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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
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JULY 1990 NUMBER 551 - Part I

Solar-Geophysical Data prompt reports

Data for June, May 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 551

(Issued in Two Parts)

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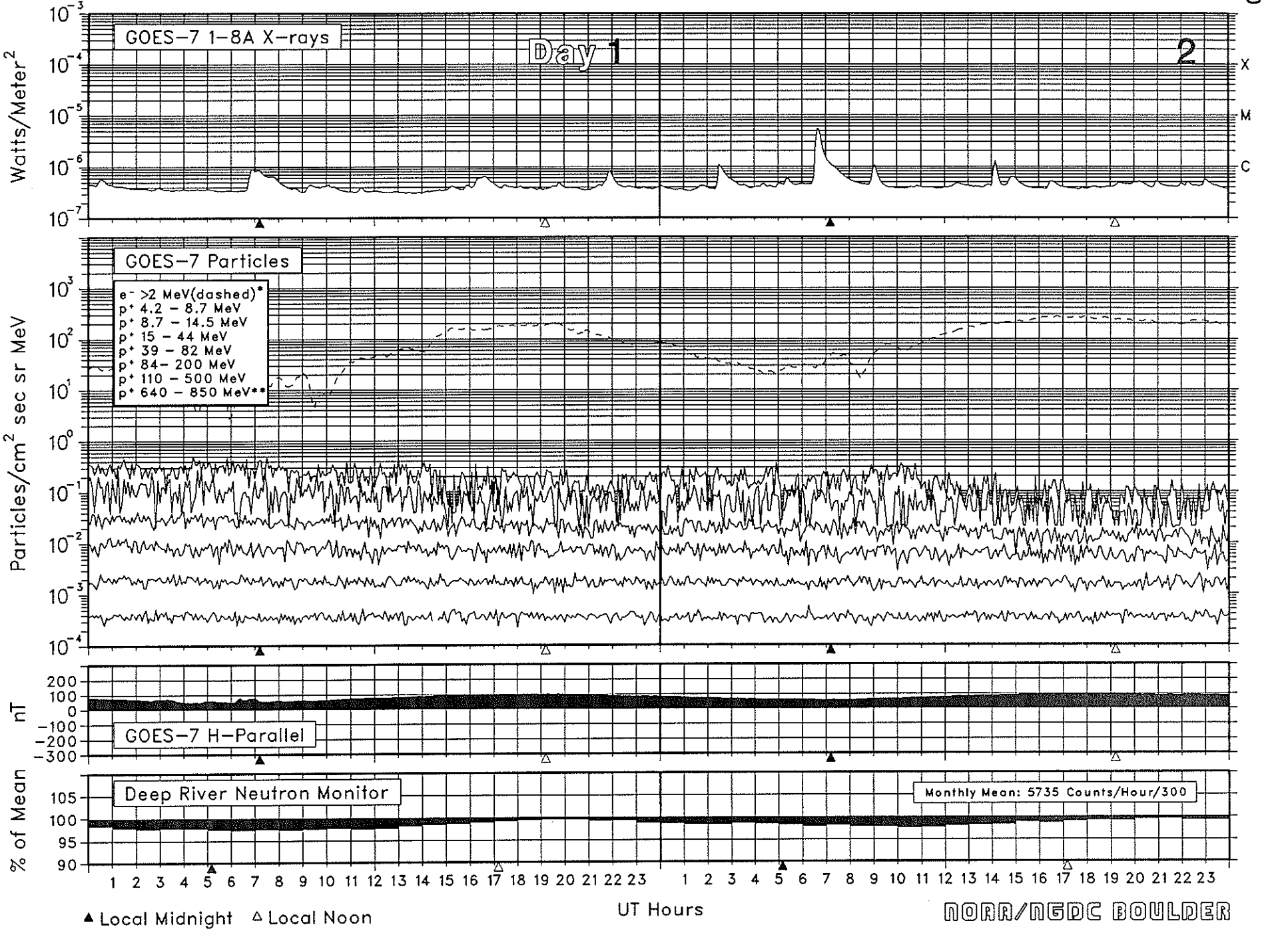
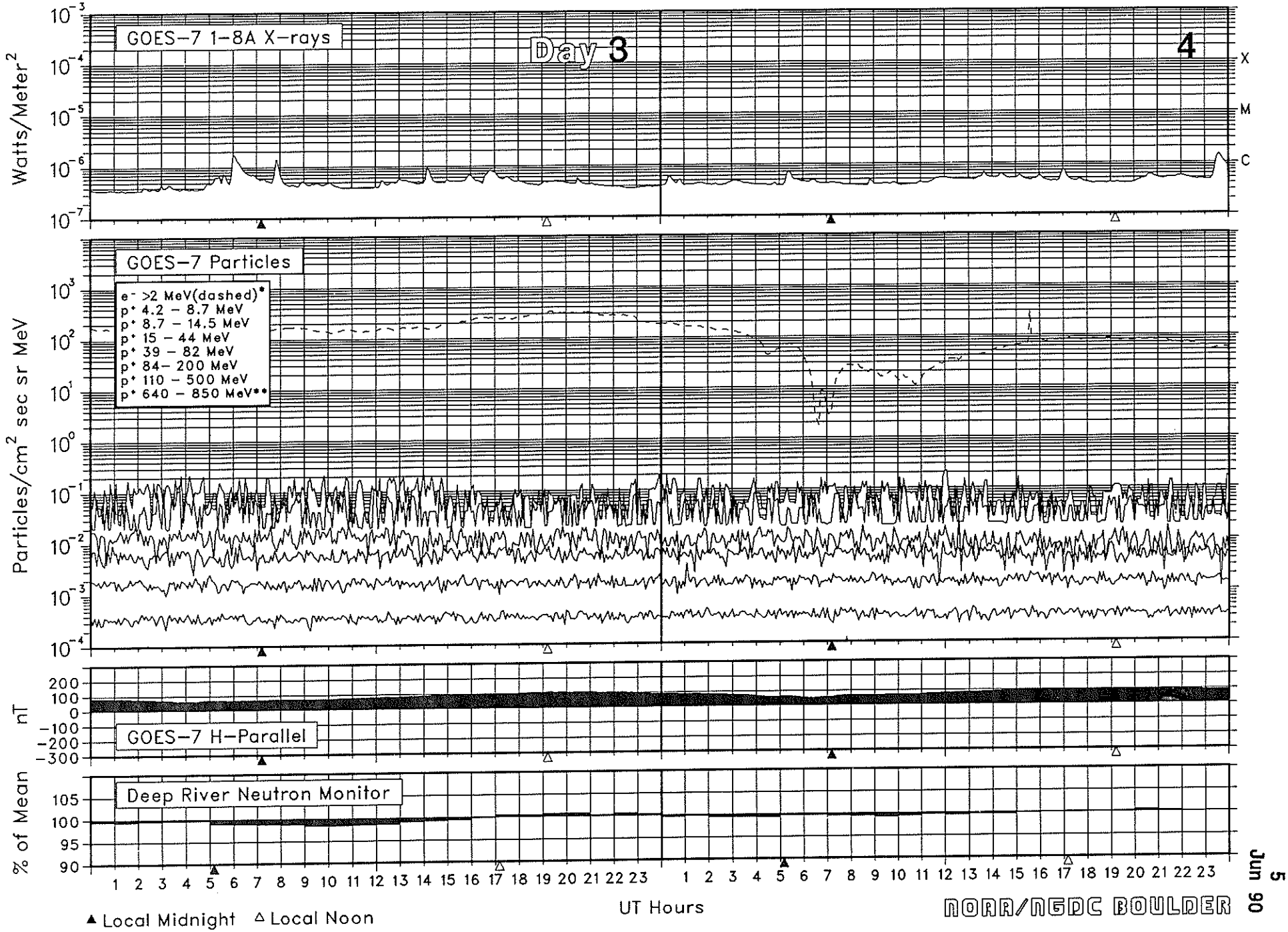


SOLAR-TERRESTRIAL ENVIRONMENT

June 1990



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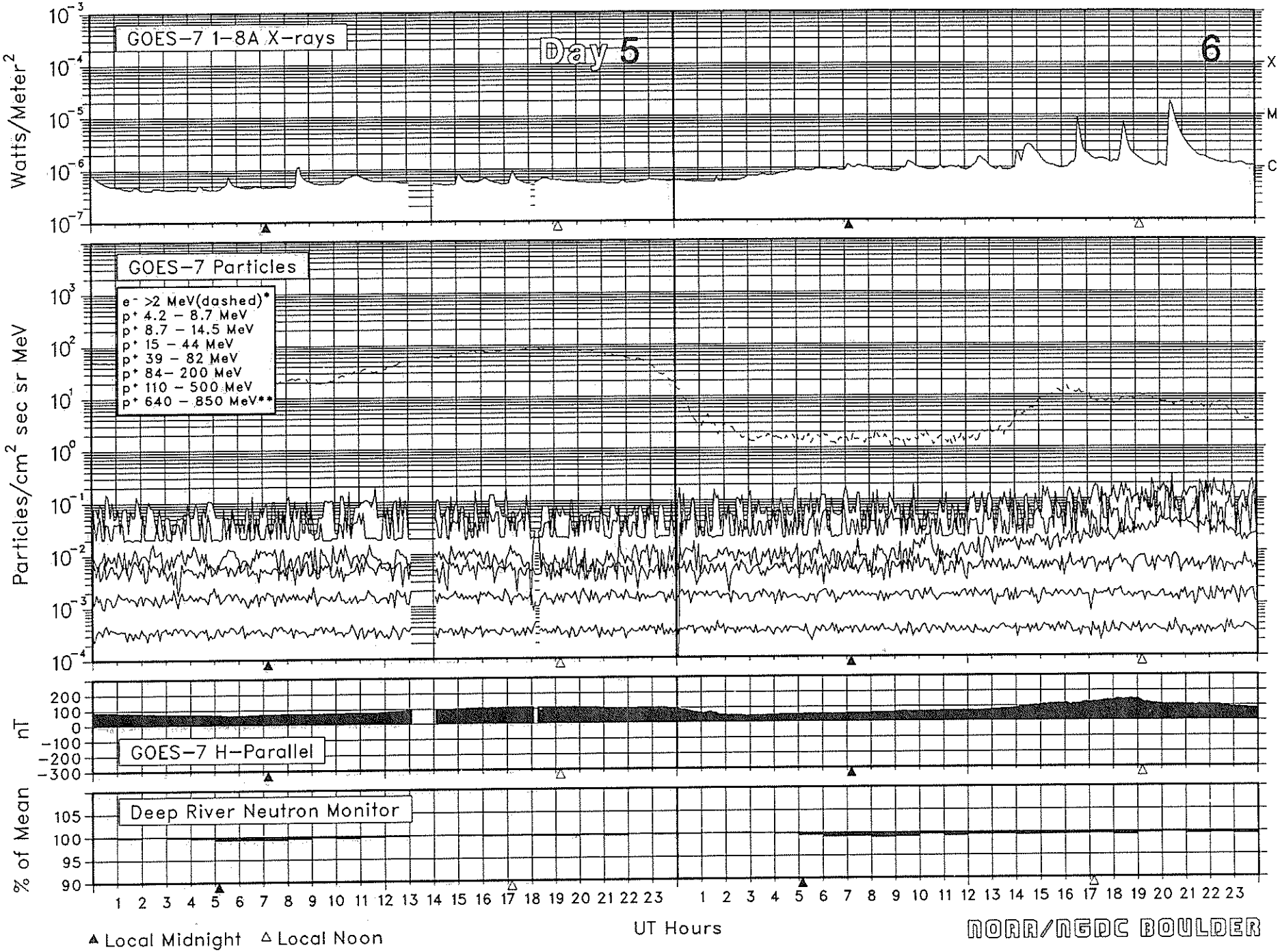
June 1990



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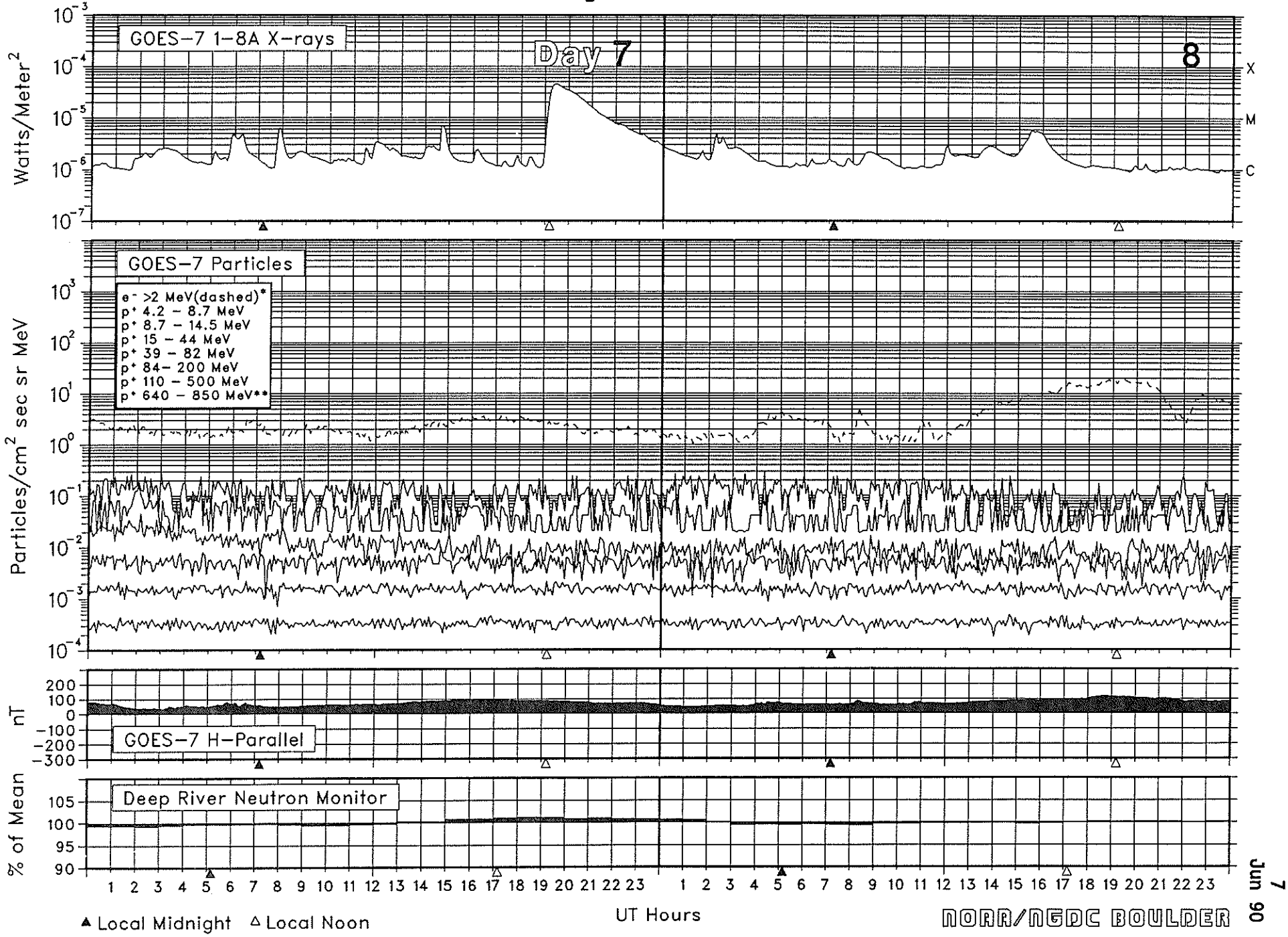
June 1990



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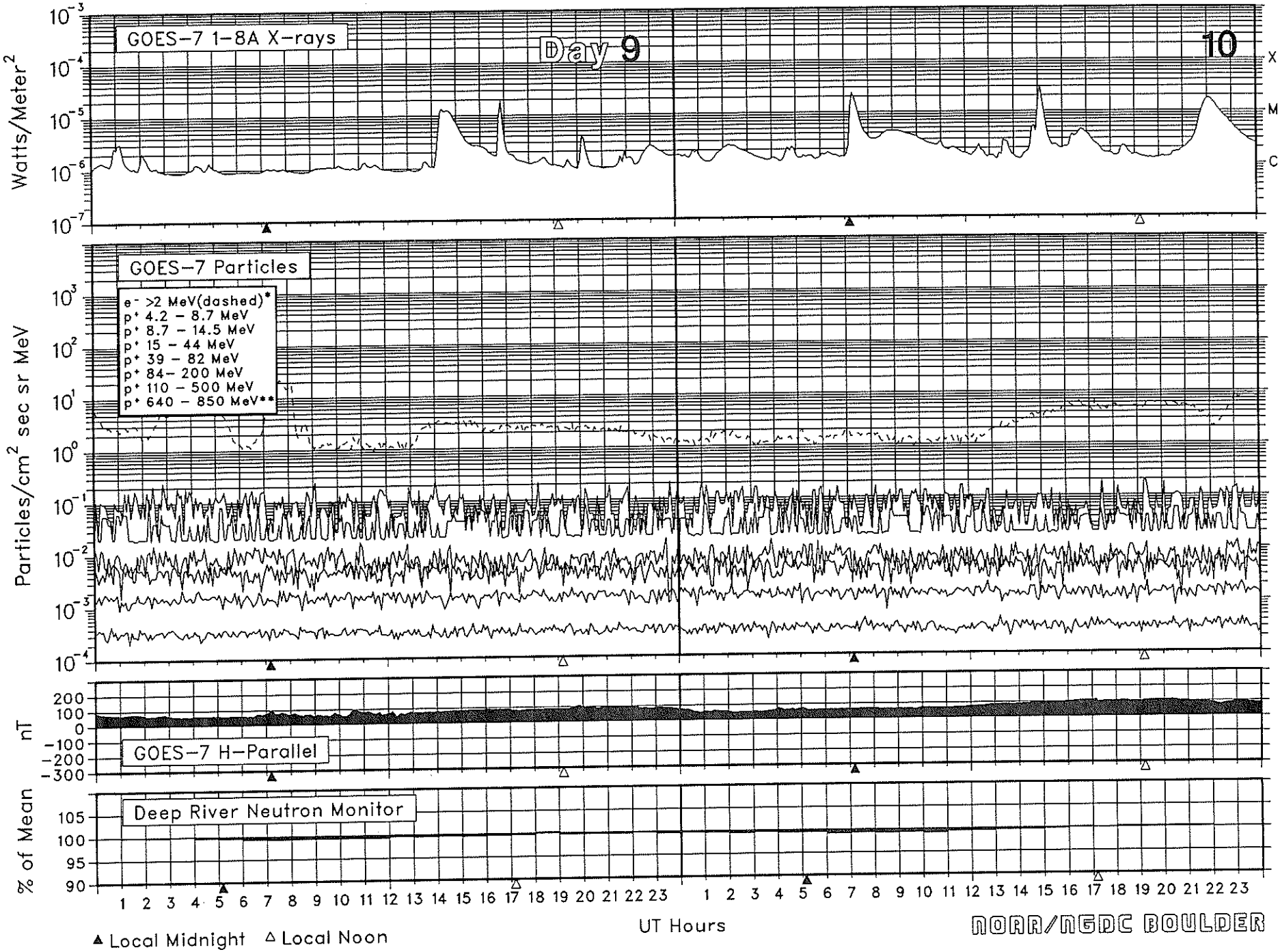
8 Jun 90



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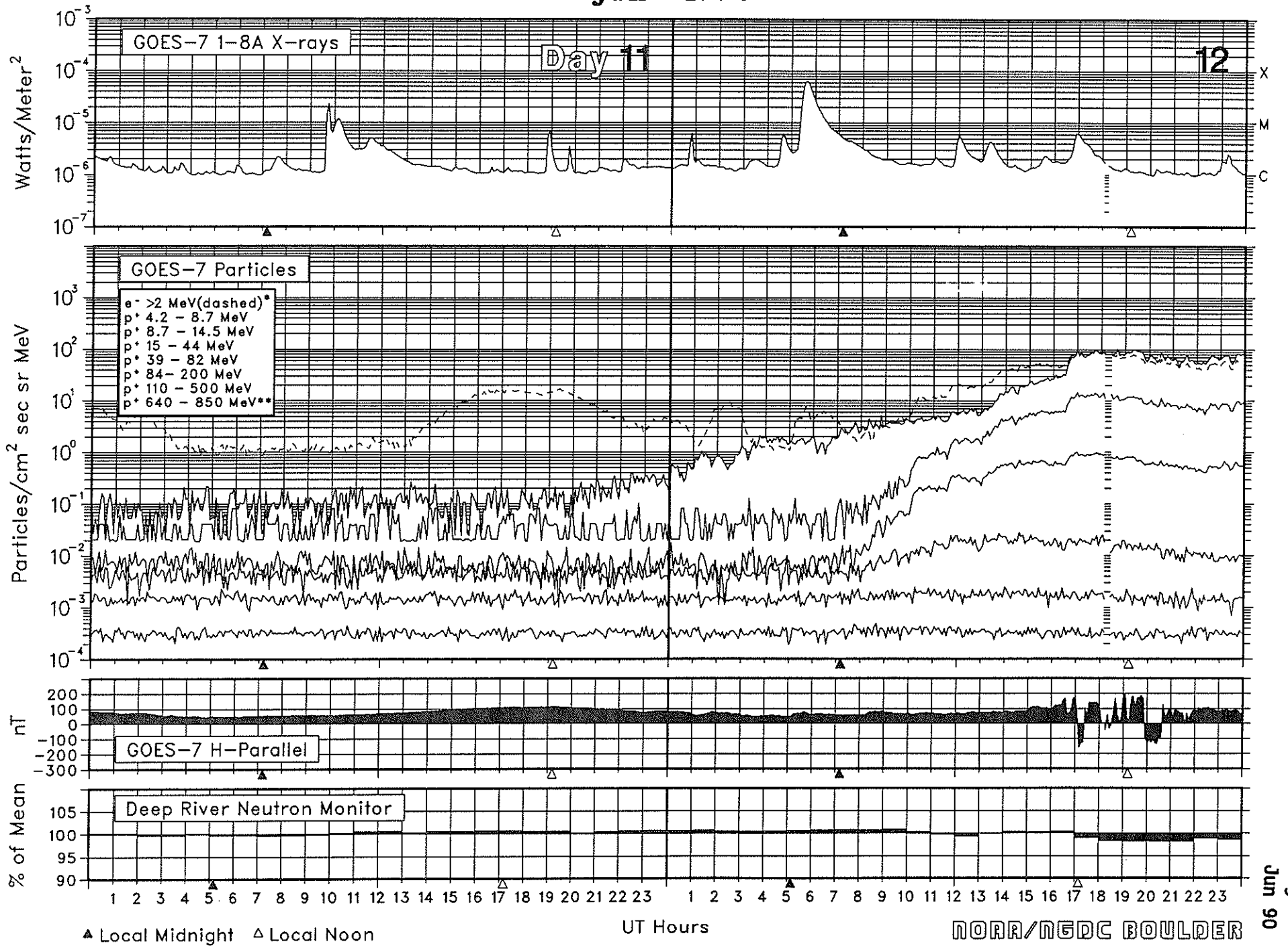
June 1990



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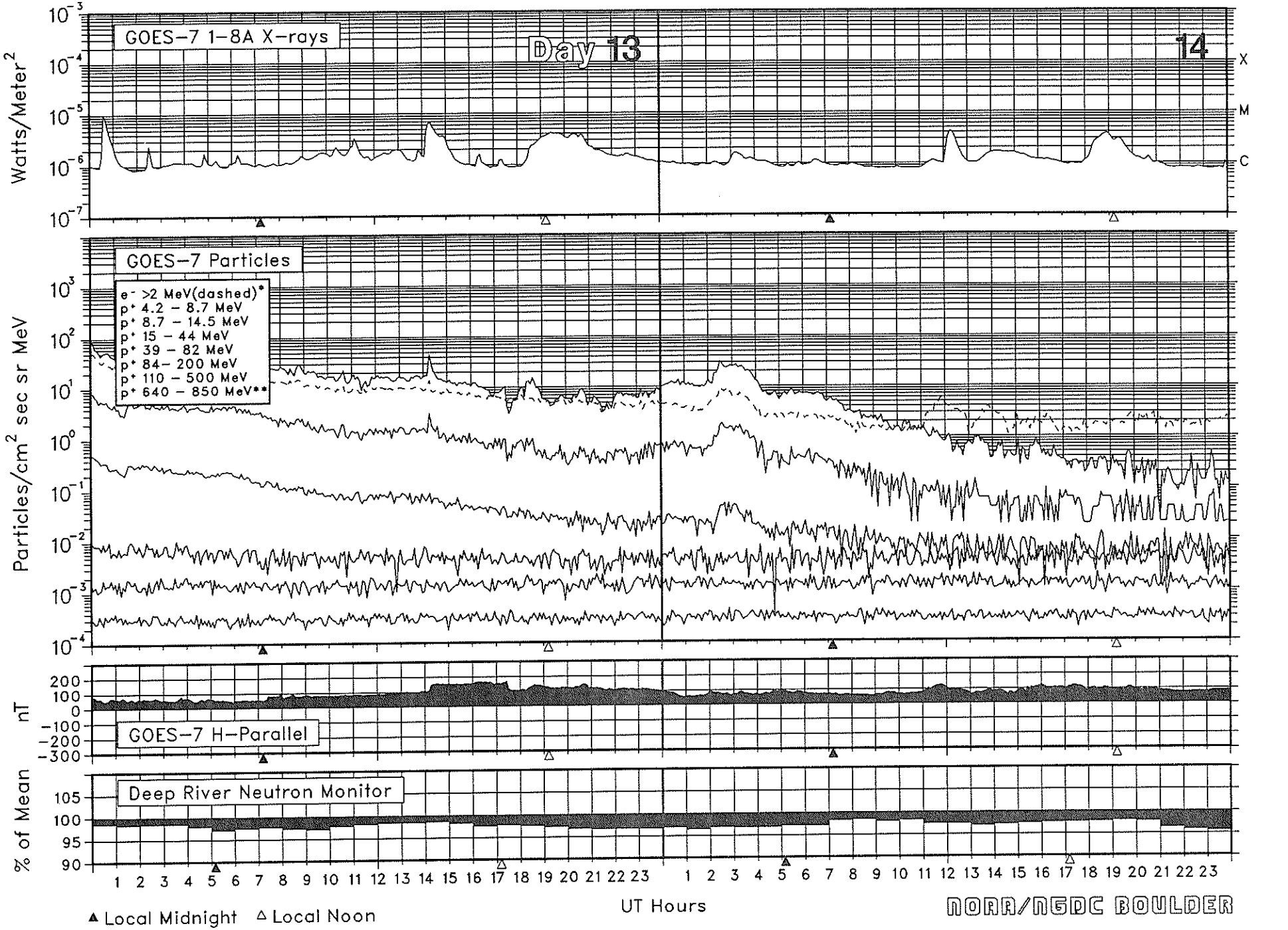
Jun 90 10



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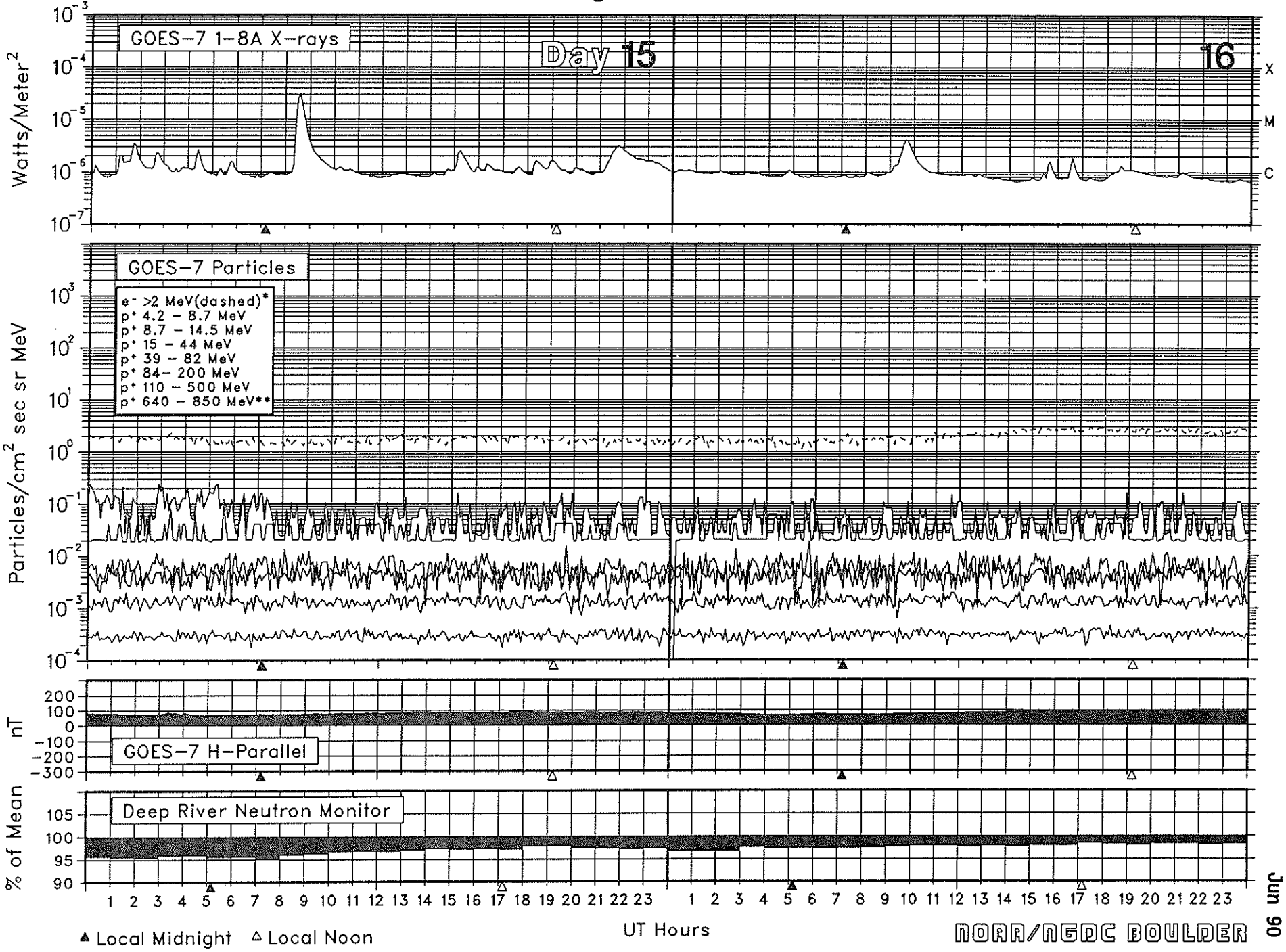
June 1990



NOAA/NGDC BOULDER

11 Jun 90

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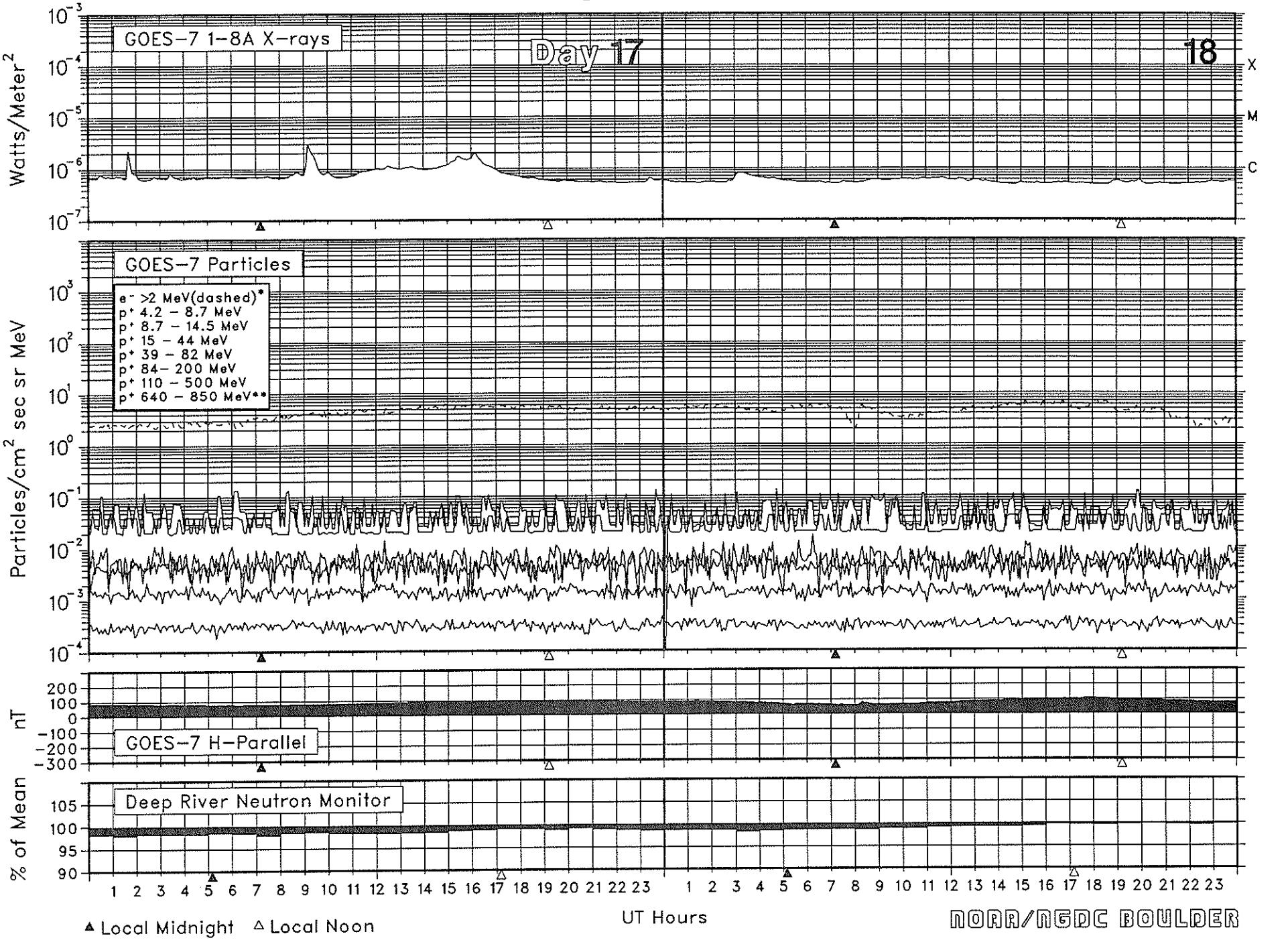
12 Jun 90



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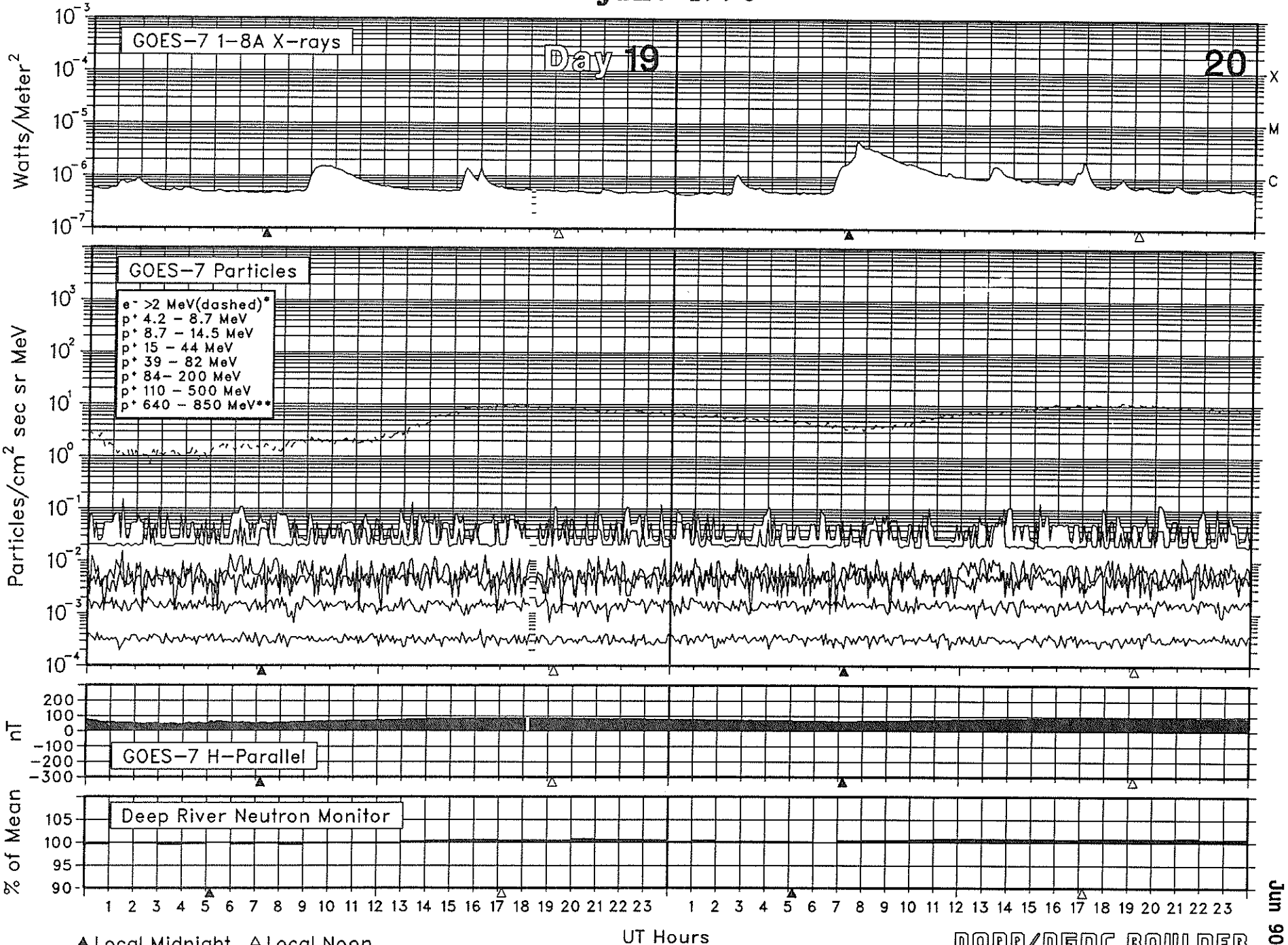
SOLAR-TERRESTRIAL ENVIRONMENT

June 1990



NOAA/NGDC BOULDER

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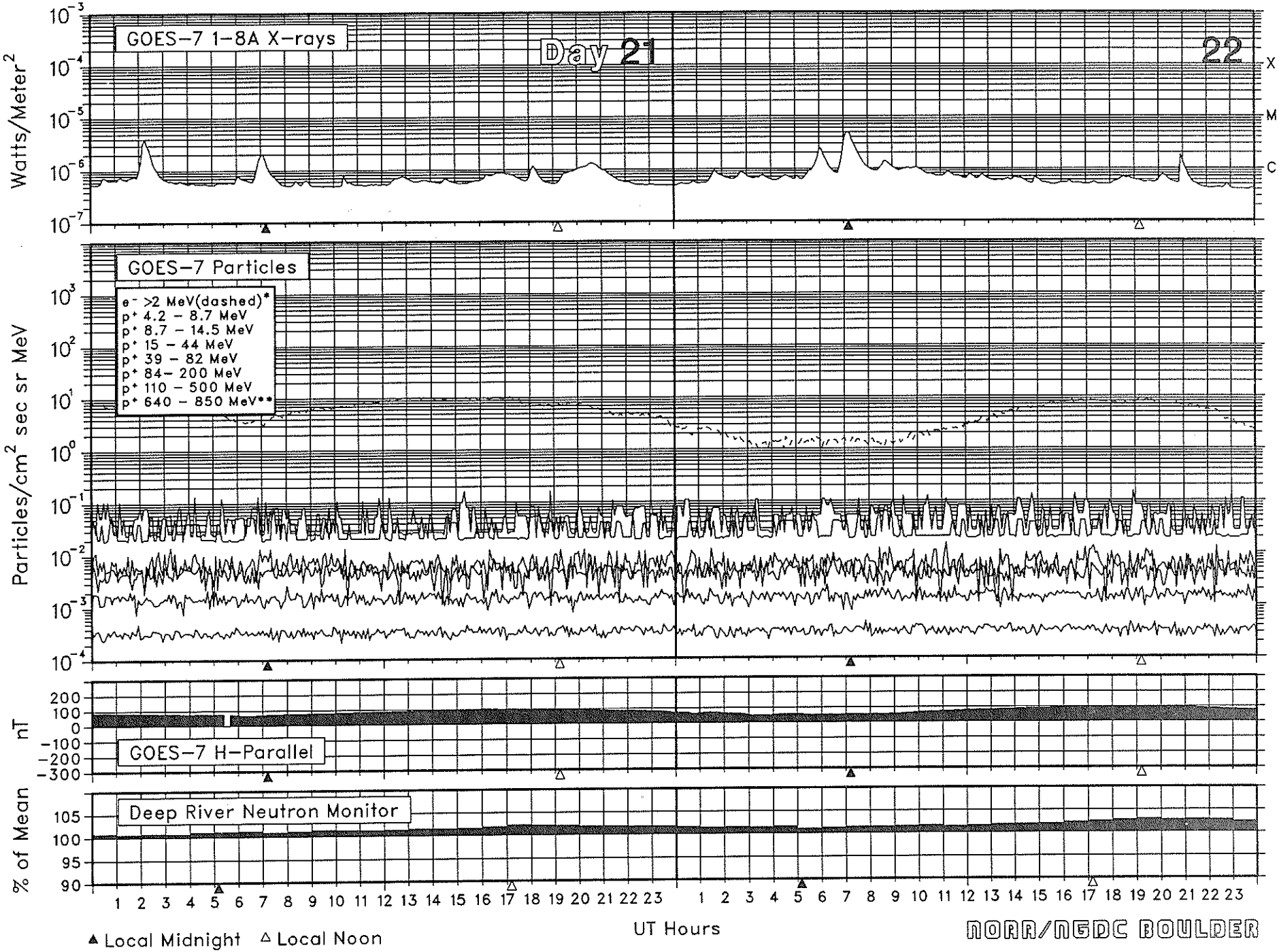
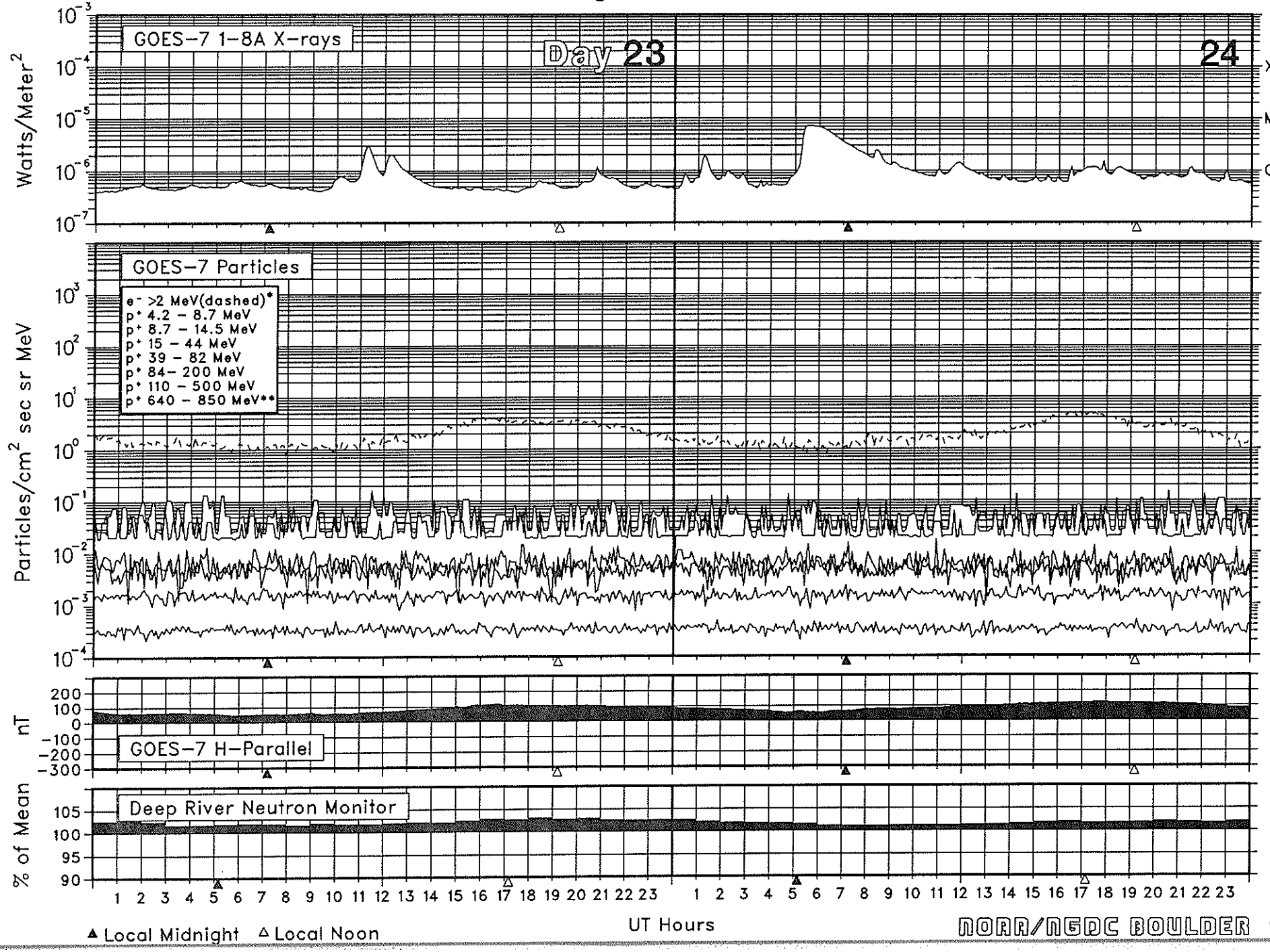
14 Jun 90



SOLAR-TERRESTRIAL ENVIRONMENT

June 1990



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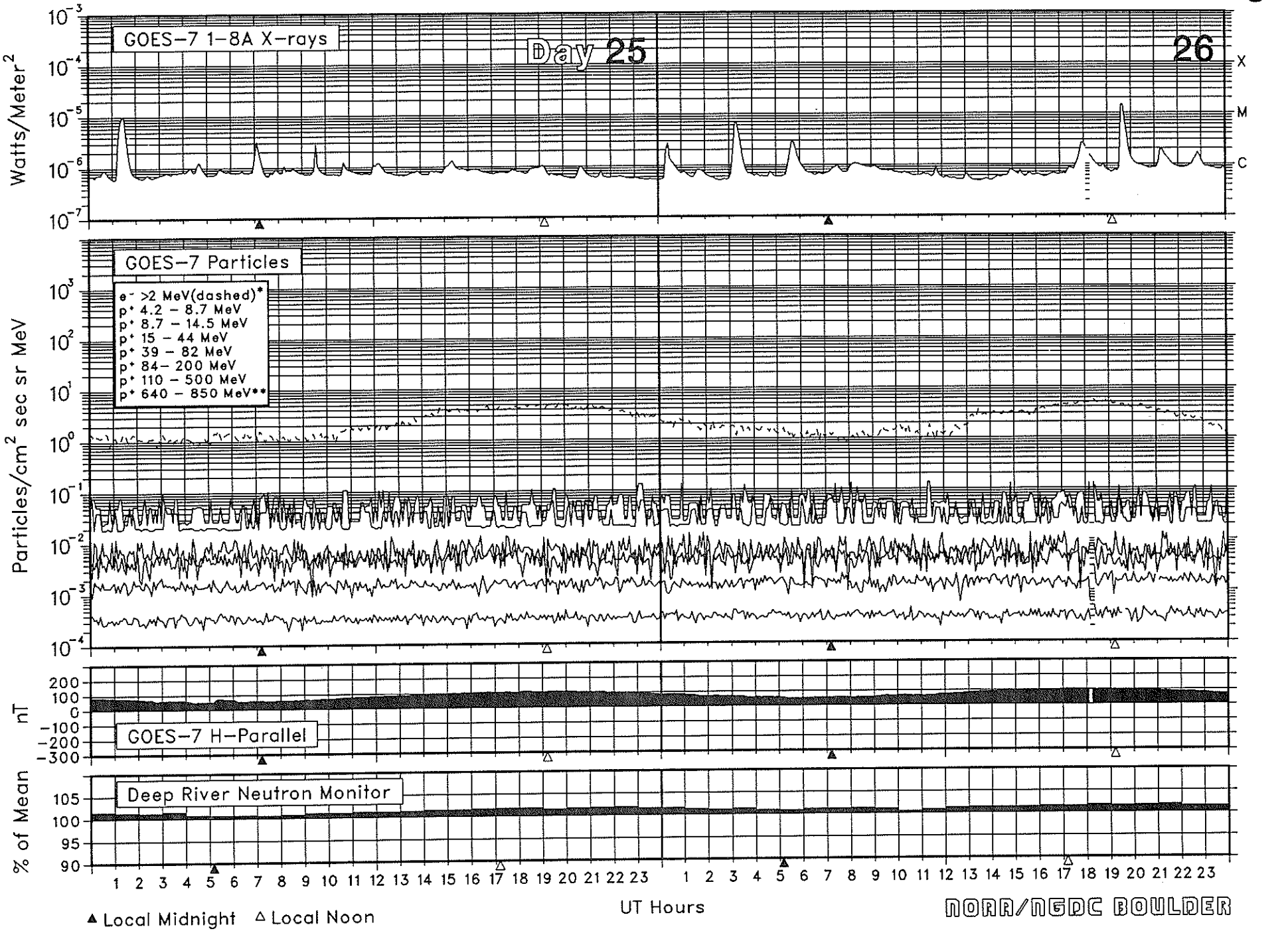
June 1990



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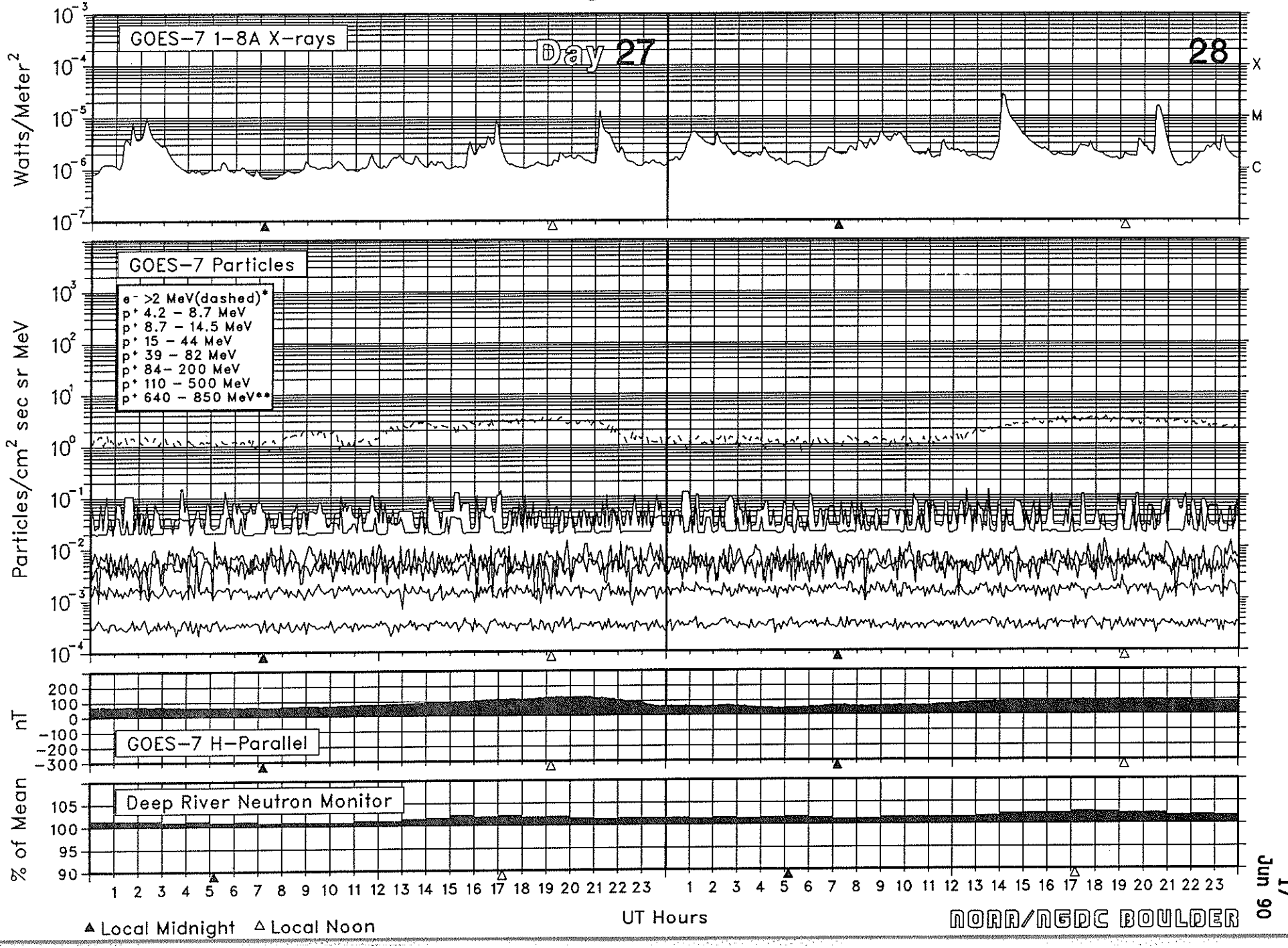
June 1990



NOAA/NGDC BOULDER

17 Jun 90

SOLAR-TERRESTRIAL ENVIRONMENT
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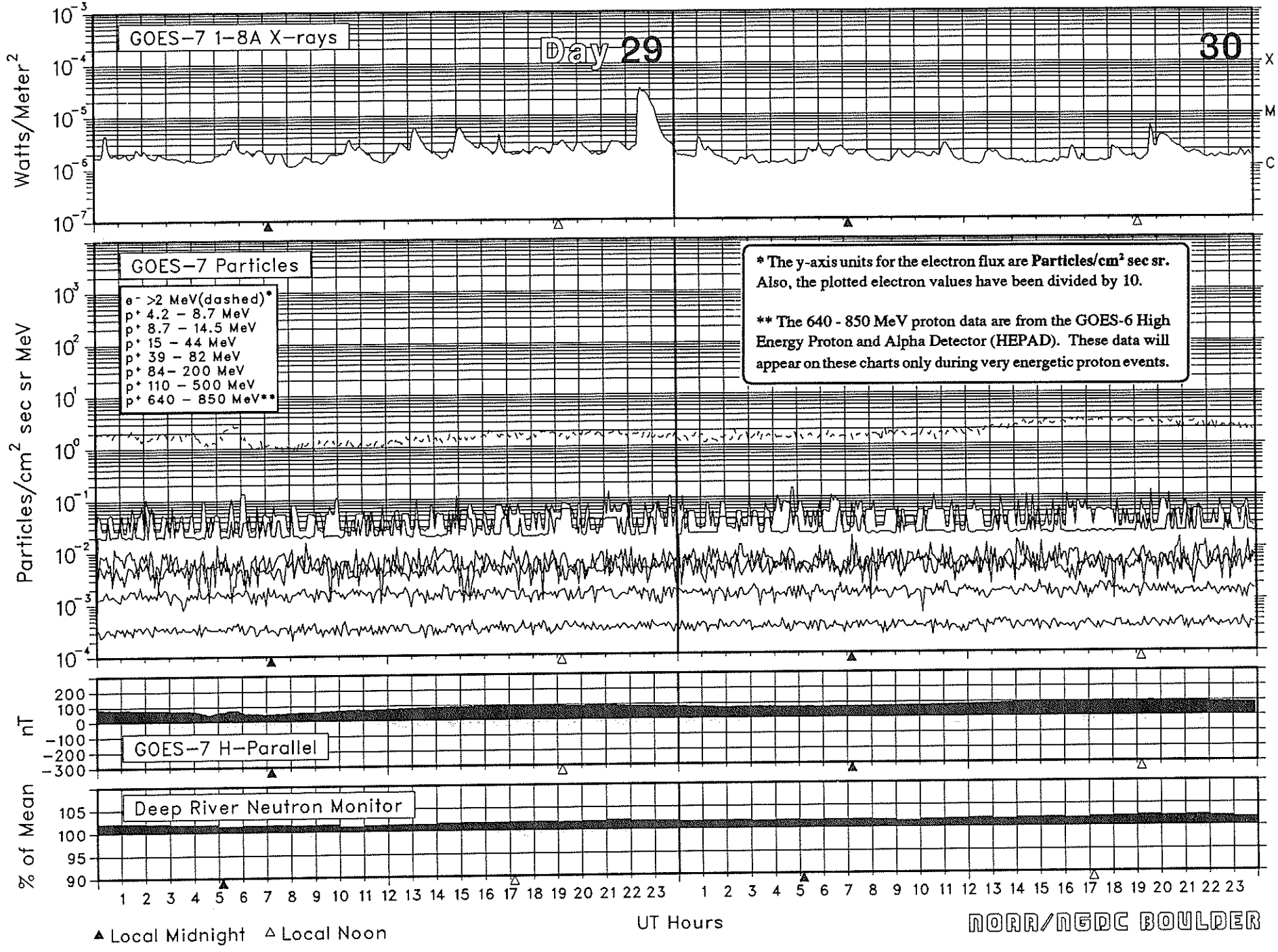
Jun 90 18



ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — JUNE 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		
152	01	31	150	140	014	N12 W48	0	0	0	01	N12 W48	Q	Solquiet, Magquiet.
						N20 W13	4	0	0		N20 W13	Q	
						S11 W31	4	0	0		S11 W31	E	
						N14 E19	2	0	0		N14 E19	Q	
						S18 W47	0	0	0		S18 W47	Q	
						N14 E09	0	0	0		N14 E09	Q	
						S04 E69	0	0	0		S04 E69	Q	
						N23 E67	0	0	0		N23 E67	Q	
						N30 W03	0	0	0		N30 W03	Q	
153	02	01	143	136	012	N12 W60	0	0	0	02	N12 W60	Q	Solquiet, Magquiet.
						N20 W26	1	0	0		N20 W26	E	
						S11 W43	1	0	0		S11 W43	E	
						N14 E07	2	0	0		N14 E07	Q	
						S18 W57	0	0	0		S18 W57	Q	
						N14 W03	0	0	0		N14 W03	Q	
						S05 E57	0	0	0		S05 E57	Q	
						N22 E56	0	0	0		N22 E56	Q	
						N31 W17	0	0	0		N31 W17	Q	
154	03	02	125	136	004	N20 W38	1	0	0	03	N20 W38	E	Solquiet, Magquiet.
						S11 W57	0	0	0		S11 W57	E	
						N14 W06	1	0	0		N14 W06	E	
						S17 W71	0	0	0		S17 W71	Q	
						S05 E43	0	0	0		S05 E43	Q	
						N22 E41	0	0	0		N22 E41	Q	
						N31 W29	1	0	0		N31 W29	Q	
						S16 E73	0	0	0		S16 E73	Q	
155	04	03	133	140	005	N20 W53	0	0	0	04	N20 W53	Q	Solquiet, Magquiet.
						S11 W70	0	0	0		S11 W70	E	
						N15 W21	1	0	0		N15 W21	E	
						S13 E02	0	0	0		S13 E02	Q	
						S04 E29	1	0	0		S04 E29	Q	
						N22 E28	0	0	0		N22 E28	Q	
						S17 E58	1	0	0		S17 E58	Q	
						N09 E72	0	0	0		N09 E72	Q	
156	05	04	122	142	007	S10 W84	0	0	0	05	S10 W84	E	Solquiet, Magquiet.
						N15 W35	1	0	0		N15 W35	E	
						S15 W12	0	0	0		S15 W12	Q	
						S05 E17	0	0	0		S05 E17	Q	
						N22 E13	0	0	0		N22 E13	Q	
						S17 E46	2	0	0		S17 E46	E	
						N09 E60	2	0	0		N09 E60	E	
						S20 E17	0	0	0		S20 E17	Q	
157	06	05	106	147	007	N15 W46	0	0	0	06	N15 W46	Q	Solquiet, Magquiet.
						S04 E03	0	0	0		S04 E03	E	
						N22 W00	1	0	0		N22 W00	Q	
						S17 E33	0	0	0		S17 E33	E	
						N10 E49	2	0	0		N10 E49	E	
						N01 E48	1	0	0		N01 E48	Q	
						N18 E53	0	0	0		N18 E53	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — JUNE 1990

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location	Flares			Date of Forecast	Location	Region Forecast [1]	Geoalerts
						°Lat °Long	Total	M	X		°Lat °Long		
158	07	06	148	155	013	S05 W10	0	0	0	07	S05 W10	E	Solquiet, Magquiet.
						N22 W14	0	0	0		N22 W14	Q	
						S17 E20	0	0	0		S17 E20	E	
						N09 E34	4	0	0		N09 E34	E	
						N00 E32	0	0	0		N00 E32	Q	
						N18 E40	0	0	0		N18 E40	Q	
						S18 W77	7	2	0		S18 W77	E	
						S12 W18	0	0	0		S12 W18	Q	
159	08	07	142	175	021	S04 W24	0	0	0	08	S04 W24	Q	Solquiet, Magquiet.
						N22 W28	0	0	0		N22 W28	Q	
						S17 E07	2	0	0		S17 E07	Q	
						N09 E21	5	0	0		N09 E21	E	
						N00 E16	0	0	0		N00 E16	Q	
						N17 E24	0	0	0		N17 E24	Q	
						S18 W90	3	0	0		S18 W90	E	
						S12 W34	0	0	0		S12 W34	Q	
						N24 E26	0	0	0		N24 E26	Q	
						N26 E75	1	0	0		N26 E75	E	
		Presto:[2] Boulder Tenflare 450 flux units 07/1900 UT duration 22 minutes.											
160	09	08	175	187	019	S04 W37	0	0	0	09	S04 W37	Q	Solalert 09/XX,
						N23 W35	0	0	0		N23 W35	Q	Magquiet.
						S17 W10	1	0	0		S17 W10	Q	
						N09 E08	6	0	0		N09 E08	E	
						N01 E02	0	0	0		N01 E02	Q	
						N16 E11	0	0	0		N16 E11	Q	
						S12 W48	0	0	0		S12 W48	Q	
						N24 E13	0	0	0		N24 E13	Q	
						N27 E68	0	0	0		N27 E68	E	
						S09 E17	0	0	0		S09 E17	Q	
						S12 E54	0	0	0		S12 E54	Q	
						S19 E59	0	0	0		S19 E59	Q	
						S13 E74	0	0	0		S13 E74	E	
161	10	09	161	198	024	S04 W54	0	0	0	10	S04 W54	Q	Solalert 10/XX,
						N09 W06	6	1	0		N09 W06	E	Magquiet.
						N01 W12	0	0	0		N01 W12	Q	
						S12 W61	0	0	0		S12 W61	Q	
						N23 E01	1	0	0		N23 E01	Q	
						N25 E55	0	0	0		N25 E55	Q	
						S12 E41	0	0	0		S12 E41	Q	
						S19 E45	0	0	0		S19 E45	Q	
						S13 E62	1	1	0		S13 E62	E	
						N24 E39	0	0	0		N24 E39	Q	
		Presto: Boulder Tenflare 530 flux units 09/1648 UT duration 5 minutes.											
162	11	10	217	206	012	S17 W37	0	0	0	11	S17 W37	Q	Solalert 11/XX,
						N09 W19	8	3	0		N09 W19	E	Magquiet.
						S23 W66	0	0	0		S23 W66	Q	
						N01 W26	0	0	0		N01 W26	Q	
						N16 W15	0	0	0		N16 W15	Q	
						S12 W73	0	0	0		S12 W73	Q	
						N23 W12	8	0	0		N23 W12	E	
						N26 E43	0	0	0		N26 E43	Q	
						S10 W08	0	0	0		S10 W08	Q	
						S13 E29	0	0	0		S13 E29	Q	
						S17 E51	1	0	0		S17 E51	E	
						N23 E25	0	0	0		N23 E25	Q	
						N12 W63	0	0	0		N12 W63	Q	
		Presto: Boulder Tenflare 540 flux units 10/0716 UT duration 10 minutes.											

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						°Lat °Long	Total	M	X		°Lat °Long		
163	12	11	201	209	014	N10 W32	4	1	0	12	N10 W32	E	Solalert 12/XX,
						S23 W84	0	0	0		S23 W84	Q	Magquiet.
						S11 W92	2	0	0		S11 W92	Q	
						N24 W27	2	0	0		N24 W27	E	
						N25 E25	0	0	0		N25 E25	Q	
						S09 W22	0	0	0		S09 W22	Q	
						S14 E37	2	1	0		S14 E37	E	
						N23 E10	0	0	0		N23 E10	Q	
						N15 E45	0	0	0		N15 E45	Q	
						S14 W01	0	0	0		S14 W01	Q	
		Presto:[2]	Boulder	Tenflare 1200 flux units 11/0942 UT duration 7 minutes.									
164	13	12	199	219	045	S17 W54	0	0	0	13	S17 W54	Q	Solalert 13/XX,
						N10 W46	10	1	0		N10 W46	E	Magalert 13/XX.
						N23 W39	2	0	0		N23 W39	E	
						N26 E13	1	1	0		N26 E13	Q	
						S12 E05	2	0	0		S12 E05	Q	
						S14 E26	5	0	0		S14 E26	E	
						N24 W04	0	0	0		N24 W04	Q	
						N16 E32	0	0	0		N16 E32	E	
						S16 W16	0	0	0		S16 W16	Q	
						N13 E59	0	0	0		N13 E59	Q	
						S31 E56	0	0	0		S31 E56	Q	
		Presto:	Boulder	Tenflare 750 flux units 12/0519 UT duration 41 minutes.									
			Boulder	Proton event began 12/1140 UT, maximum of 79 particles/cm²-s-ster at greater than 10 MeV 12/1700 UT, in progress.									
165	14	13	175	198	041	N11 W59	13	1	0	14	N11 W59	E	Solalert 14/XX,
						N24 W52	1	0	0		N24 W52	E	Magalert 14/XX.
						N26 E01	0	0	0		N26 E01	Q	
						S12 W07	0	0	0		S12 W07	Q	
						S14 E12	6	0	0		S14 E12	E	
						N17 E19	0	0	0		N17 E19	Q	
						N07 E47	5	0	0		N07 E47	Q	
						S31 E44	4	0	0		S31 E44	Q	
						S09 E65	1	0	0		S09 E65	Q	
		Presto:	Toyokawa	Tenflare 140 flux units 13/0033 UT duration 6 minutes.									
			Boulder	Strong magstorm in progress 13/0300 UT.									
166	15	14	149	196	047	N12 W72	3	0	0	15	N12 W72	E	Solnil, Magalert 15/XX.
						N24 W64	1	0	0		N24 W64	E	
						N28 W06	0	0	0		N28 W06	Q	
						S14 W00	2	0	0		S14 W00	E	
						N16 E06	0	0	0		N16 E06	Q	
						N07 E33	2	0	0		N07 E33	Q	
						S31 E31	1	0	0		S31 E31	E	
						S08 E53	1	0	0		S08 E53	Q	
		Presto:	Sydney	Magstorm in progress following Sudden Storm Commencement at 14/0313 UT.									
			Boulder	Strong magstorm in progress 14/1800 UT.									
167	16	15	151	185	010	N11 W85	1	0	0	16	N11 W85	E	Solalert 16/XX,
						N25 W77	0	0	0		N25 W77	E	Magnil.
						N28 W21	0	0	0		N28 W21	Q	
						S14 W33	0	0	0		S14 W33	Q	
						S15 W13	0	0	0		S15 W13	E	
						N17 W06	0	0	0		N17 W06	Q	
						N06 E20	5	0	0		N06 E20	E	
						S31 E17	1	1	0		S31 E17	E	
						S10 E41	8	0	0		S10 E41	E	
		Presto:	Boulder	Tenflare 200 flux units 15/0824 UT duration 16 minutes.									

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						°Lat °Long	Total	M	X		°Lat °Long		
168	17	16	159	180	005	N25 W86	0	0	0	17	N25 W86	E	Solalert 17/XX,
						N28 W32	0	0	0		N28 W32	Q	Magquiet.
						S16 W51	0	0	0		S16 W51	Q	
						S15 W26	2	0	0		S15 W26	E	
						N08 E07	1	0	0		N08 E07	E	
						S31 E05	0	0	0		S31 E05	E	
						S09 E29	2	0	0		S09 E29	E	
						S28 W20	0	0	0		S28 W20	Q	
						S35 W06	0	0	0		S35 W06	Q	
169	18	17	148	178	003	N28 W43	2	0	0	18	N28 W43	E	Solalert 18/XX,
						S14 W39	1	0	0		S14 W39	E	Magquiet.
						N08 W08	3	0	0		N08 W08	E	
						S31 W09	1	0	0		S31 W09	E	
						S09 E16	2	0	0		S09 E16	E	
						S28 W33	1	0	0		S28 W33	Q	
						S36 W21	0	0	0		S36 W21	Q	
						N13 W06	0	0	0		N13 W06	Q	
170	19	18	130	162	010	N28 W56	0	0	0	19	N28 W56	Q	Solquiet, Magquiet.
						S14 W53	0	0	0		S14 W53	E	
						N08 W21	0	0	0		N08 W21	E	
						S30 W22	0	0	0		S30 W22	E	
						S09 E02	1	0	0		S09 E02	E	
						S36 W33	0	0	0		S36 W33	Q	
						N12 W19	0	0	0		N12 W19	Q	
171	20	19	129	156	008	N29 W70	0	0	0	20	N29 W70	Q	Solquiet, Magquiet.
						S14 W66	0	0	0		S14 W66	E	
						N08 W34	0	0	0		N08 W34	E	
						S30 W35	2	0	0		S30 W35	E	
						S09 W12	1	0	0		S09 W12	E	
						N14 W34	0	0	0		N14 W34	Q	
						N17 W71	0	0	0		N17 W71	Q	
						S05 E61	0	0	0		S05 E61	Q	
						S05 W34	0	0	0		S05 W34	Q	
172	21	20	143	154	002	S14 W81	4	0	0	21	S14 W81	Q	Solquiet, Magquiet.
						N10 W47	2	0	0		N10 W47	Q	
						S30 W49	1	0	0		S30 W49	E	
						S08 W27	0	0	0		S08 W27	Q	
						N17 W50	0	0	0		N17 W50	Q	
						N18 W83	0	0	0		N18 W83	Q	
						S10 E55	1	0	0		S10 E55	Q	
						S05 W49	0	0	0		S05 W49	Q	
						S10 E55	0	0	0		S10 E55	Q	
						S08 W08	0	0	0		S08 W08	Q	
						S06 E18	0	0	0		S06 E18	Q	
173	22	21	101	148	002	S14 W93	1	0	0	22	S14 W93	E	Solquiet, Magquiet.
						N09 W60	0	0	0		N09 W60	Q	
						S29 W60	1	0	0		S29 W60	Q	
						S08 W39	1	0	0		S08 W39	Q	
						S05 W61	0	0	0		S05 W61	Q	
						S08 E42	0	0	0		S08 E42	Q	
						S06 E05	0	0	0		S06 E05	Q	
						N27 E70	0	0	0		N27 E70	Q	

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174	23	22	116	138	004	N09 W75	0	0	0	23	N09 W75	Q	Solquiet, Magquiet.
						S29 W71	1	0	0		S29 W71	Q	
						S07 W52	0	0	0		S07 W52	Q	
						N18 W81	0	0	0		N18 W81	Q	
						S09 E28	1	0	0		S09 E28	Q	
						N27 E58	0	0	0		N27 E58	Q	
						N22 E34	1	0	0		N22 E34	Q	
						S17 E64	0	0	0		S17 E64	Q	
						N16 E59	0	0	0		N16 E59	Q	
175	24	23	128	133	007	N08 W87	0	0	0	24	W08 W87	Q	Solquiet, Magquiet.
						S33 W87	0	0	0		S33 W87	Q	
						S09 W66	0	0	0		S09 W66	Q	
						S09 E13	1	0	0		S09 E13	Q	
						N27 E45	0	0	0		N27 E45	Q	
						S17 E52	0	0	0		S17 E52	Q	
						N17 E45	2	0	0		N17 E45	Q	
						S21 E65	8	0	0		S21 E65	E	
						N15 W21	0	0	0		N15 W21	Q	
176	25	24	127	137	007	S09 W79	0	0	0	25	S09 W79	Q	Solquiet, Magquiet.
						S10 E01	1	0	0		S10 E01	Q	
						N27 E33	0	0	0		N27 E33	Q	
						N16 E07	0	0	0		N16 E07	Q	
						S18 E40	1	0	0		S18 E40	Q	
						N15 E33	1	0	0		N15 E33	Q	
						S23 E57	17	0	0		S23 E57	E	
		Presto:[2] Sydney Culgoora Strong Type II began 24/0525 UT.											
177	26	25	153	142	008	S08 W93	0	0	0	26	S08 W93	Q	Solalert 26/XX, Magquiet.
						S09 W13	1	0	0		S09 W13	E	
						N27 E12	0	0	0		N27 E12	Q	
						S18 E26	0	0	0		S18 E26	Q	
						N16 E21	0	0	0		N16 E21	Q	
						S23 E45	7	1	0		S23 E45	E	
						N15 W47	0	0	0		N15 W47	Q	
						S09 E03	0	0	0		S09 E03	Q	
						N05 E53	0	0	0		N05 E53	Q	
178	27	26	212	148	009	S06 W35	0	0	0	27	S06 W35	Q	Solalert 27/XX, Magquiet.
						S09 W27	4	0	0		S09 W27	E	
						N27 E08	0	0	0		N27 E08	Q	
						S18 E13	0	0	0		S18 E13	Q	
						N18 E09	1	0	0		N18 E09	Q	
						S23 E32	7	1	0		S23 E32	E	
						N14 W63	0	0	0		N14 W63	Q	
						S09 W11	0	0	0		S09 W11	Q	
						N04 E39	0	0	0		N04 E39	Q	
						S12 E68	1	0	0		S12 E68	Q	
						N09 E72	6	0	0		N09 E72	Q	
						N21 W64	0	0	0		N21 W64	Q	
		Presto: Boulder Tenflare 240 flux units 26/1935 UT duration 5 minutes.											

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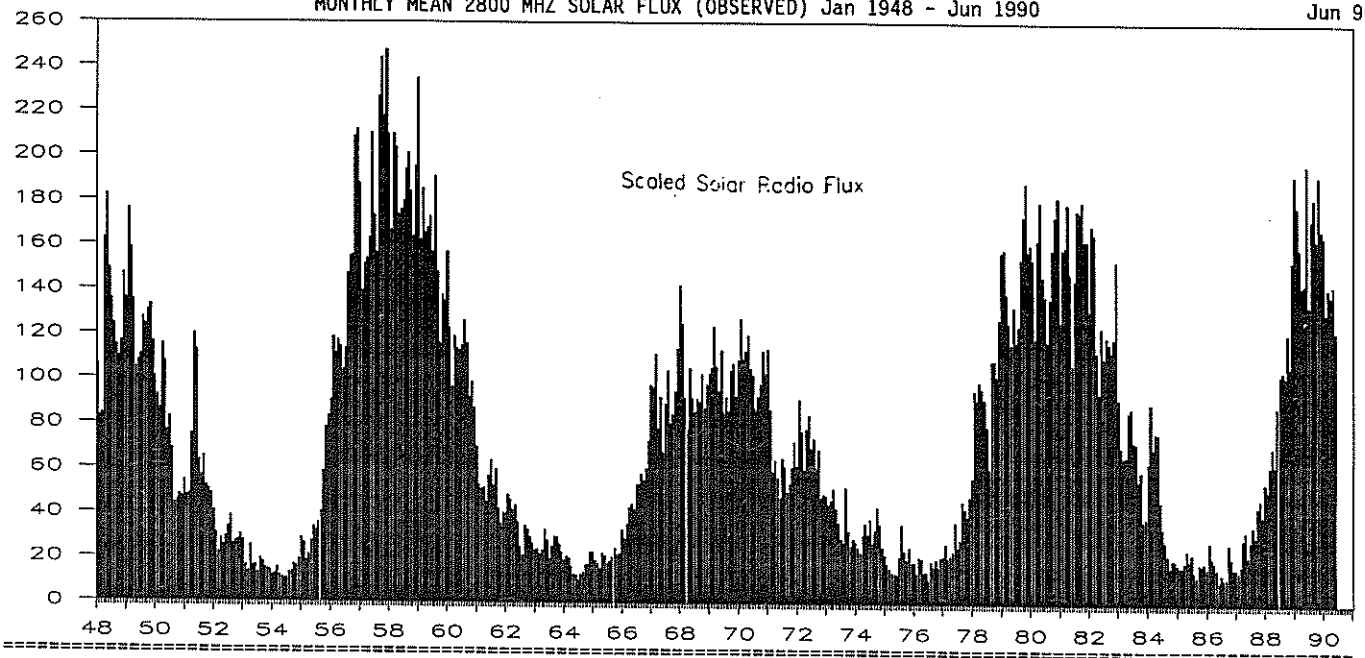
						°Lat °Long	Total	M	X		°Lat °Long		
179	28	27	206	165	012	S09 W42	0	0	0	28	S09 W42	E	Solalert 28/XX, Magquiet.
						N27 W05	0	0	0		N27 W05	Q	
						S22 E19	4	0	0		S22 E19	E	
						S08 W24	0	0	0		S08 W24	Q	
						S12 E53	2	0	0		S12 E53	Q	
						N09 E60	2	0	0		N09 E60	Q	
						N23 W78	0	0	0		N23 W78	Q	
						N15 W24	0	0	0		N15 W24	Q	
						N23 W13	3	0	0		N23 W13	E	
						S20 E66	3	0	0		S20 E66	Q	
						S28 E80	1	0	0		S28 E80	E	
180	29	28	281	178	008	S08 W54	0	0	0	29	S08 W54	Q	Solalert 29/XX, Magquiet.
						N27 W17	0	0	0		N27 W17	Q	
						S17 W11	0	0	0		S17 W11	Q	
						S21 E06	8	0	0		S21 E06	E	
						S07 W38	1	0	0		S07 W38	Q	
						N05 E13	3	0	0		N05 E13	E	
						S12 E40	1	0	0		S12 E40	Q	
						N08 E47	6	0	0		N08 E47	E	
						N16 W37	0	0	0		N16 W37	Q	
						N24 W25	2	0	0		N24 W25	Q	
						S20 E51	4	0	0		S20 E51	Q	
						S27 E67	0	0	0		S27 E67	Q	
						N18 E76	4	2	0		N18 E76	E	
						N13 E30	1	0	0		N13 E30	Q	
						S19 E34	0	0	0		S19 E34	Q	
181	30	29	318	200	010	S09 W69	2	0	0	30	S09 W69	Q	Solalert 30/XX, Magquiet.
						N27 W30	1	0	0		N27 W30	Q	
						S18 W25	0	0	0		S18 W25	Q	
						N15 W32	0	0	0		N15 W32	Q	
						S21 W06	2	0	0		S21 W06	E	
						S08 W52	2	0	0		S08 W52	Q	
						N06 W00	3	0	0		N06 W00	E	
						S13 E28	13	0	0		S13 E28	E	
						N09 E34	4	0	0		N09 E34	E	
						N15 W52	0	0	0		N15 W52	Q	
						N23 W42	1	0	0		N23 W42	Q	
						S20 E39	1	0	0		S20 E39	E	
						S27 E58	6	0	0		S27 E58	Q	
						N18 E67	10	1	0		N18 E67	E	
						N12 E17	0	0	0		N12 E17	Q	
182	01	30	370	216	004	N27 W42	0	0	0	01	N27 W42	Q	Solalert 01/XX, Magquiet.
						S21 W19	1	0	0		S21 W19	E	
						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	

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

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



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1948	155.7	134.3	135.5	208.1	226.5	195.5	182.8	172.8	163.7	159.1	165.4	193.3	174.4
1949	183.5	220.2	203.9	182.5	154.9	157.5	159.9	175.2	172.5	178.2	180.4	165.2	177.8
1950	150.7	143.3	137.8	164.3	157.1	128.7	134.1	120.9	98.6	99.9	101.9	101.1	128.2
1951	107.9	101.9	102.5	127.1	168.6	161.7	116.3	109.8	117.8	106.0	104.4	102.4	118.9
1952	95.4	86.2	78.5	84.0	80.9	84.8	88.8	93.3	81.5	82.8	83.4	85.7	85.4
1953	83.2	72.8	70.4	81.0	72.5	73.0	69.8	75.5	74.3	71.9	71.4	70.8	73.9
1954	68.7	69.2	71.9	68.7	68.0	67.3	67.7	69.9	70.1	73.2	72.6	75.5	70.2
1955	84.3	82.0	74.8	77.3	82.8	88.8	87.3	90.7	91.1	111.8	130.0	134.6	95.0
1956	141.2	167.2	160.6	165.9	163.4	154.0	162.8	193.8	200.9	201.6	250.4	253.7	184.6
1957	231.2	186.7	197.8	200.0	208.5	252.1	218.0	202.3	267.1	283.1	259.2	286.5	232.7
1958	251.5	212.2	251.5	245.9	218.6	220.5	224.1	237.0	243.5	228.0	209.2	238.2	231.7
1959	274.5	207.9	229.2	210.6	212.7	217.5	203.0	234.2	194.3	165.1	184.8	182.2	209.7
1960	202.6	170.9	146.8	167.6	162.7	161.9	163.9	174.4	164.5	142.3	148.9	138.1	162.0
1961	122.0	106.4	104.8	105.0	99.3	109.9	116.5	106.2	112.7	96.7	90.3	94.8	105.4
1962	94.9	102.2	100.3	96.2	97.9	91.0	80.7	77.3	89.5	87.8	84.9	82.0	90.4
1963	79.5	79.7	77.8	79.5	87.8	83.5	75.9	80.9	85.1	85.1	81.7	78.4	81.2
1964	75.4	76.8	75.9	72.6	69.5	69.0	67.0	69.3	70.2	73.4	73.7	78.8	72.6
1965	78.6	75.2	74.1	72.0	78.2	77.0	74.3	74.8	76.6	80.2	77.7	77.8	76.4
1966	87.9	84.2	90.3	97.2	98.5	96.3	106.7	106.6	110.9	108.6	113.3	124.6	102.1
1967	147.7	147.0	160.6	129.9	143.0	120.2	140.3	153.7	132.1	136.1	145.3	163.0	143.2
1968	189.1	173.2	142.6	129.5	154.9	142.3	137.2	142.2	141.0	152.5	138.5	148.4	149.3
1969	152.7	155.2	172.3	155.5	145.4	162.2	136.6	143.0	137.3	154.0	156.7	143.6	151.2
1970	158.3	175.4	158.4	162.0	168.4	154.9	152.0	138.2	143.2	148.3	162.0	152.8	156.2
1971	162.6	137.8	111.9	116.7	109.9	101.7	117.4	114.1	104.0	107.2	114.0	124.5	118.5
1972	114.8	141.8	128.5	112.9	129.6	135.4	122.0	125.7	113.6	121.1	101.6	102.9	120.8
1973	102.2	98.7	100.4	105.0	97.0	91.2	84.5	82.9	105.6	87.7	81.5	84.2	93.4
1974	83.1	80.9	79.2	86.1	90.6	86.3	92.5	83.0	87.8	97.6	90.3	81.1	86.5
1975	77.5	74.2	72.4	70.7	70.1	69.7	77.2	90.4	79.6	75.7	80.8	74.6	76.1
1976	74.7	70.5	76.7	76.3	70.6	70.6	67.5	74.8	73.1	75.9	72.9	76.7	73.4
1977	77.4	82.3	76.6	77.6	79.6	91.5	81.1	84.3	99.9	96.9	93.7	102.1	86.9
1978	109.6	145.4	141.8	149.4	146.5	142.2	131.1	114.0	157.9	158.2	151.5	175.5	143.6
1979	203.0	204.1	185.8	173.8	165.2	180.3	165.9	172.7	200.2	217.9	231.7	203.5	192.0
1980	206.2	200.0	168.1	207.9	224.0	193.2	184.8	166.2	183.9	204.2	218.1	225.8	198.5
1981	174.6	204.5	205.3	223.2	194.6	156.9	191.9	220.6	219.5	224.3	207.8	207.8	202.6
1982	179.0	214.2	210.5	161.8	144.7	171.9	159.6	167.9	165.3	161.9	167.4	199.4	175.3
1983	142.3	122.6	118.6	118.9	137.1	138.6	125.0	124.4	109.0	112.4	92.5	93.4	119.6
1984	116.1	140.6	122.0	128.7	128.3	100.3	89.3	83.7	78.1	73.5	76.3	75.9	101.1
1985	74.5	73.7	73.3	75.1	80.2	76.1	78.7	71.5	69.5	74.7	74.2	74.8	74.7
1986	73.2	83.6	77.0	75.1	72.6	67.6	70.2	68.4	68.7	83.0	77.1	72.6	74.1
1987	72.5	71.5	74.0	84.9	87.8	77.9	84.2	90.0	86.1	98.1	101.2	94.4	85.3
1988	108.0	105.0	114.9	122.7	115.2	139.4	152.7	154.2	152.5	169.8	156.2	199.8	141.0
1989	235.4	222.4	205.1	189.6	190.1	239.6	181.9	217.1	225.9	208.7	235.1	213.0	231.7
1990	210.1	178.3	188.8	185.3	189.7	170.9							187.2*

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

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Jul 89	Aug	Sep	Oct	Nov	Dec	Jan 90†	Feb†	Mar†	Apr†	May†	Jun†
01	128	171	147	129	153	198	186	171	165	100	70	96
02	149	196	171	150	160	182	166	161	164	114	59	80
03	129	193	180	167	191	203	166	124	163	113	61	73
04	120	213	204	186	216	182	174	119	126	127	86	77
05	101	227	212	209	228	192	164	97	98	132	80	79
06	120	220	230	189	245	184	144	80	104	138	106	96
07	149	215	267	168	233	217	129	82	105	128	132	107
08	141	218	261	166	215	167	138	95	88	116	138	107
09	116	218	296	187	214	161	125	103	71	88	133	87
10	104	200	270	178	203	148	134	79	80	77	116	111
11	136	202	280	191	179	104	164	75	77	83	126	131
12	111	188	264	154	173	99	172	80	85	77	146	115
13	116	207	248	148	153	107	179	85	83	123	144	115
14	116	197	215	159	140	100	147	75	90	142	141	111
15	92	203	207	189	132	84	157	78	110	171	144	102
16	91	177	180	209	124	101	152	64	129	170	157	110
17	99	192	159	206	124	120	174	57	123	190	167	100
18	113	189	155	184	134	123	177	77	173	203	170	83
19	138	202	152	159	124	131	199	107	202	213	187	79
20	149	209	137	140	141	127	236	134	217	206	187	73
21	170	203	111	152	159	111	217	159	211	212	193	57
22	197	160	109	158	162	150	208	191	195	214	187	71
23	195	133	103	145	157	201	219	239	206	174	160	64
24	168	129	75	131	160	191	191	249	230	157	158	85
25	132	105	80	121	175	209	228	245	186	160	146	94
26	111	82	93	109	184	221	227	213	198	118	134	103
27	99	57	101	97	183	240	211	200	168	124	139	140
28	75	50	111	116	183	249	193	156	129	103	116	184
29	112	70	134	131	164	213	185		132	94	118	203
30	125	94	150	156	182	214	198		133	126	90	224
31	132	116		157		201	201		123		101	
Mean	126.9	168.9	176.7	159.4	173.0	165.5	179.4	128.4	140.8	139.8	132.0	105.2

† = 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	Jul 89	Aug	Sep	Oct	Nov	Dec	Jan 90	Feb	Mar	Apr	May	Jun
01	204.0	198.5	223.8	198.4	211.4	223.7*	209.3	200.8	200.0	159.2	129.0	140.6
02	193.4	201.7	233.3	208.5	216.0	213.7	208.6	177.8	192.7	153.3	129.2	141.2
03	192.5*	220.2	243.0*	222.4	217.6	205.6	192.5	157.9	176.3*	151.6	125.2	146.1
04	189.8	225.7	245.0	234.1	223.9	212.9	189.2*	154.8	168.9	148.6*	123.6	148.1
05	183.4*	241.5	273.3	223.2	235.4	209.7	187.1	150.9	161.7	156.5	130.6	153.7
06	192.3	240.3	288.4	220.5	255.3	209.7	180.9	147.5	163.8*	150.2	151.0	161.4
07	193.5	240.6	303.4	225.7	207.3*	221.5	177.1	144.3	168.1	155.0	155.5	183.6
08	188.9	233.6	302.1	210.1	270.9	203.6	170.9	142.2	157.1*	152.3	170.7	195.5
09	188.1	233.9*	311.5	201.9	257.2	194.6	160.6	142.0	150.9*	146.8	174.6	203.9*
10	184.1	232.6	303.3	195.5	246.3*	177.1	167.2	148.5	149.0	149.3	195.4	207.5*
11	193.2	243.6	299.3	191.5	249.1	171.7	169.5	134.9	142.5	160.8	205.4*	217.2
12	190.7	256.1*	292.2	203.2	253.5	164.9	170.0	140.0	146.1	169.9	215.2	221.8*
13	184.0*	263.9	249.3	224.2	240.3	163.2	167.0	142.8	146.3	195.5*	225.8	208.8
14	183.9	271.3	244.9	225.9	243.0	161.8	165.9	149.5	149.8*	215.7	224.2*	206.8
15	185.7	281.7	226.0	225.4	216.5	165.5	184.9	148.8	164.2*	222.9	246.6	196.3
16	183.9	259.8	233.7	237.0	216.2	164.1	187.6	148.8	178.1	226.3*	251.5	189.9
17	184.1	262.9	216.2	225.3	215.0	176.0	186.8	151.6	182.0	236.7*	248.9	187.5
18	189.2	265.0	208.6	221.3*	221.6J	185.9	217.2	161.1	196.4	243.0	271.8	169.5
19	193.7	249.1	197.0*	214.7J	229.2	188.2	233.1	180.3	216.3	244.2*	280.0	163.5
20	192.4	236.4	173.1	205.4	223.7	189.3	238.2	189.5	223.9*	257.1	272.5	161.2
21	195.0	225.7	161.8	206.2	229.4	189.9	250.8*	211.9	227.6	239.6	259.2	155.8
22	200.9	205.4	159.3	217.8	222.0	199.9	233.7	215.7	243.1*	232.8	250.0	145.2
23	196.5	191.3	157.5	210.4	213.4	213.8	233.6	216.6	245.3	226.3	239.5	139.1
24	191.1	182.0	157.0	214.2	208.8	231.0	239.8	231.5	231.3	217.4	209.2	143.8
25	180.4	159.7	166.8	183.3*	216.0	248.0*	234.6	225.3	223.9*	198.3	189.1	149.3
26	169.8	161.0	182.2*	171.7	234.3	252.6	238.8	213.3	226.9	188.9*	186.3	154.5
27	172.8	159.6	199.4	176.9	239.4	274.8	232.2	224.1	215.1	169.8	164.6	173.4*
28	170.7	174.1	194.3	173.0	231.3	246.4	230.1	222.0	206.0	152.7	159.3	187.7
29	180.9	180.3*	204.7*	172.0	215.1	242.7*	227.8		184.1	140.9	144.8	210.8
30	185.1	192.0*	202.0	186.3	240.9	258.2*	211.4		186.5E	136.9	142.5*	226.6
31	188.2	208.9*		202.0*		236.7	209.3		172.8		142.5*	
Mean	187.8	222.5	228.4	207.4	230.0	206.3	203.4	174.1	187.0	186.6	194.0	176.3

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

DAILY SOLAR INDICES

June 1990

Day	Julian Day	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	152	16	96	94	136.7	524	276	189	140.6	137	110	76	41	22
02	153	17	80	90	137.3	525	274	187	141.2	135	104	66	39	20
03	154	18	73	84	142.0	528	279	192	146.1	136	91	68	40	19
04	155	19	77	85	143.9	522	281	193	148.1	140	94	65	39	23
05	156	20	79	81	149.3	541	282	189	153.7	139	106	69	38	19
06	157	21	96	100	156.8	639	299	220	161.4	163	122	74	41	21
07	158	22	107	100	178.2	658	311	246	183.6	189	135	78	42	21
08	159	23	107	116	189.8	576	315	243	195.5	187	118	68	47	22
09	160	24	87	103	197.9*	585	323	250	203.9*	189	143	82	48	25
10	161	25	111	112	201.3*	619	335	266	207.5*	206	132	84	60	93
11	162	26	131	131	210.7	634	334	268	217.2	212	135	91	54	49
12	163	27	115	130	215.1*	620	325	255	221.8*	202	148	85	46	21
13	164	1	115	124	202.5	587	323	257	208.8	206	---	94	54	20
14	165	2	111	121	200.4	620	315	239	206.8	189	164	89	47	19
15	166	3	102	105	190.2	658	317	242	196.3	190	200	89	46	17
16	167	4	110	109	184.0	551	305	225	189.9	181	173	92	49	21
17	168	5	100	104	181.6	613	298	218	187.5	169	152	83	43	19
18	169	6	83	90	164.1	532	278	203	169.5	159	---	79	42	20
19	170	7	79	80	158.3	546	293	201	163.5	153	143	75	41	20
20	171	8	73	74	156.1	534	292	203	161.2	154	126	64	41	18
21	172	9	57	69	150.9	527	284	189	155.8	142	104	70	41	18
22	173	10	71	76	140.6	564	279	186	145.2	136	112	69	40	19
23	174	11	64	73	134.6	535	278	186	139.1	136	97	70	42	22
24	175	12	85	86	139.2	516	266	183	143.8	132	98	69	41	28
25	176	13	94	102	144.5	531	282	192	149.3	143	101	69	43	27
26	177	14	103	121	149.6	539	286	202	154.5	152	104	68	46	32
27	178	15	140	151	167.8*	562	290	216	173.4*	168	115	70	48	44
28	179	16	184	202	181.7	531	289	220	187.7	178	120	72	41	41
29	180	17	203	225	203.9	571	297	243	210.8	202	135	74	46	66
30	181	18	224	245	219.2	593	342	286	226.6	221	139	79	52	39
Mean			105.2	112.8	170.9	569	298	220	176.3	168	126	76	45	28

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	154
1990	155	156	155	153	150	148	147	145	141	136	132	130
	(4)	(9)	(13)	(16)	(16)	(14)	(17)	(21)	(23)	(25)	(24)	(22)
1991	129	127	124	124	125	123	120	117	115	113	114	114
	(23)	(23)	(25)	(29)	(30)	(27)	(24)	(21)	(18)	(16)	(17)	(19)

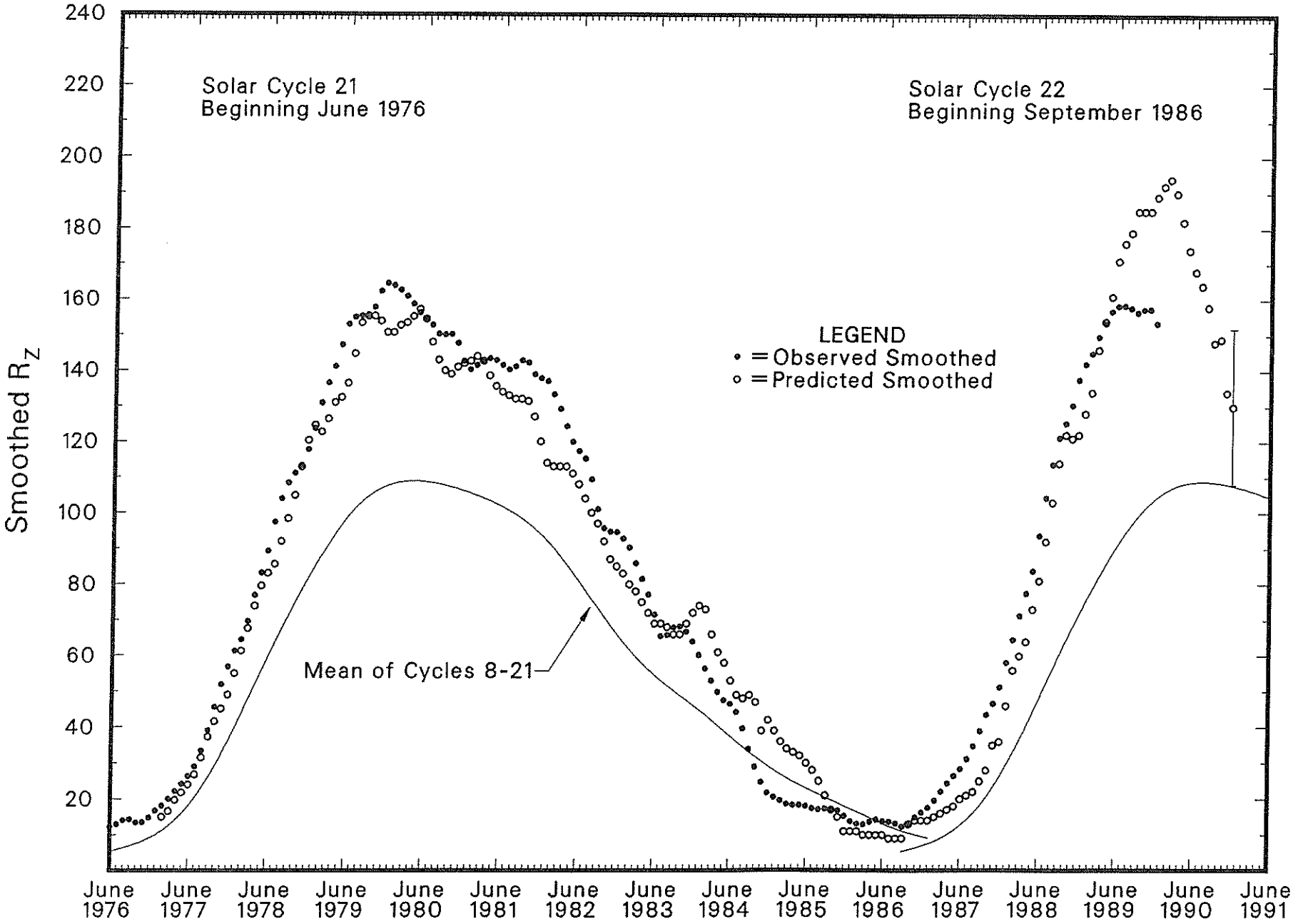
*September 1986 marks the onset of Sunspot Cycle 22.

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 December 1989 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 December 1990 prediction. There exists a 90% chance that in December 1990 the actual smoothed sunspot number will fall somewhere between 108 and 152.

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



29 Jun 90

Hα SOLAR FLARES

JUNE 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	0027	0030	0049	N13	E20	6080	06	2.5	22	SF	B 6.2	3	E		27		
LEAR		0028	0030	0043	N16	E21	6080	06	2.6	15	SF		3	E		21		
LEAR		0646	0654	0719	N22	W14	6077	05	31.2	33	SF	B 9.3	3	E		51		F
SVTO		0649E	0656U	0731	N21	W16	6077	05	31.0	42D	SF		2	E		82		F
HOLL		1622	1638	1657	S11	W41	6078	05	29.7	35	SF	B 6.6	3	E		26		
HOLL		1932	1934	1939	N14	E08	6080	06	2.4	7	SF	B 4.4	3	E		21		F
HOLL		2151	2152	2220	N22	W22	6077	05	31.2	29	SF	B 8.7	3	E		55		FH
LEAR	02	0229	0230	0237	N24	W22	6077	05	31.4	8	SF	C 1.1	3	E		40		FH
LEAR		0632	0640	0743	N16	E03	6080	06	2.5	71	SN	C 5.7	3	E		75		FE
SVTO		0635	0638	0719	N15	E02	6080	06	2.4	44	SF		3	E		37		F
LEAR		0854	0903	0919	N32	W21	6087	05	31.7	25	SF	C 1.2	3	E		87		H
SVTO		0854	0907	0924	N33	W23	6087	05	31.5	30	SF		3	E		62		H
GOES		1405	1411	1417						12		C 1.4						
GOES	03	0300	0303	0305						5		B 5.4						
LEAR		0445	0452	0501	S16	E71	6088	06	8.6	16	SF		3	E		13		
LEAR		0609	0612	0644	N15	W10	6080	06	2.5	35	SF	C 1.9	3	E		15		
GOES		0748	0754	0758						10		C 1.6						
GOES		1407	1413	1420						13		B 9.9						
HOLL		1635	1636	1651	N31	W38	6087	05	31.7	16	SF	B 9.2	3	E		66		F
RAMY		1636	1638	1648	N32	W39	6087	05	31.6	12	SF		3	E		25		
HOLL		2030	2032	2037	S04	E32	6085	06	6.2	7	SF		3	E		25		F
SVTO	04	0442	0450	0510	S18	E58	6088	06	8.6	28	SF		3	E		35		
LEAR		0450	0450	0453	S18	E59	6088	06	8.7	3	SF		3	E		17		
SVTO		0851	0852	0855	S17	E54	6088	06	8.5	4	SF		3	E		14		F
HOLL		1510	1513	1524	N11	E68	6089	06	9.7	14	SF		3	E		22		
RAMY		1700	1704	1712	S18	E51	6088	06	8.6	12	SF		3	E		14		
HOLL		2324	2338	2430	N15	W33	6080	06	2.5	66	SF	C 1.4	3	E		62		F
PALE		2334	2340	2350	N15	W32	6080	06	2.5	16	SF		3	E		17		F
GOES	05	0539	0543	0546						7		B 8.2						
SVTO		0829	0835	0843	N07	E57	6089	06	9.6	14	SF	C 1.4	3	E		34		
RAMY		1049	1052	1103	N18	E02	6086	06	5.6	14	SF		3	E		25		F
HOLL		1506	1510	1531	S09	E44		06	8.9	25	SF		3	E		49		H
RAMY		1507	1507	1515	S10	E45		06	9.0	8	SF		3	E		22		
SVTO		1507	1509	1518	S08	E44		06	8.9	11	SF	B 9.4	3	E		11		
HOLL		1702E	1720	1759	N06	E51	6089	06	9.5	57D	SN	B 9.8	3	E		71		F
RAMY		1710E	1718U	1746D	N06	E51	6089	06	9.5	36D	SF		2	E		57		
GOES	06	0145	0148	0150						5		B 7.7						
GOES		1229	1239	1247						18		C 1.6						
RAMY		1232	1233	1237	S17	W71		06	1.1	5	SF		3	E		17		
HOLL		1328	1329	1348	N09	E41	6089	06	9.6	20	SF		3	E		21		F
RAMY		1328	1330	1341	N09	E43	6089	06	9.8	13	SF		3	E		20		
HOLL		1359	1401	1425	N07	E40	6089	06	9.6	26	SF		3	E		23		F
HOLL		1409	1412	1512	S19	W72		06	1.1	63	SF	C 2.4	3	E		31		F
HOLL		1409	1426	1512	S19	W72	6093			63	SF			E		40		K
GOES		1426	1442	1459						33		C 2.7						
RAMY		1533	1539	1552	S17	W72	6093	06	1.2	19	SF		3	E		20		
HOLL		1536	1540	1550	S18	W72	6093	06	1.2	14	SF		3	E		35		F
HOLL		1609	1611	1619	S18	W72	6093	06	1.2	10	SF		3	E		11		
HOLL		1626	1639	1653	S18	W73	6093	06	1.1	27	SF		3	E		40		F
RAMY		1638	1642	1650	S18	W72	6093	06	1.2	12	SF	M 1.0	3	E		33		
PALE		1643E	1647	1654	S18	W73	6093	06	1.1	11D	SF		3	E		28		
PALE		1813	1813	1817	N08	E40	6089	06	9.7	4	SF		3	E		20		
RAMY		1813	1813	1817	N06	E40	6089	06	9.7	4	SF		3	E		15		
HOLL		1813	1814	1817	N07	E39	6089	06	9.7	4	SF		3	E		45		FH
RAMY		1820	1836	1843	S17	W74	6093	06	1.1	23	SF		3	E		33		
HOLL		1820	1837	1852	S18	W76	6093	06	1.0	32	SN	C 8.1	3	E		49		E
PALE		1822	1836	1850	S19	W78	6093	05	31.8	28	SF		3	E		52		
HOLL		2024	2032	2054	S18	W76	6093			30	SN			E		29		K
HOLL		2024	2039	2054	S18	W76	6093	06	1.1	30	SN	M 1.9	3	E		37		E
PALE		2038E	2038U	2056	S19	W78	6093	05	31.9	18D	SN		3	E		41		F
HOLL		2152	2152	2156	N06	E36	6089	06	9.6	4	SF		3	E		10		
GOES	07	0144E	0152	0203D						19D		C 2.6						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	07	0510E	0518	0535D						25D		C 2.4						
GOES		0546	0621	0628						42		C 5.0						
GOES		0744	0755	0803						19		C 7.1						
SVTO		1020	1021	1024	S19	W86	6093	05	31.9	4	SF		3	E		21		
RAMY		1129	1131	1142	S18	W81	6093	06	1.3	13	SF	C 2.9	3	E		46		
SVTO		1130	1135	1139D	S19	W85	6093	06	1.0	9D	SF		2	E		45		
GOES		1149	1202	1229						40		C 3.4						
RAMY		1212	1225	1233	N06	E28	6089	06	9.6	21	SF		3	E		23		F
RAMY		1349	1400	1428	N11	E29	6089	06	9.7	39	SF		3	E		42		F
RAMY		1440	1445	1457	S18	W78	6093	06	1.7	17	SF	C 8.4	3	E		52		
RAMY		1440	1451	1457	S18	W78	6093			17	SF			E		22		K
HOLL		1446	1450	1456	S19	W82	6093	06	1.3	10	SF		3	E		52		FE
SVTO		1450	1451	1454	S20	W90	6093	05	31.7	4	SF		3	E		24		
RAMY		1604	1606	1624	S15	E12	6088	06	8.6	20	SF	C 2.4	3	E		48		F
SVTO		1604	1607	1624D	S16	E13	6088	06	8.6	20D	SF		2	E		69		F
GOES		1716	1720	1725						9		C 1.6						
RAMY		1744	1750	1759	N26	E78		06	13.8	15	SF		3	E		76		
PALE		1746	1750	1757	N28	E80		06	14.0	11	SF	C 2.0	3	E		70		
PALE		1818	1825	1839	N08	E26	6089	06	9.7	21	SF		3	E		22		
RAMY		1818	1825	1843	N06	E26	6089	06	9.7	25	SF		3	E		28		F
GOES		1859	1930	2258						239		M 4.5						T
HOLL		2126	2130	2153	S16	E04	6088	06	8.2	27	SF		3	E		40		F
HOLL		2129	2131	2141	N07	E23	6089	06	9.6	12	SF		3	E		62		F
HOLL		2208	2210	2215	N08	E18	6089	06	9.3	7	SF		3	E		21		
GOES	08	0137E	0140	0148D						11D		C 2.5						
GOES		0211	0217	0220						9		C 5.8						
GOES		0225	0232	0236						11		C 4.4						
GOES		0828	0841	0858						30		C 2.2						
SVTO		1018	1019	1025	N07	E16	6089	06	9.6	7	SF		3	E		16		
SVTO		1151	1154	1211	S17	E00	6088	06	8.5	20	SF		3	E		45		UF
RAMY		1154	1156	1200	S18	W01	6088	06	8.4	6	SF	C 3.3	4	E		13		FH
GOES		1319	1347	1408						49		C 2.9						
HOLL		1539E	1541U	1613	N09	E13	6089	06	9.6	34D	SF		2	E		36		FH
SVTO		1544	1555	1620	N11	E12	6089	06	9.5	36	SF	C 5.7	3	E		69		F
RAMY		1552	1555	1613	N08	E13	6089	06	9.6	21	SF		4	E		25		FH
RAMY		1647	1650	1657	N07	E13	6089	06	9.7	10	SF		3	E		14		
PALE		2018	2019	2046	N09	E11	6089	06	9.7	28	SF		3	E		18		
RAMY		2118	2124	2138	N07	E10	6089	06	9.6	20	SF		3	E		26		
PALE		2120	2123	2139	N08	E10	6089	06	9.6	19	SF		3	E		19		
HOLL		2258E	2300U	2300D	N08	E06	6089	06	9.4	2D	SF		1	E		35		F
GOES	09	0052	0110	0115						23		C 3.8						
GOES		0201	0207	0216						15		C 2.2						
GOES		0448	0451	0457						9		C 1.4						
RAMY		1340	1341	1407	N07	E03	6089	06	9.8	27	SF		3	E		37		
SVTO		1340	1347	1415	N07	E01	6089	06	9.6	35	SF		3	E		59		
RAMY		1413	1415	1421D	S19	E74	6100			8D	1N			E		126		K
RAMY		1413	1423	1533	S19	E74	6100	06	15.2	80	1N		3	E		125		F
SVTO		1413	1423	1553	S14	E75	6100	06	15.3	100	1N	M 1.4	3	E		112		ZE
HOLL		1639	1648	1715	N08	W01	6089	06	9.6	36	2B	M 2.5	3	E		301		FH
HOLL		1639	1709	1715	N08	W01	6089			36	SF			E		57		K
RAMY		1648E	1648U	1728	N07	W01	6089	06	9.6	40D	1B		3	E		215		FH
RAMY		1830	1831	1842	N23	E04	6095	06	10.1	12	SF		3	E		19		
HOLL		1939	1942U	1948	N10	E01	6089	06	9.9	9	SF		2	E		12		
HOLL		2010E	2013U	2030D	N34	E86		06	16.7	20D	1F	C 4.6	2	E		126		
HOLL		2143E	2144U	2149D	N08	W04	6089	06	9.6	6D	SF		2	E		53		F
PALE		2145	2145	2151	N09	W04	6089	06	9.6	6	SF	C 1.7	3	E		16		F
PALE		2152	2155	2234	N11	W02	6089	06	9.8	42	SF	C 2.2	3	E		18		F
GOES		2234	2302	2329						55		C 2.6						
PALE		2241	2305	2315	N06	W06	6089	06	9.5	34	SF		3	E		17		F
PALE	10	0045	0046	0053	N24	W01	6095	06	9.9	8	SF		3	E		18		F
GOES		0148	0218	0237						49		C 2.5						
SVTO		0435	0453	0509	N23	W02	6095	06	10.0	34	SF	C 2.5	3	E		63		
PALE		0444	0445	0500D	N24	W04	6095	06	9.9	16D	SF		2	E		43		
SVTO		0518	0523	0537	N08	W07	6089	06	9.7	19	SF		3	E		30		
SVTO		0535	0537	0546	N24	W03	6095	06	10.0	11	SF		3	E		22		

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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	10	0656	0727	1025	N10	W10	6089	06	9.5	209	2B	M 2.3	3	E		370		F
SVTO		0656	0811	1025	N10	W10	6089			209	SN			E		67		K
SVTO		0859	0913	0921	N24	W05	6095	06	10.0	22	SF		3	E		79		F
SVTO		1057	1058	1108	N10	W09	6089	06	9.8	11	SF		3	E		14		F
RAMY		1131	1131	1144	N24	W04	6095	06	10.2	13	SF		3	E		11		
RAMY		1232	1238	1305	N24	W04	6095	06	10.2	33	SF		3	E		15		
RAMY		1304	1308	1315	N09	W13	6089	06	9.6	11	SF		3	E		19		
GOES		1325	1328	1330						5		C 1.8						
RAMY		1334	1335	1409	N08	W12	6089	06	9.7	35	SF		3	E		66		
SVTO		1337E	1337U	1356	N08	W13	6089	06	9.6	19D	SN	C 3.1	3	E		60		F
SVTO		1337E	1348	1356	N08	W13	6089			19D	SN			E		38		K
RAMY		1430	1433	1552	N08	W13	6089			82	SF			E		21		K
RAMY		1430	1506	1552	N08	W13	6089	06	9.6	82	1B	M 3.3	3	E		197		F
SVTO		1443	1447	1538	N08	W14	6089			55	SB			E		85		K
SVTO		1443	1508	1538	N08	W14	6089	06	9.6	55	1B		3	E		148		FE
HOLL		1533E	1534U	1551D	N08	W13	6089	06	9.7	18D	SF		1	E		58		
HOLL		1608E	1608U	1741D	N24	W07	6095	06	10.1	93D	SF		1	E		34		F
RAMY		1620	1643	1700	N24	W07	6095	06	10.1	40	SF	C 4.5	3	E		27		
HOLL		1755	1755	1804	N12	W15	6089	06	9.6	9	SF		3	E		12		
HOLL		1758	1801	1806	N23	W09	6095	06	10.0	8	SF		3	E		33		F
RAMY		1759	1801	1805	N22	W07	6095	06	10.2	6	SF		3	E		20		
PALE		1800	1800	1806	N23	W07	6095	06	10.2	6	SF		3	E		16		
HOLL		1821	1827	1840	N23	W08	6095	06	10.1	19	SF		3	E		22		F
RAMY		1825	1825	1840	N24	W08	6095	06	10.1	15	SF		3	E		18		
HOLL		1829	1832	1858	S13	E59	6100	06	15.2	29	SF		3	E		18		F
RAMY		1831	1837	1854	S13	E57	6100	06	15.1	23	SF		3	E		13		
PALE		2139E	2147U	2320	N09	W17	6089	06	9.6	101D	SF	M 1.7	3	E		56		
PALE	11	0135	0138	0146	N25	W13	6095	06	10.0	11	SF		3	E		15		
PALE		0336	0336	0348	N09	W16	6089	06	9.9	12	SF		3	E		20		F
SVTO		0545	0549	0606	S12	W77	6094	06	5.4	21	SF		3	E		18		
SVTO		0556	0558	0621	N08	W18	6089	06	9.9	25	SF	C 1.7	3	E		46		
SVTO		0722	0728	0746	N24	W18	6095	06	9.9	24	SN		3	E		28		
SVTO		0934	0948	1059	N10	W22	6089	06	9.7	85	2B	M 4.5	3	E		586		FH
SVTO		0934	1003	1059	N10	W22	6089			85	2B			E		260		K
RAMY		1017E	1017U	1135	N10	W20	6089	06	9.9	78D	1F		3	E		203		UF
SVTO		1105	1127	1134	N11	W22	6089	06	9.8	29	SF		3	E		15		F
SVTO		1121	1123	1130	N09	E82		06	17.6	9	SF		3	E		58		
SVTO		1216	1218	1223	S11	W84	6094	06	5.2	7	SF		3	E		12		
SVTO		1559	1604	1638	S13	E46	6100	06	15.1	39	SF		3	E		20		F
SVTO		1559	1632	1638	S13	E46	6100			39	SF			E		19		K
RAMY		1630	1632	1638	S21	E64	6100	06	16.6	8	SF		3	E		11		F
RAMY		1850	1853	1918	S25	E67	6100	06	17.0	28	2N	M 1.1	3	E		255		FH
HOLL		1905E	1905U	1932D	S18	E61	6100	06	16.4	27D	2N		1	E		591		FH
GOES		1944	1948	1950						6		C 4.9						
GOES		2200	2207	2216						16		C 2.0						
LEAR	12	0053E	0053U	0105	N24	E24	6096	06	13.9	12D	SF	M 1.0	2	E		93		E
PALE		0313	0321	0325	N12	W33	6089	06	9.6	12	SF		3	E		19		F
LEAR		0347	0353	0408	N12	W33	6089	06	9.7	21	SF		3	E		27		
PALE		0352	0353	0358	N09	W34	6089	06	9.6	6	SF		3	E		20		F
LEAR		0416	0423	0438	N25	W29	6095	06	9.9	22	SF		3	E		31		
LEAR		0429	0434	0735	N10	W33	6089			186	1B			E		165		K
LEAR		0429	0529	0735	N10	W33	6089	06	9.7	186	2B		3	E		272		UF
PALE		0431	0434	0455	N11	W32	6089	06	9.8	24	SF	C 6.2	3	E		86		
LEAR		0449	0449	0528	S14	E37	6100	06	15.0	39	SF		3	E		21		F
SVTO		0558E	0601U	0649D	N10	W35	6089	06	9.6	51D	2N	M 6.4	1	E		276		F
LEAR		0624	0630	0715	S12	E13	6098	06	13.2	51	SF		3	E		55		F
SVTO		0627	0634U	0649D	S10	E13	6098	06	13.2	22D	SF		1	E		43		
LEAR		0636	0650	0652	S14	E33	6100	06	14.8	16	SF		3	E		13		F
LEAR		0747	0751	0810	N24	W29	6095	06	10.1	23	SF		3	E		16		F
SVTO		0759	0802	0820	N24	W31	6095	06	9.9	21	SF		3	E		16		
SVTO		0859	0903	0934	N07	E68		06	17.5	35	SF		3	E		30		
RAMY		1155	1202	1227	N10	E70		06	17.7	32	1F	C 5.7	3	E		100		U
SVTO		1156	1158U	1221D	N07	E72		06	17.9	25D	SF		3	E		43		F
GOES		1300	1321	1334						34		C 4.4						
SVTO		1522	1536	1554	N54	E79		06	19.4	32	SF		3	E		29		F
HOLL		1637	1656	1746	N14	W41	6089	06	9.6	69	1F	C 6.3	3	E		161		FE

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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
RAMY	12	1645	1655	1728	N14	W43	6089	06	9.4	43	1F		3	E		121		F
PALE		1650	1658	1703	N13	W38	6089	06	9.8	13	SF		3	E		36		F
SVTO		1657E	1657U	1705D	N13	W41	6089	06	9.6	8D	SF		3	E		49		F
RAMY		1724	1726	1732	N07	E62		06	17.4	8	SF		3	E		28		F
HOLL		1747	1752	1806	N12	W39	6089	06	9.8	19	SF		3	E		58		F
RAMY		1752	1752	1801	N13	W41	6089	06	9.6	9	SF		3	E		21		F
RAMY		1901E	1901U	1906	S13	E06	6098	06	13.2	5D	SF		2	E		12		F
RAMY		2013	2017	2043	N11	W42	6089	06	9.7	30	SF	C 1.5	3	E		19		F
HOLL		2016	2018	2028D	N13	W42	6089	06	9.7	12D	SF		3	E		20		
HOLL		2042E	2042U	2056D	S11	E23	6100	06	14.6	14D	SF		2	E		12		H
HOLL		2135	2135	2214	N12	W42	6089	06	9.7	39	SF		2	E		11		
HOLL		2210	2211	2257	S17	E30	6100	06	15.2	47	SF		3	E		15		
PALE		2219E	2221U	2252D	S17	E30	6100	06	15.2	33D	SF		3	E		16		
HOLL		2258	2302	2337	N09	W44	6089			39	SF			E		22		K
HOLL		2258	2323	2337	N09	W44	6089	06	9.6	39	SF	C 2.2	3	E		49		F
HOLL		2307	2323	2338	S13	E29	6100	06	15.1	31	SF	C 2.7	3	E		17		
PALE		2311E	2311U	2336D	N11	W46	6089	06	9.5	25D	SF		3	E		29		F
PALE		2311E	2314	2327	S13	E30	6100	06	15.2	16D	SF		3	E		26		H
HOLL	13	0033E	0038U	0124	N10	W44	6089	06	9.7	51D	1B	M 1.1	2	E		178		FE
PALE		0034	0035U	0134	N11	W45	6089	06	9.6	60	1N		3	E		115		FE
HOLL		0104E	0105U	0109	S11	E23	6100	06	14.8	5D	SF		2	E		20		
PALE		0228	0232	0246	S12	E23	6100	06	14.8	18	SN	C 2.7	3	E		53		F
SVTO		0452E	0453U	0501	S18	E06		06	13.6	9D	SF	C 1.9	2	E		29		
SVTO		0518	0523	0536	N10	W47	6089	06	9.7	18	SF		3	E		19		
GOES		0614	0618	0622						8		C 1.7						
SVTO		0932	0941	1008	N12	E57	6105	06	17.7	36	SF		3	E		30		
SVTO		1049	1059	1131	N10	W52	6089			42	SF			E		47		K
SVTO		1049	1112	1131	N10	W52	6089	06	9.5	42	SF		3	E		73		F
RAMY		1055E	1112	1129	N10	W50	6089	06	9.7	34D	SN		3	E		72		F
SVTO		1056	1110	1134	S31	E50	6106	06	17.4	38	SF		3	E		27		
GOES		1110	1114	1117						7		C 3.6						
SVTO		1242	1244	1308D	S15	E22	6100	06	15.2	26D	SF		3	E		21		U
HOLL		1245	1249	1308	S16	E22	6100	06	15.2	23	SF		3	E		52		FH
HOLL		1245	1254	1326	N11	W51	6089	06	9.7	41	SF		3	E		32		F
SVTO		1250	1417	1441D	N09	W53	6089			111D	1N			E		106		K
SVTO		1250	1420	1441D	N09	W53	6089	06	9.5	111D	1N		3	E		144		F
HOLL		1257	1258	1304	S30	E52	6106	06	17.6	7	SF		3	E		22		
HOLL		1310	1313	1327	N08	E52	6105	06	17.4	17	SF		3	E		17		
RAMY		1312	1315	1327	N13	W52	6089	06	9.6	15	SF		3	E		64		
HOLL		1333	1333	1340	N10	W52	6089	06	9.6	7	SF		3	E		15		F
HOLL		1346	1350	1501	N09	W52	6089			75	SF			E		49		K
HOLL		1346	1420	1501	N09	W52	6089	06	9.7	75	1N	C 2.1	3	E		147		FE
RAMY		1348	1353	1406	N11	W52	6089	06	9.7	18	SF		3	E		64		F
GOES		1410E	1419	1442D						32D		C 7.0						
HOLL		1501	1502	1523	N09	W52	6089	06	9.7	22	SF		3	E		62		F
HOLL		1514	1514	1521	S17	E20	6100	06	15.1	7	SF		3	E		11		F
RAMY		1520	1520	1541	N11	W54	6089	06	9.6	21	SF		3	E		77		F
RAMY		1623	1624	1644	N12	W54	6089	06	9.6	21	SF	C 2.2	3	E		53		F
HOLL		1626	1626	1638	N11	W53	6089	06	9.7	12	SF		3	E		65		F
HOLL		1719	1719	1726	N08	W53	6089	06	9.7	7	SF	C 1.4	3	E		13		
PALE		1816	1834	2213D	S17	E19	6100			237D	SN			E		56		KT
PALE		1816	1851	2213D	S17	E19	6100	06	15.2	237D	1F		3	E		127		T
PALE		1830	1830	1858	S11	E74		06	19.3	28	SF		3	E		10		
GOES		1831	1927	2055						144		C 4.4						
HOLL		1839	1846	1849	S10	E73		06	19.3	10	SF		3	E		27		
HOLL		1840	1851	2057	S17	E19	6100	06	15.2	137	SF		3	E		62		
HOLL		1853	1906	1925	N09	E49	6105	06	17.5	32	SF		3	E		14		
PALE		1901	1901	2026	S32	E50	6106	06	17.7	85	SF		3	E		12		
HOLL		1939	2041	2109	N07	E48	6105	06	17.4	90	SF		3	E		37		
HOLL		2007	2008	2025	N13	W58	6089	06	9.5	18	SF		3	E		23		F
PALE		2025	2025	2031	N11	E50	6105	06	17.6	6	SF		3	E		15		
HOLL		2041	2041	2052	S30	E48	6106	06	17.6	11	SF		3	E		21		
HOLL		2238	2239	2249	N25	W49	6095	06	10.1	11	SF		3	E		32		
HOLL		2239	2239	2245	N12	W57	6089	06	9.6	6	SF		3	E		13		
HOLL	14	0035	0040	0057	N12	W59	6089	06	9.6	22	SF		3	E		17		
PALE		0305	0305	0319	N06	E48	6105	06	17.7	14	SF		3	E		11		

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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
LEAR	14	0543	0551	0608	S06	E55	6107	06	18.3	25	SF		3	E		23		
LEAR		0556	0557	0607	N25	W54	6095	06	10.1	11	SF		3	E		20		
SVTO		1205	1224	1249	S31	E34	6106	06	17.2	44	SN	C 4.2	2	E		96		F
HOLL		1211E	1212U	1248	S28	E32	6106	06	17.0	37D	SF		2	E		42		UF
HOLL		1331	1359	1426	S16	W33	6104	06	12.1	55	SF		3	E		26		F
HOLL		1357	1401	1431	S19	W25	6098	06	12.7	34	SF		3	E		35		
HOLL		1546	1611	1704	S15	E05	6100	06	15.0	78	SF		3	E		59		F
HOLL		1755	1758	1837	S14	E03	6100	06	15.0	42	SF		3	E		40		F
HOLL		1816E	1835	1950	N07	E37	6105	06	17.5	94D	1F	C 3.8	3	E		129		F
PALE		1820	1900	1928	N06	E37	6105	06	17.5	68	SF		3	E		34		F
HOLL		2247	2249	2258	N11	W73	6089	06	9.4	11	SF		3	E		18		H
HOLL		2355	2357	2402	N11	W74	6089	06	9.4	7	SF	C 1.1	3	E		17		H
GOES	15	0009	0012	0015						6		C 1.4						
LEAR		0109	0110	0128	S08	E57	6107	06	19.3	19	SF	C 2.5	3	E		13		
PALE		0110	0146	0215	S07	E58	6107	06	19.4	65	SF		3	E		63		F
LEAR		0140	0144	0158	S08	E57	6107	06	19.3	18	SF	C 3.6	3	E		21		
PALE		0159	0239	0322	N07	E33	6105	06	17.5	83	SF	C 2.4	3	E		59		FH
PALE		0407	0410	0420	N07	E32	6105	06	17.6	13	SF		3	E		19		
LEAR		0420	0424	0532	S09	E55	6107	06	19.3	72	SF	C 2.8	3	E		59		
PALE		0420	0425	0442	S09	E54	6107	06	19.2	22	SF		3	E		58		
SVTO		0515	0518	0521	S06	E52	6107	06	19.1	6	SF	C 1.3	3	E		23		
LEAR		0543	0550	0617	S09	E54	6107	06	19.3	34	SF		3	E		45		
SVTO		0650	0651	0654	N11	W79	6089	06	9.3	4	SF		3	E		22		H
LEAR		0651	0651	0654	N12	W78	6089	06	9.4	3	SF		3	E		18		
LEAR		0704	0708	0748	S09	E54	6107	06	19.3	44	SF		3	E		34		
LEAR		0823	0827	0918	S31	E28	6106			55	2N			E		525		K
LEAR		0823	0844	0918	S31	E28	6106	06	17.5	55	2B	M 3.1	3	E		495		U
SVTO		0832	0834	1033D	S30	E28	6106	06	17.5	121D	2B		2	E		306		
HOLL		1512E	1524U	1544	N07	E26	6105	06	17.6	32D	SF	C 2.6	3	E		27		UF
HOLL		1553	1557	1616	N07	E24	6105	06	17.4	23	SF		3	E		30		F
HOLL		1621	1622	1635	S09	E47	6107	06	19.2	14	SF		3	E		30		F
GOES		1816	1820	1835						19		C 1.7						
PALE		1927E	1942U	2036D	N07	E23	6105	06	17.5	69D	SF		3	E		34		F
LEAR		2344	2344	2348	S08	E42	6107	06	19.1	4	SF		3	E		36		
LEAR	16	0910	0913	0924	S08	E34	6107	06	18.9	14	SF		3	E		27		
LEAR		0917	0926	0937D	N09	E16	6105	06	17.6	20D	SF		2	E		22		
SVTO		0928E	0931U	1001D	S09	E34	6107	06	18.9	33D	SF		3	E		50		
SVTO		0930E	0933U	0949D	N10	E14	6105	06	17.4	19D	SF		3	E		42		F
HOLL		1529	1536	1618	S14	W21	6100	06	15.0	49	SF		4	E		73		F
SVTO		1535E	1538U	1605D	S23	W16	6100	06	15.4	30D	SF	C 1.7	3	E		54		F
SVTO		1628E	1630U	1656D	S23	W16	6100	06	15.4	28D	SF		3	E		46		U
HOLL		1630	1633	1707	S15	W23	6100	06	14.9	37	SF	C 1.9	4	E		72		F
PALE	17	0140	0140	0152	S14	W25	6100	06	15.2	12	SF		3	E		70		F
LEAR		0140	0140	0156	S12	W26	6100	06	15.1	16	SF	C 2.6	3	E		50		UF
HOLL		0144E	0144U	0151D	S13	W27	6105	06	15.0	7D	SF		2	E		69		F
LEAR		0159	0159	0206	S10	E29	6107	06	19.3	7	SF		3	E		10		
PALE		0159	0200	0210	S10	E30	6107	06	19.3	11	SF		3	E		14		
SVTO		0906	0911	0948	S08	E25	6107	06	19.2	42	1N	C 3.2	3	E		139		F
SVTO		0906	0924	0948	S08	E25	6107			42	SB			E		86		K
LEAR		0907	0911	0937D	S08	E24	6107	06	19.2	30D	1N		3	E		134		
SVTO		0959	0959	1018	N28	W39	6096	06	14.4	19	SF		3	E		17		
HOLL		1324	1330	1333	N05	W01	6105	06	17.5	9	SF		2	E		13		
SVTO		1521	1529	1552	N26	W46	6096	06	14.1	31	SF		3	E		24		F
HOLL		1607	1608	1630	N07	W03	6105	06	17.4	23	SF		4	E		32		F
HOLL		1608	1615	1623	S27	W29	6108	06	15.4	15	SF		4	E		22		F
HOLL		2125	2127	2130	S30	W05	6106	06	17.5	5	SF		3	E		21		F
SVTO	18	1137	1143	1147	S07	E10	6107	06	19.2	10	SF		3	E		13		
HOLL		2328	2344	2358	N16	W57		06	14.6	30	SF		3	E		21		
SVTO	19	0908	0908	0924	N06	W24	6105	06	17.6	16	SF		3	E		55		
HOLL		1556	1557	1619	S30	W34	6106	06	17.0	23	SF	C 1.6	3	E		42		F
SVTO		1557	1559	1611	S30	W35	6106	06	16.9	14	SF		3	E		27		F
HOLL		2103	2104	2109	S08	W08	6107	06	19.3	6	SF		3	E		43		
LEAR	20	0137	0145	0201	N08	W36	6105	06	17.4	24	SF		3	E		11		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	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	20	0225	0230	0247	S35	W46	6109	06	16.4	22	SF	C 1.1	3	E		52		F
SVTO		0646	0649	0703	N37	W61		06	15.4	17	SF	C 1.7	3	E		27		
SVTO		0724	0742	0829	N36	W50		06	16.3	65	SF		4	E		56		U
LEAR		0729	0733	0749	S30	W40	6106	06	17.2	20	SF	C 5.6	3	E		62		F
LEAR		0801	0802	0810	N10	W38	6105	06	17.5	9	SF		3	E		22		F
SVTO		0843	0852	0924	S04	E56	6112	06	24.5	41	SF		4	E		17		
HOLL		1304E	1304U	1309	S18	W76	6100	06	14.7	5D	SF		3	E		14		
SVTO		1420	1423	1428	S18	W80	6100	06	14.5	8	SF		3	E		15		
GOES		1653	1659	1703						10		C 2.1						
HOLL		1835E	1838U	1857D	S17	W78	6100	06	14.8	22D	SF		1	E		13		
HOLL		1923E	1928U	1939D	S18	W82	6100	06	14.6	16D	SF		1	E		27		
GOES	21	0206E	0212	0232D						26D		C 4.2						
GOES		1023	1027	1032						9		B 8.7						
HOLL		1919	1920	1937	S30	W53	6106	06	17.6	18	SF		3	E		39		
HOLL		1928	1934	1937	S06	W36	6107	06	19.1	9	SF		3	E		10		
HOLL		2206E	2208U	2212	N21	E48		06	25.6	6D	SF		2	E		11		
SVTO	22	0504	0506	0512	S07	E40	6114	06	25.2	8	SF		3	E		16		F
LEAR		0505	0505	0511	S09	E39	6114	06	25.1	6	SF		3	E		19		F
SVTO		0537	0540	0556	N22	E44	6119	06	25.6	19	SF		3	E		12		
GOES		0558	0605	0610						12		C 2.6						
SVTO		0648	0703	0803	S33	W63	6106			75	1F			E		143		K
SVTO		0648	0715	0803	S33	W63	6106	06	17.3	75	1N	C 5.1	3	E		124		F
LEAR		0650	0701	0737	S32	W62	6106	06	17.4	47	SF		3	E		80		F
GOES		2054	2058	2105						11		C 1.9						
SVTO	23	0841	0842	0850	S23	E77		06	29.3	9	SF		3	E		53		
SVTO		0952	0955	1014	S07	E21	6114	06	25.0	22	SF		3	E		20		
SVTO		1057	1104	1143	S19	E68		06	28.6	46	SF		3	E		93		
SVTO		1057	1118	1143	S19	E68				46	SF			E		75		K
RAMY		1102E	1107	1146	S20	E74		06	29.1	44D	SF	C 3.0	3	E		99		FH
SVTO		1146	1146	1200	S18	E68		06	28.7	14	SF		3	E		20		
SVTO		1201	1217	1308	S18	E67		06	28.6	67	SF		3	E		63		F
RAMY		1212	1223	1241	S19	E69		06	28.8	29	SF	C 2.1	3	E		35		
HOLL		1308E	1315	1335	S20	E68		06	28.7	27D	SF		2	E		21		F
HOLL		1635	1636	1650	N17	E51	6121	06	27.6	15	SF		3	E		15		
PALE		1744E	1751	1753	N16	E55	6121	06	27.9	9D	SF		3	E		45		
HOLL		2026	2028	2032	S22	E73	6122	06	29.5	6	SF		3	E		11		F
HOLL		2050	2050	2055	S22	E73	6122	06	29.5	5	SF	C 1.2	3	E		14		F
HOLL		2057	2101	2104	S25	E76	6122	06	29.8	7	SF		3	E		16		
PALE	24	0026	0027	0031	S20	E66	6122	06	29.1	5	SF		3	E		15		
PALE		0053	0055	0057	S20	E66	6122	06	29.1	4	SF		3	E		16		
LEAR		0107	0114	0135	N24	E33		06	26.6	28	1F		3	E		114		U
PALE		0107	0116	0148D	N23	E33		06	26.6	41D	1F	C 2.1	3	E		150		
LEAR		0334	0335	0339	S20	E64	6122	06	29.0	5	SF	B 7.7	3	E		21		
LEAR		0345	0349	0351	S21	E73	6122	06	29.7	6	SF		3	E		14		
SVTO		0517	0522	0541	S20	E71	6122	06	29.6	24	SF		3	E		14		
LEAR		0532	0536	0550	S23	E74	6122	06	29.9	18	SF	C 7.3	3	E		25		
SVTO		0725	0726	0733	S18	E54	6120	06	28.4	8	SF		3	E		23		
SVTO		0818	0822	0842	S20	E65	6122	06	29.3	24	SF	C 2.9	4	E		47		
LEAR		0819	0823	0827	S22	E62	6122	06	29.1	8	SF		3	E		16		
SVTO		0916	0916	0922	S21	E67	6122	06	29.5	6	SF		4	E		31		
SVTO		1015	1017	1024	S19	E56	6122	06	28.7	9	SF		4	E		30		
SVTO		1053	1056	1059	S21	E60	6122	06	29.0	6	SF		4	E		20		
RAMY		1057	1104	1112	S22	E61	6122	06	29.1	15	SF		3	E		12		
SVTO		1100	1109	1116	S21	E59	6122	06	29.0	16	SF		4	E		25		
RAMY		1125	1126	1132	S07	E08	6114	06	25.1	7	SF		3	E		12		
SVTO		1246	1249	1259	S18	E63	6122	06	29.3	13	SF		4	E		22		
HOLL		1336	1339	1416	N16	E39	6121	06	27.5	40	SF		3	E		37		F
SVTO		1339	1339	1350	N18	E40	6121	06	27.6	11	SF		4	E		14		
RAMY		1340	1344	1354	N16	E40	6121	06	27.6	14	SF		3	E		11		
SVTO		1434	1443	1454	S19	E58	6122	06	29.0	20	SF		3	E		16		
SVTO		1455	1459	1547	S21	E56	6122	06	28.9	52	SF		3	E		22		F
HOLL		1456	1459	1511	S22	E58	6122	06	29.1	15	SF		3	E		18		F
RAMY		1518	1522	1525	S22	E58	6122	06	29.1	7	SF		3	E		26		
HOLL		1524	1526	1527	S21	E59	6122	06	29.2	3	SF		3	E		11		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	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	24	1554	1557	1600	S23	E63	6122	06	29.5	6	SF		3	E		33		F
GOES		1627	1631	1633						6		C 1.7						
HOLL		1747	1750	1753	S20	E58	6122	06	29.2	6	SF	C 1.7	3	E		40		
GOES		2127	2130	2132						5		C 1.6						
PALE		2256	2258	2307	S22	E57	6122	06	29.3	11	SF	C 1.4	3	E		41		F
PALE	25	0116	0121	0127D	S22	E53	6122	06	29.1	11D	1N	M 1.1	3	E		136		F
LEAR		0116	0123	0158	S24	E54	6122			42	1N			E		135		K
LEAR		0116	0130	0158	S24	E54	6122	06	29.2	42	1N		3	E		93		FE
HOLL		0119E	0122	0139D	S23	E51	6122	06	29.0	20D	1N		2	E		175		UE
GOES		0436	0441	0446						10		C 1.3						
SVTO		0528	0529	0535	S21	E55	6122	06	29.4	7	SF		3	E		11		
LEAR		0702	0704	0717	S22	E50	6122	06	29.1	15	SF	C 3.3	3	E		20		
SVTO		0704	0704	0719	S22	E48	6122	06	29.0	15	SF		3	E		39		F
LEAR		0753	0755	0807	S23	E55	6122	06	29.6	14	SF		3	E		27		
GOES		0813	0817	0821						8		C 1.2						
GOES		0933	0938	0940						7		C 4.0						
SVTO		1044	1045	1101	S11	W03	6114	06	25.2	17	SF	C 1.3	3	E		34		H
SVTO		1211	1212	1226	S20	E46	6122	06	29.0	15	SF	C 1.2	3	E		16		
SVTO		1503	1503	1519	S21	E45	6122	06	29.1	16	SF		3	E		15		
HOLL		1725	1725	1732	N16	W03	6119	06	25.5	7	SF		3	E		11		
HOLL		1813E	1813U	1818	N28	E36		06	28.6	5D	SF		3	E		17		F
HOLL		1902	1910	1925	S22	E43	6122	06	29.1	23	SF		3	E		24		
GOES		2133	2136	2138						5		C 1.1						
HOLL	26	0015	0028	0050	S22	E44	6122	06	29.4	35	1N	C 4.0	3	E		215		FH
HOLL		0019	0021	0030	S10	E81		07	2.1	11	SF	C 2.8	3	E		62		
GOES		0309	0320	0328						19		C 8.1						
SVTO		0447	0447	0458	S21	E44	6122	06	29.6	11	SF		3	E		26		F
SVTO		0531	0541	0614	S20	E37	6122	06	29.0	43	SF	C 3.0	3	E		48		F
SVTO		0718	0731	0742	S10	W17	6114	06	25.0	24	SF		3	E		28		F
SVTO		0754	0757	0813	S09	W18	6114	06	25.0	19	SF		3	E		14		F
SVTO		0800	0802	0809	S20	E36	6122	06	29.1	9	SF		3	E		15		F
GOES		1143	1148	1151						8		C 1.0						
SVTO		1148	1213	1527	N10	E83		07	2.7	219	SF		3	E		63		T
RAMY		1209	1242	1247	N09	E83		07	2.7	38	SF		3	E		36		
SVTO		1304	1304	1308	S10	W21	6114	06	25.0	4	SF		3	E		17		F
RAMY		1444	1457	1518	N09	E81		07	2.7	34	SF		3	E		47		
RAMY		1455	1455	1511	S10	W22	6114	06	25.0	16	SF		3	E		25		F
HOLL		1455	1456	1542	S10	W22	6114	06	25.0	47	SF		3	E		27		F
SVTO		1503	1503	1519	S21	E45	6122	06	30.1	16	SF		3	E		15		
HOLL		1546	1547	1604D	N24	E06	6121	06	27.1	18D	SF		3	E		17		
RAMY		1607	1614	1624	N09	E80		07	2.7	17	SF		3	E		31		
RAMY		1628	1628	1958D	N09	E80		07	2.7	210D	SF		3	E		17		
HOLL		1749	1758	1834	S23	E37	6122	06	29.6	45	SF		3	E		98		F
PALE		1803	1804	1811	S22	E38	6122	06	29.7	8	SF		3	E		19		F
HOLL		1931	1945	1953	N09	E79	6127	07	2.7	22	SF		3	E		32		
HOLL		1934	1937	2004	S21	E29	6122	06	29.0	30	1B	M 1.8	3	E		129		
PALE		1936	1938	2015	S21	E31	6122	06	29.2	39	SN		3	E		97		F
HOLL		2113	2116	2159	S20	E36	6122	06	29.6	46	SF		3	E		61		F
PALE		2119E	2119U	2211D	S20	E38	6122	06	29.8	52D	SF	C 2.1	3	E		47		F
PALE	27	0022E	0023U	0122D	N11	E79	6127	07	2.9	60D	SF		3	E		15		
GOES		0116	0142	0147						31		C 9.7						
GOES		0211	0218	0230						19		M 1.0						
SVTO		0650	0653	0703	S12	E68	6126	07	2.4	13	SF		3	E		26		
GOES		0855	0859	0904						9		C 1.7						
SVTO		1139	1141	1144	S24	E30	6122	06	29.8	5	SF	C 2.2	3	E		15		UF
SVTO		1424	1426	1435	S14	E66	6126	07	2.6	11	SF		3	E		32		H
SVTO		1528	1545	1600	S30	E79		07	3.8	32	SN	C 3.5	3	E		80		
RAMY		1541	1543	1555	S31	E89		07	4.7	14	SF		3	E		85		
SVTO		1602	1613	1619	S29	E71		07	3.2	17	SF		3	E		47		
SVTO		1627	1630	1652	S20	E24	6122	06	29.5	25	1F	C 4.8	3	E		115		U
PALE		1628E	1639	1704	S20	E21	6122	06	29.3	36D	SF		3	E		45		F
RAMY		1629	1640	1705	S20	E21	6122	06	29.3	36	SF		3	E		45		F
RAMY		1648	1651	1719	N23	W07	6130	06	27.2	31	SF	C 9.2	3	E		85		
SVTO		1650	1659	1735D	N23	W08	6130	06	27.1	45D	SF		3	E		60		F
HOLL		1832E	1832U	1843D	S20	E17	6122	06	29.1	11D	SF		1	E		33		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	27	1832	1834	1840	S21	E18	6122	06	29.1	8	SF		3	E		11		F
HOLL		1929	1931	1945	S21	E66	6131	07	2.9	16	SF		3	E		51		F
PALE		1930	1931	1939	S21	E66	6131	07	2.9	9	SF	C 2.2	3	E		24		F
RAMY		1930	1931	1941	S21	E66	6131	07	2.9	11	SF		3	E		25		
HOLL		1937	1954	2018	N22	W10	6130	06	27.0	41	SF		3	E		77		F
RAMY		1940	1955	2001	N22	W10	6130	06	27.0	21	SF		3	E		43		F
RAMY		2003	2004	2008	N22	W10	6130	06	27.1	5	SF		3	E		14		F
HOLL		2037	2038	2044	N08	E66	6127	07	2.8	7	SF		3	E		30		
GOES		2106	2113	2133						27		M 1.5						
HOLL		2132	2140	2152	S23	E23	6122	06	29.7	20	SF		3	E		34		
PALE		2134	2135	2158	S20	E18	6122	06	29.3	24	SF		3	E		17		
HOLL		2201	2204	2232	N22	W11	6130	06	27.1	31	1F		3	E		130		FH
HOLL		2312	2312	2317	S21	E68	6131	07	3.2	5	SF		3	E		19		
HOLL	28	0002E	0002	0005	N07	E61	6127	07	2.6	3D	SF		3	E		17		
HOLL		0003	0009	0118D	S22	E19	6122			75D	SF			E		35		K
HOLL		0003	0054	0118D	S22	E19	6122	06	29.5	75D	1N	C 5.2	3	E		186		FE
PALE		0013	0104U	0205D	S23	E24	6122	06	29.8	112D	SF		3	E		34		
HOLL		0017	0022	0047	S21	E66	6131	07	3.1	30	SF		3	E		36		F
HOLL		0043	0046	0059	N23	W12	6130	06	27.1	16	SF		3	E		20		FH
HOLL		0059	0101	0108	S22	E71	6131	07	3.5	9	SF		3	E		22		H
GOES		0203	0208	0212						9		C 6.0						
GOES		0407		0420D						13D		C 2.7						
SVTO		0445	0446	0450	N10	E59	6127	07	2.6	5	SF		3	E		19		Y
SVTO		0624	0626	0645	S21	E61	6131	07	2.9	21	SF		3	E		28		
SVTO		0630	0632	0652	N07	E25	6125	06	30.1	22	SF		3	E		11		
SVTO		0645	0653	0743	N09	E58	6127	07	2.6	58	SF	C 2.6	3	E		18		Y
SVTO		0808	0808	0816	S10	W44	6114	06	25.0	8	SF	C 3.5	3	E		12		F
GOES		0854	0859	0906						12		C 5.2						
RAMY		1036	1038	1048	S08	W43	6124	06	25.2	12	SF		2	E		33		F
SVTO		1056	1057	1103	S12	E48	6126	07	2.1	7	SF	C 2.8	3	E		27		
GOES		1129	1134	1142						13		C 3.9						
HOLL		1320E	1321U	1325	S23	E08	6122	06	29.2	5D	SF		2	E		11		H
SVTO		1411	1417	1424	N19	E85		07	5.1	13	SF	M 2.9	3	E		21		
HOLL		1419E	1420U	1426	N17	E83		07	4.9	7D	SF		2	E		73		
SVTO		1429	1429	1435	N04	E16	6125	06	29.8	6	SF		3	E		12		
SVTO		1444	1445	1454	N15	W17	6121	06	27.3	10	SF		3	E		15		
HOLL		1551	1552	1557	N18	E86		07	5.2	6	SF		3	E		21		
HOLL		1622	1629	1643	N22	W19	6130	06	27.2	21	SF		3	E		23		F
HOLL		1743	1744	1802	S22	E05	6122	06	29.1	19	SF		3	E		28		FE
HOLL		1807	1811	1819	S10	W38	6124	06	25.9	12	SF		3	E		15		
HOLL		1813	1815	1820	S21	E54	6131	07	2.9	7	SF		3	E		21		
HOLL		1813	1817	1828	N10	E35		07	1.4	15	SF		3	E		12		
HOLL		1822	1849	1905	N08	E51	6127	07	2.6	43	SF		3	E		24		
HOLL		1848	1848	1859	S26	E19	6122	06	30.2	11	SF		3	E		15		
HOLL		1851	1857	1903	N04	E15	6125	06	29.9	12	SF		3	E		15		F
HOLL		1907	1907	1910	N08	E51	6127	07	2.6	3	SF		3	E		10		
HOLL		1925	1939	1946	S22	E04	6122	06	29.1	21	SF	C 3.9	3	E		11		
HOLL		1958	2003	2013	N08	E50	6127	07	2.6	15	SF		3	E		27		
HOLL		2003	2005	2018	S22	E04	6122	06	29.1	15	SF		3	E		25		
HOLL		2010	2012	2017	N06	E15	6125	06	30.0	7	SF		3	E		18		
HOLL		2023	2034	2049	N18	E86	6133	07	5.4	26	1N	M 2.1	3	E		197		FE
HOLL		2054	2056	2106	S14	E40	6126	07	1.9	12	SF		3	E		33		F
HOLL		2238	2239	2249	N17	E83	6133	07	5.2	11	SN	C 3.7	3	E		56		
HOLL		2317	2320	2324	N08	E49	6127	07	2.6	7	SN	C 6.2	3	E		77		FE
GOES	29	0023	0031	0034						11		C 5.5						
PALE		0148	0148	0156	S09	W39	6124	06	26.1	8	SF	C 2.5	3	E		19		
PALE		0149	0150	0155	S23	E03	6122	06	29.3	6	SF		3	E		15		
PALE		0206	0208	0219	N05	E12	6125	06	30.0	13	SF		3	E		27		F
SVTO		0533	0547	0606	N20	E84	6133	07	5.6	33	SF		3	E		86		
GOES		0544		0548D						4D		C 4.3						
SVTO		0559	0601	0615	S08	W41	6124	06	26.2	16	SF		3	E		19		
SVTO		0600	0619	0638	S12	E36	6126	07	2.0	38	SF		3	E		71		
SVTO		0652	0653	0711	S12	E36	6126	07	2.0	19	SF		3	E		17		
SVTO		0746	0747	0754	N20	E83	6133	07	5.7	8	SF	C 2.1	3	E		20		
SVTO		1027	1031	1054	S12	E33	6126	07	1.9	27	SF		4	E		35		F
RAMY		1036	1038	1048	S08	W43	6124	06	26.2	12	SF		2	E		33		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	29	1037	1038	1046	S08	W44	6124	06	26.1	9	SF		4	E		29		F
SVTO		1040	1102	1108	S19	E46	6131	07	2.9	28	SF		4	E		18		
SVTO		1058	1110	1119	S29	E66	6132	07	4.6	21	SF		4	E		29		
SVTO		1226	1240	1257	S13	E41	6126	07	2.6	31	SF		4	E		38		F
SVTO		1234	1407	1429	N19	E73	6133	07	5.1	115	SF		3	E		76		
RAMY		1237	1241	1304	S15	E41	6126	07	2.6	27	SF		3	E		21		F
RAMY		1251	1254	1301	N17	E77	6133	07	5.4	10	SF		3	E		27		
RAMY		1310	1315	1336	N17	E78	6133	07	5.5	26	SF	C 6.3	3	E		27		F
SVTO		1323	1327	1336	N21	W33	6130	06	27.0	13	SF		3	E		33		F
RAMY		1406	1407	1412	N20	E75	6133	07	5.3	6	SF		3	E		30		F
HOLL		1430	1433	1437	S11	W64	6114	06	24.8	7	SF		3	E		18		F
RAMY		1438	1441	1452	S13	E30	6126	07	1.9	14	SF		3	E		12		F
HOLL		1439	1441	1452	S13	E30	6126	07	1.9	13	SF		3	E		21		F
HOLL		1446	1447	1450	S28	E66	6132	07	4.8	4	SF		3	E		22		
SVTO		1458	1500	1535	N19	E73	6133	07	5.2	37	SF	C 5.9	3	E		23		
HOLL		1536	1538	1546	N08	E39	6127	07	2.6	10	SF		3	E		14		F
SVTO		1557	1608	1623	N19	E72	6133	07	5.1	26	SF		3	E		74		
HOLL		1559	1601	1615	N18	E74	6133	07	5.3	16	SF	C 3.4	3	E		31		
RAMY		1600	1601	1605	N17	E74	6133	07	5.3	5	SF		3	E		22		
HOLL		1602	1604	1625	S22	W07	6122	06	29.1	23	SF		3	E		32		FH
HOLL		1602	1617	1625	S22	W07	6122			23	SF			E		30		K
HOLL		1622	1624	1632	S31	E62	6132	07	4.6	10	SF		3	E		19		
HOLL		1638	1643	1657	S13	E30	6126	07	1.9	19	SF		3	E		13		F
HOLL		1644	1645	1702	S31	E61	6132	07	4.5	18	SN	C 5.7	3	E		73		E
SVTO		1644	1646	1657	S29	E59	6132	07	4.3	13	SF		3	E		52		
RAMY		1709	1719	1721	S13	E30	6126	07	2.0	12	SF		3	E		15		
RAMY		1711	1713	1715	N09	E40	6127	07	2.7	4	SF		3	E		15		
HOLL		1711	1713	1716	S13	E29	6126	07	1.9	5	SF		3	E		16		F
HOLL		1742	1744	1752	S16	E48	6126	07	3.4	10	SF		3	E		12		F
HOLL		1756	1820	1905	S14	E49		07	3.4	69	SF		3	E		60		F
HOLL		1809	1809	1821	S13	E29	6126	07	1.9	12	SF		3	E		11		
HOLL		1831	1835	1842	S13	E29	6126	07	1.9	11	SF		3	E		17		
HOLL		1842	1844	1912	S29	E62	6132	07	4.6	30	SF		3	E		32		
HOLL		1855	1857	1939	S13	E28	6126	07	1.9	44	SF		3	E		29		F
HOLL		1953	1955	2004	N04	E00	6125	06	29.8	11	SF		3	E		24		
HOLL		1956	2001	2027	S13	E28	6126	07	1.9	31	SF		3	E		31		FE
HOLL		1958	2000	2008	N15	E72	6133	07	5.3	10	SF		3	E		18		
HOLL		2008	2013	2024	S09	W68	6114	06	24.7	16	SF		3	E		14		
HOLL		2011	2015	2021	N17	E73	6133	07	5.4	10	SF		3	E		27		
HOLL		2119	2124	2225	N08	E37	6127	07	2.7	66	SF		3	E		26		
HOLL		2137	2229	2247	S17	E33	6126	07	2.4	70	SF		3	E		70		F
HOLL		2212	2213	2226	S32	E60	6132	07	4.7	14	SF		3	E		28		
HOLL		2229	2235	2323	N16	E68	6133	07	5.1	54	1B	M 3.8	3	E		158		FH
HOLL		2253	2255	2301	S13	E27	6126	07	2.0	8	SF		3	E		21		
HOLL		2253	2308	2340	N08	E35	6127	07	2.6	47	SF		3	E		59		F
PALE		2321E	2447U	2449D	N09	E36	6127	07	2.7	88D	SF		3	E		18		F
PALE		2337	2342U	2418D	S12	E29	6126	07	2.2	41D	SF		3	E		31		FH
HOLL		2339	2358	2405	S13	E29	6126	07	2.2	26	SF		3	E		23		F
LEAR		2349	2356	2402	S12	E33	6126	07	2.5	13	SF		3	E		14		
HOLL	30	0011	0016	0044	N20	W38	6130	06	27.1	33	SF		3	E		42		F
PALE		0045	0051	0057	S13	E28	6126	07	2.1	12	SF		3	E		25		F
LEAR		0058	0059	0106	S22	E37	6131	07	2.9	8	SF		3	E		49		
PALE		0058	0101	0109	S20	E40	6131	07	3.1	11	SF	C 3.9	3	E		38		
HOLL		0100E	0101U	0111	S22	E36	6131	07	2.8	11D	SF		2	E		34		
PALE		0101	0120	0144	N09	E34	6127	07	2.6	43	SF		3	E		23		
HOLL		0102E	0102U	0124	N07	E34	6127	07	2.6	22D	SF		2	E		16		
LEAR		0102	0112	0132	N07	E35	6127	07	2.7	30	SF		3	E		28		
HOLL		0122	0124	0129D	S13	E30	6126	07	2.3	7D	SF		2	E		60		F
LEAR		0122	0126	0151	S13	E31	6126	07	2.4	29	SF		3	E		93		
PALE		0122	0126	0205	S12	E32	6126	07	2.5	43	1F		3	E		114		F
PALE		0239	0247	0257	S14	E27	6126	07	2.1	18	SF		3	E		15		
PALE		0311	0326	0336	N09	E33	6127	07	2.6	25	SF		3	E		24		F
LEAR		0532	0536	0547	S13	E21	6126	07	1.8	15	SF		3	E		33		F
LEAR		0745	0749	0811	S13	E24	6126	07	2.1	26	SF		3	E		21		
RAMY		1122E	1123	1210	S13	E22	6126	07	2.1	48D	SF		2	E		12		
RAMY		1253	1256	1332	N07	E28	6127	07	2.6	39	SF		3	E		19		
SVTO		1302	1306	1314	N09	E27	6127	07	2.6	12	SF		3	E		15		F

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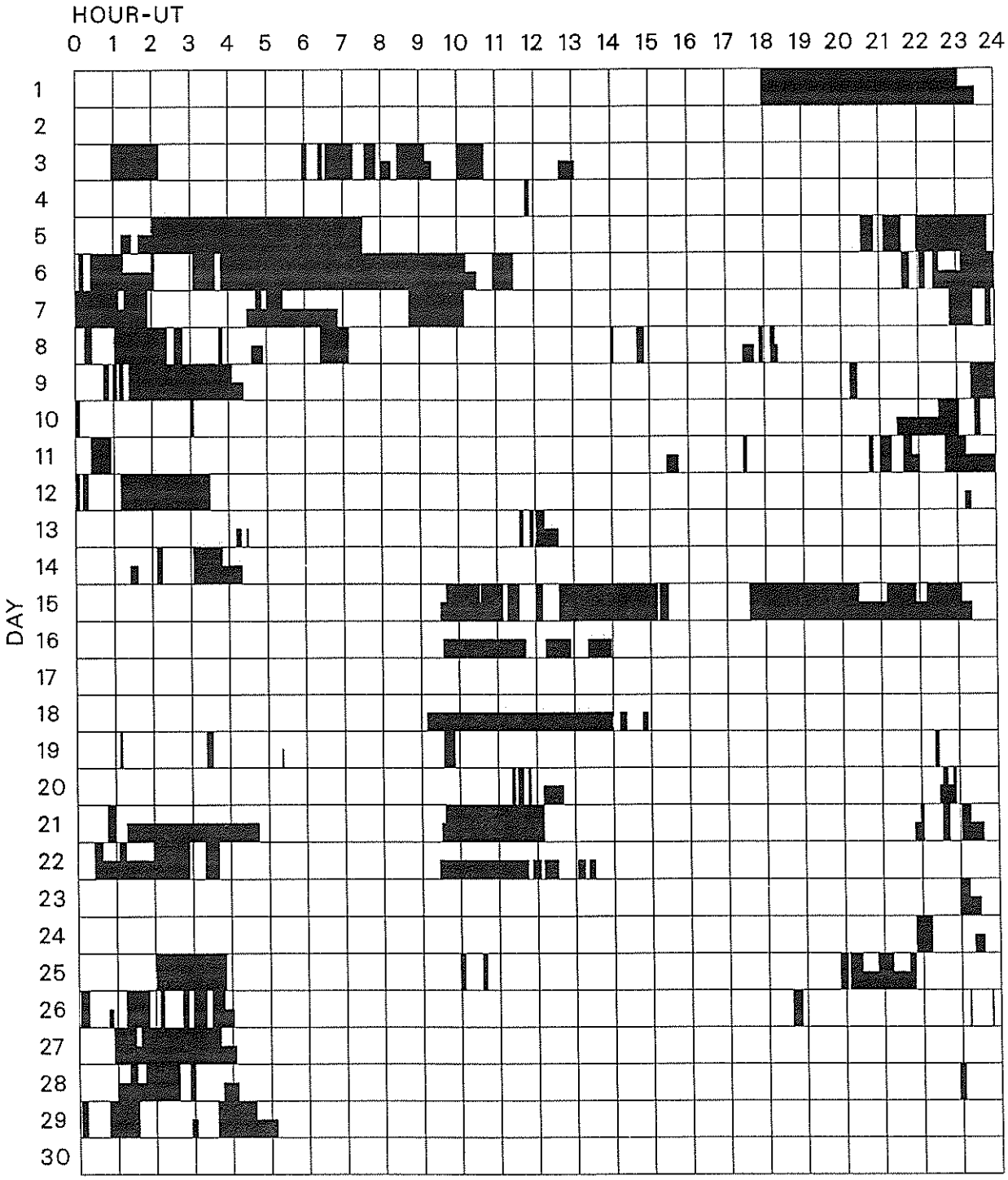
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	30	1316	1326	1342	N17	E64	6133	07	5.4	26	SF		3	E		25		
RAMY		1425	1426	1431	S30	E53	6132	07	4.8	6	SF		3	E		17		
SVTO		1425	1426	1431	S28	E53	6132	07	4.7	6	SF		3	E		30		
RAMY		1440	1441	1444	N18	E64	6133	07	5.5	4	SF		3	E		17		
HOLL		1457	1457	1502	N14	W60	6129	06	26.1	5	SF		4	E		18		
HOLL		1541	1543	1551	S25	W21	6122	06	29.0	10	SF		4	E		12		
HOLL		1600	1601	1622	S30	E51	6132	07	4.7	22	SF		4	E		39		F
RAMY		1601	1602	1611	S30	E52	6132	07	4.7	10	SF		3	E		17		
SVTO		1601	1602	1619	S28	E51	6132	07	4.6	18	SF		3	E		29		
SVTO		1624	1629	1648	S21	E30	6131	07	3.0	24	SF		3	E		98		F
HOLL		1624	1630	1648	S22	E28	6131	07	2.8	24	1F	C 2.5	4	E		135		F
RAMY		1625	1630	1641	S22	E30	6131	07	3.0	16	SF		3	E		60		F
SVTO		1640	1644	1650	N20	E61	6133	07	5.4	10	SF		3	E		16		F
SVTO		1655	1655	1706	S21	E30	6131	07	3.0	11	SF		3	E		18		F
HOLL		1655	1657	1708	S22	E30	6131	07	3.0	13	SF		4	E		28		F
HOLL		1810	1810	1816	S30	E51	6132	07	4.8	6	SF		3	E		16		
HOLL		1810	1812	1825	S23	E32	6131	07	3.2	15	SF	C 3.1	3	E		83		F
RAMY		1812	1812	1820	S24	E33	6131	07	3.3	8	SF		3	E		40		F
HOLL		1821	1831	1843	S30	E50	6132	07	4.7	22	SF	C 2.8	3	E		61		
HOLL		1857	1858	1911	S07	W62	6124	06	26.1	14	SF		3	E		21		
HOLL		1938	1940	1944	N17	E60	6133	07	5.4	6	SF		3	E		14		
HOLL		1942	1947	1959	S14	E14	6126	07	1.9	17	SF		3	E		31		F
HOLL		1945	1949	2011	N18	E60	6133	07	5.4	26	SF	C 9.7	3	E		61		F
RAMY		1946	1946	1958	N17	E59	6133	07	5.3	12	SF		3	E		17		
RAMY		1946	1947	1953	S13	E12	6126	07	1.7	7	SF		3	E		13		F
PALE		1947E	1948	2018D	N19	E62	6133	07	5.5	31D	SF		3	E		44		
HOLL		1954	2005	2112	S13	E33	6137	07	3.3	78	1F		3	E		158		F
PALE		2001	2007U	2112D	S14	E36	6137	07	3.5	71D	SF		3	E		76		
HOLL		2002	2005	2010	S41	W31	6136	06	28.3	8	SF		3	E		23		F
RAMY		2002	2007	2146D	S15	E33	6137	07	3.3	104D	SF		3	E		72		F
HOLL		2038	2038	2041	N18	E61	6133	07	5.5	3	SF		3	E		24		
PALE		2113	2115	2131	N09	E25	6127	07	2.8	18	SF		3	E		16		
HOLL		2143	2144	2152	S13	E12	6126	07	1.8	9	SF		3	E		20		
HOLL		2217E	2222	2258	S13	E15	6126	07	2.1	41D	SF		3	E		31		
HOLL		2217E	2252	2258	S13	E15	6126			41D	SF			E		19		K
PALE		2234	2258	2319	S13	E15	6126	07	2.1	45	SF		3	E		28		F
HOLL		2312	2314	2322	S23	E29	6131	07	3.2	10	SF		3	E		28		
PALE		2312	2315	2319	S22	E32	6131	07	3.4	7	SF		3	E		16		F
HOLL		2328	2328	2334	N18	E58	6133	07	5.4	6	SF		3	E		12		
HOLL		2332	2333	2342	S20	E32	6131	07	3.4	10	SF		3	E		47		
PALE		2348	2348	2358	S30	E50	6132	07	4.9	10	SF	C 1.9	3	E		18		
HOLL		2348	2349	2349D	S30	E47	6132	07	4.7	12	SF		3	E		36		

"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

JUNE 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.

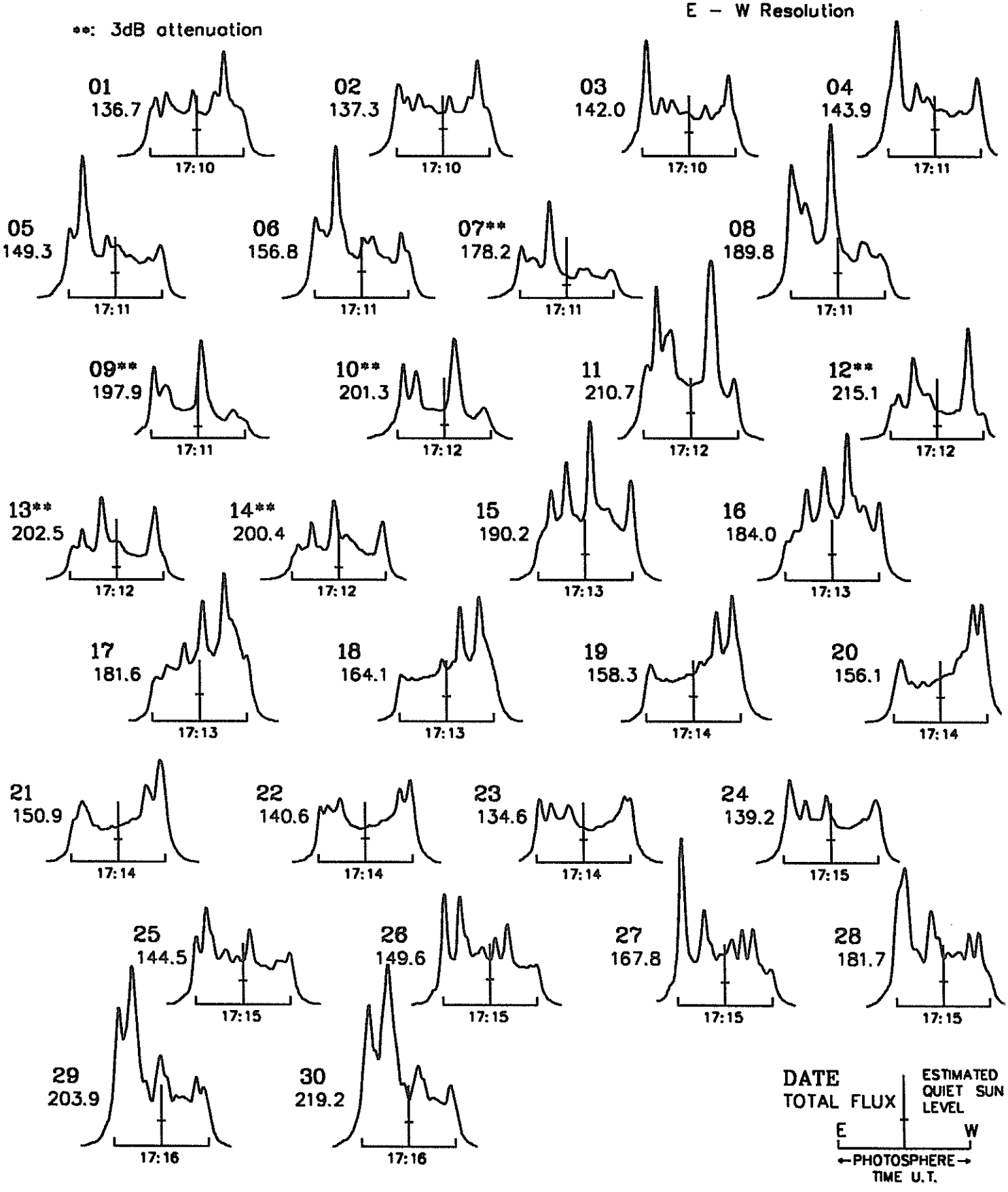
Holloman Learmonth Palehua Ramey San Vito

EAST – WEST SOLAR SCANS
JUNE 1990

ALGONQUIN RADIO OBSERVATORY
CANADA

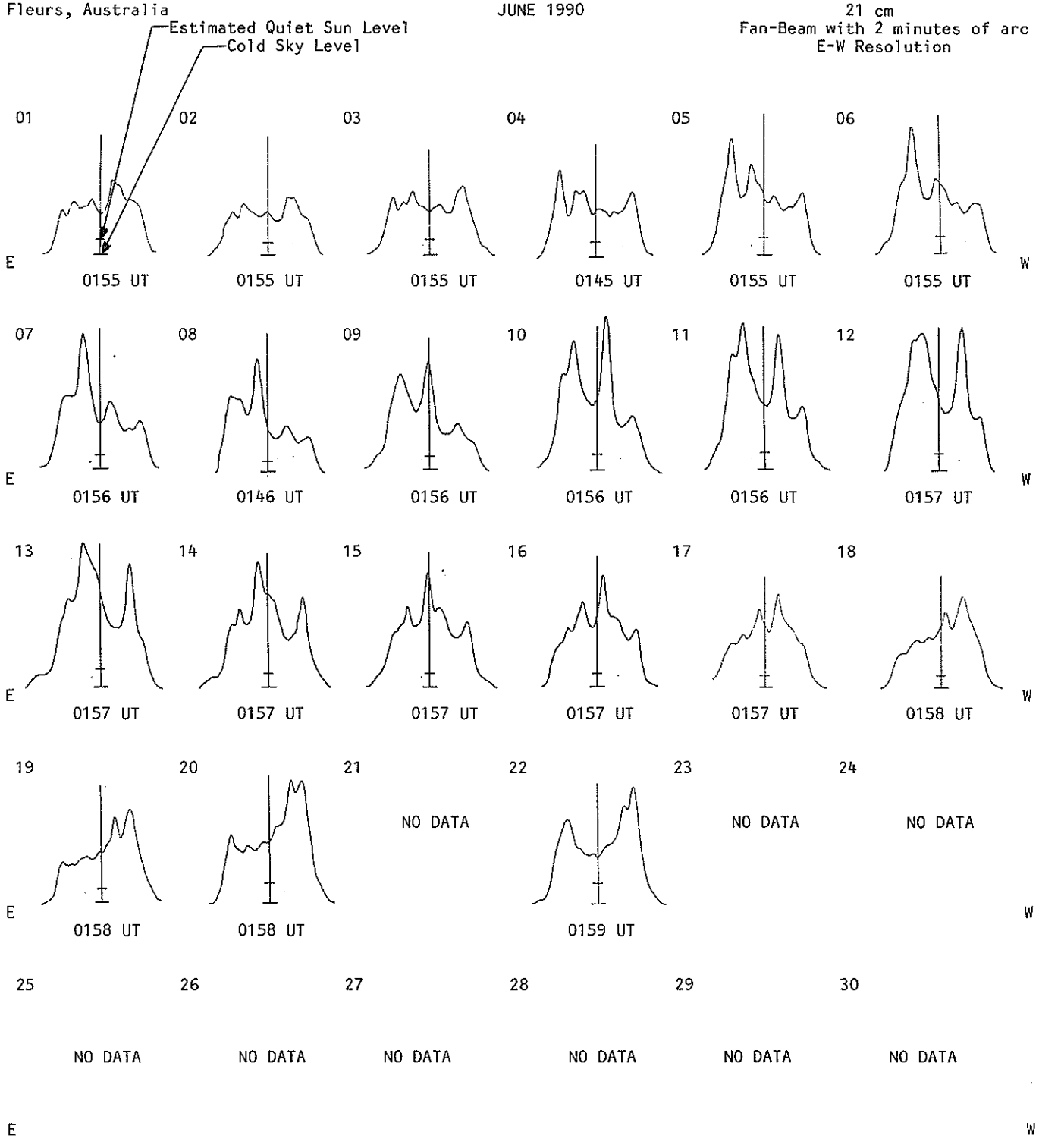
10.7 cm
Fan Beam with 1.5 minutes of arc
E – W Resolution

**: 3dB attenuation



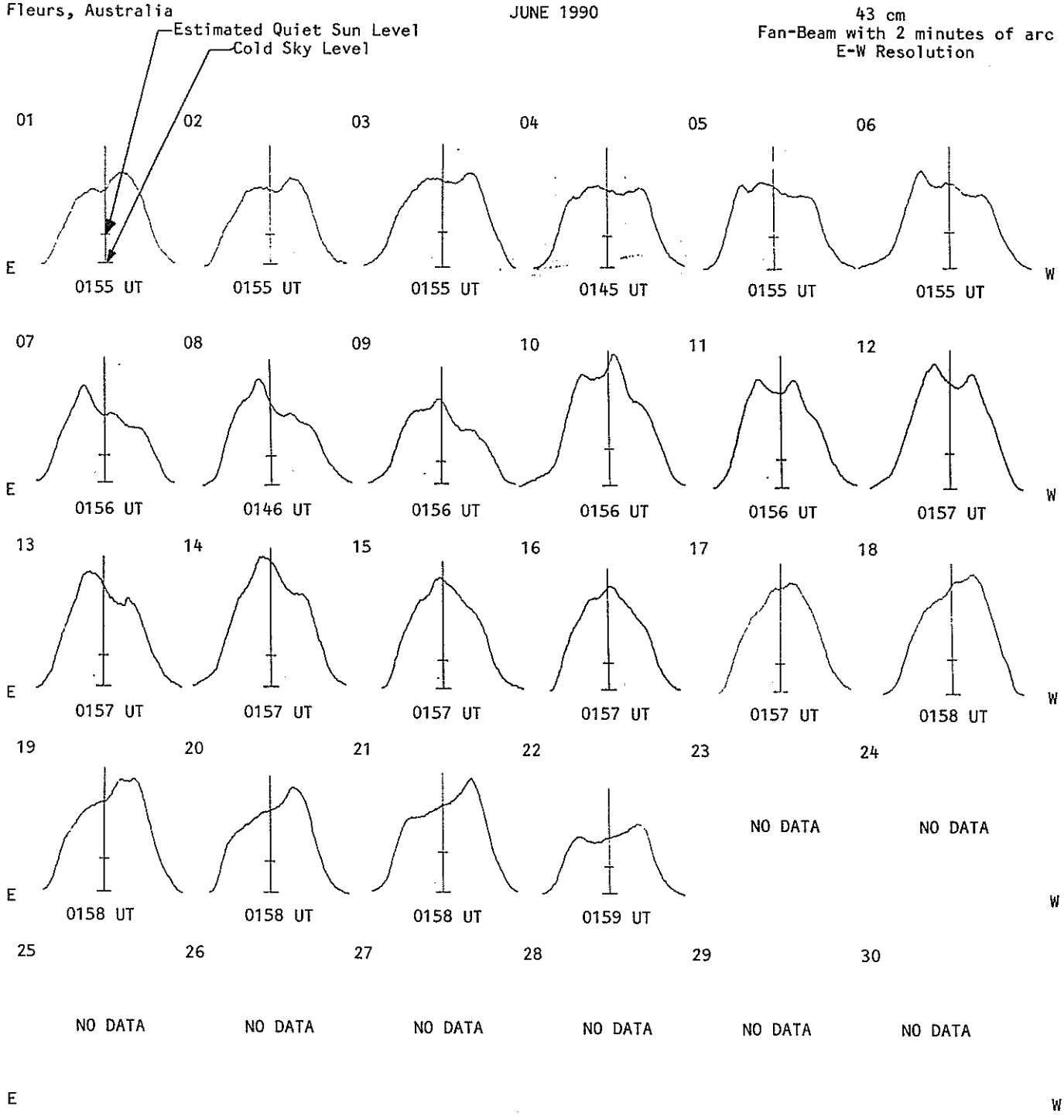
E A S T - W E S T S O L A R S C A N S

Fleurs, Australia — JUNE 1990 — 21 cm Fan-Beam with 2 minutes of arc E-W Resolution



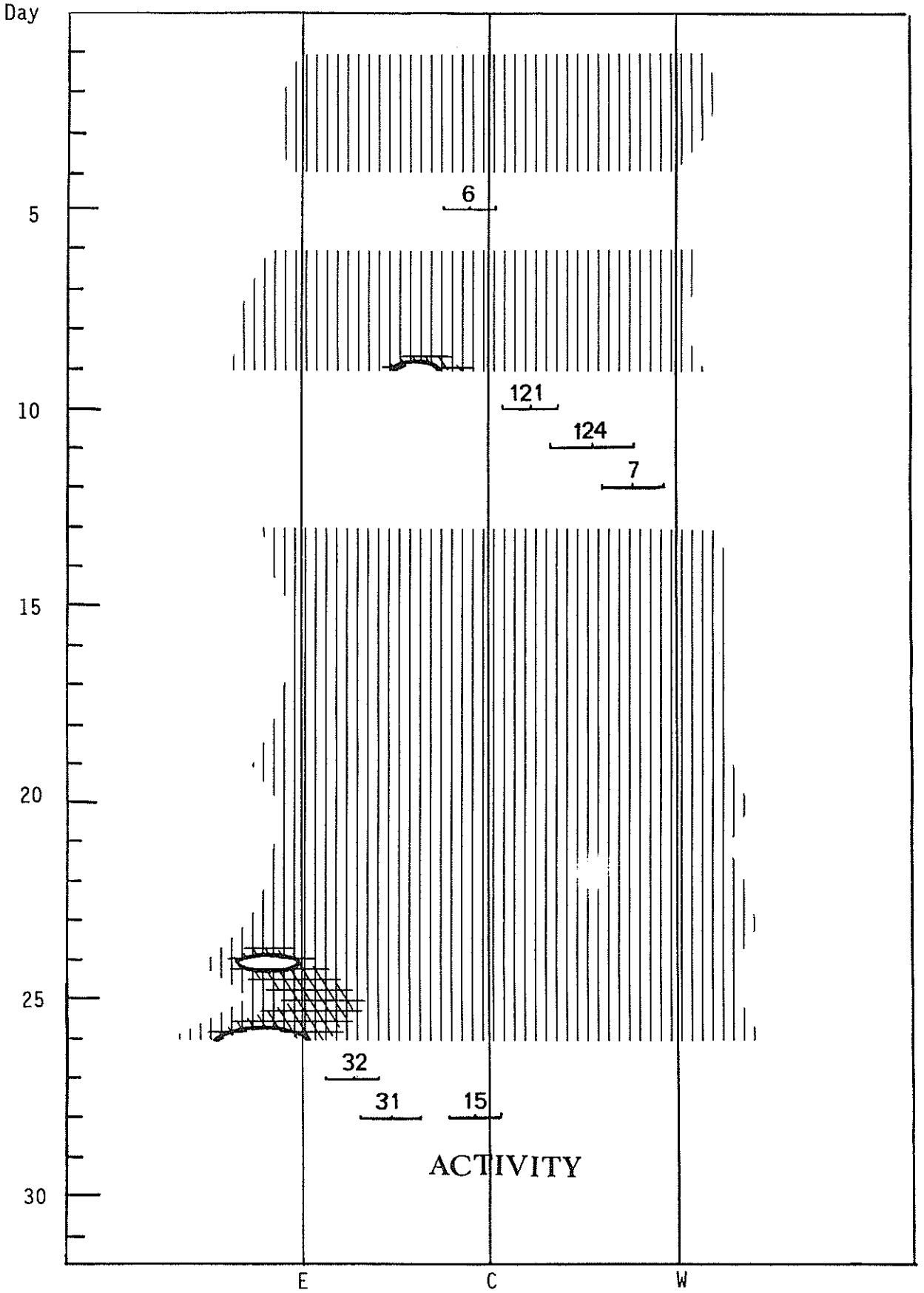
E A S T - W E S T S O L A R S C A N S

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



SOLAR INTERFEROMETRIC OBSERVATIONS

Nancay JUNE 1990 164 MHz



SOLAR RADIO EMISSION
Selected Fixed Frequency Events

JUNE 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
02	3200	BERN	46	C	0632.5	0638.3	11.0	8.6			
	8400	BERN	46	C	0632.5	0638.3	11.0	4.8			
	2695	SVTO	4	S/F	0635.0E	0638.0	5.0D	63.0			QL=4 ST=2 TYP=3
06	2800	OTTA	3	S	1223.6	1223.9	2.1	20.4	4.0		
	2800	OTTA	22	GRF	1308.0	1359.0	130.0	3.8	2.0		
	2800	OTTA	3	S	1349.1	1349.5	2.3	20.7	4.0		
	2800	OTTA	20	GRF	1558.0	1607.0	59.0	32.3	13.0		
	2800	OTTA	4	S/F	1859.0	1906.0	23.5	373.0	75.0		
	2800	OTTA	29	PBI	1920.0	1950.0	345.0	48.6	24.0		
	2800	OTTA	4	S/F	2031.8	2036.4	6.2	7.7	1.0		
07	2695	SGMR	4	S/F	1900.0E	1906.0	22.0D	450.0			QL=4 ST=2 TYP=3
	8800	SGMR	49	GB	1901.0E	1910.0	21.0D	580.0			QL=4 ST=2 TYP=7
	8800	PALE	4	S/F	1906.0E	1910.0	12.0D	440.0			QL=2 ST=2 TYP=5
	2695	PALE	4	S/F	1906.0E	1910.0	23.0D	370.0			QL=2 ST=2 TYP=5
08	2800	OTTA	20	GRF	1456.0	1536.0	120.0	13.9	6.0		
09	8800	SVTO	4	S/F	1054.0E	1057.0	786.0D	57.0			QL=4 ST=1 TYP=5
	2800	OTTA	4	S/F	1336.2	1336.8	1.2	6.8	1.0		
	2800	OTTA	4	S/F	1339.0	1339.8	2.5	51.7	10.0		
	2695	SGMR	8	S	1339.0E	1339.0	1.0D	48.0			QL=4 ST=3 TYP=3
	2800	OTTA	4	S/F	1411.7	1420.1	17.0	75.5	22.0		
	8400	BERN	46	C	1412.6	1413.8	13.0	18.8			
	3200	BERN	46	C	1412.6	1413.8	13.0	8.1			
	8800	SVTO	4	S/F	1413.0E	1413.0	9.0D	160.0			QL=4 ST=2 TYP=5
	8800	SGMR	4	S/F	1413.0E	1413.0	14.0D	170.0			QL=4 ST=2 TYP=5
	2695	SGMR	20	GRF	1413.0E	1420.0	12.0D	70.0			QL=4 ST=2 TYP=2
	2695	SVTO	20	GRF	1413.0E	1420.0	10.0D	79.0			QL=2 ST=2 TYP=2
	8800	PALE	49	GB	1645.0E	1648.0	7.0D	1400.0			QL=4 ST=2 TYP=6
	2800	OTTA	4	S/F	1645.5	1648.1	18.2	456.0	91.0		
	2695	PALE	49	GB	1646.0E	1648.0	6.0D	530.0			QL=4 ST=2 TYP=6
	2695	SGMR	4	S/F	1646.0E	1648.0	5.0D	500.0			QL=4 ST=2 TYP=3
	3200	BERN	47	GB	1647.0	1648.0	2.5	53.1			
	8400	BERN	47	GB	1647.0	1648.0	2.5	154.3			
	8800	SGMR	49	GB	1647.0E	1648.0	3.0D	1500.0			QL=4 ST=2 TYP=6
	2695	SVTO	49	GB	1647.0E	1648.0	4.0D	620.0			QL=2 ST=2 TYP=6
	2695	SGMR	4	S/F	1656.0E	1656.0	5.0D	35.0			QL=4 ST=2 TYP=3
	2800	OTTA	4	S/F	2006.7	2008.8	8.0	36.9	8.0		
10	8800	LEAR	49	GB	0715.0E	0717.0	14.0D	790.0			QL=4 ST=2 TYP=6
	2695	LEAR	49	GB	0716.0E	0717.0	10.0D	540.0			QL=4 ST=2 TYP=6
	3200	BERN	47	GB	0716.3	0717.1	4.0	42.6			
	8400	BERN	47	GB	0716.3	0717.1	4.0	77.8			
	2800	OTTA	22	GRF	1334.3	1336.0	20.0	10.6	5.0		
	2800	OTTA	22	GRF	1439.7	1445.0	70.0	10.1	5.0		
	3200	BERN	4	S/F	1442.0	1445.0	6.0	0.9			
	8400	BERN	4	S/F	1442.0	1445.0	6.0	0.9			
	3200	BERN	46	C	1500.0	1505.5	5.5	4.0			
	8400	BERN	46	C	1500.0	1505.5	5.5	35.1			
	2800	OTTA	4	S/F	1501.0	1504.3	33.0	57.7	11.0		
	2695	SGMR	4	S/F	1501.0E	1504.0	4.0D	48.0			QL=4 ST=2 TYP=3
	8800	SGMR	4	S/F	1501.0E	1501.0	5.0D	450.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	1501.0E	1501.0	9.0D	490.0			QL=4 ST=2 TYP=3
	2695	SVTO	4	S/F	1501.0E	1503.0	539.0D	69.0			QL=4 ST=1 TYP=3
	2800	OTTA	20	GRF	1603.0	1650.0	130.0	9.6	4.0		
	2800	OTTA	4	S/F	1621.3	1622.3	5.9	10.1	2.0		
	2800	OTTA	20	GRF	2035.0	2155.0	185.0	33.2	16.0		
	2800	OTTA	4	S/F	2113.3	2114.9	4.0	24.5	5.0		
11	8800	LEAR	8	S	0504.0E	0505.0	1.0D	57.0			QL=4 ST=2 TYP=3
	2695	SVTO	49	GB	0942.0E	0943.0	7.0D	1200.0			QL=4 ST=2 TYP=6
	8800	SVTO	49	GB	0942.0E	0944.0	7.0D	1900.0			QL=4 ST=2 TYP=6
	8400	BERN	47	GB	0942.8	0943.5	2.5	150.4			
	3200	BERN	47	GB	0942.8	0943.5	2.5	57.6			
	2800	OTTA	4	S/F	1847.8	1850.5	24.5	209.0	42.0		
	2695	SGMR	8	S	1849.0E	1850.0	2.0D	130.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1850.0E	1850.0	U	22.0			QL=2 ST=2 TYP=3

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

JUNE 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
11	2800	OTTA	4	S/F	1943.6	1946.3	8.7	12.7	2.0		
12	2695	PENT	4	S/F	0047.7	0048.5	7.4	40.2	8.0		
	2695	PALE	8	S	0048.0E	0048.0	U	40.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0432.0E	0433.0	4.0D	400.0			QL=4 ST=2 TYP=3
	3200	BERN	4	S/F	0432.6	0433.5	2.0	3.7			
	8400	BERN	4	S/F	0432.6	0433.5	2.0	27.0			
	2695	SVTO	8	S	0433.0E	0433.0	1.0D	47.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	0433.0E	0433.0	1167.0D	40.0			QL=4 ST=1 TYP=3
	2695	LEAR	49	GB	0517.0E	0529.0	35.0D	750.0			QL=4 ST=2 TYP=7
	2695	SVTO	49	GB	0519.0E	0529.0	41.0D	750.0			QL=4 ST=2 TYP=7
	3200	BERN	47	GB	0520.0	0529.5	22.0	55.0			
	8400	BERN	47	GB	0520.0	0529.5	22.0	100.9			
	8800	LEAR	4	S/F	0521.0E	0529.0	23.0D	340.0			QL=4 ST=2 TYP=3
	8800	SVTO	4	S/F	0521.0E	0529.0	55.0D	360.0			QL=2 ST=2 TYP=5
	2800	OTTA	22	GRF	1258.0	1314.0	110.0	15.2	7.0		
	2800	OTTA	22	GRF	1625.0	1653.0	140.0	21.3	10.0		
	2800	OTTA	3	S	2039.0	2041.4	5.0	31.9	6.0		
13	2695	PENT	3	S	0033.0	0034.5	14.5	73.5	15.0		
	8800	LEAR	4	S/F	0033.0E	0034.0	3.0D	200.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	0033.0E	0034.0	3.0D	75.0			QL=4 ST=2 TYP=3
	8800	PALE	8	S	0034.0E	0034.0	1.0D	220.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	0034.0E	0034.0	1.0D	64.0			QL=4 ST=2 TYP=3
	2800	OTTA	22	GRF	1348.0	1349.0	146.0	8.0	4.0		
	3200	BERN	3	S	1408.5	1409.5	3.0	1.6			
	2800	OTTA	3	S	1601.9	1602.3	3.0	17.9	3.0		
	3200	BERN	3	S	1622.0	1622.5	1.5	2.3			
	8400	BERN	3	S	1622.0	1622.5	1.5	1.4			
	2800	OTTA	20	GRF	1813.0	1833.0	325.0	18.3	9.0		
14	8800	SVTO	8	S	1027.0E	1029.0	2.0D	200.0			QL=4 ST=2 TYP=3
	2800	OTTA	20	GRF	1754.0	1930.0	200.0	9.0	4.0		
15	2695	LEAR	4	S/F	0824.0E	0828.0	936.0D	200.0			QL=4 ST=1 TYP=3
	2695	LEAR	4	S/F	0825.0E	0828.0	16.0D	200.0			QL=4 ST=2 TYP=5
	8400	BERN	46	C	0826.0	0830.0	19.0	19.6			
	3200	BERN	46	C	0826.0	0830.0	19.0	11.6			
	8800	SVTO	4	S/F	0827.0E	0830.0	17.0D	190.0			QL=4 ST=2 TYP=3
	8800	LEAR	4	S/F	0828.0E	0830.0	932.0D	130.0			QL=4 ST=1 TYP=3
	8800	LEAR	4	S/F	0829.0E	0830.0	12.0D	130.0			QL=4 ST=2 TYP=3
17	8800	LEAR	8	S	0139.0E	0140.0	1.0D	26.0			QL=4 ST=2 TYP=3
19	2800	OTTA	20	GRF	1510.0	1524.0	125.0	2.8	1.0		
	2800	OTTA	4	S/F	1554.6	1554.9	6.0	13.1	3.0		
24	2695	PENT	4	S/F	0116.0	0118.0	24.3	63.5	13.0		
	2695	LEAR	8	S	0819.0E	0819.0	2.0D	31.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0819.0E	0819.0	U	15.0			QL=4 ST=2 TYP=3
25	8800	LEAR	20	GRF	0116.0E	0116.0	17.0D	130.0			QL=4 ST=2 TYP=2
	2695	LEAR	4	S/F	0116.0E	0117.0	16.0D	74.0			QL=2 ST=2 TYP=3
	8800	PALE	4	S/F	0126.0E	0128.0	4.0D	120.0			QL=4 ST=2 TYP=3
	2695	PALE	8	S	0128.0E	0128.0	U	37.0			QL=4 ST=2 TYP=3
26	2695	LEAR	8	S	0540.0E	0542.0	2.0D	14.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0543.0E	0543.0	U	12.0			QL=4 ST=2 TYP=3
	2800	OTTA	24	R	1630.0	1744.0		4.7	3.0		
	2800	OTTA	22	GRF	1749.0	1800.0	100.0	5.9	2.0		
	2800	OTTA	3	S	1934.0	1936.8	45.0	228.0	46.0		
	8800	SGMR	49	GB	1934.0E	1936.0	8.0D	1100.0			QL=4 ST=3 TYP=7
	2695	PALE	4	S/F	1935.0E	1936.0	4.0D	230.0			QL=4 ST=2 TYP=3
	8800	PALE	49	GB	1935.0E	1936.0	4.0D	960.0			QL=2 ST=2 TYP=6
	2695	SGMR	49	GB	1935.0E	1936.0	5.0D	240.0			QL=4 ST=3 TYP=7
27	2800	OTTA	22	GRF	1626.0	1628.0	79.0	9.5	4.0		
	2800	OTTA	3	S	1647.5	1648.8	4.0	20.3	4.0		
	2800	OTTA	20	GRF	1754.0	1930.0	280.0	6.7	3.0		

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

JUNE 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
27	2800	OTTA	3	S	2108.5	2110.0	7.0	21.4	6.0		
28	2800	OTTA	3	S	1742.0	1744.4	5.0	7.8	2.0		
	2800	OTTA	3	S	1858.0	1858.5	6.0	6.1	1.0		
	2800	OTTA	20	GRF	2031.0	2036.0	50.0	4.1	2.0		
	8800	PALE	8	S	2031.0E	2031.0	2.0D	65.0			QL=4 ST=2 TYP=3
29	2800	OTTA	4	S/F	1601.7	1602.1	1.5	15.5	3.0		
	2800	OTTA	3	S	1643.5	1644.3	2.2	8.0	2.0		
	2800	OTTA	22	GRF	2230.0	2233.6	130.0	34.3	14.0		
	8800	PALE	4	S/F	2231.0E	2232.0	4.0D	120.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	2231.0E	2232.0	2.0D	48.0			QL=4 ST=2 TYP=3
	2695	SGMR	8	S	2233.0E	2233.0	U	24.0			QL=4 ST=2 TYP=3
30	8800	PALE	8	S	1811.0E	1811.0	1.0D	54.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	1811.0E	1811.0	1.0D	57.0			QL=4 ST=2 TYP=3
	2800	OTTA	3	S	1811.7	1812.1	3.0	20.7	4.0		

Reports are received routinely from the following observatories:

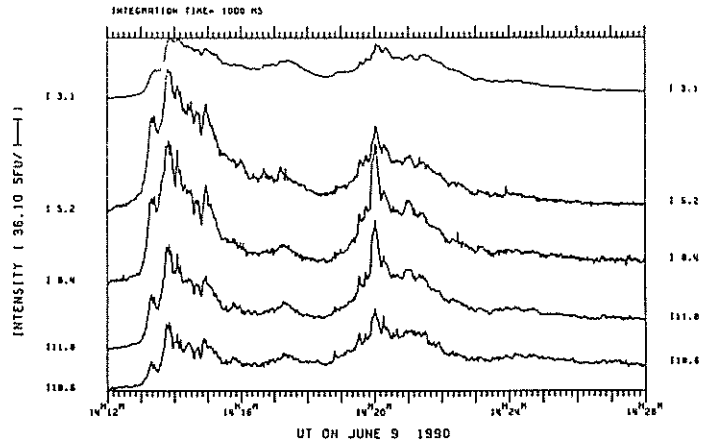
BERN = Berne LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill
OTTA = Ottawa PENT = Penticton SVTO = San Vito

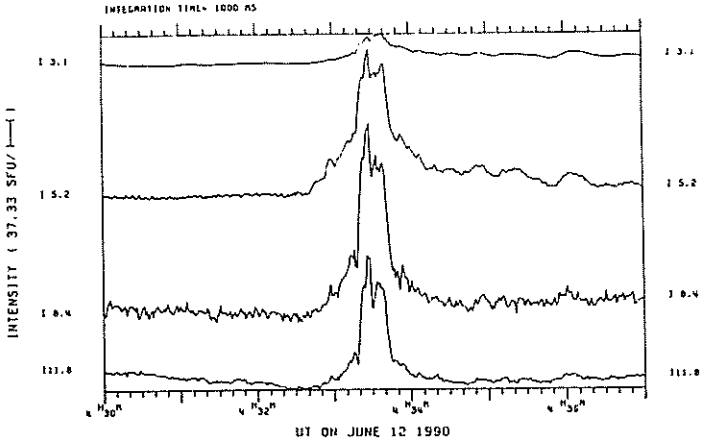
Explanation of Type Code:

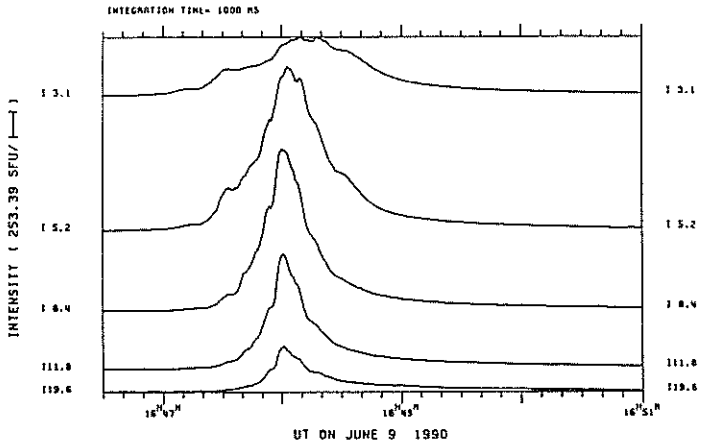
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 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

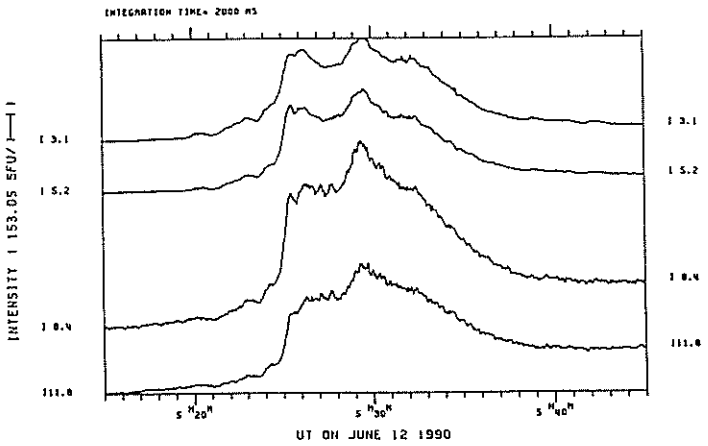
1A Simple 1A	4A Simple 2AF	24PF Post Rise F	27F Rise and Fall F
3A Simple 2A	40 Rise Only	16A Fall A	27AF Rise and Fall AF
21A Simple 3A GRF	40F Rise Only F	260 Fall Only	31A Post Burst Decrease A
2A Simple 1AF	4P Post Rise	26F Fall F	32A Absorption A

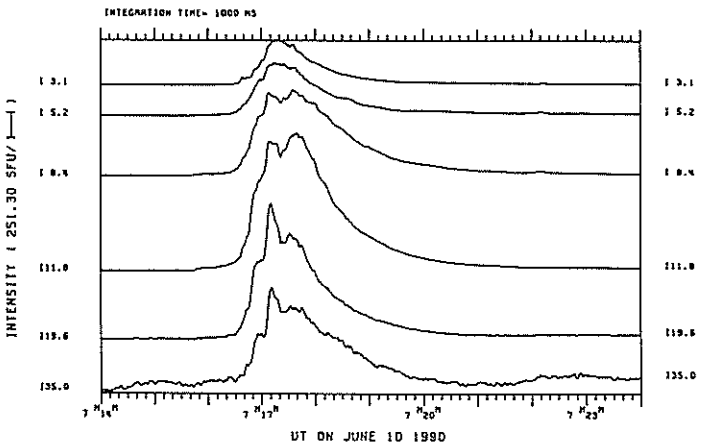
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and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

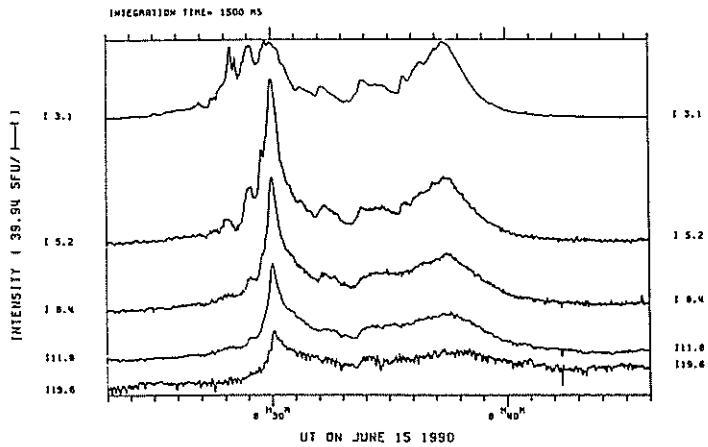

INTEGRATION TIME= 1000 MS
INTENSITY (36.10 SFU/)
UT ON JUNE 9 1990

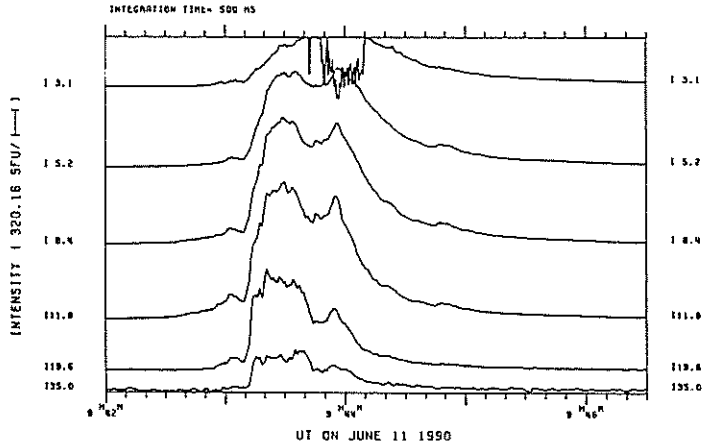

INTEGRATION TIME= 1000 MS
INTENSITY (37.33 SFU/)
UT ON JUNE 12 1990


INTEGRATION TIME= 1000 MS
INTENSITY (253.39 SFU/)
UT ON JUNE 9 1990


INTEGRATION TIME= 2000 MS
INTENSITY (153.05 SFU/)
UT ON JUNE 12 1990


INTEGRATION TIME= 1000 MS
INTENSITY (251.30 SFU/)
UT ON JUNE 10 1990


INTEGRATION TIME= 1500 MS
INTENSITY (39.94 SFU/)
UT ON JUNE 15 1990


INTEGRATION TIME= 500 MS
INTENSITY (320.16 SFU/)
UT ON JUNE 11 1990

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1989 Jul	Aug	Sep	Oct	Nov	Dec	1990 Jan	Feb	Mar	Apr	May	Jun
1	4	-145	-58	-43	-111	-113	.	128	.	84	35	-9
2	51	80	-46	.	-125	-79	22	150	.	47	19	-9
3	-19	121	-37	-87	-111	-46	70	344	.	33	23	-6
4	3	14	-37	-84	-75	-11	106	99	.	4	-18	-34
5	71	-51	-46	-35	-11	43	132	69	.	-8	-24	-33
6	69	-65	-30	-22	44	60	129	23	.	-29	-25	-32
7	25	9	-5	-13	54	.	.	-11	.	.	-27	.
8	-90	145	22	-5	86	84	58	.	-28	.	-38	-25
9	-79	86	25	0	97	126	23	-15	-23	-29	-33	-46
10	106	82	12	2	103	115	-7	-8	.	-36	-15	-86
11	115	59	23	10	107	79	-41	-14	-25	-34	-4	.
12	84	43	23	38	95	47	.	-9	-23	.	-9	-76
13	73	43	43	33	.	7	.	4	-11	-8	-47	-88
14	-55	55	44	26	13	-35	.	-12	-15	0	-80	-46
15	22	57	25	31	.	-59	5	-2	2	-2	-82	-31
16	.	66	.	17	-70	-62	-11	.	.	.	-80	-7
17	-49	33	.	5	-79	.	-14	.	-10	-20	-88	.
18	6	2	-13	.	-86	.	-58	.	-45	.	.	47
19	0	-10	-22	.	-38	-4	-86	-78	-63	.	.	44
20	-138	-20	-20	.	4	.	-84	.	-108	-105	.	43
21	-126	-35	-21	-88	.	-32	-76	-142	.	-99	-29	4
22	-57	-41	-26	0	.	-70	-88	-193	-150	.	.	-7
23	-25	-29	-31	.	17	-101	-124	-167	-124	.	25	-11
24	10	-15	-21	1	.	-103	-152	-133	-113	-21	33	-6
25	-2	-13	-1	5	.	.	-184	-102	-74	23	16	3
26	-15	-15	-8	-19	-52	-103	-203	-41	-62	57	3	4
27	-52	-7	-19	-56	-78	.	-200	.	-34	75	.	15
28	-27	4	-16	-70	-76	-130	-140	.	9	65	.	0
29	-12	.	-24	-100	-92	-108	-62		45	50	.	-1
30	-44	3	-26	-110	-110	-106	3		103	50	.	5
31	-144	-29		-104		-94	46		94		-4	

Dot symbol indicates no data available for the day.

Editor's Note: Please note that June 1990 data here are preliminary. There may be changes reflected in later analysis.

STANFORD MEAN SOLAR MAGNETIC FIELD

Rot	Date	1	5	10	15	20	25

1988

Data not available at time of publication

-- lightning strike affected computer systems.

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

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

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

C O N T E N T S

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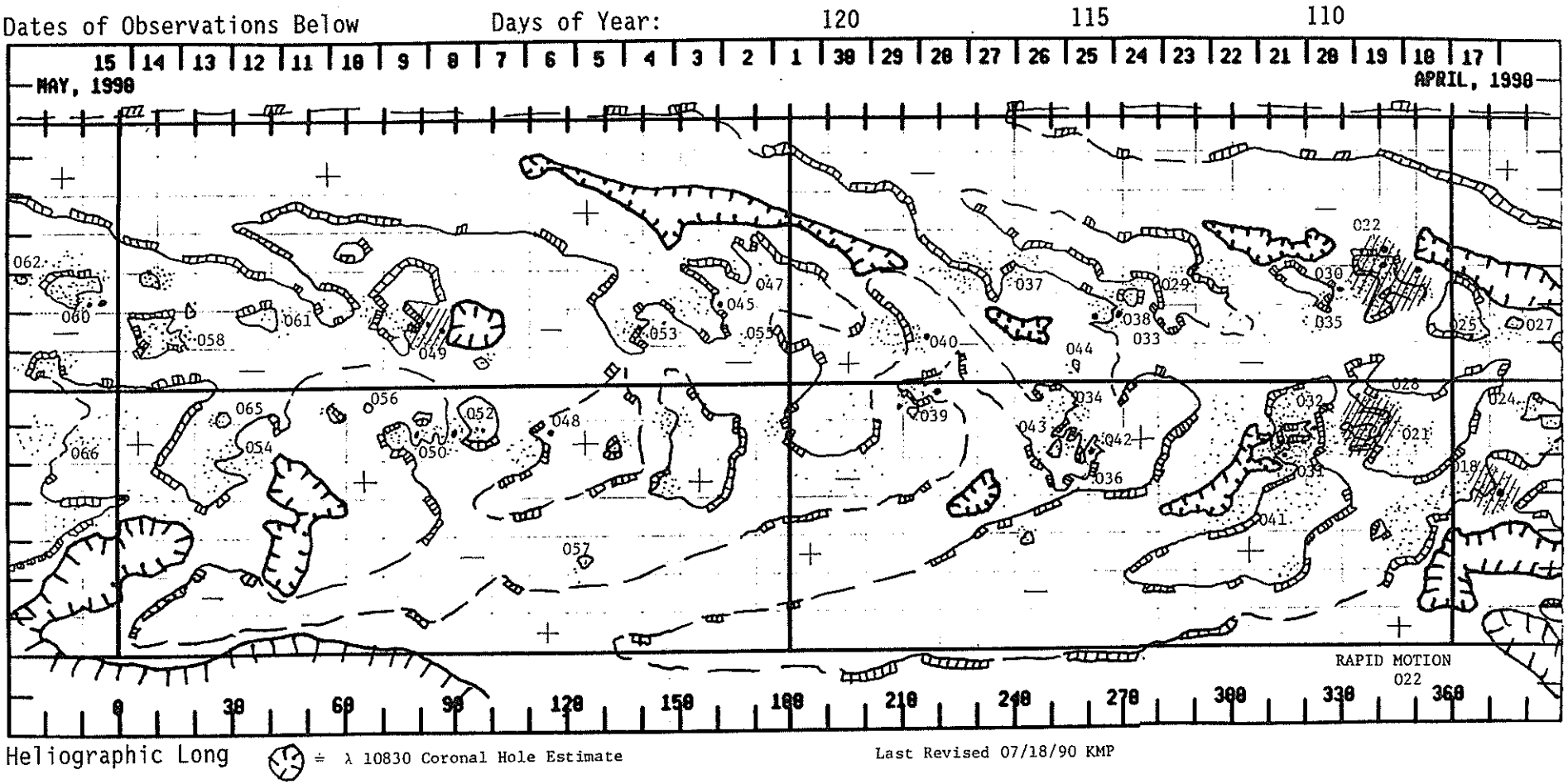
PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1828
(18 April to 15 May 1990)



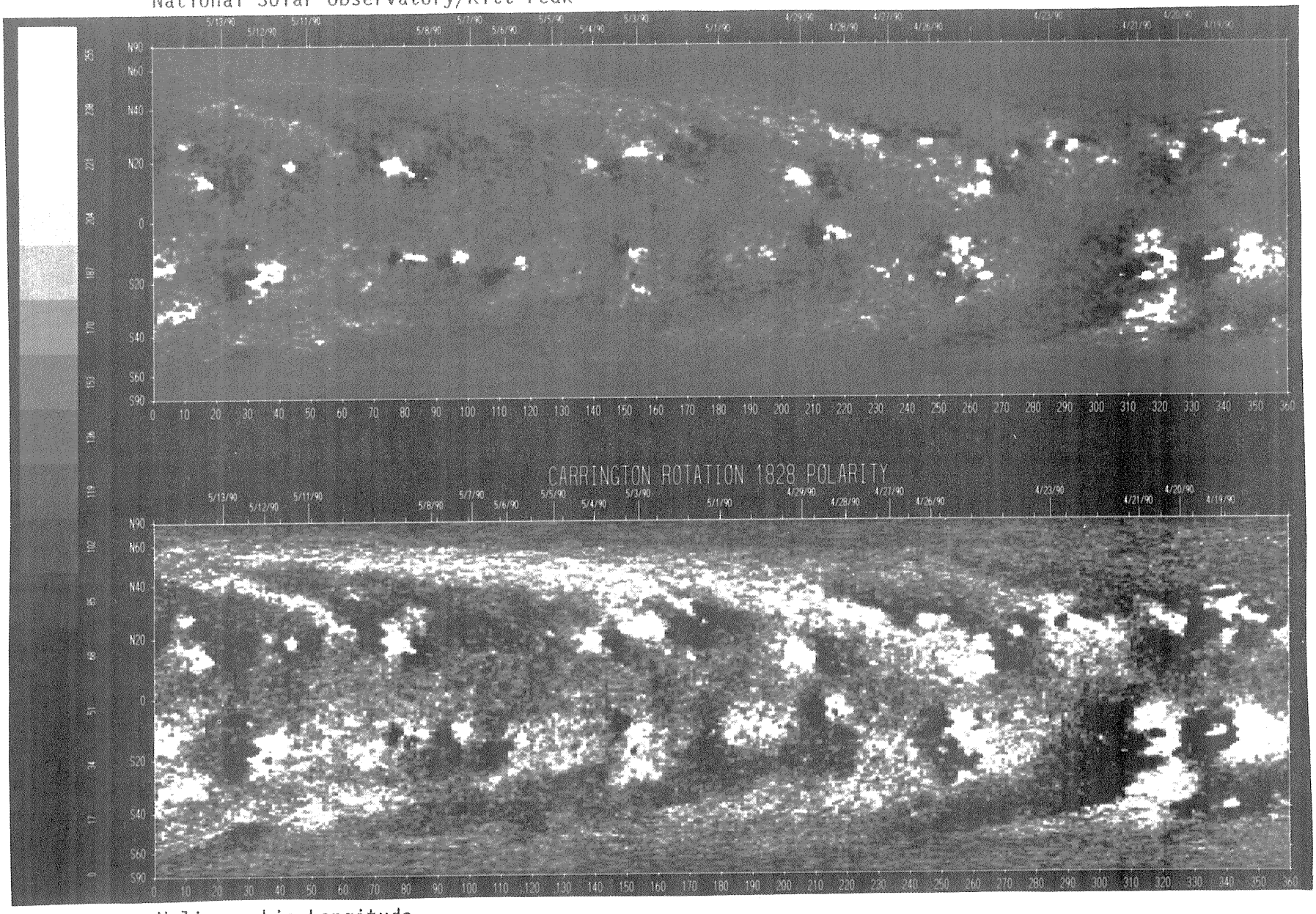
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1828

(18 April to 15 May 1990)

National Solar Observatory/Kitt Peak

Dates of Observation



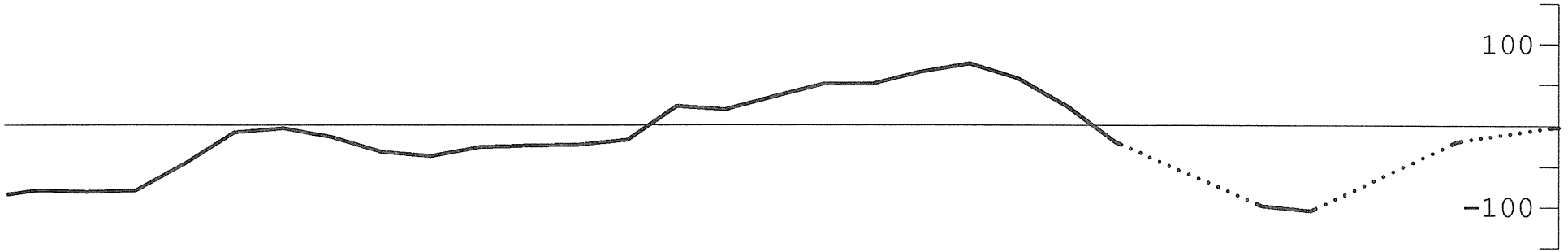
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1828
(18 April to 15 May 1990)

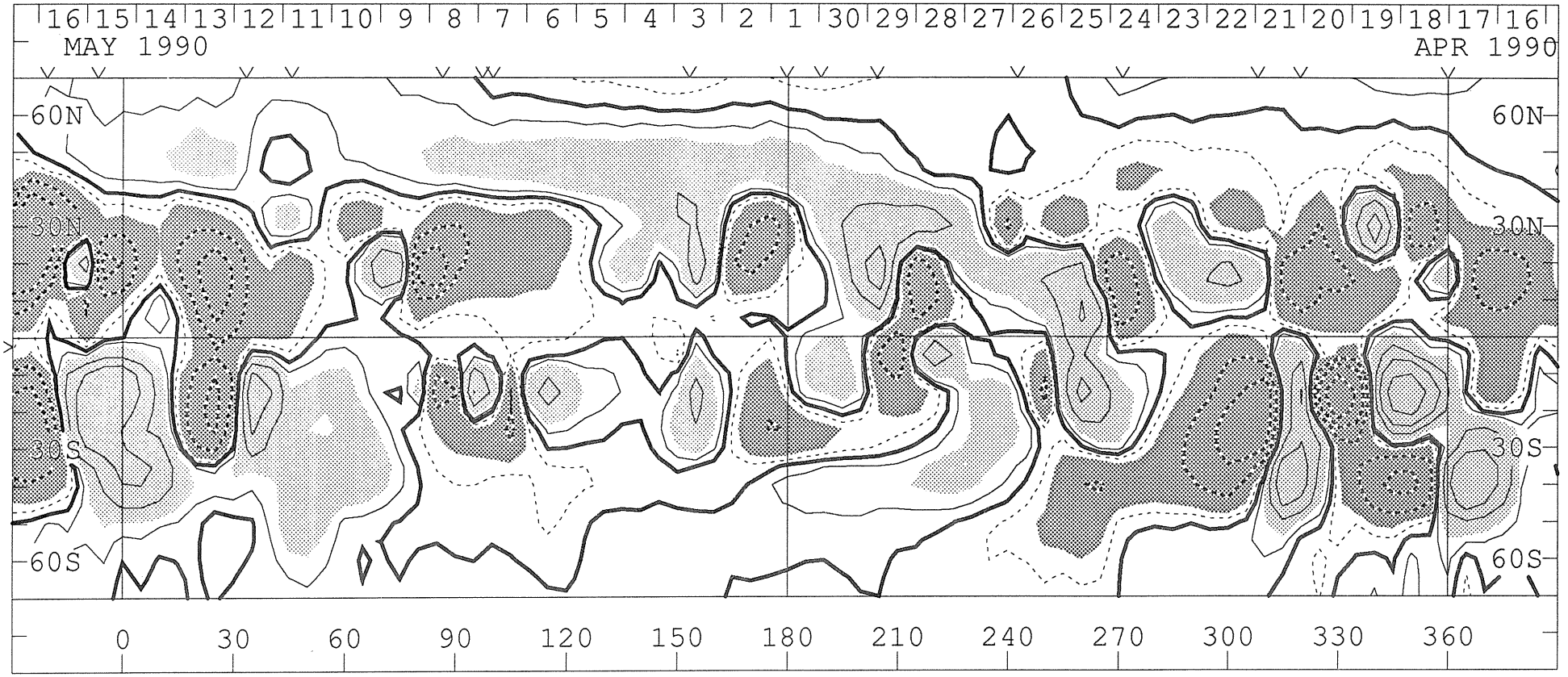
WILCOX SOLAR OBSERVATORY

Mean Field



Photospheric Magnetic Field

0, ±100, 500, 1000, 2000 MicroTesla



Heliographic Longitude

1828

SOLAR MAGNETIC FIELD SYNOPTIC CHART

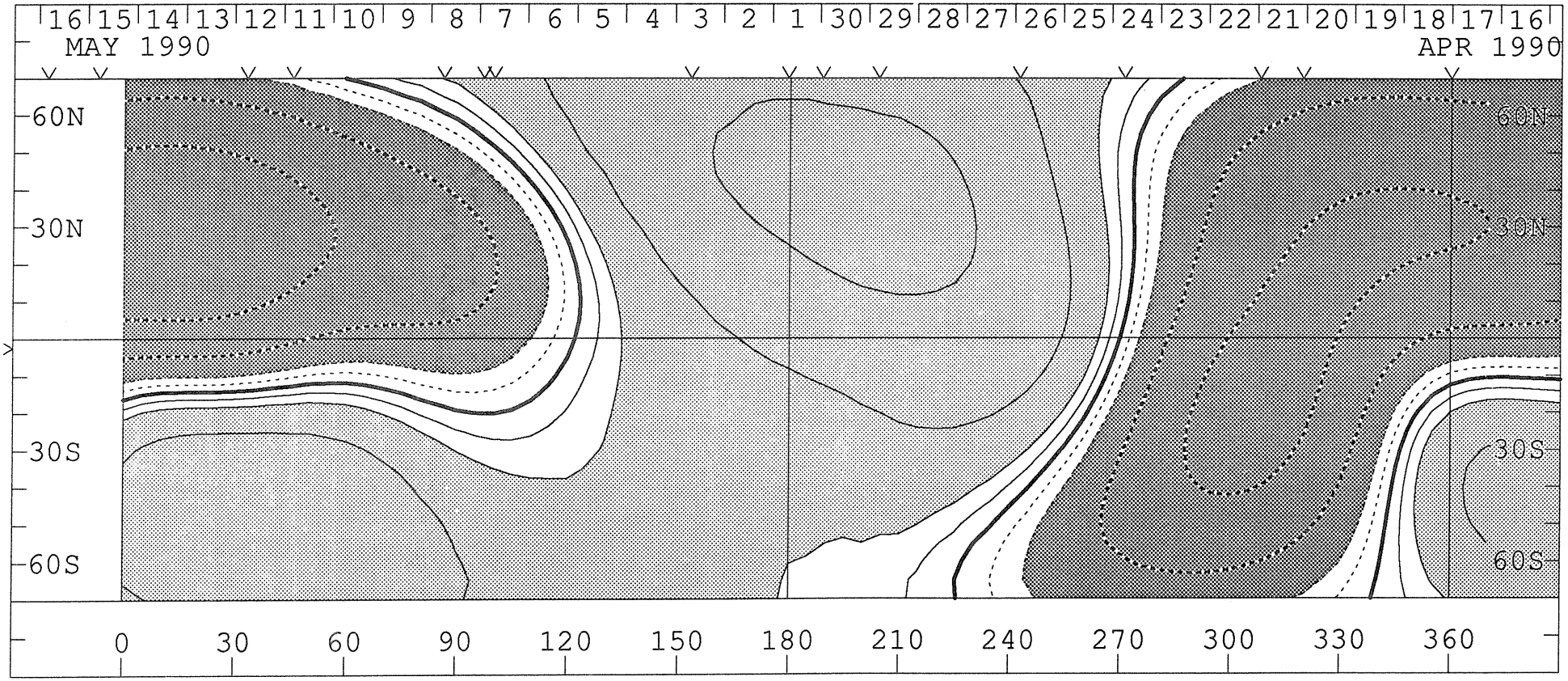
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1828

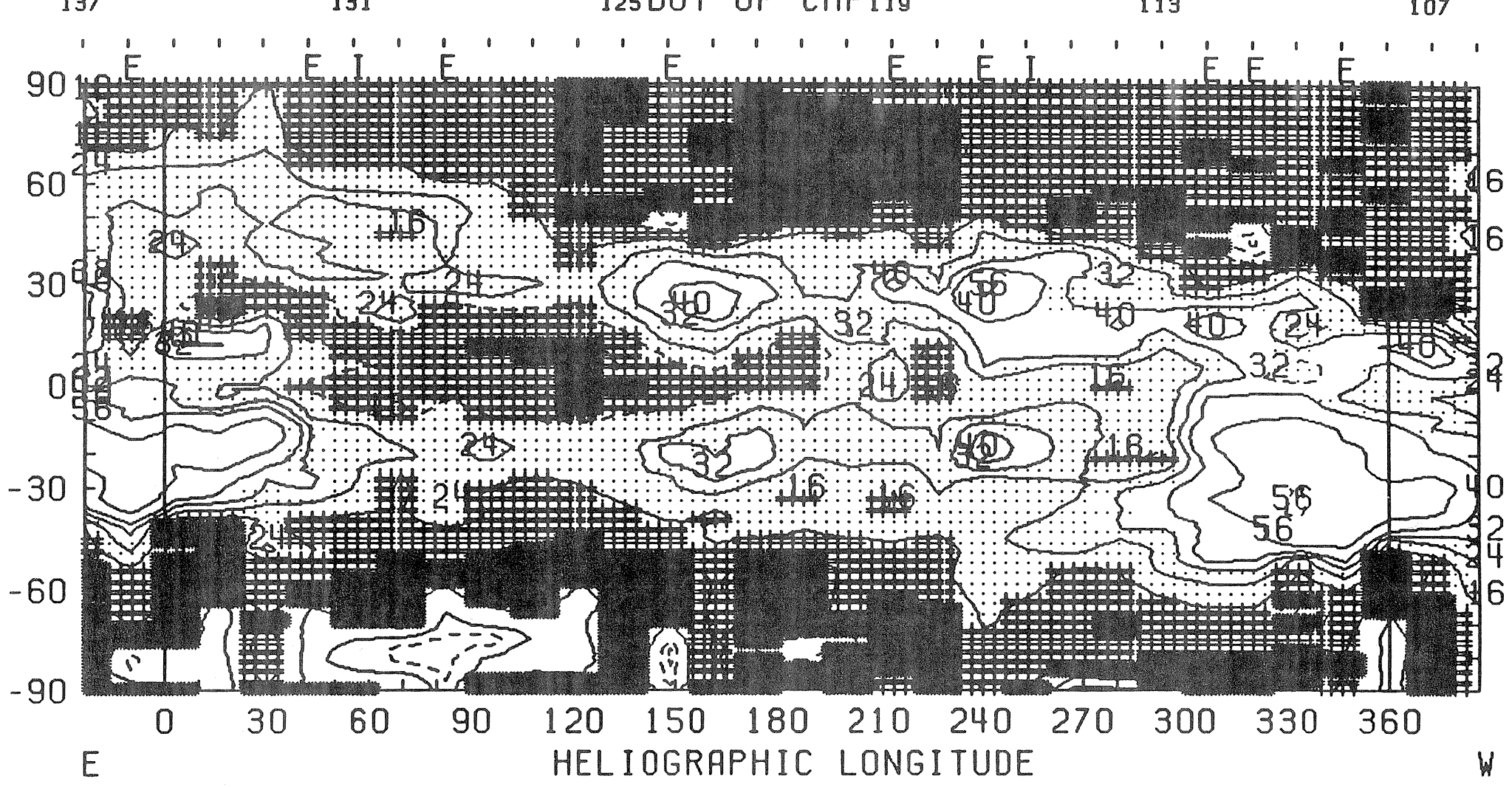
(18 April to 15 May 1990)

Wilcox Solar Observatory

0, ±1, 2, 5, 10, 20 microTesla

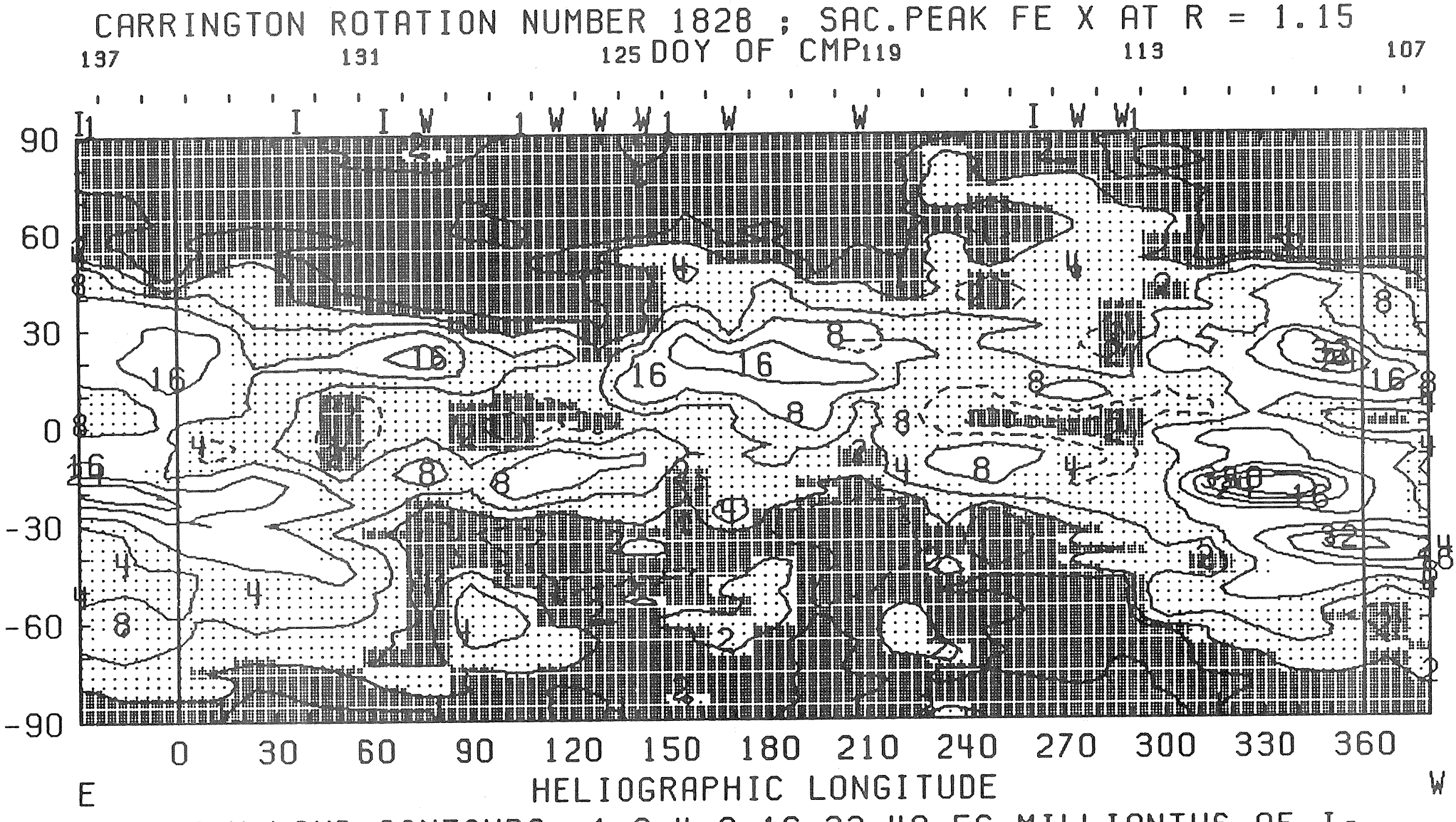


CARRINGTON ROTATION NUMBER 1828 ; SAC.PEAK FE XIV AT R = 1.15

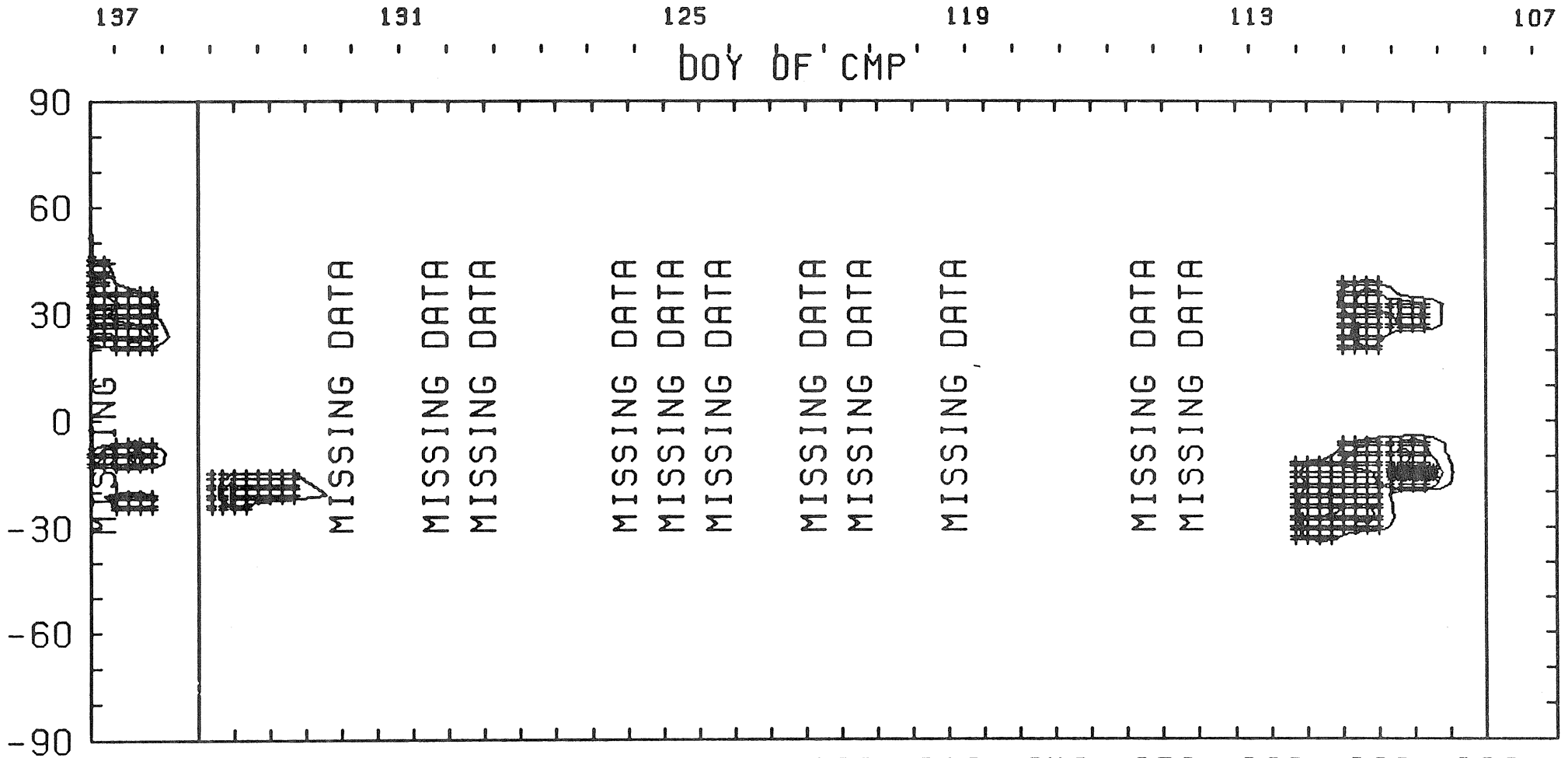


1990 W+E LIMB CONTOURS: 1,2,4,8,16,32,40,56 MILLIONTHS OF Io

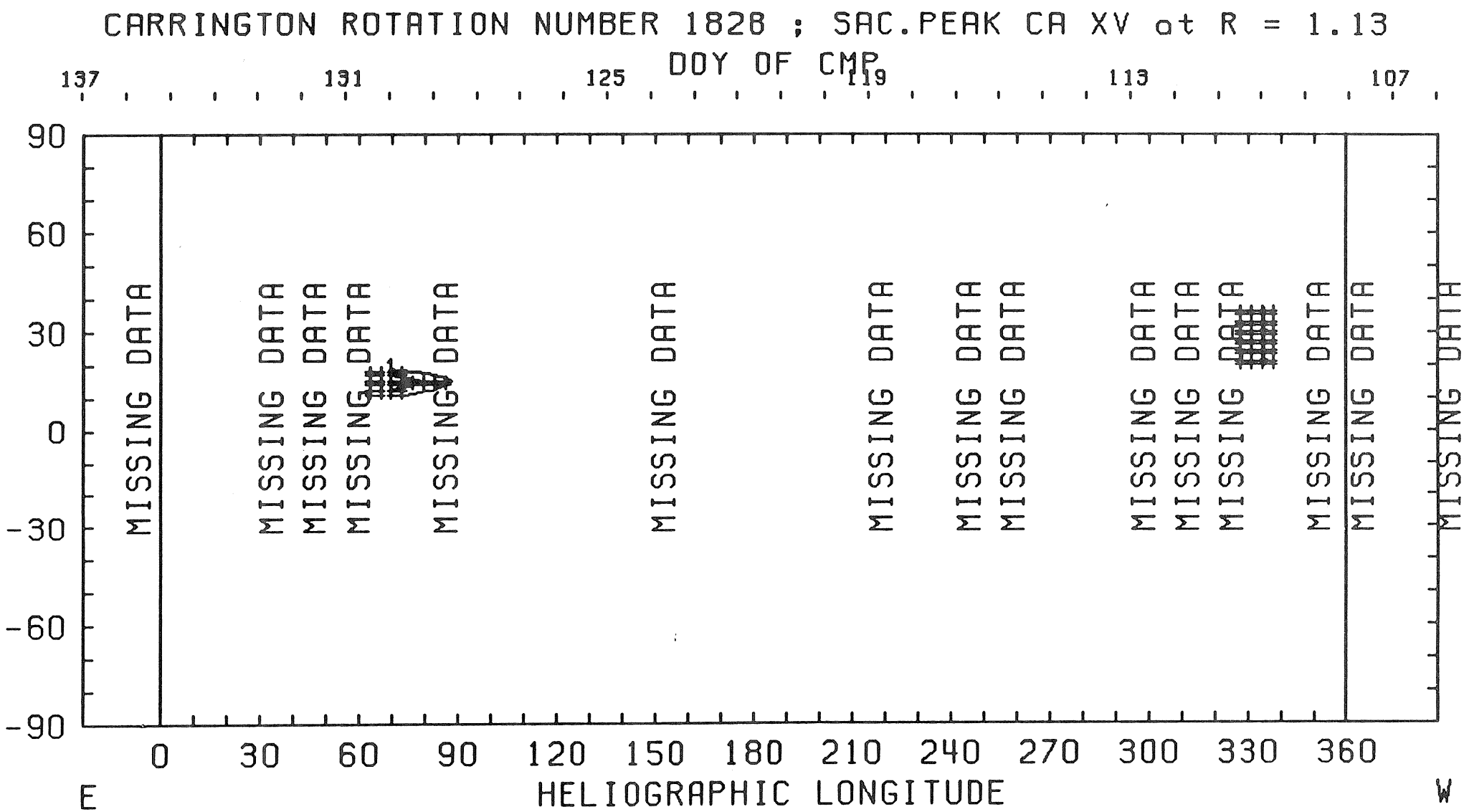
(26-Jun-90) CORONAL HOLES ARE SHOWN AS WHITE SURROUNDED BY BLACK


CARRINGTON ROTATION NUMBER 1828 ; SAC.PEAK FE X AT R = 1.15
137
131
125 DOY OF CMP 119
113
107
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
(26-Jun-90)

CARRINGTON ROTATION NUMBER 1828 ; SAC.PEAK CA XV at R = 1.13



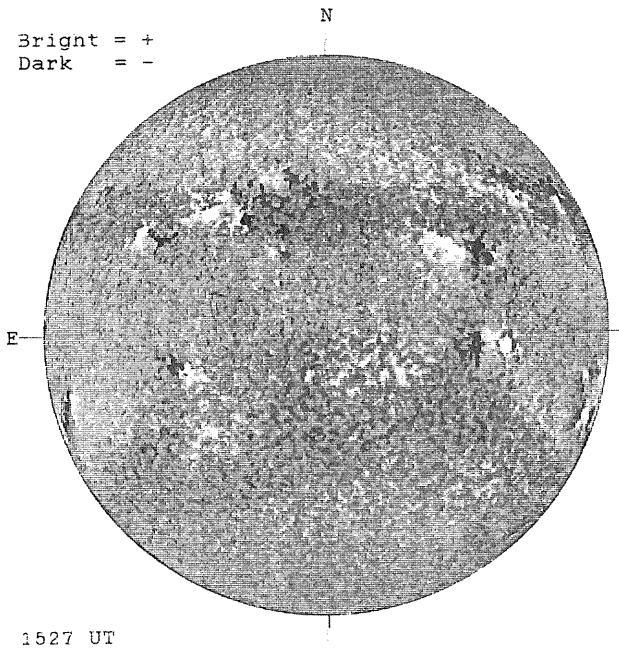
1990 EAST LIMB CONTOURS: YELLOW-MINIMUM,1,2,4,8 MILLIONTHS OF Io
(5-Jul-90)


CARRINGTON ROTATION NUMBER 1828 ; SAC.PEAK CA XV at R = 1.13
DOY OF CMP
137
131
125
119
113
107
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
(6-Jul-90)

MAY 1, 1990 (P=-24.20, B_o =-4.17, L_o = 188.36)

KITT PEAK MAGNETOGRAM

Brignt = +
Dark = -



1527 UT

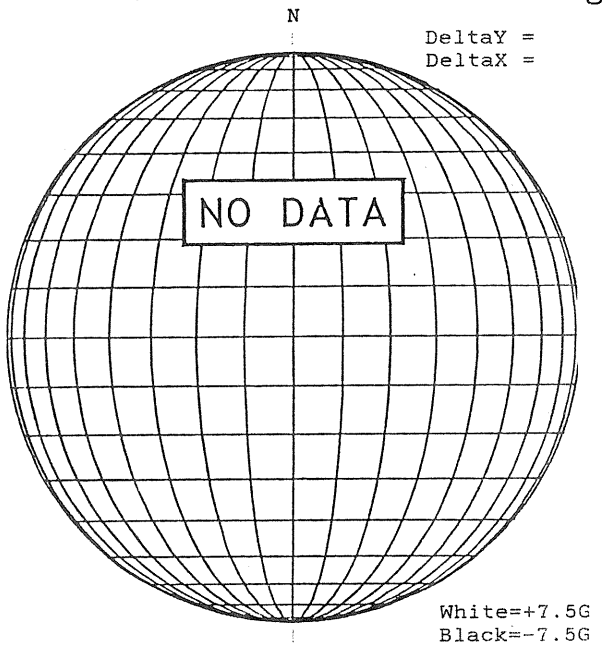
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

1552 UT

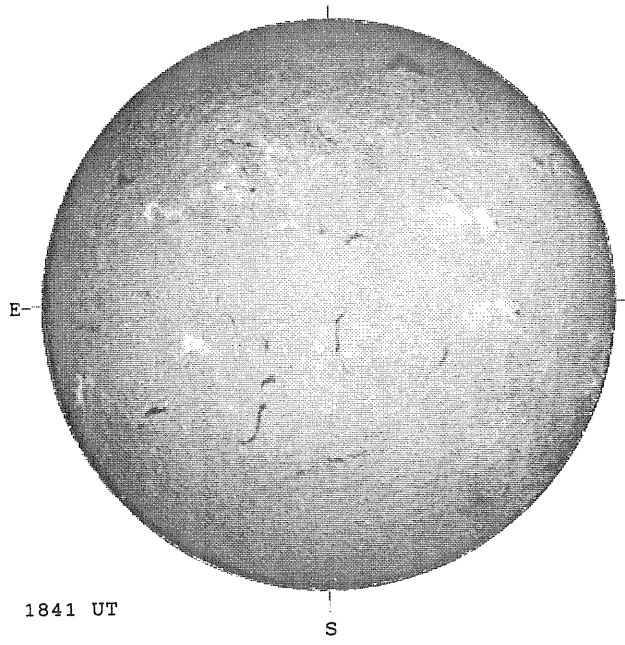
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



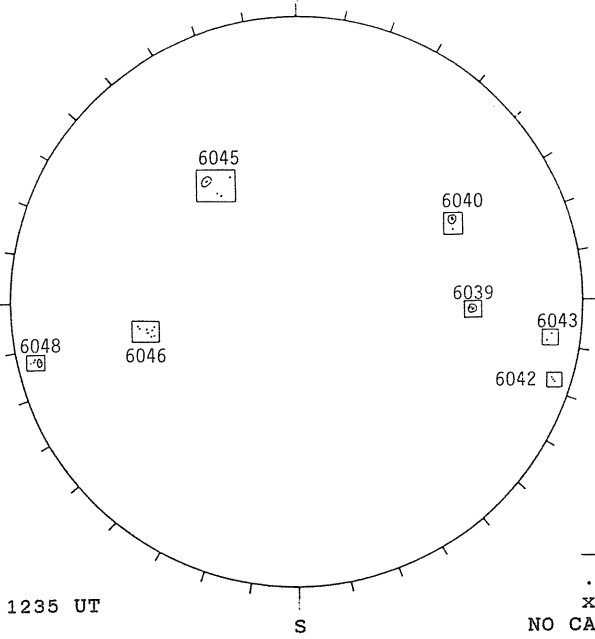
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



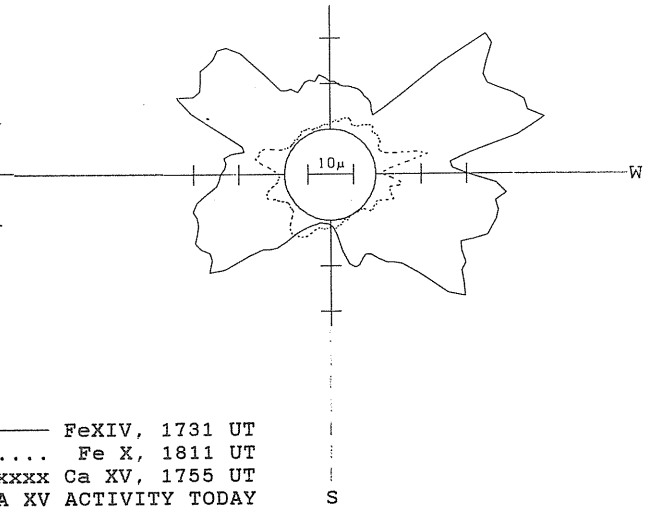
1841 UT

RAMEY SUNSPOT



1235 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

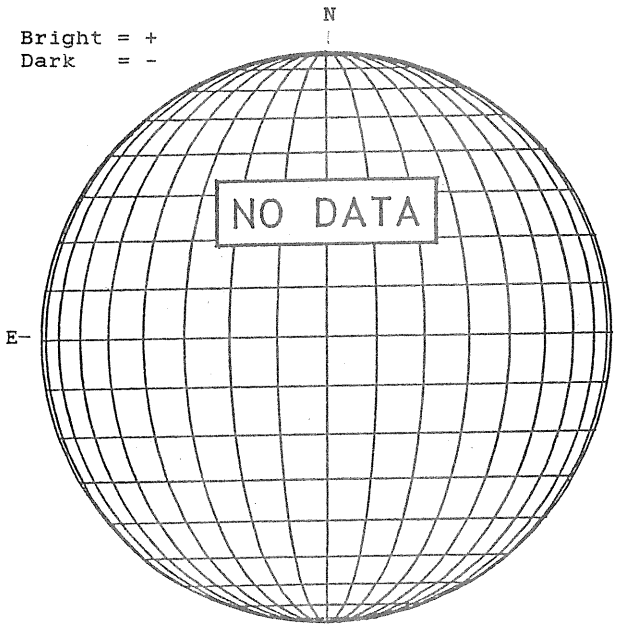


—— FeXIV, 1731 UT
.... Fe X, 1811 UT
xxxx Ca XV, 1755 UT
NO CA XV ACTIVITY TODAY

MAY 2, 1990 (P=-24.02, B_o =-4.07, L_o = 175.15)

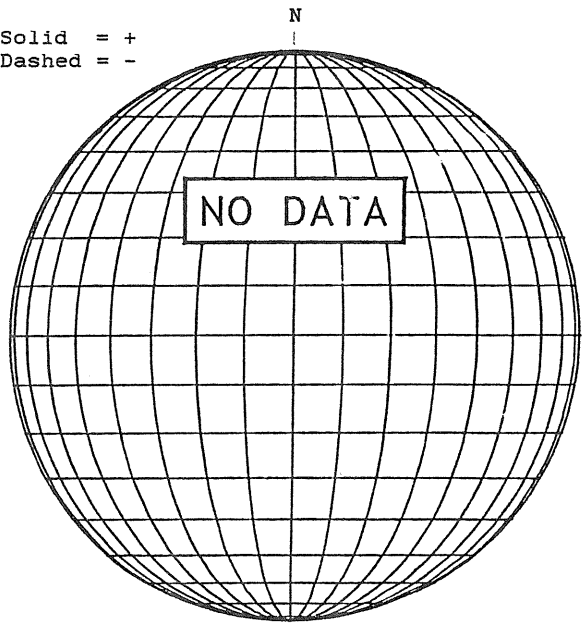
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



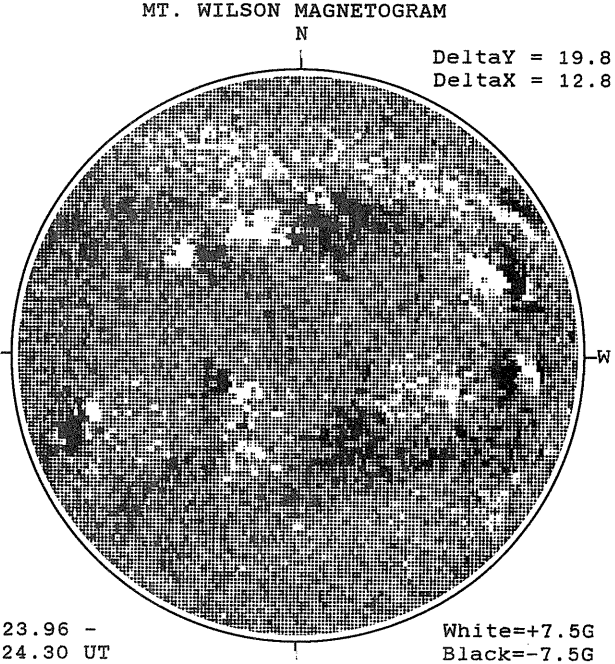
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

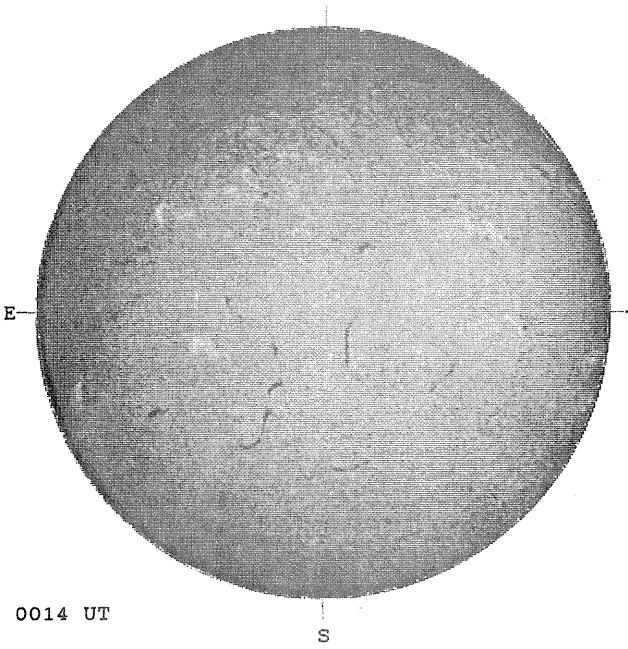
DeltaY = 19.8
DeltaX = 12.8



23.96 -
24.30 UT

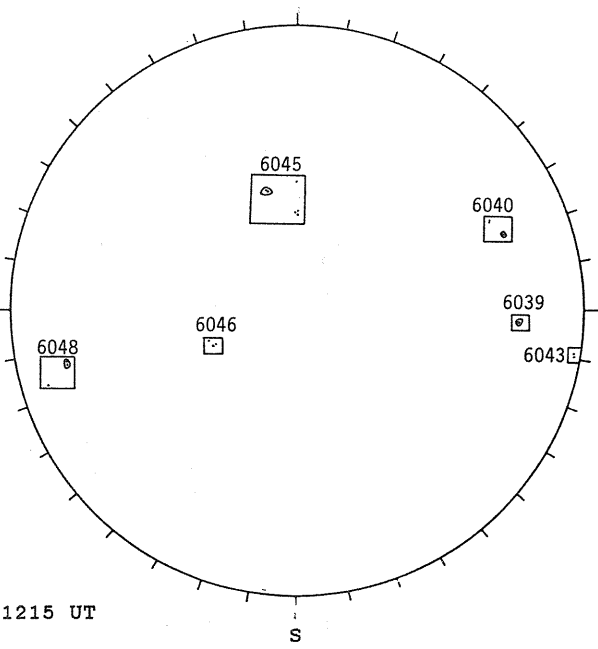
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



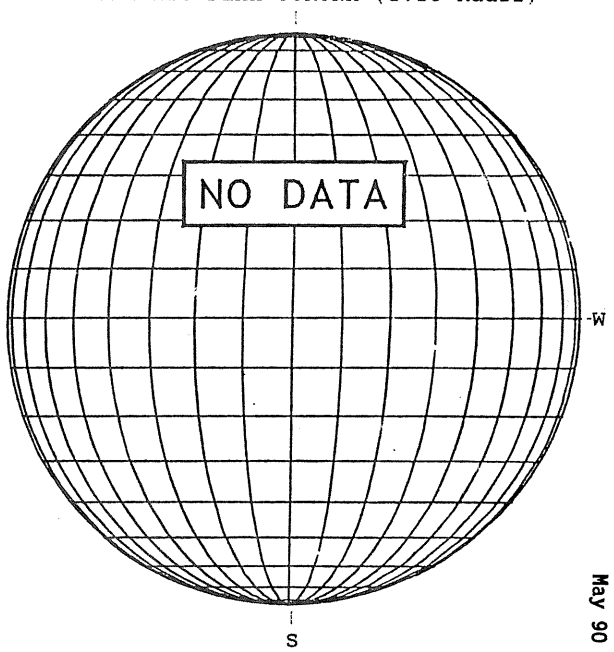
0014 UT

RAMEY SUNSPOT



1215 UT

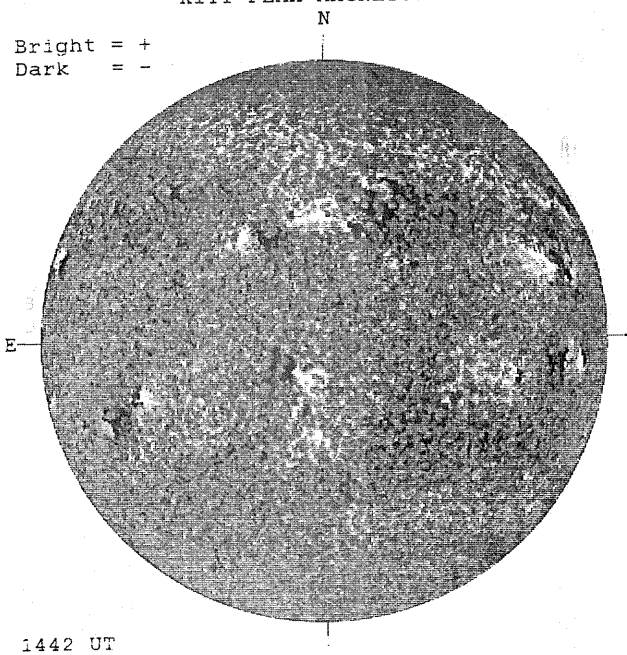
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 3, 1990 (P=-23.83, B_o =-3.97, L_o = 161.93)

KITT PEAK MAGNETOGRAM

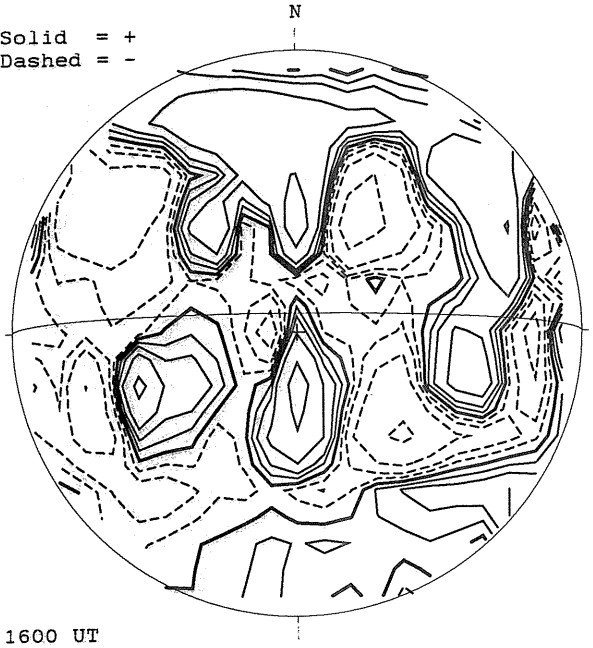
Bright = +
Dark = -



1442 UT

STANFORD MAGNETOGRAM

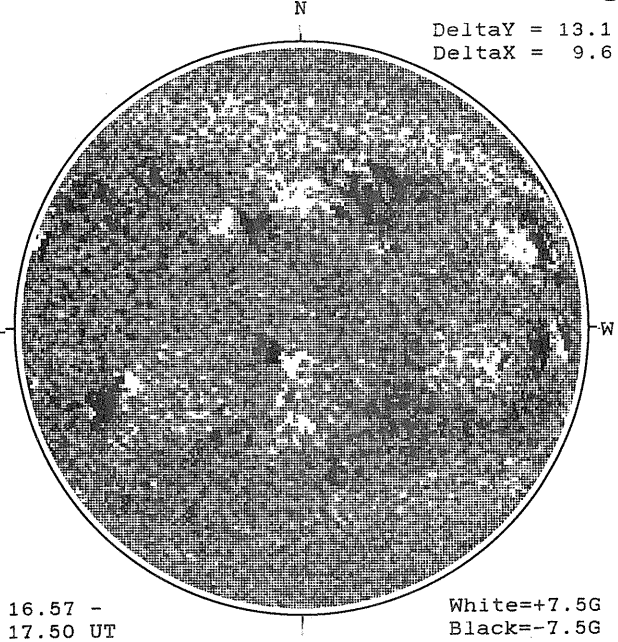
Solid = +
Dashed = -



1600 UT

MT. WILSON MAGNETOGRAM

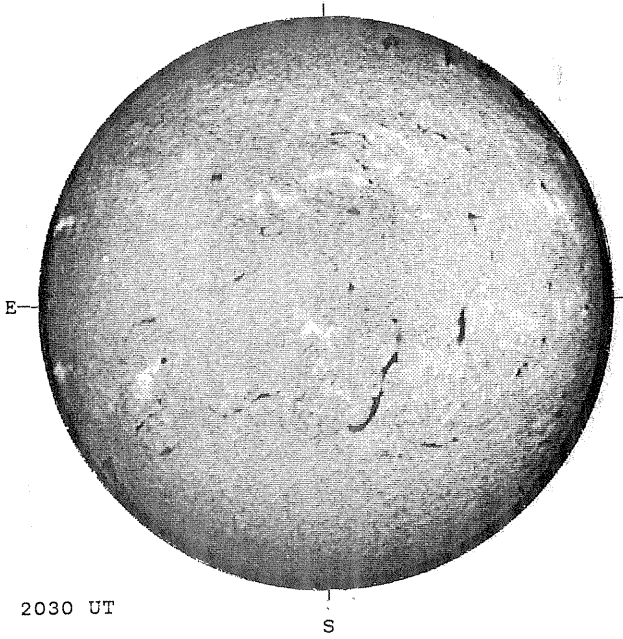
DeltaY = 13.1
DeltaX = 9.6



16.57 -
17.50 UT

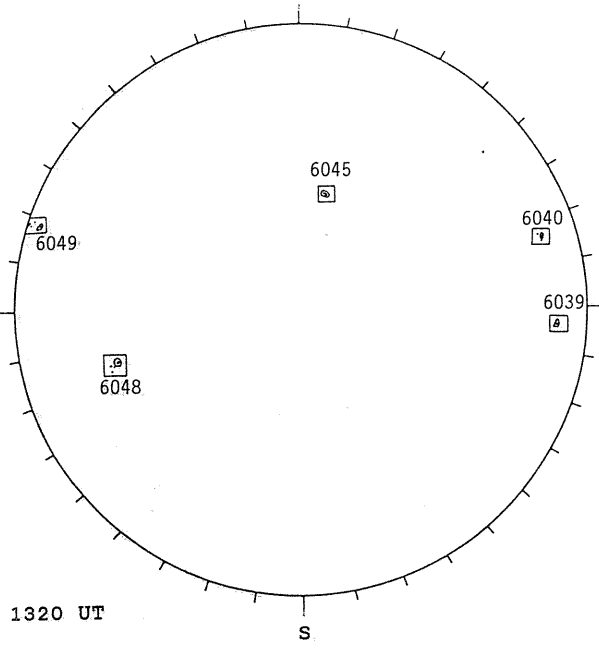
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



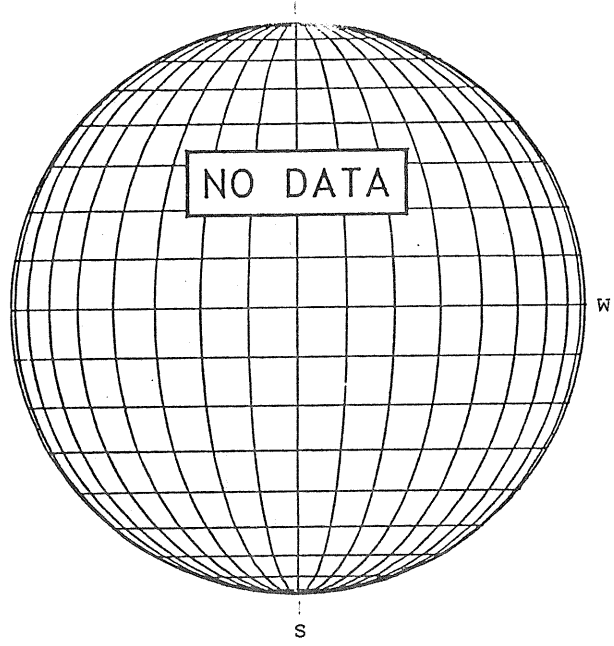
2030 UT

RAMEY SUNSPOT



1320 UT

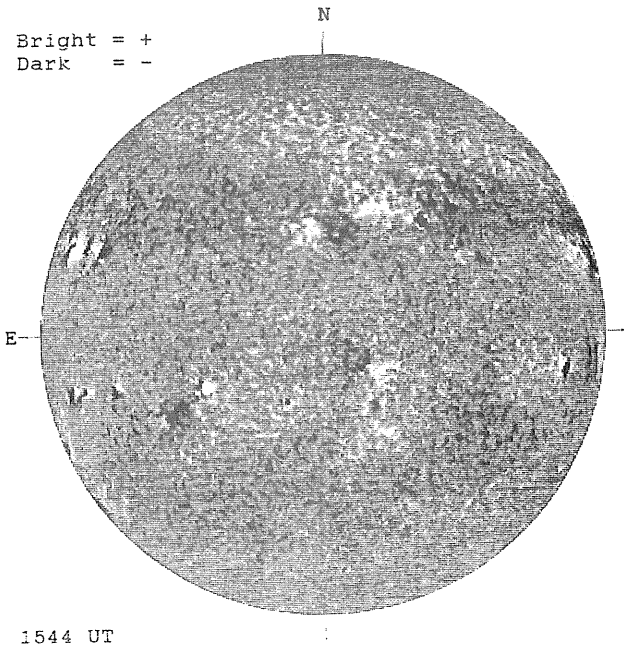
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 4, 1990 (P=-23.64, B_o =-3.87, L_o = 148.71)

KITT PEAK MAGNETOGRAM

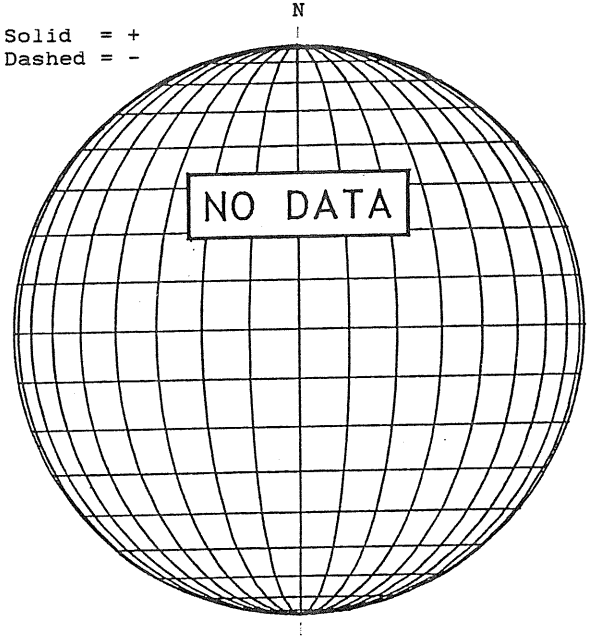
Bright = +
Dark = -



1544 UT

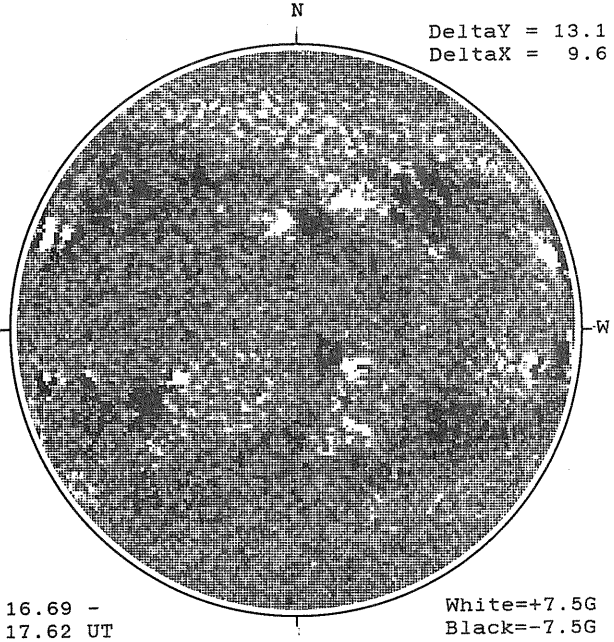
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

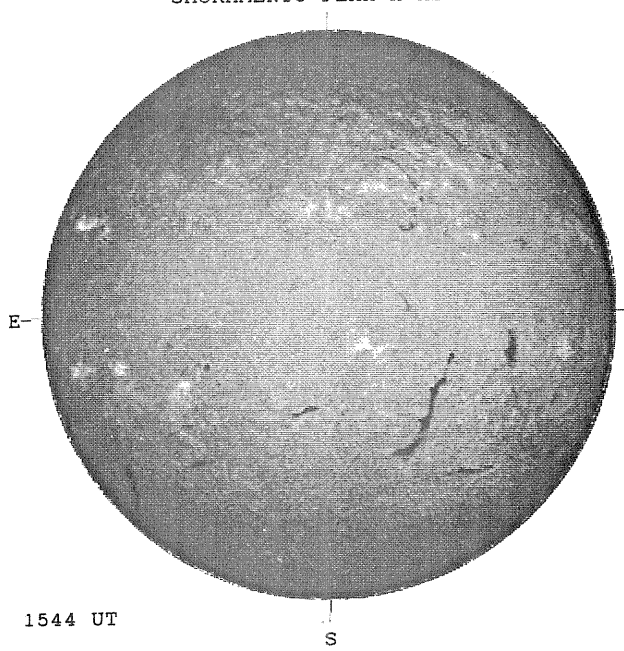
DeltaY = 13.1
DeltaX = 9.6



16.69 -
17.62 UT

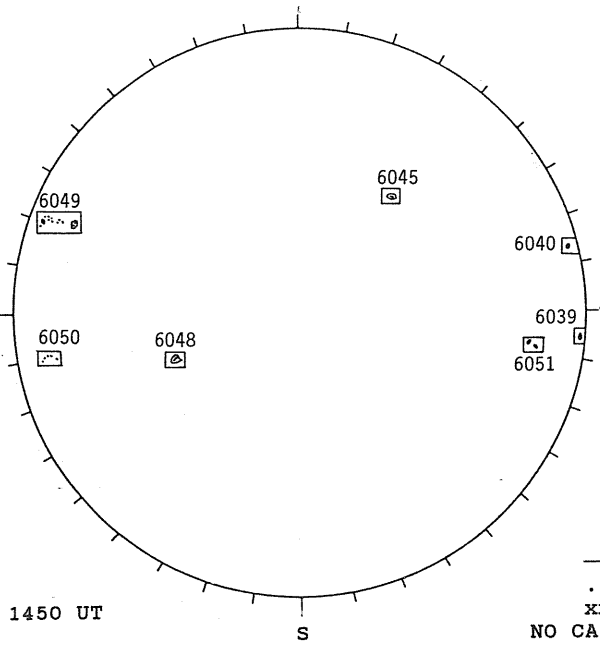
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



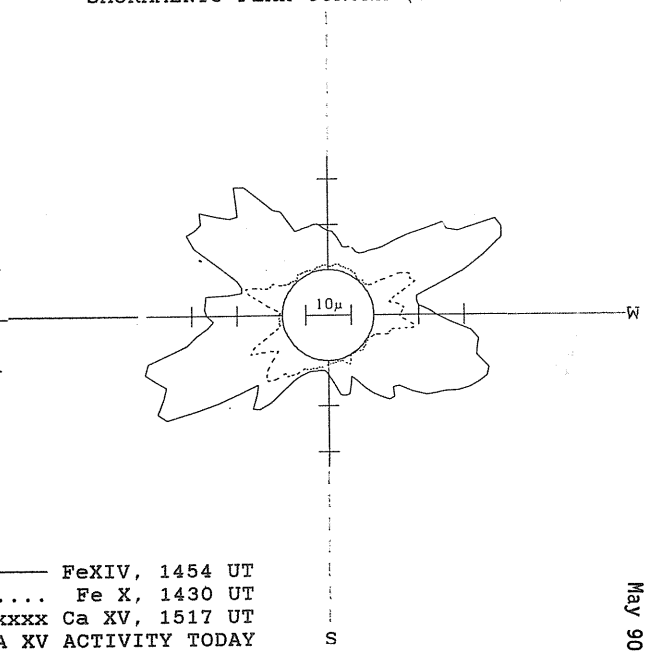
1544 UT

BOULDER SUNSPOT



1450 UT

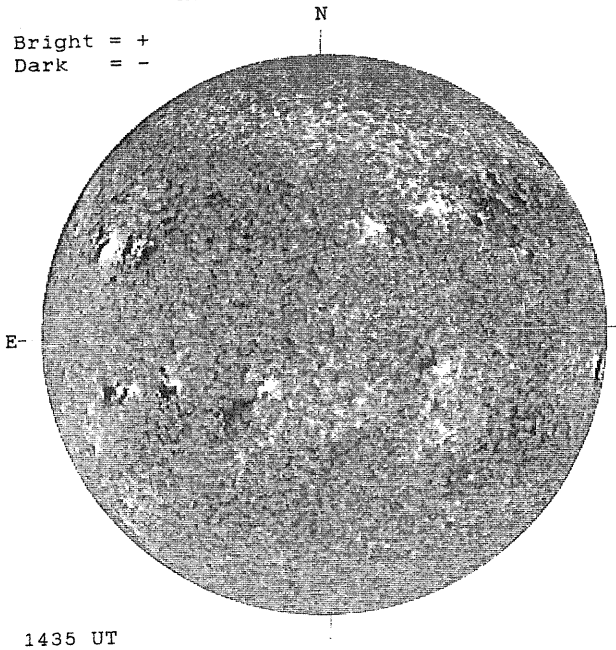
SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1454 UT
.... Fe X, 1430 UT
xxxx Ca XV, 1517 UT
NO CA XV ACTIVITY TODAY

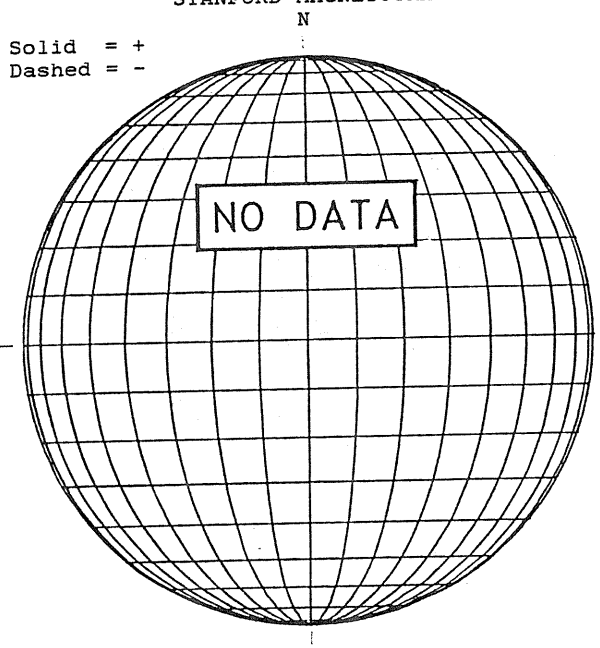
MAY 5, 1990 (P=-23.44, B_o =-3.76, L_o = 135.49)

KITT PEAK MAGNETOGRAM

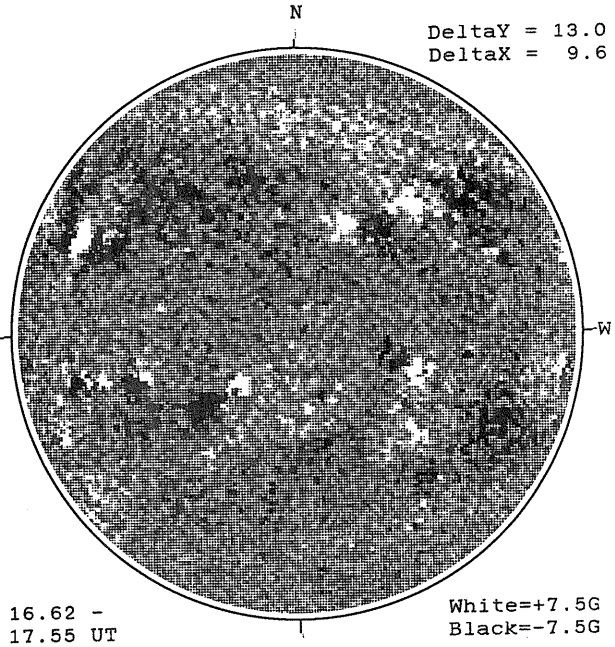


1435 UT

STANFORD MAGNETOGRAM



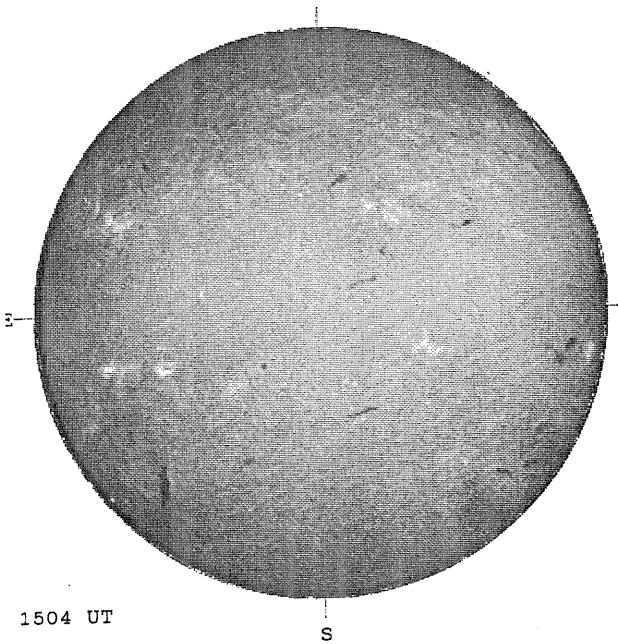
MT. WILSON MAGNETOGRAM



16.62 -
17.55 UT

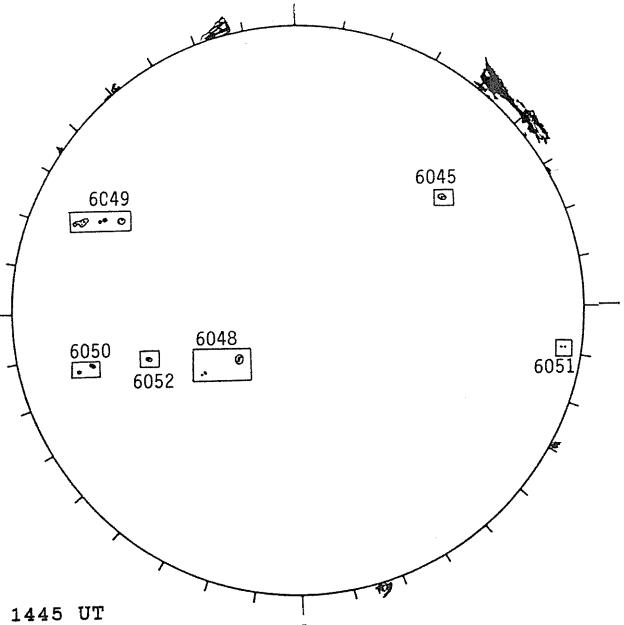
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



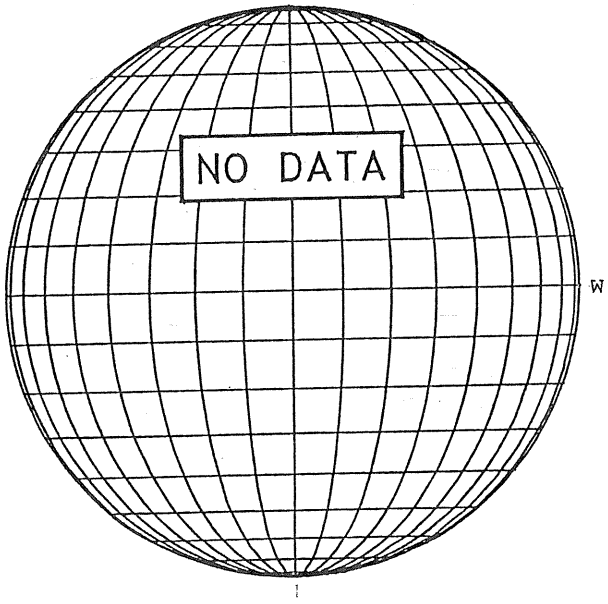
1504 UT

BOULDER SUNSPOT



1445 UT
1415 UT BOUL Prom

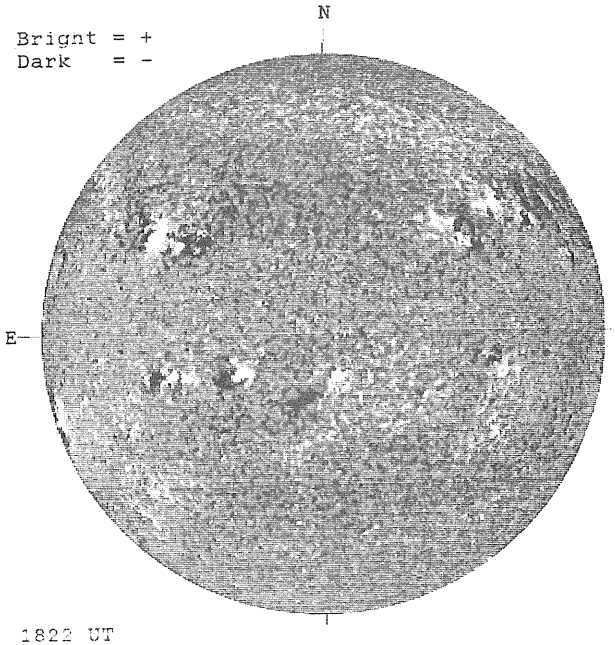
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 6, 1990 (P=-23.23, B_o =-3.66, L_o = 122.27)

KITT PEAK MAGNETOGRAM

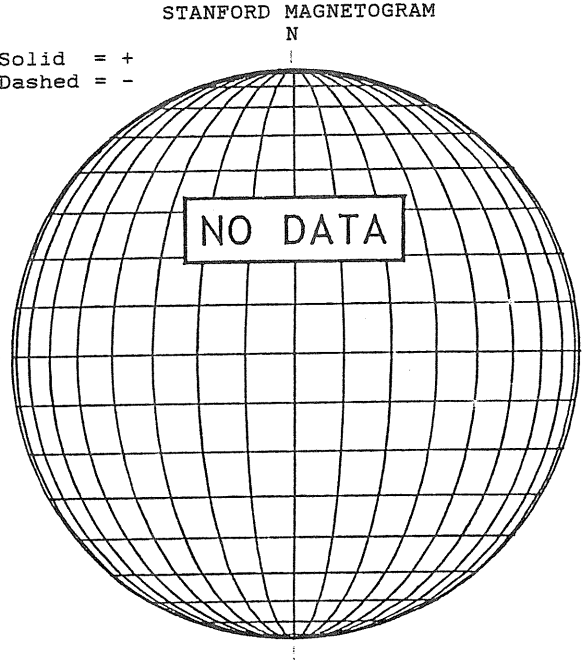
Bright = +
Dark = -



1822 UT

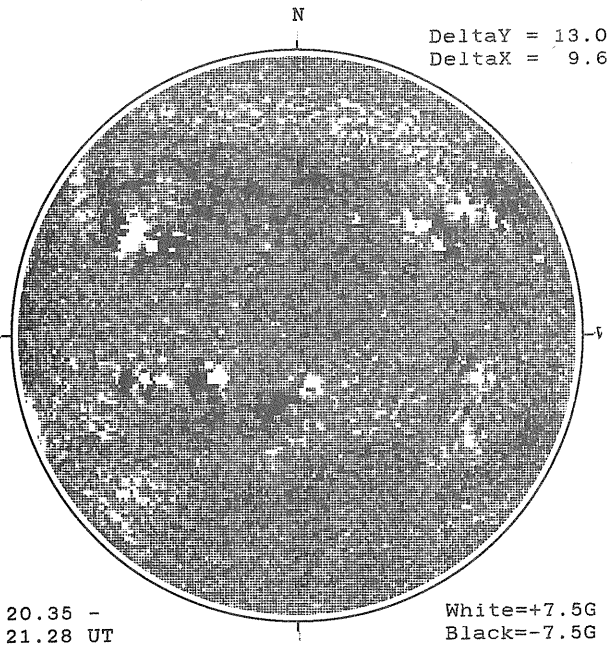
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

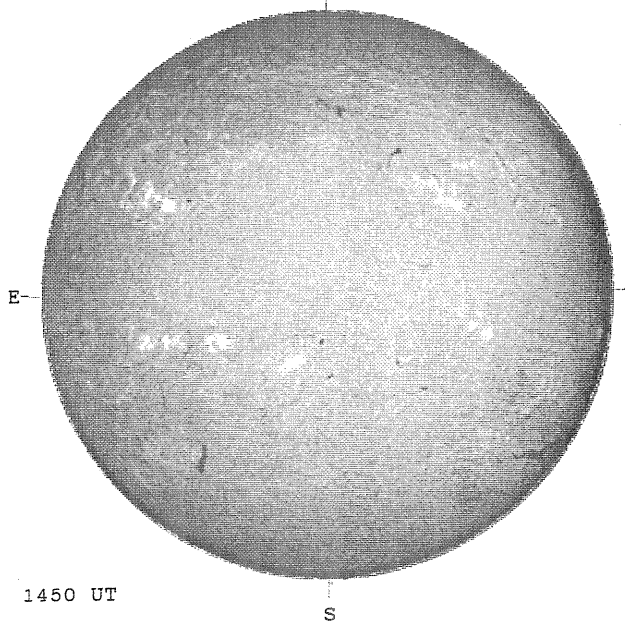
DeltaY = 13.0
DeltaX = 9.6



20.35 -
21.28 UT

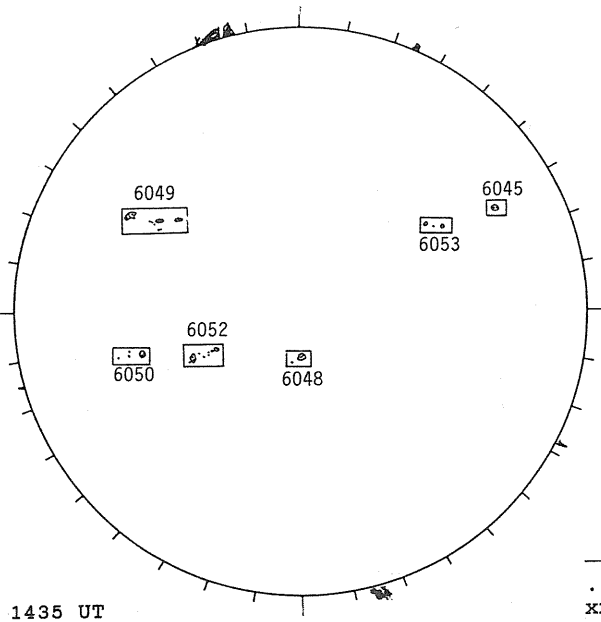
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



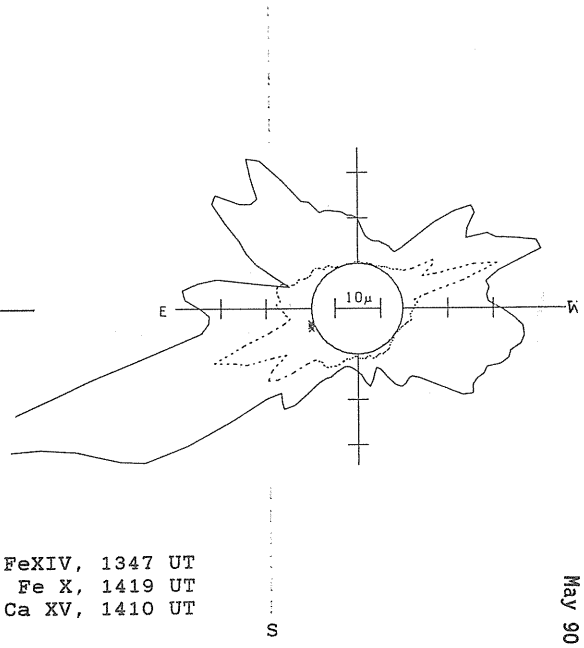
1450 UT

BOULDER SUNSPOT



1435 UT
1415 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

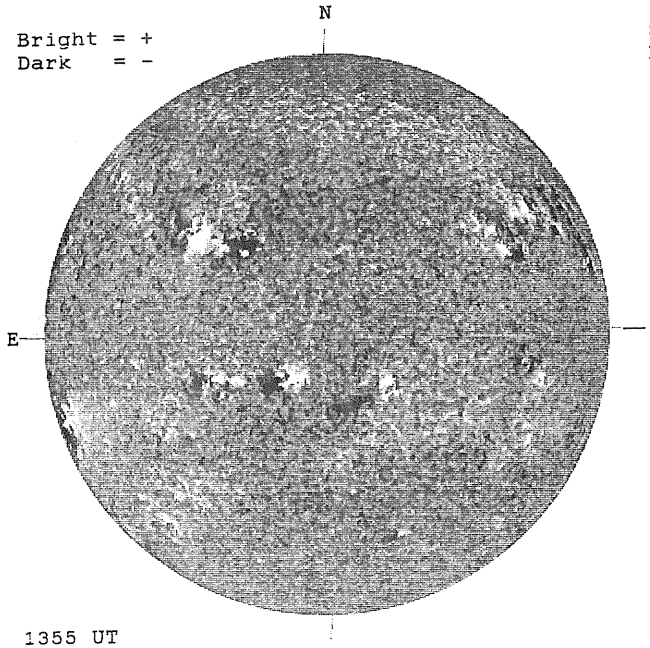


—— FeXIV, 1347 UT
.... Fe X, 1419 UT
xxxx Ca XV, 1410 UT

MAY 7, 1990 (P=-23.02, B_o =-3.55, L_o = 109.05)

KITT PEAK MAGNETOGRAM

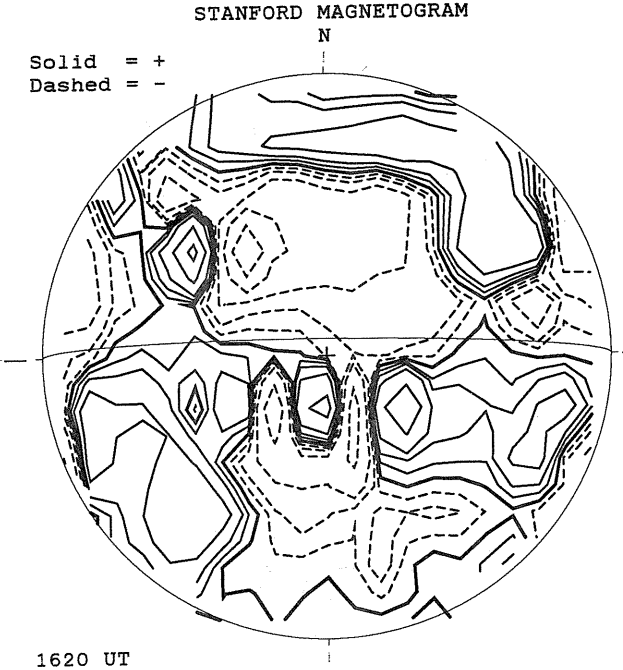
Bright = +
Dark = -



1355 UT

STANFORD MAGNETOGRAM

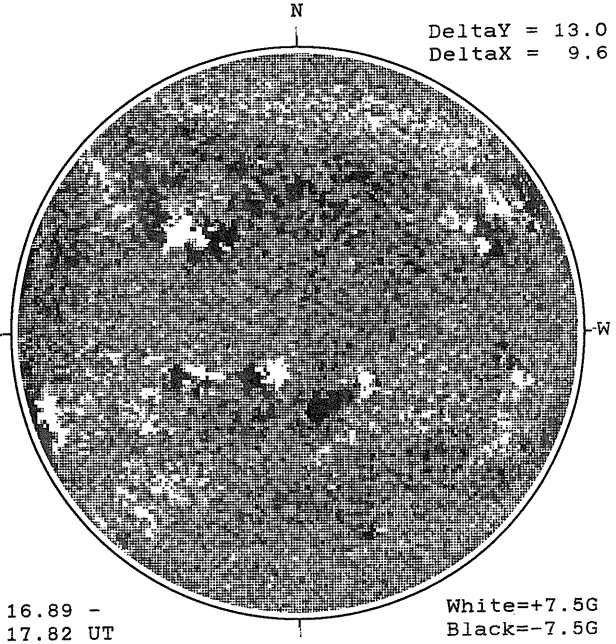
Solid = +
Dashed = -



1620 UT

MT. WILSON MAGNETOGRAM

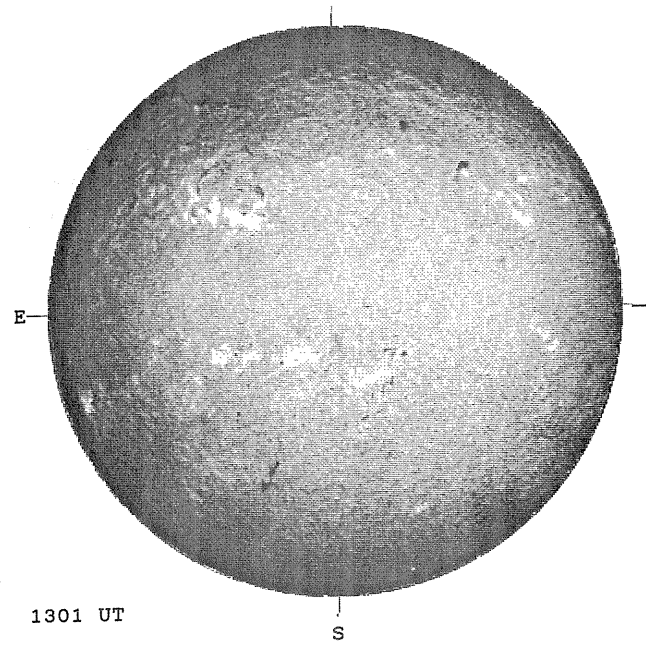
DeltaY = 13.0
DeltaX = 9.6



16.89 -
17.82 UT

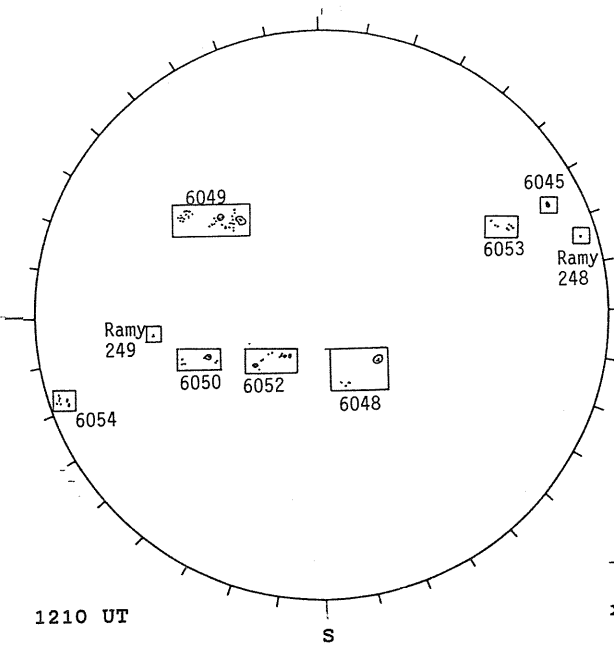
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



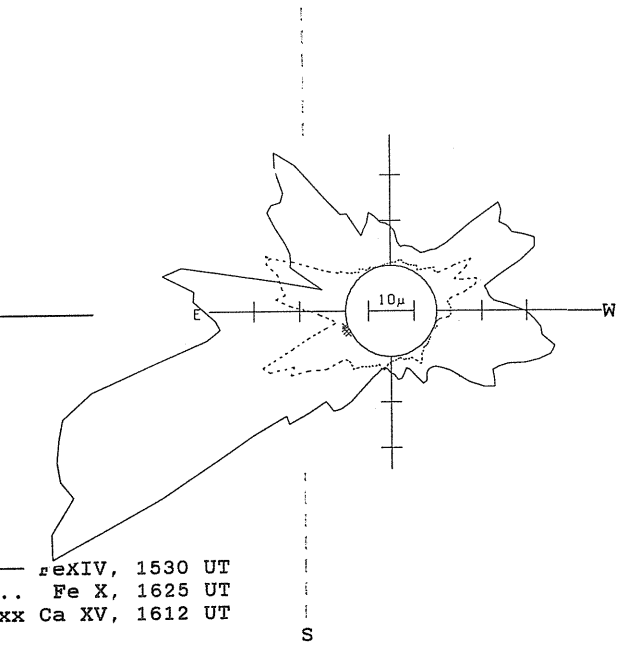
1301 UT

RAMEY SUNSPOT



1210 UT

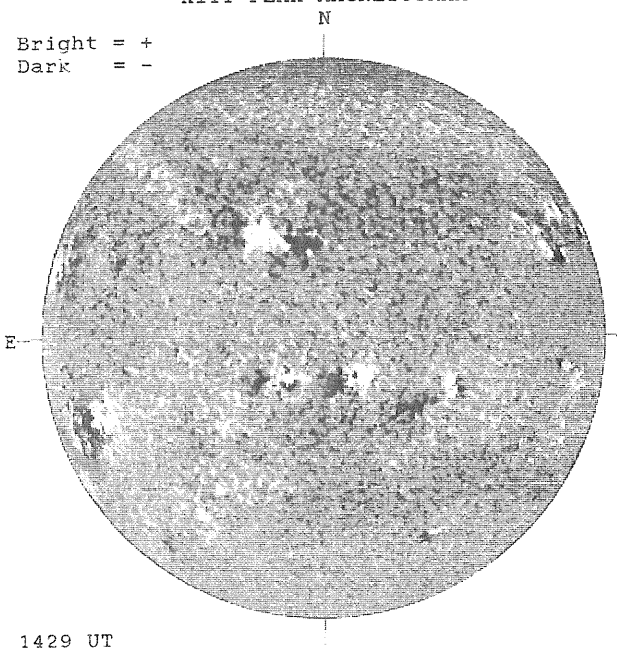
SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1530 UT
.... Fe X, 1625 UT
xxxx Ca XV, 1612 UT

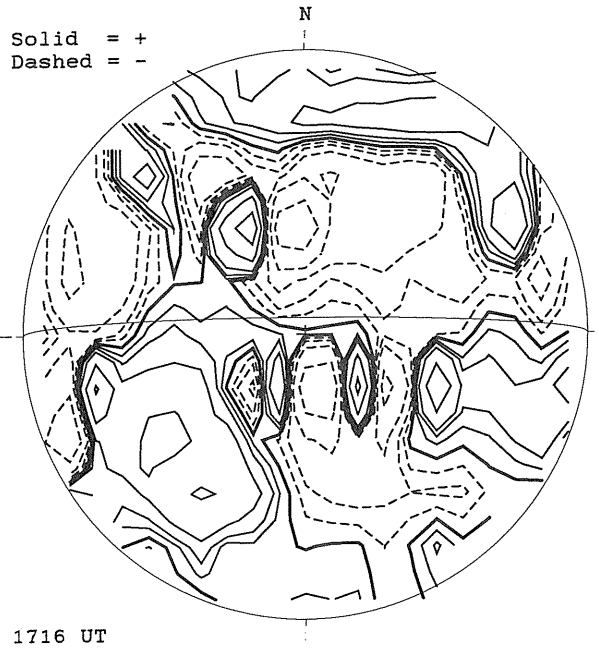
MAY 8, 1990 (P=-22.79, B_o =-3.45, L_o = 95.83)

KITT PEAK MAGNETOGRAM



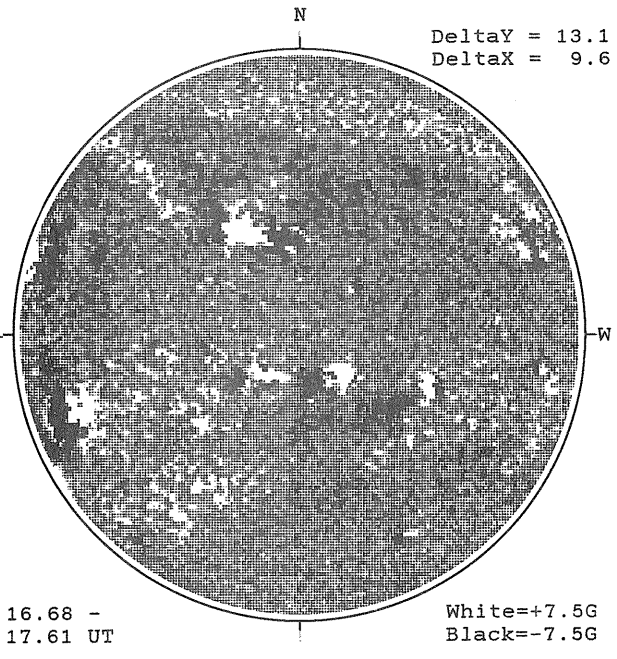
1429 UT

STANFORD MAGNETOGRAM



1716 UT

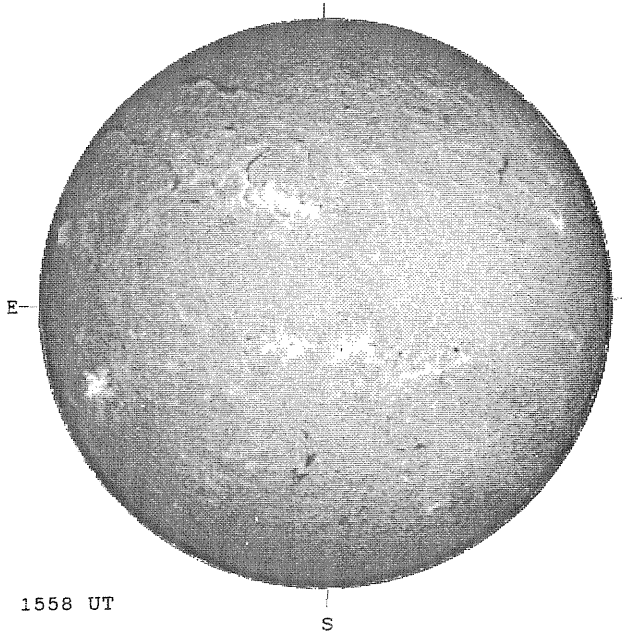
MT. WILSON MAGNETOGRAM



16.68 - 17.61 UT

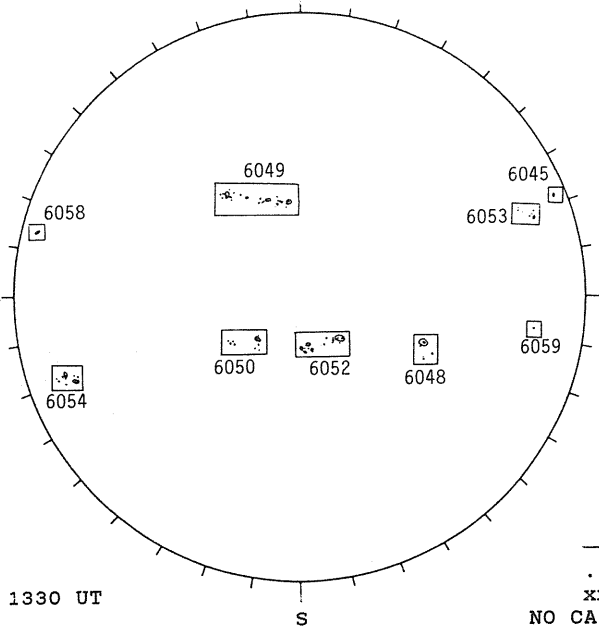
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



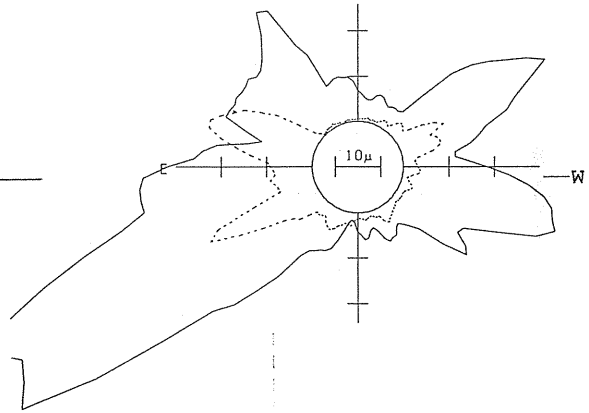
1558 UT

RAMEY SUNSPOT



1330 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1442 UT
.... Fe X, 1532 UT
xxxx Ca XV, 1505 UT
NO CA XV ACTIVITY TODAY

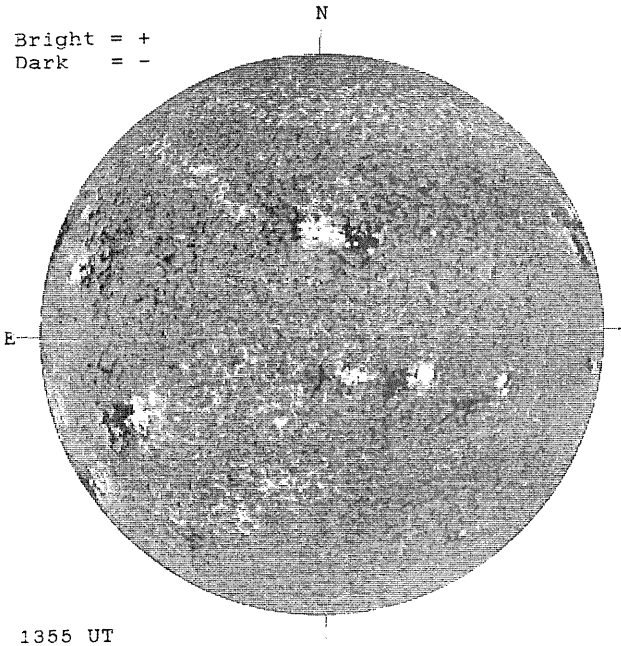
S

67
May 90

MAY 9, 1990 (P=-22.57, B_o =-3.34, L_o = 82.61)

KITT PEAK MAGNETOGRAM

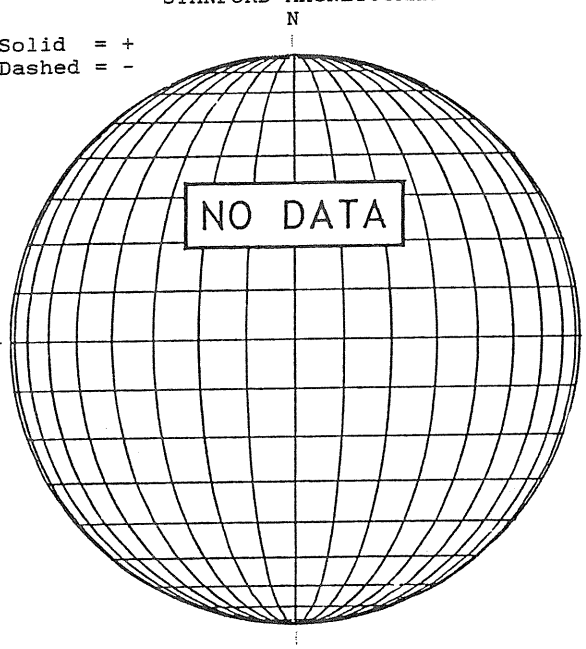
Bright = +
Dark = -



1355 UT

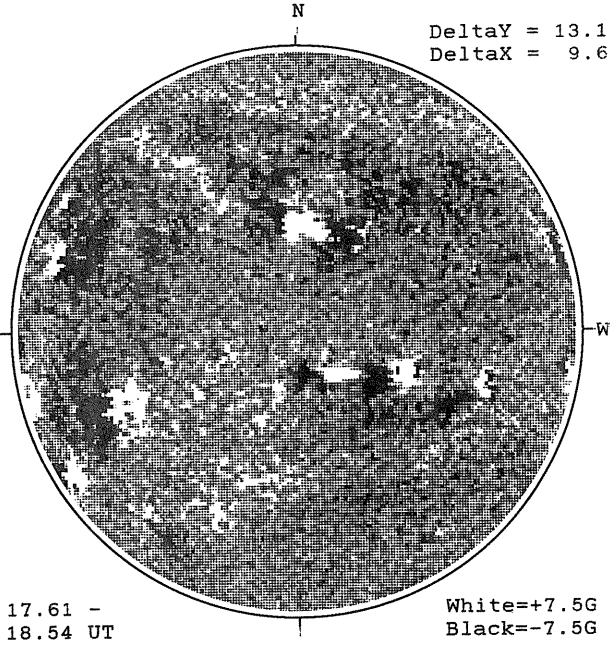
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

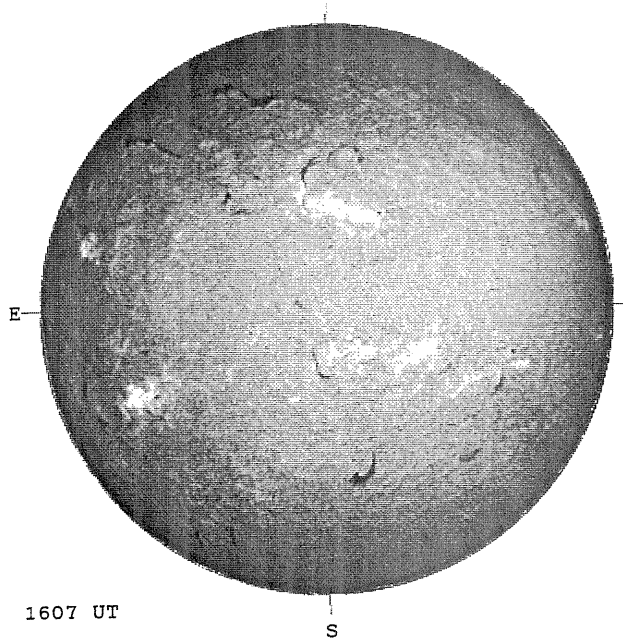
DeltaY = 13.1
DeltaX = 9.6



17.61 -
18.54 UT

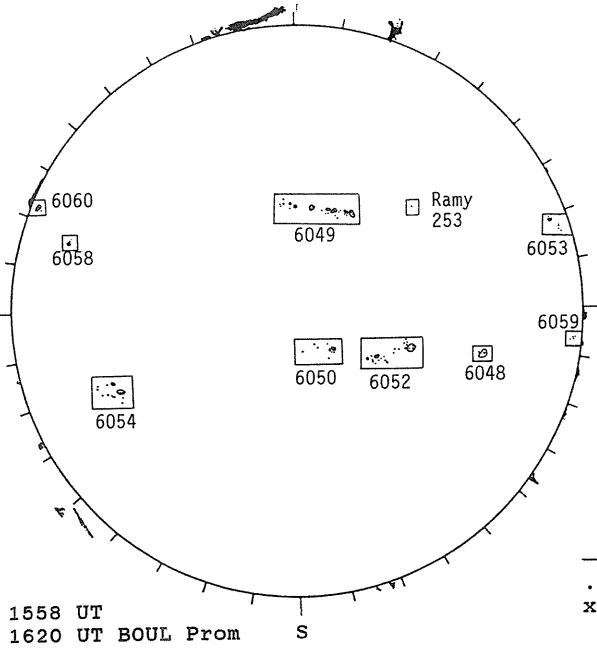
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



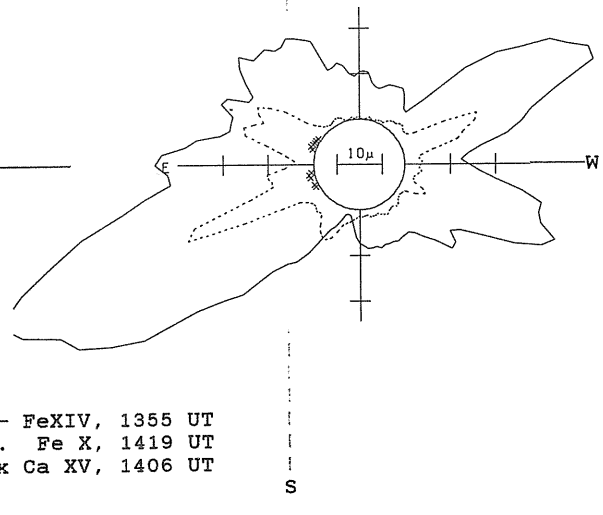
1607 UT

RAMEY SUNSPOT



1558 UT
1620 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

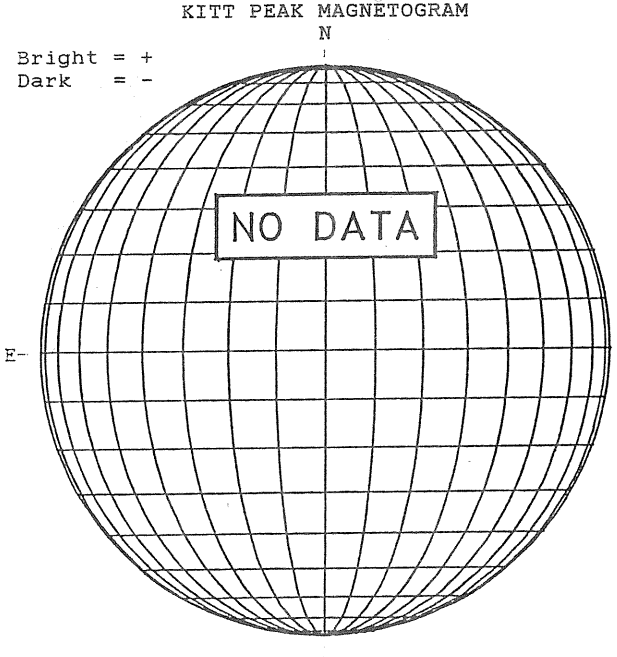


—— FeXIV, 1355 UT
.... Fe X, 1419 UT
xxxx Ca XV, 1406 UT

MAY 10, 1990 (P=-22.33, B_o =-3.23, L_o = 69.39)

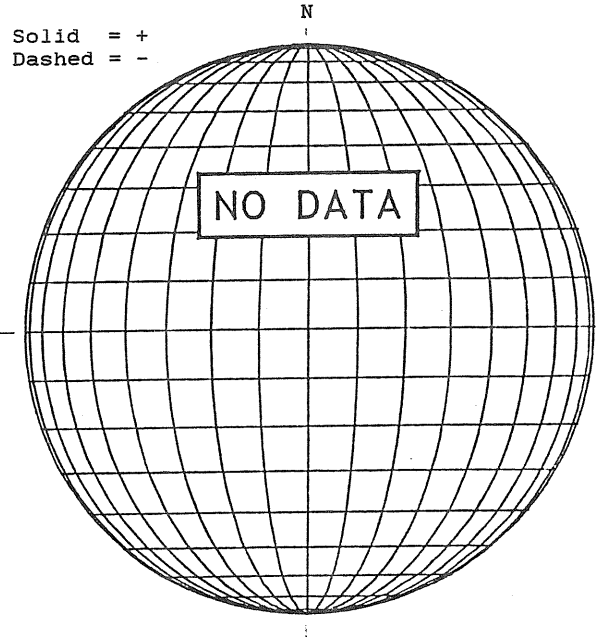
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



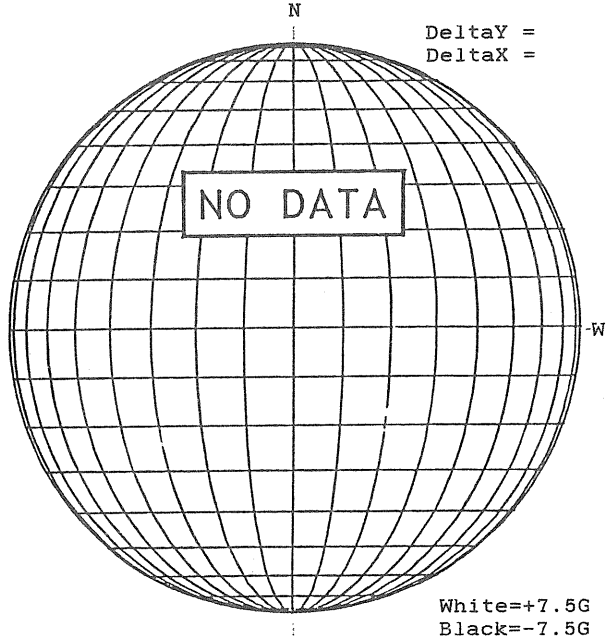
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



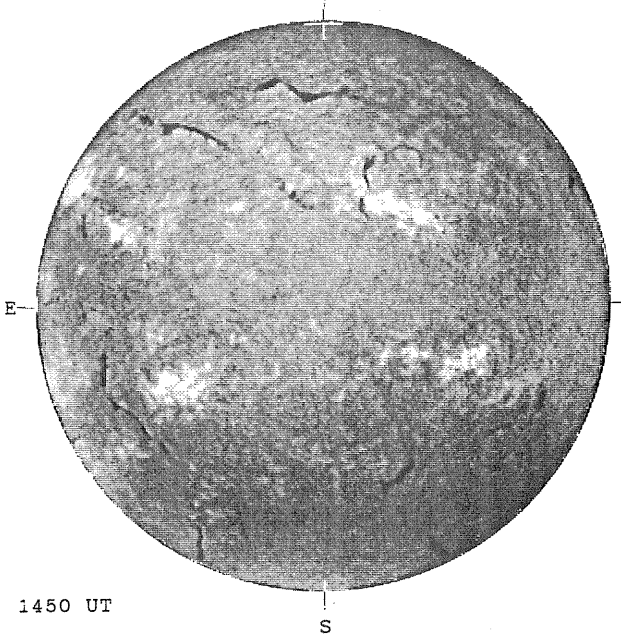
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



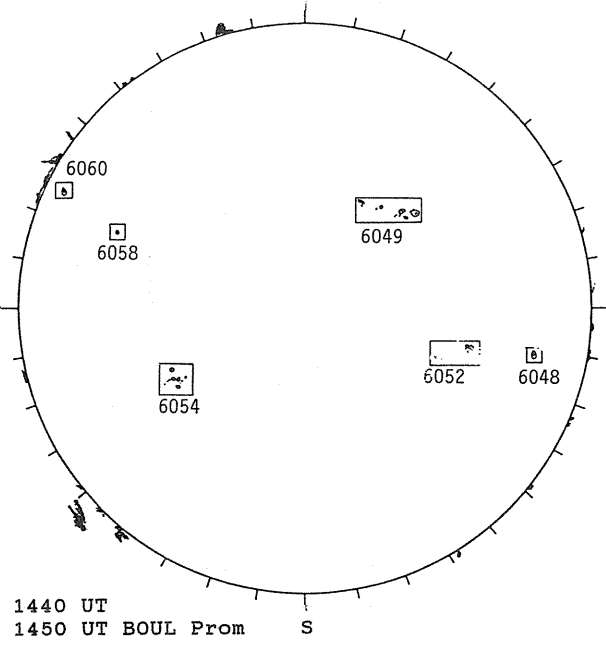
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



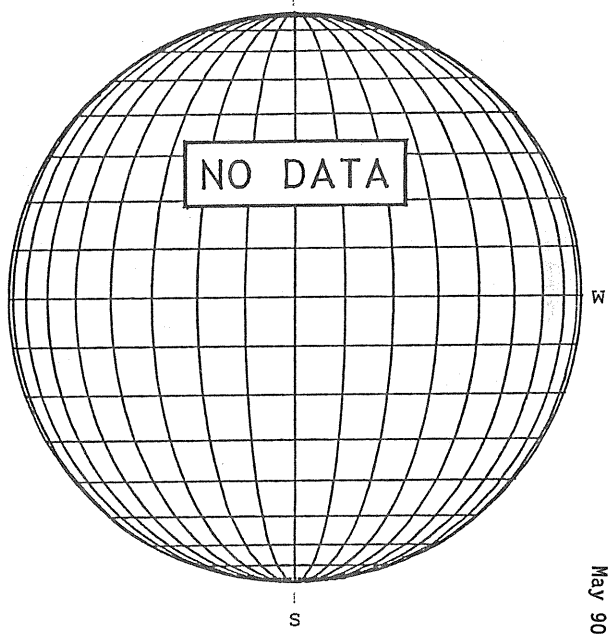
1450 UT

BOULDER SUNSPOT



1440 UT
1450 UT BOUL Prom

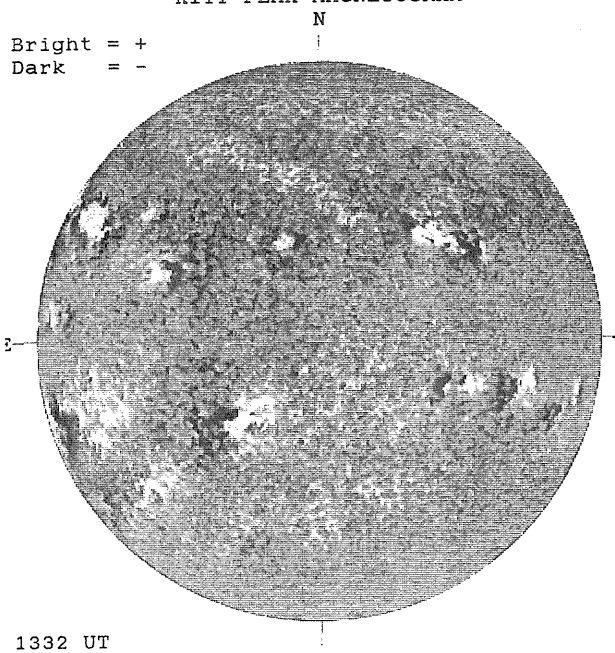
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 11, 1990 (P=-22.09, B_o =-3.12, L_o = 56.16)

KITT PEAK MAGNETOGRAM

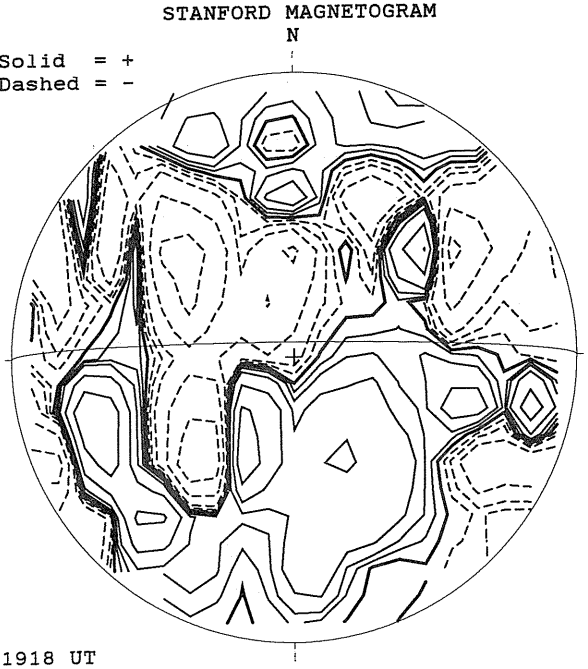
Bright = +
Dark = -



1332 UT

STANFORD MAGNETOGRAM

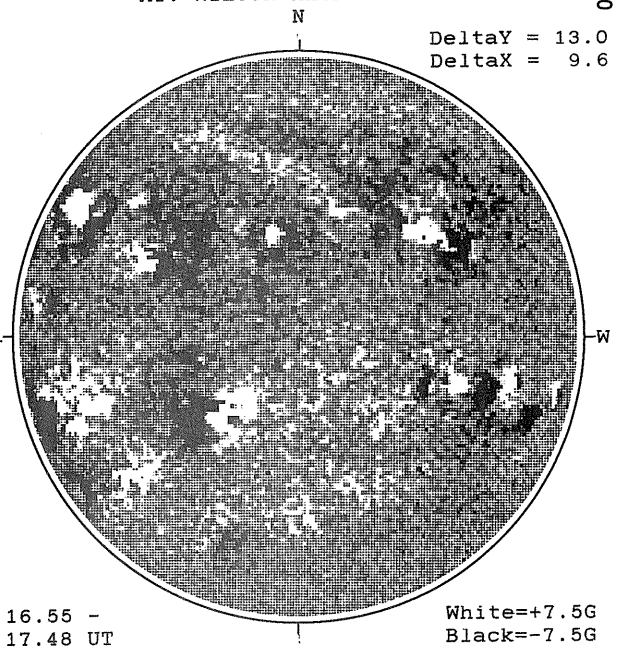
Solid = +
Dashed = -



1918 UT

MT. WILSON MAGNETOGRAM

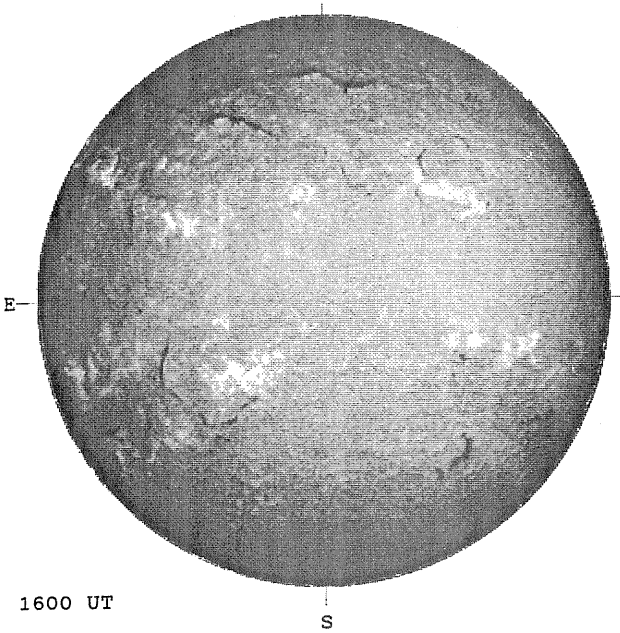
DeltaY = 13.0
DeltaX = 9.6



16.55 -
17.48 UT

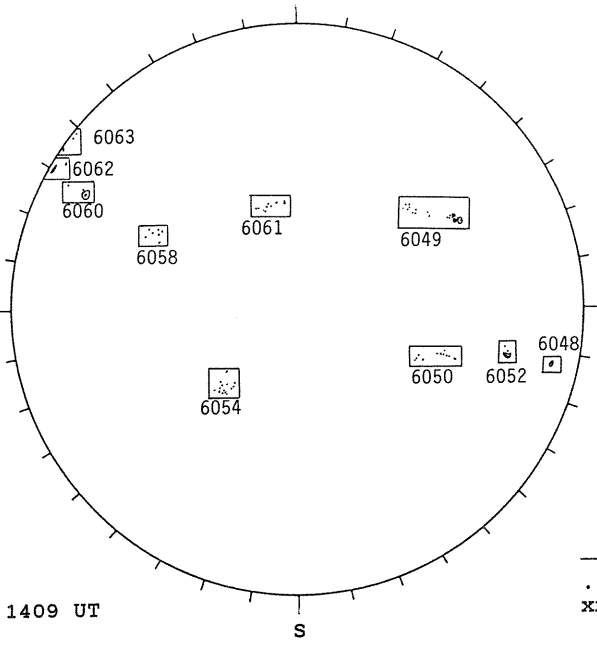
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



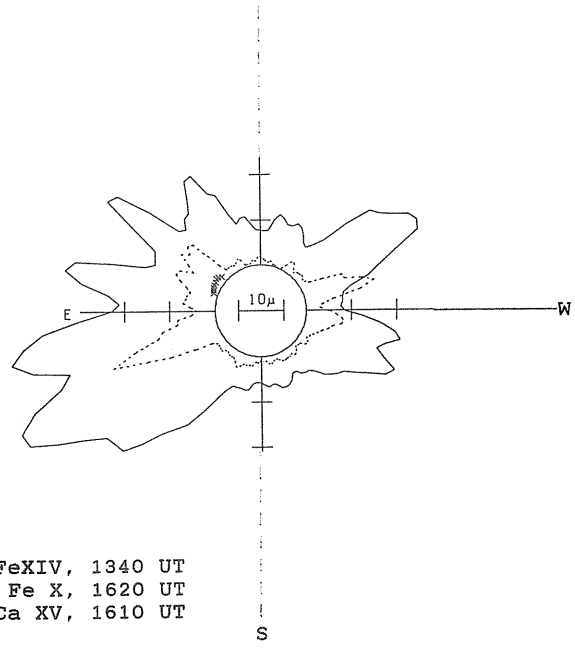
1600 UT

RAMEY SUNSPOT



1409 UT

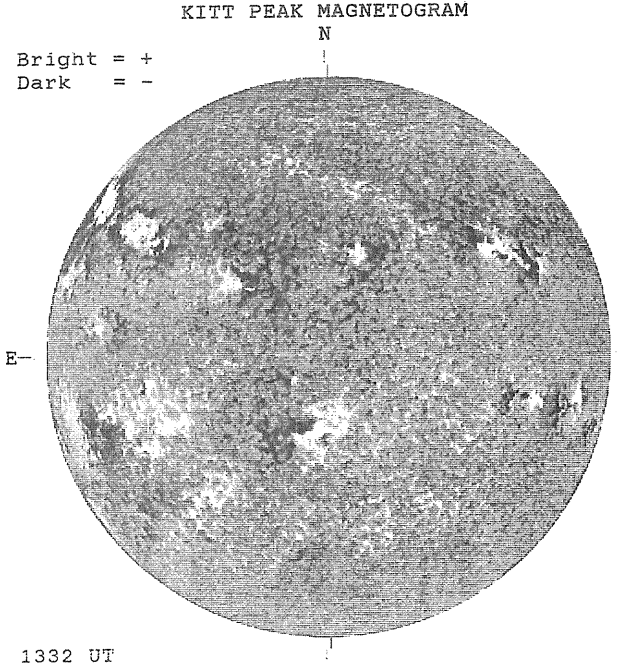
SACRAMENTO PEAK CORONA (1.15 Radii)



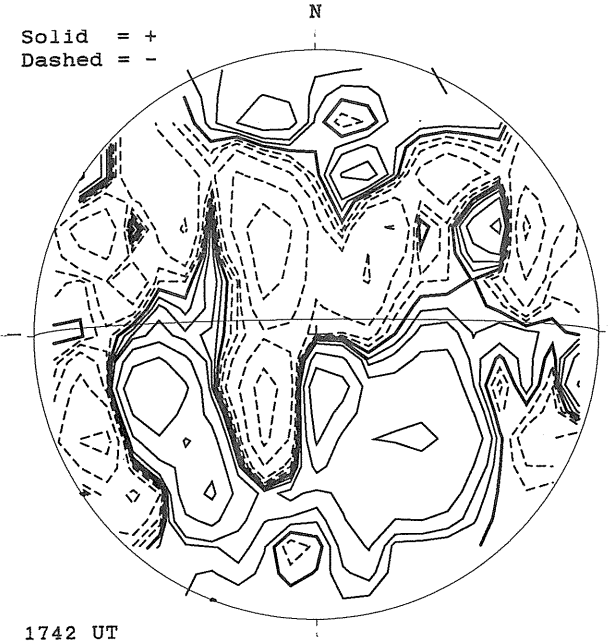
—— FeXIV, 1340 UT
.... Fe X, 1620 UT
xxxx Ca XV, 1610 UT

MAY 12, 1990 (P=-21.84, B_o =-3.01, L_o = 42.94)

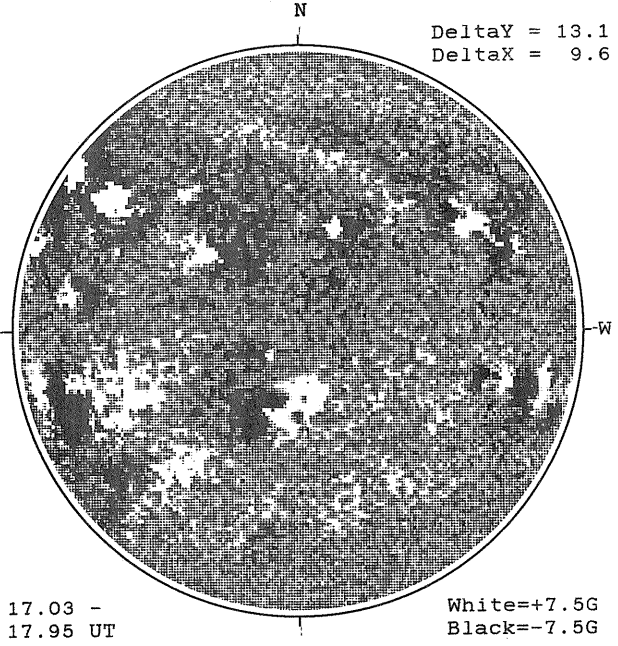
KITT PEAK MAGNETOGRAM



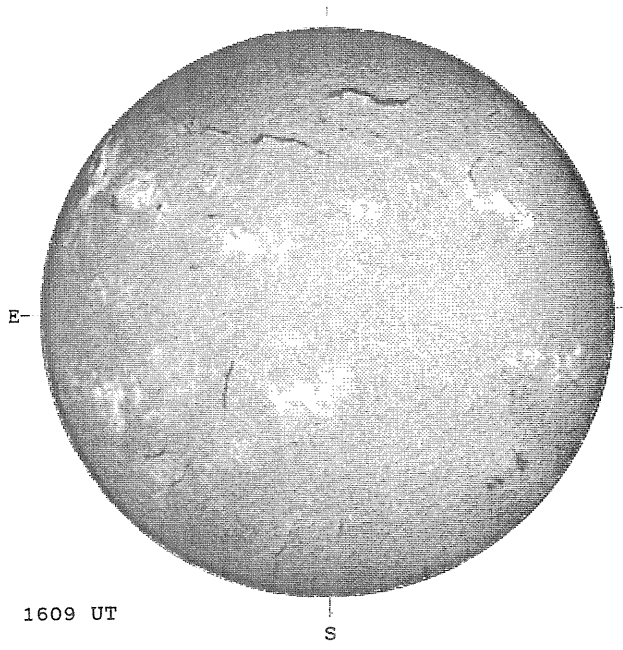
STANFORD MAGNETOGRAM



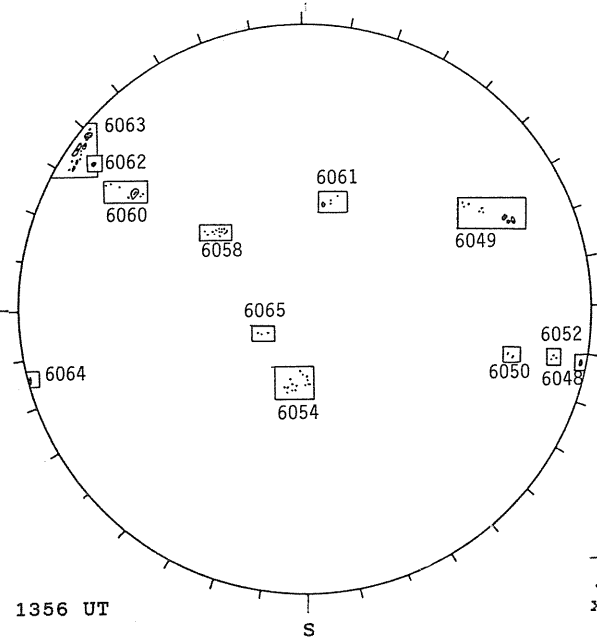
MT. WILSON MAGNETOGRAM



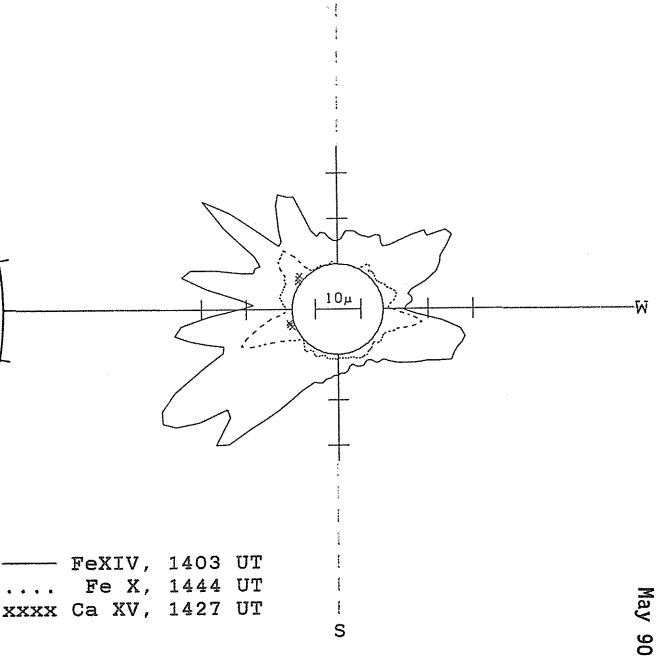
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



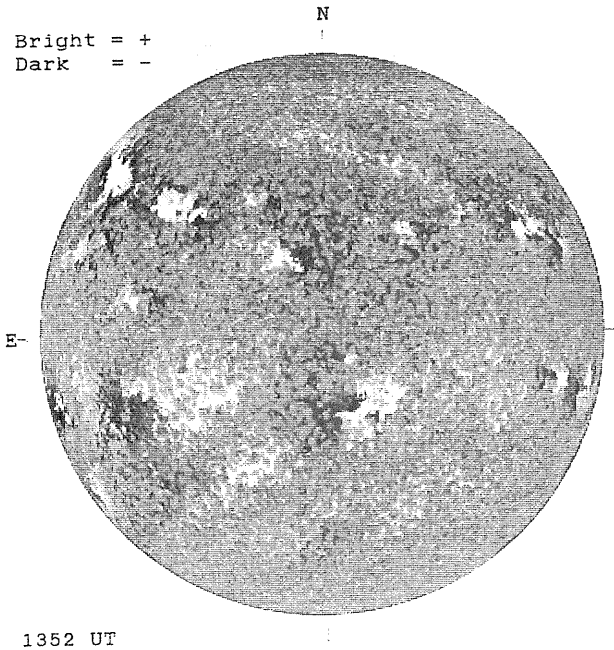
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 13, 1990 (P=-21.58, B_o =-2.90, L_o = 29.72)

KITT PEAK MAGNETOGRAM

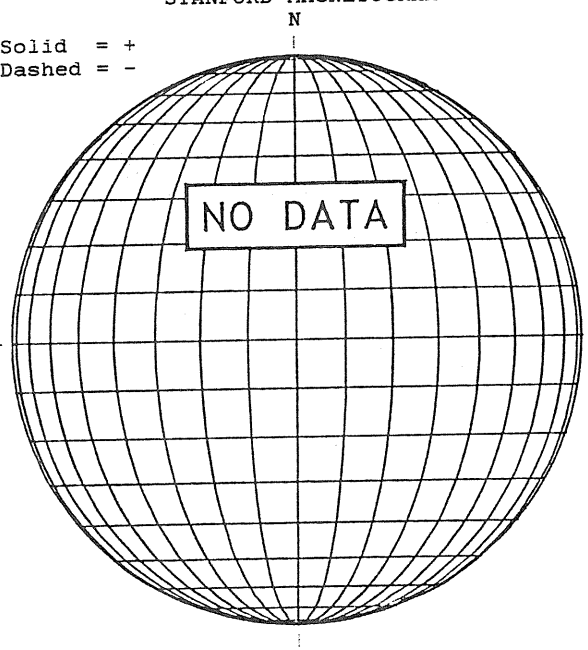
Bright = +
Dark = -



1352 UT

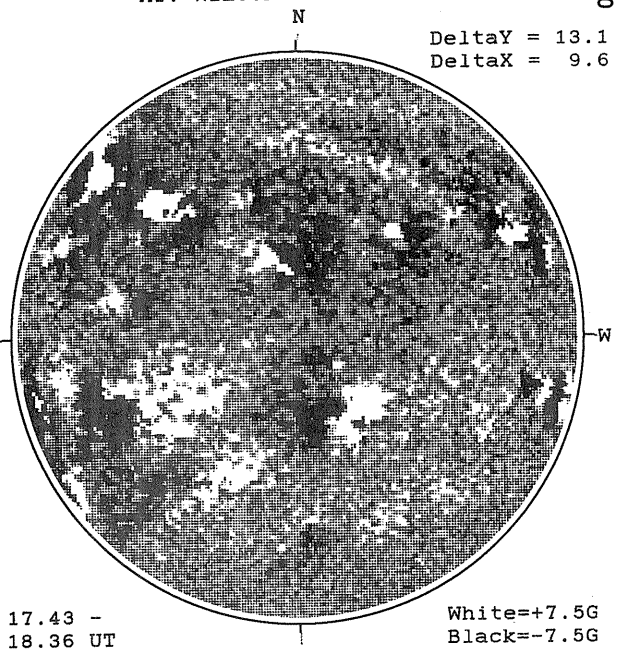
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

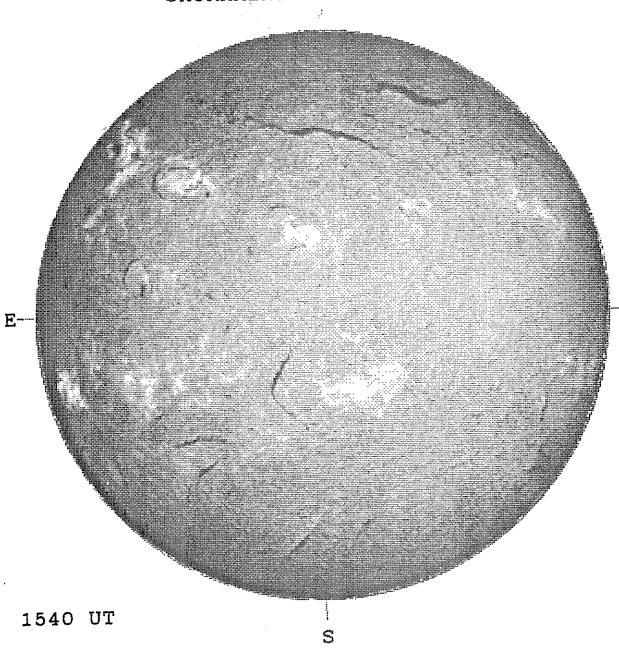
DeltaY = 13.1
DeltaX = 9.6



17.43 -
18.36 UT

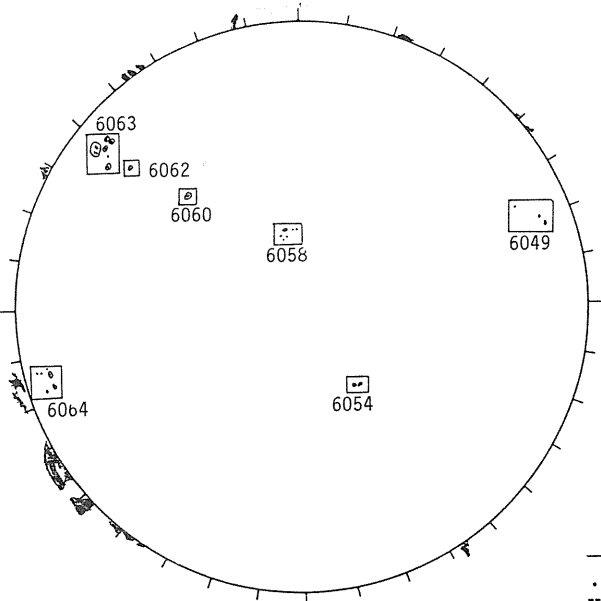
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



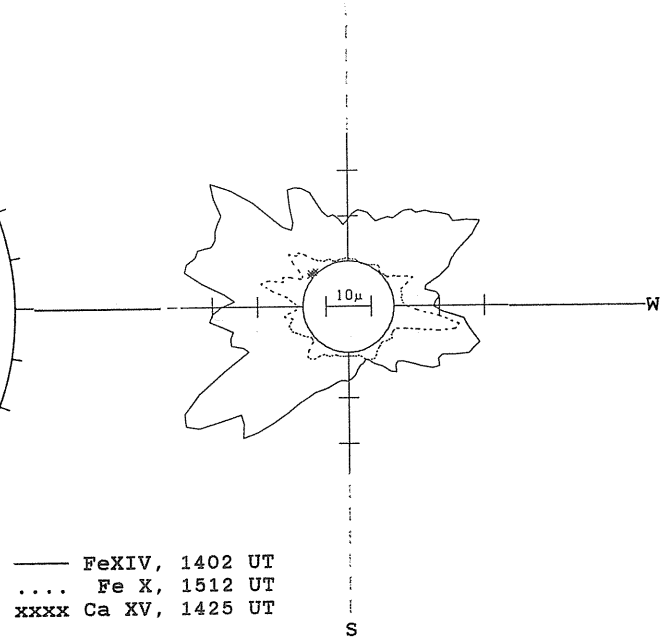
1540 UT

BOULDER SUNSPOT



1545 UT
1525 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

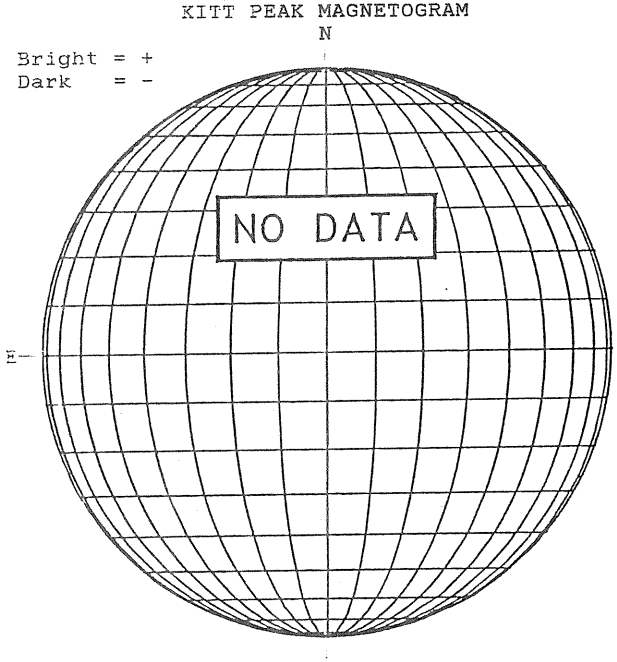


—— FeXIV, 1402 UT
.... Fe X, 1512 UT
xxxx Ca XV, 1425 UT

MAY 14, 1990 (P=-21.32, B_o =-2.79, L_o = 16.49)

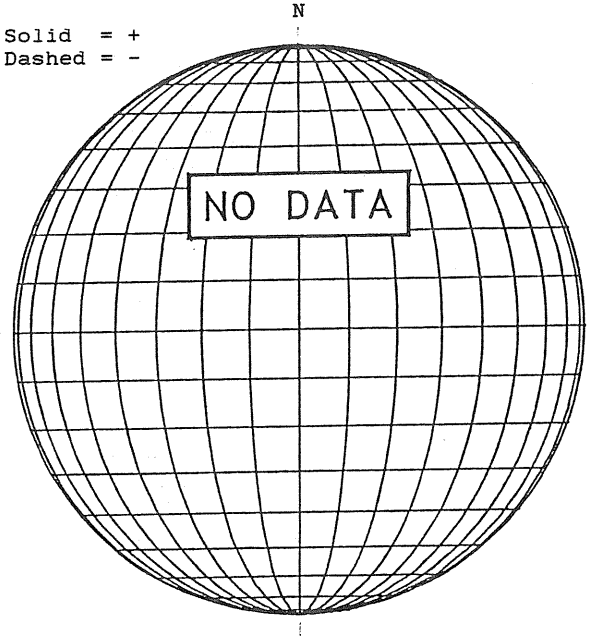
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



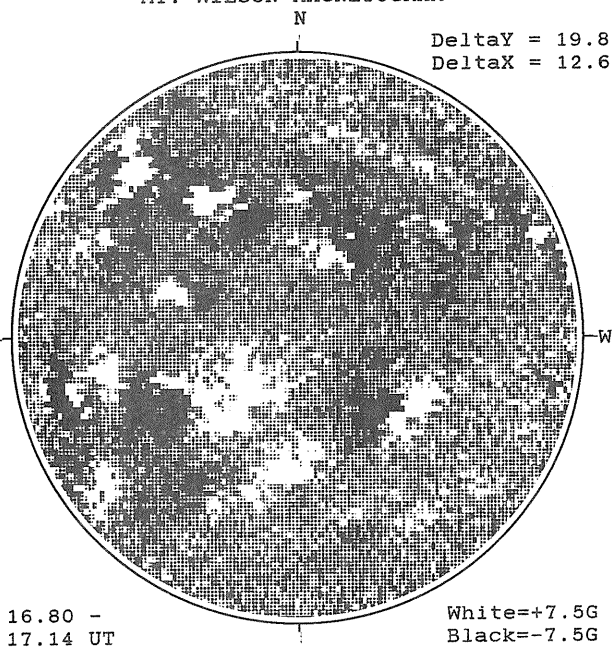
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

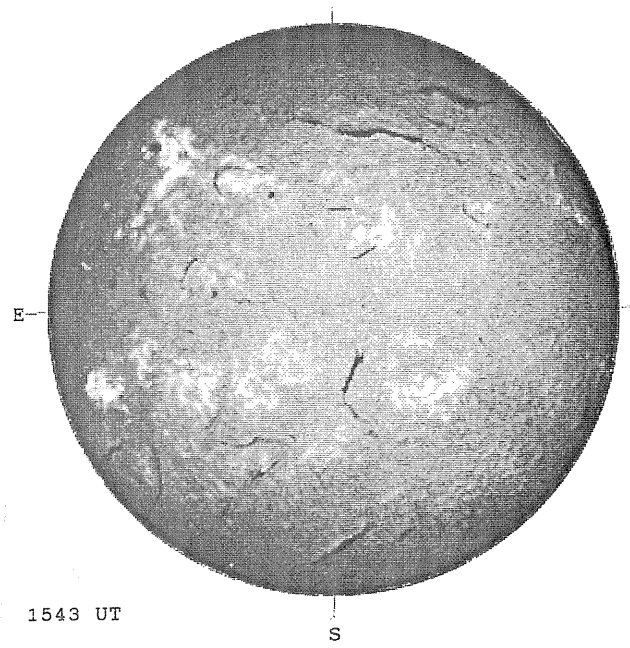
DeltaY = 19.8
DeltaX = 12.6



16.80 -
17.14 UT

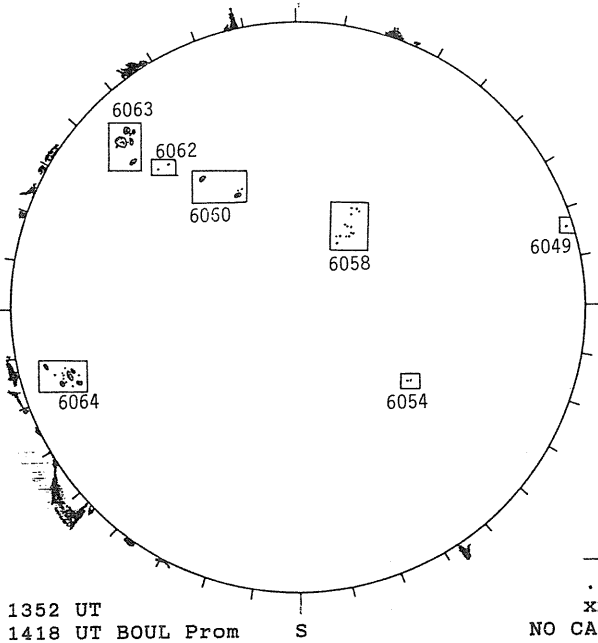
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



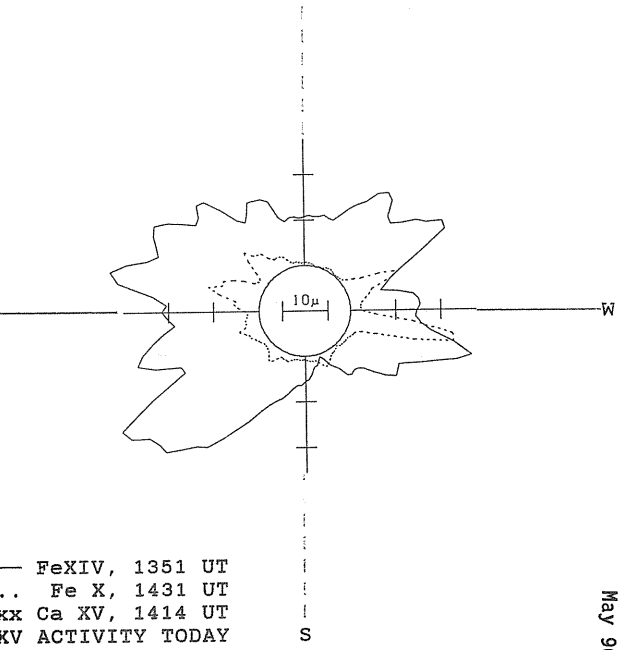
1543 UT

BOULDER SUNSPOT



1352 UT
1418 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

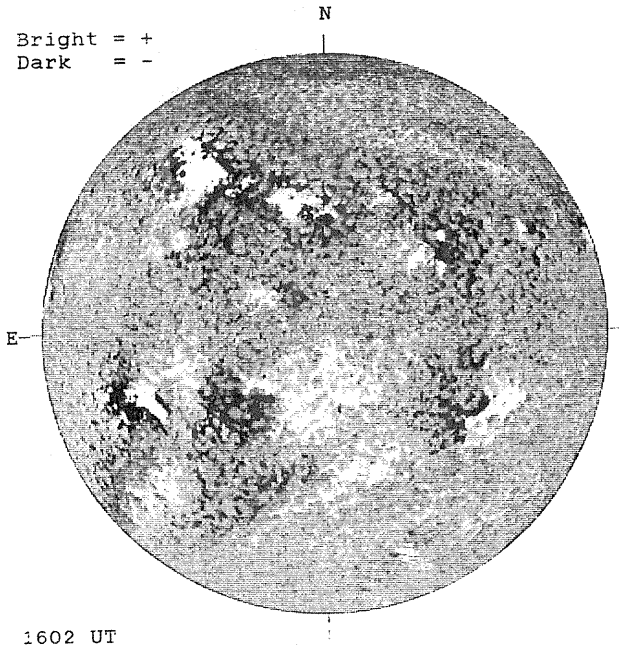


—— FeXIV, 1351 UT
.... Fe X, 1431 UT
xxxx Ca XV, 1414 UT
NO CA XV ACTIVITY TODAY

MAY 15, 1990 (P=-21.05, B_o =-2.67, L_o = 3.27)

KITT PEAK MAGNETOGRAM

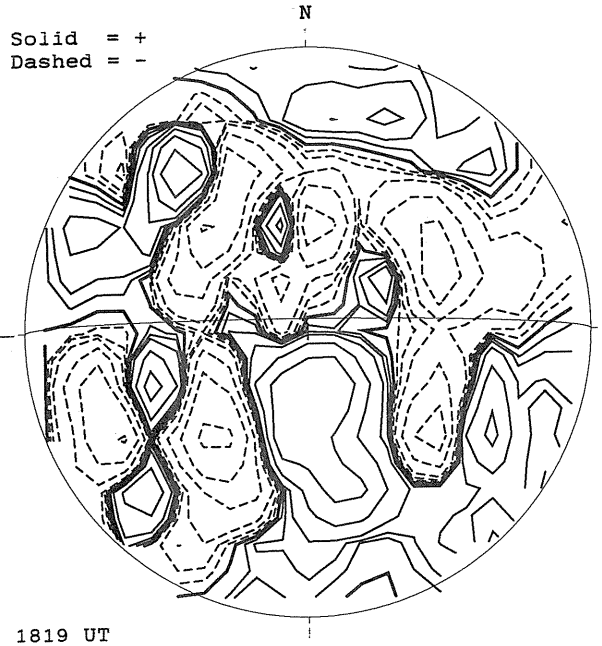
Bright = +
Dark = -



1602 UT

STANFORD MAGNETOGRAM

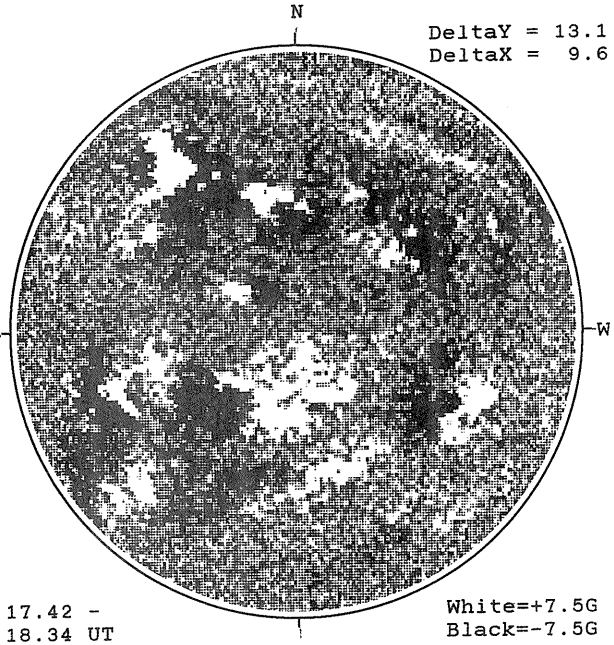
Solid = +
Dashed = -



1819 UT

MT. WILSON MAGNETOGRAM

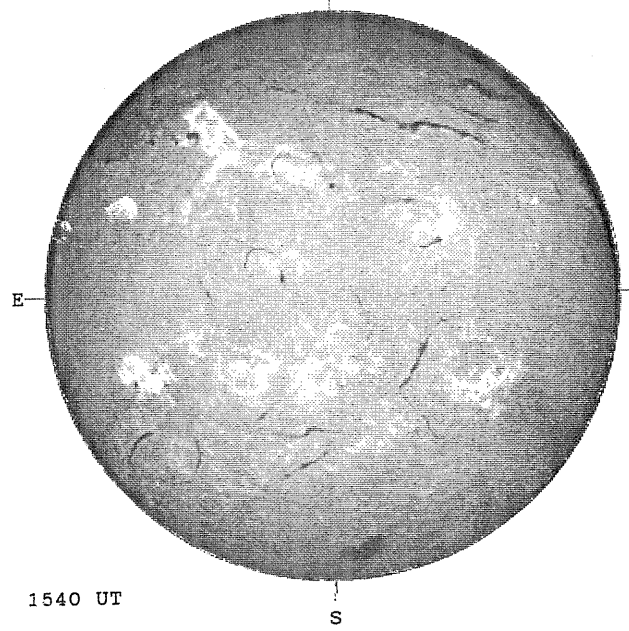
DeltaY = 13.1
DeltaX = 9.6



17.42 -
18.34 UT

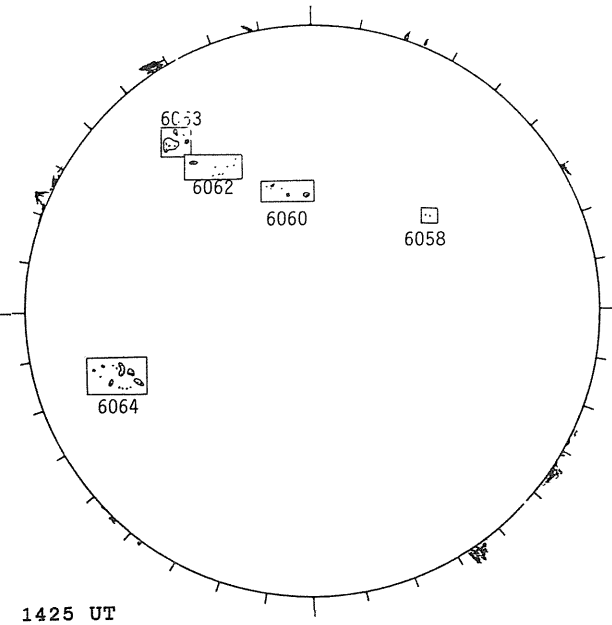
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



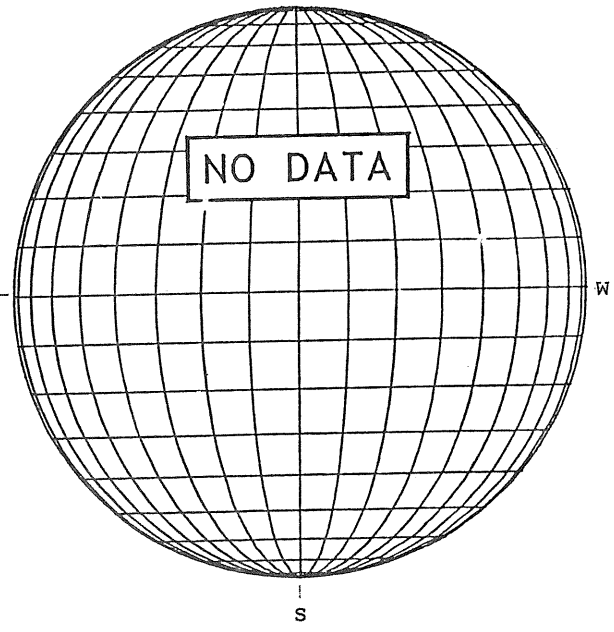
1540 UT

BOULDER SUNSPOT



1425 UT
1408 UT BOUL Prom

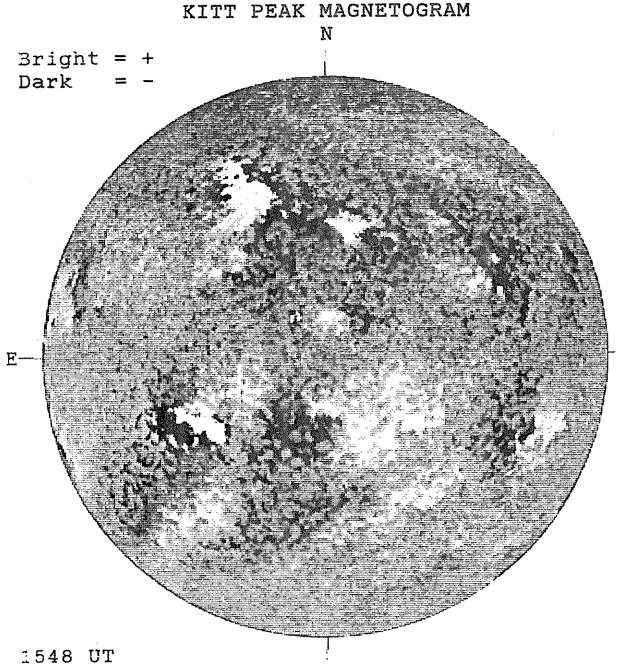
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 16, 1990 (P=-20.77, B_o =-2.56, L_o = 350.04)

KITT PEAK MAGNETOGRAM

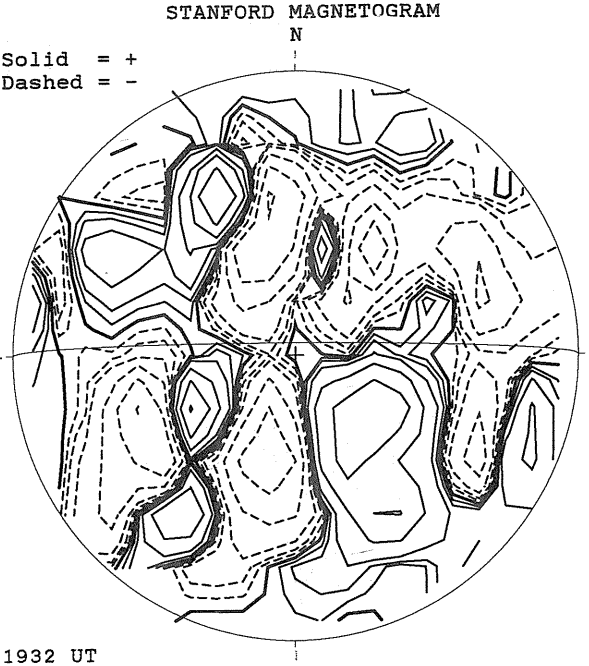
Bright = +
Dark = -



1548 UT

STANFORD MAGNETOGRAM

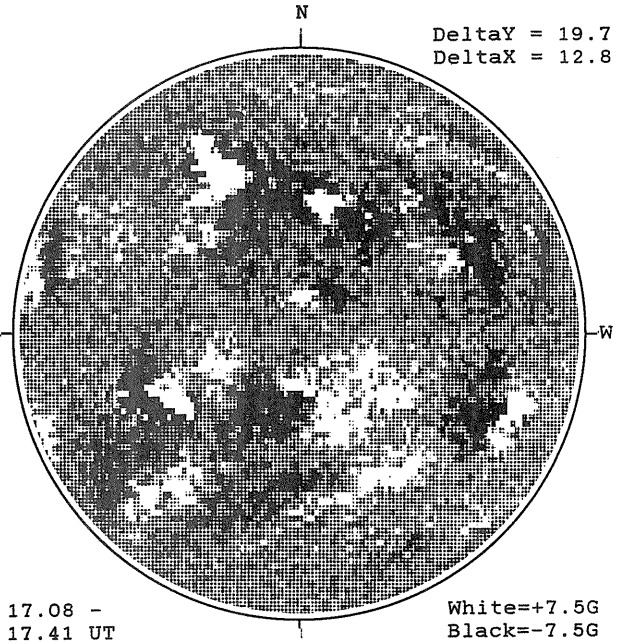
Solid = +
Dashed = -



1932 UT

MT. WILSON MAGNETOGRAM

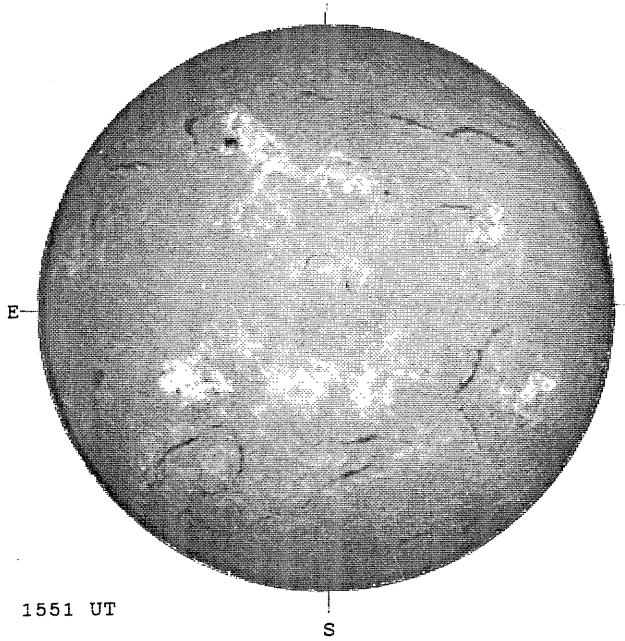
DeltaY = 19.7
DeltaX = 12.8



17.08 -
17.41 UT

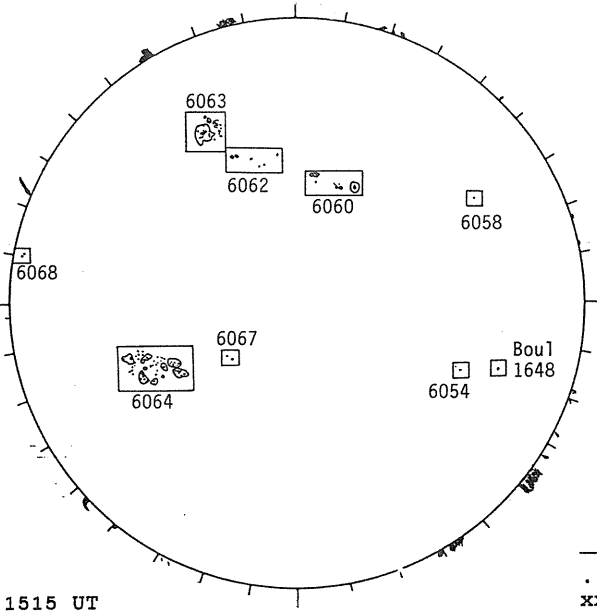
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



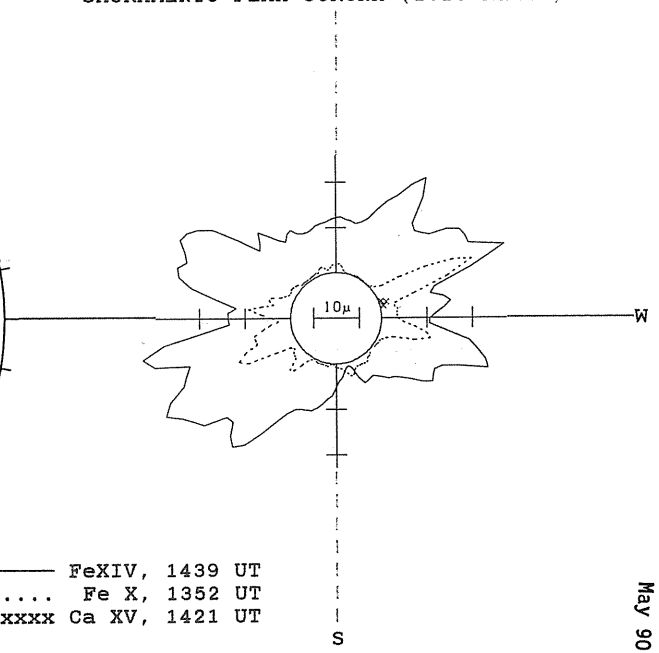
1551 UT

BOULDER SUNSPOT



1515 UT
1450 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



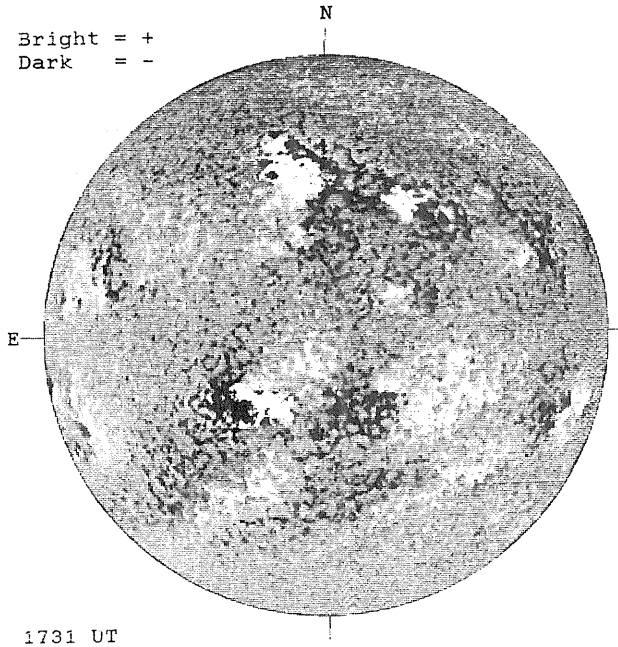
—— FeXIV, 1439 UT
.... Fe X, 1352 UT
xxxx Ca XV, 1421 UT

75
May 90

MAY 17, 1990 (P=-20.49, B_o =-2.45, L_o = 336.81)

KITT PEAK MAGNETOGRAM

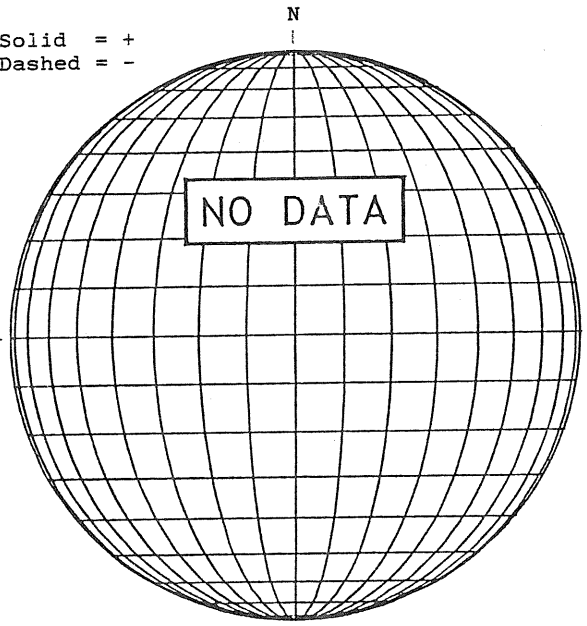
Bright = +
Dark = -



1731 UT

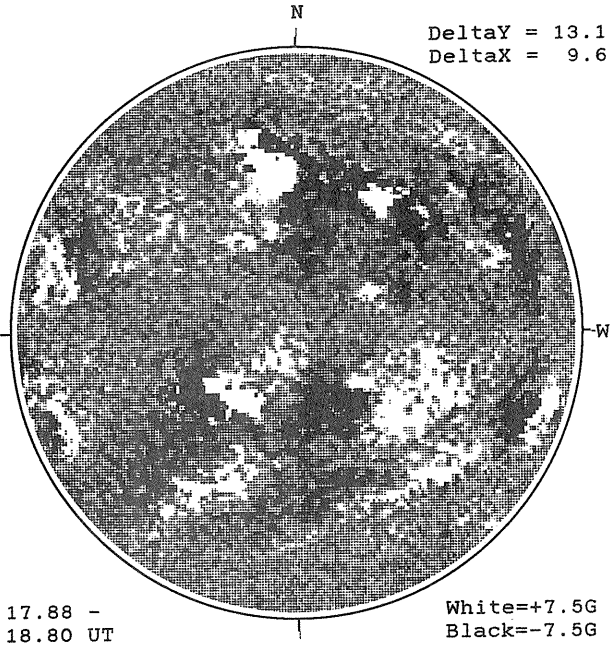
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

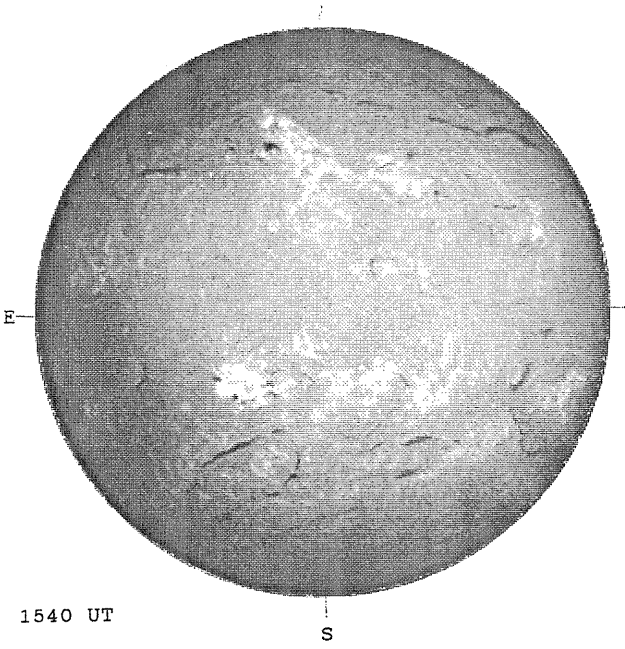
DeltaY = 13.1
DeltaX = 9.6



17.88 -
18.80 UT

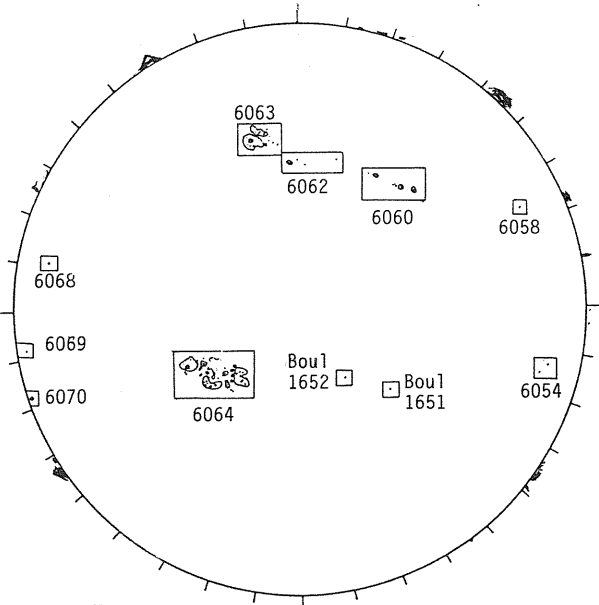
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



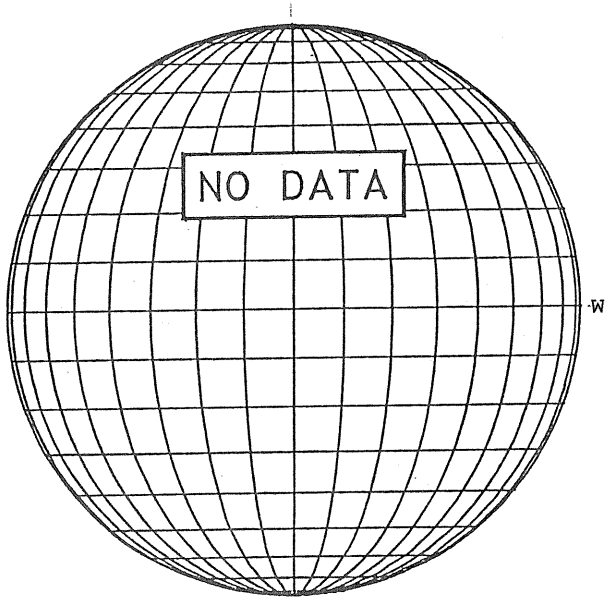
1540 UT

BOULDER SUNSPOT



1440 UT
1446 UT BOUL Prom

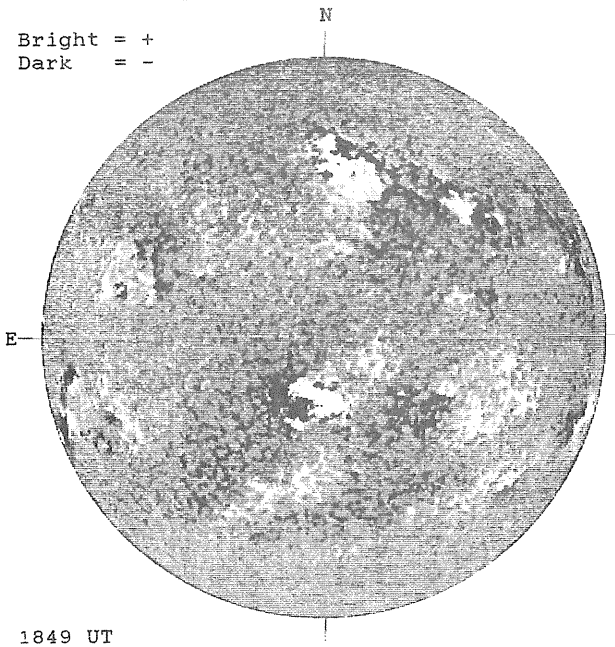
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 18, 1990 (P=-20.20, B_o =-2.33, L_o = 323.59)

KITT PEAK MAGNETOGRAM

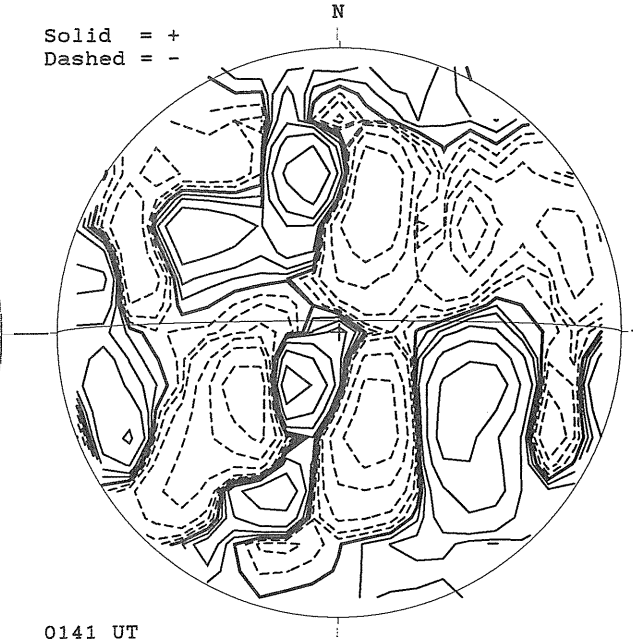
Bright = +
Dark = -



1849 UT

STANFORD MAGNETOGRAM

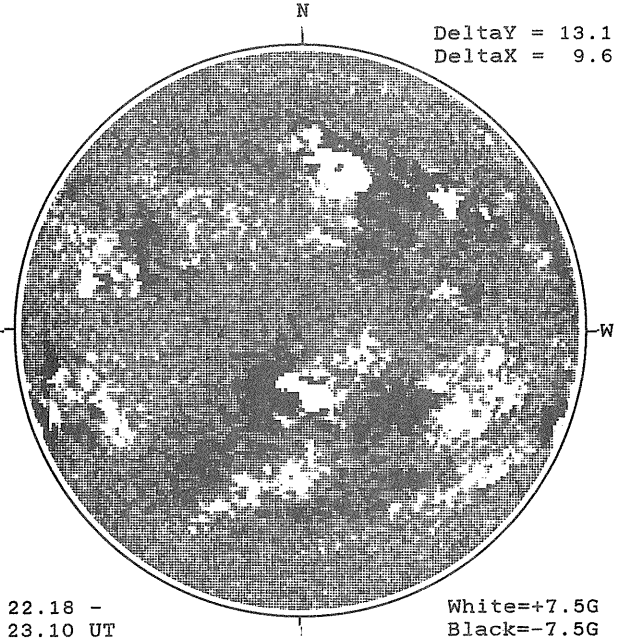
Solid = +
Dashed = -



0141 UT

MT. WILSON MAGNETOGRAM

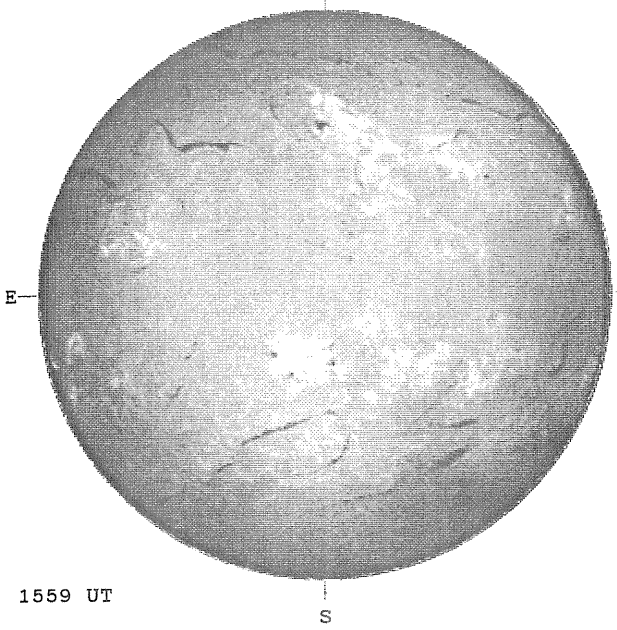
DeltaY = 13.1
DeltaX = 9.6



22.18 -
23.10 UT

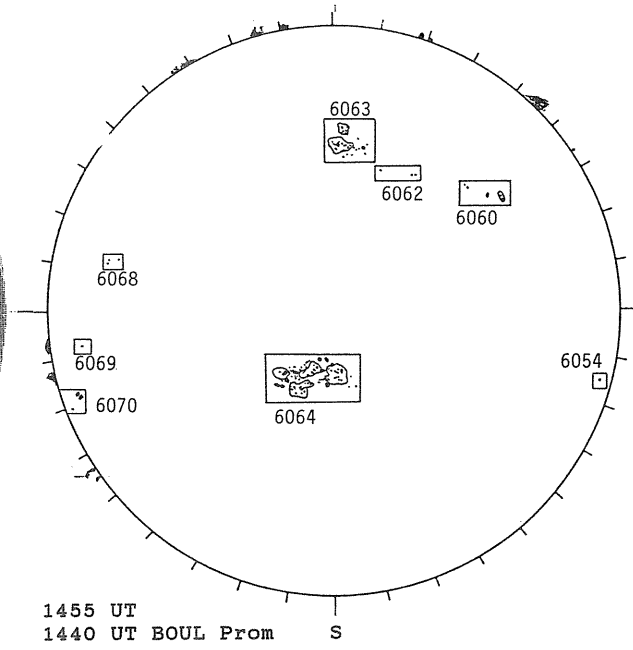
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



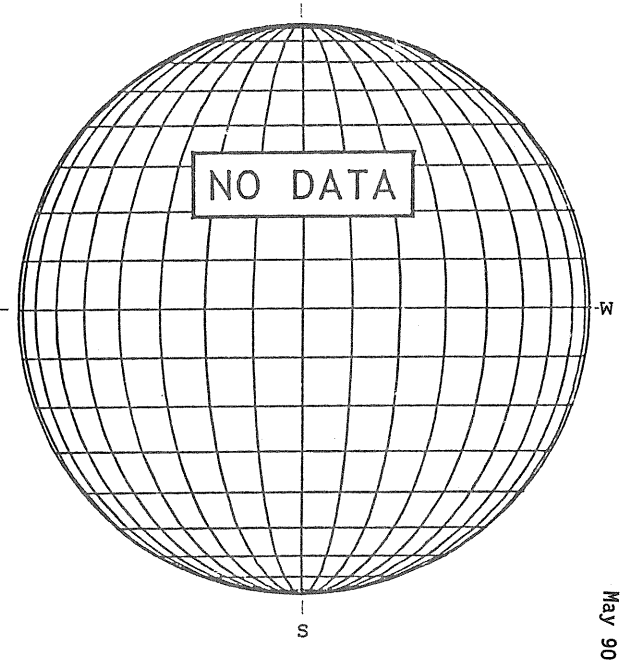
1559 UT

BOULDER SUNSPOT



1455 UT
1440 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

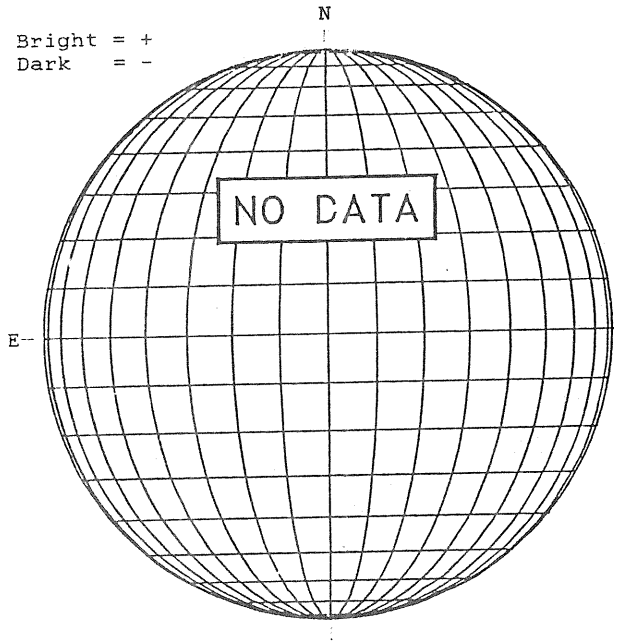


77
May 90

MAY 19, 1990 (P=-19.91, B_o =-2.22, L_o = 310.36)

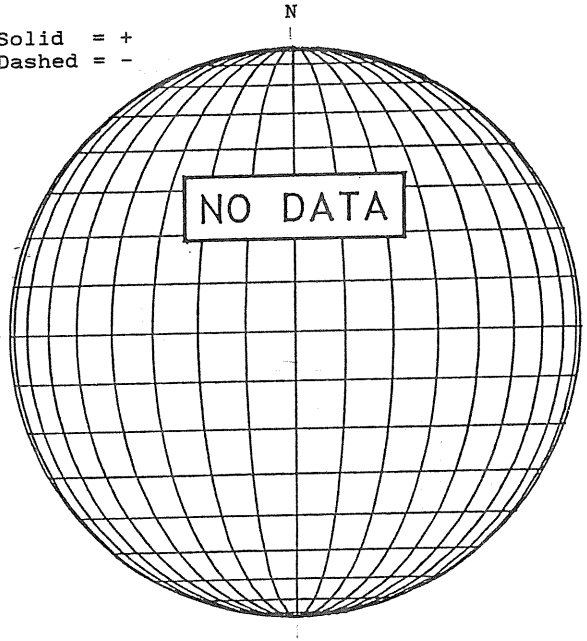
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



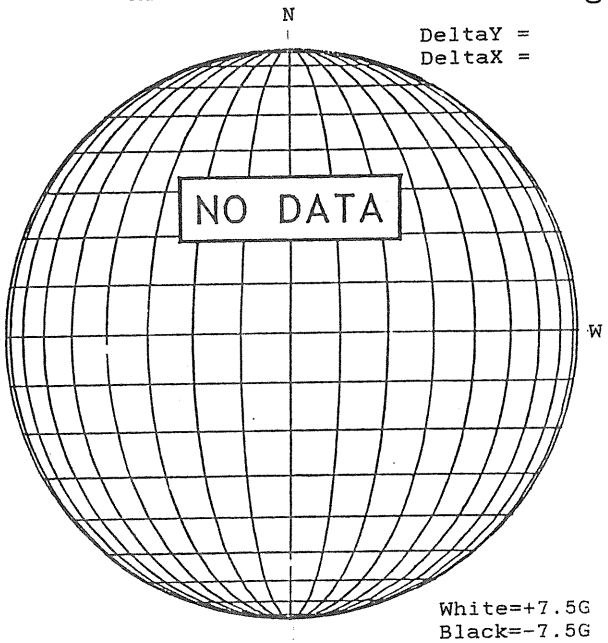
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



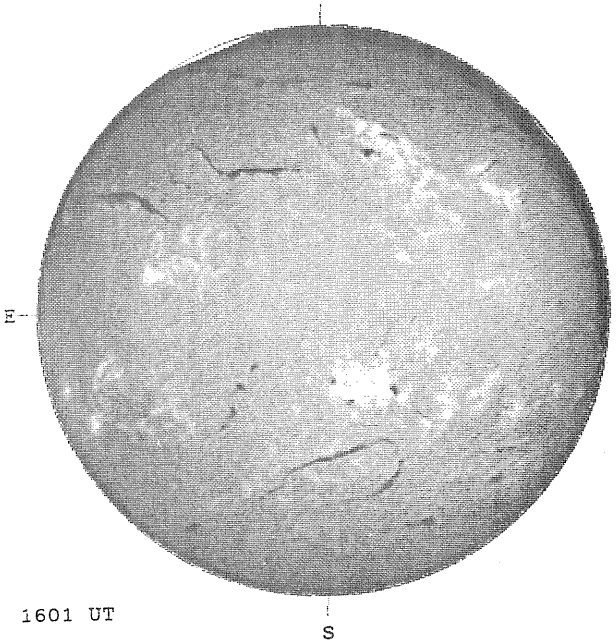
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



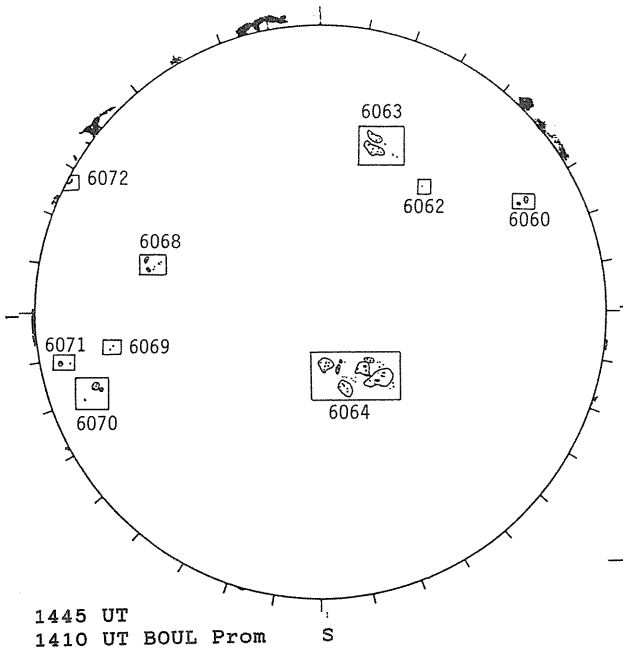
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



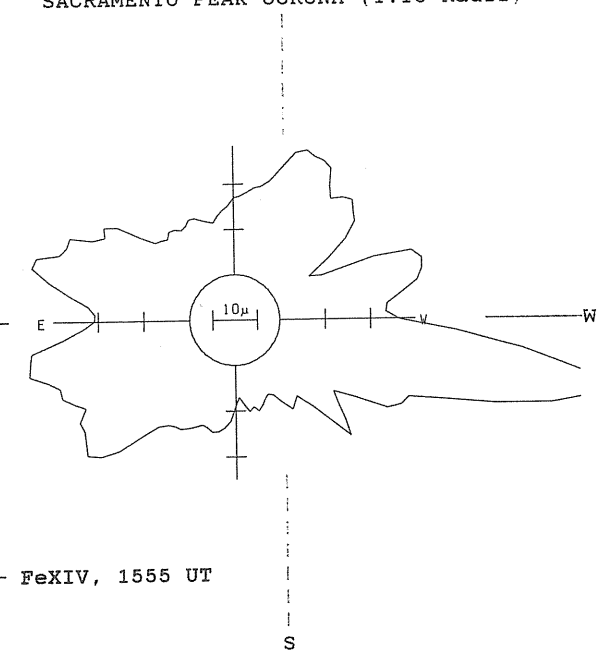
1601 UT

BOULDER SUNSPOT



1445 UT
1410 UT BOUL Prom

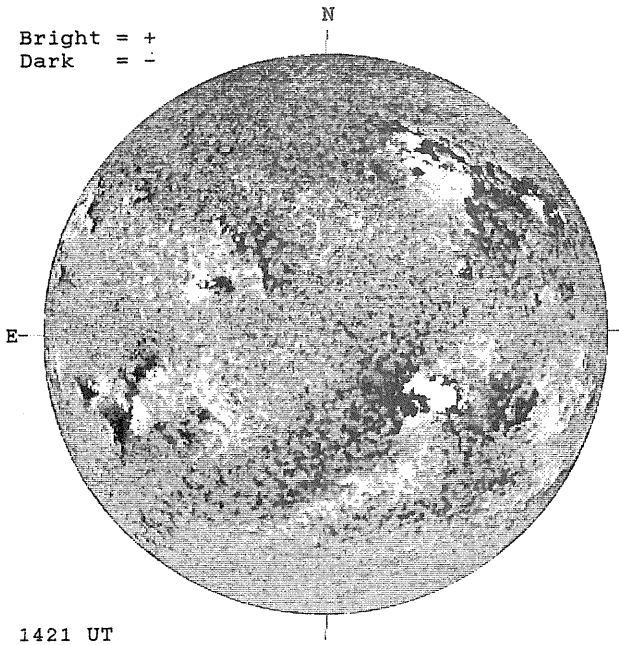
SACRAMENTO PEAK CORONA (1.15 Radii)



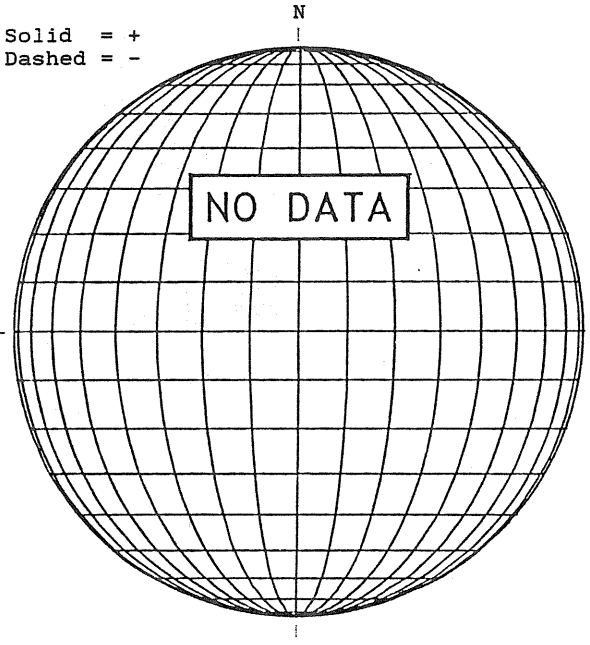
—— FeXIV, 1555 UT

MAY 20, 1990 (P=-19.61, B_o =-2.10, L_o = 297.13)

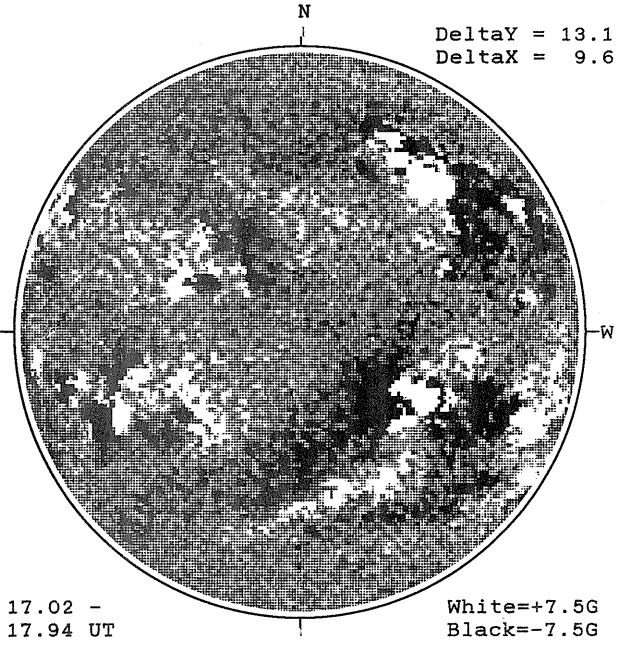
KITT PEAK MAGNETOGRAM



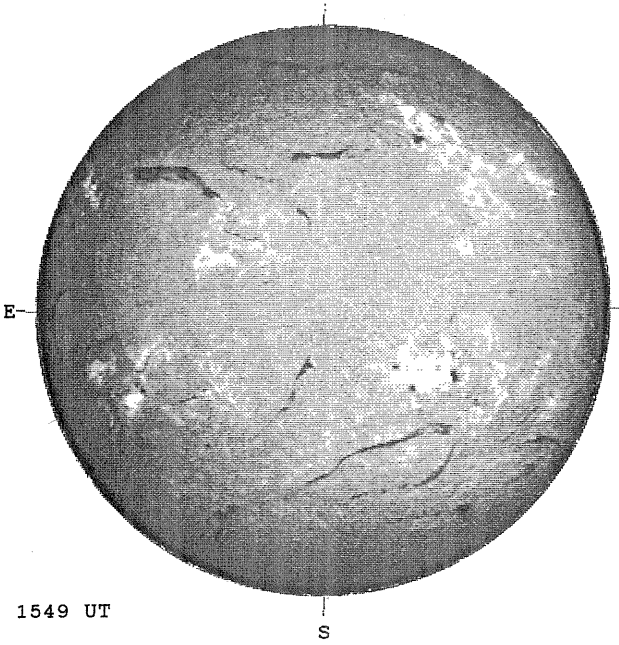
STANFORD MAGNETOGRAM



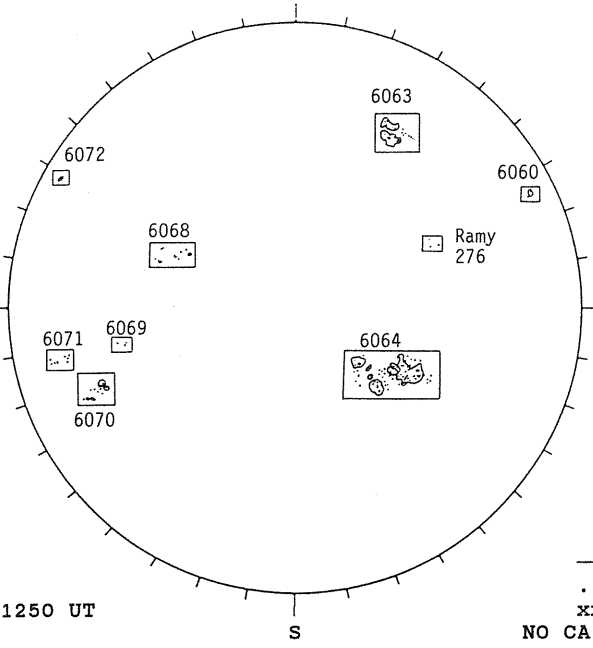
MT. WILSON MAGNETOGRAM



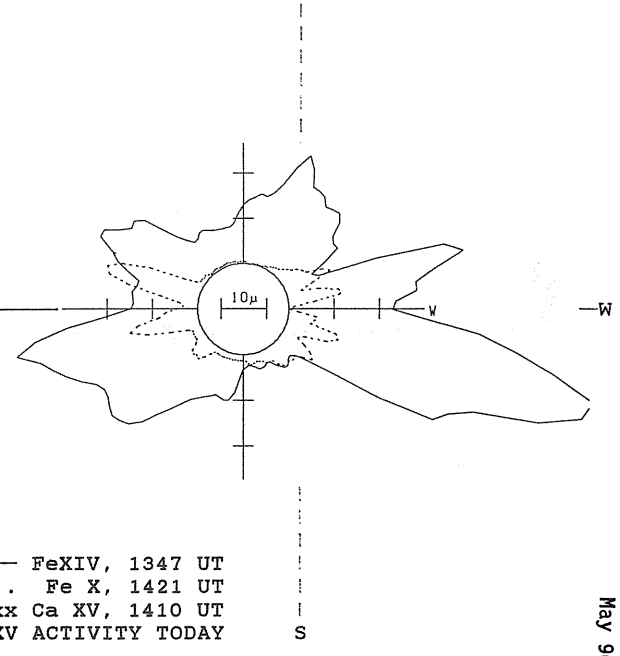
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



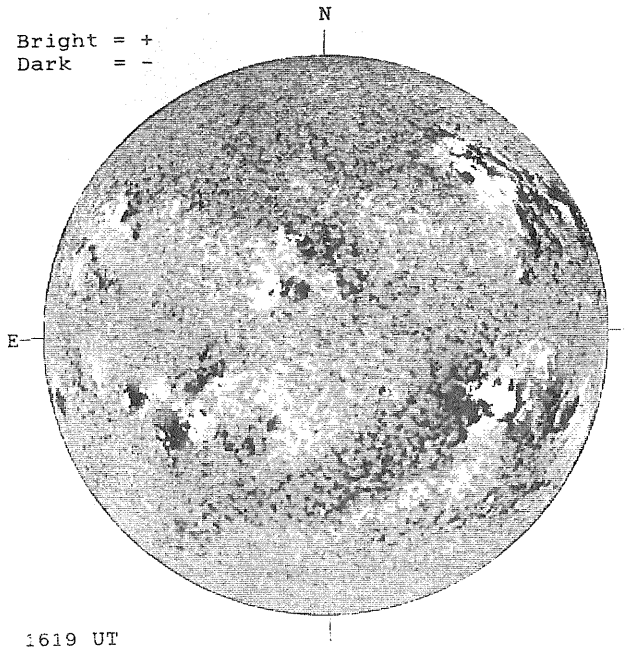
—— FeXIV, 1347 UT
.... Fe X, 1421 UT
xxxx Ca XV, 1410 UT
NO CA XV ACTIVITY TODAY

79
May 90

MAY 21, 1990 (P=-19.30, B_o =-1.99, L_o = 283.90)

KITT PEAK MAGNETOGRAM

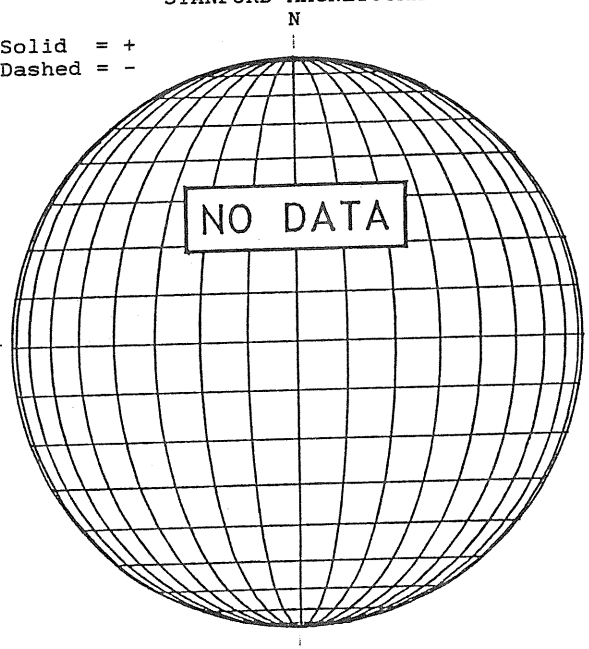
Bright = +
Dark = -



1619 UT

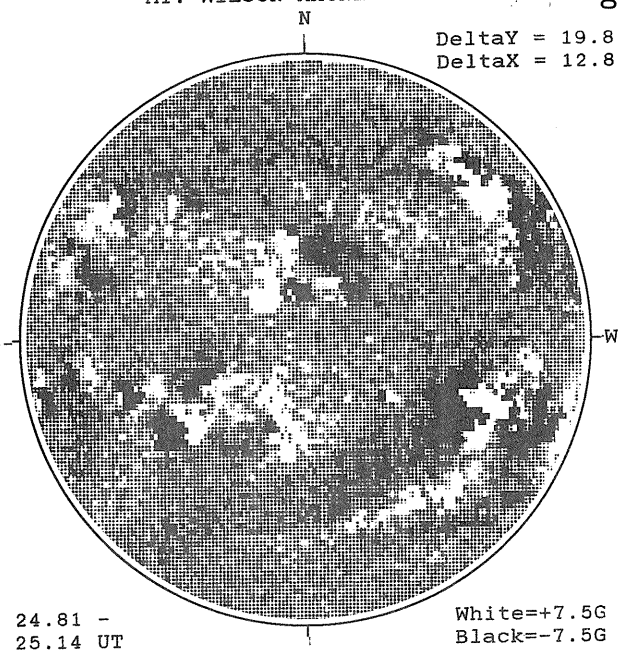
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

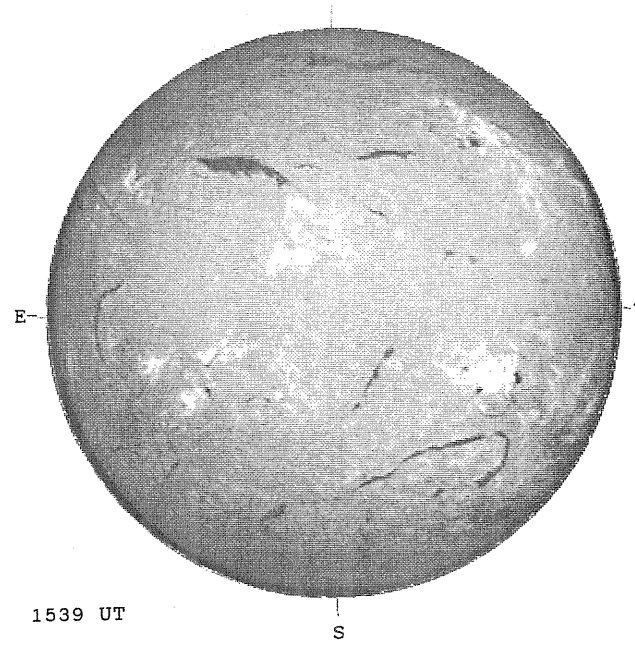
DeltaY = 19.8
DeltaX = 12.8



24.81 -
25.14 UT

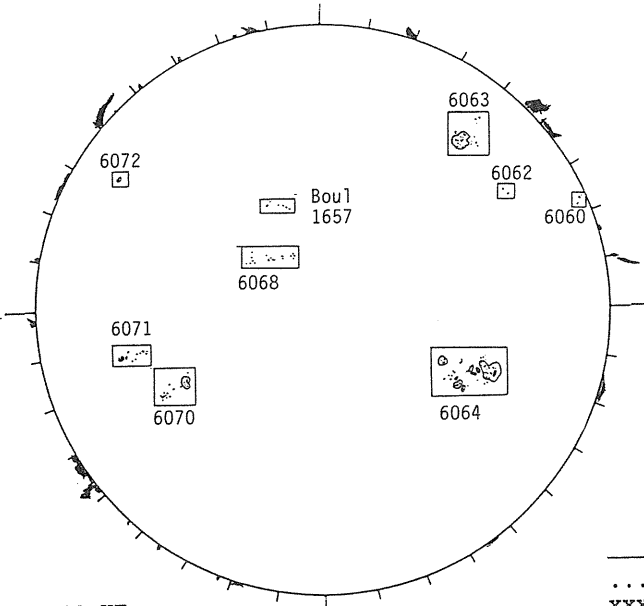
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



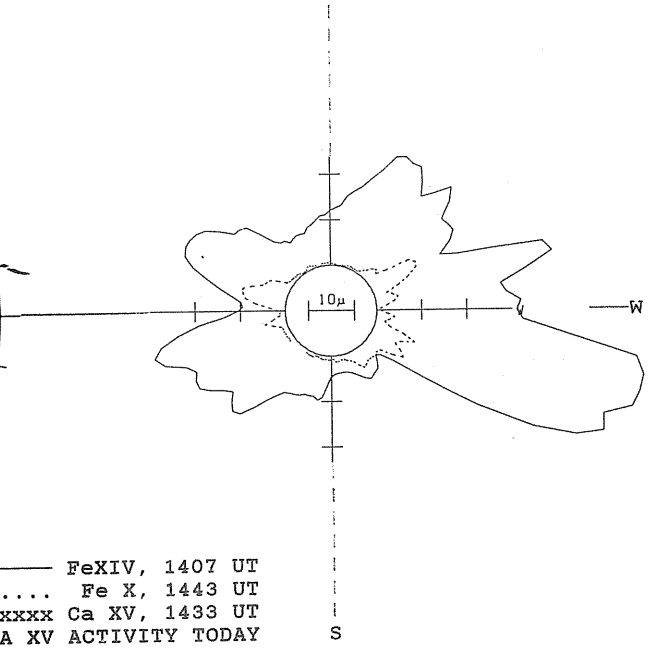
1539 UT

BOULDER SUNSPOT



1240 UT
1421 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

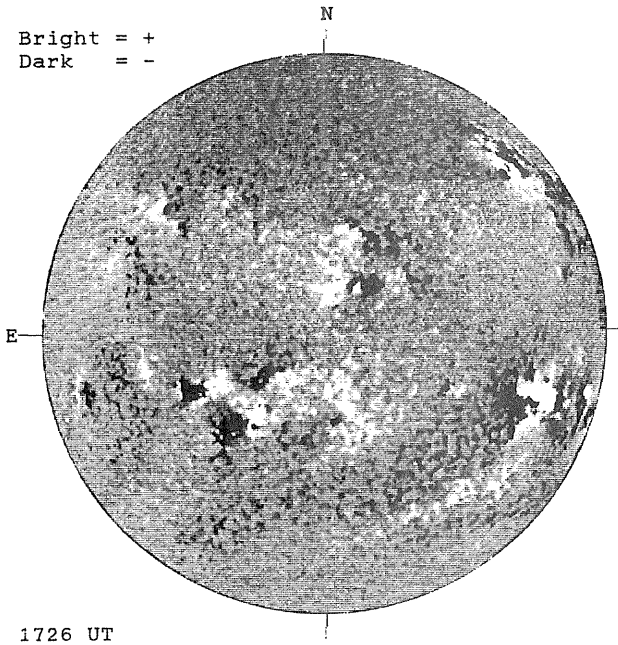


—— FeXIV, 1407 UT
.... Fe X, 1443 UT
xxxx Ca XV, 1433 UT
NO CA XV ACTIVITY TODAY

MAY 22, 1990 (P=-18.99, B_o =-1.87, L_o = 270.68)

KITT PEAK MAGNETOGRAM

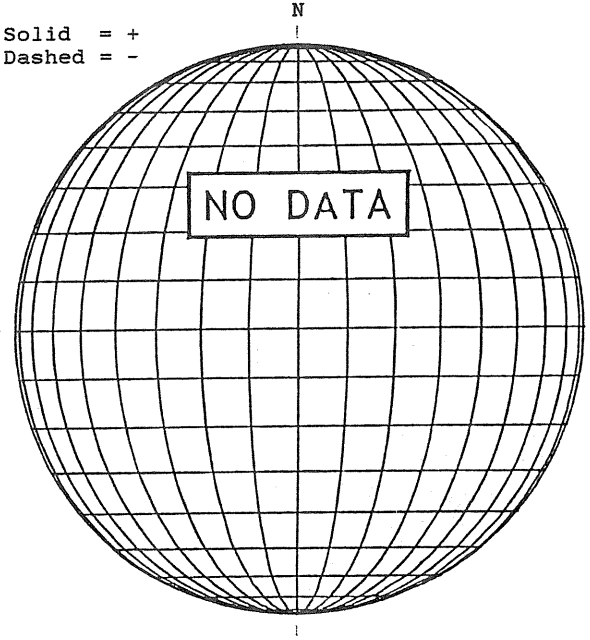
Bright = +
Dark = -



1726 UT

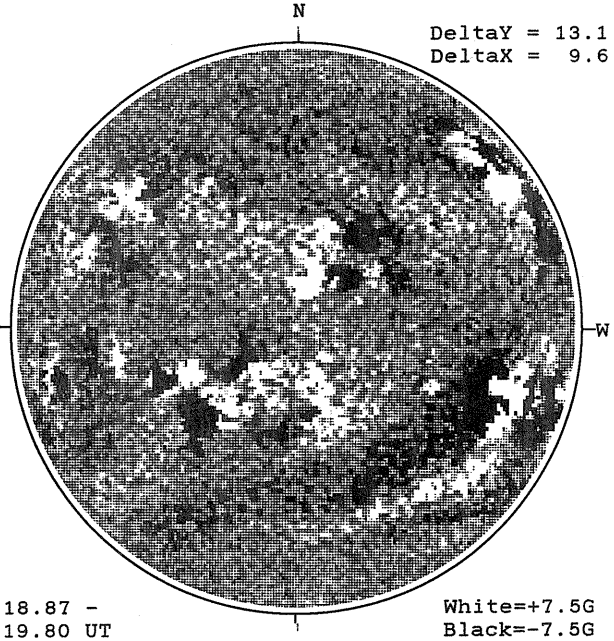
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

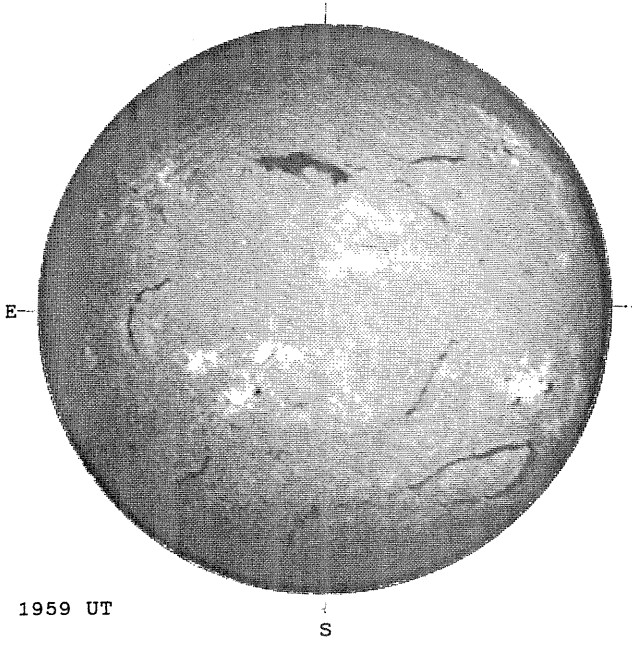
DeltaY = 13.1
DeltaX = 9.6



18.87 -
19.80 UT

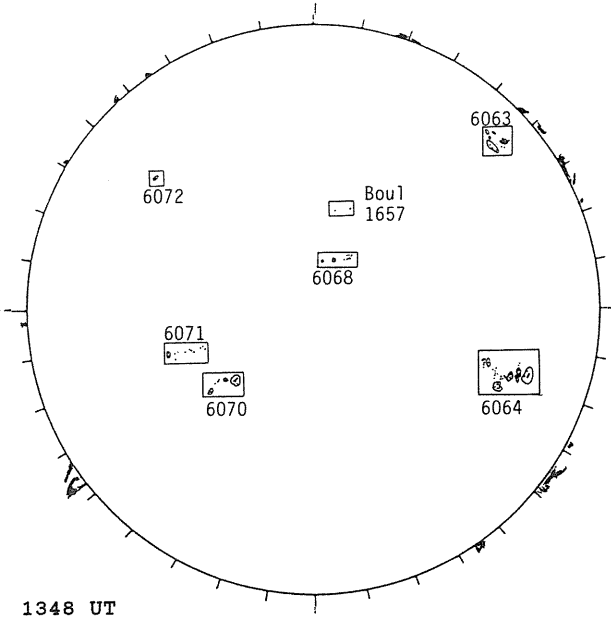
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



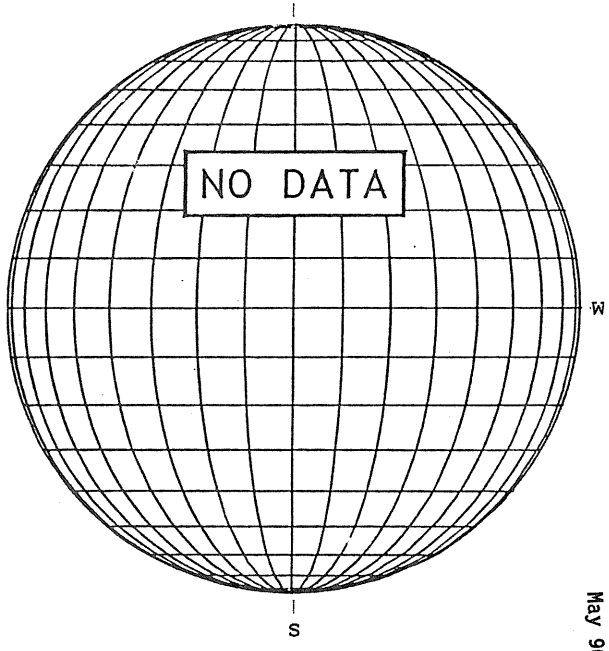
1959 UT

BOULDER SUNSPOT



1348 UT
1539 UT BOUL Prom

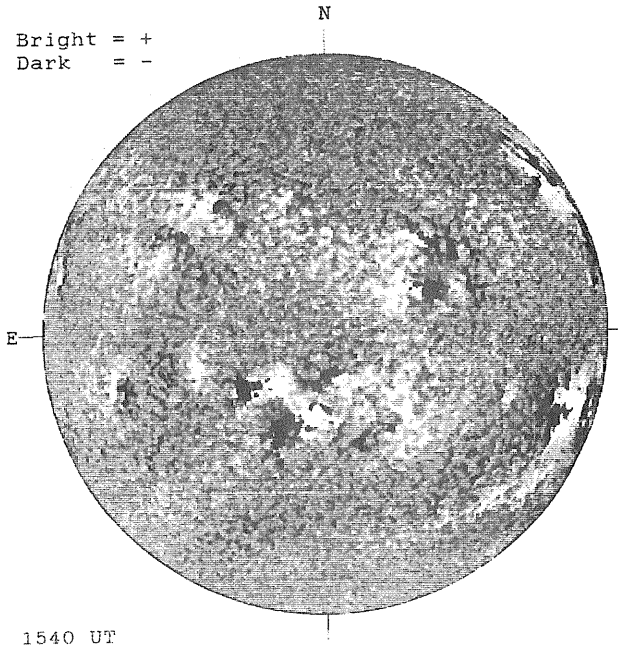
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 23, 1990 (P=-18.67, B_o =-1.75, L_o = 257.45)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1540 UT

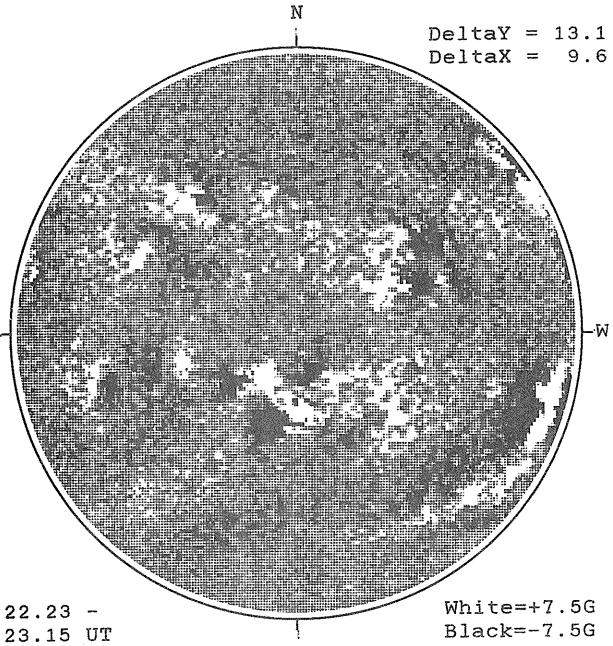
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2104 UT

MT. WILSON MAGNETOGRAM

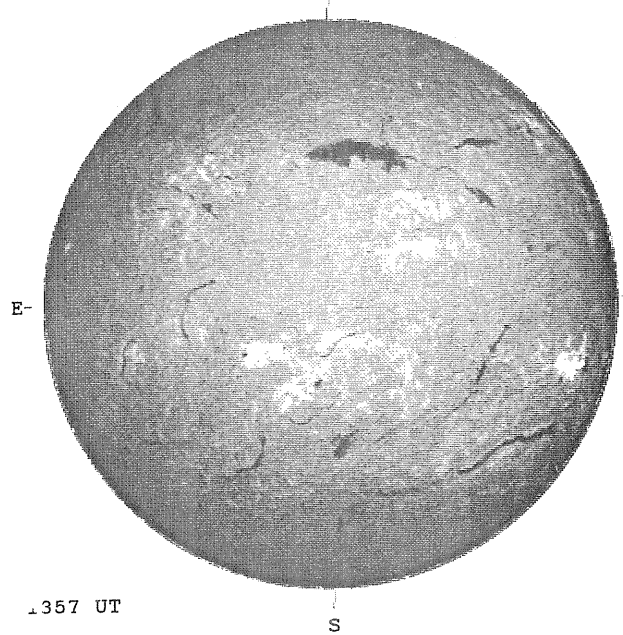
DeltaY = 13.1
DeltaX = 9.6



22.23 -
23.15 UT

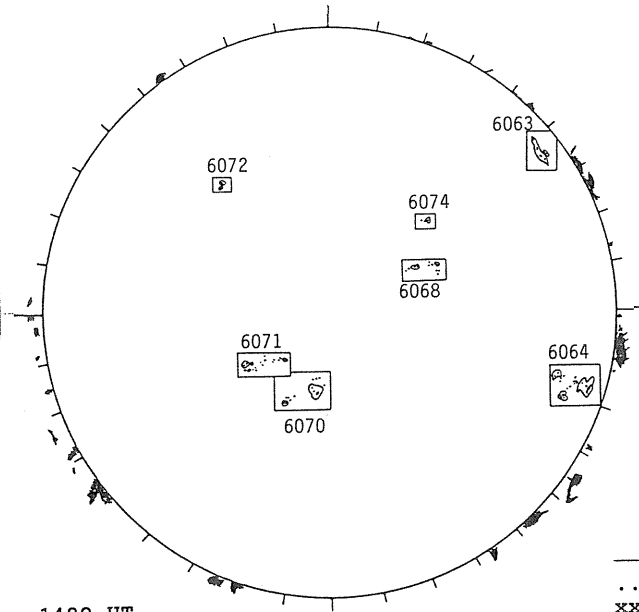
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



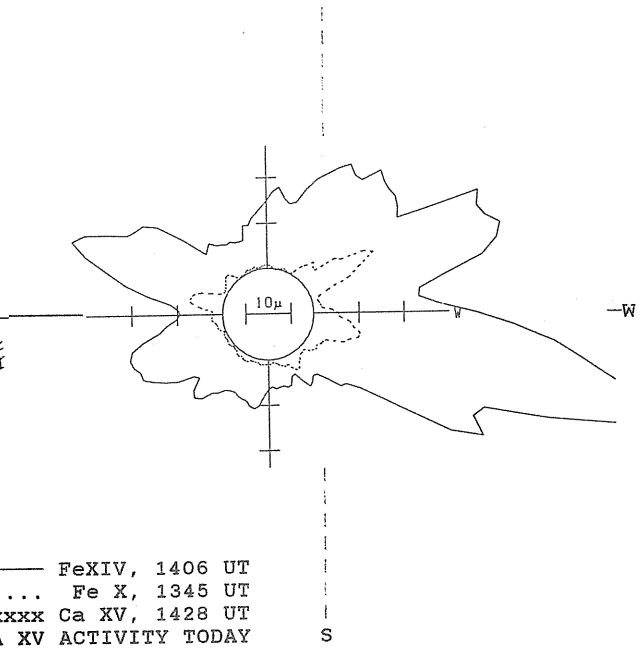
1357 UT

BOULDER SUNSPOT



1420 UT
1400 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

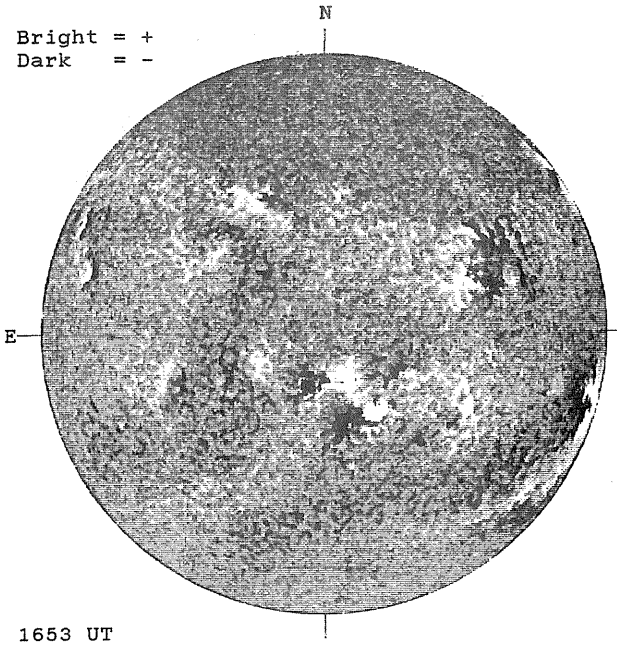


—— FeXIV, 1406 UT
.... Fe X, 1345 UT
xxxx Ca XV, 1428 UT
NO CA XV ACTIVITY TODAY

MAY 24, 1990 (P=-18.34 B_o =-1.63, L_o = 244.22)

KITT PEAK MAGNETOGRAM

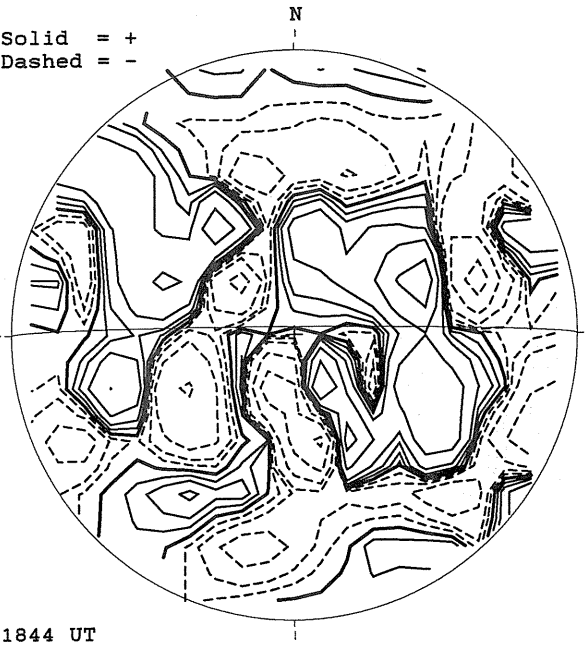
Bright = +
Dark = -



1653 UT

STANFORD MAGNETOGRAM

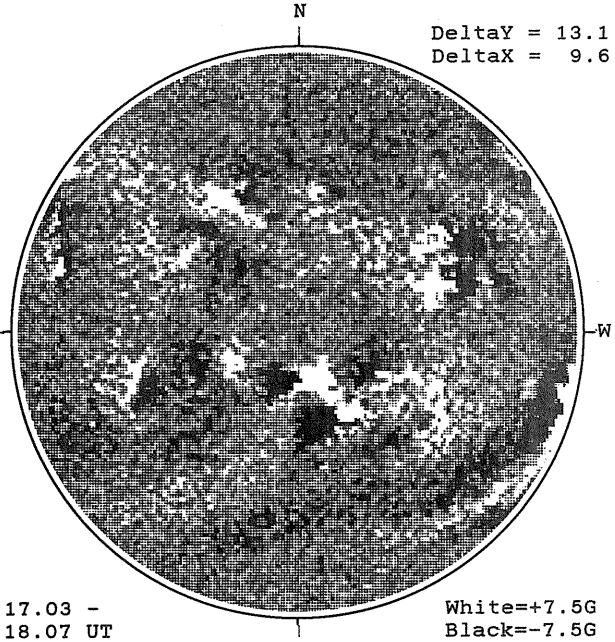
Solid = +
Dashed = -



1844 UT

MT. WILSON MAGNETOGRAM

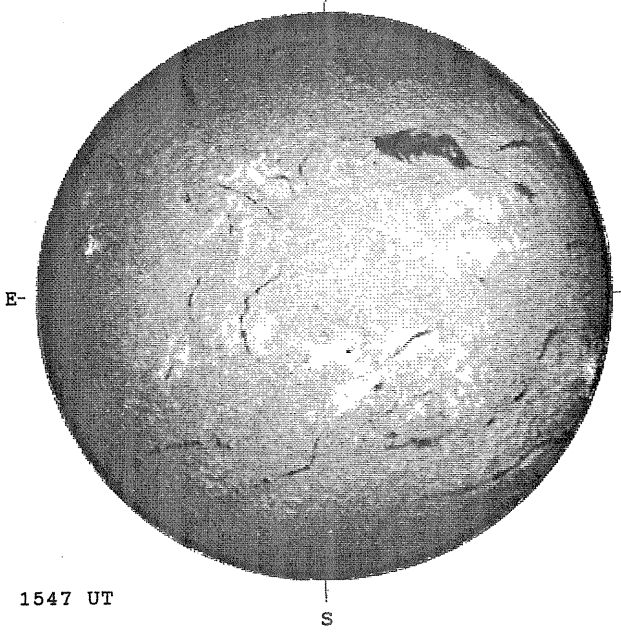
DeltaY = 13.1
DeltaX = 9.6



17.03 -
18.07 UT

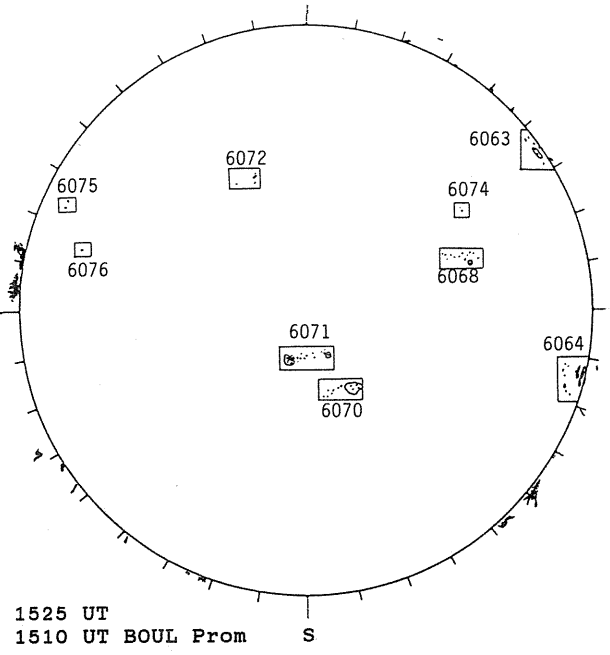
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



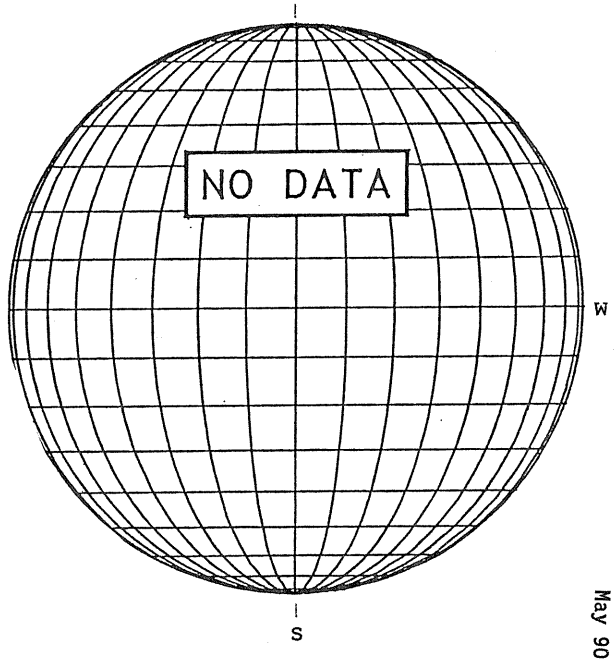
1547 UT

BOULDER SUNSPOT



1525 UT
1510 UT BOUL Prom

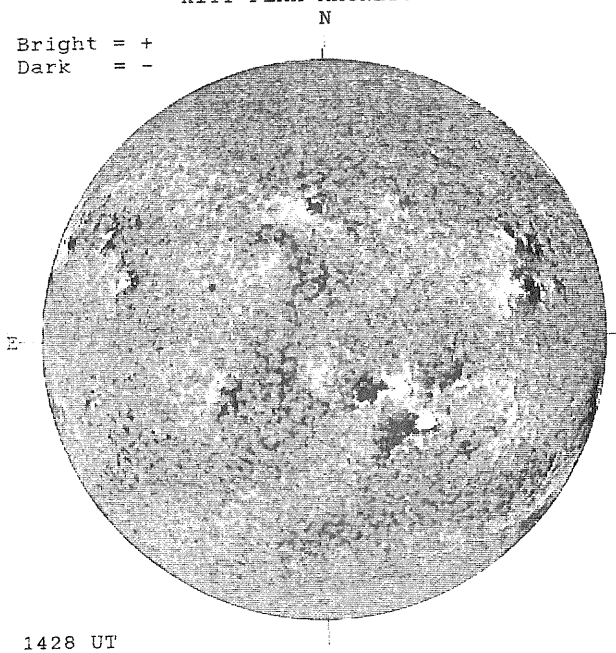
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 25, 1990 (P=-18.01, B_o =-1.51, L_o = 230.99)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1428 UT

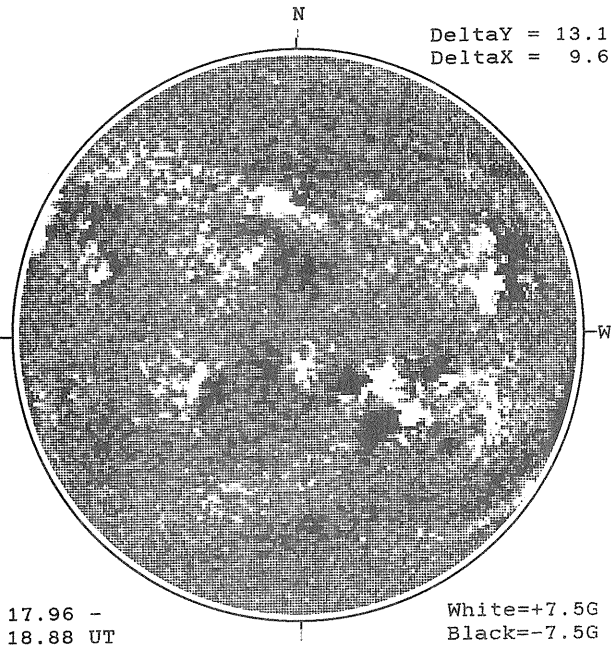
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

1608 UT

MT. WILSON MAGNETOGRAM

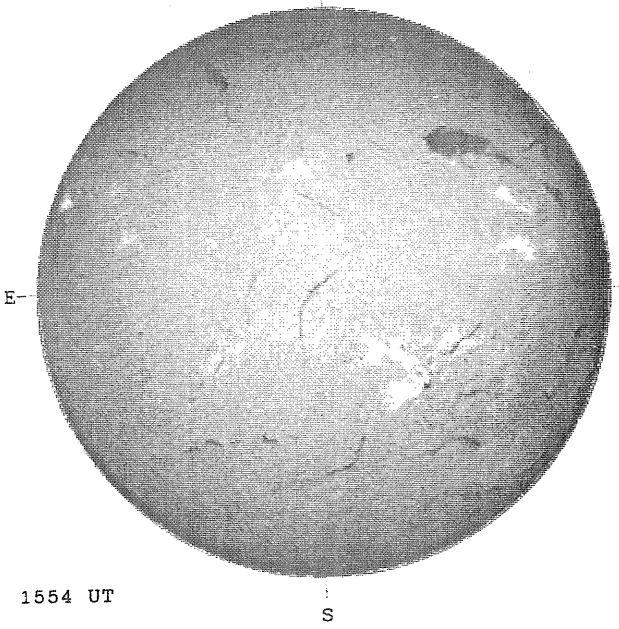
DeltaY = 13.1
DeltaX = 9.6



17.96 -
18.88 UT

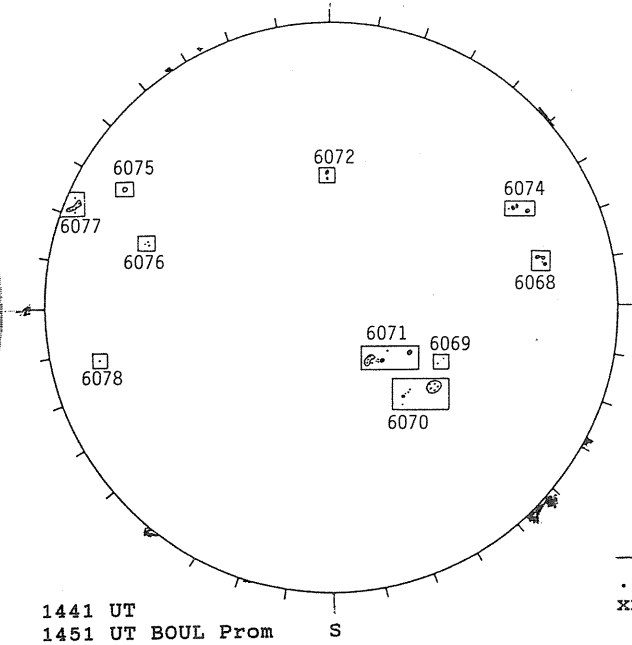
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



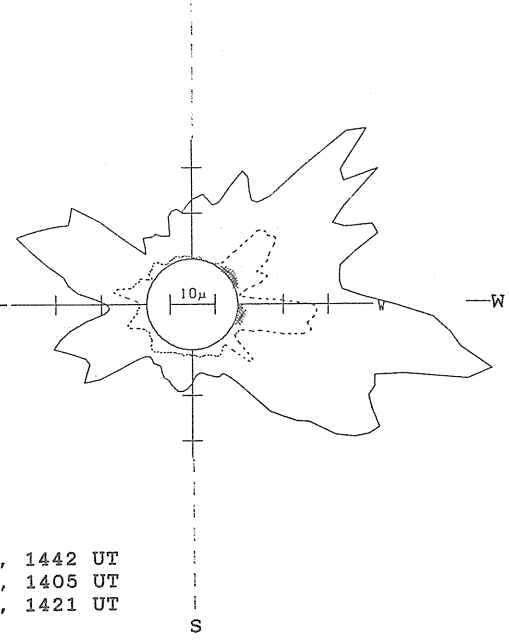
1554 UT

BOULDER SUNSPOT



1441 UT
1451 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

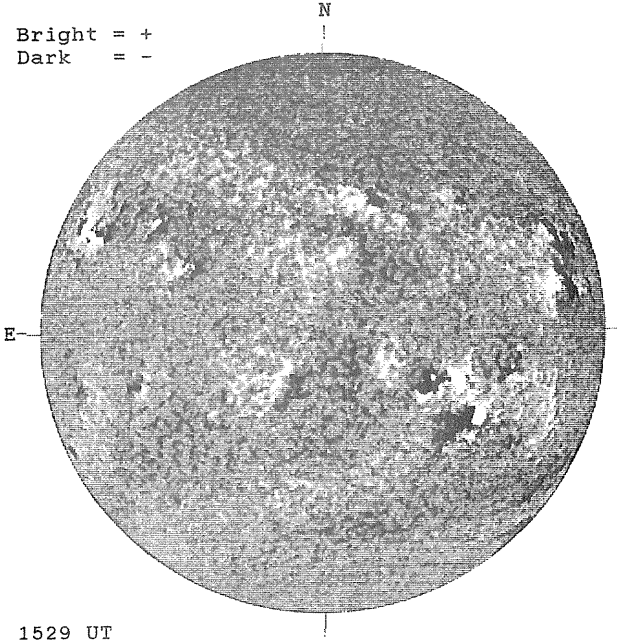


—— FeXIV, 1442 UT
.... Fe X, 1405 UT
xxxx Ca XV, 1421 UT

MAY 26, 1990 (P=-17.67, B_o =-1.40, L_o = 217.76)

KITT PEAK MAGNETOGRAM

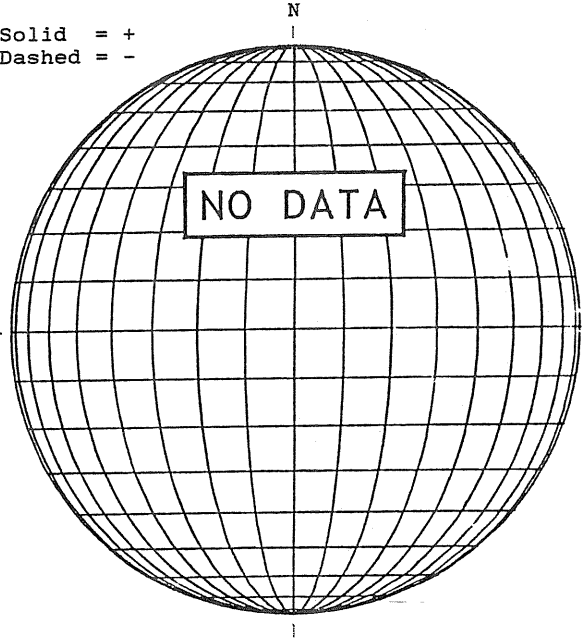
Bright = +
Dark = -



1529 UT

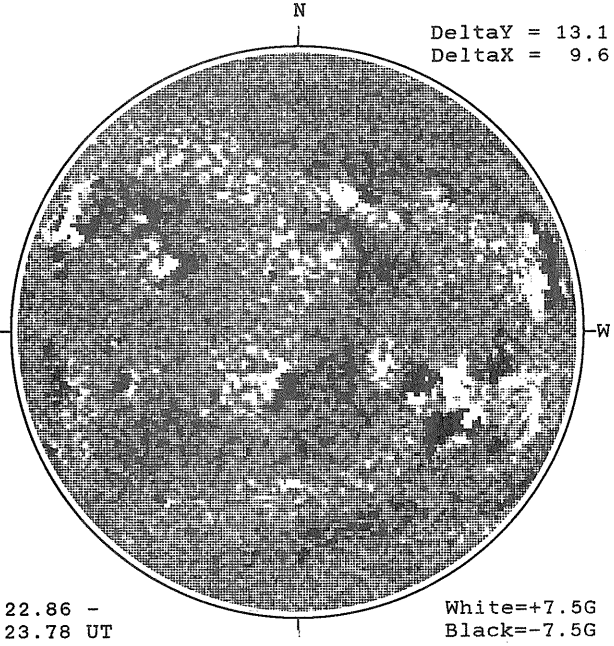
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

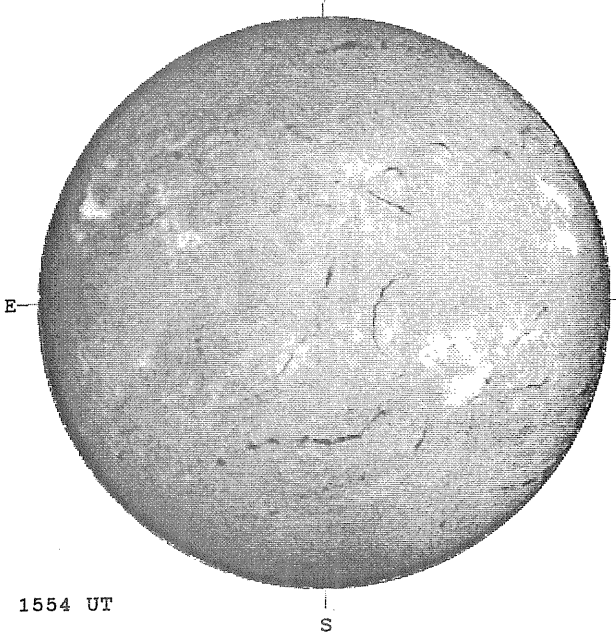
DeltaY = 13.1
DeltaX = 9.6



22.86 -
23.78 UT

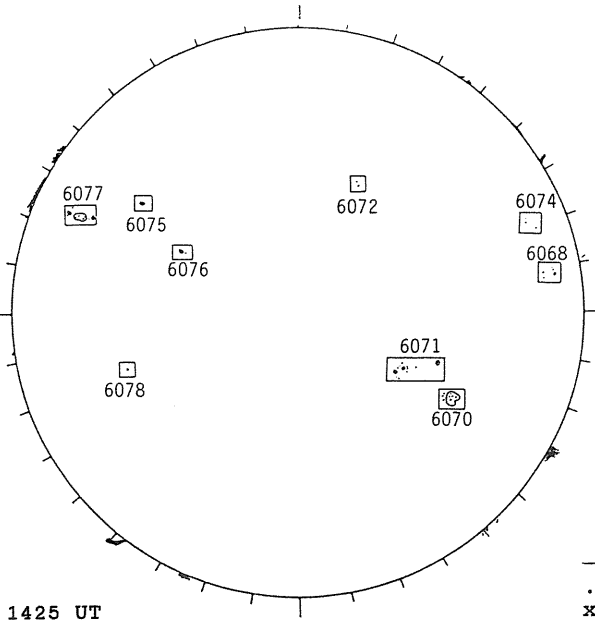
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



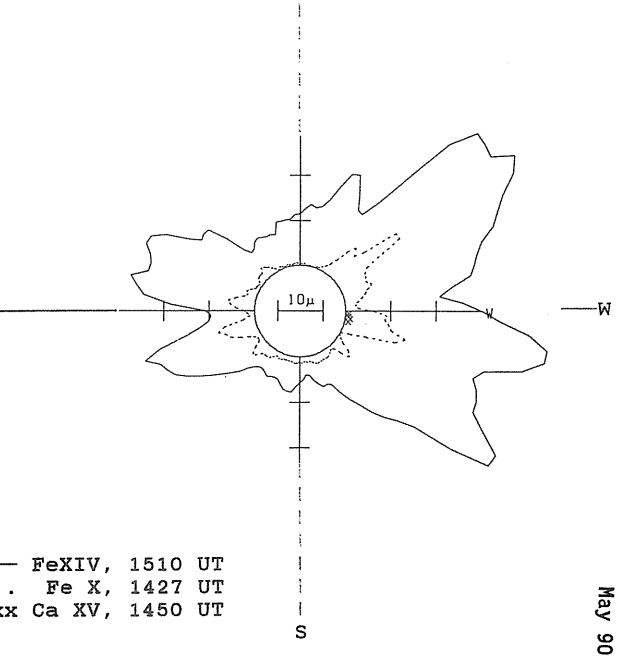
1554 UT

BOULDER SUNSPOT



1425 UT
1400 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



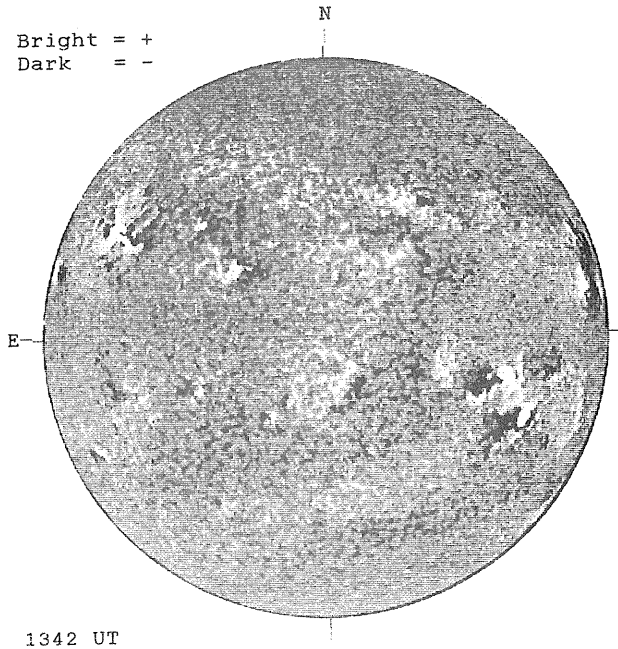
—— FeXIV, 1510 UT
.... Fe X, 1427 UT
xxxx Ca XV, 1450 UT

85
May 90

MAY 27, 1990 (P=-17.33, B_o =-1.28, L_o = 204.53)

KITT PEAK MAGNETOGRAM

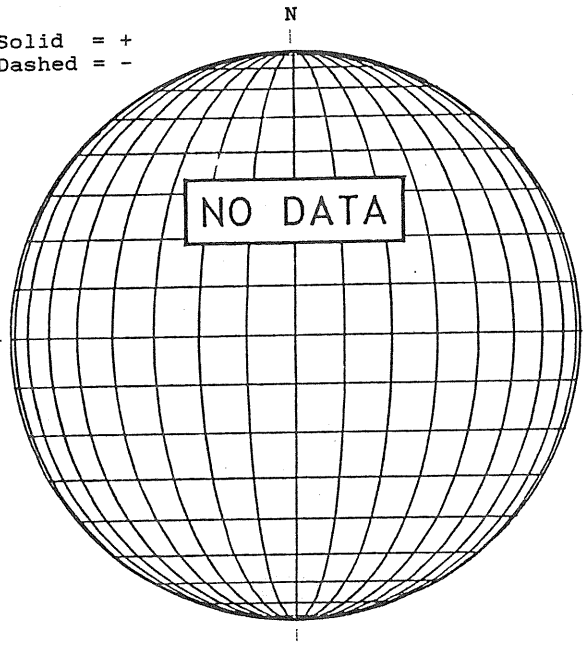
Bright = +
Dark = -



1342 UT

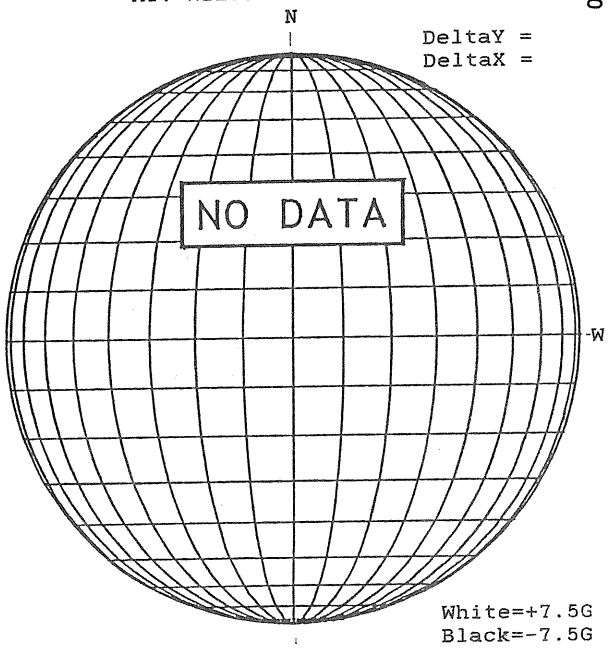
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



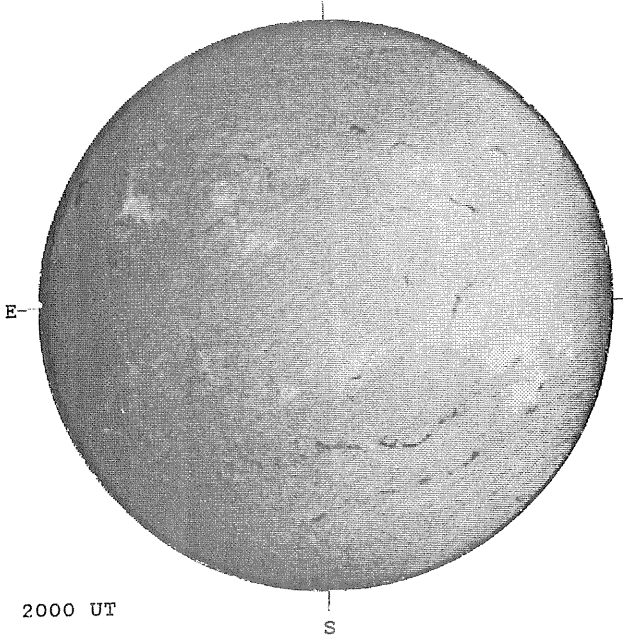
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



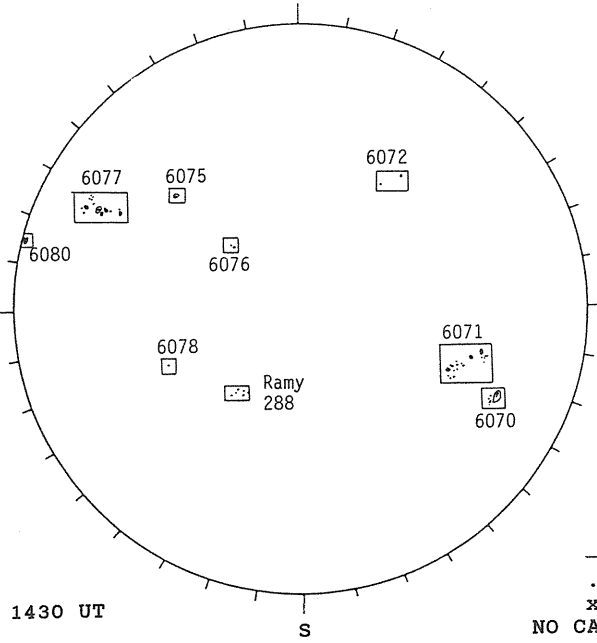
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



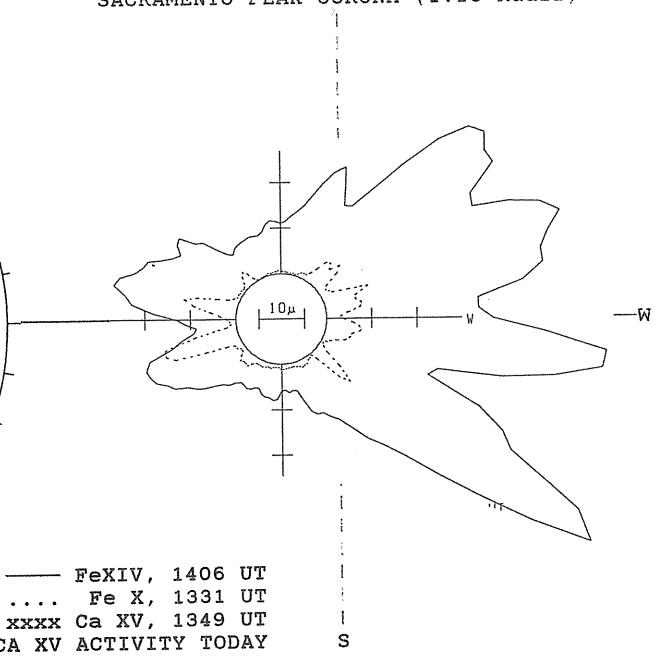
2000 UT

RAMEY SUNSPOT



1430 UT

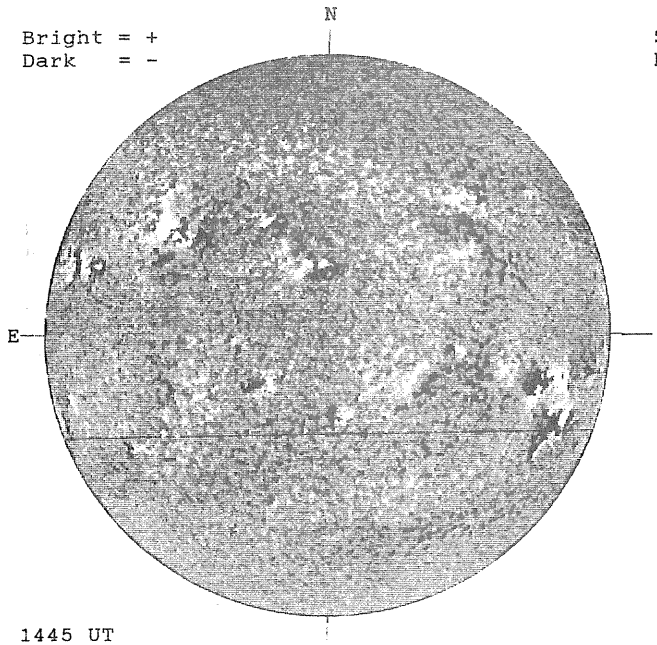
SACRAMENTO PEAK CORONA (1.15 Radii)



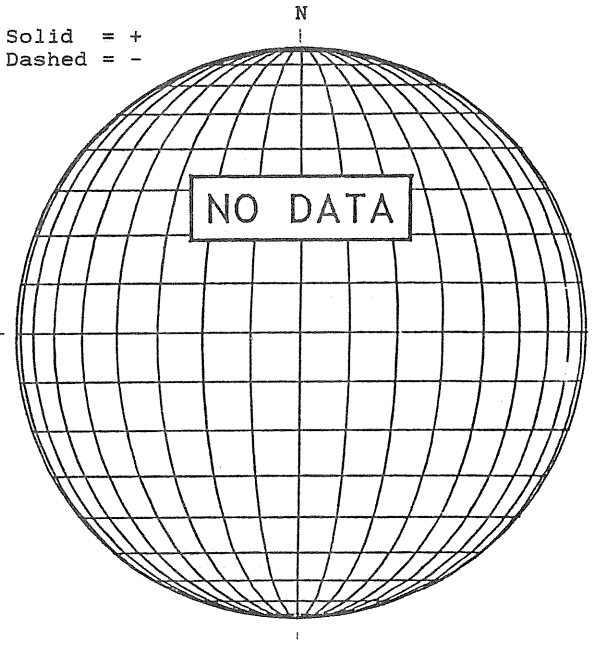
—— FeXIV, 1406 UT
.... Fe X, 1331 UT
xxxx Ca XV, 1349 UT
NO CA XV ACTIVITY TODAY

MAY 28, 1990 (P=-16.98 B_o =-1.16, L_o = 191.29)

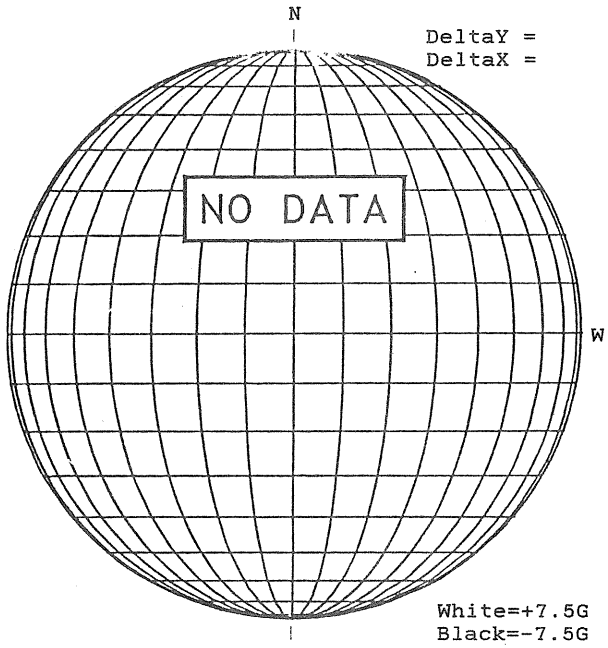
KITT PEAK MAGNETOGRAM



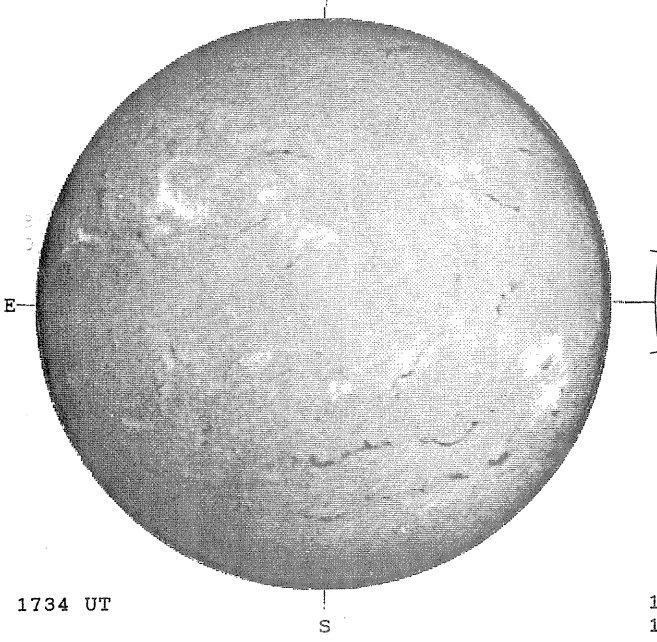
STANFORD MAGNETOGRAM



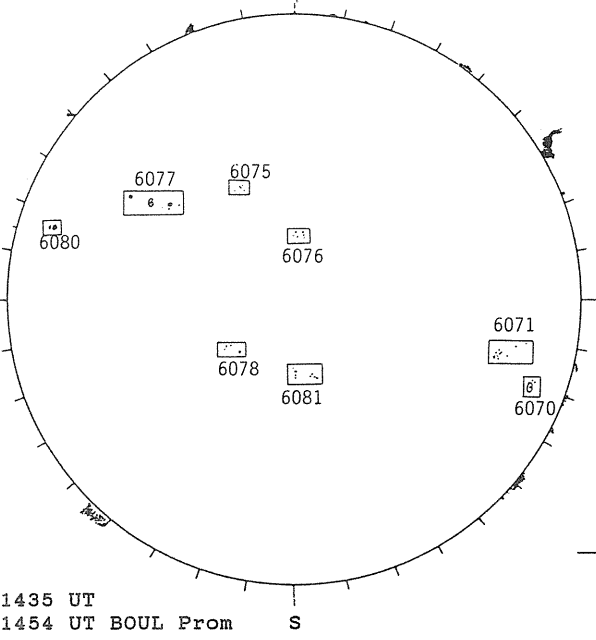
MT. WILSON MAGNETOGRAM



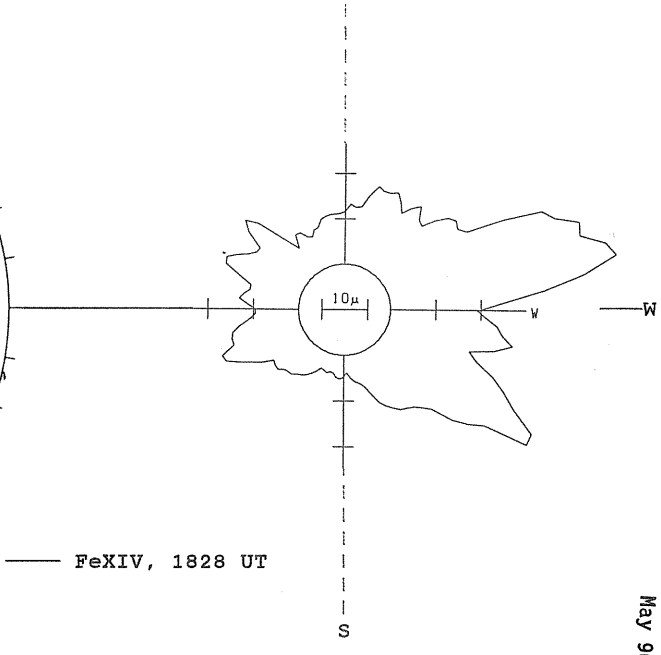
HOLLOMAN H-ALPHA



BOULDER SUNSPOT



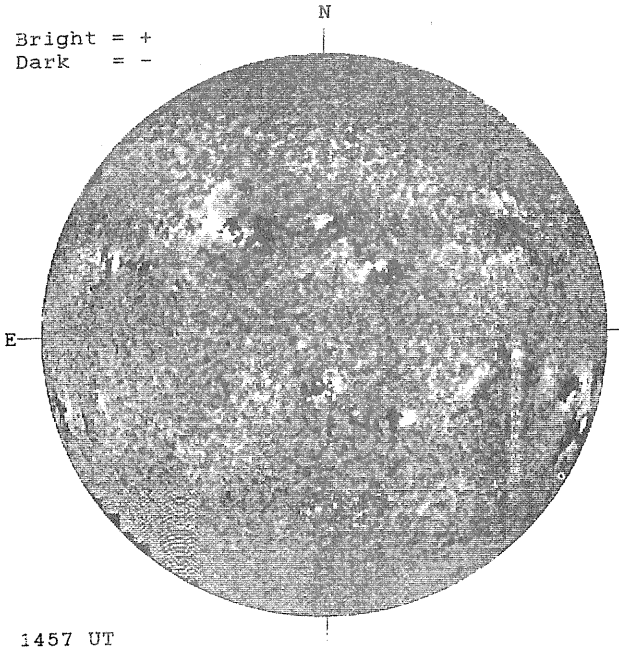
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 29, 1990 (P=-16.63, B_o =-1.04, L_o = 178.06)

KITT PEAK MAGNETOGRAM

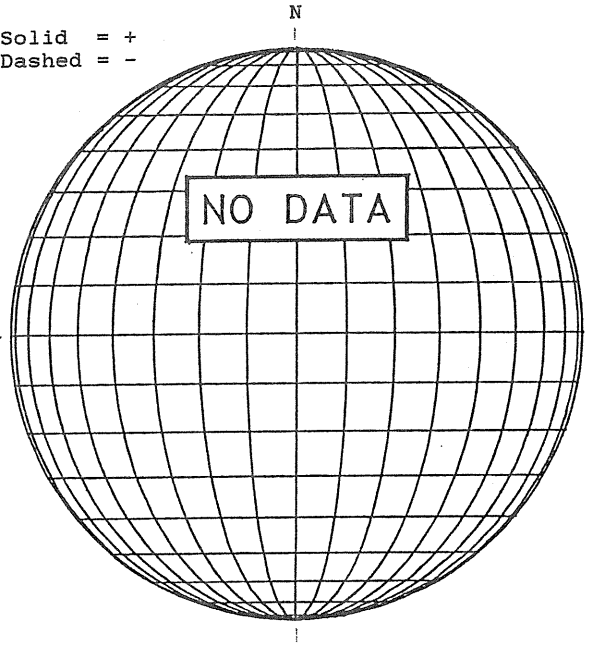
Bright = +
Dark = -



1457 UT

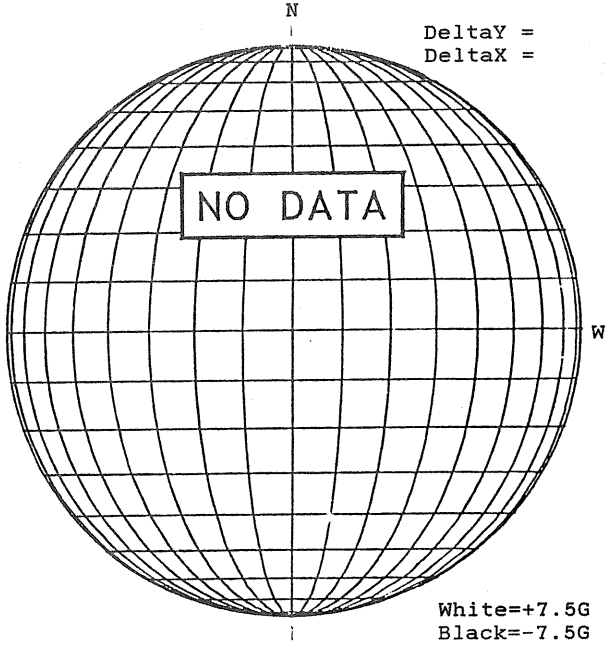
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



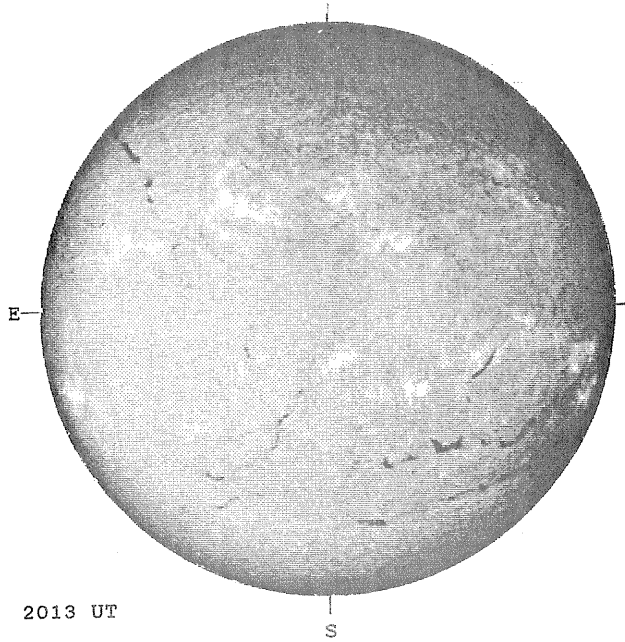
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



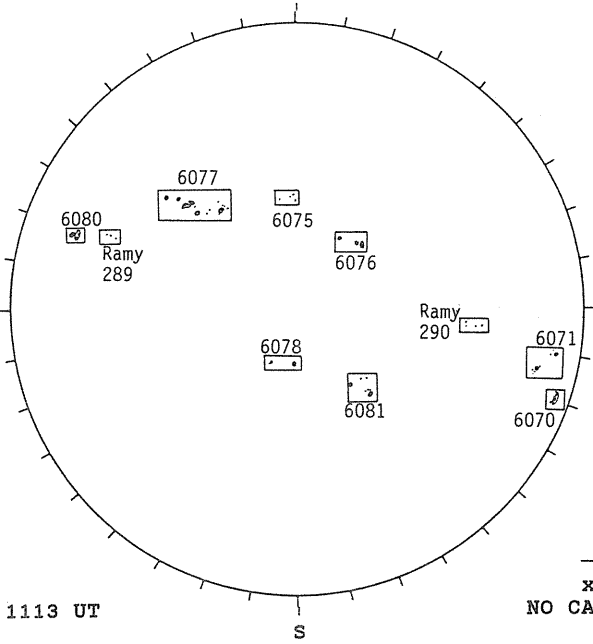
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



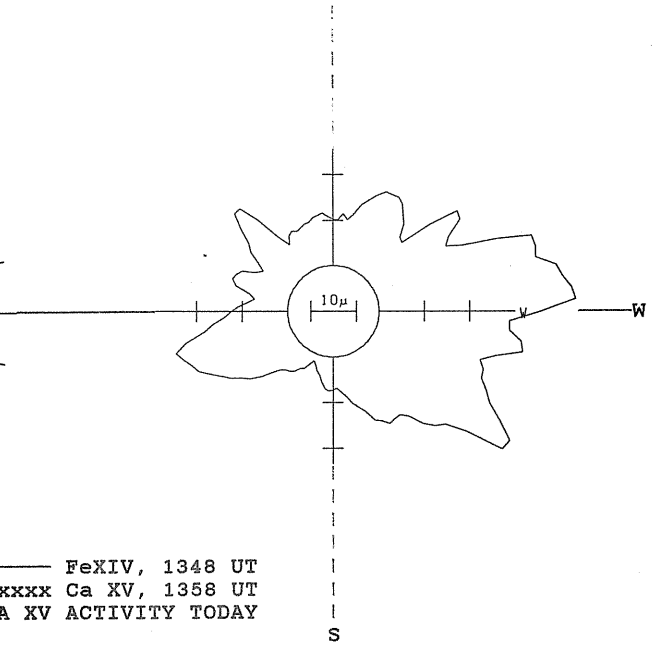
2013 UT

RAMEY SUNSPOT



1113 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

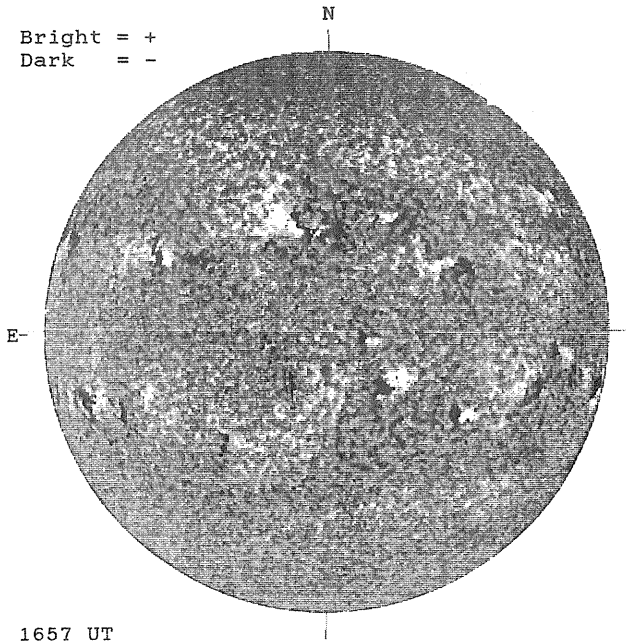


—— FeXIV, 1348 UT
xxxx Ca XV, 1358 UT
NO CA XV ACTIVITY TODAY

MAY 30, 1990 (P=-16.27, B_o =-0.92, L_o = 164.83)

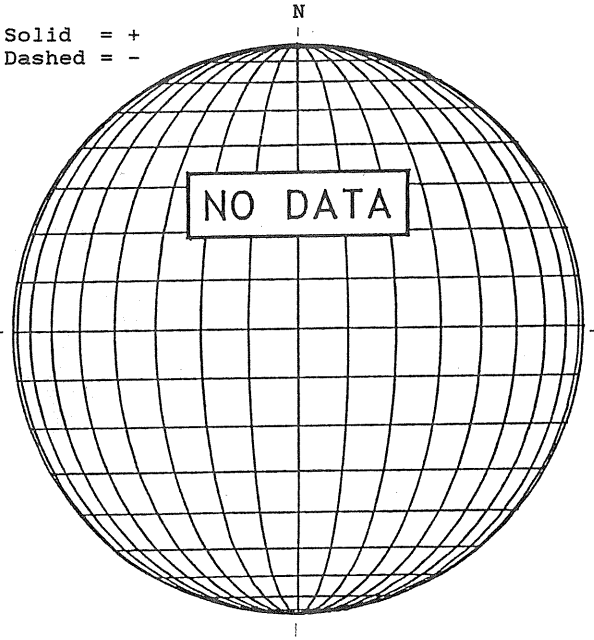
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



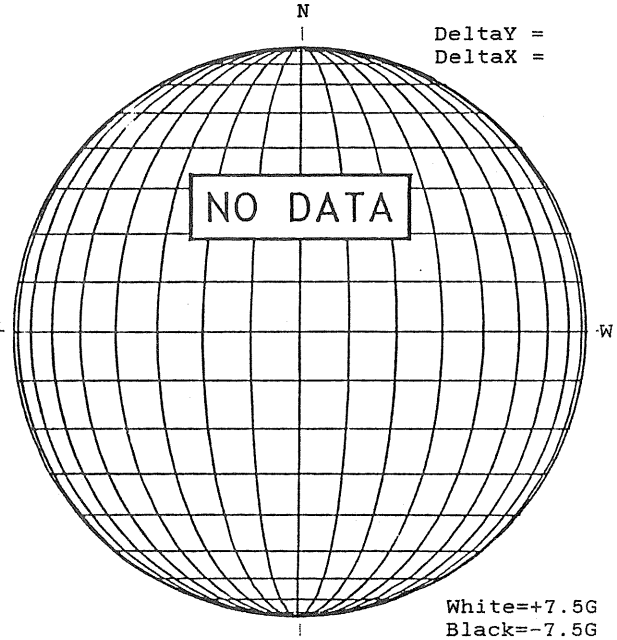
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



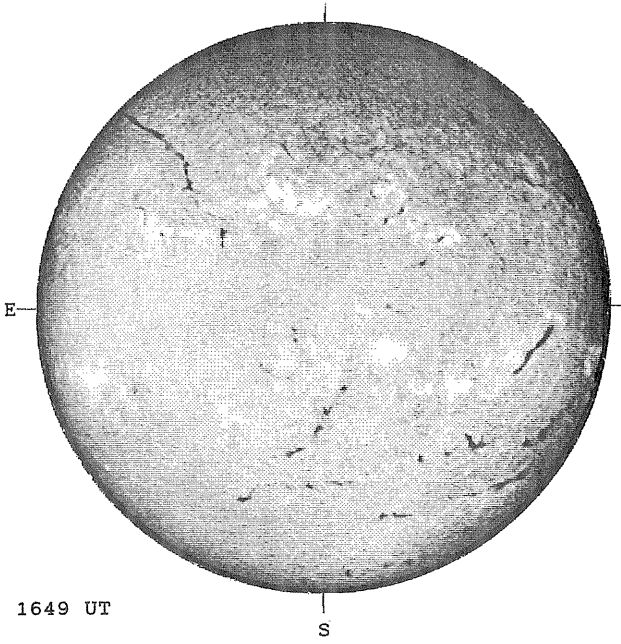
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

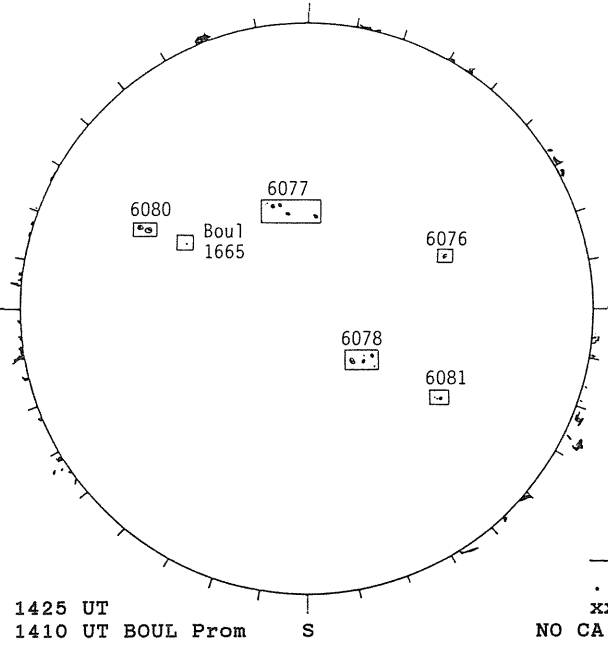


White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA

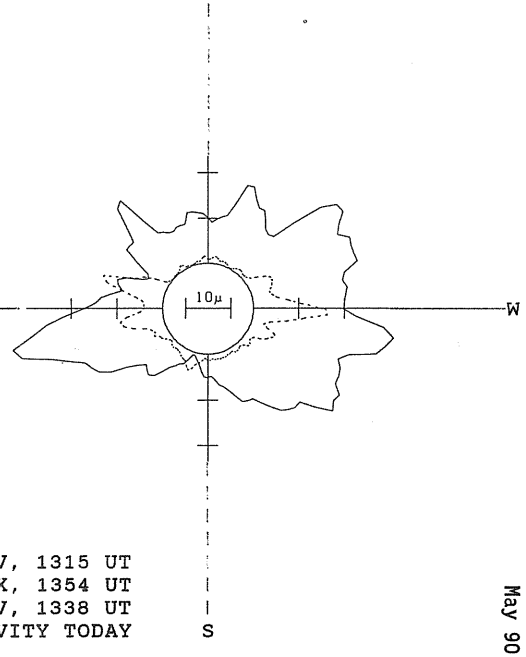


BOULDER SUNSPOT



1425 UT
1410 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



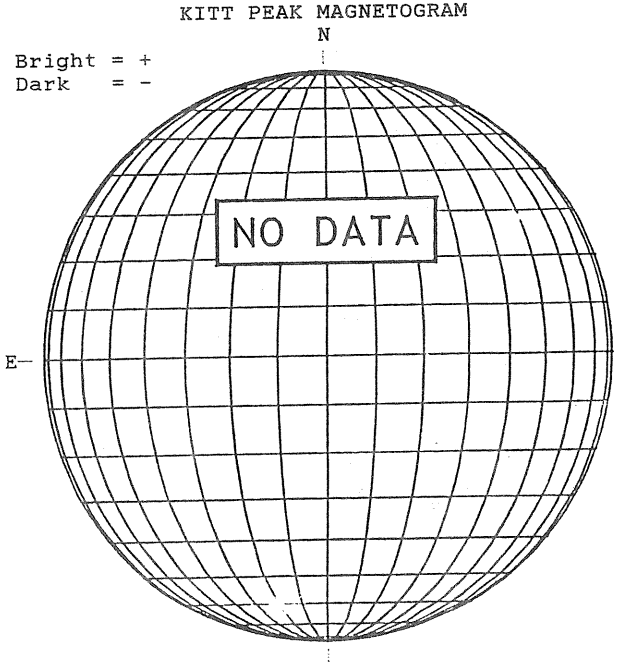
—— FeXIV, 1315 UT
.... Fe X, 1354 UT
xxxx Ca XV, 1338 UT
NO CA XV ACTIVITY TODAY

MAY 31, 1990 (P=-15.90, B_o =-0.80, L_o = 151.60)

May 90

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



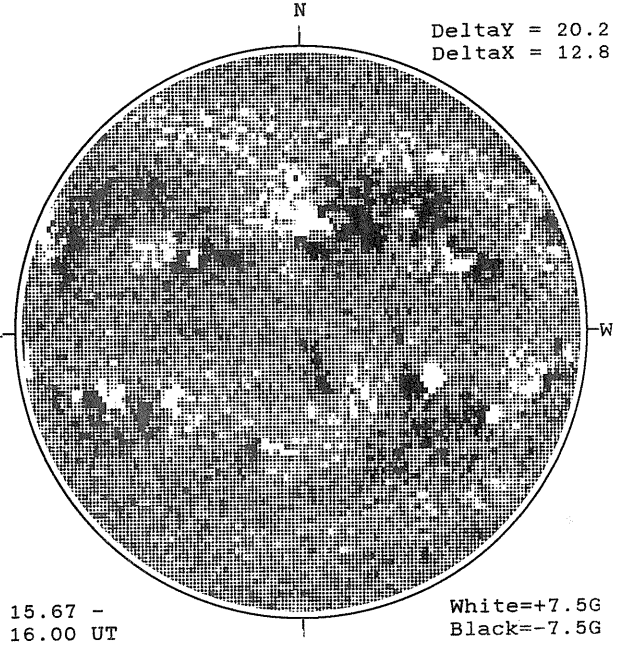
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

0048 UT
June 1

MT. WILSON MAGNETOGRAM

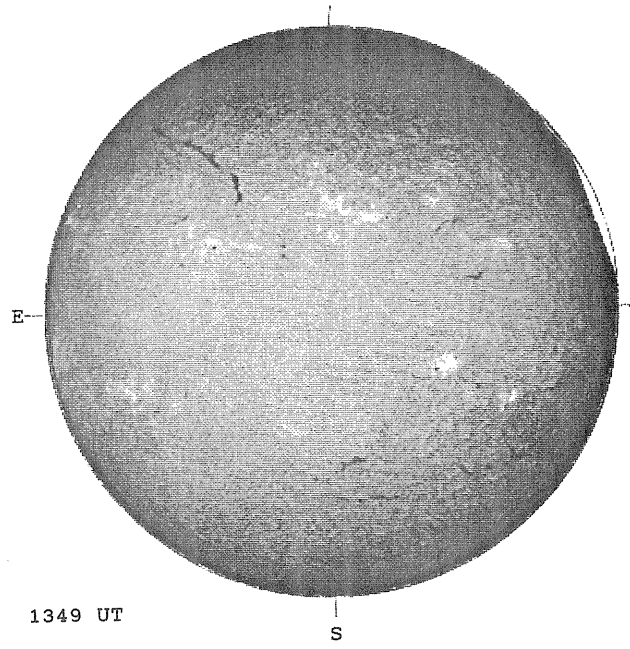
DeltaY = 20.2
DeltaX = 12.8



15.67 -
16.00 UT

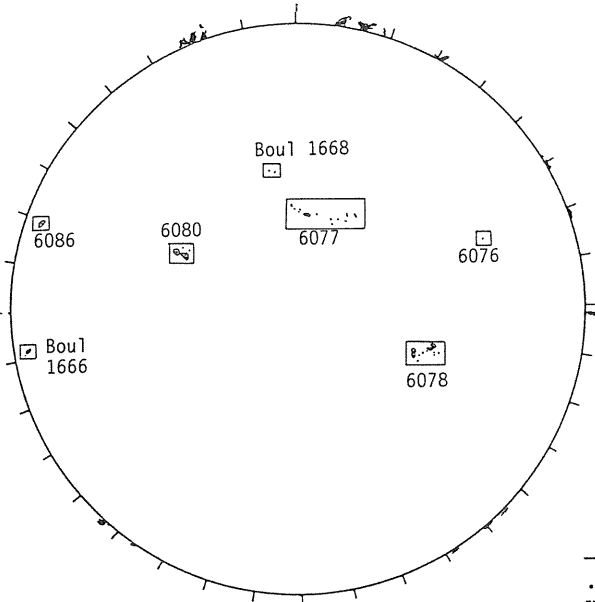
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



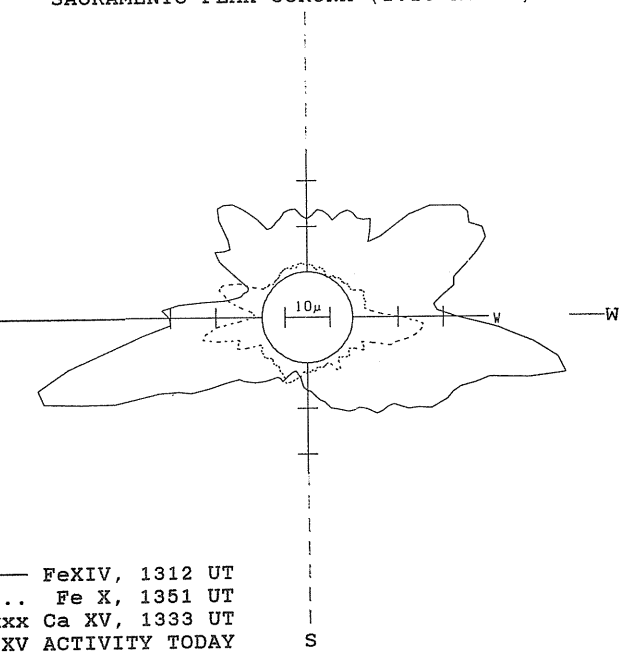
1349 UT

BOULDER SUNSPOT



1450 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1312 UT
.... Fe X, 1351 UT
xxxx Ca XV, 1333 UT
NO CA XV ACTIVITY TODAY

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 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
6040A		RAMY	04	29	1256	N25	E33	05	2.1		A	R	10	2	2	4
6040A		HOLL	04	29	1430	N23	E33	05	2.1		A	AX		2	2	2
6051A		CULG	05	07	0115	N14	W64	05	2.2		A	AX	10	1	1	3
6051A		SVTO	05	07	0622	N12	W68	05	2.1		A	AX	10	1	1	3
6051A		RAMY	05	07	1210	N13	W70	05	2.2		A	HR	10	1	1	4
6051A		HOLL	05	07	1400	N16	W71	05	2.2		A	AX	10	1		3
6051B		SVTO	04	30	0645	N14	E28	05	2.4		B	BXO	10	4	3	3
6051B		RAMY	04	30	1202	N12	E27	05	2.5		A	AX	10	2	1	3
6051B		SVTO	05	01	0755	N10	E15	05	2.4		B	BXO	10	2	1	3
6045		LEAR	04	27	0110	N18	E75	05	2.7		A	HA	30	1	2	3
6045		CULG	04	27	0110	N21	E78	05	3.0		A	HS	80	1	2	3
6045		SVTO	04	27	0745	N20	E74	05	3.0		A	HA	120	1	2	3
6045		BOUL	04	27	1425	N20	E68	05	2.8		A	HA	80	1	2	3
6045		RAMY	04	27	1446	N21	E69	05	2.9		A	HA	110	1	2	2
6045		HOLL	04	27	1520	N17	E69	05	2.9		A	HS	90	1	2	3
6045		LEAR	04	28	0015	N20	E64	05	2.9		A	HH	100	1	3	3
6045		CULG	04	28	0115	N19	E63	05	2.8		A	HA	90	1	2	4
6045		SVTO	04	28	0615	N20	E62	05	3.0		A	HA	90	1	2	3
6045		RAMY	04	28	1230	N21	E58	05	3.0		A	HA	100	1	2	2
6045		BOUL	04	28	1430	N22	E54	05	2.7		A	HS	80	1	3	1
6045		HOLL	04	28	1440	N19	E59	05	3.1		A	HS	90	1	2	4
6045		CULG	04	29	0042	N21	E50	05	2.9		A	HS	110	1	3	3
6045		LEAR	04	29	0053	N20	E51	05	2.9		A	HS	80	1	1	3
6045		SVTO	04	29	0720	N19	E48	05	3.0		A	HA	130	1	2	3
6045		RAMY	04	29	1256	N21	E46	05	3.1		B	CAO	160	4	3	4
6045		HOLL	04	29	1430	N19	E46	05	3.1		A	HS	90	1	2	2
6045		LEAR	04	30	0025	N20	E38	05	2.9		A	HS	110	2	2	4
6045		CULG	04	30	0155	N22	E37	05	2.9		A	HS	80	2	3	3
6045		SVTO	04	30	0645	N20	E36	05	3.0		A	HS	120	1	2	3
6045		RAMY	04	30	1202	N21	E32	05	2.9		A	HA	120	1	2	3
6045		HOLL	04	30	1500	N19	E32	05	3.1		A	HS	130	1	2	3
6045		PALE	04	30	1733	N20	E30	05	3.0		A	HS	180	1	3	3
6045		CULG	05	01	0135	N20	E24	05	2.9		A	HS	100	1	3	3
6045		LEAR	05	01	0644	N21	E22	05	3.0		A	HS	110	2	2	3
6045		SVTO	05	01	0755	N21	E23	05	3.1		A	HS	140	2	2	3
6045		RAMY	05	01	1235	N21	E18	05	2.9		B	CAO	170	5	7	3
6045		HOLL	05	01	1705	N21	E16	05	2.9		B	CAO	150	5	8	3
6045		PALE	05	01	2010	N21	E15	05	3.0		A	HS	90	1	2	2
6045		LEAR	05	02	0015	N21	E13	05	3.0		A	HA	90	2	2	3
6045		CULG	05	02	0146	N21	E11	05	2.9		A	HS	90	2	3	4
6045		SVTO	05	02	0630	N20	E10	05	3.0		A	HA	110	2	2	3
6045		RAMY	05	02	1215	N20	E02	05	2.7		B	CAO	120	7	8	3
6045		PALE	05	02	1950	N21	E03	05	3.0		B	HS	90	3	2	2
6045		HOLL	05	02	2130	N19	E03	05	3.1		A	HS	80	1	2	1
6045		LEAR	05	03	0003	N20	E00	05	3.0		A	HS	90	2	2	3
6045		SVTO	05	03	0625	N21	W03	05	3.0		A	HS	100	3	2	3
6045		RAMY	05	03	1320	N20	W06	05	3.1		A	HA	90	1	2	2
6045		PALE	05	03	1900	N20	W10	05	3.0		A	HS	70	1	1	2
6045		HOLL	05	03	1931	N21	W09	05	3.1		B	CSO	70	4	4	2
6045		LEAR	05	04	0030	N20	W12	05	3.1		A	HS	80	2	2	3
6045		CULG	05	04	0050	N21	W12	05	3.1		A	HS	90	3	2	4
6045		SVTO	05	04	0620	N20	W16	05	3.0		A	HA	100	1	2	3
6045		HOLL	05	04	1255	N20	W19	05	3.1		A	HS	60	2	2	3
6045		BOUL	05	04	1450	N20	W20	05	3.1		A	HA	80	1	2	4
6045		CULG	05	05	0140	N21	W27	05	3.0		A	HS	70	2	2	3
6045		LEAR	05	05	0155	N21	W26	05	3.1		A	HS	80	1	2	3
6045		SVTO	05	05	0643	N21	W30	05	3.0		A	HA	70	1	1	4
6045		RAMY	05	05	1114	N21	W32	05	3.0		A	HA	80	1	2	4
6045		BOUL	05	05	1445	N19	W31	05	3.2		A	HA	50	2	2	4
6045		HOLL	05	05	1508	N21	W33	05	3.1		A	HS	50	2	2	3
6045		PALE	05	05	2128	N20	W36	05	3.1		A	HS	30	1	1	3
6045		LEAR	05	06	0055	N20	W40	05	3.0		A	HSO	60	1	2	3
6045		CULG	05	06	0508	N21	W43	05	2.9		A	HS	60	1	3	3
6045		SVTO	05	06	0611	N20	W43	05	3.0		A	HS	90	2	2	3
6045		RAMY	05	06	1108	N20	W45	05	3.0		A	HA	90	9	2	4
6045		HOLL	05	06	1400	N22	W46	05	3.0		A	HS	600	1	1	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 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
6045		BOUL	05	06	1435	N18	W45	05	3.2		A	HA	60	2	3	4
6045		PALE	05	06	1910	N19	W49	05	3.0		A	HS	60	2	2	3
6045		CULG	05	07	0115	N21	W53	05	3.0		A	HS	30	1	1	3
6045		SVTO	05	07	0622	N18	W57	05	2.9		A	HS	60	1	2	3
6045		RAMY	05	07	1210	N19	W58	05	3.1		A	HA	50	1	1	4
6045		HOLL	05	07	1400	N22	W59	05	3.0		A	HS	80	1	2	3
6045		PALE	05	07	1850	N19	W61	05	3.1		A	HS	40	1	2	3
6045		LEAR	05	08	0130	N19	W66	05	3.0		A	HS	40	1	2	3
6045		CULG	05	08	0200	N18	W66	05	3.0		A	HS	20	1	1	3
6045		SVTO	05	08	0620	N20	W70	05	2.9		A	HS	30	1	1	3
6045		RAMY	05	08	1330	N20	W70	05	3.2		A	HS	50	1	2	2
6045		HOLL	05	08	1515	N18	W71	05	3.2		A	HS	50	1	2	3
6045		PALE	05	08	1850	N21	W75	05	3.0		A	HS	30	1	2	3
6045		LEAR	05	09	0033	N19	W77	05	3.1		A	HS	90	1	2	3
6045		CULG	05	09	0140	N21	W82	05	2.8		A	HS	20	1	1	4
6045		SVTO	05	09	0605	N20	W80	05	3.1		A	HS	30	1	1	4
6045A		HOLL	05	02	2130	S18	E12	05	3.8		A	AX		1		1
6046		LEAR	04	29	0053	S10	E67	05	4.1		B	BXO	20	2	2	3
6046		SVTO	04	29	0720	S11	E63	05	4.0		A	AX	20	4	2	3
6046		RAMY	04	29	1256	S09	E61	05	4.1		B	BXO	10	5	3	4
6046		HOLL	04	29	1430	S13	E59	05	4.0		A	AX	10	2	2	2
6046		LEAR	04	30	0025	S10	E52	05	3.9		B	BXO	30	8	5	4
6046		CULG	04	30	0155	S09	E51	05	3.9		B	BXO	10	5	4	3
6046		SVTO	04	30	0645	S09	E49	05	3.9		B	BXO	20	7	4	3
6046		RAMY	04	30	1202	S09	E47	05	4.0		B	CAO	40	4	3	3
6046		HOLL	04	30	1500	S11	E44	05	3.9		A	AX	10	1		3
6046		CULG	05	01	0135	S10	E38	05	3.9		B	BXO	10	3	4	3
6046		SVTO	05	01	0755	S10	E34	05	3.9		B	CRO	30	6	4	3
6046		RAMY	05	01	1235	S09	E32	05	3.9		B	CRO	20	8	4	3
6046		HOLL	05	01	1705	S11	E28	05	3.8		A	AX	10	1	1	3
6046		PALE	05	01	2010	S10	E27	05	3.9		A	AX		1		2
6046		LEAR	05	02	0015	S10	E23	05	3.7		A	AX	10	1	1	3
6046		CULG	05	02	0146	S09	E23	05	3.8		A	AX	10	1	1	4
6046		SVTO	05	02	0630	S12	E19	05	3.7		B	BXO	10	6	4	3
6046		RAMY	05	02	1215	S10	E17	05	3.8		B	BXO	10	4	2	3
6046		PALE	05	02	1950	S07	E14	05	3.9		A	AX		1	1	2
6046		HOLL	05	03	1931	S09	E04	05	4.1		A	AX		1		2
6046		HOLL	05	05	1508	S09	W28	05	3.5		A	AX		1		3
6059		RAMY	05	08	1330	S08	W55	05	4.4		A	AX		1	1	2
6059		HOLL	05	08	1515	S08	W57	05	4.4		A	AX		1		3
6059		HOLL	05	09	1510	S08	W73	05	4.1		A	AX	10	2	1	3
6059		RAMY	05	09	1558	S07	W70	05	4.4		B	BXO	10	3	3	3
6059		PALE	05	09	1727	S07	W73	05	4.2		A	AX	10	1	1	3
6059		SVTO	05	10	0545	S07	W80	05	4.2		A	AX		1		4
6053		PALE	05	05	2128	N15	W18	05	4.5		B	BXO		4	4	3
6053		LEAR	05	06	0055	N15	W20	05	4.5		B	CSO	40	4	4	3
6053		CULG	05	06	0508	N16	W24	05	4.4		B	CRO	10	4	5	3
6053		SVTO	05	06	0611	N16	W23	05	4.5		B	CSO	30	5	5	3
6053		RAMY	05	06	1108	N14	W27	05	4.4		B	DAO	50	6	5	4
6053		HOLL	05	06	1400	N16	W28	05	4.4		B	DSO	600	7	5	2
6053		BOUL	05	06	1435	N13	W28	05	4.5		B	DAO	40	3	4	4
6053		PALE	05	06	1910	N14	W31	05	4.4		B	BXO	30	6	5	3
6053		CULG	05	07	0115	N16	W36	05	4.3		B	CRO	20	6	6	3
6053		SVTO	05	07	0622	N13	W38	05	4.4		B	CAO	60	13	6	3
6053		RAMY	05	07	1210	N14	W40	05	4.5		B	DAO	40	12	7	4
6053		HOLL	05	07	1400	N17	W43	05	4.3		B	BXO	40	10	6	3
6053		PALE	05	07	1850	N14	W45	05	4.4		B	CAO	30	8	6	3
6053		LEAR	05	08	0130	N13	W48	05	4.4		B	BXO	30	4	5	3
6053		CULG	05	08	0200	N13	W48	05	4.5		B	CRO	30	5	5	3
6053		SVTO	05	08	0620	N16	W52	05	4.3		B	CSO	30	6	6	3
6053		RAMY	05	08	1330	N15	W55	05	4.4		B	DAO	60	7	6	2
6053		HOLL	05	08	1515	N14	W57	05	4.3		B	DSO	80	9	6	3
6053		PALE	05	08	1850	N15	W58	05	4.4		B	DAO	40	4	6	3
6053		LEAR	05	09	0033	N14	W60	05	4.5		B	BXO	60	6	7	3
6053		CULG	05	09	0140	N16	W53	05	5.0		B	BXO	10	5	5	4

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

MAY 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
6053		SVTO	05	09	0605	N15	W55	05	5.1		B	BXO	50	8	7	4
6053		HOLL	05	09	1510	N15	W69	05	4.4		B	CRO	20	5	5	3
6053		RAMY	05	09	1558	N16	W70	05	4.3		B	CAO	70	5	6	3
6053		PALE	05	09	1727	N15	W68	05	4.6		B	BXO	20	4	7	3
6053		SVTO	05	10	0545	N16	W77	05	4.4		A	AX		1		4
6053A		RAMY	04	30	1202	N18	E59	05	5.0		A	AX	10	2	1	3
6053A		HOLL	05	04	1255	N18	E06	05	5.0		A	AX		2	2	3
6053B		CULG	05	08	0200	S47	W24	05	6.1		B	BXO		2	3	3
6053B		SVTO	05	08	0620	S47	W28	05	5.9		B	BXO	10	4	4	3
6053B		HOLL	05	08	1515	S47	W31	05	6.0		A	AX		1		3
6048		RAMY	04	30	1202	S14	E81	05	6.6		A	HA	120	1	3	3
6048		HOLL	04	30	1500	S17	E80	05	6.7		A	HS	80	1	2	3
6048		PALE	04	30	1733	S14	E76	05	6.5		A	HA	60	1	3	3
6048		CULG	05	01	0135	S15	E74	05	6.7		A	HS	60	1	2	3
6048		SVTO	05	01	0755	S14	E70	05	6.6		A	HS	110	2	2	3
6048		RAMY	05	01	1235	S12	E69	05	6.7		B	CAO	160	5	6	3
6048		HOLL	05	01	1705	S15	E65	05	6.6		A	HS	130	2	2	3
6048		PALE	05	01	2010	S13	E64	05	6.7		A	HA	100	1	1	2
6048		LEAR	05	02	0015	S14	E60	05	6.5		A	HS	80	1	1	3
6048		CULG	05	02	0146	S13	E60	05	6.6		A	HS	80	2	3	4
6048		SVTO	05	02	0630	S14	E58	05	6.6		A	HA	120	1	2	3
6048		RAMY	05	02	1215	S15	E59	05	7.0		B	CAO	150	4	10	3
6048		PALE	05	02	1950	S14	E50	05	6.6		A	HS	120	1	2	2
6048		HOLL	05	02	2130	S17	E48	05	6.5		A	HS	140	1	2	1
6048		LEAR	05	03	0003	S13	E47	05	6.5		A	HH	150	1	3	3
6048		SVTO	05	03	0625	S14	E44	05	6.6		A	HS	130	1	2	3
6048		RAMY	05	03	1320	S14	E42	05	6.7		B	CAO	130	4	3	2
6048		PALE	05	03	1900	S13	E37	05	6.6		A	HS	220	1	1	2
6048		HOLL	05	03	1931	S16	E39	05	6.8		B	CSO	120	2	3	2
6048		LEAR	05	04	0030	S13	E33	05	6.5		A	HS	110	1	3	3
6048		CULG	05	04	0050	S14	E35	05	6.7		A	HS	120	2	2	4
6048		SVTO	05	04	0620	S14	E32	05	6.7		B	CSO	110	2	4	3
6048		HOLL	05	04	1255	S15	E28	05	6.6		A	HA	130	1	2	3
6048		BOUL	05	04	1450	S13	E26	05	6.6		A	HA	130	1	3	4
6048		CULG	05	05	0140	S13	E20	05	6.6		A	HS	100	1	3	3
6048		LEAR	05	05	0155	S14	E19	05	6.5		A	HS	90	2	2	3
6048		SVTO	05	05	0643	S14	E17	05	6.6		A	HS	100	1	2	4
6048		RAMY	05	05	1114	S13	E16	05	6.7		B	CAO	110	3	3	4
6048		BOUL	05	05	1445	S15	E16	05	6.8		B	CAO	110	3	9	4
6048		HOLL	05	05	1508	S13	E12	05	6.5		A	HS	100	1	2	3
6048		PALE	05	05	2128	S13	E10	05	6.6		A	HS	80	1	2	3
6048		LEAR	05	06	0055	S12	E08	05	6.6		A	HA	90	1	2	3
6048		CULG	05	06	0508	S14	E04	05	6.5		A	HS	100	1	3	3
6048		SVTO	05	06	0611	S16	E09	05	6.9		B	CSO	120	5	10	3
6048		RAMY	05	06	1108	S13	E03	05	6.7		A	HA	120	1	3	4
6048		HOLL	05	06	1400	S12	E00	05	6.6		A	HS	220	1	2	2
6048		BOUL	05	06	1435	S13	E01	05	6.7		A	CAO	60	2	2	4
6048		PALE	05	06	1910	S13	W02	05	6.6		A	HS	100	2	2	3
6048		CULG	05	07	0115	S12	W07	05	6.5		A	HS	90	2	2	3
6048		SVTO	05	07	0622	S16	W07	05	6.7		B	CSO	120	6	8	3
6048		RAMY	05	07	1210	S16	W09	05	6.8		B	CAO	140	6	9	4
6048		HOLL	05	07	1400	S11	W13	05	6.6		A	HS	170	1	2	3
6048		PALE	05	07	1850	S12	W16	05	6.6		A	HS	100	2	3	3
6048		LEAR	05	08	0130	S14	W19	05	6.6		B	CSO	100	5	4	3
6048		CULG	05	08	0200	S13	W18	05	6.7		B	CSO	110	3	2	3
6048		SVTO	05	08	0620	S13	W22	05	6.6		A	HS	100	4	2	3
6048		RAMY	05	08	1330	S14	W26	05	6.6		B	CAO	110	5	3	2
6048		HOLL	05	08	1515	S13	W27	05	6.6		B	CSO	120	5	4	3
6048		PALE	05	08	1850	S12	W29	05	6.6		B	CSO	90	4	3	3
6048		LEAR	05	09	0033	S13	W32	05	6.6		B	CSO	110	4	4	3
6048		CULG	05	09	0140	S13	W33	05	6.6		A	HS	80	1	2	4
6048		SVTO	05	09	0605	S15	W33	05	6.7		B	CAO	80	5	8	4
6048		HOLL	05	09	1510	S12	W41	05	6.5		B	CSO	80	3	3	3
6048		RAMY	05	09	1558	S12	W41	05	6.6		B	CAO	120	3	3	3
6048		PALE	05	09	1727	S11	W41	05	6.6		A	HS	80	3	2	3
6048		LEAR	05	10	0116	S12	W47	05	6.5		A	HS	80	1	2	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6048		CULG	05 10 0220	S13 W46	05 6.6		A	HS	30	2	2	3
6048		SVTO	05 10 0545	S11 W50	05 6.5		A	HA	70	1	1	4
6048		RAMY	05 10 1300	S15 W53	05 6.5		A	HA	50	2	2	3
6048		BOUL	05 10 1440	S12 W54	05 6.5		A	HS	100	1	2	2
6048		PALE	05 10 1948	S13 W57	05 6.5		A	HS	70	1	1	3
6048		CULG	05 11 0040	S13 W59	05 6.6		A	HS	40	1	2	3
6048		SVTO	05 11 0748	S11 W63	05 6.6		A	HS	80	1	2	3
6048		RAMY	05 11 1409	S12 W66	05 6.6		A	HS	80	1	2	2
6048		HOLL	05 11 1450	S12 W66	05 6.6		A	HS	30	1	1	2
6048		PALE	05 11 1737	S12 W67	05 6.7		A	HS	80	1	1	3
6048		LEAR	05 12 0100	S13 W70	05 6.7		A	HS	60	2	12	3
6048A		SVTO	05 02 0630	S19 E68	05 7.5		A	AX	10	2	2	3
6048B		HOLL	05 09 1510	N18 W25	05 7.7		A	AX		1		3
6048B		RAMY	05 09 1558	N18 W26	05 7.7		A	AX	10	1	1	3
6048B		PALE	05 09 1727	N18 W25	05 7.8		A	AX		1	1	3
6052		HOLL	05 04 1255	S14 E50	05 8.3		A	AX	10	3	1	3
6052		CULG	05 05 0140	S13 E42	05 8.2		B	BXO	10	4	4	3
6052		SVTO	05 05 0643	S12 E36	05 8.0		B	BXO	10	3	7	4
6052		RAMY	05 05 1114	S11 E38	05 8.3		B	CRO	20	4	5	4
6052		BOUL	05 05 1445	S13 E32	05 8.0		A	HA	30	2	2	4
6052		HOLL	05 05 1508	S15 E35	05 8.3		B	BXO	10	10	5	3
6052		PALE	05 05 2128	S14 E32	05 8.3		B	BXO	20	11	6	3
6052		LEAR	05 06 0055	S13 E29	05 8.2		B	CSO	80	12	7	3
6052		CULG	05 06 0508	S13 E26	05 8.2		B	DRO	20	14	7	3
6052		SVTO	05 06 0611	S13 E27	05 8.3		B	DAI	80	21	7	3
6052		RAMY	05 06 1108	S13 E25	05 8.3		B	DAO	140	16	7	4
6052		HOLL	05 06 1400	S13 E21	05 8.2		B	CAO	90	14	8	2
6052		BOUL	05 06 1435	S12 E20	05 8.1		B	DAI	100	9	9	4
6052		PALE	05 06 1910	S12 E20	05 8.3		B	CAO	80	12	7	3
6052		CULG	05 07 0115	S12 E16	05 8.2		B	DRI	40	10	7	3
6052		SVTO	05 07 0622	S13 E13	05 8.2		B	DAI	100	21	8	3
6052		RAMY	05 07 1210	S11 E11	05 8.3		B	DAO	120	23	9	4
6052		HOLL	05 07 1400	S11 E09	05 8.3		B	DAI	150	20	9	3
6052		PALE	05 07 1850	S12 E06	05 8.2		B	DAO	160	18	9	3
6052		LEAR	05 08 0130	S12 E02	05 8.2		B	DAO	150	18	9	3
6052		CULG	05 08 0200	S13 E02	05 8.2		B	DAO	90	17	9	3
6052		SVTO	05 08 0620	S12 E00	05 8.3		B	DAO	180	25	9	3
6052		RAMY	05 08 1330	S12 W04	05 8.3		B	DAO	130	19	10	2
6052		HOLL	05 08 1515	S12 W05	05 8.2		B	DAO	150	23	9	3
6052		PALE	05 08 1850	S12 W08	05 8.2		B	DAO	140	16	10	3
6052		LEAR	05 09 0033	S13 W11	05 8.2		B	DSO	160	15	10	3
6052		CULG	05 09 0140	S12 W12	05 8.2		B	DAI	80	17	9	4
6052		SVTO	05 09 0605	S12 W14	05 8.2		B	DSO	110	23	10	4
6052		HOLL	05 09 1510	S13 W18	05 8.3		B	DAO	90	31	9	3
6052		RAMY	05 09 1558	S12 W21	05 8.1		B	EAO	170	30	11	3
6052		PALE	05 09 1727	S11 W18	05 8.4		B	DAO	110	27	10	3
6052		LEAR	05 10 0116	S12 W25	05 8.2		B	DAO	180	16	10	3
6052		CULG	05 10 0220	S12 W25	05 8.2		B	DAO	60	10	9	3
6052		SVTO	05 10 0545	S11 W28	05 8.1		B	DSO	60	31	8	4
6052		RAMY	05 10 1300	S12 W33	05 8.0		B	DAO	70	21	10	3
6052		BOUL	05 10 1440	S12 W32	05 8.2		B	DAO	60	5	8	2
6052		PALE	05 10 1948	S13 W35	05 8.2		B	CAI	60	15	9	3
6052		CULG	05 11 0040	S12 W38	05 8.2		B	DAO	30	9	8	3
6052		SVTO	05 11 0748	S12 W42	05 8.2		B	CAO	70	11	9	3
6052		RAMY	05 11 1409	S12 W48	05 8.0		B	CAO	50	6	3	2
6052		HOLL	05 11 1450	S11 W48	05 8.0		A	HR	30	4	2	2
6052		PALE	05 11 1737	S11 W50	05 8.0		B	BXO	20	4	3	3
6052		LEAR	05 12 0100	S11 W54	05 8.0		B	CAO	20	6	3	3
6052		CULG	05 13 0109	S11 W68	05 7.9		A	AX	10	1	1	3
6049		PALE	05 02 1950	N16 E78	05 8.7		A	HA	60	1	2	2
6049		HOLL	05 02 2130	N13 E78	05 8.8		B	CSO	40	2	3	1
6049		LEAR	05 03 0003	N16 E74	05 8.6		B	CSO	90	2	4	3
6049		SVTO	05 03 0625	N16 E80	05 9.3		B	CSO	50	4	11	3
6049		RAMY	05 03 1320	N17 E73	05 9.1		B	EAO	180	5	12	2
6049		PALE	05 03 1900	N17 E73	05 9.3		B	EAO	50	3	14	2

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
6049		HOLL	05	03	1931	N14	E72	05	9.2		B	EAI	140	13	13	2
6049		LEAR	05	04	0030	N17	E68	05	9.2		B	ESO	170	9	12	3
6049		CULG	05	04	0050	N16	E67	05	9.1		B	EAO	160	15	14	4
6049		SVTO	05	04	0620	N17	E66	05	9.3		B	EAO	230	20	13	3
6049		HOLL	05	04	1255	N15	E65	05	9.4		B	EAO	150	9	13	3
6049		BOUL	05	04	1450	N17	E62	05	9.3		B	FAI	260	15	17	4
6049		CULG	05	05	0140	N16	E54	05	9.2		B	EAO	180	16	14	3
6049		LEAR	05	05	0155	N15	E51	05	8.9		B	FSO	340	12	11	3
6049		SVTO	05	05	0643	N16	E52	05	9.2		B	EKO	270	14	15	4
6049		RAMY	05	05	1114	N18	E50	05	9.3		B	FAO	410	16	16	4
6049		BOUL	05	05	1445	N16	E46	05	9.1		B	FAI	250	12	17	4
6049		HOLL	05	05	1508	N15	E48	05	9.3		BD	EKO	280	17	14	3
6049		PALE	05	05	2128	N17	E45	05	9.3		BD	FAI	260	16	16	3
6049		LEAR	05	06	0055	N17	E41	05	9.1		B	EAI	370	16	13	3
6049		CULG	05	06	0508	N16	E38	05	9.1		B	EAI	300	15	16	3
6049		SVTO	05	06	0611	N16	E40	05	9.3		B	EKO	340	23	15	3
6049		RAMY	05	06	1108	N17	E38	05	9.3		B	FKO	440	22	16	4
6049		HOLL	05	06	1400	N15	E35	05	9.2		B	EAO	380	23	15	2
6049		BOUL	05	06	1435	N15	E32	05	9.0		B	FAI	280	14	16	4
6049		PALE	05	06	1910	N18	E32	05	9.2		BG	FAI	280	29	16	3
6049		CULG	05	07	0115	N18	E29	05	9.3		B	EAI	130	15	16	3
6049		SVTO	05	07	0622	N17	E26	05	9.2		B	ESO	310	32	15	3
6049		RAMY	05	07	1210	N18	E24	05	9.3		BG	EAO	330	50	15	4
6049		HOLL	05	07	1400	N15	E22	05	9.2		BG	EAO	310	21	15	3
6049		PALE	05	07	1850	N18	E20	05	9.3		B	FAI	210	34	16	3
6049		LEAR	05	08	0130	N17	E15	05	9.2		B	FAI	230	24	16	3
6049		CULG	05	08	0200	N18	E15	05	9.2		B	EAI	120	18	16	3
6049		SVTO	05	08	0620	N18	E14	05	9.3		B	EAI	250	50	15	3
6049		RAMY	05	08	1330	N18	E09	05	9.2		BG	EAI	230	29	15	2
6049		HOLL	05	08	1515	N17	E08	05	9.2		BG	FAO	210	35	16	3
6049		PALE	05	08	1850	N18	E06	05	9.2		BG	FAI	210	26	16	3
6049		LEAR	05	09	0033	N18	E03	05	9.2		BG	FAI	310	30	16	3
6049		CULG	05	09	0140	N18	E02	05	9.2		B	EAI	140	30	14	4
6049		SVTO	05	09	0605	N17	E02	05	9.4		B	FAI	160	49	17	4
6049		HOLL	05	09	1510	N18	W04	05	9.3		BG	FSI	130	43	18	3
6049		RAMY	05	09	1558	N18	W07	05	9.1		BG	FAO	240	30	16	3
6049		PALE	05	09	1727	N16	W06	05	9.3		BG	ESI	150	35	15	3
6049		LEAR	05	10	0116	N17	W10	05	9.3		BG	EKI	350	30	15	3
6049		CULG	05	10	0220	N18	W11	05	9.2		B	EAI	100	15	14	3
6049		SVTO	05	10	0545	N18	W12	05	9.3		B	FAI	170	48	16	4
6049		RAMY	05	10	1300	N18	W17	05	9.2		BG	FAI	290	38	17	3
6049		BOUL	05	10	1440	N18	W18	05	9.2		B	EAI	250	14	13	2
6049		PALE	05	10	1948	N17	W20	05	9.3		BG	EAI	190	25	14	3
6049		CULG	05	11	0040	N18	W22	05	9.3		BG	FAI	180	25	16	3
6049		LEAR	05	11	0120	N16	W23	05	9.3		B	EAO	140	19	14	3
6049		SVTO	05	11	0748	N18	W27	05	9.3		B	EAO	190	27	15	3
6049		RAMY	05	11	1409	N17	W29	05	9.4		BG	EAO	140	18	14	2
6049		HOLL	05	11	1450	N18	W29	05	9.4		B	EAI	130	19	14	2
6049		PALE	05	11	1737	N19	W31	05	9.4		BG	EAO	180	18	14	3
6049		LEAR	05	12	0100	N17	W34	05	9.4		B	EAO	140	21	15	3
6049		CULG	05	13	0109	N19	W49	05	9.3		BG	EAO	60	6	14	3
6049		LEAR	05	13	0445	N17	W48	05	9.5		BG	EAO	60	4	12	3
6049		BOUL	05	13	1545	N16	W54	05	9.6		B	ESO	50	3	12	3
6049		RAMY	05	13	1545	N18	W55	05	9.5		B	EAO	90	8	13	3
6049		PALE	05	13	1705	N17	W57	05	9.4		B	ESO	90	7	13	3
6049		CULG	05	14	0112	N19	W61	05	9.4		B	CAO	30	3	15	3
6049		SVTO	05	14	1010	N18	W69	05	9.2		B	BXO	40	3	9	2
6049		RAMY	05	14	1240	N19	W65	05	9.6		B	CAO	30	3	16	2
6049		BOUL	05	14	1352	N15	W75	05	8.9		A	AX	10	1	1	1
6049		HOLL	05	14	1400	N15	W72	05	9.1		B	CSO	30	2	4	4
6049		PALE	05	14	1930	N17	W66	05	9.8		A	AX	30	2	2	3
6049		LEAR	05	15	0018	N18	W70	05	9.7		B	BXO	60	2	3	3
6049		CULG	05	15	0138	N21	W72	05	9.5		A	AX	10	1	1	2
6049		SVTO	05	15	0655	N20	W75	05	9.5		A	AX	20	1	1	3
6049		RAMY	05	15	1555	N19	W80	05	9.5		A	HA	30	1	2	3
6049		HOLL	05	15	1610	N18	W78	05	9.7		A	AX	20	1	1	4
6049		PALE	05	15	1710	N17	W75	05	10.0		A	AX	50	2	1	3
6050		HOLL	05	03	1931	S15	E75	05	9.5		A	AX	10	2		2

SUNSPOT GROUPS
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6050		CULG	05	04	0050	S13	E74	05	9.6		A	AX		1		4
6050		SVTO	05	04	0620	S13	E70	05	9.5		B	BXO	10	5	7	3
6050		HOLL	05	04	1255	S15	E65	05	9.4		B	BXO	10	4	8	3
6050		BOUL	05	04	1450	S11	E63	05	9.3		B	BXO	20	5	7	4
6050		CULG	05	05	0140	S13	E56	05	9.3		B	DRO	10	6	9	3
6050		SVTO	05	05	0643	S13	E56	05	9.5		B	DAO	50	7	7	4
6050		RAMY	05	05	1114	S11	E52	05	9.4		B	EAO	140	9	12	4
6050		BOUL	05	05	1445	S13	E50	05	9.4		B	DAO	70	4	7	4
6050		HOLL	05	05	1508	S15	E52	05	9.6		B	CAI	50	11	8	3
6050		PALE	05	05	2128	S13	E49	05	9.6		B	BXO	30	5	7	3
6050		LEAR	05	06	0055	S12	E45	05	9.4		B	DAO	80	4	8	3
6050		CULG	05	06	0508	S13	E41	05	9.3		B	DSO	50	6	8	3
6050		SVTO	05	06	0611	S13	E43	05	9.5		B	DSO	80	11	8	3
6050		RAMY	05	06	1108	S12	E40	05	9.5		B	DAO	100	12	9	4
6050		HOLL	05	06	1400	S13	E38	05	9.4		B	CSO	70	3	6	2
6050		BOUL	05	06	1435	S11	E36	05	9.3		B	DAO	60	3	7	4
6050		PALE	05	06	1910	S12	E37	05	9.6		B	CSO	50	5	7	3
6050		CULG	05	07	0115	S11	E32	05	9.4		B	CSO	40	5	6	3
6050		SVTO	05	07	0622	S11	E30	05	9.5		B	DSO	80	7	6	3
6050		RAMY	05	07	1210	S12	E27	05	9.5		B	DAO	60	9	9	4
6050		HOLL	05	07	1400	S11	E25	05	9.5		B	CSO	70	11	8	3
6050		PALE	05	07	1850	S12	E23	05	9.5		B	DSO	60	12	7	3
6050		LEAR	05	08	0130	S12	E18	05	9.4		B	CSO	60	8	7	3
6050		CULG	05	08	0200	S11	E18	05	9.4		B	CSO	30	6	6	3
6050		SVTO	05	08	0620	S11	E16	05	9.5		B	CSO	50	13	7	3
6050		RAMY	05	08	1330	S12	E12	05	9.5		B	CAO	70	9	7	2
6050		HOLL	05	08	1515	S12	E11	05	9.5		B	CAO	80	11	8	3
6050		PALE	05	08	1850	S12	E08	05	9.4		B	CAO	60	11	9	3
6050		LEAR	05	09	0033	S11	E04	05	9.3		B	CAO	60	10	8	3
6050		CULG	05	09	0140	S11	E03	05	9.3		B	CAO	20	5	6	4
6050		SVTO	05	09	0605	S13	E03	05	9.5		B	CAO	30	13	7	4
6050		HOLL	05	09	1510	S12	W03	05	9.4		B	CRO	20	10	7	3
6050		RAMY	05	09	1558	S11	W04	05	9.4		B	CAO	30	11	7	3
6050		PALE	05	09	1727	S11	W04	05	9.4		B	BXO	10	6	7	3
6050		LEAR	05	10	0116	S11	W12	05	9.2		B	BXO	30	6	3	3
6050		SVTO	05	10	0545	S10	W15	05	9.1		A	AX	10	4	1	4
6050		RAMY	05	10	1300	S11	W18	05	9.2		A	AX	20	4	2	3
6050		PALE	05	10	1948	S12	W18	05	9.5		B	BXO	10	3	7	3
6050		CULG	05	11	0040	S11	W24	05	9.2		A	AX		4	2	3
6050		SVTO	05	11	0748	S12	W26	05	9.4		B	BXO	20	9	8	3
6050		RAMY	05	11	1409	S12	W29	05	9.4		B	BXO	20	11	9	2
6050		HOLL	05	11	1450	S12	W28	05	9.5		B	BXO	10	9	10	2
6050		PALE	05	11	1737	S10	W31	05	9.4		B	BXO	10	10	8	3
6050		LEAR	05	12	0100	S13	W34	05	9.5		B	BXO	10	6	8	3
6050		CULG	05	13	0109	S11	W53	05	9.1		A	AX	10	1	1	3
6050		RAMY	05	13	1545	S12	W58	05	9.3		B	BXO	30	4	5	3
6050		PALE	05	13	1705	S12	W60	05	9.2		B	BXO	20	3	6	3
6050		CULG	05	14	0112	S10	W70	05	8.8		A	AX	10	1	1	3
6050A		SVTO	05	07	0622	S07	E39	05	10.2		A	AX	10	1	1	3
6050A		RAMY	05	07	1210	S07	E37	05	10.3		A	AX	10	2	1	4
6050B		SVTO	05	08	0620	S09	E50	05	12.0		A	AX		1		3
6061		SVTO	05	10	0545	N15	E26	05	12.2		A	AX		3	1	4
6061		RAMY	05	10	1300	N15	E23	05	12.3		B	BXO	10	3	3	3
6061		PALE	05	10	1948	N16	E17	05	12.1		B	BXO	10	6	4	3
6061		CULG	05	11	0040	N16	E13	05	12.0		B	CRO	10	9	4	3
6061		LEAR	05	11	0120	N17	E12	05	12.0		B	CRO	20	7	6	3
6061		SVTO	05	11	0748	N17	E09	05	12.0		B	CRO	40	11	6	3
6061		RAMY	05	11	1409	N18	E06	05	12.0		B	CSO	30	12	6	2
6061		HOLL	05	11	1450	N19	E05	05	12.0		B	BXO	10	9	7	2
6061		PALE	05	11	1737	N19	E04	05	12.0		B	BXO	30	8	6	3
6061		LEAR	05	12	0100	N18	W01	05	12.0		B	CAO	30	11	7	3
6061		CULG	05	13	0109	N19	W11	05	12.2		B	BXO	10	6	3	3
6061		LEAR	05	13	0445	N18	W13	05	12.2		A	AX	10	2	2	3
6061		HOLL	05	13	1515	N19	W20	05	12.1		A	AX		3	2	3
6061		RAMY	05	13	1545	N19	W19	05	12.2		B	BXO	10	2	2	3
6061		PALE	05	13	1705	N19	W21	05	12.1		A	AX		2	1	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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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
6061		CULG	05	14	0112	N20	W24	05	12.2		A	AX	10	1	1	3
6061		RAMY	05	14	1240	N15	W31	05	12.2		B	BXO	10	4	2	2
6061		HOLL	05	14	1400	N13	W33	05	12.1		A	AX		1		4
6061		PALE	05	14	1930	N14	W36	05	12.1		A	AX	10	2	1	3
6054		RAMY	05	06	1108	S18	E83	05	12.8		A	HA	120	3	4	4
6054		HOLL	05	06	1400	S21	E80	05	12.7		A	HS	80	1	1	2
6054		PALE	05	06	1910	S17	E80	05	12.9		B	CAO	60	2	5	3
6054		CULG	05	07	0115	S17	E78	05	13.0		A	HS	120	1	2	3
6054		SVTO	05	07	0622	S16	E75	05	12.9		B	DAO	90	7	9	3
6054		RAMY	05	07	1210	S18	E72	05	13.0		B	CAO	80	8	9	4
6054		HOLL	05	07	1400	S20	E70	05	12.9		B	CAO	70	7	10	3
6054		PALE	05	07	1850	S18	E68	05	13.0		B	DAO	110	7	6	3
6054		LEAR	05	08	0130	S17	E63	05	12.8		B	CSO	80	6	7	3
6054		CULG	05	08	0200	S14	E58	05	12.5		B	CAO	40	3	6	3
6054		SVTO	05	08	0620	S17	E64	05	13.1		B	DAO	110	14	10	3
6054		RAMY	05	08	1330	S18	E58	05	13.0		B	DAI	90	14	10	2
6054		HOLL	05	08	1515	S17	E57	05	13.0		B	DAO	110	12	9	3
6054		PALE	05	08	1850	S17	E54	05	12.9		B	DAO	100	10	9	3
6054		LEAR	05	09	0033	S17	E49	05	12.7		B	DAO	140	9	6	3
6054		CULG	05	09	0140	S17	E52	05	13.0				40	8	5	4
6054		SVTO	05	09	0605	S18	E50	05	13.1		B	DAO	70	20	9	4
6054		HOLL	05	09	1510	S17	E44	05	13.0		B	DSI	140	20	9	3
6054		RAMY	05	09	1558	S18	E43	05	12.9		B	DAO	130	14	8	3
6054		PALE	05	09	1727	S18	E43	05	13.0		B	ESI	80	19	11	3
6054		LEAR	05	10	0116	S18	E37	05	12.9		B	DAO	140	16	6	3
6054		CULG	05	10	0220	S18	E38	05	13.0		B	DAO	20	8	5	3
6054		SVTO	05	10	0545	S18	E34	05	12.8		B	DRI	50	23	5	4
6054		RAMY	05	10	1300	S18	E30	05	12.8		BG	DAI	80	26	8	3
6054		BOUL	05	10	1440	S17	E28	05	12.7		B	DAO	90	10	6	2
6054		PALE	05	10	1948	S19	E27	05	12.9		B	BXI	60	22	6	3
6054		CULG	05	11	0040	S18	E24	05	12.8		B	DAI	30	19	6	3
6054		SVTO	05	11	0748	S18	E21	05	12.9		B	DRI	100	19	9	3
6054		RAMY	05	11	1409	S17	E17	05	12.9		B	BXO	20	14	6	2
6054		HOLL	05	11	1450	S18	E18	05	13.0		B	CRO	20	14	10	2
6054		PALE	05	11	1737	S18	E14	05	12.8		B	BXO	40	13	4	3
6054		LEAR	05	12	0100	S18	E10	05	12.8		B	DRI	50	18	6	3
6054		CULG	05	13	0109	S17	W05	05	12.7		B	BXO	10	9	7	3
6054		LEAR	05	13	0445	S18	W07	05	12.7		A	AX	10	2	1	3
6054		RAMY	05	13	1545	S16	W14	05	12.6		B	BXO	30	10	7	3
6054		BOUL	05	13	1545	S19	W12	05	12.7		B	DSO	20	2	3	3
6054		PALE	05	13	1705	S15	W18	05	12.3		B	CRO	20	7	7	3
6054		CULG	05	14	0112	S17	W17	05	12.7		B	CRO	10	5	3	3
6054		SVTO	05	14	1010	S16	W25	05	12.5		A	AX	10	4	2	2
6054		RAMY	05	14	1240	S17	W22	05	12.8		B	BXO	10	5	3	2
6054		BOUL	05	14	1352	S18	W25	05	12.7		A	AX	10	2	1	1
6054		HOLL	05	14	1400	S18	W23	05	12.8		B	BXO	20	6	4	4
6054		PALE	05	14	1930	S18	W27	05	12.7		B	BXO	10	3	2	3
6054		LEAR	05	15	0018	S17	W31	05	12.6		B	BXO	40	3	3	3
6054		CULG	05	15	0138	S16	W33	05	12.6		A	AX	10	2	1	2
6054		SVTO	05	15	0655	S16	W36	05	12.5		B	BXO	10	4	4	3
6054		HOLL	05	15	1610	S21	W37	05	12.8		A	AX		1		4
6054		LEAR	05	16	0040	S16	W41	05	12.9		B	BXO	20	4	6	3
6054		SVTO	05	16	0755	S15	W45	05	12.9		B	BXO	10	4	3	4
6054		RAMY	05	16	1319	S16	W46	05	13.1		B	BXO	10	6	13	3
6054		BOUL	05	16	1515	S15	W46	05	13.1		A	AX	10	1	1	3
6054		HOLL	05	16	1520	S16	W47	05	13.1		B	BXO	30	9	7	4
6054		PALE	05	16	1935	S14	W48	05	13.2		B	BXO	20	2	4	3
6054		LEAR	05	17	0055	S16	W53	05	13.0		B	BXO	20	3	2	4
6054		SVTO	05	17	0640	S14	W57	05	13.0		B	BXO	20	4	3	4
6054		BOUL	05	17	1440	S14	W60	05	13.1		B	BXO	20	2	2	3
6054		RAMY	05	17	1521	S14	W61	05	13.0		B	CAO	40	3	4	3
6054		HOLL	05	17	1720	S14	W62	05	13.0		B	BXO	10	3	6	1
6054		PALE	05	17	1934	S15	W62	05	13.1		B	BXO	10	4	3	3
6054		LEAR	05	18	0150	S14	W66	05	13.1		B	DAO	50	6	6	3
6054		SVTO	05	18	0855	S13	W71	05	13.0		B	BXO	30	4	6	3
6054		RAMY	05	18	1313	S15	W74	05	12.9		B	BXO	10	4	4	2
6054		HOLL	05	18	1436	S15	W73	05	13.1		B	CAO	30	5	8	4
6054		BOUL	05	18	1455	S15	W71	05	13.2		A	AX	30	1	1	3

SUNSPOT GROUPS
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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
6054		PALE	05	18	1950	S15	W75	05	13.1		B	BXO	10	3	5	3
6054		CULG	05	19	0045	S15	W78	05	13.1		B	BXO		2	6	2
6054		LEAR	05	19	0140	S14	W78	05	13.2		B	CSO	50	2	5	3
6065		PALE	05	11	1737	S07	E22	05	13.4		A	AX		1		3
6065		LEAR	05	12	0100	S08	E15	05	13.2		B	BXO	10	3	4	3
6065		CULG	05	13	0109	S08	E04	05	13.3		A	AX	10	4	1	3
6065		LEAR	05	13	0445	S07	E01	05	13.3		A	AX	10	3	1	3
6065		HOLL	05	13	1515	S08	W05	05	13.3		A	AX	10	5	1	3
6065		RAMY	05	13	1545	S07	W04	05	13.3		A	AX	10	3	1	3
6065		PALE	05	13	1705	S08	W07	05	13.2		A	AX		3	1	3
6065A		RAMY	05	15	1555	S14	W25	05	13.8		B	BXO	10	3	2	3
6065A		BOUL	05	16	1515	S16	W37	05	13.8		A	AX	10	1		3
6058		PALE	05	07	1850	N13	E80	05	13.8		A	AX	10	1	1	3
6058		LEAR	05	08	0130	N14	E75	05	13.7		A	AX	10	1	1	3
6058		SVTO	05	08	0620	N13	E75	05	13.9		A	AX	30	2	1	3
6058		RAMY	05	08	1330	N12	E69	05	13.8		A	HA	30	1	2	2
6058		HOLL	05	08	1515	N13	E68	05	13.8		A	HS	40	1	2	3
6058		PALE	05	08	1850	N12	E65	05	13.7		A	HS	40	1	2	3
6058		LEAR	05	09	0033	N14	E62	05	13.7		A	HS	40	1	2	3
6058		SVTO	05	09	0605	N13	E61	05	13.8		A	AX	20	1	1	4
6058		HOLL	05	09	1510	N14	E55	05	13.8		A	HS	40	3	2	3
6058		RAMY	05	09	1558	N13	E54	05	13.7		B	CAO	50	4	2	3
6058		PALE	05	09	1727	N13	E55	05	13.9		A	HR	20	2	2	3
6058		LEAR	05	10	0116	N13	E48	05	13.7		B	CAO	40	2	3	3
6058		CULG	05	10	0220	N13	E49	05	13.8		A	AX		2	1	3
6058		SVTO	05	10	0545	N13	E48	05	13.9		A	AX	20	4	1	4
6058		RAMY	05	10	1300	N13	E43	05	13.8		A	HA	40	4	2	3
6058		BOUL	05	10	1440	N13	E42	05	13.8		A	HS	30	1	1	2
6058		PALE	05	10	1948	N11	E40	05	13.8		B	BXO	20	4	3	3
6058		CULG	05	11	0040	N13	E37	05	13.8		A	HR	10	3	2	3
6058		LEAR	05	11	0120	N12	E35	05	13.7		B	BXO	10	4	2	3
6058		SVTO	05	11	0748	N13	E34	05	13.9		B	BXO	20	5	4	3
6058		RAMY	05	11	1409	N13	E30	05	13.8		B	BXO	10	7	4	2
6058		HOLL	05	11	1450	N12	E30	05	13.9		B	BXO	10	6	4	2
6058		PALE	05	11	1737	N09	E29	05	13.9		B	BXO	10	7	4	3
6058		LEAR	05	12	0100	N12	E25	05	13.9		B	CAO	20	9	5	3
6058		CULG	05	13	0109	N13	E14	05	14.1		B	CRO	20	16	8	3
6058		LEAR	05	13	0445	N12	E10	05	13.9		B	DAO	50	14	6	3
6058		BOUL	05	13	1545	N12	E03	05	13.9		B	CSO	30	6	4	3
6058		RAMY	05	13	1545	N13	E03	05	13.9		B	DRI	110	26	4	3
6058		PALE	05	13	1705	N12	E02	05	13.9		B	BXO	40	25	6	3
6058		CULG	05	14	0112	N12	W03	05	13.8		B	CRO	20	30	6	3
6058		SVTO	05	14	1010	N14	W10	05	13.7		B	BXO	40	21	5	2
6058		RAMY	05	14	1240	N15	W09	05	13.8		B	CAO	70	22	9	2
6058		BOUL	05	14	1352	N14	W11	05	13.7		B	BXI	20	13	5	1
6058		HOLL	05	14	1400	N13	W08	05	14.0		BG	CAO	30	16	8	4
6058		PALE	05	14	1930	N13	W13	05	13.8		B	BXO	30	13	8	3
6058		LEAR	05	15	0018	N15	W17	05	13.7		B	BXO	40	6	9	3
6058		CULG	05	15	0138	N16	W16	05	13.8		B	BXO	10	12	9	2
6058		SVTO	05	15	0655	N15	W21	05	13.7		B	BXO	20	14	5	3
6058		BOUL	05	15	1425	N16	W25	05	13.7		A	AX		2	1	1
6058		RAMY	05	15	1555	N15	W25	05	13.8		B	CAO	20	6	8	3
6058		HOLL	05	15	1610	N15	W25	05	13.8		BG	BXO	20	7	8	4
6058		PALE	05	15	1710	N15	W25	05	13.8		B	DAO	30	8	7	3
6058		LEAR	05	16	0040	N18	W32	05	13.6		B	BXO	10	3	2	3
6058		SVTO	05	16	0755	N16	W37	05	13.5		B	DAO	20	7	7	4
6058		RAMY	05	16	1319	N15	W38	05	13.7		B	BXO	10	5	6	3
6058		BOUL	05	16	1515	N20	W41	05	13.5		A	AX	10	1	1	3
6058		HOLL	05	16	1520	N19	W40	05	13.6		B	BXO	20	2	4	4
6058		PALE	05	16	1935	N19	W42	05	13.6		B	BXO	10	2	4	3
6058		LEAR	05	17	0055	N18	W47	05	13.4		A	AX	10	1	1	4
6058		SVTO	05	17	0640	N21	W52	05	13.3		A	AX	10	1	1	4
6058		BOUL	05	17	1440	N19	W53	05	13.6		A	AX		1		3
6058		RAMY	05	17	1521	N19	W56	05	13.4		B	BXO	10	2	2	3
6058		PALE	05	17	1934	N19	W53	05	13.8		A	AX		1		3

S U N S P O T G R O U P S
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MAY 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
6055		CULG	05	08	0200	N07	E80	05	14.1		A	AX	10	1	1	3
6055A		RAMY	05	14	1240	S15	E11	05	15.4		A	AX		2	1	2
6055A		HOLL	05	14	1400	S15	E09	05	15.3		A	AX	10	3	2	4
6055A		RAMY	05	15	1555	S17	W04	05	15.3		A	AX	10	1	1	3
6055B		RAMY	05	13	1545	S07	E26	05	15.6		A	AX	10	3	1	3
6060		SVTO	05	09	0605	N22	E85	05	15.8		A	HS	30	1	3	4
6060		HOLL	05	09	1510	N23	E78	05	15.6		A	HS	120	1	2	3
6060		RAMY	05	09	1558	N22	E78	05	15.7		B	CAO	120	2	3	3
6060		PALE	05	09	1727	N21	E79	05	15.8		A	HS	60	1	2	3
6060		LEAR	05	10	0116	N23	E70	05	15.4		B	CSO	150	4	4	3
6060		CULG	05	10	0220	N22	E73	05	15.7		A	HA	90	1	2	3
6060		SVTO	05	10	0545	N24	E75	05	16.0		B	CSO	110	7	10	4
6060		RAMY	05	10	1300	N23	E70	05	15.9		B	CAO	210	4	8	3
6060		BOUL	05	10	1440	N22	E66	05	15.7		A	HS	160	1	3	2
6060		PALE	05	10	1948	N20	E62	05	15.6		A	HS	120	1	2	3
6060		CULG	05	11	0040	N23	E61	05	15.7		B	CSO	130	3	8	3
6060		SVTO	05	11	0748	N23	E58	05	15.8		B	CSO	140	6	10	3
6060		RAMY	05	11	1409	N22	E57	05	16.0		B	CAO	170	3	9	2
6060		HOLL	05	11	1450	N22	E52	05	15.6		A	HS	110	3	2	2
6060		PALE	05	11	1737	N22	E55	05	16.0		B	CAO	110	4	10	3
6060		LEAR	05	12	0100	N22	E50	05	15.9		B	DAO	150	7	8	3
6060		CULG	05	13	0109	N22	E38	05	16.0		B	CSO	100	8	14	3
6060		LEAR	05	13	0445	N22	E35	05	15.9		B	CHO	120	9	12	3
6060		BOUL	05	13	1545	N20	E25	05	15.6		A	HA	100	1	3	3
6060		RAMY	05	13	1545	N24	E32	05	16.1		B	CAO	180	15	14	3
6060		PALE	05	13	1705	N22	E26	05	15.7		B	CSO	180	5	4	3
6060		CULG	05	14	0112	N22	E27	05	16.1		B	CSO	130	14	15	3
6060		SVTO	05	14	1010	N24	E19	05	15.9		B	DSO	150	10	11	2
6060		RAMY	05	14	1240	N23	E19	05	16.0		B	EAO	250	12	11	2
6060		BOUL	05	14	1352	N22	E17	05	15.9		B	DSO	110	7	9	1
6060		HOLL	05	14	1400	N23	E18	05	16.0		B	ESO	200	15	11	4
6060		PALE	05	14	1930	N22	E12	05	15.7		B	CSO	160	3	3	3
6060		LEAR	05	15	0018	N23	E13	05	16.0		B	CHO	220	22	12	3
6060		CULG	05	15	0138	N23	E12	05	16.0		B	DAO	140	22	9	2
6060		SVTO	05	15	0655	N22	E10	05	16.0		B	CAO	170	16	9	3
6060		BOUL	05	15	1425	N22	E05	05	16.0		B	DSO	90	8	9	1
6060		RAMY	05	15	1555	N22	E05	05	16.0		B	DAO	230	20	10	3
6060		HOLL	05	15	1610	N23	E04	05	16.0		B	ESO	220	29	11	4
6060		PALE	05	15	1710	N23	E05	05	16.1		B	DAO	230	25	10	3
6060		LEAR	05	16	0040	N23	E00	05	16.0		B	ESI	190	28	14	3
6060		CULG	05	16	0340	N23	W02	05	16.0		B	DSO	130	13	9	2
6060		SVTO	05	16	0755	N23	W04	05	16.0		BG	ESO	180	24	11	4
6060		RAMY	05	16	1319	N23	W07	05	16.0		B	ESO	160	23	12	3
6060		BOUL	05	16	1515	N23	W08	05	16.0		B	DAO	140	11	9	3
6060		HOLL	05	16	1520	N23	W09	05	15.9		B	ESO	190	26	11	4
6060		PALE	05	16	1935	N24	W10	05	16.0		B	EAO	140	13	11	3
6060		LEAR	05	17	0055	N23	W13	05	16.0		B	ESO	170	11	11	4
6060		SVTO	05	17	0640	N24	W17	05	16.0		B	ESO	220	16	11	4
6060		BOUL	05	17	1440	N24	W21	05	16.0		B	ESO	140	9	11	3
6060		RAMY	05	17	1521	N24	W21	05	16.0		B	EKO	300	16	12	3
6060		HOLL	05	17	1720	N23	W22	05	16.0		B	ESO	130	11	11	1
6060		PALE	05	17	1934	N24	W21	05	16.2		B	EAO	150	13	12	3
6060		LEAR	05	18	0150	N23	W26	05	16.1		B	DAO	130	11	13	3
6060		SVTO	05	18	0855	N25	W29	05	16.1		B	EAO	120	13	12	3
6060		RAMY	05	18	1313	N23	W33	05	16.0		B	EAO	200	9	11	2
6060		HOLL	05	18	1436	N22	W33	05	16.1		B	DSO	100	10	9	4
6060		BOUL	05	18	1455	N22	W34	05	16.0		B	DAO	120	5	9	3
6060		PALE	05	18	1950	N23	W36	05	16.0		B	CSO	140	5	10	3
6060		CULG	05	19	0045	N23	W38	05	16.1		B	CSO	100	16	10	2
6060		LEAR	05	19	0140	N24	W39	05	16.0		B	DSO	120	6	9	3
6060		SVTO	05	19	0805	N24	W44	05	15.9		B	DAO	80	6	7	3
6060		RAMY	05	19	1205	N21	W49	05	15.7		B	DAO	140	5	4	3
6060		BOUL	05	19	1445	N21	W48	05	15.9		B	DSO	90	2	4	3
6060		HOLL	05	19	1710	N21	W51	05	15.8		B	DSO	100	2	4	1
6060		PALE	05	19	1915	N21	W52	05	15.8		B	DAO	90	3	4	3
6060		LEAR	05	20	0030	N22	W56	05	15.7		B	CSO	100	3	3	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
6060		CULG	05	20	0050	N22	W56	05	15.7		B	DSO	140	3	5	3
6060		SVTO	05	20	1100	N24	W62	05	15.7		B	CSO	50	2	4	2
6060		RAMY	05	20	1250	N21	W62	05	15.8		B	DAO	90	2	4	2
6060		HOLL	05	20	1435	N22	W62	05	15.8		B	CSO	80	2	5	3
6060		PALE	05	20	1825	N21	W63	05	15.9		B	CAO	50	2	5	3
6060		RAMY	05	21	1330	N24	W73	05	15.9		B	CAO	80	2	3	3
6060		BOUL	05	21	1340	N22	W74	05	15.9		B	CSO	50	2	5	1
6060		HOLL	05	21	1430	N21	W69	05	16.3		B	CSO	30	2	3	3
6060		PALE	05	21	1740	N23	W75	05	15.9		A	HS	60	1	2	3
6066		PALE	05	13	1705	S17	E33	05	16.2		A	AX		2	1	3
6066		LEAR	05	15	0018	S20	E16	05	16.2		B	BXO	20	2	3	3
6066		CULG	05	15	0138	S16	E19	05	16.5		A	AX	10	2	2	2
6066		LEAR	05	16	0040	S18	E07	05	16.6		B	BXO	10	2	3	3
6066		RAMY	05	16	1319	S19	W06	05	16.1		A	AX	10	2	1	3
6066		HOLL	05	16	1520	S20	W06	05	16.2		A	AX		1		4
6066		LEAR	05	17	0055	S20	W11	05	16.2		B	BXO	10	3	2	4
6066		SVTO	05	17	0640	S18	W15	05	16.1		A	AX		2		4
6066		BOUL	05	17	1440	S19	W19	05	16.2		BD	AX		1		3
6066		RAMY	05	17	1521	S19	W20	05	16.1		A	AX	10	4	2	3
6066		RAMY	05	19	1205	S16	W54	05	15.4		B	BXO	20	4	3	3
6066A		PALE	05	15	1710	S16	E17	05	17.0		B	BXO	40	9	6	3
6066A		BOUL	05	17	1440	S16	W09	05	16.9		A	AX	10	1	1	3
6066A		RAMY	05	17	1521	S17	W10	05	16.9		BG	AA	10	3	2	3
6066B		RAMY	05	19	1205	N05	W33	05	17.0		A	AX	10	2	1	3
6062		CULG	05	11	0040	N30	E75	05	16.9		A	HS	60	1	2	3
6062		SVTO	05	11	0748	N30	E76	05	17.3		A	HS	30	1	1	3
6062		RAMY	05	11	1409	N29	E76	05	17.5		B	DAO	90	3	10	2
6062		HOLL	05	11	1450	N24	E70	05	17.0		A	AX		1		2
6062		LEAR	05	12	0100	N29	E64	05	17.0		A	HS	20	1	2	3
6062		CULG	05	13	0109	N30	E58	05	17.6		B	EAO	100	6	11	3
6062		LEAR	05	13	0445	N27	E48	05	16.9		A	HS	20	1	1	3
6062		HOLL	05	13	1515	N25	E38	05	16.6		B	BXO	30	10	12	3
6062		BOUL	05	13	1545	N27	E42	05	16.9		A	HS	20	1	1	3
6062		RAMY	05	13	1545	N29	E43	05	17.0		A	HS	20	2	2	3
6062		PALE	05	13	1705	N25	E36	05	16.5		B	CRO	30	8	12	3
6062		CULG	05	14	0112	N29	E40	05	17.2		A	HR	10	2	1	3
6062		SVTO	05	14	1010	N26	E35	05	17.1		A	AX	20	6	3	2
6062		RAMY	05	14	1240	N28	E34	05	17.2		B	CRO	20	5	4	2
6062		BOUL	05	14	1352	N27	E31	05	17.0		B	BXO	10	2	2	1
6062		HOLL	05	14	1400	N27	E32	05	17.1		B	BXO	20	6	4	4
6062		PALE	05	14	1930	N25	E25	05	16.7		B	BXO	30	10	13	3
6062		LEAR	05	15	0018	N27	E27	05	17.1		B	BXO	80	10	4	3
6062		CULG	05	15	0138	N28	E29	05	17.3		B	DRO	20	6	5	2
6062		SVTO	05	15	0655	N27	E26	05	17.3		B	CRO	30	16	6	3
6062		BOUL	05	15	1425	N27	E23	05	17.4		B	CAO	70	9	10	1
6062		RAMY	05	15	1555	N29	E21	05	17.3		B	CAO	60	13	9	3
6062		HOLL	05	15	1610	N28	E18	05	17.1		B	CRO	50	14	9	4
6062		PALE	05	15	1710	N28	E19	05	17.2		B	CAO	40	8	7	3
6062		LEAR	05	16	0040	N28	E18	05	17.4		B	CSO	20	18	11	3
6062		CULG	05	16	0340	N27	E18	05	17.5		B	BXO	10	4	9	2
6062		SVTO	05	16	0755	N27	E08	05	16.9		B	BXO	10	8	6	4
6062		RAMY	05	16	1319	N28	E09	05	17.2		B	BXO	10	10	8	3
6062		BOUL	05	16	1515	N28	E10	05	17.4		B	ESO	50	6	11	3
6062		HOLL	05	16	1520	N27	E07	05	17.2		B	BXO	30	1	8	4
6062		PALE	05	16	1935	N27	E06	05	17.3		B	BXO	30	8	7	3
6062		LEAR	05	17	0055	N27	E01	05	17.1		B	BXO	10	3	4	4
6062		SVTO	05	17	0640	N27	W04	05	17.0		B	BXO	100	4	3	4
6062		BOUL	05	17	1440	N29	W04	05	17.3		B	CAO	30	5	11	3
6062		RAMY	05	17	1521	N28	W08	05	17.0		B	BXO	10	8	3	3
6062		PALE	05	17	1934	N28	W04	05	17.5		B	BXO	10	6	7	3
6062		LEAR	05	18	0150	N28	W07	05	17.5		B	CAO	10	6	8	3
6062		SVTO	05	18	0855	N28	W13	05	17.3		B	BXO	10	8	5	3
6062		RAMY	05	18	1313	N28	W17	05	17.2		B	BXO	10	5	3	2
6062		BOUL	05	18	1455	N27	W14	05	17.5		B	CSO	20	3	8	3
6062		PALE	05	18	1950	N29	W19	05	17.3		A	AX		2	2	3

SUNSPOT GROUPS
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6062		CULG	05	19	0045	N28	W22	05	17.3		B	BXO	10	7	4	2
6062		LEAR	05	19	0140	N28	W23	05	17.3		B	BXO	10	5	4	3
6062		SVTO	05	19	0805	N28	W27	05	17.2				10	5	4	3
6062		RAMY	05	19	1205	N27	W20	05	17.9		B	BXO	10	3	7	3
6062		BOUL	05	19	1445	N24	W22	05	17.9		A	AX	10	1	1	3
6062		PALE	05	19	1915	N29	W25	05	17.8		A	AX		1		3
6062		PALE	05	20	1825	N21	W35	05	18.1		A	AX		2	2	3
6062		RAMY	05	21	1330	N22	W45	05	18.1		B	BXO	30	3	4	3
6062		BOUL	05	21	1340	N23	W44	05	18.2		B	BXO	10	2	2	1
6062		HOLL	05	21	1430	N20	W45	05	18.2		B	CRO	20	3	5	3
6062		PALE	05	21	1740	N21	W48	05	18.0		B	BX	10	2	4	3
6066C		RAMY	05	15	1555	S16	E19	05	17.1		B	BXO	10	3	3	3
6067		SVTO	05	16	0755	S15	E17	05	17.6		A	AX	10	3	2	4
6067		RAMY	05	16	1319	S13	E15	05	17.7		A	AX	10	3	2	3
6067		BOUL	05	16	1515	S13	E14	05	17.7		B	BXO	10	2	2	3
6067		HOLL	05	16	1520	S15	E10	05	17.4		B	BXO	10	9	12	4
6067		PALE	05	16	1935	S13	E08	05	17.4		B	BXO	20	4	10	3
6067		LEAR	05	17	0055	S14	E07	05	17.6		A	AX	10	1	1	4
6067		SVTO	05	17	0640	S14	E06	05	17.7		A	AX	10	2	2	4
6067		PALE	05	17	1934	S18	W12	05	16.9		A	AX		1		3
6067		HOLL	05	18	1436	S17	W21	05	17.0		A	AX	10	3	2	4
6067		PALE	05	18	1950	S17	W24	05	17.0		A	AX		2	1	3
6067		CULG	05	19	0045	S14	W18	05	17.7		A	AX		4	2	2
6067		LEAR	05	19	0140	S15	W19	05	17.6		B	BXO	10	4	5	3
6067		SVTO	05	19	0805	S17	W24	05	17.5		A	AX		2	2	3
6067		RAMY	05	19	1205	S15	W24	05	17.7		B	BXO	10	3	6	3
6067		PALE	05	19	1915	S14	W28	05	17.7		A	AX		2	2	3
6067		LEAR	05	20	0030	S15	W31	05	17.7		A	AX	10	2	2	3
6067		SVTO	05	22	1010	S12	W66	05	17.4		B	BXO	20	3	4	2
6067		RAMY	05	22	1250	S14	W65	05	17.6		B	BXO	20	5	4	3
6067		HOLL	05	22	1915	S13	W70	05	17.5		B	BXO	30	7	5	2
6067		RAMY	05	23	1223	S12	W80	05	17.5		B	BXO	10	3	2	3
6073		SVTO	05	19	0805	N11	W13	05	18.3				10	4	3	3
6073		RAMY	05	19	1205	N11	W15	05	18.4		B	BXO	10	5	3	3
6073		PALE	05	19	1915	N11	W19	05	18.4		B	BXO		4	3	3
6073		CULG	05	20	0050	N11	W22	05	18.4		B	BXO		2	3	3
6073		SVTO	05	20	1100	N11	W28	05	18.3		B	CRO	20	5	4	2
6073		RAMY	05	20	1250	N11	W29	05	18.3		B	BXO	10	4	3	2
6073		HOLL	05	20	1435	N11	W31	05	18.3		B	BXO	10	2	3	3
6073		PALE	05	20	1825	N10	W32	05	18.4		B	BXO	10	5	3	3
6073		HOLL	05	21	1430	N10	W42	05	18.4		B	BXO		2	3	3
6063		RAMY	05	11	1409	N36	E89	05	18.7		B	CAO	60	3	4	2
6063		HOLL	05	11	1450	N29	E75	05	17.5		B	ESO	70	3	11	2
6063		PALE	05	11	1737	N32	E80	05	18.1		B	BXO	50	3	20	3
6063		LEAR	05	12	0100	N32	E78	05	18.2		B	EHI	360	21	12	3
6063		CULG	05	13	0109	N35	E67	05	18.4		B	DKC	630	15	9	3
6063		LEAR	05	13	0445	N33	E62	05	18.1		B	EKC	730	20	11	3
6063		HOLL	05	13	1515	N34	E59	05	18.3		B	EKI	1020	43	15	3
6063		BOUL	05	13	1545	N32	E53	05	17.8		B	EKI	700	11	11	3
6063		RAMY	05	13	1545	N35	E58	05	18.3		B	DKI	1200	24	10	3
6063		PALE	05	13	1705	N33	E56	05	18.2		B	EKI	820	28	12	3
6063		CULG	05	14	0112	N33	E56	05	18.5		B	EKI	680	30	13	3
6063		SVTO	05	14	1010	N34	E51	05	18.5		BG	FKI	800	30	10	2
6063		RAMY	05	14	1240	N34	E49	05	18.4		B	EKO	860	26	12	2
6063		BOUL	05	14	1352	N33	E44	05	18.1		BGD	DKI	640	19	10	1
6063		HOLL	05	14	1400	N33	E43	05	18.0		BGD	EKI	10	46	14	4
6063		PALE	05	14	1930	N32	E43	05	18.2		BGD	EKI	780	23	13	3
6063		LEAR	05	15	0018	N32	E39	05	18.1		BGD	EKI	940	22	11	3
6063		CULG	05	15	0138	N33	E42	05	18.4		BG	EKI	780	28	12	2
6063		SVTO	05	15	0655	N33	E38	05	18.3		BGD	EKC	810	33	13	3
6063		BOUL	05	15	1425	N35	E35	05	18.4		BGD	DKI	640	10	8	1
6063		RAMY	05	15	1555	N34	E32	05	18.2		BG	EKO	980	19	13	3
6063		HOLL	05	15	1610	N33	E31	05	18.1		BD	EKI	840	46	14	4
6063		PALE	05	15	1710	N35	E31	05	18.2		BG	EKO	1390	30	12	3
6063		LEAR	05	16	0040	N35	E30	05	18.4		BGD	EKC	890	26	11	3

SUNSPOT GROUPS
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6063		CULG	05	16	0340	N33	E28	05	18.4		BD	EKO	600	23	12	2
6063		SVTO	05	16	0755	N33	E25	05	18.3		BGD	EKI	480	29	13	4
6063		RAMY	05	16	1319	N33	E21	05	18.2		BG	EKO	710	23	13	3
6063		BOUL	05	16	1515	N36	E22	05	18.4		B	DKI	650	33	8	3
6063		HOLL	05	16	1520	N34	E20	05	18.2		BGD	EKI	730	39	12	4
6063		PALE	05	16	1935	N34	E20	05	18.4		BG	EKI	1120	27	14	3
6063		LEAR	05	17	0055	N34	E15	05	18.2		BGD	EKI	810	22	14	4
6063		SVTO	05	17	0640	N34	E12	05	18.2		BGD	EKI	600	32	12	4
6063		BOUL	05	17	1440	N35	E09	05	18.3		B	DKI	650	24	9	3
6063		RAMY	05	17	1521	N32	E08	05	18.3		BG	EKO	730	42	13	3
6063		HOLL	05	17	1720	N34	E06	05	18.2		BGD	EKI	620	19	13	1
6063		PALE	05	17	1934	N33	E07	05	18.4		BG	EKI	600	31	14	3
6063		LEAR	05	18	0150	N33	E02	05	18.2		BGD	EKI	620	32	10	3
6063		SVTO	05	18	0855	N34	E00	05	18.4		BGD	EKI	650	34	13	3
6063		RAMY	05	18	1313	N33	W03	05	18.3		B	EKO	840	24	12	2
6063		HOLL	05	18	1436	N31	W05	05	18.2		BGD	EKI	700	26	13	4
6063		BOUL	05	18	1455	N35	W04	05	18.3		BG	DKI	730	25	10	3
6063		PALE	05	18	1950	N34	W05	05	18.4		BGD	EKI	660	27	13	3
6063		CULG	05	19	0045	N33	W09	05	18.3		BGD	EKI	600	17	12	2
6063		LEAR	05	19	0140	N34	W10	05	18.3		BGD	EKI	520	24	12	3
6063		SVTO	05	19	0805	N34	W12	05	18.4		BGD	EKC	770	34	13	3
6063		RAMY	05	19	1205	N35	W12	05	18.5		BGD	EKC	680	31	11	3
6063		BOUL	05	19	1445	N34	W14	05	18.5		B	DKI	540	15	9	3
6063		HOLL	05	19	1710	N35	W15	05	18.5		BGD	DKI	760	14	7	1
6063		PALE	05	19	1915	N34	W16	05	18.5		BGD	EKI	650	31	11	3
6063		LEAR	05	20	0030	N34	W20	05	18.4		BGD	EKI	650	40	12	3
6063		CULG	05	20	0050	N36	W20	05	18.4		BGD	EKI	690	33	11	3
6063		SVTO	05	20	1100	N37	W25	05	18.4		BGD	DKI	860	39	9	2
6063		RAMY	05	20	1250	N35	W25	05	18.5		BGD	DKC	740	33	9	2
6063		HOLL	05	20	1435	N35	W26	05	18.5		BGD	DKI	600	26	8	3
6063		PALE	05	20	1825	N34	W27	05	18.6		BGD	DKI	710	29	9	3
6063		RAMY	05	21	1330	N35	W37	05	18.6		BGD	DKC	800	29	9	3
6063		BOUL	05	21	1340	N35	W36	05	18.7		BD	EKI	830	44	12	1
6063		HOLL	05	21	1430	N35	W37	05	18.6		BGD	DKI	730	31	9	3
6063		PALE	05	21	1740	N35	W39	05	18.6		BGD	DKI	620	21	10	3
6063		LEAR	05	22	0330	N35	W44	05	18.6		BGD	EKI	400	21	11	3
6063		SVTO	05	22	1010	N35	W49	05	18.5		BG	DKI	680	14	8	2
6063		RAMY	05	22	1250	N35	W50	05	18.5		BGD	DKC	600	22	9	3
6063		BOUL	05	22	1348	N35	W51	05	18.5		BD	DKI	590	25	6	1
6063		PALE	05	22	1840	N35	W50	05	18.8		BD	DKI	410	16	10	3
6063		HOLL	05	22	1915	N35	W55	05	18.4		BGD	EKI	660	35	11	2
6063		LEAR	05	23	0045	N35	W55	05	18.6		BD	EKI	340	19	11	3
6063		SVTO	05	23	1210	N35	W63	05	18.5		BGD	DKI	1200	16	8	2
6063		RAMY	05	23	1223	N36	W67	05	18.1		BGD	DKI	940	24	10	3
6063		BOUL	05	23	1420	N34	W60	05	18.8		B	DKI	530	12	8	3
6063		HOLL	05	23	1715	N34	W66	05	18.4		BGD	FKO	800	15	17	2
6063		PALE	05	23	2150	N34	W65	05	18.7		BD	DKO	550	14	9	3
6063		LEAR	05	24	0025	N34	W66	05	18.7		BD	DKI	600	20	9	3
6063		RAMY	05	24	1128	N36	W75	05	18.4		BGD	DKO	570	20	10	3
6063		BOUL	05	24	1525	N34	W75	05	18.7		B	DKI	360	8	10	2
6063		HOLL	05	24	1620	N34	W73	05	18.9		BG	DAI	220	17	10	2
6063		PALE	05	24	1730	N34	W75	05	18.7		B	DKI	390	13	10	3
6063		LEAR	05	25	0027	N34	W83	05	18.4		A	HA	180	6	10	2
6063		CULG	05	25	0220	N35	W80	05	18.7		A	HK	150	1	4	3
6063		SVTO	05	25	0839	N33	W82	05	18.8		A	HS	60	1	3	2
6063		RAMY	05	25	1215	N35	W89	05	18.4		A	HA	30	1	1	3
6064		CULG	05	13	0109	S13	E80	05	19.1		A	HA	60	1	2	3
6064		LEAR	05	13	0445	S15	E75	05	18.9		A	HS	90	1	2	3
6064		HOLL	05	13	1515	S14	E71	05	19.0		B	CAI	220	29	12	3
6064		RAMY	05	13	1545	S15	E70	05	18.9		B	DAO	190	13	8	3
6064		BOUL	05	13	1545	S16	E66	05	18.7		B	DSI	140	6	8	3
6064		PALE	05	13	1705	S16	E70	05	19.0		B	EAI	280	19	12	3
6064		CULG	05	14	0112	S16	E66	05	19.0		B	EAO	130	19	15	3
6064		SVTO	05	14	1010	S15	E63	05	19.2		BG	EAI	430	22	14	2
6064		RAMY	05	14	1240	S15	E60	05	19.1		B	FAO	420	25	17	2
6064		BOUL	05	14	1352	S16	E56	05	18.8		B	EKI	380	28	12	1
6064		HOLL	05	14	1400	S15	E58	05	19.0		BG	EAI	430	38	14	4
6064		PALE	05	14	1930	S17	E57	05	19.1		B	EAI	380	29	15	3

S U N S P O T G R O U P S
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MAY 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
6064		LEAR	05	15	0018	S16	E52	05	18.9		BG	FKI	720	38	13	3
6064		CULG	05	15	0138	S17	E51	05	18.9		B	EAI	370	45	14	2
6064		SVTO	05	15	0655	S16	E49	05	19.0		B	FKI	500	68	16	3
6064		BOUL	05	15	1425	S15	E44	05	18.9		B	EKI	490	24	13	1
6064		RAMY	05	15	1555	S18	E46	05	19.2		BG	FAC	710	57	16	3
6064		HOLL	05	15	1610	S15	E44	05	19.0		BG	EAI	690	67	15	4
6064		PALE	05	15	1710	S15	E45	05	19.1		BG	EKI	680	60	12	3
6064		LEAR	05	16	0040	S16	E40	05	19.1		B	EKC	900	68	14	3
6064		CULG	05	16	0340	S17	E37	05	19.0		BG	EKI	600	42	14	2
6064		SVTO	05	16	0755	S16	E37	05	19.1		BG	FKC	580	98	16	4
6064		RAMY	05	16	1319	S16	E34	05	19.1		BG	EAC	1140	63	15	3
6064		BOUL	05	16	1515	S15	E31	05	19.0		B	FKI	1110	57	16	3
6064		HOLL	05	16	1520	S15	E32	05	19.1		BG	FKC	1200	93	16	4
6064		PALE	05	16	1935	S16	E29	05	19.0		BGD	EKI	1460	73	15	3
6064		LEAR	05	17	0055	S16	E25	05	18.9		B	EKC	1530	77	15	4
6064		SVTO	05	17	0640	S14	E23	05	19.0		BG	FKC	920	83	16	4
6064		BOUL	05	17	1440	S15	E18	05	19.0		B	EKI	1450	81	15	3
6064		RAMY	05	17	1521	S15	E18	05	19.0		BGD	FKC	1700	83	16	3
6064		HOLL	05	17	1720	S15	E13	05	18.7		BG	EKC	1200	66	15	1
6064		PALE	05	17	1934	S17	E16	05	19.0		BGD	FKC	1330	89	17	3
6064		LEAR	05	18	0150	S15	E13	05	19.1		BG	FKC	1260	87	16	3
6064		SVTO	05	18	0855	S17	E08	05	19.0		BG	FKC	1670	0	16	3
6064		RAMY	05	18	1313	S16	E07	05	19.1		BGD	FKC	2160	75	17	2
6064		HOLL	05	18	1436	S16	E06	05	19.1		BG	FKC	2140	82	18	4
6064		BOUL	05	18	1455	S15	E05	05	19.0		BGD	FKC	1830	93	18	3
6064		PALE	05	18	1950	S15	E03	05	19.0		BG	FKC	1980	0	17	3
6064		CULG	05	19	0045	S16	E01	05	19.1		BGD	FKC	1580	55	17	2
6064		LEAR	05	19	0140	S16	W01	05	19.0		BGD	EKC	1560	88	16	3
6064		SVTO	05	19	0805	S15	W05	05	18.9		BGD	FKC	1890	0	19	3
6064		RAMY	05	19	1205	S16	W06	05	19.0		BG	FKC	2200	0	17	3
6064		BOUL	05	19	1445	S15	W07	05	19.1		B	FKC	1390	53	17	3
6064		HOLL	05	19	1710	S15	W08	05	19.1		BGD	EKI	1870	68	15	1
6064		PALE	05	19	1915	S16	W10	05	19.0		BG	FKC	2350	0	17	3
6064		LEAR	05	20	0030	S16	W14	05	18.9		BGD	FKC	1550	98	17	3
6064		CULG	05	20	0050	S16	W13	05	19.0		BGD	FKC	1680	58	17	3
6064		SVTO	05	20	1100	S15	W20	05	18.9		BGD	FKC	1650	86	16	2
6064		RAMY	05	20	1250	S17	W20	05	19.0		B	FKC	1840	70	18	2
6064		HOLL	05	20	1435	S15	W21	05	19.0		BGD	FKI	1810	92	16	3
6064		PALE	05	20	1825	S16	W23	05	19.0		BGD	FKI	990	58	16	3
6064		RAMY	05	21	1330	S16	W33	05	19.0		B	FKI	1680	54	16	3
6064		BOUL	05	21	1340	S15	W32	05	19.1		BD	FKI	1060	53	16	1
6064		HOLL	05	21	1430	S16	W32	05	19.2		BGD	FKI	1480	64	16	3
6064		PALE	05	21	1740	S16	W35	05	19.1		BGD	FKI	1370	30	17	3
6064		LEAR	05	22	0330	S15	W40	05	19.1		BD	FKI	1200	43	17	3
6064		SVTO	05	22	1010	S15	W45	05	19.0		BD	HKI	1440	42	18	2
6064		RAMY	05	22	1250	S16	W48	05	18.9		B	FKI	1450	38	18	3
6064		BOUL	05	22	1348	S15	W44	05	19.2		B	EKI	1200	36	15	1
6064		PALE	05	22	1840	S14	W47	05	19.2		B	EKI	1280	30	15	3
6064		HOLL	05	22	1915	S15	W50	05	19.0		BGD	FKI	1350	74	16	2
6064		LEAR	05	23	0045	S15	W51	05	19.2		BD	FKI	1190	43	17	3
6064		SVTO	05	23	1210	S15	W59	05	19.0		B	FKI	1300	30	16	2
6064		RAMY	05	23	1223	S16	W59	05	19.0		BG	FKI	1250	34	18	3
6064		BOUL	05	23	1420	S17	W56	05	19.3		B	FKI	1110	24	19	3
6064		HOLL	05	23	1715	S16	W63	05	18.9		BGD	FKO	1200	37	17	2
6064		PALE	05	23	2150	S16	W62	05	19.2		B	EKI	920	21	15	3
6064		LEAR	05	24	0025	S16	W65	05	19.1		BD	EKI	980	24	13	3
6064		RAMY	05	24	1128	S15	W70	05	19.2		BG	FKO	1120	24	17	3
6064		BOUL	05	24	1525	S15	W75	05	19.0		B	FKI	570	10	25	2
6064		HOLL	05	24	1620	S15	W72	05	19.2		BGD	EKI	620	19	14	2
6064		PALE	05	24	1730	S16	W76	05	19.0		BG	EKI	870	22	14	3
6064		LEAR	05	25	0027	S16	W78	05	19.1		B	EKI	570	17	15	2
6064		CULG	05	25	0220	S16	W79	05	19.1		BG	FKO	400	8	15	3
6064		SVTO	05	25	0839	S15	W80	05	19.3		B	DSO	120	5	10	2
6064		RAMY	05	25	1215	S18	W88	05	18.8		A	HA	50	1	1	3
6064		HOLL	05	25	1450	S18	W80	05	19.5		A	AX	50	1	1	3
6064A		RAMY	05	21	1330	S13	W11	05	20.7		A	AX	10	1	1	3
6064A		HOLL	05	21	1430	S12	W11	05	20.8		B	BXO		3	3	3
6064A		LEAR	05	22	0330	S13	W18	05	20.8		B	BXO	20	4	4	3

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time 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
6064B		LEAR	05	17	0055	N09	E56	05	21.2		B	BXO	20	2	3	4
6064B		RAMY	05	17	1521	N09	E50	05	21.4		B	BXO	10	5	3	3
6064B		HOLL	05	21	1430	N08	W04	05	21.3		A	AX		1		3
6074		PALE	05	20	1825	N18	E19	05	22.2		A	AX		1	1	3
6074		RAMY	05	21	1330	N19	E08	05	22.2		B	DAO	60	10	10	3
6074		BOUL	05	21	1340	N19	E09	05	22.2		B	BXI	10	7	5	1
6074		HOLL	05	21	1430	N19	E08	05	22.2		B	CRO	20	12	7	3
6074		PALE	05	21	1740	N18	E06	05	22.2		B	CRO	40	11	6	3
6074		LEAR	05	22	0330	N19	E01	05	22.2		B	CAO	30	7	9	3
6074		SVTO	05	22	1010	N19	W04	05	22.1		B	CRO	40	6	7	2
6074		RAMY	05	22	1250	N19	W04	05	22.2		B	CAO	40	7	8	3
6074		BOUL	05	22	1348	N18	W06	05	22.1		B	BXO	20	2	3	1
6074		PALE	05	22	1840	N18	W07	05	22.2		B	CSO	40	3	4	3
6074		HOLL	05	22	1915	N18	W10	05	22.0		B	BXO	20	7	4	2
6074		LEAR	05	23	0045	N18	W12	05	22.1		B	CAO	50	8	6	3
6074		SVTO	05	23	1210	N19	W19	05	22.0		B	CSO	80	5	5	2
6074		RAMY	05	23	1223	N20	W20	05	22.0		B	CAO	70	4	4	3
6074		BOUL	05	23	1420	N17	W21	05	22.0		B	CAO	30	3	4	3
6074		HOLL	05	23	1715	N18	W22	05	22.0		B	CSO	70	6	6	2
6074		PALE	05	23	2150	N18	W23	05	22.1		B	CAO	40	5	4	3
6074		LEAR	05	24	0025	N18	W25	05	22.1		B	CAO	40	6	6	3
6074		RAMY	05	24	1128	N19	W33	05	21.9		B	CAO	70	5	3	3
6074		BOUL	05	24	1525	N18	W34	05	22.0		A	AX	30	2	2	2
6074		HOLL	05	24	1620	N18	W35	05	22.0		A	HA	30	1	2	2
6074		PALE	05	24	1730	N18	W36	05	22.0		A	HA	30	2	2	3
6074		LEAR	05	25	0027	N18	W41	05	21.9		A	AX	20	1	1	2
6074		CULG	05	25	0220	N18	W40	05	22.0		B	CAO	30	4	4	3
6074		SVTO	05	25	0839	N19	W42	05	22.1		B	DAO	40	3	5	2
6074		RAMY	05	25	1215	N20	W45	05	22.1		B	CAO	30	5	5	3
6074		BOUL	05	25	1441	N18	W44	05	22.3		B	DSO	60	6	5	3
6074		HOLL	05	25	1450	N19	W45	05	22.2		B	BXO	50	8	5	3
6074		PALE	05	25	2235	N20	W49	05	22.2		B	BXO	10	4	4	3
6074		LEAR	05	26	0130	N19	W51	05	22.2		B	DRO	50	7	5	2
6074		CULG	05	26	0230	N21	W52	05	22.1		B	CRO	20	3	4	2
6074		SVTO	05	26	0641	N20	W54	05	22.1		B	DAI	50	8	7	3
6074		RAMY	05	26	1400	N22	W58	05	22.1		B	BXO	20	5	3	3
6074		BOUL	05	26	1425	N18	W59	05	22.1		B	BXO	20	3	3	3
6074		HOLL	05	26	1520	N19	W60	05	22.1		B	BXO	20	8	7	4
6074		PALE	05	26	1955	N19	W59	05	22.3		B	BXO	20	5	5	3
6074		LEAR	05	27	0045	N18	W66	05	22.0		A	AX	20	1	1	2
6074		SVTO	05	27	0621	N19	W70	05	21.9		A	AX	10	1	1	2
6068		RAMY	05	16	1319	N08	E70	05	21.8		B	BXO	30	4	12	3
6068		BOUL	05	16	1515	N09	E75	05	22.3		B	BXO	10	2	2	3
6068		HOLL	05	16	1520	N09	E70	05	21.9		B	BXO	30	7	16	4
6068		PALE	05	16	1935	N07	E69	05	22.0		B	BXO	30	3	18	3
6068		LEAR	05	17	0055	N08	E69	05	22.2		B	BXO	30	4	4	4
6068		SVTO	05	17	0640	N09	E61	05	21.8		B	BXO	20	3	12	4
6068		BOUL	05	17	1440	N09	E62	05	22.3		A	AX	20	1	1	3
6068		RAMY	05	17	1521	N09	E65	05	22.5		B	CAO	50	7	7	3
6068		HOLL	05	17	1720	N08	E62	05	22.4		B	BXO	20	4	6	1
6068		PALE	05	17	1934	N08	E62	05	22.5		B	BXO	20	5	7	3
6068		LEAR	05	18	0150	N08	E57	05	22.4		B	CAO	40	6	6	3
6068		SVTO	05	18	0855	N08	E52	05	22.3		B	CAO	30	7	7	3
6068		RAMY	05	18	1313	N09	E52	05	22.4		B	CAO	30	6	7	2
6068		HOLL	05	18	1436	N08	E49	05	22.3		B	CRO	30	7	7	4
6068		BOUL	05	18	1455	N09	E51	05	22.4		B	CSO	20	3	3	3
6068		PALE	05	18	1950	N08	E48	05	22.4		B	BXO	10	2	4	3
6068		CULG	05	19	0045	N08	E45	05	22.4		B	CSO	20	5	6	2
6068		LEAR	05	19	0140	N08	E44	05	22.4		B	BXO	20	9	6	3
6068		SVTO	05	19	0805	N08	E41	05	22.4		B	DAO	50	20	7	3
6068		RAMY	05	19	1205	N09	E39	05	22.4		B	DAO	70	20	6	3
6068		BOUL	05	19	1445	N08	E37	05	22.4		B	DAI	80	8	4	3
6068		HOLL	05	19	1710	N09	E38	05	22.6		B	DAO	70	11	5	1
6068		PALE	05	19	1915	N09	E36	05	22.5		B	DAO	40	12	6	3
6068		LEAR	05	20	0030	N08	E34	05	22.6		B	CRO	50	16	6	3
6068		CULG	05	20	0050	N08	E33	05	22.5		B	DAO	50	20	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6068		SVTO	05	20	1100	N08	E26	05	22.4		B	DRI	90	20	9	2
6068		RAMY	05	20	1250	N09	E25	05	22.4		B	DRO	60	14	8	2
6068		HOLL	05	20	1435	N09	E25	05	22.5		B	CRO	30	20	9	3
6068		PALE	05	20	1825	N08	E23	05	22.5		B	ERO	80	25	11	3
6068		RAMY	05	21	1330	N09	E11	05	22.4		B	DAO	110	20	10	3
6068		BOUL	05	21	1340	N08	E10	05	22.3		B	CAI	40	18	9	1
6068		HOLL	05	21	1430	N09	E11	05	22.4		B	CAI	50	25	10	3
6068		PALE	05	21	1740	N08	E08	05	22.3		B	DAO	80	16	10	3
6068		LEAR	05	22	0330	N08	E02	05	22.3		B	DAO	90	17	10	3
6068		SVTO	05	22	1010	N08	W03	05	22.2		B	DRO	100	17	8	2
6068		RAMY	05	22	1250	N09	E04	05	22.8		B	DAO	100	18	8	3
6068		BOUL	05	22	1348	N08	W05	05	22.2		B	DAI	70	10	6	1
6068		PALE	05	22	1840	N07	W07	05	22.2		B	DAO	80	19	7	3
6068		HOLL	05	22	1915	N08	W07	05	22.3		B	EAO	100	37	12	2
6068		LEAR	05	23	0045	N08	W11	05	22.2		B	EAO	70	23	12	3
6068		SVTO	05	23	1210	N09	W18	05	22.1		B	DAO	140	21	8	2
6068		RAMY	05	23	1223	N09	W19	05	22.1		B	DAI	140	25	8	3
6068		BOUL	05	23	1420	N07	W18	05	22.2		B	DAI	100	12	8	3
6068		HOLL	05	23	1715	N08	W21	05	22.1		B	CAO	80	25	8	2
6068		PALE	05	23	2150	N08	W21	05	22.3		B	DAI	90	25	9	3
6068		LEAR	05	24	0025	N08	W23	05	22.3		B	EAI	80	27	11	3
6068		RAMY	05	24	1128	N09	W33	05	22.0		B	DAO	110	20	9	3
6068		BOUL	05	24	1525	N08	W34	05	22.1		B	DAI	110	13	10	2
6068		HOLL	05	24	1620	N08	W34	05	22.1		B	DAO	120	28	9	2
6068		PALE	05	24	1730	N08	W34	05	22.2		B	DAO	100	17	7	3
6068		LEAR	05	25	0027	N08	W39	05	22.1		B	DAO	90	20	8	2
6068		CULG	05	25	0220	N08	W41	05	22.0		B	DAO	100	23	8	3
6068		SVTO	05	25	0839	N09	W44	05	22.0		B	DAI	130	16	9	2
6068		RAMY	05	25	1215	N09	W46	05	22.0		B	DAO	80	20	9	3
6068		BOUL	05	25	1441	N07	W48	05	22.0		B	DAO	90	7	3	3
6068		HOLL	05	25	1450	N09	W47	05	22.1		B	DAO	110	22	8	3
6068		PALE	05	25	2235	N09	W50	05	22.2		B	DAO	80	8	6	3
6068		LEAR	05	26	0130	N08	W53	05	22.1		B	DAO	900	14	8	2
6068		CULG	05	26	0230	N09	W54	05	22.0		B	DRO	30	5	6	2
6068		SVTO	05	26	0641	N09	W55	05	22.1		B	DAO	70	11	9	3
6068		RAMY	05	26	1400	N10	W59	05	22.1		B	BXO	40	14	9	3
6068		BOUL	05	26	1425	N08	W62	05	21.9		B	CSO	40	5	6	3
6068		HOLL	05	26	1520	N09	W61	05	22.1		B	BXO	30	13	10	4
6068		PALE	05	26	1955	N08	W62	05	22.2		B	BXO	40	9	7	3
6068		LEAR	05	27	0045	N08	W66	05	22.1		B	BXO	100	7	8	2
6068		SVTO	05	27	0621	N09	W75	05	21.6		B	CAO	60	3	4	2
6068A		CULG	05	25	0220	S13	W16	05	23.9		A	AX		2	1	3
6068A		BOUL	05	25	1441	S13	W23	05	23.9		B	BXO		2	2	3
6068B		BOUL	05	22	1348	S17	E18	05	23.9		B	DAI	250	12	7	1
6069		BOUL	05	17	1440	S09	E75	05	23.2		A	AX	10	1	1	3
6069		RAMY	05	17	1521	S09	E76	05	23.3		B	CAO	30	3	4	3
6069		HOLL	05	17	1720	S10	E75	05	23.3		A	AX	10	1		1
6069		PALE	05	17	1934	S11	E77	05	23.6		A	AX		1		3
6069		LEAR	05	18	0150	S10	E68	05	23.2		A	HA	30	1	1	3
6069		SVTO	05	18	0855	S11	E66	05	23.3		A	AX	10	2	1	3
6069		RAMY	05	18	1313	S09	E63	05	23.3		B	CAO	160	3	4	2
6069		HOLL	05	18	1436	S10	E62	05	23.3		A	AX	10	2	1	4
6069		BOUL	05	18	1455	S08	E63	05	23.3		A	AX	20	1	1	3
6069		PALE	05	18	1950	S10	E60	05	23.3		A	AX	10	2	1	3
6069		CULG	05	19	0045	S10	E57	05	23.3		A	HA	20	3	2	2
6069		LEAR	05	19	0140	S09	E55	05	23.2		B	CAO	30	3	3	3
6069		SVTO	05	19	0805	S09	E53	05	23.3		A	AX	10	2	1	3
6069		RAMY	05	19	1205	S09	E50	05	23.2		A	AX	10	2	1	3
6069		BOUL	05	19	1445	S08	E48	05	23.2		A	BXO	10	2	2	3
6069		HOLL	05	19	1710	S09	E48	05	23.3		A	AX	10	2	1	1
6069		PALE	05	19	1915	S10	E47	05	23.3		A	AX	10	3	2	3
6069		LEAR	05	20	0030	S09	E44	05	23.3		A	AX	20	3	1	3
6069		CULG	05	20	0050	S10	E44	05	23.3		A	AX		2	1	3
6069		SVTO	05	20	1100	S10	E38	05	23.3		B	BXO	10	4	3	2
6069		RAMY	05	20	1250	S09	E37	05	23.3		B	CRO	10	3	3	2
6069		HOLL	05	20	1435	S09	E37	05	23.4		B	BXO	10	4	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
6069		PALE	05	20	1825	S09	E35	05	23.4		B	BXO	10	3	3	3
6069		RAMY	05	21	1330	S08	E24	05	23.4		B	BXO	10	3	3	3
6069		HOLL	05	21	1430	S10	E22	05	23.2		A	AX		1		3
6069		LEAR	05	22	0330	S09	E21	05	23.7		A	AX	10	2	1	3
6069		SVTO	05	25	0839	S11	W19	05	23.9		B	BXO	10	3	3	2
6069		RAMY	05	25	1215	S11	W22	05	23.8		B	BXO	10	3	3	3
6069		HOLL	05	25	1450	S11	W22	05	24.0		A	AX	10	4	2	3
6070		BOUL	05	17	1440	S18	E80	05	23.7		A	AX	20	1	1	3
6070		RAMY	05	17	1521	S18	E81	05	23.8		B	CAO	60	3	6	3
6070		HOLL	05	17	1720	S18	E79	05	23.7		B	CSO	60	2	8	1
6070		PALE	05	17	1934	S18	E83	05	24.1		B	BXO		2	5	3
6070		LEAR	05	18	0150	S20	E75	05	23.8		B	DSO	90	6	8	3
6070		SVTO	05	18	0855	S20	E73	05	23.9		B	CAO	110	9	9	3
6070		RAMY	05	18	1313	S19	E71	05	24.0		B	DAO	250	7	10	2
6070		HOLL	05	18	1436	S19	E71	05	24.0		B	DSO	50	8	8	4
6070		BOUL	05	18	1455	S19	E74	05	24.3		B	DSO	130	3	10	3
6070		PALE	05	18	1950	S20	E70	05	24.2		B	CAO	80	6	10	3
6070		CULG	05	19	0045	S20	E66	05	24.1		B	DSO	100	5	9	2
6070		LEAR	05	19	0140	S18	E64	05	23.9		B	DAO	100	9	10	3
6070		SVTO	05	19	0805	S19	E62	05	24.1		B	DAO	130	16	9	3
6070		RAMY	05	19	1205	S19	E60	05	24.1		B	EAO	100	13	11	3
6070		BOUL	05	19	1445	S17	E57	05	23.9		B	DAO	120	5	4	3
6070		HOLL	05	19	1710	S19	E60	05	24.3		B	DSO	160	12	9	1
6070		PALE	05	19	1915	S19	E56	05	24.1		B	CAO	120	5	8	3
6070		LEAR	05	20	0030	S19	E53	05	24.1		B	CAO	100	9	8	3
6070		CULG	05	20	0050	S19	E53	05	24.1		B	CAO	130	7	9	3
6070		SVTO	05	20	1100	S19	E48	05	24.1		B	DAO	140	8	7	2
6070		RAMY	05	20	1250	S19	E46	05	24.0		B	DAO	230	12	8	2
6070		HOLL	05	20	1435	S18	E45	05	24.0		B	DAO	180	19	9	3
6070		PALE	05	20	1825	S19	E44	05	24.1		B	DAO	220	16	10	3
6070		RAMY	05	21	1330	S19	E34	05	24.1		B	DKO	390	24	9	3
6070		BOUL	05	21	1340	S17	E31	05	23.9		B	DAI	240	21	8	1
6070		HOLL	05	21	1430	S19	E33	05	24.1		B	DAI	250	29	10	3
6070		PALE	05	21	1740	S18	E31	05	24.1		B	DKO	340	28	9	3
6070		LEAR	05	22	0330	S19	E25	05	24.0		B	DKO	220	18	9	3
6070		SVTO	05	22	1010	S19	E21	05	24.0		B	DAI	450	19	7	2
6070		RAMY	05	22	1250	S19	E21	05	24.1		B	DKO	340	18	9	3
6070		PALE	05	22	1840	S21	E17	05	24.1		B	DKO	300	23	9	3
6070		HOLL	05	22	1915	S19	E17	05	24.1		B	EKI	370	50	11	2
6070		LEAR	05	23	0045	S20	E13	05	24.0		B	DKO	310	15	9	3
6070		SVTO	05	23	1210	S18	E07	05	24.0		B	DAO	350	25	8	2
6070		RAMY	05	23	1223	S19	E09	05	24.2		B	DKO	430	26	9	3
6070		BOUL	05	23	1420	S18	E06	05	24.0		B	DKI	300	13	10	3
6070		HOLL	05	23	1715	S18	E06	05	24.2		B	EKO	500	40	13	2
6070		PALE	05	23	2150	S19	E04	05	24.2		B	EKO	370	30	11	3
6070		LEAR	05	24	0025	S19	E01	05	24.1		B	DKO	390	26	10	3
6070		RAMY	05	24	1128	S19	W06	05	24.0		B	DKO	440	23	10	3
6070		BOUL	05	24	1525	S17	W07	05	24.1		B	DKI	330	11	9	2
6070		HOLL	05	24	1620	S19	W07	05	24.1		B	DHO	250	21	8	2
6070		PALE	05	24	1730	S21	W08	05	24.1		B	DHO	410	22	9	3
6070		LEAR	05	25	0027	S21	W09	05	24.3		B	DKO	310	22	9	2
6070		CULG	05	25	0220	S19	W12	05	24.2		B	DKO	320	17	8	3
6070		SVTO	05	25	0839	S19	W16	05	24.1		B	EKO	470	22	11	2
6070		RAMY	05	25	1215	S19	W19	05	24.1		B	CKO	350	19	9	3
6070		BOUL	05	25	1441	S19	W19	05	24.2		B	DKO	180	10	9	3
6070		HOLL	05	25	1450	S19	W19	05	24.2		B	CKO	330	23	8	3
6070		PALE	05	25	2235	S17	W25	05	24.0		B	CKO	250	6	4	3
6070		LEAR	05	26	0130	S19	W25	05	24.1		B	CKO	240	10	8	2
6070		CULG	05	26	0230	S17	W28	05	24.0		A	HK	230	2	3	2
6070		SVTO	05	26	0641	S18	W30	05	24.0		B	CKI	290	16	6	3
6070		RAMY	05	26	1400	S18	W35	05	23.9		B	CKO	280	12	5	3
6070		BOUL	05	26	1425	S18	W35	05	23.9		B	CKO	290	10	6	3
6070		HOLL	05	26	1520	S19	W32	05	24.2		B	DAO	260	17	11	4
6070		PALE	05	26	1955	S19	W33	05	24.3		B	DHO	250	11	8	3
6070		LEAR	05	27	0045	S18	W37	05	24.2		B	CHO	270	5	8	2
6070		SVTO	05	27	0621	S18	W44	05	23.9		B	CHO	310	6	4	2
6070		HOLL	05	27	1415	S19	W45	05	24.1		B	CHO	230	10	6	3
6070		RAMY	05	27	1420	S18	W46	05	24.1		B	CKO	170	6	3	3

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6070		PALE	05 27 1922	S19 W49	05 24.1		B	DKO	220	6	4	3
6070		SVTO	05 28 0543	S18 W56	05 24.0		B	CSO	290	3	4	2
6070		RAMY	05 28 1305	S19 W60	05 24.0		A	HK	220	1	3	2
6070		BOUL	05 28 1435	S18 W59	05 24.1		A	HK	230	6	3	1
6070		HOLL	05 28 1550	S18 W60	05 24.1		A	HS	170	2	2	2
6070		PALE	05 28 1852	S19 W62	05 24.0		B	CKO	300	2	4	3
6070		LEAR	05 29 0022	S18 W65	05 24.1		A	HK	140	2	4	3
6070		CULG	05 29 0050	S19 W65	05 24.1		A	HK	230	1	3	3
6070		RAMY	05 29 1113	S19 W72	05 24.0		B	CKO	240	6	4	3
6070		HOLL	05 29 1625	S19 W73	05 24.1		A	HH	150	2	3	3
6070		PALE	05 29 1749	S19 W76	05 23.9		A	HA	180	1	2	3
6070		CULG	05 30 0050	S19 W78	05 24.1		A	HK	200	1	3	3
6070		LEAR	05 30 0135	S18 W78	05 24.1		A	HK	180	1	3	4
6070		SVTO	05 30 0859	S18 W87	05 23.7		A	HS	120	1	3	2
6070		RAMY	05 30 1109	S18 W86	05 23.9		A	HK	120	3	4	3
6071		RAMY	05 18 1313	S11 E82	05 24.7		B	BXO	10	2	2	2
6071		PALE	05 18 1950	S13 E79	05 24.8		B	CAO	40	3	6	3
6071		CULG	05 19 0045	S12 E77	05 24.8		B	CAO	20	2	6	2
6071		LEAR	05 19 0140	S13 E73	05 24.6		B	CSO	60	2	6	3
6071		SVTO	05 19 0805	S12 E74	05 24.9		B	DAO	60	6	9	3
6071		RAMY	05 19 1205	S11 E70	05 24.8		B	DRO	50	6	8	3
6071		BOUL	05 19 1445	S11 E66	05 24.6		B	CSO	50	2	6	3
6071		HOLL	05 19 1710	S12 E68	05 24.8		B	BXO	30	10	7	1
6071		PALE	05 19 1915	S12 E67	05 24.8		B	BXO	20	9	8	3
6071		LEAR	05 20 0030	S12 E63	05 24.8				30	11	7	3
6071		CULG	05 20 0050	S12 E63	05 24.8		B	CSO	30	10	8	3
6071		SVTO	05 20 1100	S13 E57	05 24.7		B	CRO	80	10	7	2
6071		RAMY	05 20 1250	S11 E57	05 24.8		B	DRO	60	8	8	2
6071		HOLL	05 20 1435	S15 E55	05 24.8		B	CRO	40	13	8	3
6071		PALE	05 20 1825	S12 E54	05 24.8		B	CAO	50	8	10	3
6071		RAMY	05 21 1330	S12 E43	05 24.8		B	DAO	160	22	10	3
6071		BOUL	05 21 1340	S11 E42	05 24.7		B	DAI	80	17	9	1
6071		HOLL	05 21 1430	S12 E42	05 24.8		B	CAO	50	21	10	3
6071		PALE	05 21 1740	S12 E41	05 24.8		B	CAO	90	22	10	3
6071		LEAR	05 22 0330	S13 E35	05 24.8		B	DAO	40	20	10	3
6071		SVTO	05 22 1010	S12 E30	05 24.7		B	DRI	100	25	9	2
6071		RAMY	05 22 1250	S12 E29	05 24.7		B	DAO	100	24	9	3
6071		BOUL	05 22 1348	S11 E26	05 24.5		B	CAI	100	13	9	1
6071		PALE	05 22 1840	S14 E26	05 24.7		B	DAO	170	21	10	3
6071		HOLL	05 22 1915	S12 E25	05 24.7		B	DAI	70	33	10	2
6071		LEAR	05 23 0045	S12 E22	05 24.7		B	DAO	90	22	10	3
6071		SVTO	05 23 1210	S12 E16	05 24.7		B	DAI	200	26	9	2
6071		RAMY	05 23 1223	S12 E15	05 24.6		B	DAO	190	22	10	3
6071		BOUL	05 23 1420	S12 E14	05 24.6		B	DAI	140	19	9	3
6071		HOLL	05 23 1715	S11 E13	05 24.7		B	DAO	180	33	10	2
6071		PALE	05 23 2150	S12 E10	05 24.7		B	DAO	190	25	10	3
6071		LEAR	05 24 0025	S12 E08	05 24.6		B	DKO	250	34	9	3
6071		RAMY	05 24 1128	S11 E02	05 24.6		B	EKO	310	24	12	3
6071		BOUL	05 24 1525	S12 E01	05 24.7		B	DKI	300	18	10	2
6071		HOLL	05 24 1620	S12 E00	05 24.7		B	DAO	200	31	10	2
6071		PALE	05 24 1730	S12 E00	05 24.7		B	DAO	220	26	10	3
6071		LEAR	05 25 0027	S11 W04	05 24.7		B	DAO	220	28	10	2
6071		CULG	05 25 0220	S12 W06	05 24.6		BG	DAO	190	21	10	3
6071		SVTO	05 25 0839	S11 W09	05 24.7		B	EKO	250	15	11	2
6071		RAMY	05 25 1215	S10 W11	05 24.7		B	EAO	180	19	11	3
6071		BOUL	05 25 1441	S12 W13	05 24.6		B	DAI	190	18	10	3
6071		HOLL	05 25 1450	S11 W11	05 24.8		B	EAO	180	29	11	3
6071		PALE	05 25 2235	S11 W17	05 24.7		B	DAO	140	14	10	3
6071		LEAR	05 26 0130	S11 W17	05 24.8		B	EAO	160	20	11	2
6071		CULG	05 26 0230	S11 W19	05 24.7		B	DSO	70	6	8	2
6071		SVTO	05 26 0641	S12 W20	05 24.8		B	EAO	200	37	11	3
6071		RAMY	05 26 1400	S11 W24	05 24.8		BG	EAO	80	28	11	3
6071		BOUL	05 26 1425	S13 W24	05 24.8		B	DAI	80	16	10	3
6071		HOLL	05 26 1520	S12 W26	05 24.7		B	EAO	80	33	11	4
6071		PALE	05 26 1955	S13 W26	05 24.9		B	DAO	110	31	10	3
6071		LEAR	05 27 0045	S11 W30	05 24.8		B	DSO	190	22	10	2
6071		SVTO	05 27 0621	S12 W33	05 24.8		B	EAO	220	29	12	2
6071		HOLL	05 27 1415	S12 W36	05 24.9		BG	EAI	80	35	12	3

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

MAY 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
6071		RAMY	05	27	1420	S11	W39	05	24.7		B	DAO	190	22	10	3
6071		PALE	05	27	1922	S11	W39	05	24.9		B	DAO	120	24	10	3
6071		SVTO	05	28	0543	S11	W45	05	24.8		B	ESI	60	11	11	2
6071		RAMY	05	28	1305	S11	W49	05	24.8		B	DAO	110	10	10	2
6071		BOUL	05	28	1435	S12	W48	05	25.0		B	CAI	60	10	10	1
6071		HOLL	05	28	1550	S12	W50	05	24.9		BG	BXO	110	7	10	2
6071		PALE	05	28	1852	S11	W52	05	24.9		B	BXO	20	8	12	3
6071		LEAR	05	29	0022	S12	W55	05	24.9		B	DSO	50	10	10	3
6071		CULG	05	29	0050	S11	W55	05	24.9		B	CAO	20	11	10	3
6071		RAMY	05	29	1113	S11	W62	05	24.8		B	EAO	130	9	11	3
6071		HOLL	05	29	1625	S12	W62	05	25.0		B	BXO	10	3	6	3
6071		PALE	05	29	1749	S11	W64	05	24.9		B	BXO	10	5	4	3
6071		LEAR	05	30	0135	S13	W67	05	25.0		B	BXO	20	5	4	4
6071		RAMY	05	30	1109	S12	W74	05	24.9		B	BXO	10	7	9	3
6071		PALE	05	30	1910	S15	W76	05	25.0		B	BXO	10	4	4	2
6072		RAMY	05	19	1205	N25	E79	05	25.6		A	HS	60	1	1	3
6072		BOUL	05	19	1445	N26	E79	05	25.7		A	AX	50	1	2	3
6072		HOLL	05	19	1710	N26	E73	05	25.4		A	HS	60	1	1	1
6072		PALE	05	19	1915	N26	E74	05	25.5		A	HA	60	1	2	3
6072		CULG	05	20	0050	N26	E72	05	25.6		A	HS	80	1	2	3
6072		SVTO	05	20	1100	N24	E68	05	25.7		A	HS	70	1	2	2
6072		RAMY	05	20	1250	N26	E64	05	25.5		A	HS	40	1	1	2
6072		HOLL	05	20	1435	N26	E64	05	25.6		A	HS	50	1	1	3
6072		PALE	05	20	1825	N26	E63	05	25.7		A	HS	50	1	2	3
6072		RAMY	05	21	1330	N26	E52	05	25.6		A	HS	140	1	2	3
6072		BOUL	05	21	1340	N26	E51	05	25.5		A	HA	30	1	1	1
6072		HOLL	05	21	1430	N27	E52	05	25.6		A	HS	60	1	2	3
6072		PALE	05	21	1740	N26	E51	05	25.7		A	HS	70	1	2	3
6072		LEAR	05	22	0330	N25	E44	05	25.5		A	HS	50	1	3	3
6072		SVTO	05	22	1010	N25	E41	05	25.6		A	HS	60	2	2	2
6072		RAMY	05	22	1250	N26	E39	05	25.6		A	HS	60	1	2	3
6072		BOUL	05	22	1348	N26	E37	05	25.4		A	HS	30	1	1	1
6072		PALE	05	22	1840	N24	E38	05	25.7		A	HA	60	2	2	3
6072		HOLL	05	22	1915	N26	E37	05	25.7		A	HS	80	2	2	2
6072		LEAR	05	23	0045	N25	E32	05	25.5		A	HH	80	3	3	3
6072		SVTO	05	23	1210	N26	E28	05	25.7		A	HA	70	4	1	2
6072		RAMY	05	23	1223	N26	E28	05	25.7		B	DAO	80	5	3	3
6072		BOUL	05	23	1420	N25	E24	05	25.4		B	DAO	70	3	2	3
6072		HOLL	05	23	1715	N25	E23	05	25.5		B	CSO	60	11	8	2
6072		PALE	05	23	2150	N26	E24	05	25.8		B	CAO	50	5	4	3
6072		LEAR	05	24	0025	N25	E22	05	25.7		B	CAO	60	6	5	3
6072		RAMY	05	24	1128	N28	E18	05	25.9		B	DAO	40	5	5	3
6072		BOUL	05	24	1525	N25	E13	05	25.6		B	BXO	30	4	5	2
6072		HOLL	05	24	1620	N27	E12	05	25.6		A	HA	30	4	3	2
6072		PALE	05	24	1730	N26	E13	05	25.7		B	CAO	30	6	3	3
6072		LEAR	05	25	0027	N27	E09	05	25.7		A	AX	40	1	4	2
6072		CULG	05	25	0220	N26	E07	05	25.6		B	CAO	20	5	4	3
6072		SVTO	05	25	0839	N27	E03	05	25.6		A	HS	40	3	2	2
6072		RAMY	05	25	1215	N28	E02	05	25.7		B	DAO	30	3	2	3
6072		BOUL	05	25	1441	N26	E01	05	25.7		B	DSO	30	2	1	3
6072		HOLL	05	25	1450	N28	W01	05	25.5		B	BXO	20	4	1	3
6072		PALE	05	25	2235	N27	W02	05	25.8		B	CAO	20	2	1	3
6072		LEAR	05	26	0130	N27	W06	05	25.6		B	CRO	40	3	1	2
6072		CULG	05	26	0230	N27	W06	05	25.6		A	AX	10	2	1	2
6072		SVTO	05	26	0641	N27	W07	05	25.7		A	HS	30	4	2	3
6072		RAMY	05	26	1400	N29	W11	05	25.7		A	HR	10	2	1	3
6072		BOUL	05	26	1425	N26	W13	05	25.6		A	AX	10	2	1	3
6072		HOLL	05	26	1520	N26	W11	05	25.8		B	BXO	10	6	4	4
6072		PALE	05	26	1955	N27	W14	05	25.7		A	AX		2	1	3
6072		LEAR	05	27	0045	N27	W18	05	25.6		B	BXO	20	2	3	2
6072		SVTO	05	27	0621	N27	W20	05	25.7		A	HA	20	1	1	2
6072		HOLL	05	27	1415	N28	W25	05	25.6		A	AX		2	1	3
6072		RAMY	05	27	1420	N27	W22	05	25.9		B	BXO	10	2	6	3
6072		PALE	05	27	1922	N27	W27	05	25.7		A	AX		2	1	3
6072		PALE	05	28	1852	N27	W38	05	25.8		A	AX		2	1	3
6072		PALE	05	29	1749	N23	W53	05	25.6		A	AX		1		3
6082		LEAR	05	29	0022	S05	W31	05	26.7		B	BXO	10	2	5	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 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
6082		CULG	05 29 0050	S04 W32	05 26.6		B	BXO		2	3	3
6082		RAMY	05 29 1113	S04 W39	05 26.5		B	BXO	10	5	5	3
6082		HOLL	05 29 1625	S06 W41	05 26.6		B	BXO	10	3	4	3
6082		PALE	05 29 1749	S04 W40	05 26.7		A	AX		1		3
6082		RAMY	05 30 1109	S05 W50	05 26.7		B	BXO	10	3	3	3
6082A		RAMY	05 24 1128	S14 E36	05 27.2		B	BXO	10	3	3	3
6076		RAMY	05 24 1128	N11 E59	05 28.9		B	BXO	10	2	2	3
6076		BOUL	05 24 1525	N12 E53	05 28.6		A	AX		1	1	2
6076		HOLL	05 24 1620	N11 E55	05 28.8		A	HR	20	1	2	2
6076		PALE	05 24 1730	N11 E56	05 28.9		B	BXO	10	3	3	3
6076		LEAR	05 25 0027	N13 E50	05 28.8		A	AX	10	1	1	2
6076		CULG	05 25 0220	N11 E51	05 28.9		A	AX		1		3
6076		SVTO	05 25 0339	N12 E46	05 28.8		A	AX	10	1	1	2
6076		RAMY	05 25 1215	N12 E42	05 28.7		A	AX	10	3	1	3
6076		BOUL	05 25 1441	N11 E41	05 28.7		B	BXO	10	3	1	3
6076		HOLL	05 25 1450	N13 E43	05 28.9		B	BXO	10	5	4	3
6076		PALE	05 25 2235	N11 E40	05 28.9		B	BXO	10	4	4	3
6076		LEAR	05 26 0130	N13 E37	05 28.8		B	BXO	10	4	4	2
6076		CULG	05 26 0230	N14 E35	05 28.7		A	AX	10	1	1	2
6076		SVTO	05 26 0641	N12 E34	05 28.8		B	DAO	50	8	6	3
6076		RAMY	05 26 1400	N13 E28	05 28.7		A	HA	20	3	1	3
6076		BOUL	05 26 1425	N12 E25	05 28.5		A	HS	20	2	2	3
6076		HOLL	05 26 1520	N12 E27	05 28.7		A	AX	10	3	1	4
6076		PALE	05 26 1955	N12 E27	05 28.9		B	CRO	10	3	4	3
6076		LEAR	05 27 0045	N12 E23	05 28.8		B	BXO	20	3	5	2
6076		SVTO	05 27 0621	N12 E20	05 28.8		B	DSO	40	6	5	2
6076		HOLL	05 27 1415	N12 E16	05 28.8		B	BXO	10	3	6	3
6076		RAMY	05 27 1420	N12 E13	05 28.6		A	AX	10	2	1	3
6076		PALE	05 27 1922	N13 E10	05 28.6		A	AX	10	2	1	3
6076		SVTO	05 28 0543	N12 E04	05 28.5		A	AX	10	4	2	2
6076		RAMY	05 28 1305	N14 E04	05 28.8		B	CAO	30	10	7	2
6076		BOUL	05 28 1435	N13 W01	05 28.5		B	BXO	20	6	3	1
6076		HOLL	05 28 1550	N13 W02	05 28.5		B	BXO	50	5	3	2
6076		PALE	05 28 1852	N11 W03	05 28.6		A	AX	10	3	1	3
6076		LEAR	05 29 0022	N12 W08	05 28.4		B	CSO	20	4	3	3
6076		CULG	05 29 0050	N12 W06	05 28.6		B	CAO	20	4	3	3
6076		RAMY	05 29 1113	N12 W11	05 28.6		B	DAO	90	6	6	3
6076		HOLL	05 29 1625	N12 W15	05 28.5		B	CSO	60	5	7	3
6076		PALE	05 29 1749	N11 W14	05 28.7		B	BXO	10	6	5	3
6076		CULG	05 30 0050	N12 W19	05 28.6		B	CAO	20	4	5	3
6076		LEAR	05 30 0135	N13 W18	05 28.7		B	BXO	20	5	7	4
6076		SVTO	05 30 0859	N12 W25	05 28.5		A	AX	10	3	2	2
6076		RAMY	05 30 1109	N11 W28	05 28.3		B	CAO	20	3	3	3
6076		BOUL	05 30 1425	N10 W29	05 28.4		A	HS	10	2	1	3
6076		HOLL	05 30 1640	N12 W30	05 28.4		B	BXO	10	2	2	4
6076		PALE	05 30 1910	N11 W32	05 28.4		A	AX	10	2	2	2
6076		CULG	05 31 0050	N12 W36	05 28.3		A	AX		2	1	3
6076		LEAR	05 31 0100	N12 W36	05 28.3		B	BXO	10	2	1	3
6076		SVTO	05 31 0715	N13 W39	05 28.3		A	AX	10	3		3
6076		HOLL	05 31 1435	N10 W44	05 28.3		A	AX	10	3	2	2
6076		BOUL	05 31 1450	N13 W42	05 28.4		A	AX		1	1	2
6076		RAMY	05 31 1519	N12 W43	05 28.4		A	AX	10	3	1	2
6076		PALE	05 31 1810	N10 W44	05 28.4		A	AX	10	2	1	4
6076		CULG	06 01 0100	N12 W48	05 28.5		A	AX		2		3
6076		RAMY	06 01 1212	N12 W54	05 28.5		A	AX		1		3
6081		HOLL	05 27 1415	S17 E12	05 28.5		B	BXO	10	5	3	3
6081		RAMY	05 27 1420	S18 E12	05 28.5		B	BXO	20	6	3	3
6081		PALE	05 27 1922	S17 E09	05 28.5		B	CRO	30	5	4	3
6081		SVTO	05 28 0543	S17 E02	05 28.4		B	DAO	40	5	5	2
6081		RAMY	05 28 1305	S18 W01	05 28.5		B	CAO	60	8	5	2
6081		BOUL	05 28 1435	S16 W02	05 28.4		B	CSI	40	7	5	1
6081		HOLL	05 28 1550	S18 W03	05 28.4		B	BXO	40	6	7	2
6081		PALE	05 28 1852	S18 W03	05 28.5		B	CAO	30	8	5	3
6081		LEAR	05 29 0022	S17 W07	05 28.5		B	DSO	30	7	6	3
6081		CULG	05 29 0050	S18 W07	05 28.5		B	CAO	20	8	5	3
6081		RAMY	05 29 1113	S17 W15	05 28.3		B	DAO	60	9	5	3

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MAY 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
6081		HOLL	05	29	1625	S18	W16	05	28.5		B	CRO	20	3	6	3
6081		PALE	05	29	1749	S16	W17	05	28.4		B	BXO	10	10	6	3
6081		CULG	05	30	0050	S17	W20	05	28.5		B	CAO	20	6	4	3
6081		LEAR	05	30	0135	S17	W22	05	28.4		B	BXO	10	7	5	4
6081		SVTO	05	30	0859	S17	W29	05	28.2		A	HR	10	1	1	2
6081		RAMY	05	30	1109	S19	W28	05	28.3		B	CSO	20	5	4	3
6081		BOUL	05	30	1425	S19	W30	05	28.3		A	HS	20	4	2	3
6081		HOLL	05	30	1640	S18	W31	05	28.3		A	AX	10	3	2	4
6081		PALE	05	30	1910	S19	W31	05	28.4		B	BXO	10	3	3	2
6081		CULG	05	31	0050	S18	W38	05	28.1		A	AX		1		3
6081		LEAR	05	31	0100	S18	W37	05	28.2		A	AX	10	1	1	3
6081		SVTO	05	31	0715	S18	W37	05	28.5		A	AX		3	2	3
6081		HOLL	05	31	1435	S20	W41	05	28.5		A	AX		2	1	2
6081		RAMY	05	31	1519	S18	W41	05	28.5		A	AX	10	2	1	2
6081		PALE	05	31	1810	S19	W41	05	28.6		A	AX		1		4
6081		RAMY	06	01	1212	S18	W51	05	28.7		A	AX		1		3
6081		LEAR	06	02	0009	S17	W57	05	28.8		A	AX	20	1	1	4
6081		CULG	06	02	0053	S18	W60	05	28.6		A	AX	10	1	1	2
6075		RAMY	05	24	1128	N22	E69	05	29.8		B	CAO	50	4	2	3
6075		BOUL	05	24	1525	N22	E65	05	29.6		A	AX	10	2	3	2
6075		HOLL	05	24	1620	N21	E65	05	29.7		B	CSO	40	4	4	2
6075		PALE	05	24	1730	N22	E64	05	29.6		B	CSO	30	2	3	3
6075		LEAR	05	25	0027	N24	E61	05	29.7		B	CRO	30	3	3	2
6075		CULG	05	25	0220	N22	E60	05	29.7		B	CAO	20	4	3	3
6075		SVTO	05	25	0839	N22	E57	05	29.7		A	HS	40	2	1	2
6075		RAMY	05	25	1215	N22	E55	05	29.7		A	AX	20	3	1	3
6075		BOUL	05	25	1441	N23	E52	05	29.6		A	HA	30	2	1	3
6075		HOLL	05	25	1450	N24	E53	05	29.7		A	AX	10	3	1	3
6075		PALE	05	25	2235	N23	E50	05	29.8		A	HS	30	1	1	3
6075		LEAR	05	26	0130	N24	E48	05	29.8		B	CRO	20	3	1	2
6075		CULG	05	26	0230	N24	E47	05	29.7		A	HR	20	1	1	2
6075		SVTO	05	26	0641	N22	E45	05	29.7		A	HS	30	2	2	3
6075		RAMY	05	26	1400	N23	E40	05	29.7		A	HA	20	1	1	3
6075		BOUL	05	26	1425	N23	E37	05	29.4		A	HS	30	1	1	3
6075		HOLL	05	26	1520	N22	E39	05	29.6		B	CRO	20	3	3	4
6075		PALE	05	26	1955	N22	E38	05	29.7		B	CRO	10	2	3	3
6075		LEAR	05	27	0045	N23	E33	05	29.6		B	CSO	70	5	4	2
6075		SVTO	05	27	0621	N22	E31	05	29.6		A	HS	50	4	2	2
6075		HOLL	05	27	1415	N23	E26	05	29.6		A	HS	20	3	2	3
6075		RAMY	05	27	1420	N23	E26	05	29.6		A	HR	20	1	2	3
6075		PALE	05	27	1922	N23	E23	05	29.6		B	CRO	30	7	3	3
6075		SVTO	05	28	0543	N22	E18	05	29.6		A	HA	30	4	2	2
6075		RAMY	05	28	1305	N23	E14	05	29.6		B	CAO	30	6	4	2
6075		BOUL	05	28	1435	N23	E12	05	29.5		B	CSI	20	5	3	1
6075		HOLL	05	28	1550	N22	E13	05	29.6		B	BXO	30	4	3	2
6075		PALE	05	28	1852	N22	E12	05	29.7		A	AX	20	4	2	3
6075		LEAR	05	29	0022	N22	E08	05	29.6		B	BXO	10	5	3	3
6075		CULG	05	29	0050	N22	E07	05	29.6		B	BXO		6	3	3
6075		RAMY	05	29	1113	N21	E02	05	29.6		B	BXO	10	4	4	3
6075		PALE	05	29	1749	N19	W05	05	29.4		A	AX		3	2	3
6075		HOLL	06	01	1400	N18	W28	05	30.5		A	AX		1		3
6078		RAMY	05	25	1215	S11	E59	05	29.9		A	AX	10	1	1	3
6078		BOUL	05	25	1441	S12	E55	05	29.7		A	AX		1		3
6078		HOLL	05	25	1450	S11	E58	05	30.0		A	AX		1		3
6078		PALE	05	25	2235	S19	E47	05	29.5		A	AX		2	2	3
6078		LEAR	05	26	0130	S12	E50	05	29.8		A	AX	10	1	1	2
6078		SVTO	05	26	0641	S13	E47	05	29.8		A	HR	20	1	1	3
6078		RAMY	05	26	1400	S11	E42	05	29.7		A	HR	10	2	1	3
6078		BOUL	05	26	1425	S12	E39	05	29.5		A	AX		1		3
6078		HOLL	05	26	1520	S12	E41	05	29.7		A	AX	10	1		4
6078		PALE	05	26	1955	S12	E39	05	29.8		A	AX		2	1	3
6078		LEAR	05	27	0045	S12	E34	05	29.6		A	AX	20	2	2	2
6078		SVTO	05	27	0621	S12	E33	05	29.7		B	CRO	40	2	4	2
6078		HOLL	05	27	1415	S11	E27	05	29.6		A	AX		2	1	3
6078		RAMY	05	27	1420	S12	E26	05	29.5		A	AX	10	1	1	3
6078		PALE	05	27	1922	S12	E24	05	29.6		A	AX		2	1	3
6078		SVTO	05	28	0543	S12	E18	05	29.6		B	BXO	10	3	4	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

MAY 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
6078		RAMY	05 28 1305	S12 E14	05 29.6		B	CRO	20	3	3	2
6078		BOUL	05 28 1435	S11 E13	05 29.6		B	CSI	20	4	4	1
6078		HOLL	05 28 1550	S12 E13	05 29.6		B	BXO	10	2	4	2
6078		PALE	05 28 1852	S12 E12	05 29.7		B	BXO	20	3	3	3
6078		LEAR	05 29 0022	S12 E08	05 29.6		B	CAO	20	4	6	3
6078		CULG	05 29 0050	S12 E09	05 29.7		B	BXO		4	4	3
6078		RAMY	05 29 1113	S12 E02	05 29.6		B	DAO	40	5	7	3
6078		HOLL	05 29 1625	S12 W01	05 29.6		B	CSO	30	4	7	3
6078		PALE	05 29 1749	S12 E00	05 29.7		B	BXO	10	8	5	3
6078		CULG	05 30 0050	S12 W04	05 29.7		B	CAO	20	7	6	3
6078		LEAR	05 30 0135	S11 W06	05 29.6		B	CAO	40	10	6	4
6078		SVTO	05 30 0859	S11 W10	05 29.6		B	DRI	40	8	6	2
6078		RAMY	05 30 1109	S11 W12	05 29.6		B	DAO	70	12	6	3
6078		BOUL	05 30 1425	S12 W13	05 29.6		B	DAI	80	9	6	3
6078		HOLL	05 30 1540	S11 W13	05 29.7		B	CAO	70	13	7	4
6078		PALE	05 30 1910	S12 W14	05 29.7		B	CAO	100	10	6	2
6078		CULG	05 31 0050	S11 W18	05 29.7		B	DAO	90	17	6	3
6078		LEAR	05 31 0100	S11 W18	05 29.7		B	CAO	60	21	6	3
6078		SVTO	05 31 0715	S12 W22	05 29.6		B	DAO	130	24	6	3
6078		HOLL	05 31 1435	S12 W26	05 29.6		B	DSO	130	30	8	2
6078		BOUL	05 31 1450	S10 W25	05 29.7		B	DAO	160	14	7	2
6078		RAMY	05 31 1519	S12 W26	05 29.7		B	DAO	140	19	6	2
6078		PALE	05 31 1810	S12 W27	05 29.7		B	DAI	140	25	6	4
6078		RAMY	06 01 1212	S11 W37	05 29.8		B	DAO	210	22	7	3
6078		HOLL	06 01 1400	S11 W38	05 29.8		B	DSO	360	8	7	3
6078		LEAR	06 02 0009	S11 W43	05 29.9		B	DKO	350	17	9	4
6078		CULG	06 02 0053	S11 W44	05 29.8		B	DAO	280	12	9	2
6078		SVTO	06 02 0708	S11 W48	05 29.8		B	DKI	370	24	8	3
6078		RAMY	06 02 1220	S11 W51	05 29.8		B	DAO	420	13	9	2
6078		HOLL	06 02 1325	S11 W50	05 29.9		B	DSO	330	12	8	2
6078		BOUL	06 02 1420	S12 W50	05 29.9		B	DAO	170	3	9	1
6078		PALE	06 02 1942	S12 W56	05 29.7		B	DAO	180	13	8	2
6078		CULG	06 03 0056	S10 W58	05 29.8		B	DAO	250	9	9	3
6078		LEAR	06 03 0220	S11 W58	05 29.8		B	DAO	320	12	8	3
6078		RAMY	06 03 1210	S11 W61	05 30.0		B	DAO	130	18	10	4
6078		HOLL	06 03 1325	S11 W64	05 29.8		B	DSO	200	13	9	5
6078		BOUL	06 03 1420	S10 W64	05 29.9		B	DAI	150	10	10	2
6078		PALE	06 03 2056	S11 W68	05 29.8		B	DAO	150	14	8	3
6078		LEAR	06 04 0045	S10 W68	05 30.0		B	DAO	180	7	7	3
6078		CULG	06 04 0115	S10 W73	05 29.7		B	DAO	70	4	9	3
6078		SVTO	06 04 0537	S10 W76	05 29.6		B	DAO	240	8	10	4
6078		RAMY	06 04 1257	S10 W78	05 29.8		B	DAO	110	8	9	3
6078		BOUL	06 04 1425	S10 W74	05 30.1		B	BXO	30	2	3	1
6078		HOLL	06 04 1535	S10 W78	05 29.9		B	BXO	200	4	8	3
6078		PALE	06 04 2041	S12 W79	05 30.0		A	AX	20	1	1	3
6078		LEAR	06 05 0032	S11 W79	05 30.2		B	CAO	40	3	4	2
6077		LEAR	05 25 0027	N23 E78	05 31.0		A	AX	30	2	1	2
6077		CULG	05 25 0220	N20 E85	05 31.6		A	HR	10	2	1	3
6077		SVTO	05 25 0839	N21 E76	05 31.2		B	CAO	120	3	9	2
6077		RAMY	05 25 1215	N21 E74	05 31.2		B	CAO	90	7	7	3
6077		BOUL	05 25 1441	N21 E71	05 31.0		B	CAO	350	9	7	3
6077		HOLL	05 25 1450	N21 E70	05 31.0		B	CAI	170	15	7	3
6077		PALE	05 25 2235	N21 E71	05 31.4		B	CKO	160	4	9	3
6077		LEAR	05 26 0130	N21 E66	05 31.1		B	DAO	240	16	9	2
6077		CULG	05 26 0230	N22 E65	05 31.1		B	DSO	90	4	5	2
6077		SVTO	05 26 0641	N19 E66	05 31.3		B	DKI	330	14	10	3
6077		RAMY	05 26 1400	N20 E61	05 31.2		B	CKO	280	16	12	3
6077		BOUL	05 26 1425	N20 E55	05 30.8				230	11	11	3
6077		HOLL	05 26 1520	N20 E60	05 31.2		B	DKI	330	29	10	4
6077		PALE	05 26 1955	N21 E57	05 31.2		B	EAI	100	22	11	3
6077		LEAR	05 27 0045	N21 E52	05 31.0		B	EKO	320	24	11	2
6077		SVTO	05 27 0621	N20 E51	05 31.2		B	EAI	270	28	13	2
6077		HOLL	05 27 1415	N21 E46	05 31.1		BD	EAI	160	41	12	3
6077		RAMY	05 27 1420	N21 E48	05 31.3		BG	EKI	280	21	13	3
6077		PALE	05 27 1922	N22 E44	05 31.2		BG	EKI	200	29	14	3
6077		SVTO	05 28 0543	N21 E39	05 31.2		B	EAI	200	22	14	2
6077		RAMY	05 28 1305	N22 E35	05 31.2		BD	EKI	280	23	15	2
6077		BOUL	05 28 1435	N20 E31	05 31.0		B	EAI	160	14	14	1

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

MAY 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
6077		HOLL	05 28 1550	N20 E33	05 31.2		BD	CSO	120	9	12	2
6077		PALE	05 28 1852	N21 E32	05 31.2		BD	EKI	150	19	14	3
6077		LEAR	05 29 0022	N20 E28	05 31.1		B	EAI	180	23	14	3
6077		CULG	05 29 0050	N21 E28	05 31.2		B	EAI	110	24	13	3
6077		RAMY	05 29 1113	N20 E20	05 31.0		BG	FAI	240	25	15	3
6077		HOLL	05 29 1625	N19 E18	05 31.0		B	ESI	70	12	13	3
6077		PALE	05 29 1749	N20 E19	05 31.2		B	EAO	100	15	15	3
6077		CULG	05 30 0050	N20 E15	05 31.2		B	EAI	70	23	14	3
6077		LEAR	05 30 0135	N20 E14	05 31.1		B	EAI	90	27	14	4
6077		SVTO	05 30 0859	N20 E10	05 31.1		B	FAI	70	17	16	2
6077		RAMY	05 30 1109	N20 E07	05 31.0		B	EAO	160	22	12	3
6077		BOUL	05 30 1425	N19 E03	05 30.8		B	ESI	60	7	11	3
6077		HOLL	05 30 1640	N20 E05	05 31.1		B	ESO	90	16	14	4
6077		PALE	05 30 1910	N20 E03	05 31.0		B	DAO	80	8	12	2
6077		CULG	05 31 0050	N20 W01	05 30.9		B	EAO	40	14	13	3
6077		LEAR	05 31 0100	N21 E01	05 31.1		B	EAO	60	13	13	3
6077		SVTO	05 31 0715	N21 W04	05 31.0		B	ESO	50	18	15	3
6077		HOLL	05 31 1435	N19 W08	05 31.0		B	ESO	70	24	15	2
6077		BOUL	05 31 1450	N18 W07	05 31.1		B	EAO	90	12	14	2
6077		RAMY	05 31 1519	N21 W08	05 31.0		B	EAO	50	18	15	2
6077		PALE	05 31 1810	N20 W09	05 31.1		B	EAI	60	21	14	4
6077		CULG	06 01 0100	N20 W13	05 31.0		B	EAO	30	17	14	3
6077		RAMY	06 01 1212	N21 W12	05 31.6		B	CSO	20	16	15	3
6077		HOLL	06 01 1400	N21 W17	05 31.3		B	BXO	20	7	5	3
6077		LEAR	06 02 0009	N20 W25	05 31.1		B	CAO	90	12	15	4
6077		CULG	06 02 0053	N20 W27	05 31.0		B	CRO	20	6	14	2
6077		SVTO	06 02 0708	N20 W30	05 31.0		B	EAO	30	7	14	3
6077		RAMY	06 02 1220	N20 W32	05 31.1		B	BXO	30	14	14	2
6077		HOLL	06 02 1325	N20 W33	05 31.0		B	BXO	10	5	11	2
6077		BOUL	06 02 1420	N19 W28	05 31.5		A	AX		1		1
6077		PALE	06 02 1942	N19 W38	05 31.0		B	BXO	10	3	12	2
6077		CULG	06 03 0056	N20 W42	05 30.9		B	BXO	10	4	12	3
6077		LEAR	06 03 0220	N20 W43	05 30.9		B	BXO	60	5	13	3
6077		RAMY	06 03 1210	N21 W42	05 31.3		B	BXO	10	2	6	4
6077		LEAR	06 04 0045	N21 W51	05 31.1		A	AX	10	1	1	3
6087		RAMY	06 01 1212	N31 W11	05 31.6		A	AX	10	2	3	3
6087		LEAR	06 02 0009	N31 W16	05 31.7		B	BXO	40	3	4	4
6087		CULG	06 02 0053	N31 W17	05 31.7		A	AX	20	2	3	2
6087		SVTO	06 02 0708	N31 W20	05 31.7		A	AX	20	2	3	3
6087		RAMY	06 02 1220	N32 W23	05 31.7		B	BXO	10	5	3	2
6087		HOLL	06 02 1325	N31 W23	05 31.7		B	BXO	10	4	4	2
6087		BOUL	06 02 1420	N28 W22	05 31.9		A	AX	10	2	2	1
6087		PALE	06 02 1942	N32 W27	05 31.7		B	BXO	10	2	4	2
6087		CULG	06 03 0056	N32 W31	05 31.6		B	BXO	10	2	4	3
6077A		HOLL	05 31 1435	N31 E01	05 31.7		A	AX		1		2
6077A		BOUL	05 31 1450	N28 E05	06 1.0		A	AX		2	2	2
6077A		RAMY	05 31 1519	N31 E02	05 31.8		A	AX		1		2
6077A		PALE	05 31 1810	N30 E00	05 31.7		A	AX		1		4

Stations reporting:

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

MAY 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	0120	0122	0140	1	1					1	*		
02	1148	1150	1159	1-	3					2	1145	C1.7	
02	1514	1517	1531D	1-	1					1	1514	C1.0	
02	2002	2006	2100	2+	1					1	2002	C2.3	
02	2303	2313	2346	1-	1			1			2258	C2.0	
03	2225	2225	2240	1-	1					1	2225E	C1.1	6049
03	2357	2405	2457	1	5	1		1		1	2357	C6.2	
04	0212	0217	0240	1-	1			1			0212	C1.1	6049
04	1103	1105	1125	1	1					1	1054		
04	1650	1714	1800	2+	1					1	1645	B9.0	
04	1950	2002	2055	2+	3					2	1946	C1.4	
04	2252	2254	2301	1-	1					1	2254		6049
05	1800	1800	1822	1	1					1	1758		6051
06	0048	0102	0212	1+	3	1		1			0046	C4.6	
06	0444	0452	0522	1-	1			1			No flare		
07	0055	0107	0211	1-	3	1		1			0054E	C4.6	6051
07	1436	1436	1500	1	1					1	1436		6052
07	1908	1912	1917U	1-	1					1	1909		6054
08	0022	0030	0151	2	5	2		1			0022	M1.1	6054
08	0335	0352	0409	1-	1			1			0344	C2.3	6055
08	0751	0758	0838	1-	5	1		1	1	1	0755	C2.0	6049
08	0849	0900	0922	1-	5	1	1	1	1	1	0848	C2.4	
08	0956	1007	1107	1-	5		1	1	1	1	No flare		
08	1046	1101	1140	2+	1					1	No flare		
08	1643	1646	1709	1	5					4	1643	C2.7	6049
08	1810	1811	1827	1-	1					1	1809	C1.2	6050
08	1849	1901	2023	2+	5	1		1		5	1846	M3.3	6049
09	0030	0042	0117	1-	1			1			No flare		
09	0404	0415	0549	3-	5	1		1		3	0404	M1.2	
09	0615	0630	0720	1-	5			1	1	1	0636	C2.4	6048
09	1122	1126	1135	1-	5	1			1	2	1111	C2.4	6054
09	1325	1340	1419	1	5	2		1	1	11	1322	C8.5	6054
09	1428	1432	1500	1+	1					1	No flare		
09	1800	1801	1821	1	1					1	1759	C2.0	
09	1945	1945	1955	1-	1					1	1941		6052
10	0243	0254	0315D	1-	1			1			0220	C3.0	
10	0316	0332	0428	1+	1			1			0324	C3.8	6052
10	0401	0414	0455D	1-	1			1			*		
10	0905	0909	0932	1	1					1	0855		6049
10	1003	1007	1030	1-	3				1	3	1000	C4.2	
10	1102	1128	1233	2+	5	4	2	1	1	4	1101	C8.0	6054
10	1255	1312	1340	1	5	1			1	2	1253	C3.6	6054
10	1428	1437	1505	1	5	1			1	6	1425	C3.5	
10	1523	1548	1713	3-	5	4	1	1	1	12	1521	M3.9	
10	1919	1942	2003D	3	5	2		1		7	1918	X3.4	
10	2003E	2011	2103	3	1			1			No flare		
10	2248	2258	2351D	2-	5	1		1		4	2247	C8.7	
10	2351E	2411	2541	3	5	2		1		2	2350	M2.1	
11	0455E	0547	0715D	3	5	4	2	1	1	6	0537	X2.4	
11	0714E	0718	0812	1-	1			1			0716	C2.2	
11	1352	1356	1428	1+	5				1	3	1349	C2.8	
11	1502	1508	1540	1-	5	1		1	1	8	1458	C5.7	6054
11	1616	1624	1652	1-	5			1	1	8	1601	C6.7	
11	1727	1730	1749	1	3					2	1730		6058
11	1805	1817	1900	2	3					6	1822	C8.9	6049
11	1956	2000	2019	1	3					5	2000	C3.6	6049
11	2053	2105	2243	3	5	3		1		9	2058	X3.6	6063

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	LF-SES	Flare (UT)	X-ray Class	NOAA Region
12	0046	0053	0223	2+	5	2		1		1	0027	M1.8	6049
12	0300	0305	0338	1-	1			1			*		
12	0432	0442	0508D	1+	5	1		1	1	2	0434	C5.9	6063
12	0508E	0519	0549	1-	1			1			*		
12	1038	1046	1100	1-	5	1		1	1	2	1034	C5.2	
12	1129	1138	1250	2+	5	4	3	1	1	12	1132	X1.2	6063
12	1807	1817	1837	1+	3					2	No flare		
12	2306	2315	2330	1-	1			1			No flare		
13	0100	0126	0153D	1-	1			1			*		
13	0153E	0204	0257	1-	1			1			*		
13	0326	0336	0523	3-	3	1		1			0325	M1.7	
13	0549	0556	0604D	1-	5			1	1	4	0548	C4.1	
13	0604E	0611	0715	1-	5			1	1	3	0603	C3.7	
13	0821	0840	0950D	1-	5			1		1	0810	C4.0	
13	0950E	1002	1048	1	5		1	1	1	5	0953	C7.0	
13	1032	1102	1206	1	1		1				*		
13	1238	1246	1420	2	5	2	3		1	10	1250	M2.4	6064
13	1541	1544	1555	1-	1					1	1543		6064
13	1624	1628	1644	1	1					1	1622		6064
13	1700	1709	1720	1-	5				1	7	1657	C5.4	6063
13	1734	1736	1809	2-	5					8	1735	C6.6	6064
13	1920	1941	2032	2+	3					2	1918E	C6.2	6064
13	2343	2354	2511	2-	5	2		1		2	2342	C8.0	
14	0413	0426	0522	1	5	1		1		1	0403E	C4.5	6064
14	0531	0542	0600	1+	1					1	0531		6064
14	0810	0814	0820	1-	3	1			1	1	0807	C2.2	
14	0916	0922	0930	1-	3	1			1	2	0916	C3.0	6060
14	1026	1032	1053	1	1		1				1004	C6.5	6064
14	1054	1110	1208	2-	5	3	2	1	1	5	1038	C1.9	
14	1223	1229	1245	1-	3	1			1		1209	C2.7	6063
14	1409	1417	1451D	1-	5	1		1	1	6	1408	C4.3	6062
14	1451E	1502	1555	2-	5	2	3	1	1	10	1452	M1.2	6063
14	1621	1623	1623D	1-	1					1	1618		6063
14	1642	1645	1704	1-	5		1			5	1642	C4.9	6064
14	1745	1746	1810	1	3					2	1744		6064
15	0029	0040	0142	2-	5	2		1		1	0029	M1.2	6064
15	0255	0302	0355	1+	5	1		1		2	0257	C8.0	6063
15	0716	0727	0817	1-	5			1	1		0656	C3.7	6063
15	1123	1129	1200	1-	3	1			1	2	1111	C3.8	6064
15	1146	1201	1230	1	5		1			1	1153E		6064
15	1239	1248	1248D	1	5	2	2		1	9	1238	C6.0	6064
15	1258	1319	1815	3	5	3	2	1	1	6	1246	X1.7	6063
15	1739	1744	1814	2-	3					2	1736	C9.6	
15	1927	1933	2000	1-	5			1		4	1925	C7.4	6064
16	0040	0107	0207D	2+	5	2		1			0043	M1.7	6063
16	0207E	0211	0249	1-	1			1			0207	C4.9	6064
16	0220	0229	0240	1-	1			1			No flare		
16	0250	0300	0328	1-	1			1			0251	C4.0	6064
16	0343	0351	0409	1-	1			1			0347		6064
16	0423	0451	0514D	1-	5			1	1		0446E	C5.5	6060
16	0514E	0519	0614	1-	5			1		1	0507	C3.6	6064
16	0706	0716	0756	1-	5	1		1	1	5	0705	C3.6	6064
16	1157	1200	1209	1+	5					2	1156	C3.6	6054
16	1232	1237	1443	2+	1					1	1233		6064
16	1515	1518	1549	1	1		1				1505		6054
16	1608	1618	1639	1+	3					2	1611	C4.1	6063
16	1715	1722	1735	1	1					1	1712		6064
16	1749	1755	1821	1+	3					2	1753		6064
16	1830	1838	1851	1	1					1	1835		6060
17	0306	0313	0322D	1-	5			1		1	0307	M1.1	6063
17	0322E	0332	0601	2+	5	1		1		1	No flare		

* = no flare patrol.

MAY 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
17	0754	0759	0836	1-	5			1		1	No flare		
17	1000	1032	1142	2	5	4		1	1	4	0959	M1.0	6062
17	1106	1120	1147	2	1					1	1105		6054
17	1200	1207	1207D	1-	1					1	1202		6054
17	1223	1246	1333	2	5	4	1	1	1	9	1222	C8.8	6064
17	1356	1414	1424D	1-	5			1		1	1419	C7.6	6064
17	1424E	1452	1543	1-	5	2	1	1	1	8	1419	C7.6	6064
17	1905	1910	1930	1	3					3	1906	C2.3	6064
17	2101	2101	2124	1	1					1	2059	C3.8	6064
17	2244	2306	2333	1-	1			1			2249		6064
18	0035	0044	0110	1-	1			1			0033	C3.5	6064
18	0240	0304	0322D	1-	1			1			0257		6064
18	0320E	0344	0523	2	3	1		1			0317	C6.6	6064
18	0759	0807	0825	1-	1			1			0800	C2.3	6064
18	0846	0900	0919	1-	1			1			No flare		
18	0920	0925	0942	1-	5			1	1		0920	C2.6	6064
18	1238	1402U	1500	1	1		1				1346	C2.9	
18	2100	2100U	2418	1	1	1					2110E		6063
18	2200	2237	2422	1-	1			1			2155E	M1.7	6063
18	2314	2337	2408	1-	1			1			2307		6063
19	0122	0143	0227D	1-	1			1			0122		6063
19	0228	0233	0250	1-	1			1			No flare		
19	0254	0300	0323	1-	1			1			No flare		
19	0451	0519	0625D	1-	1			1			0510		6064
19	0625E	0633	0658D	1-	5	1	1	1	1	4	0627		6064
19	0658E	0702	0752D	1-	5			1	1		0657		6064
19	0759	0828	0947	2-	5	1	1	1	1	3	0800		6064
19	1109	1116	1131D	1-	1			1			No flare		
19	1131E	1140	1227	1-	5			1		1	No flare		
19	1245	1311	1341D	3-	5	3	3	1	1	10	1253E	M2.0	6064
19	1341E	1349	1450	1	5		1	1	1	3	1339		6068
19	1545	1550	1600	1-	1				1		1545		6064
19	1718	1727	1745	1-	5		1		1	6	1707		6064
19	2255	2300	2308	1-	1			1			2258		6064
20	0112	0122	0218D	2-	5	2		1		3	0125E	C7.4	6064
20	0213E	0218	0232	1-	1			1			No flare		
20	0316	0325	0336D	1-	1			1			No flare		
20	0401E	0408	0414D	1-	5			1		1	0338	M1.0	6064
20	0415E	0426	0542D	2+	5	1	1	1	1	2	0338	M1.0	6064
20	0542E	0547	0657	1-	1			1			0544		6064
20	0716	0718	0745	1	1		1				No flare		
20	0820	0827	0904	1-	1			1			0821		6063
20	0941	0957	1021	1-	5		1	1	1		0945	C3.3	
20	1131	1135	1155	1	1					1	1132		6070
20	1225	1240	1251	1+	1					1	1220		6063
20	1318	1342	1420	1-	1		1		1		1320	C5.7	6060
20	1406	1428	1502	1	1		1				1406		6064
20	1515	1518	1536	1-	5				1	1	1526		6063
20	1537	1602	1705	1	1		1				1538		6072
20	1850	1853	1909	1-	3					3	1850	C4.5	6064
20	2106	2120	2144	1-	1			1			No flare		
20	2239	2253	2323	1-	1			1			2246		6063
20	2331	2411	2524D	2+	5	2		1		1	2332	M1.6	6063
21	0113	0119	0126	2	1	1					0105		6064
21	0124E	0135	0332	3	5	2		1		1	0122	M4.8	6063
21	0348	0358	0428	1-	1			1			0350		6064
21	0504	0514	0600D	2+	5	2	2	1	1	3	0504	M1.0	6064
21	0602E	0643	0753	2	1			1		1	0542		6063
21	0802	0818	0941	2	5	1	3	1	1	6	0758	C5.6	6064
21	1214	1223	1330	1-	5	2	1	1	1	5	1213	C5.2	6064
21	1417	1421	1431	1-	5					2	1418	C2.2	
21	1532	1538	1559	1-	5		2	1	1	8	1526	C5.6	6064
21	1714	1724	1753	1	1		1				No flare		

SUDDEN IONOSPHERIC DISTURBANCES

MAY 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
21	1808	1817	1839	1-	5			1		7	1809	C9.1	6064
21	1920	1924	1953	1-	5			1		5	1918	C4.9	6064
21	2113	2115	2124	1-	1					1	2113	C2.7	6064
21	2213	2221	2413D	3	5	4		1		9	2212	X5.5	6063
22	0013E	0059	0244	3	5	2		1		1	0007	M3.2	6064
22	0318	0329	0341	1-	1			1			0315		6064
22	0522	0547	0629	1-	1			1			0515		6064
22	0651	0656	0720	1-	1			1			0637		6064
22	0835	0847	0942	2	5	2	1	1	1	7	0833E	C6.4	6064
22	0939	0945	1000	1	1					1	*		
22	1142	1155	1215	2-	3					2	1144		6063
22	1211	1227	1318	2-	1					1	No flare		
22	1529	1550	1619	1	1		1				1552		6063
22	1917	1925	1953	1-	1			1			1919		6064
23	0017	0026	0050	1-	1			1			0018		6064
23	0139	0146	0236	1-	1			1			0141		6063
23	0335	0339	0355	1-	1			1			0334	C1.8	
23	0400	0424	0610	3	5	4	1	1	1	5	0401	M8.7	6063
23	0643	0650	0700	1-	3				1	1	No flare		
23	0721	0752	0812D	2	5	1		1	1	4	0718	M2.0	6064
23	0852E	0916	1051	3	5	3	3	1	1	7	0851	M2.7	
23	1648	1652	1705	1-	5				1	2	No flare		
23	1806	1808	1827	1-	5					4	1805	C5.5	6064
23	2339	2348	2425D	2-	5	1		1		1	2339	C7.5	6064
24	0025E	0028	0041D	1-	1			1			0015		6064
24	0041E	0047	0127	1-	1			1			0042	C3.8	6064
24	0137	0141	0211	1-	1			1			0136	C3.0	
24	0218	0226	0239D	1-	1			1			0220	C3.5	
24	0239E	0249	0327	1-	1			1			0228		6063
24	0430	0456	0550	1-	1			1			0449		6064
24	0559	0608	0806D	3	5	3	2	1	1	7	0559	M1.3	6064
24	0805	0855	1025	2	5			1	1	2	0806	C1.0	6063
24	1008	1011	1050	2+	1					1	1011	C3.8	
24	1420	1427	1453	1-	5			1	1	7	1420	C3.1	
24	1628	1635	1655	1-	5				1	5	1626	C3.1	
24	1939	1952	2023	2-	5	1		1		7	1939	M1.3	6063
24	2045	2052	2230	3	5	3		1		8	2046	X9.3	6063
24	2254	2302	2332D	1-	1			1			2309	C3.0	6075
24	2332E	2349	2443	1	5	2		1		1	2333	C5.8	6064
25	0110	0119	0156	1-	1			1			0110	C2.3	
25	0216	0236	0300	1-	1			1			No flare		
25	0347	0403	0520	2	1			1			0347	C4.3	
25	0820	0831	0852	2	1		1				No flare		
25	1134	1140	1200	1-	5	1			1	3	1137	C3.1	
25	1254	1305	1330	1-	3	1			1		1254	C2.7	
25	1426	1430	1450	1-	1				1		1424	C2.9	6064
25	1548	1551	1600	1-	5				1	1	1545	C2.5	
25	1629	1632	1646	1-	1					1	No flare		
25	2044	2051	2144	2	3					4	2106	C8.0	6071
25	2336	2346	2409	1-	1			1			2333		6077
26	0055	0104	0122	1-	1			1			No flare		
26	0129E	0141	0207D	1-	1			1			0127		6077
26	0206	0217	0248	1-	1			1			0156		6077
26	0525	0536	0611D	2-	5			1	1	3	0529	C5.4	6077
26	0611E	0620	0724D	1-	1			1			No flare		
26	0726	0741	0809	1-	5			1	1	1	No flare		
26	1003	1013	1100	2-	5	3	3	1	1	4	1002	C7.4	6077
26	1114	1122U	1146	1	1		1				No flare		
26	1214	1223	1322	1	1		1				No flare		
26	1630	1633	1642	1-	1					1	1626		6077
26	1722	1730	1730D	1-	5		1		1	8	1712	C8.4	6071
26	1752	1804	1833	1-	5	4	1	1	1	8	1718	M2.4	6077
26	2047	2100	2200	3	5	2		1		9	2045	X1.4	

* = no flare patrol.

MAY 1990

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	LF-SES	Flare (UT)	X-ray Class	NOAA Region
27	0039	0048	0155	1-	1			1			No flare		
27	0139	0148	0212	1-	1			1			0128		6077
27	0303	0330	0510D	3	5	1		1		1	0305	M1.3	
27	0510E	0524	0646D	1	5			1		1	No flare		
27	0646E	0653	0722	1-	5			1	1	2	0646	C3.4	6077
27	0804	0814	0836	1-	5			1	1	1	0807	C2.6	6077
27	1551	1605	1645	1-	5	3	3	1	1	11	1555	C2.9	6077
27	2307	2314	2330	1-	1			1			*		
27	2345	2354	2418	1-	1			1			2343	C1.9	6077
28	0430	0443	0506	1-	3	1		1			0428	C1.4	
28	0515E	0528	0600D	2+	5	3	2	1	1	4	0515	C9.7	
28	0600E	0605	0634	1	1			1			0534E	C2.9	6077
28	0754	0815	0835	1-	1			1			0747E	C3.0	6071
28	1325	1412U	1439	1	1		1				1351		6076
28	1500	1512	1617	2-	5	3	3	1	1	10	1504	M1.1	6077
28	1804	1812	1831	1+	1					1	1751		6069
28	1928	1933	2000U	1+	1					1	No flare		
29	0023	0036	0110	1-	1			1			0027	C3.3	
29	0308	0314	0334	1-	1			1			0311	C2.0	6077
29	1539	1547	1630	1	1		1				No flare		
30	1335	1338	1341	0	3	1			1		1339	C1.1	6077
30	1536	1547	1630	2+	1					1	1518	C2.2	
31	0310	0319	0343	1-	1			1			0303	C1.7	6077
31	1133	1140	1228	1	1		1				No flare		
31	1329	1337U	1400	1	1		1				No flare		
31	1708	1732	1754	1	1		1				No flare		

* = no flare patrol.

OBSERVATORIES REPORTING FOR MAY 1990

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

MAY 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	0729	CULG										
	0447	0559	WEIS										
	0515	1740	BLEN										
	0607	1812	WEIS										
	0730	1415	POTS										
			SGMR				1552.0	1552.0	1				III
			SGMR				1645.0	1646.0	1				III
	2029	2400	CULG										
02	0000	0729	CULG				0055.0	0055.0	1				IIIG
	0515	0535	BLEN										
	0830	1811	BLEN										
	0444	1235	WEIS				0928.5	0928.7	1				IIIB
	0625	1355	POTS				0954.0	0955.9	3				IIIGG
			WEIS				0955.4	0955.6	2				IIIB
			WEIS				1000.4	1000.6	2				IIIB
			POTS				1000.5	1001.8	3				IIIG
			POTS				1043.5	1044.4	3				IIIG
			POTS				1152.5	1158.8	2				IIIG,U
			POTS				1254.3	1255.0	2				IIIG
			SGMR				1630.0	1632.0	2				V
			SVTO				1630.0	1631.0	2				III
	1239	1811	WEIS				1630.8	1631.7	3				IIIG
			PALE				1813.0	1814.0	2				V
			SGMR				1813.0	1814.0	2				V
			SGMR				1815.0	1819.0	2				II
			PALE				1816.0	1818.0	2				II
			PALE				1934.0	1935.0	1				III
	2029	2400	CULG										
03	0000	0729	CULG										
	0444	1814	WEIS										
	0513	1813	BLEN										
			SGMR				1843.0	1843.0	1				III
			PALE				1911.0	1911.0	1				III
			SGMR				1911.0	1911.0	1				V
			SGMR				1930.0	1930.0	1				V
	2029	2400	CULG				2239.0	2239.0	1				III PAIR
04	0000	0729	CULG										
			LEAR				0150.0	0151.0	2				III
			PALE				0151.0	0151.0	2				III
	0441	0538	WEIS										
	0512	1814	BLEN										
			SGMR				1301.0	1301.0	2				III
	0828	1511	POTS				1301.1	1301.7	3				IIIB
	0604	1814	WEIS				1301.1	1301.8	3				IIIG
			SGMR				1444.0	1444.0	1				III
			WEIS				1444.1	1444.2	2				IIIB
			SGMR				1640.0	1640.0	1				V
			WEIS				1640.8	1640.9	2				IIIB
	2029	2400	CULG										
05	0000	0729	CULG										
	0511	1815	BLEN										
	0719	0751	POTS										
	0805	1437	POTS										
	0440	1817	WEIS				0851.2	0851.3	1				IIIB
			PALE				1732.0	1734.0	2				III
			SGMR				1734.0	1735.0	2				V
			WEIS				1734.4	1734.8	2				IIIG
			PALE				1804.0	1805.0	2				III
			SGMR				1804.0	1805.0	1				V
			PALE				1825.0	1828.0	2				III
	2029	2400	CULG										
			SGMR				2133.0	2134.0	1				III
			PALE				2134.0	2134.0	1				III
			PALE				2333.0	2340.0	1				III
			LEAR				2348.0	2349.0	1				III

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

MAY 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			PALE				2348.0	2349.0	2				III
06	0000	0728	CULG				0056.0	0056.0	2	0056.0	0056.0	2	IIIG
			LEAR				0056.0	0057.0	2				III
			CULG				0121.0	0124.0	2				IIIG
			LEAR				0121.0	0129.0	2				III
			PALE				0123.0	0124.0	2				III
			CULG				0126.0	0129.0	1				IIIN
			CULG				0142.0	0142.0	1				IIIB
			LEAR				0142.0	0142.0	1				III
	0509	1816	BLEN										
			CULG				0623.0	0625.0	2				IIIG
			LEAR				0623.0	0629.0	2				V
			SVTO				0625.0	0625.0	2				III
	0438	1451	WEIS				0625.1	0625.7	2				IIIG
			LEAR				0700.0	0700.0	2				III
			SVTO				0700.0	0700.0	2				III
			WEIS				0700.1	0700.5	2				IIIG
	0715	1430	POTS										
			LEAR				0735.0	0735.0	1				III
			WEIS				0735.3	0735.4	1				IIIB
			SVTO				0927.0	0927.0	1				III
			WEIS				0927.2	0928.2	2				IIIG
			WEIS				1246.3	1246.4	1				IIIB
	1504	1817	WEIS										
			SGMR				1820.0	1820.0	1				III
			PALE				1941.0	1943.0	1				V
			SGMR				1941.0	1949.0	2				III
			PALE				2216.0	2216.0	1				III
	2028	2400	CULG				2346.0	2346.0	1	2346.0	2346.0	1	IIIB
			LEAR				2346.0	2354.0	2				III
			PALE				2346.0	2353.0	2				V
			CULG				2354.0	2354.0	1	2354.0	2354.0	1	
07			LEAR				0049.0	0102.0	1				S
	0000	0728	CULG				0049.5	0102.0	1				IIIB,N
			LEAR				0120.0	0159.0	2				S
			CULG				0125.0	0125.0	1				IIIB
			PALE				0125.0	0125.0	2				III
			CULG				0157.0	0159.0	1				IIIG
			LEAR				0253.0	0259.0	1				III
			CULG				0254.0	0258.0	1				IIIG
			PALE				0255.0	0258.0	1				III
			CULG				0423.5	0429.0	1				IIIGG
			CULG				0438.0	0439.5	1				IIIG
			LEAR				0438.0	0439.0	1				III
			LEAR				0453.0	0456.0	1				III
			CULG				0455.5	0456.0	1				IIIB
	0508	1818	BLEN										
			CULG				0633.0	0633.0	1				IIIB
			LEAR				0702.0	0709.0	2				III
	0438	1819	WEIS				0702.9	0704.7	1				IIIG
			CULG				0703.0	0703.5	1				IIIG
			CULG				0706.0	0709.0	1				IIIGG
			SVTO				0706.0	0708.0	3				III
	0700	1459	POTS				0706.4	0708.8	2				IIIG
			WEIS				0706.4	0708.8	3				IIIGG
			LEAR				0740.0	0744.0	2				III
			SVTO				0740.0	0744.0	2				III
			WEIS				0740.3	0741.0	3				IIIG
			POTS				0740.4	0740.8	2				IIIB
			POTS				0743.6	0743.8	1				IIIB
			WEIS				0743.7	0744.0	3				IIIG
			POTS				0757.0	1459.0	2				I,S,DC
			POTS				0802.4	0802.9	1				IIIG
			POTS				1047.3	1048.3	1				IIIG
			POTS				1129.7	1130.5	1				IIIG
			POTS				1135.0	1136.8	3				IIIG
			SGMR				1136.0	1137.0	1				III

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07		WEIS				1136.3	1136.9	2				IIIG
		POTS				1141.8	1141.9	1				IIIB
		POTS				1203.2	1203.4	2				IIIB
		SGMR				1231.0	1231.0	1				III
		WEIS				1231.9	1232.1	1				IIIB
		SGMR				1256.0	1256.0	1				III
		SGMR				1344.0	1345.0	1				V
		SVTO				1344.0	1344.0	2				III
		WEIS				1344.3	1344.6	1				IIIG
		POTS				1434.7	1436.9	2				IIIGG
		SGMR				1435.0	1437.0	1				V
		WEIS				1435.7	1435.9	1				IIIG
		SGMR				1449.0	2202.0	1				CONT
		SGMR				1738.0	1739.0	2				III
		PALE				1739.0	1739.0	1				III
		WEIS				1739.4	1739.9	2				IIIG
		PALE				1807.0	1810.0	3				V
		SGMR				1807.0	1810.0	3				V
		WEIS				1807.7	1809.6	3				IIIG
		PALE				2038.0	2041.0	2				III
	2028	CULG				2310.0	2310.0	1				IIIB
		PALE				2346.0	2353.0	2				V
08	0000	CULG				0001.0	0001.0	2				IIIB
		LEAR				0150.0	0902.0	1				CONT
		LEAR				0405.0	0405.0	2				III
		LEAR				0430.0	0430.0	2				III
	0435	WEIS				0505.0	1814.0	3				I,S,DC
		CULG				0557.5	0558.0	1				IIIG
		LEAR				0619.0	0640.0	2				S
	0633	POTS				0633.0	1505.0	2				I,S,DC,C
		SVTO				0639.0	0639.0	2				III
		WEIS				0639.3	0640.2	3				IIIG
		POTS				0639.4	0639.9	1				IIIG
		CULG				0639.5	0640.0	1				IIIG
		CULG				0655.5	0656.0	1				IIIG
		SVTO				0713.0	0717.0	2				V
		POTS				0713.2	0717.5	2				IIIGG
		WEIS				0713.2	0717.7	3				IIIG,RS
		CULG				0713.5	0715.0	1				IIIGG
	0507	BLEN				0717.9	0718.5	1				IIIG
		CULG				0721.0	0721.5	1				IIIG
		CULG				0722.0	0722.5	2				IIIG
		POTS				0726.6	0727.4	1				IIIG
		POTS				0916.3	0916.7	1				IIIG
		SVTO				0943.0	0947.0	1				III
		SVTO				1105.0	1729.0	1				CONT
		SGMR				1141.0	2148.0	1				CONT
		WEIS				1257.6	1257.7	1				IIIB
		WEIS				1259.7	1300.7	1				IIIG
		WEIS				1337.3	1737.4	1				IIIB
		WEIS				1632.3	1632.5	2				IIIG
		SGMR				1634.0	1635.0	2				V
		WEIS				1642.9	1649.6	3				IIIGG/V
		SGMR				1645.0	1653.0	3				V
		PALE				1646.0	1649.0	3				V
		SVTO				1646.0	1649.0	3				V
	0852	BLEN				1646.5	1649.1	2				IIIGG
		SGMR				1710.0	1712.0	2				III
		WEIS				1711.1	1712.6	2				IIIG
		WEIS				1737.2	1737.4	1				IIIG
		PALE				1803.0	0107.0	2				CONT
		PALE				1844.0	1850.0	2				III
		SGMR				1844.0	1851.0	2				V
		PALE				1857.0	1904.0	2				II
		SGMR				1857.0	1905.0	2				II
		PALE				1914.0	1915.0	2				III
	2040	CULG				2040.0	2041.0	1				IIIG
		PALE				2040.0	2045.0	3				V

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08		CULG				2041.0	2043.5	3				III V
		SGMR				2042.0	2047.0	3				V
		CULG				2043.0		2				IV C
		CULG				2124.0	2358.0	2				IIIB,G,N
		PALE				2124.0	2129.0	2				III
		SGMR				2128.0	2128.0	2				III
		PALE				2154.0	2156.0	2				V
		LEAR				2317.0	0856.0	1				CONT
09		LEAR				0033.0	0033.0	1				III
		LEAR				0107.0	0108.0	1				III
		CULG				0400.0		1				IV C
	0000	0715 CULG				0400.0E	0400.0	2				IV C
	0434	0956 WEIS				0508.0	1627.0	1				I,N
		SVTO				0530.0	1730.0	1				CONT
		LEAR				0534.0	0541.0	2				III
	0631	1453 POTS				0631.0	1453.0	1				I,S,DC,C
		LEAR				0704.0	0705.0	2				III
		SVTO				0704.0	0705.0	2				V
		WEIS				0704.3	0704.8	2				IIIG
		POTS				0714.5	0714.6	2				IIIB
		SGMR				1048.0	1049.0	1				III
		SVTO				1048.0	1049.0	2				V
	0959	1734 WEIS				1048.4	1049.7	3				IIIGG
	0505	1820 BLEN				1048.5	1049.0	1				IIIG
		POTS				1048.6	1049.4	2				IIIG
		SGMR				1314.0	1315.0	1				III
		POTS				1315.3	1315.4	2				IIIB
		SGMR				1510.0	1536.0	1				S
		PALE				2140.0	2140.0	2				III
		SGMR				2140.0	2140.0	2				III
	2040	2400 CULG				2140.5	2141.0	2				IIIB
		PALE				2207.0	2208.0	2				V
		SGMR				2207.0	2207.0	2				III
		CULG				2207.5	2208.0	2				IIIG
		CULG				2211.0	2226.0	1				IIIB,N
		PALE				2224.0	2226.0	2				III
		PALE				2302.0	2307.0	2				V
		SGMR				2302.0	2302.0	2				III
		CULG				2302.5	2304.0	2				IIIG
		CULG				2306.0	2327.0	1				IIIG,N
		PALE				2320.0	2327.0	2				III
		CULG				2338.0	2338.0	1				IIIB
10	0000	0715 CULG				0313.0	0316.0	1				IIIG
		PALE				0314.0	0315.0	1				III
		SVTO				0405.0	0407.0	2				III
		CULG				0426.0	0426.0	1				III PAIR
		LEAR				0512.0	0513.0	2				III
		SVTO				0512.0	0512.0	2				III
		CULG				0513.0	0513.0	2				IIIB
		CULG				0625.0	0625.0	1				IIIB
	0625	1441 POTS				0625.0	1441.0	1				I,S,DC,C
		SVTO				0640.0	0641.0	2				III
	0552	1822 WEIS				0640.4	0641.2	3				IIIGG,U
		CULG				0640.5	0642.0	2				IIIG
		POTS				0640.5	0641.2	2				IIIG
		CULG				0651.0	0652.0	1				IIIG
		POTS				0651.6	0651.8	2				IIIG
		POTS				0720.9	0721.1	1				IIIB
		WEIS				0720.9	0721.2	1				IIIB
		SVTO				0721.0	0721.0	2				III
		SVTO				0815.0	0815.0	2				III
		POTS				0815.5	0815.7	1				IIIB
		WEIS				0815.6	0815.9	1				IIIG
		SVTO				0835.0	0835.0	2				III
		POTS				0909.6	0910.3	2				IIIG
		SGMR				1020.0	1021.0	1				V
		SVTO				1020.0	1020.0	2				III

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10		POTS				1020.3	1022.6	3				IIIG
		WEIS				1020.3	1020.8	3				IIIG
0504	1303	BLEN				1020.5	1020.6	1				IIIB
		WEIS				1022.2	1022.3	1				IIIB
		SGMR				1441.0	1442.0	1				V
		SGMR				1455.0	1456.0	1				V
		SVTO				1455.0	1456.0	2				III
		WEIS				1455.6	1456.2	2				IIIG
		PALE				1902.0	1905.0	1				III
		PALE				1921.0	1923.0	3				V
		SGMR				1921.0	1922.0	2				V
		PALE				1930.0	1934.0	2				II
		SGMR				1931.0	1934.0	2				II
		SGMR				1937.0	2004.0	1				CONT
		PALE				1949.0	1951.0	1				III
		PALE				2030.0	2030.0	2				V
		SGMR				2030.0	2030.0	1				III
		PALE				2043.0	2044.0	3				V
		SGMR				2043.0	2044.0	3				V
2040	2400	CULG				2044.0	2044.0	2				IIIB
		CULG				2216.0	2216.5	2				III PAIR
		SGMR				2216.0	2216.0	2				III
		CULG				2239.0	2239.0	2				IIIB
		CULG				2253.0	2254.0	2				IIIG
		LEAR				2353.0	2353.0	2				III
		PALE				2353.0	2354.0	3				V
11		LEAR				0122.0	0123.0	1				III
		PALE				0122.0	0123.0	1				III
0000	0715	CULG				0123.0	0123.0	1				IIIB
		CULG				0147.0	0149.0	1				IIIG
		LEAR				0148.0	0148.0	1				III
		PALE				0148.0	0148.0	1				III
		LEAR				0320.0	0320.0	1				III
		CULG				0417.0	0417.0	1				III PAIR
0503	1823	BLEN										
		CULG				0607.0	0607.0	1				IIIB
		LEAR				0608.0	0608.0	1				III
		CULG				0623.0	0624.0	2				IIIG
		LEAR				0623.0	0624.0	2				III
		SVTO				0623.0	0624.0	2				III
0433	0811	WEIS				0623.3	0624.1	2				IIIG
		LEAR				0712.0	0716.0	2				III
		WEIS				0712.8	0713.3	1				IIIG
		WEIS				0715.9	0716.7	2				IIIG
0637	1503	POTS				0716.0	0716.2	1				IIIB
		SVTO				0716.0	0716.0	2				III
		POTS				0957.4	0957.6	1				IIIB
0819	1820	WEIS				0959.4	0959.8	3				IIIG
		POTS				0959.5	0959.8	3				IIIG
		SGMR				1059.0	1059.0	1				III
		SVTO				1059.0	1059.0	1				III
		WEIS				1059.2	1059.7	2				IIIG
		POTS				1059.3	1059.6	1				IIIB
		WEIS				1143.7	1144.9	1				IIIG,Spikes
		SGMR				1144.0	1145.0	1				III
		SGMR				1232.0	1235.0	1				III
		WEIS				1234.8	1235.1	1				IIIB
		SGMR				1343.0	1343.0	1				III
		WEIS				1413.3	1413.5	1				IIIB
		SGMR				1443.0	1443.0	1				III
		SGMR				1452.0	1452.0	1				V
		SVTO				1508.0	1509.0	2				III
		WEIS				1508.8	1509.1	3				IIIB
		SGMR				1509.0	1510.0	2				V
		WEIS				1510.3	1510.4	1				IIIB
		SGMR				1531.0	1531.0	1				V
		WEIS				1531.0	1531.2	1				IIIB
		SGMR				1551.0	1552.0	1				V

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11			SGMR				1807.0	1823.0	2				S
			WEIS				1807.6	1808.3	2				IIIG
			SGMR				1908.0	1917.0	3				V
			PALE				1909.0	1916.0	3				V
			SGMR				1957.0	2000.0	3				V
			PALE				1958.0	2000.0	3				V
	2040	2400	CULG				2053.0	2058.0	3				IIIB
			CULG				2058.0	2110.0	3				CONT
			PALE				2058.0	2113.0	3				IV
			SGMR				2059.0	2119.0	3				IV
			PALE				2207.0	2226.0	1				CONT
			CULG				2208.0	2232.0	1				IIIB,N
			SGMR				2208.0	2331.0	1				CONT
			CULG				2220.0	2337.0	1				I
12	0000	0715	CULG				0047.0	0050.0	2	0047.0	0048.0	1	IIIB,G
			PALE				0047.0	0048.0	2				V
			CULG				0049.0	0050.5	3				II
			CULG				0255.0	0256.0	2				III PAIR
			LEAR				0255.0	0255.0	2				III
			PALE				0255.0	0255.0	1				III
			LEAR				0434.0	0435.0	1				III
			CULG				0435.0	0435.0	1				IIIB
	0503	1824	BLEN										
			CULG				0521.0	0521.0	1				IIIB
			SVTO				0544.0	0544.0	1				III
			SVTO				0640.0	0640.0	2				III
			SVTO				0721.0	0724.0	2				III
	0430	1824	WEIS				0721.0	0721.9	1				IIIG
			SVTO				0831.0	0831.0	2				III
			WEIS				0831.5	0832.3	1				IIIG
			SVTO				0909.0	0910.0	2				III
			WEIS				1015.1	1015.2	1				IIIB
			WEIS				1022.1	1024.3	3				IIIG
			SVTO				1023.0	1024.0	2				III
	0720	1459	POTS				1023.1	1023.2	3				IIIB
			POTS				1024.2	1024.3	3				IIIB
			SVTO				1128.0	1129.0	3				III
			WEIS				1128.7	1136.3	3				IIIGG,RS
			POTS				1128.8	1135.5	3				IV
			SVTO				1130.0	1131.0	3				V
			WEIS				1135.0	1150.0	2				II H
			POTS				1145.0	1149.7	2				II
			WEIS				1239.2	1239.3	2				IIIB
			POTS				1246.2	1248.8	1				IIIG
			WEIS				1246.7	1248.7	3				IIIG
			POTS				1258.9	1403.0	2				I,S,DC
			POTS				1340.6	1340.8	1				UNCLF
			WEIS				1520.8	1528.1	3				IIIG
			WEIS				1612.7	1613.0	1				IIIB
			WEIS				1626.7	1628.4	2				IIIG
	2040	2400	CULG				2058.0	2058.0	1				IIIG
			CULG				2213.0	2225.0	2				IIIN
			CULG				2316.0	2320.0	1				IIIN
			CULG				2334.0	2334.0	1				IIIB
13	0000	0715	CULG				0006.0	0054.0	1				IIIN
			CULG				0109.0	0109.0	2	0109.0	0109.0	2	IIIG
			PALE				0109.0	0115.0	3				V
			CULG				0110.0	0155.0	2				IIIN
			LEAR				0131.0	0000.0	2				S
			PALE				0131.0	0155.0	2				S
			CULG				0201.0	0201.0	2				IIIB
			CULG				0223.0	0224.0	1				IIIG
			PALE				0223.0	0223.0	1				III
			CULG				0233.0	0233.0	1				IIIB
			CULG				0426.0	0427.0	1				IIIG
			CULG				0451.0	0451.0	1				IIIB
	0501	1120	BLEN										

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13		CULG				0503.0	0503.0	1				IIIB
		CULG				0544.0	0544.0	2				IIIB
		LEAR				0544.0	0544.0	1				III
0430	1635	WEIS				0544.4	0544.7	2				IIIG
		CULG				0559.0	0600.0	1				IIIN
		WEIS				0559.0	1625.0	2				IIIN
		CULG				0640.0	0640.0	1				IIIG
		LEAR				0640.0	0657.0	2				S
		CULG				0641.0	0715.0	1				IIIN
0703	1445	POTS				0721.0	0721.2	1				IIIB
		POTS				0820.6	0820.8	2				IIIB
		LEAR				0900.0	0909.0	1				III
		POTS				0900.4	0900.7	2				IIIG
		WEIS				0908.3	0909.0	3				IIIG
		POTS				0908.4	0909.1	2				IIIG
		POTS				0919.3	0920.0	1				UNCLF
		POTS				0948.3	0948.4	1				IIIB
		POTS				1026.9	1028.1	1				UNCLF
		POTS				1039.8	1039.9	1				IIIB
		SGMR				1238.0	1241.0	2				III
		POTS				1238.8	1240.2	2				UNCLF
		SVTO				1239.0	1239.0	2				III
1304	1825	BLEN										
		POTS				1324.2	1324.3	1				UNCLF
		SGMR				1400.0	2333.0	1				CONT
		SVTO				1400.0	1733.0	2				CONT
		POTS				1401.2	1401.4	1				UNCLF
1648	1827	WEIS										
2040	2400	CULG				2132.0	2134.0	1				IIIG
		PALE				2132.0	2134.0	1				III
		CULG				2159.0	2201.0	1				IIIB
		CULG				2236.0	2253.0	1				IIIN
		CULG				2307.0	2307.0	1				IIIB
		PALE				2327.0	2332.0	2				V
		CULG				2328.0	2332.0	2				IIIG
		LEAR				2354.0	2354.0	1				III
		PALE				2354.0	2354.0	2				III
14		PALE				0043.0	0043.0	1				III
0000	0715	CULG				0127.0	0127.0	1				IIIB
		LEAR				0127.0	0127.0	1				III
		PALE				0127.0	0127.0	1				III
		LEAR				0153.0	0157.0	1				III
0500	1517	BLEN										
0637	1509	POTS				0649.0	1503.0U	1				I,S,DC
		LEAR				0650.0	0651.0	2				III
0427	1827	WEIS				0650.0	1744.0	1				IIIN
		CULG				0651.0	0651.0	1				IIIB
		SVTO				0651.0	0651.0	2				III
		POTS				0725.0	1503.0U	1				IIIGG,N
		POTS				0941.6	0941.7	1				UNCLF
		POTS				0947.9	0948.2	2				IIIB
		SVTO				0948.0	0948.0	2				III
		POTS				0958.8	0958.9	1				UNCLF
		POTS				1033.8	1033.9	1				UNCLF
		POTS				1127.7	1129.0	1				IIIG
		SGMR				1156.0	1156.0	2				III
		SVTO				1156.0	1156.0	2				III
		POTS				1156.2	1156.4	2				IIIB
		SGMR				1207.0	2230.0	1				CONT
		POTS				1226.4	1226.7	1				UNCLF
		POTS				1317.7	1317.9	1				UNCLF
		SVTO				1334.0	1348.0	2				S
		POTS				1344.4	1344.6	1				IIIB
		POTS				1348.0	1348.3	1				IIIB
		POTS				1350.2	1359.1	1				UNCLF
		PALE				1739.0	1743.0	1				III
1758	1826	BLEN										
2040	2400	CULG				2049.0	2050.0	1				IIIB

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14			PALE				2049.0	2050.0	1				III
15	0000	0715	CULG				0029.0	0029.0	2				IIIG
			LEAR				0052.0	0052.0	2				III
			PALE				0052.0	0052.0	2				III
			CULG				0056.0	0057.0	1	0056.0	0057.0	1	IIIG
			LEAR				0244.0	0934.0	1				CONT
			CULG				0256.0	0257.0	2	0256.0	0257.0	2	IIIG
			LEAR				0256.0	0259.0	2				III
			PALE				0256.0	0257.0	1				III
			CULG				0334.0	0404.0	1				IIIN
			CULG				0416.0	0539.0	1				IIIS
	0427	1829	WEIS				0432.0	0955.0	2				IIIN
	0459	1827	BLEN										
			SVTO				0507.0	0920.0	2				CONT
			CULG				0540.0	0634.0	1				IIIN
	0633	1459	POTS				0633.0	1441.0	1				I,S,DC,IIIGG,C
			CULG				0639.0	0700.0	1				IIIS
			POTS				0904.3	0905.9	1				II ?
			POTS				0957.2	0957.6	1				UNCLF
			POTS				1033.6	1033.9	1				UG
			POTS				1304.8	1321.0U	2				II ?
			POTS				1304.8	1321.0U	2				IV ?
			WEIS				1304.9	1308.3	3				IIIGG
			WEIS				1304.9	1314.3	3				II H
			SGMR				1305.0	1343.0	3				IV
			SVTO				1305.0	1305.0	3				II
			WEIS				1312.8	1328.5	3				II H
			SGMR				1504.0	1504.0	1				III
			WEIS				1504.3	1504.9	1				IIIB
			SGMR				1734.0	1734.0	2				III
			PALE				2012.0	2012.0	2				III
	2040	2400	CULG				2223.5	2223.5	1				IIIB
			CULG				2254.5	2254.5	2				IIIB
			CULG				2355.0	2355.0	1				IIIB
			PALE				2355.0	2355.0	1				III
16	0000	0012	CULG										
	0035	0715	CULG				0039.5	0112.0	1				IIIB,N
			LEAR				0046.0	0047.0	1				III
			LEAR				0057.0	0101.0	2				III
			PALE				0057.0	0101.0	2				V
			CULG				0058.0	0058.0	2	0058.0	0058.0	1	IIIB
			CULG				0059.5	0059.5	1	0059.5	0059.5	1	IIIB
			LEAR				0106.0	0333.0	2				CONT
			CULG				0113.0	0201.0	1				IIIS,C
			PALE				0125.0	0206.0	1				CONT
			SVTO				0402.0	1035.0	1				CONT
			SVTO				0451.0	0451.0	3				III
	0458	1828	BLEN										
			LEAR				0516.0	0518.0	1				III
			CULG				0550.0	0702.0	1				IIIS
			LEAR				0615.0	0622.0	2				III
	0425	1028	WEIS				0615.3	0619.4	3				IIIG
			CULG				0616.0	0617.0	1				IIIG
			SVTO				0617.0	0619.0	3				III
			CULG				0618.0	0619.0	2				IIIG
			WEIS				0622.2	0622.3	1				IIIB
	0627	1503	POTS				0627.0	1153.0U	2				I,S,DC
			LEAR				0650.0	0650.0	1				III
			SVTO				0815.0	0815.0	2				III
			SVTO				0841.0	0841.0	2				III
			WEIS				0856.7	0856.8	1				IIIB
			POTS				0859.5	0900.7	2				IIIG
			WEIS				0917.3	0918.9	1				IIIG
	1031	1829	WEIS				1043.7	1043.8	1				IIIG
			POTS				1115.4	1115.5	1				IIIB
			SGMR				1400.0	1401.0	2				V
			SVTO				1401.0	1401.0	2				III

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16			SGMR				1604.0	2336.0	1				CONT
			SGMR				1735.0	1744.0	1				III
			PALE				1846.0	1846.0	1				III
	2040	2400	CULG										
17			CULG				0236.0	0327.0	2	0326.0	0327.0	1	IIIG
			LEAR				0323.0	0334.0	2				V
			PALE				0323.0	0327.0	2				V
	0000	0626	CULG				0324.0	0325.0	3	0324.0	0325.0	1	IIIG
			CULG				0328.0	0328.0	1				III PAIR
	0426	1831	WEIS				0457.0	1830.0	2				I,S,DC
			LEAR				0506.0	0750.0	1				CONT
			SVTO				0523.0	1737.0	2				CONT
	0623	1507	POTS				0623.0	0852.0	1				I,S
			WEIS				0722.8	0724.2	1				I
			WEIS				0749.2	0749.3	1				IIIB
			LEAR				0840.0	0841.0	3				III
			SVTO				0840.0	0841.0	2				III
	0457	1830	BLEN	0840.6	0840.9	1							IIIG
			WEIS				0840.6	0840.9	1				IIIB
			WEIS				0840.7	0841.1	1				IIIB
			WEIS				1050.4	1051.0	2				IIIG
			POTS				1050.7	1051.0	1				UNCLF
			POTS				1255.0	1507.0U	1				I,S,DP
			SGMR				1300.0	2337.0	1				CONT
			PALE				2014.0	2358.0	1				CONT
	2040	2400	CULG				2045.0	2258:0	2				I
			PALE				2116.0	2116.0	2				III
			CULG				2116.5	2116.5	2				IIIB
18			LEAR				0017.0	0540.0	1				CONT
	0000	0715	CULG				0026.0	0032.0	2				IIIB,N
			PALE				0026.0	0355.0	2				CONT
			CULG				0032.0	0435.0	1				IIIS
			LEAR				0130.0	0130.0	2				III
			CULG				0355.0	0355.0	2				IIIB
	0423	1823	WEIS				0453.0	1241.0	3				I,S
	0456	1831	BLEN										
			CULG				0513.0	0702.0	1				IIIS
			WEIS				0543.9	0544.2	1				IIIB
			LEAR				0633.0	0932.0	1				CONT
	0619	1321	POTS				0650.0	1245.0	1				I,S,DC,C
			SVTO				0747.0	1738.0	2				CONT
			WEIS				0820.0	1010.0	1				CONT
			SGMR				0923.0	0000.0	1				CONT
			WEIS				1029.2	1029.8	1				IIIG
			WEIS				1113.1	1113.2	1				IIIB
	1345	1507	POTS				1345.0	1507.0U	1				I,S,DC,C
			PALE				1831.0	1831.0	2				III
			PALE				1948.0	1949.0	1				III
			PALE				2006.0	2007.0	1				III
	2040	2400	CULG				2124.0	2339.0	1				I
			PALE				2133.0	0447.0	2				CONT
			CULG				2220.0	2252.0	2				IIIS,C
			LEAR				2307.0	0932.0	2				CONT
			CULG				2337.0		2				IIIS,C
19	0000	0210	CULG				0115.0E	0115.0	2				IIIS,C
			SVTO				0413.0	1739.0	3				CONT
	0422	1455	WEIS				0422.0	1455.0	2				I,S
			WEIS				0423.0	1455.0	2				CONT
			WEIS				0424.6	0424.7	1				IIIB
	0455	1832	BLEN										
	0440	0715	CULG				0458.0		2				C
	0655	1501	POTS				0655.0	1501.0	3				I,N,DC
			SGMR				0920.0	1200.0	1				CONT
			WEIS				1135.0	1454.0	1				IIIS
			SGMR				1200.0	2339.0	2				CONT
			WEIS				1225.7	1226.7	2				IIIG

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19			WEIS				1230.2	1230.3	2				IIIB
			WEIS				1238.3	1238.4	2				IIIB
			PALE				1738.0	0034.0	2				CONT
	2040	2400	CULG										
			LEAR				2327.0	0830.0	1				CONT
20	0000	0715	CULG				0034.0	0034.0	1				IIIB
			PALE				0123.0	0219.0	1				S
	0454	1519	BLEN	0523.2	0523.6	2							IIIGG,U,RS
			BLEN				0650.6	0650.7	1				IIIB
			BLEN	0659.7	0659.8	1							IIIB
			SGMR				1200.0	2339.0	1				CONT
	0700	1455	POTS				1225.0	1225.2	1				IIIB
			SVTO				1324.0	1327.0	2				III
			POTS				1324.5	1327.0	3				IIIG
			POTS				1331.8	1332.0	1				IIIB
			POTS				1337.0	1438.0	1				I,N
			SVTO				1342.0	1342.0	1				III
			SVTO				1345.0	1740.0	1				CONT
			PALE				1848.0	1849.0	2				III
			PALE				1901.0	1953.0	2				S
			SGMR				1906.0	1908.0	2				III
			PALE				2003.0	0315.0	1				CONT
	2040	2400	CULG				2204.0	2204.0	1				III PAIR
21	0000	0715	CULG				0044.0	0044.0	1				IIIB
			CULG				0121.5	0124.0	2				IIIG
			LEAR				0122.0	0132.0	3				III
			PALE				0122.0	0129.0	3				V
			CULG				0124.0	0128.0	3	0124.0	0128.0	1	III,V
			CULG				0128.0	0133.0	2				II
			CULG				0129.0	0139.0	1				UNCLF
			PALE				0129.0	0140.0	3				II
			CULG				0133.0	0155.0	3				IV
			PALE				0140.0	0315.0	1				IV
			LEAR				0141.0	0830.0	2				IV
			CULG				0148.0	0300.0	1				C
			CULG				0155.0	0215.0	2				IV
			CULG				0205.0	0213.0	1				IIIS
			CULG				0215.0	0315.0	1				IV
			CULG				0315.0	0410.0	1				IV
			CULG				0329.0		1				IIIS
			LEAR				0548.0	0548.0	1				III
			LEAR				0622.0	0623.0	1				III
			LEAR				0701.0	0702.0	1				III
			SVTO				0702.0	0702.0	2				III
	0719	1433	POTS				0847.0	1433.0	3				I,S,DC
	0904	1834	BLEN				1233.2	1233.5	1				IIIG
			SGMR				1249.0	1255.0	1				III
			POTS				1249.9	1250.1	1				IIIB
			POTS				1313.7	1313.8	1				IIIB
			POTS				1320.0	1320.2	1				IIIB
			SGMR				1442.0	1442.0	1				III
			PALE				1917.0	1925.0	1				III
			SGMR				1921.0	1924.0	2				V
			PALE				2029.0	2029.0	1				III
			SGMR				2029.0	2030.0	1				III
			PALE				2112.0	2113.0	1				III
			SGMR				2112.0	2112.0	1				III
	2040	2400	CULG				2113.0	2113.5	1				III PAIR
			SGMR				2212.0	2240.0	3				IV
			CULG				2213.0	2238.0	3	2213.5	2214.0	1	III,V
			PALE				2214.0	0043.0	3				IV
			CULG				2225.0	2310.0	3				IV
			SGMR				2240.0	2340.0	1				CONT
			LEAR				2308.0	0830.0	1				IV
			CULG				2310.0	2355.0	2				IV
			CULG				2355.0		1				C

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22	0000	0715	CULG				0015.0E	0015.0	1				C
			PALE				0022.0	0024.0	1				III
			CULG				0124.0	0124.0	1				IIIB
			LEAR				0247.0	0248.0	2				III
			PALE				0247.0	0248.0	2				III
			CULG				0248.0	0248.0	1				IIIB
			CULG				0254.5	0254.5	1				IIIB
			CULG				0333.0	0352.0	1				IIIS
	0420	0914	WEIS										
	0452	1835	BLEN										
			CULG				0504.0		1				IIIS
	0703	1523	POTS				1141.9	1147.4	2				UNCLF
	0933	1836	WEIS				1141.9	1147.5	3				IIIGG,U
			SVTO				1142.0	1147.0	2				III
			SGMR				1143.0	1148.0	2				III
			SGMR				1200.0	2341.0	1				CONT
			WEIS				1515.9	1516.4	3				IIIB
			SVTO				1516.0	1516.0	2				III
			SGMR				1518.0	1518.0	2				V
			PALE				2049.0	2050.0	1				III
23	0000	0715	CULG				0234.0	0234.0	1				IIIB
			LEAR				0234.0	0239.0	1				III
			CULG				0236.0	0236.0	1				IIIB
			CULG				0357.0	0357.5	1				III PAIR
			CULG				0359.0	0400.0	1				IIIG
			LEAR				0405.0	0405.0	1				III
			CULG				0405.5	0405.5	1				IIIB
			LEAR				0407.0	0930.0	1				IV
			CULG				0412.0	0414.0	1				IIIB,N
			PALE				0413.0	0416.0	1				III
			CULG				0414.0	0421.5	2				II H,SWF
			WEIS				0419.0	0654.0	2				I,N
	0419	1548	WEIS				0419.2	0419.3	1				IIIB
			CULG				0425.5	0425.5	2				U
			CULG				0426.0	0435.0	1				IV
			CULG				0426.5	0431.0	2				II (H only)
			SVTO				0427.0	0431.0	2				III
			CULG				0435.0	0510.0	1				IV
			CULG				0436.0	0439.0	2				U
			SVTO				0443.0	0944.0	3				IV
	0451	1139	BLEN	0501.0	0516.5	2							DCIM
			CULG				0503.0	0515.0	2				IIIG,N
			CULG				0510.0	0520.0	2				IV
			CULG				0520.0		2				IV
			WEIS				0917.2	0917.9	1				IIIG
			WEIS				0929.3	0929.7	2				IIIG
	0705	1511	POTS				0929.4	0929.7	1				IIIG
			POTS				0946.6	0946.8	1				IIIB
			WEIS				0946.6	0946.7	1				IIIG
			WEIS				1034.4	1036.7	1				IIIG
			POTS				1101.3	1101.4	1				IIIB
			WEIS				1101.3	1101.9	3				IIIG
			SGMR				1102.0	2230.0	1				CONT
			WEIS				1140.7	1141.2	3				IIIG,U
			POTS				1140.8	1141.0	1				U
	1225	1836	BLEN										
			WEIS				1238.7	1238.9	1				IIIB
	1647	1838	WEIS										
	2040	2400	CULG										
24	0000	0715	CULG				0204.0	0204.0	1				IIIB
			LEAR				0204.0	0205.0	1				III
			PALE				0204.0	0204.0	2				III
			LEAR				0212.0	0212.0	1				III
			CULG				0213.0	0213.0	1				IIIB
			LEAR				0340.0	0340.0	1				III
			CULG				0341.0	0341.0	1				IIIB
			CULG				0651.0	0651.0	2				III PAIR

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Spectral Observations

MAY 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
24	0539	1735	ONDR				0651.1	0651.5	2				IIIG
	0451	1837	BLEN				0651.2	0651.4	2				IIIG
	0417	1839	WEIS				0651.2	0651.6	3				IIIG
	0627	1411	POTS				0651.3	0651.6	1				UNCLF
			SVTO				0652.0	0652.0	2				III
			CULG				0657.0	0657.0	1				IIIB
			CULG				0658.0	0658.0	1				IIIB
			ONDR	0736.6	0737.8	2	0736.6	0737.8	2				IIIG,U
			BLEN	0736.8	0737.6	2	0736.8	0737.6	2				IIIG
			WEIS				0736.8	0737.5	3				IIIG
			SVTO				0752.0	0752.0	2				III
			SVTO				0753.0	0852.0	2				S
			WEIS				0813.4	0813.5	1				RS
			POTS				0816.1	0817.8	1				IIIG
			WEIS				0816.2	0816.6	1				IIIG
			WEIS				0817.7	0817.8	1				IIIB
			ONDR				0823.5	1152.0	1				I,N
			WEIS				0827.8	0827.9	2				IIIG
			ONDR	0827.9	0828.0	2							RS
			WEIS				0839.7	0839.8	1				IIIG
			SVTO				0855.0	0958.0	2				CONT
			WEIS				0856.2	0856.8	2				IIIG
			POTS				0856.4	0856.6	1				IIIB
			BLEN				1117.8	1117.9	2				IIIB
			WEIS				1117.8	1117.9	3				IIIB
			SGMR				1441.0	1442.0	1				V
			WEIS				1441.6	1441.8	1				IIIB
			SGMR				1545.0	1546.0	1				III
			WEIS				1545.6	1545.8	1				IIIB
			PALE				1843.0	1853.0	1				V
			SGMR				1843.0	1902.0	1				S
	2040	2400	CULG				2048.0	2100.0	3				IV
			PALE				2048.0	2159.0	3				IV
			SGMR				2048.0	2110.0	3				IV
			CULG				2100.0	2107.0	2				II
			CULG				2100.0	2120.0	3				IV
			SGMR				2110.0	2343.0	1				CONT
			PALE				2307.0	2307.0	1				III
25	0450	1838	BLEN										
	0000	0715	CULG				0601.0	0603.0	2				IIIG
			LEAR				0601.0	0606.0	2				III
			SVTO				0601.0	0602.0	3				V
	0418	0804	WEIS				0601.2	0603.3	3				IIIG
	0807	1207	POTS										
	0809	1840	WEIS				1714.7	1714.9	2				IIIB
			SGMR				1723.0	1724.0	1				III
	2040	2400	CULG										
26	0000	0715	CULG				0157.0	0157.0	1				IIIB
			LEAR				0157.0	0157.0	2				III
			LEAR				0222.0	0224.0	2				III
			PALE				0222.0	0224.0	1				III
			CULG				0223.0	0223.0	1				IIIB
			CULG				0224.0	0224.5	1				III PAIR
			CULG				0343.0	0343.5	1				IIIG
			CULG				0453.0	0453.0	1				IIIB
			CULG				0454.0	0454.0	1				IIIB
			SVTO				0534.0	0535.0	2				III
	0731	1427	POTS				0747.7	0750.0	1				I
	0415	1840	WEIS				0747.7	0749.2	3				IIIG
			SVTO				0906.0	0917.0	3				S
			WEIS				0906.3	0906.5	3				IIIB
			POTS				0906.4	0906.5	1				IIIB
			LEAR				0916.0	0916.0	1				III
	0449	1839	BLEN				0916.4	0916.6	2				IIIB
			WEIS				0916.5	0916.7	3				IIIG
			POTS				0916.6	0916.7	3				IIIB
			WEIS				0922.5	0922.7	2				IIIG

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

MAY 1990

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1–3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1–3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1–3)	Spectral Type
26			BLEN				1001.3	1001.8	1				IIIG
			WEIS				1001.3	1002.3	3				IIIG,U
			POTS				1001.8	1002.2	1				UNCLF
			WEIS				1015.9	1016.2	2				IIIB
			SVTO				1052.0	1055.0	3				III
			POTS				1052.3	1055.1	2				IIIG
			WEIS				1052.3	1055.5	3				IIIGG
			SGMR				1126.0	1127.0	1				III
	0540	1737	ONDR				1126.5	1126.7	1				IIIG
			BLEN				1126.6	1126.7	2				IIIB
			WEIS				1126.6	1127.3	3				IIIG,U
			POTS				1126.7	1127.3	2				IIIG
			WEIS				1159.8	1159.9	1				IIIB
			SGMR				1204.0	1205.0	1				III
			SVTO				1204.0	1204.0	2				III
			WEIS				1204.3	1204.7	2				IIIG
			SGMR				1226.0	1640.0	1				CONT
			ONDR	1639.5	1639.9	1	1639.5	1639.9	1				IIIG
			BLEN	1639.6	1639.8	2							IIIG
			SGMR				1640.0	1640.0	1				V
			SGMR				1830.0	1830.0	1				V
			SGMR				1830.0	2345.0	1				CONT
			PALE							2048.0	2048.0	2	III
			PALE				2048.0	2114.0	3				IV
			SGMR				2048.0	2113.0	3				IV
	2024	2400	CULG				2054.0	2054.0	1				III
			CULG				2056.0	2110.0	3				IV
			CULG				2110.0	2230.0	2				IV
			PALE				2214.0	2214.0	1				III
			CULG				2230.0		1				IV
27	0000	0715	CULG				0058.0E	0058.0	1				IV
			CULG				0308.5	0313.5	1	0309.0	0310.0	1	IIIG
			LEAR				0309.0	0313.0	2				III
			PALE				0309.0	0313.0	1				III
			LEAR				0320.0	0445.0	1				CONT
			CULG				0323.0	0334.0	1				I,C
			LEAR				0510.0	0514.0	3				III
			CULG				0511.0	0512.0	2	0511.5	0511.5	1	III,V
			SVTO				0511.0	0511.0	3				III
	0416	1526	WEIS				0511.2	0511.7	3				IIIB
	0703	1103	POTS										
	0554	1738	ONDR	0807.0	0807.8	1							Spikes
			WEIS	0807.5	0807.7	2							IIIG,RS
			WEIS				1020.1	1022.0	1				IIIG
			SGMR				1549.0	1557.0	3				V
	1533	1842	WEIS				1549.4	1555.2	3				IIIG/V,RS
			SVTO				1550.0	1555.0	3				III
			PALE				2025.0	2028.0	2				III
			SGMR				2025.0	2028.0	2				III
			SGMR				2028.0	2200.0	1				CONT
			PALE				2046.0	2126.0	1				CONT
	2040	2400	CULG				2051.0	2130.0	1				C
28			LEAR				0428.0	0457.0	3				IV
			PALE				0428.0	0430.0	3				V
	0414	1842	WEIS				0428.4	0436.6	3				IIIGG,RS
	0000	0715	CULG				0428.5	0448.0	3	0429.0	0430.0	1	V,III
			PALE				0430.0	0447.0	3				IV
			WEIS				0430.3	0448.0	3				II H
			SVTO				0432.0	0442.0	3				IV
			CULG				0448.5	0452.0	1				II
			LEAR				0514.0	0517.0	1				III
			CULG				0516.5	0517.0	1				III PAIR
			CULG				0607.0	0607.5	1				III PAIR
	0637	1511	POTS				0838.7	0838.8	1				IIIB
			POTS				0839.0	1345.0U	1				I,S,DC,C
			WEIS				0938.7	0938.8	2				IIIB
			WEIS				1039.7	1039.9	2				IIIG

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

MAY 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
28			SGMR				1131.0	1132.0	1				III
			WEIS				1131.4	1132.6	1				IIIB
			SGMR				1505.0	1507.0	1				V
			WEIS				1505.2	1506.7	2				IIIG
			SVTO				1506.0	1507.0	1				III
	0542	1738	ONDR				1550.0	1550.6	2				CONT
			SGMR				1743.0	0000.0	2				S
			WEIS				1743.8	1745.3	3				IIIG
			PALE				1744.0	1745.0	2				III
			SGMR				1759.0	1846.0	1				CONT
			LEAR				2323.0	2324.0	1				III
			PALE				2323.0	2326.0	2				V
	2040	2400	CULG				2324.0	2324.0	2				IIIB
			CULG				2325.5	2325.5	1				IIIB
29	0000	0715	CULG										
	0414	0639	WEIS										
			SVTO				0514.0	0514.0	2				III
	0542	1739	ONDR				0542.0	1015.0	1				I,N
			LEAR				0823.0	0824.0	2				III
	0711	1844	WEIS				0823.1	0824.0	2				IIIG
			SVTO				0824.0	0824.0	3				III
			SGMR				1243.0	1251.0	1				V
			ONDR	1243.8	1246.3	1	1243.8	1246.3	1				IIIG
			SVTO				1244.0	1248.0	2				V
	0629	1459	POTS				1244.2	1251.5	3				IIIG
			WEIS				1244.2	1246.3	2				IIIG
			SVTO				1250.0	1312.0	2				II
			POTS				1250.3	1259.0	3				I,IIIG
			WEIS				1250.3	1251.2	2				II H
			SGMR				1304.0	1313.0	1				II
			WEIS				1309.0	1312.3	1				II
			SVTO				1312.0	1351.0	2				IV
			SGMR				1313.0	1430.0	1				CONT
			ONDR	1512.2	1512.6	1	1512.2	1512.6	1				IIIG
	2040	2400	CULG										
30			LEAR				0018.0	0019.0	1				III
	0000	0715	CULG				0019.0	0019.0	1				IIIB
	0639	1513	POTS				0916.5	0916.7	1				IIIB
	0413	1844	WEIS				0916.7	0916.8	1				IIIB
	0602	1740	ONDR				0937.0	0941.0	1				I
			ONDR				1021.0	1216.0	1				I,N
			POTS				1048.5	1513.0U	2				I,N,DC
			SGMR				1627.0	1627.0	1				III
			WEIS				1627.4	1627.6	2				IIIB
			SGMR				1719.0	1722.0	1				V
			PALE				1822.0	1822.0	1				III
			SGMR				1822.0	1823.0	2				V
			WEIS				1822.3	1822.4	3				IIIB
			SGMR				1942.0	1942.0	1				V
	2040	2400	CULG				2238.0	2239.0	1				IIIG
31			PALE				0008.0	0008.0	1				III
	0000	0715	CULG				0009.0	0009.0	1				IIIB
			PALE				0115.0	0115.0	1				III
			PALE				0231.0	0240.0	2				V
			CULG				0232.0	0234.0	2	0232.0	0234.0	1	IIIG
			LEAR				0232.0	0234.0	3				III
			CULG				0238.0	0241.0	2				UNCLF
			CULG				0242.0	0300.0	2	0252.0	0300.0	1	II
			PALE				0247.0	0304.0	3				II
			LEAR				0248.0	0307.0	3				II
			CULG				0332.0	0333.0	1				IIIG
			LEAR				0332.0	0333.0	1				III
			PALE				0332.0	0333.0	1				III
	0413	1349	WEIS										
	0541	1727	ONDR	0549.7	0549.9	1							UNCLF
			CULG				0628.5	0628.5	1				IIIB

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

MAY 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
31 0635	1513	POTS				0657.3	0707.9	2				IIIGG
		POTS				0918.0	1507.0U	2				I,N,DC
		POTS				1025.0	1026.8	2				IIIG
		SGMR				1329.0	1329.0	1				III
		POTS				1329.4	1329.5	2				IIIB
		POTS				1338.8	1338.9	2				IIIB
		SGMR				1605.0	1610.0	2				V
		SVTO				1605.0	1606.0	2				III
1357	1845	WEIS				1605.8	1606.3	2				IIIB
		WEIS				1609.0	1609.7	1				IIIG
		WEIS				1641.7	1641.8	2				IIIG
		SGMR				1648.0	1655.0	1				III
		WEIS				1648.7	1648.8	1				IIIB
		PALE				1724.0	1724.0	1				III
		SGMR				1724.0	1730.0	2				V
		WEIS				1724.3	1724.4	2				IIIB
		SGMR				1812.0	2249.0	1				CONT
		PALE				1905.0	1913.0	2				III
		SGMR				1905.0	1905.0	2				V
		SGMR				2048.0	2051.0	3				V
2040	2400	CULG				2049.0	2051.0	2				UNCLF
		CULG				2109.0	2109.0	1				IIIB
		CULG				2111.0	2111.0	1				IIIB
		CULG				2115.0	2115.0	1				IIIB
		CULG				2201.0	2207.0	1				IIIB,N
		CULG				2235.0	2236.0	2				III PAIR
		CULG				2317.0	2318.0	1				IIIG
		PALE				2317.0	2319.0	2				III
		CULG				2319.5	2319.5	3				IIIB
		CULG				2323.0	2323.0	1				IIIB
		PALE				2334.0	2335.0	1				III
		CULG				2344.0	2344.0	2				IIIB
		PALE				2344.0	2344.0	1				III
		CULG				2349.5	2349.5	1				IIIB

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

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

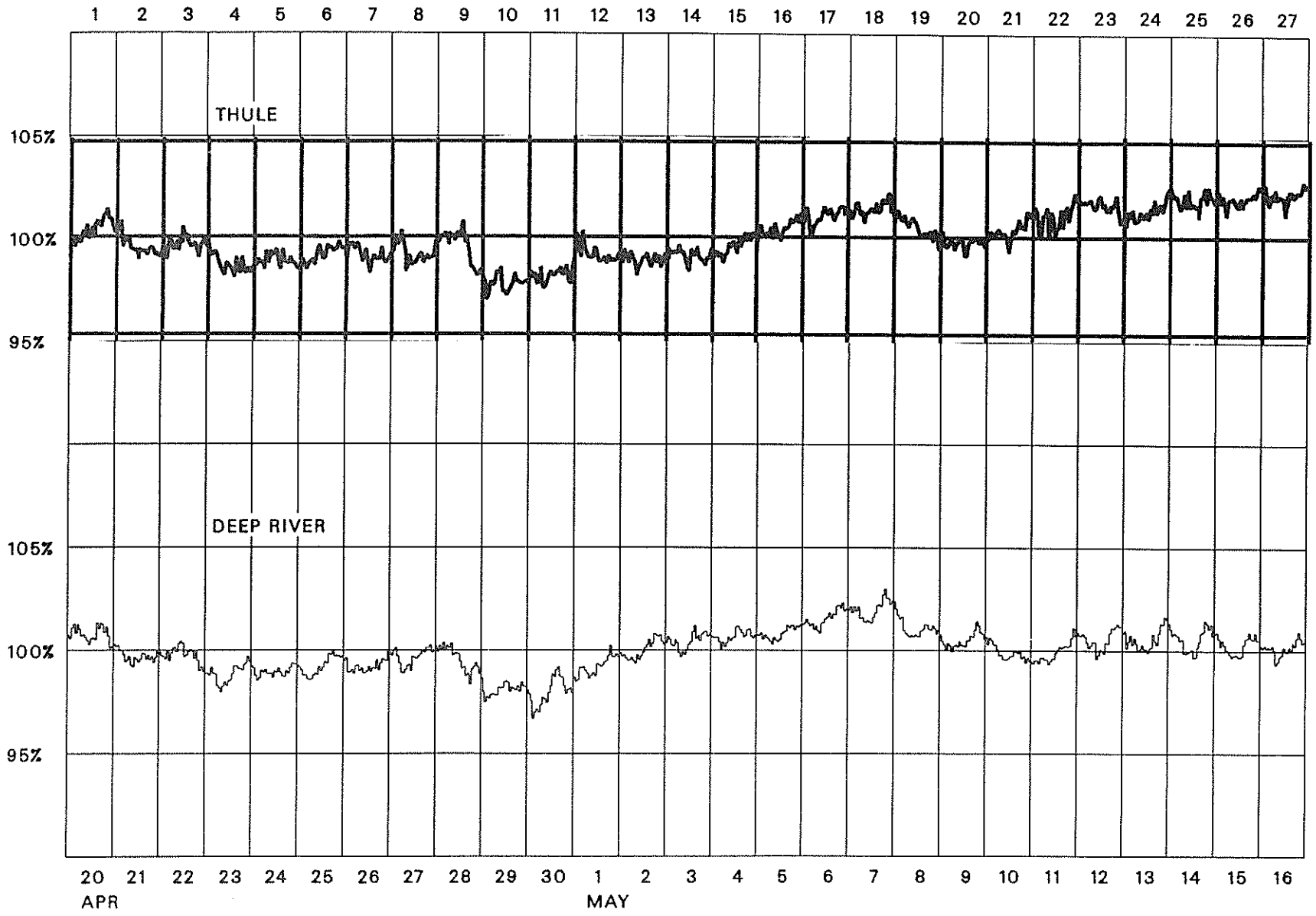
MAY 1990

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	
3	3576	5809.5	5208.5		3365.6	
4	3595	5821.8	5222.0		3360.4	
5	3628	5830.7	5244.6		3368.6	
6	3652	5873.2	5276.6		3384.8	
7	3664	5898.2	5303.1		3382.0	
8	3627	5847.7	5262.9		3382.3	
9	3600	5812.8	5266.1		3380.5	
10	3626	5778.1	5240.9		3368.2	
11	3652	5777.2	5217.6		3365.3	
12	3670	5816.2	5244.5		3379.2	
13	3664	5816.0	5246.8		3374.5	
14	3681	5817.5	5233.7		3381.2	
15	3685	5800.9	5224.0		3397.1	
16	3693	5792.4	5217.7		3395.5	
17	3694	5783.5	5218.5		3390.7	
18	3717	5786.2	5227.5		3383.6	
19	3677	5742.2	5193.5		3376.2	
20	3623	5659.2	5111.9		3355.5	
21	3610	5657.2	5089.2		3353.6	
22	3622	5651.5	5069.9		3340.1	
23	3575	5616.1	5070.5		3342.6	
24	3606	5699.1	5115.6		3348.7	
25	3687	5779.3	5151.2		3361.2	
26	3629	5710.7	5135.8		3379.7	
27	3636	5720.6	5128.7		3373.3	
28	3649	5725.7	5149.5		3360.7	
29	3581	5616.2	5073.7		3330.1	
30	3535	5559.6	5033.3		3316.3	
31	3551	5605.8	5049.9		3322.5	
Mean	3631	5752.6	5179.4		3365.5	

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.

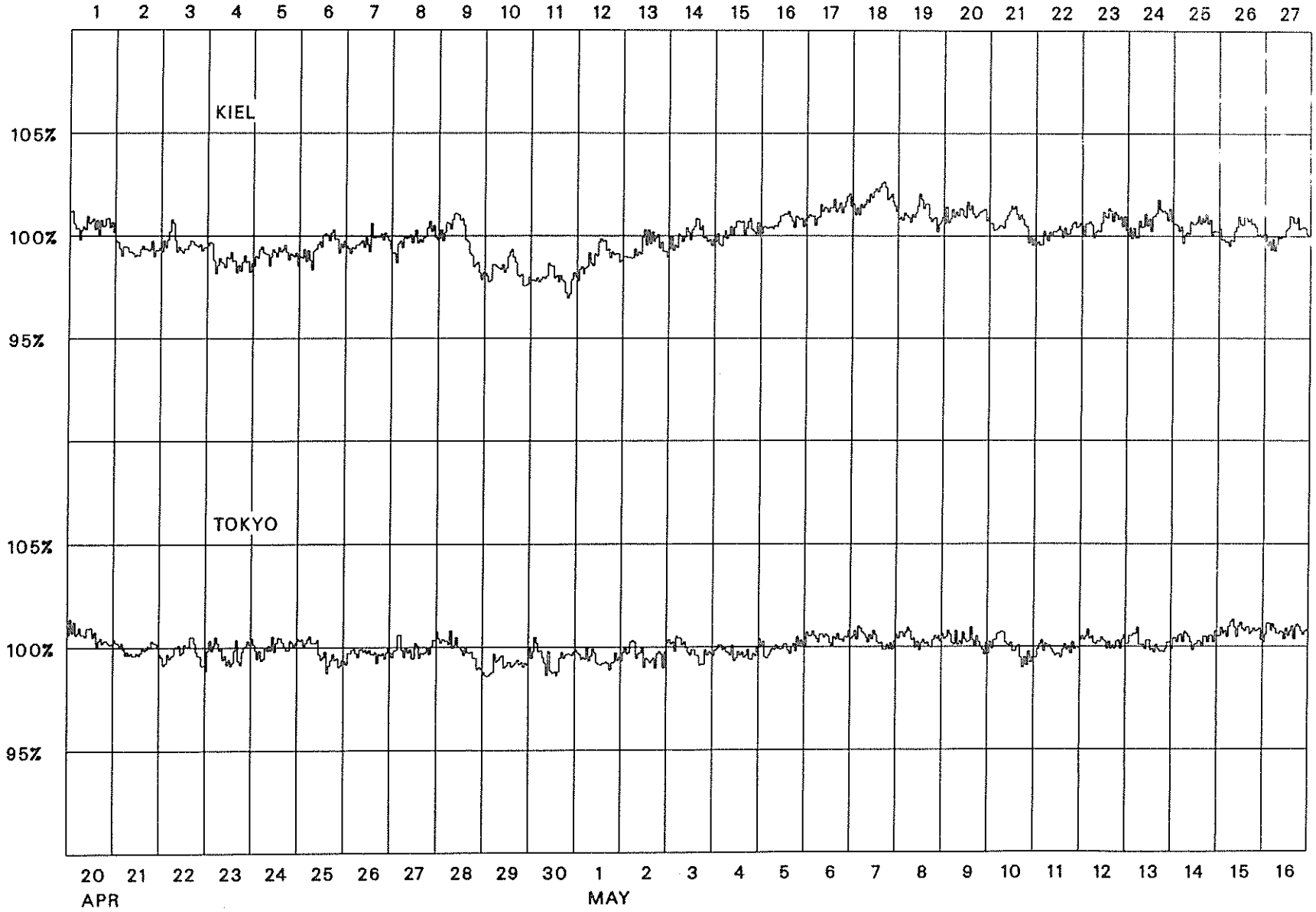
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2141 (April 1990-May 1990)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2141 (April 1990-May 1990)



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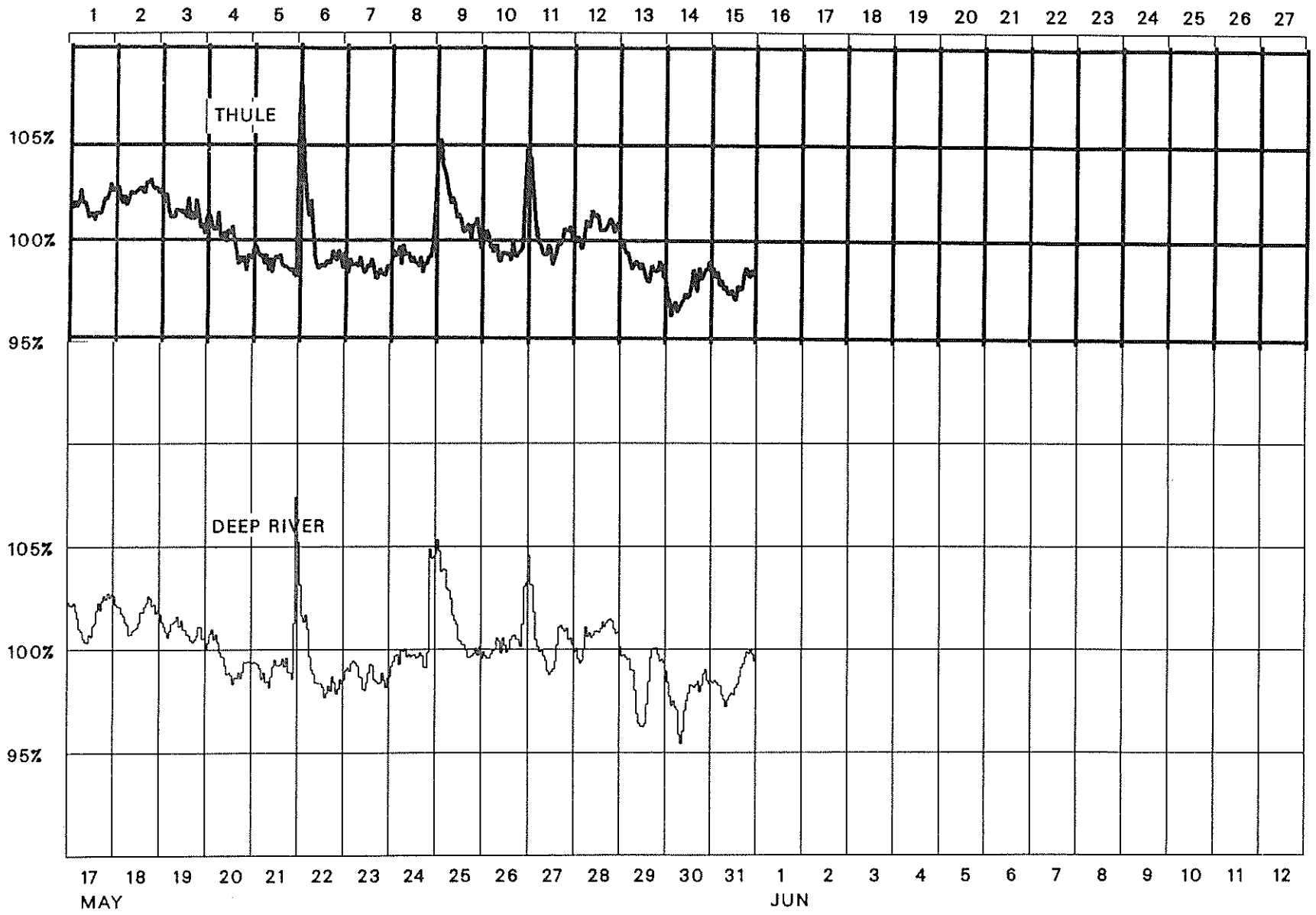
May 90

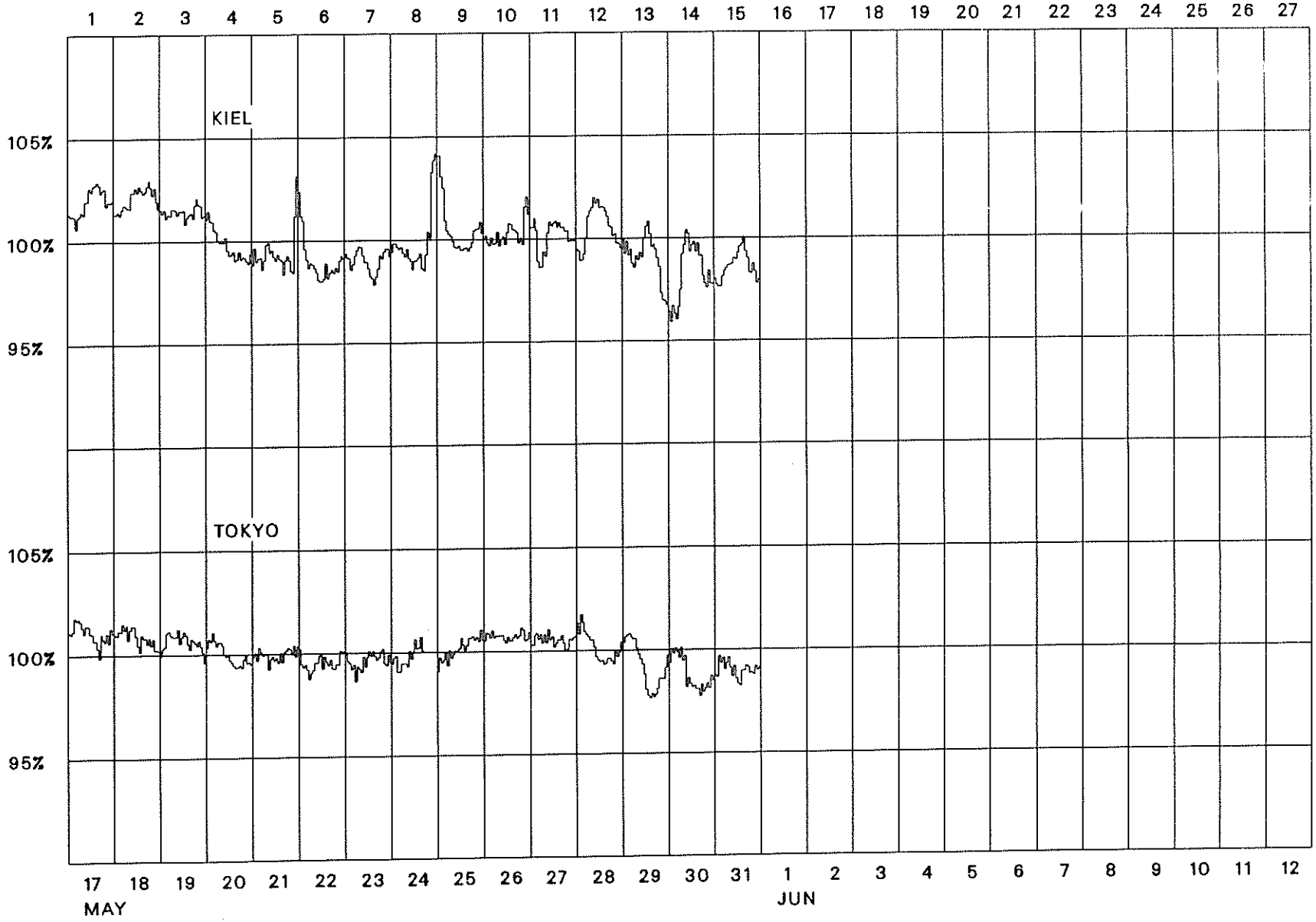
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2142 (May 1990-June 1990)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2142 (May 1990-June 1990)



GEOMAGNETIC ACTIVITY INDICES

May 1990

Day		Kp Three-Hourly Indices 1 2 3 4	5 6 7 8	Sum	Ap	Cp	Km Three-Hourly Indices 1 2 3 4	5 6 7 8	Am	aa Provisional N	S	M
1	Q10A	3- 3 2- 2	2 2+ 2 1	17-	8	0.5						
2		1 2 2+ 4-	3+ 2- 2- 2	18-	10	0.6						
3		2 3 3- 4-	4- 2 4+ 4	25+	18	1.0						
4		3+ 2+ 2+ 3	3+ 3- 2+ 2	21+	12	0.7						
5		2 2- 3 3+	2- 2+ 3- 1+	18	10	0.5						
6	Q4	1 2 1+ 2-	2- 1+ 1+ 1+	12-	5	0.2						
7	Q7A	2- 2- 2- 1+	2+ 3 1- 1+	14-	7	0.3						
8		2 3- 2- 2	3- 3- 2 4-	19+	11	0.6						
9		3 2 3+ 3	4- 2 3 4+	24+	16	0.9						
10	D3	4- 5+ 6- 5-	3+ 3+ 4+ 3	33+	33	1.3						
11		4 5+ 4+ 3-	4- 2+ 3+ 3+	29	24	1.2						
12	Q6A	3+ 2 2- 1+	1- 1- 1 2	13-	7	0.3						
13		1- 1+ 1+ 1+	2 4 3+ 3+	17+	11	0.6						
14	Q2	1+ 1- 1- 0+	1- 1- 1 1	6+	3	0.1						
15	Q5	1+ 2- 1+ 1	2 2 2- 0+	11+	5	0.2						
16	Q1	1- 1- 1- 0+	1- 1- 1- 0+	5-	3	0.0						
17	Q3	1- 1+ 1+ 1+	1 1 1+ 1-	9-	4	0.1						
18	D5	2 2- 3+ 4-	5 6+ 4- 4+	30	31	1.3						
19		4 4+ 3- 2+	3- 3+ 3 3+	26-	18	1.0						
20		4- 4- 2 2+	3- 4- 5- 4	27-	20	1.0						
21		4 2 1 3-	3+ 4 4 5	26+	22	1.1						
22	D4	4- 4+ 5+ 4+	5 4 4- 3+	34-	32	1.3						
23		3+ 3- 2+ 3	2 3 1+ 2-	19+	11	0.6						
24	Q9A	1- 1+ 1 1+	1- 2 3+ 3	13+	8	0.4						
25		3 3+ 3 4-	4+ 3+ 3+ 3+	27+	20	1.0						
26	D1	4+ 4- 3 3+	5 4- 6- 7+	36	47	1.5						
27	D2	4- 6+ 7- 5+	3 4+ 3- 3	35	45	1.5						
28	Q8A	1+ 2- 2- 2-	2 3 2- 2-	15-	7	0.4						
29		2+ 2- 2 2+	2 2+ 3- 3+	19-	10	0.5						
30		3- 3+ 3+ 4+	4- 3+ 5 3+	29	23	1.1						
31		3 3 2- 3-	2+ 2+ 3- 3-	20+	11	0.6						
Mean					16	0.72						

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							129.0	70	68	77	
2							129.2	59	55	78	
3							125.2	61	58	73	
4							123.6	86	84	71	
5							130.6	80	77	79	
6							151.0	106	106	101	
7							155.5	132	125	106	
8							170.7	138	135	122	
9							174.6	133	138	127	
10							195.4	116	128	149	
11							205.4*	126	127	160	
12							215.2	146	142	170	
13							225.8	144	141	182	
14							224.2*	141	137	180	
15							246.6	144	152	204	
16							251.5	157	168	210	
17							248.9	167	177	207	
18							271.8	170	181	232	
19							280.0	187	190	240	
20							272.5	187	183	232	
21							259.2	193	197	218	
22							250.0	187	179	208	
23							239.5	160	156	197	
24							209.2	158	151	164	
25							189.1	146	147	142	
26							186.3	134	131	139	
27							164.6	139	137	116	
28							159.3	116	118	110	
29							144.8	118	113	94	
30							142.5*	90	100	92	
31							142.5*	101	106	92	
Mean							194.0	132.0	132.5	147.5	

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

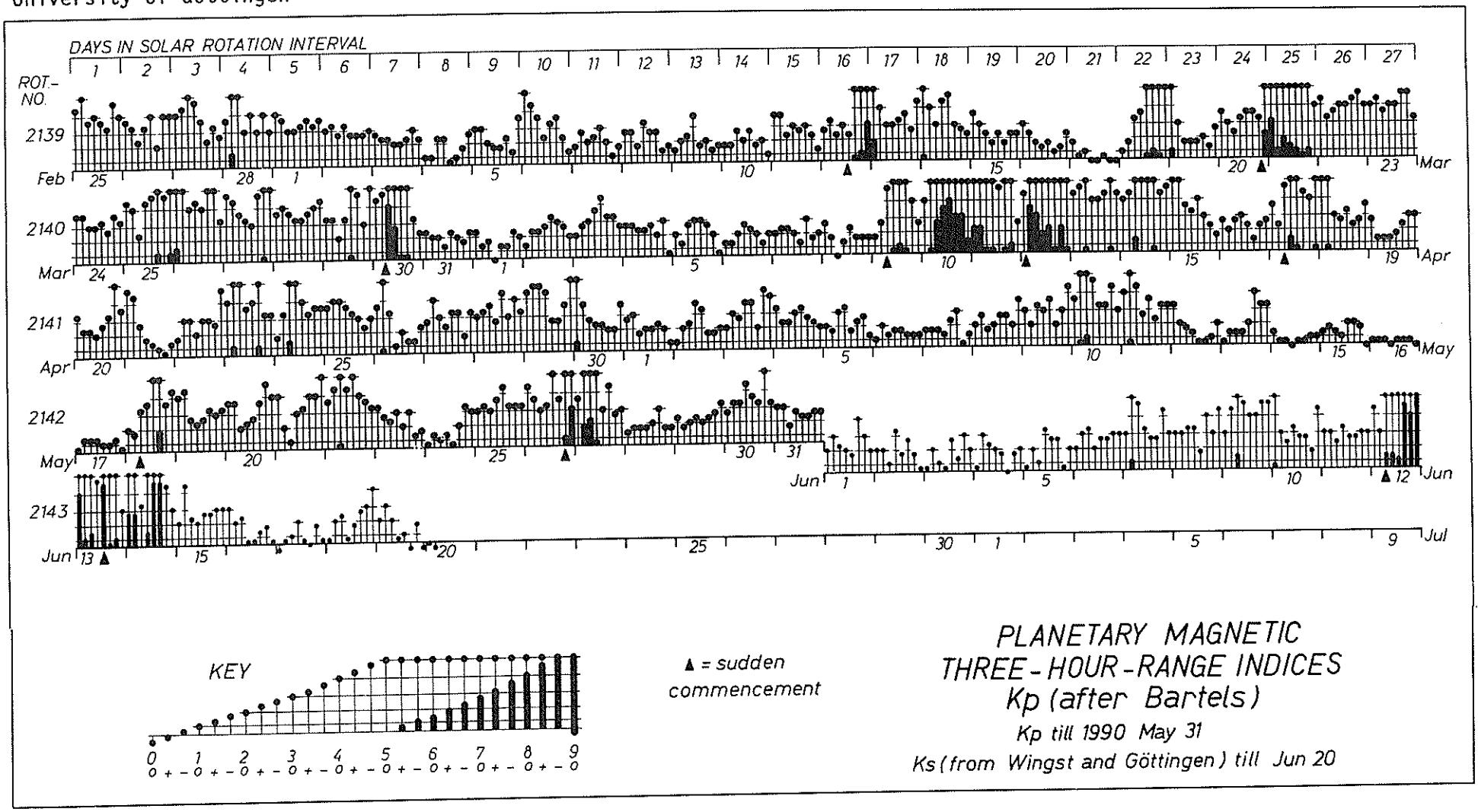
June 1989 to May 1990

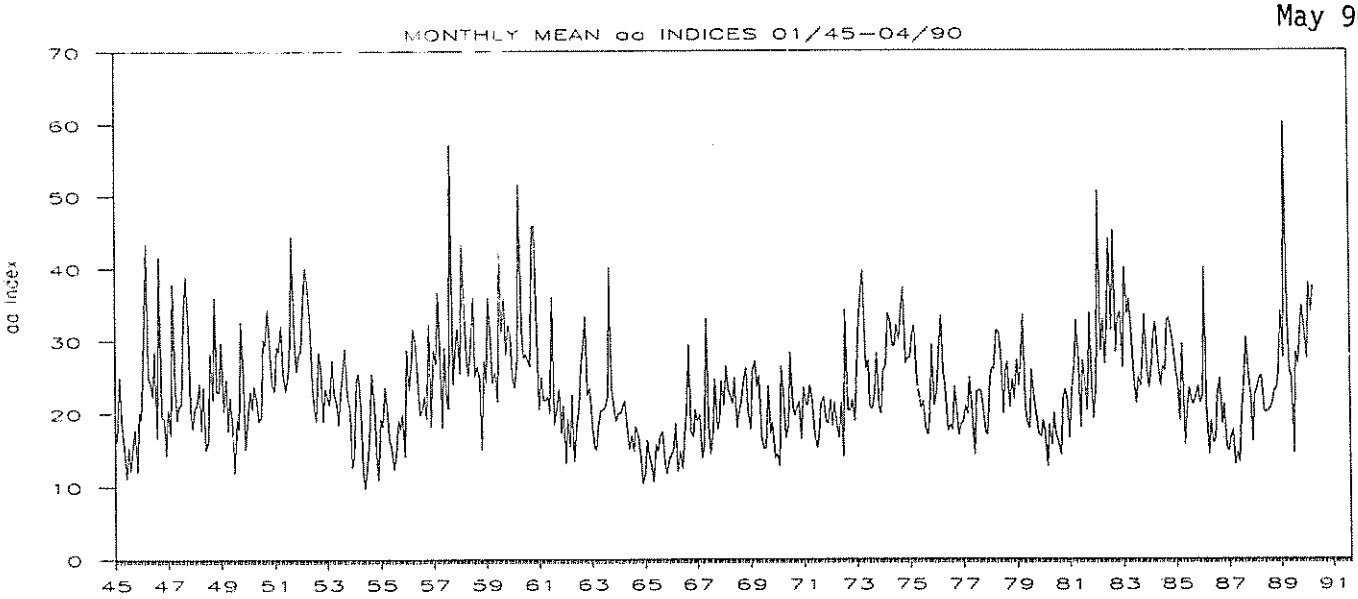
DAY	1989 JUN	JUL	AUG	SEP	OCT	NOV	DEC	1990 JAN	FEB	MAR	APR	MAY
1	11	26	6	8	13	8	38	16	22	20	6	8
2	19	5	6	8	9	21	22	17	25	14	11	10
3	14	3	5	8	12	26	26	15	8	10	17	18
4	14	3	8	30	6	28	31	12	28	6	10	12
5	7	15	2	21	5	19	14	17	24	11	10	10
6	11	11	8	12	10	11	5	7	10	21	7	5
7	34	8	9	22	12	19	10	6	25	8	8	7
8	23	4	7	16	9	15	6	11	8	10	6	11
9	34	6	10	11	11	25	4	14	7	8	34	16
10	78	11	41	10	12	10	3	16	8	8	124	33
11	22	4	25	3	7	18	6	18	10	14	64	24
12	12	3	8	12	8	10	8	15	6	42	99	7
13	16	7	9	9	1	43	7	9	9	29	38	11
14	50	4	55	5	1	14	12	8	30	26	45	3
15	37	6	77	42	4	6	10	9	36	11	24	5
16	9	2	26	24	10	5	16	10	50	7	10	3
17	5	13	34	7	12	109	11	9	33	3	40	4
18	5	13	29	52	17	45	7	8	23	35	24	31
19	8	4	14	70	24	8	6	4	33	16	9	18
20	28	4	26	6	112	8	6	14	38	30	18	20
21	4	5	21	8	146	12	8	17	16	76	13	22
22	5	7	12	23	51	6	26	19	21	28	16	32
23	5	11	28	4	22	6	15	20	36	29	37	11
24	10	8	6	7	17	8	20	32	29	18	30	8
25	7	6	5	5	23	2	16	19	29	39	19	20
26	8	13	6	54	24	11	22	10	19	41	16	47
27	6	8	26	8	17	16	25	4	26	34	15	45
28	7	9	22	8	9	28	10	7	31	24	20	7
29	13	10	58	8	13	19	50	24		27	30	10
30	10	7	17	12	23	20	30	24		69	19	23
31		4	6		14		35	18		7		11
MEAN	17	8	20	17	21	19	16	14	23	23	27	16

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

University of Göttingen

Kp through May 31, 1990





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

MAY 1990

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges K	D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
GUA	04.0N	02	09--	..	..	..	..	02(4)	5	--	50	10	02	14
FRD	49.6N	09	18--	..	..	..	..	10(3)	6	24	133	71	11	09
BJI	28.5N	09	1843	SC	.1	10	0	10(2)	5	13	103	41	10	17
HYB	07.6N	09	1843	SC	- .1	6	- 1	10(3)	6	5	137	51	11	15
GUA	04.0N	09	21--	..	..	..	..	10(2)	5	--	210	40	10	14
ETT	00.6S	09	1843	SC	- .2	6	6		-	5	247	80	10	22
COL	64.6N	18	0740	SC	- 10	85	- 36	18(6)	7	271	1250	910	18	20
FRD	49.6N	18	0739	SC	- 1.0	29	- 3.5	18(6)	6	33	124	89	19	04
BJI	28.5N	18	0740	SC	- .7	39	4	18(4)	5	10	152	30	18	24
UJJ	13.5N	18	0739	SC	- 1.0	31	- 7		-	7	188	40	19	03
ABG	09.5N	18	0739	SC	- .5	27	- 11	18(3,6)	5	8	204	50	19	03
HYB	07.6N	18	0740	SC	- .8	28	- 2	18(6)	6	8	212	21	19	24
GUA	04.0N	18	0740	SC	..	23	- 5	18(4)	5	--	120	20	18	20
ANN	01.5N	18	0739	SC	- 1.5	55	21		-	7	247	51	19	03
ETT	00.6S	18	0740	SC	- 1.4	54	35		-	8	280	68	19	19
HER	33.7S	18	0740	SC	- 6 *	12	12	18(3,5,6,8) 19(1,2)	4	27	145	90	19	04
FRD	49.6N	21	1022	SC	- 1.2	16	- 3	22(3)	6	24	156	103	23	--
BJI	28.5N	21	1022	SC	.1	25	3	22(2)	5	15	138	50	22	21
UJJ	13.5N	21	1000	..	..	..	..		-	-	162	47	22	24
ABG	09.5N	21	1000	..	..	..	..	22(5)	5	9	182	70	22	24
HYB	07.6N	21	1020	SC	- .8	17	- 1	22(3,4,5)	6	9	137	36	22	23
GUA	04.0N	21	20--	..	..	..	..	22(1)	5	10	230	40	22	20
ANN	01.5N	21	1000	..	..	..	..		-	7	252	81	22	24
ETT	00.6S	21	1021	SC	- .8	26	18		-	9	296	85	22	24
CNB	43.9S	21	19--	..	..	..	..	22(3,5)	5	17	116	55	22	18
FRD	49.6N	24	2046	SC	- 1.6	30	- 17	26(1,2)	5	20	114	60	26	06
BJI	28.5N	25	0511	SC	.6	21	0		-	--	--	--	--	--
HYB	07.6N	25	0000	..	..	..	..	25(4)	5	8	146	26	26	18
ETT	00.6S	25	0511	SC	- .6	25	15		-	9	201	59	--	--
COL	64.6N	26	2037	SC	- 14	85	38	27(3)	7	221	1470	810	27	18
FRD	49.6N	26	2036	SC*	2.5	84	- 4	26(8)	7	24	284	160	27	23
BJI	28.5N	26	2036	SC	.9	54	3	26(8)	6	14	170	57	27	21
HON	21.1N	26	2040	SC	..	..	..	26(7,8)	6	--	--	--	27	12
UJJ	13.5N	26	2036	SC	- .6	57	- 12		-	8	148	58	28	02
ABG	09.5N	26	2036	SC	- 1.0	47	- 8	26(8)	6	7	132	56	28	02
HYB	07.6N	26	2038	SC	- .5	47	- 2	26(8)	6	7	143	28	27	22
GUA	04.0N	26	2037	SC*	1.2	34	- 9	27(3)	6	10	220	50	27	13
ANN	01.5N	26	2036	SC	- 1.8	51	30		-	8	168	105	28	02
ETT	00.6S	26	2038	SC	- .6	36	37		-	7	213	119	27	22
HER	33.7S	26	2037	SC	2	28	20	26(8)	6	34	98	107	27	18
CNB	43.9S	26	2037	SC*	3.4*	15	5 *	27(3)	6	15	168	81	27	18
FRD	49.6N	30	0903	SC*	- 2.8	34	- 4	30(4)	5	21	76	42	31	05
HYB	07.6N	30	0905	SC	- .6	23	- 2	30(4)	5	4	83	17	31	21
GUA	04.0N	30	08--	..	..	..	..	30(4)	5	--	50	10	30	16
ETT	00.6S	30	0904	SC	- 1	34	24		-	5	113	57	31	12

Stations:

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

C O N T E N T S

Prompt Reports **LATE DATA** Number 551 Part I

Page

GEOMAGNETIC INDICES February-April 1990
Sudden Commencements/Solar Flare Effects 144-146

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Late
Feb 90

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

FEBRUARY 1990

Storm Sudden Commencements (ssc)

Day	Time	Quality: Station Group*
13	1715	A: SOD WNG* NAG COI BJI SPT
		PEN ALM LNP HYB ETT KGL
		B: DOB LER* ESK* NGK VAL HAD
		BDV CLF GCK MMB AQU EBR
		FRD KAK HTY KNY TAN CNB
		AMS CZT
		C: NUR
14	0321	A: COI PEN ALM TEN LNP HYB ETT
		B: EBR* BJI TAN
15	0626	A: ETT
		B: ALM TEN
		C: MMB* EBR* BJI SPT KAK* HTY*
		KNY* HYB

Solar Flare Effects (sfe)

Day	Begin-End	Station(s)
03	0108-0135	MMB KAK KNY LNP
13	0042-0046	LNP
14	0936-0942	QUE
14	0949-0955	NAG
16	0336-0345	QUE
18	1701-xxxx	TAN
19	1234-1256	BDV
21	1715-xxxx	TAN
22	0737-0756	ETT
26	0553-0556	LNP
27	0712-0716	LNP
27	2317-2327	LNP

Reporting Observatories: (up to the 2nd of April 1990):

SOD DOB NUR LER ESK WNG NGK VAL HAD BDV CLF NAG
GCK MMB AQU EBR COI BJI SPT FRD ALM KAK KNY QUE
TEN LNP HYB ETT TAN GNA CNB AMS CZT KGL DUM

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, ordinary, but unmistakable; and C means very poor, doubtful.

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

MARCH 1990

Storm Sudden Commencements (ssc)

Day	Time	Quality: Station Group*
12	1503	A: SOD* DOB* NUR* LER* ESK* WNG* BDV* CLF* HRB* NAG* GCK* MMB* AQU* EBR* COI BJI SPT* PEN* KAK HTY KNY TEN* LNP HYB ETT MPO AMS* CZT* KGL*
		B: NGK* HAD* FRD* QUE GNA* DUM*
14	0949	B: NUR WNG* BDV* HRB* TEN* TAN
		C: SPT* CZT* KGL*
20	2243	A: NUR WNG* HRB NAG* GCK* MMB* AQU* COI FRD PEN KAK* HTY* TEN MPO GNA*
		B: LER* ESK* NGK* HAD* BDV* CLF EBR* BJI AMS* KGL*
		C: KNY* QUE LNP HYB ETT DUM*
30	0720	A: SOD* NUR* WNG* NGK* BDV* CLF* HRB* GCK* MMB* COI BJI PEN* KAK HTY KNY* LNP HYB ETT* GNA KGL*
		B: NAG* AQU EBR* QUE
		C: DUM

Solar Flare Effects (sfe)

Day	Begin-End	Station(s)
01	0342-0348	LNP
02	0057-0120	MMB KAK KNY (SSC: LNP)
06	1116-1134	AQU
11	1412-1424	MPO
13	1045-1059	TEN
18	1358-1428	WNG
19	0350-0353	LNP
19	0434-0600	MMB KAK KNY LNP
19	1348-1415	WNG BDV TEN MPO
22	0424-0431	LNP
24	0252-0259	LNP
26	0326-0331	LNP
27	0347-0401	LNP
28	0730-0737	LNP
30	0207-0216	LNP

Reporting Observatories: (up to the 2nd of May 1990):

SOD DOB NUR LER ESK WNG NGK HAD BDV CLF HRB NAG
GCK MMB AQU EBR COI BJI SPT FRD PEN KAK HTY KNY
QUE TEN LNP HYB ETT TAN MPO GNA AMS CZT KGL DUM

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, ordinary, but unmistakable; and C means very poor, doubtful.

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

APRIL 1990

Storm Sudden Commencements (ssc)

Day	Time	Quality: Station Group*
09	0843	A: SOD* DOB* NUR* LER* ESK* WNG* VAL* HAD* MMB* COI BJI FRD* KAK HTY QUE TEN* LNP HYB* ETT* TAN MPO CNB* KGL*
		B: NGK* BDV* CLF* NAG* GCK* AQU* EBR* SPT KNY GNA AMS* CZT* DUM
12	0326	A: NUR* WNG* VAL BDV* CLF NAG* GCK* AQU EBR COI BJI SPT KAK* HTY* KNY* TEN* LNP HYB ETT TAN GNA CNB* CZT*
		B: NGK MMB* QUE AMS KGL* DUM
17	0719	A: BJI HTY KNY LNP HYB ETT TAN
		B: LER ESK WNG VAL HAD BDV GCK MMB EBR* SPT FRD KAK QUE GNA CNB
		C: NGK CLF NAG
20	1801	B: COI TEN
		C: CLF* SPT LNP
23	0336	A: ETT
		B: HTY CNB*
		C: MMB BJI SPT KAK KNY* QUE HYB

Solar Flare Effects (sfe)

Day	Begin-End	Station(s)
01	0510-0516	LNP
02	1940-2000	TEN
03	0149-0155	LNP
03	0524-0530	LNP
03	0824-0827	LNP
04	0155-0200	LNP
04	0331-0334	LNP
06	1233-1245	MPO
08	0400-0404	LNP
08	1022-1042	AQU
08	1216-1238	AQU
12	0257-0301	LNP
16	0038-0100	MMB KAK KNY LNP
16	0628-0655	BDV MMB AQU BJI KAK HTY KNY LNP HYB ETT
17	0307-0312	LNP
18	0354-0405	LNP
18	1521-1544	TEN
23	0330-0339	TAN
26	2326-2334	TEN
28	1305-1320	NAG TEN (SSC: CLF WNG BDV)
28	1721-1734	QUE

Reporting Observatories: (up to the 4th of June 1990):

SOD DOB NUR LER ESK WNG NGK VAL HAD BDV CLF
NAG GCK MMB AQU EBR COI BJI SPT FRD KAK HTY
KNY QUE TEN LNP HYB ETT TAN MPO GNA CNB AMS
CZT KGL DUM

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, ordinary, but unmistakable; and C means very poor, doubtful.

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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

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