-7	-8	-13	-12	-15	-16
30	-13	-12	-14	-16	-18	-21	-19	-16	-16	1	-5	0	1	-4	-12	-18	-17	-18	-19	-18	-27	-20	-20	-23
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**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."