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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
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AUGUST 1990 NUMBER 552 - Part I

Solar-Geophysical Data prompt reports

Data for July, June 1990, and Late Data

International Standard Serial Number: 0038-0911
Library of Congress Catalog Number: 79-640375 //r81

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

Subscription information is on the inside back cover.

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

NUMBER 552

(Issued in Two Parts)

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C O N T E N T S

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PART II (COMPREHENSIVE REPORTS)

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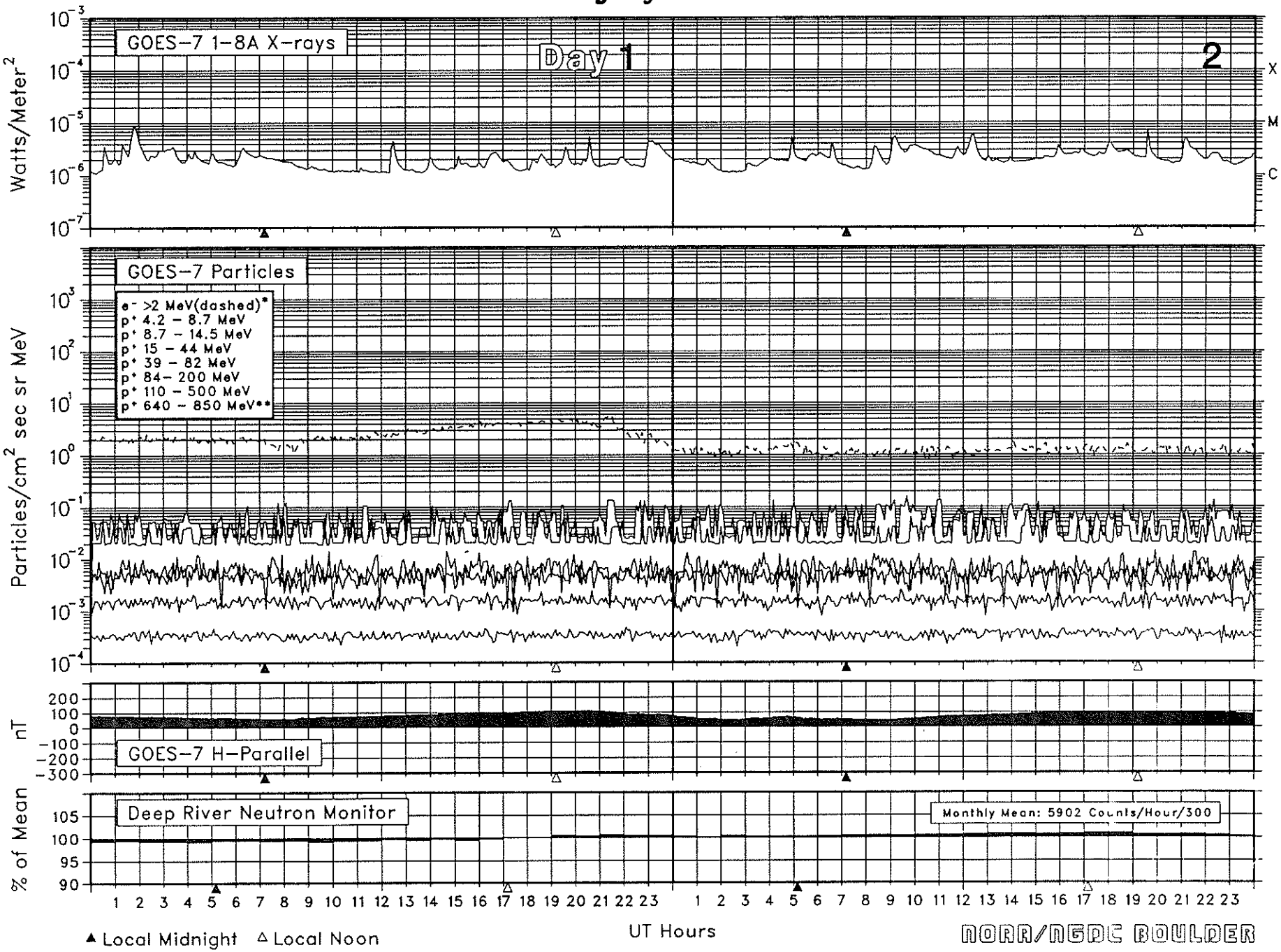
C O N T E N T S

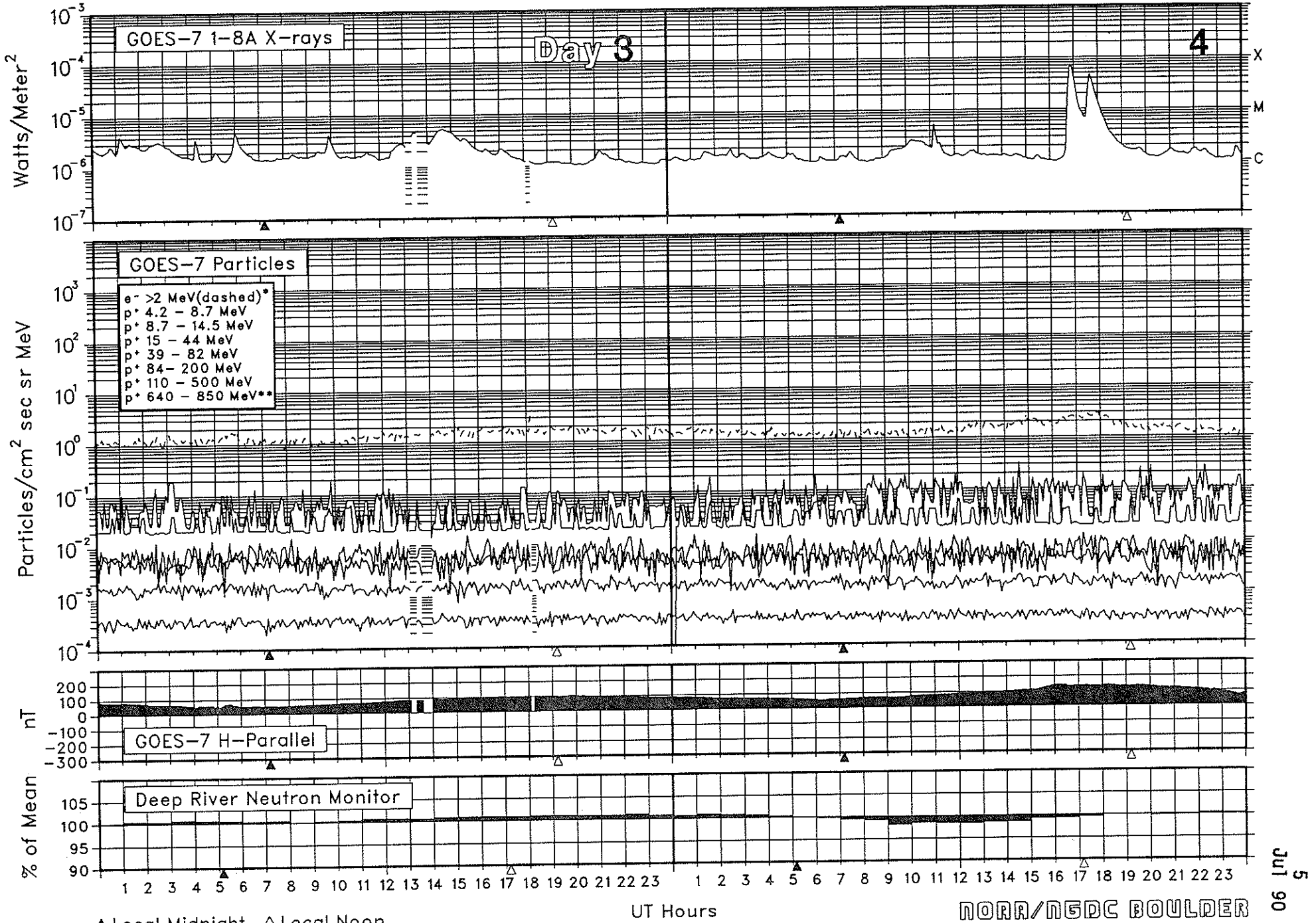
Prompt Reports DATA FOR JULY 1990 Number 552 Part I

SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

4 Jul 90

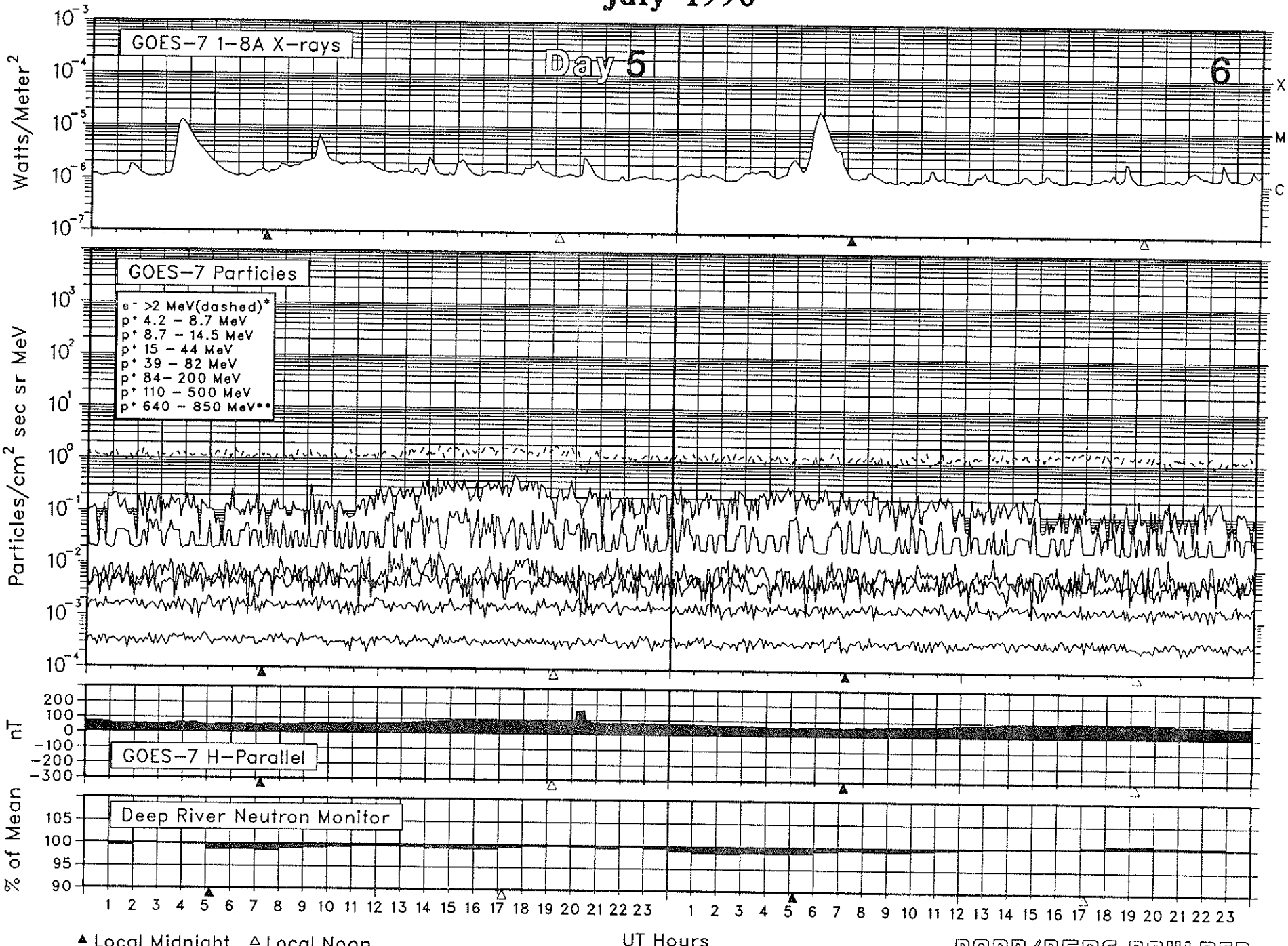


SOLAR-TERRESTRIAL ENVIRONMENT
July 1990



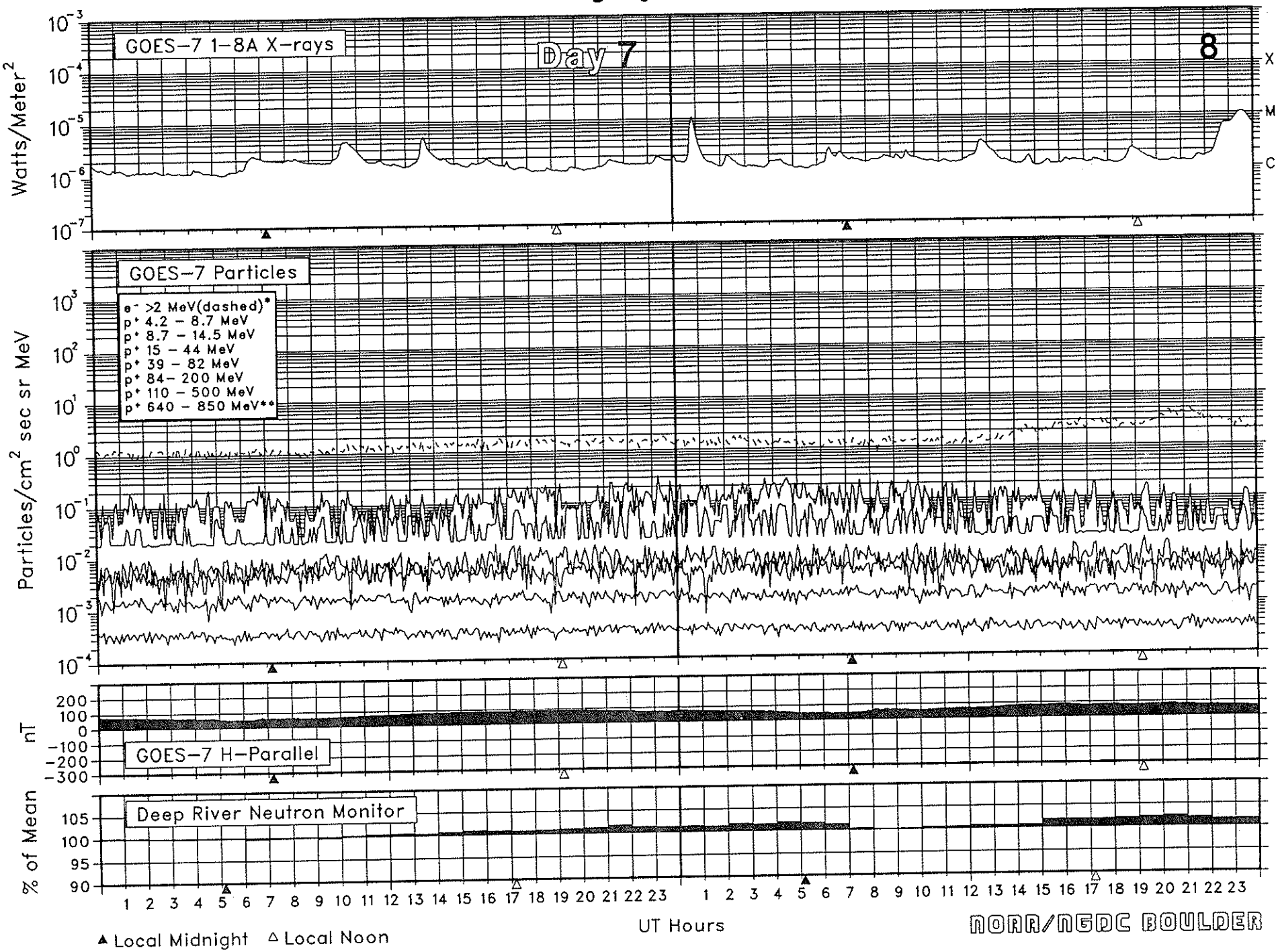
SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

Jul 90 6



NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
July 1990



SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

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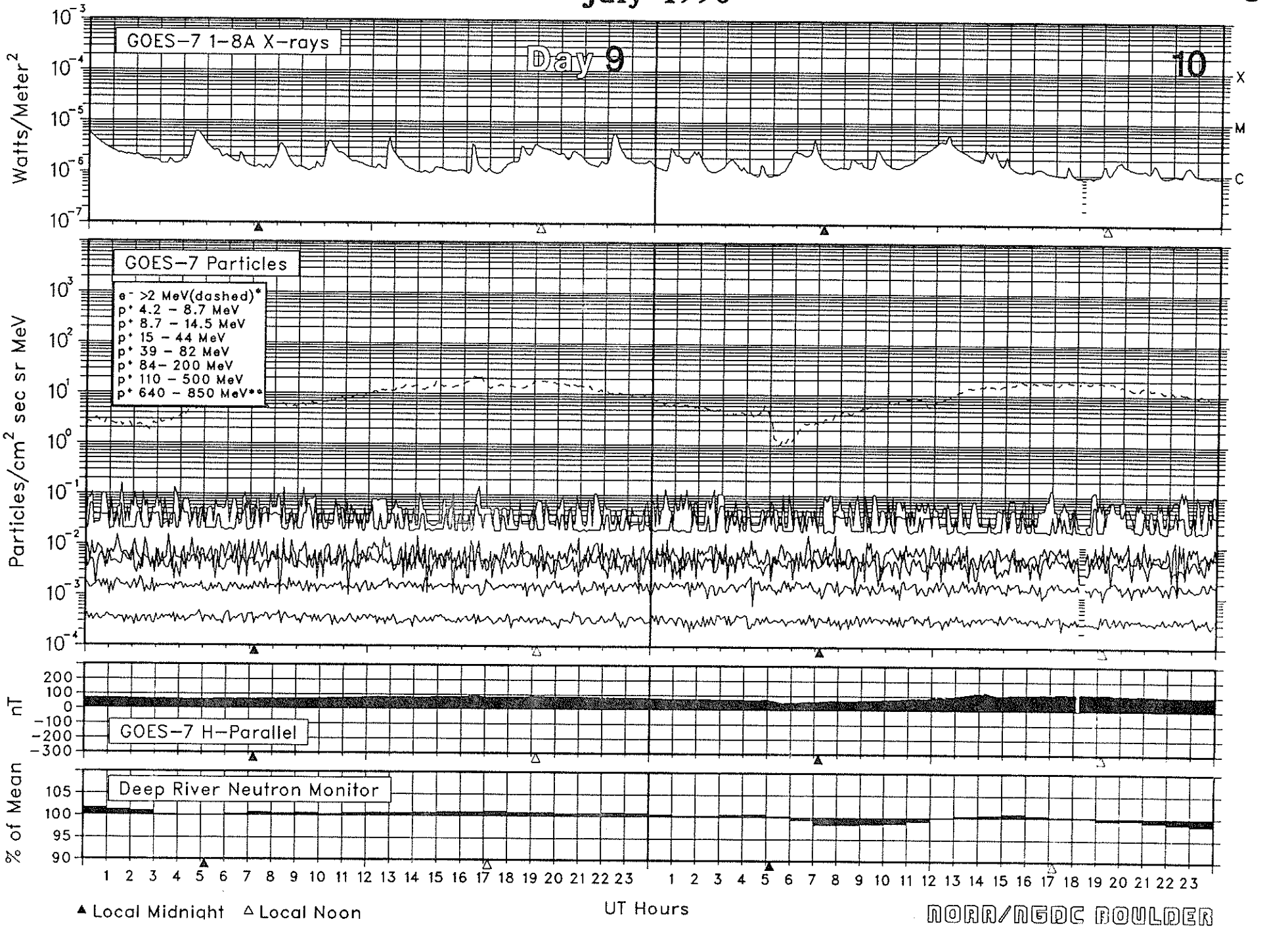

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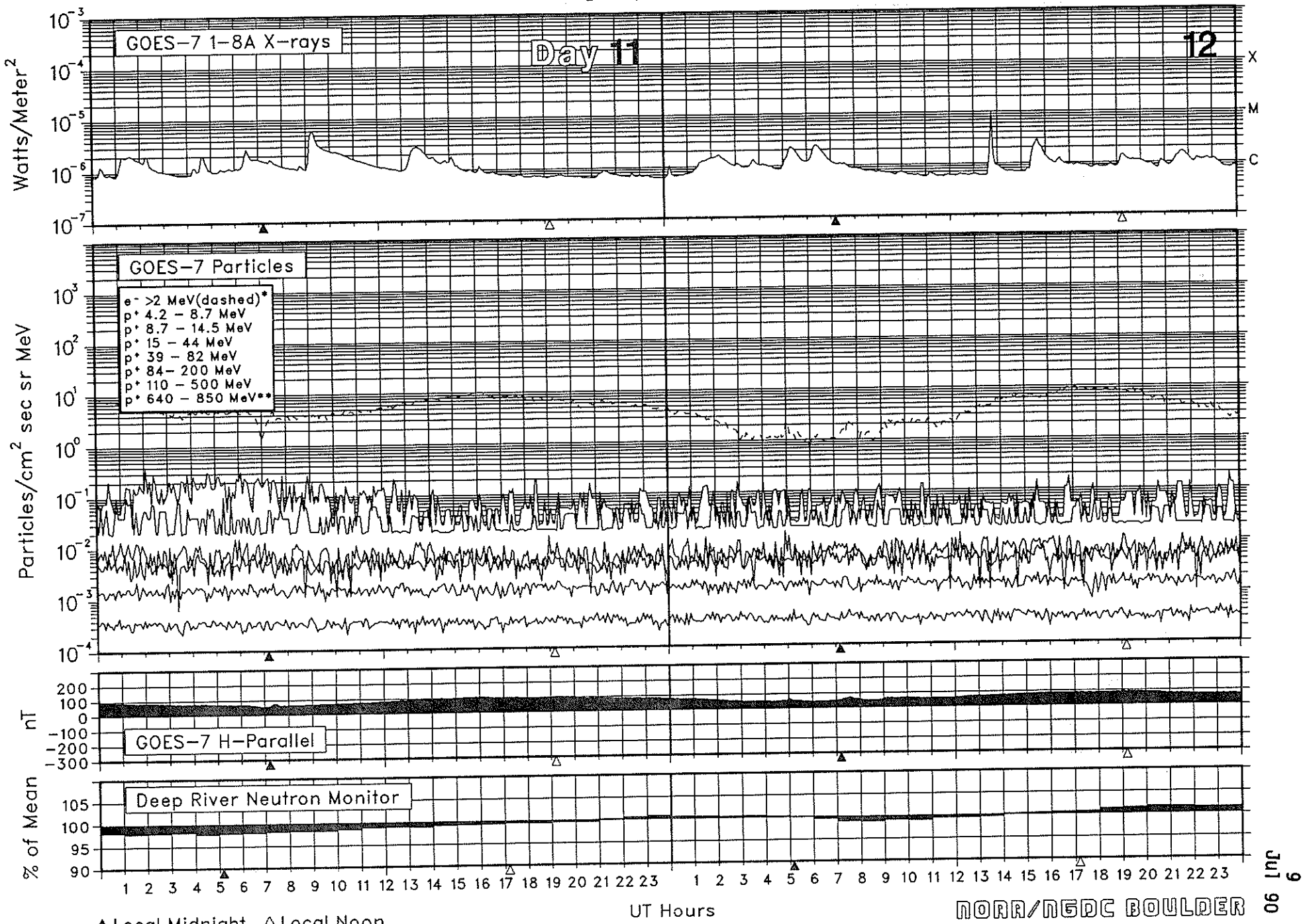
July 1990

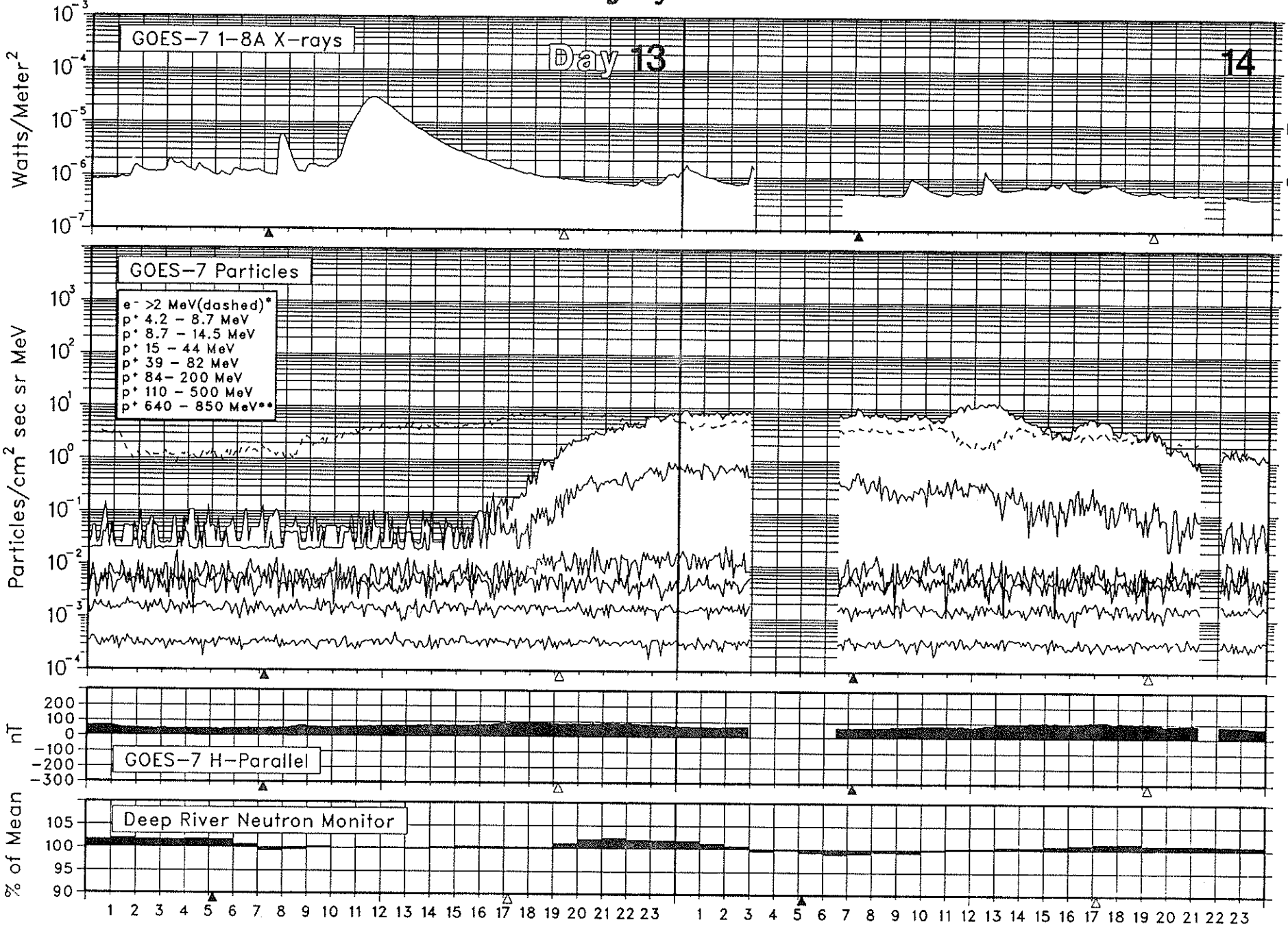


NOAA/NGDC BOULDER

Jul 90

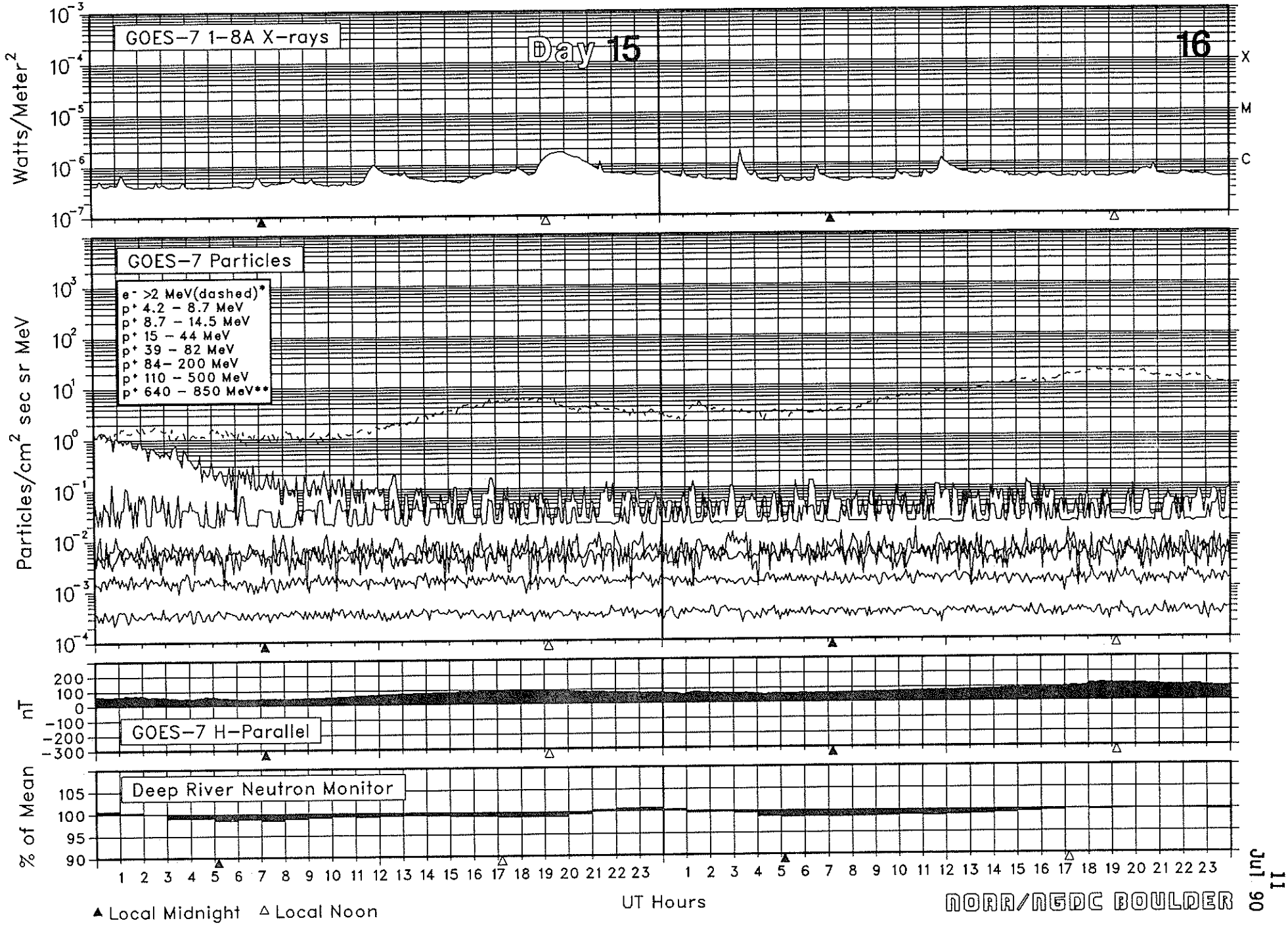
SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

Jul 90 10



NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
July 1990



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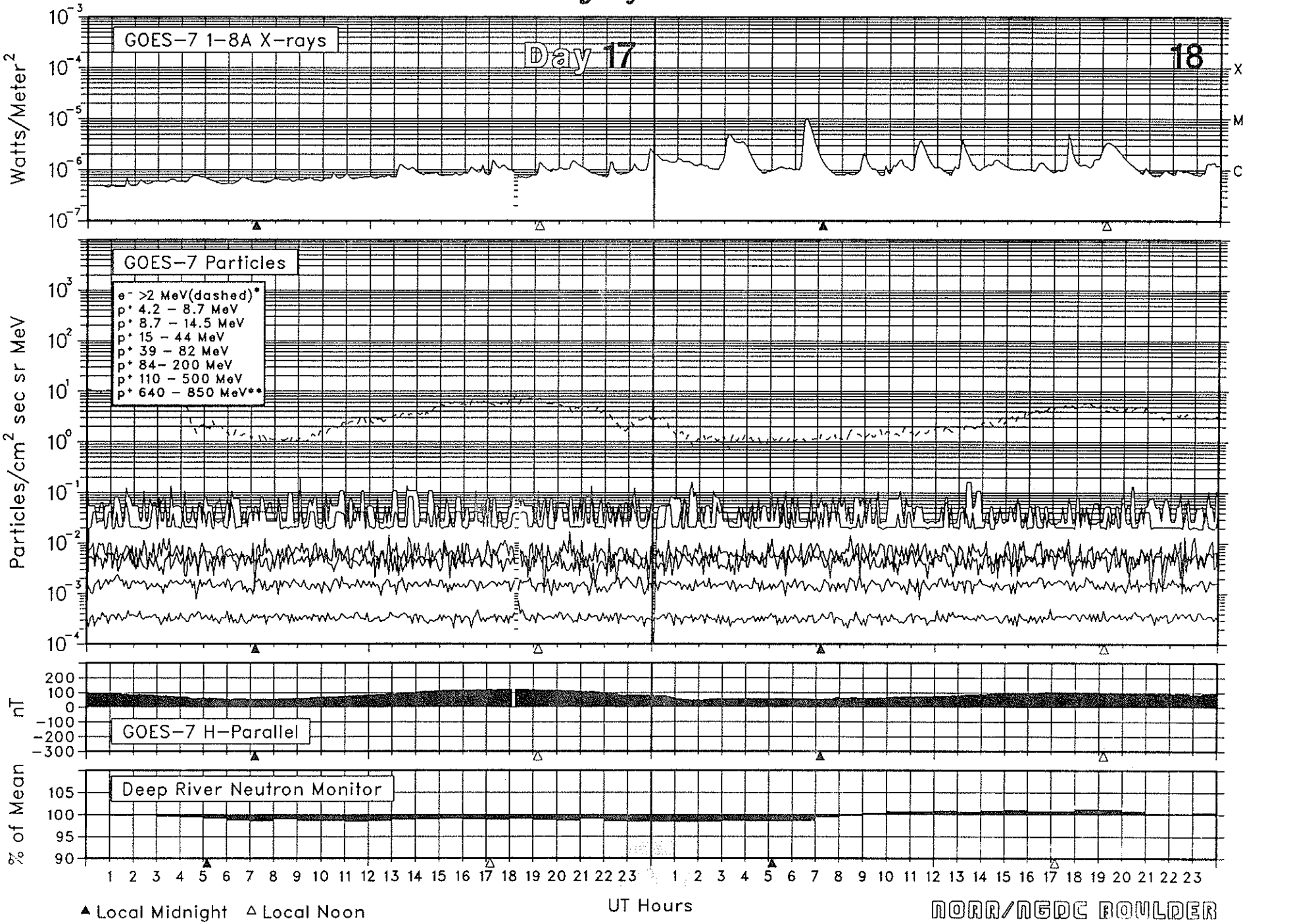
July 1990

Jul 90 12



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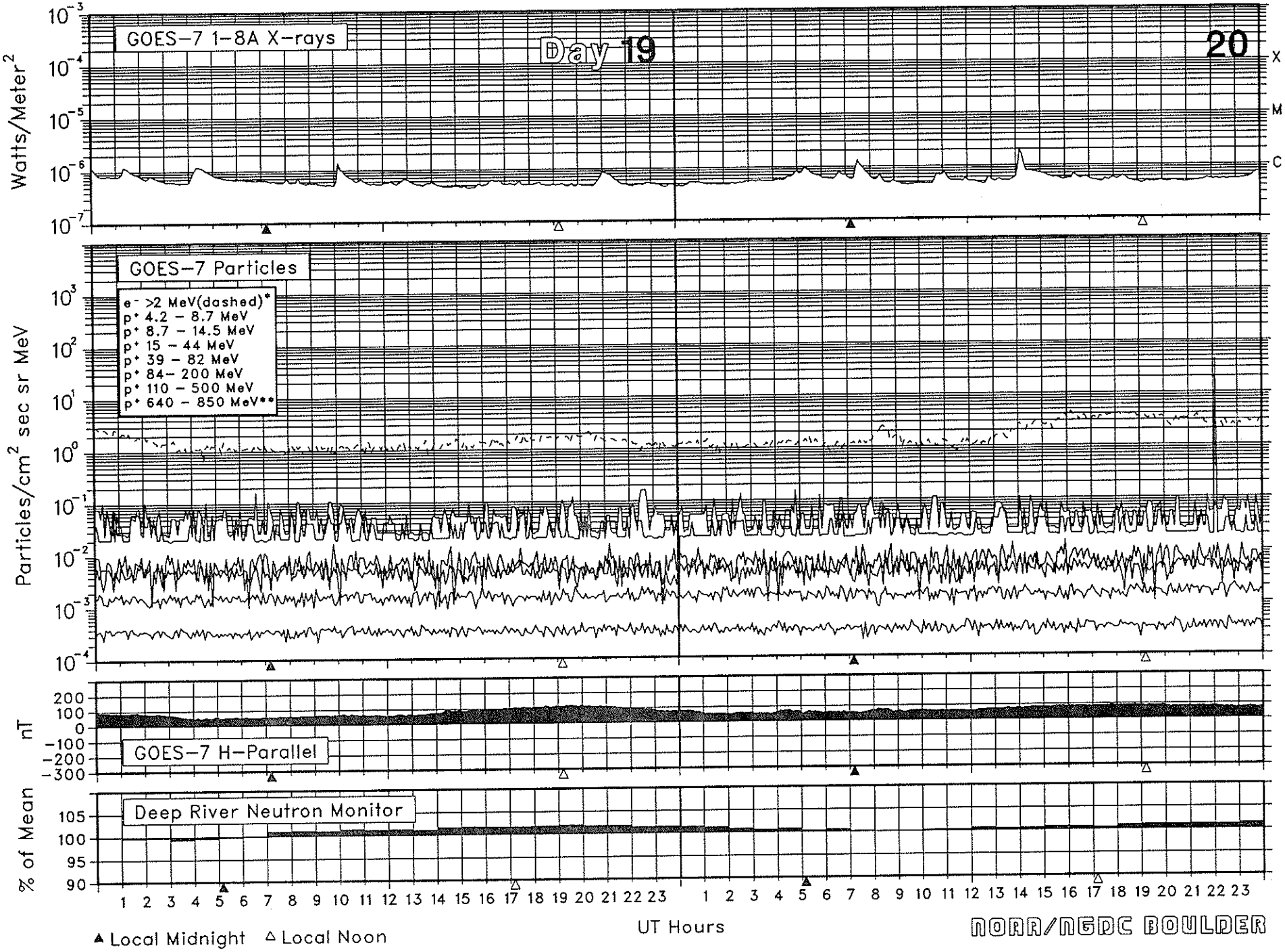
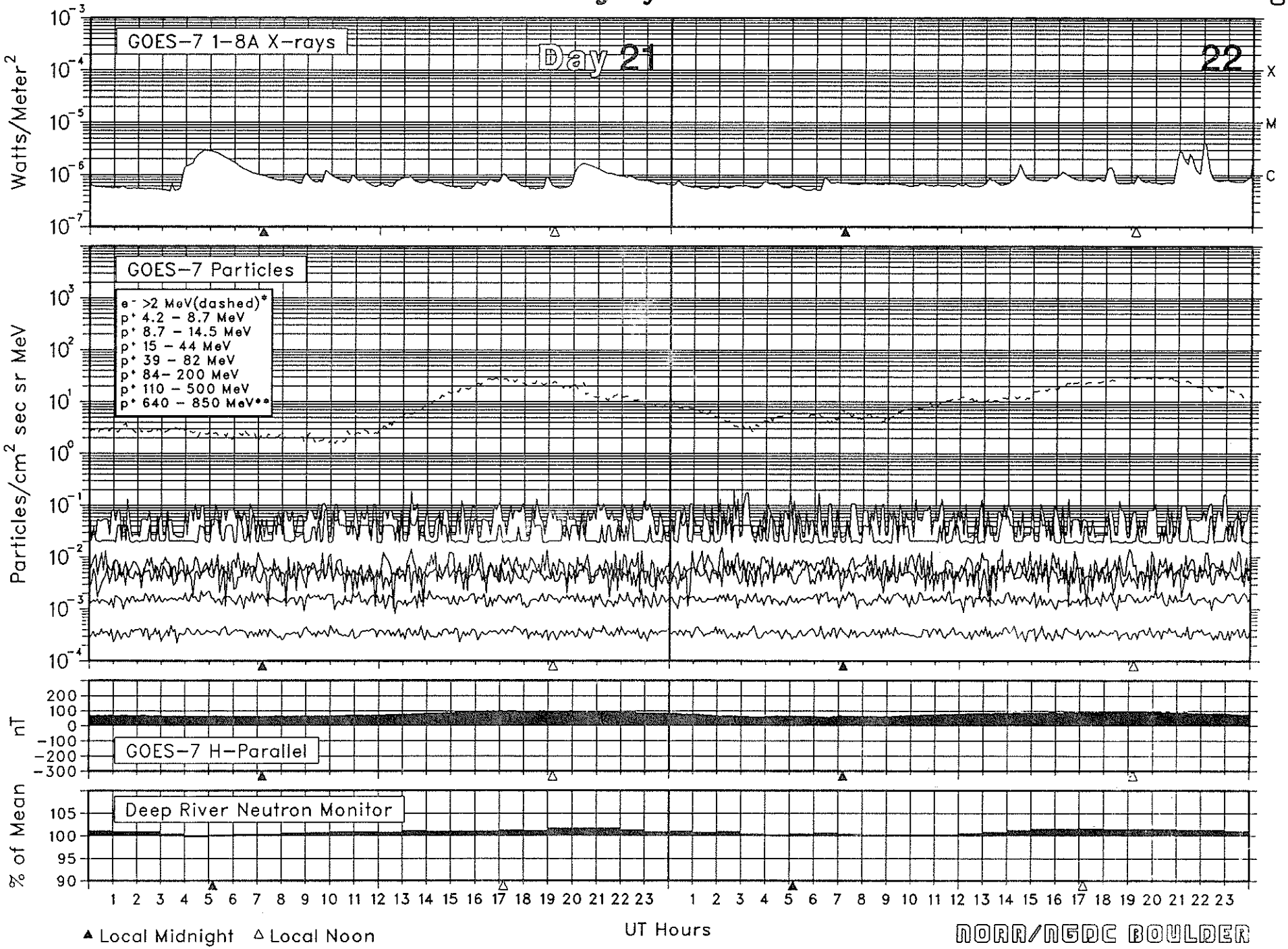
July 1990



SOLAR-TERRESTRIAL ENVIRONMENT

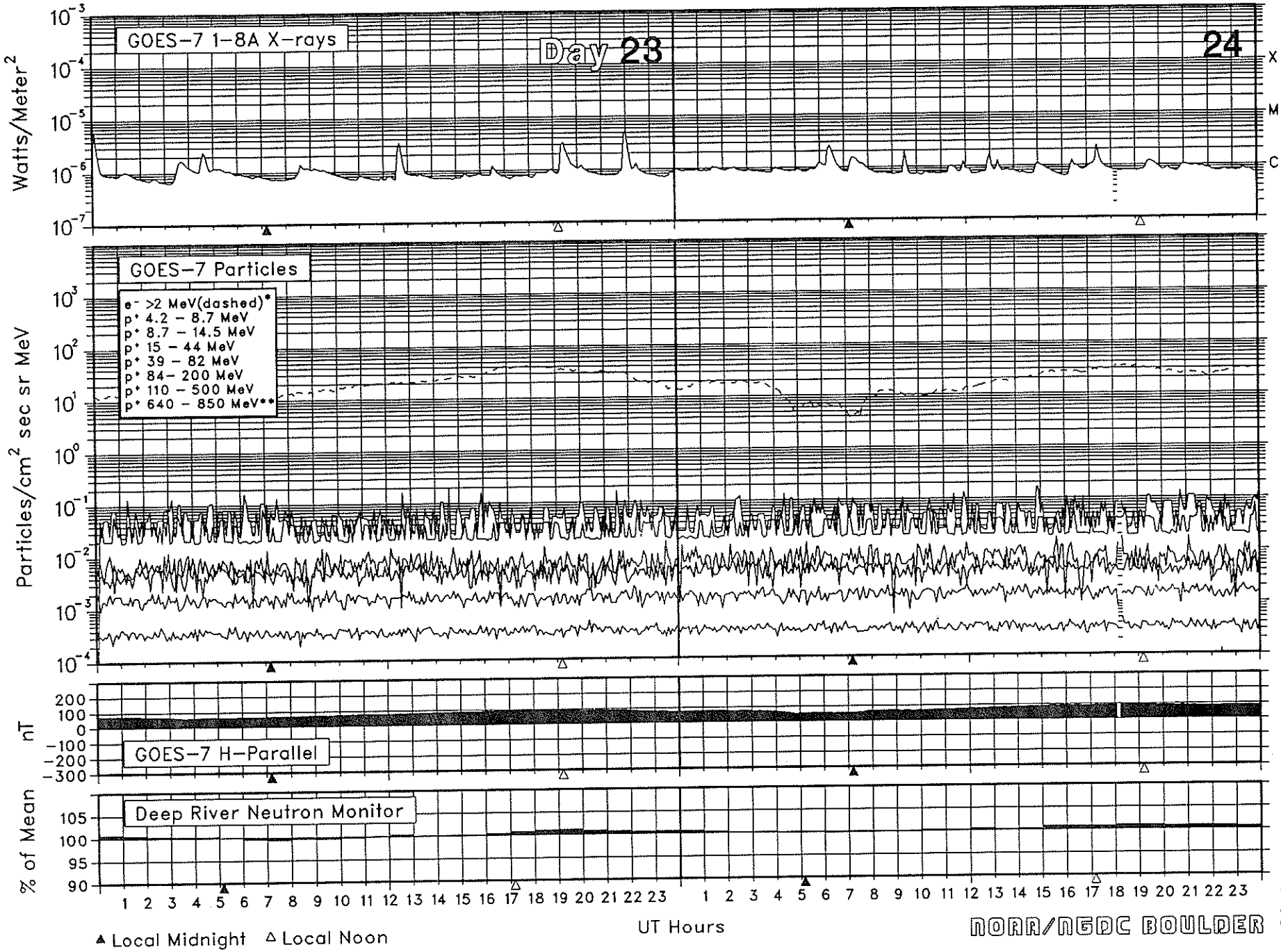
July 1990

14 Jul 90



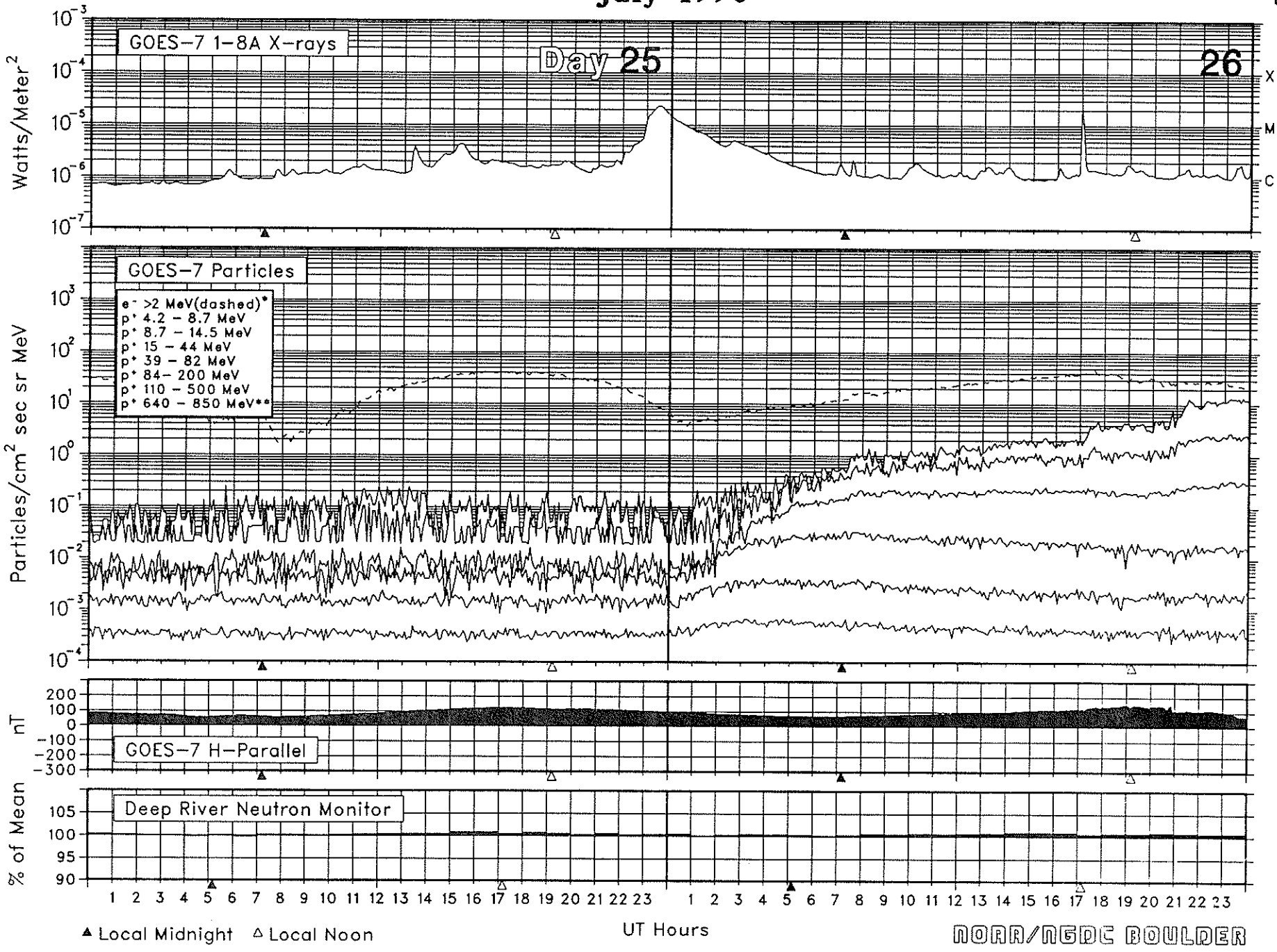
NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

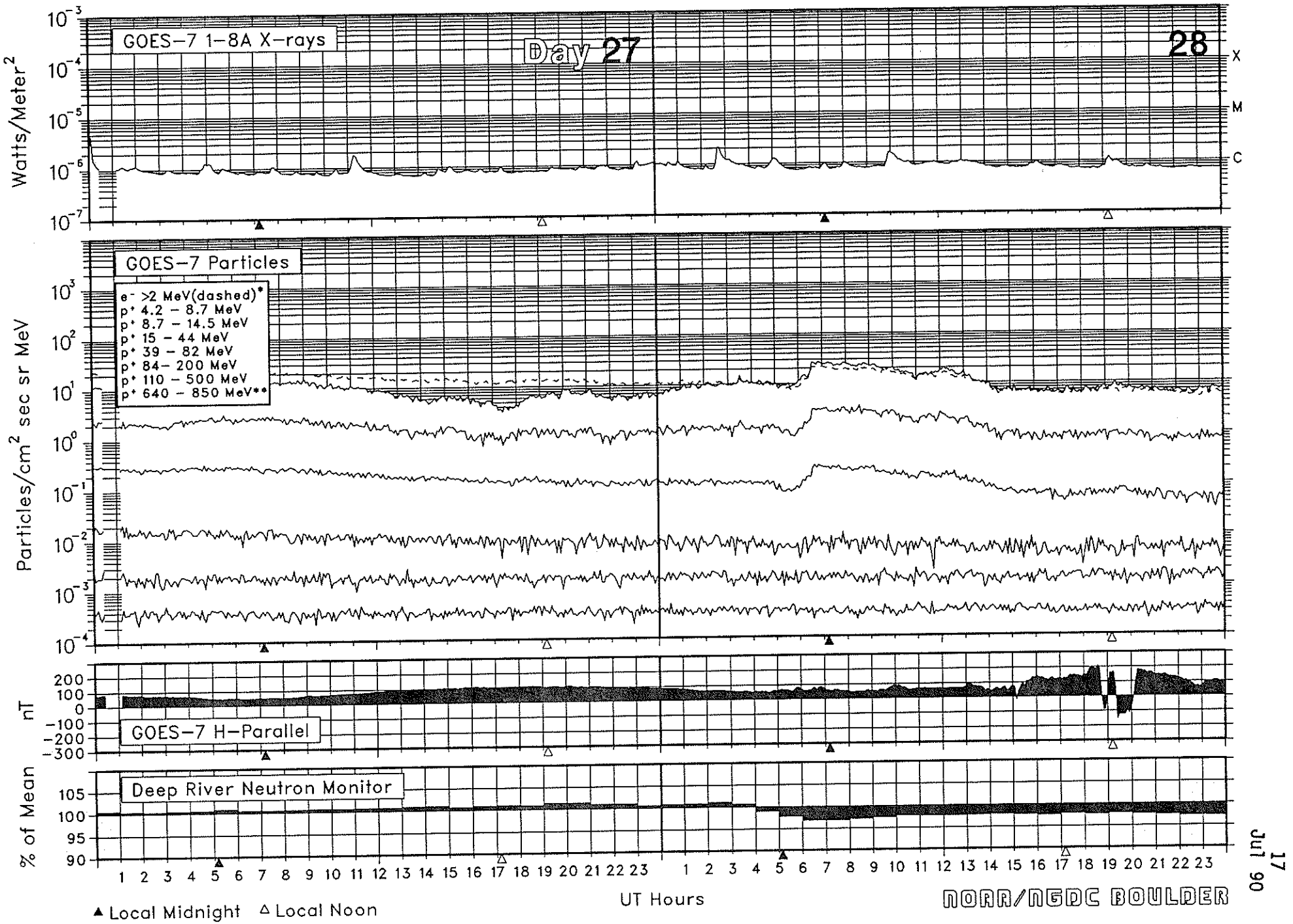


SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

Jul 16 90

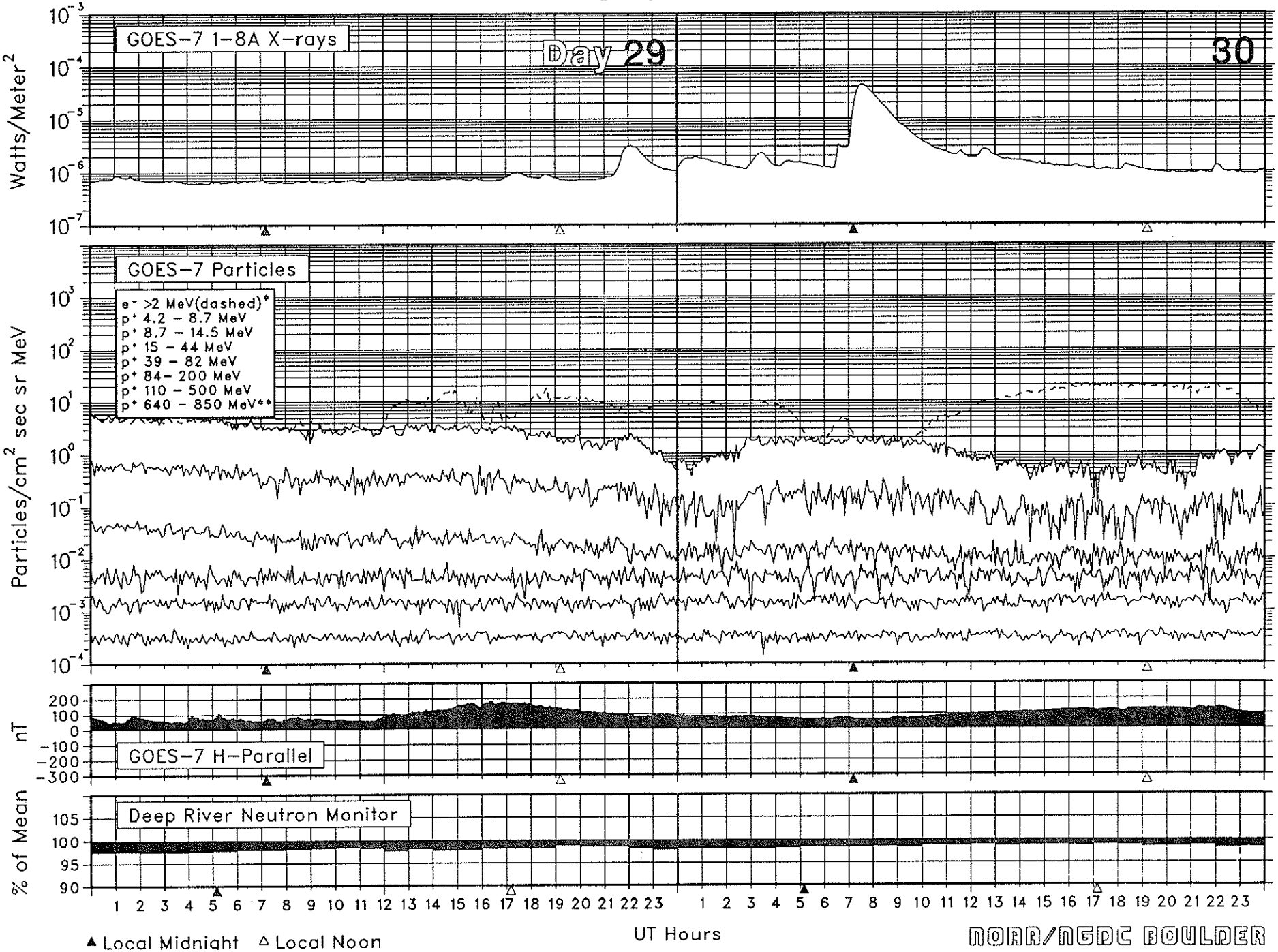


SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

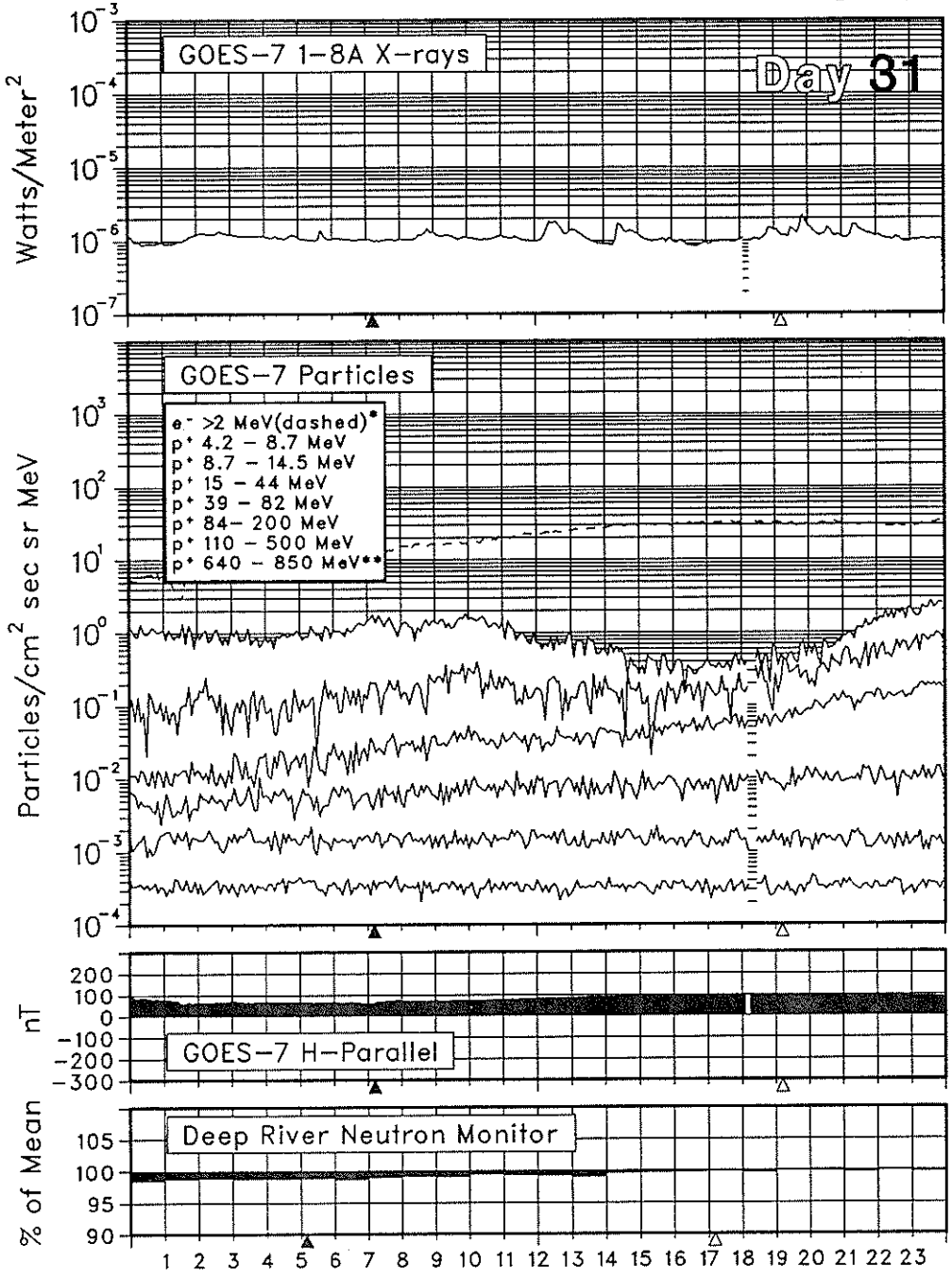


SOLAR-TERRESTRIAL ENVIRONMENT
July 1990

Jul 90 18



SOLAR-TERRESTRIAL ENVIRONMENT
July 1990



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

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

NOAA/NGDC BOULDER

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — JULY 1990

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location	Flares			Date of Forecast	Location	Region Forecast [1]	Geoalerts
						°Lat °Long	Total	M	X		°Lat °Long		
182	01	30	370	216	004	N27 W42	0	0	0	01	N27 W42	Q	Solalert 01/XX,
						S21 W19	1	0	0		S21 W19	E	Magquiet.
						S07 W63	1	0	0		S07 W63	Q	
						N05 W13	0	0	0		N05 W13	E	
						S13 E15	9	0	0		S13 E15	E	
						N09 E20	4	0	0		N09 E20	E	
						N15 W66	1	0	0		N15 W66	Q	
						S20 E26	6	0	0		S20 E26	E	
						S28 E46	5	0	0		S28 E46	E	
						N18 E55	7	0	0		N18 E55	E	
						N12 E04	0	0	0		N12 E04	Q	
						S40 W33	1	0	0		S40 W33	Q	
						S14 E31	1	0	0		S14 E31	E	
						N22 E76	0	0	0		N22 E76	Q	
						S16 E53	0	0	0		S16 E53	Q	
183	02	01	352	235	006	N26 W55	0	0	0	02	N26 W55	Q	Solalert 02/XX,
						S22 W31	1	0	0		S22 W31	E	Magquiet.
						S09 W77	1	0	0		S09 W77	Q	
						N05 W26	0	0	0		N05 W26	Q	
						S12 E01	10	0	0		S12 E01	E	
						N08 E08	1	0	0		N08 E08	E	
						N13 W79	3	0	0		N13 W79	Q	
						S22 E14	6	1	0		S22 E14	E	
						S29 E34	1	0	0		S29 E34	E	
						N18 E43	2	0	0		N18 E43	E	
						N12 W10	0	0	0		N12 W10	Q	
						S42 W44	4	0	0		S42 W44	E	
						S14 E16	1	0	0		S14 E16	Q	
						N23 E63	1	0	0		N23 E63	Q	
						S15 E41	1	0	0		S14 E41	Q	
						S04 W02	0	0	0		S04 W02	Q	
184	03	02	328	252	009	N27 W68	0	0	0	03	N27 W68	Q	Solalert 03/XX,
						S21 W42	0	0	0		S21 W42	E	Magquiet.
						N06 W38	0	0	0		N06 W38	Q	
						S12 W14	4	0	0		S12 W14	E	
						N09 W05	0	0	0		N09 W05	E	
						S20 W00	2	0	0		S20 W00	E	
						S28 E20	1	0	0		S28 E20	E	
						N17 E31	2	0	0		N17 E31	E	
						N11 W23	0	0	0		N11 W23	Q	
						S40 W59	3	0	0		S40 W59	E	
						S14 E02	0	0	0		S14 E02	Q	
						N22 E51	5	0	0		N22 E51	E	
						S16 E27	1	0	0		S16 E27	Q	
185	04	03	314	240	010	N27 W81	0	0	0	04	N27 W81	Q	Solalert 04/XX,
						S21 W57	0	0	0		S21 W57	E	Magquiet.
						S12 W29	4	0	0		S12 W29	E	
						N09 W17	1	0	0		N09 W17	E	
						S21 W12	0	0	0		S21 W12	E	
						S28 E08	1	0	0		S28 E08	Q	
						N17 E18	1	0	0		N17 E18	E	
						N12 W36	0	0	0		N12 W36	Q	
						S14 W11	0	0	0		S14 W11	Q	
						N21 E36	0	0	0		N21 E36	E	
						S16 E13	0	0	0		S16 E13	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — JULY 1990

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast [1]	Geoalerts
186	05	04	275	224	014	S21 W69	2	0	0	05	S21 W69	E	Solalert 05/XX, Magquiet.
						S12 W43	0	0	0		S12 W43	E	
						N09 W32	0	0	0		N09 W32	E	
						S21 W26	6	1	0		S21 W26	E	
						S28 W06	1	0	0		S28 W06	Q	
						N18 E04	5	0	0		N18 E04	E	
						N11 W48	1	0	0		N11 W48	Q	
						S14 W23	1	0	0		S14 W23	Q	
						N22 E23	2	1	0		N22 E23	E	
						S16 W00	1	0	0		S16 W00	Q	
		Presto:[2]	Boulder		Tenflare 670 flux units 04/1646 UT duration 10 minutes.								
187	06	05	242	219	010	S22 W81	2	0	0	06	S22 W81	E	Solalert 06/XX, Magquiet.
						S12 W55	2	0	0		S12 W55	E	
						N08 W45	0	0	0		N08 W45	E	
						S22 W39	3	0	0		S22 W39	E	
						S28 W19	0	0	0		S28 W19	Q	
						N17 W09	3	1	0		N17 W09	E	
						N12 W61	0	0	0		N12 W61	Q	
						S15 W37	3	0	0		S15 W37	Q	
						N22 E11	4	0	0		N22 E11	E	
						S17 W13	1	0	0		S17 W13	E	
						S06 W16	0	0	0		S06 W16	Q	
188	07	06	242	209	007	S21 W87	0	0	0	07	S21 W87	Q	Solalert 07/XX, Magquiet.
						S12 W69	1	0	0		S12 W69	E	
						N09 W58	0	0	0		N09 W58	E	
						S21 W52	2	0	0		S21 W52	E	
						S28 W28	0	0	0		S28 W28	Q	
						N17 W24	2	0	0		N17 W24	E	
						N12 W77	0	0	0		N12 W77	Q	
						S14 W53	7	0	0		S14 W53	E	
						N21 W02	3	0	0		N21 W02	E	
						S17 W27	0	0	0		S17 W27	Q	
						S06 W30	0	0	0		S06 W30	Q	
						S15 E72	0	0	0		S15 E72	Q	
						N13 W12	0	0	0		N13 W12	Q	
189	08	07	220	204	007	S13 W79	1	0	0	08	S13 W79	E	Solalert 08/XX, Magquiet.
						N09 W71	1	0	0		N09 W71	E	
						S21 W66	0	0	0		S21 W66	E	
						N17 W36	1	0	0		N17 W36	E	
						S13 W66	5	0	0		S13 W66	E	
						N22 W15	3	0	0		N22 W15	E	
						S17 W41	0	0	0		S17 W41	Q	
						S06 W42	0	0	0		S06 W42	Q	
						S14 E57	0	0	0		S14 E57	Q	
						N15 W26	0	0	0		N15 W26	Q	
						N09 W14	0	0	0		N09 W14	Q	
190	09	08	190	182	010	N11 W85	0	0	0	09	N11 W85	E	Solalert 09/09, Magquiet.
						S20 W79	4	1	0		S20 W79	E	
						N17 W50	4	0	0		N17 W50	E	
						S13 W80	3	0	0		S13 W80	E	
						N21 W28	1	0	0		N21 W28	E	
						S16 W57	0	0	0		S16 W57	Q	
						S15 E43	1	0	0		S15 E43	E	
						N15 W40	0	0	0		N15 W40	Q	
						N12 E62	0	0	0		N12 E62	Q	
						S22 E38	0	0	0		S22 E38	Q	
						S08 W00	0	0	0		S08 W00	Q	

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Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location	Flares			Date of Forecast	Location	Region Forecast [1]	Geoalerts
						°Lat °Long	Total	M	X		°Lat °Long		
191	10	09	177	163	004	S21 W90	0	0	0	10	S21 W90	Q	Solnil, Magquiet.
						N18 W62	6	0	0		N18 W62	E	
						S13 W90	0	0	0		S13 W90	E	
						N21 W42	1	0	0		N21 W42	E	
						S17 W69	0	0	0		S17 W69	Q	
						S06 W72	0	0	0		S06 W72	Q	
						S16 E31	0	0	0		S16 E31	E	
						N12 W50	0	0	0		N12 W50	Q	
						N12 E50	0	0	0		N12 E50	Q	
						S21 E24	0	0	0		S21 E24	Q	
						S07 W15	0	0	0		S07 W15	Q	
						N09 E04	1	0	0		N09 E04	Q	
192	11	10	172	157	012	N18 W77	7	0	0	11	N18 W77	E	Solquiet, Magquiet.
						N22 W55	3	0	0		N22 W55	E	
						S17 W81	0	0	0		S17 W81	Q	
						S16 E17	0	0	0		S16 E17	Q	
						N19 W66	0	0	0		N19 W66	Q	
						N11 W57	0	0	0		N11 W57	Q	
						N13 E36	0	0	0		N13 E36	Q	
						S20 E12	0	0	0		S20 E12	Q	
						S10 W26	0	0	0		S10 W26	Q	
						N09 W08	1	0	0		N09 W08	E	
						S09 E68	0	0	0		S09 E68	Q	
						N07 E08	6	0	0		N07 E08	E	
193	12	11	171	153	006	N17 W94	3	0	0	12	N17 W94	E	Solquiet, Magquiet.
						N21 W68	6	0	0		N21 W68	E	
						S15 E05	0	0	0		S15 E05	Q	
						N13 E23	1	0	0		N13 E23	Q	
						S21 E01	0	0	0		S21 E01	Q	
						N09 W21	0	0	0		N09 W21	Q	
						S08 E55	0	0	0		S08 E55	Q	
						N07 W04	9	0	0		N07 W04	E	
						S09 W05	0	0	0		S09 W05	Q	
						S18 E54	0	0	0		S18 E54	Q	
						N16 W07	0	0	0		N16 W07	Q	
194	13	12	129	154	007	N21 W80	0	0	0	13	N21 W80	E	Solquiet, Magquiet.
						S16 W08	0	0	0		S16 W08	Q	
						N13 E10	0	0	0		N13 E10	Q	
						S08 E42	0	0	0		S08 E42	Q	
						N07 W19	1	0	0		N07 W19	E	
						S10 W19	4	1	0		S10 W19	E	
						N15 W22	0	0	0		N15 W22	E	
195	14	13	152	153	011	N22 W89	1	1	0	14	N22 W89	E	Solquiet, Magquiet.
						S16 W21	0	0	0		S16 W21	Q	
						N13 W03	0	0	0		N13 W03	Q	
						S08 E30	1	0	0		S08 E30	Q	
						N07 W32	2	0	0		N07 W32	E	
						S10 W31	1	0	0		S10 W31	E	
						N15 W36	6	0	0		N15 W36	E	
						N20 E27	0	0	0		N20 E27	Q	
						N12 E78	0	0	0		N12 E78	Q	

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Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location	Flares			Date of Forecast	Location		Region Forecast [1]	Geoalerts
						°Lat °Long	Total	M	X		°Lat	°Long		
196	15	14	192	149	010	S16 W33	0	0	0	15	S16	W33	Q	Solquiet, Magquiet.
						N13 W17	0	0	0		N13	W17	Q	
						S08 E17	0	0	0		S08	E17	Q	
						N07 W45	0	0	0		N07	W45	E	
						S10 W44	0	0	0		S10	W44	E	
						S20 E15	0	0	0		S20	E15	Q	
						N15 W50	2	0	0		N15	W50	E	
						N19 E13	0	0	0		N19	E13	Q	
						N12 E63	0	0	0		N12	E63	E	
						S27 E25	0	0	0		S27	E25	Q	
						S15 W56	0	0	0		S15	W56	Q	
						S13 E11	0	0	0		S13	E11	Q	
197	16	15	124	143	009	S15 W46	0	0	0	16	S15	W46	Q	Solquiet, Magquiet.
						N12 W30	0	0	0		N12	W30	Q	
						N06 W58	0	0	0		N06	W58	Q	
						S10 W57	0	0	0		S10	W57	Q	
						N15 W63	7	0	0		N15	W63	E	
						N18 W01	0	0	0		N18	W01	Q	
						N10 E49	0	0	0		N10	E49	Q	
198	17	16	157	141	007	S15 W60	0	0	0	17	S15	W60	Q	Solquiet, Magquiet.
						N13 W43	0	0	0		N13	W43	Q	
						N06 W72	0	0	0		N06	W72	Q	
						S09 W69	6	0	0		S09	W69	E	
						S22 W06	0	0	0		S22	W06	Q	
						N15 W78	0	0	0		N15	W78	E	
						N19 W14	0	0	0		N19	W14	Q	
						N11 E37	0	0	0		N11	E37	Q	
						S24 W02	0	0	0		S24	W02	Q	
						N01 E35	0	0	0		N01	E35	Q	
						S28 E77	0	0	0		S28	E77	Q	
199	18	17	129	143	005	S14 W73	0	0	0	18	S14	W73	Q	Solquiet, Magquiet.
						N12 W54	0	0	0		N12	W54	Q	
						N07 W83	0	0	0		N07	W83	Q	
						S09 W80	0	0	0		S09	W80	E	
						N15 W87	0	0	0		N15	W87	E	
						N19 W27	0	0	0		N19	W27	Q	
						N11 E24	0	0	0		N11	E24	Q	
						S13 W27	0	0	0		S13	W27	Q	
						N01 E21	0	0	0		N01	E21	Q	
						S28 E64	5	0	0		S28	E64	E	
200	19	18	087	137	007	S14 W85	0	0	0	19	S14	W85	Q	Solquiet, Magquiet.
						N08 W91	0	0	0		N08	W91	Q	
						N19 W42	0	0	0		N19	W42	Q	
						N12 E10	0	0	0		N12	E10	Q	
						S28 E53	7	1	0		S28	E53	A	
						N10 E75	1	0	0		N10	E75	Q	
201	20	19	073	138	018	N19 W56	1	0	0	20	N19	W56	Q	Solalert 20/XX,
						N12 W03	0	0	0		N12	W03	Q	Magquiet.
						S28 E41	2	0	0		S28	E41	A	
						N10 E68	1	0	0		N10	E68	E	
202	21	20	118	147	017	N18 W68	1	0	0	21	N18	W68	Q	Solalert 21/XX,
						N12 W16	0	0	0		N12	W16	Q	Magquiet.
						S27 E27	2	0	0		S27	E27	E	
						N10 E54	4	0	0		N10	E54	E	
						N22 E29	1	0	0		N22	E29	Q	
						S22 E74	1	0	0		S22	E74	E	

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Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location	Flares			Date of Forecast	Location	Region Forecast [1]	Geoalerts
						°Lat °Long	Total	M	X		°Lat °Long		
203	22	21	194	153	007	N13 W29	0	0	0	22	N13 W29	Q	Solnil, Magquiet.
						S27 E15	1	0	0		S27 E15	E	
						N11 E42	8	0	0		N11 E42	E	
						N23 E14	0	0	0		N23 E14	Q	
						S21 E62	0	0	0		S21 E62	Q	
						N22 W25	0	0	0		N22 W25	Q	
						N11 E07	0	0	0		N11 E07	Q	
						N27 E49	0	0	0		N27 E49	Q	
						S13 E81	0	0	0		S13 E81	Q	
						S14 E17	0	0	0		S14 E17	Q	
						S16 W19	0	0	0		S16 W19	Q	
204	23	22	207	161	008	N11 W44	0	0	0	23	N11 W44	Q	Solquiet, Magquiet.
						S28 E02	1	0	0		S28 E02	E	
						N11 E27	4	0	0		N11 E27	E	
						N23 W00	0	0	0		N23 W00	Q	
						S21 E47	0	0	0		S21 E47	Q	
						N22 W38	0	0	0		N22 W38	Q	
						N10 W08	0	0	0		N10 W08	Q	
						N27 E37	0	0	0		N27 E37	Q	
						S13 E66	0	0	0		S13 E66	Q	
						S15 E03	0	0	0		S15 E03	Q	
						S16 W36	0	0	0		S16 W36	Q	
						N11 E76	4	0	0		N11 E76	E	
205	24	23	244	172	003	N11 W58	0	0	0	24	N11 W58	Q	Solquiet, Magquiet.
						S28 W09	0	0	0		S28 W09	E	
						N11 E14	8	0	0		N11 E14	E	
						N23 W13	0	0	0		N23 W13	Q	
						S21 E32	0	0	0		S21 E32	Q	
						N11 W20	0	0	0		N11 W20	Q	
						N27 E23	1	0	0		N27 E23	Q	
						S13 E52	0	0	0		S13 E52	Q	
						S15 W13	0	0	0		S15 W13	Q	
						S16 W50	0	0	0		S16 W50	Q	
						N11 E64	6	0	0		N11 E64	E	
						S22 E70	1	0	0		S22 E70	E	
						N21 W23	0	0	0		N21 W23	Q	
						S11 E77	0	0	0		S11 E77	Q	
206	25	24	279	180	005	N10 W71	0	0	0	25	N10 W71	Q	Solquiet, Magquiet.
						S28 W23	0	0	0		S28 W23	E	
						N11 E01	3	0	0		N11 E01	E	
						N23 W26	1	0	0		N23 W26	Q	
						S21 E20	0	0	0		S21 E20	Q	
						N28 E10	1	0	0		N28 E10	Q	
						S14 E39	0	0	0		S14 E39	Q	
						S15 W27	0	0	0		S15 W27	Q	
						S16 W64	0	0	0		S16 W64	Q	
						N11 E51	4	0	0		N11 E51	E	
						S22 E57	0	0	0		S22 E57	Q	
						N21 W37	0	0	0		N21 W37	Q	
						S12 E63	0	0	0		S12 E63	Q	
						S19 E12	0	0	0		S19 E12	Q	
						S18 W41	0	0	0		S18 W41	Q	
						S20 E70	0	0	0		S20 E70	Q	

Presto:[2] Boulder Tenflare 190 flux units 24/1532 UT duration 1 minute.

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Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast [1]	Geoalerts
207	26	25	289	204	003	S28 W35	0	0	0	26	S28 W35	E	Solquiet, Magquiet.
						N11 W13	7	0	0		N11 W13	E	
						N23 W40	0	0	0		N23 W40	Q	
						S21 E08	0	0	0		S21 E08	Q	
						N27 W03	0	0	0		N27 W03	Q	
						S13 E26	1	0	0		S13 E26	Q	
						S15 W40	0	0	0		S15 W40	Q	
						S15 W76	0	0	0		S15 W76	Q	
						N11 E36	5	0	0		N11 E36	E	
						S22 E44	0	0	0		S22 E44	Q	
						N24 W48	1	0	0		N24 W48	Q	
						S12 E51	2	0	0		S12 E51	Q	
						S19 W01	1	0	0		S19 W01	Q	
						S19 W55	4	0	0		S19 W55	Q	
						S19 E57	0	0	0		S19 E57	Q	
						N28 E08	0	0	0		N28 E08	Q	
		Presto:[2] Boulder				Tenflare 270 flux units 25/2320 UT duration 48 minutes.							
208	27	26	246	201	011	S27 W50	1	0	0	27	S27 W50	E	Solalert 27/XX,
						N10 W27	9	1	0		N10 W27	E	Magquiet.
						S21 W05	0	0	0		S21 W05	Q	
						N26 W17	0	0	0		N26 W17	Q	
						S13 E13	1	0	0		S13 E13	Q	
						N10 E25	1	0	0		N10 E25	E	
						S23 E33	1	0	0		S23 E33	Q	
						S12 E38	0	0	0		S12 E38	E	
						S18 W69	4	0	0		S18 W69	Q	
						S20 E45	3	0	0		S20 E45	Q	
						N27 W04	0	0	0		N27 W04	Q	
						N16 E68	0	0	0		N16 E68	Q	
		Presto: Boulder				Proton event began 26/1720 UT, maximum of 21 particles/cm^2-s-ster at greater than 10 MeV 26/2315 UT, in progress.							
209	28	27	232	194	011	S27 W64	0	0	0	28	S27 W64	E	Solalert, Magquiet.
						N10 W39	6	0	0		N10 W39	E	
						S20 W17	0	0	0		S20 W17	Q	
						N26 W31	0	0	0		N26 W31	Q	
						S13 W00	1	0	0		S13 W00	Q	
						N10 E12	2	0	0		N10 E12	E	
						S24 E24	1	0	0		S24 E24	E	
						S12 E27	0	0	0		S12 E27	E	
						S18 W81	2	0	0		S18 W81	Q	
						S20 E32	2	0	0		S20 E32	E	
						N15 E56	0	0	0		N15 E56	Q	
						N17 E66	0	0	0		N17 E66	Q	
210	29	28	217	183	056	S27 W80	0	0	0	29	S27 W80	E	Solalert 29/30,
						N11 W51	4	0	0		N11 W51	E	Magalert 29/30 Flare.
						S21 W29	0	0	0		S21 W29	Q	
						N26 W46	0	0	0		N26 W46	Q	
						S12 W13	2	0	0		S12 W13	Q	
						N10 W03	3	0	0		N10 W03	E	
						S24 E10	2	0	0		S24 E10	E	
						S12 E13	0	0	0		S12 E13	E	
						S19 W89	0	0	0		S19 W89	Q	
						S19 E20	0	0	0		S19 E20	E	
						N16 E43	0	0	0		N16 E43	Q	
						N18 E55	2	0	0		N18 E55	Q	
						S08 E42	0	0	0		S08 E42	Q	
						N12 W35	0	0	0		N12 W35	Q	
		Presto: Boulder				Strong magstorm in progress 28/2100 UT. SSC of 41 gammas 28/0112 UT.							

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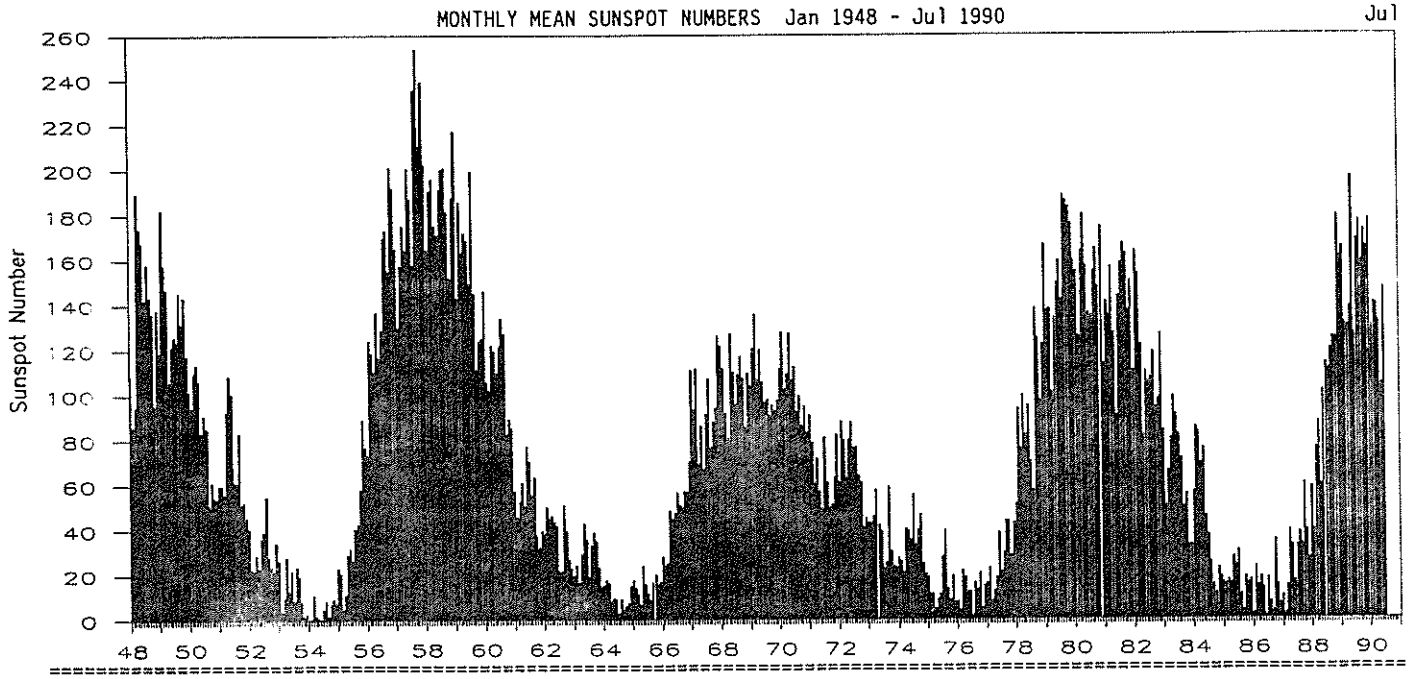
211	30	29	203	173	050	S28 W94	0	0	0	30	S28 W94	E	Solnil,
						N11 W66	0	0	0		N11 W66	E	Magalert 30/30.
						S21 W43	0	0	0		S21 W43	Q	
						N25 W61	1	0	0		N25 W61	Q	
						S12 W27	1	0	0		S12 W27	Q	
						N14 W12	1	0	0		N14 W12	Q	
						S23 W03	0	0	0		S23 W03	E	
						S11 W01	0	0	0		S11 W01	E	
						S19 E06	0	0	0		S19 E06	E	
						N16 E29	0	0	0		N16 E29	Q	
						N19 E43	1	0	0		N19 E43	Q	
						S07 E28	1	0	0		S07 E28	Q	
						N13 W49	0	0	0		N13 W49	Q	
						S03 W18	0	0	0		S03 W18	Q	
212	31	30	170	181	012	N11 W82	1	0	0	31	N11 W82	E	Solquiet, Magnil.
						S21 W54	0	0	0		S21 W54	Q	
						N25 W74	0	0	0		N25 W74	Q	
						S13 W39	0	0	0		S13 W39	Q	
						N11 W24	0	0	0		N11 W24	Q	
						S24 W16	1	0	0		S24 W16	E	
						S11 W13	0	0	0		S11 W13	E	
						S19 W05	1	0	0		S19 W05	E	
						N15 E18	0	0	0		N15 E18	Q	
						N18 E29	1	1	0		N18 E29	E	
						S08 E16	0	0	0		S08 E16	Q	
						S08 E30	0	0	0		S08 E30	Q	
		Presto:[2]	Meudon	Majorflare 2B N18 E43 began 30/0640 UT in progress.									
			Boulder	Tenflare 1800 flux units 30/0703 UT duration 85 minutes.									
			Toyokawa	Tenflare 980 flux units 30/0703 UT duration 100 minutes.									
213	01	31	209	176	006	N11 W95	0	0	0	01	N11 W95	E	Solquiet,
						S21 W68	0	0	0		S21 W68	Q	Magalert 01/01.
						S13 W52	0	0	0		S13 W51	Q	
						N10 W41	1	0	0		N10 W41	Q	
						S24 W30	8	0	0		S24 W30	E	
						S12 W26	2	0	0		S12 W26	E	
						S21 W17	0	0	0		S21 W17	Q	
						N16 E05	0	0	0		N16 E05	Q	
						N18 E16	0	0	0		N18 E16	E	
						S08 E06	0	0	0		S08 E06	Q	
						S09 E17	1	0	0		S09 E17	Q	
						N24 E73	1	0	0		N24 E73	E	
						N16 E74	0	0	0		N16 E74	Q	
						S07 E69	0	0	0		S07 E69	Q	

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

MONTHLY MEAN SUNSPOT NUMBERS Jan 1948 - Jul 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	139.8*	132.0*	105.2*	147.0*						138.9*	

*Preliminary

For the yearly means, each "M" marks a sunspot cycle maximum and each "m" a minimum.

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Aug 89	Sep	Oct	Nov	Dec	Jan 90	Feb	Mar	Apr†	May†	Jun†	Jul†
01	171	147	129	153	198	186	171	173	100	70	96	272
02	196	171	150	160	182	176	161	171	114	59	80	253
03	193	180	167	191	203	166	124	163	113	61	73	245
04	213	204	186	216	182	174	113	126	127	86	77	229
05	227	212	209	228	192	164	97	98	132	80	79	202
06	220	230	189	245	184	144	80	104	138	106	96	186
07	215	267	168	233	217	129	82	105	128	132	107	173
08	218	261	166	215	167	138	95	88	116	138	107	135
09	218	296	187	214	161	125	103	71	88	133	87	102
10	200	270	178	203	148	134	79	80	77	116	111	88
11	202	280	191	179	104	164	75	73	83	126	131	106
12	188	264	154	173	99	172	80	85	77	146	115	110
13	207	248	148	153	107	179	85	83	123	144	115	114
14	197	215	159	140	100	147	75	90	142	141	111	118
15	203	207	189	132	84	157	78	110	171	144	102	98
16	177	180	209	124	101	152	64	129	170	157	110	95
17	192	159	206	124	120	164	54	123	190	167	100	87
18	189	155	184	134	123	177	77	167	203	170	83	57
19	202	152	159	124	131	199	107	202	213	187	79	61
20	209	137	140	141	127	236	134	217	206	187	73	81
21	203	111	152	159	111	217	159	211	212	193	57	123
22	160	109	158	162	150	208	191	195	214	187	71	143
23	133	103	145	157	201	200	239	206	174	160	64	165
24	129	75	131	160	191	191	249	209	157	158	85	194
25	105	80	121	175	209	206	245	204	160	146	94	194
26	82	93	109	184	221	203	234	188	118	134	103	186
27	57	101	97	183	240	211	217	168	124	139	140	177
28	50	111	116	183	249	193	187	129	103	116	184	159
29	70	134	131	164	213	185		132	94	118	203	144
30	94	150	156	182	214	198		133	126	90	224	117
31	116		157		201	201		115		101		142
Mean	168.9	176.7	159.4	173.0	165.5	177.3	130.5	140.3	139.8	132.0	105.2	147.0

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

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

Day	Aug 89	Sep	Oct	Nov	Dec	Jan 90	Feb	Mar	Apr	May	Jun	Jul
01	198.5	223.8	198.4	211.4	223.7*	209.3	200.8	200.0	159.2	129.0	140.6	248.3
02	201.7	233.3	208.5	216.0	213.7	208.6	177.8	192.7	153.3	129.2	141.2	267.6
03	220.2	243.0*	222.4	217.6	205.6	192.5	157.9	176.3*	151.6	125.2	146.1	253.8
04	225.7	245.0	234.1	223.9	212.9	189.2*	154.8	168.9	148.6*	123.6	148.1	238.3*
05	241.5	273.3	223.2	235.4	209.7	187.1	150.9	161.7	156.5	130.6	153.7	231.6
06	240.3	288.4	220.5	255.3	209.7	180.9	147.5	163.8*	150.2	151.0	161.4	221.8
07	240.6	303.4	225.7	207.3*	221.5	177.1	144.3	168.1	155.0	155.5	183.6	215.7
08	233.6	302.1	210.1	270.9	203.6	170.9	142.2	157.1*	152.3	170.7	195.5	189.6
09	233.9*	311.5	201.9	257.2	194.6	160.6	142.0	150.9*	146.8	174.6	203.9*	170.9
10	232.6	303.3	195.5	246.3*	177.1	167.2	148.5	149.0	149.3	195.4	207.5*	164.0
11	243.6	299.3	191.5	249.1	171.7	169.5	134.9	142.5	160.8	205.4*	217.2	160.2
12	256.1*	292.2	203.2	253.5	164.9	170.0	140.0	146.1	169.9	215.2	221.8*	160.9
13	263.9	249.3	224.2	240.3	163.2	167.0	142.8	146.3	195.5*	225.8	208.8	161.5
14	271.3	244.9	225.9	243.0	161.8	165.9	149.5	149.8*	215.7	224.2*	206.8	155.4
15	281.7	226.0	225.4	216.5	165.5	184.9	148.8	164.2*	222.9	246.6	196.3	149.1
16	259.8	233.7	237.0	216.2	164.1	187.6	148.8	178.1	226.3*	251.5	189.9	146.5
17	262.9	216.2	225.3	215.0	176.0	186.8	151.6	182.0	236.7*	248.9	187.5	147.6
18	265.0	208.6	221.3*	221.6J	185.9	217.2	161.1	196.4	243.0	271.8	169.5	144.7
19	249.1	197.0*	214.7J	229.2	188.2	233.1	180.3	216.3	244.2*	280.0	163.5	145.3
20	236.4	173.1	205.4	223.7	189.3	238.2	189.5	223.9*	257.1	272.5	161.2	154.0
21	225.7	161.8	206.2	229.4	189.9	250.8*	211.9	227.6	239.6	259.2	155.8	159.2
22	205.4	159.3	217.8	222.0	199.9	233.7	215.7	243.1*	232.8	250.0	145.2	166.0*
23	191.3	157.5	210.4	213.4	213.8	233.6	216.6	245.3	226.3	239.5	139.1	180.4
24	182.0	157.0	214.2	208.8	231.0	239.8	231.5	231.3	217.4	209.2	143.8	186.6
25	159.7	166.8	183.3*	216.0	248.0*	234.6	225.3	223.9*	198.3	189.1	149.3	213.6
26	161.0	182.2*	171.7	234.3	252.6	238.8	213.3	226.9	188.9*	186.3	154.5	209.9
27	159.6	199.4	176.9	239.4	274.8	232.2	224.1	215.1	169.8	164.6	173.4*	197.2
28	174.1	194.3	173.0	231.3	246.4	230.1	222.0	206.0	152.7	159.3	187.7	193.1
29	180.3*	204.7*	172.0	215.1	242.7*	227.8		184.1	140.9	144.8	210.8	180.3
30	192.0*	202.0	186.3	240.9	258.2*	211.4		186.5E	136.9	142.5*	226.6	188.3
31	208.9*		202.0*		236.7	209.3		172.8		142.5*		183.4
Mean	222.5	228.4	207.4	230.0	206.3	203.4	174.1	187.0	186.6	194.0	176.3	186.6

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

DAILY SOLAR INDICES

July 1990

Day	Day of Year	Bartels Cycle Day	Sunspot Numbers Int	Amer	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit — PALE (15400)	PALE (8800)	PALE (4995)	Ottawa (2800)	PALE (2695)	PALE (1415)	PALE (610)	PALE (410)	PALE (245)
01	182	19	272	261	240.2	573	347	299	248.3	235	148	79	45	23
02	183	20	253	242	258.9	558	355	310	267.6	247	159	88	58	39
03	184	21	245	240	245.6	545	346	293	253.8	236	157	85	47	24
04	185	22	229	209	230.6*	570	338	299	238.3*	231	154	92	67	51
05	186	23	202	184	224.1	549	325	274	231.6	219	146	86	75	--
06	187	24	186	169	214.6	554	332	280	221.8	211	137	85	58	--
07	188	25	173	158	208.7	553	318	262	215.7	198	134	82	48	36
08	189	26	135	132	183.4	557	318	241	189.6	177	127	79	44	25
09	190	27	102	104	165.4	556	299	219	170.9	170	115	76	42	22
10	191	1	88	94	158.7	536	291	206	164.0	156	113	76	41	17
11	192	2	106	107	155.1	535	289	198	160.2	150	113	75	41	17
12	193	3	110	104	155.7	533	282	197	160.9	152	114	77	43	36
13	194	4	114	106	156.3	---	315	212	161.5	163	113	74	41	17
14	195	5	118	107	150.4	527	281	191	155.4	145	110	71	41	20
15	196	6	98	96	144.3	517	265	181	149.1	141	108	73	44	43
16	197	7	95	90	141.8	642	277	189	146.5	141	103	73	43	21
17	198	8	87	76	142.9	609	283	196	147.6	138	104	72	41	19
18	199	9	57	55	140.1	554	283	193	144.7	140	103	59	40	19
19	200	10	61	60	140.7	529	252	181	145.3	138	100	59	33	21
20	201	11	81	84	149.1	524	271	196	154.0	144	105	68	39	17
21	202	12	123	127	154.2	523	275	200	159.2	153	109	72	40	17
22	203	13	143	144	160.8*	544	298	212	166.0*	161	113	75	46	24
23	204	14	165	174	174.8	540	303	228	180.4	173	122	76	45	23
24	205	15	194	201	180.8	537	315	240	186.6	181	128	78	49	--
25	206	16	194	199	207.1	569	316	252	213.6	203	143	82	48	25
26	207	17	186	190	203.5	556	321	250	209.9	197	137	90	71	--
27	208	18	177	173	191.2	---	---	---	197.2	---	---	91	49	26
28	209	19	159	154	187.3	556	307	229	193.1	179	130	81	--	28
29	210	20	144	139	175.0	551	307	226	180.3	181	146	82	--	--
30	211	21	117	118	182.7	532	306	223	188.3	178	134	84	--	--
31	212	22	142	141	178.0	542	312	224	183.4	176	128	75	44	24
Mean			147.0	143.2	180.7	551	304	230	186.6	177	125	78	47	25

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

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

* = corrected for burst in progress.

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

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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	120	117	115	109	101	96	95	95
1983	93	90	86	82	77	70	66	66	68	68	67	64
1984	60	56	53	50	48	46	44	40	34	29	25	22
1985	20	20	19	18	18	18	17	17	17	17	17	15
1986	14	13	13	14	14	14	14	13	12*	13	15	16
1987	18	20	22	24	26	28	31	35	39	44	47	51
1988	58	65	71	78	84	94	104	114	121	125	130	138
1989	142	145	150	154	157	158	159	158	157	157	158	153
1990	151	152	151	149	147	145	144	142	139	134	131	128
		(5)	(9)	(12)	(13)	(12)	(16)	(20)	(22)	(24)	(23)	(21)
1991	127	126	124	123	124	122	119	117	114	113	113	113
	(22)	(23)	(24)	(28)	(29)	(26)	(23)	(21)	(18)	(16)	(17)	(19)

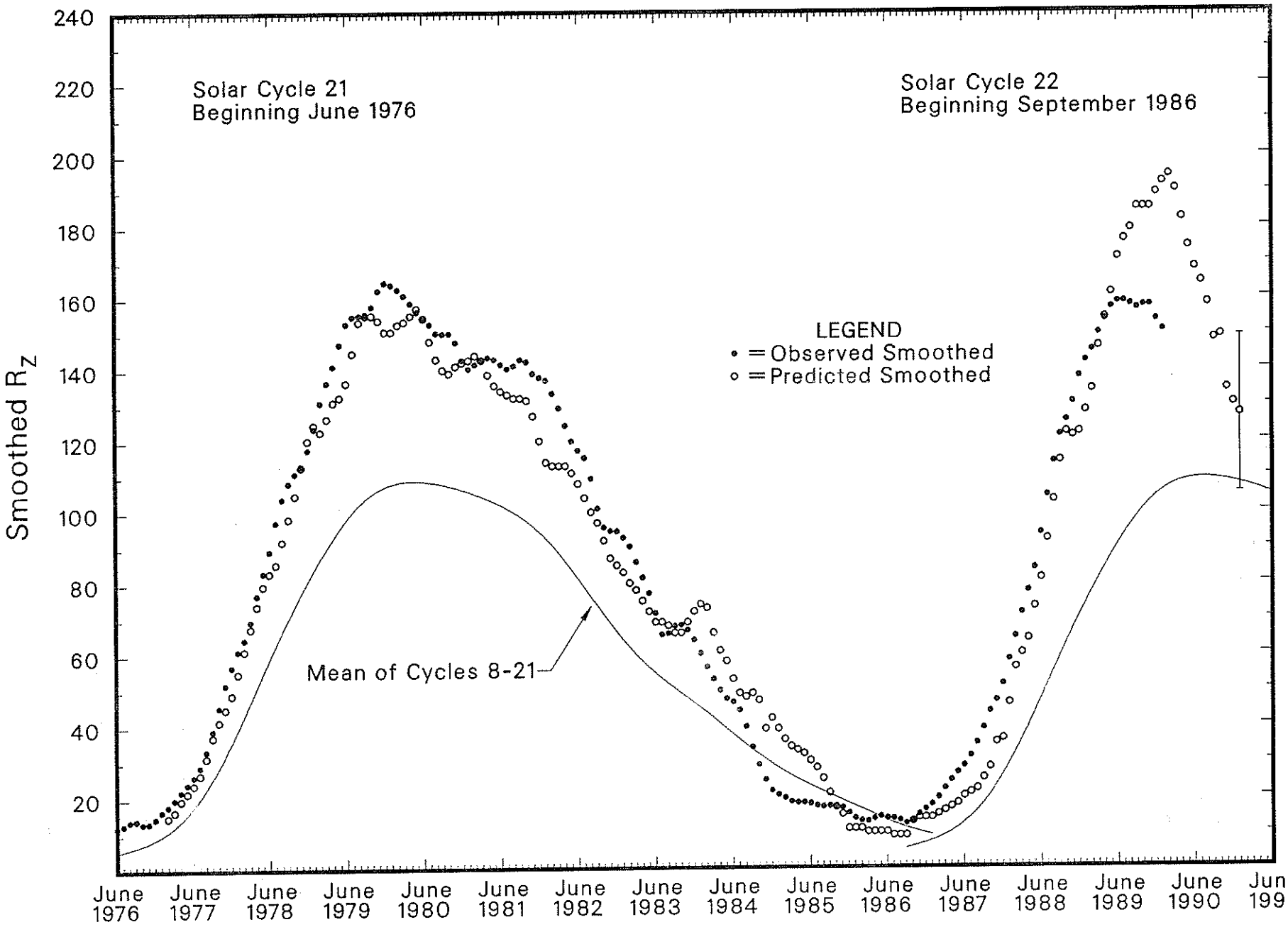
*September 1986 marks the onset of Sunspot Cycle 22.

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

Table entries, with numbers in parentheses below them, denote predictions by the McNish-Lincoln method. (See page 9 in the July 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number from the predicted value generates the lower limit. Consider, for example, the January 1991 prediction. There exists a 90% chance that in January 1991 the actual smoothed sunspot number will fall somewhere between 105 and 149.

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

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SUNSPOT NUMBERS



Hα SOLAR FLARES

JULY 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	01	0026	0028	0037	S20	E31	6131	07	3.4	11	SF		3	E		16		
HOLL		0035	0037	0047	S30	E46	6132	07	4.6	12	SN	C 5.0	3	E		60		
PALE		0035	0037	0140	S27	E44	6132	07	4.4	65	SF	C 5.0	3	E		61		
LEAR		0036	0037	0041	S30	E47	6132	07	4.7	5	SF	C 5.0	3	E		48		
PALE		0036	0039	0342	S14	E13	6126			186	1F			E		95		K
PALE		0036	0152	0342	S14	E13	6126	07	2.0	186	1F		3	E		120		F
LEAR		0037	0039	0044	S13	E11	6126	07	1.8	7	SF		2	E		62		
HOLL		0037	0039	0202D	S14	E11	6126	07	1.8	85D	SF		3	E		85		F
HOLL		0037	0121	0202D	S14	E11	6126			85D	SF			E		58		K
HOLL		0058	0058	0110	N17	E57	6133	07	5.4	12	SF		3	E		12		
LEAR		0102	0103	0110	S13	E10	6126	07	1.8	8	SF		3	E		14		
HOLL		0114	0126	0131	S20	E30	6131	07	3.3	17	SF	C 4.1	3	E		17		
LEAR		0119	0121	0137	S13	E11	6126	07	1.9	18	SF		3	E		29		
LEAR		0135	0136	0148	S15	E30	6137	07	3.3	13	SF		3	E		10		
HOLL		0136	0136	0143	S16	E28	6137	07	3.2	7	SF		3	E		32		F
PALE		0137	0139	0144	S14	E31	6137	07	3.4	7	SF		3	E		29		
HOLL		0140	0145U	0156	S21	E30	6131	07	3.4	16	SF	M 1.0	2	E		96		F
LEAR		0140	0153	0224	S13	E14	6126	07	2.1	44	SF		3	E		58		
PALE		0141	0143	0209	S22	E27	6131	07	3.1	28	1F	M 1.0	3	E		140		F
LEAR		0141	0144	0207	S23	E29	6131	07	3.3	26	1F	M 1.0	3	E		152		
LEAR		0150	0155	0207	S09	W83	6114	06	24.9	17	SF		3	E		33		
LEAR		0219	0220	0225	S22	E26	6131	07	3.1	6	SF		3	E		17		
LEAR		0231	0331	0339	S13	E12	6126	07	2.0	68	SF		3	E		38		F
LEAR		0402	0404	0413	S06	W66	6124	06	26.3	11	SF	C 3.2	3	E		37		
LEAR		0420	0420	0425	S13	E12	6126	07	2.1	5	SF	C 3.2	3	E		22		
GOES		0459	0504	0512						13		C 2.8						
SVTO		1225	1231	1302	S14	E07	6126	07	2.0	37	SN	C 5.2	4	E		90		
RAMY		1228	1230	1254	S14	E09	6126	07	2.2	26	SF		2	E		60		F
HOLL		1315	1318	1335	N06	E13	6127	07	2.5	20	SF		3	E		39		F
RAMY		1317	1318	1324	N07	E13	6127	07	2.5	7	SF		3	E		12		F
HOLL		1354	1403	1422	S42	W39	6136	06	28.5	28	SF	C 2.5	3	E		22		F
RAMY		1359	1402	1407	S42	W38	6136	06	28.6	8	SF	C 2.5	3	E		18		
HOLL		1450	1451	1500	S13	E04	6126	07	1.9	10	SF		3	E		25		F
SVTO		1508	1510	1517	S42	W39	6136	06	28.5	9	SF	C 2.6	4	E		15		
HOLL		1508	1513	1518	S42	W38	6136	06	28.6	10	SF	C 2.6	3	E		21		F
SVTO		1540	1549	1553	S21	E18	6131	07	3.0	13	SF		4	E		33		
HOLL		1626	1628	1655	N19	E49	6133	07	5.4	29	SF		3	E		23		F
HOLL		1708	1708	1717	N13	W78	6129	06	25.9	9	SF		3	E		20		F
HOLL		1708	1712	1717	S13	E06	6126	07	2.2	9	SF		3	E		14		F
HOLL		1709	1714	1720	S17	E46	6139	07	5.2	11	SF		3	E		18		F
HOLL		1758	1758	1806	S16	E03	6126	07	2.0	8	SF		3	E		12		
HOLL		1811	1817	1825	N19	E66	6138	07	6.8	14	SF		3	E		46		
HOLL		1812	1823	1902	S15	E03	6126			50	SN			E		42		K
HOLL		1812	1834	1902	S15	E03	6126	07	2.0	50	SF	C 2.7	3	E		76		F
HOLL		1856	1937	2042	S23	E18	6131	07	3.2	106	SF		3	E		30		
HOLL		1856	2022	2042	S23	E18	6131			106	SF			E		36		K
HOLL		1915	1915	1927	N15	W74	6129	06	26.3	12	SF		3	E		19		
GOES		1934	1939	1943						9		C 4.1						
HOLL		2001	2002	2005	S42	W42	6136	06	28.5	4	SF		3	E		12		F
HOLL		2014	2020U	2049	N19	E65	6138	07	6.8	35	SF		2	E		50		
HOLL		2031E	2041U	2054	S14	E04	6126	07	2.1	23D	1F	C 6.7	2	E		110		F
HOLL		2109	2109	2116	N14	W77	6129	06	26.2	7	SF		3	E		12		
HOLL		2109	2124U	2131D	S23	E18	6131	07	3.3	22D	SF		3	E		13		
HOLL		2116	2130U	2148	S19	W33	6122	06	29.5	32	SF		3	E		20		
HOLL		2126	2131U	2200D	S15	E01	6126	07	2.0	34D	SF		3	E		26		F
HOLL		2152	2154	2200D	S41	W43	6136	06	28.5	8D	SF		3	E		17		
PALE		2157E	2200	2217D	S13	E03	6126	07	2.1	20D	SF		3	E		16		
PALE		2259	2303	2351D	S16	E02	6126	07	2.1	52D	SF	C 4.7	3	E		66		
HOLL		2303E	2303U	2306D	S15	E01	6126	07	2.0	3D	1F	C 4.7	2	E		109		F
LEAR	02	0359	0401	0411	S15	E05	6126	07	2.5	12	SF		3	E		47		F
SVTO		0444	0454	0456	S21	E11	6131	07	3.0	12	SF		3	E		19		F
SVTO		0453	0454	0456	N11	W80	6129	06	26.3	3	SF	C 6.4	3	E		20		
LEAR		0533	0552	0634	S10	W03	6126	07	2.0	61	SF		3	E		28		F
LEAR		0559	0607	0633	S18	E40	6139	07	5.3	34	SF		3	E		15		
LEAR		0607	0607	0617	N15	E42	6133	07	5.4	10	SF		3	E		37		
SVTO		0617	0619	0632	N23	E61	6138	07	7.0	15	SF		3	E		20		
LEAR		0632	0638	0653	S40	W46	6136	06	28.6	21	SF	C 4.9	3	E		46		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	02	0634	0638	0649	S42	W46	6136	06	28.6	15	SF	C 4.9	3	E		31		F
LEAR		0811	0822	0900	S14	W03	6126	07	2.1	49	1F	C 3.8	2	E		175		F
SVTO		0816	0820	0905	S14	W03	6126	07	2.1	49	SF	C 3.8	3	E		44		F
SVTO		0844	0847	0851	N23	E59	6138	07	6.9	7	SF		3	E		42		
SVTO		0900	0903	0959	N15	E58		07	6.8	59	SF	C 5.5	3	E		93		F
LEAR		0901	0903	0910D	N17	E62	6138	07	7.1	9D	SF	C 5.5	2	E		37		
SVTO		1141	1143	1204	S42	W48	6136	06	28.6	23	SF	C 3.6	3	E		23		
SVTO		1150	1221	1254	N22	E57	6138	07	6.9	64	SF		3	E		32		
SVTO		1217	1223	1232	S09	W82	6124	06	26.4	15	SF	C 7.4	3	E		58		
SVTO		1301	1301	1308	S21	E07	6131	07	3.1	7	SF		3	E		14		
SVTO		1355	1356	1402	S42	W51	6136	06	28.5	7	SF		3	E		16		
SVTO		1527	1528	1534	N22	E56	6138	07	6.9	7	SF		3	E		23		
SVTO		1553	1555	1615	S13	W06	6126	07	2.2	22	SF	C 3.8	2	E		73		
RAMY		1558E	1558U	1621	S16	W09	6126	07	2.0	23D	SF		2	E		47		
PALE		1758E	1800U	1809D	N20	E36	6133	07	5.5	11D	SF		2	E		16		
HOLL		1758E	1801U	1812	N18	E34	6133	07	5.3	14D	SF		2	E		38		F
HOLL		1806E	1807	1822D	S32	E21	6132	07	4.4	16D	SF		2	E		47		
HOLL		1843E	1845	1846D	S19	W60	6120	06	28.3	3D	SF		3	E		29		
GOES		1934	1938	1941						7		C 9.0						
GOES		2102	2114	2122						20		C 5.1						
GOES	03	0107	0114	0122						15		C 4.4						
GOES		0241	0248	0253						12		C 3.3						
GOES		0419	0424	0427						8		C 4.4						
SVTO		0559	0603	0614	S10	W17	6126	07	2.0	15	SF	C 5.2	3	E		42		
SVTO		0925	0927	0934	N07	W11	6127	07	2.6	9	SF		3	E		16		
SVTO		0954	0955	1015	N18	E26	6133	07	5.4	21	SN	C 4.9	3	E		58		
RAMY		1231	1235	1301	S10	W22	6126	07	1.9	30	SF		2	E		32		
GOES		1313	1324	1350						37		C 4.7						
GOES		1411	1441	1509						58		C 5.4						
RAMY		1505	1505	1514	S11	W22	6126	07	2.0	9	SF		2	E		15		F
RAMY		1531	1533	1538D	S10	W23	6126	07	1.9	7D	SF		2	E		23		F
SVTO		1532	1532	1549	S11	W23	6126	07	1.9	17	SF		3	E		20		F
HOLL		2107E	2109U	2132D	S23	W01	6132	07	3.8	25D	SF		2	E		85		UF
SVTO	04	0414	0419	0433	S21	W14	6131	07	3.1	19	SF		3	E		40		F
SVTO		0727	0729	0733	S23	W14	6131	07	3.2	6	SF		3	E		24		F
SVTO		0736	0737	0807	N20	E15	6133	07	5.5	31	SF		3	E		33		F
SVTO		0924	0925	0940	S29	W01	6132	07	4.3	16	SF		3	E		36		
SVTO		1109	1112	1139	N22	E34	6138	07	7.1	30	1N		3	E		112		
RAMY		1110	1113	1138	N21	E34	6138	07	7.1	28	SN		2	E		80		FE
HOLL		1405	1410	1415	S24	W26	6131	07	2.6	10	SF		3	E		14		
HOLL		1625	1626	1635	N10	W44	6134	07	1.4	10	SF		3	E		16		
SVTO		1639E		1734D	N22	E27	6138	07	6.8	55D	1N	M 7.6	3	E		119		
RAMY		1639	1708U	1738	N22	E29	6138	07	6.9	59	1N		3	E		124		
PALE		1651E	1651U	1738	N23	E29	6138	07	6.9	47D	1B	M 7.6	3	E		210		
HOLL		1718	1720	1846	S23	W21	6131			88	1F			E		88		K
HOLL		1718	1742	1846	S23	W21	6131	07	3.1	88	2B	M 4.8	2	E		459		F
SVTO		1722E	1737U	1738D	N17	W09	6131	07	4.0	16D	SN		3	E		98		
PALE		1723	1740	1826	S21	W21	6131	07	3.1	63	2N		3	E		285		FR
RAMY		1731	1739	1821	S22	W22	6131	07	3.0	50	2B		3	E		331		F
RAMY		1821	1822	1847	S22	W21	6131	07	3.1	26	SF		3	E		50		
HOLL		1833	1838	1844	S23	W75	6122	06	29.1	11	SF		3	E		36		
PALE		1834	1835	1904	N17	E08	6133	07	5.4	30	SF		3	E		16		
HOLL		1834	1836	1927	N16	E06	6133	07	5.2	53	SF		3	E		36		F
RAMY		1835	1835	1907	N15	E07	6133	07	5.3	32	SF		3	E		20		F
PALE		1931	1950	1953	N19	E08	6133	07	5.4	22	SF		3	E		44		
HOLL		2101	2102	2105D	S17	E03	6139	07	5.1	4D	SF		3	E		27		
PALE		2102	2103	2107	S16	E01	6139	07	4.9	5	SF		3	E		15		
HOLL		2149	2203	2231D	N20	E06	6133	07	5.4	42D	SF		3	E		47		F
HOLL		2149	2229	2231D	N20	E06	6133			42D	SF			E		39		K
HOLL		2205	2206	2211	S14	W22	6137	07	3.2	6	SF		3	E		23		
GOES		2343	2350	2357						14		C 1.9						
GOES	05	0133	0139	0144						11		C 2.0						
SVTO		0346E	0348U	0448	N17	E03	6133	07	5.4	62D	2B	M 1.3	2	E		296		F
SVTO		0653	0710	0736	S14	W30	6137			43	SF			E		30		K
SVTO		0653	0722	0736	S14	W30	6137	07	3.0	43	SF		3	E		28		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	05	0739	0751	0809	S14	W30	6137	07	3.0	30	SF		3	E		35		F
SVTO		0739	0757	0809	S14	W30	6137			30	SF			E		27		K
SVTO		0811	0811	0817	S21	W66	6122	06	30.3	6	SF		3	E		16		
SVTO		0820	0834	0849	S21	W73	6122	06	29.8	29	SF		3	E		23		
SVTO		0913	0917	0945	S16	W42	6126	07	2.2	32	1N	C 6.7	3	E		177		F
SVTO		1007	1041	1052	S14	W31	6131	07	3.1	45	SF		3	E		44		
SVTO		1026	1029	1033	N19	W01	6133	07	5.3	7	SF		2	E		20		
RAMY		1241	1241	1250	S16	W04	6139	07	5.2	9	SF		3	E		11		F
RAMY		1316	1318	1330	N24	E19	6138	07	7.0	14	SF		3	E		21		F
SVTO		1341	1350	1427	S21	W33	6131	07	3.0	46	SF		3	E		95		F
RAMY		1354	1355	1411	S14	W49	6126	07	1.9	17	SF	C 3.2	3	E		17		F
HOLL		1424E	1428U	1433D	S21	W33	6131	07	3.1	9D	SF		2	E		26		
HOLL		1440	1442	1449	S14	W35	6137	07	3.0	9	SF		2	E		14		
SVTO		1448	1502	1553	N21	E16	6138			65	SF			E		53		K
SVTO		1448	1511	1553	N21	E16	6138	07	6.8	65	SF	C 2.5	3	E		77		
HOLL		1452	1512	1530D	N21	E17	6138	07	6.9	38D	SF	C 2.5	3	E		57		F
HOLL		1457	1459	1508	S14	W35	6137	07	3.0	11	SF		3	E		13		
RAMY		1506	1513	1534	N23	E19	6138	07	7.1	28	SF		3	E		44		F
HOLL		1510	1512	1519	S14	W33	6137	07	3.1	9	SF		3	E		15		F
RAMY		1705	1710	1714	N18	W04	6133	07	5.4	9	SF		3	E		11		
HOLL		1747	1751	1757D	N21	E16	6138	07	7.0	10D	SF		3	E		11		
HOLL		1758	1818	1846	S21	W39	6131	07	2.7	48	SF		3	E		68		
RAMY		1803	1816	1819	S20	W33	6131	07	3.2	16	SF		3	E		34		F
PALE		1813	1814	1826	S20	W37	6131	07	2.9	13	SF		3	E		17		
HOLL		2007E	2010	2059D	N21	E13	6138	07	6.8	52D	1N	C 2.8	3	E		146		F
GOES		2141	2146	2147						6		C 1.6						
SVTO	06	0423	0434	0455	S15	W42	6137	07	3.0	32	SF	C 2.9	3	E		22		
SVTO		0436	0556	0721	N17	W12	6133	07	5.3	165	1N	M 2.2	3	E		234		F
SVTO		0637	0643	0712	N22	E08	6138	07	6.9	35	SF		3	E		70		
GOES		0749	0754	0800						11		C 1.7						
GOES		1025	1030	1037						12		C 1.8						
RAMY		1239	1239	1243	S13	W48	6137	07	2.9	4	SF		3	E		13		
SVTO		1241	1243	1248	S22	W46	6131	07	3.0	7	SF		3	E		17		F
HOLL		1409	1410	1413	N12	W11	6133	07	5.8	4	SF		3	E		11		
HOLL		1418	1419	1428	S16	W45	6137	07	3.2	10	SF		3	E		21		
RAMY		1419	1419	1424	S13	W47	6137	07	3.0	5	SF		3	E		10		
HOLL		1429	1429	1436	N21	W02	6138	07	6.4	7	SF		3	E		17		
HOLL		1508	1513	1523	S22	W47	6131	07	3.0	15	SF		3	E		29		
RAMY		1625	1630	1634	S13	W49	6137	07	3.0	9	SF		3	E		16		
HOLL		1631	1645	1713	S16	W46	6137	07	3.2	42	SF		3	E		21		
HOLL		1659	1727	1744D	N17	W18	6133	07	5.3	45D	SF		3	E		18		
HOLL		1715	1729	1742	S16	W47	6137	07	3.1	27	SF		3	E		25		
HOLL		1826	1829	1837D	S15	W50	6137	07	3.0	11D	SN	C 3.3	3	E		84		FE
PALE		1827	1831	1839	S15	W50	6137	07	3.0	12	SF	C 3.3	3	E		28		F
PALE		1848	1848	1942D	S13	W66	6126	07	1.8	54D	SF		3	E		34		
HOLL		1918	1918	1926	N20	E05	6138	07	7.2	8	SF		3	E		26		
GOES		2058	2119	2129						31		C 1.9						
GOES		2224	2229	2233						9		C 2.9						
GOES		2339	2342	2345						6		C 2.2						
HOLL	07	0002	0004	0011	N09	W60	6127	07	2.5	9	SF		2	E		19		
HOLL		0106	0108	0117	N20	W05	6138	07	6.7	11	SF		2	E		13		F
HOLL		0117	0119	0125	S16	W57	6137	07	2.7	8	SF		2	E		27		
GOES		0620	0644	0714						54		C 2.4						
SVTO		0912	0915	0922	S13	W73	6126	07	1.9	10	SF		3	E		24		
SVTO		0959	1021	1111	N21	W08	6138	07	6.8	72	1F	C 4.6	3	E		155		F
SVTO		1057	1059	1105	S15	W59	6137	07	3.0	8	SF		3	E		23		
SVTO		1232	1233	1235	N09	W68	6127	07	2.4	3	SF		3	E		24		
SVTO		1333	1341	1417	N22	W09	6138	07	6.9	44	1N	C 5.5	3	E		119		F
HOLL		1335	1341	1433	N20	W09	6138	07	6.9	58	1N	C 5.5	3	E		112		FE
HOLL		1355	1404	1421	S14	W63	6137	07	2.8	26	SF		3	E		22		
SVTO		1434	1438	1456	N20	W31	6133	07	5.2	22	SF		3	E		26		
HOLL		1516	1520	1523	S14	W61	6137	07	3.0	7	SF		4	E		23		
HOLL		1709	1713	1721	S14	W63	6137	07	2.9	12	SN	C 2.1	4	E		71		
PALE		1712	1713	1719	S15	W64	6137	07	2.9	7	SF	C 2.1	3	E		50		
RAMY		1712	1713	1722D	S14	W60	6137	07	3.2	10D	SF		2	E		53		
SVTO		1713	1713	1717	S15	W65	6137	07	2.8	4	SF		3	E		39		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	07	2117	2127	2134						17		C 1.8						
GOES		2317	2326	2334						17		C 2.0						
HOLL	08	0003	0004	0008	S21	W62	6131	07	3.2	5	SF	C 3.0	2	E		19		
LEAR		0045	0047	0100	S23	W62	6131	07	3.2	15	1F	M 1.1	3	E		122		
SVTO		0619	0627	0744	N17	W38	6133	07	5.4	85	SF	C 2.7	3	E		36		UF
GOES		0917	0920	0922						5		C 2.3						
RAMY		1135	1136	1140	N20	W40	6133	07	5.4	5	SF		3	E		20		
HOLL		1242	1243	1254D	S21	W72	6131	07	3.0	12D	SF	C 3.2	2	E		36		
RAMY		1418	1419	1422	S14	W74	6137	07	3.0	4	SF		3	E		12		
HOLL		1447E	1447U	1459	S22	W76	6131	07	2.8	12D	SF		3	E		29		
HOLL		1511	1511	1513D	N19	W26	6138	07	6.6	2D	SF		3	E		22		
HOLL		1523	1524	1530	N19	W43	6133	07	5.3	7	SF		3	E		15		
HOLL		1655	1656	1700	S14	E47	6142	07	12.2	5	SF		3	E		19		
HOLL		1825	1826	1832	S14	W78	6137	07	2.9	7	SF		3	E		17		
HOLL		1825	1833	1836	N19	W45	6133	07	5.3	11	SF		3	E		25		
HOLL		1837	1838	1842	S14	W78	6137	07	2.9	5	SF		3	E		14		
GOES		1850	1902	1929						39		C 2.1						
GOES		2218	2334	2411						113		M 1.1						
GOES	09	0410	0437	0509						59		C 6.4						
LEAR		0623	0625	0646	N16	W51	6133	07	5.4	23	SF	C 2.6	3	E		33		
SVTO		0751	0810	0840	N16	W52	6133	07	5.4	49	SF		3	E		47		
LEAR		0753E	0811U	0847D	N17	W52	6133	07	5.4	54D	1F		3	E		195		
GOES		0939	0942	0948						9		C 1.6						
SVTO		1001	1008	1044	N14	W53	6133	07	5.4	43	SF	C 4.1	3	E		74		F
GOES		1241	1245	1249						8		C 7.3						
RAMY		1312	1315	1320	N18	W56	6133	07	5.3	8	SF		3	E		31		F
RAMY		1418	1418	1425	N20	W56	6133	07	5.3	7	SF		3	E		31		
HOLL		1611	1621	1647	N08	E08		07	10.3	36	SN	C 4.7	3	E		73		FE
SVTO		1612	1623	1650	N09	E08		07	10.3	38	SF	C 4.7	3	E		58		
RAMY		1614	1619	1647	N09	E08		07	10.3	33	SN	C 4.7	3	E		58		E
RAMY		1614	1625	1647	N09	E08				33	SN	C 4.7		E		35		K
GOES		1818	1824	1834						16		C 3.5						
RAMY		1852	1859	1918	N18	W58	6133	07	5.4	26	SF		3	E		28		F
RAMY		2051	2057	2107	S31	W67	6132	07	4.6	16	SF		3	E		14		F
PALE		2209	2210	2238	N16	W61	6133	07	5.3	29	SF	C 6.1	3	E		47		F
GOES	10	0036	0044	0057						21		C 3.3						
PALE		0131E	0144U	0146D	N17	W63	6133	07	5.3	15D	SF		3	E		41		F
GOES		0430	0435	0439						9		C 1.8						
GOES		0642	0648	0653						11		C 5.2						
SVTO		0845	0846	0849	N16	W72	6133	07	4.9	4	SF		3	E		26		
GOES		0923	0929	0937						14		C 3.3						
RAMY		1039	1109	1148	N19	W48	6138	07	6.8	69	SF		3	E		75		F
RAMY		1201	1206	1211	N20	W47	6138	07	6.9	10	SF		3	E		84		F
HOLL		1220E	1228U	1313	N20	W55	6138	07	6.3	53D	SF		2	E		85		
RAMY		1223	1223	1247	N19	W50	6138	07	6.7	24	SF		3	E		63		F
HOLL		1227E	1228	1241	N16	W71	6133	07	5.1	14D	SF	C 8.3	2	E		57		H
RAMY		1228	1228	1233	N16	W69	6133	07	5.3	5	SF	C 8.3	3	E		57		
SVTO		1356	1400	1438	N09	W04	6148	07	10.3	42	SF		3	E		58		
HOLL		1356	1402	1434	N09	W04	6148	07	10.3	38	SF		3	E		63		F
SVTO		1407	1422	1434	N12	W72	6133	07	5.2	27	SF	C 3.5	3	E		18		F
HOLL		1421	1422	1440	N16	W69	6133	07	5.4	19	SF	C 3.5	3	E		44		
SVTO		1446	1456	1528	N15	W72	6133	07	5.2	42	SF	C 2.5	3	E		61		
HOLL		1451	1456	1513	N16	W72	6133	07	5.1	22	SF	C 2.5	3	E		76		
RAMY		1519	1519	1522	N16	W77	6133	07	4.8	3	SF		3	E		39		
HOLL		1519	1519	1524	N16	W77	6133	07	4.8	5	SF		3	E		34		
HOLL		1539	1541	1548	N07	E14		07	11.7	9	SF		3	E		31		
RAMY		1543	1546	1601	N07	E13		07	11.6	18	SF		3	E		19		F
HOLL		1609	1609	1624	N07	E13		07	11.6	15	SF		3	E		33		
HOLL		1730	1737	1748	N16	W71	6133	07	5.3	18	SF	C 1.6	3	E		47		
RAMY		1731	1733	1743	N17	W74	6133	07	5.1	12	SF	C 1.6	3	E		18		
HOLL		1737	1759	1831	N07	E13		07	11.7	54	SF		3	E		36		
HOLL		1846	1857	1927	N07	E13				41	SN			E		61		K
HOLL		1846	1906	1927	N07	E13		07	11.7	41	SN	C 1.7	3	E		78		FE
PALE		1905	1907U	2238D	N07	E12		07	11.7	213D	SF		3	E		29		T
LEAR	11	0020	0021U	0027	N18	W80	6133	07	4.9	7	SF		3	E		30		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	11	0021	0025	0036	N07	E09	6150	07	11.7	15	1F		3	E		151		
LEAR		0110	0113	0147	N19	W60	6138	07	6.5	37	SF		3	E		39		
PALE		0119	0133	0137	N18	W62	6133	07	6.3	18	SF		3	E		16		F
LEAR		0216	0217	0229	N07	E08	6150	07	11.7	13	SF	C 3.0	3	E		21		
SVTO		0416E	0418U	0430D	N07	E06	6150	07	11.6	14D	SF	C 1.4	2	E		15		F
GOES		0432	0441	0448						16		C 2.1						
LEAR		0609	0609	0617	N07	E06	6150	07	11.7	8	SF		3	E		13		
LEAR		0610	0626	0629	N15	W81	6133	07	5.1	19	SF		3	E		28		
SVTO		0619	0632	0947	N07	E04				208	SF	C 2.9		E		43		K
SVTO		0619	0638	0641	N17	W82	6133	07	5.0	22	SF		3	E		26		
SVTO		0619	0823	0947	N07	E04	6150	07	11.6	208	SF		3	E		53		F
LEAR		0623	0628	0645	N19	W64	6138	07	6.4	22	SF		3	E		52		
LEAR		0630	0630	0640	N07	E06	6150	07	11.7	10	SF		3	E		40		
LEAR		0645	0648	0658	N19	W61	6138	07	6.6	13	SF		3	E		40		
LEAR		0731	0734	0747	N07	E05	6150	07	11.7	16	SF		3	E		16		
LEAR		0906	0913	0926D	N19	W66	6138	07	6.3	20D	1F	C 6.2	3	E		115		
SVTO		0907	0913	0932	N18	W68	6138	07	6.2	25	SF	C 6.2	3	E		78		
SVTO		1314	1321	1422	N14	E30	6145	07	13.8	68	SF		3	E		96		F
RAMY		1316	1342	1427	N17	E33	6145	07	14.1	71	SF		4	E		99		F
HOLL		1613	1615	1631	N06	E00	6150	07	11.7	18	SF		3	E		39		
RAMY		1615	1616	1656	N06	W01	6150	07	11.6	41	SF		3	E		41		
HOLL		1622	1625	1631	N19	W72	6138	07	6.2	9	SF		3	E		26		
SVTO		1634	1651	1659	N17	W73	6138	07	6.1	25	SF		2	E		73		
HOLL		1644	1651	1706	N19	W72	6138	07	6.2	22	1N		3	E		174		
RAMY		1650	1650	1701	N19	W74	6138	07	6.0	11	1F		3	E		153		
PALE		1714	1716	1732	N06	W01	6150	07	11.6	18	SF		3	E		16		
RAMY		1714	1718	1726	N06	W02	6150	07	11.6	12	SF		3	E		32		
RAMY		1730	1730	1738	N06	W02	6150	07	11.6	8	SF		3	E		13		
GOES	12	0012	0017	0019						7		C 1.3						
SVTO		1109	1111	1129	S11	W10	6151	07	11.7	20	SF		3	E		20		
SVTO		1341	1348	1407	S10	W11	6151	07	11.7	26	1N	M 1.2	3	E		116		
RAMY		1342	1345	1353	S11	W11	6151	07	11.7	11	SF	M 1.2	2	E		42		H
RAMY		1549	1553	1602	S11	W12	6151	07	11.7	13	SF	C 2.9	3	E		27		F
SVTO		1550	1550	1610	S10	W14	6151	07	11.6	20	SF	C 2.9	3	E		10		
HOLL		2050E	2052U	2104	S09	W15	6151	07	11.7	14D	SF	C 1.2	2	E		15		
HOLL		2050E	2052U	2107	N09	W34	6148	07	10.3	17D	SF		2	E		16		H
RAMY		2053E	2053U	2058D	N08	W34	6148	07	10.3	5D	SF		2	E		20		
RAMY		2053E	2054U	2058D	S11	W15	6151	07	11.7	5D	SF		2	E		18		
HOLL		2247E	2249	2255	N05	W18	6150	07	11.6	8D	SF		3	E		22		F
HOLL	13	0022	0022	0034	N05	W18	6150	07	11.7	12	SF		3	E		14		
GOES		0735	0740	0759						24		C 7.2						
GOES		0959	1130	1242						163		M 3.1						
HOLL		1458	1458	1505	N15	W32	6153	07	11.2	7	SF		3	E		11		
HOLL		1506	1508	1515	S11	W28	6151	07	11.5	9	SF		3	E		14		
HOLL		1746	1752	1811	N18	W28	6153	07	11.6	25	SF		4	E		12		F
RAMY		1854	1901	1906	N14	W36	6153	07	11.1	12	SF		3	E		12		
HOLL		2132	2134	2143	N15	W38	6153	07	11.0	11	SF		3	E		10		
HOLL		2200	2201	2207	N15	W34	6153	07	11.3	7	SF		3	E		12		
HOLL		2231	2235	2324	N15	W39	6153	07	11.0	53	SF		3	E		16		
HOLL		2309	2310	2319	S09	E28	6149	07	16.1	10	SF		3	E		59		FH
HOLL		2340	2341U	2354D	N06	W33	6150	07	11.5	14D	SF		2	E		19		
PALE		2342	2342	2346	N05	W33	6150	07	11.5	4	SF		3	E		16		
GOES		2356	2358	2402						6		C 1.7						
GOES	14	0006	0011	0019						13		C 1.7						
PALE		0007	0010U	0028D	N11	E81	6155	07	20.1	21D	SF		3	E		37		
HOLL		0008E	0008U	0014D	N10	E82	6155	07	20.2	6D	SF		2	E		91		F
GOES		0247	0254	0259						12		C 1.8						
SVTO		1218	1219	1230	N13	W44	6153	07	11.2	12	SF	C 1.4	3	E		29		
RAMY		1218	1221	1234	N15	W45	6153	07	11.1	16	SF	C 1.4	3	E		33		
RAMY		1527	1533	1540	N16	W46	6153	07	11.1	13	SF		3	E		18		
LEAR	15	0022	0023	0036	N15	W54	6153	07	10.9	14	SF		3	E		42		
LEAR		0113	0118	0132	N15	W55	6153	07	10.9	19	SF	B 9.1	3	E		34		
LEAR		0231	0248	0255	N15	W55	6153	07	10.9	24	SF		3	E		32		
LEAR		0656E	0703U	0714D	N14	W59	6153	07	10.8	18D	SF		2	E		40		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	15	0707	0707	0712	N15	W55	6153	07	11.1	5	SF		3	E		15		F
LEAR		0832	0834	0843	N14	W59	6153	07	10.9	11	SF		3	E		54		
SVTO		0833	0834	0841	N13	W57	6153	07	11.0	8	SF		3	E		25		F
SVTO		0918	0923	0928	N12	W58	6153	07	11.0	10	SF		3	E		26		F
SVTO		1140	1152	1228	S11	W47	6151	07	11.9	48	SF		3	E		29		
HOLL		1637	1638	1703	N14	W63	6153	07	10.9	26	SF		4	E		17		
HOLL		1930E	1933U	2057D	N38	W08		07	15.2	87D	1F	C 1.8	2	E		158		UF
GOES		2129	2133	2135						6		C 1.3						
GOES	16	0100	0104	0106						6		C 1.0						
PALE		0322E	0329U	0329D	S12	W58	6151	07	11.8	7D	SF	C 2.1	3	E		28		
LEAR		0507E	0509U	0531D	N04	E01	6151	07	16.3	24D	SN		2	E		72		
SVTO		0509	0510	0517	S10	W62	6151	07	11.5	8	SF	B 6.5	2	E		74		
LEAR		0555E	0559	0606	S11	W60	6151	07	11.7	11D	SF		3	E		37		
SVTO		0623	0637	0652	S12	W59	6151	07	11.8	29	SF	C 1.0	3	E		31		
LEAR		0636	0637	0651	S10	W60	6151	07	11.8	15	SF	C 1.0	3	E		22		
GOES		1110	1115	1120						10		B 8.0						
SVTO		1153	1154	1159	S12	W64	6151	07	11.7	6	SF	C 1.3	3	E		19		
HOLL		1328	1334	1341	S10	W66	6151	07	11.6	13	SF		3	E		60		
GOES		2051	2054	2057						6		C 1.1						
GOES	17	0141	0145	0147						6		B 9.7						
LEAR		0207	0224	0242	S30	E87	6161	07	23.9	35	SF		3	E		48		
GOES		1311	1320	1339						28		C 1.2						
SVTO		1341	1342	1347	S28	E77	6161	07	23.6	6	SF		3	E		12		
SVTO		1407	1409	1417	S28	E76	6161	07	23.5	10	SF		3	E		18		
GOES		1643	1647	1649						6		C 1.4						
HOLL		1710	1712	1723	S29	E74	6161	07	23.5	13	SF	C 1.7	4	E		22		
GOES		1908	1912	1926						18		C 1.4						
RAMY		2211	2216	2222	S27	E69	6161	07	23.3	11	SF	C 1.7	3	E		16		
PALE	18	0205E	0205U	0208	S26	E68	6161	07	23.4	3D	SF		3	E		13		
PALE		0211	0214	0221	S27	E68	6161	07	23.4	10	SF		3	E		22		
GOES		0301	0315	0356						55		C 5.0						
SVTO		0626	0630	0635	S27	E63	6161	07	23.2	9	SF	M 1.0	3	E		28		
GOES		0851	0855	0905						14		C 2.1						
GOES		0948	0952	0956						8		C 1.3						
GOES		1103	1122	1133						30		C 3.9						
SVTO		1246	1246	1249	S26	E58	6161	07	23.0	3	SF		3	E		16		
GOES		1259	1306	1314						15		C 4.4						
HOLL		1701	1702	1705	N05	E86	6162	07	25.1	4	SF		3	E		26		
HOLL		1734	1737	1747	S29	E60	6161	07	23.4	13	1B	C 6.1	3	E		178		EH
PALE		2050	2050	2114	S27	E57	6161	07	23.3	24	SF		3	E		26		
PALE		2215	2216	2423	S26	E53	6161			128	SF			E		27		KT
PALE		2215	2345	2423	S26	E53	6161	07	23.0	128	SF	C 1.4	3	E		48		T
LEAR	19	0802	0807	0810	S29	E47	6161	07	23.0	8	SF		3	E		13		
LEAR		0914	0915	0918	S29	E45	6161	07	22.9	4	SF		3	E		19		
GOES		1007	1012	1015						8		C 1.6						
HOLL		1346	1349	1424	N19	W47	6154	07	16.0	38	SF		3	E		44		
HOLL		1346	1401	1424	N19	W47	6154			38	SF			E		56		K
RAMY		1357	1357	1405	N19	W47	6154	07	16.0	8	SF		3	E		28		F
HOLL		2301	2304	2314	N10	E72	6162	07	25.4	13	SF		3	E		16		
LEAR	20	0514	0516	0551	N22	E38		07	23.1	37	SF		3	E		22		F
LEAR		0726	0732	0748	N09	E65	6162	07	25.2	22	SF	C 1.3	3	E		33		F
LEAR		0820	0822	0833	S26	E36	6161	07	23.1	13	SF		3	E		28		F
SVTO		1407	1412	1432	N11	E63	6162	07	25.3	25	1F		3	E		102		F
RAMY		1409	1410	1424	N09	E62	6162	07	25.2	15	SF		3	E		46		FH
HOLL		1411E	1413U	1454	N09	E62	6162	07	25.2	43D	SF		2	E		79		F
HOLL		1411E	1415U	1420	N16	W61	6154	07	16.0	9D	SF		2	E		29		
HOLL		1501	1507	1511	N08	E57	6162	07	24.9	10	SF		3	E		13		
HOLL		1619	1619	1624	N09	E57	6162	07	24.9	5	SF		3	E		11		
HOLL		1623	1623	1627	S23	W56	6156	07	16.4	4	SF		3	E		11		
RAMY		1943	1944	1947	S29	E33	6161	07	23.4	4	SF		3	E		19		
GOES	21	0325E	0328	0331D						6D		B 8.2						
GOES		0353E	0400U	0400D						7D		C 3.3						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	21	0434E	0435U	0443	N11	E45	6162	07	24.6	9D	SF		1	E		49		H
SVTO		0848	0902	0910	N11	E53	6162	07	25.3	22	SF		3	E		39		F
SVTO		0942	0945	0951	N11	E49	6162	07	25.1	9	SF		3	E		19		
SVTO		1205	1206	1216	N11	E50	6162	07	25.3	11	SF		3	E		28		
HOLL		2001	2015	2021	S28	E16	6161	07	23.1	20	SF	C 1.7	4	E		27		F
RAMY		2010	2020	2028	S28	E17	6161	07	23.2	18	SF		3	E		24		F
LEAR	22	0019	0019	0026	S27	E13	6161	07	23.0	7	SF		3	E		10		F
SVTO		0618	0620	0639	N14	E43	6162	07	25.5	21	SF	B 9.4	3	E		17		
RAMY		1424	1428	1434	N13	E38	6162	07	25.5	10	SF		3	E		27		
RAMY		1601	1611	1619	N13	E37	6162	07	25.4	18	SF		3	E		29		
SVTO		1601	1613	1623	N14	E37	6162	07	25.5	22	SF		3	E		22		
HOLL		1602	1610	1616	N12	E38	6162	07	25.5	14	SF		2	E		35		
RAMY		1723	1727	1731	N10	E83		07	29.0	8	SF		3	E		39		
PALE		1725	1727	1733	N11	E88		07	29.3	8	SF		3	E		34		
HOLL		1809	1811	1835	N11	E80		07	28.8	26	SF	C 1.5	3	E		20		
RAMY		1811	1813	1830	N10	E79		07	28.7	19	SF	C 1.5	3	E		29		
HOLL		2049	2052	2136	N12	E32	6162	07	25.3	47	SF	C 2.9	3	E		77		F
PALE		2050	2052	2129D	N14	E33	6162	07	25.4	39D	SF	C 2.9	3	E		41		F
HOLL		2126	2129	2145	N10	E87	6171	07	29.4	19	1F	C 2.9	3	E		115		
PALE		2128	2130U	2146D	N11	E88	6171	07	29.5	18D	SF	C 2.9	3	E		55		
HOLL		2157	2158	2217	N11	E80	6171	07	28.9	20	SF	C 4.7	3	E		54		
GOES	23	0003E	0004	0007D						4D		C 7.1						
PALE		0433	0434	0447D	N11	E75	6171	07	28.8	14D	SF	C 2.5	3	E		24		
GOES		0832	0838	0901						29		C 1.4						
SVTO		1233	1236	1258	N14	E70	6171	07	28.8	25	SF		3	E		70		
RAMY		1237	1237	1241	N11	E69	6171	07	28.7	4	SF		3	E		25		
HOLL		1409	1411	1416	N10	E23	6162	07	25.3	7	SF		2	E		19		
HOLL		1542E	1548	1624	N11	E19	6162	07	25.1	42D	SF		3	E		35		F
HOLL		1545	1554	1616	N29	E29	6167	07	25.9	31	SF		3	E		25		F
HOLL		1631E	1631U	1636	S18	E80	6172	07	29.8	5D	SF	C 1.2	2	E		28		
PALE		1819	1819	1824	N10	E22	6162	07	25.4	5	SF		3	E		14		
HOLL		1919	1921	1930	N09	E21	6162	07	25.4	11	SF		3	E		31		FH
HOLL		1919	1922	1949	N08	E67	6171	07	28.8	30	SF		3	E		64		
PALE		1920	1921	1940	N11	E22	6162	07	25.5	20	SF	C 3.3	3	E		69		F
PALE		1920	1923	1946	N12	E68	6171	07	28.9	26	SF		3	E		49		
RAMY		1921	1926	1950	N13	E69	6171	07	29.0	29	SF		3	E		48		
RAMY		1925E	1925U	1940	N12	E20	6162	07	25.3	15D	SF		3	E		23		
HOLL		2009	2009	2019	N08	E74	6171	07	29.4	10	SF		3	E		11		
HOLL		2144	2148	2150	N09	E09	6162	07	24.6	6	SF		3	E		22		F
HOLL		2153	2153	2159	N11	E17	6162	07	25.2	6	SF		3	E		17		F
RAMY		2154	2155	2155D	N11	E75	6171	07	29.5	1D	SN		2	E		80		E
HOLL		2154	2157	2219	N10	E72	6171	07	29.3	25	1B	C 6.3	3	E		227		F
PALE		2205E	2205U	2218	N13	E73	6171	07	29.4	13D	SF		3	E		64		
PALE		2222	2226	2231	N12	E11	6162	07	24.8	9	SF		3	E		24		
HOLL		2225	2226	2233	N12	E14	6162	07	25.0	8	SF		3	E		29		F
HOLL		2346	2350	2416	N08	E07	6162	07	24.5	30	SF		3	E		35		
SVTO	24	0558	0600	0611	N13	E60	6171	07	28.8	13	SF		3	E		12		
LEAR		0618	0620	0639	N11	E69	6171			21	SF	C 2.7		E		75		K
LEAR		0618	0629	0639	N11	E69	6171	07	29.4	21	SF		2	E		41		
SVTO		0715	0722	0725	N11	E62	6171	07	29.0	10	SF	C 1.7	3	E		43		
LEAR		0716	0718	0727	N11	E61	6171	07	28.9	11	SF	C 1.7	2	E		30		
SVTO		0929	0931	0944	N12	E03	6162	07	24.6	15	SF	C 2.2	3	E		62		FH
LEAR		0930	0931	0939	N12	W01	6162	07	24.3	9	SF	C 2.2	3	E		69		F
SVTO		1154	1155	1200	N11	E05	6162	07	24.9	6	SF	C 1.3	3	E		17		F
HOLL		1234E	1234U	1353	N11	E08	6162	07	25.1	79D	SF		1	E		80		FH
SVTO		1258	1301	1306	N13	E12	6162	07	25.4	8	SF	C 2.1	3	E		33		FH
GOES		1318	1322	1326						8		C 1.3						
HOLL		1452	1501	1536	N11	E58	6171	07	29.0	44	SF		3	E		36		
HOLL		1531	1532	1537	N24	W20	6163	07	23.1	6	SF		3	E		33		
GOES		1623	1627	1629						6		C 1.4						
HOLL		1723	1725	1743	S21	E66	6172	07	29.8	20	SF	C 2.6	3	E		50		
PALE		1724	1724	1734	S21	E70	6172	07	30.1	10	SF	C 2.6	3	E		22		
PALE		2056E	2056U	2115D	N32	E16	6167	07	26.1	19D	SF		3	E		43		F
HOLL		2102E	2106	2110	N31	E17	6167	07	26.2	8D	SF		3	E		22		F
LEAR	25	0014	0015	0018	N11	E58	6171	07	29.4	4	SF		3	E		22		

Hα S O L A R F L A R E S

JULY 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
LEAR	25	0256	0258	0307	S20	E13	6175	07	26.1	11	SF		3	E		32		
SVTO		0818E	0821U	0836	N13	E52	6171	07	29.3	18D	SF		3	E		32		F
SVTO		1316	1326	1347	N13	E48	6171	07	29.2	31	1F	C 3.8	3	E		116		F
RAMY		1319	1321	1347	N11	E48	6171	07	29.2	28	SF	C 3.8	3	E		90		F
HOLL		1323E	1325U	1328D	N11	E46	6171	07	29.0	5D	SF		2	E		95		F
HOLL		1408	1415U	1510	S16	E62	6174	07	30.3	62	SF		3	E		29		
RAMY		1413	1414	1427	S16	E62	6174	07	30.3	14	SF		3	E		39		F
SVTO		1413	1420	1433	S14	E63	6174	07	30.3	20	SF		3	E		24		
HOLL		1429E	1435	1444	N11	W06	6162	07	25.1	15D	SF		3	E		12		F
HOLL		1501	1510	1609	N11	W06	6162			68	SF			E		33		K
HOLL		1501	1524	1609	N11	W06	6162	07	25.2	68	SF		3	E		59		F
SVTO		1502	1525	1547	N11	W07	6162	07	25.1	45	SF		3	E		49		F
RAMY		1515	1528	1557	N12	W07	6162	07	25.1	42	SF		3	E		34		F
HOLL		1620	1633	1639	S18	W52	6176	07	21.7	19	SF		3	E		13		
HOLL		1705	1708	1726	N20	W44	6173	07	22.3	21	SF		3	E		49		
PALE		1759	1810	1837	N11	W06	6162	07	25.3	38	SF		3	E		30		
HOLL		1808	1810	1820	N11	W07	6162	07	25.2	12	SF		3	E		25		F
HOLL		1819	1825	1831	S19	W53	6176	07	21.7	12	SF		3	E		21		F
PALE		1823	1826	1830	S21	W52	6176	07	21.8	7	SF		3	E		13		F
HOLL		1842	1843	1846	S15	E33	6168	07	28.3	4	SF		3	E		19		F
HOLL		1843	1844	1854	N10	W02	6162	07	25.6	11	SF		3	E		17		F
HOLL		1936	1940	1947	S18	W53	6176	07	21.8	11	SF		3	E		10		F
HOLL		1940	1947	1953	N10	W11	6162	07	25.0	13	SF		3	E		16		F
HOLL		2044	2046	2102	S18	W54	6176	07	21.7	18	SF		3	E		14		F
HOLL		2045	2046	2053	N12	W07	6162	07	25.3	8	SF		3	E		24		
PALE		2045	2046	2054	N11	W13	6162	07	24.9	9	SF		3	E		26		F
PALE		2056	2142	2213	N10	W05	6162	07	25.5	77	SF		3	E		63		F
HOLL		2123	2133	2139	N10	E45	6171	07	29.3	16	SF		3	E		28		F
PALE		2126	2134	2143	N11	E46	6171	07	29.3	17	SF		3	E		44		F
PALE		2200	2206	2402D	N11	E44	6171			122D	1F			E		99		KT
HOLL		2200	2301	2407	N10	E43	6171	07	29.1	127	1N		3	E		149		FET
PALE		2200	2303	2402D	N11	E44	6171	07	29.2	122D	1F		3	E		152		FET
PALE		2221	2232	2535	S14	E58	6174			194	SF			E		55		KU
PALE		2221	2323U	2535	S14	E58	6174	07	30.3	194	2N	M 2.3	3	E		460		UF
HOLL		2223	2302	2529	S15	E55	6174			186	SN			E		78		KT
HOLL		2223	2324	2529	S15	E55	6174	07	30.1	186	2N	M 2.3	3	E		457		FET
LEAR		2322E	2334U	2545	S12	E51	6174	07	29.8	143D	2N		1	E		590		UF
HOLL	26	0121	0124	0130	S18	W57	6176	07	21.7	9	SF		3	E		14		F
LEAR		0150	0245	0322	N11	W11	6162	07	25.2	92	SF		3	E		62		F
PALE		0224	0235	0258	N11	W10	6162	07	25.3	34	SF		3	E		36		
LEAR		0230	0239	0249	N07	E43	6171	07	29.3	19	SF		3	E		19		
SVTO		0655	0657	0718	S19	E56	6177	07	30.6	23	SF	C 2.0	3	E		71		F
LEAR		0656	0657	0711	S21	E56	6177	07	30.6	15	SF	C 2.0	3	E		31		F
LEAR		0730	0734	0743	N13	W13	6162	07	25.3	13	SF	C 2.8	3	E		58		HE
SVTO		0732	0734U	0740	N12	W13	6162	07	25.3	8	SF	C 2.8	2	E		23		F
SVTO		1105	1106	1110	S19	W64	6176	07	21.6	5	SF		3	E		15		
RAMY		1154	1157	1204	S17	E20	6168	07	28.0	10	SF		3	E		20		F
SVTO		1157	1158	1202	S15	E21	6168	07	28.1	5	SF		3	E		14		F
RAMY		1315	1318	1329	N12	W20	6162	07	25.0	14	SF		3	E		27		F
HOLL		1331	1334	1340	S18	W63	6176	07	21.8	9	SF		3	E		24		F
RAMY		1334	1334	1339	S17	W67	6176	07	21.5	5	SF		3	E		28		
HOLL		1336	1337	1408	S22	E50	6177	07	30.4	32	SF		3	E		35		F
HOLL		1336	1353	1408	S22	E50	6177			32	SF			E		37		K
RAMY		1337	1337	1349	S22	E49	6177	07	30.3	12	SF		3	E		28		
SVTO		1337	1337	1406D	S20	E51	6177	07	30.5	29D	SF		3	E		38		
RAMY		1353	1356	1423D	S21	E50	6177	07	30.4	30D	SF		3	E		16		F
RAMY		1357	1358U	1425D	N12	W18	6162	07	25.2	28D	SF		3	E		22		F
HOLL		1357	1403	1408	N12	W18	6162	07	25.2	11	SF		3	E		15		F
RAMY		1604	1607	1619	S24	E41	6172	07	29.8	15	SF		3	E		20		
RAMY		1659	1703	1719D	N13	W17	6162	07	25.4	20D	1B	M 3.3	3	E		190		H
PALE		1659E	1703U	1719	N11	W22	6162	07	25.0	20D	1B		3	E		110		H
HOLL		1659	1704	1717	N13	W17	6162	07	25.4	18	1B	M 3.3	3	E		117		FH
HOLL		1837	1848	1917	S18	W66	6176	07	21.7	40	SF		3	E		38		
HOLL		2058	2100	2115	S21	W54	6161	07	22.7	17	SF		3	E		13		
HOLL		2113	2118	2135	N13	W19	6162			22	SF			E		29		K
HOLL		2113	2124	2135	N13	W19	6162	07	25.4	22	SN		3	E		79		E
PALE		2122E	2125	2138D	N13	W19	6162	07	25.4	16D	SF		3	E		28		

Hα SOLAR FLARES

JULY 1990

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	26	2146E	2147U	2153	S20	E48	6177	07	30.6	7D	SF		3	E		18		
HOLL		2329	2335	2353	N13	W20	6162	07	25.5	24	SF	C 2.0	3	E		20		
HOLL		2332E	2336	2355D	S22	E45	6177	07	30.4	23D	SF		2	E		67		
LEAR	27	0001	0005	0015	N14	W21	6162	07	25.4	14	1N	C 6.7	3	E		139		F
PALE		0006E	0006U	0035D	N12	W20	6162	07	25.5	29D	SN	C 6.7	3	E		58		H
LEAR		0447	0447	0456	S26	E36	6172	07	30.0	9	SF		3	E		15		
SVTO		0459	0459	0506	S19	E44	6177	07	30.6	7	SF		3	E		15		
SVTO		0747	0751	0759	S18	E43	6177	07	30.6	12	SF		3	E		26		
LEAR		0751	0755	0758	S20	E41	6177	07	30.5	7	SF		3	E		28		
LEAR		0757	0800	0807	N11	E26	6171	07	29.3	10	SF		3	E		12		
SVTO		0758	0802	0809	N12	E25	6171	07	29.2	11	SF		3	E		15		
LEAR		0844	0845	0900	N12	W29	6162	07	25.2	16	SF		3	E		25		
SVTO		0941	0942	0947	N11	W27	6162	07	25.4	6	SF		3	E		33		
SVTO		1021	1021	1030	N09	W35	6162	07	24.8	9	SF		3	E		20		
SVTO		1031	1031	1034	S20	W85	6176	07	20.9	3	SF		3	E		24		
SVTO		1106	1116	1149	N11	E24	6171	07	29.3	43	SF		3	E		74		F
HOLL		1450	1452	1459	N13	W29	6162	07	25.4	9	SF		3	E		41		FE
RAMY		1450	1453	1458	N13	W30	6162	07	25.3	8	SF		3	E		17		
SVTO		1450	1453	1458	N12	W31	6162	07	25.3	8	SF		3	E		24		
HOLL		1519	1519	1523	S19	W80	6176	07	21.5	4	SF	C 1.4	3	E		14		
HOLL		2046	2046	2057	N14	W38	6162	07	25.0	11	SF		3	E		15		
HOLL		2048	2054	2058	N16	W71	6173	07	22.5	10	SF		3	E		16		H
HOLL		2234	2235	2238D	S16	E01	6168	07	28.0	4D	SF		3	E		25		F
LEAR		2328	2328	2339	N10	E17	6171	07	29.2	11	SF		3	E		44		F
LEAR	28	0037	0037	0041	S24	E21	6172	07	29.6	4	SF		3	E		11		
LEAR		0238	0245	0258	N10	W45	6162	07	24.7	20	SF	C 2.4	3	E		58		F
LEAR		0239	0239	0242	S23	E20	6172	07	29.6	3	SF		3	E		21		
LEAR		0312	0314	0318	N14	W36	6162	07	25.4	6	SF		3	E		57		
LEAR		0458	0459	0503	N18	W76	6173	07	22.4	5	SF		3	E		27		
LEAR		0706	0707	0715	N18	W77	6173	07	22.4	9	SF		3	E		15		
SVTO		0746	0747	0751	N20	E69	6180	08	2.6	5	SF		3	E		37		
LEAR		0803	0804	0813	S16	W05	6168	07	27.9	10	SF		3	E		23		F
SVTO		0953	0956	1034D	N11	E10	6171	07	29.2	41D	SF	C 1.5	3	E		77		F
HOLL		1413	1415	1421	N10	W50	6162	07	24.8	8	SF		3	E		17		
HOLL		1451	1453	1503	N10	E10	6171	07	29.4	12	SF		3	E		13		
HOLL		1757	1800	1808	S16	W10	6168	07	28.0	11	SF		3	E		23		
LEAR	29	0137	0144	0150	N26	W42	6167	07	25.8	13	SF		3	E		45		F
HOLL		1831E	1831U	1901D	N11	W07	6171	07	29.2	30D	SF		2	E		32		FH
HOLL		2220E	2224U	2252	N15	E45	6180	08	2.3	32D	2F	C 3.1	2	E		349		U
GOES	30	0004	0051	0133						89		C 1.9						
LEAR		0327	0329	0336	N14	W73	6162	07	24.6	9	SF	C 2.3	3	E		11		
SVTO		0633	0638	0654	N18	E42	6180	08	2.5	21	SF		3	E		32		UF
SVTO		0706	0732	0847	N20	E45	6180	08	2.7	101	2B	M 4.4	4	E		568		ZU
GOES		1131	1135	1139						8		C 2.6						
GOES		1223	1233	1247						24		C 2.7						
SVTO		1510	1510	1515	S28	W33		07	28.0	5	SF		3	E		13		
HOLL		1511	1511	1520	S25	W31		07	28.2	9	SF		3	E		18		
HOLL		1536	1539	1545	S24	W11	6172	07	29.8	9	SF		3	E		17		
HOLL		1615	1616	1626	S20	W03	6177	07	30.4	11	SF		3	E		21		
GOES		2153	2210	2212						19		C 1.4						
HOLL	31	0002	0007	0011D	S23	W21	6172	07	29.4	9D	SF		3	E		15		
SVTO		0539	0539	0547	S16	W16	6174	07	30.0	8	SF	C 1.5	3	E		11		F
SVTO		0800	0801	0804	N10	W27	6171	07	29.3	4	SF		3	E		13		
SVTO		0849	0849	0856	S15	W18	6174	07	30.0	7	SF		3	E		36		F
LEAR		0849	0849	0858	S15	W18	6174	07	30.0	9	SF		3	E		60		F
LEAR		0900	0900	0907	S23	W21	6172	07	29.7	7	SF		3	E		16		
GOES		1217	1237	1244						27		C 1.9						
RAMY		1257	1302	1324	S24	W21	6172	07	29.9	27	SF		3	E		38		F
SVTO		1258	1301	1319	S23	W22	6172	07	29.8	21	SF		3	E		20		
HOLL		1422	1430	1450	S08	E22	6184	08	2.2	28	SF	C 1.7	3	E		32		F
RAMY		1423	1426	1458	S08	E22	6184	08	2.2	35	SF	C 1.7	3	E		24		F
HOLL		1557	1557	1602	N13	E85		08	7.1	5	SF		3	E		34		F
HOLL		1652	1652	1711	S25	W27	6172	07	29.6	19	SF		3	E		18		F

Hα SOLAR FLARES

JULY 1990

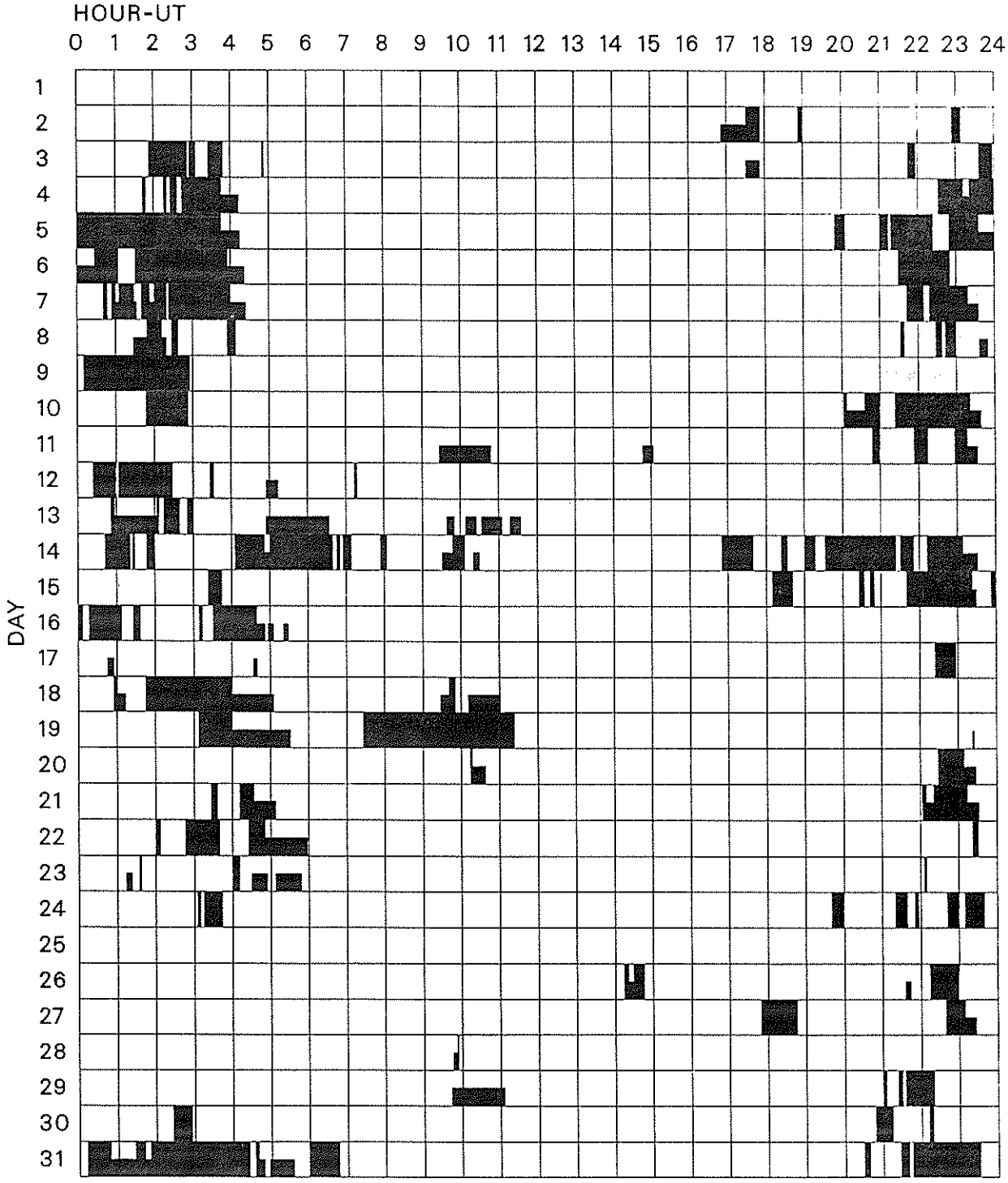
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	31	1804	1807	1811	S25	W27	6172	07	29.7	7	SF		3	E		26		
PALE		1806	1806	1813	S24	W27	6172	07	29.7	7	SF		3	E		15		F
HOLL		1849	1905	1912D	S25	W30	6172	07	29.4	23D	SF		3	E		50		H
HOLL		1930E	1932	2025	S24	W25	6172			55D	SB			E		27		K
HOLL		1930E	1948U	2025	S24	W25	6172	07	29.9	55D	SF	C 2.3	3	E		86		F
GOES		2115	2124	2130						15		C 1.8						
HOLL		2358	2359	2411	S24	W33	6172	07	29.4	13	SF		3	E		17		

"Remarks"

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

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

JULY 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.

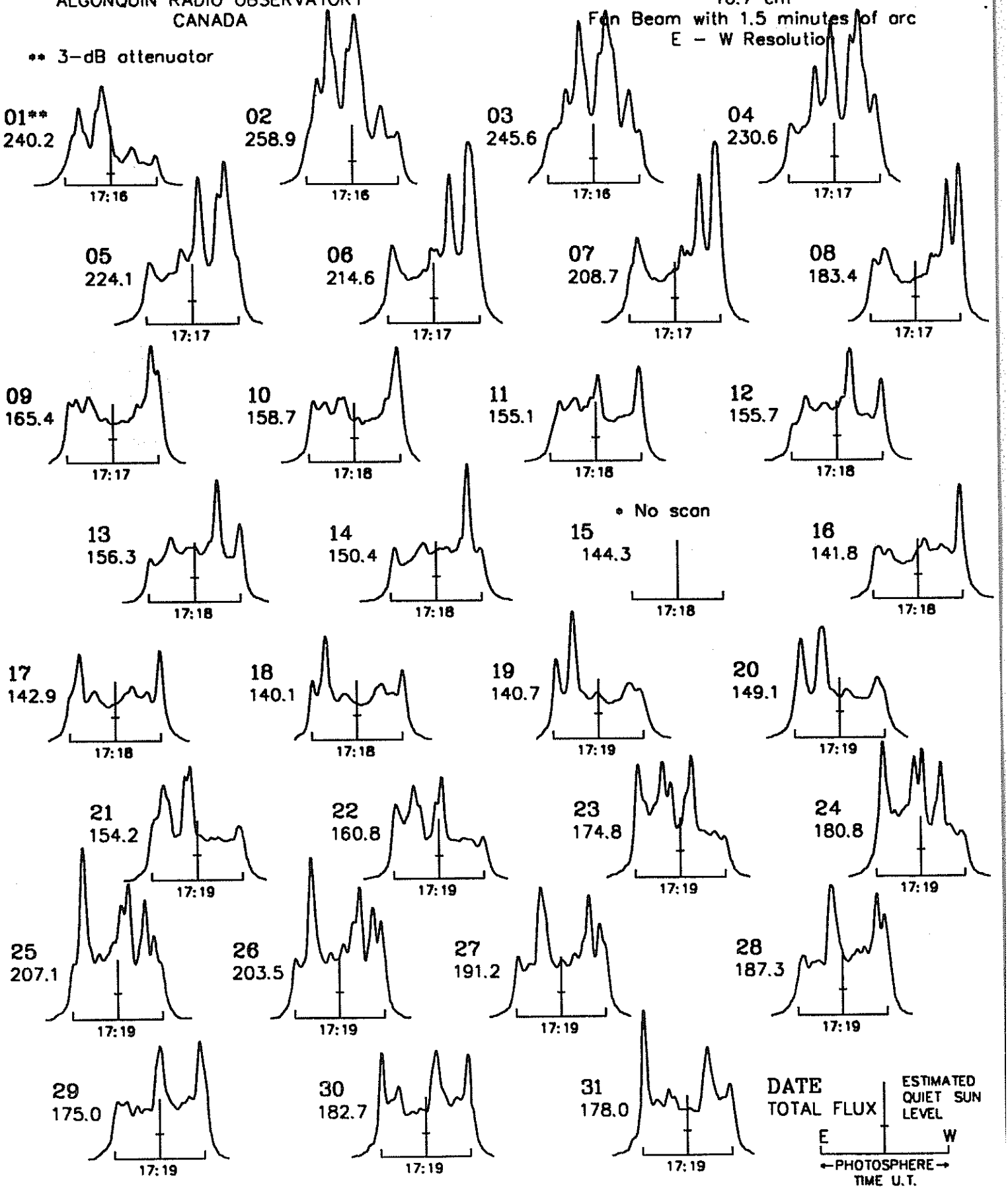
Holloman Learmonth Palehua Ramey San Vito

EAST - WEST SOLAR SCANS
JULY 1990

ALGONQUIN RADIO OBSERVATORY
CANADA

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

** 3-dB attenuator

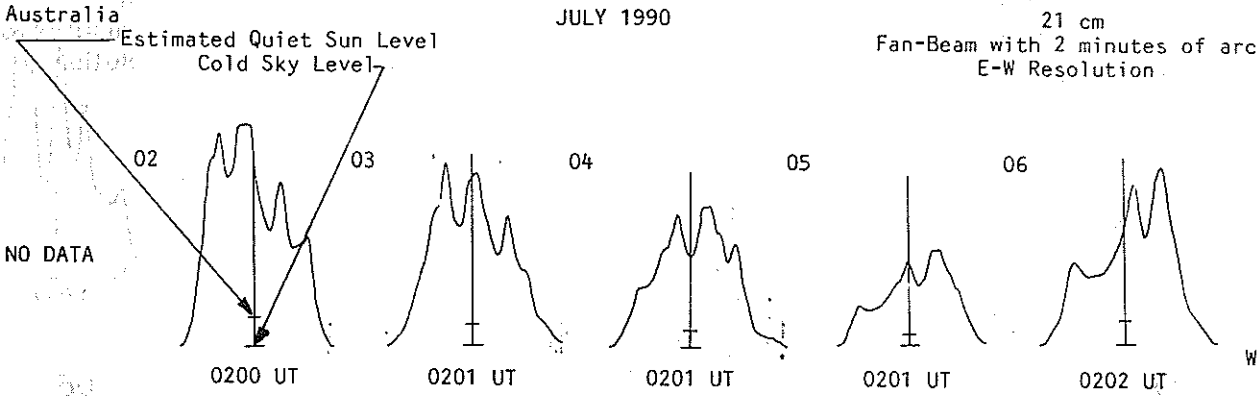


E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

JULY 1990

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



01 NO DATA

02 0200 UT

03 0201 UT

04 0201 UT

05 0201 UT

06 0202 UT

07 0202 UT

08 0202 UT

09 0202 UT

10 0202 UT

11 0202 UT

12 0202 UT

13 NO DATA

14 NO DATA

15 NO DATA

16 NO DATA

17 NO DATA

18 NO DATA

19 NO DATA

20 NO DATA

21 NO DATA

22 NO DATA

23 NO DATA

24 NO DATA

25 NO DATA

26 NO DATA

27 NO DATA

28 NO DATA

29 NO DATA

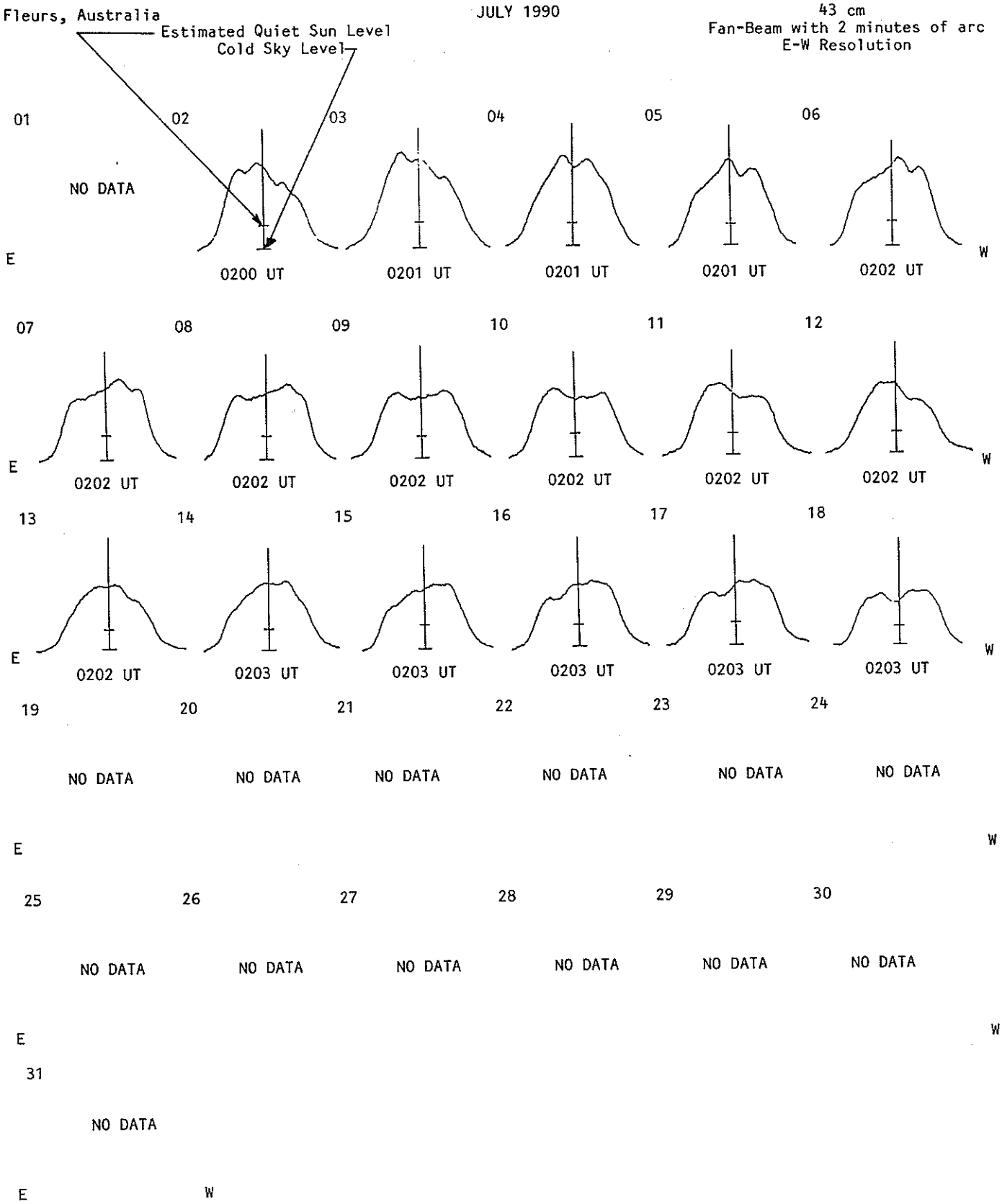
30 NO DATA

31 NO DATA

E W

E A S T - W E S T S O L A R S C A N S

Fleurs, Australia — JULY 1990 — 43 cm Fan-Beam with 2 minutes of arc E-W Resolution

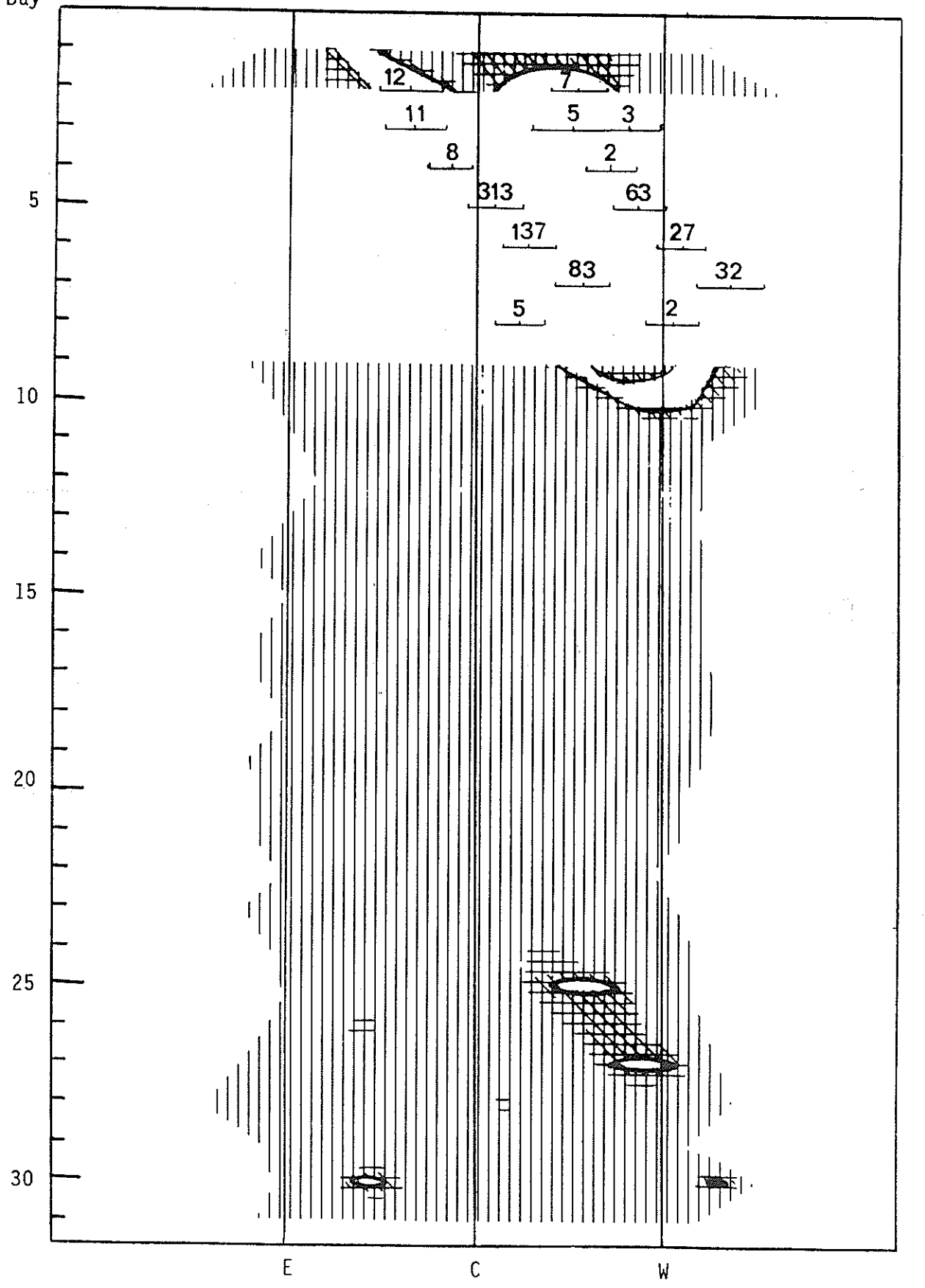


46
Jul. 90

SOLAR INTERFEROMETRIC OBSERVATIONS
JULY 1990

Nancay

164 MHz



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

JULY 1990

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2695	LEAR	4	S/F	0247.0E	0249.0	4.0D	67.0			QL=2 ST=2 TYP=3
	2695	PALE	8	S	0248.0E	0249.0	2.0D	56.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	2346.0E	2347.0	2.0D	130.0			QL=4 ST=2 TYP=3
02	2800	OTTA	20	GRF	1440.0	1634.0	345.0	12.5	6.0		
	2800	OTTA	22	GRF	1552.5	1553.5	34.0	6.9	2.0		
	2800	OTTA	4	S/F	1935.0	1935.5	2.1	25.0	5.0		
03	8800	SVTO	8	S	0953.0E	0954.0	1.0D	100.0			QL=4 ST=2 TYP=3
	2800	OTTA	20	GRF	2045.0	2117.5	150.0	7.2	3.0		
	2800	OTTA	4	S/F	2208.1	2208.9	1.2	14.4	4.0		
04	8800	SVTO	4	S/F	1100.0E	1110.0	12.0D	290.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1109.0E	1110.0	3.0D	290.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1110.0E	1110.0	1.0D	63.0			QL=4 ST=2 TYP=3
	2800	OTTA	47	GB	1646.0	1647.5	6.0	958.0	192.0		
	2695	PALE	4	S/F	1646.0E	1647.0	4.0D	440.0			QL=4 ST=2 TYP=3
	8800	SGMR	49	GB	1646.0E	1649.0	9.0D	840.0			QL=4 ST=2 TYP=7
	8800	SVTO	49	GB	1646.0E	1649.0	9.0D	710.0			QL=4 ST=2 TYP=6
	2695	SVTO	49	GB	1646.0E	1647.0	10.0D	670.0			QL=4 ST=2 TYP=7
	8800	PALE	49	GB	1647.0E	1649.0	3.0D	960.0			QL=4 ST=2 TYP=6
	2800	OTTA	29	PBI	1652.0	1657.6	350.0	108.1	22.0		
	2800	OTTA	22	GRF	1732.0	1733.5	100.0	42.8	12.0		
	8800	SGMR	4	S/F	1732.0E	1738.0	8.0D	51.0			QL=4 ST=3 TYP=3
	2695	SVTO	4	S/F	1733.0E	1733.0	6.0D	56.0			QL=4 ST=2 TYP=3
05	2800	OTTA	3	S	1347.0	1349.5	6.3	20.0	4.0		
	2800	OTTA	20	GRF	1457.0	1512.0	100.0	6.0	2.0		
07	2800	OTTA	22	GRF	1320.0	1340.0	140.0	15.1	4.0		
	2695	PENT	20	GRF	2310.5	2319.0	73.0	6.2	3.0		
08	2695	PENT	4	S/F	0004.9	0005.2	5.2	24.4	5.0		
	2695	LEAR	8	S	0005.0E	0005.0	1.0D	33.0			QL=4 ST=2 TYP=3
	2695	PENT	3	S	0046.1	0047.1	3.1	15.5	3.0		
09	8800	SVTO	8	S	0828.0E	0828.0U	U	55.0			QL=4 ST=2 TYP=3
	2800	OTTA	4	S/F	1616.0	1617.5	6.7	15.2	3.0		
	2800	OTTA	20	GRF	1742.5	1752.0	238.0	16.5	8.0		
	2800	OTTA	22	GRF	2207.0	2210.0	97.0	11.8	5.0		
10	8800	SGMR	8	S	1228.0E	1228.0	U	60.0			QL=4 ST=2 TYP=3
	2800	OTTA	20	GRF	1249.0E	1249.0	197.0D	12.4	6.0		
	2800	OTTA	4	S/F	1357.0	1359.5	9.4	9.6	3.0		
11	8800	LEAR	8	S	0910.0E	0911.0	2.0D	30.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	0910.0E	0911.0	7.0D	53.0			QL=4 ST=2 TYP=3
	2695	SVTO	8	S	0910.0E	0911.0	2.0D	40.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	0910.0E	0912.0	3.0D	58.0			QL=4 ST=2 TYP=3
	2800	OTTA	20	GRF	1308.0	1348.5	157.0	6.0	3.0		
12	2800	OTTA	22	GRF	1343.4	1347.5	11.8	12.2	2.0		
13	2695	SGMR	20	GRF	1108.0E	1112.0	8.0D	57.0			QL=4 ST=2 TYP=2
	8800	SVTO	20	GRF	1108.0E	1111.0	7.0D	82.0			QL=4 ST=2 TYP=2
	2695	SVTO	20	GRF	1108.0E	1112.0	7.0D	68.0			QL=4 ST=2 TYP=2
	8800	SGMR	20	GRF	1109.0E	1111.0	7.0D	59.0			QL=2 ST=2 TYP=2
15	2800	OTTA	20	GRF	1845.5	1950.0	130.0	10.7	5.0		
16	2800	OTTA	3	S	1904.3	1904.8	1.9	7.3	2.0		
21	2800	OTTA	20	GRF	1943.5	2003.0	187.0	8.6	4.0		
22	2695	LEAR	8	S	0618.0E	0618.0	U	27.0			QL=4 ST=2 TYP=3
	8800	LEAR	8	S	0618.0E	0618.0	U	17.0			QL=4 ST=2 TYP=3
	2800	OTTA	4	S/F	1427.8	1428.3	3.2	27.6	8.0		
	2800	OTTA	29	PBI	1431.0	1431.0	19.1	5.6	2.0		
	2800	OTTA	3	S	2157.0	2157.8	3.0	11.1	2.0		

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

JULY 1990

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
23	8800	LEAR	4	S/F	0002.0E	0003.0	3.0D	190.0			QL=4 ST=2 TYP=3
	2695	LEAR	8	S	0003.0E	0003.0	1.0D	59.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	0003.0E	0003.0	1.0D	50.0			QL=4 ST=2 TYP=3
	2800	OTTA	4	S/F	1235.5	1235.9	6.4	39.9	8.0		
	2800	OTTA	20	GRF	1918.0	1921.0	26.0	6.1	3.0		
	2800	OTTA	4	S/F	2150.6	2155.2	6.1	18.4	4.0		
24	2695	SVTO	8	S	1532.0E	1532.0	1.0D	190.0			QL=4 ST=2 TYP=3
25	2800	OTTA	20	GRF	1319.0	1325.0	26.0	4.2	2.0		
	2800	OTTA	22	GRF	1519.0E	1519.0	120.0D	9.6	4.0		
	2800	OTTA	28	PRE	2027.0	2255.0	158.0	17.2	8.0		
	2695	PENT	4	S/F	2255.0	2324.1	29.1	221.5	44.0		
	2695	PALE	4	S/F	2258.0E	2300.0	6.0D	62.0			QL=4 ST=2 TYP=3
	2695	PALE	20	GRF	2310.0E	2332.0	39.0D	230.0			QL=4 ST=2 TYP=2
	8800	PALE	20	GRF	2311.0E	2323.0	39.0D	82.0			QL=4 ST=2 TYP=2
	2695	LEAR	20	GRF	2320.0E	2332.0	48.0D	270.0			QL=4 ST=2 TYP=2
	8800	LEAR	20	GRF	2325.0E	2337.0	43.0D	100.0			QL=4 ST=2 TYP=2
	2695	PENT	29	PBI	2328.1	2332.0	134.0	228.9	34.0		
26	2800	OTTA	3	S	1658.5	1700.2	11.4	151.7	30.0		
	2695	PALE	8	S	1659.0E	1700.0	2.0D	120.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	1659.0E	1659.0	1.0D	140.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	1659.0E	1700.0	2.0D	140.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1659.0E	1659.0	5.0D	170.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	1659.0E	1700.0	421.0D	190.0			QL=4 ST=1 TYP=3
	2695	SVTO	4	S/F	1709.0E	1709.0	411.0D	46.0			QL=4 ST=1 TYP=3
	2800	OTTA	3	S	1824.1	1824.3	1.1	6.7	1.0		
	2695	PENT	3	S	2331.0	2331.3	1.3	8.7	2.0		
	2695	PENT	20	GRF	2334.2	2335.2	6.1	4.0	2.0		
27	2695	PENT	3	S	0003.0	0003.4	2.7	18.6	5.0		
29	2695	PENT	20	GRF	2127.0	2224.0	235.0	10.1	5.0		
30	2695	LEAR	49	GB	0702.0E	0728.0	103.0D	3100.0			QL=4 ST=2 TYP=7
	2695	SVTO	49	GB	0703.0E	0729.0	85.0D	1800.0			QL=4 ST=2 TYP=7
	8800	LEAR	49	GB	0708.0E	0735.0	69.0D	580.0			QL=4 ST=2 TYP=7
	8800	SVTO	49	GB	0710.0E	0735.0	86.0D	820.0			QL=4 ST=2 TYP=6
31	2800	OTTA	3	S	1421.2	1424.5	5.0	8.7	2.0		

Reports are received routinely from the following observatories:
BERN = Berne LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill
OTTA = Ottawa PENT = Penticton SVTO = San Vito

Explanation of Type Code:

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

1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

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

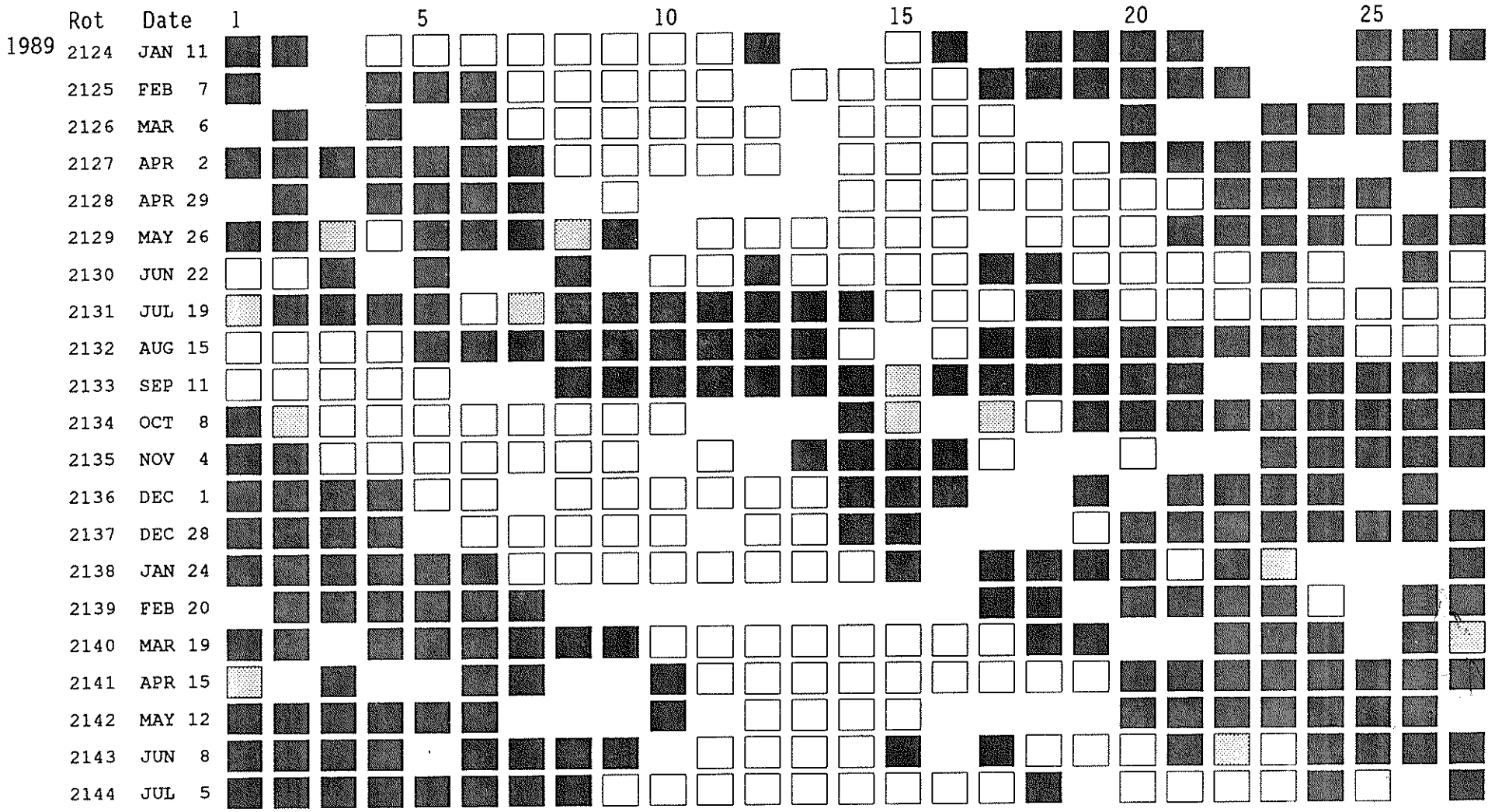
STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1989 Aug	Sep	Oct	Nov	Dec	1990 Jan	Feb	Mar	Apr	May	Jun	Jul
1	-145	-58	-43	-111	-113	.	128	.	84	35	-9	-4
2	80	-46	.	-125	-79	22	150	.	47	19	-8	-13
3	121	-37	-87	-111	-46	70	344	.	33	23	-5	-34
4	14	-37	-84	-75	-11	106	99	.	4	-18	-34	-42
5	-51	-46	-35	-11	43	132	69	.	-8	-24	-33	-36
6	-65	-30	-22	44	60	129	23	.	-29	-25	-33	-36
7	9	-5	-13	54	.	.	-11	.	.	-27	.	-45
8	145	22	-5	86	84	58	.	-28	.	-38	-26	-34
9	86	25	0	97	126	23	-15	-23	-29	-33	-52	-12
10	82	12	2	103	115	-7	-8	.	-36	-15	-86	-11
11	59	23	10	107	79	-41	-14	-25	-34	-4	-83	-10
12	43	23	38	95	47	.	-9	-23	.	-9	.	-15
13	43	43	33	.	7	.	4	-11	-8	-47	-88	17
14	55	44	26	13	-35	.	-12	-15	0	-80	-58	32
15	57	25	31	.	-59	5	-2	2	-2	-82	-31	78
16	66	.	17	-70	-62	-11	.	.	.	-80	-10	95
17	33	.	5	-79	.	-14	.	-10	-20	-88	.	57
18	2	-13	.	-86	.	-58	.	-45	.	.	47	10
19	-10	-22	.	-38	-4	-86	-78	-63	.	.	44	26
20	-20	-20	.	4	.	-84	.	-108	-105	.	43	41
21	-35	-21	-88	.	-32	-76	-142	.	-99	-29	11	20
22	-41	-26	0	.	-70	-88	-193	-150	.	.	-4	-12
23	-29	-31	.	17	-101	-124	-167	-124	.	25	.	.
24	-15	-21	1	.	-103	-152	-133	-113	-21	33	-12	7
25	-13	-1	5	.	.	-184	-102	-74	23	16	7	25
26	-15	-8	-19	-52	-103	-203	-41	-62	57	3	13	50
27	-7	-19	-56	-78	.	-200	.	-34	75	.	42	10
28	4	-16	-70	-76	-130	-140	.	9	65	.	-7	-13
29	.	-24	-100	-92	-108	-62		45	50	.	-2	39
30	3	-26	-110	-110	-106	3		103	50	.	8	.
31	-29		-104		-94	46		94		-4		67

Dot symbol indicates no data available for the day.

NOTE: Data beginning Jun 21, 1990 is of poorer quality due to an equipment problem.

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.

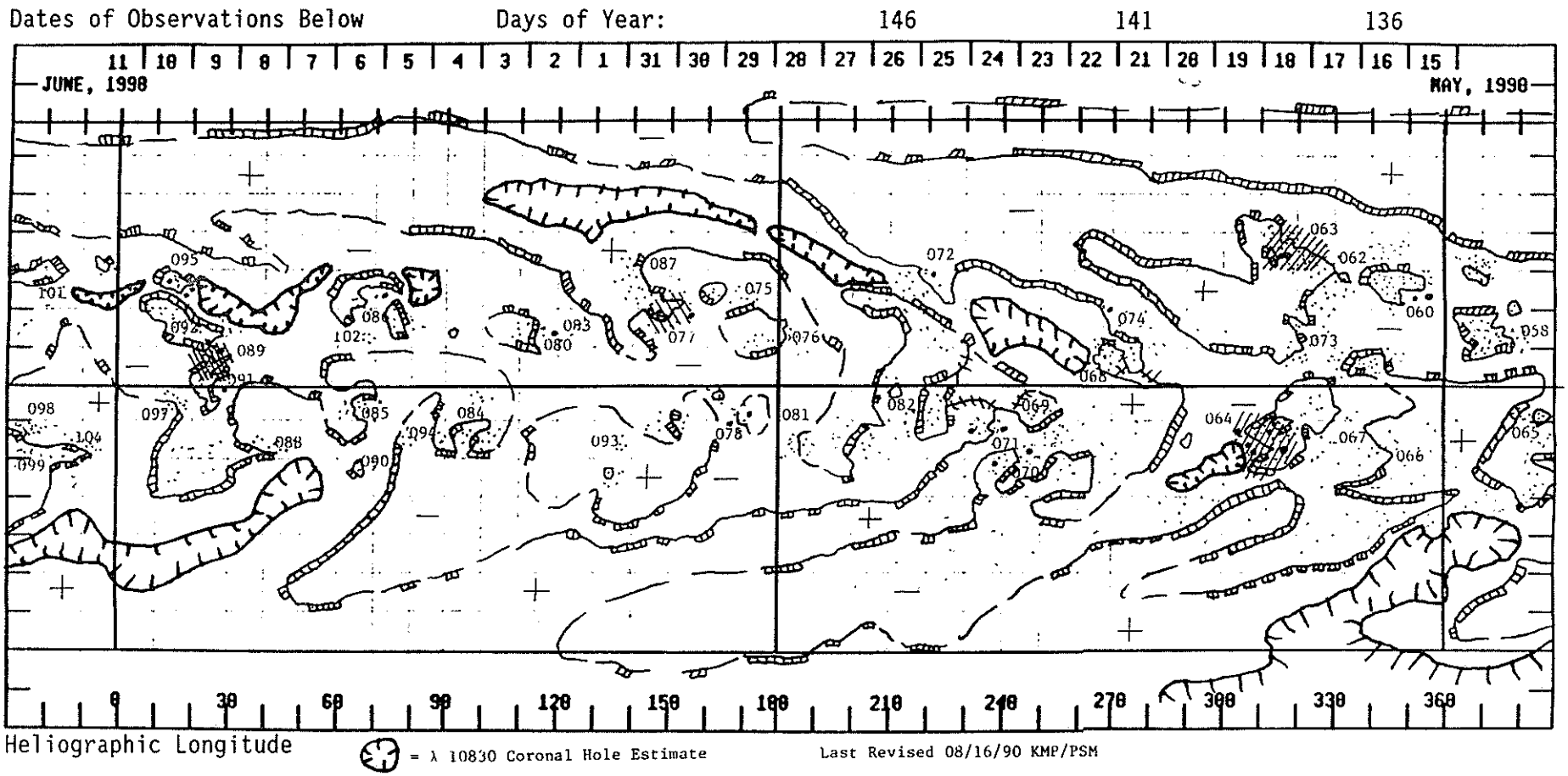
CONTENTS

Prompt Reports DATA FOR **JUNE 1990** Number 552 Part I

*** Data no longer available in SGD because of extremely low usage. Please contact the data center for further information on data availability.

PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1829
(15 May to 11 June 1990)



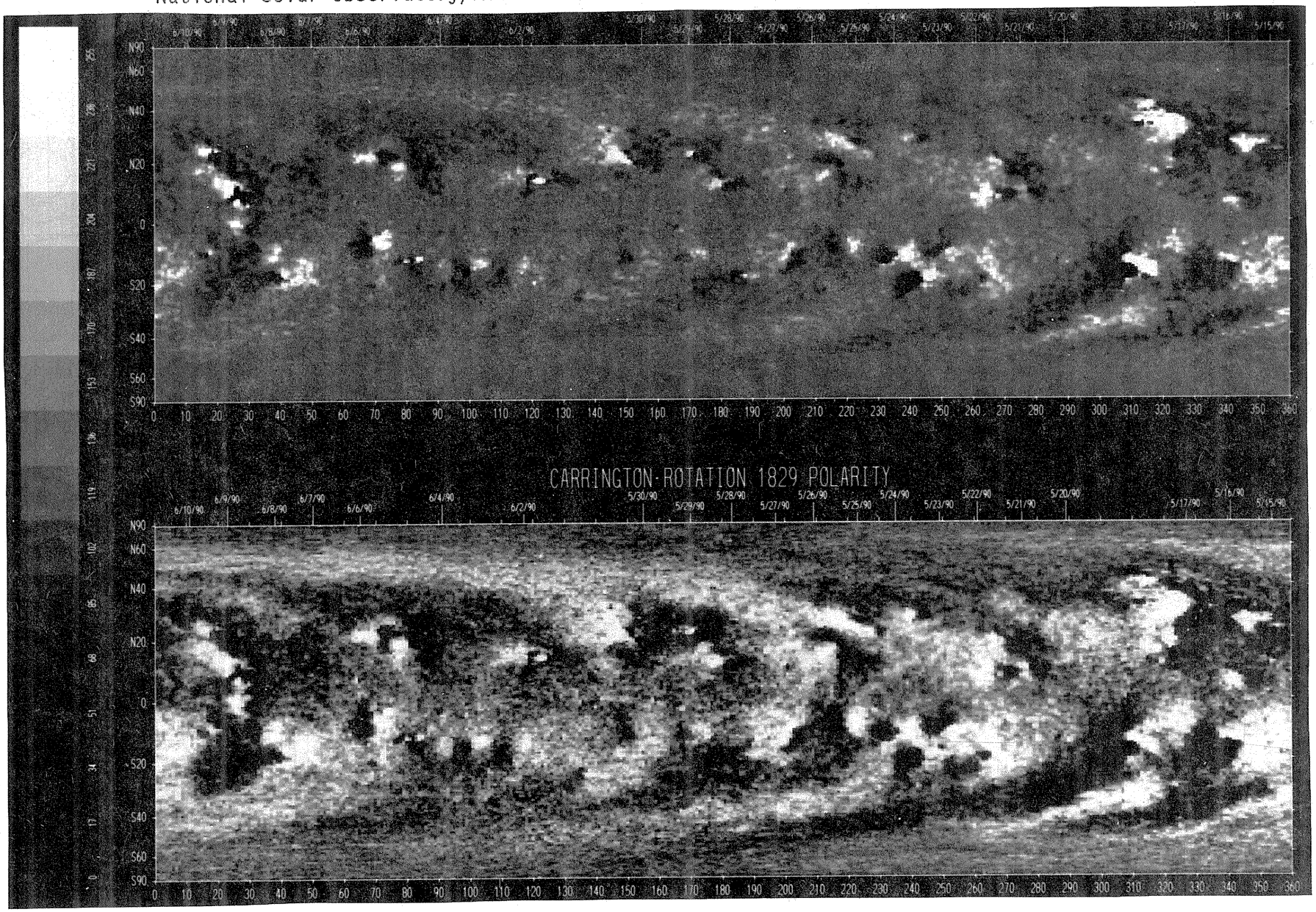
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1829

(15 May to 11 June 1990)

National Solar Observatory/Kitt Peak

Dates of Observation

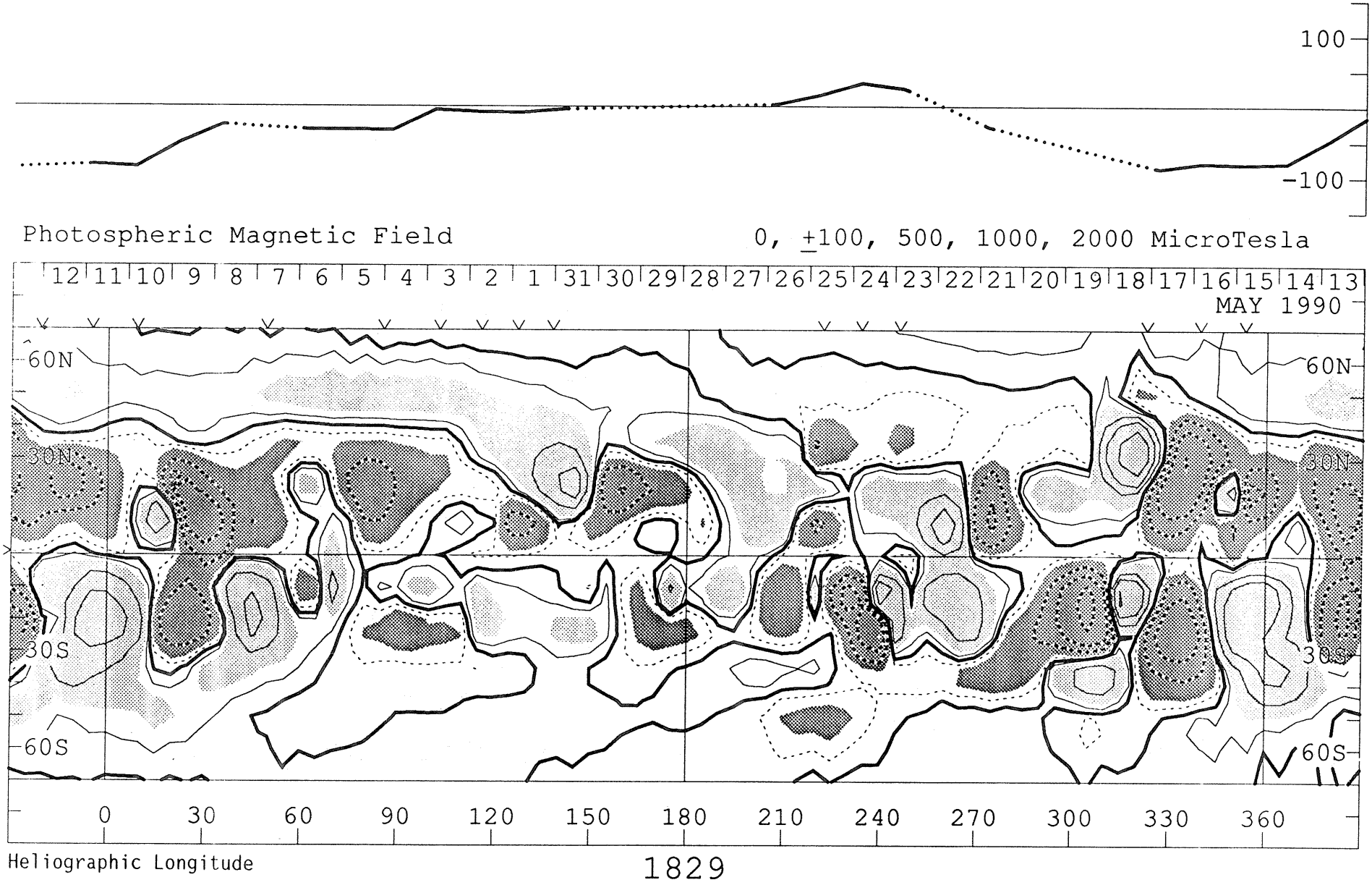


Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1829
(15 May to 11 June 1990)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

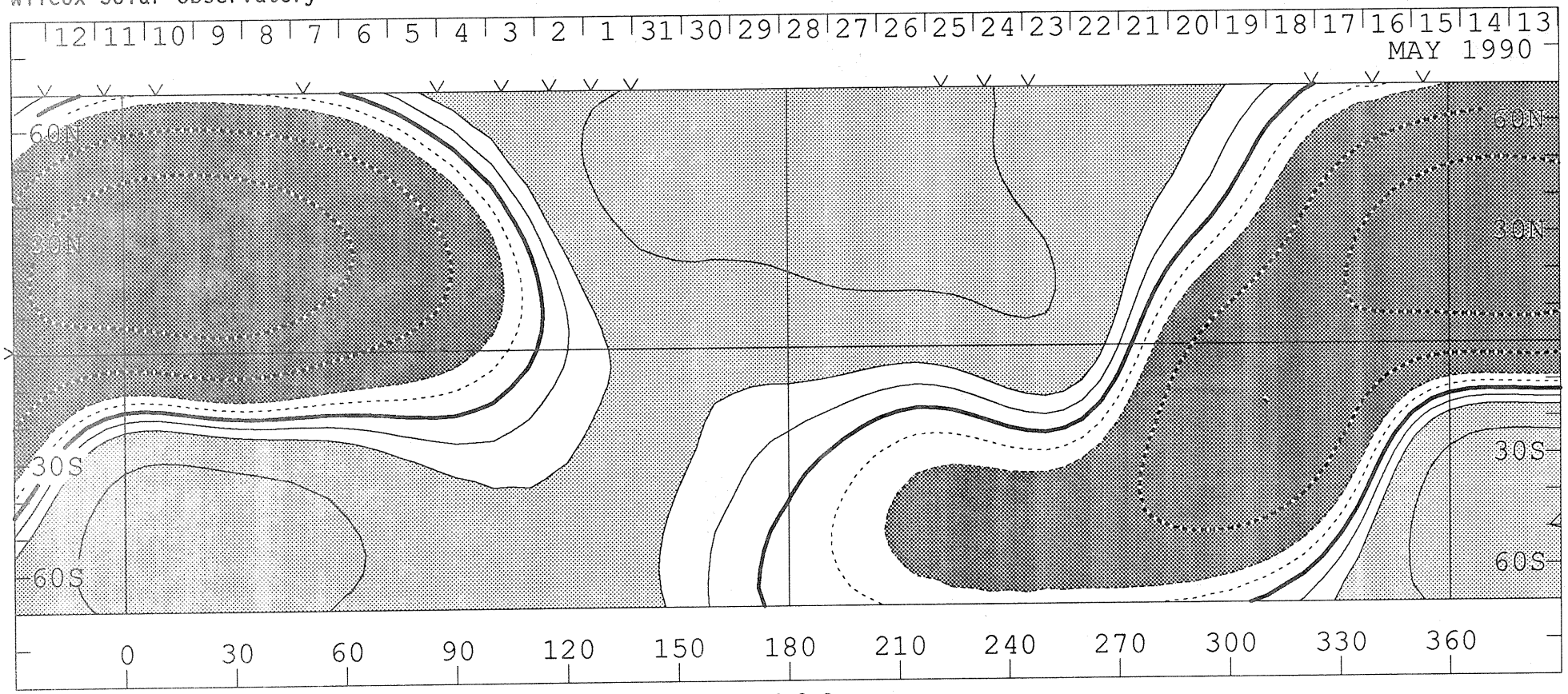
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1829

(15 May to 11 June 1990)

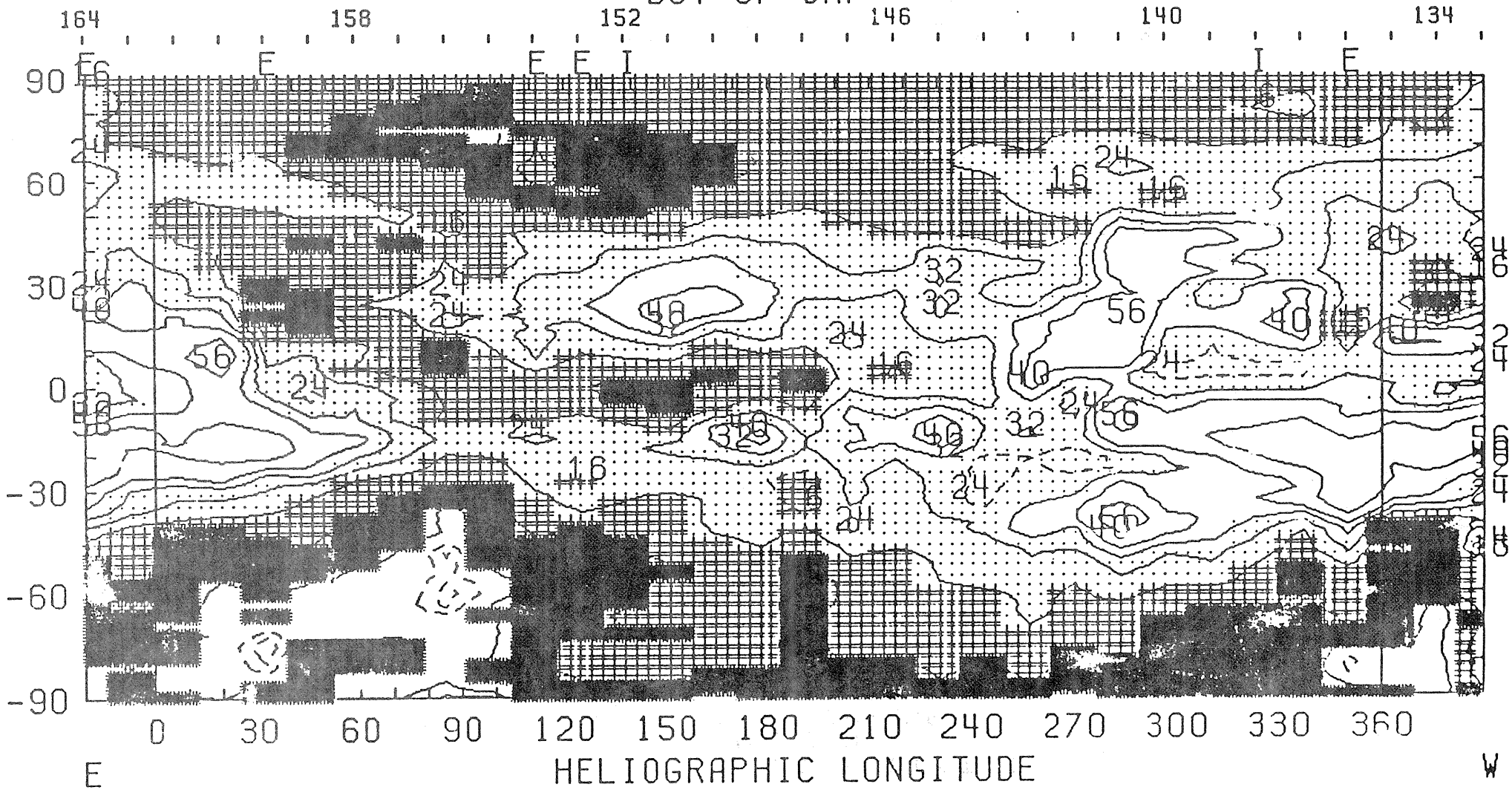
Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla



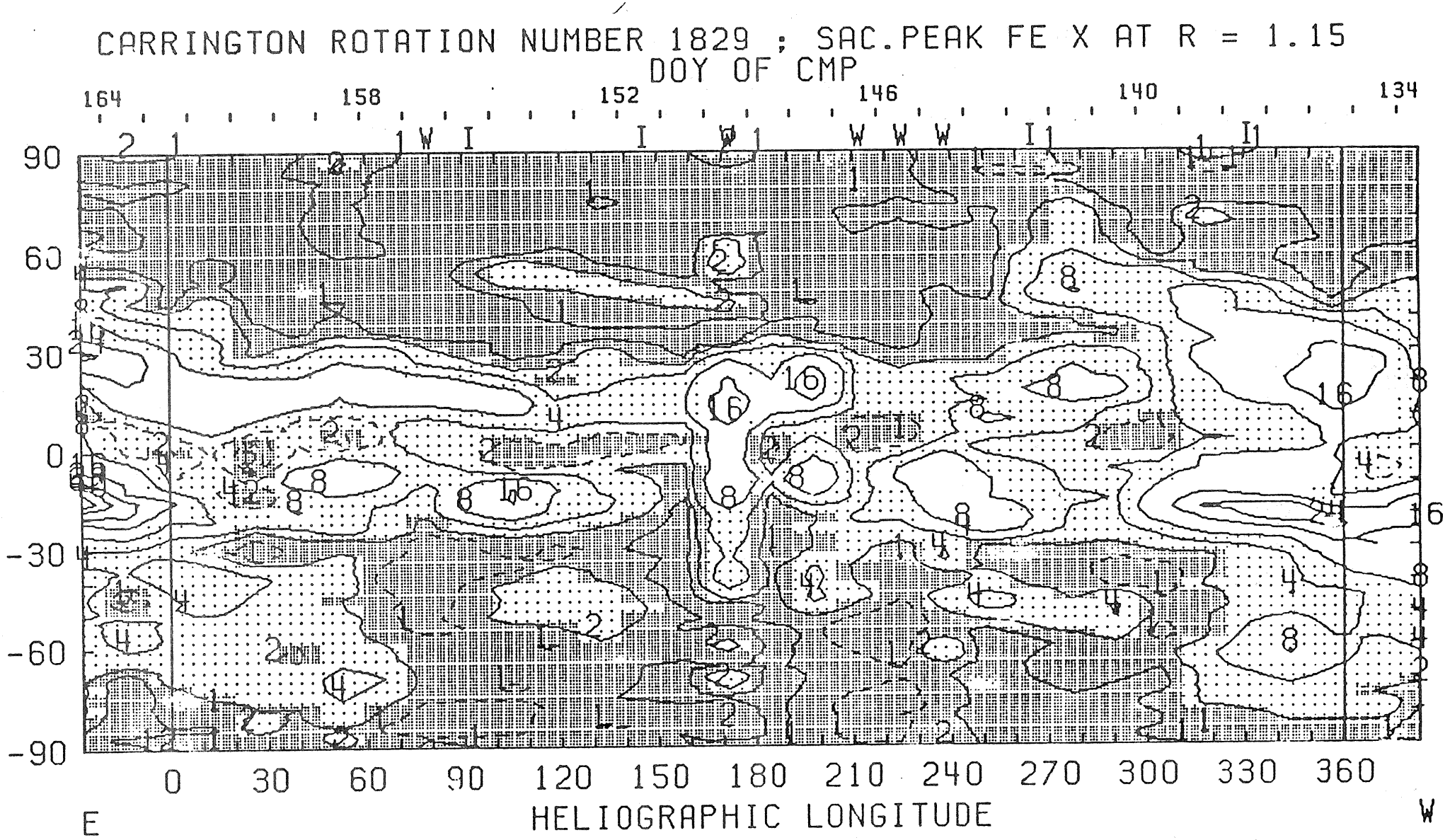
56
Jun 90

CARRINGTON ROTATION NUMBER 1829 ; SAC.PEAK FE XIV AT R = 1.15



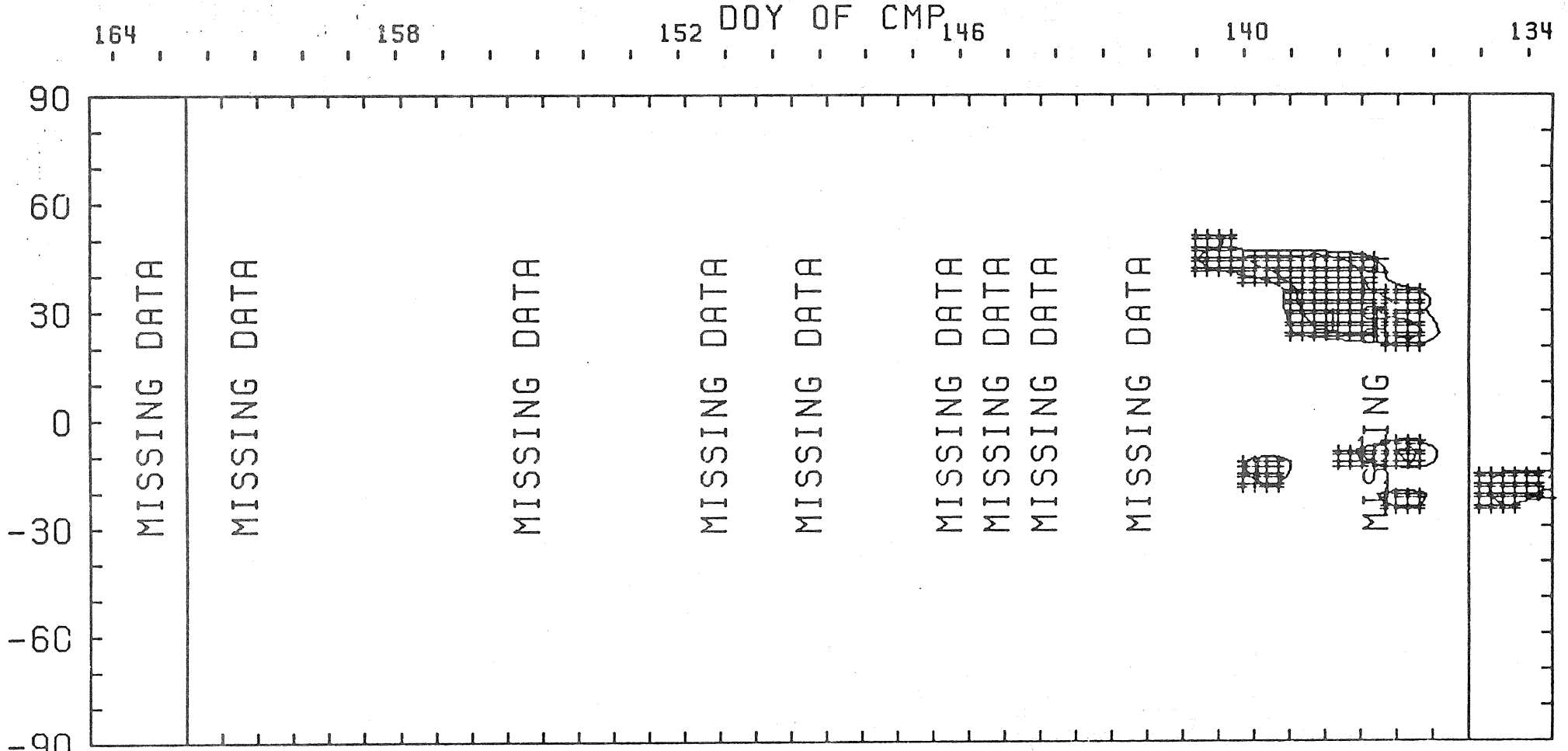
1990 W+E LIMB CONTOURS: 1,2,4,8,16,32,40,56 MILLIONTHS OF I$_\odot$

(14-Aug-90) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK

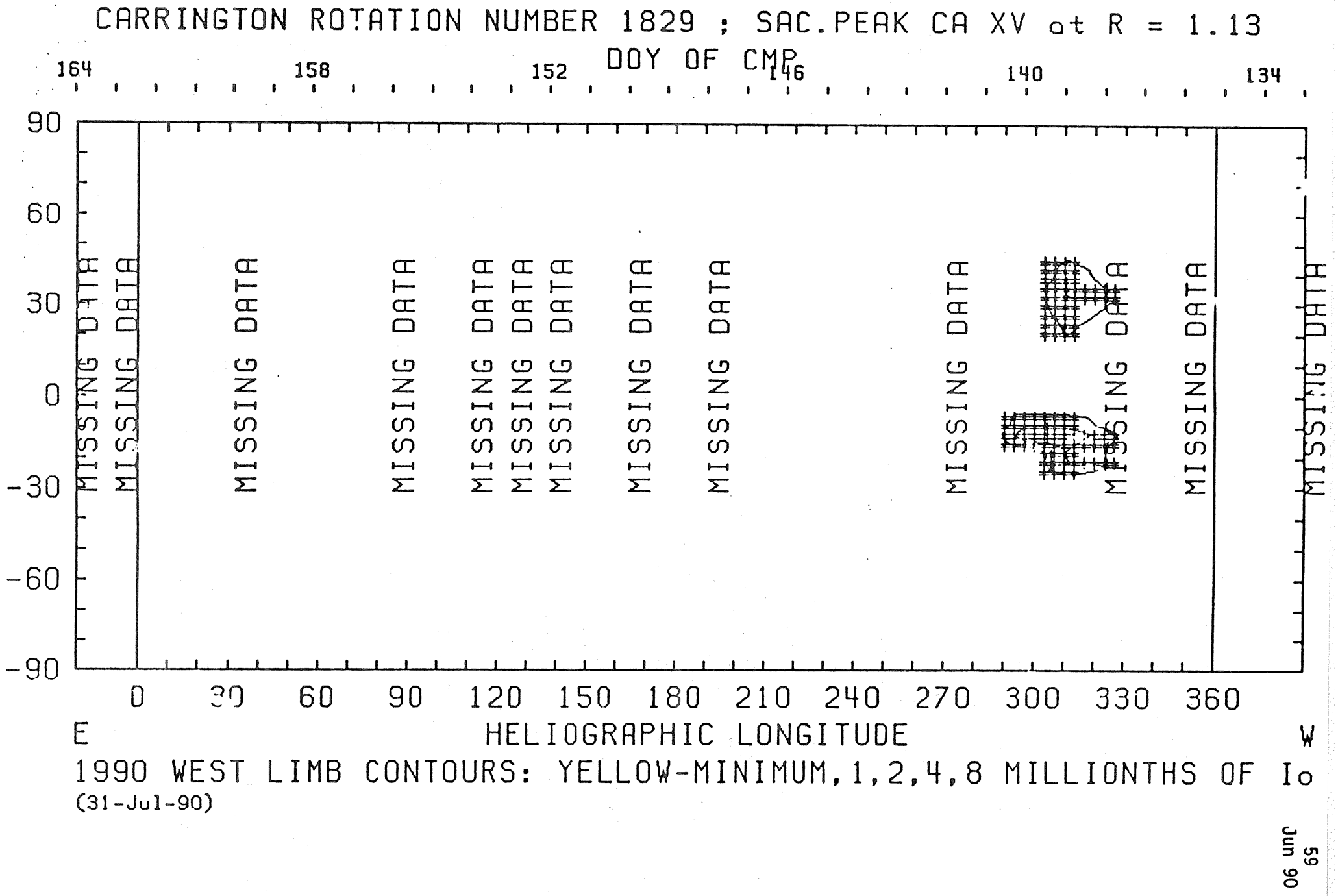

CARRINGTON ROTATION NUMBER 1829 ; SAC.PEAK FE X AT R = 1.15
DOY OF CMP
164
158
152
146
140
134
90
60
30
0
-30
-60
-90
0
30
60
90
120
150
180
210
240
270
300
330
360
E
HELIOGRAPHIC LONGITUDE
W
1990 E+W LIMB CONTOURS: 1,2,4,8,16,32,40,56 MILLIONTHS OF Io
(31-Jul-90)

57
Jun 90

CARRINGTON ROTATION NUMBER 1829 ; SAC.PEAK CA XV at R = 1.13



1990 EAST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io
(31-Jul-90)

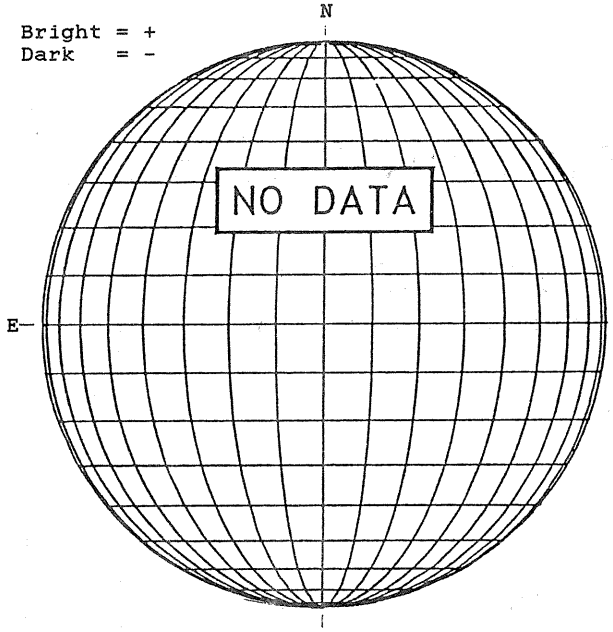

CARRINGTON ROTATION NUMBER 1829 ; SAC.PEAK CA XV at R = 1.13
DOY OF CMP
164
158
152
146
140
134
90
60
30
0
-30
-60
-90
MISSING DATA
0
30
60
90
120
150
180
210
240
270
300
330
360
E
HELIOGRAPHIC LONGITUDE
W
1990 WEST LIMB CONTOURS: YELLOW-MINIMUM, 1, 2, 4, 8 MILLIONTHS OF Io
(31-Jul-90)
Jun 90
59

JUNE 1, 1990 (P=-15.53, B_o =-0.68, L_o = 138.36)

Jun 90

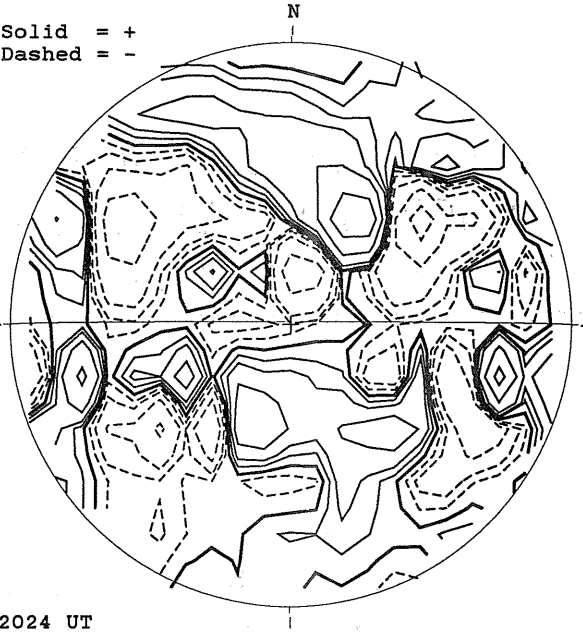
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

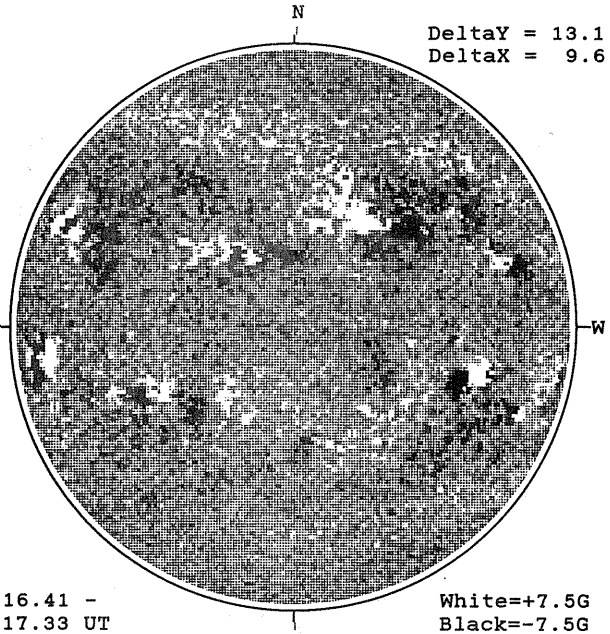
Solid = +
Dashed = -



2024 UT

MT. WILSON MAGNETOGRAM

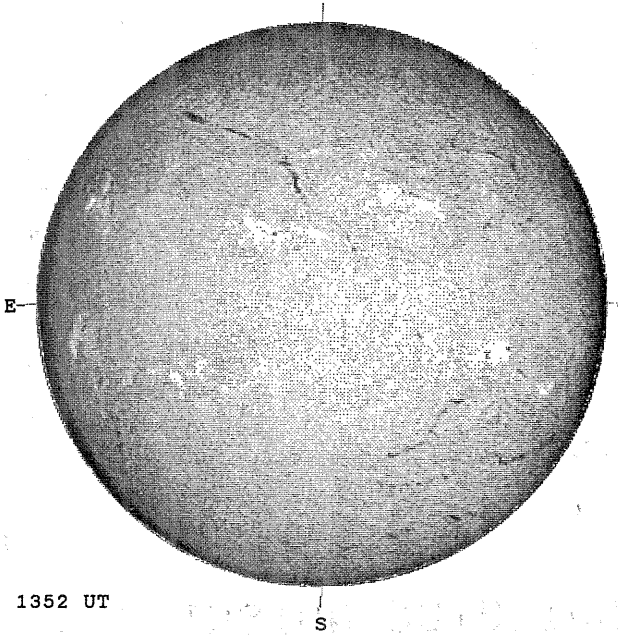
DeltaY = 13.1
DeltaX = 9.6



16.41 -
17.33 UT

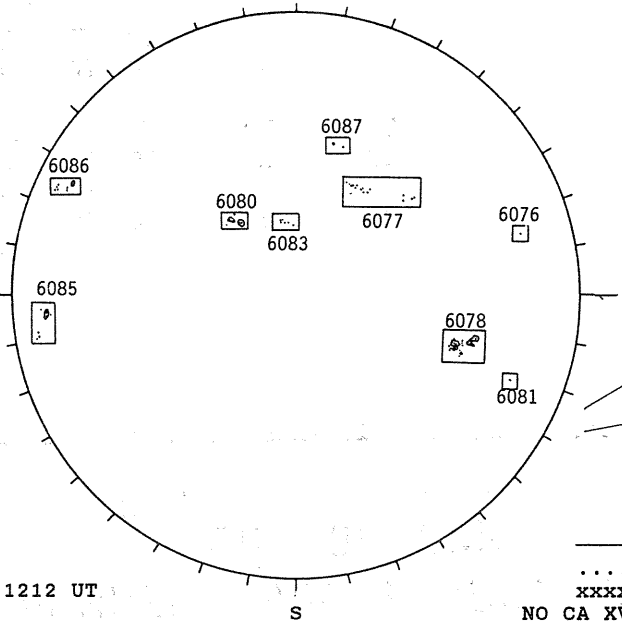
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



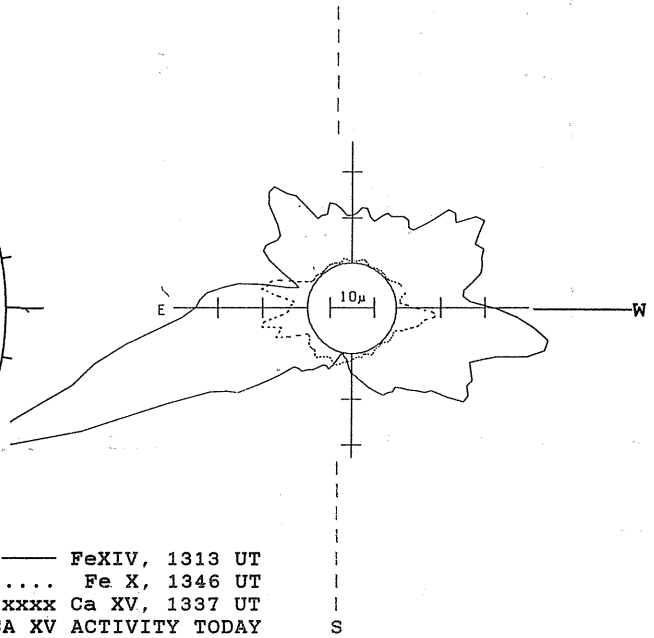
1352 UT

RAMEY SUNSPOT



1212 UT

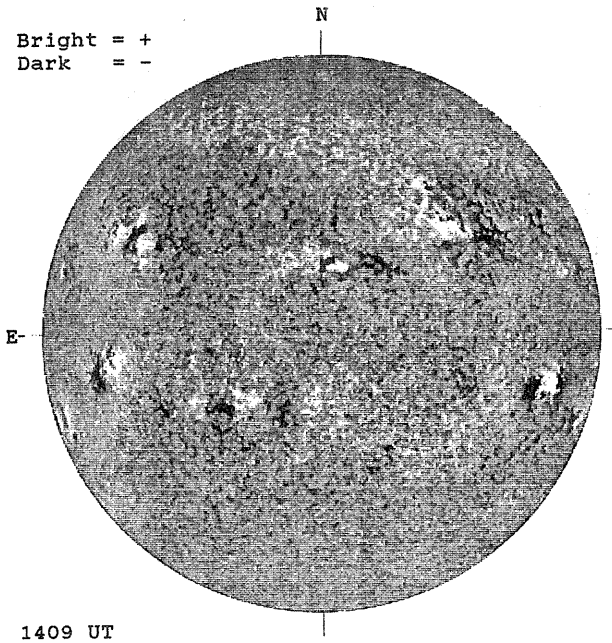
SACRAMENTO PEAK CORONA (1.15 Radii)



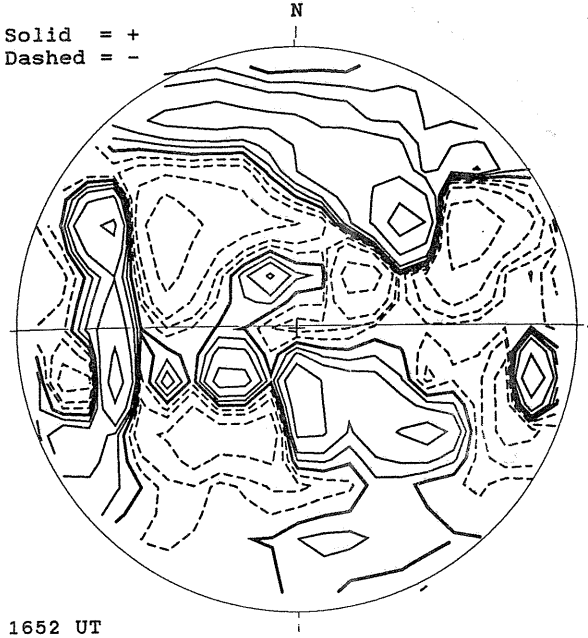
—— FeXIV, 1313 UT
.... Fe X, 1346 UT
xxxx Ca XV, 1337 UT
NO CA XV ACTIVITY TODAY

JUNE 2, 1990 (P=-15.16, B_o =-0.56, L_o = 125.13)

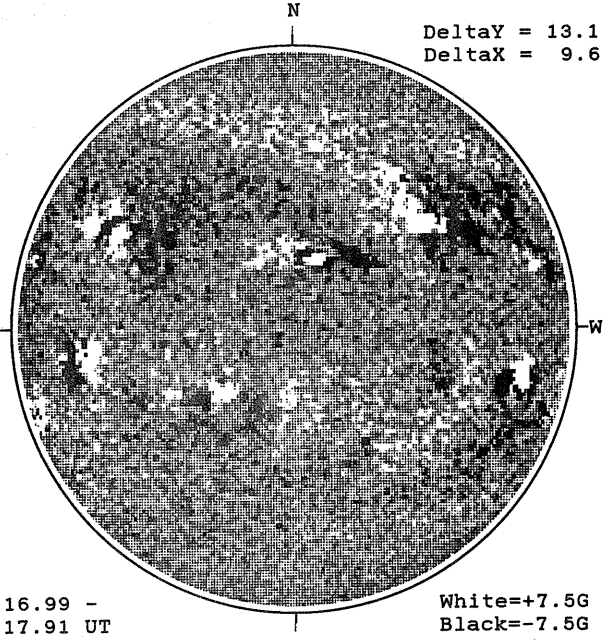
KITT PEAK MAGNETOGRAM



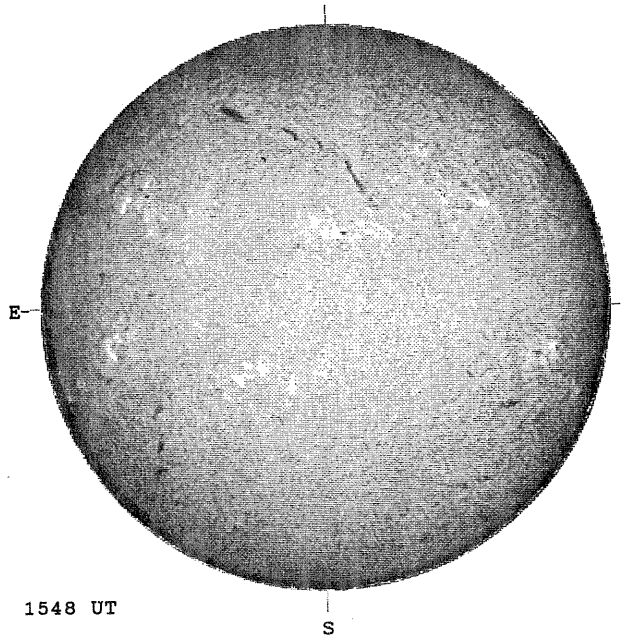
STANFORD MAGNETOGRAM



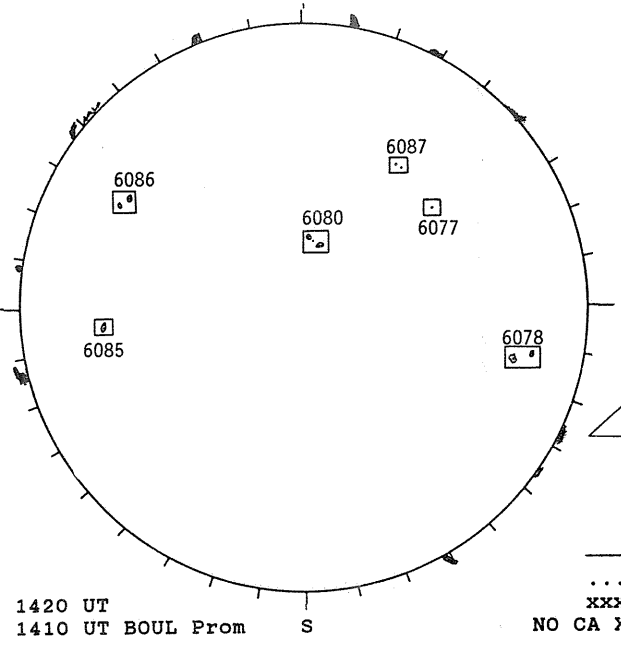
MT. WILSON MAGNETOGRAM



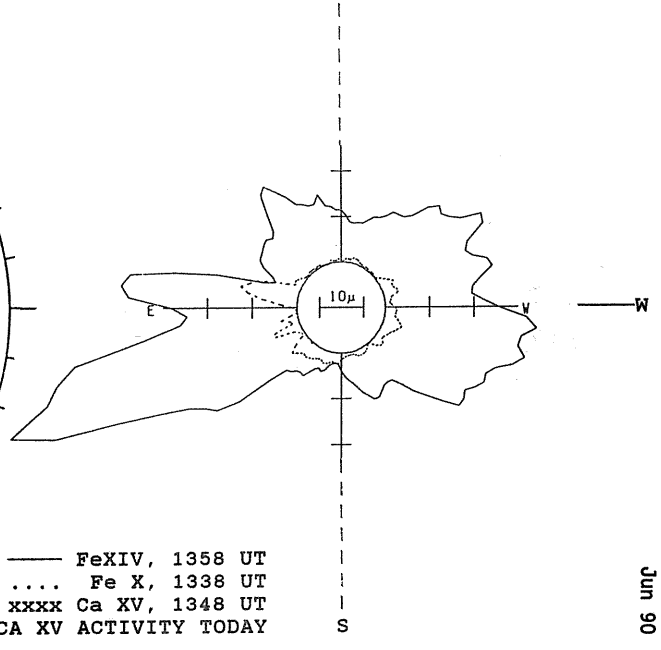
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



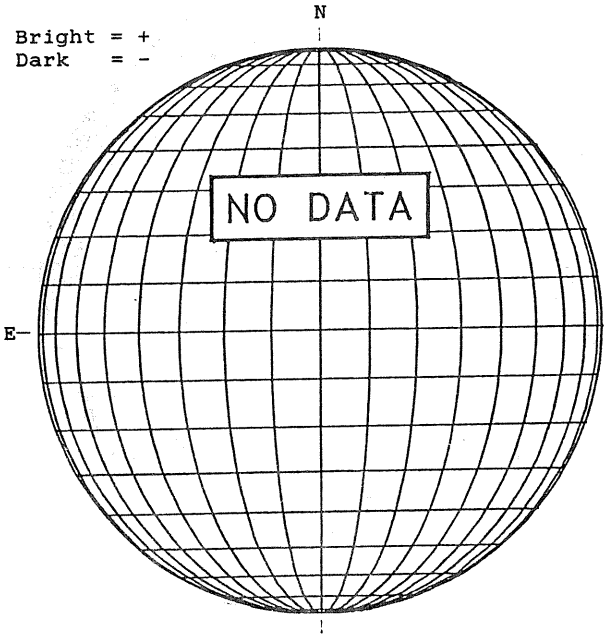
61
Jun 90

JUNE 3, 1990 (P=-14.78, B_o =-0.44, L_o = 111.90)

Jun 90 62

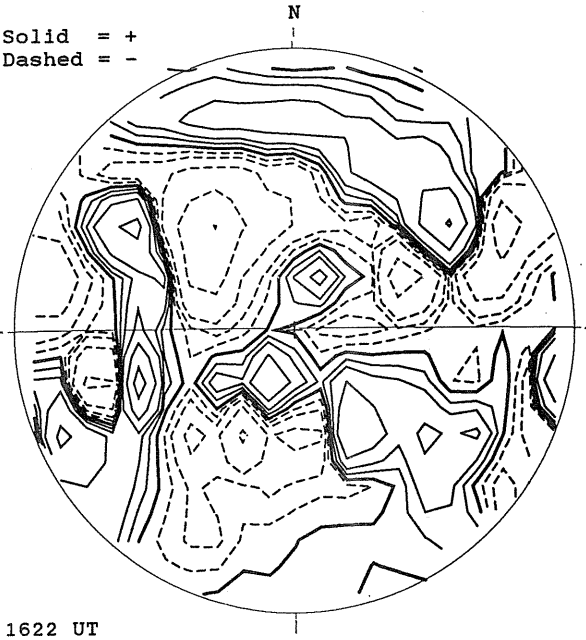
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

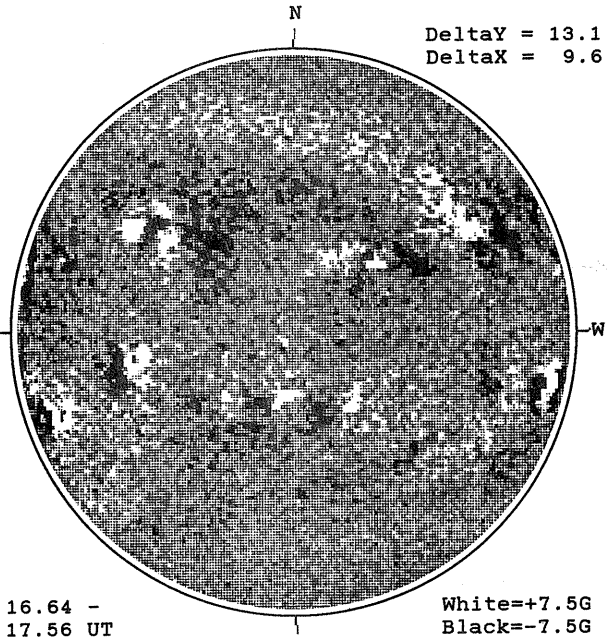
Solid = +
Dashed = -



1622 UT

MT. WILSON MAGNETOGRAM

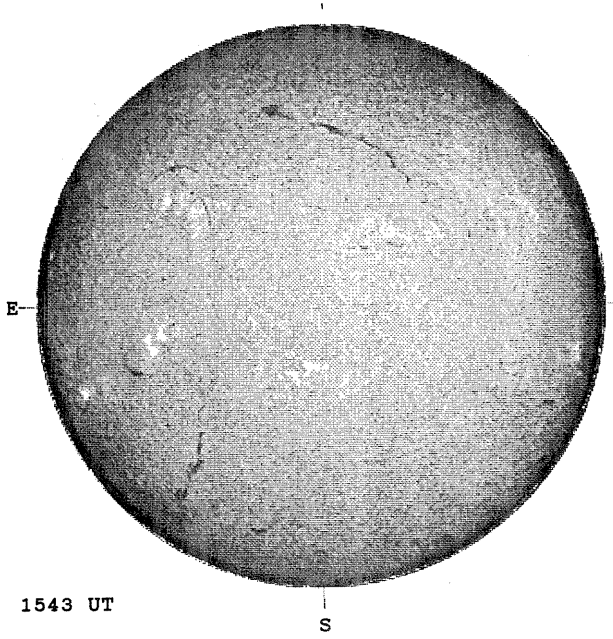
DeltaY = 13.1
DeltaX = 9.6



16.64 -
17.56 UT

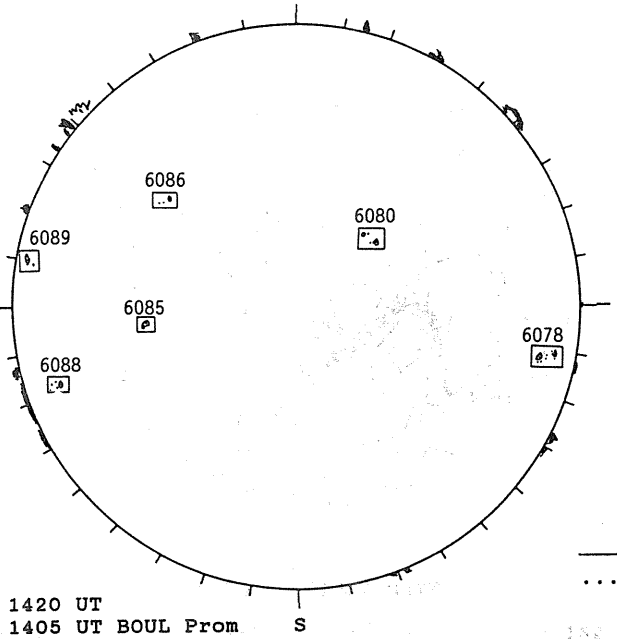
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



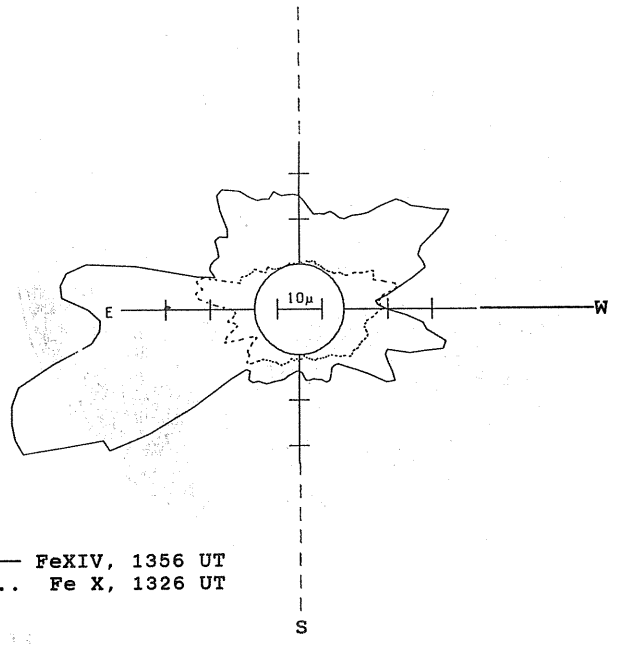
1543 UT

BOULDER SUNSPOT



1420 UT
1405 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

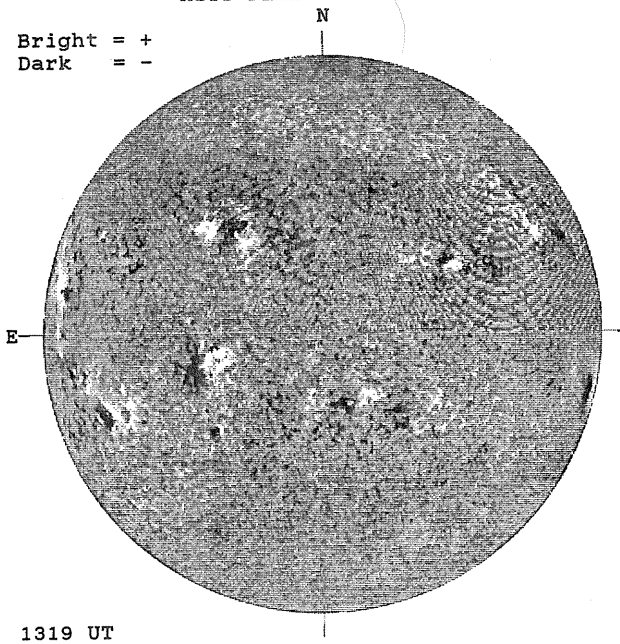


—— FeXIV, 1356 UT
.... Fe X, 1326 UT

JUNE 4, 1990 (P=-14.40, B_o =-0.32, L_o = 98.66)

KITT PEAK MAGNETOGRAM

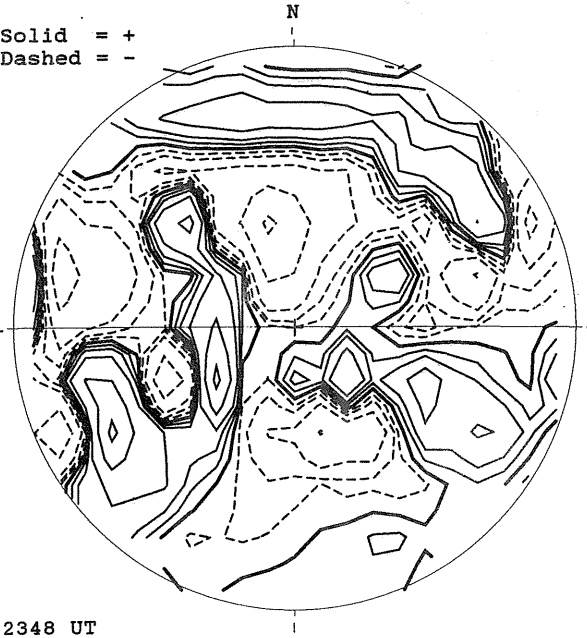
Bright = +
Dark = -



1319 UT

STANFORD MAGNETOGRAM

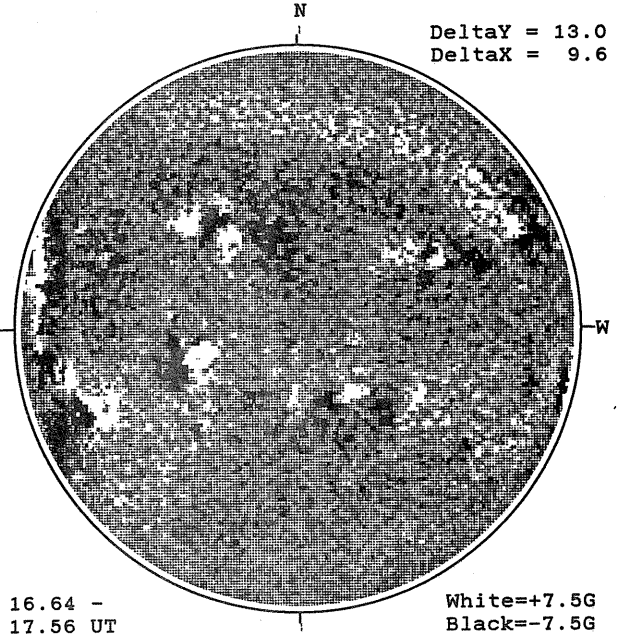
Solid = +
Dashed = -



2348 UT

MT. WILSON MAGNETOGRAM

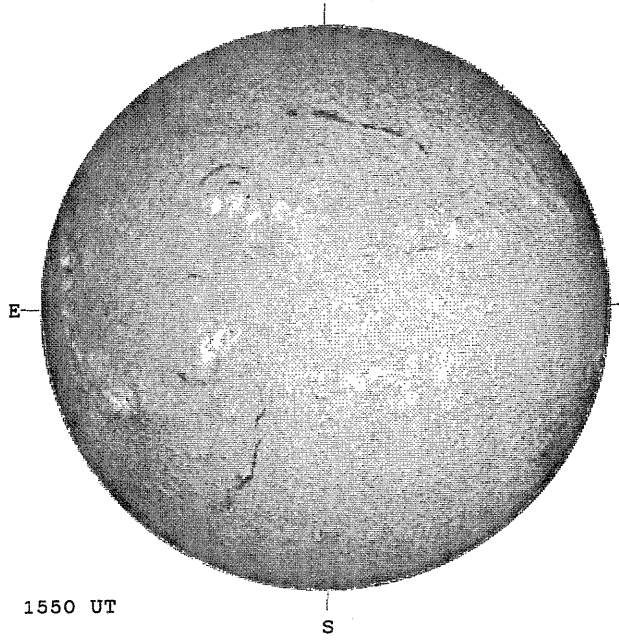
DeltaY = 13.0
DeltaX = 9.6



16.64 -
17.56 UT

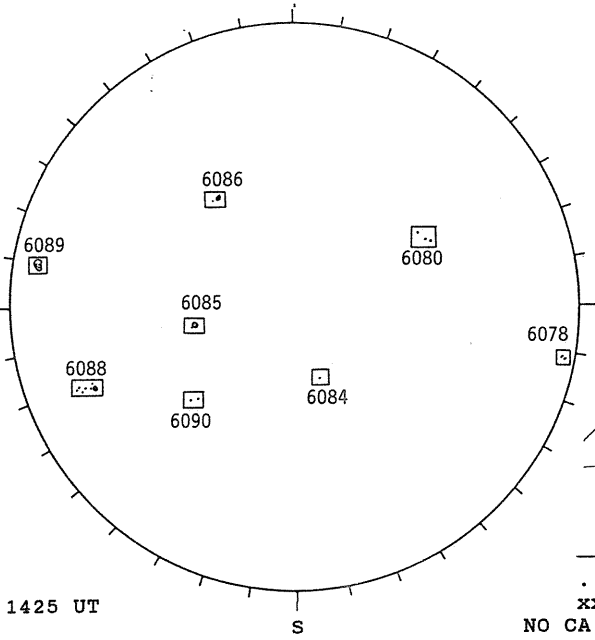
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



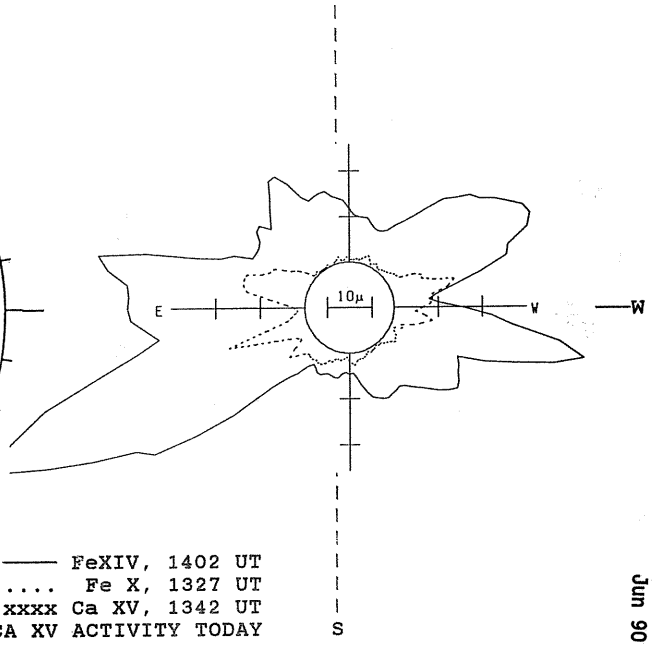
1550 UT

BOULDER SUNSPOT



1425 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



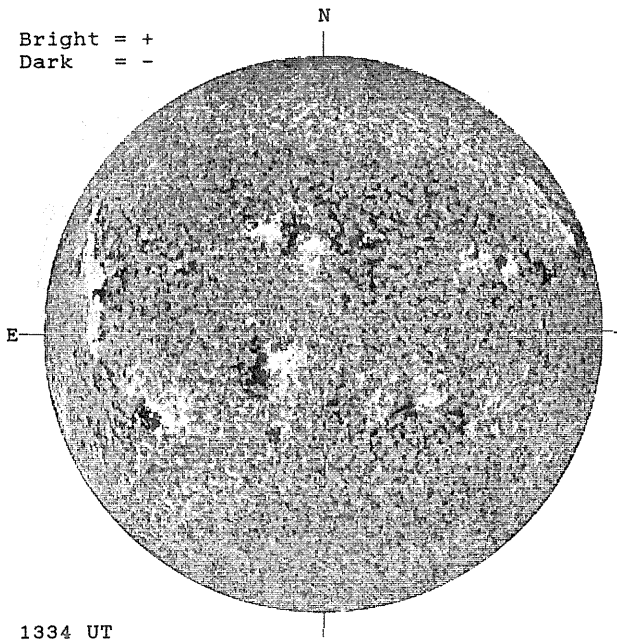
—— FeXIV, 1402 UT
.... Fe X, 1327 UT
xxxx Ca XV, 1342 UT
NO CA XV ACTIVITY TODAY

63
Jun 90

JUNE 5, 1990 (P=-14.01, B_o =-0.20, L_o = 85.43)

KITT PEAK MAGNETOGRAM

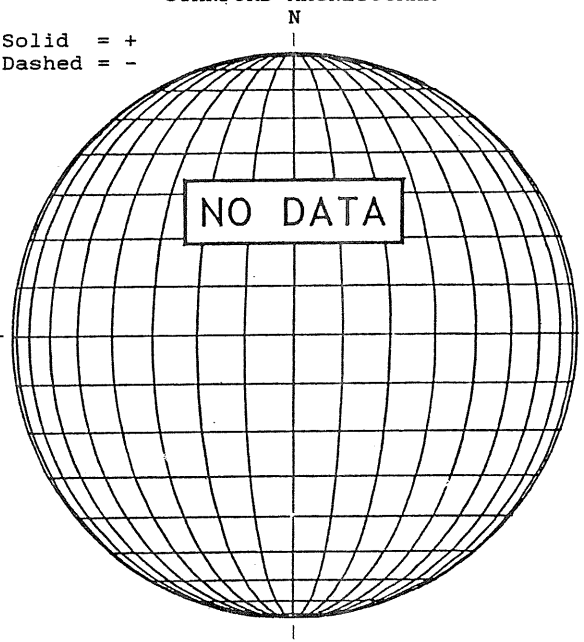
Bright = +
Dark = -



1334 UT

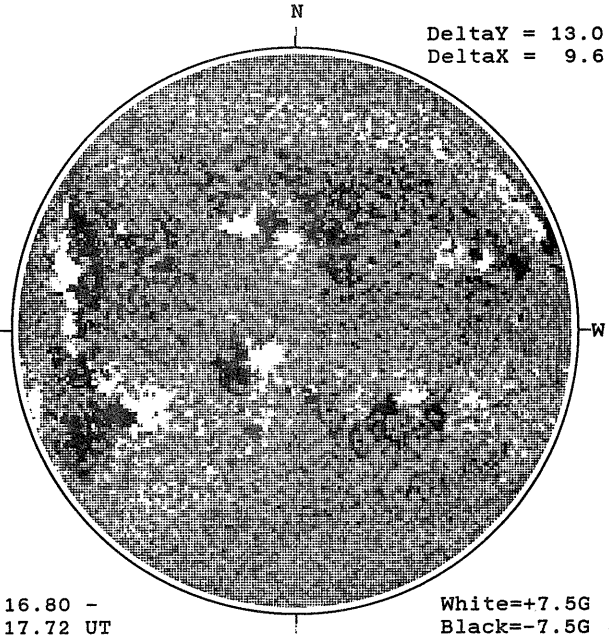
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

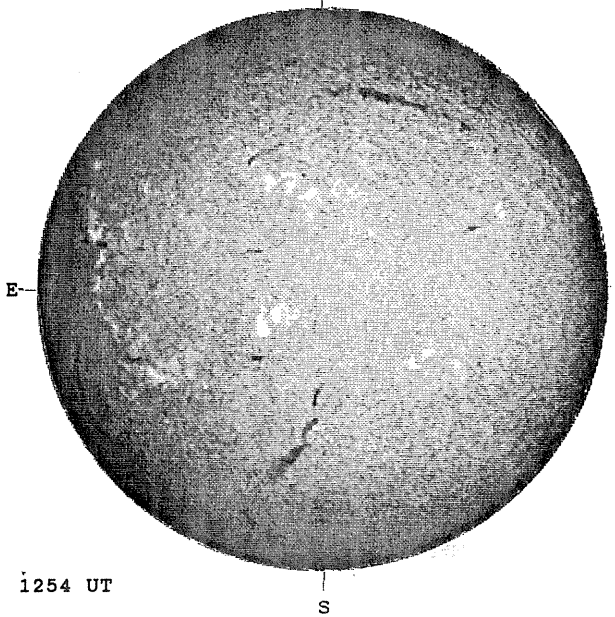
DeltaY = 13.0
DeltaX = 9.6



16.80 -
17.72 UT

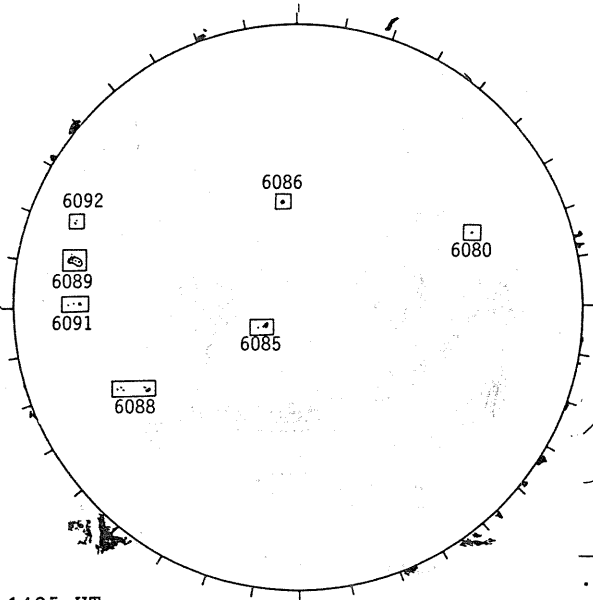
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



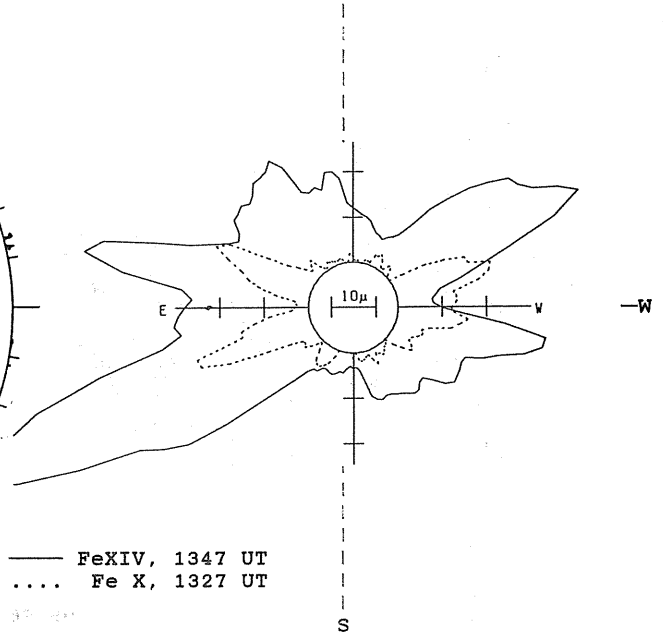
1254 UT

BOULDER SUNSPOT



1405 UT
1422 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

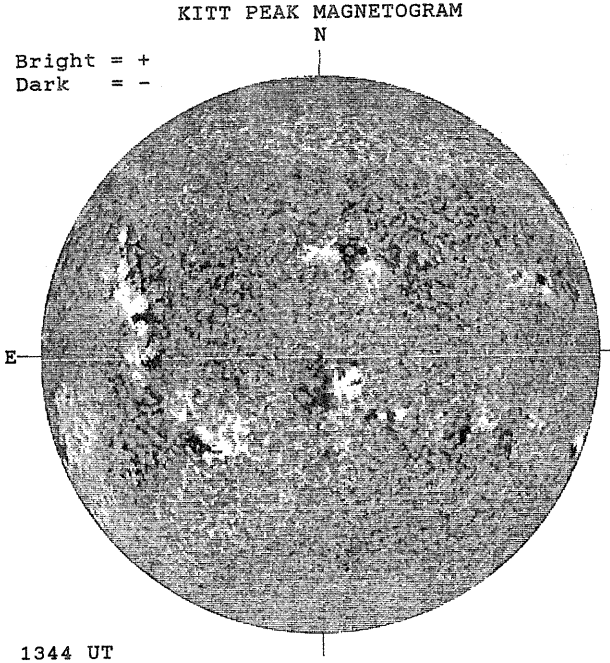


—— FeXIV, 1347 UT
.... Fe X, 1327 UT

JUNE 6, 1990 (P=-13.62, B_o =-0.08, L_o = 72.19)

KITT PEAK MAGNETOGRAM

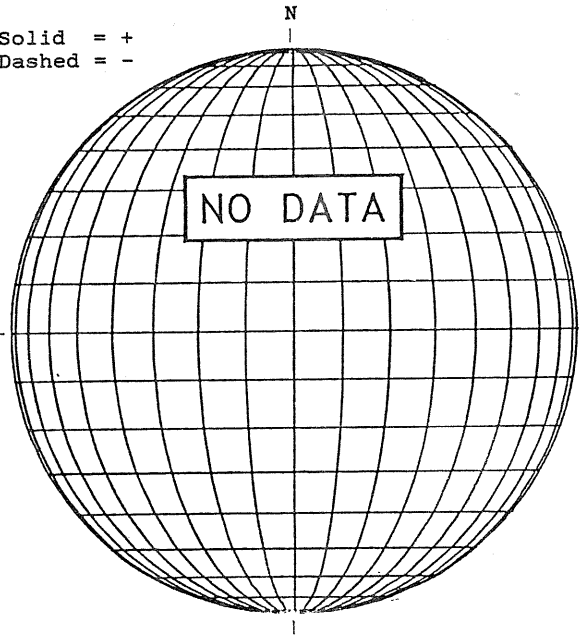
Bright = +
Dark = -



1344 UT

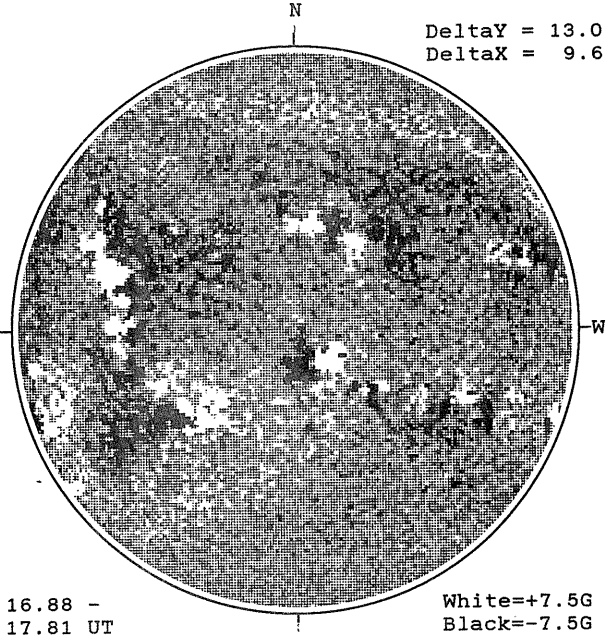
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

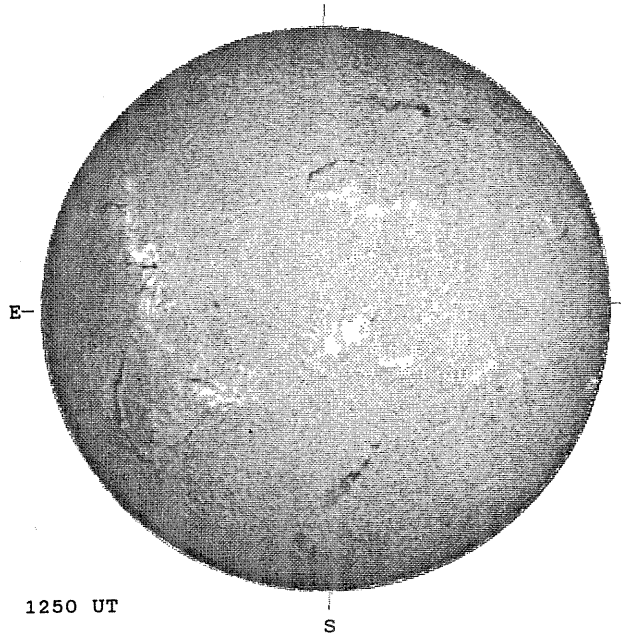
DeltaY = 13.0
DeltaX = 9.6



16.88 -
17.81 UT

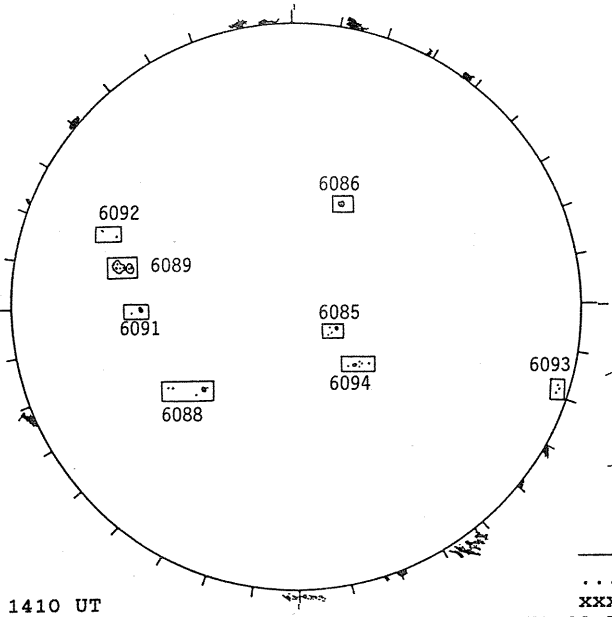
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



1250 UT

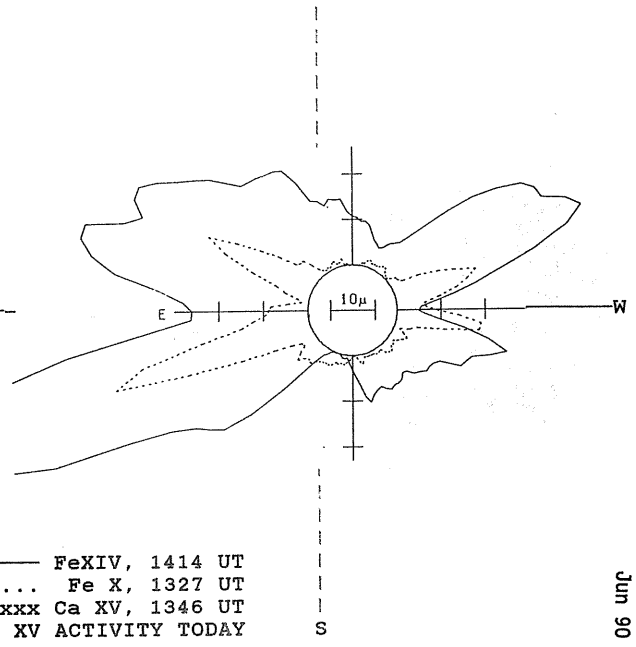
BOULDER SUNSPOT



1410 UT
1400 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1414 UT
.... Fe X, 1327 UT
xxxx Ca XV, 1346 UT
NO CA XV ACTIVITY TODAY

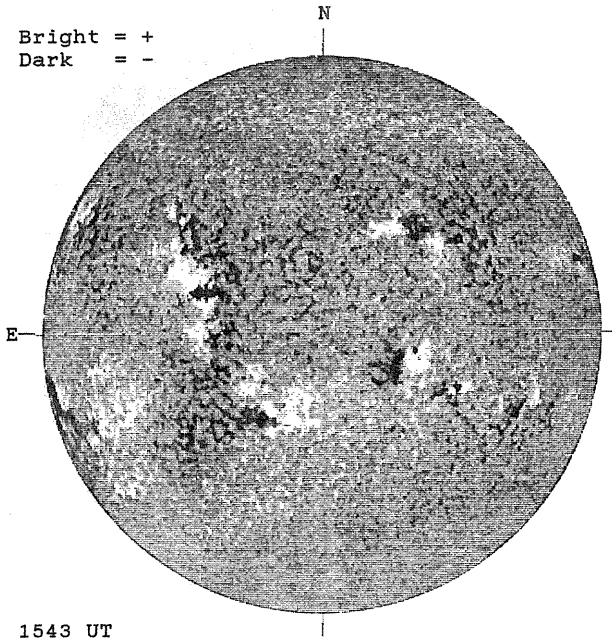
95
Jun 90

JUNE 7, 1990 (P=-13.22, B_o = 0.04, L_o = 58.96)

Jun 90
66

KITT PEAK MAGNETOGRAM

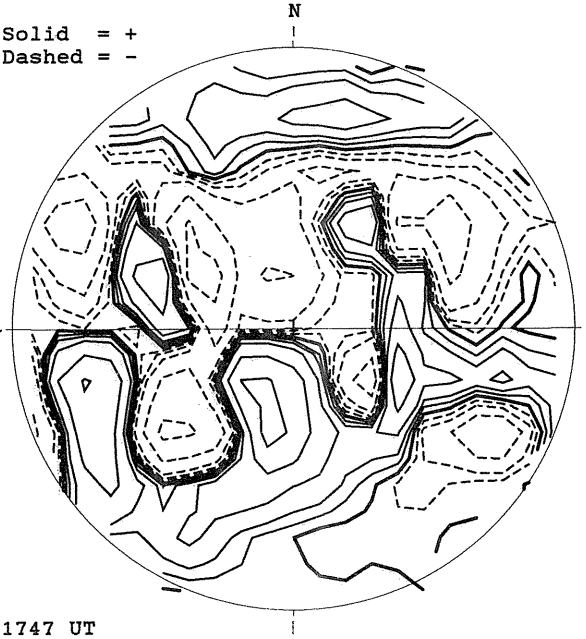
Bright = +
Dark = -



1543 UT

STANFORD MAGNETOGRAM

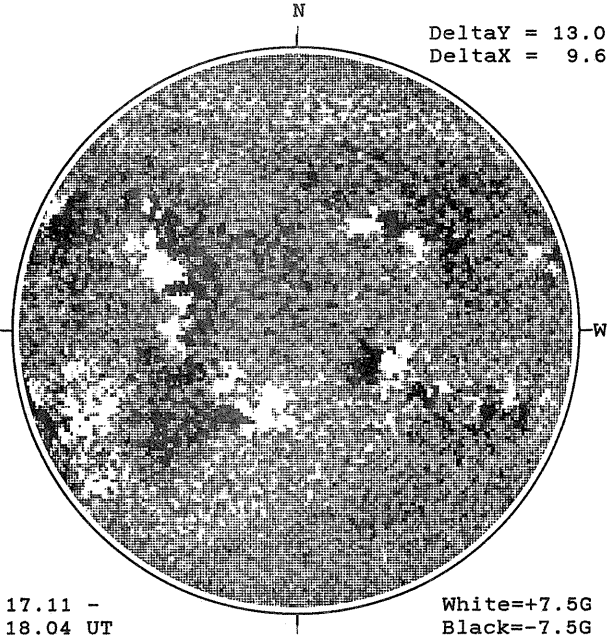
Solid = +
Dashed = -



1747 UT

MT. WILSON MAGNETOGRAM

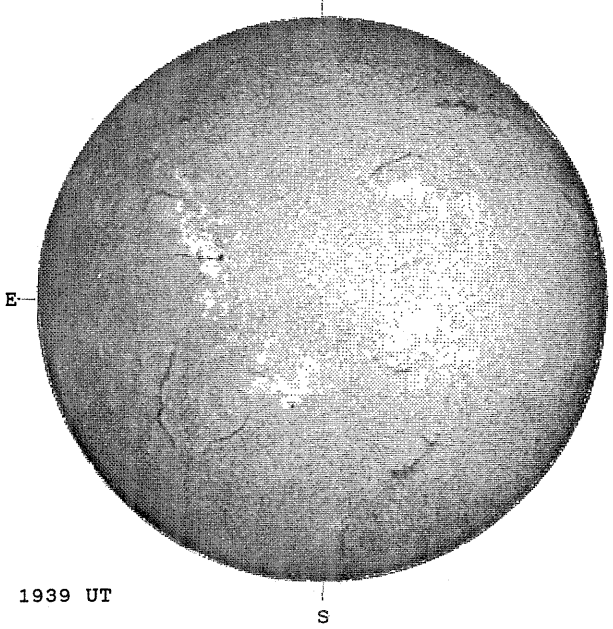
DeltaY = 13.0
DeltaX = 9.6



17.11 -
18.04 UT

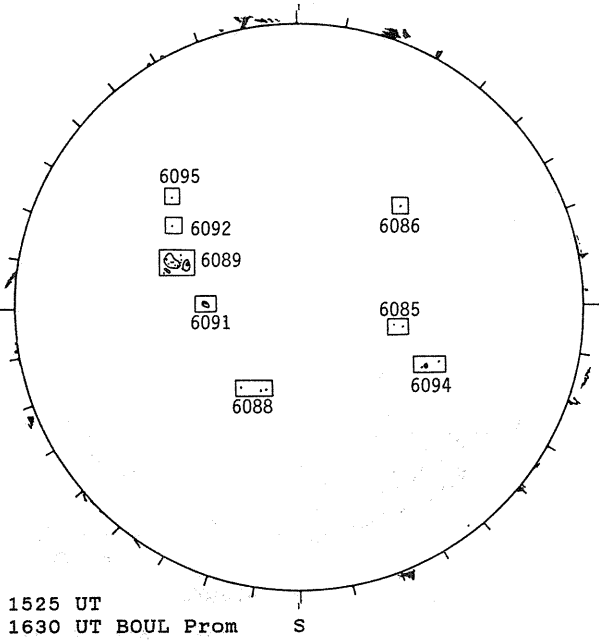
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



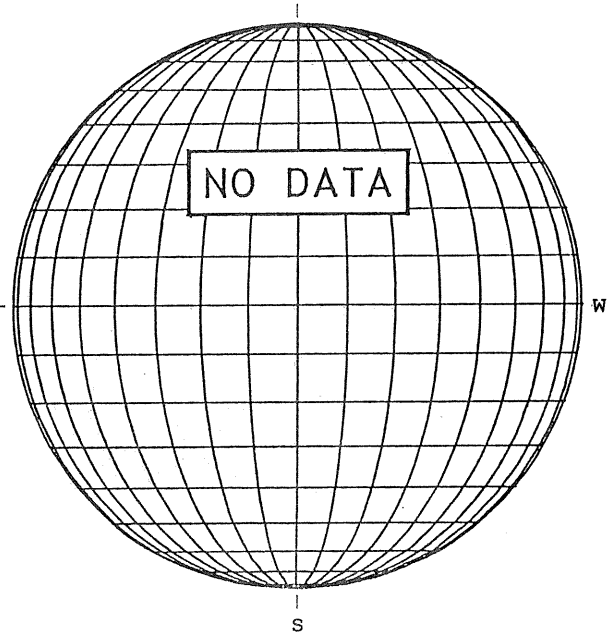
1939 UT

BOULDER SUNSPOT



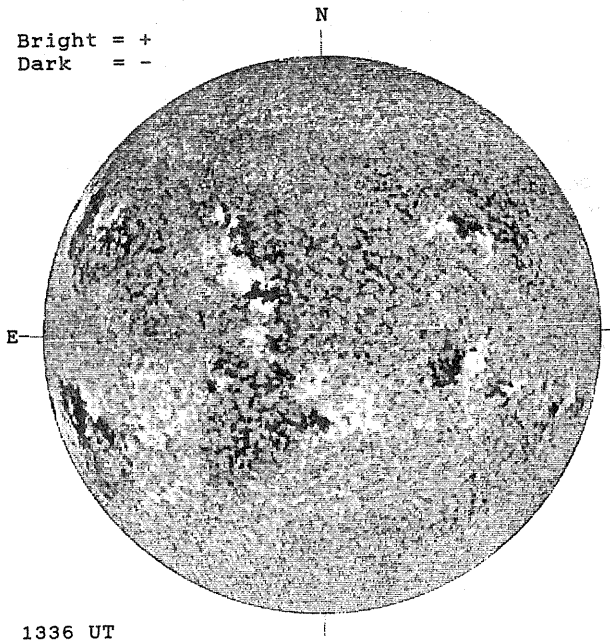
1525 UT
1630 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

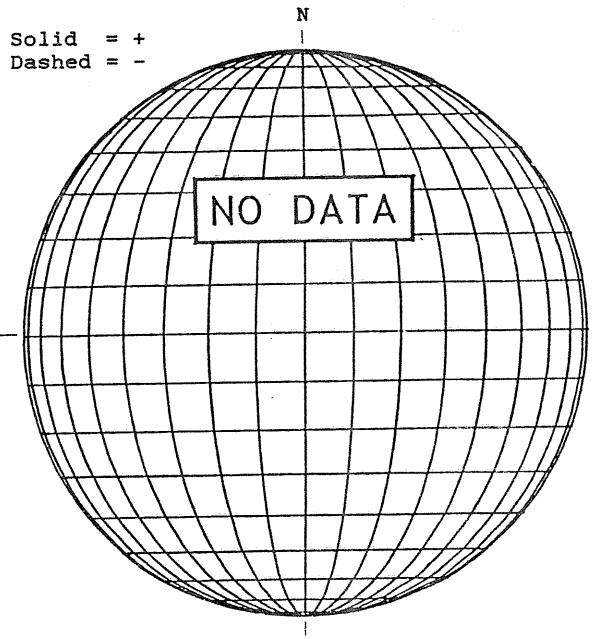


JUNE 8, 1990 (P=-12.82, B_o = 0.16, L_o = 45.72)

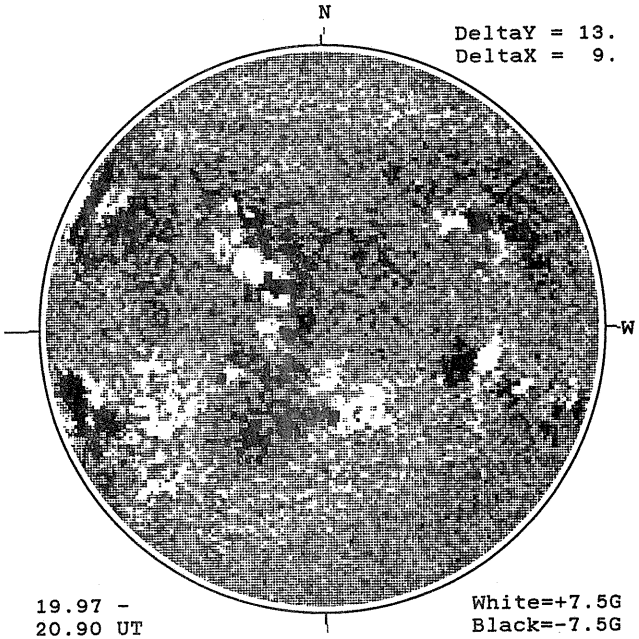
KITT PEAK MAGNETOGRAM



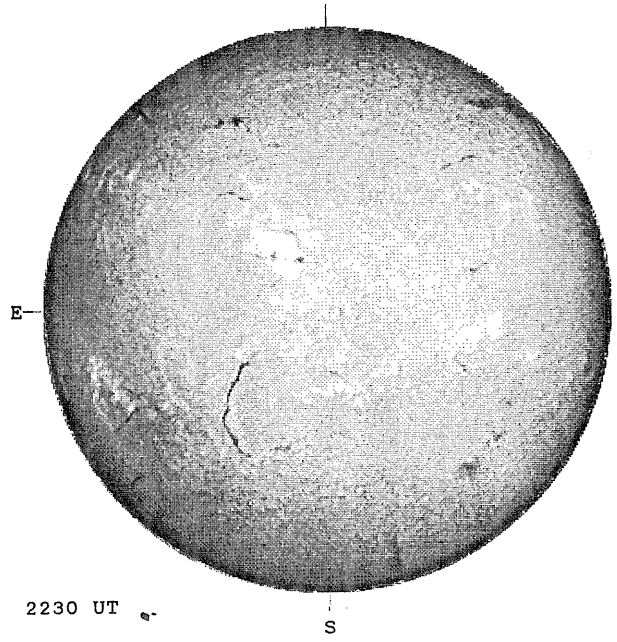
STANFORD MAGNETOGRAM



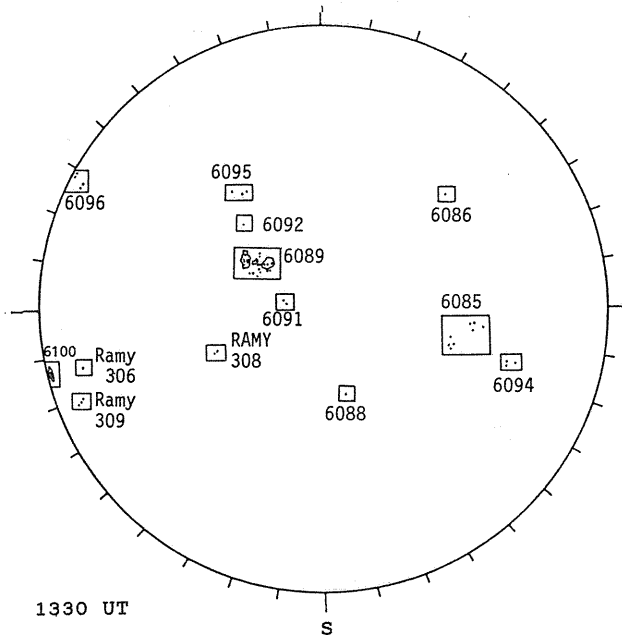
MT. WILSON MAGNETOGRAM



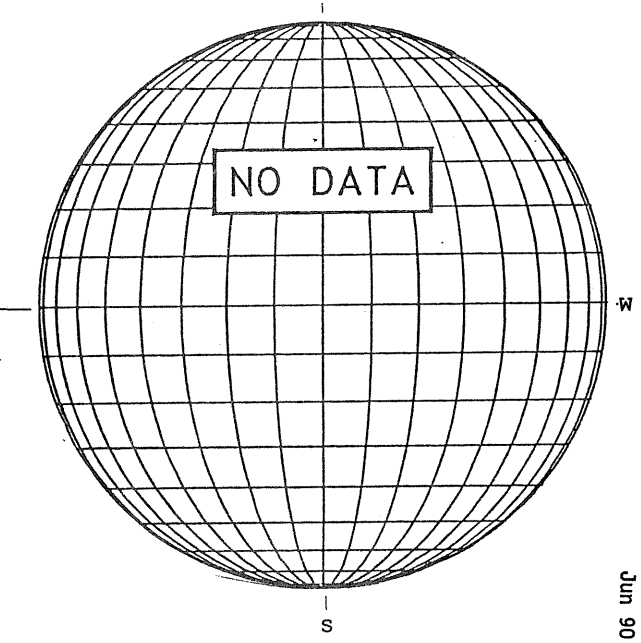
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



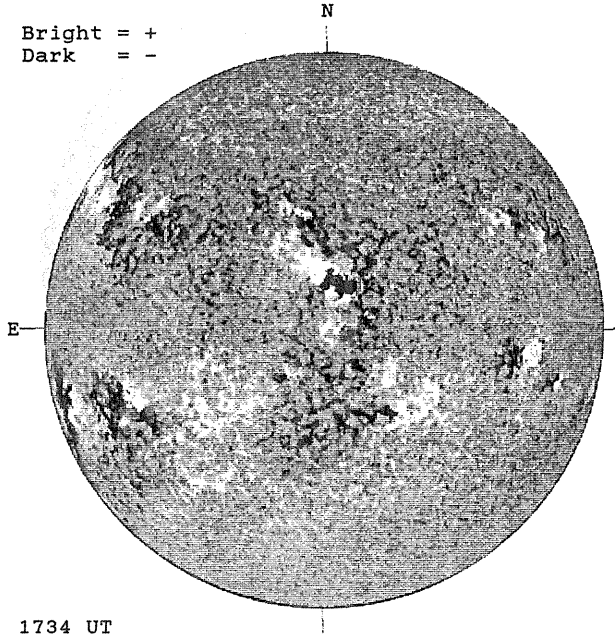
67
Jun 90

JUNE 9, 1990 (P=-12.41, B_o = 0.28, L_o = 32.48)

Jun 90 68

KITT PEAK MAGNETOGRAM

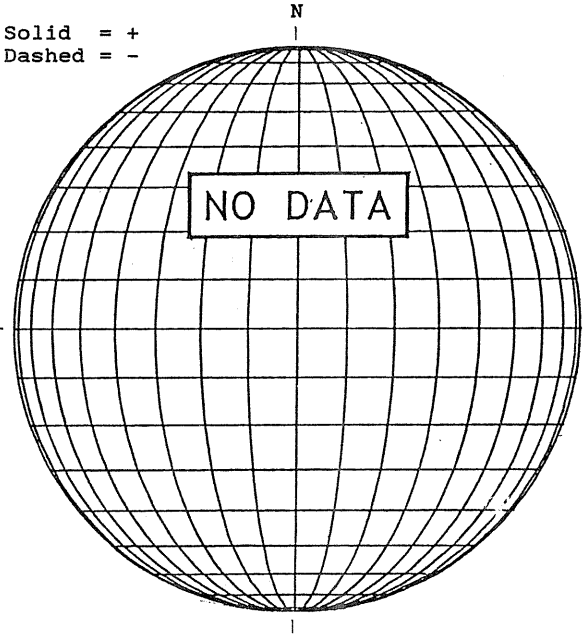
Bright = +
Dark = -



1734 UT

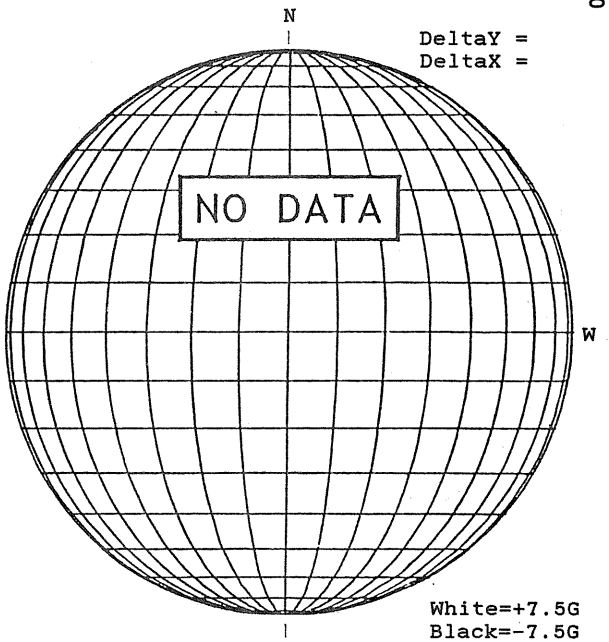
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



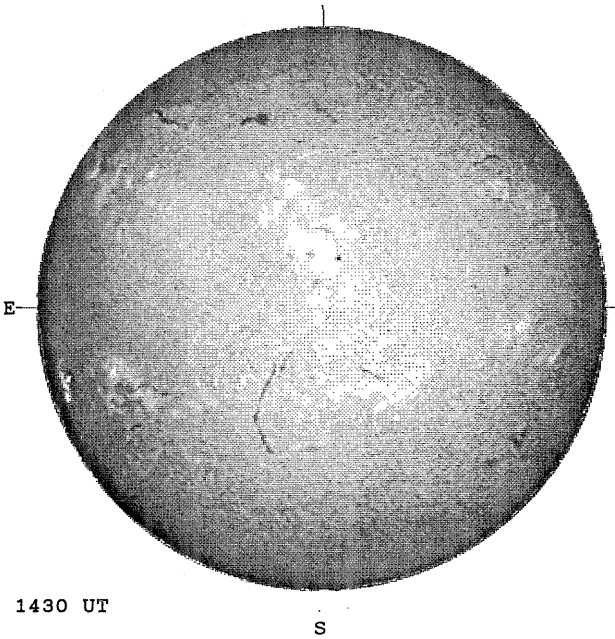
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



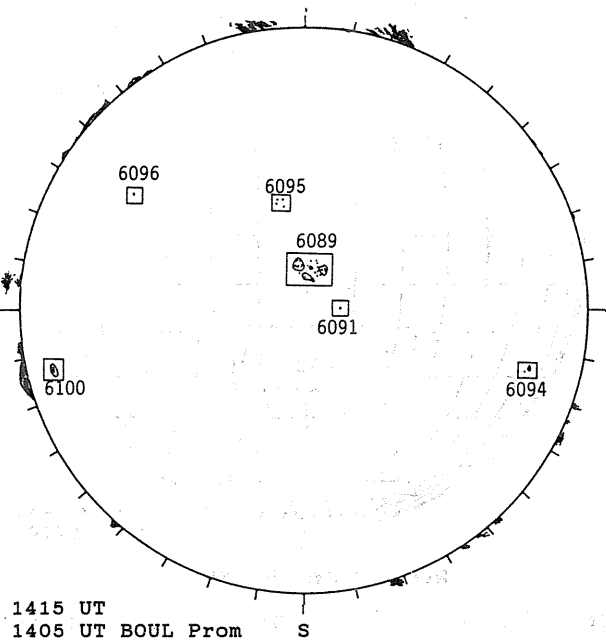
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



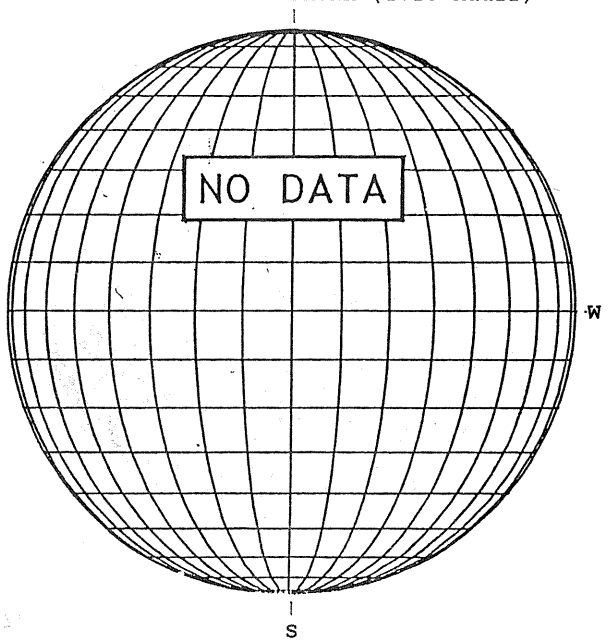
1430 UT

BOULDER SUNSPOT



1415 UT
1405 UT BOUL Prom

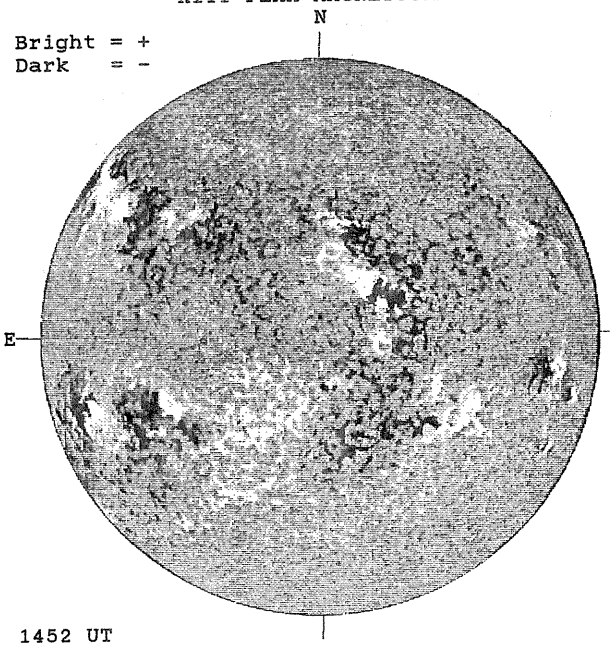
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 10, 1990 (P=-12.00, B_o = 0.40, L_o = 19.25)

KITT PEAK MAGNETOGRAM

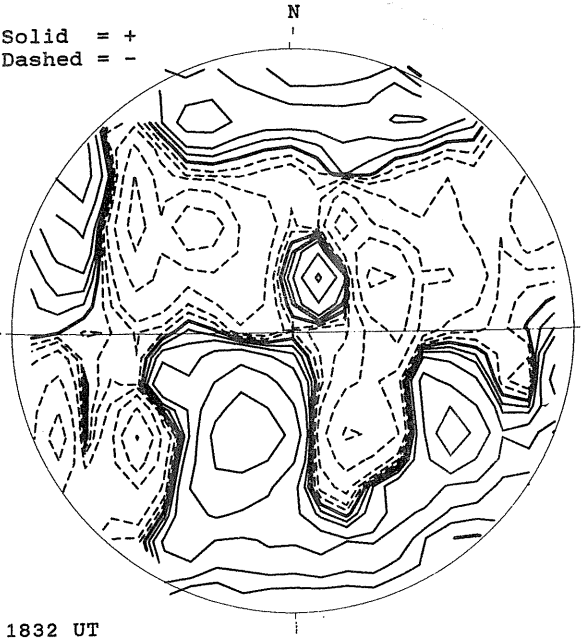
Bright = +
Dark = -



1452 UT

STANFORD MAGNETOGRAM

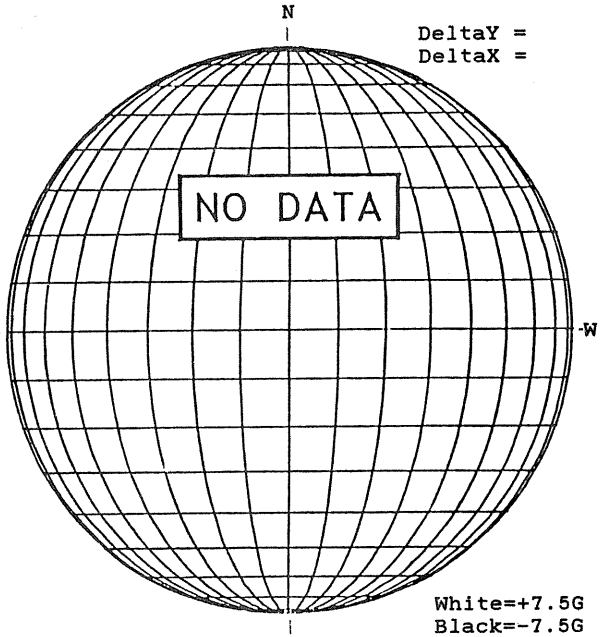
Solid = +
Dashed = -



1832 UT

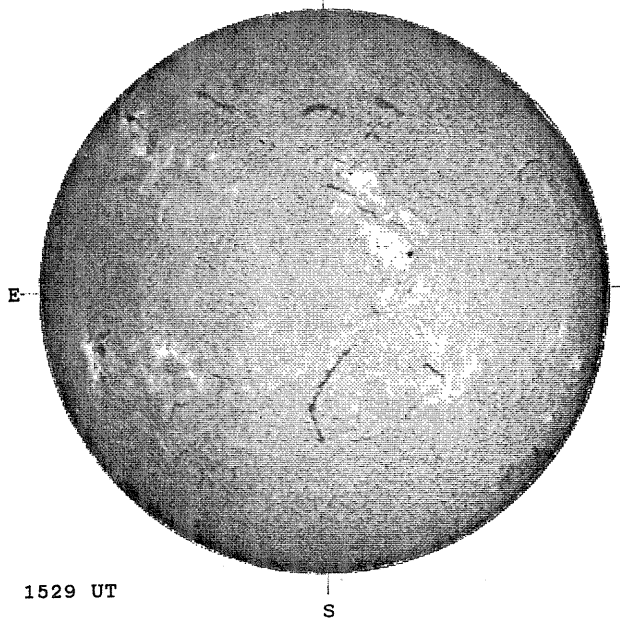
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



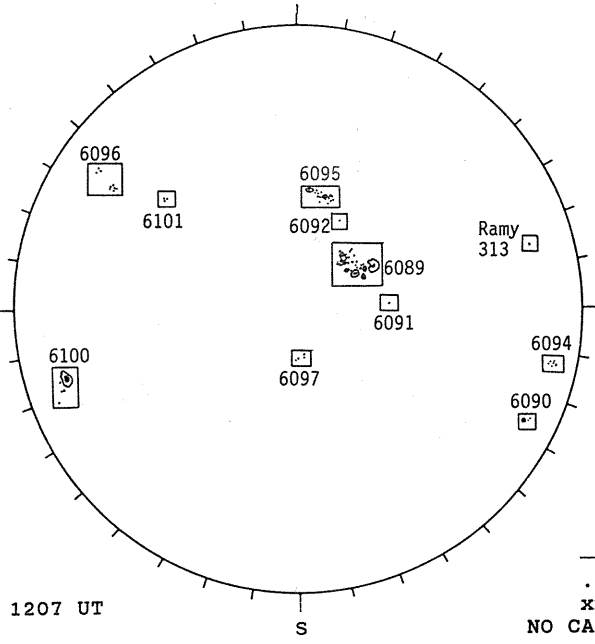
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



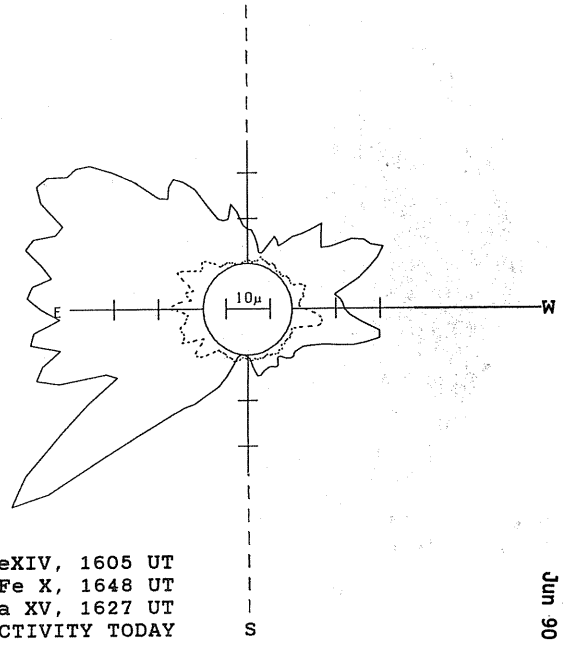
1529 UT

RAMEY SUNSPOT



1207 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1605 UT
.... Fe X, 1648 UT
xxxx Ca XV, 1627 UT
NO CA XV ACTIVITY TODAY

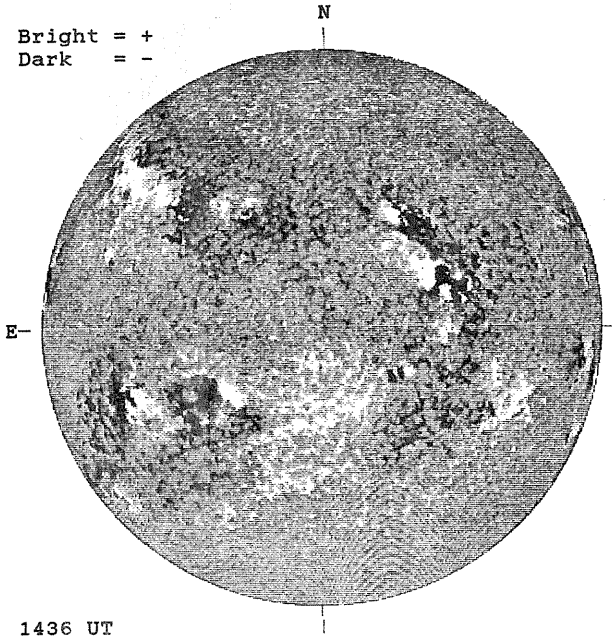
Jun 90

JUNE 11, 1990 (P=-11.59, B_o = 0.52, L_o = 6.01)

Jun 90 70

KITT PEAK MAGNETOGRAM

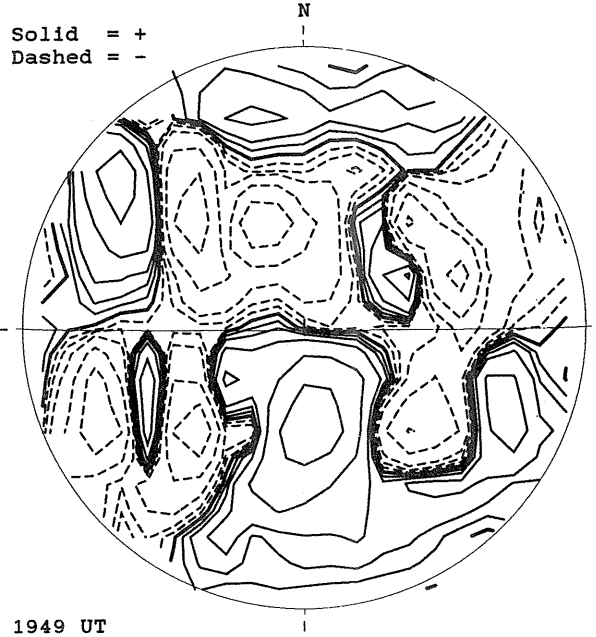
Bright = +
Dark = -



1436 UT

STANFORD MAGNETOGRAM

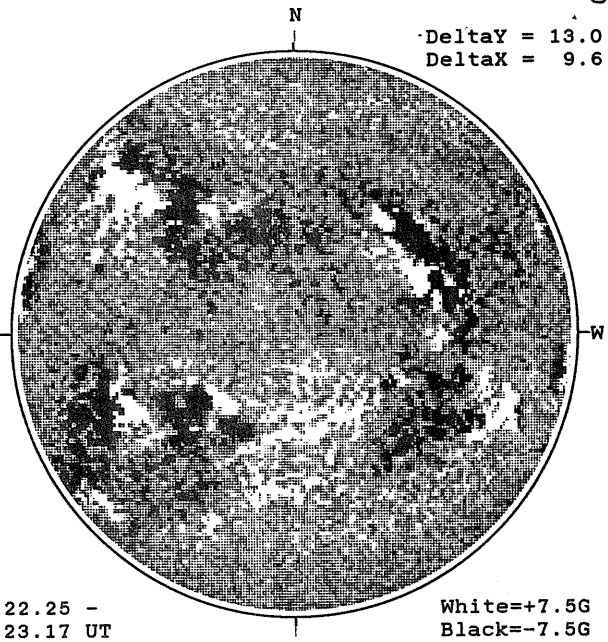
Solid = +
Dashed = -



1949 UT

MT. WILSON MAGNETOGRAM

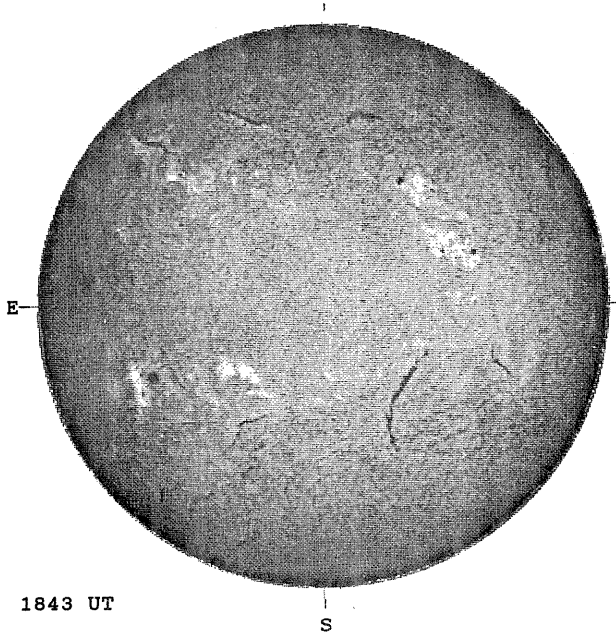
DeltaY = 13.0
DeltaX = 9.6



22.25 -
23.17 UT

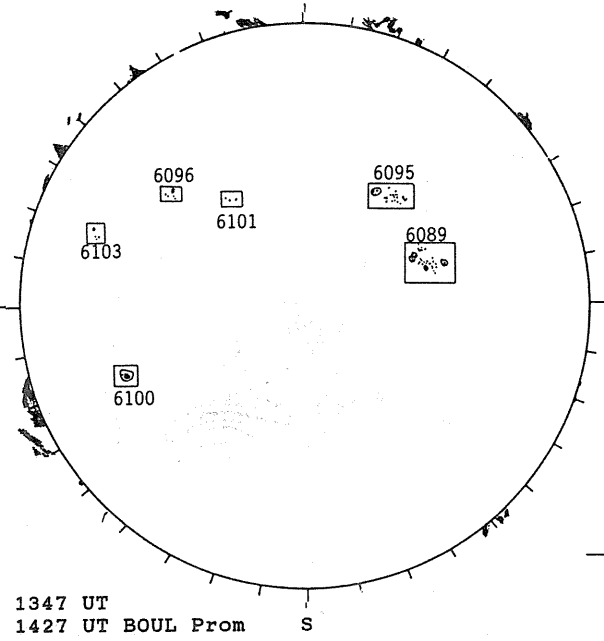
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



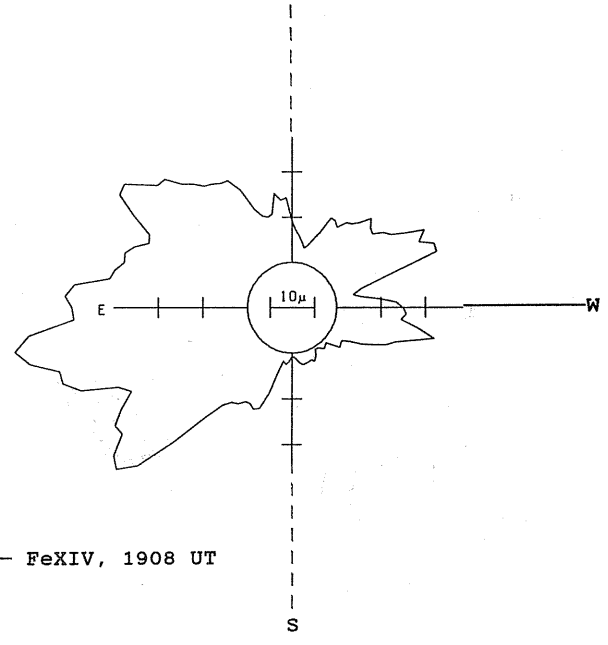
1843 UT

BOULDER SUNSPOT



1347 UT
1427 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

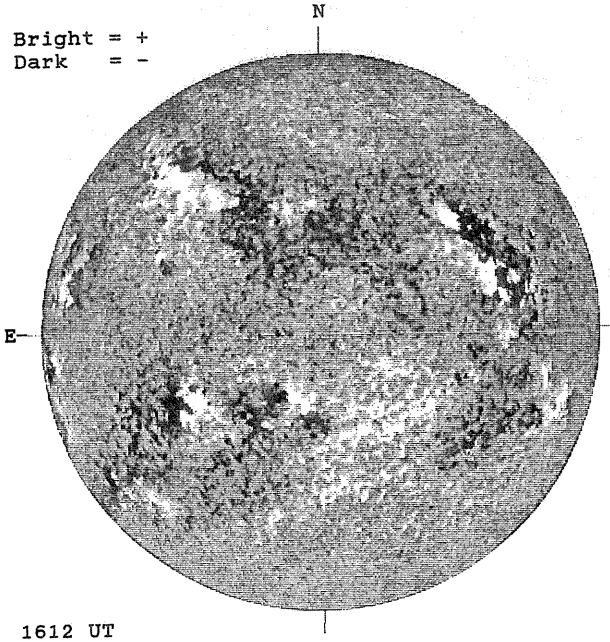


—— FeXIV, 1908 UT

JUNE 12, 1990 (P=-11.18, B_o = 0.64, L_o = 352.78)

KITT PEAK MAGNETOGRAM

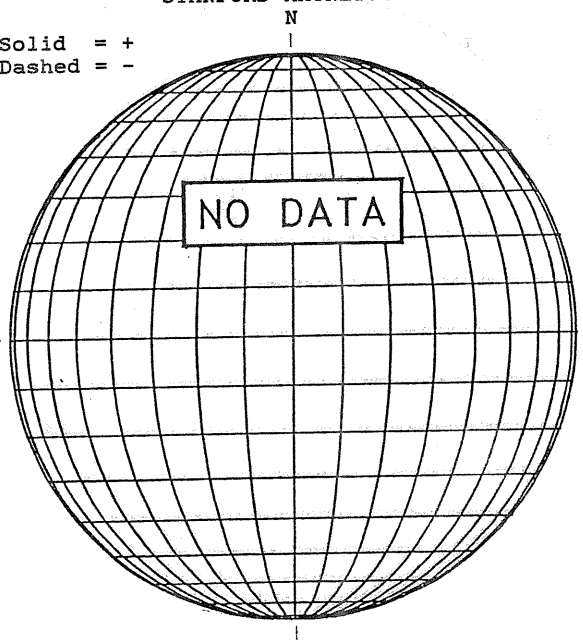
Bright = +
Dark = -



1612 UT

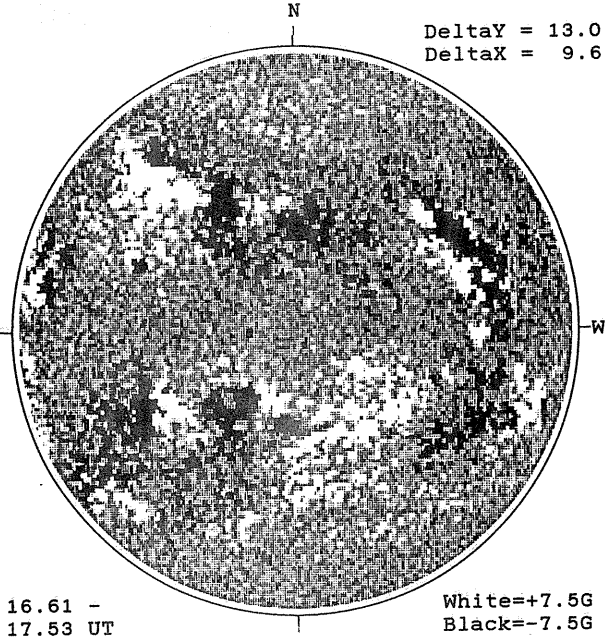
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

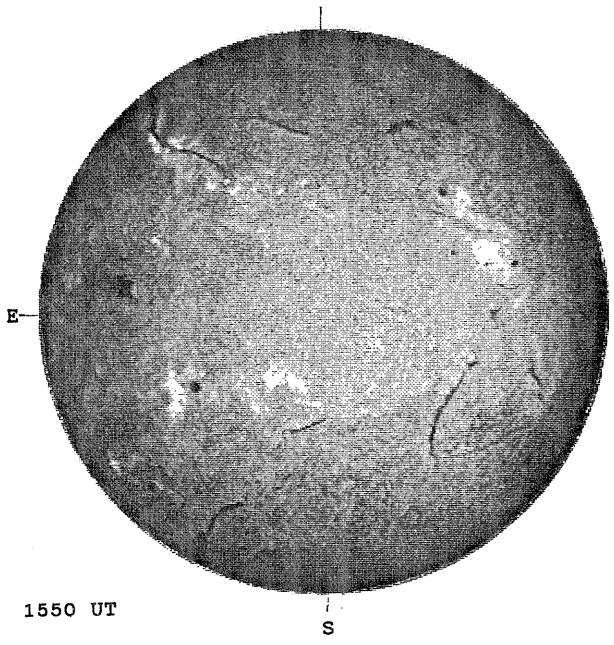
DeltaY = 13.0
DeltaX = 9.6



16.61 -
17.53 UT

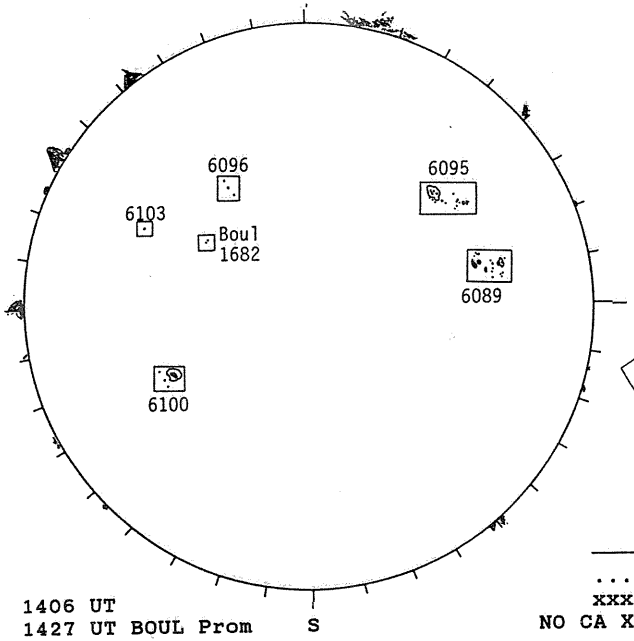
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



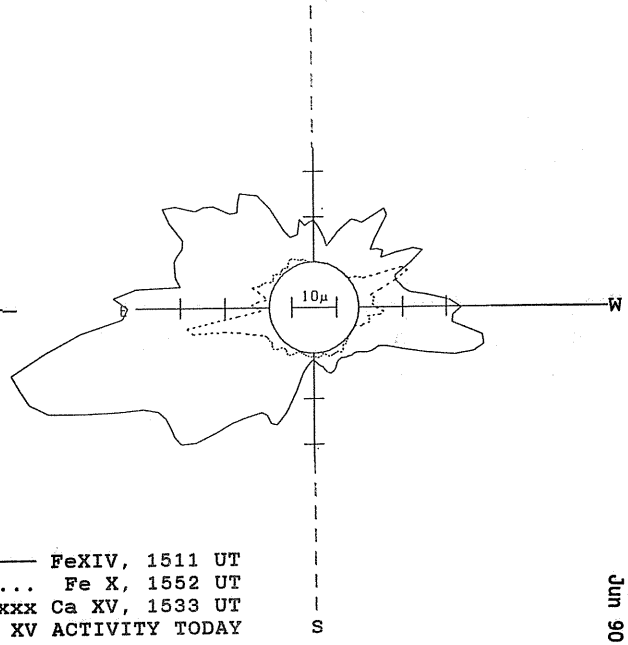
1550 UT

BOULDER SUNSPOT



1406 UT
1427 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



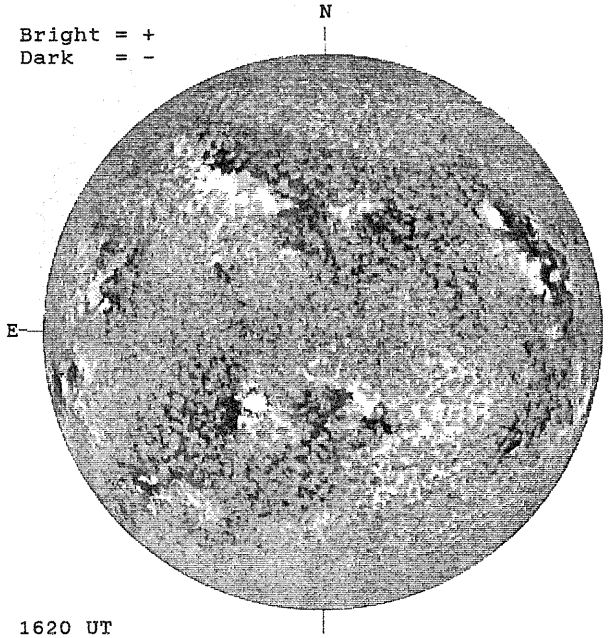
—— FeXIV, 1511 UT
.... Fe X, 1552 UT
xxxx Ca XV, 1533 UT
NO CA XV ACTIVITY TODAY

71
Jun 90

JUNE 13, 1990 (P=-10.76, B_o = 0.76, L_o = 339.54)

KITT PEAK MAGNETOGRAM

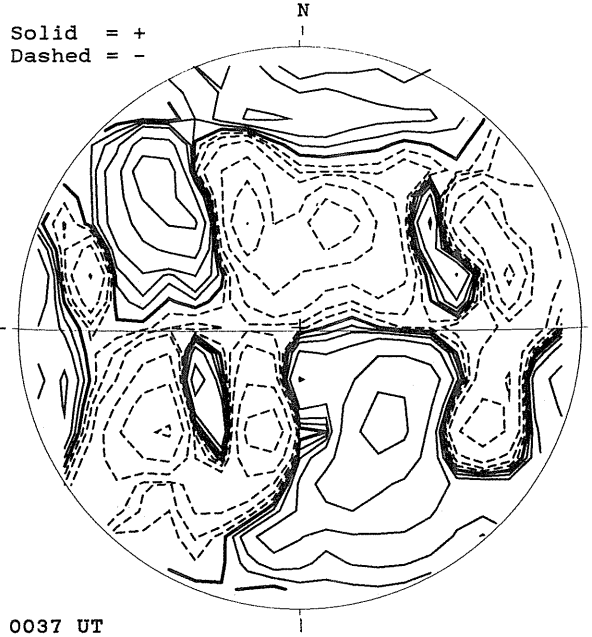
Bright = +
Dark = -



1620 UT

STANFORD MAGNETOGRAM

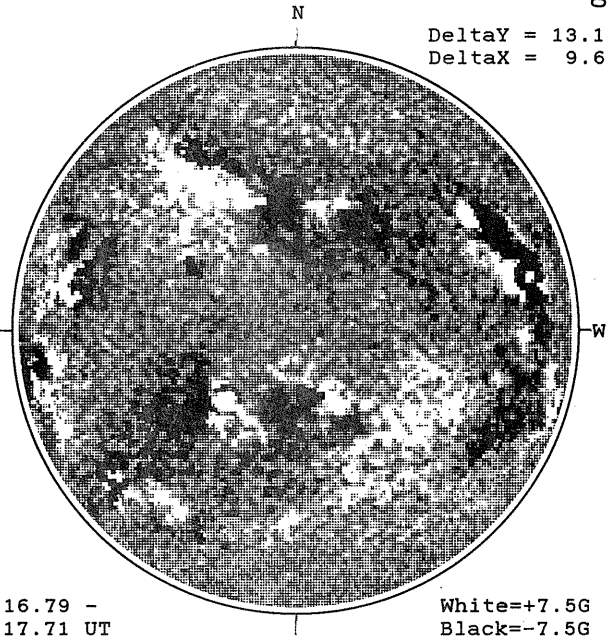
Solid = +
Dashed = -



0037 UT

MT. WILSON MAGNETOGRAM

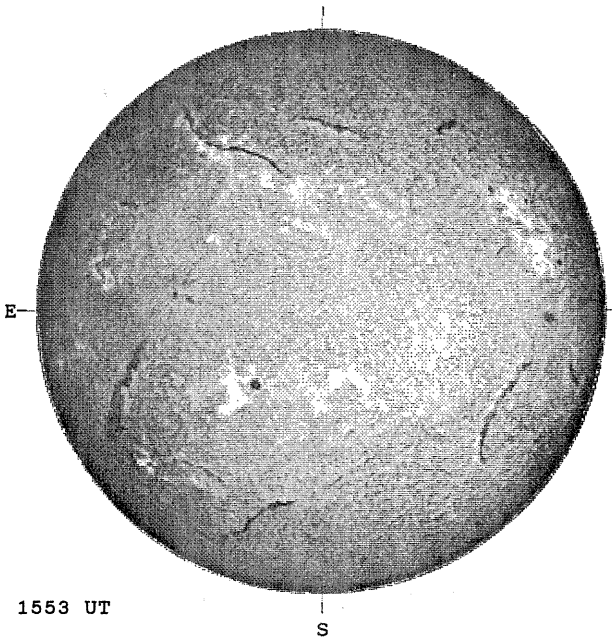
DeltaY = 13.1
DeltaX = 9.6



16.79 -
17.71 UT

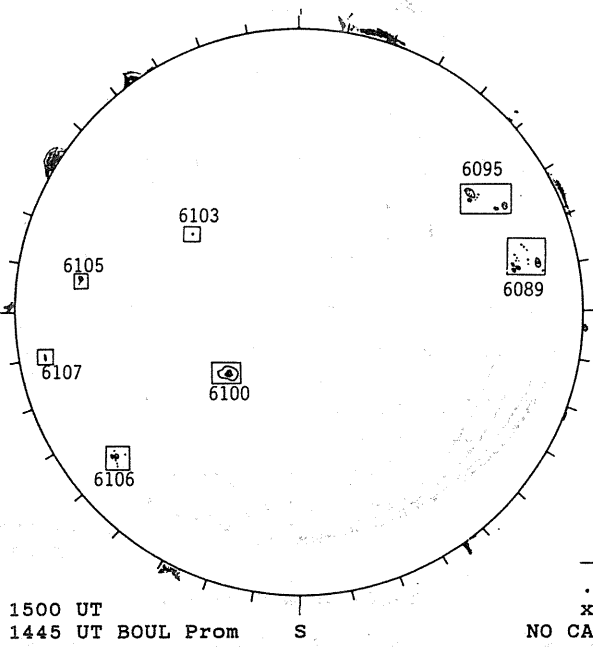
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



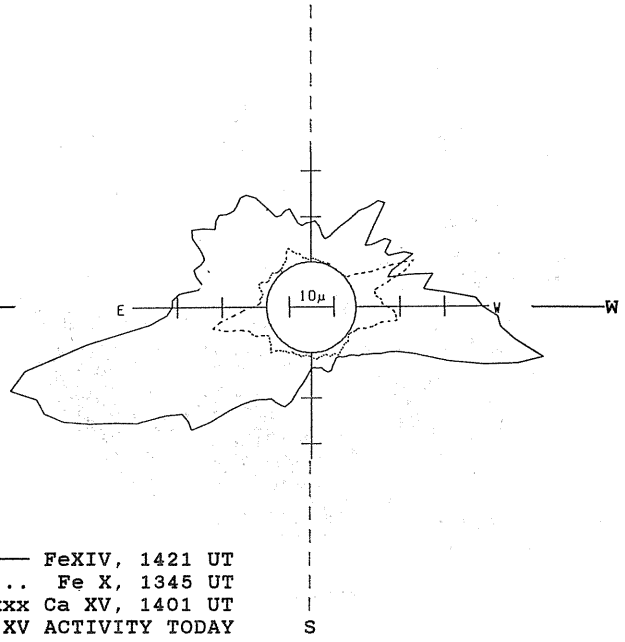
1553 UT

BOULDER SUNSPOT



1500 UT
1445 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

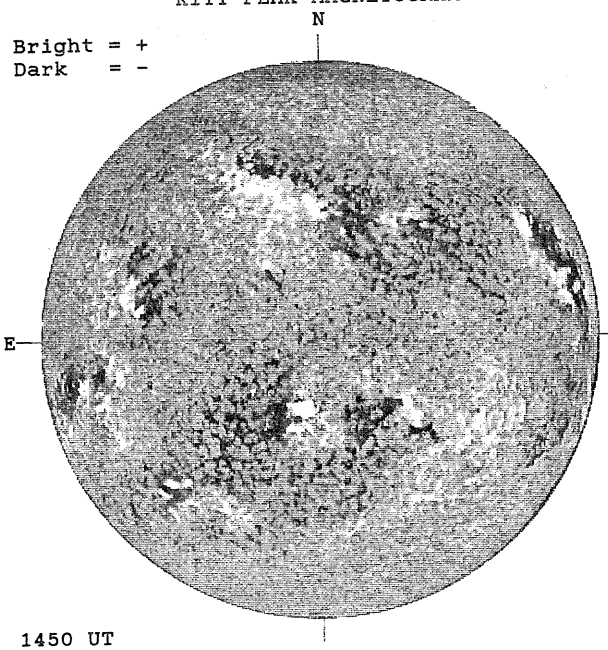


—— FeXIV, 1421 UT
.... Fe X, 1345 UT
xxxx Ca XV, 1401 UT
NO CA XV ACTIVITY TODAY

JUNE 14, 1990 (P=-10.33, B_o = 0.88, L_o = 326.30)

KITT PEAK MAGNETOGRAM

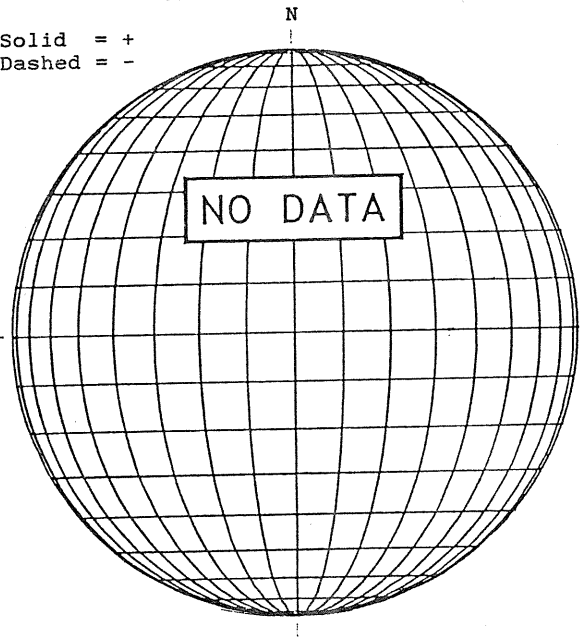
Bright = +
Dark = -



1450 UT

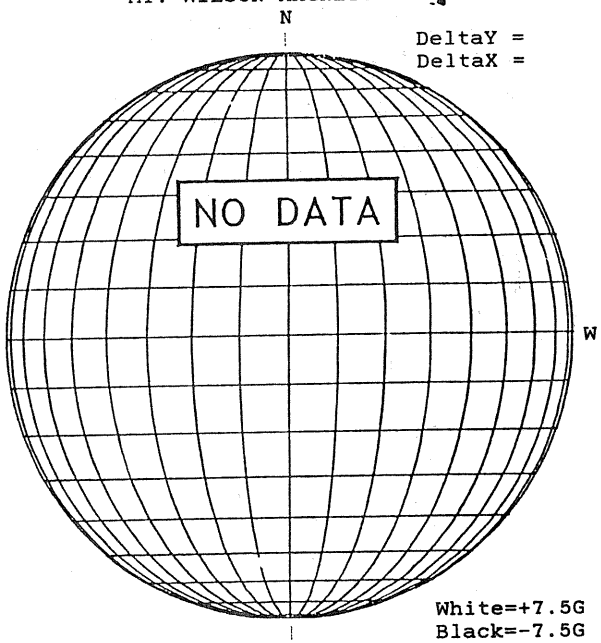
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



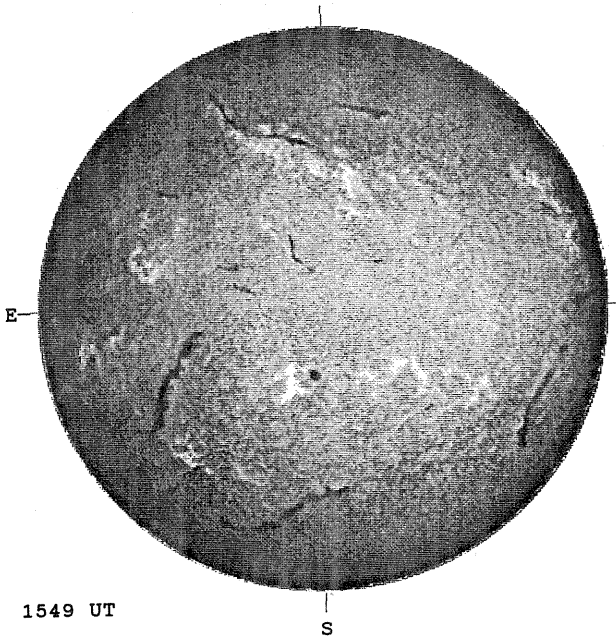
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



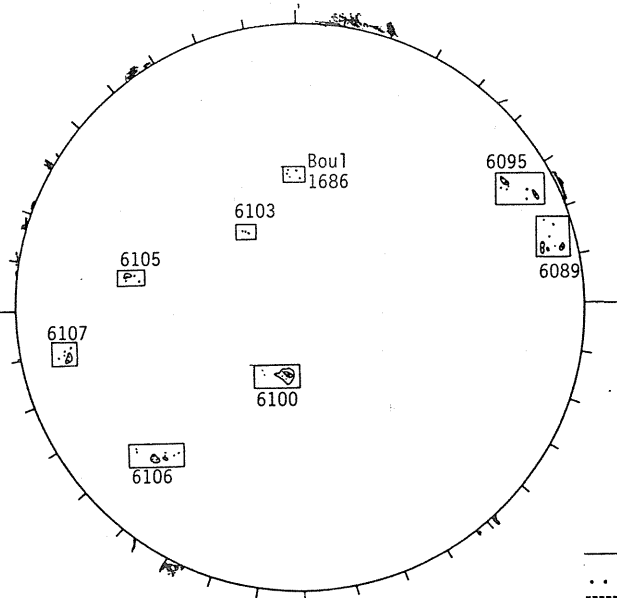
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



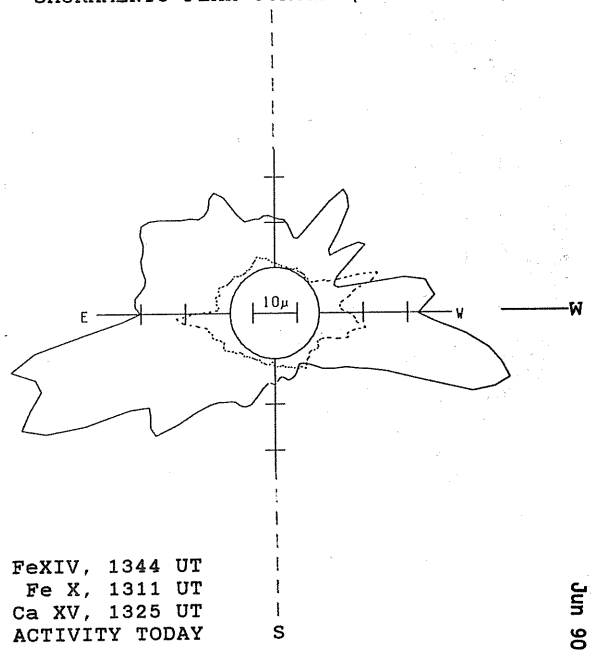
1549 UT

BOULDER SUNSPOT



1425 UT
1445 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1344 UT
.... Fe X, 1311 UT
xxxx Ca XV, 1325 UT
NO CA XV ACTIVITY TODAY

73
Jun 90

JUNE 15, 1990 (P= -9.91, B_o = 1.00, L_o = 313.07)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

N

E

NO DATA

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

2241 UT

MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

N

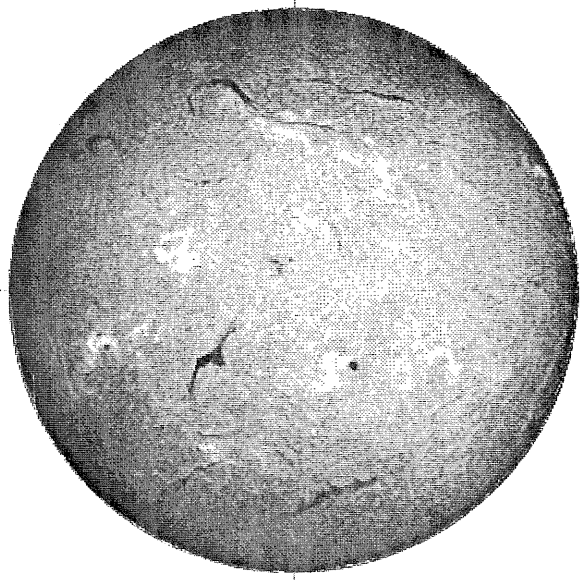
W

NO DATA

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

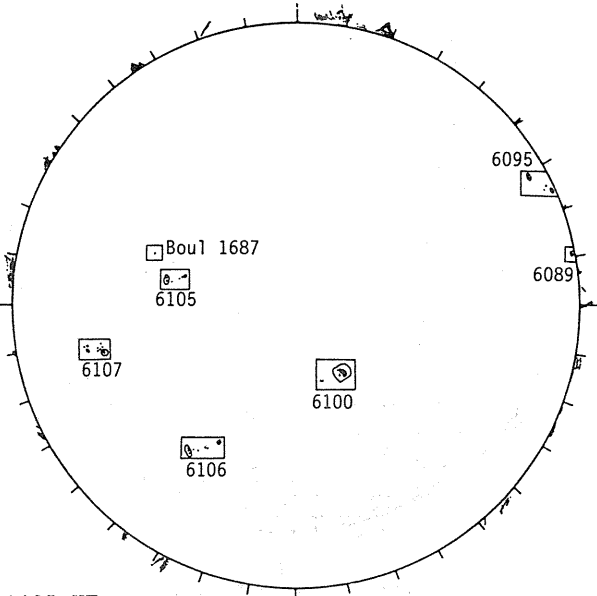
E



1618 UT

S

BOULDER SUNSPOT



1435 UT
1600 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)

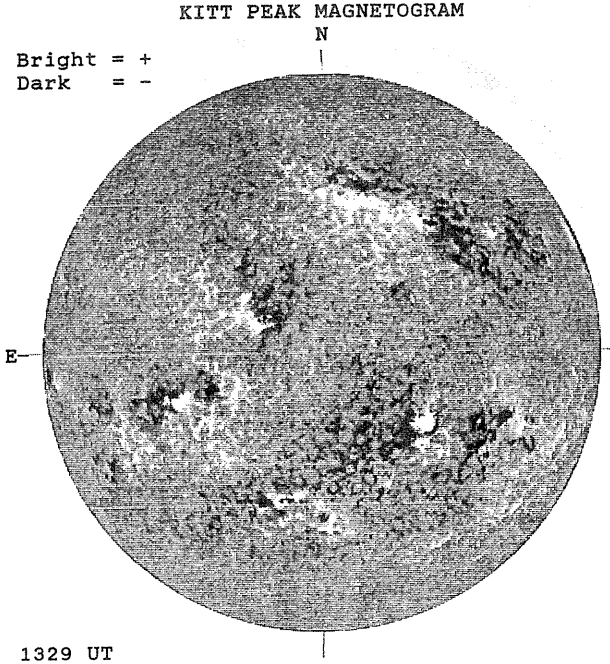
NO DATA

W

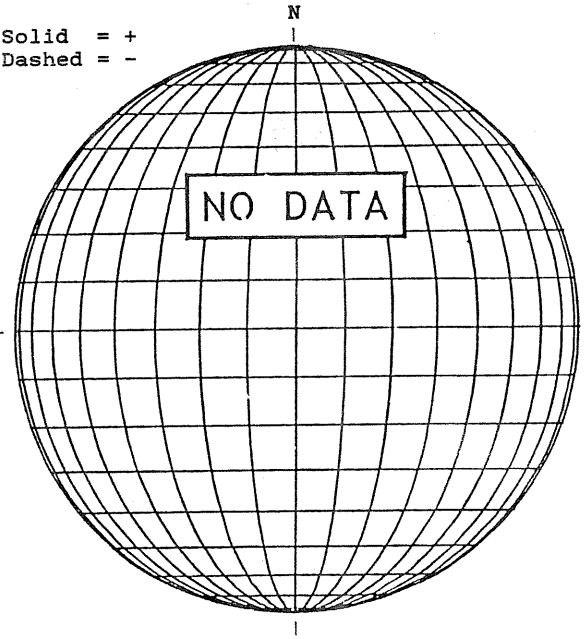
S

JUNE 16, 1990 (P= -9.48, B_o = 1.12, L_o = 299.83)

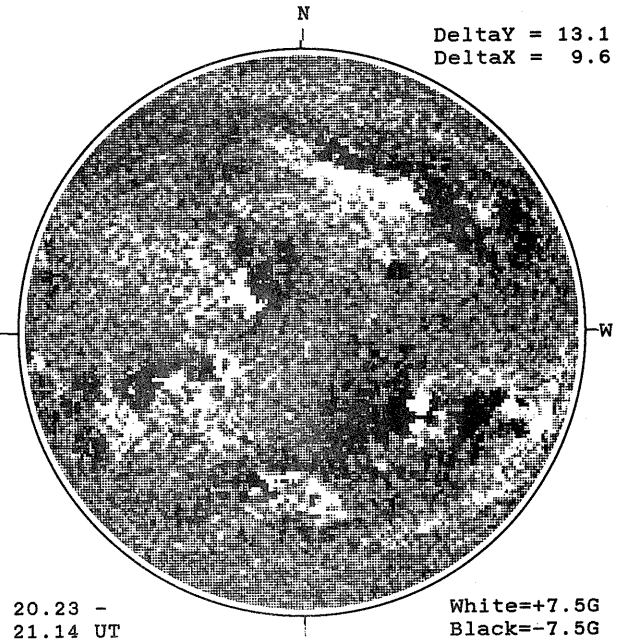
KITT PEAK MAGNETOGRAM



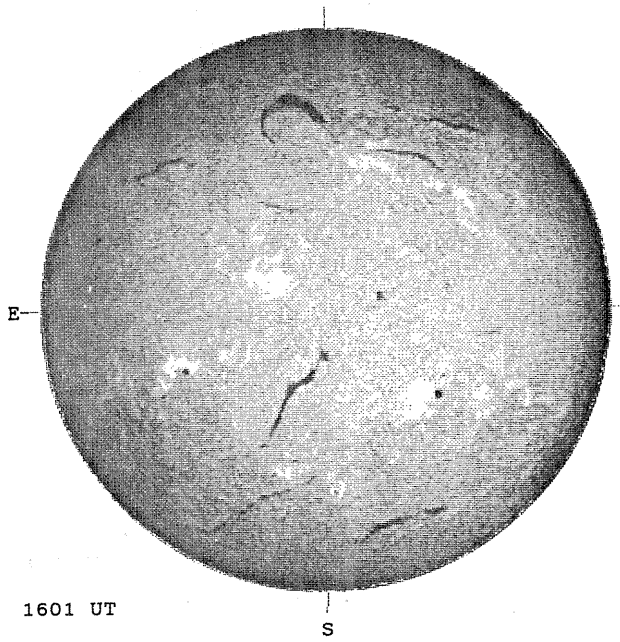
STANFORD MAGNETOGRAM



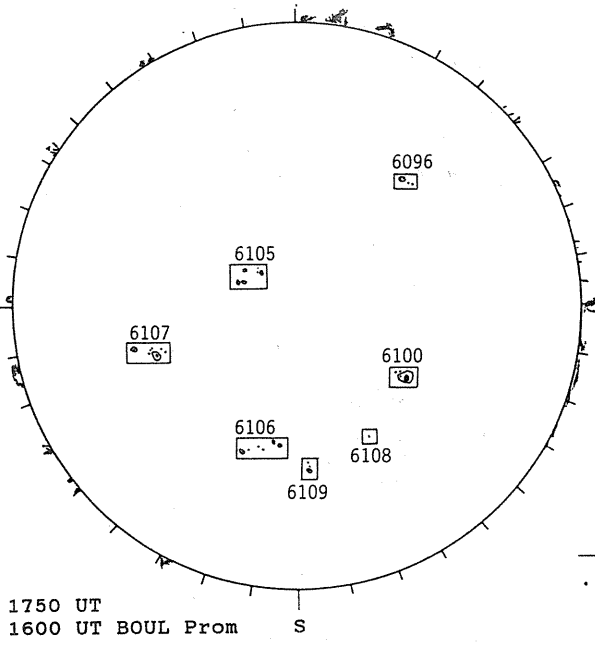
MT. WILSON MAGNETOGRAM



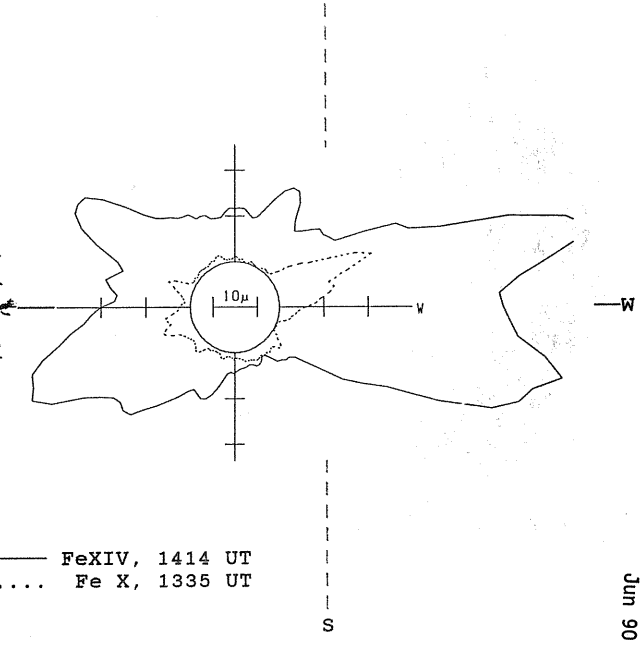
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



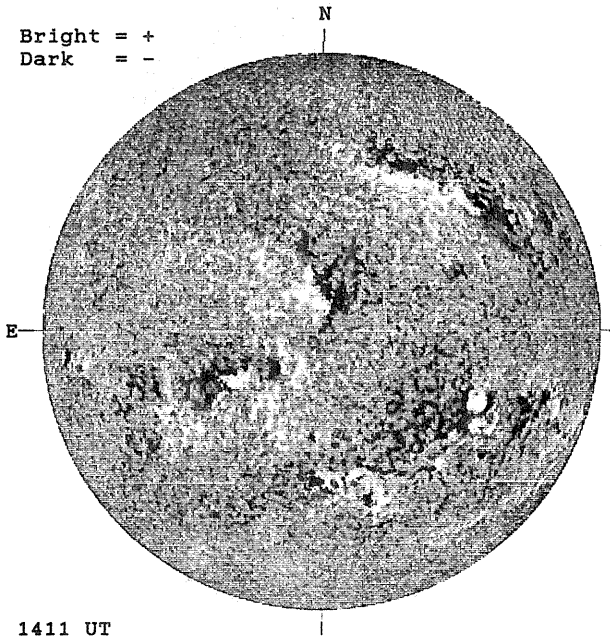
75
Jun 90

JUNE 17, 1990 (P= -9.05, B_o = 1.24, L_o = 286.59)

Jun 90 76

KITT PEAK MAGNETOGRAM

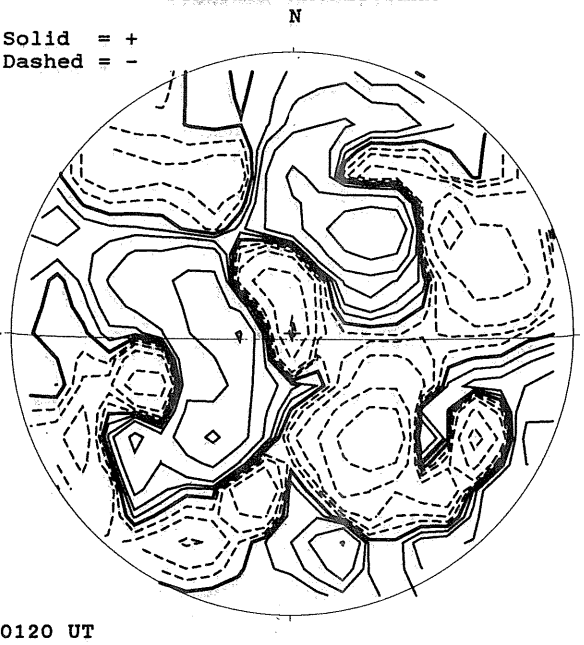
Bright = +
Dark = -



1411 UT

STANFORD MAGNETOGRAM

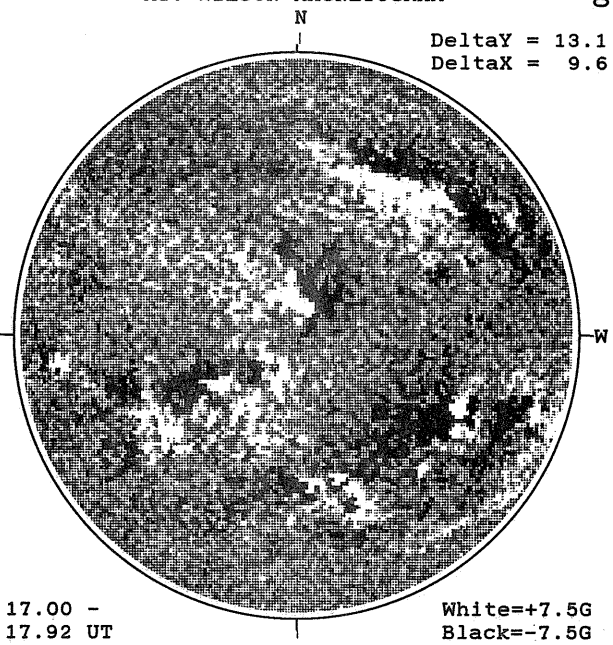
Solid = +
Dashed = -



0120 UT

MT. WILSON MAGNETOGRAM

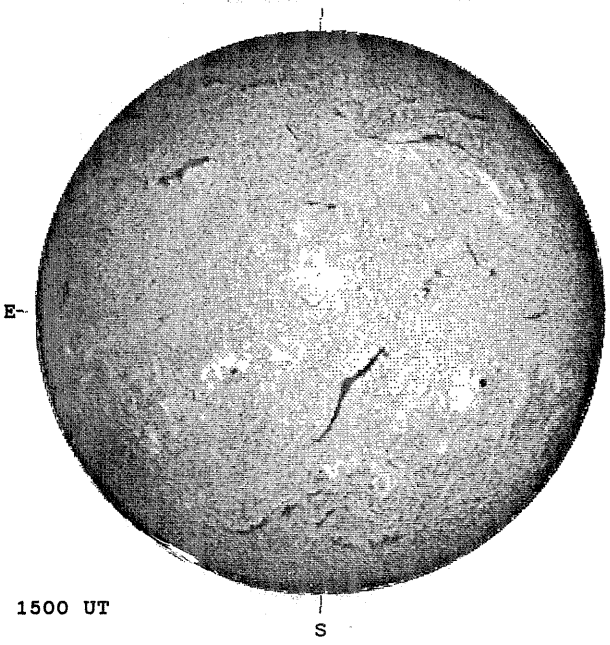
DeltaY = 13.1
DeltaX = 9.6



17.00 -
17.92 UT

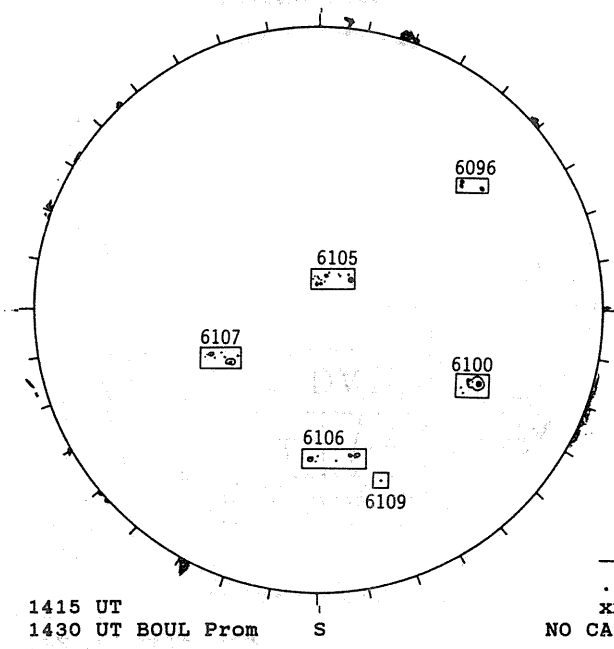
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



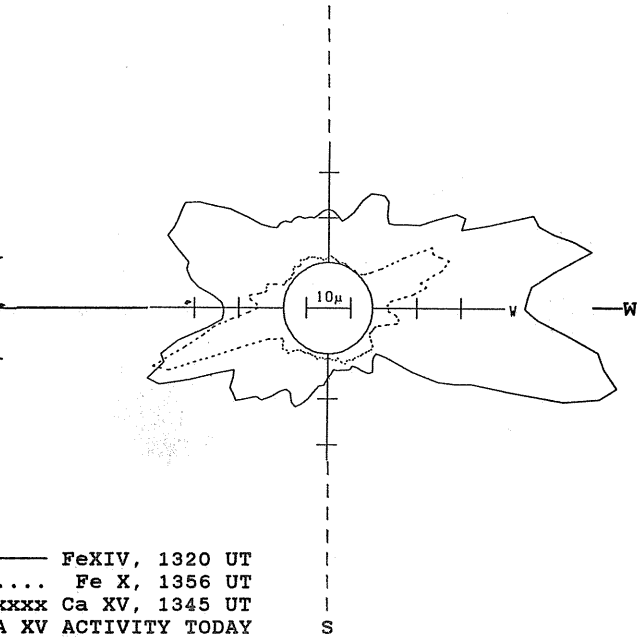
1500 UT

BOULDER SUNSPOT



1415 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

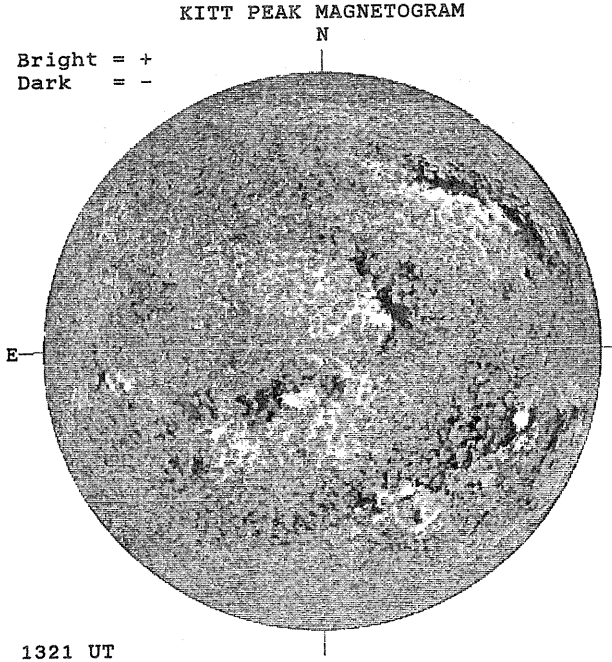


—— FeXIV, 1320 UT
.... Fe X, 1356 UT
xxxx Ca XV, 1345 UT
NO CA XV ACTIVITY TODAY

JUNE 18, 1990 (P= -8.61, B_o = 1.36, L_o = 273.36)

KITT PEAK MAGNETOGRAM

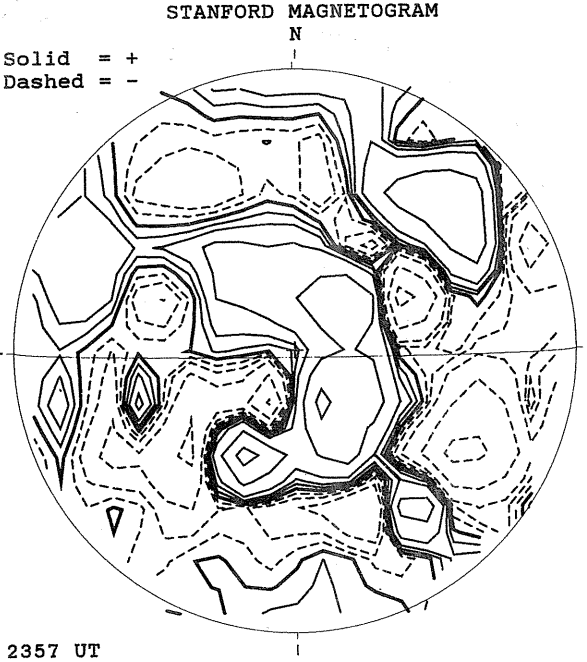
Bright = +
Dark = -



1321 UT

STANFORD MAGNETOGRAM

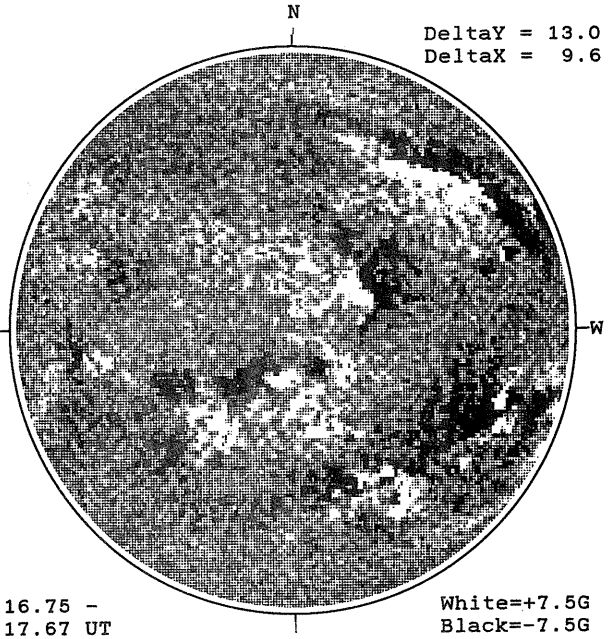
Solid = +
Dashed = -



2357 UT

MT. WILSON MAGNETOGRAM

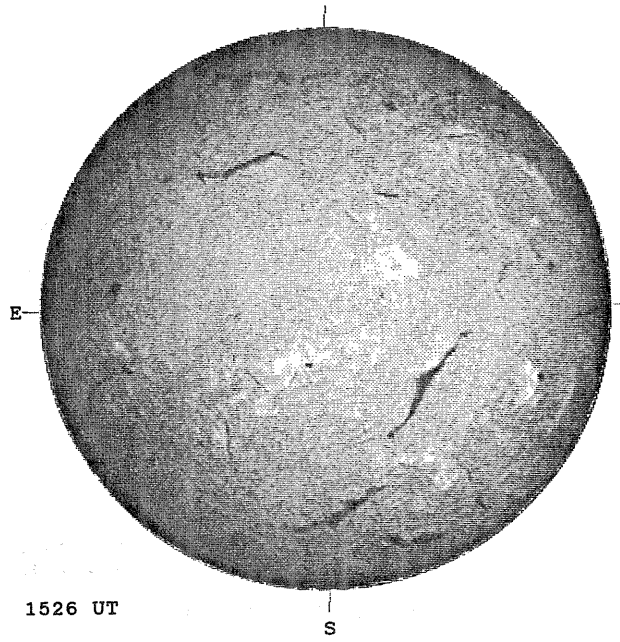
DeltaY = 13.0
DeltaX = 9.6



16.75 -
17.67 UT

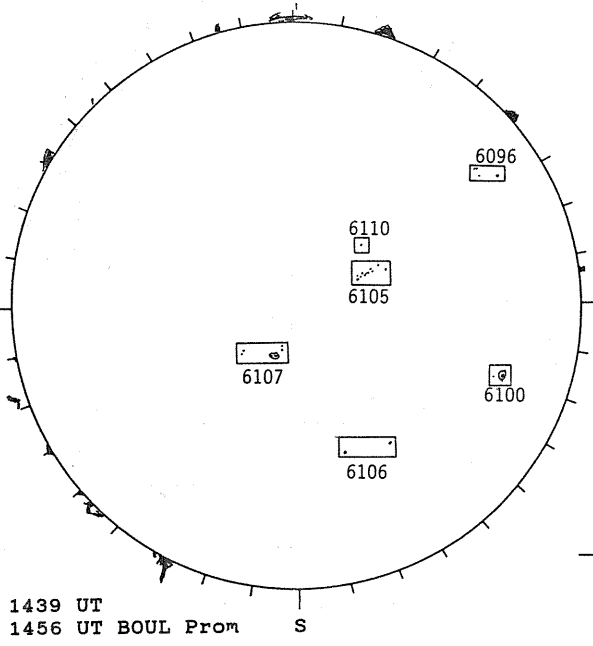
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



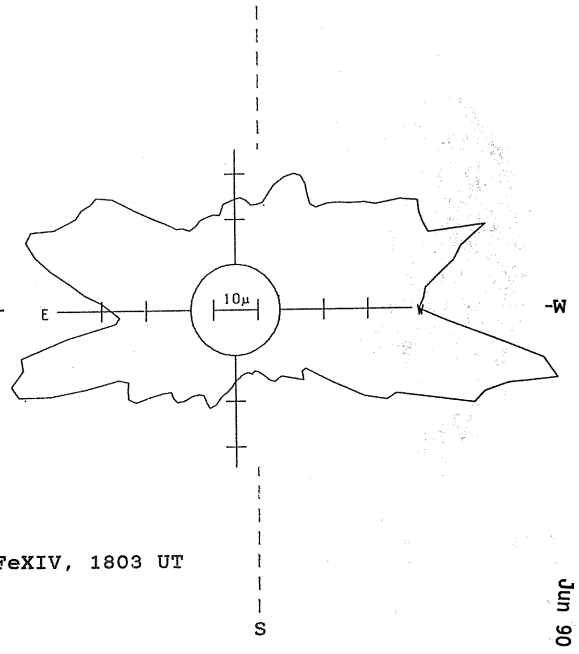
1526 UT

BOULDER SUNSPOT



1439 UT
1456 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1803 UT

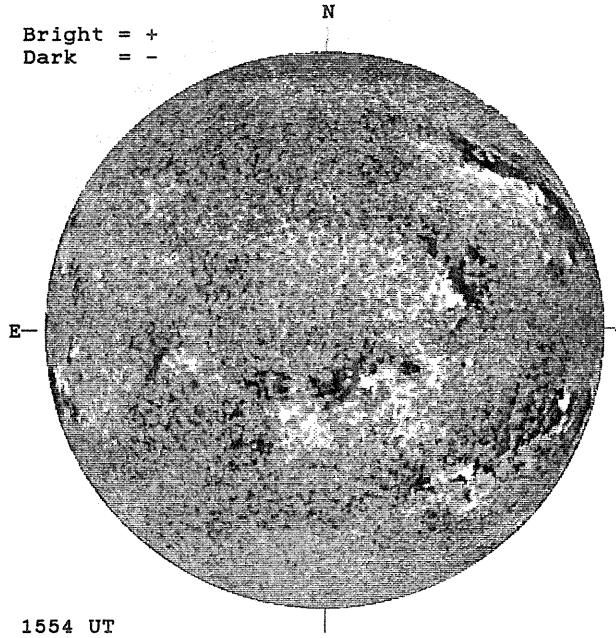
77
Jun 90

JUNE 19, 1990 (P= -8.18, B_o = 1.48, L_o = 260.12)

Jun 90 78

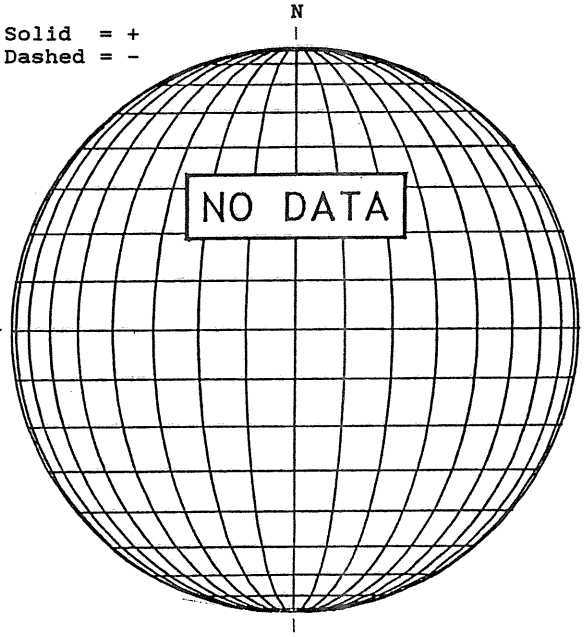
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



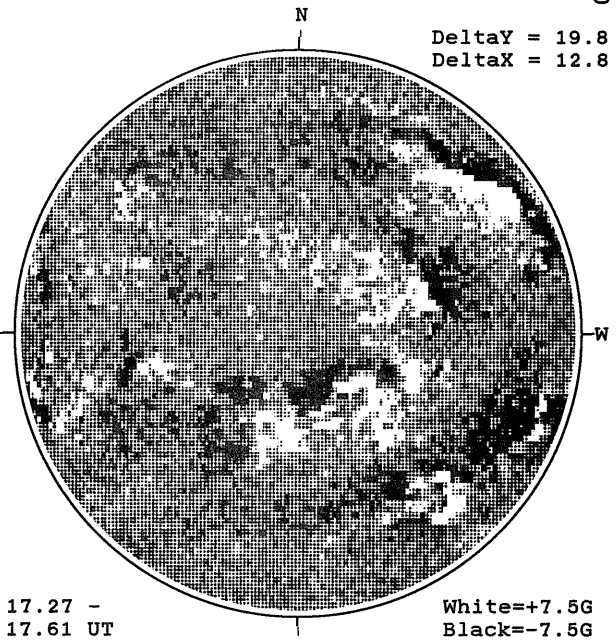
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

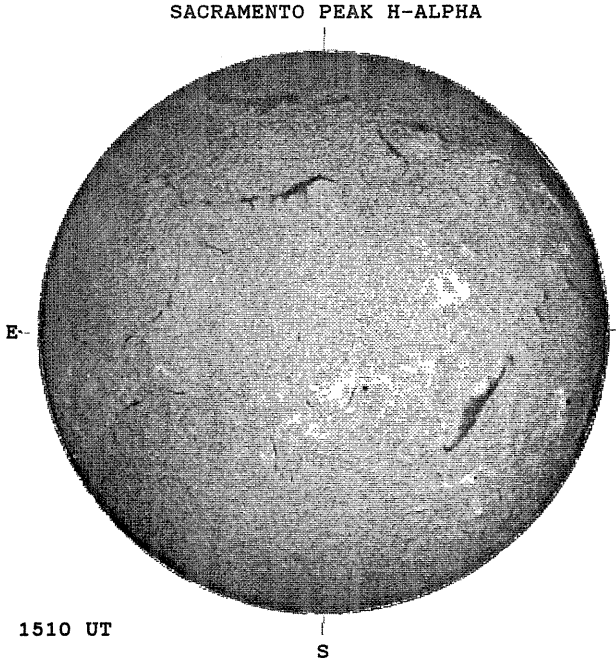


MT. WILSON MAGNETOGRAM

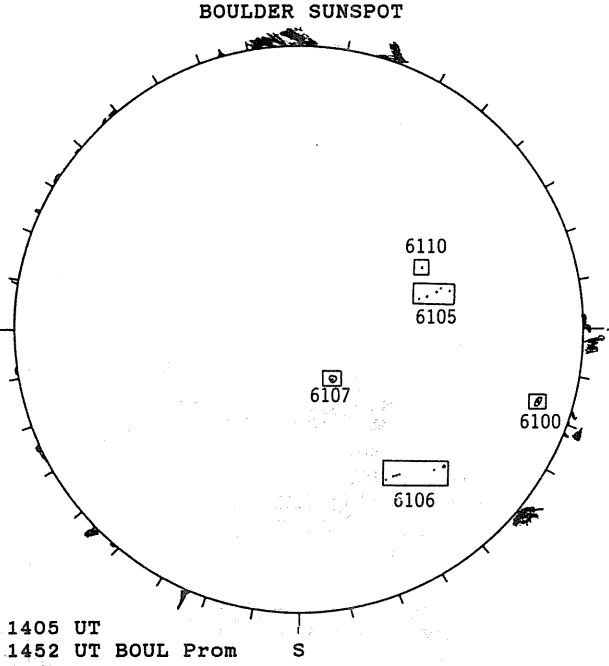
DeltaY = 19.8
DeltaX = 12.8



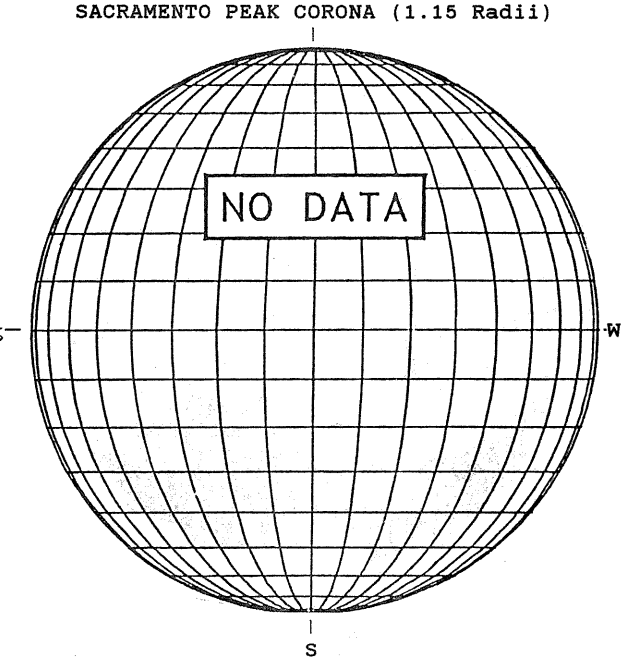
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



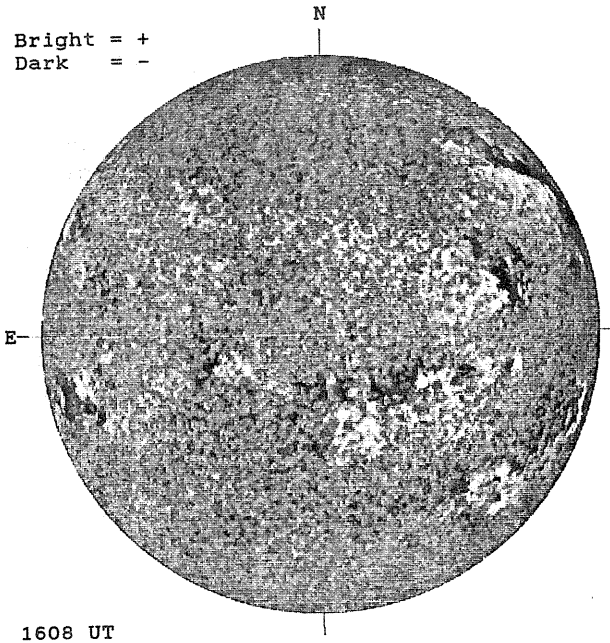
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 20, 1990 (P= -7.74, B_o = 1.59, L_o = 246.88)

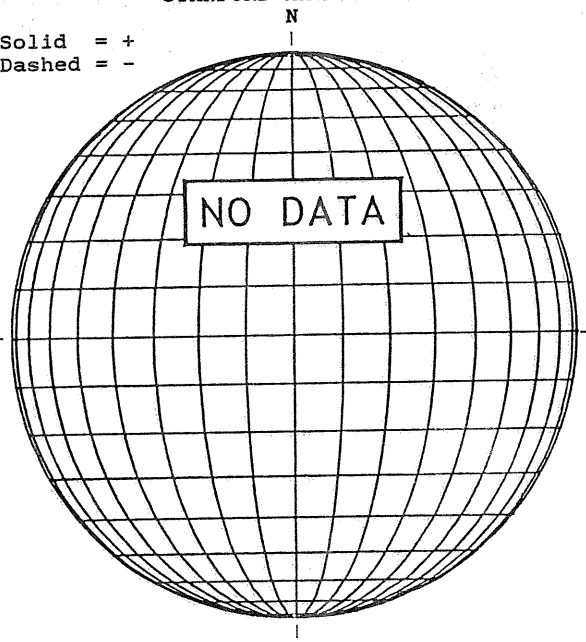
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



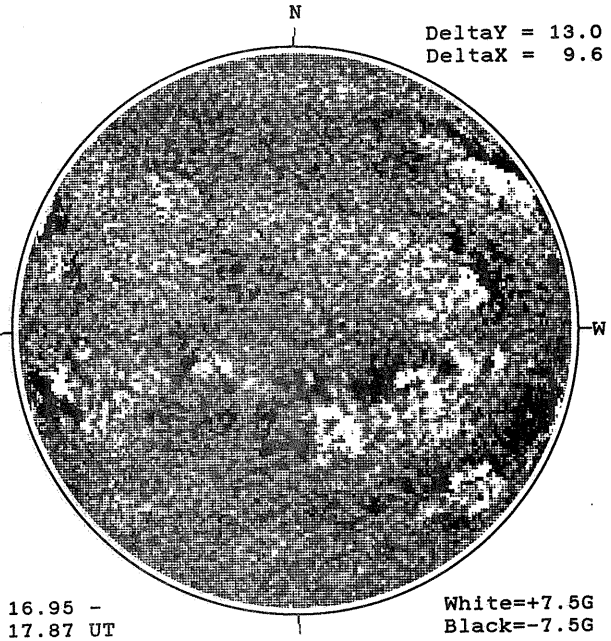
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

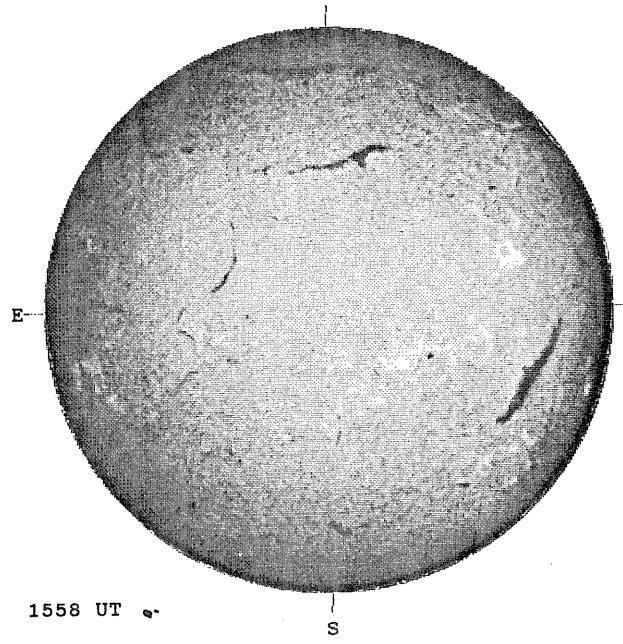
DeltaY = 13.0
DeltaX = 9.6



16.95 -
17.87 UT

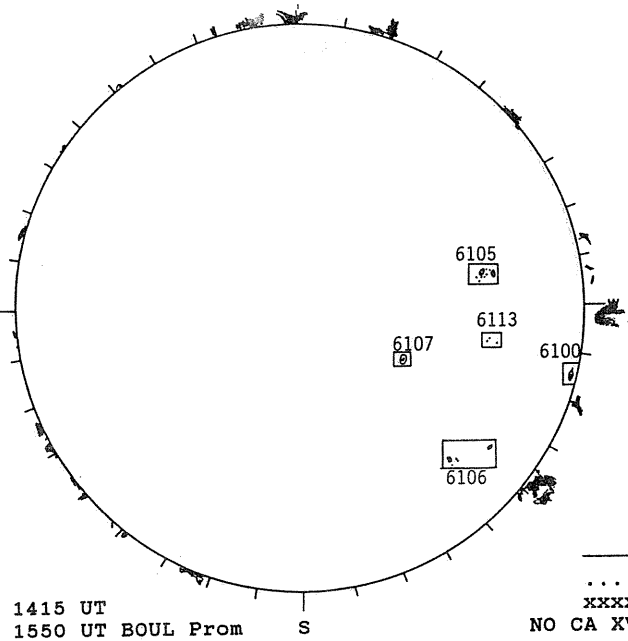
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



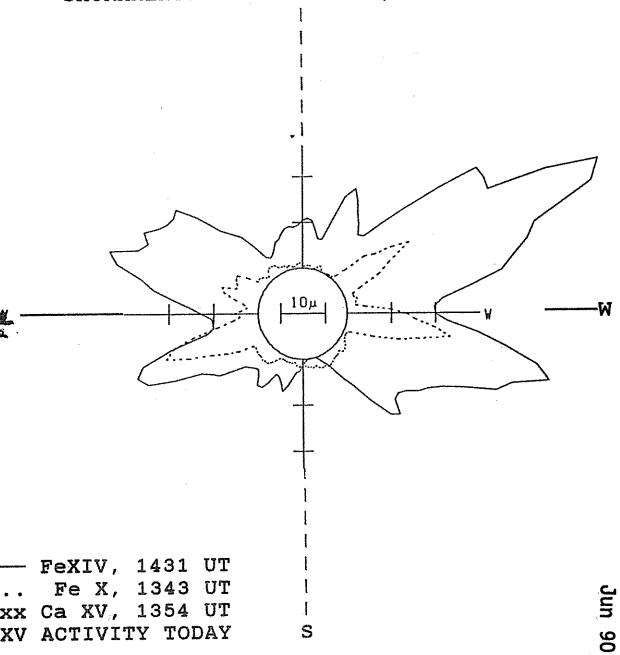
1558 UT

BOULDER SUNSPOT



1415 UT
1550 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1431 UT
.... Fe X, 1343 UT
xxxx Ca XV, 1354 UT
NO CA XV ACTIVITY TODAY

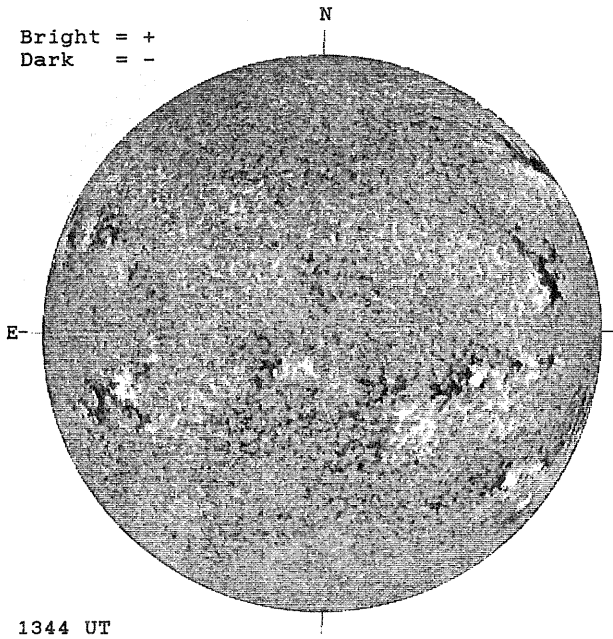
79
Jun 90

JUNE 21, 1990 (P= -7.30, B_o = 1.71, L_o = 233.65)

Jun 90

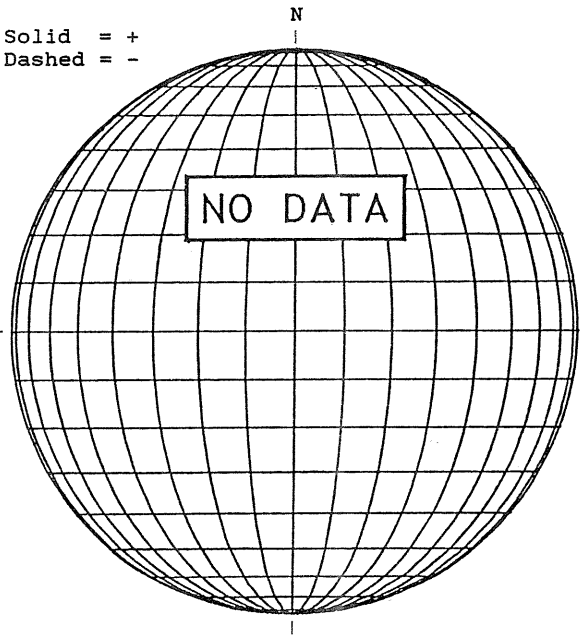
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



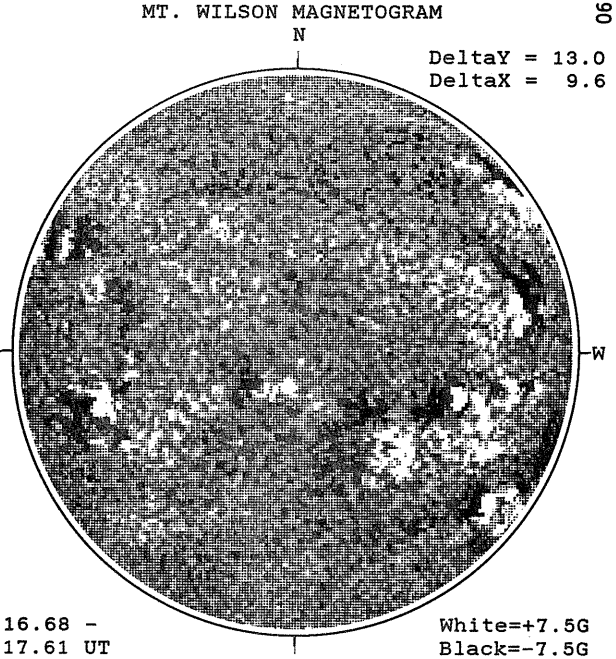
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



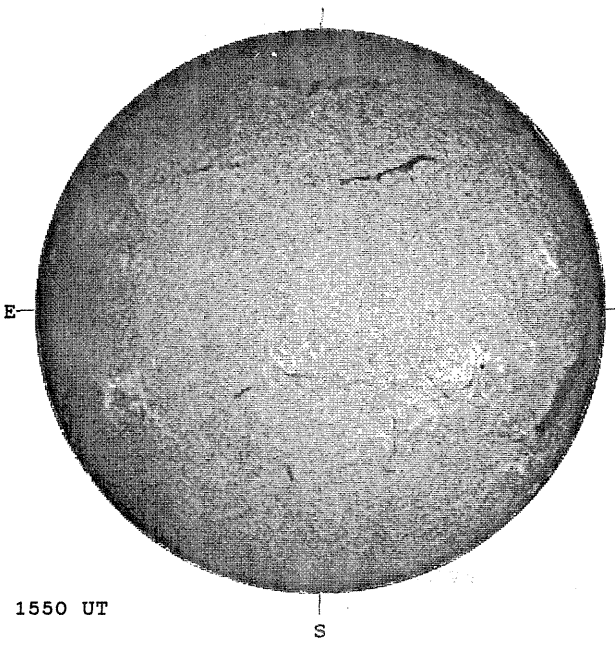
MT. WILSON MAGNETOGRAM

DeltaY = 13.0
DeltaX = 9.6

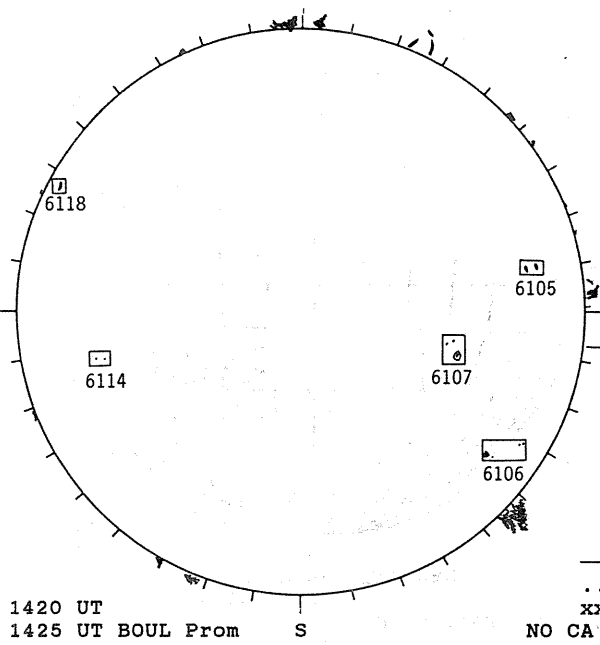


White=+7.5G
Black=-7.5G

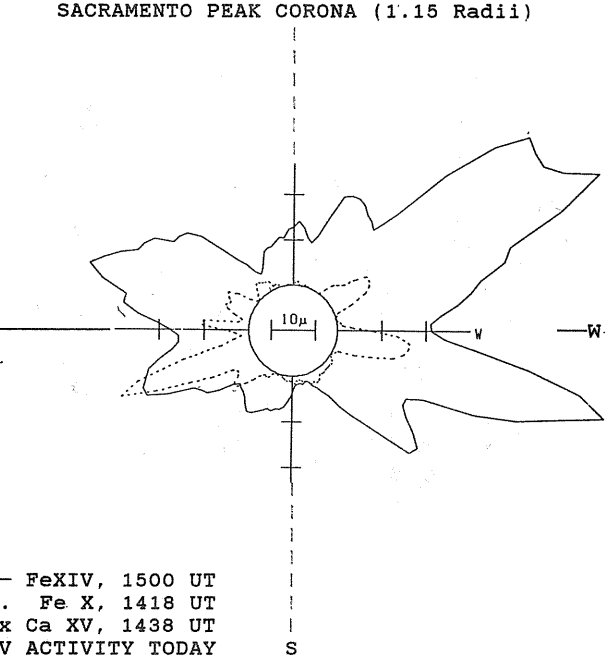
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



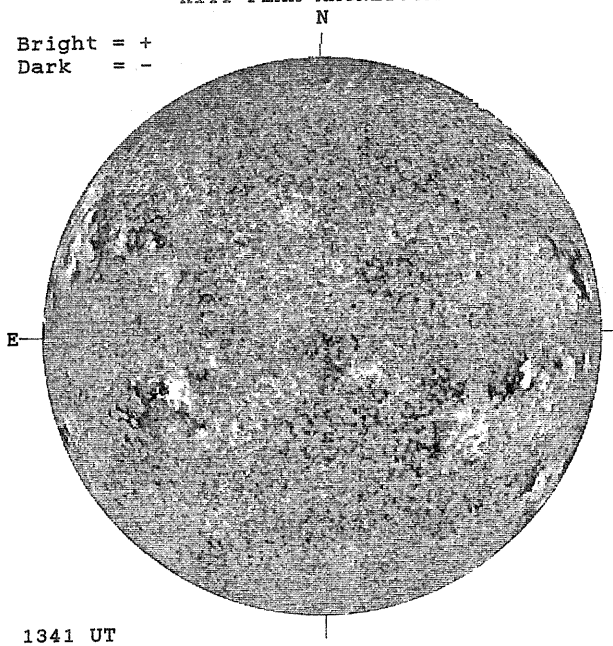
SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1500 UT
.... Fe X, 1418 UT
xxxx Ca XV, 1438 UT
NO CA XV ACTIVITY TODAY

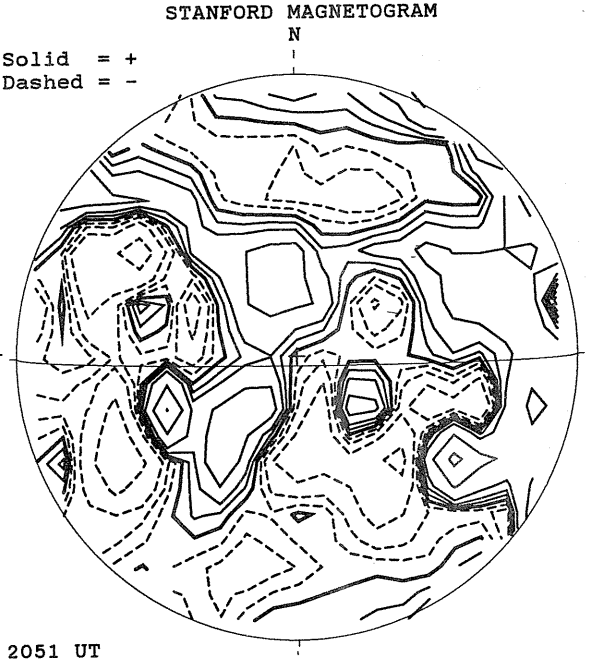
JUNE 22, 1990 (P= -6.85, B_o = 1.83, L_o = 220.41)

KITT PEAK MAGNETOGRAM



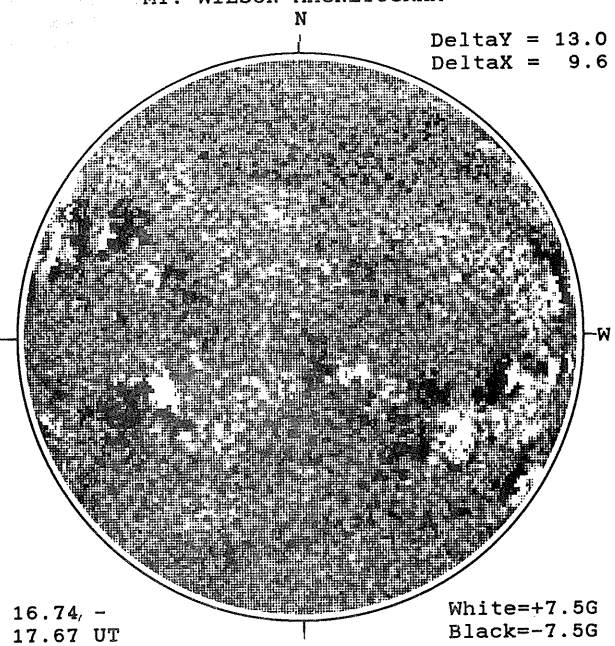
1341 UT

STANFORD MAGNETOGRAM



2051 UT

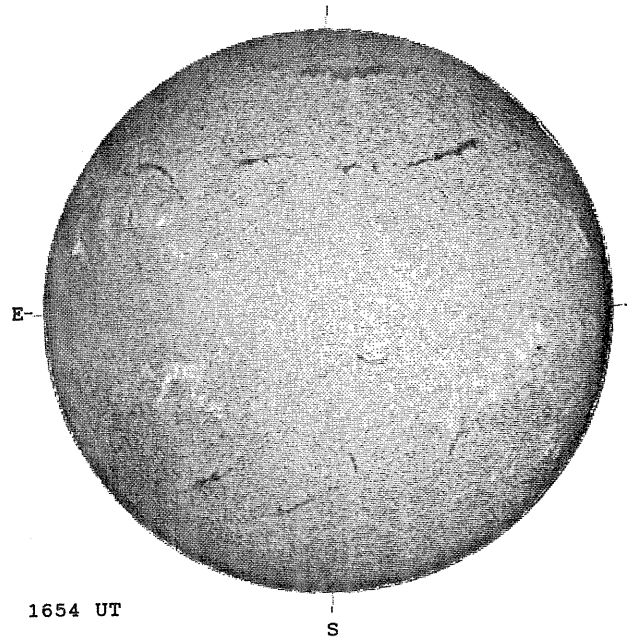
MT. WILSON MAGNETOGRAM



16.74, -
17.67 UT

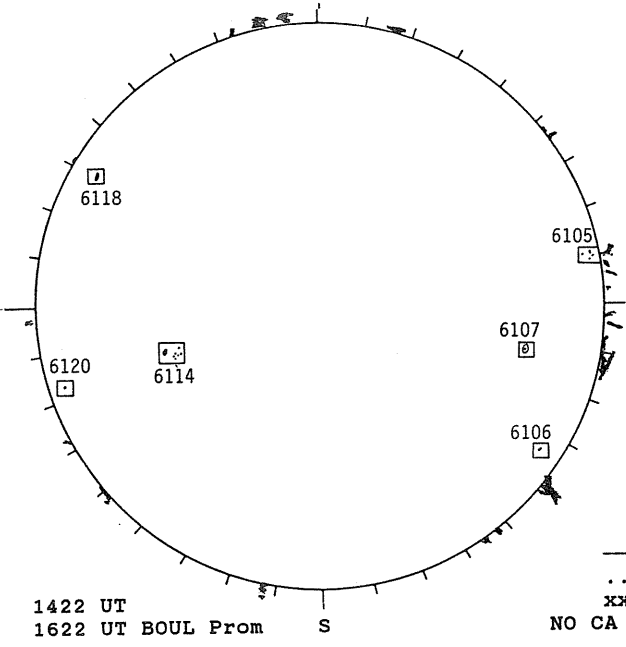
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



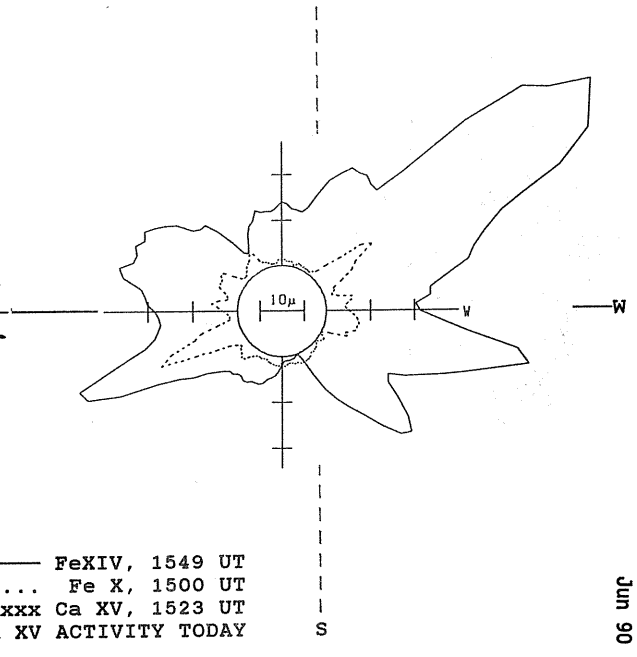
1654 UT

BOULDER SUNSPOT



1422 UT
1622 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1549 UT
.... Fe X, 1500 UT
xxxx Ca XV, 1523 UT
NO CA XV ACTIVITY TODAY

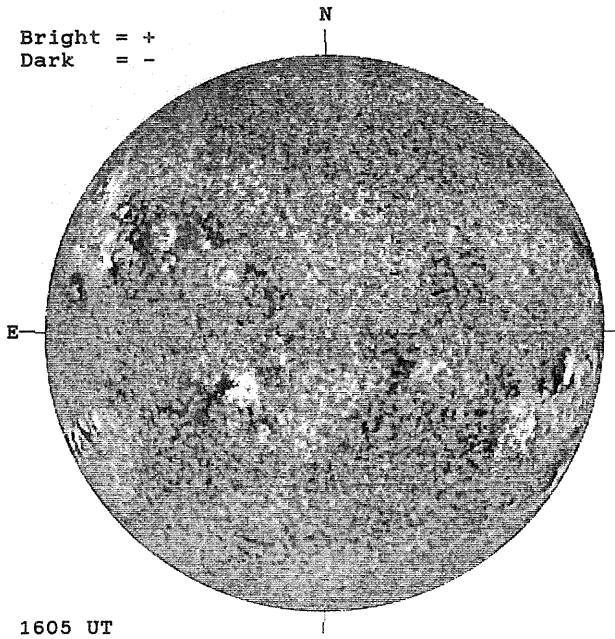
81
Jun 90

JUNE 23, 1990 (P= -6.41, B_o = 1.94, L_o = 207.17)

Jun 90 82

KITT PEAK MAGNETOGRAM

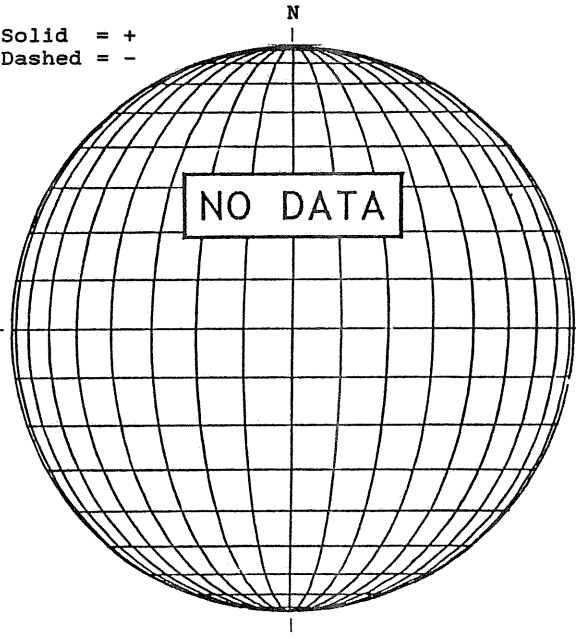
Bright = +
Dark = -



1605 UT

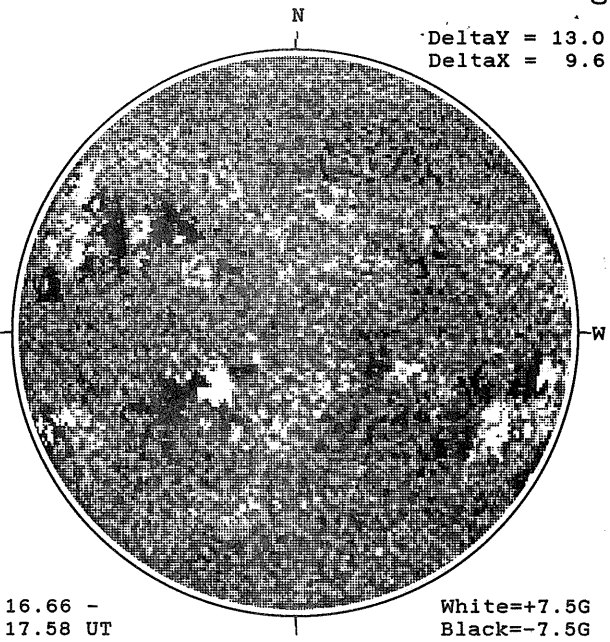
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

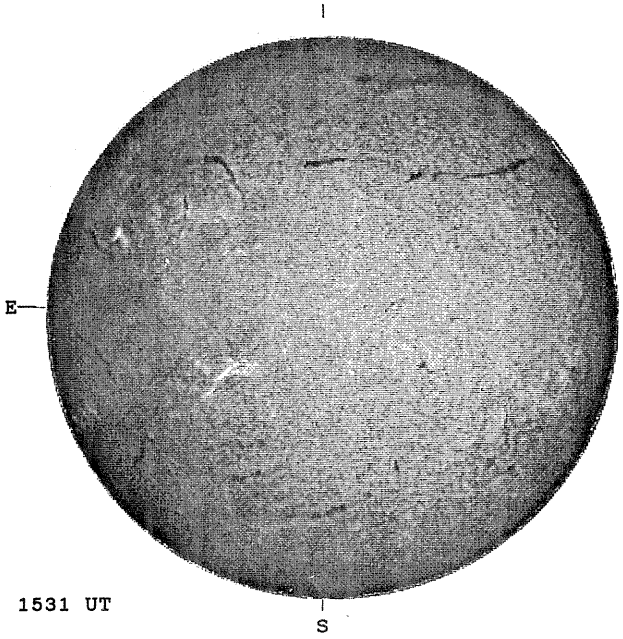
DeltaY = 13.0
DeltaX = 9.6



16.66 -
17.58 UT

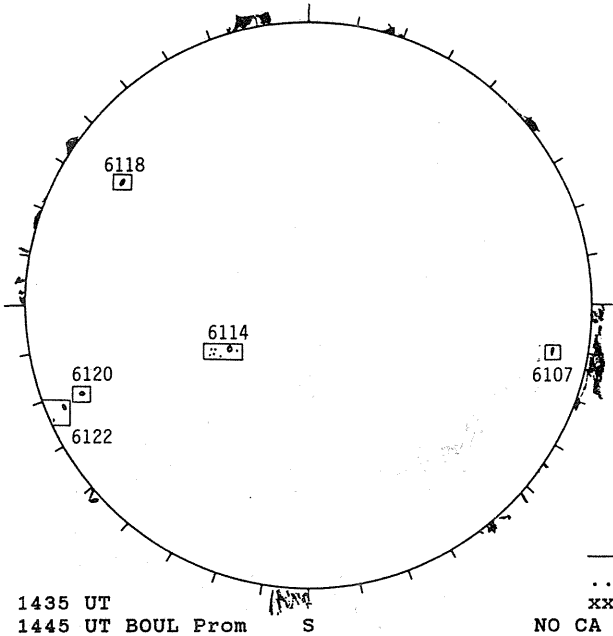
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



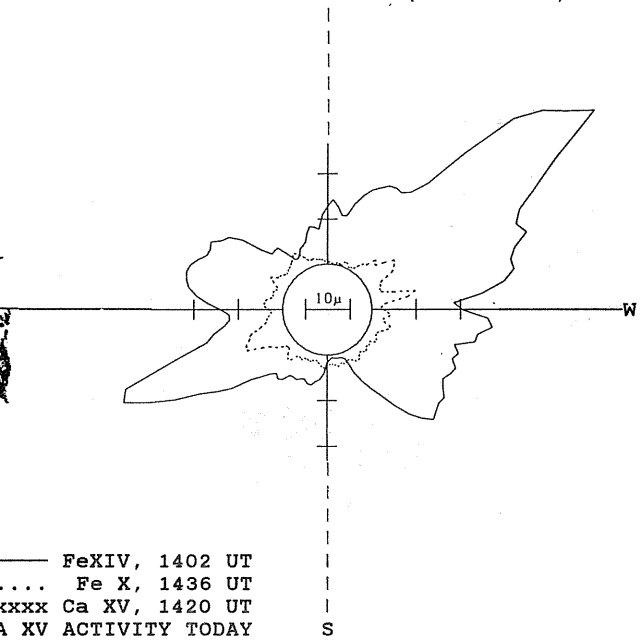
1531 UT

BOULDER SUNSPOT



1435 UT
1445 UT BOUL Prom

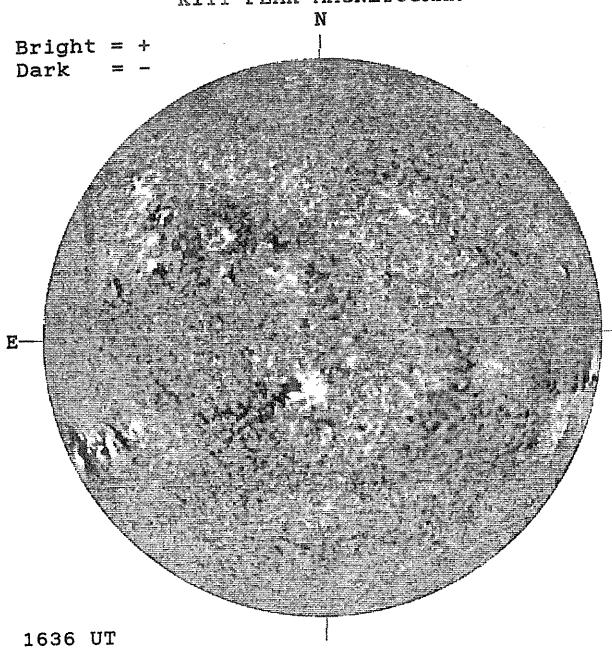
SACRAMENTO PEAK CORONA (1.15 Radii)



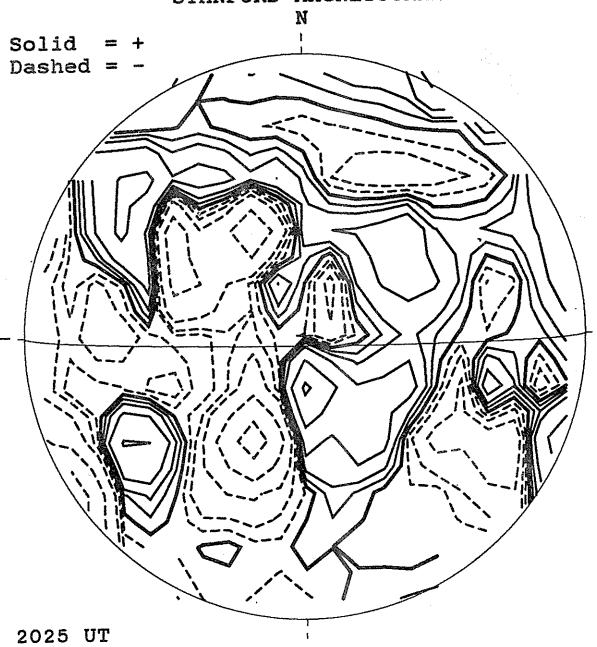
—— FeXIV, 1402 UT
.... Fe X, 1436 UT
xxxx Ca XV, 1420 UT
NO CA XV ACTIVITY TODAY

JUNE 24, 1990 (P= -5.96 B_o = 2.06, L_o = 193.94)

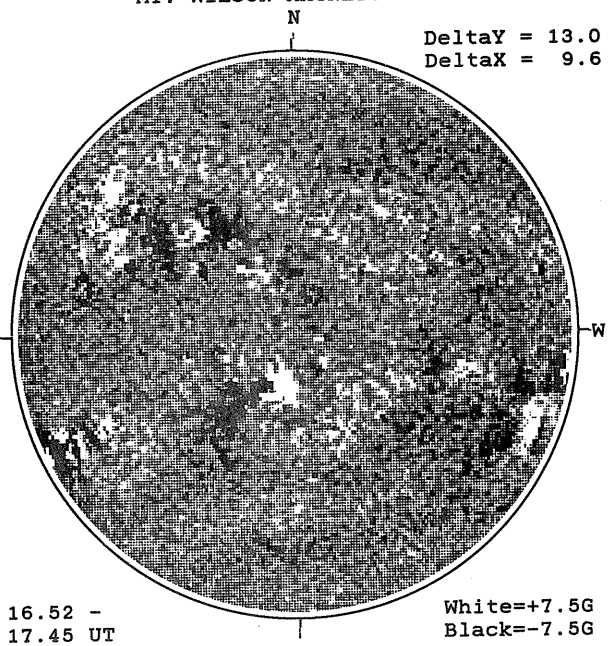
KITT PEAK MAGNETOGRAM



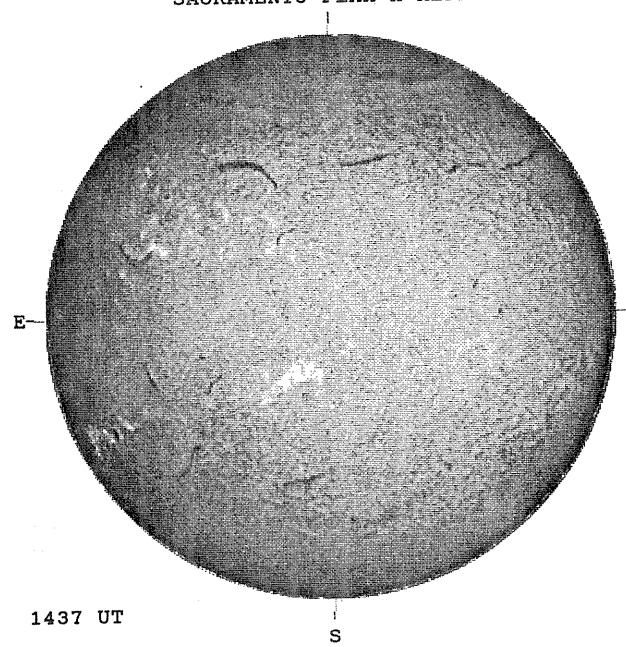
STANFORD MAGNETOGRAM



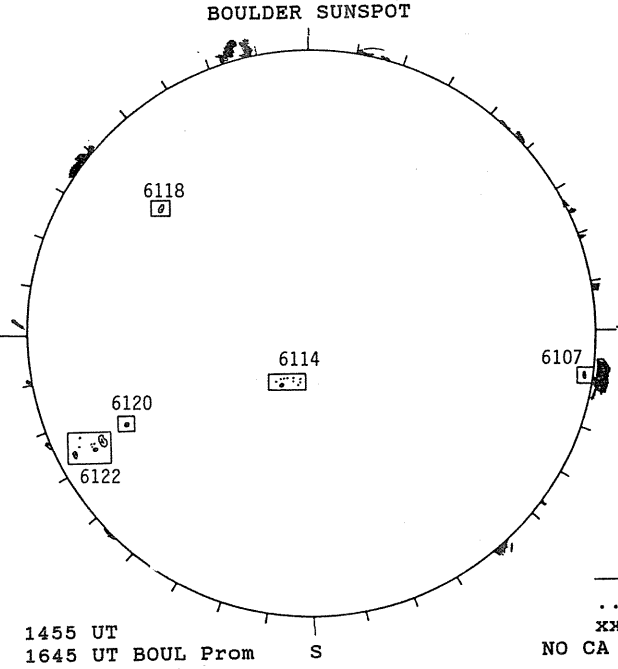
MT. WILSON MAGNETOGRAM



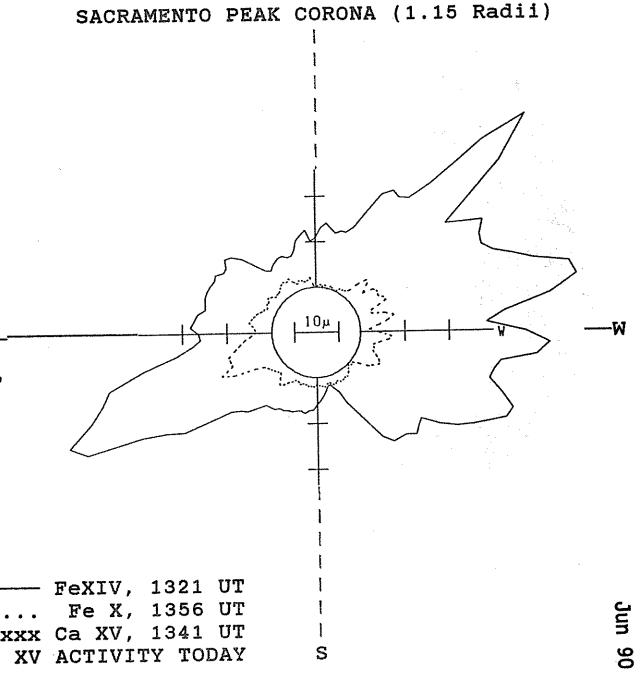
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



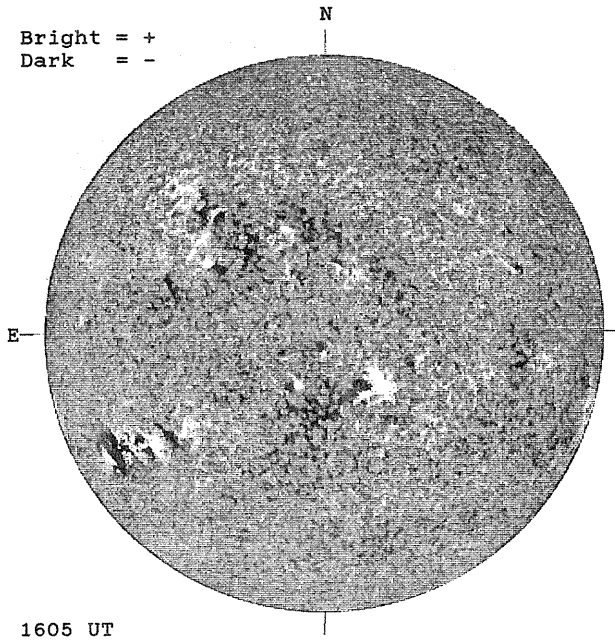
83
Jun 90

JUNE 25, 1990 (P= -5.51, B_o = 2.18, L_o = 180.70)

Jun 90 84

KITT PEAK MAGNETOGRAM

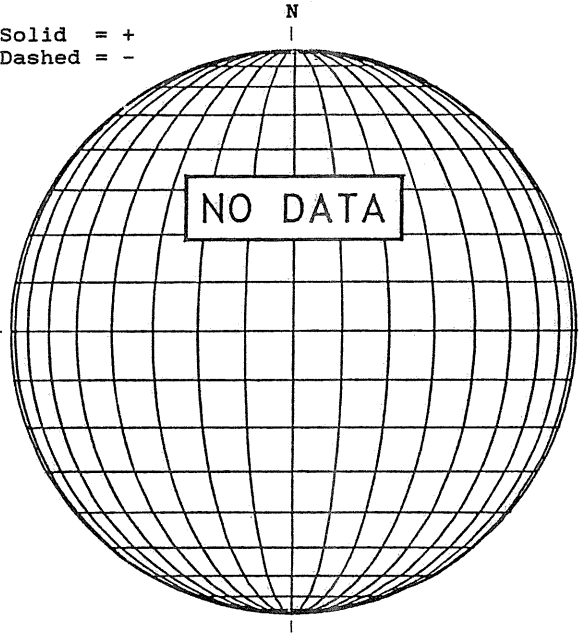
Bright = +
Dark = -



1605 UT

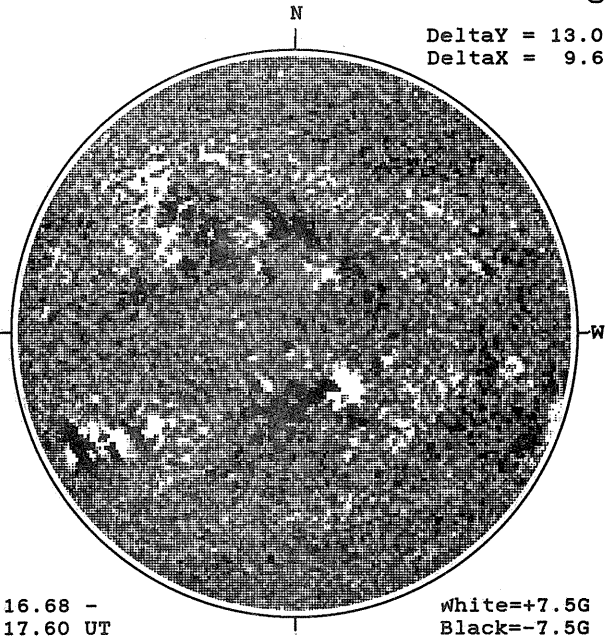
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

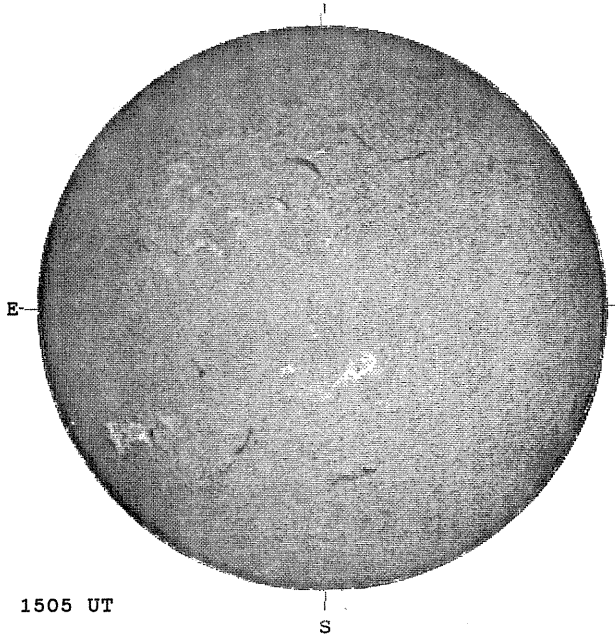
DeltaY = 13.0
DeltaX = 9.6



16.68 -
17.60 UT

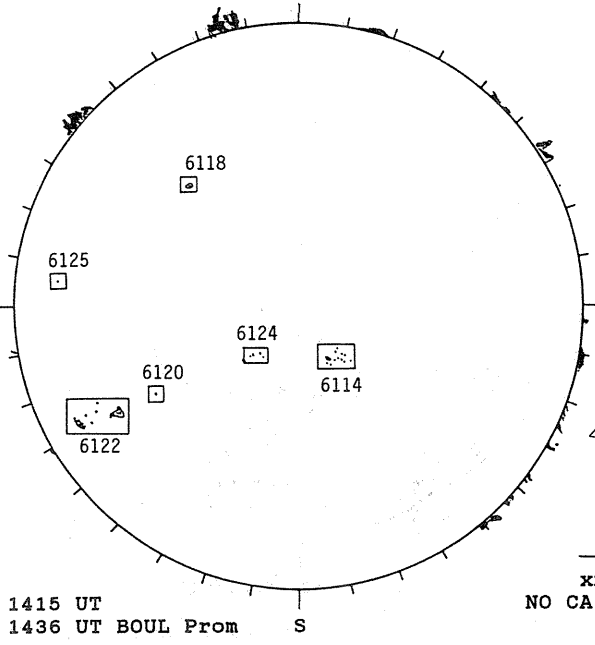
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



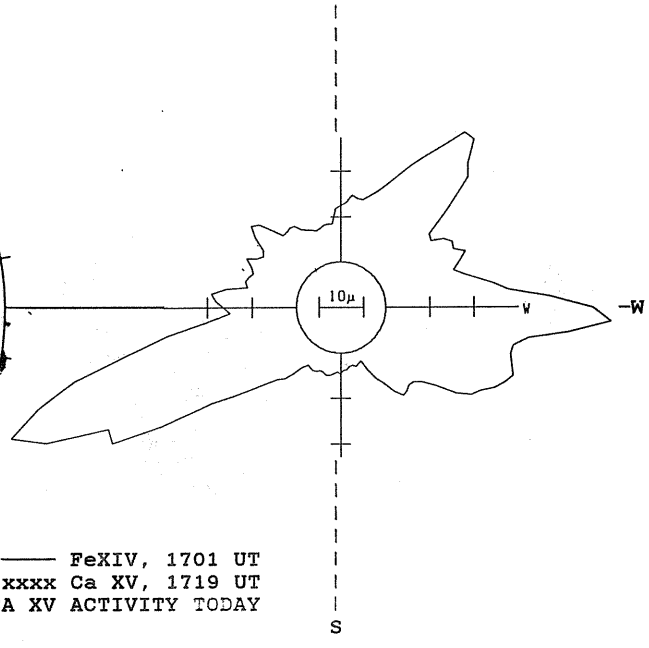
1505 UT

BOULDER SUNSPOT



1415 UT
1436 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

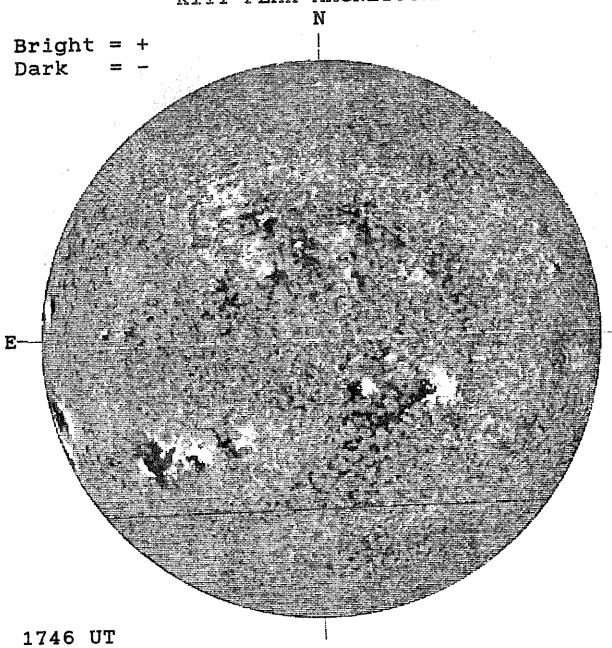


—— FeXIV, 1701 UT
xxxx Ca XV, 1719 UT
NO CA XV ACTIVITY TODAY

JUNE 26, 1990 (P= -5.06, B_o = 2.29, L_o = 167.47)

KITT PEAK MAGNETOGRAM

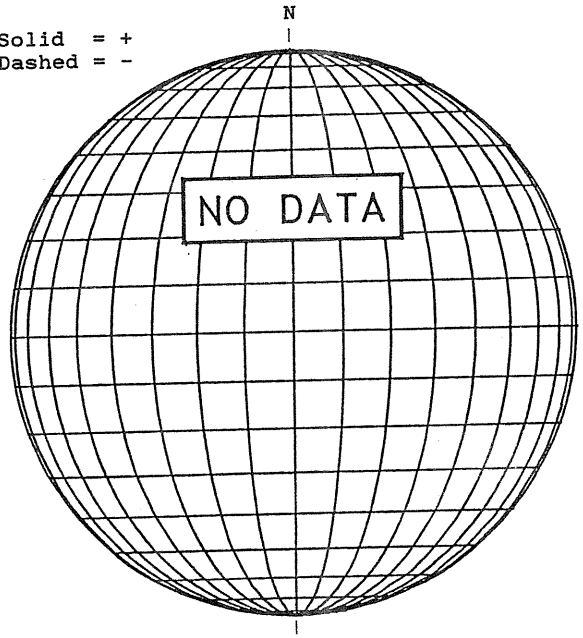
Bright = +
Dark = -



1746 UT

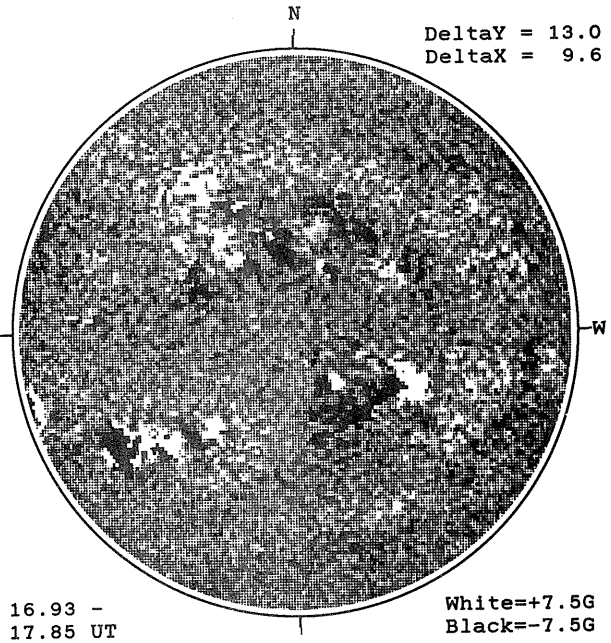
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

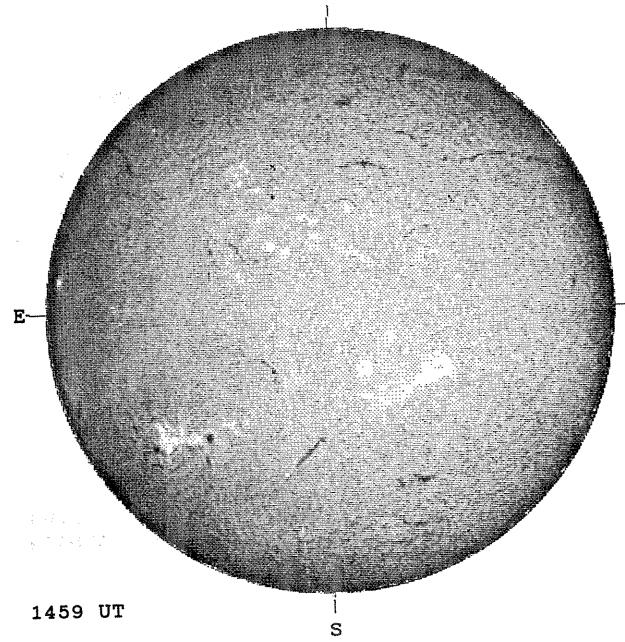
DeltaY = 13.0
DeltaX = 9.6



16.93 -
17.85 UT

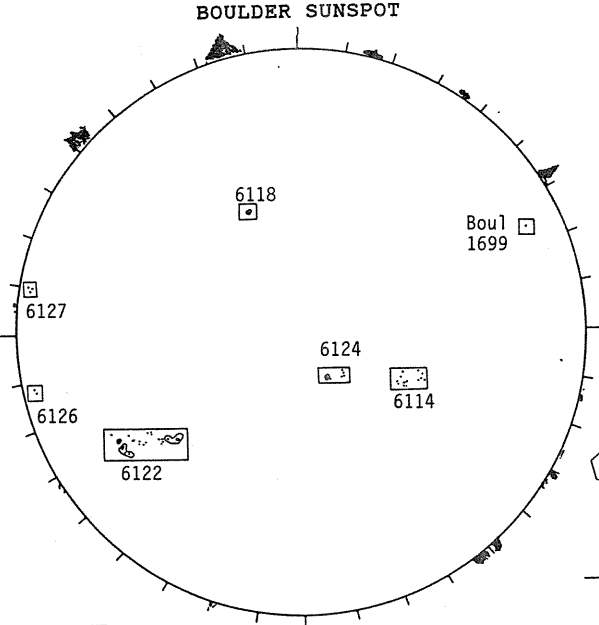
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



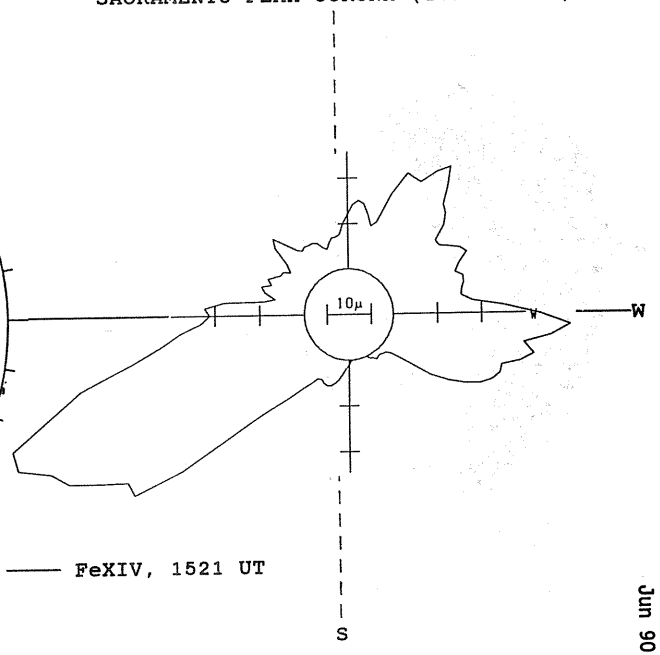
1459 UT

BOULDER SUNSPOT



1518 UT
1500 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1521 UT

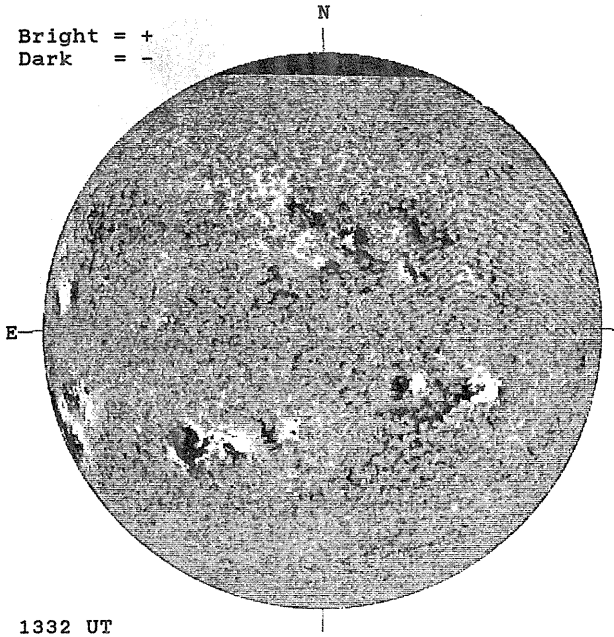
85
Jun 90

JUNE 27, 1990 (P= -4.61, B_o = 2.40, L_o = 154.23)

Jun 90 86

KITT PEAK MAGNETOGRAM

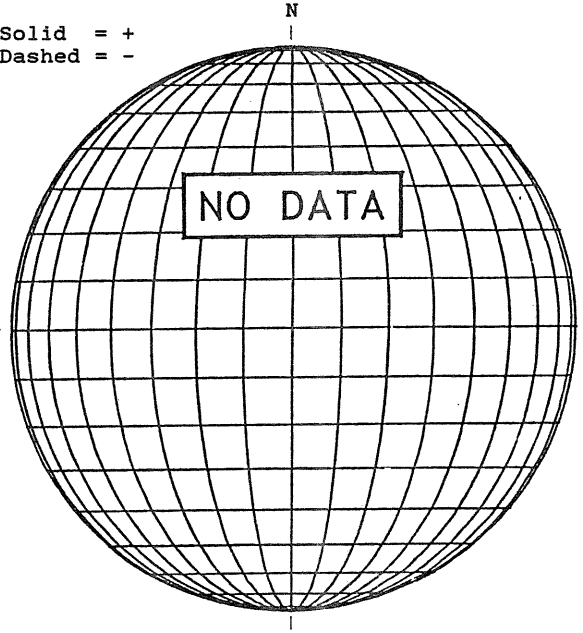
Bright = +
Dark = -



1332 UT

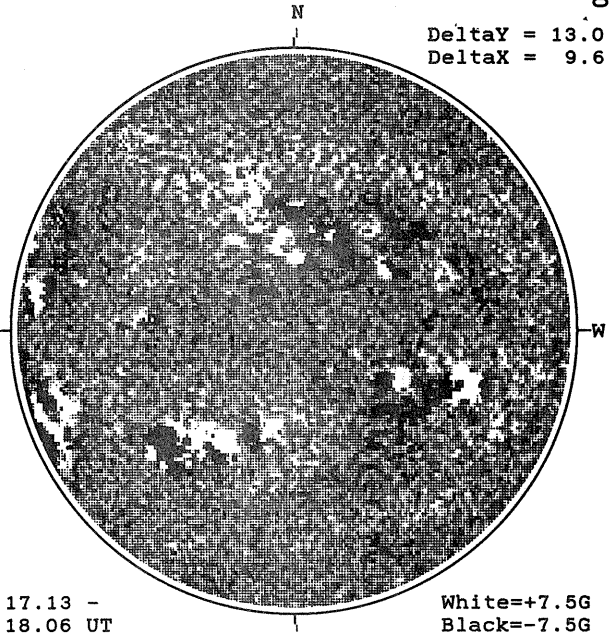
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

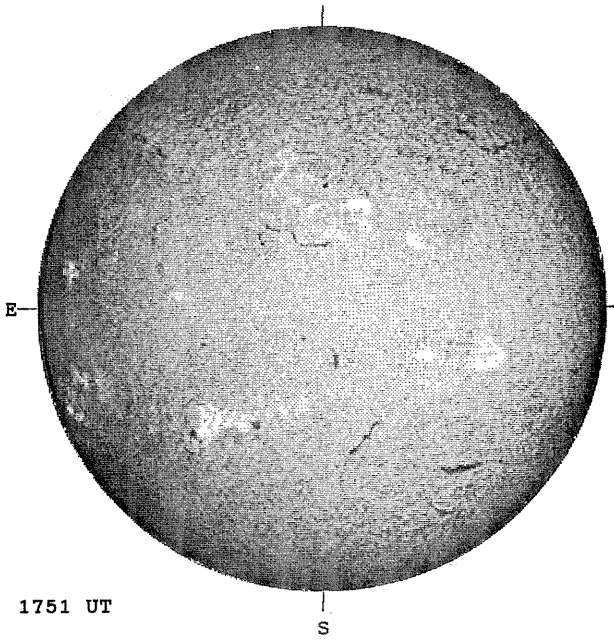
DeltaY = 13.0
DeltaX = 9.6



17.13 -
18.06 UT

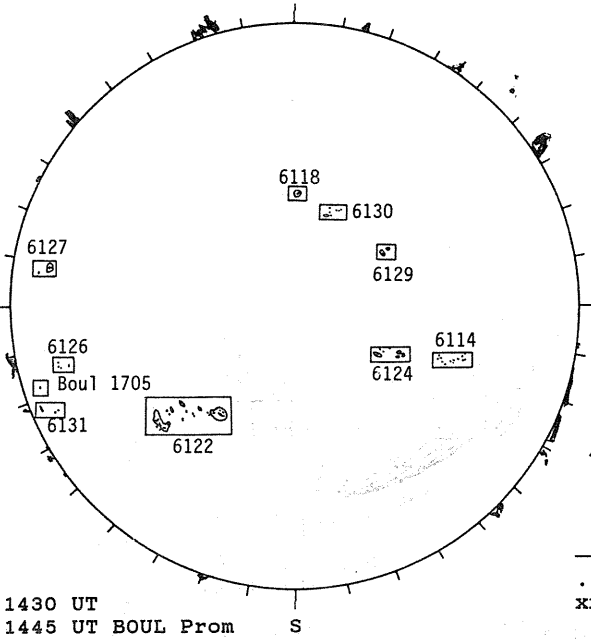
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



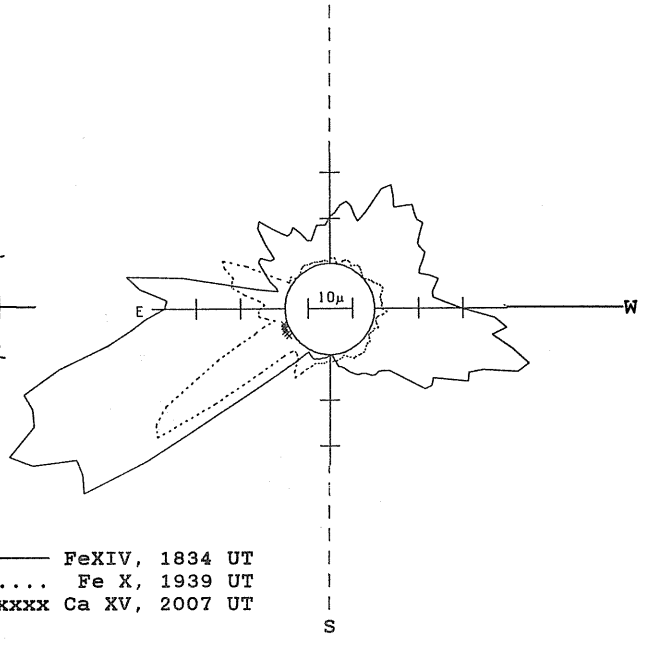
1751 UT

BOULDER SUNSPOT



1430 UT
1445 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

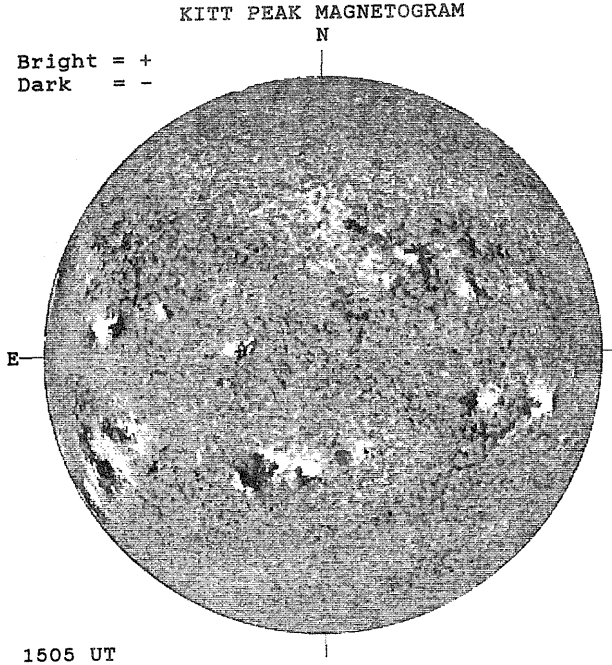


—— FeXIV, 1834 UT
.... Fe X, 1939 UT
xxxx Ca XV, 2007 UT

JUNE 28, 1990 (P= -4.16 B_o = 2.52, L_o = 140.99)

KITT PEAK MAGNETOGRAM

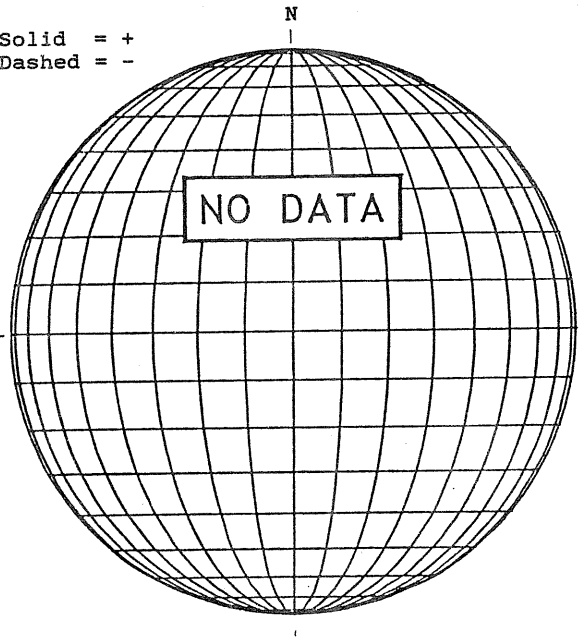
Bright = +
Dark = -



1505 UT

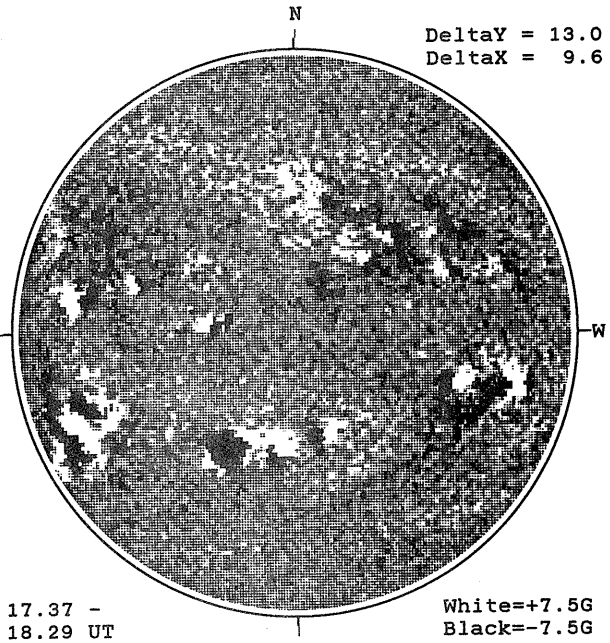
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

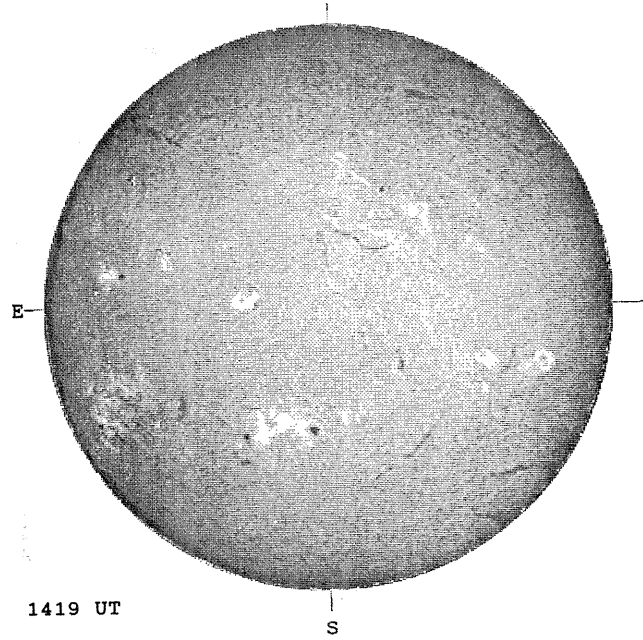
DeltaY = 13.0
DeltaX = 9.6



17.37 -
18.29 UT

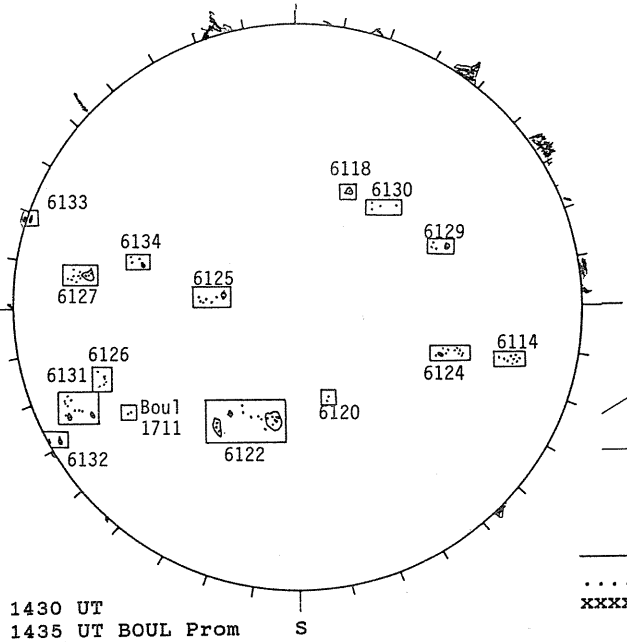
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



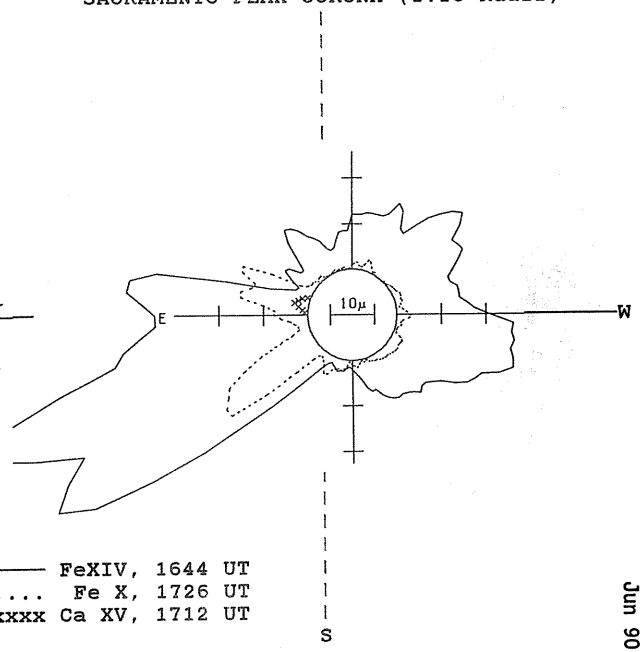
1419 UT

BOULDER SUNSPOT



1430 UT
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



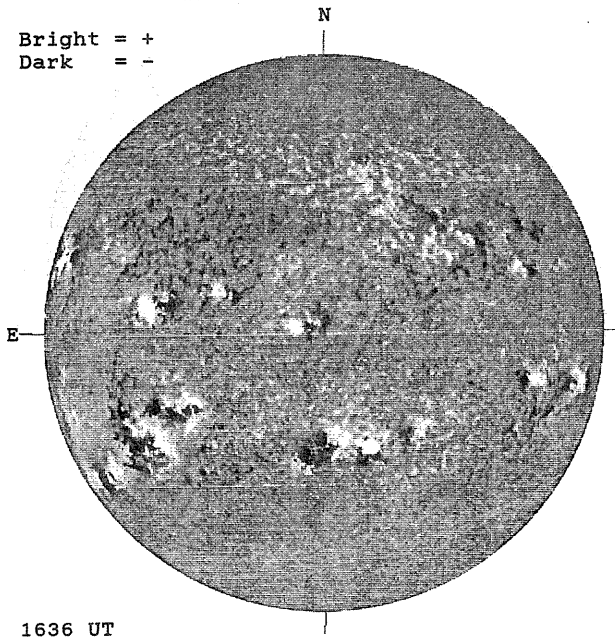
—— FeXIV, 1644 UT
.... Fe X, 1726 UT
xxxx Ca XV, 1712 UT

87 Jun 90

JUNE 29, 1990 (P= -3.71, B_o = 2.63, L_o = 127.76)

KITT PEAK MAGNETOGRAM

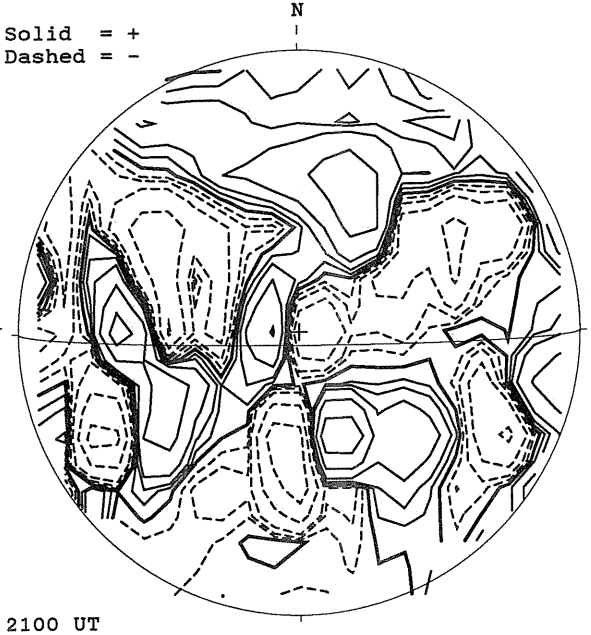
Bright = +
Dark = -



1636 UT

STANFORD MAGNETOGRAM

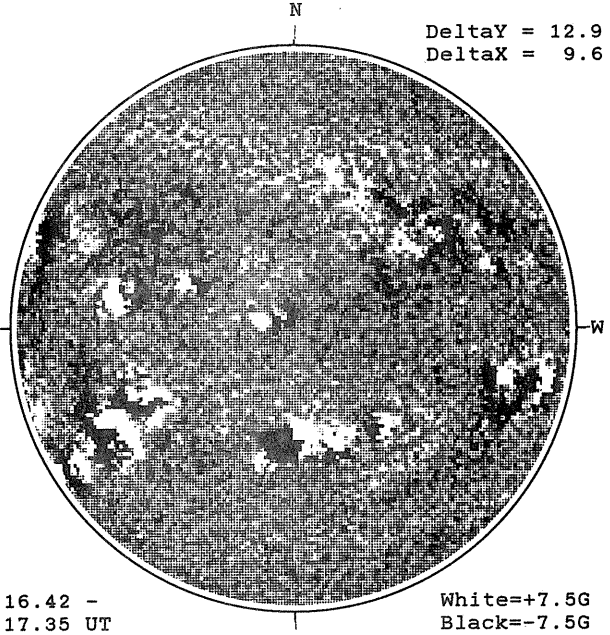
Solid = +
Dashed = -



2100 UT

MT. WILSON MAGNETOGRAM

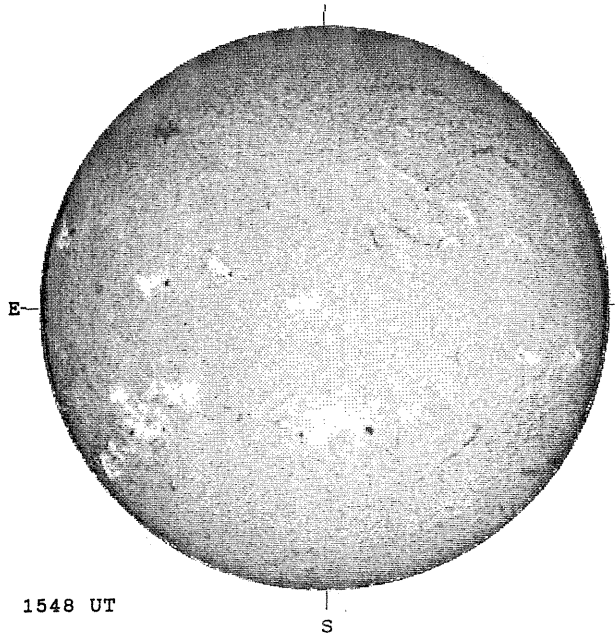
DeltaY = 12.9
DeltaX = 9.6



16.42 -
17.35 UT

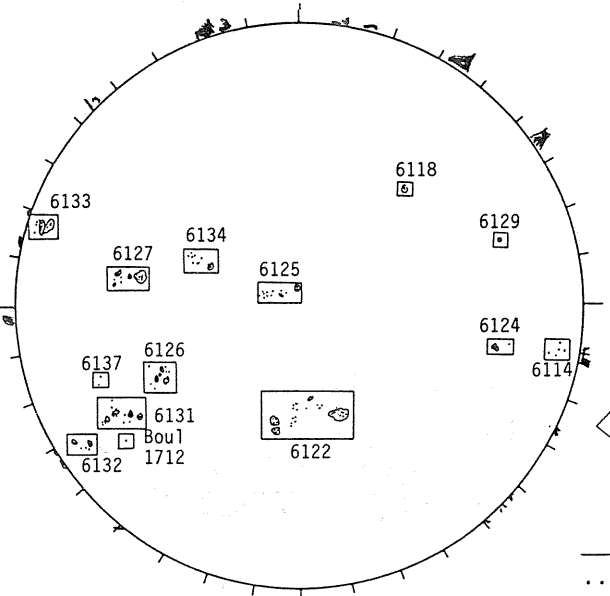
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



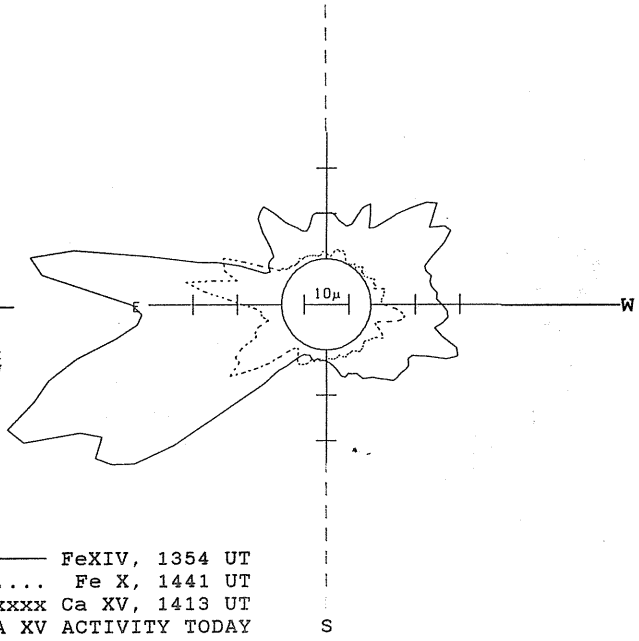
1548 UT

BOULDER SUNSPOT



1435 UT
1505 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

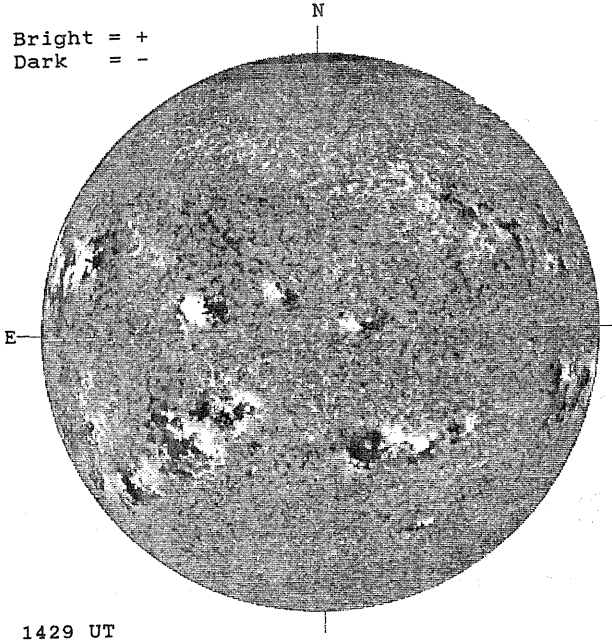


—— FeXIV, 1354 UT
.... Fe X, 1441 UT
xxxx Ca XV, 1413 UT
NO CA XV ACTIVITY TODAY

JUNE 30, 1990 (P= -3.26, B_o = 2.74, L_o = 114.52)

KITT PEAK MAGNETOGRAM

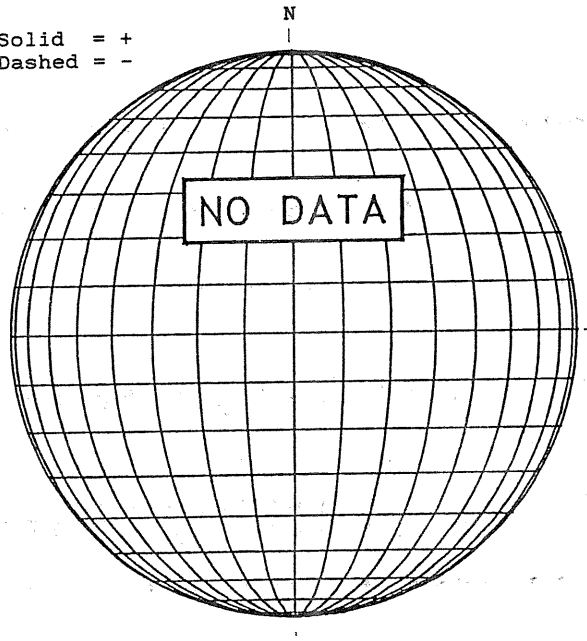
Bright = +
Dark = -



1429 UT

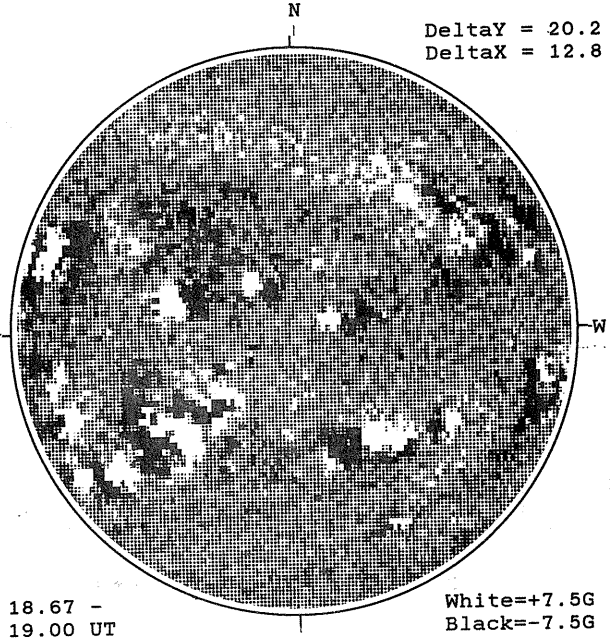
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

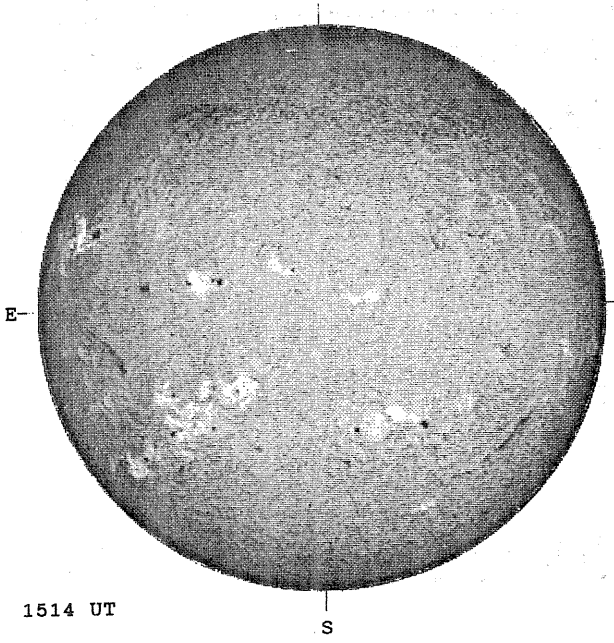
DeltaY = 20.2
DeltaX = 12.8



18.67 -
19.00 UT

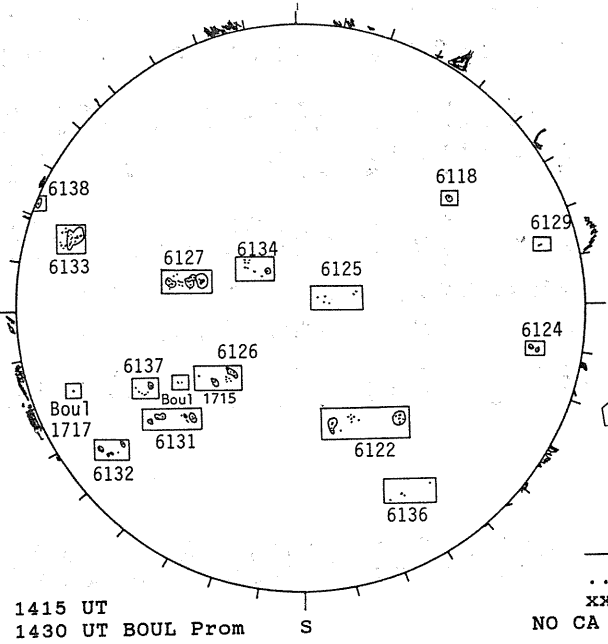
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



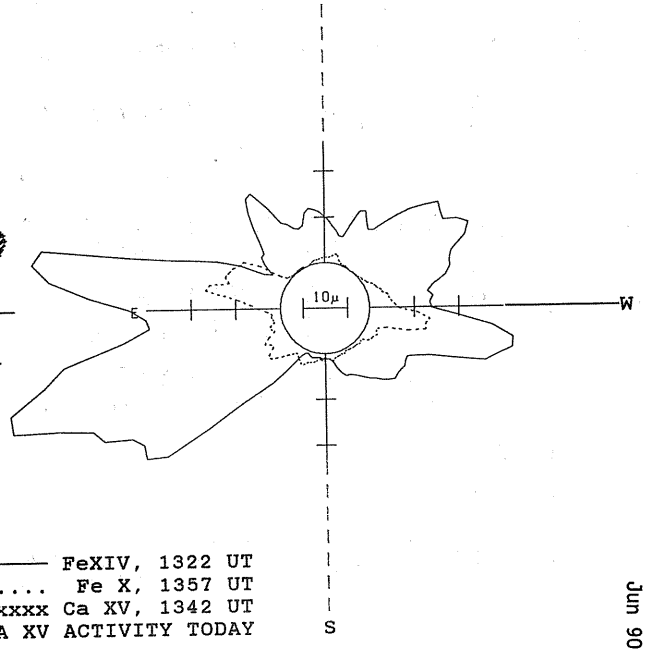
1514 UT

BOULDER SUNSPOT



1415 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1322 UT
.... Fe X, 1357 UT
xxxx Ca XV, 1342 UT
NO CA XV ACTIVITY TODAY

89
Jun 90

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 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
6079		SVTO	05	26	0641	S24	E78	06	1.3		A	AX	10	1	1	3
6079		RAMY	05	26	1400	S24	E71	06	1.1		A	AX	10	2	1	3
6079		HOLL	05	26	1520	S25	E75	06	1.4		B	BXO	10	2	5	4
6079		LEAR	05	27	0045	S24	E65	06	1.0		A	AX	20	1	1	2
6079		SVTO	05	27	0621	S25	E63	06	1.1		A	AX	10	1	1	2
6079		HOLL	05	27	1415	S24	E59	06	1.1		A	AX		1		3
6093		RAMY	06	06	1228	S18	W72	06	1.0		B	DAO	120	7	8	4
6093		BOUL	06	06	1410	S18	W70	06	1.2		B	BXO	20	3	4	3
6093		SVTO	06	06	1520	S18	W67	06	1.5		B	CSO	20	2	3	1
6093		HOLL	06	06	1545	S19	W73	06	1.1		B	CSI	100	10	9	3
6093		PALE	06	06	1740	S19	W74	06	1.1		B	DAO	100	7	7	4
6093		CULG	06	07	0205	S17	W83	05	31.8		B	DSO	50	2	7	3
6093		SVTO	06	07	0540	S18	W75	06	1.5		B	CSO	90	2	3	2
6093		RAMY	06	07	1332	S19	W86	06	1.0		A	HA	60	1	2	3
6083		RAMY	05	28	1305	N14	E58	06	1.9		A	AX	20	4	4	2
6083		LEAR	05	29	0022	N13	E48	06	1.6		A	AX	20	1	1	3
6083		RAMY	05	29	1113	N13	E41	06	1.6		B	BXO	10	3	3	3
6083		RAMY	05	30	1109	N13	E28	06	1.6		B	BXO	10	3	3	3
6083		HOLL	05	30	1640	N13	E27	06	1.7		A	AX		1		4
6083		PALE	05	30	1910	N14	E25	06	1.7		A	AX		1		2
6083		CULG	05	31	0050	N13	E22	06	1.7		A	AX		1		3
6083		LEAR	05	31	0100	N14	E22	06	1.7		A	AX	20	2	1	3
6083		SVTO	05	31	0715	N13	E17	06	1.6		A	AX		1		3
6083		PALE	05	31	1810	N14	E12	06	1.7		B	BXO	10	6	4	4
6083		RAMY	06	01	1212	N14	E03	06	1.7		B	BXO	10	6	4	3
6083		HOLL	06	01	1400	N14	E02	06	1.7		A	AX		1		3
6080		LEAR	05	27	0045	N15	E77	06	1.9		B	CSO	90	2	3	2
6080		SVTO	05	27	0621	N14	E83	06	2.5		B	DSO	90	3	10	2
6080		HOLL	05	27	1415	N16	E78	06	2.5		B	DSO	40	4	5	3
6080		RAMY	05	27	1420	N14	E78	06	2.5		B	DAO	130	2	5	3
6080		PALE	05	27	1922	N15	E74	06	2.4		B	DAO	120	3	5	3
6080		SVTO	05	28	0543	N14	E68	06	2.4		B	DSO	100	2	4	2
6080		RAMY	05	28	1305	N15	E65	06	2.5		B	DAO	140	2	6	2
6080		BOUL	05	28	1435	N14	E61	06	2.2		B	DSO	90	2	3	1
6080		HOLL	05	28	1550	N14	E63	06	2.4		B	CSO	60	2	3	2
6080		PALE	05	28	1852	N15	E63	06	2.5		B	DAO	100	2	4	3
6080		LEAR	05	29	0022	N15	E58	06	2.4		B	DSO	90	3	4	3
6080		CULG	05	29	0050	N15	E58	06	2.4		B	DSO	120	3	5	3
6080		RAMY	05	29	1113	N13	E53	06	2.5		B	DAO	170	4	5	3
6080		HOLL	05	29	1625	N13	E48	06	2.3		B	DSO	110	2	3	3
6080		PALE	05	29	1749	N14	E48	06	2.4		B	DAO	90	2	3	3
6080		CULG	05	30	0050	N14	E45	06	2.4		B	DAO	90	2	4	3
6080		LEAR	05	30	0135	N14	E44	06	2.4		B	DAO	110	3	4	4
6080		SVTO	05	30	0859	N14	E40	06	2.4		B	DSO	80	2	4	2
6080		RAMY	05	30	1109	N15	E39	06	2.4		B	DAO	200	6	5	3
6080		BOUL	05	30	1425	N15	E35	06	2.2		B	DSO	90	2	5	3
6080		HOLL	05	30	1640	N14	E37	06	2.5		B	DSO	100	2	4	4
6080		PALE	05	30	1910	N14	E36	06	2.5		B	DAO	110	3	4	2
6080		CULG	05	31	0050	N14	E32	06	2.4		B	DSO	80	3	4	3
6080		LEAR	05	31	0100	N14	E31	06	2.4		B	DAO	80	3	3	3
6080		SVTO	05	31	0715	N15	E28	06	2.4		B	DSO	90	2	3	3
6080		HOLL	05	31	1435	N16	E23	06	2.3		B	DSI	60	7	3	2
6080		BOUL	05	31	1450	N12	E24	06	2.4		B	DAO	100	6	4	2
6080		RAMY	05	31	1519	N14	E24	06	2.4		B	DSO	90	5	3	2
6080		PALE	05	31	1810	N14	E22	06	2.4		B	DSO	100	7	4	4
6080		RAMY	06	01	1212	N14	E13	06	2.5		B	DAO	90	6	4	3
6080		HOLL	06	01	1400	N13	E12	06	2.5		B	DSO	80	6	4	3
6080		LEAR	06	02	0009	N14	E08	06	2.6		B	DSO	120	9	6	4
6080		CULG	06	02	0053	N14	E07	06	2.6		B	DSO	70	6	6	2
6080		SVTO	06	02	0708	N13	E04	06	2.6		B	DAI	90	10	5	3
6080		RAMY	06	02	1220	N14	E00	06	2.5		B	DAO	130	7	6	2
6080		HOLL	06	02	1325	N14	E00	06	2.5		B	DSO	60	7	6	2
6080		BOUL	06	02	1420	N13	W02	06	2.4		B	DAO	60	4	3	1
6080		PALE	06	02	1942	N15	W04	06	2.5		B	DSO	80	5	4	2
6080		CULG	06	03	0056	N15	W09	06	2.3		B	DSO	60	6	4	3
6080		LEAR	06	03	0220	N14	W09	06	2.4		B	DSO	100	7	5	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 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
6080		RAMY	06	03	1210	N15	W14	06	2.4		B	DAO	60	7	3	4
6080		HOLL	06	03	1325	N15	W15	06	2.4		B	DSO	50	7	5	5
6080		BOUL	06	03	1420	N14	W15	06	2.5		B	DAO	40	4	4	2
6080		PALE	06	03	2056	N14	W20	06	2.4		B	BXO	30	7	4	3
6080		LEAR	06	04	0045	N14	W21	06	2.4		B	DSO	40	5	4	3
6080		CULG	06	04	0115	N15	W23	06	2.3		B	CSO	20	5	4	3
6080		SVTO	06	04	0537	N15	W25	06	2.3		B	CRO	30	7	5	4
6080		RAMY	06	04	1257	N15	W29	06	2.3		B	BXO	20	6	4	3
6080		BOUL	06	04	1425	N14	W28	06	2.5		B	BXO	20	3	4	1
6080		HOLL	06	04	1535	N14	W29	06	2.4		B	BXO	100	5	5	3
6080		PALE	06	04	2041	N14	W34	06	2.3		B	BXO	10	4	5	3
6080		LEAR	06	05	0032	N14	W33	06	2.5		B	BXO	10	2	4	2
6080		SVTO	06	05	0736	N16	W38	06	2.4		A	AX	10	1	1	2
6080		RAMY	06	05	1113	N15	W39	06	2.5		A	AX	10	1	1	3
6080		BOUL	06	05	1405	N15	W39	06	2.6		A	AX		1		1
6080		HOLL	06	05	1430	N16	W40	06	2.6		A	AX		1		3
6080		PALE	06	05	2000	N14	W44	06	2.5		A	AX		2	2	2
6084		RAMY	05	30	1109	S13	E57	06	3.8		B	BXO	10	4	4	3
6084		HOLL	06	03	1325	S13	E08	06	4.2		B	BXO	10	3	3	5
6084		RAMY	06	04	1257	S14	W07	06	4.0		B	BXO	10	3	4	3
6084		BOUL	06	04	1425	S14	W06	06	4.1		A	AX		1		1
6084		HOLL	06	04	1535	S16	W07	06	4.1		A	AX		1		3
6084		PALE	06	04	2041	S16	W09	06	4.2		B	BXO	10	6	3	3
6084		RAMY	06	05	1113	S17	W18	06	4.1		B	BXO	10	2	3	3
6084		PALE	06	06	1740	S18	W33	06	4.2		A	AX		1		4
6094		PALE	06	05	2000	S11	W06	06	5.4		A	AX		1		2
6094		RAMY	06	06	1228	S12	W13	06	5.5		B	DAO	60	11	8	4
6094		BOUL	06	06	1410	S12	W12	06	5.7		B	CRO	20	6	5	3
6094		SVTO	06	06	1520	S12	W13	06	5.6		B	BXI	20	7	7	1
6094		HOLL	06	06	1545	S12	W15	06	5.5		B	BXO	30	16	8	3
6094		PALE	06	06	1740	S12	W15	06	5.6		B	DAO	40	14	8	4
6094		CULG	06	07	0205	S11	W23	06	5.3		B	BXI	10	8	4	3
6094		SVTO	06	07	0540	S13	W24	06	5.4		B	BXO	20	3	4	2
6094		RAMY	06	07	1332	S12	W29	06	5.4		B	BXO	20	9	5	3
6094		BOUL	06	07	1525	S12	W28	06	5.5		B	CSO	20	3	1	2
6094		HOLL	06	07	1600	S11	W30	06	5.4		B	BXO	40	5	4	1
6094		CULG	06	08	0130	S10	W37	06	5.3		B	CRO	20	2	3	2
6094		SVTO	06	08	0643	S12	W38	06	5.4		B	BXO	10	2	4	4
6094		RAMY	06	08	1330	S11	W42	06	5.4		A	AX	10	3	3	3
6094		CULG	06	09	0040	S12	W48	06	5.4		B	BXO		3	1	3
6094		SVTO	06	09	0710	S11	W54	06	5.2		B	CRO	20	2	3	4
6094		RAMY	06	09	1120	S11	W52	06	5.5		B	CRO	20	5	4	4
6094		BOUL	06	09	1415	S12	W53	06	5.6		A	CAO	20	3	3	2
6094		HOLL	06	09	1642	S13	W56	06	5.5		B	BXO	20	2	4	2
6094		PALE	06	09	1923	S13	W58	06	5.4		B	BXO	10	3	3	3
6094		CULG	06	10	0015	S12	W61	06	5.4		B	BXO		3	3	3
6094		SVTO	06	10	0740	S11	W65	06	5.4		B	BXO	20	2	3	3
6094		RAMY	06	10	1207	S11	W66	06	5.5		B	BXO	20	6	5	3
6094		HOLL	06	10	1810	S12	W68	06	5.6		B	BXO	40	6	3	4
6094		PALE	06	10	1927	S12	W72	06	5.4		A	AX		2		3
6094		CULG	06	11	0107	S12	W79	06	5.1		A	AX	10	1	1	4
6094		SVTO	06	11	0755	S09	W82	06	5.2		B	BXO	10	2	5	2
6086		PALE	05	30	1910	N24	E82	06	6.1		A	HA	120	1	1	2
6086		CULG	05	31	0050	N24	E79	06	6.1		A	HS	60	1	2	3
6086		LEAR	05	31	0100	N24	E79	06	6.1		A	HA	90	1	1	3
6086		SVTO	05	31	0715	N21	E75	06	6.0		A	HS	30	1	1	3
6086		HOLL	05	31	1435	N25	E71	06	6.1		B	CSO	50	6	4	2
6086		BOUL	05	31	1450	N18	E68	06	5.8		B	DAO	100	2	3	2
6086		RAMY	05	31	1519	N22	E75	06	6.4		B	CAO	70	4	8	2
6086		PALE	05	31	1810	N23	E72	06	6.3		B	CSO	70	6	9	4
6086		RAMY	06	01	1212	N22	E62	06	6.3		B	CSO	100	7	8	3
6086		HOLL	06	01	1400	N22	E61	06	6.3		B	CSO	100	6	8	3
6086		LEAR	06	02	0009	N22	E54	06	6.1		B	DSO	140	7	8	4
6086		CULG	06	02	0053	N21	E55	06	6.2		B	CSO	50	5	8	2
6086		SVTO	06	02	0708	N21	E52	06	6.3		B	DAO	80	6	9	3
6086		RAMY	06	02	1220	N22	E47	06	6.1		B	DAO	50	7	8	2

SUNSPOT GROUPS
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JUNE 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
6086		HOLL	06	02	1325	N22	E48	06	6.2		B	DSO	60	7	8	2
6086		BOUL	06	02	1420	N23	E43	06	5.9		B	DSO	70	2	4	1
6086		PALE	06	02	1942	N23	E43	06	6.1		B	CSO	60	2	3	2
6086		CULG	06	03	0056	N23	E39	06	6.0		B	CSO	50	4	4	3
6086		LEAR	06	03	0220	N22	E40	06	6.2		B	DSO	110	8	10	3
6086		RAMY	06	03	1210	N22	E35	06	6.2		B	DAO	100	24	10	4
6086		HOLL	06	03	1325	N22	E35	06	6.2		B	CSO	80	9	10	5
6086		BOUL	06	03	1420	N23	E30	06	5.9		B	CSO	30	3	4	2
6086		PALE	06	03	2056	N22	E30	06	6.2		B	CSO	30	5	8	3
6086		LEAR	06	04	0045	N22	E26	06	6.0		B	CSO	50	4	3	3
6086		CULG	06	04	0115	N23	E25	06	6.0		B	CSO	20	3	3	3
6086		SVTO	06	04	0537	N22	E23	06	6.0		B	CSO	70	3	3	4
6086		RAMY	06	04	1257	N23	E20	06	6.1		B	CSO	50	3	3	3
6086		BOUL	06	04	1425	N23	E17	06	5.9		B	CAO	30	2	2	1
6086		HOLL	06	04	1535	N22	E18	06	6.0		B	CSO	300	4	4	3
6086		PALE	06	04	2041	N24	E16	06	6.1		B	CSO	30	4	3	3
6086		LEAR	06	05	0032	N22	E12	06	5.9		A	HS	20	1	2	2
6086		CULG	06	05	0130	N23	E11	06	5.9		A	HS	20	1	1	2
6086		SVTO	06	05	0736	N22	E08	06	5.9		A	HS	30	1	1	2
6086		RAMY	06	05	1113	N22	E10	06	6.2		B	CAO	60	2	10	3
6086		BOUL	06	05	1405	N23	E04	06	5.9		A	HS	20	1	1	1
6086		HOLL	06	05	1430	N23	E04	06	5.9		A	HS	40	1	2	3
6086		PALE	06	05	2000	N22	E00	06	5.8		A	HS	40	1	2	2
6086		RAMY	06	06	1228	N21	W12	06	5.6		B	CAO	70	4	9	4
6086		BOUL	06	06	1410	N21	W10	06	5.8		A	HS	30	1	2	3
6086		SVTO	06	06	1520	N22	W09	06	5.9		A	HS	20	1	2	1
6086		HOLL	06	06	1545	N22	W07	06	6.1		B	CSO	50	2	8	3
6086		PALE	06	06	1740	N22	W08	06	6.1		B	CSO	30	4	8	4
6086		CULG	06	07	0205	N23	W17	06	5.8		A	HR	10	1	1	3
6086		SVTO	06	07	0540	N22	W17	06	5.9		A	C	20	1	1	2
6086		RAMY	06	07	1332	N21	W21	06	5.9		B	CAO	20	3	3	3
6086		BOUL	06	07	1525	N22	W23	06	5.9		A	AX	10	1	1	2
6086		HOLL	06	07	1600	N21	W22	06	6.0		B	BXO	20	2	3	1
6086		PALE	06	07	1730	N21	W27	06	5.6		A	AX	20	2	2	2
6086		RAMY	06	08	1330	N23	W39	06	5.5		A	AX		1		3
6086B		BOUL	05	31	1450	S18	E70	06	5.9		A	HA	50	2	3	2
6085		PALE	05	30	1910	S02	E82	06	5.9		A	HA	40	1	1	2
6085		CULG	05	31	0050	S03	E80	06	6.0		A	HA	60	1	2	3
6085		LEAR	05	31	0100	S04	E79	06	5.9		B	CAO	60	3	1	3
6085		HOLL	05	31	1435	S01	E74	06	6.1		B	CSO	40	7	3	2
6085		RAMY	05	31	1519	S04	E74	06	6.2		A	HA	60	2	2	2
6085		RAMY	06	01	1212	S05	E64	06	6.3		B	CAO	90	6	7	3
6085		HOLL	06	01	1400	S04	E60	06	6.1		A	HS	120	2	2	3
6085		LEAR	06	02	0009	S05	E55	06	6.1		B	DAO	120	6	4	4
6085		CULG	06	02	0053	S05	E54	06	6.1		A	HA	110	5	3	2
6085		SVTO	06	02	0708	S07	E55	06	6.4		B	DAO	140	6	7	3
6085		RAMY	06	02	1220	S03	E50	06	6.2		B	CAO	110	5	6	2
6085		HOLL	06	02	1325	S03	E49	06	6.2		A	HA	70	5	2	2
6085		BOUL	06	02	1420	S04	E45	06	6.0		A	HA	60	2	2	1
6085		PALE	06	02	1942	S04	E47	06	6.3		A	HA	80	3	2	2
6085		CULG	06	03	0056	S03	E41	06	6.1		A	HA	50	4	3	3
6085		LEAR	06	03	0220	S04	E39	06	6.0		B	DAO	100	5	4	3
6085		RAMY	06	03	1210	S04	E39	06	6.4		B	CAO	120	8	8	4
6085		HOLL	06	03	1325	S05	E36	06	6.2		B	CSO	50	8	5	5
6085		BOUL	06	03	1420	S03	E32	06	6.0		A	HA	70	3	3	2
6085		PALE	06	03	2056	S04	E30	06	6.1		A	HA	70	2	2	3
6085		LEAR	06	04	0045	S06	E32	06	6.4		B	CAO	60	8	8	3
6085		CULG	06	04	0115	S03	E28	06	6.1		A	HA	40	3	2	3
6085		SVTO	06	04	0537	S05	E26	06	6.2		A	HA	70	3	2	4
6085		RAMY	06	04	1257	S06	E25	06	6.4		B	CAO	80	12	8	3
6085		BOUL	06	04	1425	S03	E20	06	6.1		B	CAO	40	3	2	1
6085		HOLL	06	04	1535	S05	E23	06	6.4		B	CSO	600	8	8	3
6085		PALE	06	04	2041	S04	E18	06	6.2		B	CAO	50	5	4	3
6085		LEAR	06	05	0032	S04	E16	06	6.2		B	DSO	30	3	2	2
6085		CULG	06	05	0130	S03	E14	06	6.1		A	HA	60	3	2	2
6085		SVTO	06	05	0736	S06	E14	06	6.4		B	CSO	50	6	8	2
6085		RAMY	06	05	1113	S05	E12	06	6.4		B	DAO	50	12	8	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 Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6085		BOUL	06	05	1405	S04	E07	06	6.1		B	CAO	30	3	3	1
6085		HOLL	06	05	1430	S03	E08	06	6.2		B	CSO	20	3	3	3
6085		PALE	06	05	2000	S04	E05	06	6.2		B	CAO	20	5	4	2
6085		RAMY	06	06	1228	S05	W03	06	6.3		B	DAO	30	15	5	4
6085		BOUL	06	06	1410	S04	W07	06	6.1		B	CRO	10	4	3	3
6085		SVTO	06	06	1520	S04	W06	06	6.2		B	CSO	30	6	4	1
6085		HOLL	06	06	1545	S04	W07	06	6.1		B	BXO	20	7	4	3
6085		PALE	06	06	1740	S06	W06	06	6.3		B	CSO	20	13	8	4
6085		CULG	06	07	0205	S03	W13	06	6.1		B	BXO	10	7	3	3
6085		SVTO	06	07	0540	S04	W13	06	6.3		B	BXO	30	7	4	2
6085		RAMY	06	07	1332	S05	W15	06	6.4		B	BXO	10	12	8	3
6085		BOUL	06	07	1525	S04	W21	06	6.1		B	BXO	10	2	3	2
6085		HOLL	06	07	1600	S04	W20	06	6.2		B	BXO	20	4	4	1
6085		PALE	06	07	1730	S07	W20	06	6.2		B	BXO	20	11	8	2
6085		CULG	06	08	0130	S03	W26	06	6.1		B	BXO		5	3	2
6085		SVTO	06	08	0643	S05	W25	06	6.4		B	BXO	20	4	8	4
6085		CULG	06	09	0040	S04	W41	06	6.0		A	AX		1		3
6085A		SVTO	05	31	0715	S15	E79	06	6.3		B	CAO	40	3	7	3
6085A		PALE	05	31	1810	S15	E74	06	6.3		B	CAO	60	7	9	4
6086A		RAMY	06	10	1207	N12	W56	06	6.3		A	AX		1	1	3
6086A		HOLL	06	10	1810	N13	W60	06	6.2		A	AX		1		4
6086A		PALE	06	10	1927	N12	W61	06	6.2		A	AX		1		3
6090		BOUL	06	04	1425	S18	E22	06	6.3		B	BXO	20	3	4	1
6090		HOLL	06	04	1535	S20	E22	06	6.3		B	BXO	40	2	3	3
6090		RAMY	06	10	1207	S23	W61	06	5.8		B	CRO	20	4	3	3
6090		HOLL	06	10	1810	S23	W62	06	6.0		B	BXO	10	3	5	4
6090		PALE	06	10	1927	S25	W64	06	5.8		A	AX		1		3
6090		CULG	06	11	0107	S23	W71	06	5.6		B	BXO	10	3	6	4
6090A		RAMY	06	04	1257	S20	E24	06	6.4		A	AX	10	4	3	3
6090A		PALE	06	04	2041	S20	E20	06	6.4		B	BXO		4	3	3
6090B		CULG	06	07	0205	S07	W08	06	6.5		A	AX	10	3	2	3
6090B		CULG	06	08	0130	S07	W21	06	6.5		A	AX		1		2
6088		RAMY	06	02	1220	S16	E78	06	8.4		A	HR	20	1	1	2
6088		HOLL	06	02	1325	S16	E79	06	8.5		A	AX	10	2	1	2
6088		PALE	06	02	1942	S16	E75	06	8.5		A	HS	60	1	2	2
6088		CULG	06	03	0056	S15	E70	06	8.3		A	HR	10	4	4	3
6088		LEAR	06	03	0220	S17	E69	06	8.3		B	CAO	80	4	4	3
6088		RAMY	06	03	1210	S16	E65	06	8.4		B	DAO	70	9	6	4
6088		HOLL	06	03	1325	S17	E65	06	8.5		B	DSO	70	9	6	5
6088		BOUL	06	03	1420	S16	E61	06	8.2		B	CAO	60	5	6	2
6088		PALE	06	03	2056	S17	E61	06	8.5		B	BXO	30	4	6	3
6088		LEAR	06	04	0045	S17	E58	06	8.4		B	DSO	60	6	6	3
6088		CULG	06	04	0115	S16	E58	06	8.4		B	CRO	10	6	6	3
6088		SVTO	06	04	0537	S18	E57	06	8.6		B	DAI	130	9	6	4
6088		RAMY	06	04	1257	S17	E53	06	8.6		B	DAO	90	9	8	3
6088		BOUL	06	04	1425	S16	E49	06	8.3		B	CAO	80	7	6	1
6088		HOLL	06	04	1535	S18	E50	06	8.4		B	CSO	400	14	8	3
6088		PALE	06	04	2041	S16	E49	06	8.6		B	DAO	50	7	7	3
6088		LEAR	06	05	0032	S17	E46	06	8.5		B	DAO	100	11	8	2
6088		CULG	06	05	0130	S14	E46	06	8.5		B	CAO	40	6	7	2
6088		SVTO	06	05	0736	S18	E41	06	8.4		B	DAO	120	13	9	2
6088		RAMY	06	05	1113	S17	E40	06	8.5		B	DAO	90	13	9	3
6088		BOUL	06	05	1405	S17	E37	06	8.4		B	CSO	70	7	9	1
6088		HOLL	06	05	1430	S17	E38	06	8.5		B	BXO	20	10	8	3
6088		PALE	06	05	2000	S17	E36	06	8.6		B	CRO	20	13	8	2
6088		RAMY	06	06	1228	S18	E26	06	8.5		B	DAO	50	14	10	4
6088		BOUL	06	06	1410	S17	E25	06	8.5		B	CSO	20	8	9	3
6088		SVTO	06	06	1520	S17	E25	06	8.5		B	CAO	30	5	9	1
6088		HOLL	06	06	1545	S18	E24	06	8.5		B	BXO	30	10	10	3
6088		PALE	06	06	1740	S17	E24	06	8.5		B	CAO	30	12	10	4
6088		CULG	06	07	0205	S17	E13	06	8.1		B	BXO	10	4	3	3
6088		SVTO	06	07	0540	S18	E18	06	8.6		B	BXO	30	4	11	2
6088		RAMY	06	07	1332	S16	E14	06	8.6		B	BXO	20	14	11	3

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6088		BOUL	06 07 1525	S16 E10	06 8.4		B	BXO	10	3	5	2
6088		HOLL	06 07 1600	S18 E08	06 8.3		A	AX	20	2	1	1
6088		PALE	06 07 1730	S18 E08	06 8.3		B	BXO	30	6	5	2
6088		SVTO	06 08 0643	S18 E00	06 8.3		A	AX	10	1		4
6088		RAMY	06 08 1330	S17 W05	06 8.2		B	BXO	10	8	8	3
6088		PALE	06 10 1927	S17 W34	06 8.2		A	AX		1		3
6088		LEAR	06 12 0240	S17 W42	06 8.9		A	AX	10	1	1	3
6088A		CULG	06 07 0205	S17 E22	06 8.7		A	AX		1		3
6091		SVTO	06 05 0736	N00 E57	06 9.6		B	BXO	20	3	4	2
6091		RAMY	06 05 1113	N01 E55	06 9.6		B	CRO	30	7	5	3
6091		BOUL	06 05 1405	N01 E52	06 9.5		B	BXO	20	2	4	1
6091		HOLL	06 05 1430	N01 E53	06 9.6		B	BXO	10	2	5	3
6091		PALE	06 05 2000	N01 E49	06 9.5		B	CSO	30	2	3	2
6091		RAMY	06 06 1228	N00 E39	06 9.4		B	CAO	80	6	6	4
6091		BOUL	06 06 1410	S01 E34	06 9.1		B	CAO	20	3	3	3
6091		SVTO	06 06 1520	S02 E36	06 9.3		B	CSO	20	2	5	1
6091		HOLL	06 06 1545	S01 E37	06 9.4		B	CSO	50	4	5	3
6091		PALE	06 06 1740	N01 E36	06 9.4		B	CSO	30	5	5	4
6091		CULG	06 07 0205	N01 E27	06 9.1		A	HA	20	2	1	3
6091		SVTO	06 07 0540	S02 E27	06 9.2		A	HS	30	2	1	2
6091		RAMY	06 07 1332	N01 E21	06 9.1		B	CAO	20	3	3	3
6091		BOUL	06 07 1525	N02 E18	06 9.0		A	AX	20	2	1	2
6091		HOLL	06 07 1600	N01 E21	06 9.2		A	HS	30	1	1	1
6091		PALE	06 07 1730	N02 E19	06 9.1		A	HS	40	2	2	2
6091		CULG	06 08 0130	N02 E14	06 9.1		A	HS	20	1	1	2
6091		SVTO	06 08 0643	N01 E12	06 9.2		A	HS	30	2	1	4
6091		RAMY	06 08 1330	N01 E07	06 9.1		A	AX	10	2	1	3
6091		CULG	06 09 0040	N01 E02	06 9.2		A	HR	10	2	1	3
6091		SVTO	06 09 0710	N02 W04	06 9.0		A	AX	10	2	1	4
6091		RAMY	06 09 1120	N01 W05	06 9.1		A	HR	10	2	1	4
6091		BOUL	06 09 1415	N01 W07	06 9.1		A	AX		1		2
6091		HOLL	06 09 1642	N00 W08	06 9.1		B	BXO	20	3	3	2
6091		PALE	06 09 1923	N01 W09	06 9.1		A	AX		2	1	3
6091		CULG	06 10 0015	N01 W12	06 9.1		A	AX		2	1	3
6091		SVTO	06 10 0740	N01 W16	06 9.1		B	BXO	10	3	2	3
6091		RAMY	06 10 1207	N01 W19	06 9.1		A	AX		2	1	3
6091		PALE	06 10 1927	N01 W24	06 9.0		A	AX		1		3
6091A		CULG	06 14 0040	N16 W62	06 9.3		B	CRO	10	6	5	3
6091A		CULG	06 15 0055	N16 W71	06 9.6		A	AX		1		3
6089		RAMY	06 03 1210	N09 E80	06 9.5		A	HK	180	1	3	4
6089		HOLL	06 03 1325	N08 E79	06 9.5		B	DSO	120	4	5	5
6089		BOUL	06 03 1420	N10 E75	06 9.2		A	HK	120	2	5	2
6089		PALE	06 03 2056	N08 E73	06 9.3		B	CAO	110	2	4	3
6089		LEAR	06 04 0045	N09 E72	06 9.4		B	CAO	240	4	4	3
6089		CULG	06 04 0115	N10 E73	06 9.5		A	HA	180	2	4	3
6089		SVTO	06 04 0537	N08 E71	06 9.5		A	HA	390	3	4	4
6089		RAMY	06 04 1257	N10 E68	06 9.6		B	CKO	250	6	6	3
6089		BOUL	06 04 1425	N09 E66	06 9.5		A	HA	220	3	4	1
6089		HOLL	06 04 1535	N09 E65	06 9.5		BD	DAC	800	6	6	3
6089		PALE	06 04 2041	N10 E63	06 9.6		B	CKO	280	3	5	3
6089		LEAR	06 05 0032	N09 E63	06 9.7		B	CAO	300	5	6	2
6089		CULG	06 05 0130	N08 E62	06 9.7		A	HK	220	2	4	2
6089		SVTO	06 05 0736	N12 E57	06 9.6		A	HA	450	3	4	2
6089		RAMY	06 05 1113	N10 E56	06 9.7		B	CKO	500	9	7	3
6089		BOUL	06 05 1405	N09 E53	06 9.6		B	CAO	250	8	4	1
6089		HOLL	06 05 1430	N09 E56	06 9.8		BD	DAC	360	11	6	3
6089		PALE	06 05 2000	N10 E51	06 9.7		BD	DKC	420	16	6	2
6089		RAMY	06 06 1228	N09 E42	06 9.7		B	CKO	500	20	6	4
6089		BOUL	06 06 1410	N08 E37	06 9.4		B	DKO	360	7	6	3
6089		HOLL	06 06 1545	N09 E39	06 9.6		BD	DKC	380	23	5	3
6089		PALE	06 06 1740	N10 E38	06 9.6		B	DKO	470	24	6	4
6089		CULG	06 07 0205	N08 E33	06 9.6		B	DKO	330	11	5	3
6089		SVTO	06 07 0540	N08 E32	06 9.6		B	DKO	290	10	5	2
6089		RAMY	06 07 1332	N09 E28	06 9.7		B	DKO	570	22	6	3
6089		BOUL	06 07 1525	N09 E25	06 9.5		B	DKO	450	12	7	2

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 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
6089		HOLL	06 07 1600	N09 E25	06 9.5		B	DKI	550	11	7	1
6089		PALE	06 07 1730	N10 E24	06 9.5		BG	DKI	490	15	8	2
6089		CULG	06 08 0130	N09 E20	06 9.6		B	DAI	340	8	6	2
6089		SVTO	06 08 0643	N08 E18	06 9.6		BG	DAI	450	14	6	4
6089		RAMY	06 08 1330	N09 E14	06 9.6		BG	DKO	530	19	7	3
6089		CULG	06 09 0040	N09 E08	06 9.6		BG	DKI	440	30	7	3
6089		SVTO	06 09 0710	N08 E04	06 9.6		BG	DKI	480	40	7	4
6089		RAMY	06 09 1120	N09 E02	06 9.6		BG	DKO	540	58	10	4
6089		BOUL	06 09 1415	N08 W01	06 9.5		BG	DKI	430	22	8	2
6089		HOLL	06 09 1642	N09 W02	06 9.5		BGD	DKI	480	23	8	2
6089		PALE	06 09 1923	N08 W04	06 9.5		BG	DKI	510	34	8	3
6089		CULG	06 10 0015	N09 W06	06 9.6		BG	DKI	480	30	8	3
6089		SVTO	06 10 0740	N09 W10	06 9.6		BG	DKI	390	37	8	3
6089		RAMY	06 10 1207	N09 W11	06 9.7		BG	DKI	570	49	10	3
6089		HOLL	06 10 1810	N09 W15	06 9.6		BG	EKI	500	61	12	4
6089		PALE	06 10 1927	N10 W16	06 9.6		BG	DKI	460	27	10	3
6089		CULG	06 11 0107	N10 W19	06 9.6		BG	EKC	440	65	11	4
6089		SVTO	06 11 0755	N09 W23	06 9.6		BG	DAI	400	34	9	2
6089		BOUL	06 11 1347	N09 W24	06 9.8		B	DAI	280	40	8	2
6089		RAMY	06 11 1709	N10 W28	06 9.6		BG	DKI	370	39	10	3
6089		HOLL	06 11 2000	N10 W32	06 9.4		BG	EAI	360	51	11	1
6089		PALE	06 11 2110	N11 W30	06 9.6		BG	DAI	390	36	9	3
6089		LEAR	06 12 0240	N09 W34	06 9.5		B	DAI	300	37	9	3
6089		SVTO	06 12 0902	N10 W38	06 9.5		BG	DAI	360	36	9	3
6089		RAMY	06 12 1259	N09 W40	06 9.5		BG	DAI	510	30	10	3
6089		BOUL	06 12 1406	N09 W40	06 9.6		B	DAI	280	25	9	2
6089		HOLL	06 12 1440	N09 W41	06 9.5		BG	DAI	350	30	10	3
6089		PALE	06 12 1845	N11 W43	06 9.5		BG	DAI	350	37	10	3
6089		CULG	06 13 0252	N10 W49	06 9.4		BG	EAI	150	30	11	4
6089		LEAR	06 13 0645	N09 W49	06 9.6		BG	DAO	170	20	10	3
6089		SVTO	06 13 0708	N10 W50	06 9.5		BG	DAI	300	31	9	3
6089		BOUL	06 13 1500	N12 W54	06 9.5		B	EAI	200	15	11	2
6089		HOLL	06 13 1540	N10 W55	06 9.5		BG	DAI	290	34	10	3
6089		PALE	06 13 1801	N13 W56	06 9.5		BG	DAI	250	25	10	3
6089		CULG	06 14 0040	N11 W59	06 9.6		BG	DAO	180	16	10	3
6089		LEAR	06 14 0145	N11 W60	06 9.5		B	DAO	340	15	10	3
6089		SVTO	06 14 0600	N11 W63	06 9.5		BG	EAI	200	20	10	4
6089		BOUL	06 14 1425	N14 W65	06 9.7		B	EAI	260	11	11	4
6089		RAMY	06 14 1440	N09 W66	06 9.6		BG	DAO	150	7	10	1
6089		HOLL	06 14 1500	N11 W67	06 9.6		BG	DAI	260	19	9	4
6089		PALE	06 14 1858	N12 W70	06 9.5		B	DAO	210	11	9	3
6089		LEAR	06 15 0020	N11 W69	06 9.8		B	EAI	140	6	12	3
6089		CULG	06 15 0055	N12 W72	06 9.6		BG	DAO	220	8	10	3
6089		SVTO	06 15 0648	N13 W79	06 9.3		B	EAO	360	7	15	4
6089		BOUL	06 15 1435	N11 W81	06 9.5		A	HA	60	3	1	3
6089		HOLL	06 15 1615	N09 W77	06 9.9		A	HS	60	6	4	3
6089		RAMY	06 15 2034	N10 W88	06 9.2		A	HA	60	1	1	1
6092		SVTO	06 05 0736	N18 E62	06 10.0		B	BXO	20	2	5	2
6092		RAMY	06 05 1113	N19 E60	06 10.0		B	BXO	10	3	3	3
6092		BOUL	06 05 1405	N17 E56	06 9.8		A	AX	10	2		1
6092		HOLL	06 05 1430	N18 E59	06 10.1		B	BXO		2	1	3
6092		PALE	06 05 2000	N19 E56	06 10.1		B	BXO	10	5	6	2
6092		RAMY	06 06 1228	N18 E49	06 10.2		B	DRO	30	6	6	4
6092		BOUL	06 06 1410	N15 E42	06 9.8		B	BXO	10	2	5	3
6092		SVTO	06 06 1520	N18 E44	06 10.0		B	BXO	10	2	6	1
6092		HOLL	06 06 1545	N18 E45	06 10.1		B	BXO	20	4	5	3
6092		PALE	06 06 1740	N19 E44	06 10.1		B	BXO	10	3	6	4
6092		CULG	06 07 0205	N17 E37	06 9.9		A	AX		1		3
6092		SVTO	06 07 0540	N18 E34	06 9.8		A	AX	10	1		2
6092		RAMY	06 07 1332	N17 E31	06 9.9		A	AX		2	1	3
6092		BOUL	06 07 1525	N17 E28	06 9.8		A	AX		1	1	2
6092		HOLL	06 07 1600	N17 E29	06 9.9		A	AX	10	1		1
6092		PALE	06 07 1730	N18 E28	06 9.9		A	AX	10	3	2	2
6092		CULG	06 08 0130	N17 E23	06 9.8		A	AX		1		2
6092		SVTO	06 08 0643	N17 E21	06 9.9		A	AX	10	1		4
6092		RAMY	06 08 1330	N14 E17	06 9.8		A	AX		1		3
6092		RAMY	06 10 1207	N18 W09	06 9.8		A	AX		1	1	3
6092		PALE	06 10 1927	N14 W12	06 9.9		A	AX	10	2	2	3

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6095		RAMY	06 05 1113	N27 E65	06 10.5		B	BXO	10	3	2	3
6095		RAMY	06 06 1228	N26 E49	06 10.3		B	BXO	10	1	3	4
6095		PALE	06 06 1740	N25 E45	06 10.2		A	AX		1		4
6095		RAMY	06 07 1332	N24 E32	06 10.0		A	AX		2	1	3
6095		BOUL	06 07 1525	N24 E29	06 9.9		A	AX		1	1	2
6095		HOLL	06 07 1600	N24 E32	06 10.1		B	BXO	10	2	3	1
6095		PALE	06 07 1730	N24 E31	06 10.1		B	BXO	20	5	3	2
6095		SVTO	06 08 0643	N24 E24	06 10.1		B	BXO	10	2	4	4
6095		RAMY	06 08 1330	N24 E19	06 10.0		A	AX		3	3	3
6095		BOUL	06 09 1415	N23 E06	06 10.0		B	BXO	10	4	3	2
6095		HOLL	06 09 1642	N22 E05	06 10.1		B	BXO	40	7	4	2
6095		PALE	06 09 1923	N24 E04	06 10.1		B	CRO	40	11	4	3
6095		CULG	06 10 0015	N23 E01	06 10.1		B	DRO	20	11	4	3
6095		RAMY	06 10 1207	N23 W05	06 10.1		B	DAO	110	20	6	3
6095		HOLL	06 10 1810	N23 W08	06 10.1		B	DAI	100	17	7	4
6095		PALE	06 10 1927	N24 W09	06 10.1		B	DAI	90	13	7	3
6095		CULG	06 11 0107	N23 W13	06 10.0		B	DAI	80	30	8	4
6095		SVTO	06 11 0755	N24 W16	06 10.1		B	DAI	130	22	8	2
6095		BOUL	06 11 1347	N24 W19	06 10.1		B	DAI	150	26	8	2
6095		RAMY	06 11 1709	N24 W22	06 10.0		B	DKI	300	29	10	3
6095		HOLL	06 11 2000	N23 W25	06 9.9		B	DAI	240	30	10	1
6095		PALE	06 11 2110	N24 W23	06 10.1		B	DSI	300	28	9	3
6095		LEAR	06 12 0240	N23 W27	06 10.0		B	DAO	320	26	10	3
6095		SVTO	06 12 0902	N22 W30	06 10.1		B	DSO	390	23	9	3
6095		RAMY	06 12 1259	N22 W31	06 10.1		BG	EKI	380	24	11	3
6095		BOUL	06 12 1406	N24 W33	06 10.0		B	EKI	360	22	11	2
6095		HOLL	06 12 1440	N22 W35	06 9.9		B	EKI	480	25	11	3
6095		PALE	06 12 1845	N24 W36	06 10.0		B	EKI	480	23	12	3
6095		CULG	06 13 0252	N23 W41	06 10.0		B	EKO	350	20	12	4
6095		LEAR	06 13 0645	N24 W41	06 10.1		B	EKO	230	13	12	3
6095		SVTO	06 13 0708	N23 W43	06 10.0		B	EKO	320	19	12	3
6095		BOUL	06 13 1500	N24 W47	06 10.0		B	EKI	280	12	12	2
6095		HOLL	06 13 1540	N22 W48	06 10.0		B	EAO	320	23	12	3
6095		PALE	06 13 1801	N26 W46	06 10.2		B	EAO	170	12	12	3
6095		CULG	06 14 0040	N24 W52	06 10.0		B	EKO	190	15	12	3
6095		LEAR	06 14 0145	N24 W51	06 10.1		B	EAO	290	14	12	3
6095		SVTO	06 14 0600	N24 W56	06 9.9		B	EAO	270	23	13	4
6095		BOUL	06 14 1425	N25 W58	06 10.1		B	EAO	240	8	14	4
6095		RAMY	06 14 1440	N23 W60	06 10.0		B	EAO	220	6	13	1
6095		HOLL	06 14 1500	N23 W59	06 10.1		B	ESO	220	12	11	4
6095		PALE	06 14 1858	N23 W59	06 10.2		B	FAO	210	7	16	3
6095		LEAR	06 15 0020	N24 W61	06 10.3		B	EAO	180	6	15	3
6095		CULG	06 15 0055	N24 W64	06 10.1		B	EAO	220	8	13	3
6095		SVTO	06 15 0648	N27 W69	06 9.9		B	ESO	310	3	15	4
6095		BOUL	06 15 1435	N25 W74	06 9.9		B	EAO	150	5	13	3
6095		HOLL	06 15 1615	N23 W72	06 10.1		B	ESO	160	4	13	3
6095		RAMY	06 15 2034	N24 W76	06 10.0		B	EAO	230	4	14	1
6095		CULG	06 16 0020	N25 W77	06 10.0		B	EAO	240	3	14	3
6095		LEAR	06 16 0105	N24 W72	06 10.5		B	DAO	90	2	8	3
6095		SVTO	06 16 0742	N25 W79	06 10.2		B	DSO	150	2	8	2
6095		RAMY	06 16 1220	N25 W81	06 10.2		B	CAO	60	3	10	1
6095		HOLL	06 16 1500	N25 W77	06 10.6		A	HS	60	1	2	4
6095		PALE	06 16 1930	N24 W86	06 10.2		A	HS	60	1	2	3
6097		PALE	06 07 1730	S08 E34	06 10.3		A	AX	10	2	2	2
6097		CULG	06 08 0130	S09 E29	06 10.2		A	AX		1		2
6097		SVTO	06 08 0643	S10 E28	06 10.4		B	BXO	10	4	2	4
6097		RAMY	06 08 1330	S08 E22	06 10.2		A	AX	10	2	1	3
6097		CULG	06 09 0040	S09 E17	06 10.3		A	AX		1		3
6097		CULG	06 10 0015	S09 E04	06 10.3		A	AX		2	2	3
6097		SVTO	06 10 0740	S10 E02	06 10.5		B	BXO	10	4	3	3
6097		RAMY	06 10 1207	S10 W01	06 10.4		B	BXO	10	4	2	3
6097		HOLL	06 10 1810	S10 W04	06 10.4		B	CRO	10	2	3	4
6097		PALE	06 10 1927	S09 W04	06 10.5		A	AX	10	2	2	3
6097		CULG	06 11 0107	S10 W09	06 10.4		B	BXO	10	5	4	4
6097		SVTO	06 11 0755	S09 W13	06 10.3		B	BXO	200	6	5	2
6097		RAMY	06 11 1709	S08 W18	06 10.4		A	AX	10	2	3	3

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

JUNE 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
6097A		RAMY	06 07 1332	S16 E50	06 11.3		A	AX		2		3
6104		SVTO	06 11 0755	S15 E06	06 11.8		A	AX	10	3	3	2
6104		RAMY	06 11 1709	S14 E03	06 11.9		A	AX		1		3
6104		PALE	06 11 2110	S14 E01	06 11.9		A	AX		1		3
6104		SVTO	06 12 0902	S16 W08	06 11.8		A	AX		2		3
6104		RAMY	06 12 1259	S15 W11	06 11.7		B	BXO	10	3	3	3
6101		RAMY	06 09 1120	N25 E47	06 13.1		B	BXO	20	4	11	4
6101		HOLL	06 09 1642	N23 E42	06 12.9		A	AX	10	1	1	2
6101		PALE	06 09 1923	N24 E41	06 13.0		A	AX		2	1	3
6101		CULG	06 10 0015	N24 E39	06 13.0		A	HR	10	4	1	3
6101		SVTO	06 10 0740	N22 E32	06 12.8		A	AX	10	3	2	3
6101		RAMY	06 10 1207	N22 E31	06 12.9		A	AX	10	3	1	3
6101		HOLL	06 10 1810	N22 E26	06 12.7		B	BXO	10	3	3	4
6101		PALE	06 10 1927	N24 E26	06 12.8		A	AX		1		3
6101		CULG	06 11 0107	N23 E21	06 12.7		A	AX	10	1	1	4
6101		SVTO	06 11 0755	N23 E20	06 12.9		B	BXO	10	4	4	2
6101		BOUL	06 11 1347	N23 E16	06 12.8		B	BXO	10	3	3	2
6101		RAMY	06 11 1709	N25 E15	06 12.9		B	B	20	4	4	3
6101		HOLL	06 11 2000	N24 E11	06 12.7		A	AX	10	2	1	1
6101		PALE	06 11 2110	N23 E13	06 12.9		B	BXO	10	5	4	3
6101		LEAR	06 12 0240	N24 E08	06 12.7		B	BXO	10	5	4	3
6101		SVTO	06 12 0902	N22 E05	06 12.8		A	AX		1		3
6101		RAMY	06 12 1259	N22 E02	06 12.7		B	BXO	10	3	2	3
6101		HOLL	06 12 1440	N25 E01	06 12.7		A	AX	10	1		3
6101		PALE	06 12 1845	N25 W01	06 12.7		A	AX		2	1	3
6101		CULG	06 13 0252	N24 W13	06 12.1		A	AX	10	1	1	4
6101A		PALE	06 06 1740	S17 E80	06 12.8		A	AX		1		4
6101B		RAMY	06 09 1120	N25 E47	06 13.1		B	BXO	10	4	6	4
6101B		BOUL	06 09 1415	N24 E42	06 12.8		A	AX		1		2
6099		RAMY	06 08 1330	S19 E65	06 13.5		A	AX	10	3	2	3
6099		CULG	06 09 0040	S19 E59	06 13.5		A	AX		1		3
6099		SVTO	06 09 0710	S20 E56	06 13.6		A	AX	10	2	6	4
6099		RAMY	06 09 1120	S18 E50	06 13.3		A	AX		2	1	4
6098		RAMY	06 07 1332	S12 E74	06 13.1		A	AX	10	3	1	3
6098		PALE	06 07 1730	S11 E72	06 13.1		B	CSO	40	2	3	2
6098		CULG	06 08 0130	S13 E67	06 13.1		A	AX		1		2
6098		SVTO	06 08 0643	S13 E64	06 13.1		A	AX	10	1		4
6098		RAMY	06 08 1330	S11 E60	06 13.1		A	AX		1		3
6098		CULG	06 09 0040	S12 E54	06 13.1		A	AX		1		3
6098		SVTO	06 09 0710	S13 E51	06 13.1		A	AX		1		4
6098		RAMY	06 09 1120	S11 E48	06 13.1		B	BXO	10	3	3	4
6098		CULG	06 10 0015	S12 E41	06 13.1		A	AX		1		3
6098		SVTO	06 10 0740	S13 E39	06 13.3		B	BXO	20	5	5	3
6098		LEAR	06 12 0240	S12 E17	06 13.4		B	BXO	10	3	4	3
6098		HOLL	06 15 1615	S14 W29	06 13.5		A	AX	10	2	2	3
6098		CULG	06 16 0020	S17 W38	06 13.1		A	AX		1		3
6098		LEAR	06 16 0105	S16 W38	06 13.2		A	AX	10	1	1	3
6096A		PALE	06 11 2110	N33 E29	06 14.2		B	CRO	20	6	3	3
6096B		HOLL	06 14 1500	N19 W04	06 14.3		B	BXO	10	3	3	4
6096		RAMY	06 07 1332	N26 E81	06 13.8		A	AX	20	1	1	3
6096		RAMY	06 08 1330	N27 E72	06 14.2		B	BXO	20	4	10	3
6096		CULG	06 09 0040	N27 E68	06 14.3		B	BXO		3	10	3
6096		SVTO	06 09 0710	N24 E60	06 13.9		B	BXO	20	4	10	4
6096		RAMY	06 09 1120	N28 E62	06 14.3		B	BXO	20	5	11	4
6096		HOLL	06 09 1642	N25 E56	06 14.0		A	AX		1	1	2
6096		CULG	06 10 0015	N25 E55	06 14.3		B	BXO		3	9	3
6096		RAMY	06 10 1207	N28 E50	06 14.4		B	BXO	30	9	10	3
6096		HOLL	06 10 1810	N24 E42	06 14.0		A	AX		1		4
6096		CULG	06 11 0107	N25 E37	06 13.9		B	BXO	10	3	4	4
6096		SVTO	06 11 0755	N24 E35	06 14.0		A	AX	10	5	3	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6096		BOUL	06	11	1347	N24	E31	06	14.0		B	CAO	20	4	3	2
6096		RAMY	06	11	1709	N25	E30	06	14.0		B	BXO	20	5	4	3
6096		HOLL	06	11	2000	N25	E29	06	14.1		A	AX	10	7	2	1
6096		LEAR	06	12	0240	N26	E24	06	14.0		B	BXO	20	6	4	3
6096		SVTO	06	12	0902	N24	E22	06	14.1		B	BXO	10	4	4	3
6096		RAMY	06	12	1259	N26	E19	06	14.0		B	CAO	40	8	5	3
6096		BOUL	06	12	1406	N26	E17	06	13.9		B	BXO	20	3	3	2
6096		HOLL	06	12	1440	N26	E19	06	14.1		B	BXO	30	4	4	3
6096		PALE	06	12	1845	N26	E16	06	14.0		B	CRO	20	5	5	3
6096		CULG	06	13	0252	N27	E11	06	14.0		B	BXO	10	4	1	4
6096		LEAR	06	13	0645	N27	E09	06	14.0		B	CSO	20	3	2	3
6096		SVTO	06	13	0708	N24	E10	06	14.1		A	AX	10	3	1	3
6096		HOLL	06	13	1540	N26	E05	06	14.0		B	BXO	10	2	3	3
6096		PALE	06	13	1801	N26	E07	06	14.3		B	BXO		2	3	3
6096		LEAR	06	14	0145	N28	E07	06	14.6		A	AX	10	1	1	3
6096		SVTO	06	14	0600	N27	E06	06	14.7		A	AX	10	4	2	4
6096		BOUL	06	14	1425	N28	E02	06	14.7		B	BXO		5	3	4
6096		RAMY	06	14	1440	N29	W01	06	14.5		A	AX	10	2	2	1
6096		HOLL	06	14	1500	N28	W01	06	14.5		B	BXO	10	8	4	4
6096		PALE	06	14	1858	N28	W05	06	14.4		B	BXO	10	6	6	3
6096		LEAR	06	15	0020	N29	W08	06	14.4		B	BXO	10	2	3	3
6096		CULG	06	15	0055	N29	W08	06	14.4		B	BXO		3	6	3
6096		SVTO	06	15	0648	N28	W13	06	14.3		B	BXO	10	4	8	4
6096		HOLL	06	15	1615	N27	W16	06	14.4		B	BXO	10	3	7	3
6096		RAMY	06	15	2034	N29	W16	06	14.6		A	AX	10	5	3	1
6096		CULG	06	16	0020	N28	W21	06	14.4		B	BXO		8	9	3
6096		LEAR	06	16	0105	N28	W18	06	14.6		B	BXO	40	6	3	3
6096		SVTO	06	16	0742	N29	W26	06	14.3		B	BXO	30	7	10	2
6096		RAMY	06	16	1220	N29	W24	06	14.6		B	DAO	50	8	4	1
6096		HOLL	06	16	1500	N28	W25	06	14.7		B	CSO	40	10	5	4
6096		BOUL	06	16	1750	N27	W26	06	14.7		B	CAO	30	4	4	2
6096		PALE	06	16	1930	N28	W28	06	14.6		B	DAO	70	9	4	3
6096		LEAR	06	17	0110	N28	W31	06	14.6		B	DAO	80	3	5	3
6096		SVTO	06	17	0730	N28	W35	06	14.6		B	DAO	50	9	7	3
6096		RAMY	06	17	1300	N29	W37	06	14.6		B	DAO	70	6	6	1
6096		BOUL	06	17	1415	N27	W36	06	14.8		B	DSO	60	3	7	3
6096		HOLL	06	17	1440	N28	W38	06	14.6		B	DAO	70	13	7	5
6096		PALE	06	17	1655	N28	W40	06	14.6		B	DAO	100	5	7	3
6096		LEAR	06	18	0005	N28	W44	06	14.6		B	DAO	30	6	8	3
6096		SVTO	06	18	0605	N28	W47	06	14.6		B	DSO	50	9	8	3
6096		BOUL	06	18	1439	N28	W49	06	14.8		B	BXO	20	4	7	1
6096		RAMY	06	18	1519	N29	W52	06	14.6		B	CAO	40	4	8	2
6096		HOLL	06	18	1530	N28	W53	06	14.5		B	BXO	30	5	9	3
6096		PALE	06	18	1847	N29	W51	06	14.8		B	BXO	20	4	8	3
6096		LEAR	06	19	0015	N30	W56	06	14.6		B	CRO	30	4	8	2
6096		CULG	06	19	0057	N29	W58	06	14.5		B	BXO	10	2	8	3
6096		SVTO	06	19	0705	N28	W60	06	14.6		B	BXO	10	3	8	3
6096		RAMY	06	19	1421	N31	W60	06	14.9		B	BXO	10	3	2	1
6096		PALE	06	19	1902	N26	W72	06	14.2		A	AX		1		2
6111		LEAR	06	19	0015	N17	W58	06	14.6		B	BXO	10	2	1	2
6111		CULG	06	19	0057	N17	W58	06	14.6		A	AX	10	2	1	3
6111		SVTO	06	19	0705	N16	W61	06	14.7		A	AX		2	1	3
6111		RAMY	06	19	1421	N17	W66	06	14.6		B	BXO	10	2	2	1
6111		HOLL	06	19	1510	N17	W67	06	14.5		A	AX		1		3
6111		LEAR	06	20	0012	N18	W69	06	14.7		A	AX	30	1	1	3
6111		CULG	06	20	0055	N17	W71	06	14.6		A	AX		1		3
6100		RAMY	06	08	1330	S13	E79	06	14.5		A	HH	300	1	3	3
6100		CULG	06	09	0040	S13	E74	06	14.6		A	HH	300	1	3	3
6100		SVTO	06	09	0710	S15	E75	06	15.0		A	HK	280	1	4	4
6100		RAMY	06	09	1120	S12	E68	06	14.6		B	CHO	260	3	5	4
6100		BOUL	06	09	1415	S13	E65	06	14.5		A	HS	240	1	5	2
6100		HOLL	06	09	1642	S14	E67	06	14.7		A	HH	360	1	3	2
6100		PALE	06	09	1923	S14	E66	06	14.8		A	HH	360	1	5	3
6100		CULG	06	10	0015	S13	E62	06	14.7		A	HH	440	1	4	3
6100		SVTO	06	10	0740	S15	E59	06	14.8		A	HH	380	1	4	3
6100		RAMY	06	10	1207	S15	E59	06	15.0		B	CKO	490	6	10	3
6100		HOLL	06	10	1810	S17	E55	06	14.9		B	CHO	460	5	7	4

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JUNE 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
6100		PALE	06 10 1927	S14 E54	06 14.9		A	HH	290	1	4	3
6100		CULG	06 11 0107	S15 E49	06 14.7		B	CHO	360	3	8	4
6100		SVTO	06 11 0755	S14 E45	06 14.7		A	HH	420	1	4	2
6100		BOUL	06 11 1347	S13 E41	06 14.7		A	HK	310	2	4	2
6100		RAMY	06 11 1709	S15 E44	06 15.0		B	CHO	390	3	4	3
6100		HOLL	06 11 2000	S13 E39	06 14.8		A	HK	430	1	3	1
6100		PALE	06 11 2110	S14 E40	06 14.9		B	CHO	400	4	8	3
6100		LEAR	06 12 0240	S13 E38	06 15.0		B	CHO	370	9	8	3
6100		SVTO	06 12 0902	S16 E35	06 15.0		B	CKO	420	13	9	3
6100		RAMY	06 12 1259	S14 E32	06 14.9		B	CKO	520	14	9	3
6100		BOUL	06 12 1406	S13 E29	06 14.8		B	CKO	290	4	6	2
6100		HOLL	06 12 1440	S14 E32	06 15.0		B	CKO	390	8	7	3
6100		PALE	06 12 1845	S15 E26	06 14.7		B	CHO	340	6	6	3
6100		CULG	06 13 0252	S13 E24	06 14.9		B	CHO	350	9	7	4
6100		LEAR	06 13 0645	S14 E20	06 14.8		B	CKO	340	8	5	3
6100		SVTO	06 13 0708	S16 E24	06 15.1		B	CKO	390	17	9	3
6100		BOUL	06 13 1500	S12 E15	06 14.7		A	HK	340	1	5	2
6100		HOLL	06 13 1540	S14 E18	06 15.0		B	CKO	440	10	8	3
6100		PALE	06 13 1801	S16 E14	06 14.8		B	CHO	410	10	6	3
6100		CULG	06 14 0040	S14 E12	06 14.9		B	CKO	330	10	7	3
6100		LEAR	06 14 0145	S15 E11	06 14.9		B	CKO	420	9	8	3
6100		SVTO	06 14 0600	S16 E11	06 15.1		B	DKO	460	17	8	4
6100		BOUL	06 14 1425	S13 E05	06 15.0		B	DKO	310	11	8	4
6100		RAMY	06 14 1440	S14 E06	06 15.1		B	CKO	500	5	7	1
6100		HOLL	06 14 1500	S14 E05	06 15.0		B	CHO	400	9	6	4
6100		PALE	06 14 1858	S13 E02	06 14.9		B	CKO	410	9	6	3
6100		LEAR	06 15 0020	S15 E01	06 15.1		B	CKO	400	10	8	3
6100		CULG	06 15 0055	S14 W01	06 15.0		B	CKO	420	11	7	3
6100		SVTO	06 15 0648	S14 W05	06 14.9		B	CKO	420	7	8	4
6100		BOUL	06 15 1435	S14 W08	06 15.0		B	CHO	400	5	6	3
6100		HOLL	06 15 1615	S16 W09	06 15.0		B	CHO	400	11	7	3
6100		RAMY	06 15 2034	S14 W10	06 15.1		B	CKO	440	6	7	1
6100		CULG	06 16 0020	S15 W13	06 15.0		B	CKO	320	10	7	3
6100		LEAR	06 16 0105	S14 W13	06 15.1		B	CKO	350	11	8	3
6100		SVTO	06 16 0742	S15 W18	06 14.9		B	CKO	400	6	6	2
6100		RAMY	06 16 1220	S13 W19	06 15.1		B	CKO	360	10	7	1
6100		HOLL	06 16 1500	S17 W19	06 15.2		B	CKO	360	13	10	4
6100		BOUL	06 16 1750	S13 W23	06 15.0		A	HK	260	4	5	2
6100		PALE	06 16 1930	S14 W25	06 14.9		B	CKO	310	8	6	3
6100		LEAR	06 17 0110	S14 W27	06 15.0		B	CKO	300	5	5	3
6100		SVTO	06 17 0730	S14 W30	06 15.0		B	CKO	250	8	6	3
6100		RAMY	06 17 1300	S13 W32	06 15.1		B	CKO	310	7	7	1
6100		BOUL	06 17 1415	S15 W34	06 15.0		B	CKO	300	5	7	3
6100		HOLL	06 17 1440	S14 W32	06 15.2		B	CKO	340	5	7	5
6100		PALE	06 17 1655	S16 W35	06 15.0		B	CKO	290	8	7	3
6100		LEAR	06 18 0005	S14 W40	06 15.0		B	CSO	210	7	7	3
6100		SVTO	06 18 0605	S14 W43	06 15.0		B	CHI	290	10	5	3
6100		BOUL	06 18 1439	S14 W46	06 15.1		B	CAO	150	2	4	1
6100		RAMY	06 18 1519	S14 W47	06 15.1		B	CKO	300	4	6	2
6100		HOLL	06 18 1530	S15 W48	06 15.0		B	CHO	320	8	5	3
6100		PALE	06 18 1847	S15 W49	06 15.1		B	CKO	230	4	4	3
6100		LEAR	06 19 0015	S14 W53	06 15.0		B	CSO	110	5	6	2
6100		CULG	06 19 0057	S14 W53	06 15.0		B	CHO	230	2	5	3
6100		SVTO	06 19 0705	S15 W60	06 14.7		A	HS	290	1	3	3
6100		BOUL	06 19 1405	S14 W59	06 15.1		A	HA	190	1	2	1
6100		RAMY	06 19 1421	S14 W61	06 15.0		B	CKO	220	5	6	1
6100		HOLL	06 19 1510	S15 W61	06 15.0		A	HS	260	1	2	3
6100		PALE	06 19 1902	S13 W63	06 15.0		B	CKO	240	3	5	2
6100		LEAR	06 20 0012	S13 W66	06 15.0		A	HH	190	1	3	3
6100		CULG	06 20 0055	S14 W67	06 15.0		A	HK	180	1	3	3
6100		SVTO	06 20 0555	S13 W72	06 14.8		A	HA	220	1	2	4
6100		BOUL	06 20 1415	S14 W76	06 14.8		A	HA	230	1	5	3
6100		HOLL	06 20 1452	S15 W73	06 15.1		B	CSO	210	2	4	3
6100		RAMY	06 20 1518	S12 W76	06 14.9		B	CKO	300	3	5	1
6100		PALE	06 20 1920	S16 W76	06 15.0		B	CKO	240	3	7	2
6100		CULG	06 21 0050	S14 W81	06 14.9		A	HK	150	1	3	3
6100		LEAR	06 21 0100	S15 W78	06 15.1		B	CKO	270	3	8	4
6100		SVTO	06 21 0645	S13 W85	06 14.9		A	HA	120	1	3	3

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

JUNE 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
6100A		SVTO	06 12 0902	N30 E40	06 15.5		A	AX		3	1	3
6100A		RAMY	06 12 1259	N32 E37	06 15.5		B	BXO	10	3	3	3
6103		SVTO	06 11 0755	N15 E54	06 15.4		B	BXO	10	2	2	2
6103		BOUL	06 11 1347	N16 E49	06 15.3		B	CAO	20	5	2	2
6103		RAMY	06 11 1709	N16 E49	06 15.4		A	AX	20	3	3	3
6103		HOLL	06 11 2000	N15 E48	06 15.5		B	BXO	20	3	3	1
6103		PALE	06 11 2110	N15 E48	06 15.5		B	CSO	20	4	3	3
6103		LEAR	06 12 0240	N17 E43	06 15.4		B	CAO	30	6	4	3
6103		RAMY	06 12 1259	N16 E38	06 15.4		B	CAO	40	5	4	3
6103		BOUL	06 12 1406	N17 E35	06 15.2		A	HS	10	1		2
6103		HOLL	06 12 1440	N17 E39	06 15.6		A	AX	10	1		3
6103		PALE	06 12 1845	N15 E35	06 15.4		B	CRO	20	4	3	3
6103		CULG	06 13 0252	N19 E30	06 15.4		A	AX	10	1	1	4
6103		LEAR	06 13 0645	N18 E29	06 15.5		A	HS	10	2	1	3
6103		SVTO	06 13 0708	N15 E30	06 15.6		A	HR	10	1		3
6103		BOUL	06 13 1500	N17 E23	06 15.4		A	AX		1		2
6103		HOLL	06 13 1540	N16 E24	06 15.5		B	CRO	20	3	3	3
6103		PALE	06 13 1801	N15 E23	06 15.5		B	BXO	10	8	7	3
6103		CULG	06 14 0040	N17 E19	06 15.5		B	CRO	20	3	3	3
6103		LEAR	06 14 0145	N17 E18	06 15.4		B	BXO	20	2	3	3
6103		SVTO	06 14 0600	N15 E17	06 15.5		A	AX	40	3	1	4
6103		BOUL	06 14 1425	N17 E11	06 15.4		A	AX		3	2	4
6103		RAMY	06 14 1440	N17 E12	06 15.5		A	AX	10	4	2	1
6103		HOLL	06 14 1500	N17 E11	06 15.5		A	AX	10	3	2	4
6103		PALE	06 14 1858	N16 E09	06 15.5		A	AX		2	1	3
6103		LEAR	06 15 0020	N18 E07	06 15.5		A	AX	10	1	1	3
6103		CULG	06 15 0055	N16 E06	06 15.5		A	AX		2		3
6108		HOLL	06 15 1615	S29 W02	06 15.5		A	AX		1		3
6108		RAMY	06 15 2034	S27 W04	06 15.5		A	AX	10	2	1	1
6108		CULG	06 16 0020	S28 W06	06 15.5		A	AX		5	2	3
6108		LEAR	06 16 0105	S28 W07	06 15.5		B	BXO	20	4	2	3
6108		SVTO	06 16 0742	S28 W11	06 15.5		A	AX	10	2	2	2
6108		RAMY	06 16 1220	S29 W12	06 15.6		B	BXO	10	3	2	1
6108		HOLL	06 16 1500	S28 W15	06 15.4		B	BXO	10	2	3	4
6108		BOUL	06 16 1750	S27 W17	06 15.4		A	AX		1		2
6108		PALE	06 16 1930	S28 W18	06 15.4		A	AX		2	1	3
6108		LEAR	06 17 0110	S28 W21	06 15.4		B	BXO	10	3	2	3
6108		SVTO	06 17 0730	S28 W24	06 15.4		B	BXO	10	2	3	3
6108A		CULG	06 16 0020	N33 W05	06 15.6		A	AX		2		3
6108B		HOLL	06 15 1615	N33 E05	06 16.1		A	AX		1		3
6109		SVTO	06 16 0742	S35 E02	06 16.5		A	AX	10	1	1	2
6109		RAMY	06 16 1220	S35 E00	06 16.5		B	CRO	10	3	2	1
6109		HOLL	06 16 1500	S36 W02	06 16.5		B	CRO	20	5	4	4
6109		BOUL	06 16 1750	S34 W03	06 16.5		B	CSO	20	3	2	2
6109		PALE	06 16 1930	S36 W03	06 16.6		B	CRO	10	5	4	3
6109		LEAR	06 17 0110	S36 W08	06 16.4		B	CSO	30	3	5	3
6109		SVTO	06 17 0730	S36 W12	06 16.3		B	BXO	10	2	2	3
6109		RAMY	06 17 1300	S36 W14	06 16.4		A	HA	10	1	1	1
6109		BOUL	06 17 1415	S36 W17	06 16.2		A	AX		1		3
6109		PALE	06 17 1655	S37 W17	06 16.3		A	AX		1		3
6109		SVTO	06 18 0605	S36 W21	06 16.6		B	BXO	10	2	3	3
6109		HOLL	06 18 1530	S36 W29	06 16.3		A	AX		1		3
6109		PALE	06 18 1847	S35 W33	06 16.1		A	AX		1		3
6109A		HOLL	06 14 1500	N16 E33	06 17.1		A	AX		1		4
6106		LEAR	06 12 0240	S29 E65	06 17.2		A	AX	30	1	1	3
6106		SVTO	06 12 0902	S31 E66	06 17.6		B	BXO	10	3	4	3
6106		RAMY	06 12 1259	S29 E61	06 17.3		B	BXO	10	7	4	3
6106		HOLL	06 12 1440	S30 E61	06 17.4		B	BXO	30	3	3	3
6106		PALE	06 12 1845	S32 E58	06 17.4		B	BXO	20	3	4	3
6106		CULG	06 13 0252	S30 E55	06 17.4		B	BXO	10	5	6	4
6106		LEAR	06 13 0645	S30 E51	06 17.3		B	CAO	50	9	8	3
6106		SVTO	06 13 0708	S32 E55	06 17.6		B	CRO	20	13	6	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 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
6106		RAMY	06 13 1304	S30 E50	06 17.5		B	DAO	110	7	7	2
6106		BOUL	06 13 1500	S30 E48	06 17.4		B	DSO	60	7	6	2
6106		HOLL	06 13 1540	S31 E50	06 17.6		B	BXO	70	17	6	3
6106		PALE	06 13 1801	S33 E48	06 17.6		B	CRO	60	13	7	3
6106		CULG	06 14 0040	S31 E44	06 17.5		B	DAO	100	10	7	3
6106		LEAR	06 14 0145	S31 E42	06 17.4		B	CAO	180	10	8	3
6106		SVTO	06 14 0600	S32 E42	06 17.6		B	DAO	130	12	8	4
6106		BOUL	06 14 1425	S32 E35	06 17.4		B	EAI	180	11	12	4
6106		RAMY	06 14 1440	S30 E36	06 17.4		B	DAO	110	8	8	1
6106		HOLL	06 14 1500	S31 E36	06 17.5		B	DAI	130	11	8	4
6106		PALE	06 14 1858	S31 E34	06 17.5		B	CAO	100	8	8	3
6106		LEAR	06 15 0020	S30 E30	06 17.4		B	DSO	100	7	10	3
6106		CULG	06 15 0055	S31 E31	06 17.5		B	DAO	120	8	10	3
6106		SVTO	06 15 0648	S32 E25	06 17.3		B	DSI	130	12	10	4
6106		BOUL	06 15 1435	S32 E22	06 17.3		B	DAO	120	12	8	3
6106		HOLL	06 15 1615	S31 E22	06 17.4		B	DSO	110	10	10	3
6106		RAMY	06 15 2034	S30 E21	06 17.5		B	DAO	90	9	8	1
6106		CULG	06 16 0020	S31 E17	06 17.3		B	DAO	90	12	10	3
6106		LEAR	06 16 0105	S31 E17	06 17.4		B	DAO	100	11	10	3
6106		SVTO	06 16 0742	S31 E14	06 17.4		B	CSI	100	11	10	2
6106		RAMY	06 16 1220	S31 E12	06 17.5		B	EAO	110	13	11	1
6106		HOLL	06 16 1500	S31 E09	06 17.3		BG	EAO	100	17	11	4
6106		BOUL	06 16 1750	S29 E08	06 17.4		B	ESO	90	6	11	2
6106		PALE	06 16 1930	S31 E07	06 17.4		B	EAO	70	9	11	3
6106		LEAR	06 17 0110	S31 E03	06 17.3		B	EAO	120	7	11	3
6106		SVTO	06 17 0730	S30 E00	06 17.3		B	EAO	130	15	12	3
6106		RAMY	06 17 1300	S31 W01	06 17.5		B	EAO	80	10	11	1
6106		BOUL	06 17 1415	S31 W04	06 17.3		B	EAO	90	7	12	3
6106		HOLL	06 17 1440	S31 W04	06 17.3		B	EAO	90	13	12	5
6106		PALE	06 17 1655	S31 W05	06 17.3		B	EAO	70	7	12	3
6106		LEAR	06 18 0005	S30 W10	06 17.2		B	EAO	50	10	11	3
6106		SVTO	06 18 0605	S30 W13	06 17.2		B	EAO	40	6	12	3
6106		BOUL	06 18 1439	S30 W16	06 17.3		B	EAO	40	2	11	1
6106		RAMY	06 18 1519	S30 W17	06 17.3		B	EAO	50	8	13	2
6106		HOLL	06 18 1530	S31 W18	06 17.2		B	ESO	110	10	13	3
6106		PALE	06 18 1847	S30 W17	06 17.4		B	EAO	70	7	13	3
6106		LEAR	06 19 0015	S30 W23	06 17.2		B	EAO	60	8	12	2
6106		CULG	06 19 0057	S30 W22	06 17.3		B	EAO	30	7	13	3
6106		SVTO	06 19 0705	S32 W28	06 17.1		B	ESO	40	9	13	3
6106		BOUL	06 19 1405	S29 W29	06 17.3		B	CAO	30	5	12	1
6106		RAMY	06 19 1421	S31 W27	06 17.5		B	EAO	80	9	12	1
6106		HOLL	06 19 1510	S30 W30	06 17.3		B	CSO	50	10	15	3
6106		PALE	06 19 1902	S30 W32	06 17.3		B	EAO	50	4	13	2
6106		LEAR	06 20 0012	S29 W35	06 17.3		B	ESO	70	3	12	3
6106		CULG	06 20 0055	S30 W36	06 17.2		B	EAO	50	6	13	3
6106		SVTO	06 20 0555	S30 W39	06 17.2		B	ESO	30	5	13	4
6106		BOUL	06 20 1415	S30 W43	06 17.2		B	EAO	80	8	12	3
6106		HOLL	06 20 1452	S30 W43	06 17.2		B	CRO	50	4	13	3
6106		RAMY	06 20 1518	S28 W46	06 17.0		B	EAO	80	11	12	1
6106		PALE	06 20 1920	S31 W46	06 17.2		B	EAO	60	7	13	2
6106		CULG	06 21 0050	S30 W49	06 17.2		B	EAO	50	9	13	3
6106		LEAR	06 21 0100	S30 W48	06 17.3		B	ESO	120	6	14	4
6106		SVTO	06 21 0645	S29 W50	06 17.4		B	EAO	80	5	15	3
6106		RAMY	06 21 1339	S30 W55	06 17.2		B	CAO	90	8	13	3
6106		BOUL	06 21 1420	S28 W56	06 17.2		B	EAO	100	4	14	4
6106		HOLL	06 21 1451	S30 W54	06 17.4		B	CAO	60	6	14	4
6106		LEAR	06 22 0035	S30 W60	06 17.3		B	CSO	110	2	15	4
6106		CULG	06 22 0100	S29 W60	06 17.3		B	CAO	40	4	14	2
6106		SVTO	06 22 0505	S29 W65	06 17.1		B	CSO	60	2	14	4
6106		RAMY	06 22 1215	S29 W66	06 17.3		B	CSO	70	2	14	2
6106		BOUL	06 22 1422	S31 W62	06 17.7		A	HS	40	1	1	3
6106		HOLL	06 22 1600	S30 W66	06 17.5		B	CSO	60	2	11	3
6106		PALE	06 22 1925	S28 W66	06 17.6		B	BXO	30	3	5	3
6106		LEAR	06 23 0032	S32 W65	06 17.9		A	HS	60	1	2	2
6106		SVTO	06 23 0820	S31 W70	06 17.8		A	AX	10	1		3
6106		RAMY	06 23 1203	S31 W70	06 18.0		A	HR	20	2	1	4
6106		HOLL	06 23 1545	S32 W72	06 17.9		A	AX	10	2	2	3
6105		RAMY	06 11 1709	N13 E76	06 17.4		A	AX	10	2	1	3

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JUNE 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6105		PALE	06	11	2110	N10	E72	06	17.3		A	AX	10	2	1	3
6105		LEAR	06	12	0240	N14	E70	06	17.4		B	CAO	30	3	5	3
6105		SVTO	06	12	0902	N11	E67	06	17.4		A	AX		1		3
6105		RAMY	06	12	1259	N13	E64	06	17.4		B	BXO	10	3	4	3
6105		HOLL	06	12	1440	N13	E64	06	17.4		A	AX	10	1		3
6105		PALE	06	12	1845	N13	E61	06	17.4		A	AX		1	1	3
6105		CULG	06	13	0252	N11	E57	06	17.4		B	BXO	10	5	4	4
6105		LEAR	06	13	0645	N08	E57	06	17.5		B	CSO	30	4	4	3
6105		SVTO	06	13	0708	N05	E57	06	17.6		A	HS	20	4	3	3
6105		RAMY	06	13	1304	N07	E54	06	17.6		B	DAO	70	6	6	2
6105		BOUL	06	13	1500	N07	E51	06	17.4		A	CSO	60	3	2	2
6105		HOLL	06	13	1540	N07	E51	06	17.5		B	CAO	80	7	5	3
6105		PALE	06	13	1801	N04	E50	06	17.5		B	CRO	30	5	4	3
6105		CULG	06	14	0040	N07	E47	06	17.5		B	CSO	70	7	4	3
6105		LEAR	06	14	0145	N07	E46	06	17.5		B	DSO	130	6	5	3
6105		SVTO	06	14	0600	N05	E44	06	17.5		B	CSI	40	8	4	4
6105		BOUL	06	14	1425	N08	E36	06	17.3		B	CAO	70	4	4	4
6105		RAMY	06	14	1440	N07	E39	06	17.5		B	CAO	80	6	3	1
6105		HOLL	06	14	1500	N07	E38	06	17.5		B	CAO	70	7	5	4
6105		PALE	06	14	1858	N05	E37	06	17.5		B	CAO	80	6	4	3
6105		LEAR	06	15	0020	N08	E33	06	17.5		B	DAO	60	8	5	3
6105		CULG	06	15	0055	N07	E33	06	17.5		B	CAO	40	8	4	3
6105		SVTO	06	15	0648	N05	E29	06	17.4		B	DAI	110	9	4	4
6105		BOUL	06	15	1435	N04	E24	06	17.4		B	DAO	90	13	5	3
6105		RAMY	06	15	2034	N08	E22	06	17.5		B	DAO	90	9	6	1
6105		CULG	06	16	0020	N06	E20	06	17.5		B	DAO	50	16	5	3
6105		LEAR	06	16	0105	N07	E19	06	17.5		B	DAO	100	9	6	3
6105		SVTO	06	16	0742	N08	E15	06	17.4		B	DAI	100	10	6	2
6105		RAMY	06	16	1220	N09	E14	06	17.6		B	DAO	80	17	8	1
6105		HOLL	06	16	1500	N09	E13	06	17.6		B	DAO	90	23	10	4
6105		BOUL	06	16	1750	N07	E10	06	17.5		B	DAI	80	7	5	2
6105		PALE	06	16	1930	N08	E08	06	17.4		B	DAI	90	21	6	3
6105		LEAR	06	17	0110	N08	E05	06	17.4		B	DAO	90	18	8	3
6105		SVTO	06	17	0730	N08	E03	06	17.5		B	DAO	60	21	8	3
6105		RAMY	06	17	1300	N08	W01	06	17.5		B	DAO	70	18	8	1
6105		BOUL	06	17	1415	N07	W03	06	17.4		B	DSI	60	14	9	3
6105		HOLL	06	17	1440	N07	W03	06	17.4		B	DAI	90	29	7	5
6105		PALE	06	17	1655	N08	W04	06	17.4		B	DAI	90	25	8	3
6105		LEAR	06	18	0005	N08	W08	06	17.4		B	DAI	100	31	10	3
6105		SVTO	06	18	0605	N09	W10	06	17.5		B	DAI	140	34	10	3
6105		BOUL	06	18	1439	N08	W16	06	17.4		B	DSI	50	10	7	1
6105		RAMY	06	18	1519	N08	W16	06	17.4		B	DSO	90	15	8	2
6105		HOLL	06	18	1530	N08	W15	06	17.5		B	CAI	100	21	13	3
6105		PALE	06	18	1847	N08	W18	06	17.4		B	DAO	50	12	7	3
6105		LEAR	06	19	0015	N08	W21	06	17.4		B	DAO	40	12	7	2
6105		CULG	06	19	0057	N08	W22	06	17.4		B	DAO	20	11	9	3
6105		SVTO	06	19	0705	N09	W25	06	17.4		B	CRO	40	20	9	3
6105		BOUL	06	19	1405	N08	W28	06	17.5		B	CAO	20	5	7	1
6105		RAMY	06	19	1421	N08	W29	06	17.4		B	DSO	40	9	8	1
6105		HOLL	06	19	1510	N08	W29	06	17.4		B	BXO	40	15	9	3
6105		PALE	06	19	1902	N09	W31	06	17.5		B	BXO	20	11	8	2
6105		LEAR	06	20	0012	N09	W33	06	17.5		B	CSO	80	11	7	3
6105		CULG	06	20	0055	N08	W36	06	17.3		B	DSO	20	12	8	3
6105		SVTO	06	20	0555	N05	W38	06	17.4		B	CRO	20	3	4	4
6105		BOUL	06	20	1415	N08	W41	06	17.5		B	DAI	100	15	7	3
6105		HOLL	06	20	1452	N08	W41	06	17.5		B	DAO	100	11	6	3
6105		RAMY	06	20	1518	N10	W42	06	17.5		B	DAO	130	9	6	1
6105		PALE	06	20	1920	N09	W44	06	17.5		B	DAO	100	16	6	2
6105		CULG	06	21	0050	N10	W47	06	17.5		B	DAO	100	12	7	3
6105		LEAR	06	21	0100	N09	W47	06	17.5		B	DAO	120	6	7	4
6105		SVTO	06	21	0645	N08	W50	06	17.5		B	DAO	60	9	8	3
6105		RAMY	06	21	1339	N08	W57	06	17.3		B	DAO	70	3	5	3
6105		BOUL	06	21	1420	N10	W55	06	17.5		B	DSO	70	2	5	4
6105		HOLL	06	21	1451	N08	W55	06	17.5		B	DSO	60	6	7	4
6105		LEAR	06	22	0035	N09	W61	06	17.4		B	DSO	100	3	5	4
6105		CULG	06	22	0100	N09	W60	06	17.5		B	DAO	60	4	6	2
6105		SVTO	06	22	0505	N09	W66	06	17.2		B	DAO	50	4	5	4
6105		RAMY	06	22	1215	N09	W69	06	17.3		B	CAO	40	5	6	2
6105		BOUL	06	22	1422	N10	W73	06	17.1		B	CAO	50	4	7	3

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

JUNE 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
6105		HOLL	06 22 1600	N08 W69	06 17.5		B	CSO	40	4	4	3
6105		PALE	06 22 1925	N11 W73	06 17.3		B	BXO		2	5	3
6105		LEAR	06 23 0032	N09 W73	06 17.5		B	BXO	60	2	4	2
6105		RAMY	06 23 1203	N08 W80	06 17.5		A	AX	10	1	1	4
6113		HOLL	06 19 1510	S06 W29	06 17.5		A	AX	10	2	1	3
6113		PALE	06 19 1902	S04 W31	06 17.5		A	AX		1		2
6113		LEAR	06 20 0012	S05 W35	06 17.4		B	BXO	40	3	3	3
6113		CULG	06 20 0055	S04 W36	06 17.3		B	DRO	20	7	4	3
6113		BOUL	06 20 1415	S06 W43	06 17.4		B	BXO	10	3	3	3
6113		HOLL	06 20 1452	S05 W43	06 17.4		B	BXO	30	4	4	3
6113		RAMY	06 20 1518	S03 W44	06 17.3		B	DAO	60	7	5	1
6113		PALE	06 20 1920	S06 W46	06 17.4		B	BXO	10	3	4	2
6113		CULG	06 21 0050	S05 W48	06 17.4		A	AX		2	1	3
6105A		LEAR	06 17 0110	S19 E07	06 17.6		A	AX	10	1	1	3
6105A		SVTO	06 17 0730	S19 E04	06 17.6		A	AX		1		3
6110		CULG	06 16 0020	N13 E22	06 17.7		B	BXO		6	5	3
6110		RAMY	06 17 1300	N13 E01	06 17.6		B	BXO	10	8	7	1
6110		HOLL	06 17 1440	N13 W01	06 17.5		B	BXO	10	6	5	5
6110		PALE	06 17 1655	N13 W01	06 17.6		B	BXO	10	3	4	3
6110		BOUL	06 18 1439	N13 W14	06 17.5		A	AX		1		1
6110		RAMY	06 18 1519	N12 W13	06 17.6		B	BXO	10	6	4	2
6110		HOLL	06 18 1530	N12 W14	06 17.6		B	BXO	10	3	3	3
6110		PALE	06 18 1847	N13 W14	06 17.7		A	AX		3	1	3
6110		CULG	06 19 0057	N13 W20	06 17.5		A	AX	10	1	1	3
6110		SVTO	06 19 0705	N16 W30	06 17.0		A	AX		2	1	3
6110		BOUL	06 19 1405	N14 W26	06 17.6		A	AX		1		1
6110		RAMY	06 19 1421	N13 W26	06 17.6		B	BXO	10	3	3	1
6110		HOLL	06 19 1510	N12 W29	06 17.4		A	AX	10	4	2	3
6110		PALE	06 19 1902	N14 W27	06 17.7		A	AX		1		2
6110		SVTO	06 20 0555	N12 W37	06 17.4		B	DAI	50	11	7	4
6110		RAMY	06 20 1518	N17 W44	06 17.3		B	BXO	10	4	7	1
6110		PALE	06 20 1920	N17 W47	06 17.2		A	AX		1		2
6110		PALE	06 22 1925	N18 W78	06 16.9		A	AX		1		3
6113A		BOUL	06 15 1435	N09 E29	06 17.8		A	AX		1		3
6113B		CULG	06 16 0020	S08 E30	06 18.3		B	CRO	10	5	5	3
6113B		RAMY	06 16 1220	S07 E20	06 18.0		A	AX		2	1	1
6113B		HOLL	06 16 1500	S07 E17	06 17.9		A	AX		1		4
6113C		PALE	06 16 1930	S17 E18	06 18.2		B	BXO		3	7	3
6113C		CULG	06 19 0057	S12 W10	06 18.3		A	AX	10	2	1	3
6107		RAMY	06 12 1259	S06 E78	06 18.4		A	AX	10	2	1	3
6107		PALE	06 12 1845	S11 E85	06 19.2		A	HA	30	1	1	3
6107		CULG	06 13 0252	S08 E76	06 18.8		A	HS	30	1	2	4
6107		LEAR	06 13 0645	S09 E72	06 18.7		A	HS	60	2	4	3
6107		SVTO	06 13 0708	S10 E78	06 19.1		A	HS	60	2	3	3
6107		RAMY	06 13 1304	S09 E70	06 18.8		B	CAO	150	5	6	2
6107		BOUL	06 13 1500	S08 E66	06 18.6		A	HA	70	1	2	2
6107		HOLL	06 13 1540	S09 E71	06 19.0		B	CAO	110	3	3	3
6107		PALE	06 13 1801	S12 E69	06 18.9		B	CAO	70	6	4	3
6107		CULG	06 14 0040	S09 E65	06 18.9		B	DAO	100	3	3	3
6107		LEAR	06 14 0145	S08 E64	06 18.9		B	CAO	180	5	4	3
6107		SVTO	06 14 0600	S10 E64	06 19.0		B	CAO	100	5	5	4
6107		BOUL	06 14 1425	S08 E55	06 18.7		B	CAO	80	6	5	4
6107		RAMY	06 14 1440	S09 E60	06 19.1		B	CAO	100	5	4	1
6107		HOLL	06 14 1500	S08 E59	06 19.0		B	CAO	70	10	5	4
6107		PALE	06 14 1858	S09 E58	06 19.1		B	CAI	110	13	6	3
6107		LEAR	06 15 0020	S09 E54	06 19.1		B	CAO	80	12	8	3
6107		CULG	06 15 0055	S08 E53	06 19.0		B	CAO	80	13	6	3
6107		SVTO	06 15 0648	S12 E51	06 19.1		B	DAI	180	9	6	4
6107		BOUL	06 15 1435	S11 E44	06 18.9		B	DAO	100	14	7	3
6107		HOLL	06 15 1615	S09 E46	06 19.1		BG	DSI	170	16	7	3
6107		RAMY	06 15 2034	S09 E46	06 19.3		B	DSO	130	11	7	1
6107		CULG	06 16 0020	S10 E41	06 19.1		B	DAO	150	17	7	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 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
6107		LEAR	06 16 0105	S09 E41	06 19.1		B	DAO	170	12	8	3
6107		SVTO	06 16 0742	S09 E38	06 19.2		B	DAO	170	10	7	2
6107		RAMY	06 16 1220	S08 E37	06 19.3		B	DAO	170	14	8	1
6107		HOLL	06 16 1500	S08 E33	06 19.1		B	DSO	190	17	9	4
6107		BOUL	06 16 1750	S09 E32	06 19.1		B	DSI	130	8	8	2
6107		PALE	06 16 1930	S09 E32	06 19.2		B	ESO	140	11	11	3
6107		LEAR	06 17 0110	S09 E28	06 19.1		B	DAO	140	9	9	3
6107		SVTO	06 17 0730	S09 E24	06 19.1		B	ESO	150	20	12	3
6107		RAMY	06 17 1300	S09 E22	06 19.2		B	DAO	140	10	10	1
6107		BOUL	06 17 1415	S09 E20	06 19.1		B	DAO	140	7	7	3
6107		HOLL	06 17 1440	S08 E22	06 19.3		B	ESO	150	14	11	5
6107		PALE	06 17 1655	S09 E19	06 19.1		B	CSO	120	9	11	3
6107		LEAR	06 18 0005	S09 E15	06 19.1		B	CSO	110	15	10	3
6107		SVTO	06 18 0605	S09 E12	06 19.1		B	ESO	170	12	11	3
6107		BOUL	06 18 1439	S09 E07	06 19.1		B	CAO	90	7	8	1
6107		RAMY	06 18 1519	S09 E08	06 19.2		B	CAO	110	10	10	2
6107		HOLL	06 18 1530	S09 E07	06 19.2		B	CHO	160	17	11	3
6107		PALE	06 18 1847	S09 E06	06 19.2		B	CAO	120	10	7	3
6107		LEAR	06 19 0015	S09 W01	06 18.9		B	CSO	90	5	7	2
6107		CULG	06 19 0057	S09 E00	06 19.0		B	CSO	100	2	5	3
6107		SVTO	06 19 0705	S11 E00	06 19.3		B	CSO	120	5	8	3
6107		BOUL	06 19 1405	S08 W07	06 19.1		A	HA	100	1	2	1
6107		RAMY	06 19 1421	S09 W08	06 19.0		B	CHO	190	9	6	1
6107		HOLL	06 19 1510	S09 W09	06 18.9		B	CSO	140	3	4	3
6107		PALE	06 19 1902	S08 W10	06 19.0		B	CAO	80	3	2	2
6107		LEAR	06 20 0012	S08 W13	06 19.0		B	CSO	120	3	3	3
6107		CULG	06 20 0055	S08 W13	06 19.1		B	CSO	120	5	4	3
6107		SVTO	06 20 0555	S09 W17	06 19.0		A	HS	100	2	2	4
6107		BOUL	06 20 1415	S08 W22	06 18.9		A	HS	110	1	2	3
6107		HOLL	06 20 1452	S08 W22	06 19.0		A	HS	80	1	2	3
6107		RAMY	06 20 1518	S08 W22	06 19.0		B	CKO	170	3	4	1
6107		PALE	06 20 1920	S09 W24	06 19.0		A	HS	110	1	3	2
6107		CULG	06 21 0050	S08 W27	06 19.0		A	HS	190	1	2	3
6107		LEAR	06 21 0100	S09 W27	06 19.0		A	HS	90	1	2	4
6107		SVTO	06 21 0645	S08 W29	06 19.1		A	HS	110	1	2	3
6107		RAMY	06 21 1339	S08 W33	06 19.1		B	CSO	110	4	4	3
6107		BOUL	06 21 1420	S05 W32	06 19.2		B	CSO	90	3	4	4
6107		LEAR	06 22 0035	S07 W39	06 19.1		B	CSO	130	5	6	4
6107		CULG	06 22 0100	S06 W38	06 19.2		B	CSO	80	5	5	2
6107		SVTO	06 22 0505	S07 W42	06 19.1		B	CSO	130	7	4	4
6107		RAMY	06 22 1215	S07 W45	06 19.1		B	CSO	90	6	4	2
6107		BOUL	06 22 1422	S08 W47	06 19.1		A	HS	100	1	2	3
6107		HOLL	06 22 1600	S07 W47	06 19.1		B	CSO	130	5	5	3
6107		PALE	06 22 1925	S08 W51	06 19.0		A	HA	60	1	1	3
6107		LEAR	06 23 0032	S09 W53	06 19.0		A	HS	100	1	2	2
6107		SVTO	06 23 0820	S09 W58	06 19.0		A	HS	110	1	2	3
6107		RAMY	06 23 1203	S09 W59	06 19.1		A	HS	110	1	2	4
6107		BOUL	06 23 1435	S09 W60	06 19.1		A	HS	80	1	2	2
6107		HOLL	06 23 1545	S09 W61	06 19.1		A	HS	50	1	2	3
6107		PALE	06 23 2203	S08 W65	06 19.0		A	HA	130	1	2	2
6107		LEAR	06 24 0155	S09 W67	06 19.0		A	HS	100	1	2	3
6107		SVTO	06 24 0540	S08 W70	06 19.0		A	HS	80	1	2	4
6107		RAMY	06 24 1105	S09 W70	06 19.2		A	HS	90	1	2	4
6107		BOUL	06 24 1455	S08 W75	06 19.0		A	HS	120	1	4	4
6107		HOLL	06 24 1515	S11 W75	06 19.0		A	HS	120	1	1	4
6107		PALE	06 24 2115	S10 W79	06 18.9		A	HS	60	1	2	3
6107		LEAR	06 25 0009	S09 W80	06 19.0		A	HS	100	1	1	3
6107		CULG	06 25 0050	S09 W79	06 19.1		A	HS	100	1	2	3
6107		SVTO	06 25 0725	S07 W85	06 18.9		A	HA	60	1	2	3
6107A		HOLL	06 21 1451	S18 W22	06 19.9		A	AX	10	1	1	4
6107B		CULG	06 21 0050	S24 W08	06 20.4		A	AX		1		3
6115		CULG	06 20 0055	S07 E06	06 20.5		A	AX		1		3
6115		SVTO	06 20 0555	S08 E03	06 20.5		A	AX		1		4
6115		RAMY	06 20 1518	S07 W02	06 20.5		B	BXO	10	3	3	1
6128		PALE	06 25 2200	N22 W48	06 22.2		A	HS	20	1	1	3

S U N S P O T G R O U P S
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JUNE 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6128		SVTO	06	26	0437	N23	W54	06	22.0		A	AX		1		4
6128		RAMY	06	26	1229	N19	W57	06	22.2		A	AX	10	1	1	3
6128		BOUL	06	26	1518	N22	W59	06	22.1		A	AX		1		2
6128		PALE	06	26	1915	N21	W61	06	22.1		A	AX		1		3
6128		CULG	06	27	0150	N24	W66	06	22.0		A	AX	10	1	1	2
6128		SVTO	06	27	0530	N23	W68	06	22.0		A	AX	10	1	1	4
6116		RAMY	06	20	1518	S06	E23	06	22.3		A	AX	10	2	2	1
6116		CULG	06	21	0050	S06	E18	06	22.4		A	AX		1		3
6116		LEAR	06	21	0100	S06	E18	06	22.4		A	AX	10	1	1	4
6116		SVTO	06	21	0645	S05	E15	06	22.4		A	AX		1		3
6123		RAMY	06	23	1203	N15	W14	06	22.4		B	BXO	10	2	4	4
6123		HOLL	06	23	1545	N14	W15	06	22.5		B	BXO		2	3	3
6123		PALE	06	23	2203	N16	W18	06	22.5		A	AX		1		2
6123		HOLL	06	25	1450	N15	W42	06	22.4		A	AX	10	3	2	2
6123		PALE	06	25	2200	N14	W46	06	22.4		B	BXO		3	3	3
6123		SVTO	06	26	0437	N15	W52	06	22.2		A	AX	20	4	4	4
6123		RAMY	06	26	1229	N12	W57	06	22.2		A	AX	10	1	1	3
6123		PALE	06	27	1909	N16	W61	06	23.2		A	AX		1		3
6112		SVTO	06	19	0705	S05	E70	06	24.5		A	AX		2	3	3
6112		PALE	06	26	1915	S06	W32	06	24.4		A	AX		1		3
6112		PALE	06	27	1909	S05	W44	06	24.5		A	AX		1		3
6123A		RAMY	06	18	1519	S02	E81	06	24.7		A	AX		1		2
6123A		LEAR	06	19	0015	S05	E73	06	24.5		B	BXO	10	2	5	2
6123A		RAMY	06	19	1421	S03	E65	06	24.4		A	AX	10	1	1	1
6114		RAMY	06	19	1421	S10	E75	06	25.2		A	AX	10	2	2	1
6114		LEAR	06	20	0012	S09	E68	06	25.1		B	BXO	80	3	3	3
6114		SVTO	06	20	0555	S11	E66	06	25.2		A	AX		1		4
6114		RAMY	06	20	1518	S11	E61	06	25.2		B	BXO	10	2	3	1
6114		SVTO	06	21	0645	S10	E52	06	25.2		A	AX	10	3	2	3
6114		RAMY	06	21	1339	S08	E48	06	25.2		A	AX	10	5	3	3
6114		BOUL	06	21	1420	S08	E45	06	25.0		A	AX		2	3	4
6114		HOLL	06	21	1451	S08	E47	06	25.1		B	BXO	10	2	3	4
6114		LEAR	06	22	0035	S08	E41	06	25.1		B	BXO	60	7	4	4
6114		CULG	06	22	0100	S09	E40	06	25.0		B	CRO	20	9	5	2
6114		SVTO	06	22	0505	S10	E39	06	25.1		B	DAO	50	8	4	4
6114		RAMY	06	22	1215	S08	E36	06	25.2		B	CAO	40	9	4	2
6114		BOUL	06	22	1422	S08	E32	06	25.0		B	CAO	40	11	4	3
6114		HOLL	06	22	1600	S08	E32	06	25.1		B	CAO	70	19	6	3
6114		PALE	06	22	1925	S09	E30	06	25.1		B	CAO	60	2	4	3
6114		LEAR	06	23	0032	S09	E27	06	25.0		B	DAO	110	10	6	2
6114		SVTO	06	23	0820	S09	E23	06	25.1		B	DAO	40	20	6	3
6114		RAMY	06	23	1203	S09	E21	06	25.1		B	DAO	60	22	10	4
6114		BOUL	06	23	1435	S07	E17	06	24.9		B	CAO	40	8	7	2
6114		HOLL	06	23	1545	S09	E17	06	24.9		B	DAO	50	19	2	3
6114		PALE	06	23	2203	S09	E15	06	25.0		B	CAO	50	9	7	2
6114		LEAR	06	24	0155	S09	E13	06	25.0		B	DAO	70	20	8	3
6114		SVTO	06	24	0540	S10	E11	06	25.1		B	CRI	30	28	8	4
6114		RAMY	06	24	1105	S09	E09	06	25.1		B	DAO	70	35	8	4
6114		BOUL	06	24	1455	S08	E05	06	25.0		B	CAI	40	10	6	4
6114		HOLL	06	24	1515	S13	E06	06	25.1		B	CRI	60	36	7	4
6114		PALE	06	24	2115	S09	E02	06	25.0		B	CAI	40	14	6	3
6114		LEAR	06	25	0009	S09	E01	06	25.1		B	DRO	50	18	7	3
6114		CULG	06	25	0050	S09	E01	06	25.1		B	DRI	20	16	6	3
6114		SVTO	06	25	0725	S09	W04	06	25.0		B	DAI	80	19	5	3
6114		RAMY	06	25	1247	S12	W08	06	24.9		B	DAO	100	20	6	3
6114		BOUL	06	25	1415	S08	W09	06	24.9		B	CAI	60	12	5	2
6114		HOLL	06	25	1450	S08	W09	06	24.9		B	CAI	90	24	7	2
6114		PALE	06	25	2200	S09	W12	06	25.0		B	DAO	70	15	6	3
6114		SVTO	06	26	0437	S07	W17	06	24.9		B	DAO	70	26	7	4
6114		RAMY	06	26	1229	S12	W21	06	24.9		B	DAI	40	22	7	3
6114		HOLL	06	26	1515	S08	W22	06	25.0		B	DAO	80	23	8	3
6114		BOUL	06	26	1518	S08	W22	06	25.0		B	CAI	30	12	5	2
6114		PALE	06	26	1915	S10	W23	06	25.1		B	CAO	50	17	6	3
6114		CULG	06	27	0150	S09	W29	06	24.9		B	CAO	30	18	6	2

S U N S P O T G R O U P S
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JUNE 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
6114		SVTO	06 27 0530	S09 W31	06 24.9		B	DRO	60	16	8	4
6114		BOUL	06 27 1430	S08 W34	06 25.0		B	BXI	30	13	7	3
6114		RAMY	06 27 1558	S09 W37	06 24.9		B	DAO	40	18	9	3
6114		HOLL	06 27 1715	S10 W36	06 25.0		B	BXO	30	14	7	2
6114		PALE	06 27 1909	S10 W37	06 25.0		B	DAO	50	6	6	3
6114		CULG	06 28 0155	S08 W42	06 24.9		B	CSO	30	6	6	2
6114		RAMY	06 28 1352	S08 W48	06 25.0		B	BXO	30	11	8	3
6114		BOUL	06 28 1430	S09 W49	06 24.9		B	BXI	40	9	6	4
6114		HOLL	06 28 1625	S09 W49	06 25.0		B	BXO	40	12	7	4
6114		PALE	06 29 0150	S11 W54	06 25.0		B	BXO	10	3	8	3
6114		CULG	06 29 0155	S09 W60	06 24.6		A	AX		1		3
6114		SVTO	06 29 0830	S09 W60	06 24.8		B	BXO	40	11	8	3
6114		RAMY	06 29 1256	S08 W63	06 24.8		B	BXO	20	8	8	4
6114		BOUL	06 29 1435	S08 W65	06 24.7		B	BXO	20	5	8	3
6114		HOLL	06 29 1630	S10 W63	06 24.9		B	BXO	30	10	8	3
6114		LEAR	06 30 0025	S08 W69	06 24.8		B	BXO	30	5	4	3
6114		PALE	06 30 2235	S09 W77	06 25.2		A	AX		1		2
6119		HOLL	06 22 1600	N22 E38	06 25.6		A	AX		1		3
6119		LEAR	06 24 0155	N15 E19	06 25.5		B	BXO	10	3	3	3
6119		SVTO	06 24 0540	N17 E17	06 25.5		A	AX	10	3	1	4
6119		RAMY	06 24 1105	N17 E13	06 25.4		B	BXO	10	7	3	4
6119		HOLL	06 24 1515	N16 E12	06 25.5		A	AX	10	2	2	4
6119		CULG	06 25 0050	N16 E07	06 25.6		A	AX		1		3
6114A		PALE	06 25 2200	S15 W03	06 25.7		A	AX		1		3
6114A		PALE	06 26 1915	S16 W16	06 25.6		A	AX		1		3
6114B		PALE	06 25 2200	S02 W02	06 25.8		A	AX		2	2	3
6124		SVTO	06 25 0725	S09 E13	06 26.3		B	BXO		4	3	3
6124		RAMY	06 25 1247	S09 E09	06 26.2		B	BXO	10	7	4	3
6124		BOUL	06 25 1415	S08 E07	06 26.1		B	BXO	20	4	3	2
6124		HOLL	06 25 1450	S09 E09	06 26.3		B	BXO	10	4	3	2
6124		PALE	06 25 2200	S09 E04	06 26.2		B	DSO	30	5	3	3
6124		SVTO	06 26 0437	S09 W01	06 26.1		B	CRO	30	11	4	4
6124		RAMY	06 26 1229	S12 W04	06 26.2		B	DAO	40	12	5	3
6124		BOUL	06 26 1518	S07 W07	06 26.1		B	CSI	40	9	4	2
6124		PALE	06 26 1915	S09 W09	06 26.1		B	DAO	90	17	7	3
6124		CULG	06 27 0150	S08 W13	06 26.1		B	DAI	70	10	4	2
6124		SVTO	06 27 0535	S06 W18	06 25.9		B	DRO	70	12	7	4
6124		BOUL	06 27 1430	S06 W19	06 26.2		B	DAI	90	8	7	3
6124		RAMY	06 27 1558	S08 W21	06 26.1		B	DAO	100	15	7	3
6124		HOLL	06 27 1715	S08 W20	06 26.2		B	DAO	40	8	6	2
6124		PALE	06 27 1909	S09 W22	06 26.1		B	DAO	110	12	6	3
6124		CULG	06 28 0155	S07 W27	06 26.0		B	DAO	80	9	7	2
6124		RAMY	06 28 1352	S07 W34	06 26.0		B	CAO	40	14	7	3
6124		BOUL	06 28 1430	S07 W33	06 26.1		B	DAI	60	11	7	4
6124		HOLL	06 28 1625	S07 W34	06 26.1		B	CSO	60	19	7	4
6124		PALE	06 29 0150	S09 W39	06 26.1		B	CSO	60	8	7	3
6124		CULG	06 29 0155	S07 W40	06 26.1		B	CSO	40	4	6	3
6124		SVTO	06 29 0830	S07 W44	06 26.0		B	CAO	70	8	8	3
6124		RAMY	06 29 1256	S07 W47	06 26.0		B	CAO	70	12	7	4
6124		BOUL	06 29 1435	S07 W45	06 26.2		B	CAO	90	4	6	3
6124		HOLL	06 29 1630	S09 W48	06 26.1		B	CAI	130	26	6	3
6124		LEAR	06 30 0025	S07 W50	06 26.3		B	CAO	50	6	3	3
6124		PALE	06 30 0135	S09 W52	06 26.2		B	CSO	70	5	4	2
6124		SVTO	06 30 0540	S06 W56	06 26.0		B	DAO	90	7	4	4
6124		RAMY	06 30 1205	S08 W55	06 26.4		B	DAO	100	6	4	2
6124		BOUL	06 30 1415	S07 W56	06 26.4		B	DAO	100	4	5	4
6124		HOLL	06 30 1615	S07 W59	06 26.2		B	DAO	70	4	4	3
6124		PALE	06 30 2235	S09 W62	06 26.3		B	CAO	50	2	5	2
6124		LEAR	07 01 0155	S11 W63	06 26.4		B	CRO	20	3	3	3
6124		SVTO	07 01 0555	S09 W70	06 26.1		B	BXO	30	5	7	3
6124		RAMY	07 01 1220	S09 W70	06 26.4		B	CRO	40	5	3	2
6124		BOUL	07 01 1500	S07 W70	06 26.5		A	AX	10	1	1	4
6124		HOLL	07 01 1715	S08 W75	06 26.2		A	AX	40	3	2	3
6124		PALE	07 01 2033	S08 W74	06 26.4		A	AX	30	2	2	2
6124		LEAR	07 02 0040	S08 W75	06 26.5		A	AX	30	2	2	3

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

JUNE 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
6129		PALE	06 25 2200	N15 E06	06 26.4		A	AX		1		3
6129		SVTO	06 26 0437	N15 E01	06 26.3		A	AX	10	2	2	4
6129		CULG	06 27 0150	N17 W13	06 26.1		A	AX	10	1	1	2
6129		SVTO	06 27 0530	N15 W13	06 26.2		B	CRO	20	4	4	4
6129		BOUL	06 27 1430	N15 W19	06 26.2		B	DAO	40	5	2	3
6129		RAMY	06 27 1558	N15 W18	06 26.3		B	DAO	40	5	5	3
6129		HOLL	06 27 1715	N15 W20	06 26.2		B	CRO	20	4	3	2
6129		PALE	06 27 1909	N15 W22	06 26.1		B	DAO	50	6	3	3
6129		CULG	06 28 0155	N16 W26	06 26.1		B	CRO	20	4	3	2
6129		RAMY	06 28 1352	N16 W31	06 26.2		B	CAO	590	7	4	3
6129		BOUL	06 28 1430	N15 W32	06 26.2		B	DAO	30	5	3	4
6129		HOLL	06 28 1625	N16 W32	06 26.2		B	CAO	60	10	5	4
6129		PALE	06 29 0150	N14 W38	06 26.2		B	CSO	30	4	4	3
6129		CULG	06 29 0155	N16 W38	06 26.2		B	CSO	30	5	5	3
6129		SVTO	06 29 0830	N15 W42	06 26.2		B	CAO	20	4	5	3
6129		RAMY	06 29 1256	N15 W48	06 25.9		A	HA	30	1	2	4
6129		BOUL	06 29 1435	N15 W47	06 26.0		A	HS	30	1	1	3
6129		HOLL	06 29 1630	N14 W49	06 26.0		A	HA	20	2	2	3
6129		LEAR	06 30 0025	N15 W53	06 26.0		A	AX	20	3	2	3
6129		PALE	06 30 0135	N13 W55	06 25.9		A	AX	10	2	1	2
6129		SVTO	06 30 0540	N16 W56	06 26.0		A	AX	20	3	3	4
6129		RAMY	06 30 1205	N15 W58	06 26.1		A	HR	20	2	1	2
6129		BOUL	06 30 1415	N13 W60	06 26.1		A	AX	10	2	1	4
6129		HOLL	06 30 1615	N15 W61	06 26.0		A	AX	10	2	2	3
6129		PALE	06 30 2235	N14 W66	06 25.9		A	AX		1		2
6129		LEAR	07 01 0155	N12 W65	06 26.3		A	AX	10	2	2	3
6129		RAMY	07 01 1220	N12 W75	06 26.0		A	AX	10	2	1	2
6130		HOLL	06 25 1450	N24 E18	06 27.0		A	AX		2	1	2
6130		CULG	06 27 0150	N23 W02	06 26.9		B	BXO	10	2	3	2
6130		SVTO	06 27 0535	N24 W05	06 26.8		B	CRO	30	10	7	4
6130		BOUL	06 27 1430	N23 W08	06 27.0		G	CS	30	8	4	3
6130		RAMY	06 27 1558	N22 W08	06 27.0		B	DAI	40	14	5	3
6130		HOLL	06 27 1715	N23 W09	06 27.0		B	CAO	40	10	5	2
6130		PALE	06 27 1909	N22 W09	06 27.1		B	BXO	20	11	7	3
6130		CULG	06 28 0155	N23 W13	06 27.1		B	CRO	20	5	7	2
6130		RAMY	06 28 1352	N23 W21	06 26.9		B	BXO	10	7	5	3
6130		BOUL	06 28 1430	N25 W18	06 27.2		B	BXO	10	4	6	4
6130		HOLL	06 28 1625	N23 W22	06 27.0		B	CRO	30	9	6	4
6130		PALE	06 29 0150	N22 W30	06 26.8		A	AX		1		3
6130		CULG	06 29 0155	N23 W29	06 26.8		A	AX		1		3
6130		SVTO	06 29 0830	N24 W34	06 26.7		B	BXO	10	2	2	3
6130		RAMY	06 29 1256	N23 W36	06 26.8		A	AX		1		4
6130		HOLL	06 29 1630	N24 W37	06 26.8		A	AX	10	2	2	3
6118		CULG	06 21 0050	N25 E85	06 27.6		A	HS	70	1	2	3
6118		SVTO	06 21 0645	N27 E81	06 27.6		A	HA	60	1	3	3
6118		RAMY	06 21 1339	N28 E76	06 27.5		A	HA	60	1	2	3
6118		BOUL	06 21 1420	N27 E72	06 27.2		A	HS	110	1	4	4
6118		HOLL	06 21 1451	N27 E77	06 27.6		A	HS	60	1	2	4
6118		LEAR	06 22 0035	N27 E69	06 27.4		A	HH	180	1	3	4
6118		CULG	06 22 0100	N27 E70	06 27.5		A	HS	60	1	2	2
6118		SVTO	06 22 0505	N27 E69	06 27.6		A	HS	70	1	1	4
6118		RAMY	06 22 1215	N28 E66	06 27.7		A	HA	90	1	2	2
6118		BOUL	06 22 1422	N28 E61	06 27.4		A	HA	90	1	2	3
6118		HOLL	06 22 1600	N27 E62	06 27.5		A	HS	70	1	2	3
6118		PALE	06 22 1925	N27 E64	06 27.8		A	HA	90	1	1	3
6118		LEAR	06 23 0032	N27 E58	06 27.5		A	HS	120	1	2	2
6118		SVTO	06 23 0820	N27 E55	06 27.6		A	HS	70	1	2	3
6118		RAMY	06 23 1203	N28 E52	06 27.6		A	HA	100	1	2	4
6118		BOUL	06 23 1435	N27 E47	06 27.3		A	HS	50	1	2	2
6118		HOLL	06 23 1545	N27 E50	06 27.5		A	HS	60	1	2	3
6118		PALE	06 23 2203	N25 E47	06 27.5		A	HS	60	1	1	2
6118		LEAR	06 24 0155	N27 E45	06 27.6		A	HS	60	1	2	3
6118		SVTO	06 24 0540	N26 E44	06 27.6		A	HS	80	1	2	4
6118		RAMY	06 24 1105	N28 E40	06 27.6		A	HS	80	1	2	4
6118		BOUL	06 24 1455	N28 E36	06 27.4		A	HS	60	1	2	4
6118		HOLL	06 24 1515	N25 E37	06 27.5		A	HS	110	1	2	4

SUNSPOT GROUPS
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JUNE 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
6118		PALE	06 24 2115	N28 E35	06 27.6		A	HS	80	1	2	3
6118		LEAR	06 25 0009	N27 E34	06 27.6		A	HS	80	2	2	3
6118		CULG	06 25 0050	N27 E33	06 27.6		A	HS	100	1	2	3
6118		SVTO	06 25 0725	N27 E30	06 27.6		A	HS	100	1	2	3
6118		RAMY	06 25 1247	N23 E26	06 27.5		B	CAO	100	2	3	3
6118		BOUL	06 25 1415	N27 E24	06 27.5		A	HA	70	1	2	2
6118		HOLL	06 25 1450	N28 E26	06 27.6		A	HS	70	1	2	2
6118		PALE	06 25 2200	N28 E22	06 27.6		A	HS	70	1	2	3
6118		SVTO	06 26 0437	N27 E19	06 27.7		A	HS	70	3	2	4
6118		RAMY	06 26 1229	N23 E13	06 27.5		B	CAO	100	2	2	3
6118		HOLL	06 26 1515	N27 E13	06 27.6		A	HS	70	1	2	3
6118		BOUL	06 26 1518	N27 E11	06 27.5		A	HA	40	1	2	2
6118		PALE	06 26 1915	N28 E11	06 27.7		A	HS	70	1	2	3
6118		CULG	06 27 0150	N27 E07	06 27.6		A	HS	50	1	2	2
6118		SVTO	06 27 0530	N27 E07	06 27.8		A	HS	90	1	2	4
6118		BOUL	06 27 1430	N27 W01	06 27.5		A	HA	70	1	2	3
6118		RAMY	06 27 1558	N28 E01	06 27.7		B	CAO	70	4	4	3
6118		HOLL	06 27 1715	N28 E00	06 27.7		A	HS	70	1	2	2
6118		PALE	06 27 1909	N27 W03	06 27.6		A	HS	70	1	1	3
6118		CULG	06 28 0155	N27 W07	06 27.5		A	HS	50	1	1	2
6118		RAMY	06 28 1352	N27 W13	06 27.6		A	HS	40	1	2	3
6118		BOUL	06 28 1430	N28 W11	06 27.7		A	HA	70	1	2	4
6118		HOLL	06 28 1625	N27 W13	06 27.7		A	HS	70	1	2	4
6118		PALE	06 29 0150	N27 W19	06 27.6		A	HS	70	1	2	3
6118		CULG	06 29 0155	N27 W18	06 27.7		A	HS	50	1	1	3
6118		SVTO	06 29 0830	N28 W21	06 27.7		A	HS	90	1	2	3
6118		RAMY	06 29 1256	N28 W23	06 27.7		A	HS	40	1	2	4
6118		BOUL	06 29 1435	N27 W24	06 27.7		A	HA	80	1	2	3
6118		HOLL	06 29 1630	N27 W26	06 27.7		A	HS	70	1	2	3
6118		LEAR	06 30 0025	N27 W29	06 27.7		A	HS	70	1	2	3
6118		PALE	06 30 0135	N26 W31	06 27.6		A	HS	30	1	2	2
6118		SVTO	06 30 0540	N28 W32	06 27.7		A	HS	80	1	1	4
6118		RAMY	06 30 1205	N28 W35	06 27.8		A	HS	80	1	2	2
6118		BOUL	06 30 1415	N25 W36	06 27.8		A	HA	80	1	2	4
6118		HOLL	06 30 1615	N27 W38	06 27.7		A	HS	60	1	2	3
6118		PALE	06 30 2235	N27 W42	06 27.7		A	HS	60	1	1	2
6118		LEAR	07 01 0155	N23 W40	06 28.1		A	HS	60	1	2	3
6118		SVTO	07 01 0555	N26 W47	06 27.7		A	HS	50	1	1	3
6118		RAMY	07 01 1220	N27 W49	06 27.8		A	HS	60	1	1	2
6118		BOUL	07 01 1500	N27 W49	06 27.9		A	HA	60	1	2	4
6118		HOLL	07 01 1715	N26 W52	06 27.8		A	HS	100	1	2	3
6118		PALE	07 01 2033	N27 W52	06 27.9		A	HS	30	1	1	2
6118		LEAR	07 02 0040	N28 W55	06 27.8		A	HS	40	1	1	3
6118		SVTO	07 02 0640	N28 W60	06 27.7		A	HS	40	1	1	3
6118		BOUL	07 02 1430	N26 W63	06 27.8		A	HA	60	1	2	2
6118		HOLL	07 02 1452	N27 W61	06 28.0		A	HS	40	2	2	2
6118		RAMY	07 02 1800	N26 W60	06 28.2		A	HA	30	1	2	1
6118		PALE	07 02 2015	N27 W65	06 27.9		A	HS	40	1	2	3
6118		SVTO	07 03 0755	N28 W75	06 27.6		A	HS	50	1	2	3
6118		RAMY	07 03 1318	N27 W73	06 28.0		A	HA	60	1	2	2
6118		BOUL	07 03 1410	N26 W75	06 27.9		A	HA	30	1	1	2
6118		HOLL	07 03 1625	N27 W75	06 27.9		A	HS	50	1	2	2
6118		PALE	07 03 2200	N26 W76	06 28.1		A	HA	60	1	2	3
6118		CULG	07 04 0030	N26 W80	06 27.9		A	HS	10	1	1	3
6121		LEAR	06 22 0035	N16 E73	06 27.6		A	AX	30	1	1	4
6121		HOLL	06 22 1600	N16 E62	06 27.4		B	BXO	10	2	6	3
6121		SVTO	06 23 0820	N16 E54	06 27.4		A	AX		1		3
6121		RAMY	06 23 1203	N17 E52	06 27.4		B	BXO	20	6	4	4
6121		HOLL	06 23 1545	N17 E51	06 27.5		B	BXO	20	4	3	3
6121		PALE	06 23 2203	N15 E47	06 27.5		A	AX		1		2
6121		LEAR	06 24 0155	N16 E46	06 27.6		B	BXO	20	3	5	3
6121		SVTO	06 24 0540	N15 E43	06 27.5		A	AX		1		4
6121		RAMY	06 24 1105	N17 E40	06 27.5		B	BXO	10	7	4	4
6121		HOLL	06 24 1515	N14 E37	06 27.4		B	BXO	20	5	5	4
6121		PALE	06 24 2115	N17 E34	06 27.5		B	BXO	10	3	4	3
6121		LEAR	06 25 0009	N16 E33	06 27.5		B	BXO	10	3	4	3
6121		CULG	06 25 0050	N16 E33	06 27.5		B	BXO		4	5	3
6121		SVTO	06 25 0725	N17 E30	06 27.6		A	AX		2	1	3

S U N S P O T G R O U P S
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JUNE 1990

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6121		RAMY	06	25	1247	N13	E28	06	27.6		A	AX	10	4	2	3
6121		HOLL	06	25	1450	N18	E27	06	27.7		A	AX	10	4	2	2
6121		PALE	06	25	2200	N17	E22	06	27.6		A	AX		2	1	3
6121		RAMY	06	26	1229	N13	E14	06	27.6		A	AX	10	2	1	3
6121		PALE	06	26	1915	N12	E12	06	27.7		A	AX		2		3
6121		HOLL	06	29	1630	N15	W28	06	27.6		A	AX		1		3
6121		LEAR	06	30	0025	N14	W36	06	27.3		A	AX	10	1	2	3
6121A		CULG	06	22	0100	N25	E74	06	27.8		A	AX		1		2
6120		LEAR	06	22	0035	S17	E76	06	27.8		A	AX	30	1	1	4
6120		CULG	06	22	0100	S18	E77	06	27.9		A	HS	20	1	1	2
6120		SVTO	06	22	0505	S17	E76	06	28.0		A	HR	30	1	1	4
6120		RAMY	06	22	1215	S15	E71	06	27.9		A	HA	60	1	2	2
6120		BOUL	06	22	1422	S16	E69	06	27.8		A	HR	30	1	1	3
6120		HOLL	06	22	1600	S17	E68	06	27.8		A	HS	50	2	2	3
6120		PALE	06	22	1925	S18	E67	06	27.9		A	AX	20	1	1	3
6120		LEAR	06	23	0032	S17	E65	06	28.0		A	HS	50	1	2	2
6120		SVTO	06	23	0820	S16	E61	06	28.0		A	HS	20	1	1	3
6120		RAMY	06	23	1203	S16	E59	06	28.0		B	CRO	30	6	3	4
6120		BOUL	06	23	1435	S17	E57	06	27.9		A	HS	30	1	2	2
6120		HOLL	06	23	1545	S17	E57	06	28.0		A	HA	40	2	2	3
6120		PALE	06	23	2203	S19	E54	06	28.0		A	AX		1		2
6120		LEAR	06	24	0155	S17	E51	06	27.9		B	CAO	40	4	3	3
6120		SVTO	06	24	0540	S19	E51	06	28.1		A	HS	20	2	3	4
6120		RAMY	06	24	1105	S16	E47	06	28.0		B	CRO	20	4	3	4
6120		BOUL	06	24	1455	S17	E43	06	27.9		A	HA	20	2	2	4
6120		HOLL	06	24	1515	S19	E45	06	28.1		A	HR	30	3	1	4
6120		PALE	06	24	2115	S17	E41	06	28.0		A	HS	30	2	1	3
6120		LEAR	06	25	0009	S17	E39	06	28.0		A	HS	20	2	1	3
6120		CULG	06	25	0050	S18	E40	06	28.1		A	HR	10	4	1	3
6120		SVTO	06	25	0725	S18	E35	06	28.0		A	HR		2		3
6120		RAMY	06	25	1247	S21	E33	06	28.1		B	CAO	30	4	3	3
6120		BOUL	06	25	1415	S17	E30	06	27.9		A	HS	10	1		2
6120		HOLL	06	25	1450	S18	E33	06	28.1		B	BXO	10	6	3	2
6120		PALE	06	25	2200	S17	E28	06	28.0		A	HS	10	1	1	3
6120		SVTO	06	26	0437	S17	E23	06	27.9		A	HA	10	2	1	4
6120		RAMY	06	26	1229	S21	E21	06	28.1		A	AX	20	3	1	3
6120		HOLL	06	26	1515	S17	E18	06	28.0		A	AX		2	1	3
6120		RAMY	06	27	1558	S17	E04	06	28.0		B	BXO	10	4	3	3
6120		RAMY	06	28	1352	S17	W07	06	28.0		A	AX	40	4	3	3
6120		BOUL	06	28	1430	S16	W06	06	28.1		A	AX	10	2	1	4
6120		HOLL	06	28	1625	S17	W07	06	28.1		A	AX	10	3	1	4
6120		PALE	06	29	0150	S19	W12	06	28.2		A	AX		1		3
6120		CULG	06	29	0155	S19	W12	06	28.2		A	AX		1		3
6120		SVTO	06	29	0830	S17	W17	06	28.1		B	BXO	10	6	4	3
6120		RAMY	06	29	1256	S17	W19	06	28.1		A	AX		1		4
6121B		HOLL	06	27	1715	N20	E04	06	28.0		A	AX		2	2	2
6121B		PALE	06	27	1909	N20	E03	06	28.0		A	AX		1		3
6120A		RAMY	06	28	1352	N21	W01	06	28.5		A	AX	10	2	1	3
6120A		HOLL	06	28	1625	N22	W03	06	28.4		A	AX		2		4
6136		SVTO	06	30	0540	S40	W25	06	28.2		B	BXO	10	4	5	4
6136		RAMY	06	30	1205	S41	W24	06	28.5		B	BXO	20	6	7	2
6136		BOUL	06	30	1415	S38	W29	06	28.2		B	BXO	10	4	10	4
6136		HOLL	06	30	1615	S41	W27	06	28.5		B	BXO	20	5	6	3
6136		PALE	06	30	2235	S42	W32	06	28.3		B	CAO	40	2	5	2
6136		LEAR	07	01	0155	S45	W35	06	28.3		A	AX	10	3	5	3
6136		SVTO	07	01	0555	S42	W34	06	28.5		B	BXO	20	13	8	3
6136		RAMY	07	01	1220	S42	W35	06	28.7		B	CAO	40	6	8	2
6136		BOUL	07	01	1500	S40	W39	06	28.5		B	BXO	10	2	4	4
6136		HOLL	07	01	1715	S40	W41	06	28.5		B	BXO	30	7	9	3
6136		PALE	07	01	2033	S41	W42	06	28.5		B	BXO	20	2	5	2
6136		SVTO	07	02	0640	S40	W50	06	28.3		B	BXO	20	2	6	3
6136		HOLL	07	02	1452	S40	W53	06	28.4		B	BXO	50	3	5	2
6136B		RAMY	06	24	1105	N34	E55	06	28.8		B	BXO	30	8	6	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 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
6136B		PALE	06 24 2115	N34 E48	06 28.7		A	AX		2		3
6136B		CULG	06 25 0050	N34 E47	06 28.8		A	AX		1		3
6122		LEAR	06 23 0032	S22 E77	06 28.9		A	HH	120	1	3	2
6122		SVTO	06 23 0820	S20 E74	06 29.0		A	HS	110	3	5	3
6122		RAMY	06 23 1203	S20 E71	06 28.9		B	CAO	120	7	16	4
6122		BOUL	06 23 1435	S23 E73	06 29.2		B	CSO	110	2	14	2
6122		HOLL	06 23 1545	S22 E72	06 29.2		B	ESO	140	13	13	3
6122		PALE	06 23 2203	S24 E67	06 29.1		B	CAO	120	6	6	2
6122		LEAR	06 24 0155	S22 E68	06 29.3		B	EAO	210	10	15	3
6122		SVTO	06 24 0540	S24 E69	06 29.6		B	FAO	320	13	18	4
6122		RAMY	06 24 1105	S21 E62	06 29.2		B	FKO	380	26	16	4
6122		BOUL	06 24 1455	S23 E60	06 29.2		B	FKI	350	8	16	4
6122		HOLL	06 24 1515	S23 E64	06 29.6		BGD	FKO	480	34	21	4
6122		PALE	06 24 2115	S22 E58	06 29.3		B	FKO	520	21	19	3
6122		LEAR	06 25 0009	S23 E57	06 29.4		BG	FKO	620	31	19	3
6122		CULG	06 25 0050	S23 E57	06 29.4		B	FKO	490	22	18	3
6122		SVTO	06 25 0725	S24 E55	06 29.5		BGD	FKO	580	23	17	3
6122		RAMY	06 25 1247	S24 E52	06 29.5		BG	FKO	700	37	17	3
6122		BOUL	06 25 1415	S22 E47	06 29.2		B	FKI	450	14	17	2
6122		HOLL	06 25 1450	S21 E49	06 29.4		BG	FKO	610	40	16	2
6122		PALE	06 25 2200	S23 E45	06 29.4		B	FKO	670	18	18	3
6122		SVTO	06 26 0437	S23 E42	06 29.4		BGD	FKO	570	44	17	4
6122		RAMY	06 26 1229	S25 E40	06 29.6		BG	FKO	570	37	19	3
6122		BOUL	06 26 1518	S22 E35	06 29.3		B	FKI	550	27	18	2
6122		PALE	06 26 1915	S22 E34	06 29.4		BG	FKI	670	43	16	3
6122		CULG	06 27 0150	S22 E31	06 29.4		BG	FKI	600	50	17	2
6122		SVTO	06 27 0530	S23 E29	06 29.5		BGD	FKI	820	46	17	4
6122		BOUL	06 27 1430	S19 E23	06 29.3		B	FKI	580	32	18	3
6122		RAMY	06 27 1558	S23 E22	06 29.4		BG	FKO	820	47	18	3
6122		HOLL	06 27 1715	S22 E23	06 29.5		B	FKO	530	29	18	2
6122		PALE	06 27 1909	S21 E23	06 29.6		BG	FKI	630	35	17	3
6122		CULG	06 28 0155	S22 E18	06 29.5		B	FKO	450	19	18	2
6122		RAMY	06 28 1352	S21 E12	06 29.5		BG	FKO	730	31	17	3
6122		BOUL	06 28 1430	S20 E11	06 29.4		B	FKI		17	16	4
6122		HOLL	06 28 1625	S22 E12	06 29.6		BG	FKO	670	46	18	4
6122		PALE	06 29 0150	S22 E08	06 29.7		B	FKO	590	21	18	3
6122		CULG	06 29 0155	S22 E04	06 29.4		B	FKO	440	20	17	3
6122		SVTO	06 29 0830	S21 E03	06 29.6		B	FKO	470	30	18	3
6122		RAMY	06 29 1256	S20 E01	06 29.6		BG	FKO	590	45	20	4
6122		BOUL	06 29 1435	S20 W01	06 29.5		B	FKI	530	41	17	3
6122		HOLL	06 29 1630	S21 W02	06 29.5		BG	FKO	560	63	18	3
6122		LEAR	06 30 0025	S21 W07	06 29.5		B	FHO	420	38	17	3
6122		SVTO	06 30 0540	S20 W11	06 29.4		B	FSO	450	52	19	4
6122		RAMY	06 30 1205	S21 W11	06 29.7		B	FKO	480	60	21	2
6122		BOUL	06 30 1415	S22 W14	06 29.5		B	FKI	440	16	17	4
6122		HOLL	06 30 1615	S21 W14	06 29.6		B	FSO	450	31	18	3
6122		PALE	06 30 2235	S22 W17	06 29.6		B	FKO	310	8	17	2
6122		LEAR	07 01 0155	S26 W20	06 29.6		B	FKO	270	17	18	3
6122		SVTO	07 01 0555	S22 W21	06 29.7		B	FAO	400	19	17	3
6122		RAMY	07 01 1220	S21 W21	06 30.0		B	FAO	380	18	16	2
6122		BOUL	07 01 1500	S20 W26	06 29.7		B	FKO	340	12	17	4
6122		HOLL	07 01 1715	S21 W28	06 29.7		B	FAO	340	19	16	3
6122		PALE	07 01 2033	S21 W29	06 29.7		B	FKO	280	19	16	2
6122		LEAR	07 02 0040	S22 W30	06 29.8		B	FSO	300	19	16	3
6122		SVTO	07 02 0640	S21 W36	06 29.6		B	FAO	380	19	18	3
6122		BOUL	07 02 1430	S20 W38	06 29.8		B	FAO	170	16	17	2
6122		HOLL	07 02 1452	S22 W41	06 29.6		B	FAO	390	17	16	2
6122		RAMY	07 02 1800	S22 W40	06 29.8		B	FAO	400	11	16	1
6122		PALE	07 02 2015	S20 W40	06 29.9		B	EKO	310	15	18	3
6122		SVTO	07 03 0755	S21 W50	06 29.6		B	FAO	300	17	18	3
6122		RAMY	07 03 1318	S22 W50	06 29.8		B	FAO	280	16	18	2
6122		BOUL	07 03 1410	S20 W51	06 29.8		B	FKO	270	14	18	2
6122		HOLL	07 03 1625	S22 W53	06 29.7		B	FAO	200	14	19	2
6122		PALE	07 03 2200	S25 W55	06 29.7		B	FKO	290	13	17	3
6122		CULG	07 04 0030	S21 W55	06 29.9		B	FAO	110	10	17	3
6122		SVTO	07 04 0555	S20 W61	06 29.7		B	FSO	340	12	16	4
6122		RAMY	07 04 1338	S22 W62	06 29.9		B	FAO	240	6	16	1
6122		BOUL	07 04 1425	S20 W63	06 29.9		B	FKO	230	6	17	3

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

JUNE 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
6122		HOLL	07 04 1535	S22 W66	06 29.7		B	FAO	130	10	19	3
6122		PALE	07 04 1958	S23 W65	06 29.9		B	FAO	120	6	17	3
6122		CULG	07 05 0105	S21 W69	06 29.8		B	FAO	200	4	17	2
6122		SVTO	07 05 0548	S21 W76	06 29.5		B	FSO	330	2	18	3
6122		RAMY	07 05 1237	S22 W80	06 29.5		B	FAO	190	4	16	3
6122		HOLL	07 05 1443	S22 W74	06 30.0		B	CSO	90	2	8	3
6122		BOUL	07 05 1515	S23 W74	06 30.0		A	HA	90	1	5	2
6122		PALE	07 05 1854	S22 W73	06 30.2		B	CAO	60	3	7	3
6122		CULG	07 06 0145	S22 W74	06 30.4		A	HA	40	2	2	2
6122		SVTO	07 06 0626	S20 W79	06 30.2		A	HS	30	1	2	2
6125		CULG	06 25 0050	N06 E69	06 30.2		A	AX		1		3
6125		SVTO	06 25 0725	N04 E63	06 30.0		A	AX		1		3
6125		RAMY	06 25 1247	N04 E61	06 30.1		B	BXO	10	4	4	3
6125		BOUL	06 25 1415	N06 E56	06 29.8		A	AX		1		2
6125		HOLL	06 25 1450	N05 E59	06 30.0		A	AX		1		2
6125		PALE	06 25 2200	N05 E55	06 30.0		A	AX		1		3
6125		SVTO	06 26 0437	N04 E50	06 29.9		A	AX		1		4
6125		RAMY	06 28 1352	N06 E18	06 29.9		B	DAO	490	11	7	3
6125		BOUL	06 28 1430	N05 E17	06 29.9		B	CAO	50	9	6	4
6125		HOLL	06 28 1625	N04 E17	06 29.9		BG	DAO	60	19	7	4
6125		PALE	06 29 0150	N05 E11	06 29.9		B	DAO	80	11	7	3
6125		CULG	06 29 0155	N05 E12	06 30.0		B	DSI	40	12	7	3
6125		SVTO	06 29 0830	N06 E08	06 29.9		B	CAO	50	15	7	3
6125		RAMY	06 29 1256	N06 E06	06 30.0		B	CAO	30	18	7	4
6125		BOUL	06 29 1435	N06 E05	06 30.0		B	DAO	90	15	8	3
6125		HOLL	06 29 1630	N05 E05	06 30.1		B	CRO	50	27	7	3
6125		LEAR	06 30 0025	N05 W01	06 29.9		B	CAO	40	12	8	3
6125		PALE	06 30 0135	N05 W02	06 29.9		B	CSO	50	8	7	2
6125		SVTO	06 30 0540	N06 W05	06 29.9		B	BXO	20	14	8	4
6125		RAMY	06 30 1205	N05 W05	06 30.1		B	CRO	20	14	9	2
6125		BOUL	06 30 1415	N05 W08	06 30.0		B	BXO	10	6	9	4
6125		HOLL	06 30 1615	N06 W08	06 30.1		B	BXO	20	9	10	3
6125		PALE	06 30 2235	N05 W16	06 29.7		A	AX		1		2
6125		LEAR	07 01 0155	N00 W18	06 29.8		A	AX	10	2	1	3
6125		SVTO	07 01 0555	N05 W16	06 30.0		B	BXO	20	8	10	3
6125		RAMY	07 01 1220	N04 W21	06 30.0		B	BXO	10	6	7	2
6125		BOUL	07 01 1500	N06 W18	06 30.3		A	AX		1		4
6125		HOLL	07 01 1715	N05 W21	06 30.1		B	BXO	10	3	3	3
6125		PALE	07 01 2033	N05 W22	06 30.2		A	HA	10	1	1	2
6125		SVTO	07 02 0640	N06 W28	06 30.2		B	BXO	10	4	2	3

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0636	0638	0729	2+	1					1	0646	B9.3	6077
02	0230	0237	0309	1-	1			1			0229	C1.1	6077
02	0518	0533	0542	1-	1			1			No flare		
02	0634	0652	0804	2	5	3	3	1	1	5	0632	C5.7	6080
02	1405	1406	1414	1-	1					1	1405	C1.4	
03	0600	0605	0648	1-	5			1		2	0609	C1.9	6080
03	0749	0754	0840	1-	5			1	1	4	0748	C1.6	
03	1620	1626	1648	1+	1					1	1635	B9.2	6087
04	2332	2335	2348	1-	1			1			2324	C1.4	6080
05	0824	0840	0856	1	3		1			1	0829	C1.4	6089
05	1702	1702	1717	1-	1					1	1702E	B9.8	6089
06	0726	0736	0759	1-	1			1			*		
06	1240	1312	1320	1+	1		1				1229	C1.6	
06	1410	1416	1439	1-	3	1			1		1409	C2.4	
06	1433	1439	1509	2-	3					2	1426	C2.7	
06	1637	1645	1737	1-	5	4	3	1	1	10	1638	M1.0	6093
06	1827	1846	1938	1	5			1		6	1820	C8.1	6093
06	2027	2041	2204	2+	5	1		1		5	2024	M1.9	6093
07	0143	0156	0235D	1-	1			1			0144E	C2.6	
07	0236	0306	0408	1-	1			1			No flare		
07	0502	0513	0545D	1-	1			1			0510E	C2.4	
07	0551	0625	0738	2	5		1	1	1	5	0546	C5.0	
07	0746	0757	0917	2	5	2	1	1	1	6	0744	C7.1	
07	1131	1139	1139D	1-	5		1		1	2	1129	C2.9	6093
07	1152	1203	1246	1-	5		3	1	1	1	1149	C3.4	
07	1410	1454	1524	1-	5	3	3	1	1	10	1440	C8.4	6093
07	1602	1626	1638	1-	5		1			1	1604	C2.4	6088
07	1715	1717	1721	1-	1					1	1716	C1.6	
07	1743	1747	1807	1+	5					2	1746	C2.0	
07	1904	1939	2206	2+	1	2		1		8	1859	M4.5	
08	0138	0142	0153	1-	1			1			0137E	C2.5	
08	0207	0220	0226D	1-	1			1			0211	C5.8	
08	0226E	0238	0354	1	1			1			0225	C4.4	
08	0615	0625	0727	1	1					1	*		
08	0821	0847	0944	1-	5		1	1			0828	C2.2	
08	1157	1202	1250	1	3	1	2		1	5	1154	C3.3	6088
08	1321	1342	1412	2-	5					2	1319	C2.9	
08	1513	1525	1552	1+	5	1				2	1544	C5.7	6089
08	2118	2123	2138	1	1					1	2118		6089
09	0053	0112	0155	1-	1			1			0052	C3.8	
09	0202	0213	0243	1-	1			1			0201	C2.2	
09	1412	1420	1530	1+	5		1		1	7	1413	M1.4	6100
09	1413	1440	1555	2+	5	3	2	1		4	1413	M1.4	6100
09	1647	1656	1752	1	5	3	3	1	1	10	1639	M2.5	6089
09	2007	2011	2040	2-	3					3	2010E	C4.6	
09	2252	2301	2330	2	1					1	2234	C2.6	
10	0427	0455	0535	1-	1			1			0435	C2.5	6095
10	0707	0726	0842D	3	5	3	3	1	1	5	0656	M2.3	6089
10	0842E	0846	1017	1-	5			1		2	No flare		
10	1232	1245	1320	1-	1				1		1232		6095
10	1336	1343	1415	1-	5		1		1	4	1337E	C3.1	6089
10	1443	1512	1605	3-	5	3	5	1	1	12	1430	M3.3	6089
10	1612	1624	1727	2+	1					1	1620	C4.5	6095
10	1821	1827	1858	2	1					1	1821		6095
10	2133	2214	2322	2	5	1		1		4	2139E	M1.7	6089
11	0033	0043	0103	1-	1			1			*		
11	0558	0558	0614	1-	1					1	0556	C1.7	6089
11	0940	0947	1003D	3	5	3	3	1	1	4	0934	M4.5	6089

* = no flare patrol.

JUNE 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
11	1003E	1010	1148	3-	5		2	1		1	1017E		6089
11	1123	1127	1210	2+	1					1	1121		
11	1851	1853	1923	1+	5					7	1850	M1.1	6100
11	1943	1945	2015	1+	1					1	1944	C4.9	
12	0049	0053	0138	1+	5	2		1			0053E	M1.0	6096
12	0432	0444	0519D	2	5	1		1	1		0431	C6.2	6089
12	0519E	0539	0838	3	5	3	2	1	1	5	0558E	M6.4	6089
12	0555	0725	0822	3+	1		1				0558E	M6.4	6089
12	1156	1213	1246	1-	5	1	2	1	1	1	1155	C5.7	
12	1312	1325	1400	1-	5		2		1	2	1300	C4.4	
12	1540	1541	1546	1-	1					1	1522		
12	1652	1705	1720	1-	5	2			1	4	1637	C6.3	6089
12	1815	1825	1910	2+	1					1	No flare		
12	2030	2115	2415	3+	1					1	2042E		6100
12	2314	2320	2341	1-	1			1			2307	C2.7	6100
13	0035	0042	0200	2	5	2		1			0033E	M1.1	6089
13	0230	0235	0308	1-	3	1		1			0228	C2.7	6100
13	0614	0619	0636	1-	1			1			0614	C1.7	
13	1108	1115	1150	1-	3	1	1		1	1	1110	C3.6	
13	1413	1427	1512	1-	5	1	1	1	1	7	1410E	C7.0	
13	1623	1626	1642	1-	3					3	1623	C2.2	
13	1831	1836	1850U	1-	1					1	1831	C4.4	
13	2006	2009	2020	1-	1					1	2007		6089
13	2238	2240	2255	1+	1					1	2238		6089
14	0923	0930	0957	1-	1			1			No flare		
14	1145	1149	1208	1	1					1	No flare		
14	1218	1222	1313	1-	5		1	1	1	2	1205	C4.2	6106
14	1838	1845	1915	2	1					1	1816E	C3.8	6105
15	0108	0116	0141D	1-	1			1			0109	C2.5	6107
15	0141E	0151	0214	1-	1			1			0140	C3.6	6107
15	0239	0245	0319	1-	1			1			0159	C2.4	6105
15	0420	0428	0502	1-	1			1			0420	C2.8	6107
15	0542	0553	0611	1-	1			1			0543		6107
15	0653	0658	0815	2+	1					1	0650		6089
15	0823	0840	1043	3-	5	3	4	1	1	5	0823	M3.1	6106
15	1508	1517	1533	1	1					1	1512E	C2.6	6105
16	0933	0944	1011	1-	5			1	1	1	0930E		6105
16	1536	1541	1600	1-	1		1		1		1535E	C1.7	6100
16	1632	1637	1650	1-	5				1	2	1630	C1.9	6100
17	0140	0144	0208	1-	1			1			0140	C2.6	6100
17	0910	0927	1037	1-	5			1	1		0906	C3.2	6107
17	1526	1530	1538	1-	1					1	1521		6096
19	1600	1600	1628	1+	1					1	1556	C1.6	6106
20	0643	0647	0700	1-	3		1			1	0646	C1.7	
20	0728	0744	0828	1-	5		1	1		2	0729	C5.6	6106
20	1653	1656	1715	1	1					1	1653	C2.1	
21	0208	0219	0320	1	3	1		1			0206E	C4.2	
21	0655	0712	0751	1-	1			1			No flare		
22	0557	0614	0641	1-	5			1		2	0558	C2.6	
22	0656	0714	0811	1	5	2		1	1	2	0648	C5.1	6106
22	2052	2056	2107	1-	1					1	2054	C1.9	
23	1102	1120	1200	1-	3				1	2	1102E	C3.0	
23	1158	1215	1255	2+	1					1	1212	C2.1	
23	1757	1800	1817	1	1					1	1744E		6121
23	2050	2050	2115	1	1					1	2050	C1.2	6122

* = no flare patrol.

JUNE 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
24	0109	0118	0132	1-	1	1					0107	C2.1	
24	0517	0544	0803	2-	5	1		1		1	0532	C7.3	6122
24	0818	0833	0858	1-	5			1	1	1	0818	C2.9	6122
24	1628	1630	1658	1+	1					1	1627	C1.7	
24	2257	2303	2322	1-	1			1			2256	C1.4	6122
25	0116	0134	0300	2+	5	2		1			0116	M1.1	6122
25	0433	0442	0507	1-	1			1			0436	C1.3	
25	0703	0709	0755	1	5	2	2	1	1	4	0702	C3.3	6122
25	0935	0943	1032	1-	5	1		1	1	1	0933	C4.0	
26	0020	0036	0106	1-	1			1			0015	C4.0	
26	0314	0324	0427	2	5	1		1		1	0309	C8.1	
26	0536	0549	0611	1-	5		1	1	1	2	0531	C3.0	6122
26	0840	0846	0858	1	1		1				No flare		
26	0909	0911	0930	1-	1			1			No flare		
26	1745	1758	1830	2	1					1	1749		6122
26	1936	1945	2040	2	5	2		1		3	1934	M1.8	6122
27	0118	0132	0140D	1-	3	1		1			0116	C9.7	
27	0140E	0146	0209D	2-	3	1		1			No flare		
27	0208E	0223	0358	2	3	2		1			0211	M1.0	
27	0812	0820	0834	1-	1			1			No flare		
27	1132	1134	1202	1+	1					1	1139	C2.2	6122
27	1430	1434	1445	1-	1					1	1424		6126
27	1538	1545	1600	1	3					3	1528	C3.5	
27	1635	1639	1709	1+	5					2	1627	C4.8	6122
27	1647	1700	1730	1-	5	1		1	1	3	1648	C9.2	6130
27	2108	2119	2217	2-	5	1		1		4	2106	M1.5	
28	0047	0112	0205D	1+	1			1			0003	C5.2	6122
28	0205E	0212	0254	1-	1			1			0203	C6.0	
28	0640	0649	0717	1-	1			1			0645	C2.6	6127
28	0800	0806	0820	1-	1				1		0808	C3.5	6114
28	0852	0912	0930D	1	5	1	1	1	1		0854	C5.2	
28	0930E	0943	1038	1	1			1			No flare		
28	1056	1101	1110	1-	1		1		1		1056	C2.8	6126
28	1132	1140	1220	1	5	1	2		1	1	1129	C3.9	
28	1358	1414	1521	2+	5	4	4	1	1	7	1411	M2.9	
28	1717	1721	1805	2+	1					1	No flare		
28	1911	1915	1941	1+	1					1	1909		6127
28	1943	1947	2012	1+	3					3	1925	C3.9	6122
28	2032	2044	2123	2	5	1		1		5	2023	M2.1	6133
28	2317	2322	2404	1-	5			1		2	2317	C6.2	6127
29	0024	0033	0111	1-	3	1		1			0023	C5.5	
29	0141	0148	0203D	1-	1			1			0148	C2.5	6124
29	0203E	0213	0232	1-	1			1			0206		6125
29	0534	0541	0546D	1-	5			1		1	0533		6133
29	0546E	0553	0712	1-	5			1	1	2	0544	C4.3	
29	1028	1039	1039D	1-	3	1			1	1	1036		6124
29	1057	1101	1120	1-	1				1		1058		6132
29	1140	1205	1235	2-	1		1				No flare		
29	1234	1252	1252D	1-	1				1		1226		6126
29	1308	1321	1423	1+	5	3	1	1	1	5	1310	C6.3	6133
29	1439	1447	1447D	1-	3				1	1	1438		6126
29	1456	1516	1615	1	5	2		1	1	5	1458	C5.9	6133
29	1600	1603	1629	1+	3					2	1559	C3.4	6133
29	1644	1646	1710	1	3					4	1644	C5.7	6132
29	1819	1825	1852	1-	1			1			1809		6126
29	1915	1923	1945	1+	1					1	No flare		
29	2230	2244	2457	3-	5	3		1		5	2229	M3.8	6133
30	0100	0109	0206	1-	1			1			0058	C3.9	6131
30	0534	0541	0557D	1-	1			1			0532		6126
30	0557E	0605	0635	1-	5			1		1	No flare		

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
30	0637	0647	0720	1-	1			1			No flare		
30	1108	1122	1145	1-	3	1			1	1	1122E		6126
30	1255	1309	1340	1-	1				1		1253		6127
30	1624	1630	1705	2	3					2	1624	C2.5	6131
30	1811	1814	1857	2	3					2	1810	C3.1	6131
30	1946	1955	2103	1-	5			1		7	1945	C9.7	6133

* = no flare patrol.

OBSERVATORIES REPORTING FOR JUNE 1990

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

JUNE 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01	0000	0715	CULG				0024.0	0025.0	1				IIIG
			PALE				0112.0	0115.0	1				III
			CULG				0115.0	0115.0	1				IIIB
			CULG				0523.0	0523.0	1				IIIB
			CULG				0610.0	0610.0	1				IIIB
	0629	1509	POTS				0644.1	0644.4	1				IIIG
	0413	1840	WEIS				0731.3	0731.4	1				IIIB
			LEAR				0821.0	0821.0	1				III
			WEIS				0821.0	0821.2	1				IIIB
			WEIS				0908.2	0908.6	1				IIIG
			WEIS				1006.2	1006.6	1				IIIG
			WEIS				1009.3	1009.5	1				IIIB
			SGMR				1052.0	1053.0	2				III
			SVTO				1052.0	1053.0	2				III
			WEIS				1052.3	1053.4	3				IIIG
			POTS				1052.4	1052.7	1				IIIG
			POTS				1129.2	1233.0	1				I,N
			SGMR				1135.0	2350.0	1				CONT
			WEIS				1157.9	1201.3	2				IIIG
			SVTO				1158.0	1201.0	2				III
			POTS				1158.1	1203.8	1				IIIGG
			WEIS				1207.8	1208.9	1				IIIG
			WEIS				1402.6	1403.8	1				IIIG
			SGMR				1410.0	1412.0	2				III
			SVTO				1410.0	1411.0	2				III
			POTS				1410.7	1410.9	1				UNCLF
			WEIS				1410.7	1411.3	2				IIIG
			SGMR				1557.0	1600.0	2				V
			SVTO				1557.0	1558.0	3				III
			WEIS				1557.3	1558.9	2				IIIG
			WEIS				1606.3	1606.4	1				IIIB
			SGMR				1803.0	1805.0	1	II			
			PALE				1833.0	1834.0	1	II			
			WEIS				1833.9	1834.3	1				IIIG
			PALE				2104.0	2105.0	1				III
	2040	2400	CULG				2358.0	2358.0	1				IIIB
02	0000	0715	CULG				0014.0	0015.0	1				IIIG
	0411	1847	WEIS										
			LEAR				0648.0	0648.0	1				III
	0625	1407	POTS				0721.0	0820.0	1				I,N
			POTS				0732.5	0733.0	1				IIIG
			POTS				0908.2	0908.3	1				IIIB
			POTS				1007.0	1227.0	1				I,N,DC
			POTS				1151.0	1151.2	1				IIIB
			POTS				1314.5	1314.6	1				IIIB
			PALE				1927.0	1930.0	1				III
			SGMR				1930.0	1931.0	2				III
	2040	2400	CULG										
03	0000	0715	CULG										
	0412	1849	WEIS										
	0628	1431	POTS				0744.0	0744.6	1				UNCLF
			POTS				1256.0	1257.0	2				IIIG
			POTS				1422.6	1431.0U	1				I,N
	2040	2400	CULG										
04	0000	0715	CULG				0521.0	0522.0	1				IIIG
	0410	1048	WEIS				0521.2	0521.7	1				IIIG,RS
	1056	1849	WEIS										
	0639	1451	POTS				1110.1	1110.2	1				IIIB
			POTS				1338.9	1339.2	2				U
			SGMR				1638.0	1639.0	1				V
	2040	2400	CULG										
05	0000	0715	CULG				0026.0	0026.0	1				IIIB
	0632	1503	POTS				0645.9	0650.6	1				IIIG
			POTS				0733.3	1334.0	2				I,S,C,DC
			LEAR				0740.0	0741.0	1				III

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

JUNE 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
05	0411	1850	WEIS				0741.0	0741.3	1				IIIG
			WEIS				0807.1	0807.5	1				IIIG
			POTS				0826.2	0826.3	1				IIIB
			POTS				0828.8	0830.7	3				IIIG
			SVTO				0938.0	0945.0	2				III
			WEIS				0938.0	1038.0	2				IIIN
			SVTO				1007.0	1027.0	2				IV
			POTS				1010.0U	1143.0	3				IV ,Z
			SGMR				1014.0	1025.0	1				S
			SGMR				1104.0	1242.0	1				CONT
			POTS				1239.5	1239.7	1				U
			POTS				1241.8	1242.5	2				UNCLF
			WEIS				1242.3	1242.4	1				IIIB
			SGMR				1619.0	1620.0	1				III
			SVTO				1619.0	1620.0	2				III
			WEIS				1619.4	1620.4	2				IIIG
	2040	2400	CULG				2152.0	2152.5	2				IIIG
			PALE				2152.0	2154.0	1				III
			SGMR				2152.0	2154.0	1				III
			CULG				2154.5	2154.5	2				IIIB
			CULG				2336.0	2336.0	1				III PAIR
			PALE				2336.0	2336.0	1				III
			CULG				2356.0	2356.0	2				IIIB
			PALE				2356.0	2356.0	1				III
06	0000	0715	CULG				0146.0	0147.0	1				IIIG
			LEAR				0146.0	0147.0	1				III
			PALE				0146.0	0147.0	1				III
			LEAR				0545.0	0545.0	1				III
	0635	1512	POTS				0840.3	0840.5	1				UNCLF
			POTS				0940.2	0940.4	1				UNCLF
			POTS				1115.1	1115.3	1				UNCLF
			POTS				1118.1	1118.2	1				UNCLF
			POTS				1119.9	1120.1	1				UNCLF
			POTS				1139.4	1139.5	1				UNCLF
	0409	1747	WEIS				1445.0	1445.1	1				IIIB
			SGMR				1446.0	2045.0	1				CONT
			WEIS				1656.4	1656.8	2				IIIG
			PALE				1830.0	1830.0	1				III
	2040	2400	CULG										
07	0000	0715	CULG				0004.0	0004.5	1				III PAIR
			LEAR				0034.0	0035.0	1				III
			PALE				0034.0	0035.0	1				III
			CULG				0135.0	0135.0	1				IIIB
			CULG				0424.0	0425.0	1				IIIG
	0705	0805	POTS										
			SGMR				1222.0	1224.0	1				III
	0539	1852	WEIS				1223.7	1224.7	1				IIIG
			WEIS				1347.2	1347.4	2				IIIG
			SVTO				1432.0	1510.0	1				CONT
			SGMR				1449.0	0000.0	1				CONT
			WEIS				1450.0	1710.0	2				I,S
			SVTO				1510.0	1753.0	2				CONT
			WEIS				1624.3	1624.9	1				IIIG
			WEIS				1655.2	1656.1	2				IIIG,Spikes
			WEIS				1722.3	1722.4	1				U
			PALE				1902.0	1902.0	2				III
			SGMR				1902.0	1924.0	2				S
			PALE				1911.0	2014.0	2				IV
	2040	2400	CULG										
			PALE				2205.0	2205.0	1				III
			PALE				2220.0	2220.0	1				III
			PALE				2235.0	2235.0	1				III
08			LEAR				0113.0	0113.0	1				III
			LEAR				0218.0	0219.0	2				III
	0000	0715	CULG				0219.0	0219.5	1				IIIB
			PALE				0220.0	0222.0	1				III

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

JUNE 1990

Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
08		LEAR				0247.0	0251.0	1				III
		LEAR				0609.0	0619.0	1				III
		SGMR				1750.0	1753.0	1				V
	0408	1851 WEIS				1750.1	1752.6	1				IIIG
		SGMR				1806.0	1806.0	1				III
		SGMR				1825.0	1856.0	1				S
		PALE				1854.0	1855.0	2				V
		SGMR				1854.0	1855.0	2				V
		PALE				2019.0	2019.0	1				III
		SGMR				2019.0	2019.0	1				III
		SGMR				2034.0	2035.0	2				III
		PALE				2035.0	2035.0	2				V
	2040	2400 CULG				2107.0	2110.0	1				IIIG
		CULG				2134.0	2135.0	1				IIIG
09		LEAR				0202.0	0216.0	2				S
		PALE				0229.0	0238.0	1				III
		LEAR				0232.0	0242.0	2				III
	0000	0710 CULG				0233.0	0234.0	1				IIIG
		LEAR				0607.0	0617.0	3				S
		SVTO				0607.0	0616.0	1				III
	0410	1211 WEIS				0607.7	0617.6	2				IIIGG
		CULG				0608.0	0611.0	1				IIIGG
		CULG				0613.0	0618.0	1				IIIGG
		CULG				0616.0	0616.0	2				IIIB
		LEAR				0622.0	0622.0	1				III
		WEIS				1010.2	1012.2	3				IIIG
		SGMR				1118.0	1118.0	1				III
		SVTO				1118.0	1123.0	2				III
		WEIS				1118.2	1118.8	3				IIIG
		WEIS				1122.9	1123.2	2				IIIG
		SGMR				1303.0	1303.0	1				III
	1216	1853 WEIS				1303.3	1303.6	1				IIIG
		SGMR				1324.0	1324.0	1				III
		WEIS				1337.3	1337.4	2				Spikes
		SGMR				1338.0	1342.0	3				V
		SVTO				1338.0	1345.0	3				V
		WEIS				1338.1	1342.1	3				IIIGG/V,RS
		SGMR				1344.0	1345.0	2				III
		WEIS				1344.7	1345.9	3				IIIG
		SGMR				1351.0	1400.0	1				III
		WEIS				1351.6	1352.8	1				IIIG
		SVTO				1444.0	1446.0	3				III
		SGMR				1445.0	1453.0	2				III
		WEIS				1445.4	1446.6	3				IIIG
		SVTO				1448.0	1700.0	2				CONT
		WEIS				1448.4	1449.2	2				IIIG
		WEIS				1452.7	1453.4	2				IIIG
		WEIS				1502.8	1503.0	1				IIIB
		SGMR				1559.0	1603.0	2				III
		SVTO				1559.0	1602.0	3				III
		WEIS				1559.4	1602.8	3				IIIGG
		WEIS				1644.4	1659.4	3				IIIGG/V
		PALE				1646.0	1651.0	3				V
		SGMR				1646.0	1714.0	3				IV
		SVTO				1646.0	1657.0	3				IV
		WEIS				1649.1	1659.7	3				II
		WEIS				1714.5	1714.7	1				U
		PALE				1806.0	1807.0	3				III
		SGMR				1806.0	1808.0	3				V
		WEIS				1806.6	1807.4	3				IIIG
		PALE				1849.0	1850.0	1				III
		PALE				1902.0	1903.0	2				V
		SGMR				1902.0	1903.0	2				III
		PALE				1935.0	1936.0	1				III
		PALE				2037.0	2041.0	2				V
	2040	2400 CULG										
		SGMR				2040.0	2041.0	2				III
		PALE				2236.0	2237.0	1				III

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Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
10	0000	0710	CULG				0532.0	0533.0	1				IIIG
			LEAR				0532.0	0533.0	1				III
			LEAR				0559.0	0559.0	1				III
			WEIS				0722.0	1852.0	2				IS,DP,DC
	0408	1854	WEIS				0724.0	0752.0	2				IIIN
			LEAR				0725.0	0928.0	2				IV
			SVTO				0727.0	0743.0	3				IV
			SVTO				0808.0	1755.0	3				CONT
			WEIS				0811.0	1231.0	3				Cont,P
			SGMR				0900.0	1524.0	1				CONT
			SGMR				1228.0	1229.0	2				III
			SVTO				1228.0	1228.0	3				III
			WEIS				1228.3	1229.9	3				IIIG
			WEIS				1241.0	1241.0	1				IIIB
			WEIS				1332.3	1339.3					IIIGG/V,RS,Z
			SVTO				1334.0	1339.0	3				V
			WEIS				1345.9	1350.9	3				IIIGG,Spikes
			SVTO				1346.0	1347.0	3				III
			SGMR				1426.0	1429.0	3				V
			SVTO				1426.0	1429.0	3				V
			WEIS				1426.7	1434.9	3				IIIGG/V,Spikes
			WEIS				1439.7	1456.8	3				IIIGG
			SVTO				1443.0	1447.0	3				III
			SGMR				1444.0	1446.0	2				V
			WEIS				1456.9	1459.1	1				IIIG
			SGMR				1501.0	1506.0	3				V
			SVTO				1501.0	1505.0	3				V
			WEIS				1501.1	1506.7	3				IIIGG
			SVTO				1512.0	1522.0	3				II
			SGMR				1513.0	1523.0	2				II
			WEIS				1513.3	1522.2	3				II H
			SGMR				1524.0	1734.0	2				CONT
			WEIS				1524.4	1525.7	3				IIIGG
			WEIS				1612.0	1738.0	2				IIIN
			PALE				1734.0	0202.0	1				CONT
			PALE				2109.0	2113.0	2				V
	2040	2400	CULG				2110.0	2129.0	1				IIIS
			PALE				2126.0	2352.0	3				IV
			SGMR				2126.0	2214.0	3				IV
			CULG				2129.0	2136.0	2				IIIS
			CULG				2136.0	2151.0	1				IIIS
			CULG				2151.0	2238.0	1				IIIS
			CULG				2244.0	2245.0	2				IIIG
11			LEAR				0100.0	0730.0	1				CONT
	0000	0710	CULG				0202.0	0325.0	1				IIIN
			CULG				0439.0	0439.0	1	0439.0	0439.0	1	IIIB
			LEAR				0439.0	0439.0	1				III
			CULG				0503.0	0532.0	1				IIIN
	0410	1852	WEIS				0943.5	0945.8	3				IIIGG
			SVTO				0945.0	1005.0	2				S
			SGMR				1001.0	1300.0	1				CONT
			WEIS				1001.3	1012.7	3				IIIGG
			WEIS				1026.0	1407.0	2				IIIN
			SVTO				1031.0	1755.0	3				CONT
			WEIS				1031.2	1031.6	2				B,U
			WEIS				1100.0	1340.0	2				Cont
			WEIS				1102.4	1102.8	2				IIIG
			WEIS	1113.1	1113.6	3							IIIG
	1145	1517	POTS				1145.0E	1517.0U	1				I,N,DC
			SGMR				1205.0	1206.0	3				III
			SVTO				1205.0	1206.0	3				III
			POTS				1205.4	1206.0	3				IIIG
			WEIS				1205.4	1206.1	3				IIIG
			SGMR				1300.0	1441.0	2				CONT
	1901	2054	WEIS										
			PALE				1934.0	1949.0	3				S
			SGMR				1934.0	1947.0	3				S
			SGMR				1954.0	1958.0	1				II

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11 2050	2400	CULG				2133.0	2134.0	1				IIIG
		CULG				2156.0	2156.0	1				IIIB
		CULG				2210.0	2244.0	1				IIIN
		CULG				2218.0	2227.0	2				IIIN
		PALE				2218.0	2219.0	1				III
12		LEAR				0031.0	0032.0	1				III
0000	0700	CULG				0032.0	0032.0	1				IIIB
		PALE				0032.0	0032.0	1				III
		CULG				0048.0	0051.0	3	0048.0	0051.0	1	IIIGG
		LEAR				0048.0	0109.0	3				S
		CULG							0049.0	0052.0		SWF
		CULG				0049.0	0054.0	2			IV	C
		PALE				0049.0	0056.0	3				V
		CULG				0055.0	0103.0	3			II	B
		LEAR				0056.0	0105.0	3			II	
		PALE				0056.0	0109.0	3			II	
		CULG				0058.0	0058.0	3	0058.0	0058.0	1	IIIB
		CULG				0104.0	0105.0	3	0104.0	0105.0	1	IIIG
		LEAR				0106.0	0518.0	1				CONT
		PALE				0109.0	0110.0	2				III
		CULG				0157.0	0241.0	1				IIIN
		CULG				0302.0	0308.0	1				IIIN
		CULG				0322.0	0322.0	1				IIIG
		LEAR				0322.0	0322.0	2				III
		PALE				0322.0	0322.0	1				III
		CULG				0325.0	0328.0	1				IIIN
		CULG				0358.0	0358.0D	1				IIIN
		CULG				0432.0	0437.0	3	0432.0	0437.0	2	IIIGG
		LEAR				0432.0	0449.0	3				S
		PALE							0432.0	0437.0	3	V
0408	1853	WEIS				0432.7	0437.8	3				IIIGG
		WEIS				0459.0	1102.0	1				I,N
		LEAR				0503.0	0503.0	1				III
		CULG				0518.0	0541.0	3				IIIGG
		LEAR				0518.0	0928.0	2			IV	
		WEIS				0518.0	0541.0	2				IIIGG
		SVTO				0522.0	0535.0	3			IV	
		WEIS				0523.0	0610.0	2				Spikes,RS
		CULG							0527.0	0555.0		SWF
		CULG				0536.0	0600.0	1			IV	C
		SVTO				0544.0	1100.0	2				CONT
		CULG				0613.0	0613.0D	1			IV	C
0635	1507	POTS				0635.0E	1507.0U	2				I,N,DC
		WEIS				0754.0	0809.0	2				IIIG
		SVTO				1100.0	1546.0	1				CONT
		SGMR				1144.0	2356.0	1				CONT
		SVTO				1310.0	1314.0	2				III
		WEIS				1310.9	1313.7	2				IIIG
		WEIS				1417.3	1417.4	1				IIIB
		WEIS				1527.7	1551.8	1				IIIB
		SGMR				1646.0	1701.0	2				S
		WEIS				1646.4	1657.1	3				IIIGG,RS
		PALE				1647.0	1647.0	2				III
		SVTO				1647.0	1648.0	2				III
		PALE				1648.0	1648.0	2				III
		WEIS				1718.0	1719.4	2				IIIG
		WEIS				1720.7	1720.8	1				IIIB
2050	2400	CULG				2228.0	2240.0	1				IIIN
13 0000	0700	CULG										
		LEAR				0118.0	0118.0	1				III
		PALE				0118.0	0118.0	1				III
0409	0731	WEIS				0614.7	0614.9	1				IIIB
0631	1455	POTS										
0705	1039	POTS				0752.0	1004.0	2				I,N,DC
1233	1340	POTS				1047.0	1455.0U	1				I,N,DC
		SGMR				1409.0	1409.0	2				III
		SVTO				1409.0	1409.0	2				III

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13	0737	1855	WEIS				1409.4	1409.7	2				IIIG
	2040	2400	CULG										
14	0000	0705	CULG										
	0407	1259	WEIS										
			SGMR				1208.0	1219.0	1				S
	0645	1513	POTS				1210.5	1210.7	1				UNCLF
			POTS				1223.4	1223.6	1				UNCLF
			POTS				1257.8	1258.0	1				IIIB
	1306	1501	WEIS										
			SGMR				1628.0	1630.0	2				V
			SVTO				1628.0	1629.0	2				III
	1549	1856	WEIS				1628.8	1629.3	2				IIIG
			SGMR				1731.0	1744.0	2				S
			WEIS				1731.9	1732.3	2				IIIG
			PALE				1732.0	1732.0	1				III
			PALE				2001.0	2001.0	1				III
			SGMR				2001.0	2001.0	1				III
	2040	2400	CULG										
15	0000	0705	CULG				0617.0	0617.0	1				IIIB
	0635	1139	POTS				0647.3	0716.0	1				I
			LEAR				0737.0	0737.0	1				III
			SVTO				0737.0	0737.0	2				V
			POTS				0825.0	0843.0	2				I,N,DC
			SVTO				0825.0	0825.0	2				III
			LEAR				0828.0	0845.0	1	II			
			SVTO				0828.0	0855.0	2	II			
	0409	1832	WEIS				0828.0	0844.2	1	II			H
			WEIS				0831.2	0838.9	3				IIIGG
	0906	1144	POTS										
			POTS				1129.5	1139.0U	1				I,N,DC
	1205	1431	POTS										
	1210	1443	POTS				1345.3	1345.9	2				IIIG
			POTS				1403.8	1404.9	1				I
			SGMR				1831.0	1833.0	1				V
	1838	1856	WEIS										
	2040	2400	CULG				2052.0	2053.0	1				III PAIR
			CULG				2056.0	2153.0	1				IIIB,N
			CULG				2232.0	2247.0	1				IIIB,N
16			LEAR				0326.0	0327.0	2				III
	0000	0705	CULG				0327.0	0327.5	2				III PAIR
			PALE				0327.0	0327.0	1				III
			LEAR				0631.0	0632.0	1				III
	0631	1457	POTS				0636.0	0636.1	1				IIIB
			POTS				0704.7	0704.8	2				IIIB
			POTS				0757.7	0759.9	2				IIIG
			POTS				0857.1	0857.5	3				IIIG
	0407	1856	WEIS				0857.3	0857.4	1				IIIB
			POTS				1303.0	1303.1	2				IIIB
			SGMR				1804.0	1816.0	1	II			
			PALE				1805.0	1813.0	1	II			
			WEIS				1808.1	1813.2	1	II			
	2040	2400	CULG										
17	0000	0700	CULG				0621.0	0622.0	1				IIIG
			LEAR				0621.0	0622.0	1				III
			SVTO				0621.0	0622.0	3				III
	0409	1857	WEIS				0621.2	0622.1	1				IIIG
			LEAR				0709.0	0714.0	2				III
			SVTO				0710.0	0714.0	2				III
			WEIS				0710.0	0710.8	1				IIIG
	0635	1449	POTS				0710.5	0710.8	1				UNCLF
			WEIS				0713.2	0714.2	1				IIIG
			POTS				0713.3	0714.2	2				IIIG
			SVTO				0846.0	0847.0	2				III
			POTS				0846.5	0846.7	2				IIIG
			WEIS				0846.5	0846.7	2				IIIB

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17			SGMR				1303.0	1304.0	2				III
			SVTO				1303.0	1304.0	2				III
			POTS				1303.5	1304.6	1				IIIB
			WEIS				1303.5	1304.8	2				
	2040	2400	CULG										
18	0000	0700	CULG										
			SVTO				0346.0	0346.0	2				III
	0407	1016	WEIS										
	0623	1125	POTS										
	1301	1337	POTS										
	1405	1510	POTS										
	1020	1856	WEIS				1625.8	1626.1	1				IIIG
	2040	2400	CULG										
19	0000	0700	CULG										
	0409	1536	WEIS										
	0627	1458	POTS				0911.4	0912.6	1				IIIG
	1545	1857	WEIS										
	2040	2400	CULG										
20	0000	0700	CULG										
			LEAR				0127.0	0127.0	1				III
			PALE				0127.0	0127.0	1				III
			LEAR				0322.0	0323.0	1				III
			SVTO				0653.0	0700.0	2				II
	0408	1856	WEIS				0654.4	0658.3	1				II
			SVTO				0659.0	0821.0	1				CONT
	0715	1456	POTS				0838.8	0839.7	1				I
			LEAR				0848.0	0848.0	1				III
			SVTO				0848.0	0848.0	2				III
	2040	2400	CULG										
21	0000	0705	CULG										
	0410	1858	WEIS										
	0705	1453	POTS				0739.0	0739.3	1				UNCLF
			POTS				0840.6	0841.0	1				I
	2040	2400	CULG										
22	0000	0705	CULG										
	0408	0720	WEIS										
			SVTO				0658.0	0712.0	2				S
	0645	1509	POTS				0658.1	0659.4	1				IIIG
			POTS				0726.6	1051.0	2				I,N
			SVTO				0735.0	1017.0	2				CONT
			POTS				0847.2	0847.4	1				UNCLF
	0737	1857	WEIS				0847.2	0847.6	1				IIIG
			POTS				1236.8	1239.3	1				I
			SVTO				1514.0	1602.0	2				S
			SGMR				1541.0	1542.0	1				III
			WEIS				1541.8	1542.1	2				IIIB
			SGMR				1706.0	1706.0	1				III
			SGMR				1845.0	1845.0	1				III
	2050	2400	CULG										
23	0000	0700	CULG				0059.0	0059.0	1				IIIB
	0630	1455	POTS				0631.0E	1448.0U	1				I,N,DC
			POTS				0642.5	0642.7	1				III
			POTS				0849.6	0849.7	1				IIIB
			POTS				1045.5	1045.6	1				IIIB
			SVTO				1105.0	1105.0	2				III
	0409	1250	WEIS				1203.1	1205.9	1				IIIG
			SGMR				1204.0	1205.0	1				III
			SVTO				1204.0	1205.0	2				III
			POTS				1204.1	1204.7	1				IIIG
			WEIS				1208.8	1208.9	1				IIIB
			POTS				1211.0	1223.5	2				II W
			WEIS				1211.6	1219.4	3				II H,HB
			SGMR				1213.0	1222.0	2				II

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23			SVTO				1213.0	1226.0	2				II
			POTS				1223.5	1223.8	1				IIIG
	1301	1858	WEIS										
			SGMR				1304.0	1305.0	1				III
			POTS				1408.7	1408.8	1				IIIB
	2050	2400	CULG				2112.0	2112.0	1				IIIB
			SGMR				2112.0	2112.0	1				III
24	0000	0700	CULG				0045.0	0059.0	1				IIIN
			CULG				0101.0	0108.0	2				IIIG
			LEAR				0102.0	0110.0	2				III
			PALE				0102.0	0114.0	2				S
			LEAR				0113.0	0115.0	1				III
			LEAR				0122.0	0127.0	1				III
			PALE				0123.0	0123.0	1				III
			LEAR				0136.0	0142.0	1				III
			LEAR				0411.0	0413.0	2				III
			CULG				0412.0	0413.0	1				IIIG
			CULG				0525.0	0533.0	3				IIIB
			LEAR				0525.0	0530.0	1				II
			SVTO				0525.0	0534.0	2				II
			CULG				0542.0	0542.0	1				UNCLF
			LEAR				0542.0	0543.0	1				III
	0659	1517	POTS				0701.0E	0811.0	1				I,N,DC
			LEAR				0902.0	0903.0	1				III
			SVTO				0902.0	0903.0	2				V
			POTS				0902.7	0902.9	1				IIIB
	0409	1857	WEIS				0902.7	0903.2	3				IIIB
			SVTO				0946.0	0946.0	2				III
			POTS				0946.3	0946.4	1				IIIB
			WEIS				1200.4	1206.9	1				IIIG
			SGMR				1206.0	1207.0	1				III
			POTS				1206.4	1206.6	1				IIIG
			SGMR				1429.0	1429.0	1				III
			SGMR				1949.0	1949.0	1				III
	2050	2400	CULG				2123.0	2124.0	1				IIIG
			PALE				2153.0	2154.0	2				V
25			LEAR				0023.0	0023.0	1				III
			PALE				0023.0	0023.0	2				III
	0000	0705	CULG				0023.5	0023.5	2				IIIB
			LEAR				0049.0	0052.0	1				III
			CULG				0122.0	0128.0	3				II
			LEAR				0123.0	0136.0	1				II
			PALE				0123.0	0126.0	2				II
			CULG				0133.0	0136.0	2				II
			PALE				0133.0	0241.0	2				IV
			LEAR				0134.0	0400.0	2				IV
			CULG				0137.0	0146.0	1				I,S
			LEAR				0227.0	0227.0	1				III
			PALE				0227.0	0228.0	2				III
			CULG				0228.0	0228.0	1				IIIB
			CULG				0329.5	0329.5	2				IIIB
			LEAR				0419.0	0420.0	1				III
			CULG				0420.0	0420.0	1				IIIB
			CULG				0431.0	0434.0	1				IIIG
			LEAR				0435.0	0439.0	2				III
	0650	1523	POTS				0650.0E	1147.0	2				I,N,DC
			LEAR				0701.0	0703.0	1				III
			SVTO				0702.0	0703.0	2				III
			LEAR				0757.0	0758.0	1				III
			POTS				0833.7	0835.6	3				IIIG
			SVTO				0933.0	0938.0	2				III
			POTS				0934.7	0938.2	1				IIIG
	0410	1858	WEIS				0934.9	0938.3	2				IIIGG
			POTS				1021.6	1021.8	1				IIIB
			WEIS				1021.6	1021.8	2				U,H
			POTS				1211.8	1211.9	1				IIIB
			POTS				1215.9	1216.0	1				IIIB

SOLAR RADIO EMISSION
Spectral Observations

JUNE 1990

Observation Start Day (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
25		SGMR				1216.0	1216.0	1				III
		WEIS				1216.0	1216.1	1				IIIB
		POTS				1219.3	1221.1	1				IIIG
		POTS				1219.4	1229.4	1				I,N
		POTS				1239.0	1523.0	2				I,N,DC
		SGMR				1255.0	1256.0	1				III
		SVTO				1255.0	1256.0	2				III
		WEIS				1255.5	1256.1	2				IIIG
		POTS				1255.6	1258.2	2				IIIG
		SVTO				1526.0	1526.0	1				III
		WEIS				1526.5	1526.6	1				IIIB
		SGMR				1541.0	1542.0	2				III
		SVTO				1541.0	1542.0	1				III
		WEIS				1541.8	1542.1	2				IIIG
		PALE				1952.0	1952.0	1				III
		SGMR				1952.0	1952.0	1				III
	2050	2400 CULG				2210.5	2210.5	2				IIIB
26	0000	0705 CULG				0018.0	0023.0	1				UNCLF
		CULG				0248.0	0249.5	2				IIIG
		LEAR				0248.0	0249.0	2				III
		PALE				0248.0	0249.0	1				III
		LEAR				0304.0	0304.0	1				III
	0409	1447 WEIS										
		CULG				0544.0	0544.0	2				IIIB
	0635	1505 POTS				0635.0E	1505.0	2				I,S,DC,C
		POTS				0823.7	0832.9	1				IIIGG
		SGMR				1042.0	1043.0	2				III
		POTS				1201.3	1201.4	1				IIIB
		POTS				1229.3	1229.5	1				UNCLF
		POTS				1413.4	1416.6	1				IIIGG
		SGMR				1645.0	1645.0	2				III
		SVTO				1645.0	1645.0	2				III
	0455	1857 WEIS				1645.2	1645.5	3				IIIG
		SGMR				1935.0	1947.0	3				II
		PALE				1936.0	1937.0	1				V
		PALE				1939.0	1946.0	3				II
		SGMR				2008.0	2009.0	2				III
		PALE				2009.0	2009.0	1				III
	2050	2400 CULG										
		PALE				2056.0	2106.0	3				S
		SGMR				2056.0	2106.0	2				III
27	0000	0710 CULG										
		LEAR				0259.0	0301.0	2				III
		CULG				0301.0	0301.0	1	0301.0	0301.0	1	IIIB
	0641	0720 POTS				0641.0E	1341.0	2				I,S,DC,C
		LEAR				0654.0	0655.0	1				III
		LEAR				0702.0	0703.0	1				III
		LEAR				0706.0	0708.0	3				III
	0412	1858 WEIS				0706.9	0808.2	3				IIIG
		CULG				0707.0	0707.0	2				IIIB
		POTS				0707.0	0708.2	3				IIIG
		SVTO				0707.0	0708.0	3				III
	0753	1457 POTS										
		SGMR				1106.0	1106.0	1				III
		SVTO				1106.0	1106.0	2				III
		WEIS				1106.0	1106.3	1				IIIG
		SGMR				1256.0	1256.0	1				III
		SVTO				1256.0	1256.0	2				III
		SGMR				1340.0	1341.0	1				III
		SVTO				1340.0	1341.0	2				III
		SGMR				1524.0	1529.0	1				III
		WEIS				1524.8	1525.0	1				IIIG
		SGMR				1537.0	2116.0	1				CONT
		SGMR				1647.0	1653.0	2				V
		WEIS				1648.7	1650.0	3				IIIG
		SVTO				1649.0	1650.0	2				III
		WEIS				1652.5	1652.8	2				IIIG

SOLAR RADIO EMISSION
Spectral Observations

JUNE 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1–3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1–3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1–3)	Spectral Type
27			WEIS				1830.9	1831.3	2				IIIB
			PALE				1831.0	1831.0	1				III
			PALE				1842.0	1842.0	1				III
			PALE				2004.0	2004.0	1				III
			PALE				2019.0	2031.0	2				S
			PALE				2116.0	2116.0	1				III
	2050	2400	CULG				2347.0	2347.0	1				IIIB
			CULG				2353.0	2354.0	1				IIIG
28	0000	0710	CULG				0036.0	0036.0	1				IIIB
			CULG				0211.0	0211.0	1				IIIB
			LEAR				0211.0	0214.0	2				III
			PALE				0211.0	0211.0	1				III
			LEAR				0254.0	0309.0	1				S
			SVTO				0327.0	0429.0	2				III
			CULG				0421.0	0425.0	1				IIIB,G,N
			LEAR				0422.0	0429.0	2				III
	0410	1128	WEIS				0422.2	0422.3	1				IIIB
			CULG				0426.0	0430.0	2				IIIGG
			WEIS				0426.3	0429.7	3				IIIGG
			PALE				0427.0	0428.0	1				III
			SVTO				0427.0	0429.0	2				III
			WEIS				0459.0	1822.0	1				I,S
			CULG				0558.0	0558.0	1				IIIB
			LEAR				0558.0	0559.0	2				III
			SVTO				0558.0	0559.0	2				III
			WEIS				0558.3	0558.7	2				IIIG
			CULG				0558.5	0559.0	2				IIIB
			SVTO				0615.0	0615.0	2				III
			WEIS				0615.3	0615.5	2				IIIB,U
			CULG				0615.5	0615.5	1				IIIB
	0628	1513	POTS				0633.0E	1507.0	3				I,S,DC
			LEAR				0722.0	0723.0	2				III
			SVTO				0722.0	0723.0	3				V
			WEIS				0722.4	0722.9	3				IIIG
			POTS				0944.1	0944.2	3				IIIB
			POTS				1053.9	1056.6	3				IIIG
			WEIS				1054.0	1057.2	3				IIIGG,RS
			SGMR				1055.0	1057.0	2				V
			SVTO				1055.0	1058.0	2				V
			POTS				1055.7	1058.2	3				UNCLF
			SGMR				1206.0	1207.0	1				III
			SVTO				1207.0	1208.0	2				III
			POTS				1207.1	1207.9	3				IIIG
	1133	1857	WEIS				1207.3	1207.9	3				IIIG,U
			WEIS				1214.5	1215.4	1				IIIG
			WEIS				1226.9	1227.7	1				IIIG
			SGMR				1227.0	2237.0	1				CONT
			SVTO				1227.0	1254.0	2				CONT
			WEIS				1233.6	1235.4	2				IIIG
			WEIS				1241.4	1241.6	1				IIIG
			WEIS				1243.3	1246.4	1				IIIG
			WEIS				1252.3	1252.7	1				IIIG
			SVTO				1315.0	1321.0	2				III
			WEIS				1316.8	1320.9	1				IIIG
			WEIS				1323.9	1326.9	1				IIIG
			SVTO				1352.0	1448.0	2				CONT
			WEIS				1412.3	1412.4	1				IIIG
			SVTO				1428.0	1430.0	2				III
			WEIS				1428.4	1429.8	2				IIIB
			WEIS				1546.8	1546.9	1				IIIB
			WEIS				1559.3	1559.4	1				IIIB
			WEIS				1601.7	1601.8	1				IIIB
			WEIS				1610.9	1612.2	1				IIIG
			WEIS				1624.4	1624.7	1				IIIG
			SVTO				1634.0	1635.0	2				III
			WEIS				1634.6	1635.4	2				IIIG
			PALE				1836.0	1836.0	1				III
			WEIS				1836.4	1836.7	1				IIIB

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

JUNE 1990

Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
28			WEIS				1847.8	1848.6	3				IIIG
			PALE				2035.0	2035.0	1				III
			PALE							2100.0	2102.0	2	V
			SGMR				2100.0	2200.0	2				III
			PALE				2237.0	2241.0	3				V
			SGMR				2237.0	2239.0	2				III
	2050	2400	CULG				2238.0	2240.0	2				IIIGG
			PALE				2312.0	2327.0	2				S
			CULG				2326.0	2326.0	1	2326.0	2326.0	1	IIIB
29			LEAR				0016.0	0019.0	2				III
			PALE				0016.0	0019.0	2				III
	0000	0631	CULG				0017.0	0017.5	1	0017.0	0017.5	1	IIIG
			CULG				0018.5	0021.0	1				IIIB,N
			LEAR				0054.0	0730.0	1				CONT
			CULG				0058.0	0058.0	2				IIIB
			PALE				0102.0	0103.0	2				III
			CULG				0103.0	0106.0	1				IIIB,N
			CULG				0140.0	0142.5	2	0140.0	0143.0	1	IIIGG
			LEAR				0140.0	0142.0	2				III
			PALE				0140.0	0143.0	2				V
			CULG				0143.5	0143.5	1				IIIB
			LEAR				0322.0	0323.0	2				III
			CULG				0323.0	0323.0	1				IIIB
			PALE				0323.0	0323.0	1				III
	0412	1653	WEIS				0412.0	1805.0	2				I,S
			CULG				0508.0	0509.0	1				IIIG
	0641	1509	POTS				0641.0E	1445.0	3				I,S,DC,C
			LEAR				0650.0	0653.0	2				III
	0637	0710	CULG				0650.5	0651.0	1				IIIB
			WEIS				0650.5	0651.1	2				IIIB
			SVTO				0700.0	1800.0	2				CONT
			CULG				0704.0	0704.0	1				IIIB
			POTS				1027.8	1028.7	2				UNCLF
			WEIS				1027.8	1028.8	2				IIIG
			WEIS				1040.8	1040.9	2				IIIB
			POTS				1055.0	1055.3	2				IIIG
			WEIS				1055.1	1055.3	2				IIIB
			SGMR				1107.0	2059.0	1				CONT
			WEIS				1125.1	1125.2	1				IIIB
			WEIS				1141.8	1142.2	1				IIIB
			POTS				1145.0	1509.0	3				I,N,DC
			WEIS				1146.3	1146.7	1				IIIB
			WEIS				1155.6	1155.7	1				IIIB
			WEIS				1430.4	1431.1	2				IIIG
			WEIS				1502.1	1503.7	2				IIIG
			WEIS				1506.1	1507.4	2				IIIG
			WEIS				1511.4	1515.2	1				IIIG
			WEIS				1530.8	1531.1	2				IIIB
			WEIS				1534.3	1539.4	2				IIIG,U
			WEIS				1549.7	1549.9	1				IIIB
	1659	1858	WEIS										
	2050	2400	CULG										
30			LEAR				0122.0	0129.0	2				V
			PALE				0122.0	0128.0	2				V
	0000	0710	CULG				0123.0	0126.5	2	0123.0	0126.5	1	IIIGG
			LEAR				0246.0	0246.0	1				III
			LEAR				0335.0	0335.0	1				III
			LEAR				0537.0	0538.0	1				III
			CULG				0538.5	0538.5	1				IIIB
			LEAR				0617.0	0617.0	1				III
	0629	1441	POTS				0629.0E	1441.0	3				I,S,DC,C
			LEAR				0811.0	0811.0	1				III
			SVTO				0811.0	0811.0	2				III
			POTS				1232.0	1232.3	1				IIIG
			SGMR				1232.0	1232.0	1				V
			SVTO				1232.0	1241.0	2				III
	0411	1856	WEIS				1232.1	1232.4	2				IIIG

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

JUNE 1990

Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1–3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1–3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1–3)	Spectral Type
30		SGMR				1240.0	1240.0	2				III
		POTS				1240.3	1241.7	2				IIIG
		WEIS				1240.4	1240.8	2				IIIB
		POTS				1330.6	1330.7	1				IIIB
		POTS				1332.6	1332.7	1				IIIB
		SGMR				1345.0	1345.0	1				III
		SGMR				1536.0	1539.0	2				V
		SVTO				1536.0	1537.0	3				III
		WEIS				1536.4	1538.3	3				IIIG,U
		SGMR				1719.0	2230.0	1				CONT
	2050	2400 CULG										

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

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

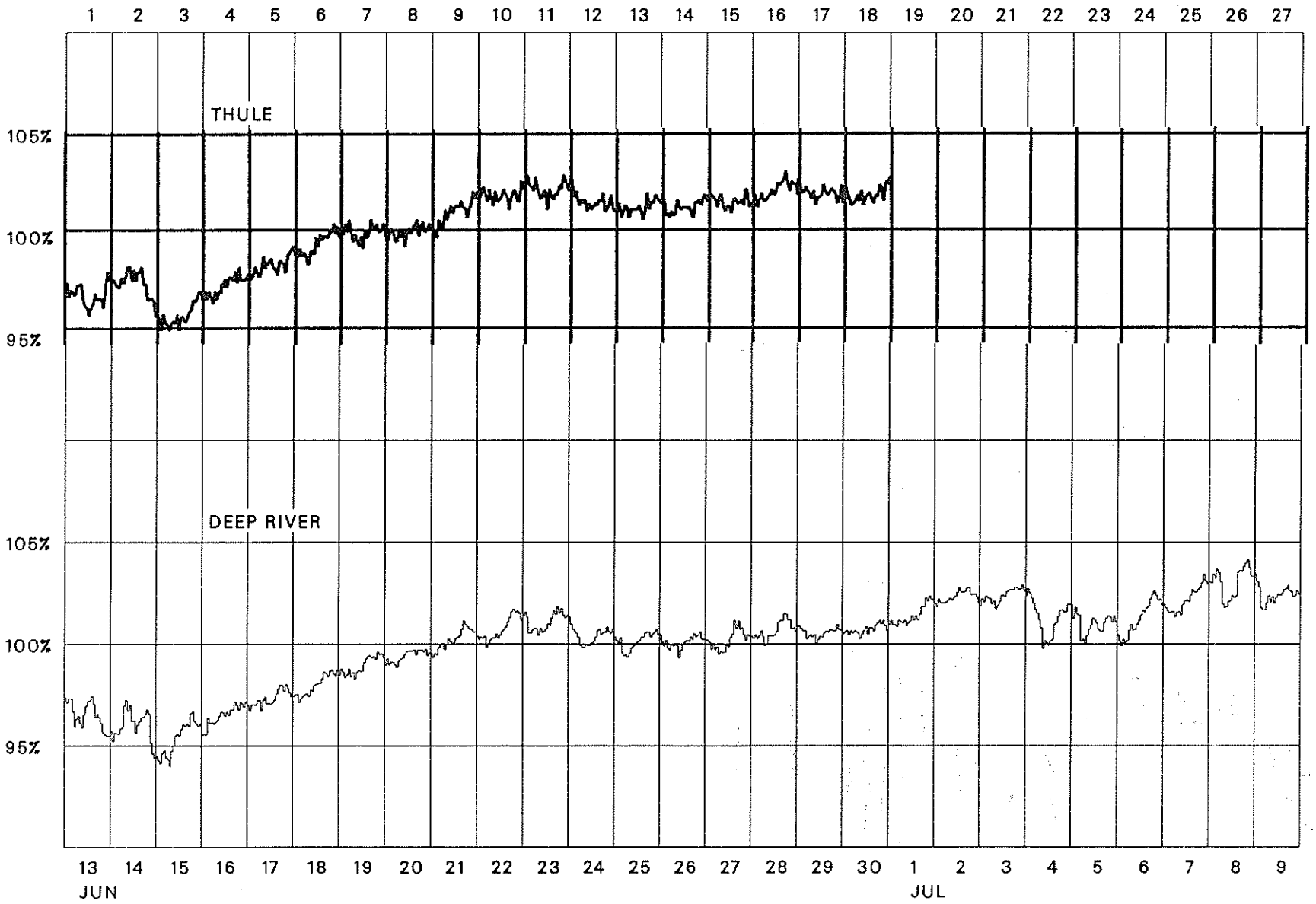
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

Stations Reporting:

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

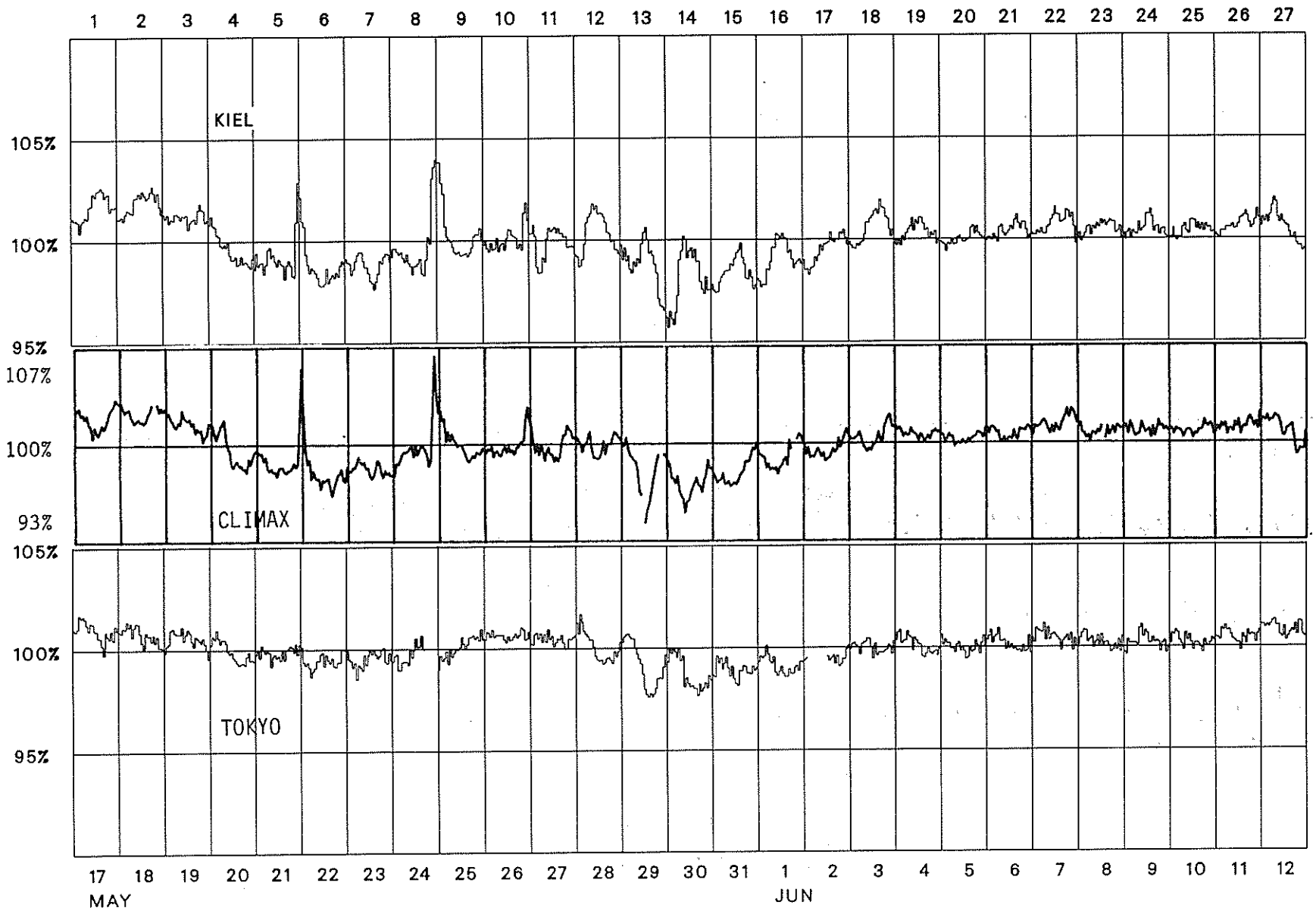
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2143 (June 1990-July 1990)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2142 (May 1990-June 1990)



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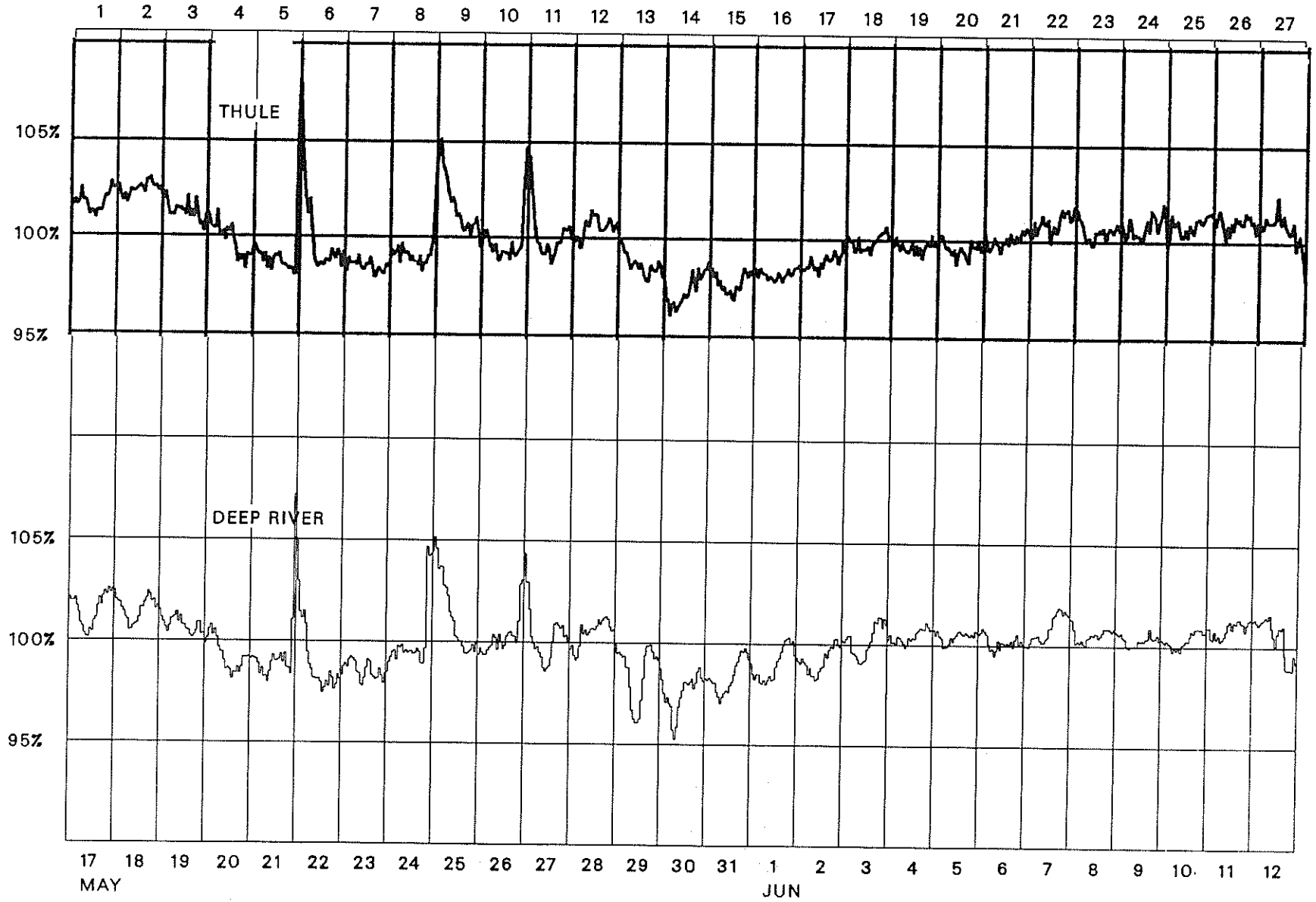
Jun 90

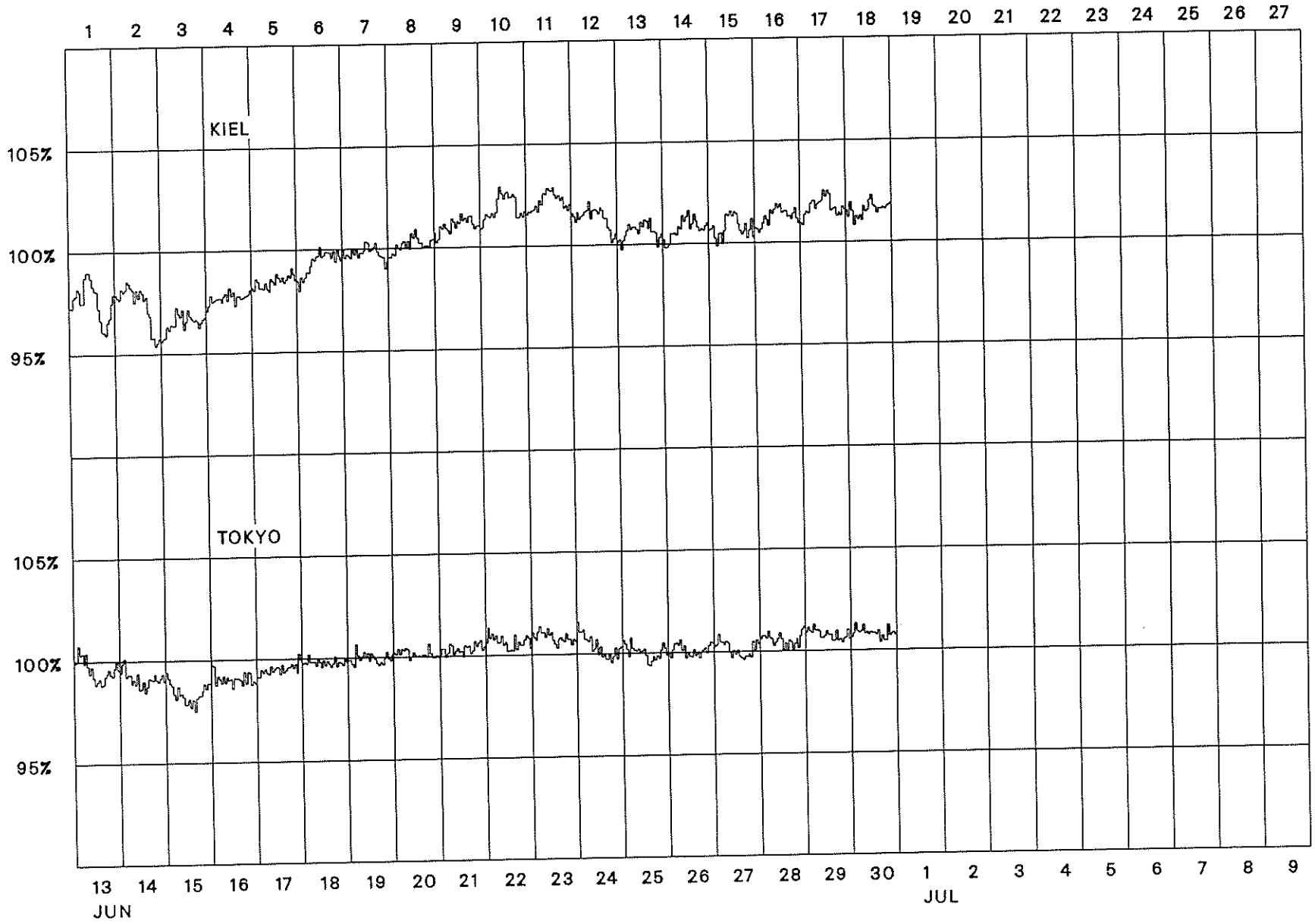
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2142 (May 1990-June 1990)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2143 (June 1990-July 1990)



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Jun 90

COSMIC RAY INDICES
(Neutron Monitor)

JUNE 1990

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	3566	5639.8	5084.3	3169.2	3329.4	
2	3593	5652.6	5107.8	3187.0	3341.6	
3	3628	5708.6	5163.0	3216.3	3358.5	
4	3618	5722.7	5150.4	3222.7	3362.2	
5	3617	5722.6	5133.5	3212.0	3359.1	
6	3633	5707.6	5152.6	3223.5	3364.3	
7	3667	5744.7	5170.1	3246.7	3374.7	
8	3650	5731.0	5158.4	3227.3	3366.7	
9	3659	5717.2	5157.6	3230.8	3366.5	
10	3664	5717.5	5154.7	3229.2	3366.9	
11	3667	5749.2	5167.4	3239.2	3375.3	
12	3654	5727.1	5163.2	3229.3	3387.9	
13	3561	5604.2	5065.7	3187.5	3370.9	
14	3582	5575.4	5056.9	3154.0	3354.8	
15	3525	5537.2	5009.9	3123.7	3330.4	
16	3581	5602.7	5070.8	3162.7	3353.1	
17	3620	5651.4	5110.6	3197.1	3368.2	
18	3660	5688.7	5156.9	3224.3	3377.7	
19	3680	5744.8	5179.9	3257.1	3383.4	
20	3682	5771.7	5198.6	3269.5	3389.3	
21	3721	5818.6	5246.6	3292.6	3396.0	
22	3752	5847.5	5289.1	3322.0	3406.5	
23	3763	5869.3	5303.1	3341.6	3413.0	
24	3736	5830.7	5259.8	3314.4	3396.2	
25	3729	5813.4	5223.2	3295.5	3386.0	
26	3729	5811.2	5229.2	3295.7	3388.1	
27	3740	5817.4	5230.5	3302.4	3388.7	
28	3762	5844.1	5256.6	3307.4	3403.1	
29	3754	5838.2	5280.0	3313.7	3410.9	
30	3752	5846.8	5272.0	3324.2	3412.5	
Mean	3665	5735.2	5173.4	3244.0	3376.5	

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

GEOMAGNETIC ACTIVITY INDICES

June 1990

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M
1		2	3	3	2-	2-	3-	3-	2	19-	10	0.6												
2	Q9	2	2-	2	2	1+	1+	1+	1	13-	6	0.3												
3	Q10	1+	2	1	1	2	1+	2+	2	13	6	0.3												
4	Q7	1	2+	2	1+	1+	0+	1-	2	11	5	0.2												
5	Q5	1	1+	1	2-	2-	2-	1-	2	11	5	0.2												
6		2+	3-	2+	2+	2+	2+	2+	3+	20	10	0.6												
7	D5	3+	5+	4-	3	3+	3	3+	3	28	22	1.1												
8		3	4-	4-	3+	2+	3	3-	3+	25	16	0.9												
9	D4	4-	4-	6-	5	5	4-	3	3-	32+	32	1.3												
10		5-	3	2	3	3	3-	2	4	24+	17	0.9												
11		2+	3	3-	2+	3-	2+	3-	3-	21-	11	0.6												
12	D1	4	3	4+	4+	5+	7	8-	8+	44	89	1.8												
13	D3	8-	6	6-	5-	6+	5-	5-	4-	43+	70	1.7												
14	D2	6	6+	3+	6-	7+	8-	4	3	43+	79	1.8												
15		2+	4-	2	1+	2+	2	2	2+	18	9	0.5												
16	Q4	2+	1	1+	1-	1	1	1+	1-	9+	5	0.2												
17	Q2	0+	1-	1	1-	0+	0+	1-	1-	5-	3	0.0												
18		1-	2	2+	2	2+	3	4-	3-	19-	10	0.6												
19		2+	3-	1+	1+	2+	1-	1	1-	12+	6	0.3												
20	Q1	0+	0+	1-	0+	1-	0+	1-	1-	4	2	0.0												
21	Q6	0+	1	1-	1-	1+	2	2+	2	10+	5	0.2												
22	Q8	2	2+	1+	1	1+	1+	1-	2-	12-	6	0.2												
23		2-	1	1+	2+	3-	2+	1+	1-	13+	7	0.3												
24		2-	2	2	2+	2-	2+	2	2+	16+	8	0.4												
25		2-	2+	2	1+	2	1+	3-	2	15+	7	0.4												
26		2-	2	2-	3-	2-	1+	2-	2	15-	7	0.3												
27		1+	1	1+	2-	3+	2-	2+	5-	17+	12	0.7												
28		2	2	3	2+	2-	2-	1	1	15-	7	0.4												
29		1-	3	3-	2-	2+	2-	2+	1	15+	8	0.4												
30	Q3	1	1-	0+	1-	1+	1	1-	1+	7	4	0.1												
Mean											16	0.58												

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1																			140.6	96	94	90	
2																			141.2	80	90	90	
3																			146.1	73	84	96	
4																			148.1	77	85	98	
5																			153.7	79	81	104	
6																			161.4	96	100	112	
7																			183.6	107	100	136	
8																			195.5	107	116	149	
9																			203.9*	87	103	158	
10																			207.5*	111	112	162	
11																			217.2	131	131	173	
12																			221.8*	115	130	178	
13																			208.8	115	124	164	
14																			206.8	111	121	161	
15																			196.3	102	105	150	
16																			189.9	110	109	143	
17																			187.5	100	104	141	
18																			169.5	83	90	121	
19																			163.5	79	80	115	
20																			161.2	73	74	112	
21																			155.8	57	69	106	
22																			145.2	71	76	95	
23																			139.1	64	73	88	
24																			143.8	85	86	93	
25																			149.3	94	102	99	
26																			154.5	103	121	105	
27																			173.4*	140	151	125	
28																			187.7	184	202	141	
29																			210.8	203	225	166	
30																			226.6	224	245	183	
Mean																			176.3	105.2	112.8	128.4	

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

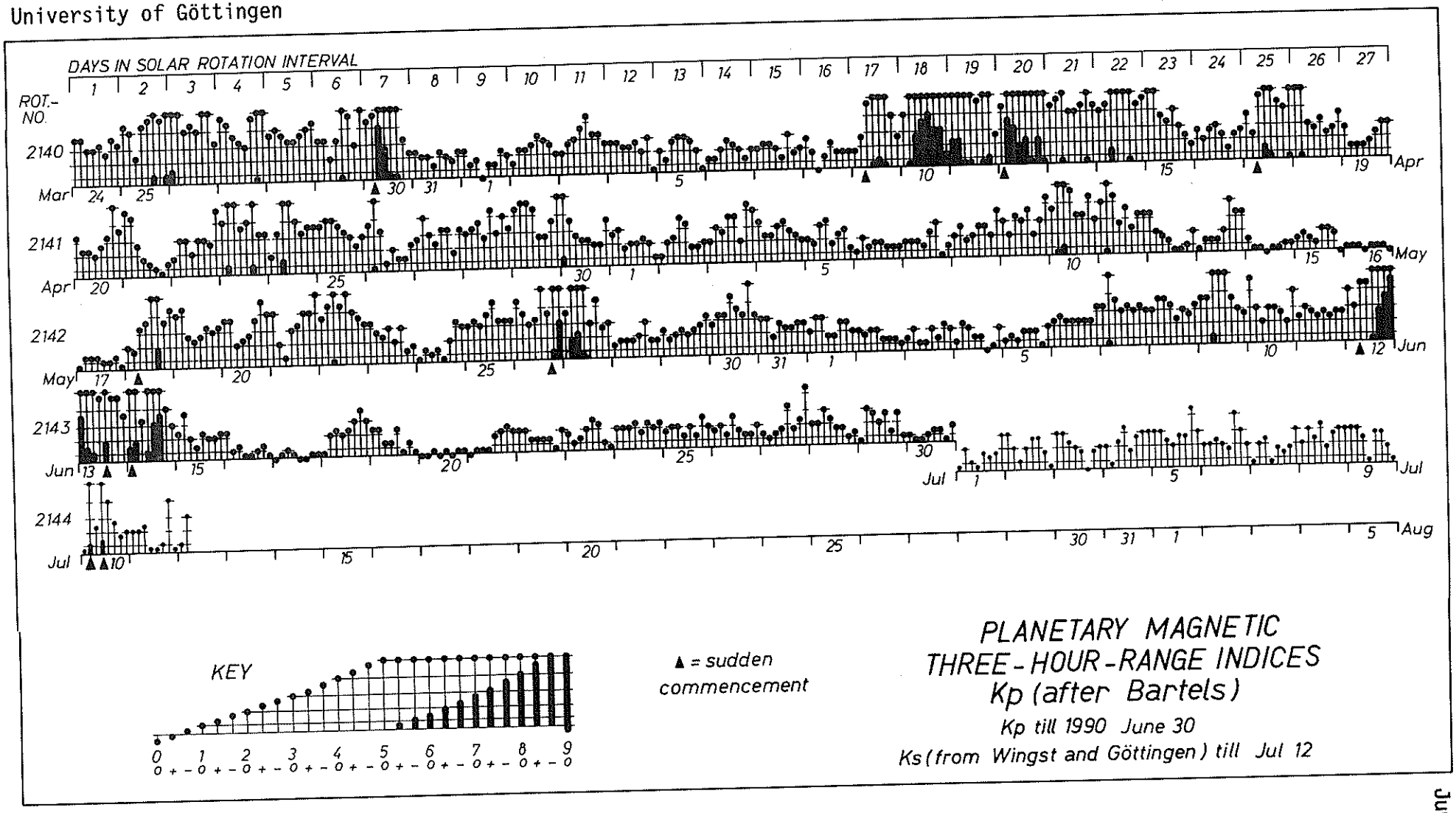
July 1989 to June 1990

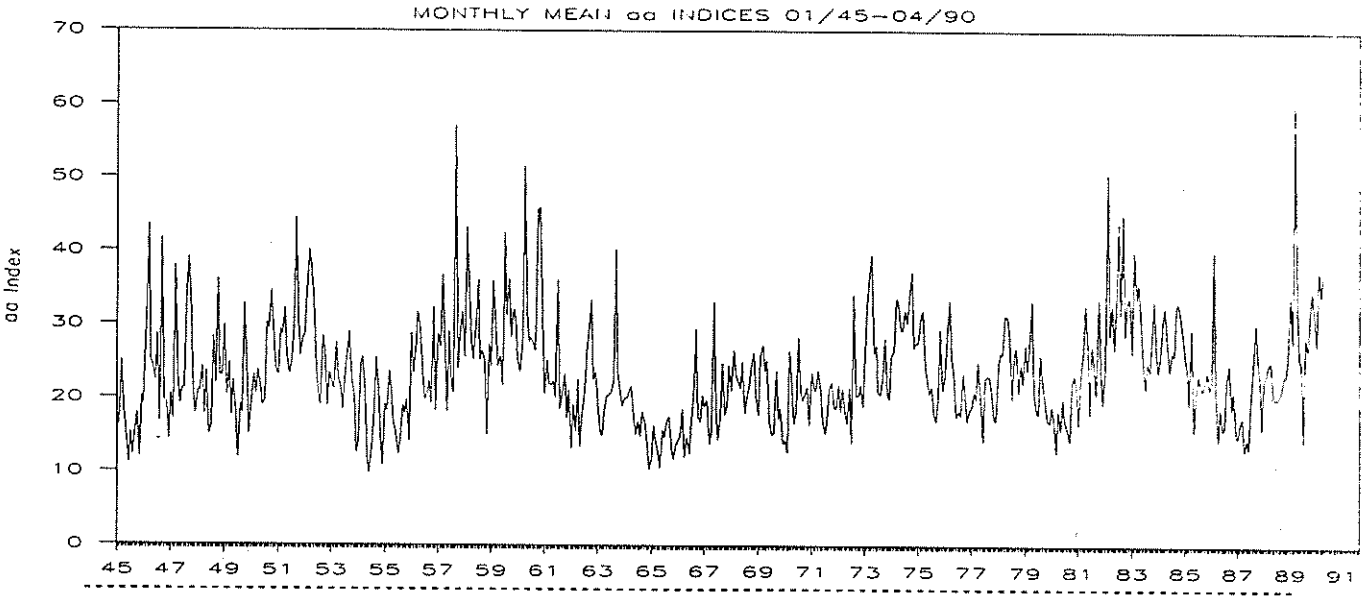
DAY	1989 JUL	AUG	SEP	OCT	NOV	DEC	1990 JAN	FEB	MAR	APR	MAY	JUN
1	26	6	8	13	8	38	16	22	20	6	8	10
2	5	6	8	9	21	22	17	25	14	11	10	6
3	3	5	8	12	26	26	15	8	10	17	18	6
4	3	8	30	6	28	31	12	28	6	10	12	5
5	15	2	21	5	19	14	17	24	11	10	10	5
6	11	8	12	10	11	5	7	10	21	7	5	10
7	8	9	22	12	19	10	6	25	8	8	7	22
8	4	7	16	9	15	6	11	8	10	6	11	16
9	6	10	11	11	25	4	14	7	8	34	16	32
10	11	41	10	12	10	3	16	8	8	124	33	17
11	4	25	3	7	18	6	18	10	14	64	24	11
12	3	8	12	8	10	8	15	6	42	99	7	89
13	7	9	9	1	43	7	9	9	29	38	11	70
14	4	55	5	1	14	12	8	30	26	45	3	79
15	6	77	42	4	6	10	9	36	11	24	5	9
16	2	26	24	10	5	16	10	50	7	10	3	5
17	13	34	7	12	109	11	9	33	3	40	4	3
18	13	29	52	17	45	7	8	23	35	24	31	10
19	4	14	70	24	8	6	4	33	16	9	18	6
20	4	26	6	112	8	6	14	38	30	18	20	2
21	5	21	8	146	12	8	17	16	76	13	22	5
22	7	12	23	51	6	26	19	21	28	16	32	6
23	11	28	4	22	6	15	20	36	29	37	11	7
24	8	6	7	17	8	20	32	29	18	30	8	8
25	6	5	5	23	2	16	19	29	39	19	20	7
26	13	6	54	24	11	22	10	19	41	16	47	7
27	8	26	8	17	16	25	4	26	34	15	45	12
28	9	22	8	9	28	10	7	31	24	20	7	7
29	10	58	8	13	19	50	24		27	30	10	8
30	7	17	12	23	20	30	24		69	19	23	4
31	4	6		14		35	18		7		11	
MEAN	8	20	17	21	19	16	14	23	23	27	16	16

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

Kp through June 30, 1990

University of Göttingen





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									34.1

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

JUNE 1990

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
GUA	04.0N	06	00--	..	..	..	..	06(1)	5	10	60	10	06	09
FRD	49.6N	07	----	..	..	..	..	07(2) 09(4,5)	5	23	122	66	10	06
GUA	04.0N	07	01--	..	..	..	..	07(1)	5	--	140	20	07	09
HYB	07.6N	08	0500	..	..	..	..	09(3,4)	5	7	136	32	10	04
ETT	00.6S	08	0000	..	..	..	..		-	7	228	51	09	22
GUA	04.0N	09	01--	..	..	..	..	09(3)	6	10	220	20	09	14
GUA	04.0N	09	19--	..	..	..	..	10(1)	5	10	100	30	10	05
HER	33.7S	09	06--	..	..	..	..	09(3)	5	17	103	61	09	14
HYB	07.6N	10	0716	SC	- .4	5	0		-	--	--	--	--	--
ETT	00.6S	10	0716	SC	- .6	11	5		-	--	--	--	--	--
COL	64.6N	12	08--	..	..	..	..	12(6)	7	395	2290	970	13	10
FRD	49.6N	12	0821	SC	- .8	51	- 9	12(7,8)	7	38	369	300	15	05
BJI	28.5N	12	0820	SC	- .6	40	4	12(7)	6	19	251	67	14	21
HON	21.1N	12	0820	SC	..	..	..	12(6,7)	7	--	--	--	15	08
KRC	16.4N	12	0824	SC	- 1.2	22	12	14(5)	7	12	200	80	15	15
UJJ	13.5N	12	0819	SC	- .8	26	- 7		-	13	225	62	15	11
ABG	09.5N	12	0819	SC	- 1.1	26	- 12	12(6,8) 13(5) 14(5)	6	15	250	85	15	11
HYB	07.6N	12	0820	SC	- .6	17	- 3	12(6,8)	6	13	236	32	13	12
GUA	04.0N	12	0820	SC	- .1	18	- 5	12(4)	5	--	60	20	12	15
GUA	04.0N	12	16--	..	..	..	..	12(7)	6	10	110	40	13	13
ANN	01.5N	12	0819	SC	- 1.8	54	19		-	13	322	86	15	11
ETT	00.6S	12	0820	SC	- 1.4	59	31		-	14	308	86	--	--
TRD	01.1S	12	0819	SC	- .3	64	62		-	12	322	223	15	11
HER	33.7S	12	0821	SC	4	9	6	12(7,8) 13(1)	6	37	208	185	13	12
GNA	43.2S	12	0832	SC*	- 1.3*	12 *	- 6 *	12(8)	7	35	140	210	14	22
CNB	43.9S	12	0822	SC	- 1.5	6	0	13(1) 14(6)	6	32	186	65	14	21
CNB	43.9S	12	1804	SC*	4.8	18	4.5		5	--	--	--	13	12
COL	64.6N	13	1416	SC	- 32	256	- 98	14(5,6)	7	306	2260	990	14	20
HYB	07.6N	13	1416	SC	- .6	65	- 4		-	--	---	--	--	--
GUA	04.0N	13	1416	SC	.1	53	- 14	13(5)	5	10	150	20	14	03
ETT	00.6S	13	1416	SC	- .8	53	50		-	--	--	--	--	--
HER	33.7S	13	1415	SC	3	40	33	13(5)	5	7	32	64	13	18
CNB	43.9S	13	1415	SC*	2.6	45	4	14(6)	6	24	36	50	15	07
HYB	07.6N	14	0309	SC	- .8	52	- 6	14(2,5,7)	6	8	255	31	15	15
GUA	04.0N	14	0310	SC*	.7	119	- 32	14(2)	7	10	280	50	14	21
ETT	00.6S	14	0309	SC*	2.5	93	62		-	7	317	158	15	19
HER	33.7S	14	0310	SC	7	26	21	14(5)	6	19	210	126	14	17
GUA	04.0N	15	0254	SC	..	12	- 4	15(2)	5	--	90	20	15	08
GUA	04.0N	27	21--	..	..	..	..	27(8)	5	--	60	20	28	03

Stations:

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

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SOLAR RADIO EMISSION
Spectral Observations

MARCH 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01	0642	0844	WEIS										
	0852	1645	WEIS				0924.0	0924.2	1				RS
			WEIS				0948.3	0948.8	1				IIIG
			WEIS				1011.0	1625.0	2				IIIN
			WEIS				1105.4	1107.6	3				IIIGG
			WEIS				1310.0	1313.2	3				IIIGG
			WEIS				1500.0	1506.2	3				IIIGG
			WEIS				1512.1	1513.9	3				IIIG
02	0640	1646	WEIS				0825.2	0825.4	3				IIIG,U
			WEIS				0909.2	0910.8	3				IIIG
			WEIS				0930.9	0932.2	3				IIIGG
			WEIS				0933.9	0934.2	2				IIIG
			WEIS				0943.4	0943.5	1				IIIB
			WEIS				0946.4	0946.7	1				IIIG
			WEIS				1114.6	1114.7	1				IIIB
			WEIS				1124.2	1124.3	1				IIIB
			WEIS				1323.9	1324.2	2				IIIB
			WEIS				1406.1	1406.4	2				IIIG
			WEIS				1435.3	1435.4	1				IIIB
			WEIS				1506.3	1507.4	3				IIIG
			WEIS				1524.3	1524.6	2				IIIG
03	0638	1648	WEIS				0852.1	0852.8	3				IIIGG
			WEIS				0921.7	0921.9	1				IIIB
			WEIS				0923.6	0923.7	1				IIIB
			WEIS				0934.4	0934.6	2				IIIB
			WEIS				0946.0	0947.2	1				IIIG
			WEIS				0949.3	0950.3	1				IIIG
			WEIS				0959.7	0959.9	3				IIIG
			WEIS				1053.9	1054.4	1				IIIG
			WEIS				1144.7	1145.8	1				IIIG
			WEIS				1227.5	1228.4	3				IIIB,U
			WEIS				1350.5	1350.7	1				IIIB
			WEIS				1444.3	1447.3	3				IIIG,U
			WEIS				1458.3	1458.4	1				IIIB
			WEIS				1638.7	1644.2	2				IIIG
04	0636	1449	WEIS										
05	0636	1651	WEIS										
06	0632	1024	WEIS				0728.7	0734.1	2				IIIG
			WEIS				0743.3	0743.6	2				IIIG
			WEIS				0838.2	0838.6	2				IIIG
26	1111	1722	WEIS										
27	0549	1724	WEIS				0939.7	0939.9	1				IIIG
28	0547	0831	WEIS				0739.0	0740.4	2				IIIG
			WEIS				0748.5	0748.8	3				IIIG,RS
			WEIS				0813.8	0814.2	2				IIIG
			WEIS				0820.2	0822.4	1				IIIG
			WEIS				0825.3	0826.8	2				IIIG
	0940	1051	WEIS				0955.1	0955.3	2				IIIG
			WEIS				0957.5	0957.9	3				IIIG
			WEIS	1147.2	1147.3	1							IIIB,RS
			WEIS				1147.4	1147.5	1				IIIB
			WEIS				1150.0	1151.4	3				IIIG
			WEIS				1156.6	1156.7	2				IIIB
			WEIS				1335.8	1336.4	2				IIIG
			WEIS				1341.7	1341.8	2				IIIB
29	0547	1726	WEIS										
30	0543	0725	WEIS										
	0734	1728	WEIS				1040.2	1041.1	1				IIIB
			WEIS				1310.8	1311.1	2				IIIB

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

MARCH 1990

Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1–3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1–3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1–3)	Spectral Type
Day												
30		WEIS				1508.3	1508.6	2				IIIG
		WEIS				1551.3	1553.1	1				IIIG
31	0541 1728	WEIS				0740.9	0742.1	3				IIIG
		WEIS				0801.8	0802.0	2				IIIG

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

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

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

Stations Reporting:

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

COSMIC RAY INDICES
(Neutron Monitor)

APRIL 1990

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	3566	5790.4	5192.9	3304.0	3375.7	---
2	3623	5859.6	5261.5	3329.9	3387.6	---
3	3617	5814.3	5225.3	3298.4	3355.5	---
4	3680	5865.4	5283.3	3333.3	3373.0	1641.0(16)
5	3697	5889.7	5318.0	3350.5	3398.2	1630.1
6	3695	5916.7	5331.5	3355.0	3386.7	1635.3
7	3715	6000.0	5381.3	3407.3	3393.2	1638.3(20)
8	3694	6000.5	5379.7	3415.3	3404.2	---
9	3544	5794.5	5176.6	3281.7	3334.1	---
10	3460	5573.9	5042.0	3161.8	3306.1	---
11	3488	5673.7	5081.1	3203.3	3339.9	1618.9(14)
12	3457	5671.1	5063.8	3191.1	3322.2	1608.3
13	3480	5684.4	5074.3	3202.2	3324.8	1610.0
14	3522	5733.6	5133.8	3229.0	3349.7	1621.7
15	3570	5760.7	5176.0	3261.1	3366.7	1625.1
16	3604	5819.7	5207.8	3291.3	3387.2	1629.8
17	3616	5809.2	5230.9	3301.9	3402.0	1634.1(36)
18	3604	5835.3	5218.1	3298.2	3400.6	1634.0
19	3598	5842.2	5234.3	3302.6	3393.8	---
20	3625	5829.6	5238.4	3293.8	3389.9	---
21	3591	5766.3	5173.9	3253.9	3367.7	1621.3(38)
22	3598	5771.4	5188.9	3257.9	3361.5	1629.5(36)
23	3557	5717.0	5146.1	3233.8	3362.1	1622.0(38)
24	3567	5723.7	5161.6	3251.5	3370.4	---
25	3579	5739.1	5182.8	3269.2	3362.8	---
26	3577	5738.2	5194.2	3274.3	3359.2	---
27	3580	5764.1	5200.9	3287.0	3365.8	---
28	3592	5759.4	5199.8	3268.0	3367.5	---
29	3523	5673.4	5122.0	3228.3	3340.1	---
30	3539	5666.0	5100.0	3192.7	3352.2	---
Mean	3585	5782.8	5197.3	3277.4	3366.7	1625.5

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

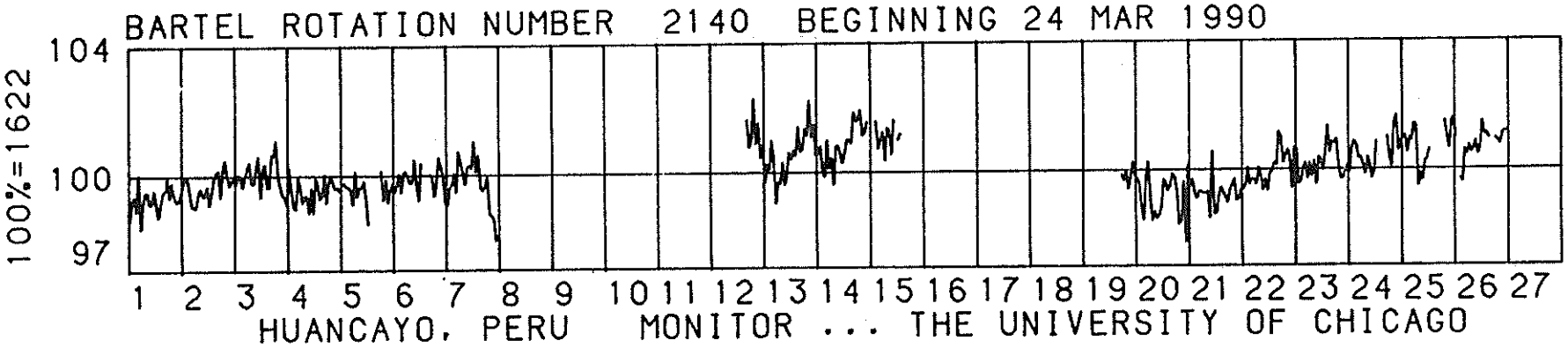
COSMIC RAY INDICES
(Neutron Monitor)

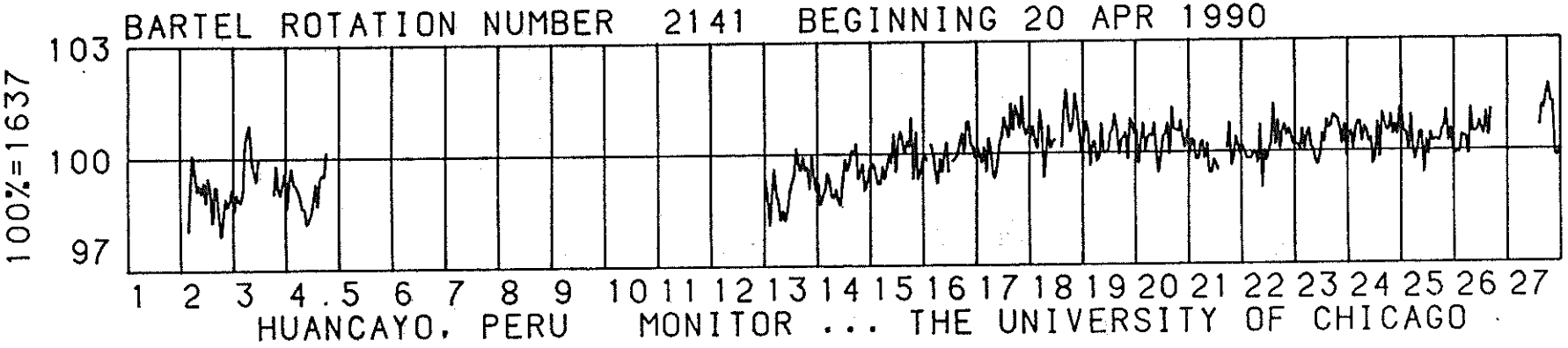
MAY 1990

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	3579	5738.0	5155.0		3350.7	---
2	3568	5785.0	5180.2		3356.9	1623.5
3	3576	5809.5	5208.5		3365.6	1626.5
4	3595	5821.8	5222.0		3360.4	1635.2
5	3628	5830.7	5244.6		3368.6	1637.5
6	3652	5873.2	5276.6		3384.8	1643.8
7	3664	5898.2	5303.1		3382.0	1646.7
8	3627	5847.7	5262.9		3382.3	1643.0
9	3600	5812.8	5266.1		3380.5	1643.6
10	3626	5778.1	5240.9		3368.2	1636.8
11	3652	5777.2	5217.6		3365.3	1640.1
12	3670	5816.2	5244.5		3379.2	1643.0
13	3664	5816.0	5246.8		3374.5	1645.3
14	3681	5817.5	5233.7		3381.2	1642.6
15	3685	5800.9	5224.0		3397.1	1644.5(34)
16	3693	5792.4	5217.7		3395.5	1651.1(20)
17	3694	5783.5	5218.5		3390.7	1642.6
18	3717	5786.2	5227.5		3383.6	1646.5
19	3677	5742.2	5193.5		3376.2	1643.3
20	3623	5659.2	5111.9		3355.5	1628.7
21	3610	5657.2	5089.2		3353.6	1628.6
22	3622	5651.5	5069.9		3340.1	1618.9
23	3575	5616.1	5070.5		3342.6	1628.7
24	3606	5699.1	5115.6		3348.7	1630.4
25	3687	5779.3	5151.2		3361.2	1630.5
26	3629	5710.7	5135.8		3379.7	1636.4
27	3636	5720.6	5128.7		3373.3	1632.7
28	3649	5725.7	5149.5		3360.7	1633.0
29	3581	5616.2	5073.7		3330.1	1617.2
30	3535	5559.6	5033.3		3316.3	1611.6
31	3551	5605.8	5049.9		3322.5	1615.0
Mean	3631	5752.6	5179.4		3365.5	1634.4

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.

COSMIC RAY INDICES
(Neutron Monitor)





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

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