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ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages JULY 1989

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										
182	01	30	211	213	010	S17	W77	0	0	0	01	S17	W77	Q	Solalert 01/XX, Magalert 01/02.								
						N26	W61	0	0	0		N26	W61	E									
						S18	W58	0	0	0		S18	W58	Q									
						N08	W43	3	0	0		N08	W43	E									
						N20	W42	0	0	0		N20	W42	Q									
						S18	W49	0	0	0		S18	W49	Q									
						S16	W33	0	0	0		S16	W33	E									
						N22	W36	0	0	0		N22	W36	Q									
						N17	W75	1	0	0		N17	W75	Q									
						N21	W27	9	2	0		N21	W27	A									
						S16	E68	3	1	0		S16	E68	E									
						N15	E68	1	0	0		N15	E68	E									
						183	02	01	199	199		016	S17	W86		0	0	0	02	S17	W86	Q	Solalert 02/XX, Magalert 02/XX.
N27	W74	1	0	0	N27						W74		Q										
S18	W72	0	0	0	S18						W72		Q										
N09	W57	2	0	0	N09						W57		E										
N21	W54	0	0	0	N21						W54		Q										
S19	W67	0	0	0	S19						W67		Q										
S16	W46	1	0	0	S16						W46		Q										
N22	W51	0	0	0	N22						W51		Q										
N21	W39	4	0	0	N21						W39		E										
S18	E54	1	0	0	S18						E54		E										
N15	E55	0	0	0	N15						E55		Q										
S15	E55	0	0	0	S15						E55		Q										
N23	E82	0	0	0	N23						E82		Q										
Presto: ² Kakioka Magstorm began 01/1548 UT.																							
184	03	02	227	189	006	N26	W87	0	0	0	03	N26	W87	Q	Solnil, Magnil.								
						S18	W84	0	0	0		S18	W84	Q									
						N09	W70	1	0	0		N09	W70	E									
						N21	W67	0	0	0		N21	W67	Q									
						S19	W78	0	0	0		S19	W78	Q									
						S16	W60	0	0	0		S16	W60	Q									
						N22	W52	7	0	0		N22	W52	E									
						S19	E42	0	0	0		S19	E42	Q									
						N15	E42	0	0	0		N15	E42	Q									
						S14	E42	0	0	0		S14	E42	Q									
						N23	E65	5	0	0		N23	E65	E									
						N09	E69	4	0	0		N09	E69	E									
						N29	E03	0	0	0		N29	E03	Q									
N14	E50	0	0	0	N14	E50	Q																
185	04	03	184	191	003	N09	W84	0	0	0	04	N09	W84	Q	Solquiet, Magquiet.								
						N21	W80	1	0	0		N21	W80	Q									
						S20	W94	0	0	0		S20	W94	Q									
						S16	W73	2	0	0		S16	W73	Q									
						N20	W66	3	0	0		N20	W66	E									
						S18	E28	1	0	0		S18	E28	Q									
						N15	E30	0	0	0		N15	E30	Q									
						S14	E30	2	0	0		S14	E30	E									
						N24	E53	11	1	0		N24	E53	E									
						N09	E58	3	0	0		N09	E58	Q									
						N12	E36	0	0	0		N12	E36	Q									
						Presto: ² Toyokawa Tenflare 110 flux units 03/0135 UT duration 2 minutes.																	
						186	05	04	186	184		002	N21	W90		0	0	0	05	N21	W90	Q	Solquiet, Magquiet.
S17	W86	0	0	0	S17						W86		Q										
N19	W81	0	0	0	N19						W81		Q										
S18	E16	2	0	0	S18						E16		E										
N14	E15	1	0	0	N14						E15		Q										
S15	E20	0	0	0	S15						E20		Q										

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

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JUL 89

Summary of the Geoalert Messages JULY 1989

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
186	05	04				N24	E39	5	0	0	05	N24	E39	E	
						N09	E44	9	0	0		N09	E44	E	
						N15	E24	1	0	0		N15	E24	Q	
						S10	E78	0	0	0		S10	E78	Q	
						S05	W35	0	0	0		S05	W35	Q	
187	06	05	156	181	013	N19	W92	0	0	0	06	N19	W92	Q	Solquiet, Magquiet.
						S18	E04	4	0	0		S18	E04	E	
						N12	W01	1	0	0		N12	W01	Q	
						S15	E04	0	0	0		S15	E04	Q	
						N24	E27	6	1	0		N24	E27	E	
						N09	E32	1	0	0		N09	E32	E	
						N12	E07	1	0	0		N12	E07	Q	
						S10	E65	2	0	0		S10	E65	Q	
						N17	E68	0	0	0		N17	E68	Q	
						N25	E73	1	0	0		N25	E73	E	
188	07	06	190	189	014	S19	W09	7	0	0	07	S19	W09	E	Solquiet, Magquiet.
						N15	W12	0	0	0		N15	W12	Q	
						N23	E13	2	0	0		N23	E13	E	
						N09	E18	2	0	0		N09	E18	E	
						S10	E58	0	0	0		S10	E58	Q	
						N17	E55	0	0	0		N17	E55	Q	
						N24	E64	0	0	0		N24	E64	E	
						N20	W06	0	0	0		N20	W06	Q	
						S28	E09	0	0	0		S28	E09	Q	
						S13	E76	1	0	0		S13	E76	Q	
						S18	E79	0	0	0		S18	E79	Q	
189	08	07	225	186	009	N19	W81	1	0	0	08	N19	W81	Q	Solquiet, Magquiet.
						S18	W21	7	0	0		S18	W21	E	
						N24	W01	6	0	0		N24	W01	E	
						N09	E05	0	0	0		N09	E05	Q	
						N14	W18	0	0	0		N14	W18	Q	
						S10	E44	1	0	0		S10	E44	Q	
						N19	E43	0	0	0		N19	E43	Q	
						N25	E53	1	0	0		N25	E53	Q	
						N19	W18	0	0	0		N19	W18	Q	
						S27	W04	0	0	0		S27	W04	Q	
						S13	E62	0	0	0		S13	E62	Q	
						S17	E67	0	0	0		S17	E67	Q	
						S18	W55	0	0	0		S18	W55	Q	
190	09	08	206	183	002	S18	W34	4	0	0	09	S18	W34	E	Solquiet, Magquiet.
						N16	W37	0	0	0		N16	W37	Q	
						N24	W14	1	0	0		N24	W14	E	
						N10	W11	1	0	0		N10	W11	Q	
						S10	E30	3	0	0		S10	E30	Q	
						N19	E31	0	0	0		N19	E31	Q	
						N25	E40	0	0	0		N25	E40	Q	
						N20	W27	0	0	0		N20	W27	Q	
						S13	E47	1	0	0		S13	E47	Q	
						S17	E54	1	0	0		S17	E54	Q	
						S18	W71	1	0	0		S18	W71	Q	
						N09	E03	0	0	0		N09	E03	Q	
						Presto: ² Sydney Culgoora Intense Type II began 09/0126 UT in progress.									
191	10	09	152	185	006	S18	W48	1	1	0	10	S18	W48	Q	Solquiet, Magquiet.
						N24	W25	2	0	0		N24	W25	Q	
						N10	W23	0	0	0		N10	W23	Q	
						S10	E18	1	0	0		S10	E18	Q	
						N19	E18	1	0	0		N19	E18	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Gealert Messages

JULY 1989

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	Galerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
191	10	09				N25 E25	1	0	0	10	N25 E25	Q			
						S13 E34	0	0	0		S13 E34	Q			
						S17 E42	0	0	0		S17 E42	Q			
						N09 W09	0	0	0		N09 W09	Q			
192	11	10	215	177	015	S18 W61	0	0	0	11	S18 W61	E	Solquiet, Magquiet.		
						N25 W41	1	0	0		N25 W41	E			
						N10 W38	1	0	0		N10 W38	Q			
						S09 E05	3	0	0		S09 E05	E			
						N20 E06	0	0	0		N20 E06	Q			
						N23 E13	1	0	0		N23 E13	Q			
						N22 W52	0	0	0		N22 W52	Q			
						S13 E23	0	0	0		S13 E23	Q			
						S17 E29	0	0	0		S17 E29	Q			
						N26 E78	1	0	0		N26 E78	Q			
						N11 E79	0	0	0		N11 E79	Q			
193	12	11	205	186	005	S17 W73	0	0	0	12	S17 W73	Q	Solquiet, Magquiet.		
						N13 W77	1	0	0		N13 W77	Q			
						N25 W52	1	0	0		N25 W52	E			
						N10 W49	0	0	0		N10 W49	Q			
						S10 W08	0	0	0		S10 W08	E			
						N20 W07	1	0	0		N20 W07	Q			
						N24 E02	0	0	0		N24 E02	Q			
						N22 W65	0	0	0		N22 W65	Q			
						S12 E09	0	0	0		S12 E09	Q			
						S16 E15	0	0	0		S16 E15	Q			
						N28 E67	0	0	0		N28 E67	E			
						N11 E67	0	0	0		N11 E67	Q			
194	13	12	188	184	002	S16 W79	3	0	0	13	S16 W79	Q	Solquiet, Magquiet.		
						N13 W88	0	0	0		N13 W88	Q			
						N25 W64	0	0	0		N25 W64	E			
						N10 W66	1	0	0		N10 W66	Q			
						S11 W21	2	0	0		S11 W21	E			
						N20 W22	0	0	0		N20 W22	Q			
						N22 W78	0	0	0		N22 W78	Q			
						S13 W05	0	0	0		S13 W05	Q			
						S16 E02	0	0	0		S16 E02	Q			
						N10 W53	0	0	0		N10 W53	Q			
						N27 E56	3	0	0		N27 E56	E			
						N11 E53	2	0	0		N11 E53	Q			
						N13 W35	0	0	0		N13 W35	Q			
195	14	13	178	181	006	N26 W76	0	0	0	14	N26 W76	E	Solquiet, Magquiet.		
						S10 W36	1	0	0		S10 W36	E			
						N21 W33	0	0	0		N21 W33	Q			
						N26 W24	2	0	0		N26 W24	Q			
						S12 W19	0	0	0		S12 W19	Q			
						S17 W11	0	0	0		S17 W11	Q			
						N27 E43	1	0	0		N27 E43	E			
						N10 E40	0	0	0		N10 E40	Q			
						N14 W48	0	0	0		N14 W48	Q			
						S17 W28	0	0	0		S17 W28	Q			
						N17 W07	0	0	0		N17 W07	Q			
196	15	14	157	179	004	N24 W89	0	0	0	15	N24 W89	Q	Solquiet, Magquiet.		
						S11 W50	1	0	0		S11 W50	E			
						N20 W45	0	0	0		N20 W45	Q			
						N28 W36	0	0	0		N28 W36	Q			
						S13 W32	0	0	0		S13 W32	Q			
						S18 W24	1	0	0		S18 W24	E			

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Summary of the Geolert Messages

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Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geolerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
196	15	14				N27	E30	0	0	0	15	N27	E30	E	
						N11	E27	1	0	0		N11	E27	Q	
						S12	W42	0	0	0		S12	W42	Q	
						N16	W19	0	0	0		N16	W19	Q	
						S05	E56	0	0	0		S05	E56	Q	
197	16	15	152	181	007	S11	W58	0	0	0	16	S11	W58	Q	Solquiet, Magquiet.
						N22	W60	0	0	0		N22	W60	Q	
						S13	W46	0	0	0		S13	W46	Q	
						S17	W37	0	0	0		S17	W37	Q	
						N28	E18	5	0	0		N28	E18	E	
						N11	E13	1	0	0		N11	E13	Q	
						S05	E43	2	0	0		S05	E43	Q	
						S09	E53	0	0	0		S09	E53	Q	
						N18	E73	0	0	0		N18	E73	Q	
						S11	E79	1	0	0		S11	E79	Q	
198	17	16	164	179	002	S12	W68	0	0	0	17	S12	W68	Q	Solquiet, Magquiet.
						S12	W58	0	0	0		S12	W58	Q	
						S18	W49	0	0	0		S18	W49	Q	
						N28	E05	1	0	0		N28	E05	E	
						N12	E01	1	0	0		N12	E01	Q	
						S05	E30	0	0	0		S05	E30	Q	
						S08	E35	0	0	0		S08	E35	Q	
						N19	E61	0	0	0		N19	E61	Q	
						S11	E64	5	0	0		S11	E64	E	
						S21	E71	1	0	0		S21	E71	Q	
199	18	17	147	179	016	S18	W63	1	0	0	18	S18	W63	Q	Solquiet, Magquiet.
						N28	W09	0	0	0		N28	W09	E	
						N12	W13	0	0	0		N12	W13	Q	
						S04	E15	0	0	0		S04	E15	Q	
						N18	E48	1	0	0		N18	E48	Q	
						S11	E50	2	0	0		S11	E50	E	
						S21	E60	0	0	0		S21	E60	Q	
						N28	E79	0	0	0		N28	E79	Q	
Presto: ² Sydney Sudden Commencement began 17/0205UT.															
200	19	18	172	185	016	S18	W76	1	0	0	19	S18	W76	Q	Solquiet, Magquiet.
						N28	W21	6	0	0		N28	W21	Q	
						N13	W26	0	0	0		N13	W26	Q	
						S04	E02	0	0	0		S04	E02	Q	
						N19	E35	1	0	0		N19	E35	Q	
						S11	E38	2	0	0		S11	E38	Q	
						S22	E48	0	0	0		S22	E48	E	
						N26	E67	1	0	0		N26	E67	Q	
						S20	E70	0	0	0		S20	E70	Q	
N25	E77	1	0	0	N25	E77	Q								
201	20	19	219	189	004	S18	W91	0	0	0	20	S18	W91	Q	Solquiet, Magquiet.
						N25	W36	1	0	0		N25	W36	Q	
						N12	W41	0	0	0		N12	W41	Q	
						N19	E22	1	0	0		N19	E22	Q	
						S12	E26	3	0	0		S12	E26	Q	
						S21	E36	0	0	0		S21	E36	E	
						N28	E54	0	0	0		N28	E54	Q	
						S20	E58	0	0	0		S20	E58	Q	
						N25	E65	7	0	0		N25	E65	E	
						N19	W17	0	0	0		N19	W17	Q	
						N29	W14	0	0	0		N29	W14	Q	
N28	W56	0	0	0	N28	W56	Q								

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Summary of the Geoalert Messages **JULY 1989**

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		
202	21	20	219	188	005	N25	W50	0	0	0	21	N25	W50	E	Solquiet, Magquiet.
						N12	W53	1	0	0		N12	W53	Q	
						S06	W20	0	0	0		S06	W20	Q	
						N20	E09	1	0	0		N20	E09	E	
						S12	E12	5	1	0		S12	E12	E	
						S21	E22	0	0	0		S21	E22	E	
						N27	E42	0	0	0		N27	E42	E	
						S20	E43	0	0	0		S20	E43	Q	
						N25	E53	2	1	0		N25	E53	E	
						N29	W25	1	0	0		N29	W25	Q	
					N15	E18	0	0	0	N15	E18	Q			
203	22	21	285	190	008	N25	W63	1	0	0	22	N25	W63	E	Solquiet, Magquiet.
						N13	W67	0	0	0		N13	W67	Q	
						N19	W03	2	0	0		N19	W03	Q	
						S12	W03	6	1	0		S12	W03	E	
						S21	E09	0	0	0		S21	E09	E	
						N27	E29	0	0	0		N27	E29	E	
						S21	E19	1	0	0		S21	E19	Q	
						N25	E39	1	0	0		N25	E39	E	
						N30	W37	3	0	0		N30	W37	Q	
						N15	E04	0	0	0		N15	E04	Q	
					S32	E02	4	0	0	S32	E02	Q			
					S15	E11	0	0	0	S15	E11	Q			
204	23	22	302	195	008	N27	W74	0	0	0	23	N27	W74	Q	Solquiet, Magquiet.
						N12	W80	0	0	0		N12	W80	Q	
						N19	W17	3	0	0		N19	W17	E	
						S11	W16	8	0	0		S11	W16	E	
						S21	W01	0	0	0		S21	W01	E	
						N28	E16	0	0	0		N28	E16	Q	
						S19	E17	0	0	0		S19	E17	Q	
						N25	E27	0	0	0		N25	E27	E	
						N29	W52	7	0	0		N29	W52	E	
						N16	W09	0	0	0		N16	W09	Q	
					S31	W10	8	0	0	S31	W10	E			
					S15	W01	0	0	0	S15	W01	Q			
					S19	E72	3	0	0	S19	E72	E			
					S16	E41	0	0	0	S16	E41	Q			
205	24	23	305	190	012	N26	W90	1	0	0	24	N26	W90	Q	Solquiet, Magquiet.
						N13	W95	0	0	0		N13	W95	Q	
						N19	W29	0	0	0		N19	W29	Q	
						S11	W29	3	0	0		S11	W29	E	
						S21	W15	3	0	0		S21	W15	E	
						N28	E04	0	0	0		N28	E04	Q	
						S19	E05	0	0	0		S19	E05	Q	
						N26	E14	0	0	0		N26	E14	E	
						N29	W65	7	0	0		N29	W65	E	
						N16	W24	0	0	0		N16	W24	Q	
					S31	W24	5	0	0	S31	W24	E			
					S19	E58	7	0	0	S19	E58	E			
					S17	E28	0	0	0	S17	E28	Q			
					N14	W78	0	0	0	N14	W78	Q			
206	25	24	210	186	013	N19	W40	0	0	0	25	N19	W40	Q	Solquiet, Magquiet.
						S13	W42	0	0	0		S13	W42	E	
						S22	W27	0	0	0		S22	W27	E	
						N27	W09	0	0	0		N27	W09	E	
						S19	W06	0	0	0		S19	W06	Q	
						N26	E02	0	0	0		N26	E02	E	
					N28	W79	0	0	0	N28	W79	E			

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Summary of the Gealert Messages

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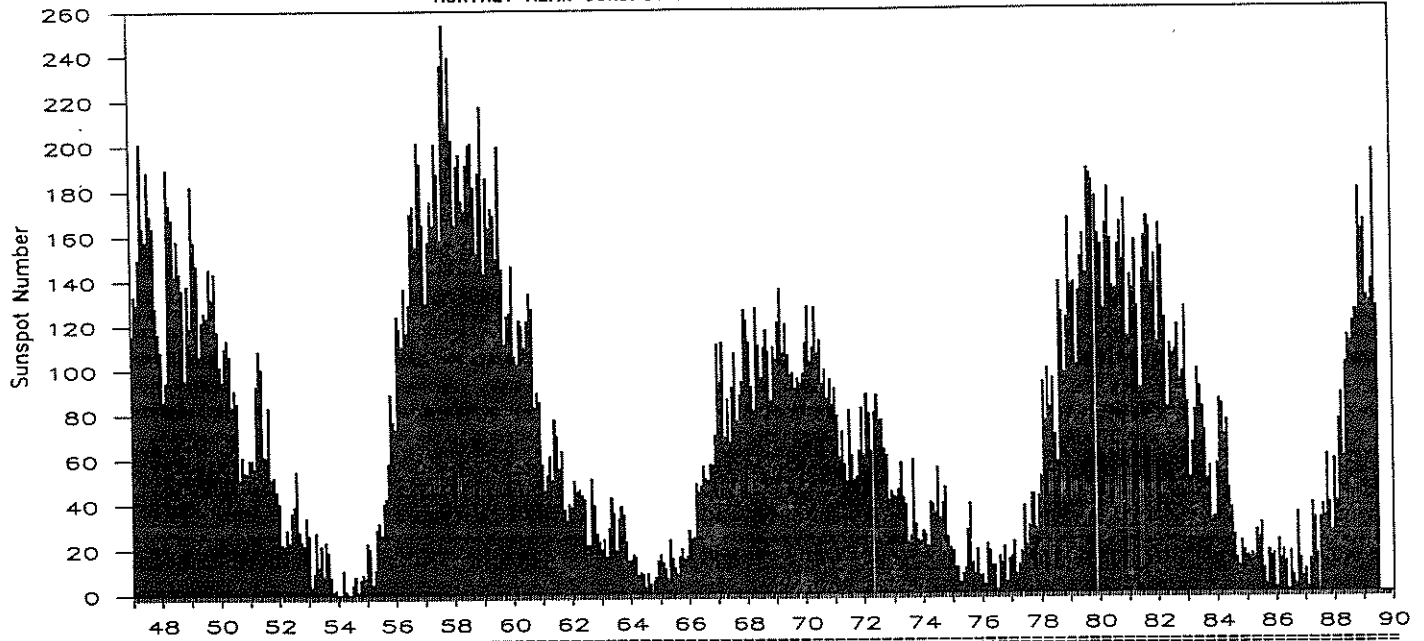
Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location		Flares			Date of Forecast	Location		Region Forecast ¹	Geoalerts
						°Lat	°Long	Total	M	X		°Lat	°Long		
206	25	24				N15 W37	1	0	0	25	N15 W37	E			
						S32 W36	0	0	0		S32 W36	E			
						S18 E46	0	0	0		S18 E46	E			
207	26	25	171	176	005	S13 W55	0	0	0	26	S13 W55	E	Solquiet, Magquiet.		
						S23 W42	0	0	0		S23 W42	E			
						N27 W21	0	0	0		N27 W21	E			
						S20 W23	0	0	0		S20 W23	Q			
						N26 W11	1	0	0		N26 W11	E			
						N28 W90	3	0	1		N28 W90	E			
						N14 W51	0	0	0		N14 W51	Q			
						S32 W50	0	0	0		S32 W50	E			
						S18 E33	0	0	0		S18 E33	Q			
						Presto: ² Boulder X-ray event X2/2N N25 W84 25/0838 UT duration 30 minutes.									
						Boulder Tenflare 210 flux units 25/0841 UT duration 6 minutes.									
						Toyokawa Tenflare 240 flux units 25/0848 UT duration 18 minutes.									
						Boulder Proton event began 25/0900 UT, maximum of 54 particles/cm ² -s-ster at greater than 10 MeV 25/1225 UT in progress.									
208	27	26	143	164	021	S13 W70	2	0	0	27	S13 W70	E	Solquiet, Magquiet.		
						S22 W56	1	0	0		S22 W56	E			
						N27 W33	0	0	0		N27 W33	E			
						S13 W42	0	0	0		S13 W42	Q			
						N27 W25	0	0	0		N25 W25	Q			
						N12 W67	0	0	0		N12 W67	Q			
						S33 W63	1	0	0		S33 W63	Q			
						S19 E20	3	0	0		S19 E20	E			
						S38 W20	0	0	0		S38 W20	Q			
209	28	27	135	168	011	S13 W84	0	0	0	28	S13 W84	E	Solquiet, Magquiet.		
						S24 W69	0	0	0		S24 W69	E			
						N26 W48	0	0	0		N26 W48	E			
						N13 W81	0	0	0		N13 W81	Q			
						S33 W75	0	0	0		S33 W75	Q			
						S19 E05	1	0	0		S19 E05	E			
						S37 W33	0	0	0		S37 W33	Q			
						S20 E75	0	0	0		S20 E75	E			
210	29	28	127	168	010	S21 W83	0	0	0	29	S21 W83	Q	Solquiet, Magquiet.		
						N27 W60	0	0	0		N26 W60	Q			
						S18 W09	4	0	0		S18 W09	E			
						S36 W50	0	0	0		S36 W50	Q			
						S17 E61	0	0	0		S17 E61	E			
						N24 W77	1	0	0		N24 W77	Q			
						N11 E68	1	0	0		N11 E68	Q			
						S06 E71	1	0	0		S06 E71	Q			
						S19 W16	0	0	0		S19 W16	Q			
211	30	29	184	176	011	N27 W73	0	0	0	30	N27 W73	Q	Solquiet, Magquiet.		
						S18 W21	0	0	0		S18 W21	E			
						S37 W63	0	0	0		S37 W63	Q			
						S17 E50	1	0	0		S17 E50	E			
						N22 W88	5	0	0		N22 W88	E			
						N11 E54	0	0	0		N11 E54	Q			
						S04 E55	6	0	0		S04 E55	Q			
						S19 W27	0	0	0		S19 W27	Q			
						N18 W01	1	0	0		N18 W01	E			
						S11 W13	1	0	0		S11 W13	E			
						S12 E72	0	0	0		S12 E72	Q			
						N26 E73	0	0	0		N26 E73	Q			

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Summary of the Geoalert Messages JULY 1989

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		
212	31	30	201	180	008	N27	W85	0	0	0	31	N27	W85	Q	Solquiet, Magquiet.
						S18	W34	0	0	0		S18	W34	Q	
						S18	E38	3	0	0		S18	E38	E	
						N13	E45	0	0	0		N13	E45	Q	
						S04	E42	1	0	0		S04	E42	Q	
						S19	W39	1	0	0		S19	W39	Q	
						N19	W13	2	0	0		N19	W13	E	
						S12	W27	0	0	0		S12	W27	Q	
						S12	E59	1	0	0		S12	E59	Q	
						N26	E62	0	0	0		N26	E62	Q	
						S28	E52	1	0	0		S28	E52	Q	
						S27	E69	1	0	0		S27	E69	Q	
						213	01	31	207	182		006	S19	W46	
S17	E24	5	1	0	S17						E24		E		
N12	E29	0	0	0	N12						E29		Q		
S04	E30	0	0	0	S04						E30		Q		
N19	W27	1	0	0	N19						W27		E		
S11	W41	0	0	0	S11						W41		Q		
S11	E47	0	0	0	S11						E47		Q		
N27	E49	0	0	0	N27						E49		Q		
S27	E36	0	0	0	S27						E36		Q		
S26	E56	0	0	0	S26						E56		Q		
S13	E75	4	1	0	S13						E75		A		
N12	E70	0	0	0	N12						E70		Q		

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



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5	151.6 M
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0	136.3
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6	134.7
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1	83.9
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4 m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2 M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	112.3
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2 m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9 M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6 m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4 M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4 m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.4
1988	59.0	40.0	76.2	88.0	60.1	101.8	113.8	111.6	120.1	125.1	125.1	179.2	100.2
1989	161.3	165.1	131.4	129.3*	138.4*	196.0*	126.8*						153.6*

*Preliminary

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

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Aug 88	Sep	Oct	Nov	Dec	Jan 89	Feb	Mar	Apr [†]	May [†]	Jun [†]	Jul [†]
01	142	137	109	126	128	148	141	127	104	93	136	128
02	143	144	117	114	114	173	144	107	122	94	148	149
03	146	129	129	121	139	146	164	103	140	85	154	129
04	135	148	128	104	122	120	133	98	126	97	157	120
05	120	128	130	129	149	155	127	90	94	83	171	101
06	123	93	123	124	149	142	127	103	139	105	145	120
07	144	97	128	114	144	165	132	98	170	134	130	149
08	160	88	131	95	111	155	161	109	185	149	143	141
09	171	74	125	110	122	165	172	133	153	137	168	116
10	152	76	146	131	133	190	192	163	122	123	192	104
11	135	81	148	155	152	211	190	155	106	115	203	136
12	133	88	169	159	175	229	216	140	96	115	218	111
13	122	91	150	147	187	206	219	162	92	129	253	116
14	128	94	131	139	213	189	208	181	98	123	251	116
15	121	89	109	156	225	177	191	165	120	148	264	92
16	91	89	108	181	226	164	195	187	130	161	265	91
17	67	79	125	196	232	155	209	168	144	161	233	99
18	47	97	134	175	222	160	163	164	137	177	216	113
19	57	113	133	147	223	140	164	148	151	191	235	138
20	57	153	119	112	218	126	169	158	155	195	232	149
21	40	168	117	145	210	114	149	155	161	168	187	162
22	21	168	109	131	255	165	142	155	167	156	174	197
23	26	190	104	117	235	171	134	145	128	180	196	195
24	43	172	121	116	199	142	153	155	135	196	215	168
25	76	149	124	89	183	144	189	131	132	173	227	132
26	93	151	119	73	174	152	163	117	116	157	237	111
27	142	157	120	69	175	157	147	102	126	163	206	105
28	146	143	119	86	196	172	128	89	109	130	187	75
29	164	111	128	86	194	169		95	107	121	182	112
30	163	106	115	107	178	157		78	114	122	156	125
31	151		111		172	140		91		111		132
Mean	111.6	120.1	125.1	125.1	179.2	161.3	165.1	131.4	129.3	138.4	196.0	126.8

† = preliminary. The yearly mean sunspot number equaled 100.2 for 1988.

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

Day	Aug 88	Sep	Oct	Nov	Dec	Jan 89	Feb	Mar	Apr	May	Jun	Jul
01	180.9	191.3	179.4	157.2*	150.5	179.5*	184.8	168.8*	173.8*	180.5	191.6*	204.0
02	187.6	178.9	197.0	156.5*	149.4	193.7	171.2	173.7	183.5	184.5*	208.2*	193.4
03	172.2*	177.3	200.4	164.0	147.3	189.2	185.8*	169.0	196.5*	190.6	203.3*	192.5*
04	163.6	165.9	189.2	159.7	142.7	195.7*	183.4	163.6	188.9	198.2	221.3*	189.8
05	159.2	166.3	191.0	163.8	154.6*	201.6	195.1	183.5	191.1	193.7	213.2*	183.4*
06	163.4	152.4	193.4	161.2	157.7	198.7	205.3*	201.1J	196.5	195.9*	212.2*	192.3
07	170.4	145.4	182.4	151.6	152.9*	239.5	210.5	190.3*	199.8	200.6	205.3	193.5
08	186.9	138.9	172.6	143.5	164.1	260.2	243.9	202.6	207.1	212.4	222.9	188.9
09	182.4	128.0	176.5	152.4	165.2	251.3	259.3	204.2*	194.0	205.1*	241.9	188.1
10	181.8	117.6	177.8	147.7	161.2*	250.0	269.8	212.4*	182.3	208.7	250.9*	184.1
11	178.2	121.9	168.2	153.8	176.4	254.7*	257.0	232.4*	180.7	198.9	270.3	193.2
12	161.2	127.0	148.4	150.6*	173.9	263.2	257.3	237.6*	181.3	197.2	285.8*	190.7
13	159.7	124.8	157.5	157.8*	181.1	291.7*	258.4	253.0	185.3*	197.5	319.2	184.0*
14	151.6	130.2	150.4	173.2*	204.4*	274.9	260.7	263.8J	198.1	193.1*	327.2	183.9
15	144.0	126.1	149.1	161.1*	212.0	280.1	241.3	255.8J	199.5	195.8	334.7*	185.7
16	137.8	128.5	152.3	186.1*	232.1	292.1	241.1	261.6J	203.9	188.6	320.9*	183.9
17	145.6	135.3	175.0	175.6	241.7	266.7*	233.9*	240.7	210.6*	187.0	303.7*	184.1
18	128.5	139.5	162.3	161.8	243.5	271.2	213.8	234.2	204.1	184.9	271.5	189.2
19	123.9	138.6	164.0	151.2	240.2	241.6	214.0	221.1	209.7	188.6	270.6	193.7
20	118.1	151.4	166.0	146.6	238.8	222.0*	202.2*	218.2*	192.5	203.1	249.3*	192.4
21	116.1	157.8	165.9	152.9	245.2	198.2*	217.8	213.5*	196.1	211.9*	242.8	195.0
22	114.9	178.6	166.2	153.1	246.6	203.6	213.9	222.5	193.6*	203.9	233.1	200.9
23	121.7A	177.8*	171.1	135.7	234.8	205.6	214.7*	216.1*	183.1*	212.2	238.7	196.5
24	133.7	178.6	168.4	138.0	221.6	211.0	213.4	193.2*	189.0	210.0	227.6	191.1
25	144.3	177.4	162.1	137.5	210.5	227.3	203.8*	186.2*	179.7	194.6*	221.6	180.4
26	157.1	172.0	155.4	137.4	193.0	206.3	190.3*	171.6*	176.9	188.0	233.0	169.8
27	166.8	179.6*	161.8	140.9	201.9	211.1	168.6*	162.6	176.9	176.6	227.5	172.8
28	174.0	171.0	156.0	138.8	201.6	207.1	163.5	157.3	183.2	173.5	227.4	170.7
29	189.0	172.0	155.9	137.6	196.7	200.5		155.8	189.5	173.6	223.0	180.9
30	190.0	173.1	154.2*	135.8	179.5	187.3		159.8	180.6	183.0	217.4	185.1
31	194.5		160.4		177.6	187.5		167.5		194.2		188.2
Mean	158.0	154.1	168.7	152.8	193.5	227.8	217.0	203.0	190.9	194.4	247.2	187.8

* = corrected for burst in progress; A = interpolation - interference during calibration; J = no calibration due to burst. The yearly mean flux equaled 141.1 in 1988.

DAILY SOLAR INDICES

July 1989

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers		Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit								
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	182	5	128	139	197.4	529	337	230	204.0	176	143	71	40	16
02	183	6	149	153	187.1	527	322	222	193.4	170	136	69	36	18
03	184	7	129	134	186.2*	529	330	226	192.5*	175	143	77	41	18
04	185	8	120	122	183.6	529	319	218	189.8	169	143	75	40	17
05	186	9	101	110	177.4*	517	286	199	183.4*	166	140	79	38	18
06	187	10	120	131	186.0	470	324	217	192.3	171	130	62	35	21
07	188	11	149	153	187.2	518	---	---	193.5	---	---	78	40	33
08	189	12	141	144	182.7	529	320	207	188.9	181	136	81	40	18
09	190	13	116	112	182.0	527	315	207	188.1	180	139	82	40	19
10	191	14	104	115	178.1	515	317	207	184.1	179	137	86	40	21
11	192	15	136	145	186.9	538	343	212	193.2	184	137	82	42	19
12	193	16	111	123	184.5	537	323	211	190.7	---	139	83	41	19
13	194	17	116	114	178.1*	528	331	220	184.0*	182	144	80	39	20
14	195	18	116	111	178.0	545	277	210	183.9	170	128	84	42	24
15	196	19	92	96	179.7	544	240	201	185.7	171	124	82	67	22
16	197	20	91	105	178.0	534	228	194	183.9	172	109	78	41	23
17	198	21	99	111	178.2	506	240	198	184.1	172	122	77	47	21
18	199	22	113	126	183.2	604	279	222	189.2	178	131	76	32	19
19	200	23	138	146	187.6	---	278	219	193.7	183	---	78	39	22
20	201	24	149	160	186.3	582	299	219	192.4	176	126	78	38	20
21	202	25	162	181	188.9	585	272	219	195.0	178	123	75	37	20
22	203	26	197	217	194.6	592	279	230	200.9	189	127	72	36	19
23	204	27	195	215	190.4	592	276	229	196.5	190	120	70	37	22
24	205	1	168	169	185.2	591	275	226	191.1	181	123	72	40	27
25	206	2	132	135	174.9	578	272	211	180.4	169	117	71	40	26
26	207	3	111	108	164.6	605	262	205	169.8	165	113	71	40	24
27	208	4	105	98	167.6	599	292	206	172.8	159	106	66	36	22
28	209	5	75	88	165.6	604	303	212	170.7	160	99	67	35	18
29	210	6	112	112	175.5	614	290	224	180.9	164	113	69	38	18
30	211	7	125	130	179.6	607	287	227	185.1	173	144	69	38	16
31	212	8	132	144	182.7	557	286	226	188.2	176	119	73	38	15
Mean			126.8	133.8	181.9	554	293	215	187.8	174	128	75	40	20

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

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

* = corrected for burst in progress

Equipment problems produced any gaps in the Air Weather Service's Sagamore Hill (SGMR) observations.

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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	137
1989	142	145 (4)	152 (10)	158 (14)	164 (16)	170 (18)	173 (23)	175 (28)	182 (31)	187 (34)	189 (36)	191 (37)
1990	192 (38)	193 (39)	192 (39)	187 (38)	181 (35)	177 (31)	175 (30)	173 (31)	165 (31)	157 (31)	149 (29)	145 (26)
1991	143 (27)	139 (28)	135 (29)	134 (34)	136 (35)	133 (32)	130 (28)	125 (25)	119 (22)	118 (20)	119 (21)	119 (24)

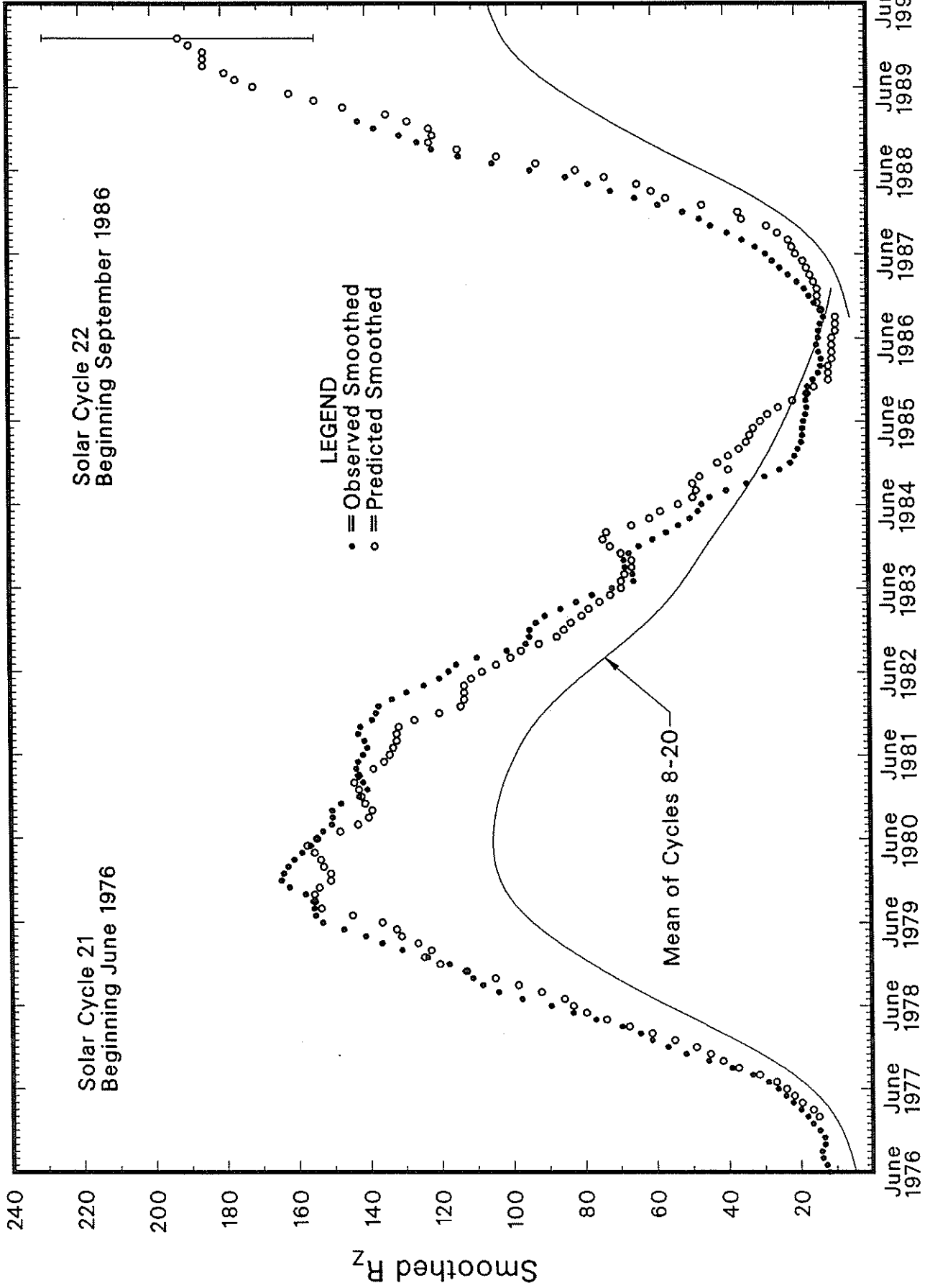
*September 1986 marks the onset of Sunspot Cycle 22.

For the end of Solar Cycle 21, and the beginning of 22, the table gives observed smoothed sunspot numbers up to the one calculated from the most recently available monthly mean. These smoothed observed values are based on final, monthly means through March 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 January 1990 prediction. There exists a 90% chance that in January 1990 the actual smoothed sunspot number will fall somewhere between 154 and 230.

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

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SUNSPOT NUMBERS



H α SOLAR FLARES

JULY 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement Time (UT) (10-6 Disk)	Corr (Sq Deg)	Remarks	
HOLL	01	0023	0031	0041	S16	E64	5572	07 5.9	18	SF	3 E		21		
PALE		0113	0114	0122	N12	W41	5558	06 28.1	9	SF C	1.8 3 E		63		
PALE		0424	0426	0436	N09	W44	5558	06 28.0	12	SF C	1.6 3 E		46		
SVTO		1142E	1143U	1152D	N18	W34	5569	06 29.0	100	SF	2 E		15	F	
SVTO		1155	1156	1255D	N18	W36	5569	06 28.8	600	SF	2 E		19		
HOLL		1455	1455	1510	N16	W81	5567	06 25.6	15	SF	3 E		22		
HOLL		1509	1526	1608	N21	W36	5569	06 29.0	59	SF	3 E		34		
SVTO		1514E	1518U	1529D	N19	W36	5569	06 29.0	150	SF	2 E		15	F	
RAMY		1646E	1646U	1656D	N16	W35	5569	06 29.1	100	SF	2 E		15	F	
HOLL		1950	1954	2003	N14	W77	5567	06 26.1	13	SF	3 E		17		
HOLL		2021	2023	2027	N26	W71	5555	06 26.4	6	SF C	1.4 4 E		16		
GOES		2246	2249	2251					5		C 1.6				
HOLL		2339	2340	2409	S18	W45	5563	06 28.6	30	SF	4 E		23	H	
[HOLL	02	0011	0015	0030	N26	E85	5575	07 8.6	19	SF C	4.0 4 E		69	F	
[LEAR		0012	0014	0018	N24	E83	5575	07 8.4	6	SF	3 E		24		
[PALE		0013	0015	0021	N24	E90	5575	07 9.0	8	SF	3 E		22	F	
HOLL		0052	0055	0101	N22	W40	5569	06 29.1	9	SF	4 E		12	F	
SVTO		0645	0820	0947	N20	W45	5569	06 28.9	182	SF	3 E		87		
SVTO		0712	0803	0904	N25	E76	5575	07 8.2	112	SF	3 E		79		
[LEAR		0801	0803	0813	N25	E78	5575	07 8.4	12	SF C	1.7 3 E		81		
LEAR		0810	0816	0902	N21	W44	5569	06 29.1	52	SN	3 E		41		
SVTO		1032	1034	1047	N19	W49	5569	06 28.8	15	SF C	2.2 3 E		30	F	
SVTO		1053	1054	1112	N24	E77	5575	07 8.4	19	SF C	2.0 3 E		35	F	
[SVTO		1133	1146	1151	N20	W50	5569	06 28.7	18	SF C	1.9 3 E		11	F	
[RAMY		1146E	1146U	1150	N18	W47	5569	06 29.0	40	SF	2 E		39	F	
GOES		1226	1229	1231					5		C 1.4				
SVTO		1238	1240	1246	N20	W50	5569	06 28.8	8	SF	3 E		23	F	
[HOLL		1400	1419	1505	N21	W45	5569	06 29.2	65	SF	3 E		45		
[RAMY		1416	1418	1424	N21	W51	5569	06 28.8	8	SF	3 E		19	F	
RAMY		1431	1435	1453	N10	E75		07 8.2	22	SF	3 E		28		
HOLL		1546	1546	1550	N09	E79		07 8.6	4	SF	3 E		14		
HOLL		1551	1551	1605	N20	W47	5569	06 29.2	14	SF	3 E		11		
HOLL		1647	1650	1721	N07	W66	5558	06 27.8	34	SF	3 E		23		
HOLL		1735	1742	1758	N23	E71	5575	07 8.2	23	SF	3 E		36		
HOLL		1953	1957	2017	N07	E78	5576	07 8.7	24	SF	3 E		29		
HOLL		2214	2221	2251	N09	E75	5576	07 8.5	37	SF	3 E		23		
[HOLL		2320	2328	2336	N23	E68	5575	07 8.2	16	SF C	2.6 4 E		51		
[PALE		2325	2326	2334	N21	E69	5575	07 8.3	9	SF C	2.6 3 E		34		
[HOLL	03	0034	0049	0057	N23	E68	5575	07 8.3	23	SF	3 E		31		
[LEAR		0044	0049	0055	N22	E66	5575	07 8.1	11	SF	3 E		22		
[HOLL		0047	0053	0120	N09	E72	5576	07 8.4	33	SF	3 E		40		
[HOLL		0134	0139	0145	S14	E45	5574	07 6.5	11	SF C	6.8 3 E		48	E	
[LEAR		0136	0140	0143	S14	E44	5574	07 6.4	7	SF C	6.8 3 E		14		
[HOLL		0138	0142	0146	N24	E65	5575	07 8.1	8	SF	3 E		20		
[LEAR		0144	0145	0149	N22	E66	5575	07 8.1	5	SF	3 E		11		
LEAR		0243	0246	0251	N22	E65	5575	07 8.1	8	SF	3 E		22		
LEAR		0346	0350	0357	N21	E64	5575	07 8.1	11	SF	3 E		44		
GOES		0549	0552	0555					6		C 1.8				
LEAR		0657	0659	0705	S16	W64	5563	06 28.5	8	SF	3 E		23		
GOES		0915	0919	0922					7		C 2.2				
HOLL		1350	1351	1354	S15	E37	5574	07 6.4	4	SF	3 E		13		
[HOLL		1357	1402	1453	S21	E55			56	SF	3 E		25	K	
[HOLL		1357	1417	1453	S21	E55		07 7.8	56	SF	3 E		27		
HOLL		1438	1444	1501	N23	E60	5575	07 8.2	23	SF	3 E		56		
HOLL		1456	1500	1528	N07	E68	5576	07 8.7	32	SF	3 E		49		
[HOLL		1459	1502	1558	N17	W58	5569		59	SN	3 E		50	K	
[HOLL		1459	1518	1558	N17	W58	5569	06 29.3	59	SF	3 E		34		
HOLL		1511	1515	1524	S19	W69	5563	06 28.5	13	SF	3 E		35		
HOLL		1527	1527	1535	N25	E58	5575	07 8.1	8	SF	3 E		10		
HOLL		1756	1756	1812	N22	W78	5559	06 27.8	16	SF	3 E		11		
HOLL		1812	1813	1829	N23	E57	5575	07 8.1	17	SF	3 E		18		
HOLL		1821	1829	1838	N18	W64	5569	06 29.0	17	SF	3 E		19		
HOLL		1844	1845	1901	N23	E56	5575	07 8.1	17	SF	3 E		16	F	
HOLL		1904	1915	1930	N23	E56	5575	07 8.1	26	SF	3 E		16		
HOLL		1927	1927	1940	N21	W62	5569	06 29.1	13	SF	3 E		19		
PALE		1929	1930	1938D	N20	W77	5559	06 28.0	90	SF	3 E		10		

H α SOLAR FLARES

JULY 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/	CMP	Dur	Imp	Obs	Area Measurement			Remarks
							USAF Region					Mo	Day	Time (UT)		Apparent (10-6 Disk)	Corr (Sq Deg)
HOLL	09	1422	1423	1430	N25	W21	5575	07	8.0	8	SF	3	E	25	F
SVTO		1422	1425	1432	N25	W22	5575	07	7.9	10	SF	4	E	25	F
HOLL		2056E	2057U	2125	N23	W30	5575	07	7.6	290	SF C 1.0	3	E	75	
HOLL		2255E	2256	2304	N26	E24	5582	07	11.8	90	SF	3	E	32	
HOLL	10	0009	0009	0021	N26	W28	5575	07	7.8	12	SF	3	E	64	
LEAR		0223	0225	0231	N26	E86		07	16.8	8	SF C 1.2	3	E	64	
LEAR		0347	0348	0356	N23	E29	5582	07	12.4	9	SF	3	E	34	
GOES		1010E	1012	1025D	N28	E33				15D	1F C 1.8				
HOLL		1519E	1521	1530D	S14	E13	5579	07	11.6	11D	SF	3	E	17	F
HOLL		1755	1756	1806D	S10	E12	5579	07	11.6	11D	SF	3	E	29	F
GOES		1837E	1838	1842D	N13	W60				5D	SF C 1.2				
RAMY		1852	1853	1902	S09	E11	5579	07	11.6	10	SF	3	E	18	
HOLL		1853E	1853	1905D	S09	E11	5579	07	11.6	12D	SF	3	E	41	F
HOLL		2012	2013	2043	N10	W34	5576	07	8.3	31	SF C 1.3	3	E	41	F
RAMY		2012	2014	2040	N09	W33	5576	07	8.4	28	SF C 1.3	3	E	34	
HOLL		2104	2108	2115	N13	W61	5573	07	6.3	11	SF C 1.3	3	E	44	
LEAR	11	0034	0034	0042	N13	W65	5573	07	6.1	8	SF C 1.1	3	E	24	
LEAR		0633	0634	0644	N24	W42	5575	07	8.0	11	SF C 1.2	3	E	30	
RAMY		1140	1141	1146	N13	E03	5581	07	11.7	6	SF	3	E	12	
SVTO		1141	1141	1149	N14	E02	5581	07	11.6	8	SF	3	E	27	F
GOES		2121	2125	2138						17	C 1.2				
GOES		2324	2327	2329						5	B 9.5				
PALE	12	0028	0029	0046	N07	W53	5576	07	8.0	18	SF C 1.3	3	E	24	F
LEAR		0357	0402	0423	S10	W07	5579	07	11.6	26	SF C 3.1	4	E	95	F
SVTO		0538	0538	0546	S09	W09	5579	07	11.5	8	SF	3	E	18	F
SVTO		0546	0551	0558	N29	E64	5589	07	17.2	12	SF	3	E	47	F
LEAR		0639	0639	0719	N12	E63	5590	07	17.0	40	SF	3	E	31	
SVTO		0759	0801	0805	S18	W71	5572	07	6.9	6	SF	3	E	14	
SVTO		0828	0835	0843	S24	W83	5572	07	5.9	15	SF	3	E	31	
SVTO		0914	0915	0919	S18	W75	5572	07	6.7	5	SF	3	E	17	
HOLL		1729	1741	1802	N27	E62	5589	07	17.5	33	SF C 1.2	2	E	51	F
GOES		1920	2008	2110						110	C 2.2				
HOLL		1938	1949	2054	N37	W30		07	10.4	76	SF	3	E	78	FS
HOLL		1949	1956	2022	N29	E56	5589	07	17.2	33	SF	3	E	37	
PALE		2051	2119	2122	N12	E52	5590	07	16.8	31	SF	3	E	18	
PALE	13	0141E	0141U	0146	S17	W80	5572	07	7.0	5D	SF	3	E	38	
GOES		0424	0427	0431						7	C 1.3				
GOES		0537	0541	0546						9	C 1.2				
SVTO		0803E	0805U	0829	S19	W89	5572	07	6.5	26D	SN	2	E		
SVTO		0826	0829	0850	S12	W22	5579	07	11.7	24	SF	3	E	22	
SVTO		0843	0857	0931	N28	E53	5589	07	17.5	48	SF	3	E	33	
SVTO		0854	0914	0945	N25	W15	5582	07	12.2	51	SF	3	E	48	U
SVTO		0932	0933	0947	N28	E52	5589	07	17.5	15	SF	3	E	22	
SVTO		0932	0942	0954	S18	W19	5579	07	11.9	22	SF	3	E	33	
GOES		1050	1102	1119						29	C 3.4				
SVTO		1559E	1601U	1635	N23	W13	5582	07	12.7	36D	SF	2	E	61	F
HOLL		1559E	1605	1644	N30	W17	5582			45D	SF		E	75	K
HOLL		1559E	1612	1644	N30	W17	5582	07	12.3	45D	SF	3	E	72	F
SVTO	14	0702	0711	0730	S14	W16	5586	07	13.1	28	SF	3	E	15	
RAMY		1524	1528	1541	S11	W40	5579	07	11.6	17	SF	3	E	17	F
SVTO		1524E	1531U	1550	S13	W42	5579	07	11.5	26D	SF	3	E	42	
HOLL		1858	1905	1925	N10	E31	5590	07	17.1	27	SF	3	E	41	
PALE		1902	1902	1908	N13	E32	5590	07	17.2	6	SF	3	E	13	
RAMY		1902	1903	1915D	N11	E32	5590	07	17.2	13D	SF	3	E	20	
GOES		2245E	2246	2255D	S10	E90				10D	SN C 1.5				
GOES	15	0407	0413	0429						22	C 1.2				
SVTO		0449	0457	0528	N27	E28	5589	07	17.4	39	SF	3	E	22	
SVTO		0511	0511	0515	S04	E56	5594	07	19.4	4	SF	3	E	16	
SVTO		0534	0538	0541	S04	E56	5594	07	19.4	7	SF	3	E	12	
SVTO		0539E	0540U	0557	S07	E89		07	21.9	18D	SF C 1.6	3	E		H
SVTO		0930	0941	1022	N28	E26	5589	07	17.4	52	SF	3	E	65	
RAMY		1203	1215	1225	N11	E22	5590	07	17.1	22	SF	4	E	17	F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
												Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
RAMY	20	1106	1132	1205	N24	E65	5601	07 25.5	59	1N M 1.0	3 E		133		FH
SVTO		1120	1132	1203	N26	E64	5601	07 25.4	43	1F M 1.0	3 E		117		FH
SVTO		1419	1421	1427	S12	E19	5597	07 22.0	8	SF	3 E		18		F
HOLL		1528	1529	1541	S10	E18	5597	07 22.0	13	SF	3 E		19		
HOLL		1637	1646	1759	N26	E57	5601		82	SF	3 E		34		K
HOLL		1637	1656	1759	N26	E57	5601	07 25.1	82	1F C 2.6	3 E		191		
SVTO		1642	1656	1740D	N27	E56	5601	07 25.0	58D	1N C 2.6	3 E		181		F
RAMY		1652E	1655U	1728	N25	E56	5601	07 25.0	36D	SF	1 E		81		F
HOLL		1837	1838	1848	S14	E17	5597	07 22.1	11	SF	3 E		39		F
HOLL		1917	1919	1934	N29	W07	5603	07 20.2	17	SF	3 E		17		F
HOLL		2025E	2027	2048	S16	E09	5597	07 21.5	23D	1B M 3.3	3 E		198		FH
HOLL		2323	2323	2331	N12	W52	5590	07 17.0	8	SF	3 E		20		
HOLL		2344	2344	2401	S11	E15	5597	07 22.1	17	SF	3 E		14		F
HOLL	21	0031	0032	0038	N18	E10	5596	07 21.8	7	SF	3 E		25		F
HOLL		0045	0046	0100	S16	E12	5597	07 21.9	15	SF C 1.3	3 E		11		F
GOES		0523	0531	0540					17	C 3.3					
SVTO		0544	0550	0606	S15	E08	5597	07 21.8	22	1B M 1.4	3 E		176		H
LEAR		0554	0554	0601	S15	E06	5597	07 21.7	7	SF M 1.4	3 E		17		H
SVTO		0736	0740	0752	N27	W32	5603	07 18.8	16	SN C 1.6	3 E		44		H
GOES		0955	1020	1040					45	C 2.9					
SVTO		1142	1146	1200	S13	E14	5597	07 22.5	18	SF C 1.9	3 E		49		F
RAMY		1145E	1146U	1151	S14	E14	5598	07 22.5	6D	SF C 1.9	3 E		17		FH
GOES		1247	1253	1301					14	C 2.8					
HOLL		1631	1631	1640	S33	E08		07 22.3	9	SF C 3.4	3 E		16		
HOLL		1651	1652	1704	S10	E01	5597	07 21.8	13	SF C 1.5	3 E		33		F
SVTO		1651	1657	1702	S09	E01	5597	07 21.8	11	SF C 1.5	3 E		42		
RAMY		1652E	1652U	1852D	S10	E01	5597	07 21.8	120D	SF C 1.5	2 E		34		F
SVTO		1716	1717	1727	S13	E03	5597	07 21.9	11	SF	3 E		12		F
RAMY		1929	1931	1947	N26	W35	5603	07 19.1	18	SF	3 E		22		F
HOLL		1931	1933	1945	N27	W37	5603	07 18.9	14	SF	4 E		17		F
HOLL		1943	1943	1952	N19	E00	5596	07 21.8	9	SF	4 E		10		
HOLL		2005	2011	2041	S32	E05	5606	07 22.2	36	SN C 3.8	4 E		67		E
HOLL		2038	2045	2126	N28	W37	5603	07 19.0	48	SF	4 E		24		F
HOLL		2128	2132	2158	S19	E31	5600	07 24.3	30	SF	4 E		20		
HOLL		2146	2154	2222	S33	E04	5606	07 22.2	36	SF	4 E		45		F
HOLL		2208	2211	2224	S14	E00	5597	07 21.9	16	SF	4 E		23		
HOLL		2211	2219	2234	N23	E39	5601	07 24.9	23	SF	3 E		28		
HOLL		2300E	2309	2413	S33	E03	5606	07 22.2	73D	1N C 4.8	3 E		101		E
HOLL		2357		2413	N26	W60	5589	07 17.3	16	SF	3 E		22		
LEAR	22	0137	0138	0147	N27	W39	5603	07 19.0	10	SF C 2.0	3 E		21		
PALE		0140E	0143U	0155D	N28	W42	5603	07 18.8	15D	SF	1 E		28		
LEAR		0207	0209	0222	S33	E02	5606	07 22.2	15	SF	3 E		21		F
PALE		0210E	0212U	0215D	S32	E01	5606	07 22.2	5D	SF	1 E		18		F
LEAR		0243	0246	0253	N29	W40	5603	07 19.0	10	SF	3 E		34		
LEAR		0312	0319	0335	S33	E00	5606	07 22.1	23	SF C 4.2	3 E		29		FH
SVTO		0434	0436	0520	N20	W05	5596	07 21.8	46	SF C 1.5	2 E		84		
LEAR		0435	0436	0452	N19	W06	5596	07 21.7	17	SF C 1.5	3 E		40		
SVTO		0529	0533	0551	S10	W06	5597	07 21.8	22	SF	3 E		22		
LEAR		0603	0604	0617	S10	W07	5597	07 21.7	14	SF C 3.1	3 E		25		
SVTO		0603	0604	0619	S10	W06	5597	07 21.8	16	SF C 3.1	3 E		40		
SVTO		0902	0903	0917	N27	W42	5603	07 19.1	15	SF C 1.9	2 E		22		
SVTO		0949	0956	1003	S32	W01	5606	07 22.3	14	SF	2 E		21		
SVTO		1040	1046	1111	N20	W08	5596	07 21.8	31	SF C 1.5	3 E		42		F
SVTO		1044	1047	1056	S32	W02	5606	07 22.3	12	SF	3 E		16		F
SVTO		1106	1116	1131	S11	W10	5597	07 21.7	25	SF	3 E		17		F
RAMY		1113E	1123U	1135	S13	W07	5597	07 21.9	22D	SF	2 E		14		F
SVTO		1302	1303	1320	S32	W03	5606	07 22.3	18	SF	3 E		23		F
HOLL		1302	1304	1319	S33	W04	5606	07 22.2	17	SF	3 E		33		FH
RAMY		1307E	1308U	1317	S33	W05	5606	07 22.1	10D	SF	2 E		27		
SVTO		1312	1319	1347	N19	W10	5596	07 21.8	35	SF C 1.5	3 E		32		F
RAMY		1316	1318U	1410D	N19	W11	5596	07 21.7	54D	SF C 1.5	2 E		19		
HOLL		1316	1321	1338	N19	W10	5596	07 21.8	22	SF	3 E		22		F
SVTO		1343	1344	1400	S32	W04	5606	07 22.2	17	SF	3 E		19		F
SVTO		1404	1404	1427	S33	W01	5606	07 22.5	23	SF	3 E		24		
SVTO		1507	1509	1531	N27	W49	5603	07 18.8	24	SF	3 E		22		
HOLL		1508	1510	1521	N27	W46	5603	07 19.0	13	SF	3 E		19		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP No	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
SVTO	25	0839	0843	0908	N25	W84	5603	07	18.8	29	2N	X	2.6	3	E		279	
GOES		0947	0950	0952						5		C	3.4					
GOES		1234	1239	1242						8		C	1.6					
GOES		1330	1335	1338						8		C	5.0					
GOES		1347	1350	1353						6		C	2.4					
GOES		1503	1509	1512						9		C	2.6					
SVTO		1504	1506	1512	N29	W85	5603	07	19.0	8	SF			3	E		44	
RAMY		1505	1505	1511	N29	W90	5603	07	18.6	6	SF			3	E		31	
SVTO		1548	1549	1558	N28	W90	5603	07	18.6	10	SF	C	3.4	3	E		51	
GOES		1705	1716	1727						22		C	4.3					
GOES		1812	1815	1817						5		C	2.3					
GOES		2309	2314	2332						23		C	1.6					
GOES	26	0036	0043	0051						15		C	2.9					
PALE		0122	0122	0132	S16	W56	5597	07	21.8	10	SF	C	2.2	3	E		33	
PALE		0250	0300	0314	S16	W59	5597	07	21.6	24	1F	C	3.3	3	E		174	F
GOES		0314	0318	0322						8		C	4.3					
GOES		0454	0517	0545						51		C	7.8					
SVTO		0821	0823	0830	S15	W32	5598	07	23.9	9	SF			3	E		44	
LEAR		0822	0822	0827	S14	W32	5598	07	23.9	5	SF			3	E		17	
SVTO		1020	1020	1025	N31	W88	5603	07	19.5	5	SF			3	E		13	
GOES		1335	1341	1346						11		C	2.1					
GOES		1349	1354	1400						11		C	4.8					
GOES		1540	1642	1746						126		C	5.0					
RAMY		1557	1557	1606	S17	E26	5608	07	28.6	9	SF			2	E		21	F
SVTO		1600E	1600U	1635D	S18	E25	5608	07	28.6	35D	SF			2	E		38	F
PALE		1727	1728	1754	S17	E26	5608	07	28.7	27	SF			3	E		15	FH
PALE		1857	1859	1934D	S17	E25	5608	07	28.7	37D	SF			3	E		40	F
HOLL		2109	2110	2117	S34	W61	5606	07	22.0	8	SF			2	E		66	
GOES	27	0635	0638	0642						7		C	1.9					
GOES		1351	1355	1357						6		C	2.0					
GOES		1625	1640	1715						50		C	5.3					
GOES		1916	1920	1924						8		C	1.7					
PALE		1945	2009	2010	S18	E11	5608	07	28.7	25	SF			3	E		59	F
GOES		2152	2156	2201						9		C	1.5					
GOES		2213	2219	2224						11		C	2.0					
GOES	28	0021	0029	0041						20		C	1.8					
PALE		0222	0226	0228	S18	E07	5608	07	28.6	6	SF			3	E		13	
PALE		0315	0322	0344	S19	E07	5608	07	28.7	29	SF			3	E		27	
PALE		0356	0359	0413	S18	E05	5608	07	28.5	17	SF	C	2.7	3	E		36	
LEAR		0838	0838	0842	S20	W07	5608	07	27.8	4	SF	C	1.6	3	E		14	F
HOLL		1357	1416	1540	S04	E71		08	2.9	103	SF			3	E		28	H
HOLL		1611	1613	1625	N12	E76		08	3.4	14	SF			3	E		17	
HOLL		1713	1720	1731	N22	W73	5613	07	23.1	18	SF			3	E		17	
PALE	29	0255	0302	0307	N20	W82	5613	07	22.8	12	SF			3	E		22	
PALE		0259	0302	0312	S03	E69	5615	08	3.3	13	SF			3	E		13	
PALE		0316	0317	0322	S03	E68	5615	08	3.2	6	SF			3	E		21	
GOES		0552	0600	0610						18		C	2.5					
GOES		0611	0615	0618						7		C	3.8					
LEAR		0652	0653	0701	N23	W82	5613	07	23.0	9	SF			3	E		31	
LEAR		0709	0709	0725	N23	W81	5613	07	23.0	16	SF	C	4.3	3	E		40	
SVTO		1033	1040	1100	S12	W05		07	29.1	27	SF			3	E		22	
SVTO		1033	1045	1102	N19	W80	5613	07	23.3	29	SF	C	3.0	3	E		20	
SVTO		1034	1037	1043	S20	W19	5616	07	28.0	9	SF			3	E		14	
SVTO		1101	1116	1132	S12	W06		07	29.0	31	SF			3	E		18	
SVTO		1143	1146	1215	N18	E05		07	29.9	32	SF			3	E		19	
SVTO		1500	1502	1511	N18	W87	5613	07	23.0	11	SF			3	E		81	
RAMY		1500	1505	1511	N21	W80	5613	07	23.5	11	SF	C	7.1	2	E		96	
RAMY		1847E	1901U	1907	S04	E60	5615	08	3.3	20D	SF			2	E		19	
HOLL		2030E	2031	2040	S16	E54	5612	08	2.9	10D	SF			3	E		48	
HOLL		2030	2038	2158D	S04	E62	5615	08	3.5	88D	SF	C	1.8	2	E		68	
HOLL		2030	2051	2158D	S04	E62	5615			88D	SF				E		40	K
PALE		2037	2037	2043	S02	E58	5615	08	3.2	6	SF			3	E		12	
PALE		2227	2231	2242	S04	E57	5615	08	3.2	15	SF			3	E		12	
PALE		2247	2250	2304	S02	E57	5615	08	3.2	17	SF			3	E		26	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks			
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)				
GOES	29	2342	2345	2347						5											
PALE	30	0035	0039	0109	N19	W01	5617	07	29.9	34	SF			3	E			37		F	
LEAR		0038	0038	0055	N19	E00	5617	07	30.0	17	SF			3	E			14			
PALE		0451	0454U	0458D	S12	E77	5619	08	5.0	7D	SF			3	E			44			
LEAR		0451	0455	0525	S14	E72	5619	08	4.6	34	1F	C 4.6		3	E			165		F	
SVTO		0453E	0453U	0523	S12	E76	5619	08	4.9	30D	SF			2	E			40			
LEAR		0633	0634	0636	S28	E59		08	3.9	3	SF			3	E			14			
SVTO		1026	1026	1030	S13	E46	5612	08	2.9	4	SF			3	E			14			
SVTO		1035	1049	1114	S16	E48	5612	08	3.1	39	SF			3	E			32		F	
SVTO		1214	1214	1221	S13	E45	5612	08	2.9	7	SF			3	E			36		F	
SVTO		1219	1221	1224	N18	W07	5617	07	30.0	5	SF			3	E			15			
SVTO		1259	1321	1406	S25	E75		08	5.3	67	SF			3	E			20			
SVTO		1313	1322	1332	S04	E50	5615	08	3.3	19	SF			3	E			11			
HOLL		2040	2040	2048	S20	W37	5616	07	28.0	8	SF	C 3.0		3	E			22			
GOES		2350	2359	2411						21											
PALE	31	0106	0114	0149	N18	W14	5617	07	30.0	43	SF	C 7.2		3	E			31		F	
SVTO		0703	0709	0746	S17	E36	5612	08	3.0	43	SF	C 8.7		3	E			23			
SVTO		0801	0802	0807	S20	E36	5612	08	3.1	6	SF			3	E			24			
RAMY		1334	1334	1338	S14	E89		08	7.3	4	SF			3	E			15			
RAMY		1701	1701	1709	S15	E35	5612	08	3.3	8	SF			3	E			27			
PALE		1752	1754	1810D	S11	E79	5623	08	6.7	18D	SF	C 9.6		3	E			75			
GOES		1816	1825	1838						22											
HOLL		2058E	2058U	2125	S16	E32	5612	08	3.3	27D	1B	M 1.5		2	E			124		FE	
PALE		2258	2301U	2315	S14	E30	5612	08	3.2	17	SF	C 6.4		3	E			30		F	
PALE		2315	2316	2327	S10	E76	5623	08	6.7	12	1N	M 1.0		3	E			219		F	

"Remarks"

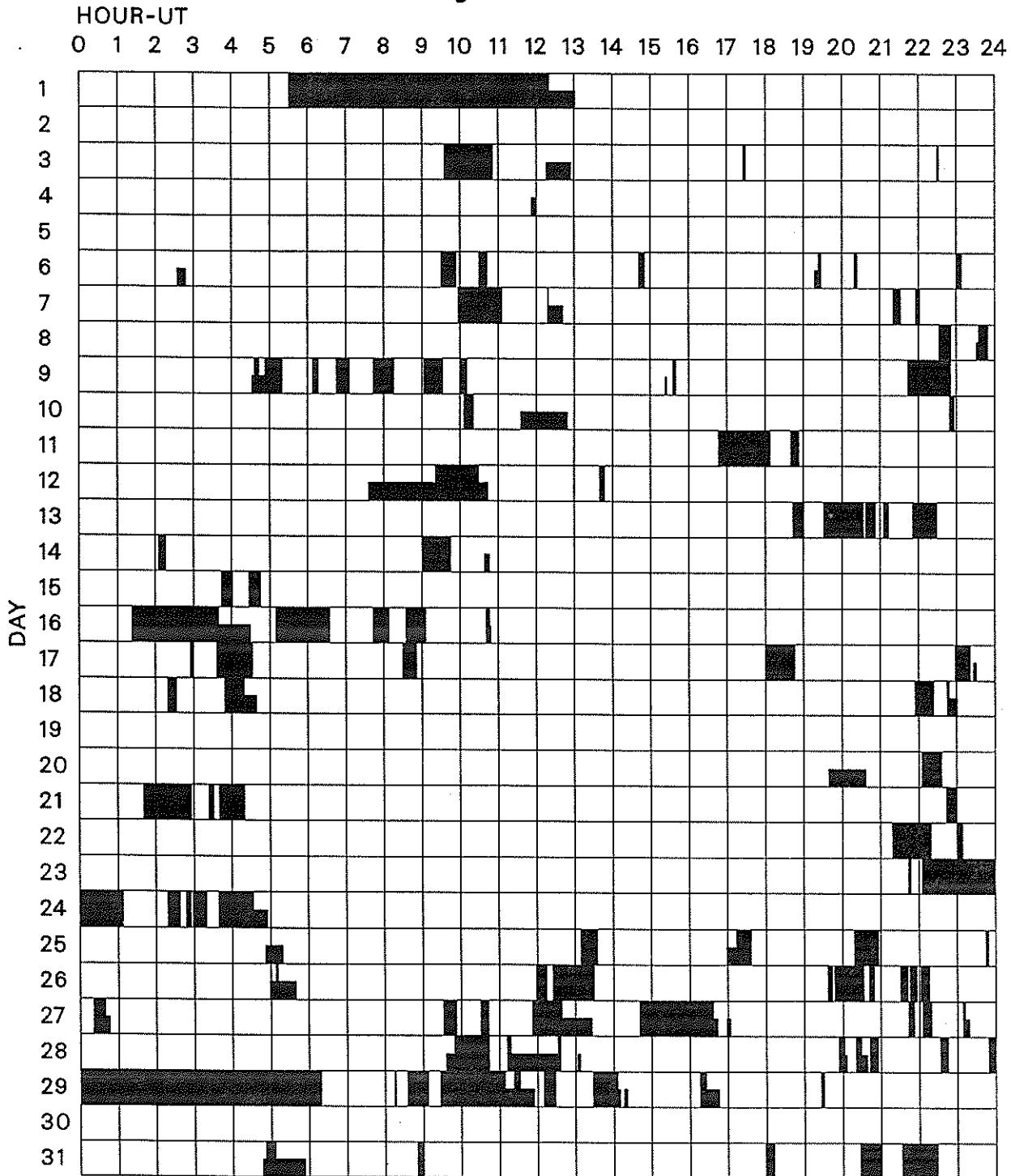
- A = Eruptive prominence whose base is less than 90 degrees from central meridian.
- B = Probably the end of a more important flare.
- C = Invisible 10 minutes before.
- D = Brilliant point.
- E = Two or more brilliant points.
- F = Several eruptive centers.
- G = No visible spots in the neighborhood.
- H = Flare accompanied by high-speed dark filament.
- I = Active region very extended.
- J = Distinct variations of plage intensity before or after the flare.
- K = Several intensity maxima.
- L = Existing filaments show signs of sudden activity.
- M = White-light flare.
- N = Continuous spectrum shows effects of polarization.

- O = Observations have been made in the H and K lines of Ca II.
- P = Flare shows Helium D3 in emission.
- Q = Flare shows Balmer continuum in emission.
- R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
- S = Brightness follows disappearance of filament in same position.
- T = Region active all day.
- U = Two bright branches, parallel or converging.
- V = Occurrence of an explosive phase; important, expansion within roughly 1 minute that often includes a significant intensity increase.
- W = Great increase in area after time of maximum intensity.
- X = Unusually wide H-alpha line.
- Y = System of loop-type prominences.
- Z = Major sunspot umbra covered by flare.

INTERVALS OF NO FLARE PATROL OBSERVATION FOR PRECEDING SOLAR FLARE TABLE

25
Jul 89

JULY 1989



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

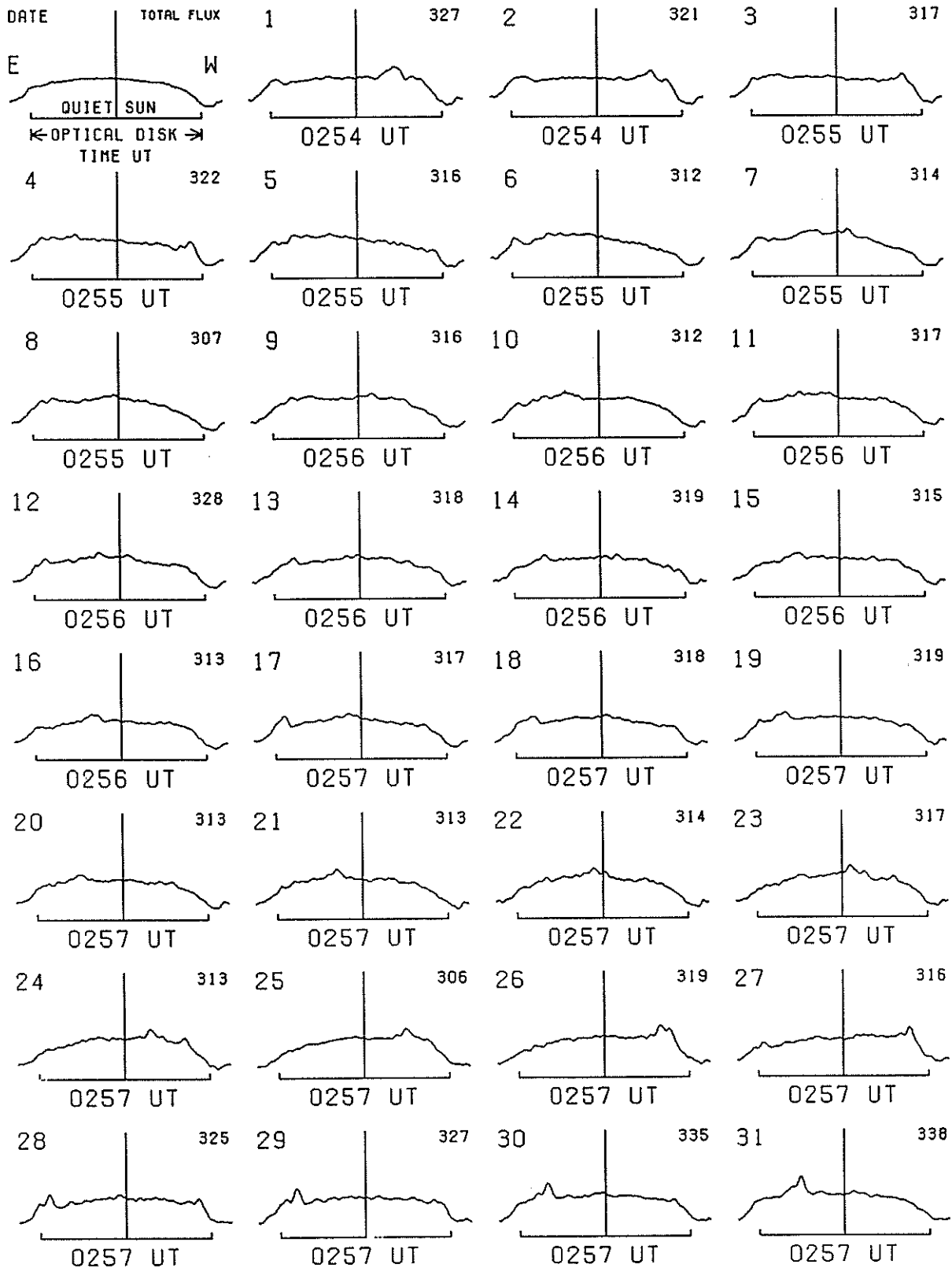
26
Jul 89

EAST-WEST SOLAR SCANS

JULY 1989

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



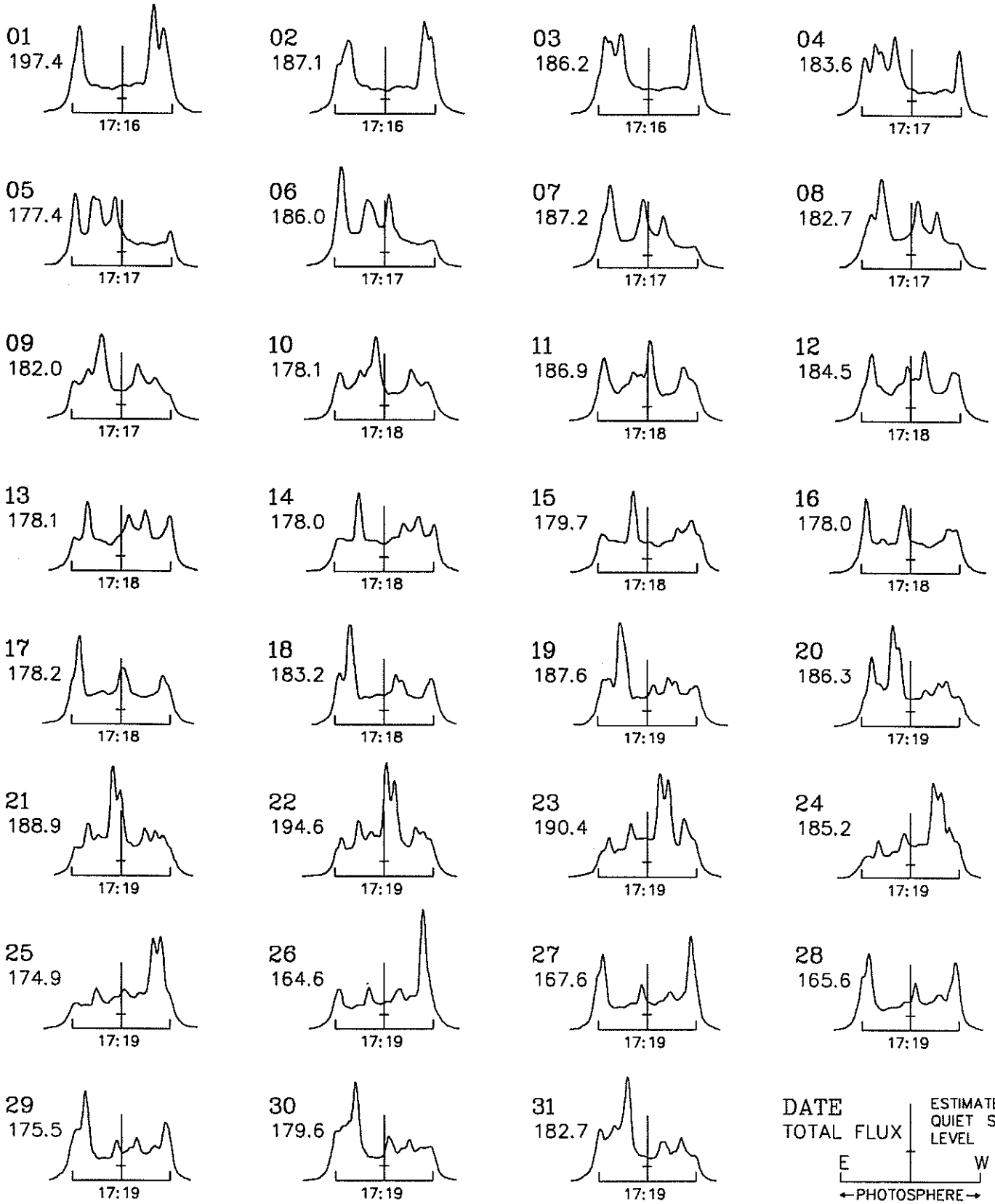
Note: All scans taken with 3 dB attenuation. This means all scans are one-half normal height.

EAST - WEST SOLAR SCANS JULY 1989

27
Jul 89

ALGONQUIN RADIO OBSERVATORY
CANADA

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



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

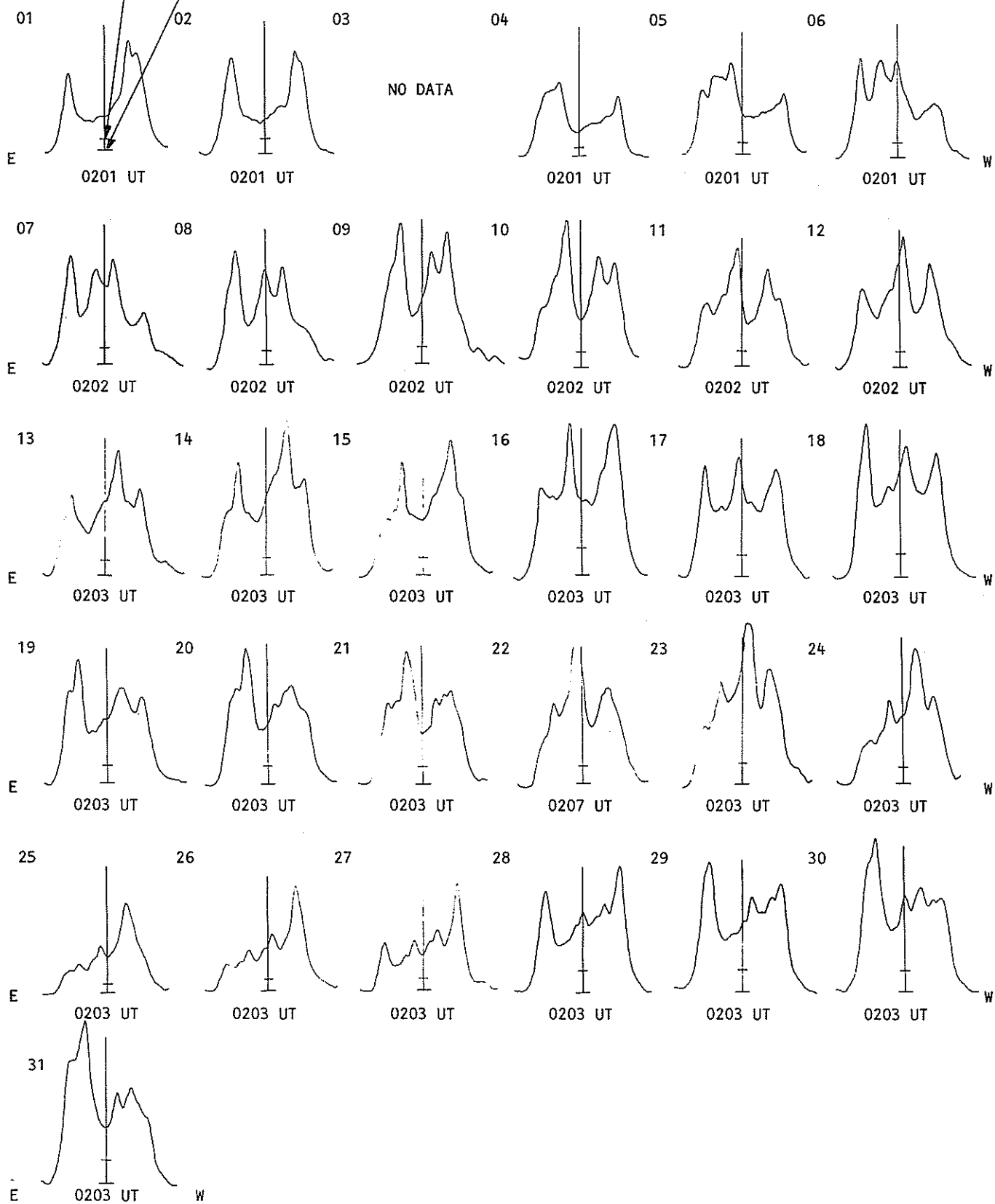
EAST - WEST SOLAR SCANS

Fleurs, Australia

JULY 1989

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

Estimated Quiet Sun Level
Cold Sky Level

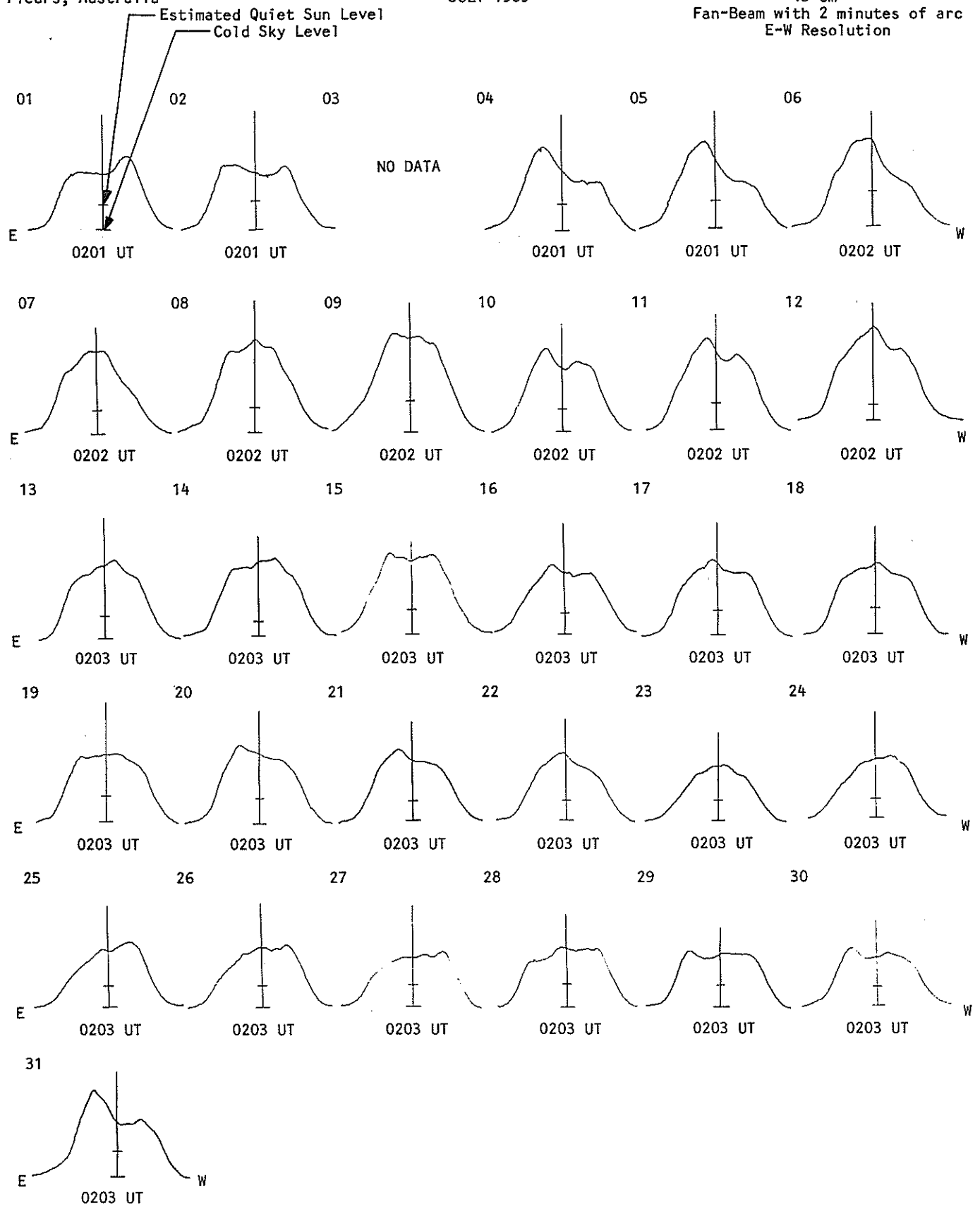


EAST - WEST SOLAR SCANS

Fleurs, Australia

JULY 1989

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



30
Jul 89

Nancay
Day

SOLAR INTERFEROMETRIC OBSERVATIONS
JULY 1989

164 MHz

5

Chart unavailable at time of publication.

10

15

20

25

30

E

C

W

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

31
Jul 89

JULY 1989

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m ² Hz)	Mean		
03	2695 LEAR	8 S	0135.0E	0135.0	2.00	130.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0135.0E	0135.0	1.00	170.0			QL=1 ST=2 TYP=3
	2695 PALE	8 S	0135.0E	0135.0	1.00	130.0			QL=1 ST=2 TYP=3
	8800 PALE	8 S	0135.0E	0135.0	1.00	220.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0139.0E	0139.0	1.00	15.0			QL=1 ST=2 TYP=3
	2800 OTTA	20 GRF	1424.0	1458.0	246.0	12.5	6.0		
04	2695 PENT	3 S	0000.0	0001.0	14.0	156.4	59.0		
	8800 LEAR	49 GB	0000.0E	0000.0	2.00	550.0			QL=1 ST=2 TYP=6
	2695 LEAR	4 S/F	0000.0E	0000.0	3.00	150.0			QL=1 ST=2 TYP=3
	8800 PALE	49 GB	0000.0E	0000.0	1.00	690.0			QL=1 ST=2 TYP=6
	2800 OTTA	3 S	1443.0	1444.0	3.0	17.4	6.0		
	8800 SGMR	8 S	1443.0E	1444.0	2.00	87.0			QL=1 ST=2 TYP=3
05	8800 SVTO	8 S	1443.0E	1444.0	1.00	57.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0315.0E	0315.0	1.00	80.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0315.0E	0316.0	1.00	61.0			QL=1 ST=2 TYP=3
	2695 LEAR	8 S	0753.0E	0754.0	2.00	22.0			QL=1 ST=2 TYP=3
	8800 LEAR	8 S	0753.0E	0754.0	2.00	55.0			QL=1 ST=2 TYP=3
	8800 SVTO	8 S	0753.0E	0754.0	1.00	70.0			QL=1 ST=2 TYP=3
07	2800 OTTA	3 S	1645.0	1647.0	5.0	16.2	7.0		
	2800 OTTA	29 PBI	1647.0	1710.0	36.0	4.5	4.0		
07	2800 OTTA	3 S	1212.0	1214.0	8.0	38.1	14.0		
	2695 SGMR	8 S	1212.0E	1212.0	1.00	56.0			QL=1 ST=2 TYP=3
08	2800 OTTA	4 S/F	1916.0	1918.0	4.0	14.5	6.0		
09	2695 PENT	4 S/F	0111.0	0113.0	41.00	82.7	28.0		
	2695 LEAR	4 S/F	0114.0E	0117.0	26.00	57.0			QL=1 ST=2 TYP=3
	2695 PALE	4 S/F	0115.0E	0118.0	7.00	68.0			QL=1 ST=2 TYP=3
	8800 LEAR	4 S/F	0119.0E	0127.0	21.00	25.0			QL=1 ST=2 TYP=3
12	8800 SVTO	8 S	0655.0E	0655.0	U	79.0			QL=1 ST=2 TYP=3
	2800 OTTA	20 GRF	1935.0	2027.0	195.0	16.2	7.0		
	2800 OTTA	3 S	2122.0	2124.0	5.0	12.5	6.0		
13	8800 SVTO	8 S	1019.0E	1019.0	U	54.0			QL=1 ST=2 TYP=3
	2800 OTTA	20 GRF	1400.0	1410.0	107.0	6.1	3.0		
	2800 OTTA	20 GRF	1548.0	1620.0	132.0	8.5	4.0		
16	2800 OTTA	20 GRF	1340.0	1412.0	100.0	7.7	3.0		
	2800 OTTA	20 GRF	1902.0	1958.0	116.0	9.7	5.0		
17	2695 LEAR	4 S/F	0549.0E	0551.0	4.00	54.0			QL=1 ST=2 TYP=3
	2695 SVTO	4 S/F	0549.0E	0551.0	3.00	63.0			QL=1 ST=2 TYP=3
	8800 SVTO	8 S	0550.0E	0551.0	2.00	93.0			QL=1 ST=2 TYP=3
19	2800 OTTA	3 S	2117.0	2126.0	45.0	28.9	12.0		
	2800 OTTA	3 S	2215.0	2217.0	20.0	22.9	8.0		
20	2695 PENT	4 S/F	0009.0	0010.0	10.0	25.5	9.0		
	2695 LEAR	8 S	0706.0E	0707.0	1.00	140.0			QL=1 ST=2 TYP=3
	2800 OTTA	4 S/F	2019.0	2023.0	10.0	186.9	50.0		
	8800 PALE	4 S/F	2026.0E	2027.0	3.00	390.0			QL=1 ST=2 TYP=3
	2695 PALE	4 S/F	2026.0E	2027.0	4.00	170.0			QL=1 ST=2 TYP=3
	2695 SGMR	4 S/F	2026.0E	2027.0	4.00	170.0			QL=1 ST=2 TYP=3
	8800 SGMR	4 S/F	2026.0E	2027.0	3.00	490.0			QL=1 ST=2 TYP=3
21	2695 PENT	3 S	0045.5	0045.8	7.0	16.9	6.0		
	8800 LEAR	4 S/F	0543.0E	0545.0	9.00	51.0			QL=1 ST=2 TYP=3
	2695 SVTO	4 S/F	0543.0E	0545.0	3.00	68.0			QL=1 ST=3 TYP=3
	8800 SVTO	8 S	0544.0E	0545.0	2.00	50.0			QL=1 ST=3 TYP=3
22	2695 PALE	8 S	1637.0E	1638.0	2.00	75.0			QL=1 ST=2 TYP=3
24	2695 PENT	4 S/F	0026.5	0030.5	12.0	23.2	12.0		
25	8800 LEAR	49 GB	0838.0E	0842.0	10.00	830.0			QL=1 ST=2 TYP=7

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

JULY 1989

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		
25	8800 SVTO	49 GB	0838.0E	0842.0	11.00	820.0			QL=1 ST=2 TYP=7
	2695 SVTO	49 GB	0839.0E	0841.0	8.00	210.0			QL=1 ST=2 TYP=7
	2695 LEAR	49 GB	0840.0E	0841.0	5.00	260.0			QL=1 ST=2 TYP=7
26	2800 OTTA	3 S	1350.0	1351.0	4.0	38.2	15.0		
	2800 OTTA	4 S/F	1557.0	1601.0	28.0	12.5	5.0		
27	2800 OTTA	3 S	1747.0	1748.0	11.0	136.0	51.0		
	2695 PALE	4 S/F	1747.0E	1747.0	3.00	140.0			QL=1 ST=2 TYP=3
	2695 SGMR	4 S/F	1747.0E	1747.0	3.00	130.0			QL=1 ST=2 TYP=3
29	8800 LEAR	4 S/F	0610.0E	0611.0	3.00	170.0			QL=1 ST=2 TYP=3
	8800 SVTO	8 S	0610.0E	0611.0	2.00	160.0			QL=1 ST=2 TYP=3
31	2695 SVTO	4 S/F	1719.0E	1722.0	4.00	56.0			QL=1 ST=3 TYP=3
	2800 OTTA	3 S	1754.0	1755.0	2.0	38.6	14.0		
	2800 OTTA	3 S	2055.0	2056.0	7.0	39.8	15.0		
	2800 OTTA	20 GRF	2100.0	2230.0	290.0	7.5	6.0		

Reports are received routinely from the following observatories:

BERN = Berne

LEAR = Learmonth

OTTA = Ottawa

PALE = Palehua

PENT = Penticton

SGMR = Sagamore Hill

SVTO = San Vito

Explanation of Type Code:

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

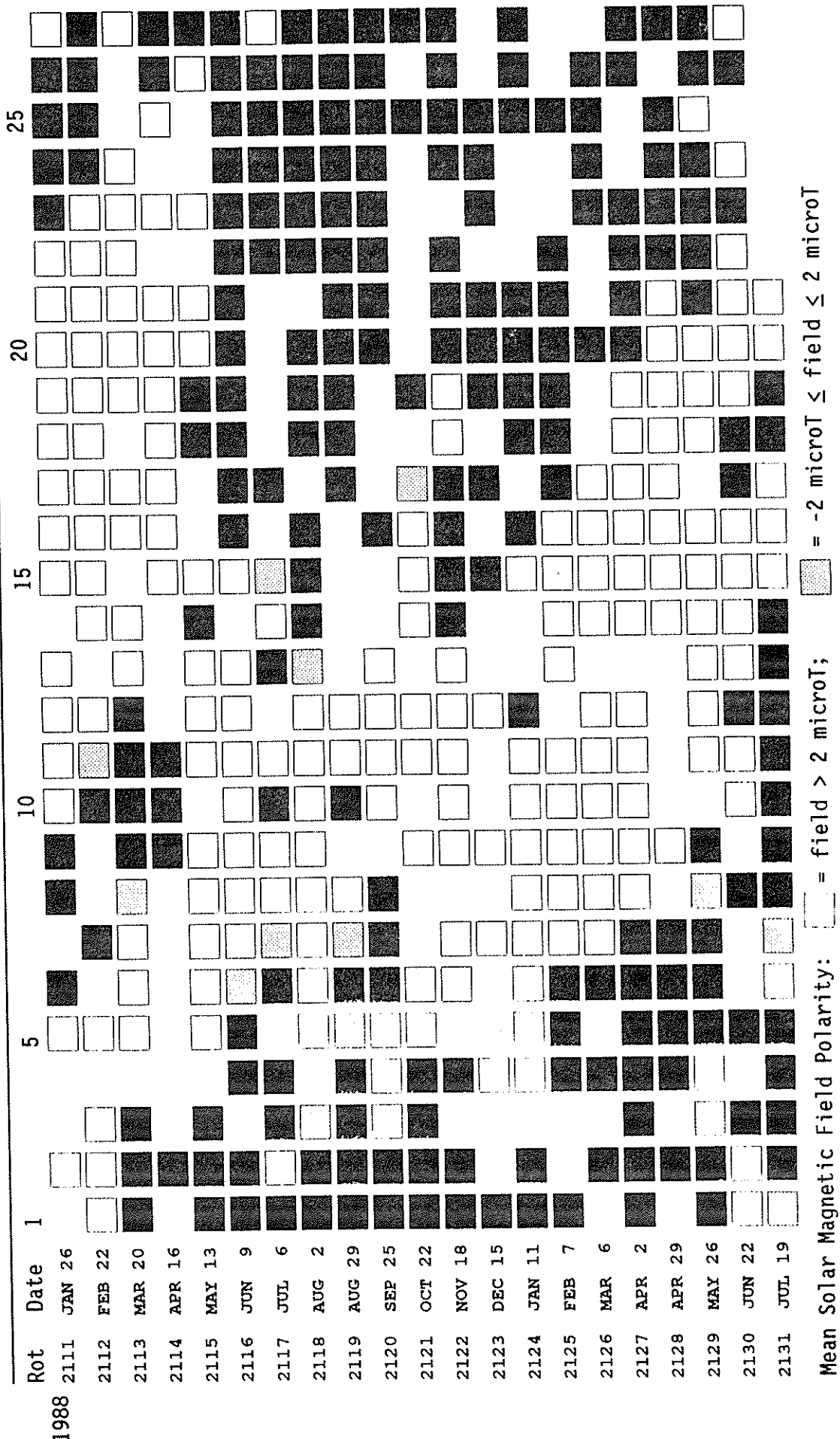
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and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

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1988					1989						
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
1	5	-27	-15	23	-3	.	.	.	.	.	-5	4
2	-22	-2	-19	24	-5	-19	.	.	-97	-47	-1	51
3	-14	-4	.	.	-4	-22	.	-66	-114	-31	-22	-19
4	1	-2	8	40	-12	-41	-65	.	-86	-22	.	3
5	.	16	12	19	2	.	-46	.	-76	-22	2	71
6	5	.	15	3	4	-65	-4	.	-62	.	56	69
7	18	-22	10	0	-24	-85	-13	-10	-28	65	74	25
8	43	43	.	.	-27	-101	.	.	-15	.	120	-90
9	48	45	.	-9	-33	.	.	-58	25	.	145	-79
10	51	.	-8	.	.	.	-16	.	71	.	142	106
11	22	.	.	.	-62	-16	-6	-16	101	.	.	115
12	25	.	.	.	-47	-23	-18	37	78	73	37	84
13	23	.	.	.	-53	.	23	39	54	87	34	73
14	1	-30	-36	.	-38	10	34	61	.	75	24	-55
15	-14	-44	-33	-35	-30	24	55	63	44	76	-58	22
16	-15	-50	-43	.	.	23	73	40	11	73	-26	.
17	-20	-54	-39	-46	.	16	66	32	15	59	-91	-49
18	.	-46	-52	-43	34	74	.	.	19	53	-6	6
19	-36	-49	-53	-46	.	101	116	64	29	22	4	0
20	-38	-64	-40	.	.	120	131	73	27	-37	-67	-138
21	-49	-67	-37	-19	56	119	94	14	-21	-44	-18	-126
22	.	-64	-34	.	.	-29	40	12	-68	-48	35	-57
23	-57	-57	-38	29	61	.	-13	.	-6	-54	15	-25
24	-79	-36	-36	31	.	.	-7	.	-110	.	-15	10
25	-91	-29	-17	.	.	22	-35	-50	.	-44	.	-2
26	-77	-8	14	30	65	-37	-64	.	.	-14	-24	-15
27	-57	6	15	31	.	.	-108	.	-80	-13	.	-52
28	-24	34	.	24	.	-50	-93	-110	-77	1	.	-27
29	-10	13	.	26	-5	-64	.	-105	.	7	-30	-12
30	-20	-6	15	18	.	-91	.	-106	-64	-12	.	-44
31	-20	.	.	.	-24	-101	.	-100	.	-5	.	-144

Dot symbol indicates no data available for the day.

STANFORD MEAN SOLAR MAGNETIC FIELD



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

C O N T E N T S

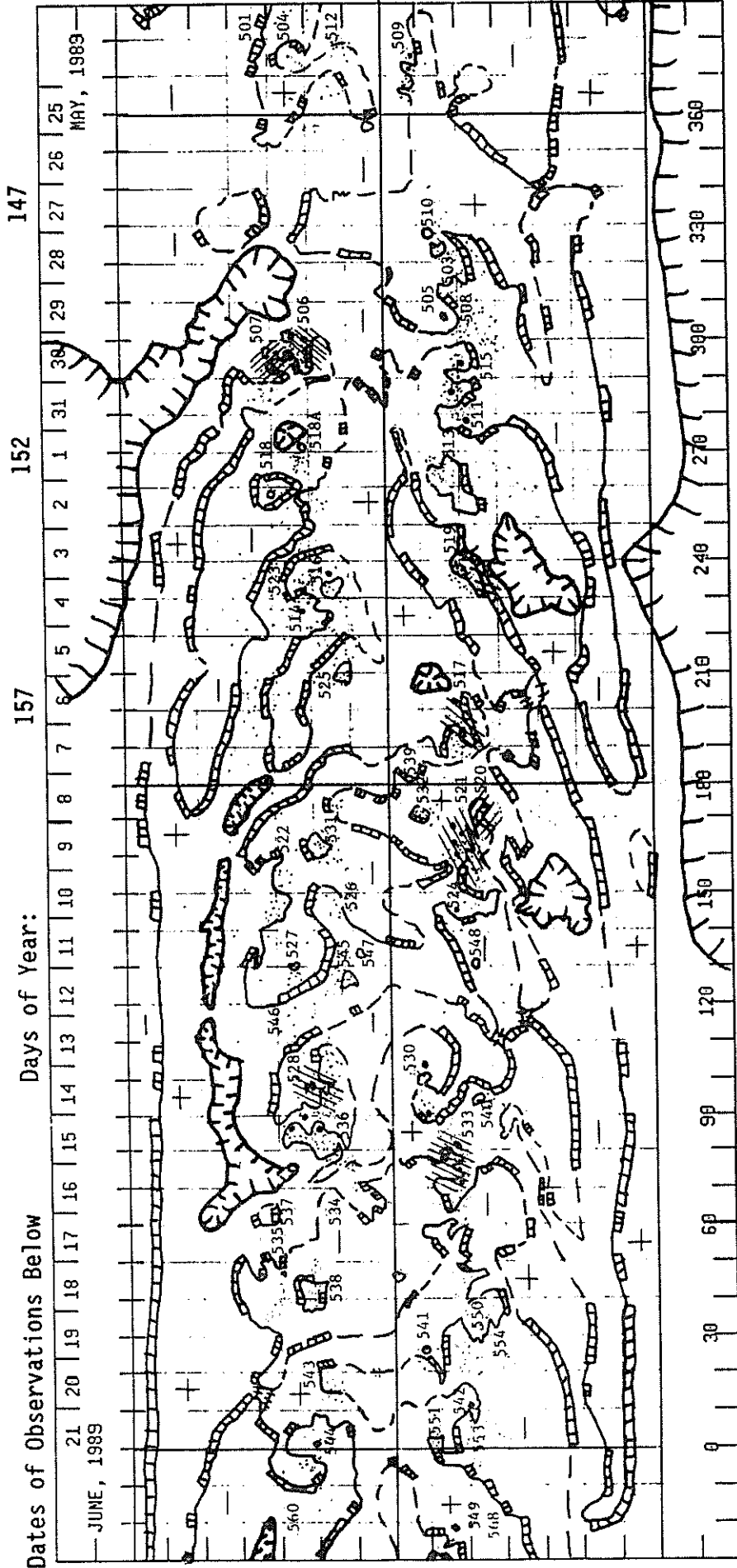
Prompt Reports

DATA FOR JUNE 1989

Number 540 Part I

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PRELIMINARY H - ALPHA SOLAR SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1816
(25 May to 21 June 1989)



Last Revised 07/24/89 KMP/FSM

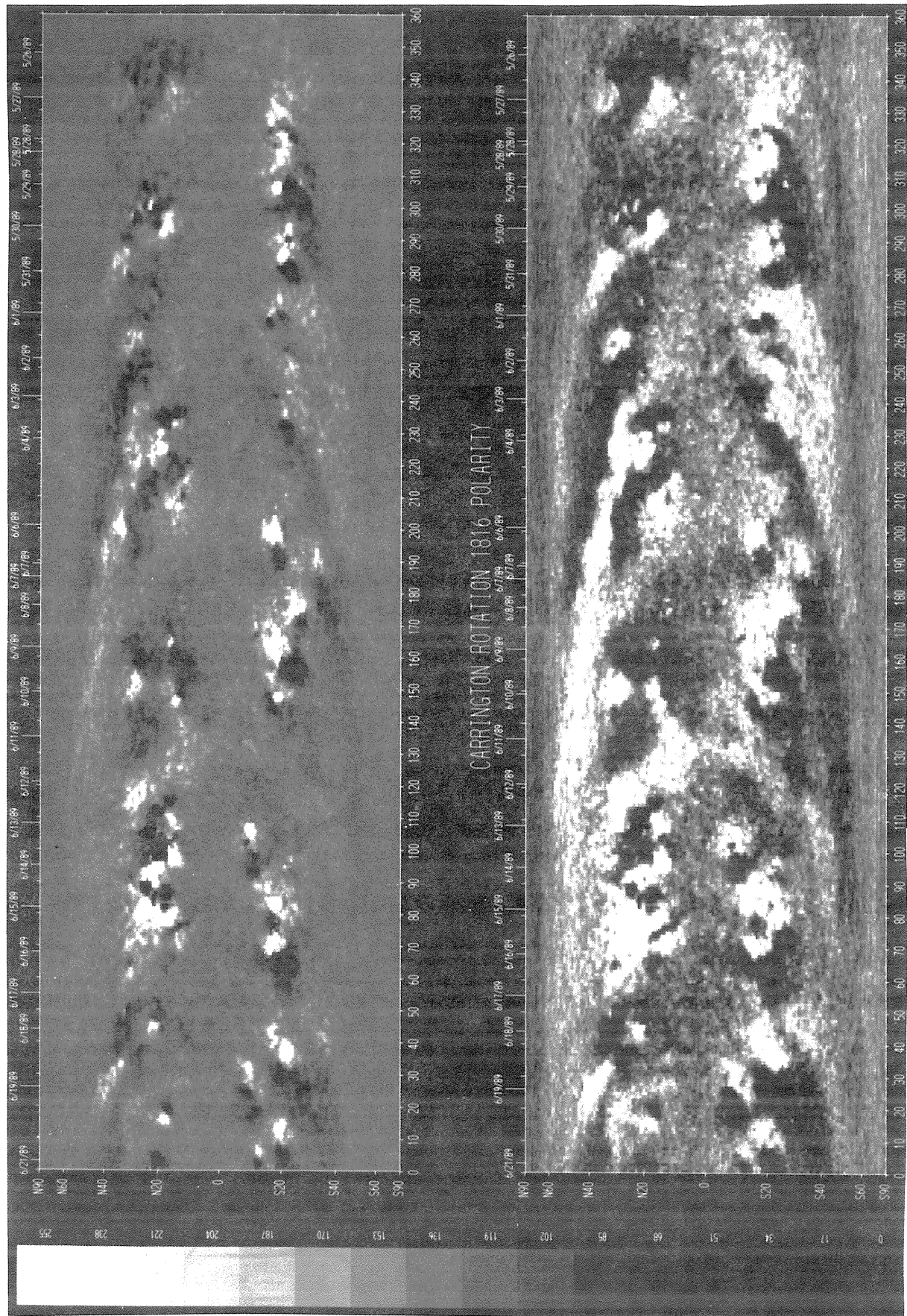
= 110830 Coronal Hole Estimate

Heliographic Longitude

S O L A R M A G N E T I C F I E L D S Y N O P T I C C H A R T
CARRINGTON ROTATION NUMBER 1816
(25 May to 21 June 1989)

Kitt Peak National Observatory

Dates of Observation

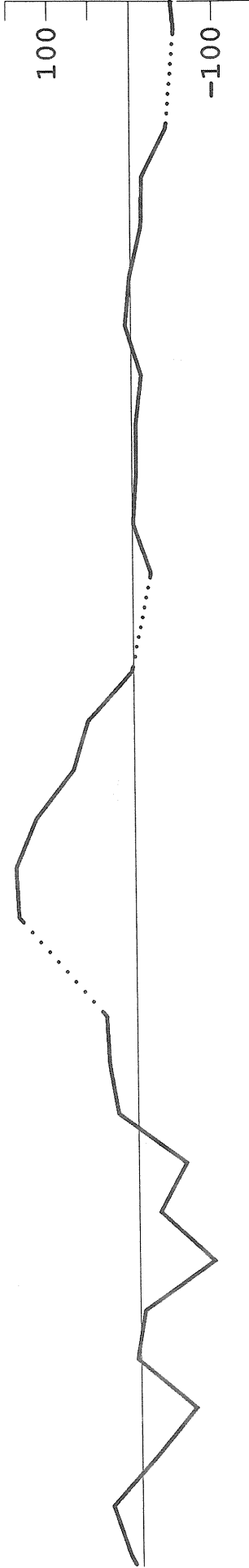


Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1816
(25 May to 21 June 1989)

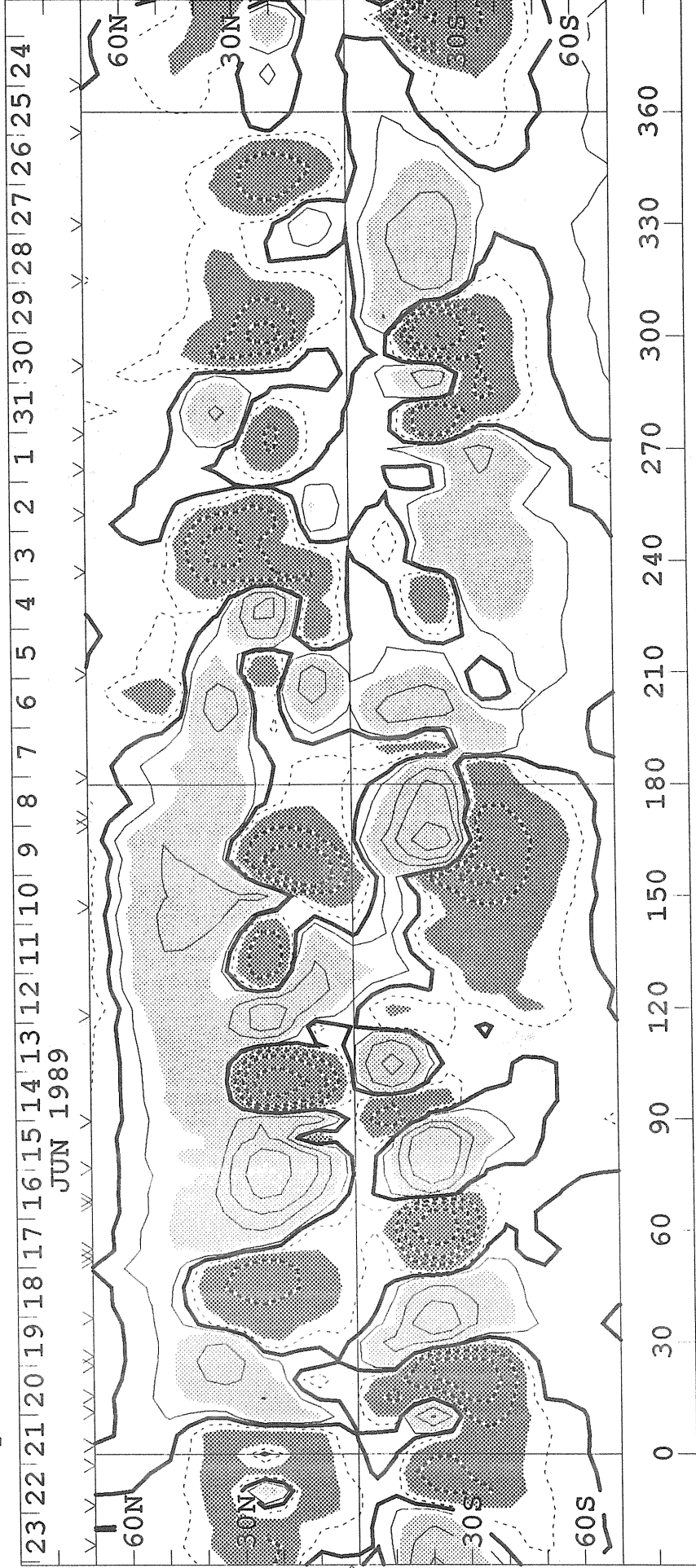
WILCOX SOLAR OBSERVATORY

Mean Field



Photospheric Magnetic Field

0, +100, 500, 1000, 2000 MicroTesla



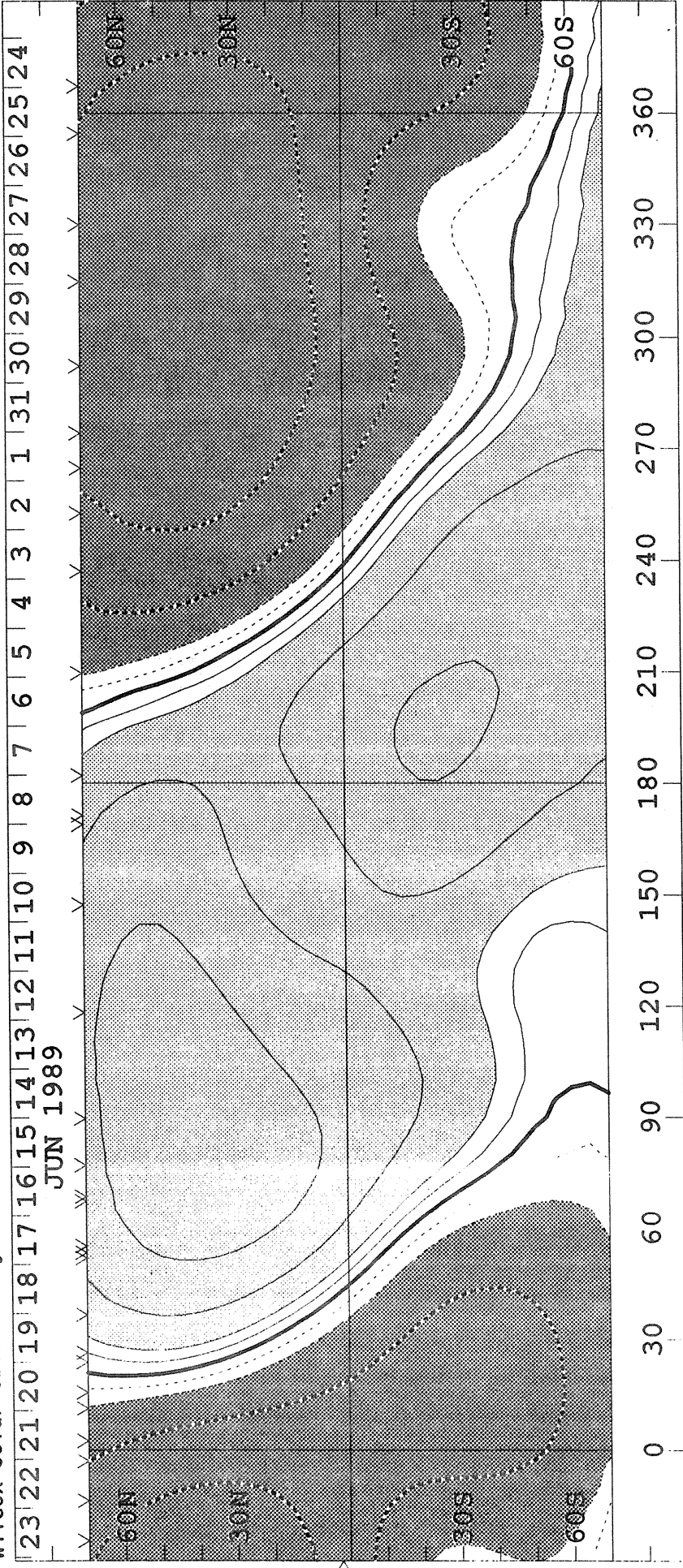
Heliographic Longitude

1816

S O L A R M A G N E T I C F I E L D S Y N O P T I C C H A R T
S O U R C E S U R F A C E F I E L D
C A R R I N G T O N R O T A T I O N N U M B E R 1 8 1 6
(2 5 M a y t o 2 1 J u n e 1 9 8 9)

0, ±1, 2, 5, 10, 20 microTesla

Wilcox Solar Observatory

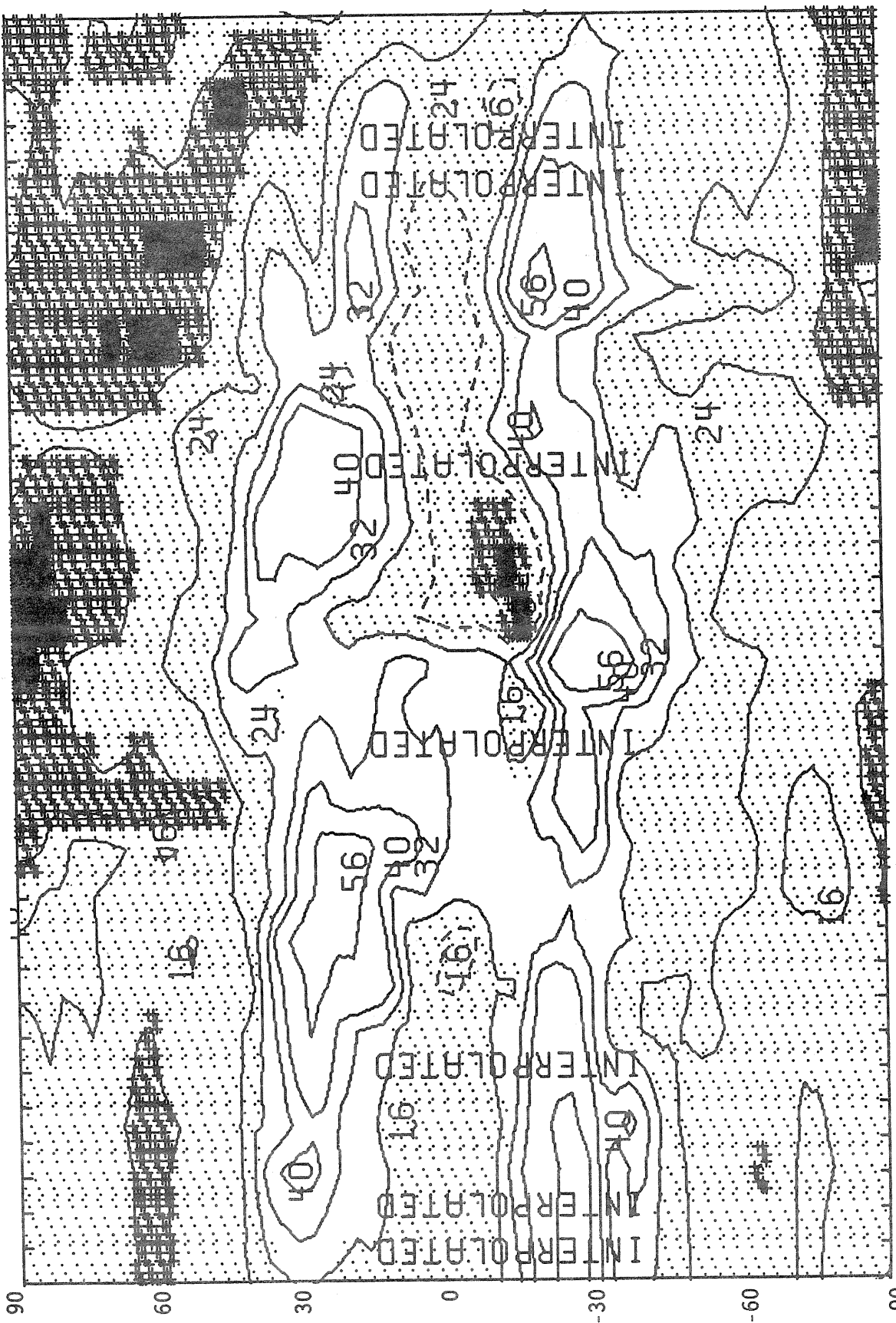


1816

Heliographic Longitude

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1816 (25 May to 21 June 1989)

172----- Day of Year of CMP -----145



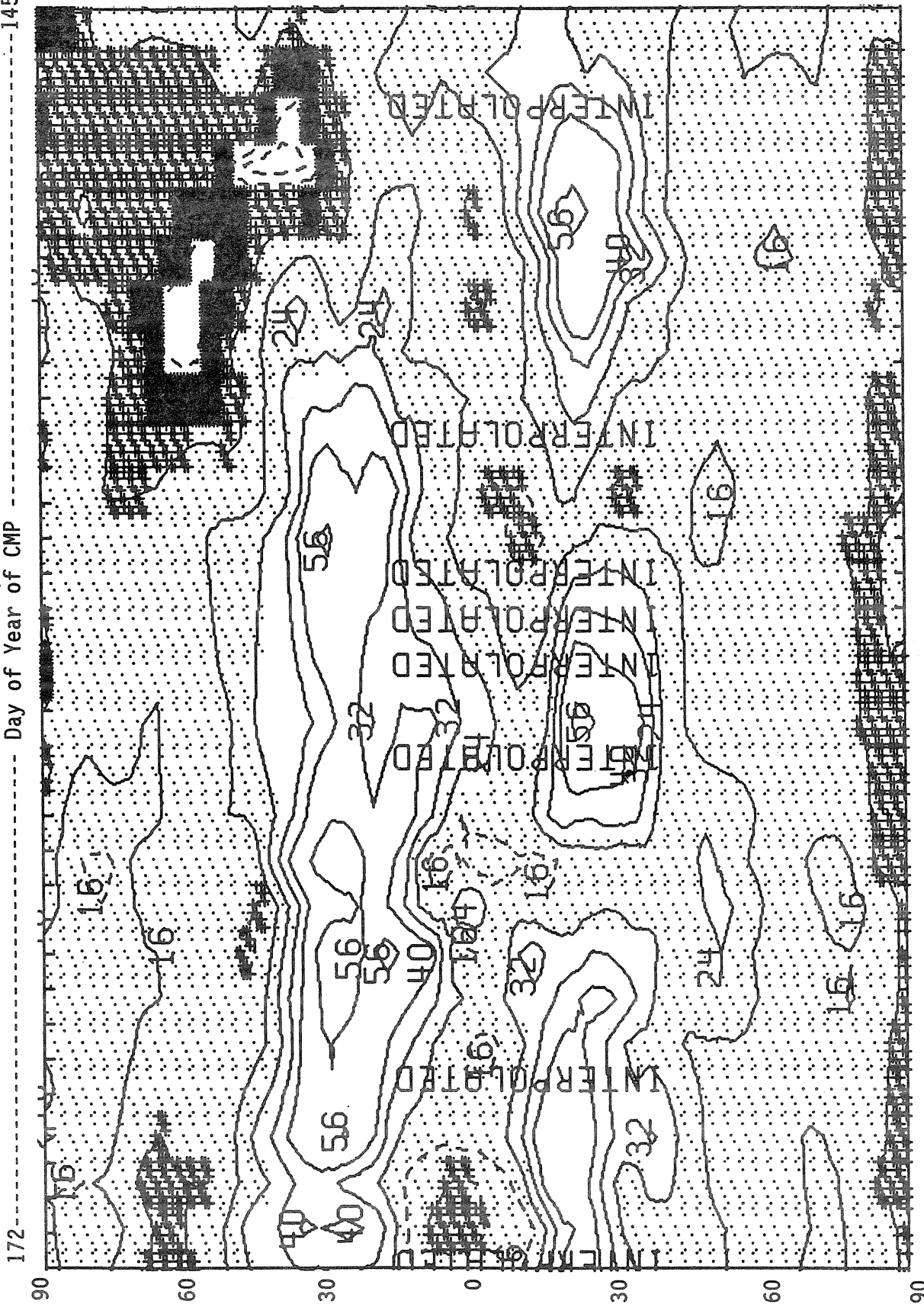
Heliographic Longitude

360

0

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1816 (25 May to 21 June 1989)

Day of Year of CMP -----145



Heliographic Longitude

360

0

172

90

60

30

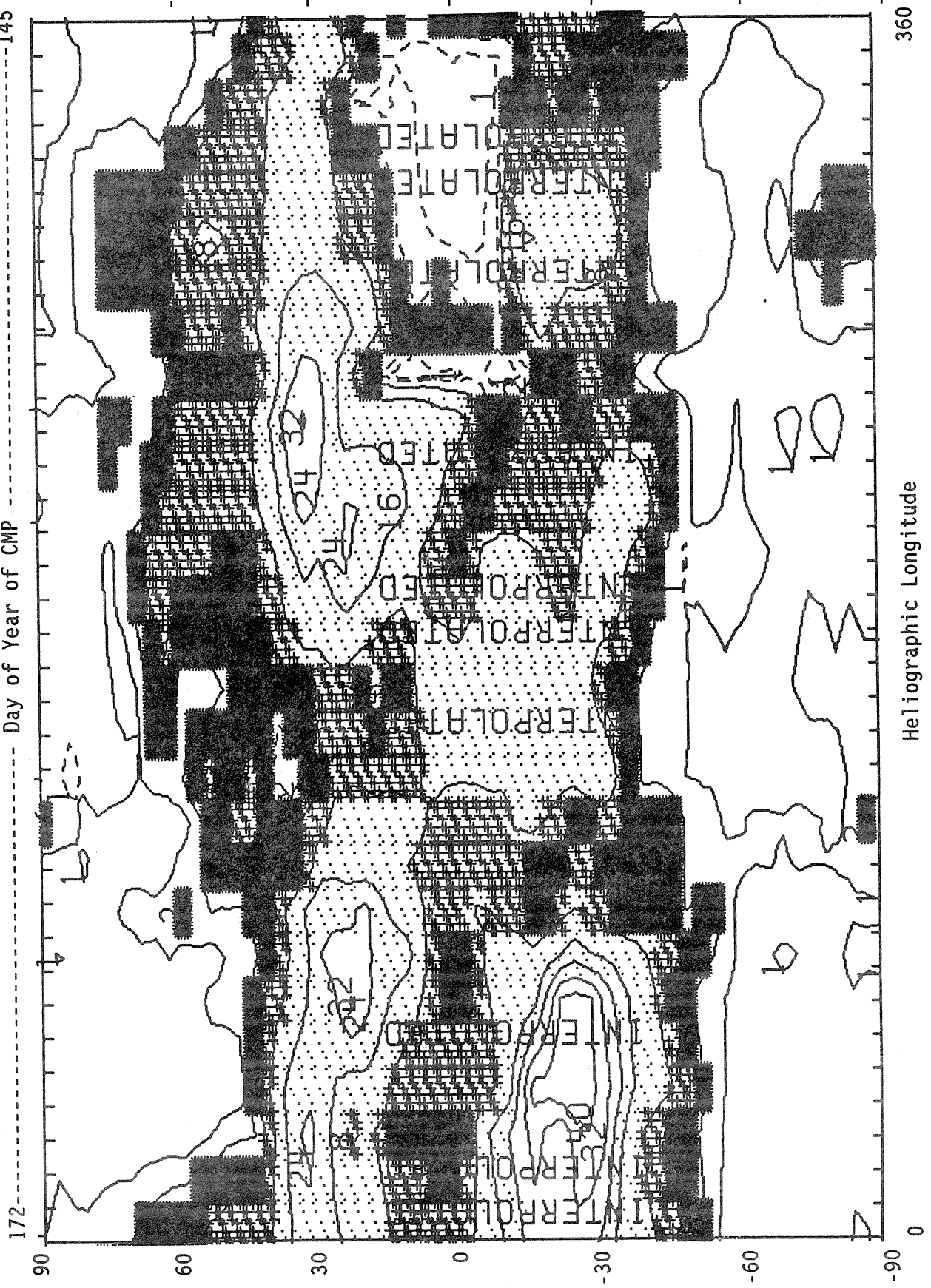
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-30

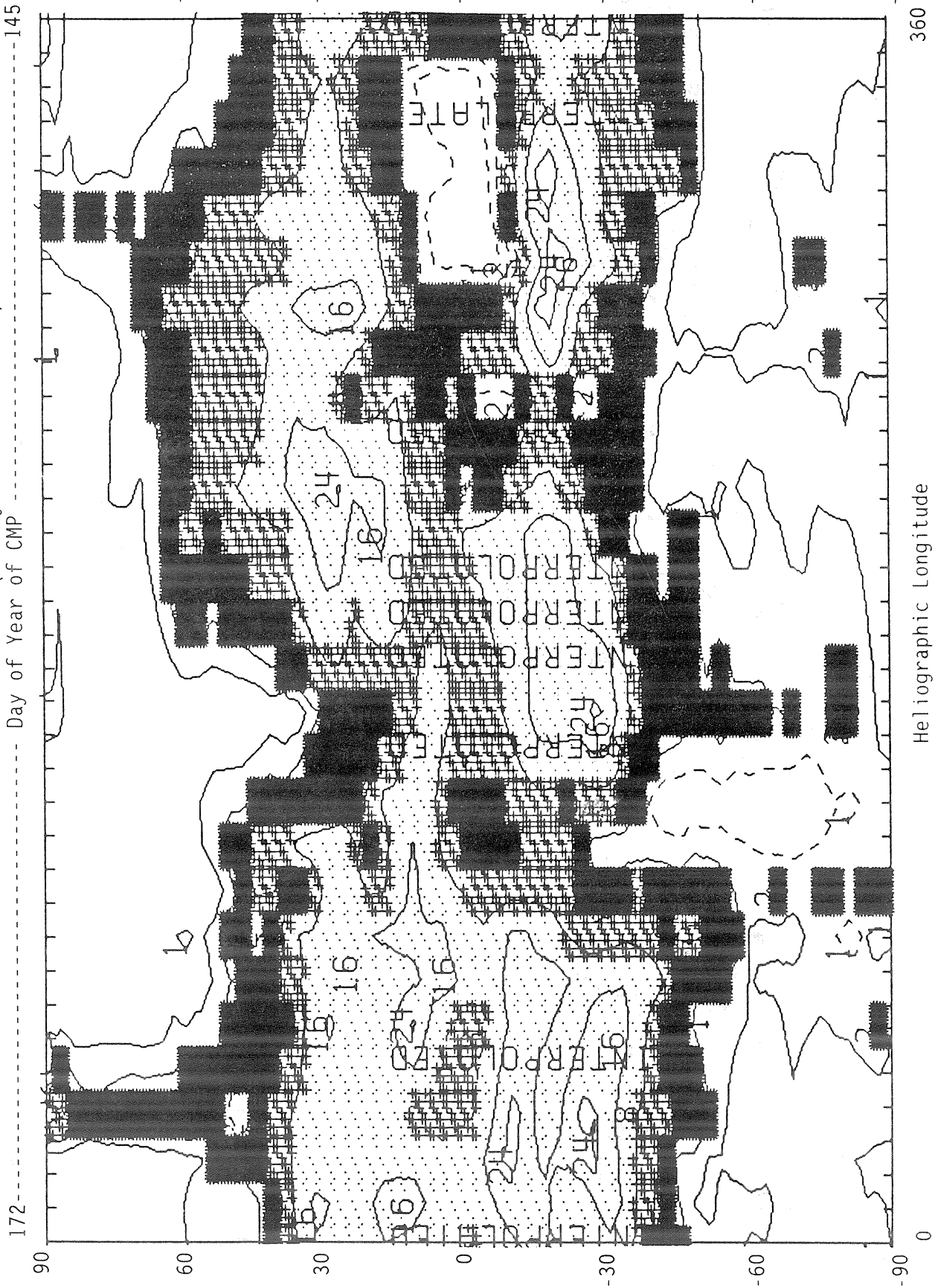
-60

-90

SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1816 (25 May to 21 June 1989)
----- Day of Year of CMP -----145



SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1816 (25 May to 21 June 1989)
Day of Year of CMP



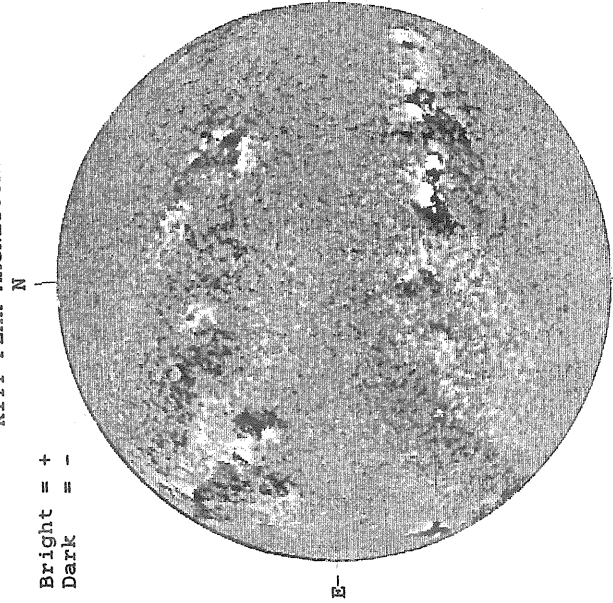
Heliographic Longitude

360

0

JUNE 1, 1989 (P=-15.45, B₀ = -0.65, L₀ = 275.91)

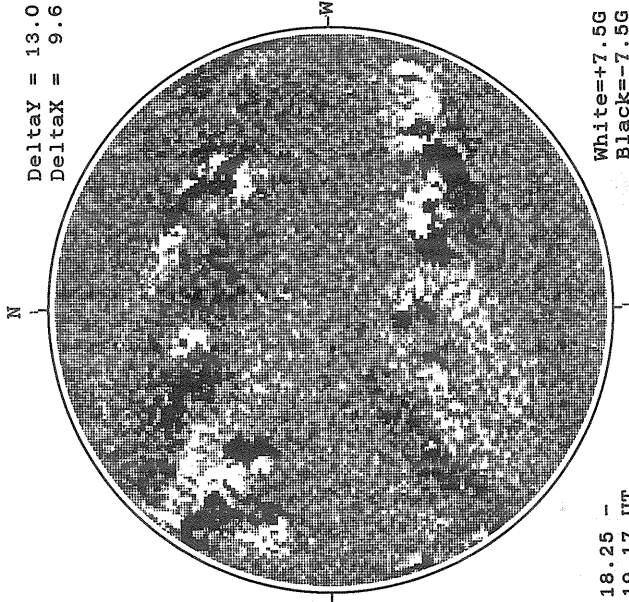
KITT PEAK MAGNETOGRAM



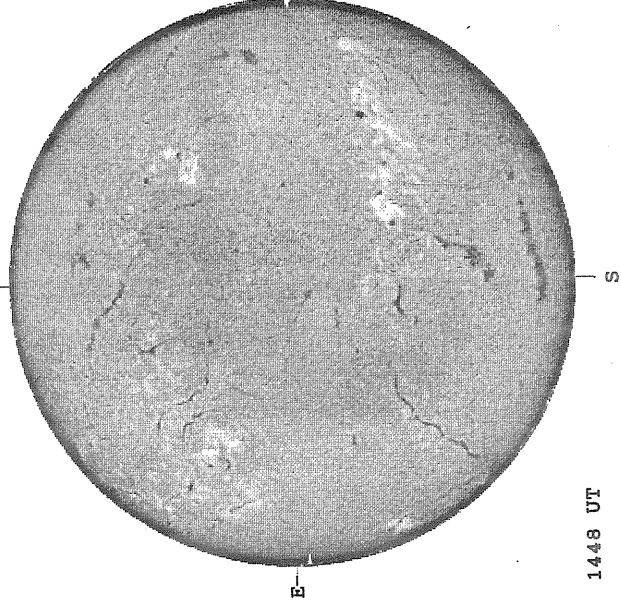
STANFORD MAGNETOGRAM



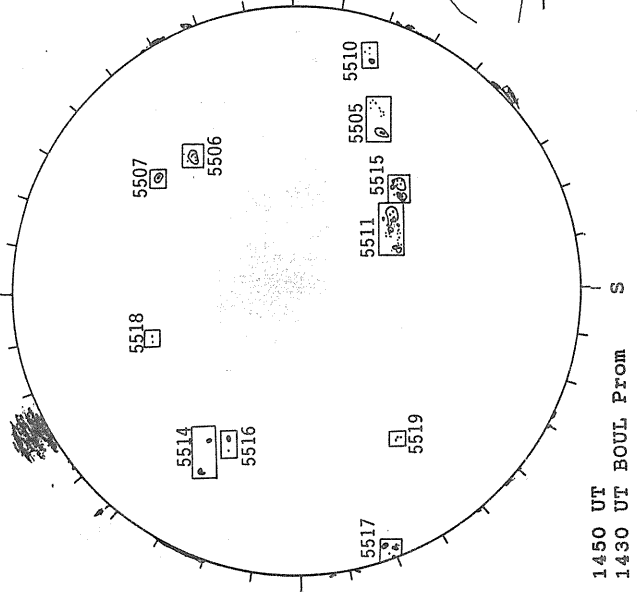
MT. WILSON MAGNETOGRAM



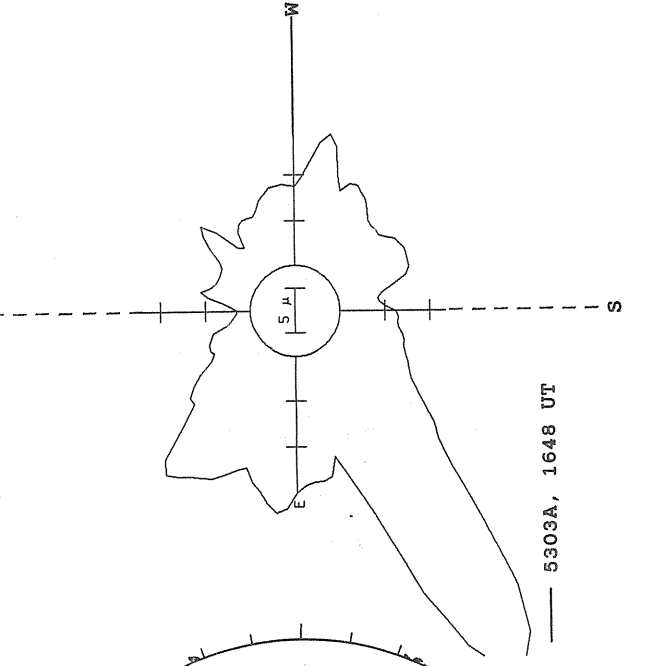
HOLLOMAN H-ALPHA



BOULDER SUNSPOT



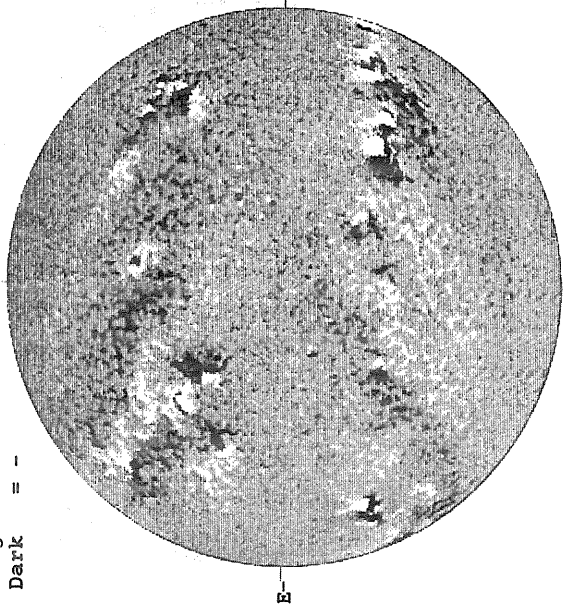
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 2, 1989 (P=-15.07, B₀ = -0.53, L₀ = 262.67)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1811 UT

STANFORD MAGNETOGRAM

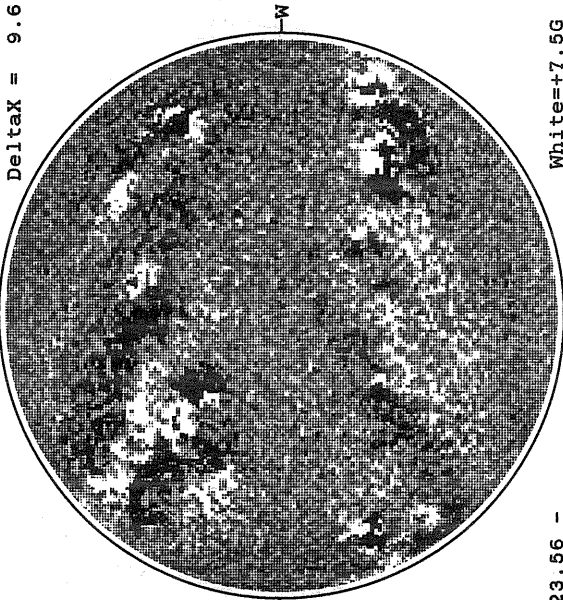
Solid = +
Dashed = -



1610 UT

MT. WILSON MAGNETOGRAM

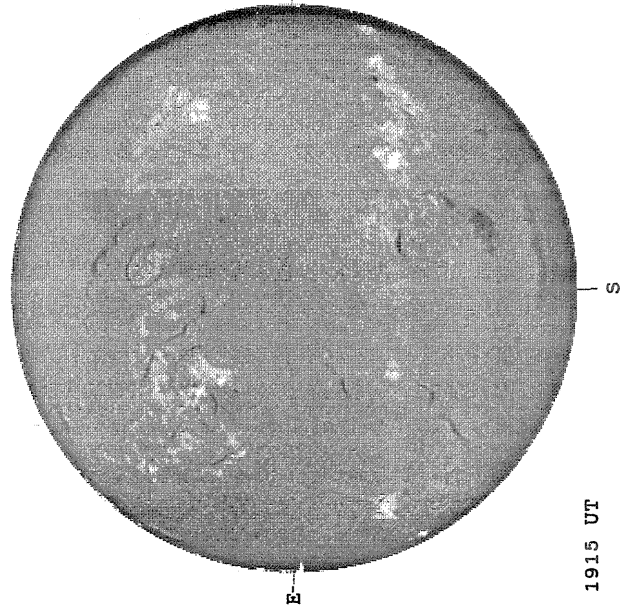
DeltaY = 13.0
DeltaX = 9.6



23.56 -
24.49 UT

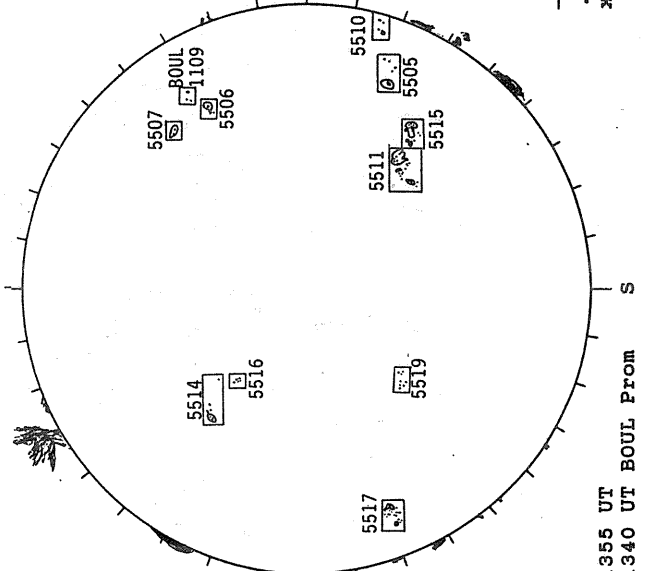
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



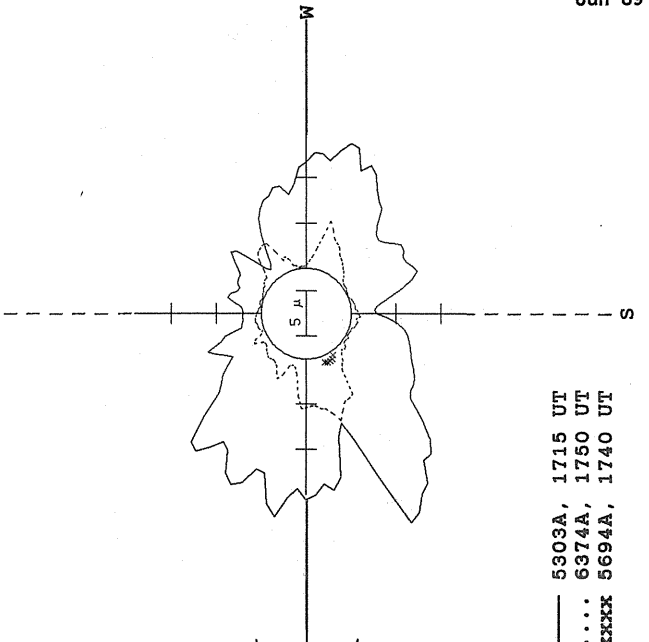
1915 UT

BOULDER SUNSPOT



1355 UT BOUL Prom
1340 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

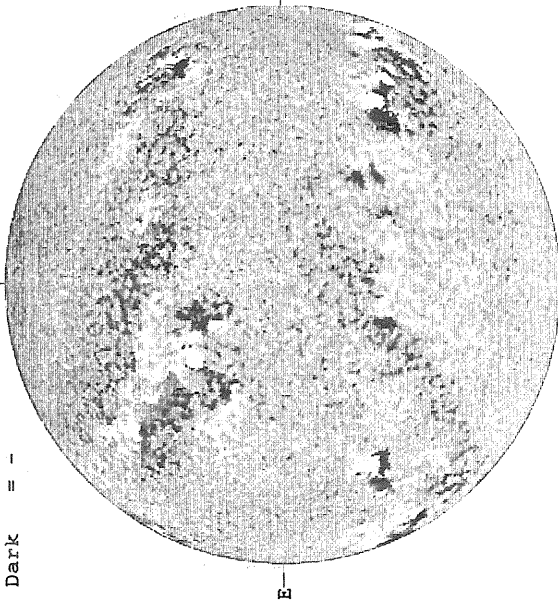


— 5803A, 1715 UT
... 6374A, 1750 UT
XXXX 5694A, 1740 UT

JUNE 3, 1989 (P=-14.69, B₀ = -0.41, L₀ = 249.44)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1447 UT

STANFORD MAGNETOGRAM

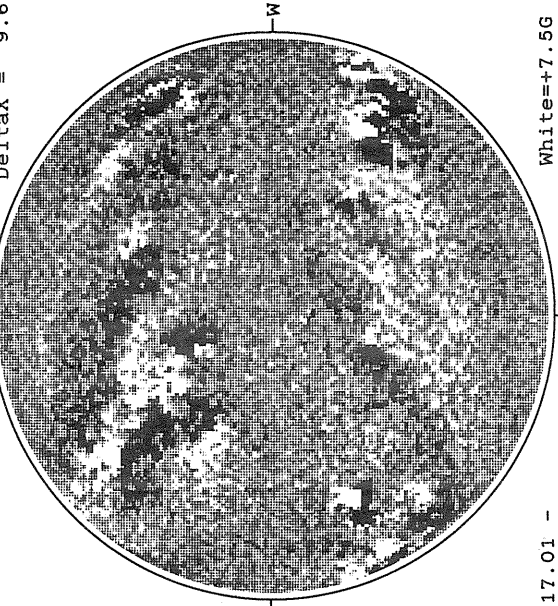
Solid = +
Dashed = -



2018 UT

MT. WILSON MAGNETOGRAM

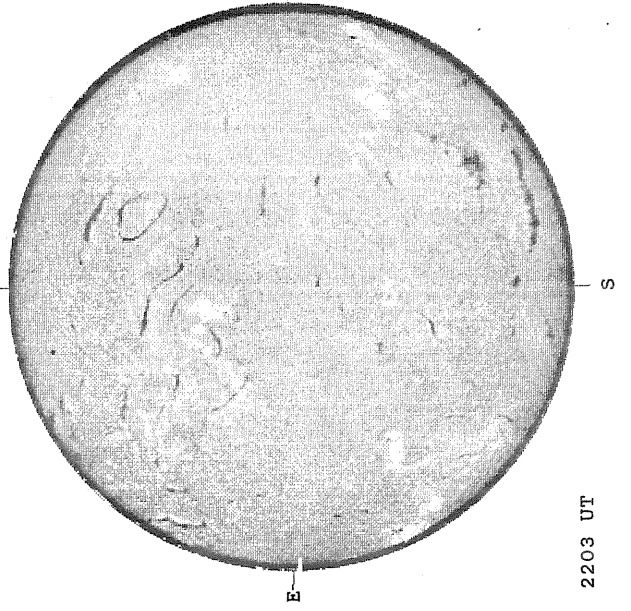
Deltaγ = 13.0
Deltaα = 9.6



17.01 -
17.93 UT

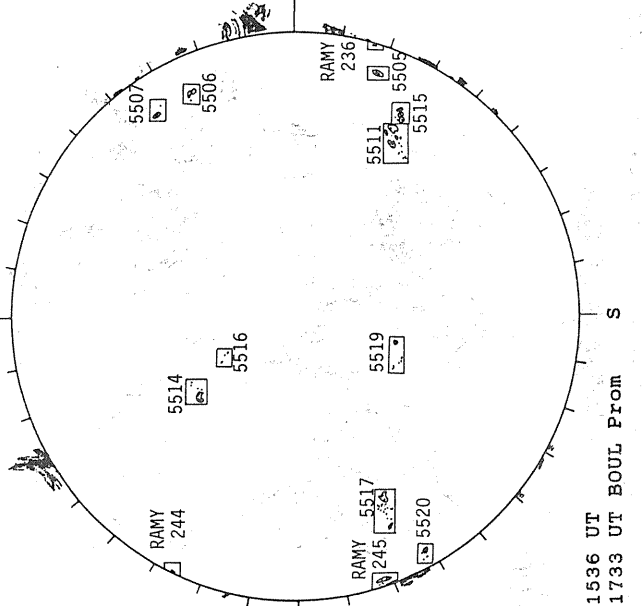
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



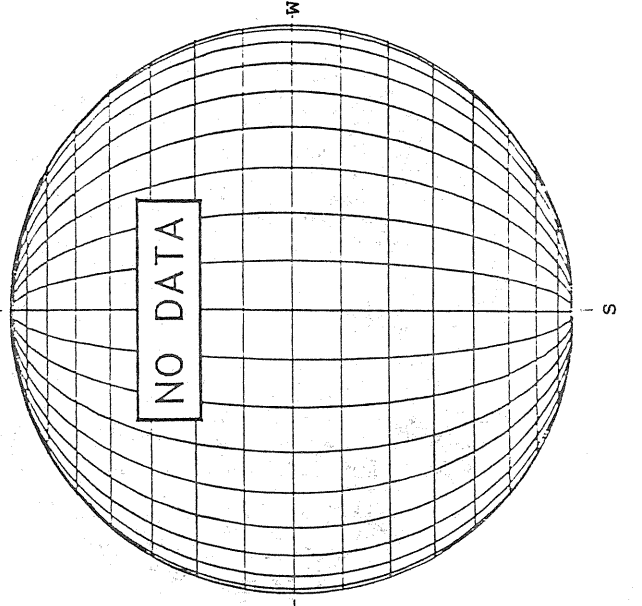
2203 UT

RAMEY SUNSPOT



1536 UT
1733 UT BOUL Prom

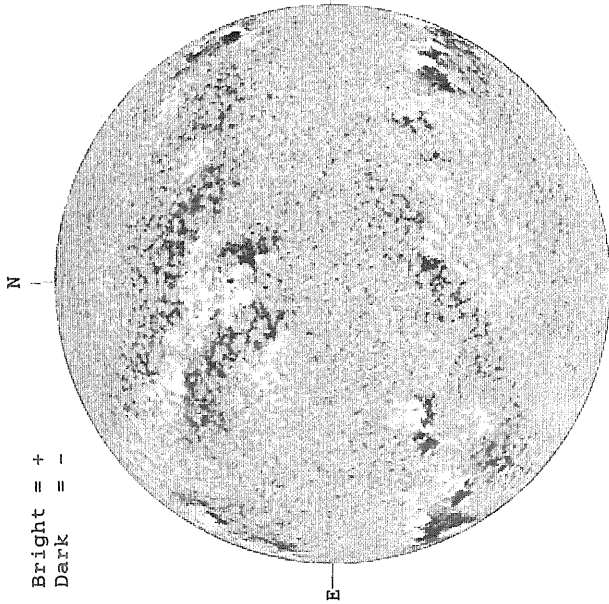
SACRAMENTO PEAK CORONA (1.15 Radii)



NO DATA

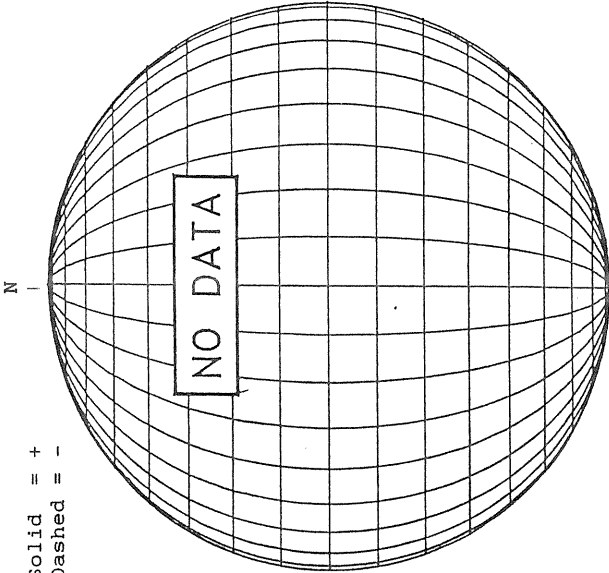
JUNE 4, 1989 (P=-14.31, B₀ = -0.29, L₀ = 236.21)

KITT PEAK MAGNETOGRAM

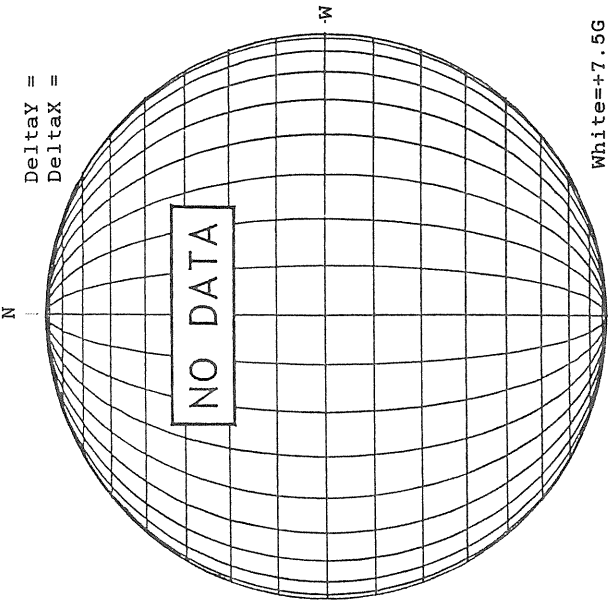


1446 UT

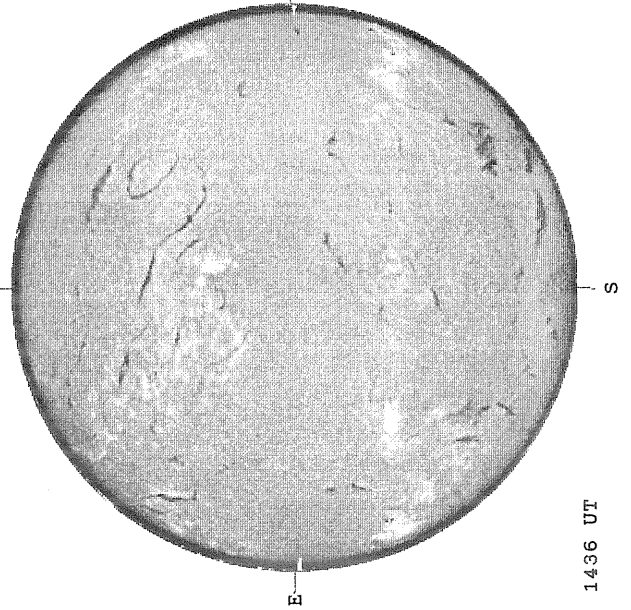
STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM

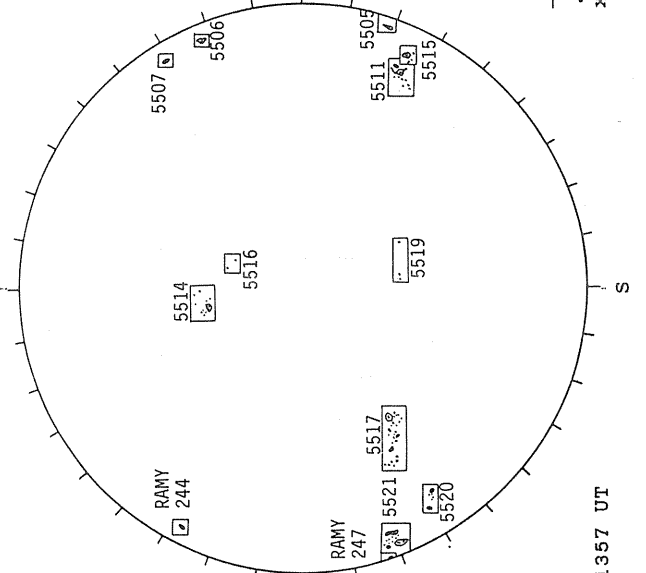


HOLLOWMAN H-ALPHA



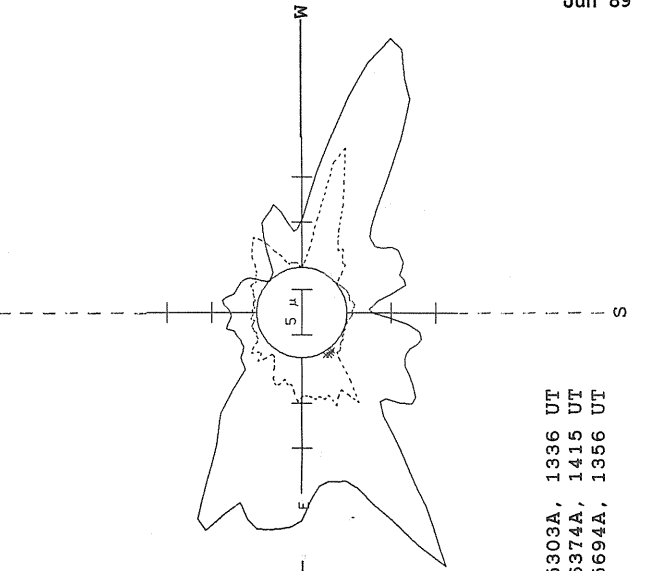
1436 UT

RAMEY SUNSPOT



1357 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

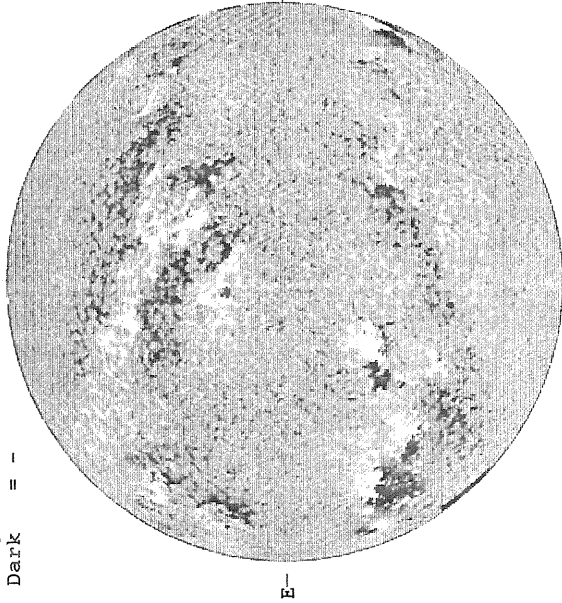


— 5303A, 1336 UT
... 6374A, 1415 UT
xxxx 5694A, 1356 UT

JUNE 5, 1989 (P=-13.92, B₀ = -0.17, L₀ = 222.97)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



2011 UT

STANFORD MAGNETOGRAM

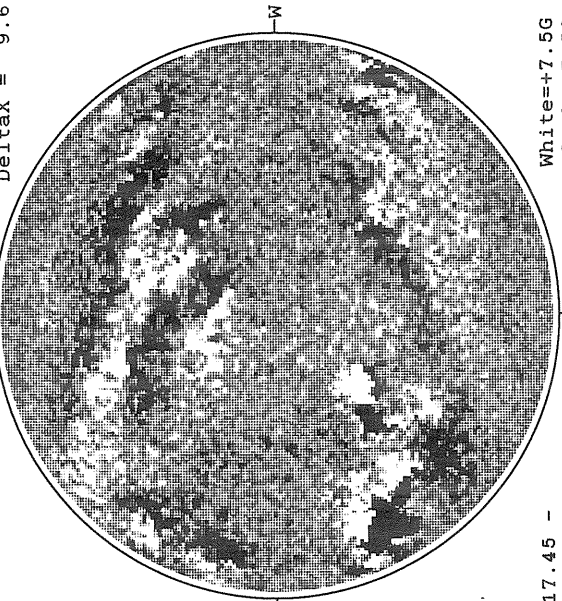
Solid = +
Dashed = -



2211 UT

MT. WILSON MAGNETOGRAM

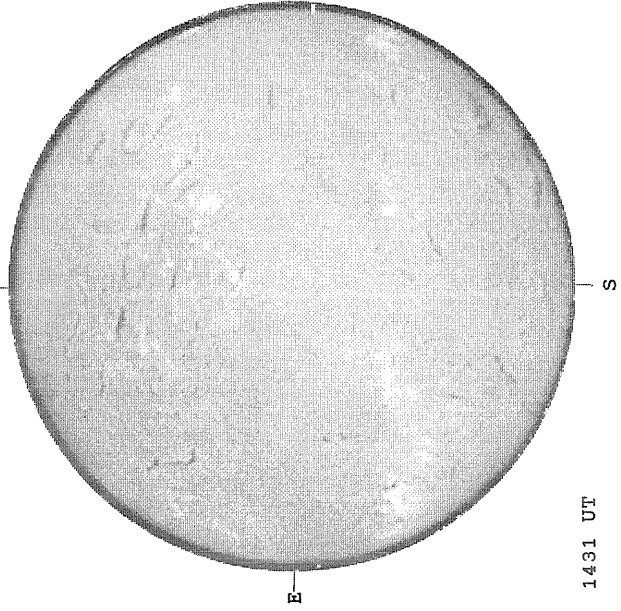
Delta_Y = 13.0
Delta_X = 9.6



17.45 -
18.38 UT

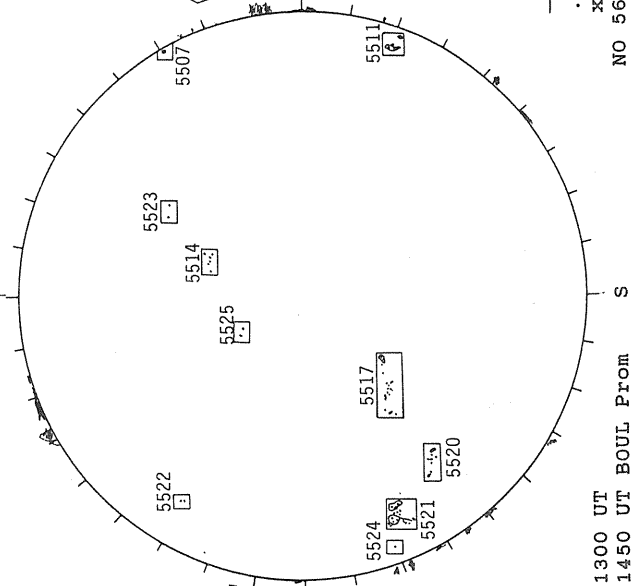
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



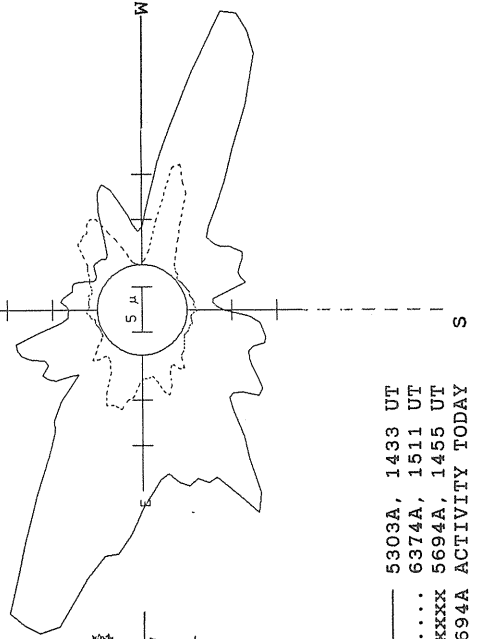
1431 UT

BOULDER SUNSPOT



1300 UT
1450 UT BOUL FROM

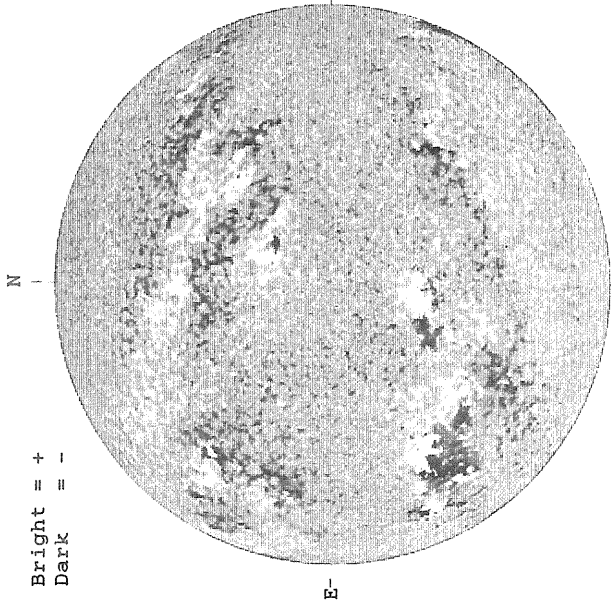
SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A, 1433 UT
.... 6374A, 1511 UT
XXXX 5694A, 1455 UT
NO 5694A ACTIVITY TODAY

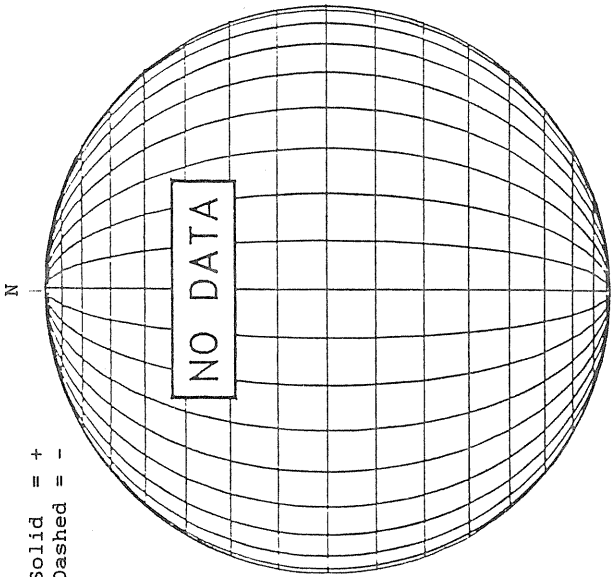
JUNE 6, 1989 (P=-13.52, B₀ = -0.05, I₀ = 209.74)

KITT PEAK MAGNETOGRAM



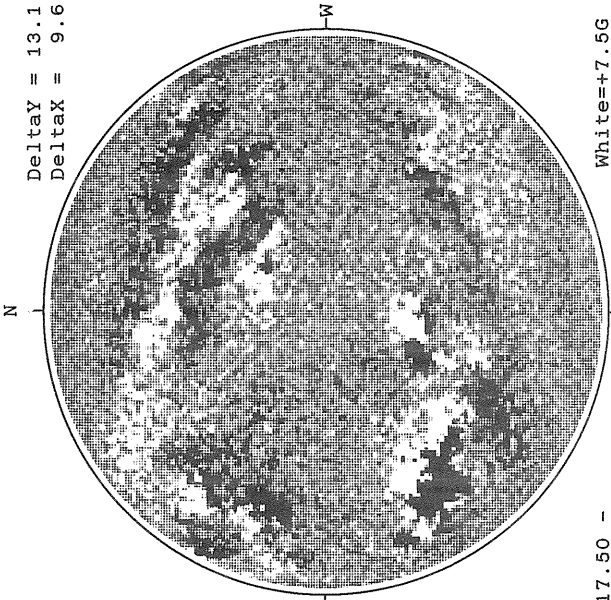
Bright = +
Dark = -

STANFORD MAGNETOGRAM



Solid = +
Dashed = -

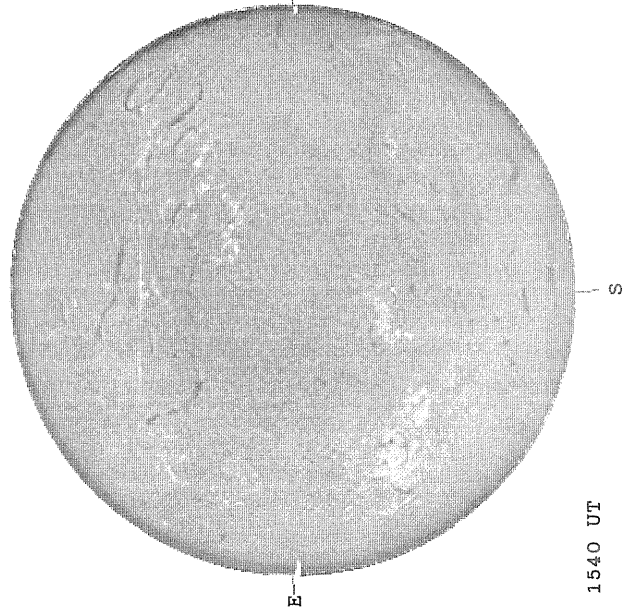
MT. WILSON MAGNETOGRAM



DeltaY = 13.1
DeltaX = 9.6

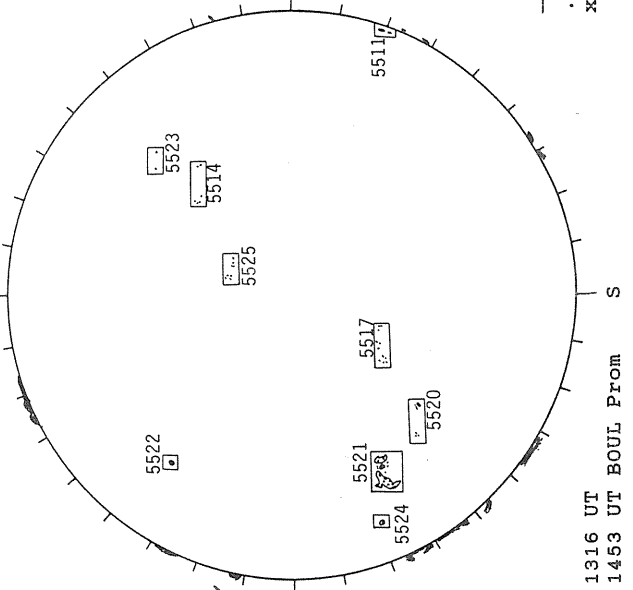
17.50 -
18.42 UT
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



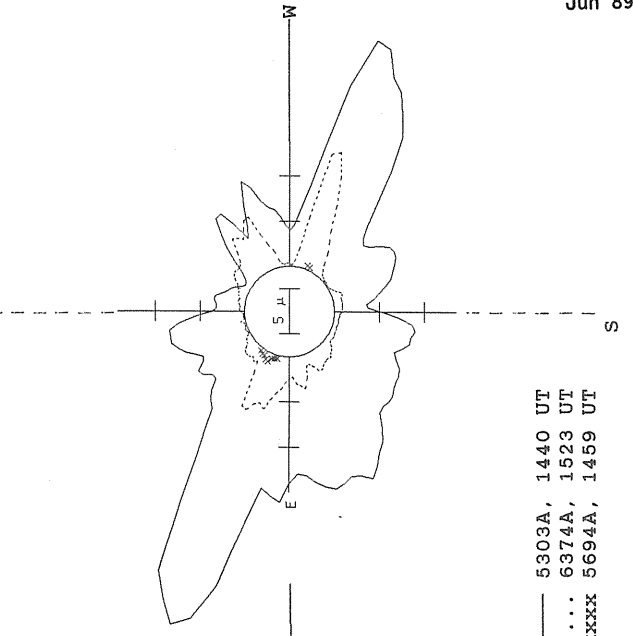
1540 UT

BOULDER SUNSPOT



1316 UT
1453 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

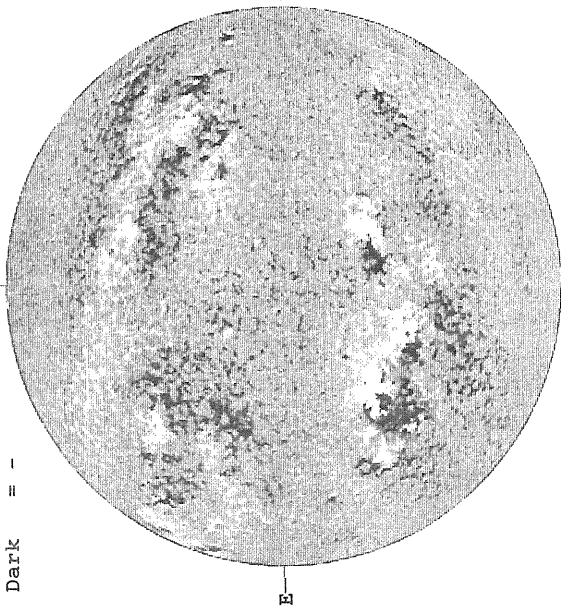


— 5303A, 1440 UT
... 6374A, 1523 UT
xxxx 5694A, 1459 UT

JUNE 7, 1989 (P=-13.12, B₀ = 0.07, L₀ = 196.50)

KITT PEAK MAGNETOGRAM

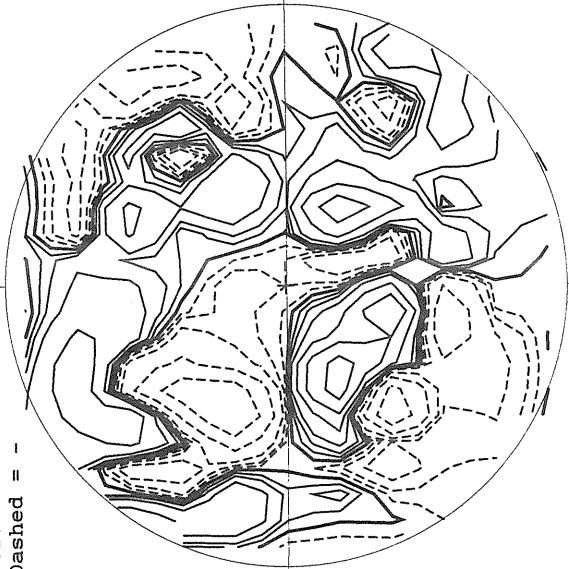
Bright = +
Dark = -



2110 UT

STANFORD MAGNETOGRAM

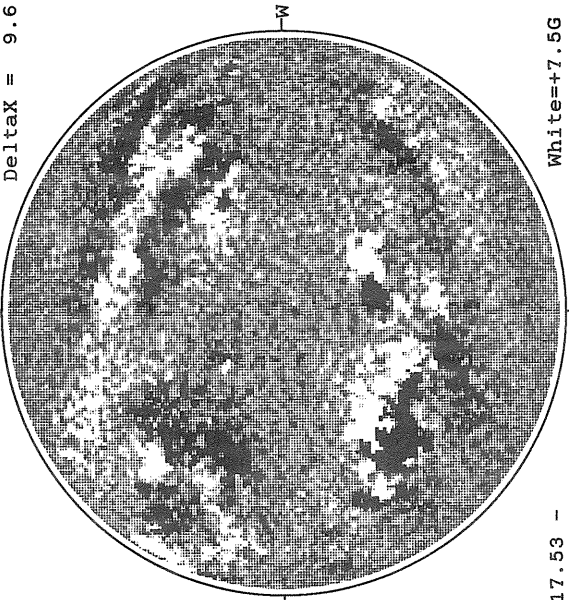
Solid = +
Dashed = -



0024 UT
June 08

MT. WILSON MAGNETOGRAM

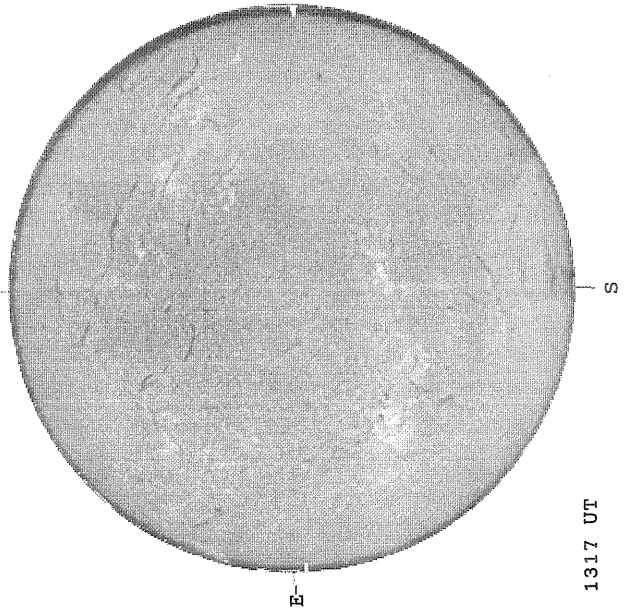
DeltaY = 13.1
DeltaX = 9.6



17.53 -
18.45 UT

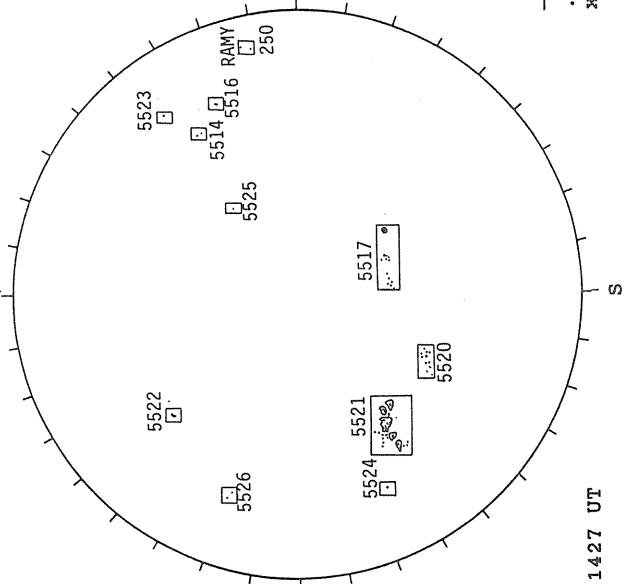
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



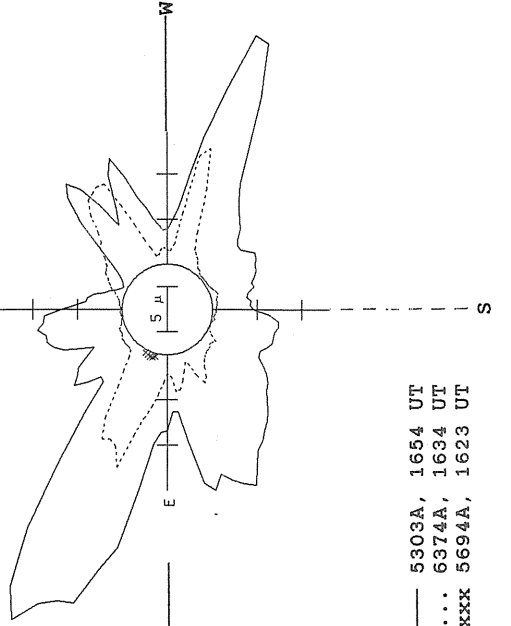
1317 UT

RAMEY SUNSPOT



1427 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

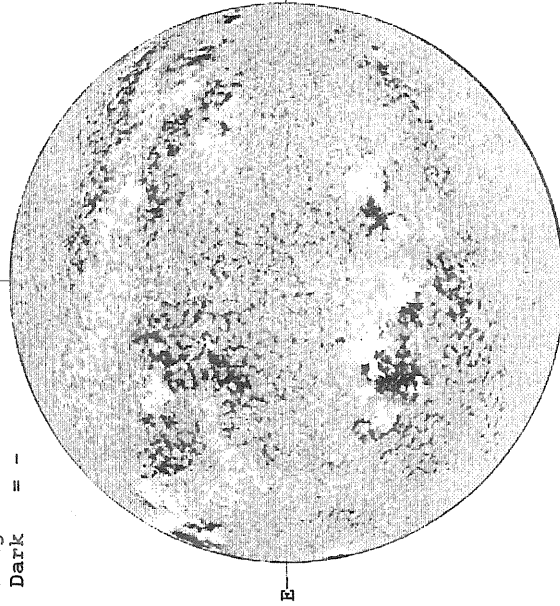


— 5303A, 1654 UT
.... 6374A, 1634 UT
xxxxx 5694A, 1623 UT

JUNE 8, 1989 ($P = -12.72$, $B_0 = 0.19$, $L_0 = 183.27$)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1331 UT

STANFORD MAGNETOGRAM

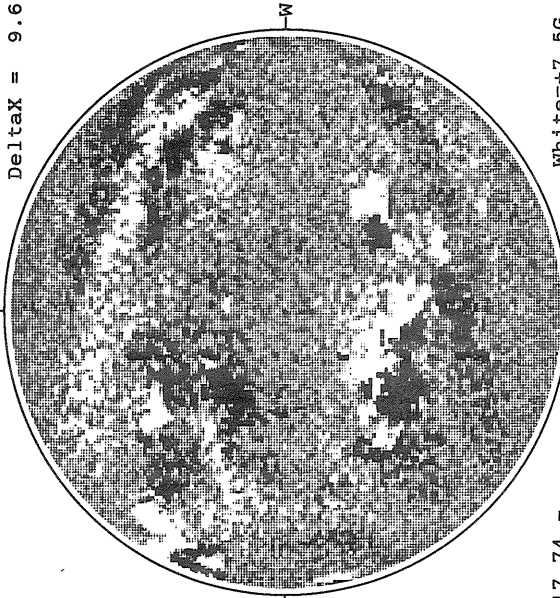
Solid = +
Dashed = -



1956 UT

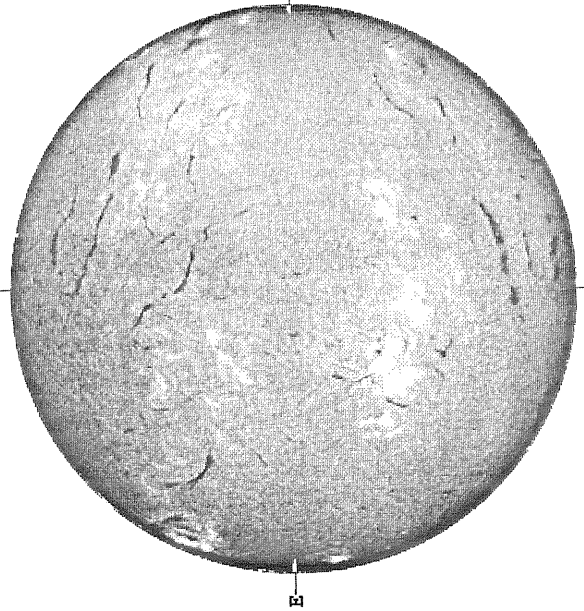
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6



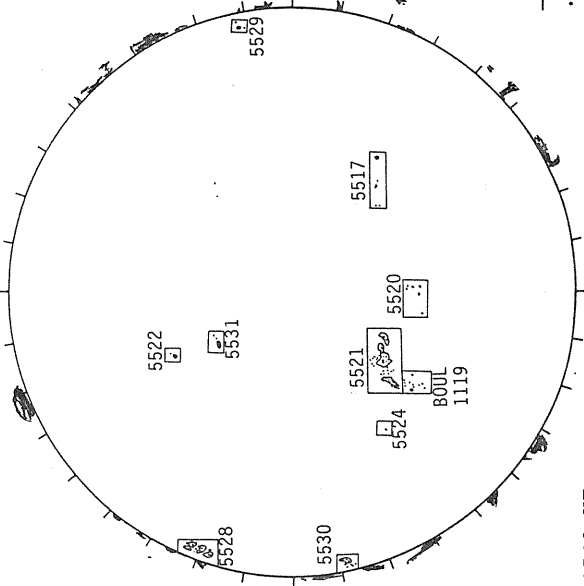
17.74 ~
18.66 UT
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



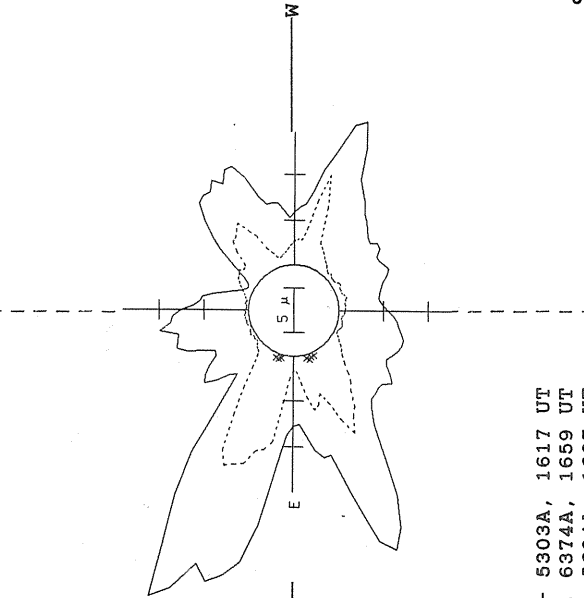
1504 UT

BOULDER SUNSPOT



1543 UT
1453 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

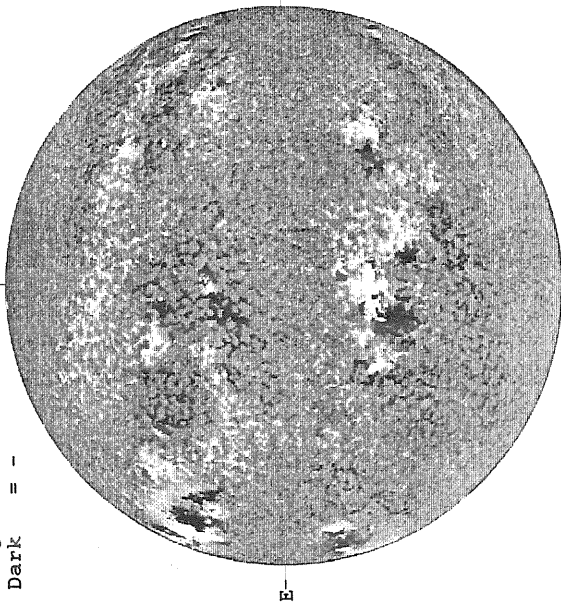


— 5303A, 1617 UT
.... 6374A, 1659 UT
XXXX 5694A, 1637 UT

JUNE 9, 1989 (P=-12.32, B₀ = 0.31, L₀ = 170.03)

KITT PEAK MAGNETOGRAM

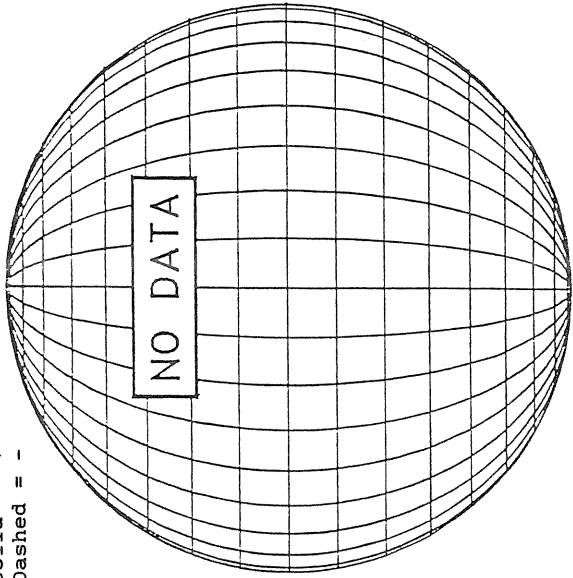
Bright = +
Dark = -



1331 UT

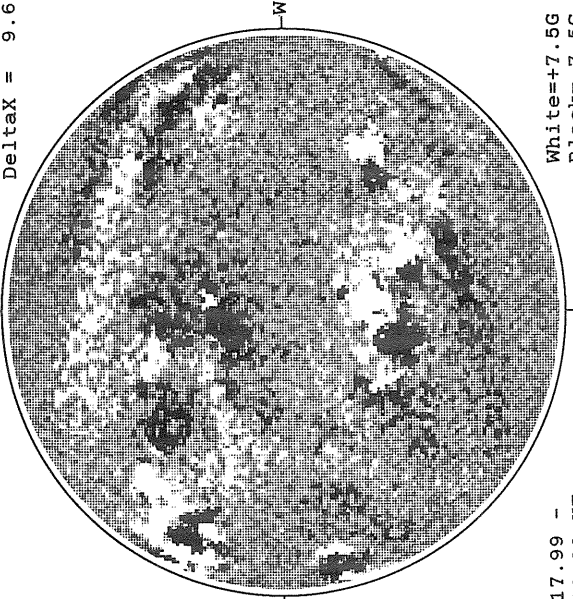
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

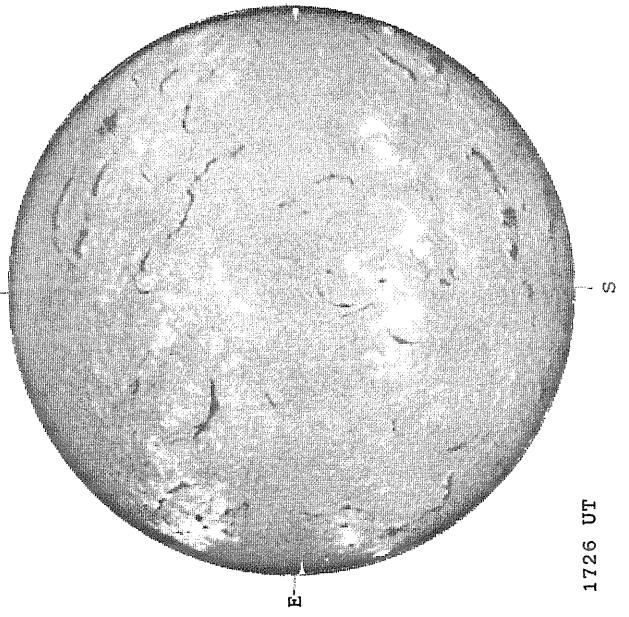
DeltaY = 13.1
DeltaX = 9.6



17.99 -
18.92 UT

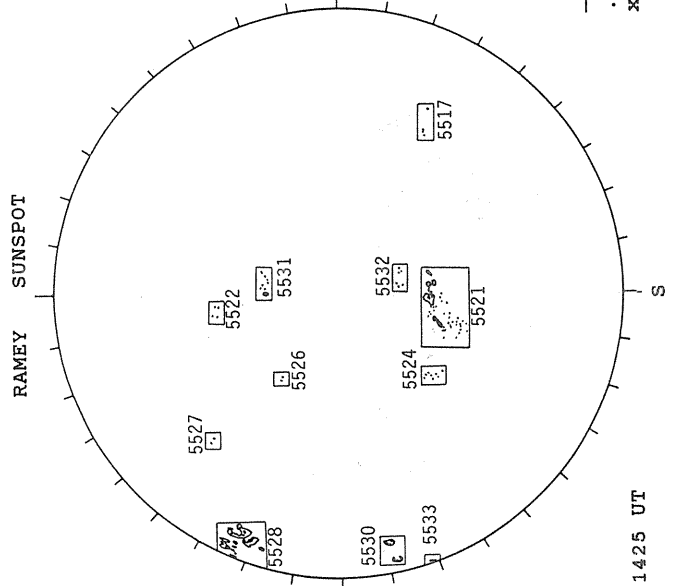
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



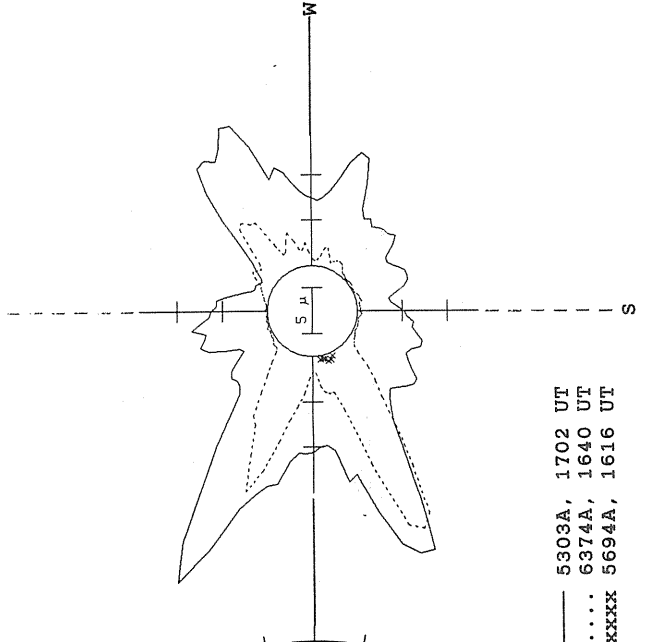
1726 UT

RAMEY SUNSPOT



1425 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

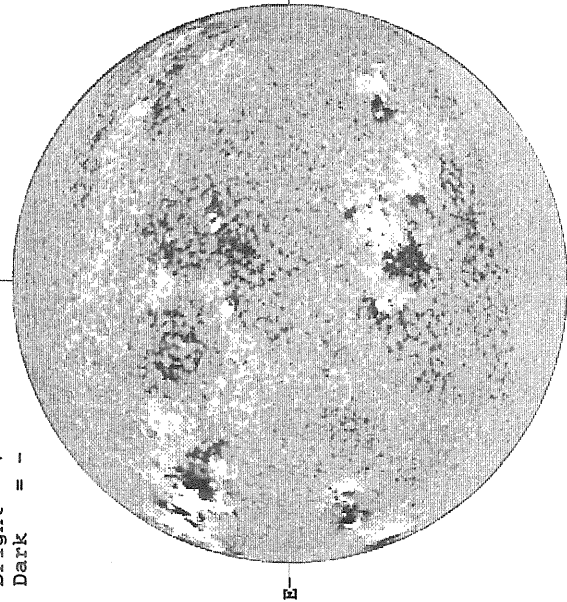


— 5303A, 1702 UT
.... 6374A, 1640 UT
xxxxx 5694A, 1616 UT

JUNE 10, 1989 ($P = -11.91$, $B_0 = 0.44$, $L_0 = 156.80$)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1444 UT

STANFORD MAGNETOGRAM

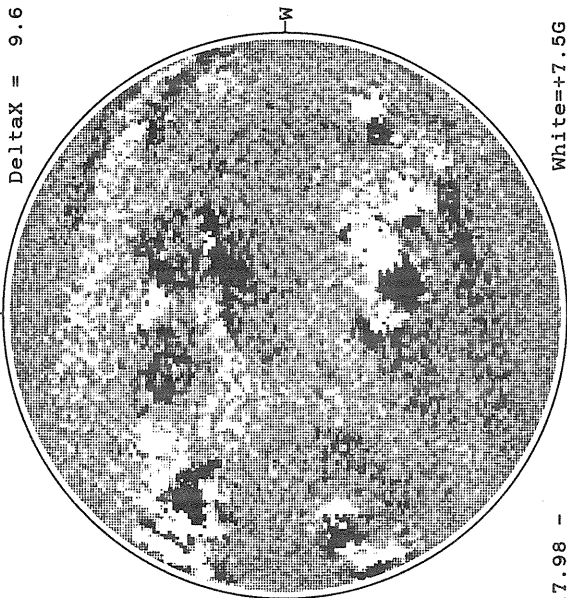
Solid = +
Dashed = -



1542 UT

MT. WILSON MAGNETOGRAM

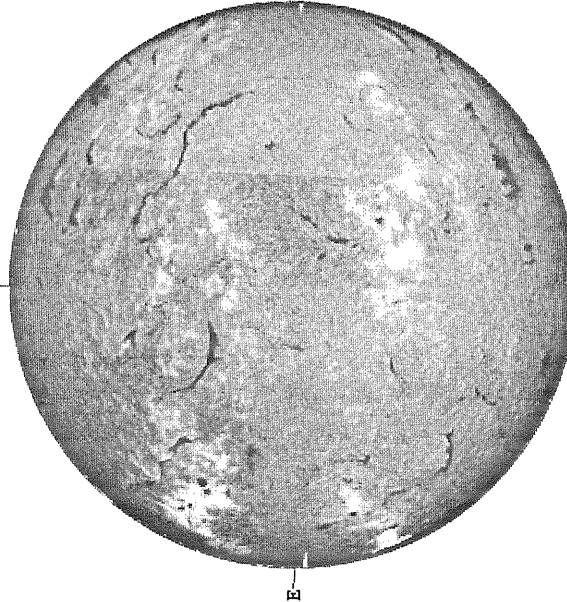
Delta γ = 13.0
Delta α = 9.6



17.98 -
18.90 UT

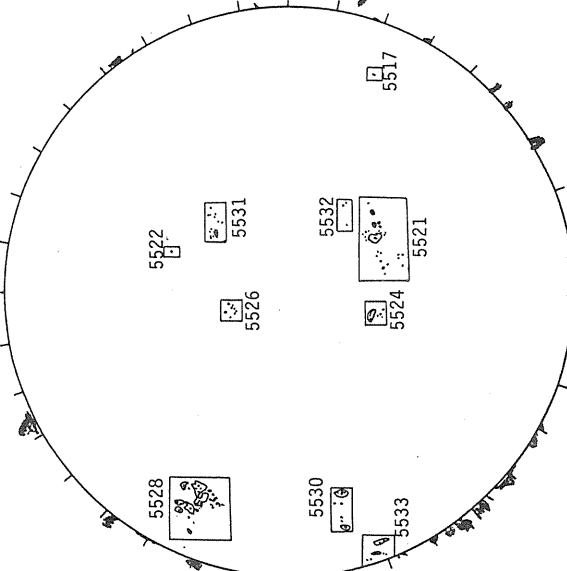
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



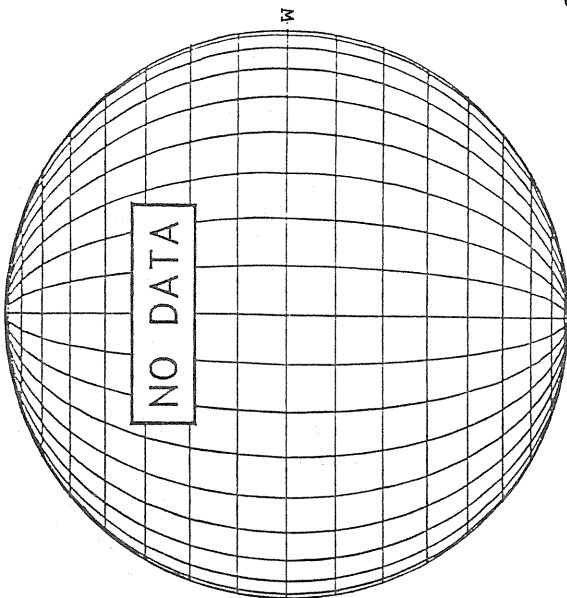
1542 UT

BOULDER SUNSPOT



1338 UT
1358 UT BOUL Prom

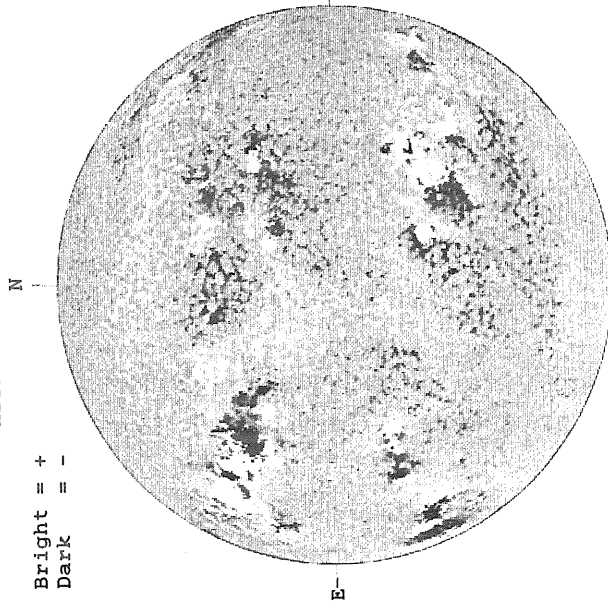
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 11, 1989 (P=-11.49, B₀ = 0.56, L₀ = 143.56)

KITT PEAK MAGNETOGRAM

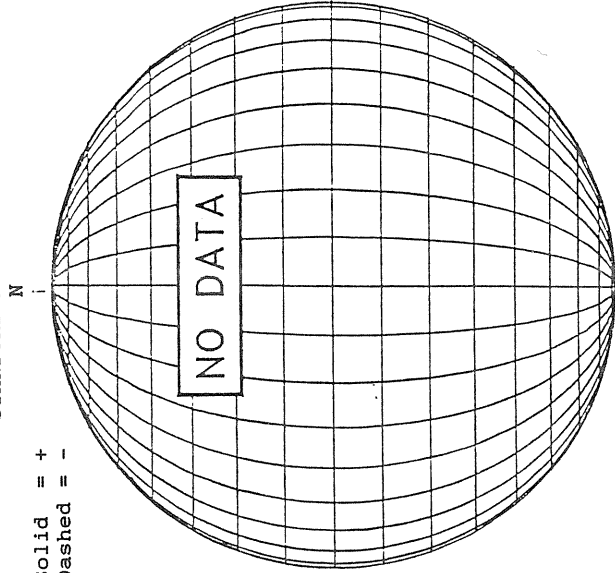
Bright = +
Dark = -



1443 UT

STANFORD MAGNETOGRAM

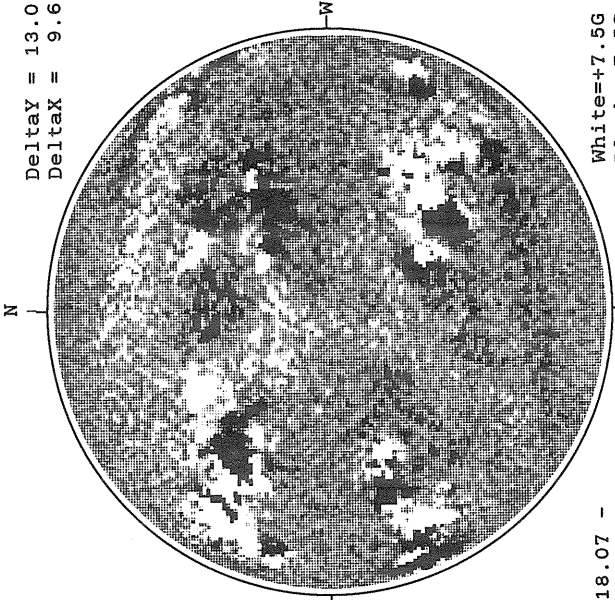
Solid = +
Dashed = -



18.07 -
19.00 UT

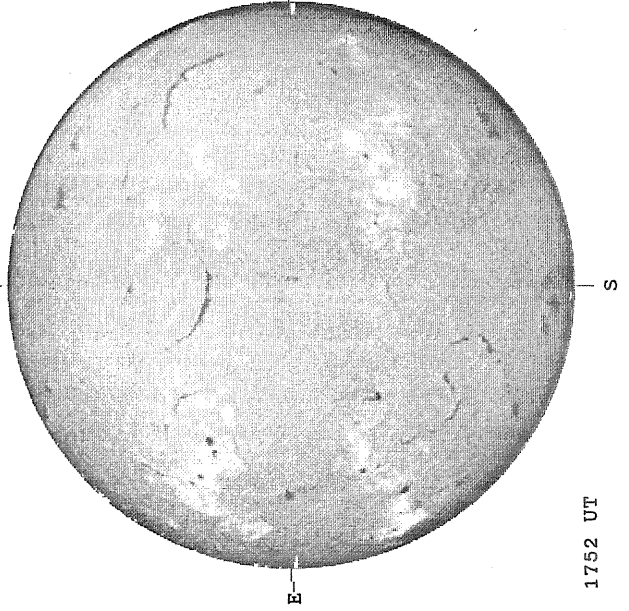
MT. WILSON MAGNETOGRAM

Delta_y = 13.0
Delta_x = 9.6



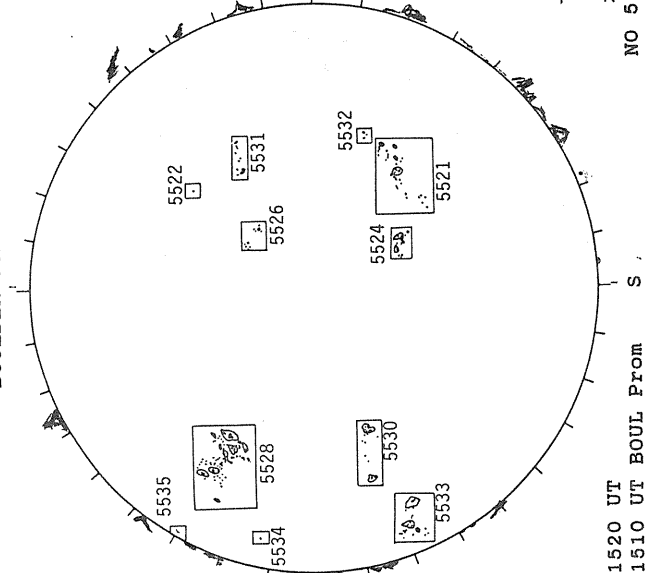
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



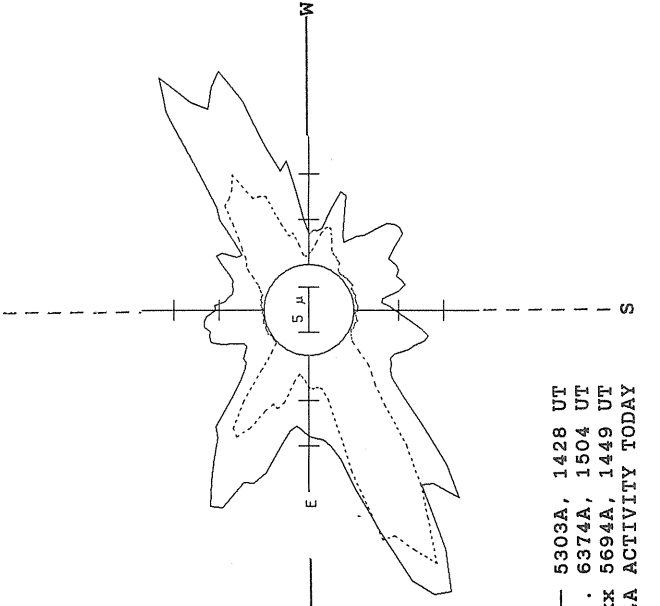
1752 UT

BOULDER SUNSPOT



1520 UT
1510 UT BOUL Prom

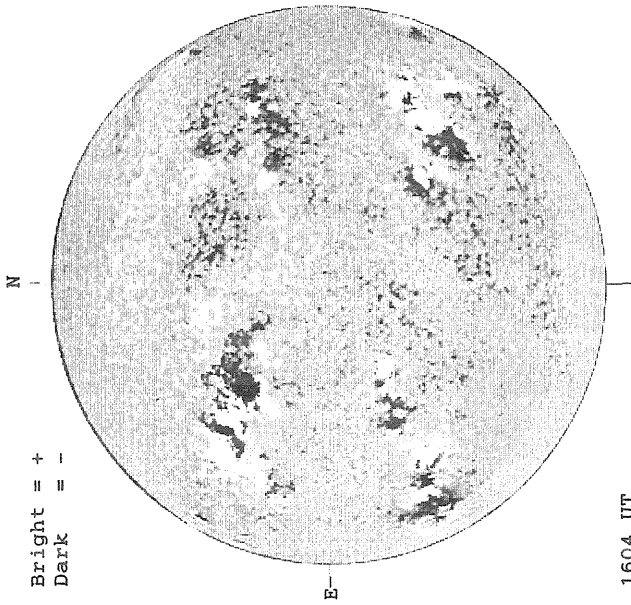
SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A, 1428 UT
.... 6374A, 1504 UT
xxxx 5694A, 1449 UT
NO 5694A ACTIVITY TODAY

JUNE 12, 1989 (P=-11.08, B₀ = 0.68, L₀ = 130.32)

KITT PEAK MAGNETOGRAM



Bright = +
Dark = -

1604 UT

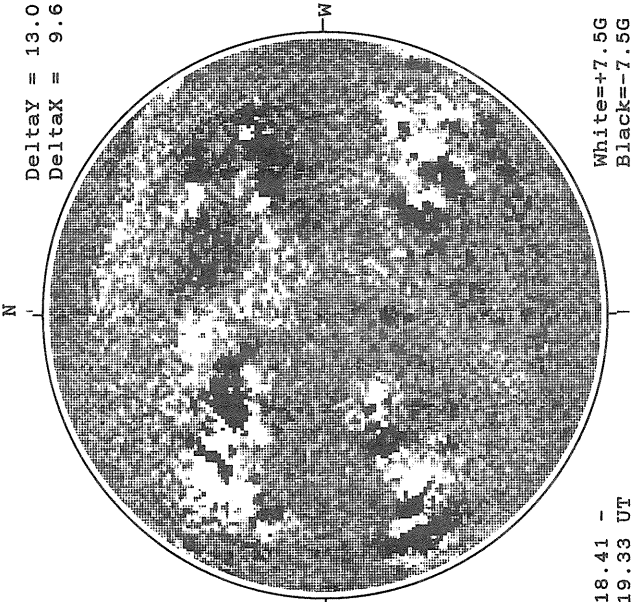
STANFORD MAGNETOGRAM



Solid = +
Dashed = -

2028 UT

MT. WILSON MAGNETOGRAM

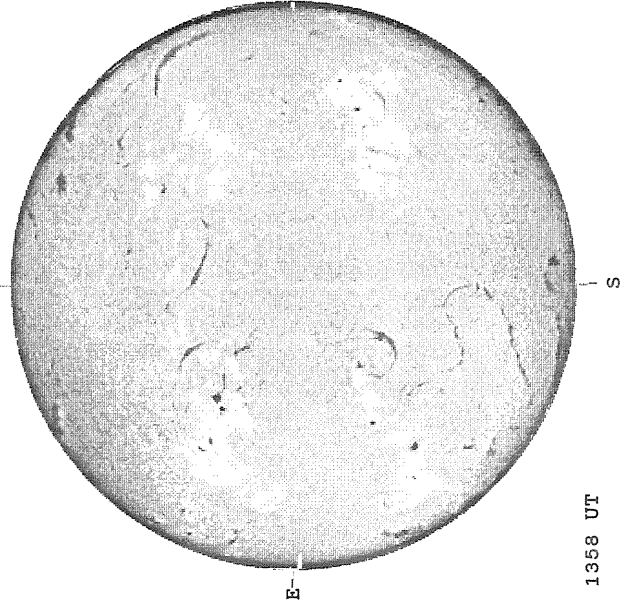


DeltaY = 13.0
DeltaX = 9.6

18.41 -
19.33 UT

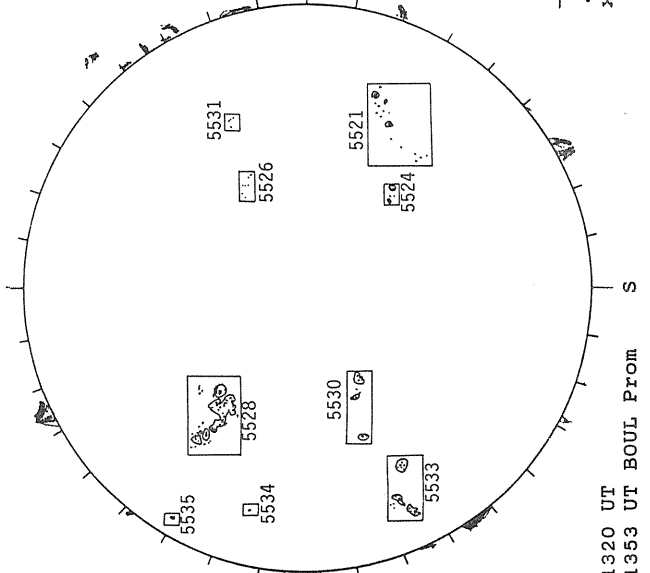
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



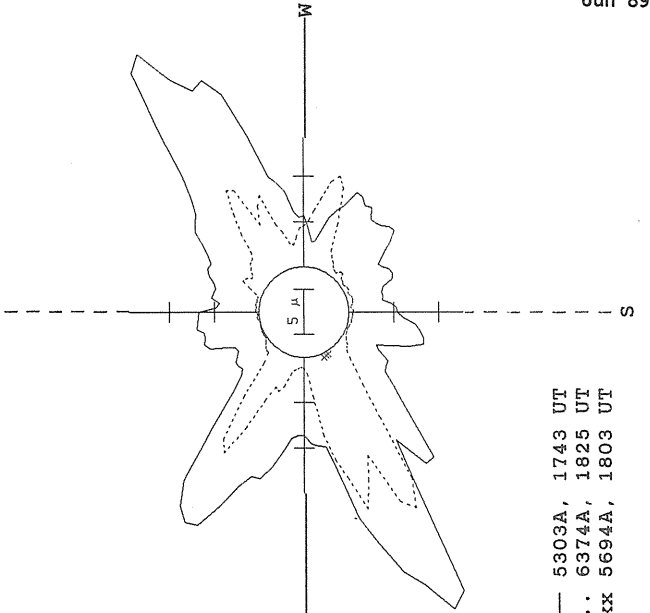
1358 UT

BOULDER SUNSPOT



1320 UT
1353 UT BOUL From

SACRAMENTO PEAK CORONA (1.15 Radii)

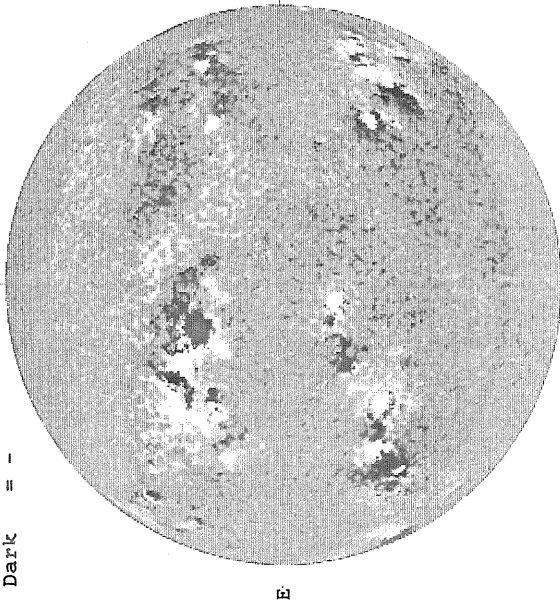


— 5303A, 1743 UT
... 6374A, 1825 UT
XXXX 5694A, 1803 UT

JUNE 13, 1989 (P=-10.66, B₀ = 0.80, L₀ = 117.09)

KITT PEAK MAGNETOGRAM

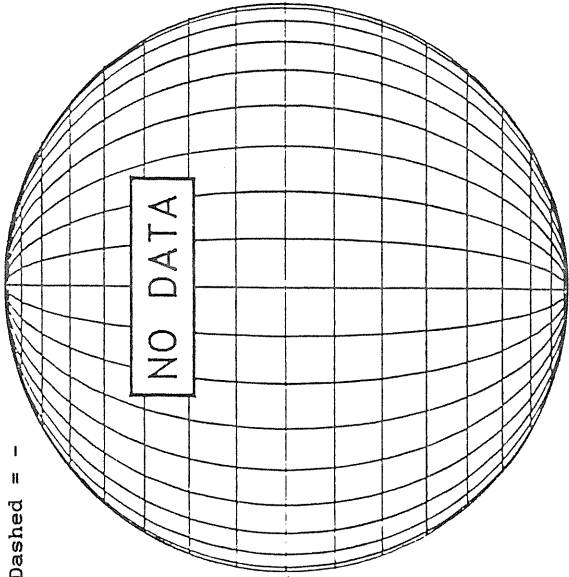
Bright = +
Dark = -



1613 UT

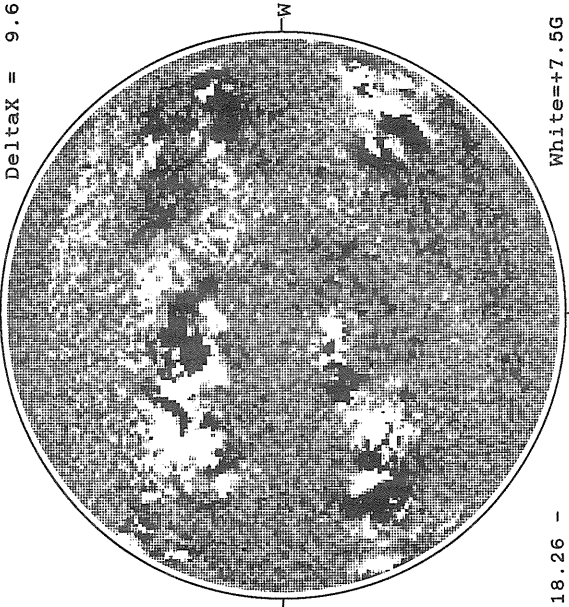
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

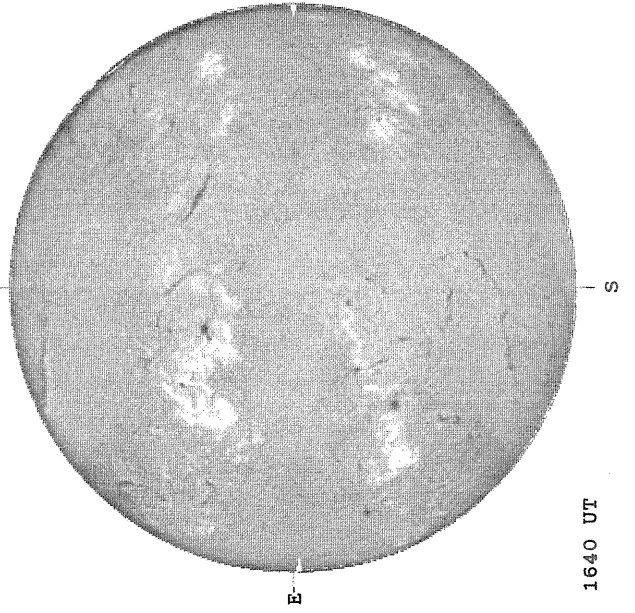
DeltaY = 13.0
DeltaX = 9.6



18.26 -
19.19 UT

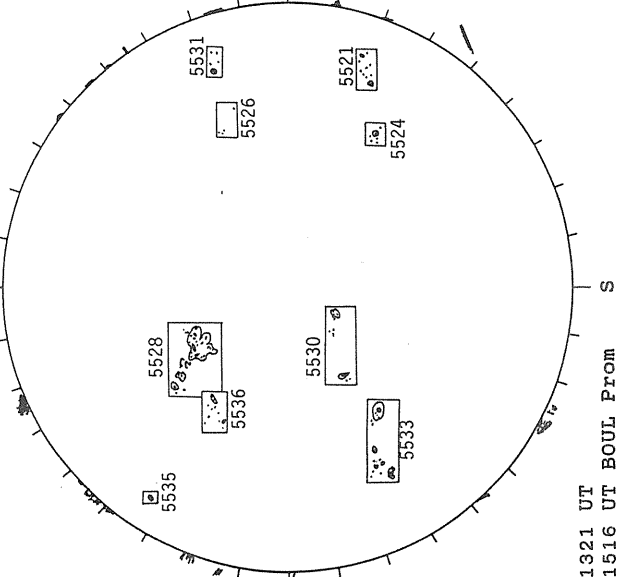
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



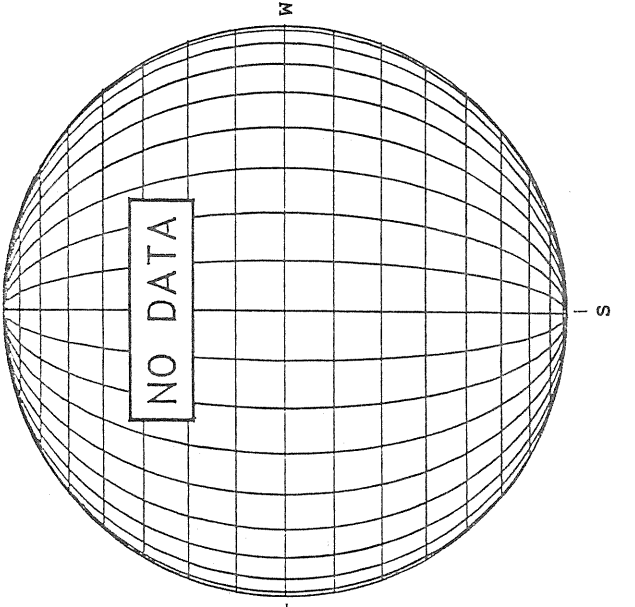
1640 UT

BOULDER SUNSPOT



1321 UT
1516 UT BOUL Prom

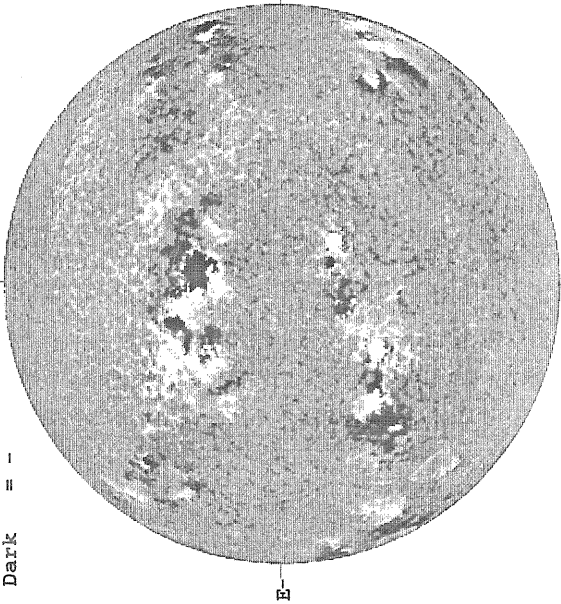
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 14, 1989 (P=-10.23, B₀ = 0.91, L₀ = 103.85)

KITT PEAK MAGNETOGRAM

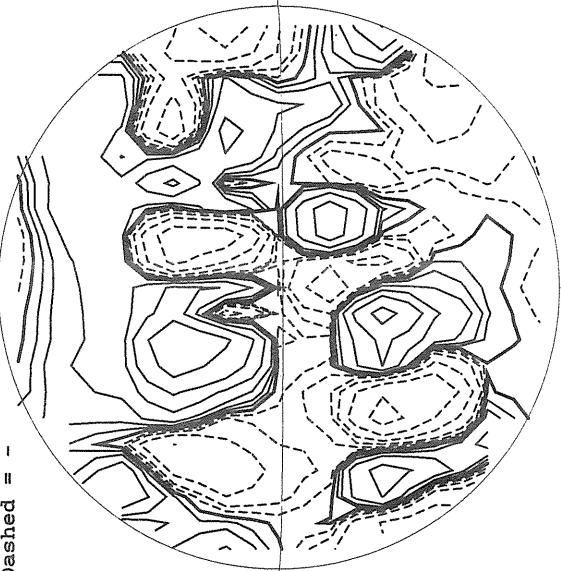
Bright = +
Dark = -



1618 UT

STANFORD MAGNETOGRAM

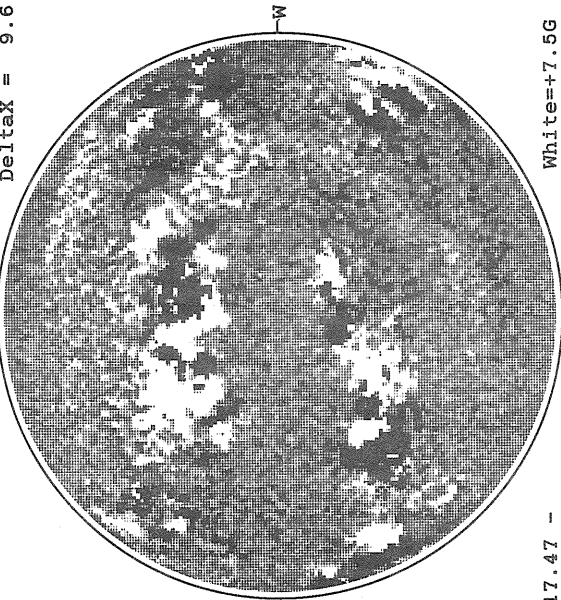
Solid = +
Dashed = -



0031 UT
June 15

MT. WILSON MAGNETOGRAM

Delta_{tau} = 12.9
Delta_{tau} = 9.6



17.47 -
18.40 UT

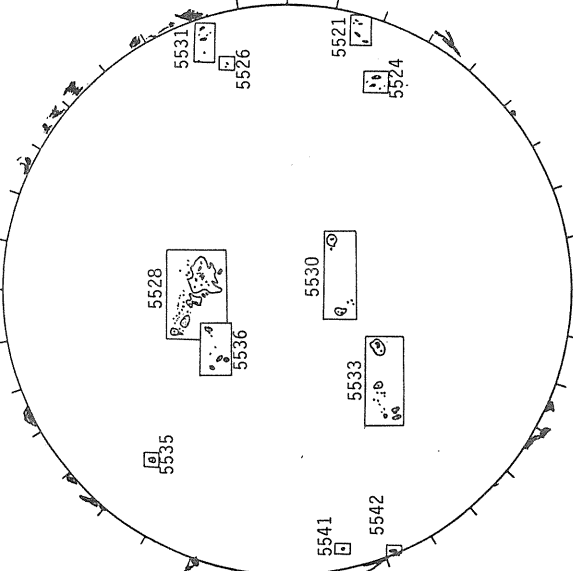
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



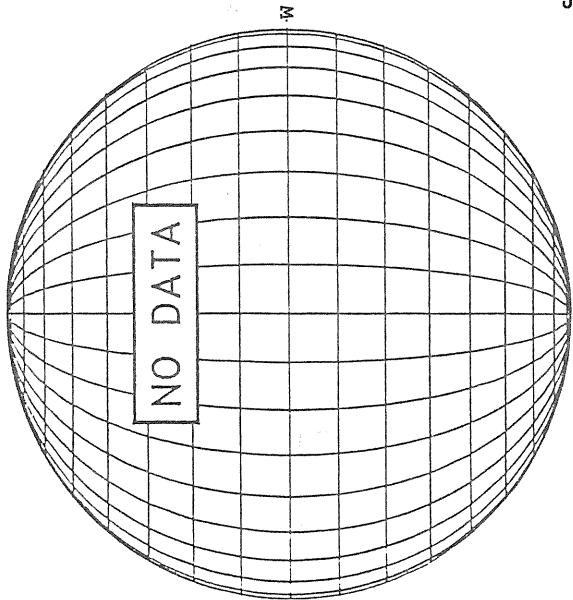
1400 UT

BOULDER SUNSPOT



1707 UT
1720 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

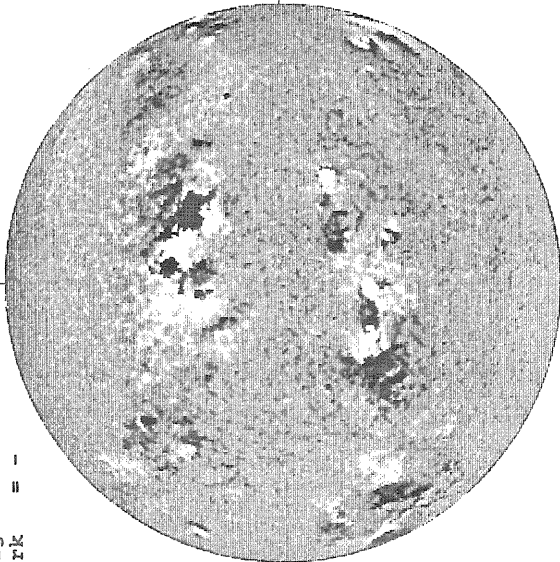


NO DATA

JUNE 15, 1989 (P = - 9.81, B₀ = 1.03, L₀ = 90.62)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1609 UT

STANFORD MAGNETOGRAM

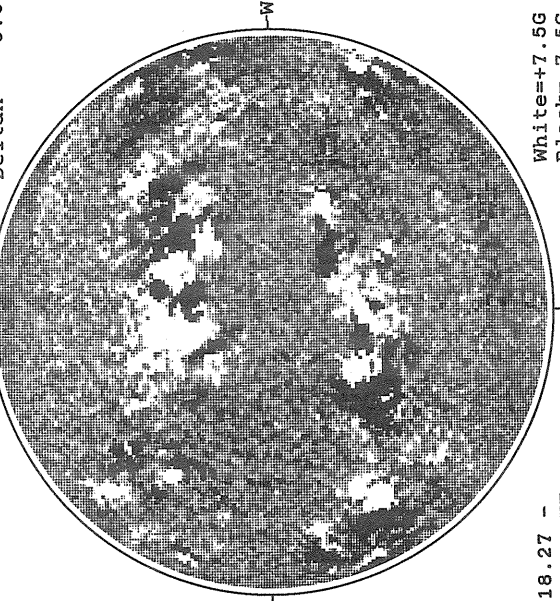
Solid = +
Dashed = -



2325 UT

MT. WILSON MAGNETOGRAM

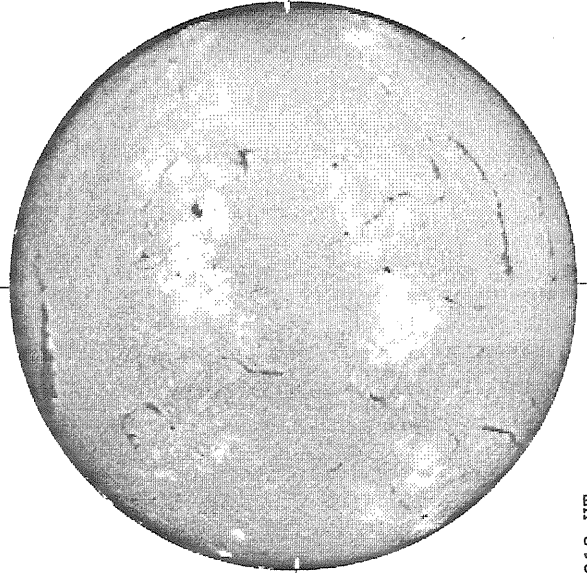
Delta_y = 12.9
Delta_x = 9.6



18.27 -
19.21 UT

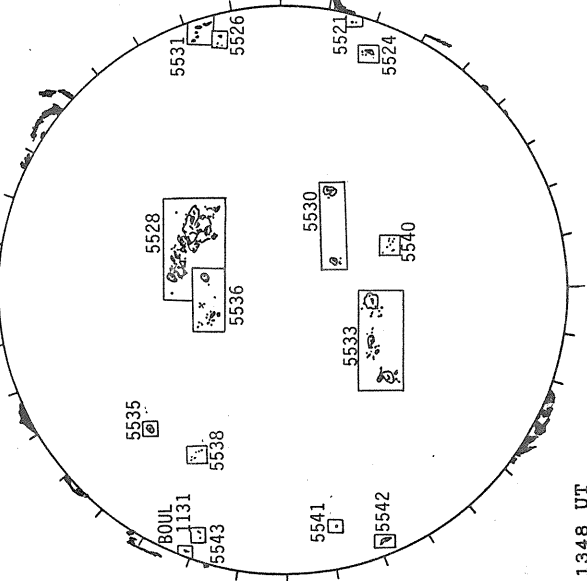
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



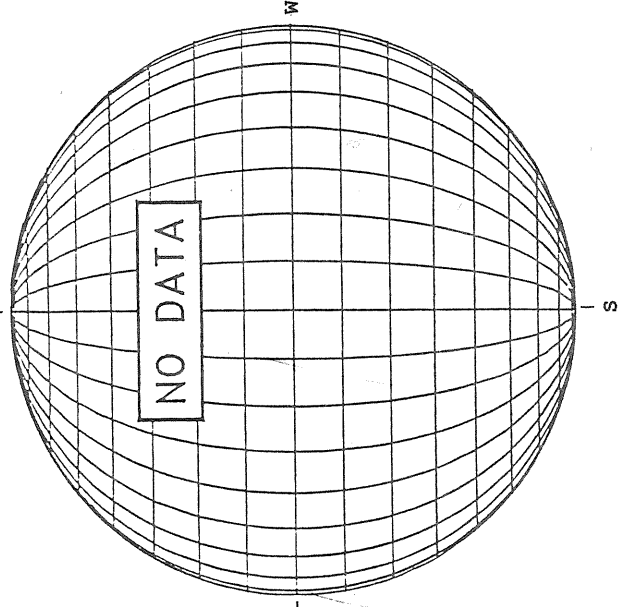
1918 UT

BOULDER SUNSPOT



1348 UT
1350 UT BOUL Prom

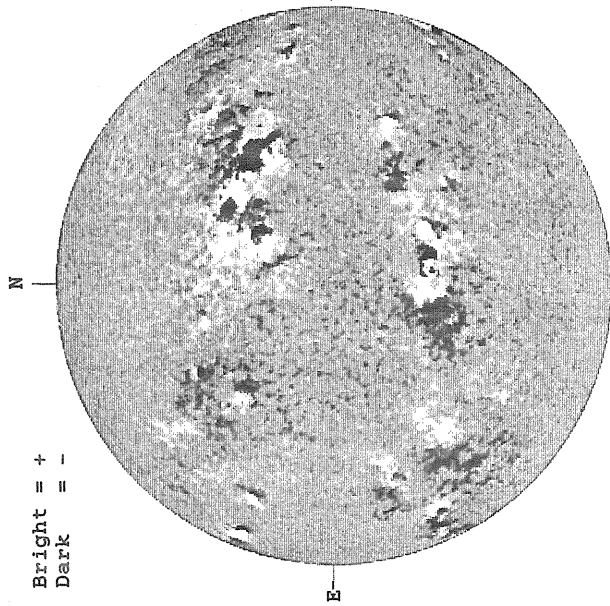
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 16, 1989 (P = - 9.38, B₀ = 1.15, L₀ = 77.38)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1631 UT

STANFORD MAGNETOGRAM

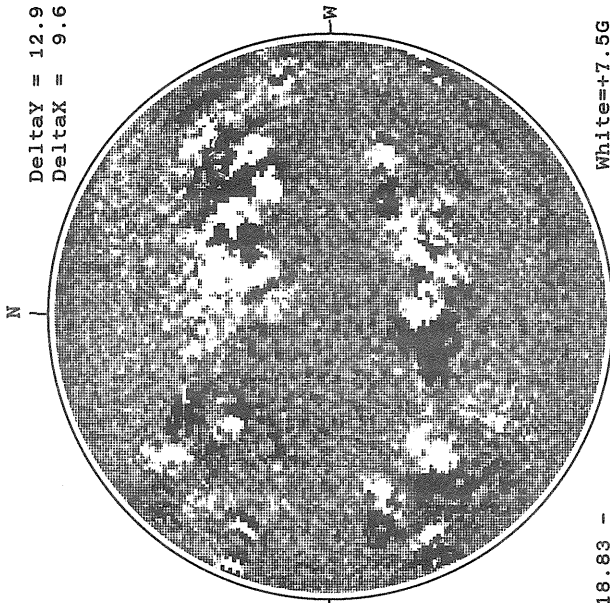
Solid = +
Dashed = -



1709 UT

MT. WILSON MAGNETOGRAM

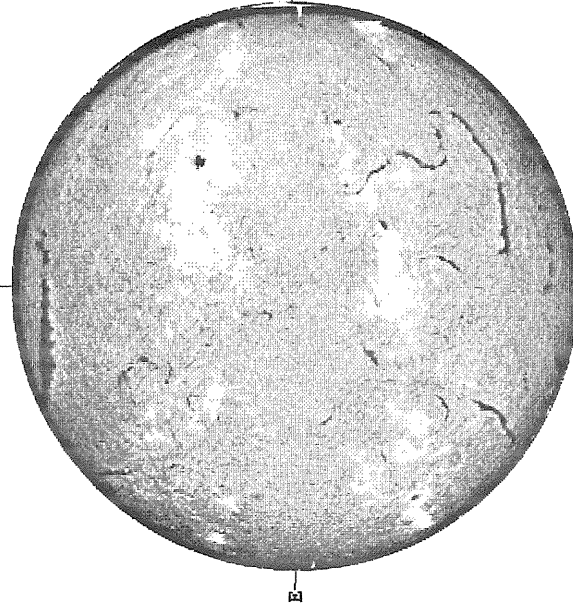
DeltaY = 12.9
DeltaX = 9.6



18.83 -
19.76 UT

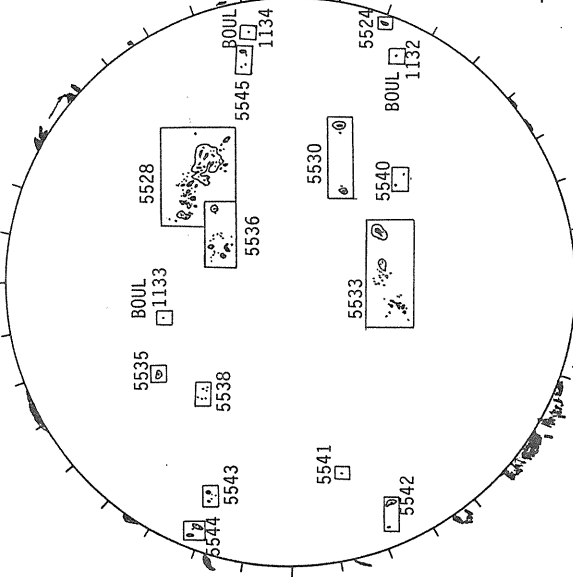
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



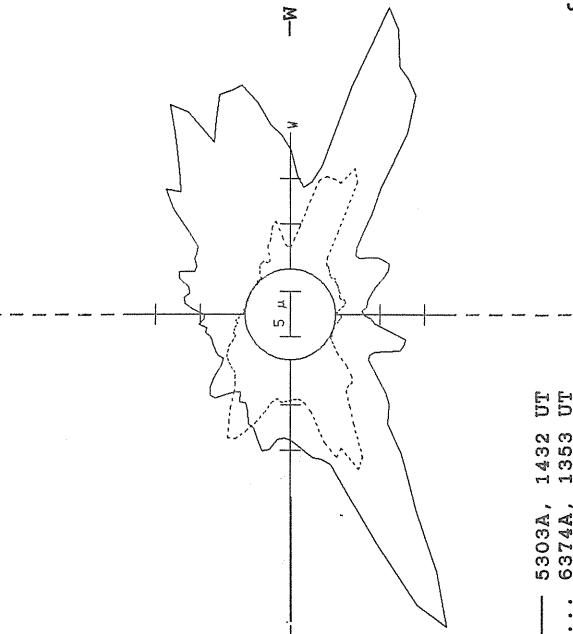
1706 UT

BOULDER SUNSPOT



1355 UT
1420 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

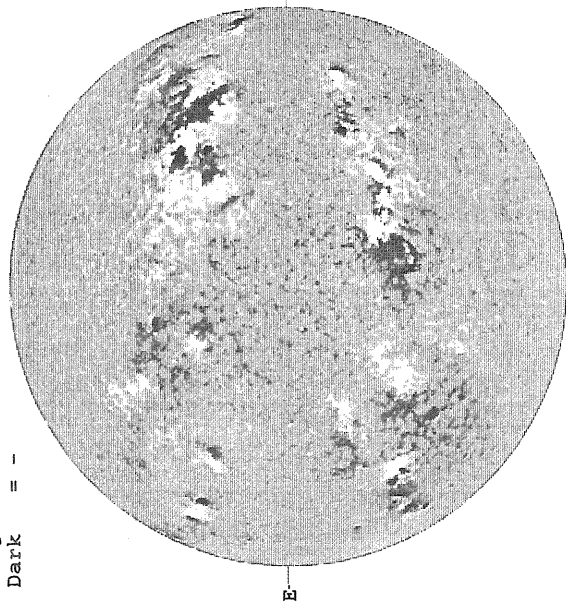


— 5303A, 1432 UT
... 6374A, 1353 UT
xxxx 5694A, 1410 UT
NO 5694A ACTIVITY TODAY

JUNE 17, 1989 (P = - 8.94, B₀ = 1.27, L₀ = 64.14)

KITT PEAK MAGNETOGRAM

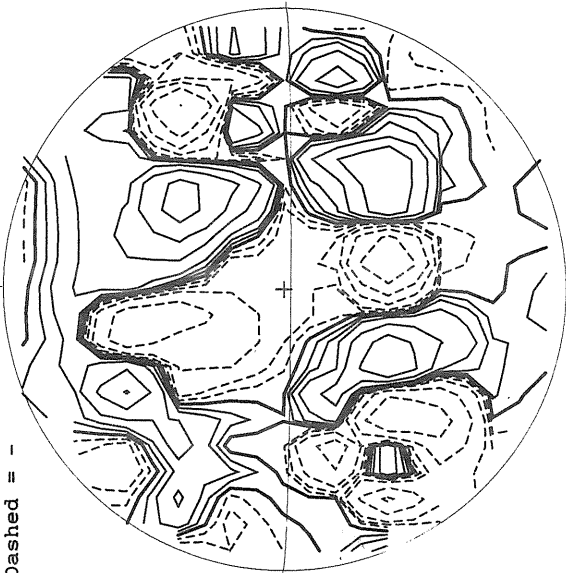
Bright = +
Dark = -



1632 UT

STANFORD MAGNETOGRAM

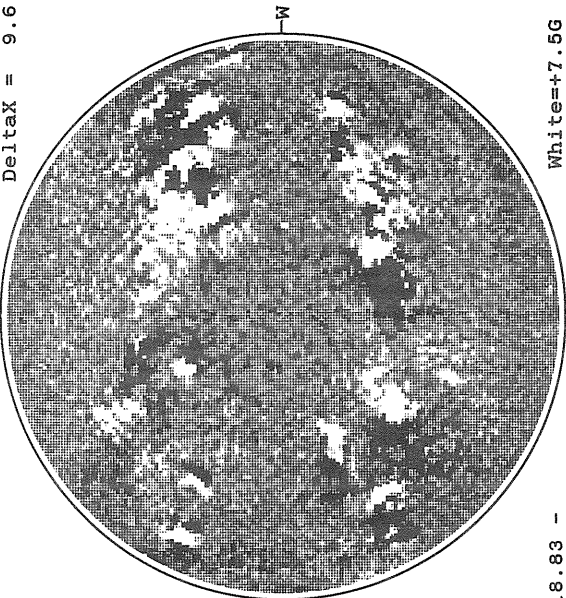
Solid = +
Dashed = -



2054 UT

MT. WILSON MAGNETOGRAM

Delta α = 12.9
Delta λ = 9.6



18.83 -
19.76 UT

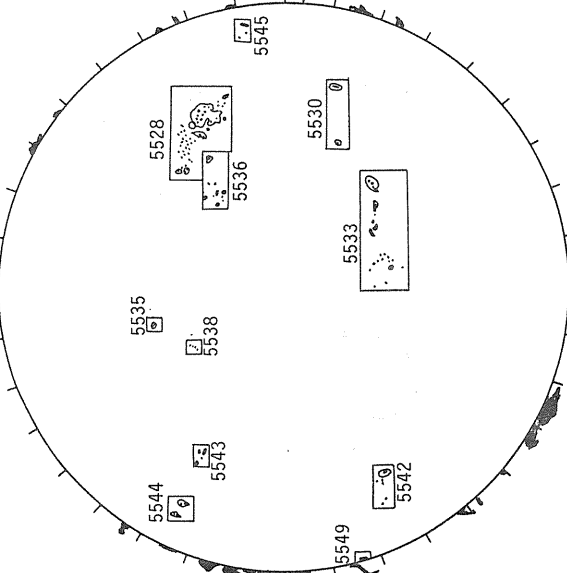
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



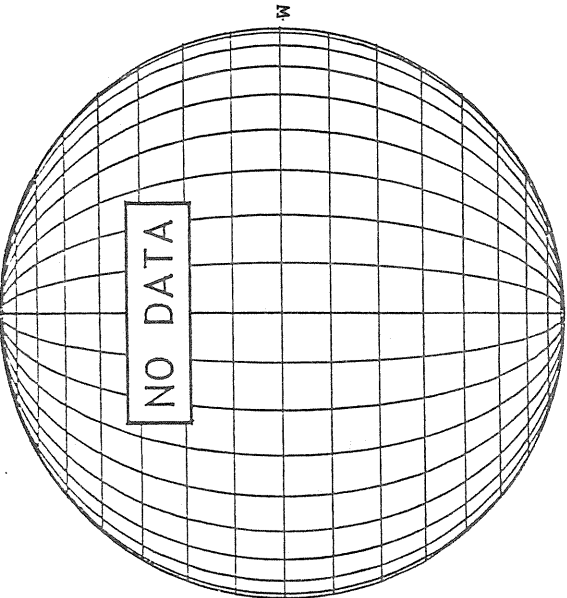
1542 UT

BOULDER SUNSPOT



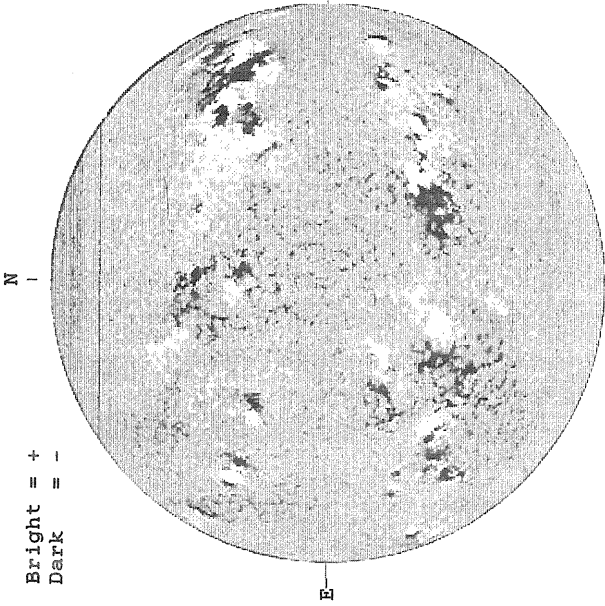
1400 UT
1410 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 18, 1989 (P=- 8.51, B₀ = 1.39, I₀ = 50.90)

KITT PEAK MAGNETOGRAM



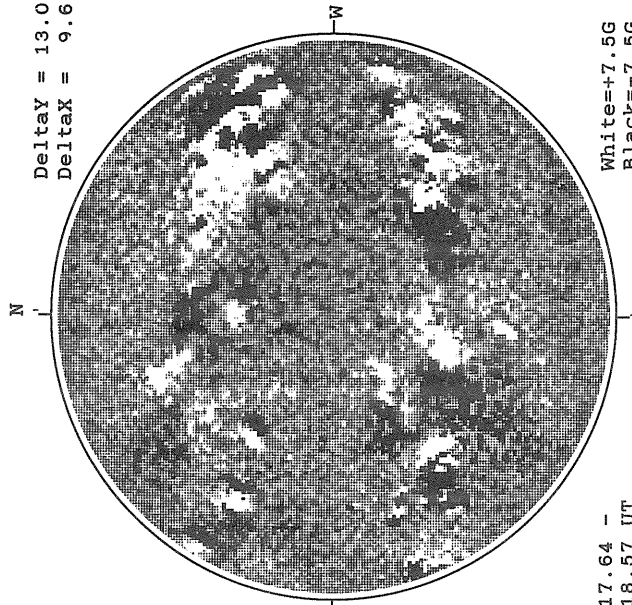
1312 UT

STANFORD MAGNETOGRAM



0043 UT
June 19

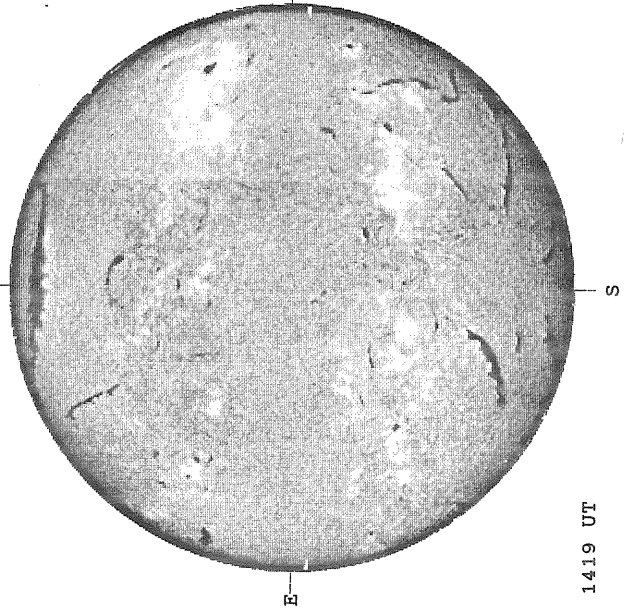
MT. WILSON MAGNETOGRAM



17.64 -
18.57 UT

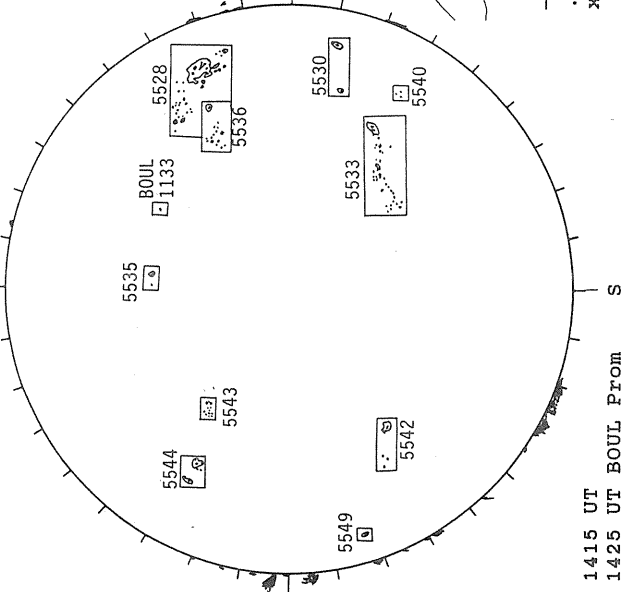
White = +7.5G
Black = -7.5G

HOLLoman H-ALPHA



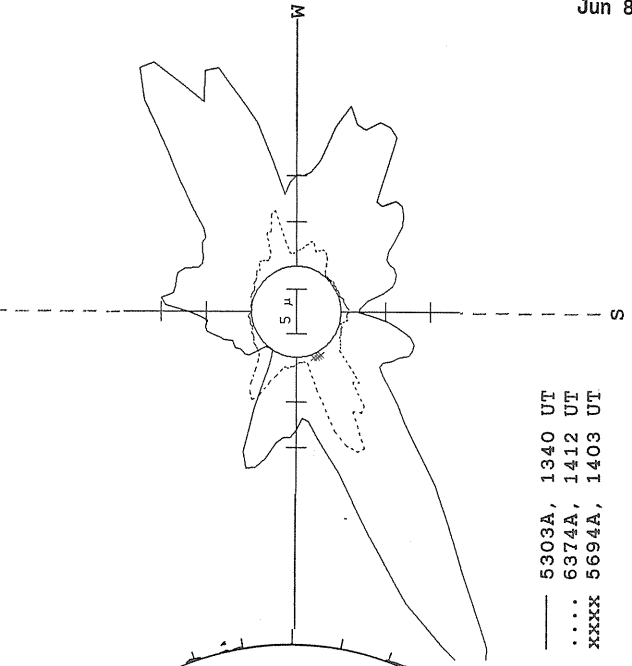
1419 UT

BOULDER SUNSPOT



1415 UT
1425 UT BOUL Prom

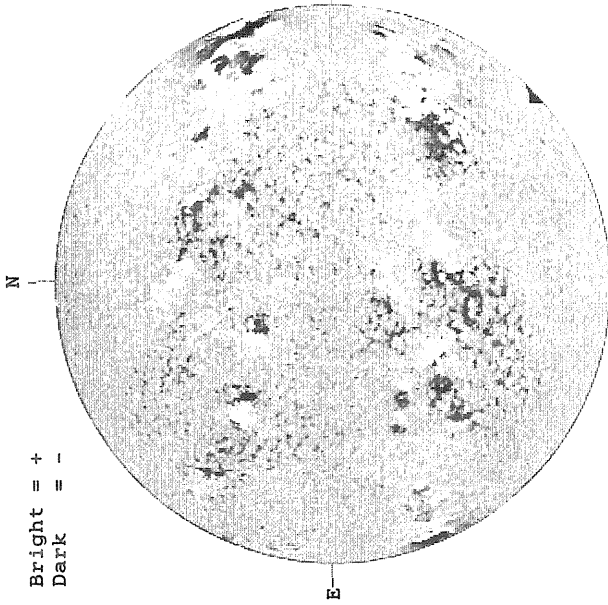
SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A, 1340 UT
... 6374A, 1412 UT
xxxx 5694A, 1403 UT

JUNE 19, 1989 (P = - 8.07, B₀ = 1.51, L₀ = 37.67)

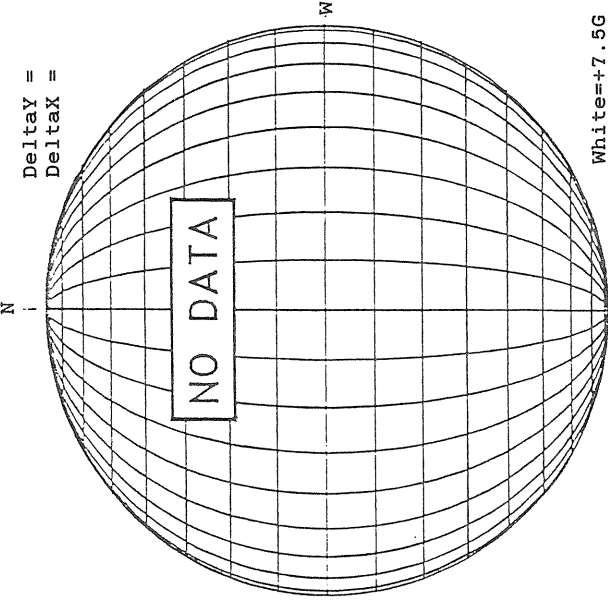
KITT PEAK MAGNETOGRAM



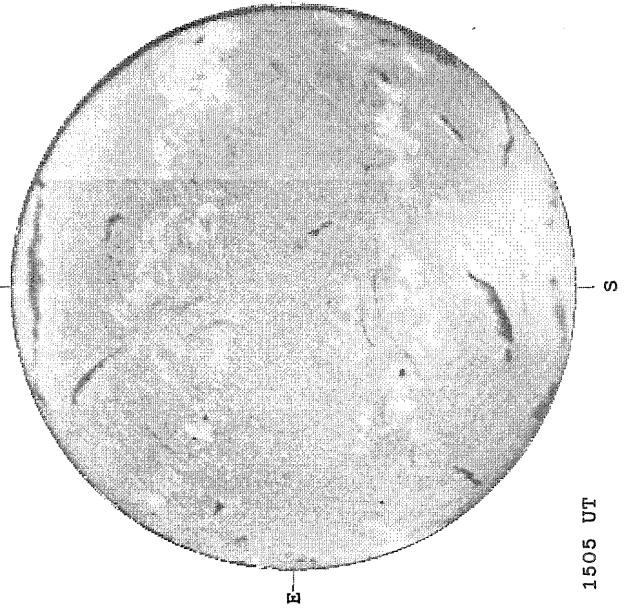
STANFORD MAGNETOGRAM



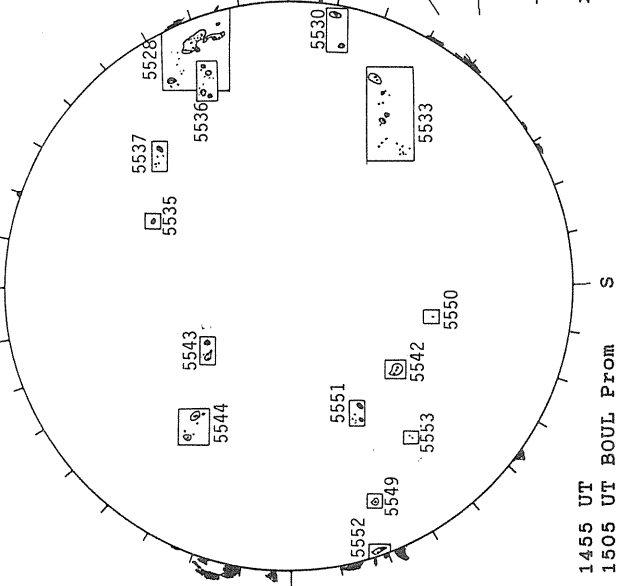
MT. WILSON MAGNETOGRAM



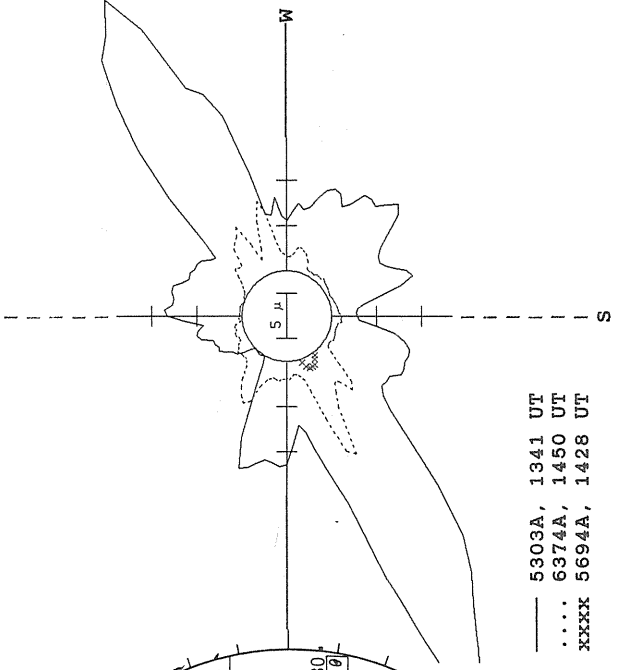
BOULDER H-ALPHA



BOULDER SUNSPOT



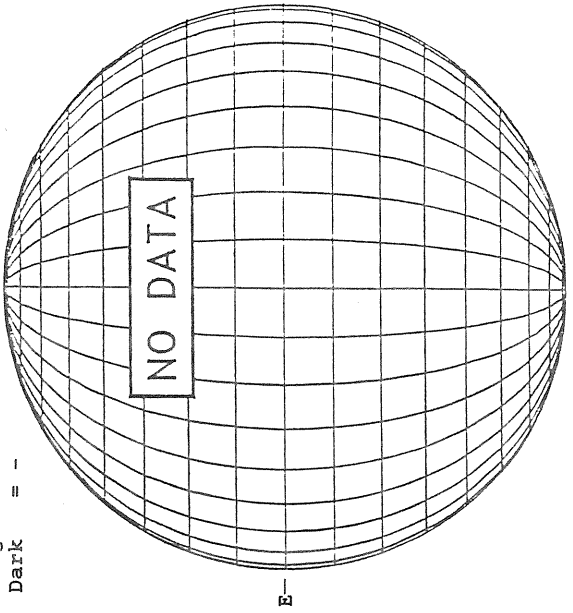
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 20, 1989 (P=- 7.63, B₀ = 1.62, I₀ = 24.43)

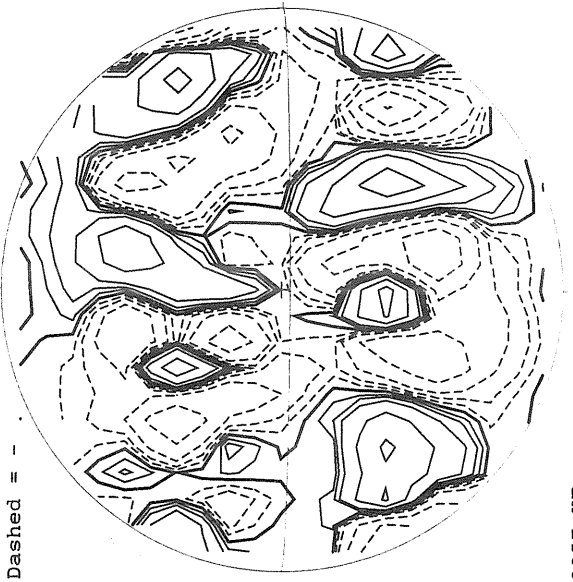
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



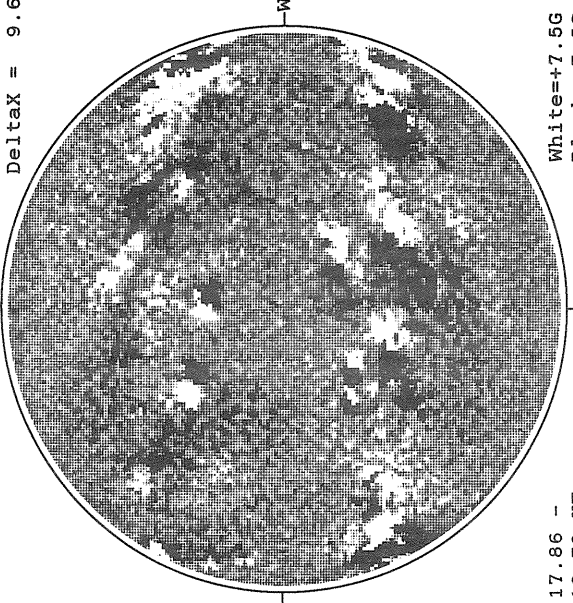
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

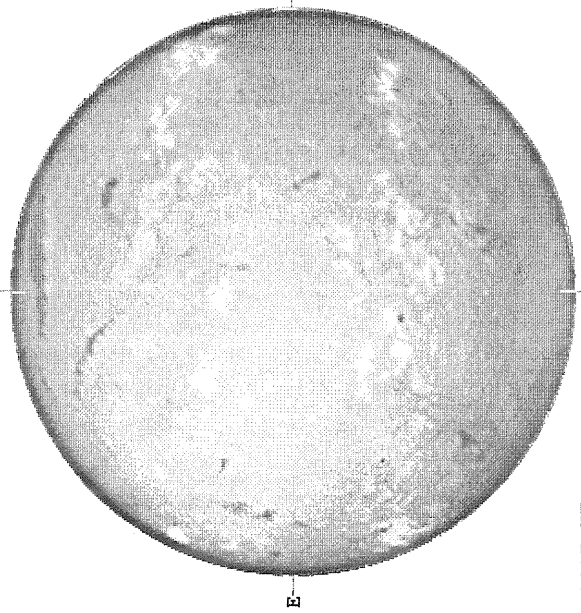
DeltaY = 12.9
DeltaX = 9.6



White = +7.5G
Black = -7.5G

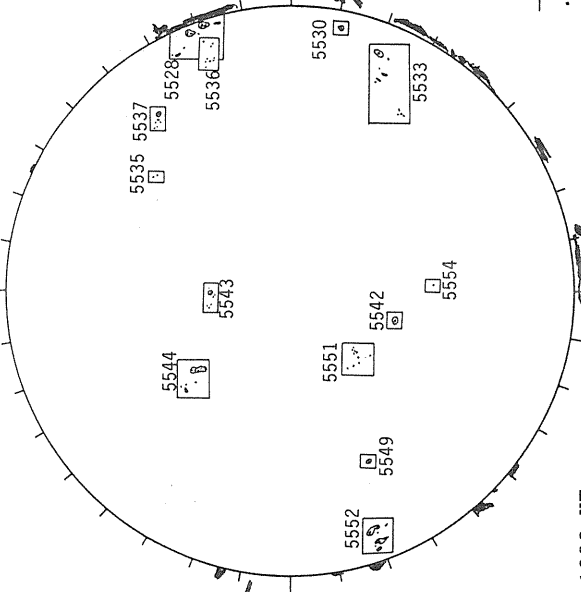
17.86 -
18.79 UT

BOULDER H-ALPHA



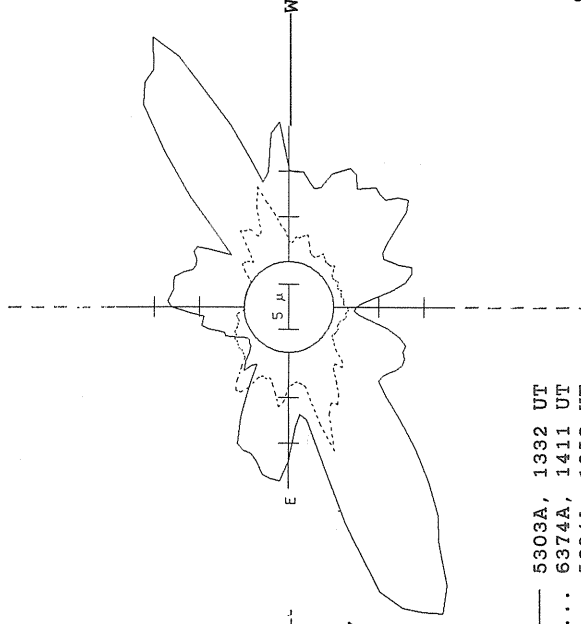
1417 UT

BOULDER SUNSPOT



1336 UT
1417 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

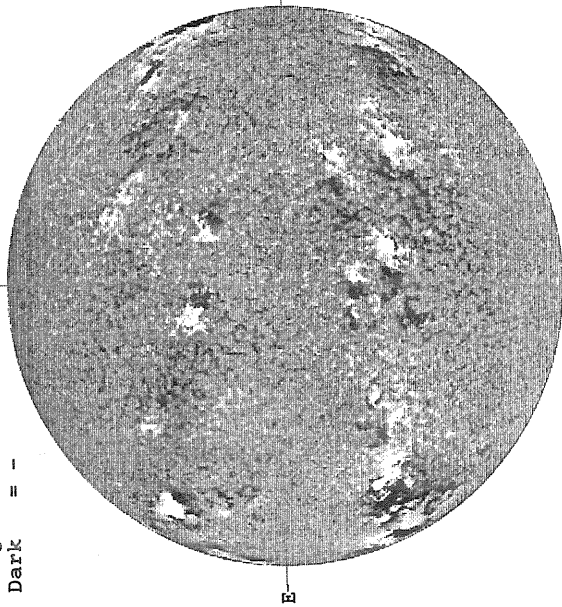


— 5303A, 1332 UT
... 6374A, 1411 UT
xxxx 5694A, 1358 UT
NO 5694A ACTIVITY TODAY

JUNE 21, 1989 (P=- 7.19, B₀ = 1.74, L₀ = 11.19)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1546 UT

STANFORD MAGNETOGRAM

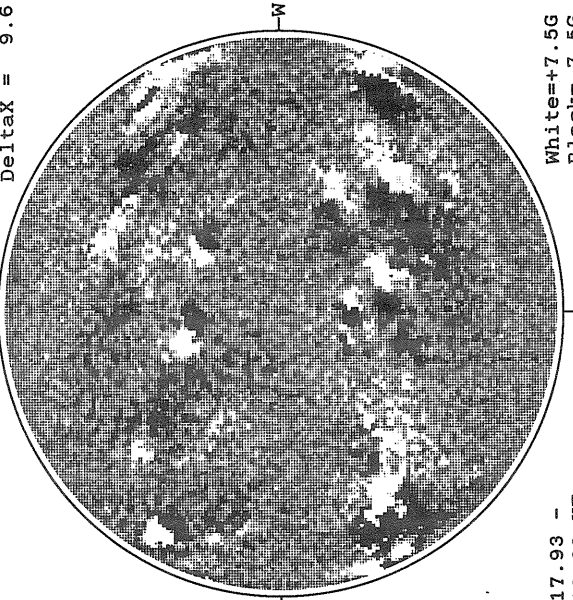
Solid = +
Dashed = -



1501 UT

MT. WILSON MAGNETOGRAM

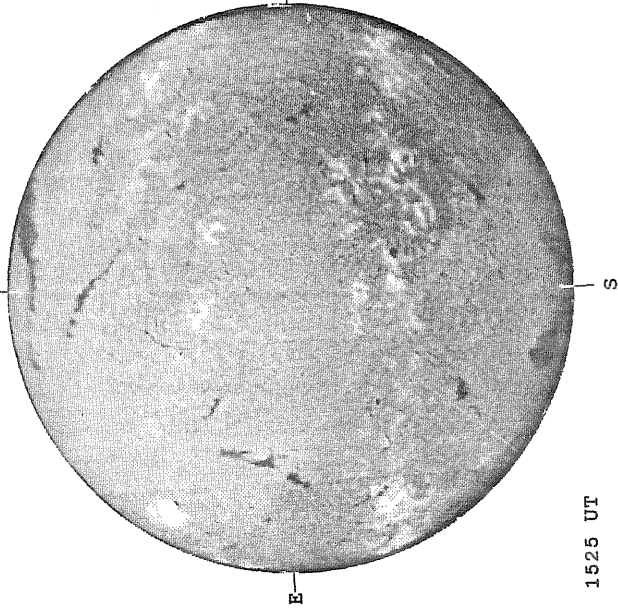
Delta_Y = 13.0
Delta_X = 9.6



17.93 -
18.88 UT

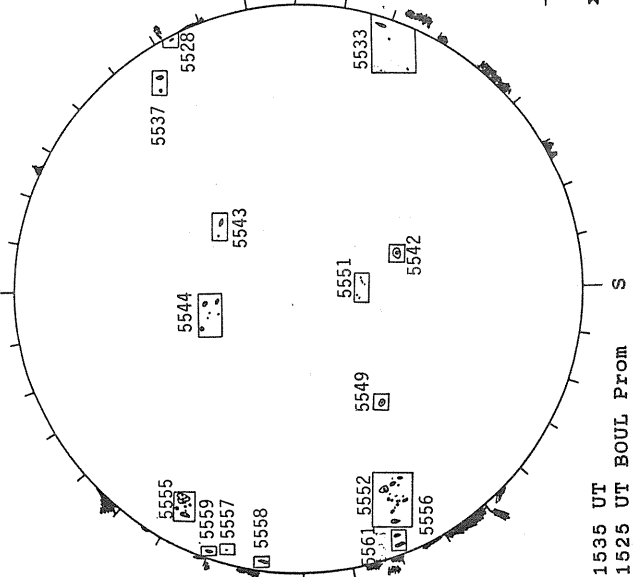
White = +7.5G
Black = -7.5G

BOULDER H-ALPHA



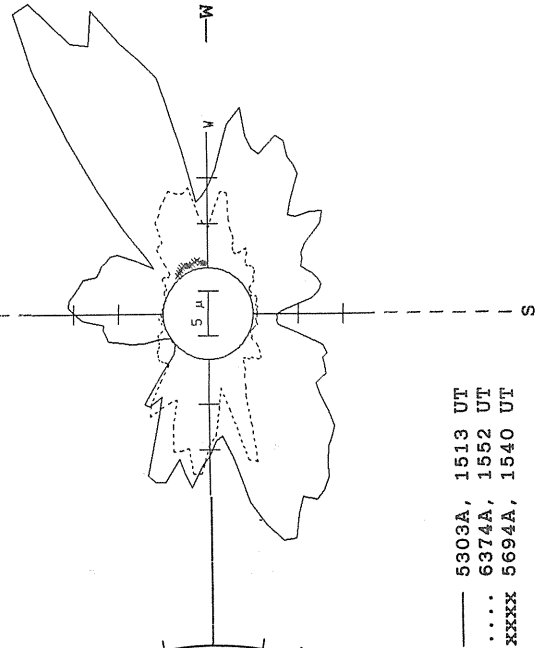
1525 UT

BOULDER SUNSPOT



1535 UT BOUL Prom
1525 UT BOUL Prom

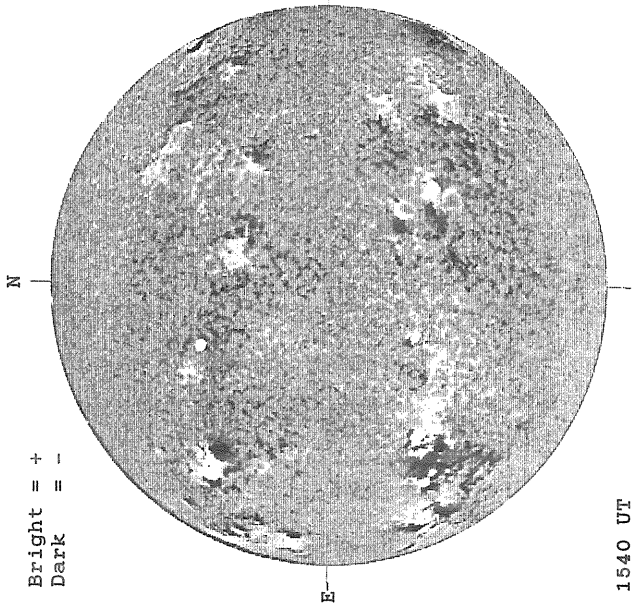
SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A, 1513 UT
... 6374A, 1552 UT
XXXX 5694A, 1540 UT

JUNE 22, 1989 (P = - 6.75, B₀ = 1.86, L₀ = 357.96)

KITT PEAK MAGNETOGRAM



Bright = +
Dark = -

1540 UT

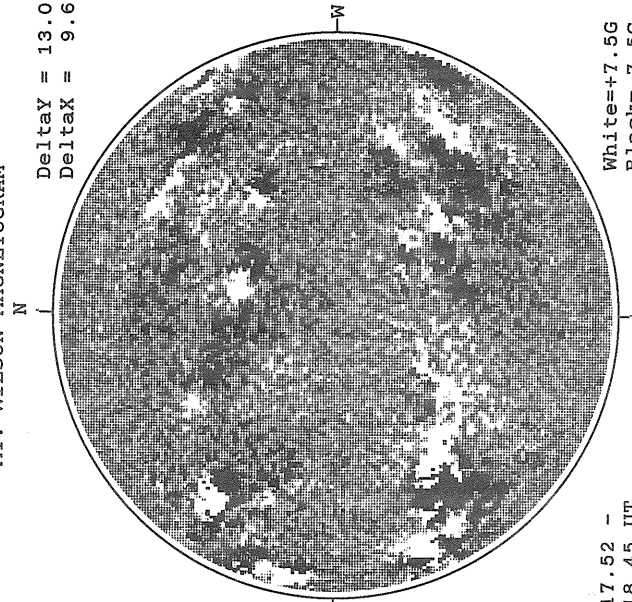
STANFORD MAGNETOGRAM



Solid = +
Dashed = -

2032 UT

MT. WILSON MAGNETOGRAM

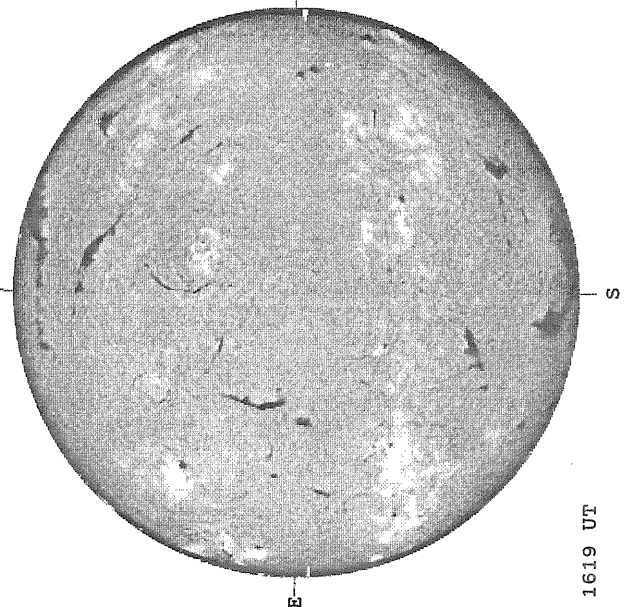


Delta_Y = 13.0
Delta_X = 9.6

17.52 -
18.45 UT

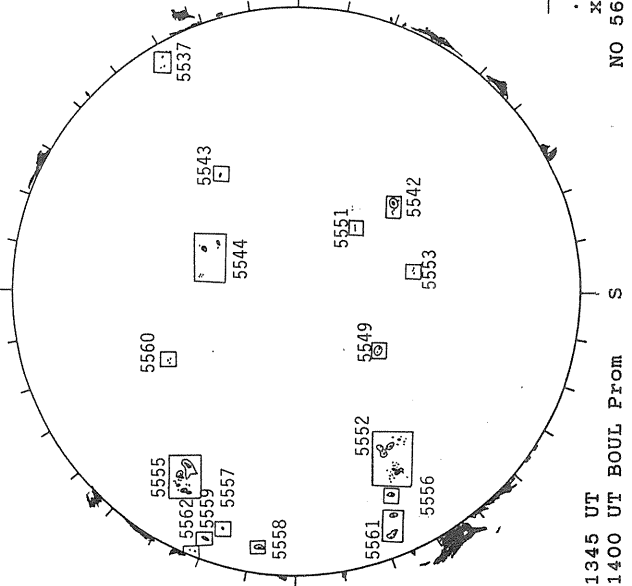
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



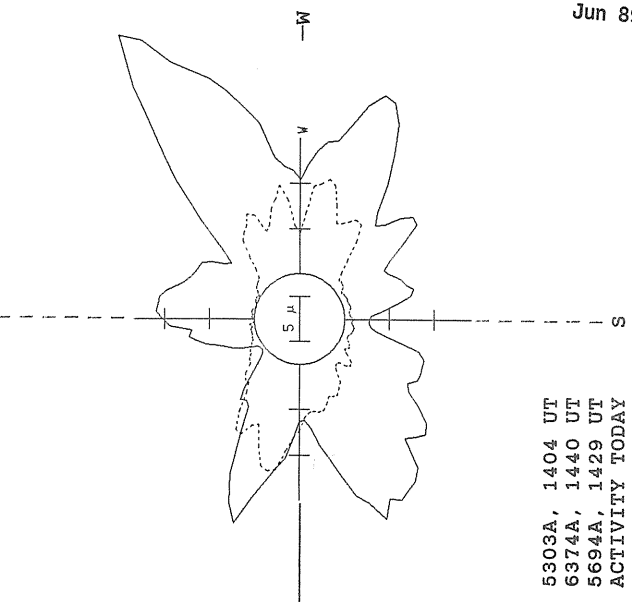
1619 UT

BOULDER SUNSPOT



1345 UT BOUL Prom
1400 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

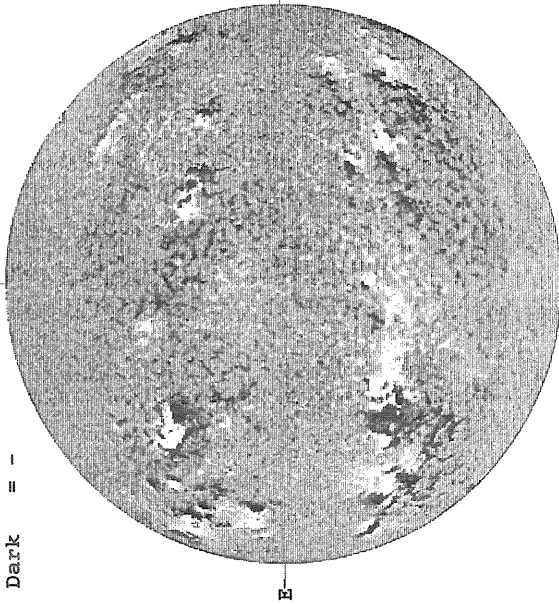


— 5303A, 1404 UT
... 6374A, 1440 UT
XXXX 5694A, 1429 UT
NO 5694A ACTIVITY TODAY

JUNE 23, 1989 (P = -6.30, B₀ = 1.97, L₀ = 344.72)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1341 UT

STANFORD MAGNETOGRAM

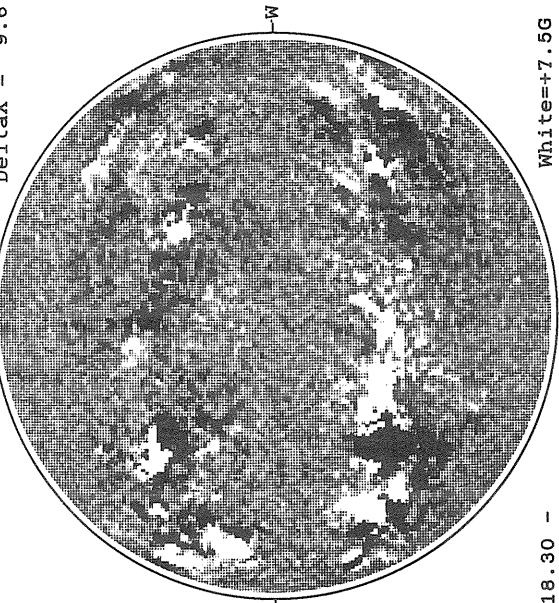
Solid = +
Dashed = -



1604 UT

MT. WILSON MAGNETOGRAM

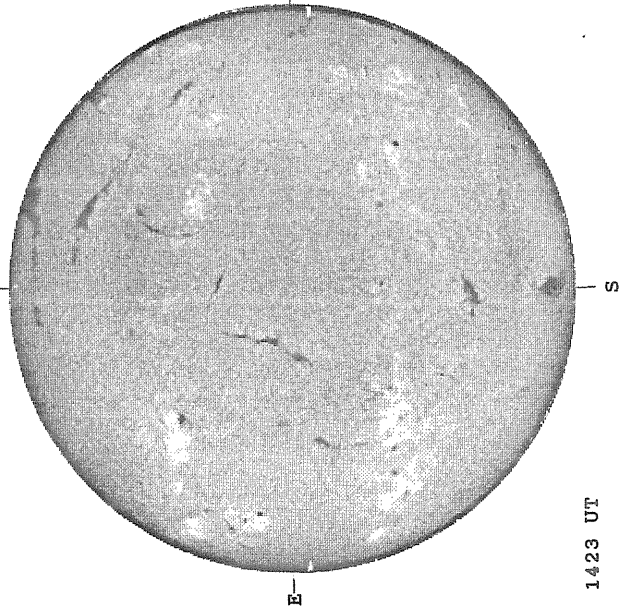
Delta Y = 13.0
Delta X = 9.6



18.30 -
19.23 UT

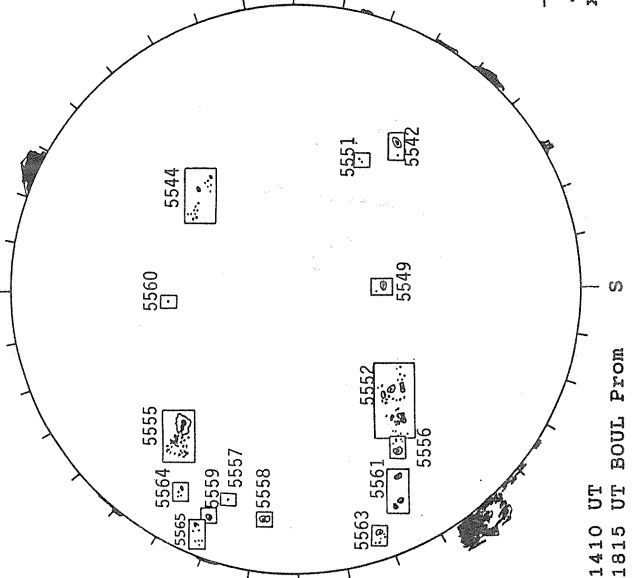
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



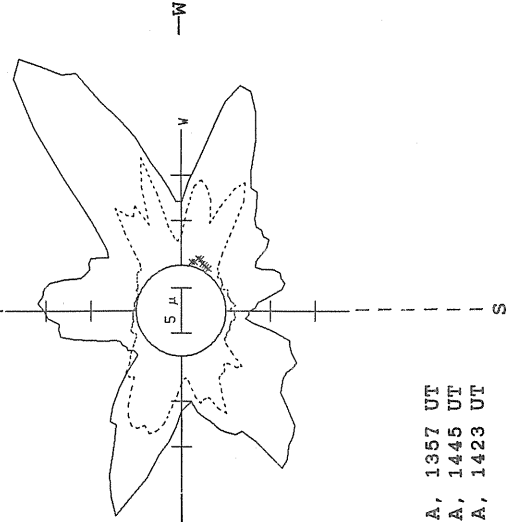
1423 UT

RAMEY SUNSPOT



1410 UT
1815 UT BOUL FROM

SACRAMENTO PEAK CORONA (1.15 Radii)

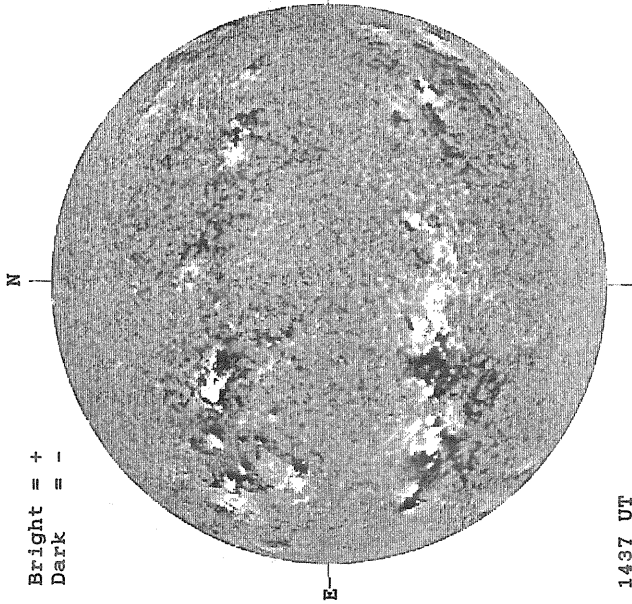


— 5303A, 1357 UT
.... 6374A, 1445 UT
XXXX 5694A, 1423 UT

JUNE 24, 1989 (P = -5.86, B₀ = 2.09, L₀ = 331.48)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



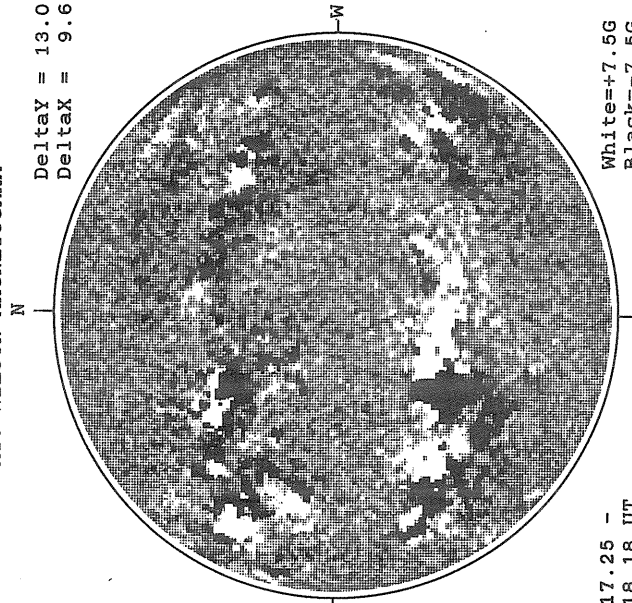
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



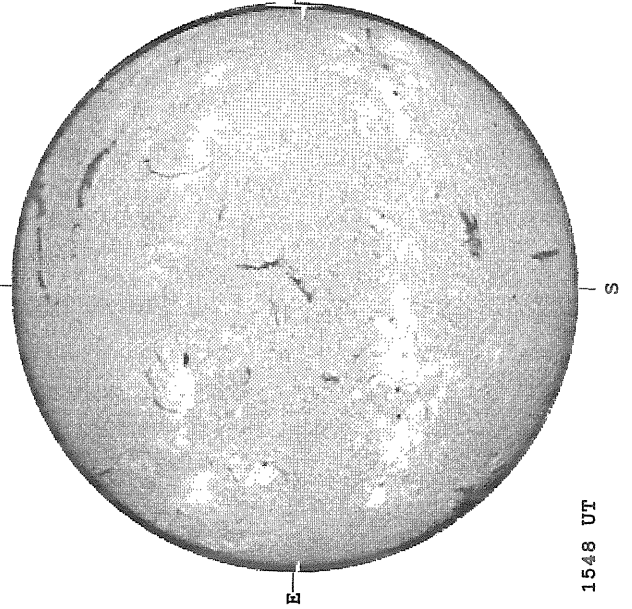
MT. WILSON MAGNETOGRAM

Delta γ = 13.0
Delta α = 9.6

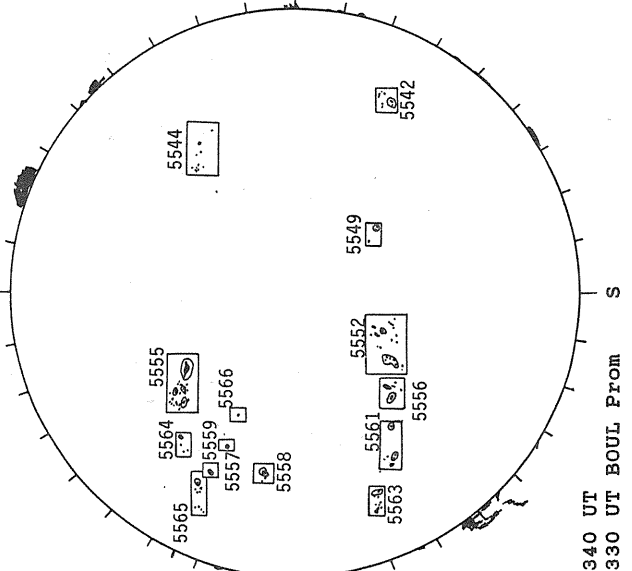


White = +7.5G
Black = -7.5G

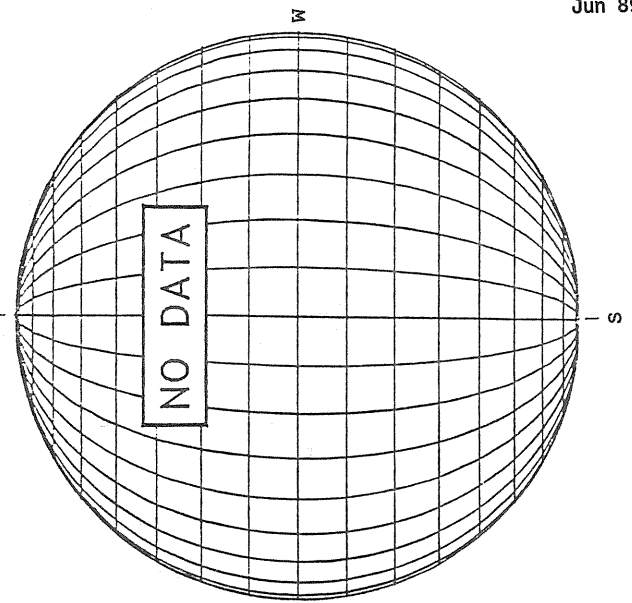
HOLLOMAN H-ALPHA



BOULDER SUNSPOT

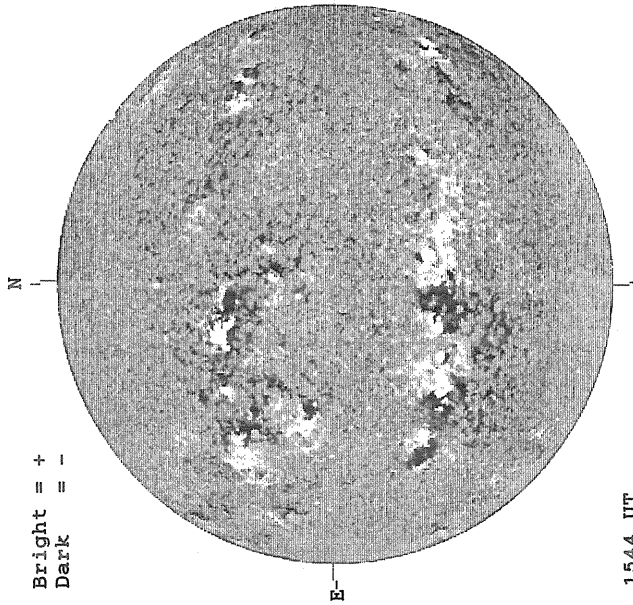


SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 25, 1989 (P=-5.41, B₀ = 2.20, I₀ = 318.24)

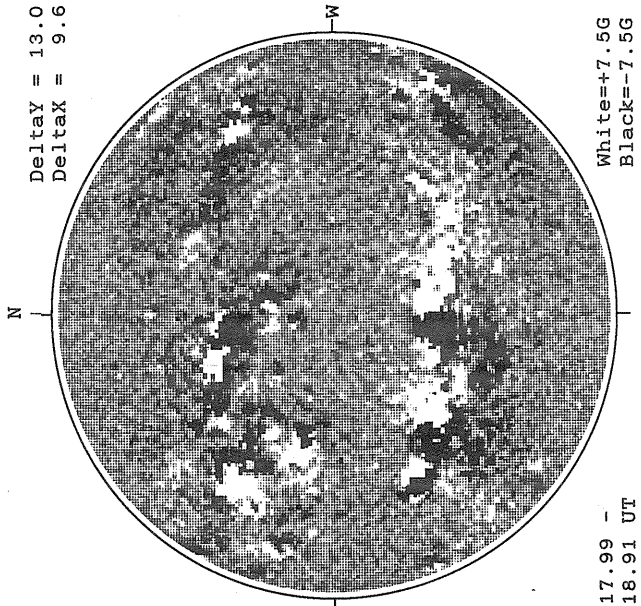
KITT PEAK MAGNETOGRAM



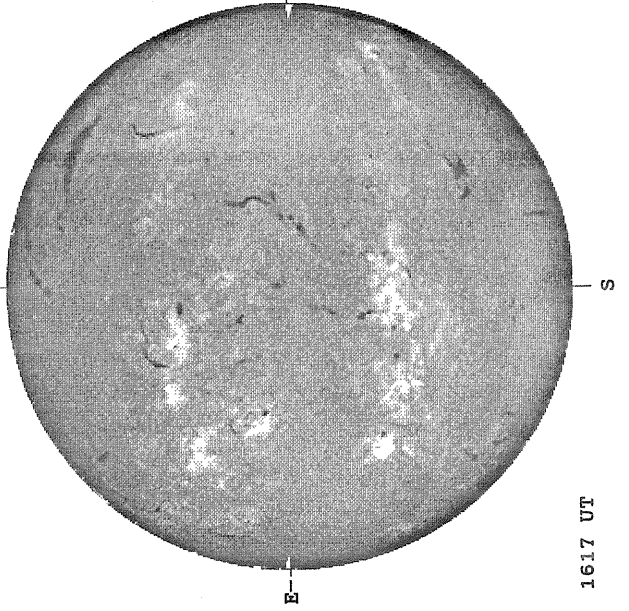
STANFORD MAGNETOGRAM



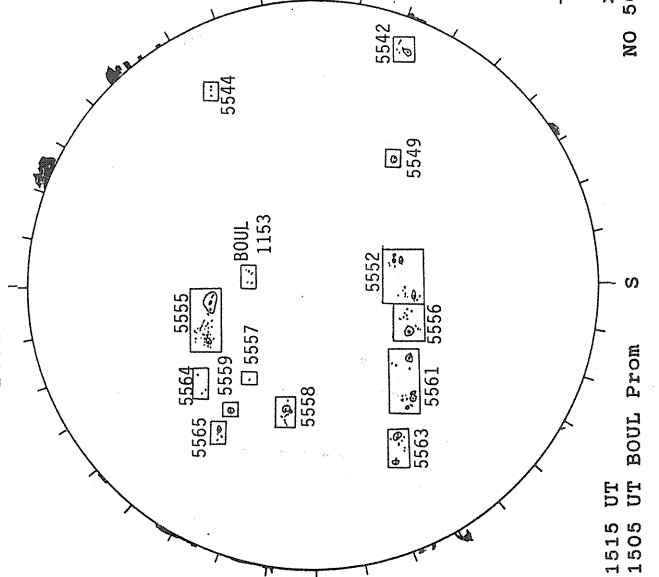
MT. WILSON MAGNETOGRAM



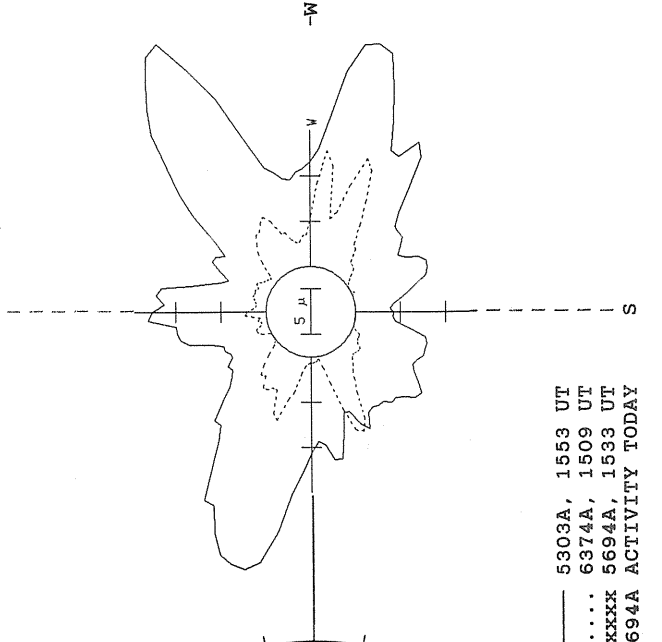
HOLLOMAN H-ALPHA



BOULDER SUNSPOT



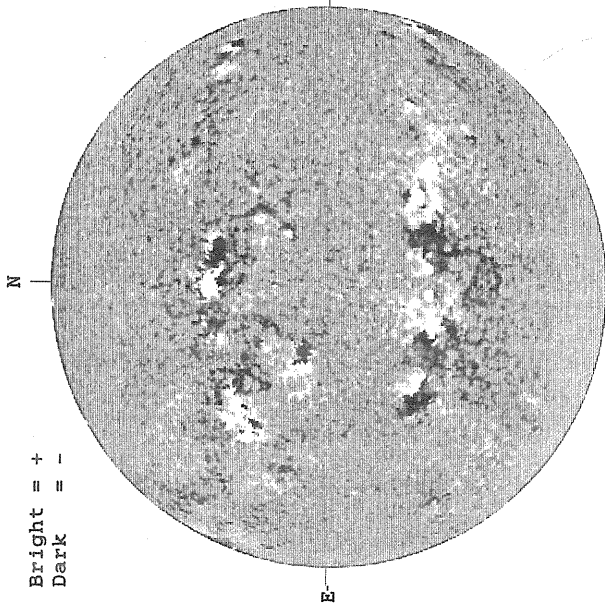
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 26, 1989 (P=- 4.96, B₀ = 2.32, L₀ = 305.01)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1558 UT

STANFORD MAGNETOGRAM

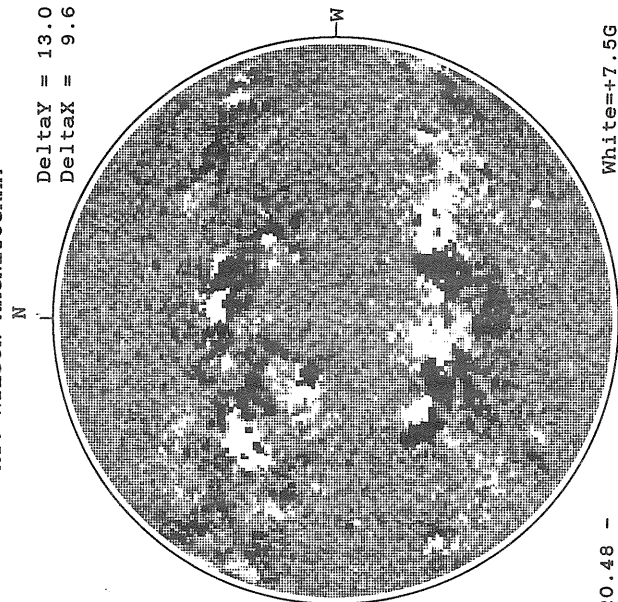
Solid = +
Dashed = -



2122 UT

MT. WILSON MAGNETOGRAM

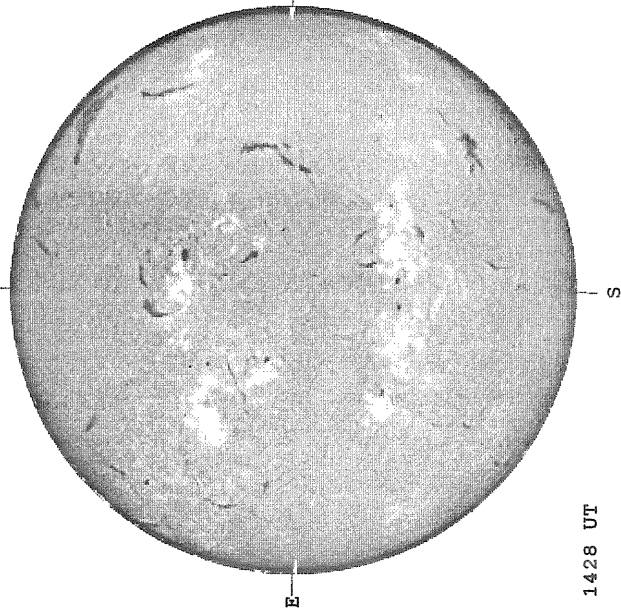
DeltaY = 13.0
DeltaX = 9.6



20.48 -
21.40 UT

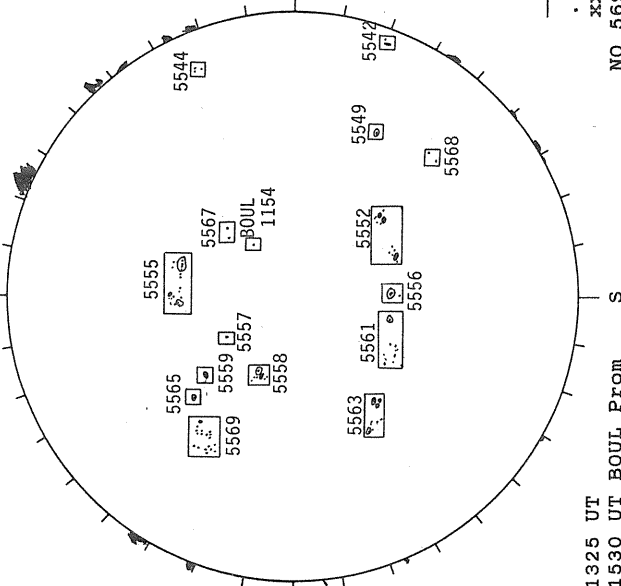
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



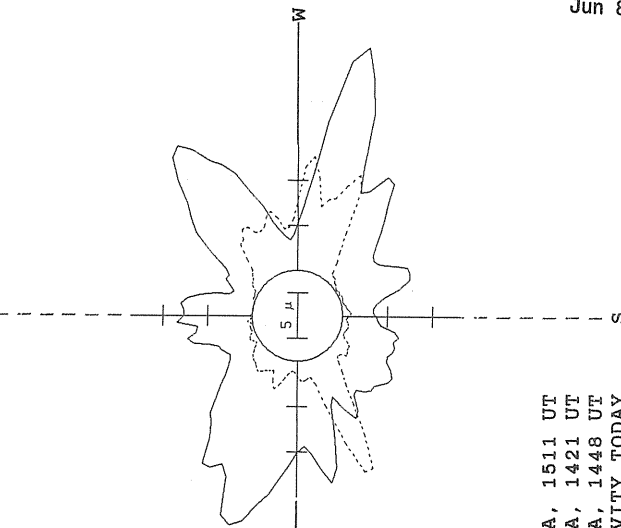
1428 UT

BOULDER SUNSPOT



1325 UT BOUL From
1530 UT BOUL From

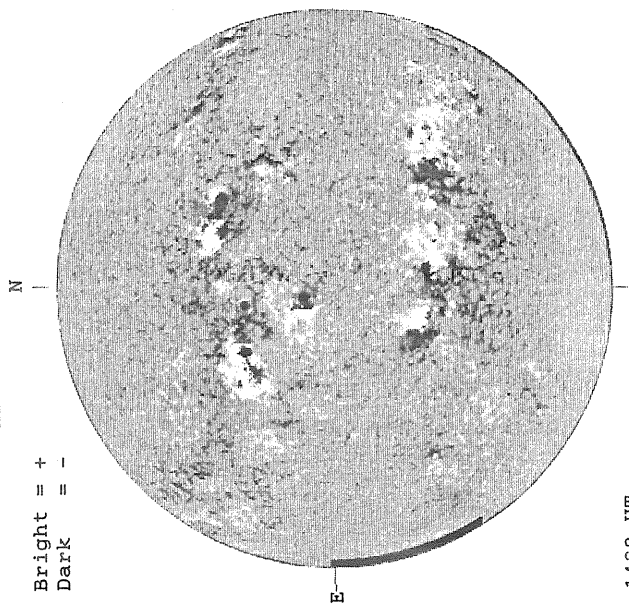
SACRAMENTO PEAK CORONA (1.15 Radii)



— 5303A, 1511 UT
... 6374A, 1421 UT
XXXX 5694A, 1448 UT
NO 5694A ACTIVITY TODAY

JUNE 27, 1989 (P = - 4.51, B₀ = 2.43, I₀ = 291.77)

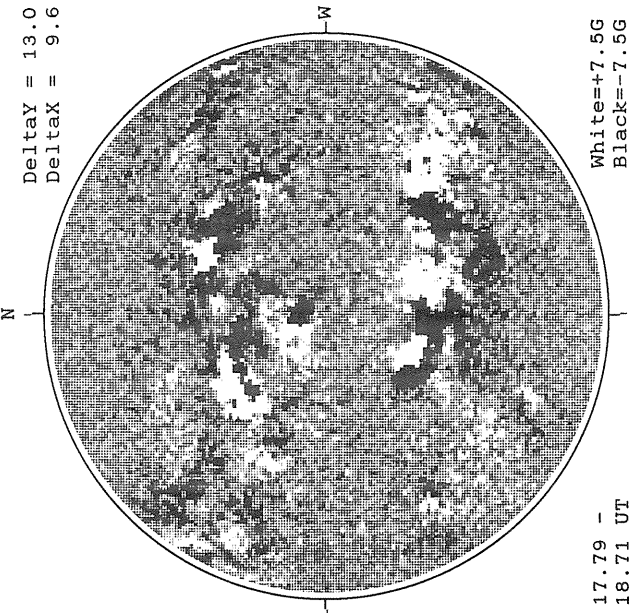
KITT PEAK MAGNETOGRAM



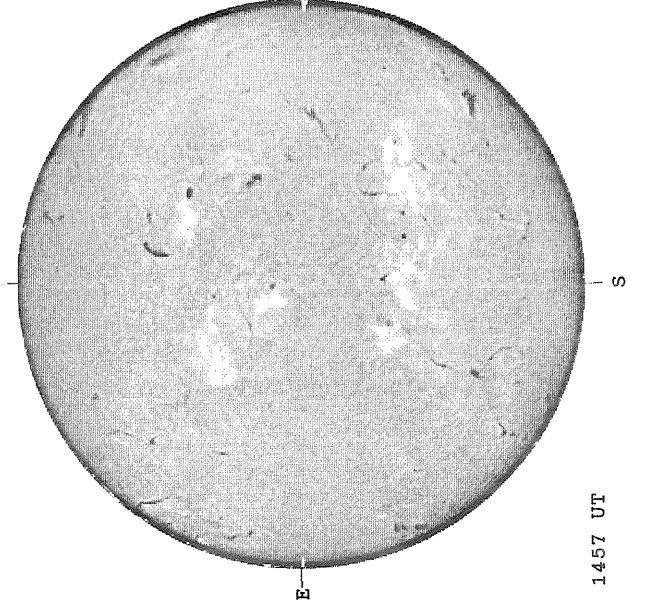
STANFORD MAGNETOGRAM



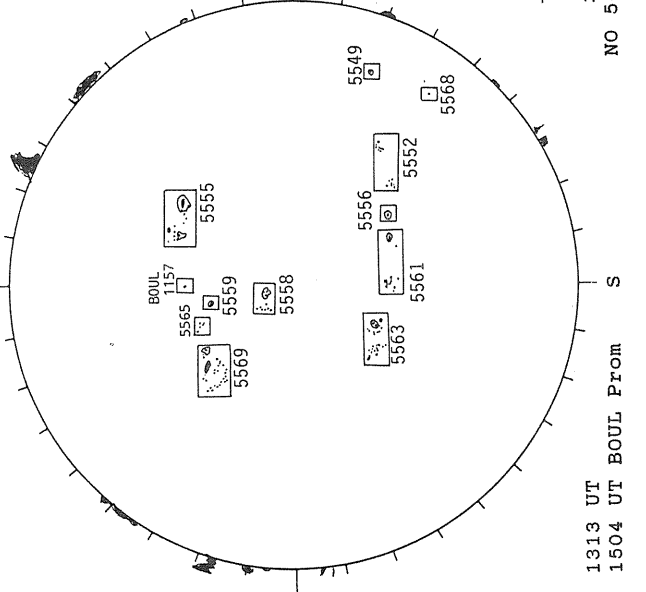
MT. WILSON MAGNETOGRAM



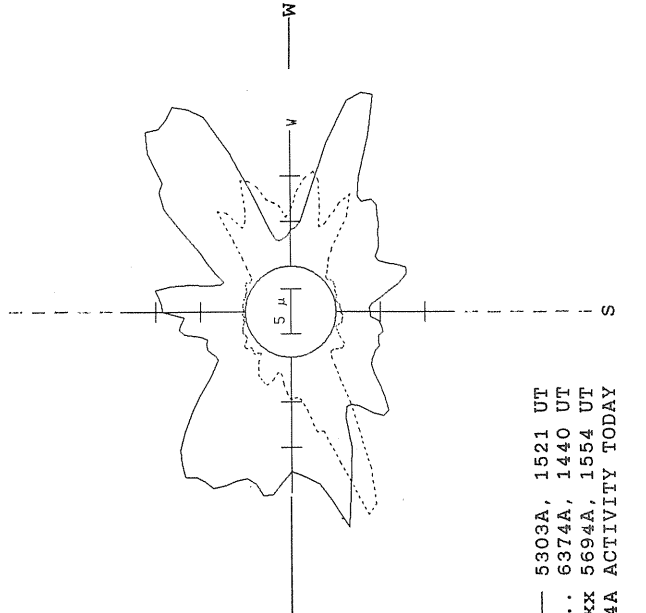
HOLLOMAN H-ALPHA



BOULDER SUNSPOT



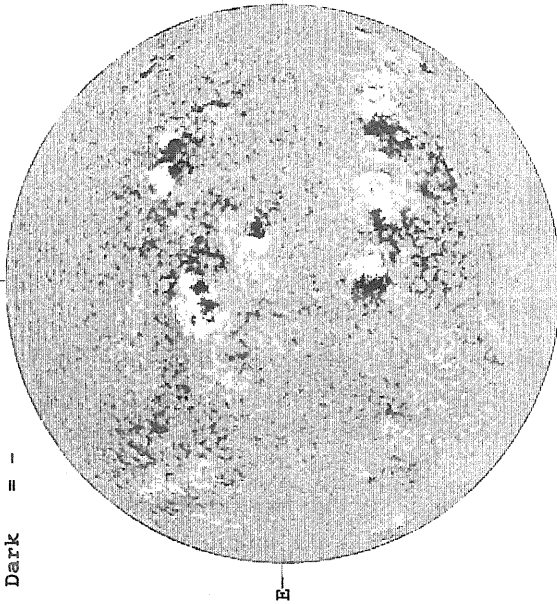
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 28, 1989 (P = -4.06, B₀ = 2.54, L₀ = 278.53)

KITT PEAK MAGNETOGRAM

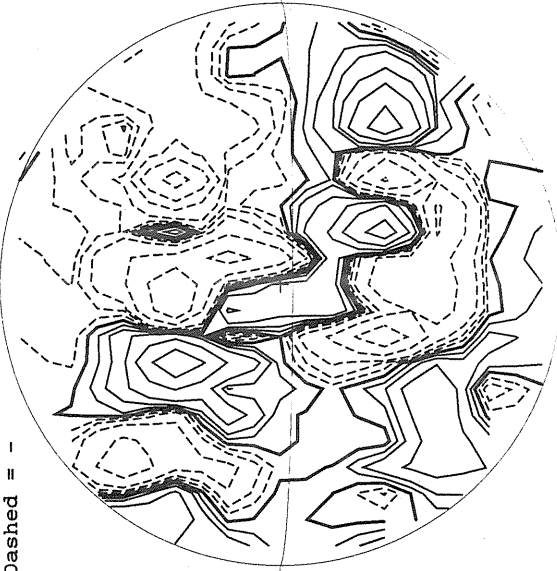
Bright = +
Dark = -



1323 UT

STANFORD MAGNETOGRAM

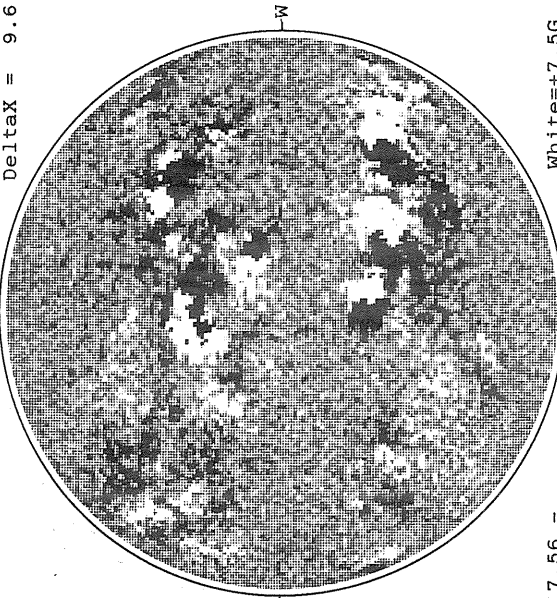
Solid = +
Dashed = -



0113 UT

MT. WILSON MAGNETOGRAM

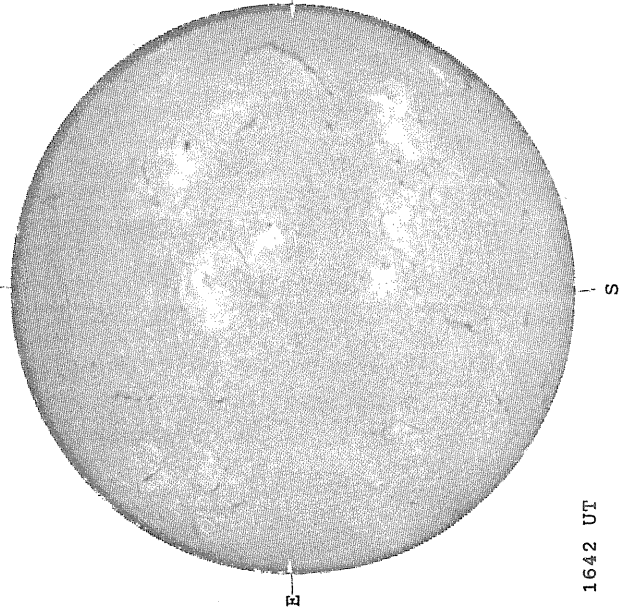
Delta_Y = 13.0
Delta_X = 9.6



17.56 -
18.48 UT

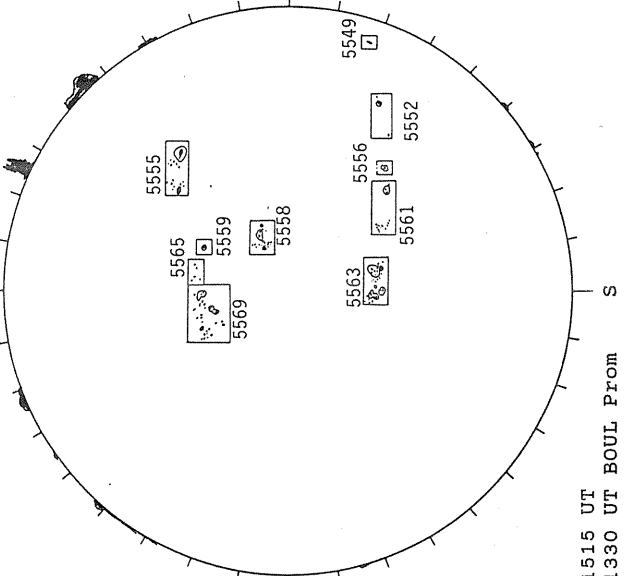
White = +7.5G
Black = -7.5G

HOLLOMAN H-ALPHA



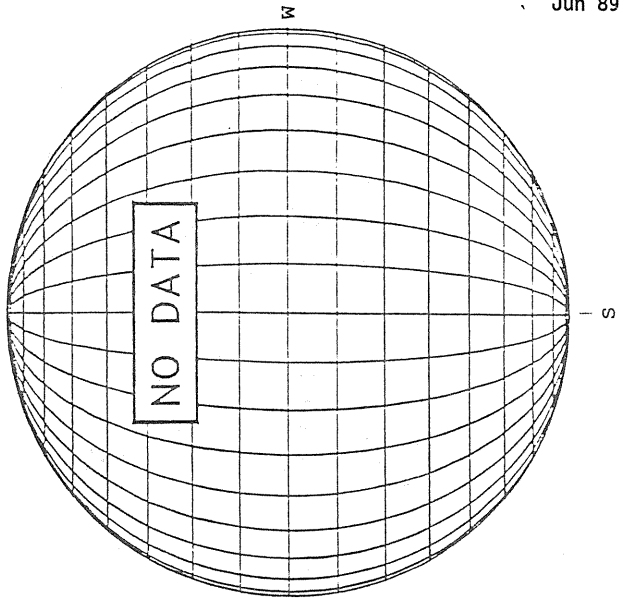
1642 UT

BOULDER SUNSPOT



1515 UT
1330 UT BOUL PROM

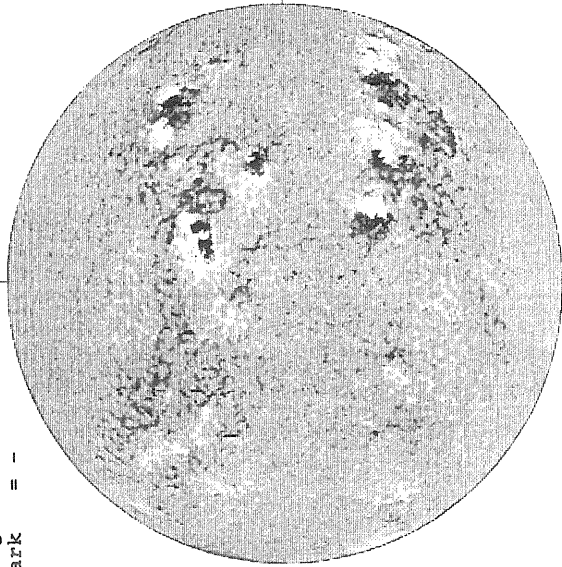
SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 29, 1989 (P=- 3.60, B₀ = 2.66, L₀ = 265.30)

KITT PEAK MAGNETOGRAM

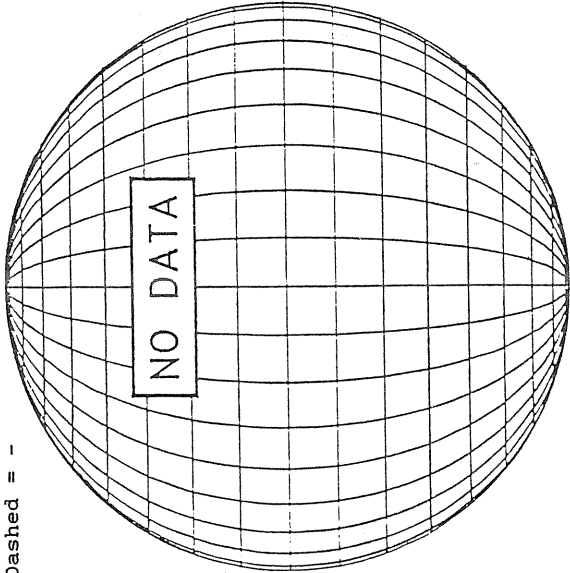
Bright = +
Dark = -



1405 UT

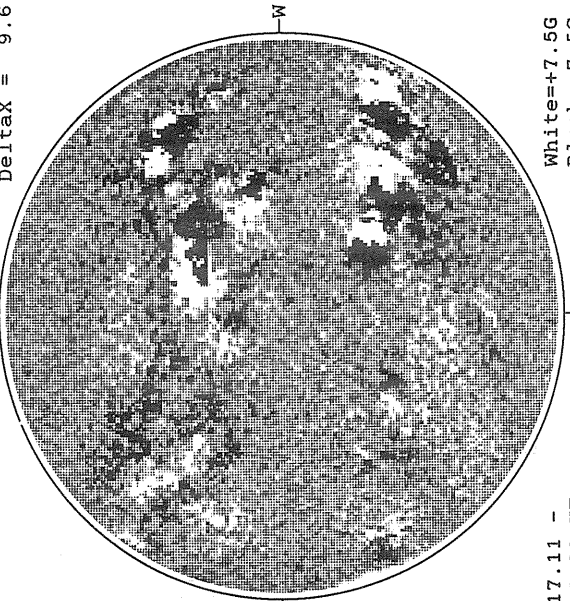
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

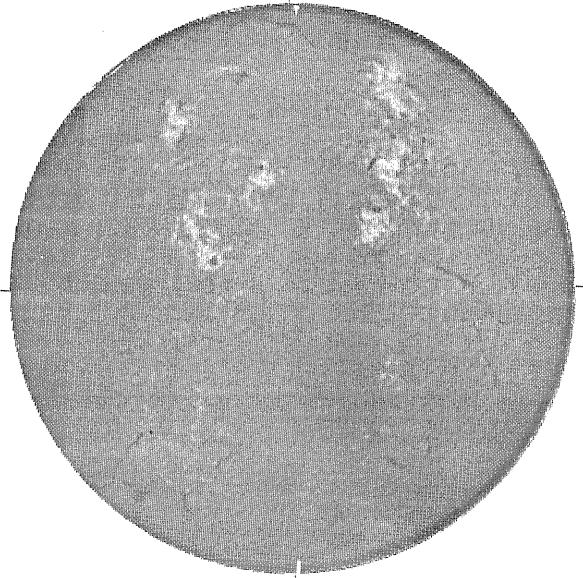
Delta Y = 13.0
Delta X = 9.6



17.11 -
18.03 UT

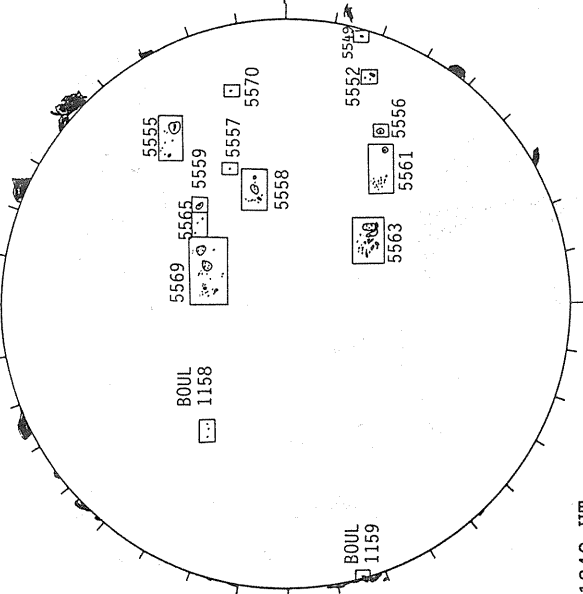
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



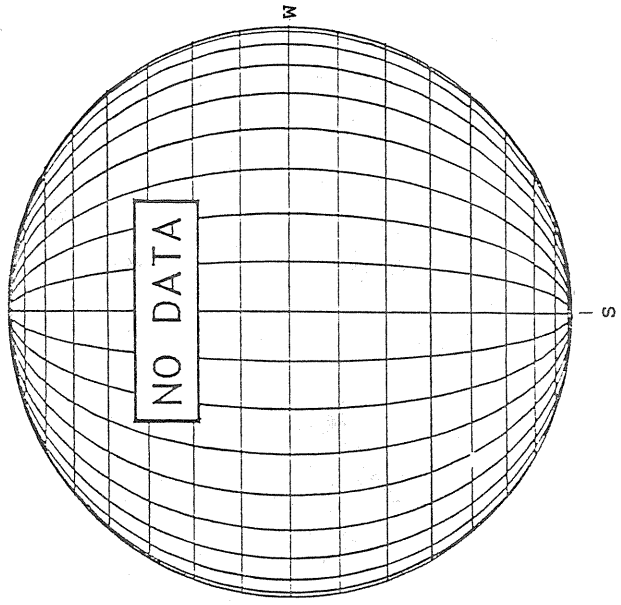
1422 UT

BOULDER SUNSPOT



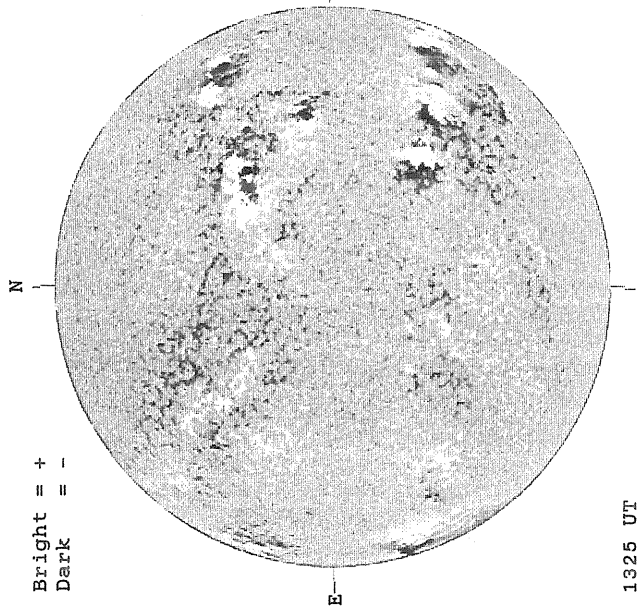
1340 UT
1345 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



JUNE 30, 1989 (P=- 3.15, B₀ = 2.77, I₀ = 252.06)

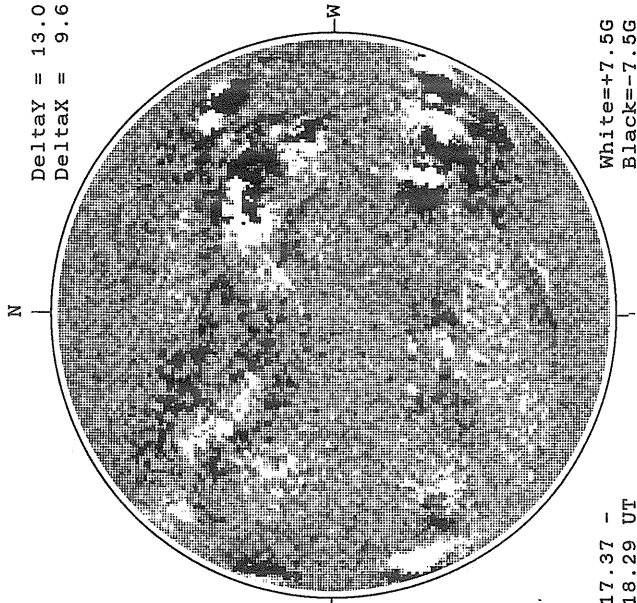
KITT PEAK MAGNETOGRAM



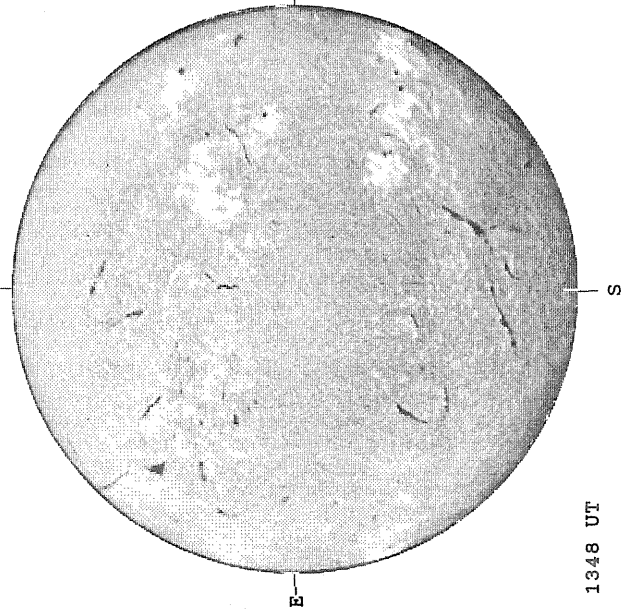
STANFORD MAGNETOGRAM



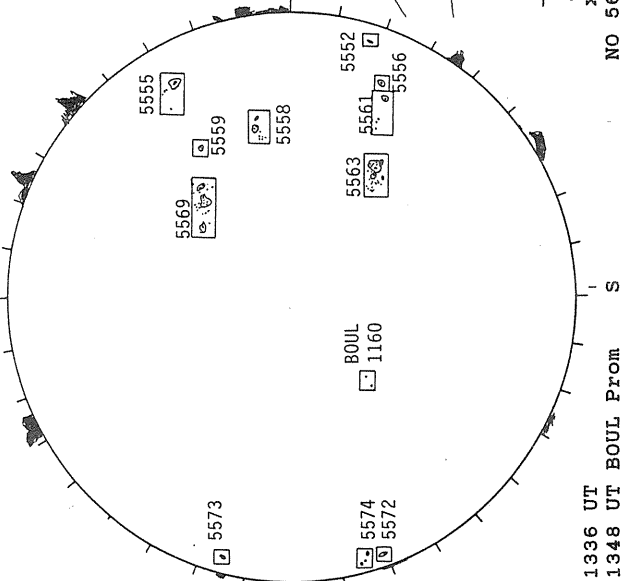
MT. WILSON MAGNETOGRAM



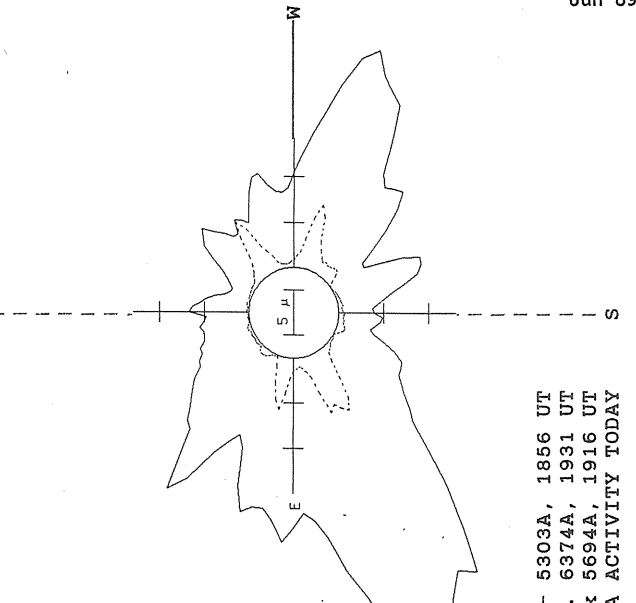
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



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Jun 89

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 1989

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
5513A		PALE	05 30 1809	N29	E22	06 1.5		A	AX		2	1	3
5513B		LEAR	06 05 0025	N24	W45	06 1.5		B	BXO	20	4	2	3
5513B		RAMY	06 05 1410	N23	W50	06 1.7		A	AX		1		3
5513	25257	MWIL	05 26 1515	S19	E79	06 1.7	3	(AP)					
5513		SVTO	05 27 0639	S19	E70	06 1.6		B	BXO	10	3	4	2
5513		HOLL	05 27 1428	S19	E63	06 1.4		A	AX	20	2	2	2
5513	25257	MWIL	05 27 1515	S19	E65	06 1.6	3	(B)					
5513		PALE	05 27 2000	S20	E60	06 1.4		B	BXO	10	5	5	4
5513		LEAR	05 28 0135	S18	E57	06 1.4		B	BXO	10	2	3	3
5513		CULG	05 28 0330	S19	E55	06 1.3		A	AX		1		2
5513		SVTO	05 28 0748	S19	E56	06 1.6		B	BXO	20	2	8	3
5513		RAMY	05 28 1314	S19	E52	06 1.5		B	BXO	10	2	4	2
5513		BOUL	05 28 1345	S18	E48	06 1.2		A	AX		1		3
5513	25257	MWIL	05 28 1515	S18	E48	06 1.3	4	(AP)					
5513		PALE	05 28 1735	S19	E48	06 1.4		A	AX		1		4
5513		HOLL	05 28 1810	S19	E46	06 1.3		A	AX		1		2
5513		LEAR	05 29 0020	S18	E42	06 1.2		A	AX	30	1	1	3
5513		SVTO	05 29 0800	S19	E39	06 1.3		A	AX		1		2
5513		BOUL	05 29 1329	S18	E33	06 1.1		A	AX	10	1		1
5513		RAMY	05 29 1429	S17	E35	06 1.3		A	AX		1		1
5513	25257	MWIL	05 29 1530	S18	E34	06 1.2	4	(AP)					
5513		HOLL	05 29 1600	S19	E33	06 1.2		A	AX	10	1	1	3
5513		PALE	05 29 1803	S19	E33	06 1.3		A	AX		3	2	3
5513		LEAR	05 30 0015	S16	E37	06 1.8		B	BXO	20	2	3	3
5513		CULG	05 30 0300	S16	E34	06 1.7		A	AX	10	1	1	2
5513		SVTO	05 30 0755	S16	E32	06 1.7		B	BXO	10	2	1	3
5513		HOLL	05 30 1435	S15	E28	06 1.7		B	BXO	10	4	5	4
5513	25263	MWIL	05 30 1515	S16	E27	06 1.7	5	(BP)					
5513		PALE	05 30 1809	S16	E25	06 1.6		B	BXO	10	4	4	3
5513		LEAR	05 31 0110	S15	E22	06 1.7		B	BXO	20	6	5	3
5513		LEAR	06 01 0034	S17	E06	06 1.5		B	BXO	10	3	6	4
5513		HOLL	06 01 1437	S15	E03	06 1.8		B	BXO	10	6	4	4
5513	25269	MWIL	06 01 1445	S15	E03	06 1.8	3	(B)					
5513		LEAR	06 02 0020	S16	W03	06 1.8		B	BXO	10	3	3	3
5513		CULG	06 02 0430	S16	W07	06 1.6		B	BXO		2	1	2
5513		SVTO	06 02 0713	S15	W08	06 1.7		A	AX		1		1
5513		HOLL	06 02 1515	S15	W11	06 1.8		B	BXO	10	5	5	3
5518		HOLL	06 01 1437	N30	E10	06 2.4		A	AX		1		4
5518	25270	MWIL	06 01 1445	N31	E10	06 2.4	3	(AP)					
5518		BOUL	06 01 1450	N31	E11	06 2.5		B	BXO	10	2	2	3
5518		RAMY	06 01 1800	N30	E09	06 2.4		A	AX	10	2	2	2
5518		LEAR	06 02 0020	N31	E05	06 2.4		B	BXO	10	3	3	3
5518		SVTO	06 02 0713	N31	E00	06 2.3		A	AX		2	3	1
5518A		PALE	05 30 1809	N14	E41	06 2.8		A	AX		2		3
5529		HOLL	06 07 1245	N10	W60	06 3.0		B	BXO		2	3	3
5529		RAMY	06 07 1427	N10	W63	06 2.9		A	AX	10	2	1	3
5529		PALE	06 07 2020	N08	W64	06 3.0		B	BXO	10	3	3	3
5529		SVTO	06 08 0515	N10	W71	06 2.9		B	CAO	30	4	5	2
5529		RAMY	06 08 1413	N11	W74	06 3.0		B	BXO	70	4	7	2
5529		BOUL	06 08 1543	N12	W73	06 3.1		B	CAO	60	3	6	3
5529		HOLL	06 08 1715	N09	W69	06 3.5		B	BXO	10	2	11	3
5529		SVTO	06 09 0456	N10	W80	06 3.2		A	AX	10	1		2
5518B	25284	MWIL	06 08 1515	N11	W72	06 3.2	4	(BF)					
5518C		PALE	05 30 1809	S20	E48	06 3.4		A	AX		2		3
5523		LEAR	06 05 0025	N29	W15	06 3.8		A	AX	10	2	1	3
5523		SVTO	06 05 0655	N29	W19	06 3.8		B	CRO	10	3	3	2
5523		BOUL	06 05 1300	N28	W19	06 4.0		B	BXO	10	2	3	1
5523		RAMY	06 05 1410	N28	W22	06 3.9		B	BXO	10	4	4	3
5523		HOLL	06 05 1450	N29	W22	06 3.9		B	BXO	20	2	3	3
5523	25277	MWIL	06 05 1515	N29	W22	06 3.9	4	(B)					
5523		PALE	06 05 1815	N29	W24	06 3.9		B	BXO		3	4	3

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

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Jun 89

JUNE 1989

NOAA/ USAF Group	Ht Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5523		CULG	06 06 0310	N29 W30	06 3.8		B	BXO	10	2	4	3
5523		BOUL	06 06 1316	N29 W33	06 4.0		B	BXO	10	2	4	2
5523		RAMY	06 06 1320	N28 W34	06 3.9		B	BXO	10	2	5	4
5523		HOLL	06 06 1450	N30 W35	06 3.9		B	BXO	10	2	3	3
5523	25277	MJIL	06 06 1515	N29 W35	06 3.9	4	(BF)					
5523		PALE	06 06 1940	N29 W36	06 4.0		A	AX		1		3
5523		CULG	06 07 0320	N29 W40	06 4.0		A	AX	10	1		2
5523		SVTO	06 07 0513	N29 W42	06 3.9		A	AX	10	1	1	2
5523		HOLL	06 07 1245	N29 W44	06 4.1		A	AX		1		3
5523		RAMY	06 07 1427	N28 W46	06 4.0		A	AX		1		3
5523	25277	MJIL	06 07 1515	N29 W46	06 4.0	4	(AF)					
5523		PALE	06 07 2020	N27 W50	06 3.9		A	AX		1		3
5523		SVTO	06 08 0515	N28 W56	06 3.8		A	AX		2	2	2
5523		HOLL	06 08 1715	N27 W59	06 4.1		A	AX	10	1		3
5523A	25290	MJIL	06 09 1500	S20 W75	06 3.9	4	(AP)					
5519		HOLL	06 01 1437	S21 E35	06 4.3		A	AX	10	2	2	4
5519	25271	MJIL	06 01 1445	S21 E35	06 4.3	4	(AF)					
5519		BOUL	06 01 1450	S21 E33	06 4.1		A	AX	10	2	1	3
5519		RAMY	06 01 1800	S21 E33	06 4.3		A	AX	10	2	1	2
5519		LEAR	06 02 0020	S22 E30	06 4.3		A	AX	10	2	1	3
5519		CULG	06 02 0430	S21 E28	06 4.3		A	AX		2	1	2
5519		SVTO	06 02 0713	S20 E26	06 4.3		B	BXO	10	4	1	1
5519		BOUL	06 02 1355	S20 E20	06 4.1		B	BXO		8	4	3
5519	25271	MJIL	06 02 1440	S21 E21	06 4.2	4	(B)					
5519		HOLL	06 02 1515	S20 E21	06 4.2		B	BXO	10	5	4	3
5519		LEAR	06 03 0105	S21 E15	06 4.2		B	CRO	30	9	6	3
5519	25271	MJIL	06 03 1430	S21 E07	06 4.1	5	(B)					
5519		RAMY	06 03 1536	S21 E08	06 4.3		B	DAO	30	5	7	2
5519		PALE	06 03 2030	S21 E05	06 4.2		B	BXO	10	3	7	3
5519		HOLL	06 03 2150	S20 E03	06 4.1		B	BXO	10	2	7	2
5519		LEAR	06 04 0020	S20 E03	06 4.2		B	CRO	30	5	7	3
5519		SVTO	06 04 1016	S20 W05	06 4.0		B	DAO	20	4	9	2
5519		RAMY	06 04 1357	S20 W05	06 4.2		B	CRO	30	3	9	3
5519		HOLL	06 04 1545	S20 W08	06 4.0		B	BXO	20	7	8	3
5519		PALE	06 04 1935	S20 W09	06 4.1		B	BXO	10	5	9	3
5519		LEAR	06 05 0025	S20 W11	06 4.2		B	CSO	30	3	9	3
5519		SVTO	06 05 0655	S22 W13	06 4.3		A	AX		3	2	2
5519		HOLL	06 05 1450	S25 W19	06 4.1		B	BXO	10	5	8	3
5519		HOLL	06 07 1245	S21 W41	06 4.4		A	AX		1		3
5519		SVTO	06 09 0456	S19 W72	06 3.7		B	BXO	10	3	3	2
5519		PALE	06 09 1750	S20 W80	06 3.6		A	AX		1		4
5516		HOLL	05 30 1435	N15 E61	06 4.2		B	BXO	10	6	4	4
5516	25264	MJIL	05 30 1515	N14 E60	06 4.2	3	(B)					
5516		PALE	05 30 1809	N14 E59	06 4.2		B	BXO	20	2	1	3
5516		LEAR	05 31 0110	N14 E55	06 4.2		B	CAO	70	7	6	3
5516		HOLL	05 31 1310	N14 E50	06 4.3		B	CSO	40	5	5	3
5516	25264	MJIL	05 31 1515	N14 E47	06 4.2	5	(BP)					
5516		PALE	05 31 1810	N13 E45	06 4.1		B	CAO	110	5	4	2
5516		LEAR	06 01 0034	N15 E41	06 4.1		B	CAO	60	9	6	4
5516		CULG	06 01 0315	N15 E40	06 4.2		B	CSO	20	3	4	2
5516		SVTO	06 01 0935	N16 E37	06 4.2		B	CSO	260	16	5	2
5516		HOLL	06 01 1437	N14 E34	06 4.2		B	CSO	20	7	4	4
5516	25264	MJIL	06 01 1445	N14 E34	06 4.2	5	(B)					
5516		BOUL	06 01 1450	N14 E33	06 4.1		B	CSO	30	2	4	3
5516		RAMY	06 01 1800	N17 E32	06 4.2		B	CAO	40	8	8	2
5516		LEAR	06 02 0020	N13 E28	06 4.1		B	CAO	30	4	4	3
5516		CULG	06 02 0430	N14 E26	06 4.1		B	CSO	10	4	3	2
5516		SVTO	06 02 0713	N17 E23	06 4.0		B	CRO	20	9	6	1
5516		BOUL	06 02 1355	N13 E19	06 4.0		A	AX		5	1	3
5516	25264	MJIL	06 02 1440	N13 E20	06 4.1	4	(BP)					
5516		HOLL	06 02 1515	N16 E21	06 4.2		B	BXO	10	9	4	3
5516		LEAR	06 03 0105	N14 E14	06 4.1		A	HRO	20	1	1	3
5516		SVTO	06 03 0645	N15 E11	06 4.1		A	HR	10	1	1	2
5516	25264	MJIL	06 03 1430	N14 E07	06 4.1	4	(BP)					
5516		RAMY	06 03 1536	N15 E08	06 4.2		B	CRO	10	3	3	2
5516		PALE	06 03 2030	N17 E04	06 4.1		B	BXO	20	9	3	3

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

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CHD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5516		HOLL	06 03	2150	N15 E03	06 4.1		A	AX		1		2
5516		LEAR	06 04	0020	N15 E02	06 4.2		A	AX	20	2	2	3
5516		SVTO	06 04	1016	N16 W04	06 4.1		A	HA	10	3	2	2
5516		RAMY	06 04	1357	N15 W05	06 4.2		B	BXO	10	2	3	3
5516		HOLL	06 04	1545	N15 W06	06 4.2		B	BXO	10	2	3	3
5516		PALE	06 04	1935	N15 W09	06 4.1		B	BXO		2	3	3
5516		LEAR	06 05	0025	N17 W11	06 4.2		B	BXO	10	7	3	3
5516		SVTO	06 05	0655	N17 W14	06 4.2		B	BXO		5	3	2
5516		RAMY	06 05	1410	N17 W16	06 4.4		B	BXO	10	4	4	3
5516	25264	MWIL	06 05	1515	N17 W18	06 4.3	4	(BP)					
5516		PALE	06 05	1815	N18 W18	06 4.4		B	BXO	10	5	4	3
5516		RAMY	06 06	1320	N18 W31	06 4.2		A	AX	10	2	2	4
5516	25264	MWIL	06 06	1515	N17 W33	06 4.1	4	(AP)					
5516		PALE	06 06	1940	N19 W34	06 4.2		A	AX		3		3
5516		SVTO	06 07	0513	N18 W40	06 4.2		B	BXO		3	2	2
5516		RAMY	06 07	1427	N17 W46	06 4.1		A	AX	10	1	1	3
5516	25264	MWIL	06 07	1515	N17 W46	06 4.1	4	(AP)					
5514		SVTO	05 29	0800	N18 E79	06 4.3		A	HR	30	2	2	2
5514		BOUL	05 29	1329	N18 E75	06 4.3		B	BXO	30	4	9	1
5514		RAMY	05 29	1429	N19 E75	06 4.3		B	CSO	60	4	8	1
5514	25262	MWIL	05 29	1530	N19 E78	06 4.6	5	(B					
5514		HOLL	05 29	1600	N18 E75	06 4.4		B	BXO	70	7	9	3
5514		PALE	05 29	1803	N18 E78	06 4.7		B	BXO	80	7	10	3
5514		LEAR	05 30	0015	N19 E68	06 4.2		B	CKO	150	6	9	3
5514		CULG	05 30	0300	N20 E72	06 4.6		B	CSO	70	3	11	2
5514		SVTO	05 30	0755	N19 E69	06 4.6		B	DSO	90	4	10	3
5514		HOLL	05 30	1435	N19 E62	06 4.3		B	CAO	80	5	10	4
5514	25262	MWIL	05 30	1515	N19 E65	06 4.6	5	(B)					
5514		PALE	05 30	1809	N20 E65	06 4.7		B	CAO	110	5	11	3
5514		LEAR	05 31	0110	N19 E58	06 4.5		B	EKO	190	10	11	3
5514		SVTO	05 31	0935	N16 E50	06 4.2		B	DAO	60	8	5	2
5514		HOLL	05 31	1310	N19 E52	06 4.5		B	CAO	80	5	9	3
5514	25262	MWIL	05 31	1515	N19 E52	06 4.6	4	(BF)					
5514		PALE	05 31	1810	N19 E50	06 4.6		B	CAO	130	4	11	2
5514		LEAR	06 01	0034	N19 E44	06 4.4		B	CHO	150	9	12	4
5514		CULG	06 01	0315	N20 E43	06 4.4		B	CSO	70	4	12	2
5514		SVTO	06 01	0935	N20 E46	06 4.9		A	HA	100	3	2	2
5514		HOLL	06 01	1437	N19 E38	06 4.5		B	CAO	90	7	12	4
5514	25262	MWIL	06 01	1445	N19 E40	06 4.7	5	(B)					
5514		BOUL	06 01	1450	N19 E36	06 4.4		B	EAO	90	3	12	3
5514		RAMY	06 01	1800	N20 E41	06 4.9		A	HA	130	2	2	2
5514		LEAR	06 02	0020	N19 E32	06 4.4		B	CAO	100	7	10	3
5514		CULG	06 02	0430	N19 E31	06 4.5		B	CAO	80	8	10	2
5514		SVTO	06 02	0713	N21 E33	06 4.8		B	CAO	120	8	3	1
5514		BOUL	06 02	1355	N18 E25	06 4.5		B	CAO	70	11	10	3
5514	25262	MWIL	06 02	1440	N20 E28	06 4.7	4	(BF)					
5514		HOLL	06 02	1515	N21 E29	06 4.8		B	CSO	70	8	4	3
5514		LEAR	06 03	0105	N21 E23	06 4.8		B	CKO	100	6	4	3
5514		SVTO	06 03	0645	N22 E21	06 4.9		B	CAO	90	10	3	2
5514	25262	MWIL	06 03	1430	N20 E15	06 4.7	4	(BF)					
5514		RAMY	06 03	1536	N20 E16	06 4.9		B	CAO	70	10	5	2
5514		PALE	06 03	2030	N21 E12	06 4.8		B	CAO	70	6	4	3
5514		HOLL	06 03	2150	N21 E12	06 4.8		B	CAO	50	8	5	2
5514		LEAR	06 04	0020	N20 E11	06 4.8		B	CAO	30	7	8	3
5514		SVTO	06 04	1016	N22 E04	06 4.7		B	CAO	40	11	5	2
5514		RAMY	06 04	1357	N22 E03	06 4.8		B	CAO	40	14	6	3
5514		HOLL	06 04	1545	N22 E02	06 4.8		B	CRO	40	11	6	3
5514		PALE	06 04	1935	N21 W01	06 4.7		B	CAO	40	8	5	3
5514		LEAR	06 05	0025	N20 W02	06 4.9		B	CAO	40	5	3	3
5514		SVTO	06 05	0655	N21 W06	06 4.8		B	CAO	50	8	3	2
5514		BOUL	06 05	1300	N19 W07	06 5.0		B	BXO	20	6	4	1
5514		RAMY	06 05	1410	N19 W10	06 4.8		B	CAO	40	9	4	3
5514		HOLL	06 05	1450	N19 W14	06 4.5		B	BXO	40	15	10	3
5514	25262	MWIL	06 05	1515	N19 W11	06 4.8	5	(BF)					
5514		PALE	06 05	1815	N20 W11	06 4.9		B	BXO	10	5	3	3
5514		CULG	06 06	0310	N19 W17	06 4.8		B	CAO	10	4	2	3
5514		BOUL	06 06	1316	N19 W24	06 4.7		B	BXO	10	6	9	2
5514		RAMY	06 06	1320	N18 W22	06 4.9		A	AX	10	3	2	4

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time 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
5514		HOLL	06 06 1450	N19	W26	06 4.6		B	BXO	10	8	10	3
5514	25262	MJIL	06 06 1515	N19	W24	06 4.8	4	(AF)					
5514		PALE	06 06 1940	N19	W26	06 4.8		A	AX		1		3
5514		CULG	06 07 0320	N20	W29	06 4.9		B	BXO	10	2	1	2
5514		SVTO	06 07 0513	N20	W32	06 4.8		A	AX	10	2	2	2
5514		HOLL	06 07 1245	N19	W38	06 4.6		B	BXO	10	3	9	3
5514		RAMY	06 07 1427	N20	W37	06 4.8		A	AX	10	2	2	3
5514	25262	MJIL	06 07 1515	N20	W36	06 4.9	4	(BF)					
5514A	25281	MJIL	06 07 1515	N23	W28	06 5.5	4	(AP)					
5525	25273	MJIL	06 03 1430	N14	E30	06 5.9	3	(AP)					
5525		SVTO	06 05 0655	N13	E11	06 6.1		B	CRO	10	2	2	2
5525		BOUL	06 05 1300	N13	E08	06 6.1		B	BXO	10	2	3	1
5525		RAMY	06 05 1410	N13	E07	06 6.1		B	CAO	20	3	4	3
5525		HOLL	06 05 1450	N13	E06	06 6.1		B	BXO	20	4	3	3
5525	25273	MJIL	06 05 1515	N13	E07	06 6.2	5	(BF)					
5525		PALE	06 05 1815	N12	E05	06 6.1		B	CAO	10	4	3	3
5525		CULG	06 06 0310	N13	W01	06 6.0		B	CAO	20	5	4	3
5525		BOUL	06 06 1316	N13	W06	06 6.1		B	BXO	10	8	5	2
5525		RAMY	06 06 1320	N12	W05	06 6.2		B	BXI	30	13	7	4
5525		HOLL	06 06 1450	N13	W06	06 6.2		B	BXO	10	10	6	3
5525	25273	MJIL	06 06 1515	N13	W06	06 6.2	4	(BF)					
5525		PALE	06 06 1940	N12	W10	06 6.1		B	BXO	10	9	5	3
5525		CULG	06 07 0320	N13	W13	06 6.1		B	BXO	10	4	4	2
5525		SVTO	06 07 0513	N15	W14	06 6.1		B	CRO	10	5	5	2
5525		HOLL	06 07 1245	N13	W18	06 6.2		A	AX		3	2	3
5525		RAMY	06 07 1427	N13	W18	06 6.2		A	AX		1		3
5525	25273	MJIL	06 07 1515	N13	W18	06 6.3	4	(AF)					
5525		PALE	06 07 2020	N15	W22	06 6.2		A	AX		3	2	3
5525		PALE	06 10 2105	N17	W64	06 6.0		A	AX		1		2
5525A		PALE	06 06 1940	N18	W08	06 6.2		A	AX		1		3
5525B		HOLL	06 09 1445	N25	W35	06 6.9		A	AX	10	2	1	3
5525B	25291	MJIL	06 09 1500	N26	W37	06 6.7	4	(AP)					
5525B		PALE	06 09 1750	N26	W38	06 6.8		A	AX		1		4
5517		HOLL	05 31 1310	S19	E86	06 7.1		A	HS	30	2	2	3
5517	25268	MJIL	05 31 1515	S17	E87	06 7.2	4	AP					
5517		PALE	05 31 1810	S18	E80	06 6.8		A	HA	60	1	2	2
5517		LEAR	06 01 0034	S18	E78	06 7.0		B	DAO	900	5	7	4
5517		CULG	06 01 0315	S19	E76	06 6.9		B	CSO	40	2	4	2
5517		SVTO	06 01 0935	S19	E78	06 7.3		B	CSO	80	4	9	2
5517		HOLL	06 01 1437	S19	E74	06 7.2		B	CSO	70	7	10	4
5517	25268	MJIL	06 01 1445	S19	E71	06 7.0	5	(B)					
5517		BOUL	06 01 1450	S19	E74	06 7.3		B	EAO	230	9	12	3
5517		RAMY	06 01 1800	S18	E74	06 7.4		B	CAO	100	6	6	2
5517		LEAR	06 02 0020	S18	E66	06 7.0		B	DAI	190	9	8	3
5517		CULG	06 02 0430	S18	E66	06 7.2		B	DAI	170	9	10	2
5517		SVTO	06 02 0713	S18	E65	06 7.2		B	DAI	290	17	9	1
5517		BOUL	06 02 1355	S18	E57	06 6.9		B	DAI	90	24	8	3
5517	25268	MJIL	06 02 1440	S19	E59	06 7.1	5	(D)					
5517		HOLL	06 02 1515	S18	E58	06 7.0		BG	DSI	180	30	9	3
5517		LEAR	06 03 0105	S18	E53	06 7.1		B	EKI	200	24	11	3
5517		SVTO	06 03 0645	S18	E52	06 7.2				130	21	12	2
5517	25268	MJIL	06 03 1430	S19	E45	06 7.0	5	(D)					
5517		RAMY	06 03 1536	S18	E45	06 7.1		BG	EAI	250	20	13	2
5517		PALE	06 03 2030	S19	E43	06 7.1		B	EKI	180	19	13	3
5517		HOLL	06 03 2150	S19	E41	06 7.0		B	EAO	130	16	11	2
5517		LEAR	06 04 0020	S18	E40	06 7.0		B	EAI	170	20	12	3
5517		SVTO	06 04 1016	S18	E35	06 7.1		B	EAI	130	30	14	2
5517		RAMY	06 04 1357	S18	E32	06 7.0		BG	EAI	170	29	14	3
5517		HOLL	06 04 1545	S19	E32	06 7.1		BG	CSO	200	48	13	3
5517		PALE	06 04 1935	S19	E30	06 7.1		B	DSI	120	28	14	3
5517		LEAR	06 05 0025	S18	E27	06 7.1		BG	ESI	140	29	14	3
5517		SVTO	06 05 0655	S19	E25	06 7.2		BGD	EAI	90	20	15	2
5517		BOUL	06 05 1300	S17	E20	06 7.1		B	EAI	110	16	12	1
5517		RAMY	06 05 1410	S17	E20	06 7.1		B	EAI	140	27	14	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5517		HOLL	06 05 1450	S19 E19	06 7.1		BG	CAO	150	29	10	3
5517	25268	MWIL	06 05 1515	S18 E18	06 7.0	5	(BG)					
5517		PALE	06 05 1815	S19 E18	06 7.1		B	EAI	90	23	14	3
5517		CULG	06 06 0310	S17 E13	06 7.1		BG	EAI	60	13	14	3
5517		BOUL	06 06 1316	S18 E07	06 7.1		B	ERI	50	13	14	2
5517		RAMY	06 06 1320	S18 E08	06 7.2		B	FAI	120	22	16	4
5517		HOLL	06 06 1450	S18 E08	06 7.2		B	CSO	50	13	15	3
5517	25268	MWIL	06 06 1515	S18 E04	06 6.9	5	(BP)					
5517		PALE	06 06 1940	S19 E04	06 7.1		B	CAI	100	16	16	3
5517		CULG	06 07 0320	S18 E00	06 7.1		B	FAI	20	11	16	2
5517		SVTO	06 07 0513	S18 W03	06 7.0		B	FAO	50	20	16	2
5517		HOLL	06 07 1245	S18 W05	06 7.1		B	CSO	30	11	16	3
5517		RAMY	06 07 1427	S17 W09	06 6.9		B	EAO	50	12	14	3
5517	25268	MWIL	06 07 1515	S17 W08	06 7.0	5	(BG)					
5517		PALE	06 07 2020	S19 W12	06 6.9		B	EAO	110	15	13	3
5517		CULG	06 08 0340	S18 W17	06 6.8		B	ESO	30	9	13	2
5517		RAMY	06 08 1413	S18 W25	06 6.7		B	CAO	40	4	9	2
5517	25268	MWIL	06 08 1515	S17 W21	06 7.0	5	(BP)					
5517		BOUL	06 08 1543	S17 W23	06 6.9		B	ESO	50	7	11	3
5517		HOLL	06 08 1715	S18 W25	06 6.8		B	BXO	30	7	12	3
5517		PALE	06 08 1835	S18 W27	06 6.7		B	CRO	10	3	8	3
5517		SVTO	06 09 0456	S18 W33	06 6.7		B	CRO	10	4	7	2
5517		RAMY	06 09 1425	S17 W39	06 6.6		B	BXO	20	4	7	3
5517		HOLL	06 09 1445	S18 W43	06 6.3		B	BXO	20	4	8	3
5517	25268	MWIL	06 09 1500	S17 W38	06 6.7	5	(BP)					
5517		PALE	06 09 1750	S18 W41	06 6.6		B	BXO	10	3	6	4
5517		SVTO	06 10 0504	S19 W49	06 6.5		A	HR	10	1	1	2
5517		BOUL	06 10 1338	S17 W53	06 6.5		A	AX		1		2
5517		RAMY	06 10 1410	S18 W54	06 6.5		A	AX	10	1		2
5517	25268	MWIL	06 10 1530	S17 W55	06 6.5	4	(AP)					
5517	25268	MWIL	06 11 1515	S18 W69	06 6.4	4	(AP)					
5517		HOLL	06 11 1630	S18 W68	06 6.5		A	AX		1		4
5517A		PALE	06 07 2020	N33 W05	06 7.4		A	AX		1		3
5517B	25278	MWIL	06 05 1515	S24 E25	06 7.6	4	(AP)					
5539	25301	MWIL	06 13 1600	S06 W75	06 8.0	4	(AP)					
5539		PALE	06 13 1735	S07 W78	06 7.9		A	AX		1		3
5539		HOLL	06 13 1920	S05 W75	06 8.2		A	AX	20	1		4
5539		LEAR	06 14 0109	S06 W80	06 8.1		A	AX	10	2	1	3
5520	25274	LEAR	06 03 0105	S23 E78	06 9.0		B	CKO	180	4	13	3
5520		MWIL	06 03 1430	S27 E69	06 9.0	4	(B)					
5520		RAMY	06 03 1536	S26 E67	06 8.8		B	CAO	100	4	6	2
5520		PALE	06 03 2030	S28 E68	06 9.2		B	CAO	80	5	6	3
5520		HOLL	06 03 2150	S27 E65	06 9.0		B	CRO	40	6	8	2
5520		LEAR	06 04 0020	S27 E64	06 9.0		B	CAO	60	5	9	3
5520		SVTO	06 04 1016	S26 E56	06 8.8		B	DAO	60	8	8	2
5520		RAMY	06 04 1357	S26 E56	06 8.9		B	DAO	70	7	8	3
5520		HOLL	06 04 1545	S25 E55	06 8.9		B	CSO	90	12	9	3
5520		PALE	06 04 1935	S28 E54	06 9.0		B	DAO	50	7	9	3
5520		LEAR	06 05 0025	S27 E50	06 8.9		B	DAO	70	6	8	3
5520		SVTO	06 05 0655	S27 E48	06 9.0		B	DSO	50	8	8	2
5520		BOUL	06 05 1300	S27 E42	06 8.8		B	DAI	70	8	7	1
5520		RAMY	06 05 1410	S26 E43	06 8.9		B	DAO	50	11	8	3
5520	25274	HOLL	06 05 1450	S28 E41	06 8.8		B	BXO	30	11	10	3
5520		MWIL	06 05 1515	S27 E42	06 8.9	5	(B)					
5520		PALE	06 05 1815	S28 E42	06 9.0		B	DAO	50	6	8	3
5520		CULG	06 06 0310	S26 E36	06 8.9		B	CAO	20	7	9	3
5520		BOUL	06 06 1316	S26 E29	06 8.8		B	CRO	30	7	8	2
5520		RAMY	06 06 1320	S26 E30	06 8.9		B	CRO	30	8	8	4
5520		HOLL	06 06 1450	S27 E28	06 8.8		B	CRO	20	7	9	3
5520	25274	MWIL	06 06 1515	S27 E29	06 8.9	5	(BP)					
5520		PALE	06 06 1940	S27 E27	06 8.9		B	BXO	20	14	1	3
5520		CULG	06 07 0320	S26 E19	06 8.6		A	HR	20	5	1	2
5520		SVTO	06 07 0513	S27 E20	06 8.8		B	CRO	10	11	9	2
5520		HOLL	06 07 1245	S26 E16	06 8.8		B	BXO	10	11	5	3
5520		RAMY	06 07 1427	S26 E15	06 8.8		B	BXO	20	11	6	3

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

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Jun 89

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5520	25274	MWIL	06 07 1515	S27 E15	06 8.8	4	(BP)					
5520		PALE	06 07 2020	S26 E12	06 8.8		B	BXO	10	10	6	3
5520		CULG	06 08 0340	S26 E07	06 8.7		A	HR	10	3	2	2
5520		RAMY	06 08 1413	S27 E01	06 8.7		A	AX	10	4	2	2
5520	25274	MWIL	06 08 1515	S27 E01	06 8.7	4	(BP)					
5520		BOUL	06 08 1543	S25 E03	06 8.9		B	BXO	20	8	4	3
5520		HOLL	06 08 1715	S25 W01	06 8.6		B	BXO	20	8	5	3
5520		SVTO	06 09 0456	S28 W01	06 9.1		A	AX		1		2
5520		HOLL	06 09 1445	S23 W15	06 8.4		A	AX	10	3	2	3
5520	25274	MWIL	06 09 1500	S24 W13	06 8.6	4	(AP)					
5520		PALE	06 09 1750	S26 W14	06 8.6		B	BXO		3	5	4
5520		SVTO	06 10 0504	S26 W16	06 9.0		A	AX		1		2
5520	25274	MWIL	06 10 1530	S24 W22	06 8.9	3	(AP)					
5532		SVTO	06 09 0456	S12 E03	06 9.4		B	CSO	10	5	4	2
5532		RAMY	06 09 1425	S12 W03	06 9.4		B	BXO	20	6	4	3
5532		HOLL	06 09 1445	S11 W04	06 9.3		B	BXO	30	12	5	3
5532	25292	MWIL	06 09 1500	S12 W04	06 9.3	4	(B)					
5532		PALE	06 09 1750	S11 W05	06 9.4		B	BXO	20	6	5	4
5532		BOUL	06 10 1338	S12 W16	06 9.4		B	BXO		3	5	2
5532		RAMY	06 10 1410	S13 W16	06 9.4		B	CAO	10	3	5	2
5532	25292	MWIL	06 10 1530	S11 W17	06 9.4	4	(BP)					
5532		HOLL	06 10 1919	S10 W19	06 9.4		B	BXO		3	5	4
5532		PALE	06 10 2105	S11 W20	06 9.4		B	BXO		2	6	2
5532		LEAR	06 11 0145	S12 W23	06 9.3		B	CSO	20	2	6	1
5532	25292	MWIL	06 11 1515	S11 W34	06 9.1	4	(AP)					
5532		BOUL	06 11 1520	S10 W33	06 9.1		A	AX		3	1	3
5532		HOLL	06 11 1630	S11 W33	06 9.2		B	BXO	10	2	2	4
5532		RAMY	06 11 1734	S12 W35	06 9.1		A	AX	10	2	1	2
5532		PALE	06 13 1735	S07 W61	06 9.2		A	AX		1		3
5531		HOLL	06 07 1245	N12 E32	06 9.9		A	AX		1		3
5531		RAMY	06 08 1413	N16 E12	06 9.5		A	AX	10	4	2	2
5531	25285	MWIL	06 08 1515	N16 E12	06 9.5	5	(BF)					
5531		BOUL	06 08 1543	N16 E12	06 9.6		B	CAO	30	5	3	3
5531		HOLL	06 08 1715	N16 E10	06 9.5		B	BXO	20	6	4	3
5531		SVTO	06 09 0456	N16 E03	06 9.4		B	DRO	30	6	4	2
5531		RAMY	06 09 1425	N16 W02	06 9.4		B	CAO	40	11	6	3
5531		HOLL	06 09 1445	N14 E01	06 9.7		B	CAO	70	13	11	3
5531	25285	MWIL	06 09 1500	N16 W02	06 9.5	5	(BF)					
5531		PALE	06 09 1750	N15 W04	06 9.4		B	CSO	30	9	6	4
5531		BOUL	06 10 1338	N15 W09	06 9.9		B	DAO	30	17	7	2
5531		RAMY	06 10 1410	N16 W15	06 9.4		B	DAO	80	15	7	2
5531	25285	MWIL	06 10 1530	N16 W15	06 9.5	5	(BF)					
5531		HOLL	06 10 1919	N18 W17	06 9.5		B	CAI	50	19	8	4
5531		PALE	06 10 2105	N17 W20	06 9.3		B	BXO	10	13	8	2
5531		LEAR	06 11 0145	N16 W21	06 9.5		B	DSO	30	7	7	1
5531		SVTO	06 11 0828	N17 W26	06 9.4				60	0	9	1
5531	25285	MWIL	06 11 1515	N16 W29	06 9.4	4	(BF)					
5531		BOUL	06 11 1520	N16 W28	06 9.5		B	DRO	30	10	7	3
5531		HOLL	06 11 1630	N17 W28	06 9.5		B	DAO	80	12	8	4
5531		RAMY	06 11 1734	N17 W30	06 9.4		B	BXO	30	9	7	2
5531		PALE	06 11 2000	N17 W32	06 9.4		B	BXO	50	14	8	3
5531		SVTO	06 12 0655	N18 W40	06 9.2		B	CAO	40	5	8	2
5531		BOUL	06 12 1320	N16 W40	06 9.5		B	BXO	10	5	8	2
5531		HOLL	06 12 1435	N17 W43	06 9.3		B	DSO	110	10	9	3
5531	25285	MWIL	06 12 1600	N16 W44	06 9.3	5	(BF)					
5531		PALE	06 12 1945	N16 W46	06 9.3		B	CAO	50	17	9	3
5531		LEAR	06 13 0100	N16 W50	06 9.2		B	CSO	90	10	10	1
5531		SVTO	06 13 0905	N16 W55	06 9.2		B	DAO	90	9	9	2
5531		RAMY	06 13 1307	N16 W58	06 9.1		B	CAO	60	15	11	3
5531		BOUL	06 13 1321	N16 W55	06 9.4		B	CAI	60	5	8	1
5531	25285	MWIL	06 13 1600	N16 W58	06 9.3	5	(B)					
5531		PALE	06 13 1735	N16 W59	06 9.2		B	DAO	100	9	9	3
5531		HOLL	06 13 1920	N16 W58	06 9.4		B	BXO	110	18	11	4
5531		LEAR	06 14 0109	N16 W62	06 9.3		B	DAO	120	11	10	3
5531		CULG	06 14 0425	N17 W62	06 9.5		B	CSO	30	3	4	2
5531		SVTO	06 14 1430	N16 W66	06 9.6		B	FAI	50	13	18	2
5531		RAMY	06 14 1504	N17 W70	06 9.3		B	EAO	130	12	14	2

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

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat Mo Day	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5531		HOLL	06 14 1510	N17	W63	06 9.8		B	BXO	160	8	19	4
5531	25285	MWIL	06 14 1530	N17	W69	06 9.4	5	(BG)					
5531		BOUL	06 14 1707	N17	W64	06 9.8		B	FSO	70	8	19	1
5531		PALE	06 14 1920	N15	W71	06 9.4		B	DAI	120	10	10	3
5531		LEAR	06 15 0051	N17	W72	06 9.6		B	FAO	210	10	16	3
5531		CULG	06 15 0450	N18	W68	06 10.0		B	CSO	30	5	11	2
5531		SVTO	06 15 1155	N16	W75	06 9.8		B	EAO	230	11	14	2
5531		BOUL	06 15 1348	N16	W73	06 10.0		B	ESI	210	6	11	3
5531		RAMY	06 15 1407	N15	W80	06 9.5		A	BXO	90	10	19	2
5531	25285	MWIL	06 15 1430	N17	W77	06 9.7	4	B)					
5531		HOLL	06 15 1640	N17	W72	06 10.2		B	EAO	450	8	12	4
5531		PALE	06 15 1953	N16	W76	06 10.1		B	CAO	80	3	8	3
5531		LEAR	06 16 0108	N18	W80	06 9.9		B	EAO	150	4	12	3
5531	25285	MWIL	06 16 1440	N18	W86	06 10.1	3	AF					
5531		HOLL	06 16 1530	N18	W82	06 10.4		A	AX	30	1	2	3
5521	25276	MWIL	06 03 1430	S19	E80	06 9.7	4	(B)					
5521		RAMY	06 03 1536	S19	E78	06 9.6		B	DKI	360	6	8	2
5521		PALE	06 03 2030	S19	E80	06 9.9		B	DKO	450	10	8	3
5521		HOLL	06 03 2150	S19	E77	06 9.8		B	DKO	440	9	10	2
5521		LEAR	06 04 0020	S19	E74	06 9.7		B	DKI	420	6	10	3
5521		SVTO	06 04 1016	S19	E69	06 9.7		B	DKI	670	15	10	2
5521		RAMY	06 04 1357	S18	E65	06 9.5		B	DAI	800	15	9	3
5521		HOLL	06 04 1545	S19	E65	06 9.6		BD	DKI	700	32	10	3
5521		PALE	06 04 1935	S20	E66	06 9.9		B	EKI	960	15	11	3
5521		LEAR	06 05 0025	S19	E61	06 9.7		B	EKI	680	25	11	3
5521		SVTO	06 05 0655	S20	E60	06 9.9		BGD	EKI	860	35	12	2
5521		BOUL	06 05 1300	S19	E55	06 9.7		B	EKC	700	17	11	1
5521		RAMY	06 05 1410	S18	E55	06 9.8		BGD	EKC	1160	36	12	3
5521		HOLL	06 05 1450	S19	E53	06 9.7		BD	EKI	680	56	11	3
5521	25276	MWIL	06 05 1515	S19	E54	06 9.7	6	(D)					
5521		PALE	06 05 1815	S20	E54	06 9.9		B	EKI	1000	31	12	3
5521		CULG	06 06 0310	S18	E48	06 9.8		BD	EKI	810	24	11	3
5521		BOUL	06 06 1316	S19	E41	06 9.7		B	EKC	660	29	11	2
5521		RAMY	06 06 1320	S19	E42	06 9.8		BD	EKC	960	51	12	4
5521		HOLL	06 06 1450	S19	E42	06 9.8		BD	EKC	790	36	11	3
5521	25276	MWIL	06 06 1515	S19	E41	06 9.8	6	(D)					
5521		PALE	06 06 1940	S20	E39	06 9.8		BD	EKC	850	35	11	3
5521		CULG	06 07 0320	S18	E34	06 9.7		BD	EKI	740	31	13	2
5521		SVTO	06 07 0513	S19	E33	06 9.7		BD	EKC	1050	47	12	2
5521		HOLL	06 07 1245	S19	E30	06 9.8		BD	EKC	630	41	12	3
5521		RAMY	06 07 1427	S19	E30	06 9.9		BG	EKC	670	42	13	3
5521	25276	MWIL	06 07 1515	S19	E28	06 9.8	5	(D)					
5521		PALE	06 07 2020	S18	E26	06 9.8		BG	EKI	780	50	13	3
5521		CULG	06 08 0340	S19	E21	06 9.7		B	EAI	250	16	13	2
5521		RAMY	06 08 1413	S18	E18	06 10.0		BG	FKI	590	64	16	2
5521	25276	MWIL	06 08 1515	S19	E15	06 9.8	5	(D)					
5521		BOUL	06 08 1543	S19	E16	06 9.9		B	EKC	630	52	13	3
5521		HOLL	06 08 1715	S21	E15	06 9.9		BD	FAI	630	98	17	3
5521		SVTO	06 09 0456	S20	E09	06 9.9		B	EKI	480	60	14	2
5521		RAMY	06 09 1425	S21	E03	06 9.8		B	FAI	410	54	17	3
5521		HOLL	06 09 1445	S21	E04	06 9.9		BD	FKI	520	76	19	3
5521	25276	MWIL	06 09 1500	S19	E02	06 9.8	5	(BG)					
5521		PALE	06 09 1750	S22	E01	06 9.8		BG	FKI	380	45	16	4
5521		SVTO	06 10 0504	S21	W07	06 9.7		B	EKI	330	44	15	2
5521		BOUL	06 10 1338	S20	W12	06 9.6		B	EKI	290	31	14	2
5521		RAMY	06 10 1410	S20	W08	06 10.0		B	FKI	330	36	19	2
5521	25276	MWIL	06 10 1530	S18	W12	06 9.7	5	(BG)					
5521		HOLL	06 10 1919	S19	W13	06 9.8		B	CAI	260	36	16	4
5521		PALE	06 10 2105	S20	W17	06 9.6		B	FKI	320	34	16	2
5521		LEAR	06 11 0145	S18	W17	06 9.8		B	EAO	250	16	14	1
5521		SVTO	06 11 0828	S20	W23	06 9.6		B	FKO	210	34	16	1
5521	25276	MWIL	06 11 1515	S17	W25	06 9.7	5	(BG)					
5521		BOUL	06 11 1520	S17	W24	06 9.8		B	EAI	200	51	14	3
5521		HOLL	06 11 1630	S18	W25	06 9.8		BG	CAI	330	48	21	4
5521		RAMY	06 11 1734	S18	W25	06 9.8		B	FKI	300	47	17	2
5521		PALE	06 11 2000	S20	W29	06 9.6		B	FAI	340	41	16	3
5521		SVTO	06 12 0655	S19	W37	06 9.5		BG	FKI	420	38	20	2
5521		BOUL	06 12 1320	S17	W36	06 9.8		B	FAI	250	18	18	2

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual		
			Mo	Day (UT)											
5521	25276	HOLL	06	12	1435	S18 W38	06	9.7	BG	FSO	560	27	22	3	
5521		MWIL	06	12	1600	S17 W41	06	9.5	5	(BG)					
5521		PALE	06	12	1945	S20 W42	06	9.6	BG	FAI	320	45	21	3	
5521		LEAR	06	13	0100	S17 W48	06	9.4	B	EAO	370	19	12	1	
5521		SVTO	06	13	0905	S16 W55	06	9.2	BG	ESI	230	17	14	2	
5521		RAMY	06	13	1307	S17 W52	06	9.6	BG	FKO	250	29	16	3	
5521		BOUL	06	13	1321	S16 W53	06	9.5	B	EAI	140	10	13	1	
5521		HOLL	06	13	1410	S16 W58	06	9.2	BG	ESO	360	22	14	3	
5521		MWIL	06	13	1600	S17 W54	06	9.6	5	(BG)					
5521		PALE	06	13	1735	S20 W55	06	9.5	BG	FAI	180	15	20	3	
5521	LEAR	06	14	0109	S17 W63	06	9.3	B	EAO	290	17	14	3		
5521	CULG	06	14	0425	S14 W64	06	9.3	B	ESO	70	4	12	2		
5521	SVTO	06	14	1430	S16 W70	06	9.3	BG	EAO	320	13	14	2		
5521	RAMY	06	14	1504	S17 W69	06	9.4	B	EAO	340	8	14	2		
5521	HOLL	06	14	1510	S15 W68	06	9.5	B	EAO	570	11	15	4		
5521	25276	MWIL	06	14	1530	S17 W67	06	9.5	5	(D)					
5521		BOUL	06	14	1707	S15 W71	06	9.3	B	ESI	140	5	13	1	
5521		PALE	06	14	1920	S19 W74	06	9.1	B	EAO	210	16	13	3	
5521		LEAR	06	15	0051	S17 W75	06	9.3	B	FAO	330	14	15	3	
5521		CULG	06	15	0450	S14 W78	06	9.3	B	ESO	40	4	13	2	
5521		BOUL	06	15	1348	S15 W77	06	9.7	B	CSO	30	2	2	3	
5521		RAMY	06	15	1407	S16 W80	06	9.5	A	AX	60	5	2	2	
5521		MWIL	06	15	1430	S16 W79	06	9.6	3	X					
5521		HOLL	06	15	1640	S15 W81	06	9.6	B	BXO	60	5	3	4	
5521		PALE	06	15	1953	S16 W79	06	9.8	A	AX		1		3	
5522	25275	MWIL	06	03	1430	N25 E80	06	9.8	3	AP					
5522		RAMY	06	03	1536	N26 E80	06	9.9	A	HA	50	1	2	2	
5522		PALE	06	03	2030	N27 E79	06	10.0	A	HS	60	1	1	3	
5522		HOLL	06	03	2150	N26 E76	06	9.8	A	HS	50	2	1	2	
5522		LEAR	06	04	0020	N26 E75	06	9.8	A	AX	30	2	1	3	
5522		SVTO	06	04	1016	N27 E70	06	9.9	A	HA	30	2	2	2	
5522		RAMY	06	04	1357	N26 E68	06	9.9	A	HS	50	1	2	3	
5522		HOLL	06	04	1545	N25 E65	06	9.7	A	AX	40	4	2	3	
5522		PALE	06	04	1935	N26 E66	06	9.9	A	HS	50	3	2	3	
5522		LEAR	06	05	0025	N27 E61	06	9.8	A	HA	40	3	1	3	
5522	SVTO	06	05	0655	N27 E59	06	9.9	A	HS	50	3	2	2		
5522	BOUL	06	05	1300	N26 E53	06	9.6	A	AX	10	2	1	1		
5522	RAMY	06	05	1410	N26 E53	06	9.7	A	HA	50	3	2	3		
5522	HOLL	06	05	1450	N26 E53	06	9.7	A	AX	40	4	1	3		
5522	25275	MWIL	06	05	1515	N26 E54	06	9.8	5	(AP)					
5522		PALE	06	05	1815	N26 E54	06	9.9	A	HS	40	3	2	3	
5522		CULG	06	06	0310	N27 E47	06	9.8	A	HA	20	2	1	3	
5522		BOUL	06	06	1316	N26 E41	06	9.7	A	HA	60	2	1	2	
5522		RAMY	06	06	1320	N26 E42	06	9.8	A	HA	50	4	2	4	
5522		HOLL	06	06	1450	N26 E42	06	9.9	A	HS	20	3	1	3	
5522		25275	MWIL	06	06	1515	N26 E41	06	9.8	4	(AP)				
5522			PALE	06	06	1940	N26 E38	06	9.8	A	HS	30	2	2	3
5522			CULG	06	07	0320	N27 E34	06	9.8	A	HA	10	2	1	2
5522			SVTO	06	07	0513	N27 E33	06	9.8	A	HS	30	2	2	2
5522	HOLL		06	07	1245	N26 E29	06	9.8	A	HS	10	2	1	3	
5522	RAMY		06	07	1427	N26 E28	06	9.8	A	HR	10	2	2	3	
5522	25275		MWIL	06	07	1515	N26 E28	06	9.8	5	(AP)				
5522			PALE	06	07	2020	N28 E24	06	9.7	A	HS	20	1	1	3
5522			CULG	06	08	0340	N26 E21	06	9.8	A	HR	10	1	1	2
5522			RAMY	06	08	1413	N26 E15	06	9.7	A	HR	20	2	1	2
5522		25275	MWIL	06	08	1515	N25 E15	06	9.8	5	(AP)				
5522			BOUL	06	08	1543	N26 E14	06	9.7	A	HA	30	3	1	3
5522			HOLL	06	08	1715	N26 E15	06	9.9	A	AX	10	3	1	3
5522			SVTO	06	09	0456	N25 E08	06	9.8	A	HA	10	3	1	2
5522			RAMY	06	09	1425	N26 E04	06	9.9	B	BXO	10	5	3	3
5522			HOLL	06	09	1445	N26 E04	06	9.9	B	BXO	20	6	3	3
5522	25275		MWIL	06	09	1500	N26 E05	06	10.0	4	(BP)				
5522			PALE	06	09	1750	N26 E01	06	9.8	B	CRO	10	3	3	4
5522			SVTO	06	10	0504	N25 W06	06	9.7	A	AX		1		2
5522			BOUL	06	10	1338	N25 W09	06	9.9	A	AX		1		2
5522		RAMY	06	10	1410	N26 W06	06	10.1	B	BXO	10	3	7	2	
5522		25275	MWIL	06	10	1530	N26 W10	06	9.9	4	(BP)				
5522			HOLL	06	10	1919	N28 W11	06	9.9	A	AX	10	4	2	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 1989

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
5522		PALE	06 10 2105	N27	W13	06 9.9		B	BXO		2	3	2
5522		LEAR	06 11 0145	N26	W16	06 9.8		A	AX	10	1	1	1
5522		SVTO	06 11 0828	N27	W20	06 9.8		A	AX		1	1	1
5522	25275	MWIL	06 11 1515	N26	W24	06 9.8	4	(AP)					
5522		BOUL	06 11 1520	N26	W22	06 9.9		A	AX		1		3
5522		HOLL	06 11 1630	N26	W22	06 10.0		A	AX	10	1	1	4
5522		PALE	06 11 2000	N28	W30	06 9.5		A	AX		2	2	3
5522A		BOUL	06 08 1543	S25	E22	06 10.3		B	CAO	60	12	4	3
5522A		LEAR	06 11 0145	S25	W12	06 10.1		A	AX	10	1	1	1
5522B	25293	MWIL	06 09 1500	N13	E08	06 10.2	4	(AP)					
5522C	25286	MWIL	06 08 1515	N27	E26	06 10.7	4	(AF)					
5522D	25282	MWIL	06 07 1515	S23	E42	06 10.9	4	(AP)					
5524		RAMY	06 04 1357	S18	E85	06 11.0		A	HA	30	1	1	3
5524		HOLL	06 04 1545	S19	E79	06 10.7		A	HS	30	1	1	3
5524		PALE	06 04 1935	S18	E81	06 11.0		A	HS	30	1	1	3
5524		SVTO	06 05 0655	S18	E79	06 11.3		B	CSO	50	4	11	2
5524		BOUL	06 05 1300	S18	E69	06 10.8		A	AX	10	1	1	1
5524		RAMY	06 05 1410	S17	E69	06 10.8		A	HA	30	2	2	3
5524		HOLL	06 05 1450	S19	E69	06 10.9		A	AX	30	2	1	3
5524	25279	MWIL	06 05 1515	S18	E70	06 11.0	4	(AP)					
5524		PALE	06 05 1815	S18	E70	06 11.1		A	HA	50	2	1	3
5524		CULG	06 06 0310	S17	E64	06 11.0		A	HS	10	1	1	3
5524		BOUL	06 06 1316	S18	E57	06 10.9		A	HR	40	1	1	2
5524		RAMY	06 06 1320	S18	E57	06 10.9		A	HA	20	1	2	4
5524		HOLL	06 06 1450	S18	E57	06 10.9		A	HR	20	1	1	3
5524	25279	MWIL	06 06 1515	S18	E57	06 11.0	5	(AP)					
5524		PALE	06 06 1940	S18	E56	06 11.1		A	HS	20	1	1	3
5524		CULG	06 07 0320	S17	E51	06 11.0		A	HA	10	1	1	2
5524		SVTO	06 07 0513	S20	E47	06 10.8		B	CSO	20	3	5	2
5524		HOLL	06 07 1245	S21	E45	06 11.0		B	BXO	10	2	6	3
5524		RAMY	06 07 1427	S18	E44	06 10.9		A	AX	10	1	1	3
5524	25279	MWIL	06 07 1515	S18	E44	06 11.0	5	(AP)					
5524		PALE	06 07 2020	S17	E43	06 11.1		A	AX		1		3
5524		CULG	06 08 0340	S19	E37	06 11.0		A	AX		1		2
5524		SVTO	06 08 0515	S18	E37	06 11.0		A	HS	10	2	1	2
5524		RAMY	06 08 1413	S19	E32	06 11.0		B	BXO	10	2	3	2
5524	25279	MWIL	06 08 1515	S18	E31	06 11.0	5	(AP)					
5524		BOUL	06 08 1543	S18	E32	06 11.1		A	AX	10	1	1	3
5524		HOLL	06 08 1715	S19	E28	06 10.8		B	BXO	20	5	3	3
5524		SVTO	06 09 0456	S19	E23	06 11.0		B	BXO	10	5	3	2
5524		RAMY	06 09 1425	S18	E18	06 11.0		B	BXO	10	7	4	3
5524		HOLL	06 09 1445	S18	E17	06 10.9		B	BXO	30	11	4	3
5524	25279	MWIL	06 09 1500	S18	E17	06 10.9	4	(BG)					
5524		PALE	06 09 1750	S19	E16	06 11.0		B	BXO	10	7	3	4
5524		SVTO	06 10 0504	S18	E10	06 11.0		B	DAO	40	9	7	2
5524		BOUL	06 10 1338	S18	E05	06 10.9		B	CAO	100	11	6	2
5524		RAMY	06 10 1410	S19	E05	06 11.0		B	CKO	100	8	4	2
5524	25279	MWIL	06 10 1530	S17	E04	06 10.9	5	(B)					
5524		HOLL	06 10 1919	S18	E02	06 10.9		B	DAI	110	11	5	4
5524		PALE	06 10 2105	S19	E01	06 10.9		B	CAO	120	10	4	2
5524		LEAR	06 11 0145	S18	W01	06 11.0		B	DAO	150	13	5	1
5524		SVTO	06 11 0828	S18	W06	06 10.9		B	DAO	100	14	6	1
5524	25279	MWIL	06 11 1515	S17	W08	06 11.0	5	(BG)					
5524		BOUL	06 11 1520	S17	W09	06 10.9		B	DAI	170	19	6	3
5524		HOLL	06 11 1630	S18	W09	06 11.0		B	DAO	150	13	7	4
5524		RAMY	06 11 1734	S18	W09	06 11.0		B	DAO	90	8	6	2
5524		PALE	06 11 2000	S19	W13	06 10.8		B	DAO	150	8	6	3
5524		SVTO	06 12 0655	S19	W18	06 10.9		BD	DAO	130	13	7	2
5524		BOUL	06 12 1320	S16	W21	06 11.0		B	DAO	90	4	5	2
5524		HOLL	06 12 1435	S17	W23	06 10.8		B	DSO	180	8	7	3
5524	25279	MWIL	06 12 1600	S17	W23	06 10.9	5	(BP)					
5524		PALE	06 12 1945	S19	W25	06 10.9		B	DSI	80	12	6	3
5524		LEAR	06 13 0100	S18	W28	06 10.9		B	CSO	80	9	4	1
5524		SVTO	06 13 0905	S19	W32	06 10.9		B	CAI	70	11	4	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5524		RAMY	06 13 1307	S18 W36	06 10.8		B	CAO	100	11	4	3
5524		BOUL	06 13 1321	S17 W33	06 11.0		B	CAI	70	6	5	1
5524		HOLL	06 13 1410	S18 W37	06 10.8		B	DSO	100	16	4	3
5524	25279	MWIL	06 13 1600	S18 W36	06 10.9	5	(BG)					
5524		PALE	06 13 1735	S20 W38	06 10.8		B	DAO	120	9	5	3
5524		LEAR	06 14 0109	S20 W41	06 10.9		B	DAI	180	11	6	3
5524		CULG	06 14 0425	S17 W43	06 10.9		B	CAI	140	9	6	2
5524		SVTO	06 14 1430	S19 W51	06 10.7		B	DAI	160	14	6	2
5524		RAMY	06 14 1504	S19 W48	06 11.0		B	CAO	180	11	4	2
5524		HOLL	06 14 1510	S18 W49	06 10.9		B	DAO	240	10	6	4
5524	25279	MWIL	06 14 1530	S19 W50	06 10.8	5	(D)					
5524		BOUL	06 14 1707	S17 W50	06 10.9		B	DAO	100	7	5	1
5524		PALE	06 14 1920	S21 W55	06 10.6		B	DAO	220	13	5	3
5524		LEAR	06 15 0051	S19 W56	06 10.8		B	DAO	200	13	6	3
5524		CULG	06 15 0450	S17 W59	06 10.7		B	CAO	50	4	3	2
5524		SVTO	06 15 1155	S20 W64	06 10.6		B	CAI	100	6	4	2
5524		BOUL	06 15 1348	S18 W61	06 10.9		B	CAO	90	6	4	3
5524		RAMY	06 15 1407	S20 W64	06 10.7		B	CAO	110	6	4	2
5524	25279	MWIL	06 15 1430	S19 W64	06 10.7	4	(BP)					
5524		HOLL	06 15 1640	S18 W62	06 11.0		B	CAO	220	9	5	4
5524		PALE	06 15 1953	S20 W68	06 10.6		B	CAO	110	3	4	3
5524		LEAR	06 16 0108	S18 W78	06 10.1		B	CAO	120	4	4	3
5524		SVTO	06 16 0932	S19 W74	06 10.7		B	CSO	60	2	4	2
5524		RAMY	06 16 1353	S21 W78	06 10.6		B	BXO	30	7	19	3
5524		BOUL	06 16 1355	S19 W74	06 10.9		A	HS	80	1	2	2
5524	25279	MWIL	06 16 1440	S20 W79	06 10.6	4	AF					
5524		HOLL	06 16 1530	S18 W75	06 10.9		B	CHO	50	2	4	3
5524		PALE	06 16 1815	S20 W80	06 10.6		A	HA	60	1	2	2
5524		LEAR	06 17 0038	S19 W81	06 10.8		B	CAO	20	3	3	3
5526		RAMY	06 07 1427	N14 E46	06 11.1		A	AX	10	2	2	3
5526		SVTO	06 09 0456	N13 E23	06 10.9		B	BXO	10	2	3	2
5526		RAMY	06 09 1425	N18 E12	06 10.5		A	AX	10	2	1	3
5526		HOLL	06 09 1445	N13 E15	06 10.7		B	BXO	20	6	7	3
5526	25294	MWIL	06 09 1500	N12 E17	06 10.9	4	(AP)					
5526		PALE	06 09 1750	N12 E16	06 10.9		A	AX		3	2	4
5526		BOUL	06 10 1338	N12 E04	06 10.9		B	BXO	10	8	4	2
5526		RAMY	06 10 1410	N13 E05	06 11.0		B	CAO	30	6	4	2
5526	25294	MWIL	06 10 1530	N13 E03	06 10.9	4	(B)					
5526		HOLL	06 10 1919	N15 E01	06 10.9		B	BXO	10	9	3	4
5526		PALE	06 10 2105	N13 W01	06 10.8		B	BXO	10	13	4	2
5526		LEAR	06 11 0145	N14 W04	06 10.8		B	DRO	20	7	5	1
5526		SVTO	06 11 0828	N14 W07	06 10.8		B	DAO	40	11	5	1
5526	25294	MWIL	06 11 1515	N14 W11	06 10.8	5	(B)					
5526		BOUL	06 11 1520	N13 W10	06 10.9		B	CRO	10	12	4	3
5526		HOLL	06 11 1630	N13 W10	06 10.9		B	CAO	50	11	5	4
5526		RAMY	06 11 1734	N13 W11	06 10.9		B	BXO	20	10	6	2
5526		PALE	06 11 2000	N13 W14	06 10.8		B	BXO	10	13	5	3
5526		SVTO	06 12 0655	N15 W20	06 10.8		B	CAO	40	12	6	2
5526		BOUL	06 12 1320	N13 W22	06 10.9		B	BXO	20	7	5	2
5526		HOLL	06 12 1435	N14 W23	06 10.9		B	DSO	110	9	6	3
5526	25294	MWIL	06 12 1600	N14 W25	06 10.8	4	(BP)					
5526		PALE	06 12 1945	N13 W25	06 10.9		B	DSO	40	12	6	3
5526		LEAR	06 13 0100	N14 W31	06 10.7		B	DSO	40	9	7	1
5526		SVTO	06 13 0905	N14 W36	06 10.6		B	BXO	30	6	6	2
5526		RAMY	06 13 1307	N13 W37	06 10.7		B	BXO	20	10	8	3
5526		BOUL	06 13 1321	N13 W36	06 10.8		B	BXO	10	4	6	1
5526	25294	MWIL	06 13 1600	N14 W38	06 10.8	4	(BF)					
5526		PALE	06 13 1735	N13 W40	06 10.7		B	CRO	30	8	7	3
5526		HOLL	06 13 1920	N13 W41	06 10.7		B	BXO	20	10	8	4
5526		LEAR	06 14 0109	N11 W43	06 10.8		B	CAO	40	4	7	3
5526		CULG	06 14 0425	N13 W49	06 10.5		A	AX		1		2
5526		SVTO	06 14 1430	N13 W51	06 10.7		B	BXO	20	5	7	2
5526		RAMY	06 14 1504	N14 W52	06 10.7		B	BXO	30	4	7	2
5526		HOLL	06 14 1510	N14 W51	06 10.8		B	BXO	40	3	9	4
5526	25294	MWIL	06 14 1530	N14 W52	06 10.7	4	(BG)					
5526		BOUL	06 14 1707	N13 W54	06 10.6		B	BXO		2	2	1
5526		PALE	06 14 1920	N14 W57	06 10.5		B	BXO	10	9	12	3
5526		LEAR	06 15 0051	N12 W56	06 10.8		B	DAO	10	10	7	3

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	ChP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5526		CULG	06	15	0450	N15	W59	06	10.7		B	BXO	10	3	5	2
5526		SVTO	06	15	1155	N12	W65	06	10.6		B	CAO	30	3	5	2
5526		BOUL	06	15	1348	N13	W64	06	10.7		B	CAO	20	5	6	3
5526		RAMY	06	15	1407	N11	W68	06	10.5		B	BXO	20	5	6	2
5526	25294	MWIL	06	15	1430	N12	W67	06	10.5	4	(B)					
5526		HOLL	06	15	1640	N13	W65	06	10.8		B	CAO	70	5	8	4
5526		PALE	06	15	1953	N11	W71	06	10.5		B	BXO	30	3	8	3
5526		LEAR	06	16	0108	N12	W73	06	10.5		B	BXO	10	2	4	3
5526		SVTO	06	16	0932	N09	W71	06	11.1		A	AX		1		2
5526		RAMY	06	16	1353	N07	W78	06	10.7		A	AX	30	1	1	3
5526		SVTO	06	17	0748	N09	W72	06	11.9		A	AX		1		2
5526A		SVTO	06	07	0513	N14	E51	06	11.1		B	BXO	10	3	2	2
5526A		HOLL	06	07	1245	N14	E48	06	11.1		A	AX		2		3
5526A	25283	MWIL	06	07	1515	N14	E47	06	11.2	4	(B)					
5547		RAMY	06	16	1353	N08	W66	06	11.6		A	AX	10	1	1	3
5547		BOUL	06	16	1355	N09	W62	06	11.9		A	AX		1		2
5547	25311	MWIL	06	16	1440	N08	W66	06	11.7	4	(AF)					
5527		SVTO	06	07	0513	N28	E65	06	12.3		A	AX	10	3	2	2
5527		HOLL	06	07	1245	N26	E60	06	12.2		A	AX		1		3
5527		SVTO	06	08	0515	N28	E51	06	12.2		A	AX	10	2	2	2
5527		RAMY	06	08	1413	N27	E47	06	12.2		A	AX	10	1		2
5527	25287	MWIL	06	08	1515	N26	E46	06	12.2	4	(AP)					
5527		HOLL	06	08	1715	N27	E45	06	12.2		A	AX	10	1	1	3
5527		SVTO	06	09	0456	N27	E39	06	12.2		A	HR	10	1		2
5527		RAMY	06	09	1425	N27	E34	06	12.2		A	AX	10	2	2	3
5527		HOLL	06	09	1445	N27	E33	06	12.2		A	AX	10	1		3
5527	25287	MWIL	06	09	1500	N26	E33	06	12.2	4	(AP)					
5527		PALE	06	09	1750	N27	E32	06	12.2		A	AX		1		4
5527		SVTO	06	10	0504	N27	E24	06	12.1		B	BXO		3	3	2
5527		RAMY	06	10	1410	N25	E20	06	12.1		B	BXO	90	4	3	2
5527	25287	MWIL	06	10	1530	N26	E19	06	12.1	4	(AP)					
5527		HOLL	06	10	1919	N28	E18	06	12.2		B	BXO		3	4	4
5527		PALE	06	10	2105	N27	E16	06	12.1		A	AX		4	2	2
5527		LEAR	06	11	0145	N26	E12	06	12.0		A	AX	10	2	2	1
5527		SVTO	06	11	0828	N27	E09	06	12.0		A	AX		1	1	1
5527	25287	MWIL	06	11	1515	N26	E05	06	12.0	3	(AP)					
5527		RAMY	06	11	1734	N27	E05	06	12.1		B	BXO	90	5	4	2
5527		PALE	06	11	2000	N26	E03	06	12.1		A	AX		2	2	3
5527		SVTO	06	12	0655	N28	W03	06	12.0		A	AX		3	2	2
5527	25287	MWIL	06	12	1600	N27	W06	06	12.2	4	(AP)					
5527		LEAR	06	13	0100	N27	W12	06	12.1		A	AX	10	1	1	1
5527		RAMY	06	13	1307	N27	W17	06	12.2		A	AX		1		3
5527	25287	MWIL	06	13	1600	N27	W19	06	12.2	4	(AP)					
5527		HOLL	06	13	1920	N27	W16	06	12.5		B	BXO	20	4	11	4
5548		LEAR	06	16	0108	S21	W51	06	12.1		B	BXO	10	3	2	3
5548		BOUL	06	16	1355	S22	W59	06	12.0		A	AX		1		2
5548		HOLL	06	16	1530	S22	W60	06	12.0		A	AX	10	2	1	3
5548		PALE	06	16	1815	S22	W62	06	12.0		A	AX		1		2
5545		RAMY	06	15	1407	N11	W41	06	12.5		A	AX	10	3	1	2
5545	25307	MWIL	06	15	1430	N11	W41	06	12.5	4	(B)					
5545		HOLL	06	15	1640	N11	W41	06	12.6		A	AX	10	3	2	4
5545		PALE	06	15	1953	N10	W45	06	12.4		B	BXO		2	3	3
5545		LEAR	06	16	0108	N11	W48	06	12.4		B	DAO	30	3	4	3
5545		SVTO	06	16	0932	N11	W51	06	12.6		B	DSO	50	3	5	2
5545		RAMY	06	16	1353	N10	W55	06	12.4		B	CAO	50	6	7	3
5545		BOUL	06	16	1355	N11	W53	06	12.6		B	CAO	30	6	5	2
5545	25307	MWIL	06	16	1440	N10	W56	06	12.4	4	(B)					
5545		HOLL	06	16	1530	N11	W57	06	12.3		B	ESO	180	8	12	3
5545		PALE	06	16	1815	N09	W53	06	12.8		B	CAO	90	6	14	2
5545		LEAR	06	17	0038	N09	W64	06	12.2		B	CAO	30	6	9	3
5545		SVTO	06	17	0748	N10	W64	06	12.5		B	CAO	40	2	6	2
5545		RAMY	06	17	1240	N10	W68	06	12.4		B	CSO	100	4	7	4
5545		BOUL	06	17	1400	N10	W67	06	12.5		B	CSO	80	2	7	2
5545	25307	MWIL	06	17	1430	N10	W70	06	12.3	5	(BP)					

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	Cmd	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual
5545		PALE	06 17 1840	N09	W72	06 12.4		B	CAO	60	2	7	4
5545		LEAR	06 18 0014	N09	W78	06 12.1		A	HH	120	1	4	3
5545		CULG	06 18 0115	N11	W78	06 12.2		A	HS	40	1	2	3
5545		SVTO	06 18 0606	N09	W85	06 11.9		A	HA	50	1	1	2
5545A	25296	MWIL	06 10 1530	N25	E31	06 13.0	4	(AF)					
5545A	25296	MWIL	06 11 1515	N27	E17	06 13.0	4	(AF)					
5545A		LEAR	06 15 0051	N27	W21	06 13.4		B	BXO	10	2	3	3
5545A		RAMY	06 15 1407	N27	W31	06 13.2		A	AX	10	2	1	2
5530		SVTO	06 08 0515	S08	E82	06 14.4		A	HH	50	1	1	2
5530		RAMY	06 08 1413	S09	E79	06 14.5		B	EKI	180	6	11	2
5530	25289	MWIL	06 08 1515	S10	E79	06 14.6	5	B)					
5530		BOUL	06 08 1543	S10	E78	06 14.5		B	CAO	300	10	8	3
5530		HOLL	06 08 1715	S10	E75	06 14.3		B	CKI	270	26	10	3
5530		SVTO	06 09 0456	S09	E70	06 14.4		B	EKO	500	7	12	2
5530		RAMY	06 09 1425	S10	E65	06 14.5		B	EAO	310	7	12	3
5530		HOLL	06 09 1445	S10	E65	06 14.5		B	EKO	280	11	11	3
5530	25289	MWIL	06 09 1500	S11	E65	06 14.5	5	(B)					
5530		PALE	06 09 1750	S11	E65	06 14.6		B	EKO	360	6	11	4
5530		SVTO	06 10 0504	S08	E56	06 14.4		B	EKO	320	15	12	2
5530		BOUL	06 10 1338	S10	E52	06 14.5		B	EAO	280	12	14	2
5530		RAMY	06 10 1410	S10	E53	06 14.6		B	EKO	320	10	12	2
5530	25289	MWIL	06 10 1530	S10	E52	06 14.5	5	(BG)					
5530		HOLL	06 10 1919	S10	E48	06 14.4		B	EAO	300	14	13	4
5530		PALE	06 10 2105	S10	E48	06 14.5		B	EAO	270	15	13	2
5530		LEAR	06 11 0145	S10	E45	06 14.4		B	EKO	280	11	14	1
5530		SVTO	06 11 0828	S11	E42	06 14.5		B	EAO	330	25	15	1
5530	25289	MWIL	06 11 1515	S10	E37	06 14.4	5	(BG)					
5530		BOUL	06 11 1520	S10	E36	06 14.3		B	EAO	250	18	15	3
5530		HOLL	06 11 1630	S11	E38	06 14.5		B	FAO	280	14	16	4
5530		RAMY	06 11 1734	S10	E36	06 14.4		B	FKO	280	17	14	2
5530		PALE	06 11 2000	S10	E35	06 14.5		B	EAO	270	17	15	3
5530		SVTO	06 12 0655	S10	E28	06 14.4		BG	EKO	330	12	15	2
5530		BOUL	06 12 1320	S09	E26	06 14.5		B	DAO	200	11	6	2
5530		HOLL	06 12 1435	S11	E25	06 14.5		B	EKO	490	8	17	3
5530	25289	MWIL	06 12 1600	S10	E24	06 14.5	6	(BP)					
5530		PALE	06 12 1945	S10	E24	06 14.6		B	FAO	350	16	16	3
5530		LEAR	06 13 0100	S10	E20	06 14.5		B	EKO	370	19	15	1
5530		SVTO	06 13 0905	S10	E14	06 14.4		B	FKO	440	14	17	2
5530		RAMY	06 13 1307	S09	E13	06 14.5		B	FKO	330	25	17	3
5530		BOUL	06 13 1321	S09	E12	06 14.4		B	FAO	220	11	16	1
5530	25289	MWIL	06 13 1600	S10	E11	06 14.5	5	(BG)					
5530		PALE	06 13 1735	S10	E11	06 14.5		B	FKO	320	10	17	3
5530		HOLL	06 13 1920	S10	E10	06 14.5		B	FHO	580	38	17	4
5530		LEAR	06 14 0109	S12	E06	06 14.5		B	FAO	390	17	18	3
5530		CULG	06 14 0425	S09	E05	06 14.5		B	FAO	180	9	15	2
5530		RAMY	06 14 1504	S10	E00	06 14.6		B	FKO	330	8	17	2
5530		HOLL	06 14 1510	S10	W01	06 14.5		B	FSO	160	12	17	4
5530	25289	MWIL	06 14 1530	S10	W03	06 14.4	5	(BG)					
5530		BOUL	06 14 1707	S10	W03	06 14.5		B	FAO	250	9	16	1
5530		PALE	06 14 1920	S10	W04	06 14.5		B	FKO	240	8	16	3
5530		LEAR	06 15 0051	S12	W06	06 14.6		B	FAO	350	18	18	3
5530		CULG	06 15 0450	S09	W09	06 14.5		B	FAO	150	6	15	2
5530		SVTO	06 15 1155	S10	W13	06 14.5		B	FKO	220	14	17	2
5530		BOUL	06 15 1348	S09	W13	06 14.6		B	FKO	250	15	16	3
5530		RAMY	06 15 1407	S10	W14	06 14.5		B	FAO	320	8	17	2
5530	25289	MWIL	06 15 1430	S10	W15	06 14.5	5	(B)					
5530		HOLL	06 15 1640	S10	W14	06 14.6		B	FKO	110	7	17	4
5530		PALE	06 15 1953	S10	W18	06 14.5		B	FKO	300	7	17	3
5530		LEAR	06 16 0108	S09	W19	06 14.6		B	FAO	310	7	18	3
5530		SVTO	06 16 0932	S10	W23	06 14.7		B	FHO	200	4	18	2
5530		RAMY	06 16 1353	S10	W27	06 14.5		B	FAO	330	2	17	3
5530		BOUL	06 16 1355	S09	W26	06 14.6		B	EAO	220	6	16	2
5530	25289	MWIL	06 16 1440	S10	W28	06 14.5	5	(B)					
5530		HOLL	06 16 1530	S10	W26	06 14.7		B	FSO	150	3	18	3
5530		PALE	06 16 1815	S10	W28	06 14.6		B	FKO	260	3	17	2
5530		LEAR	06 17 0038	S09	W32	06 14.6		B	FSO	220	4	17	3
5530		SVTO	06 17 0748	S09	W35	06 14.7		B	FSO	200	6	17	2

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 CND	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5530		RAMY	06 17 1240	S10 W39	06 14.6		B	FHO	310	4	16	4
5530		BOUL	06 17 1400	S09 W39	06 14.6		B	ESO	200	2	17	2
5530	25289	MWIL	06 17 1430	S10 W41	06 14.5	5	(B)					
5530		HOLL	06 17 1555	S11 W42	06 14.5		B	FSO	250	4	18	3
5530		PALE	06 17 1840	S10 W42	06 14.6		B	FHO	240	7	17	4
5530		LEAR	06 18 0014	S10 W46	06 14.5		B	FHO	210	2	17	3
5530		CULG	06 18 0115	S09 W45	06 14.7		B	ESO	300	40	14	3
5530		SVTO	06 18 0606	S09 W49	06 14.6		B	FSO	260	3	18	2
5530		RAMY	06 18 1245	S09 W52	06 14.6		B	FHO	260	6	18	3
5530		BOUL	06 18 1415	S08 W52	06 14.7		B	FSO	190	3	17	3
5530		HOLL	06 18 1426	S10 W53	06 14.6		B	FSO	160	4	16	3
5530	25289	MWIL	06 18 1430	S09 W52	06 14.7	5	(B)					
5530		LEAR	06 19 0120	S09 W59	06 14.6		B	FSO	240	4	16	3
5530		CULG	06 19 0210	S09 W61	06 14.5		B	FHO	200	2	17	2
5530		SVTO	06 19 0625	S10 W62	06 14.6		B	FSO	150	2	18	4
5530		HOLL	06 19 1415	S10 W64	06 14.8		B	FSO	280	2	15	3
5530		RAMY	06 19 1450	S09 W67	06 14.6		B	FSO	140	2	19	3
5530		BOUL	06 19 1455	S08 W68	06 14.5		B	FAO	260	3	19	3
5530	25289	MWIL	06 19 1615	S09 W69	06 14.5	5	(B)					
5530		PALE	06 19 1925	S10 W71	06 14.5		B	FAO	200	4	18	3
5530		CULG	06 20 0220	S09 W72	06 14.7		B	ESO	180	2	15	2
5530		SVTO	06 20 0520	S10 W74	06 14.7		B	DSO	120	2	14	3
5530		BOUL	06 20 1336	S09 W79	06 14.6		A	HA	100	1	2	1
5530		HOLL	06 20 1415	S09 W72	06 15.2		B	AX	60	1	1	3
5530		RAMY	06 20 1427	S09 W73	06 15.1		A	HA	60	1	2	3
5530	25289	MWIL	06 20 1500	S09 W74	06 15.1	4	AF					
5530		PALE	06 20 1925	S11 W78	06 14.9		A	HA	60	1	2	2
5530		LEAR	06 21 0045	S10 W80	06 15.0		A	HA	30	1	2	3
5528		HOLL	06 07 1245	N17 E88	06 14.2		A	AX		1		3
5528		PALE	06 07 2020	N23 E83	06 14.2		A	AX	30	1	2	3
5528		CULG	06 08 0340	N19 E82	06 14.4		B	DAI	200	3	8	2
5528		SVTO	06 08 0515	N22 E81	06 14.4		B	DSI	320	6	7	2
5528		RAMY	06 08 1413	N22 E78	06 14.6		B	FKI	810	5	18	2
5528	25288	MWIL	06 08 1515	N21 E76	06 14.5	5	D*)					
5528		BOUL	06 08 1543	N21 E77	06 14.5		B	DKI	820	18	9	3
5528		HOLL	06 08 1715	N22 E75	06 14.5		B	EKI	780	50	11	3
5528		SVTO	06 09 0456	N21 E70	06 14.6		B	FKC	1530	24	16	2
5528		RAMY	06 09 1425	N22 E68	06 14.8		BG	FKI	1870	24	21	3
5528		HOLL	06 09 1445	N20 E65	06 14.6		BG	EKI	1250	76	14	3
5528	25288	MWIL	06 09 1500	N21 E67	06 14.8	6	(D)					
5528		PALE	06 09 1750	N21 E68	06 14.9		BG	FKI	1630	42	22	4
5528		SVTO	06 10 0504	N21 E59	06 14.7		BGD	FKI	1400	74	24	2
5528		BOUL	06 10 1338	N19 E55	06 14.8		B	FKC	1110	54	21	2
5528		RAMY	06 10 1410	N19 E57	06 14.9		BGD	FKC	2110	38	23	2
5528	25288	MWIL	06 10 1530	N21 E54	06 14.8	6	(D)*					
5528		HOLL	06 10 1919	N21 E54	06 14.9		BGD	FKC	1850	68	20	4
5528		PALE	06 10 2105	N23 E52	06 14.9		BGD	FKC	1440	40	16	2
5528		LEAR	06 11 0145	N21 E51	06 15.0		BGD	FKC	1710	57	23	1
5528		SVTO	06 11 0828	N21 E46	06 14.9		BGD	FKC	1520	85	24	1
5528	25288	MWIL	06 11 1515	N21 E40	06 14.7	6	(D)					
5528		BOUL	06 11 1520	N19 E43	06 14.9		B	FKC	1110	94	22	3
5528		HOLL	06 11 1630	N20 E41	06 14.8		BGD	FKC	2250	68	22	4
5528		RAMY	06 11 1734	N19 E41	06 14.9		BGD	FKC	2030	83	26	2
5528		PALE	06 11 2000	N21 E42	06 15.0		BGD	FKC	1670	78	27	3
5528		SVTO	06 12 0655	N21 E36	06 15.0		BGD	FKC	2150	97	25	2
5528		BOUL	06 12 1320	N19 E28	06 14.7		B	FAC	1540	71	17	2
5528		HOLL	06 12 1435	N21 E32	06 15.1		BGD	FKI	2150	51	23	3
5528	25288	MWIL	06 12 1600	N21 E27	06 14.7	6	(D)					
5528		PALE	06 12 1945	N22 E28	06 15.0		BGD	FKC	2340	0	20	3
5528		LEAR	06 13 0100	N23 E24	06 14.9		BGD	FKC	2040	66	23	1
5528		SVTO	06 13 0905	N21 E18	06 14.7		BG	FKC	2360	84	21	2
5528		RAMY	06 13 1307	N21 E16	06 14.8		BGD	FKC	2260	81	18	3
5528		BOUL	06 13 1321	N20 E15	06 14.7		B	FKC	1500	42	16	1
5528	25288	MWIL	06 13 1600	N20 E13	06 14.7	6	(D)					
5528		PALE	06 13 1735	N22 E15	06 14.9		BGD	FKC	2120	73	20	3
5528		HOLL	06 13 1920	N21 E12	06 14.7		BGD	FKC	2400	0	26	4
5528		LEAR	06 14 0109	N19 E11	06 14.9		BGD	FKC	2360	90	19	3
5528		CULG	06 14 0425	N22 E08	06 14.8		BGD	FKI	1800	40	19	2

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5528		SVTO	06 14 1430	N20	E01	06 14.7		BGD	FKC	2310	76	21	2
5528		RAMY	06 14 1504	N22	E03	06 14.8		BGD	FKI	2430	51	19	2
5528		HOLL	06 14 1510	N21	W02	06 14.5		BGD	FKC	2700	74	20	4
5528	25288	MWIL	06 14 1530	N20	W01	06 14.6	5	(D)					
5528		BOUL	06 14 1707	N21	E01	06 14.8		B	FKC	1650	62	18	1
5528		PALE	06 14 1920	N20	W01	06 14.7		BGD	FKC	2390	62	17	3
5528		LEAR	06 15 0051	N19	W03	06 14.8		BGD	FKC	2200	83	18	3
5528		CULG	06 15 0450	N21	W05	06 14.8		BGD	FKI	2200	55	17	2
5528		SVTO	06 15 1155	N20	W09	06 14.8		BGD	FKC	1970	97	24	2
5528		BOUL	06 15 1348	N19	W09	06 14.9		B	FKC	1820	0	18	3
5528		RAMY	06 15 1407	N21	W11	06 14.7		BGD	FKC	2320	0	27	2
5528	25288	MWIL	06 15 1430	N20	W12	06 14.7	5	(D)					
5528		HOLL	06 15 1640	N19	W11	06 14.8		BGD	FKC	2800	83	20	4
5528		PALE	06 15 1953	N20	W14	06 14.7		BGD	FKC	2390	61	23	3
5528		LEAR	06 16 0108	N22	W17	06 14.7		BGD	FKC	2700	84	22	3
5528		SVTO	06 16 0932	N21	W19	06 14.9		BGD	FKC	2210	88	20	2
5528		RAMY	06 16 1353	N20	W26	06 14.6		BGD	FKC	2480	78	22	3
5528		BOUL	06 16 1355	N20	W23	06 14.8		B	FKC	1900	94	18	2
5528	25288	MWIL	06 16 1440	N20	W26	06 14.6	5	(D)					
5528		HOLL	06 16 1530	N20	W23	06 14.9		BGD	FKC	1800	97	22	3
5528		PALE	06 16 1815	N19	W27	06 14.7		BGD	FKC	2330	56	20	2
5528		LEAR	06 17 0038	N19	W30	06 14.7		BGD	FKC	2180	77	19	3
5528		SVTO	06 17 0748	N21	W32	06 14.9		BGD	FKI	2020	73	19	2
5528		RAMY	06 17 1240	N21	W37	06 14.7		BGD	FKC	2340	0	27	4
5528		BOUL	06 17 1400	N19	W35	06 14.9		B	FKC	1510	58	19	2
5528	25288	MWIL	06 17 1430	N20	W38	06 14.7	5	(D)					
5528		HOLL	06 17 1555	N23	W38	06 14.7		BGD	FKC	2150	85	25	3
5528		PALE	06 17 1840	N19	W40	06 14.7		BGD	FKC	2020	82	21	4
5528		LEAR	06 18 0014	N19	W41	06 14.9		BGD	FKC	2800	66	21	3
5528		CULG	06 18 0115	N20	W41	06 14.9		BGD	FKC	1600	59	22	3
5528		SVTO	06 18 0606	N22	W46	06 14.7		BG	FKI	2310	60	21	2
5528		RAMY	06 18 1245	N21	W49	06 14.8		BGD	FKC	1910	0	28	3
5528		BOUL	06 18 1415	N20	W48	06 14.9		B	FKC	1220	42	23	3
5528		HOLL	06 18 1426	N20	W48	06 14.9		BGD	FKC	1530	67	29	3
5528	25288	MWIL	06 18 1430	N21	W51	06 14.7	5	(BG)					
5528		LEAR	06 19 0120	N22	W56	06 14.7		BGD	FKC	1480	40	27	3
5528		CULG	06 19 0210	N20	W55	06 14.9		BGD	FKC	1380	39	20	2
5528		SVTO	06 19 0625	N20	W60	06 14.7		BGD	FKI	1690	41	22	4
5528		HOLL	06 19 1415	N22	W65	06 14.6		BGD	FKC	1370	39	29	3
5528		RAMY	06 19 1450	N22	W63	06 14.8		BGD	FKI	1660	39	22	3
5528		BOUL	06 19 1455	N20	W62	06 14.9		B	FKC	1820	47	21	3
5528	25288	MWIL	06 19 1615	N21	W68	06 14.5	5	(D)					
5528		PALE	06 19 1925	N20	W66	06 14.8		BGD	FKC	1000	12	22	3
5528		CULG	06 20 0220	N20	W66	06 15.0		BGD	FKC	960	20	16	2
5528		SVTO	06 20 0520	N20	W70	06 14.9		BGD	FKI	1090	21	19	3
5528		BOUL	06 20 1336	N20	W71	06 15.1		B	FKC	930	13	20	1
5528		HOLL	06 20 1415	N20	W78	06 14.6		BGD	FHC	1440	20	27	3
5528		RAMY	06 20 1427	N18	W77	06 14.7		BGD	FKI	870	22	18	3
5528	25288	MWIL	06 20 1500	N21	W79	06 14.6	5	D*					
5528		PALE	06 20 1925	N20	W79	06 14.8		BGD	FKI	1260	8	20	2
5528		LEAR	06 21 0045	N23	W79	06 14.9		BGD	FKO	300	6	18	3
5528		CULG	06 21 0421	N20	W85	06 14.7		BGD	FKI	30	1	20	1
5528		SVTO	06 21 0543	N24	W78	06 15.2		A	HA	80	2	2	3
5528	25288	MWIL	06 21 1515	N24	W80	06 15.4	2	AF					
5528		BOUL	06 21 1535	N26	W80	06 15.4		A	HS	30	1	1	2
5540		SVTO	06 14 1430	S24	E01	06 14.7		A	AX	10	2	1	2
5540		RAMY	06 14 1504	S23	E01	06 14.7		A	AX		1		2
5540		HOLL	06 14 1510	S24	E03	06 14.9		A	AX	10	4	5	4
5540	25304	MWIL	06 14 1530	S24	E01	06 14.7	4	(AP)					
5540		LEAR	06 15 0051	S26	W04	06 14.7		B	BXO	10	2	3	3
5540		SVTO	06 15 1155	S23	W10	06 14.7		A	AX	10	5	3	2
5540		BOUL	06 15 1348	S21	W09	06 14.9		B	BXO	10	8	3	3
5540		RAMY	06 15 1407	S22	W10	06 14.8		B	BXO	10	7	3	2
5540	25304	MWIL	06 15 1430	S23	W10	06 14.8	5	(AF)					
5540		HOLL	06 15 1640	S23	W11	06 14.8		A	AX	10	2	2	4
5540		PALE	06 15 1953	S22	W15	06 14.7		B	BXO	10	10	4	3
5540		LEAR	06 16 0108	S21	W17	06 14.7		B	BXO	10	6	4	3
5540		SVTO	06 16 0932	S22	W20	06 14.9		B	BXO	10	5	4	2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CHP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5540		RAMY	06	16	1353	S22	W25	06	14.6		B	BXO	10	3	3	3
5540		BOUL	06	16	1355	S21	W22	06	14.9		B	BXO		2	3	2
5540	25304	MWIL	06	16	1440	S22	W24	06	14.8	4	(AP)					
5540		HOLL	06	16	1530	S22	W23	06	14.9		A	AX	20	2	3	3
5540		LEAR	06	17	0038	S23	W31	06	14.6		A	AX	10	1	1	3
5540		SVTO	06	18	0606	S25	W42	06	15.0		B	BXO		2	1	2
5540		RAMY	06	18	1245	S23	W48	06	14.8		B	BXO	10	2	3	3
5540		BOUL	06	18	1415	S21	W47	06	15.0		B	BXO		3	2	3
5540		HOLL	06	18	1426	S22	W48	06	14.9		B	BXO	10	6	5	3
5540	25304	MWIL	06	18	1430	S22	W48	06	14.9	3	(BG)					
5540		LEAR	06	19	0120	S22	W54	06	14.9		B	BXO	20	3	3	3
5540		CULG	06	19	0210	S23	W56	06	14.8		B	BXO		2	1	2
5540		SVTO	06	19	0625	S24	W58	06	14.8		B	BXO	20	3	4	4
5540		HOLL	06	19	1415	S23	W65	06	14.6		B	BXO		4	2	3
5540		RAMY	06	19	1450	S22	W61	06	14.9		B	BXO	20	4	5	3
5540	25304	MWIL	06	19	1615	S23	W63	06	14.8	4	(BP)					
5540		PALE	06	19	1925	S25	W66	06	14.7		A	AX	10	3	2	3
5540		SVTO	06	20	0520	S24	W70	06	14.8		A	AX	10	3	3	3
5540		HOLL	06	20	1415	S23	W79	06	14.5		B	AX	10	1	1	3
5540		RAMY	06	20	1427	S23	W78	06	14.6		A	AX	20	1	1	3
5540	25304	MWIL	06	20	1500	S23	W78	06	14.6	3	X					
5536	25299	MWIL	06	12	1600	N17	E42	06	15.8	4	(B)					
5536		PALE	06	12	1945	N16	E39	06	15.8		B	CRO	10	2	3	3
5536		LEAR	06	13	0100	N16	E36	06	15.8		B	DAO	60	6	7	1
5536		SVTO	06	13	0905	N16	E31	06	15.7		B	DAI	90	20	8	2
5536		RAMY	06	13	1307	N16	E29	06	15.7		B	DSO	100	25	7	3
5536		BOUL	06	13	1321	N16	E26	06	15.5		B	DAI	80	12	7	1
5536	25299	MWIL	06	13	1600	N16	E27	06	15.7	5	(B)					
5536		PALE	06	13	1735	N17	E26	06	15.7		B	DSI	120	21	7	3
5536		HOLL	06	13	1920	N16	E25	06	15.7		B	DAO	260	34	8	4
5536		LEAR	06	14	0109	N14	E22	06	15.7		B	DAO	280	25	8	3
5536		CULG	06	14	0425	N17	E22	06	15.8		B	DAI	130	9	8	2
5536		SVTO	06	14	1430	N18	E16	06	15.8		B	DAO	260	27	10	2
5536		RAMY	06	14	1504	N19	E16	06	15.8		B	DSO	240	17	10	2
5536		HOLL	06	14	1510	N17	E15	06	15.8		B	DSO	230	16	10	4
5536	25299	MWIL	06	14	1530	N16	E15	06	15.8	5	(BG)					
5536		BOUL	06	14	1707	N15	E12	06	15.6		B	DSI	150	8	9	1
5536		PALE	06	14	1920	N15	E11	06	15.6		B	EAO	230	19	11	3
5536		LEAR	06	15	0051	N14	E09	06	15.7		B	EAI	230	23	11	3
5536		CULG	06	15	0450	N17	E07	06	15.7		B	DAO	120	8	9	2
5536		SVTO	06	15	1155	N16	E05	06	15.9		B	EAO	160	22	12	2
5536		BOUL	06	15	1348	N16	E02	06	15.7		B	DAI	130	30	10	3
5536		RAMY	06	15	1407	N17	E01	06	15.7		B	EAO	250	29	11	2
5536	25299	MWIL	06	15	1430	N16	E01	06	15.7	5	(B)					
5536		HOLL	06	15	1640	N16	E03	06	15.9		B	EAO	250	19	12	4
5536		PALE	06	15	1953	N16	W01	06	15.7		B	EAI	160	15	12	3
5536		LEAR	06	16	0108	N18	W04	06	15.7		B	EAO	320	25	12	3
5536		SVTO	06	16	0932	N17	W07	06	15.9		B	EAO	230	24	13	2
5536		RAMY	06	16	1353	N17	W13	06	15.6		B	EAO	210	31	11	3
5536		BOUL	06	16	1355	N15	W10	06	15.8		B	ESI	120	27	12	2
5536	25299	MWIL	06	16	1440	N17	W12	06	15.7	4	(B)					
5536		PALE	06	16	1815	N17	W14	06	15.7		B	ESO	160	20	11	2
5536		LEAR	06	17	0038	N18	W17	06	15.7		B	EAI	160	20	12	3
5536		SVTO	06	17	0748	N17	W19	06	15.9		B	ESO	130	17	13	2
5536		RAMY	06	17	1240	N17	W23	06	15.8		B	ESI	190	24	13	4
5536		BOUL	06	17	1400	N16	W23	06	15.8		B	EAI	120	12	12	2
5536	25299	MWIL	06	17	1430	N17	W25	06	15.7	5	(B)					
5536		PALE	06	17	1840	N17	W27	06	15.7		B	ESI	100	22	12	4
5536		LEAR	06	18	0014	N17	W29	06	15.8		B	ESO	200	16	13	3
5536		CULG	06	18	0115	N18	W30	06	15.8		B	EAO	130	20	12	3
5536		SVTO	06	18	0606	N17	W34	06	15.7		B	ESO	190	21	12	2
5536		RAMY	06	18	1245	N17	W36	06	15.8		B	ESI	220	24	12	3
5536		BOUL	06	18	1415	N16	W36	06	15.9		B	ESI	80	15	13	3
5536		HOLL	06	18	1426	N17	W37	06	15.8		B	CAI	80	19	12	3
5536	25299	MWIL	06	18	1430	N18	W37	06	15.8	5	(BG)					
5536		LEAR	06	19	0120	N18	W43	06	15.8		B	EAI	130	20	12	3
5536		CULG	06	19	0210	N18	W43	06	15.8		B	DAO	130	18	10	2
5536		SVTO	06	19	0625	N16	W47	06	15.7		B	EAO	150	24	12	4

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

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JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CHD	CHP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5536		HOLL	06 19 1415	N19	W49	06 15.8		B	EAO	380	14	14	3
5536		RAMY	06 19 1450	N18	W50	06 15.8		B	EAI	180	23	11	3
5536		BOUL	06 19 1455	N18	W50	06 15.8		B	EAI	250	20	11	3
5536	25299	MWIL	06 19 1615	N18	W52	06 15.7	5	(BP)					
5536		PALE	06 19 1925	N17	W52	06 15.8		B	EAO	170	10	12	3
5536		CULG	06 20 0220	N18	W56	06 15.8		B	DAO	110	9	10	2
5536		SVTO	06 20 0520	N17	W59	06 15.7		B	ERO	70	8	11	3
5536		BOUL	06 20 1336	N20	W71	06 15.1		B	BXI	60	9	12	1
5536		RAMY	06 20 1427	N18	W65	06 15.6		B	CAO	90	11	11	3
5536	25299	MWIL	06 20 1500	N18	W64	06 15.7	4	(B)					
5536		PALE	06 20 1925	N18	W70	06 15.5		B	BXO	30	4	11	2
5536		LEAR	06 21 0045	N18	W69	06 15.8		B	CAO	90	6	7	3
5536		SVTO	06 21 0543	N17	W75	06 15.5		B	EAO	90	5	12	3
5536		RAMY	06 21 1515	N15	W82	06 15.4		A	AX	20	1	1	2
5536	25299	MWIL	06 21 1515	N18	W78	06 15.7	4	B)					
5540A	25310	MWIL	06 15 1430	S18	E02	06 15.7	5	(BP)					
5540A	25310	MWIL	06 16 1440	S18	W12	06 15.7	5	(AP)					
5540A	25310	MWIL	06 17 1430	S17	W24	06 15.8	6	(AP)					
5540A	25310	MWIL	06 18 1430	S16	W37	06 15.8	5	(AP)					
5540A	25310	MWIL	06 19 1615	S17	W52	06 15.7	5	(AP)					
5540A	25310	MWIL	06 20 1500	S17	W63	06 15.8	5	(AP)					
5540A	25310	MWIL	06 21 1515	S17	W78	06 15.7	5	(AP)					
5536A		HOLL	06 14 1510	N25	E19	06 16.1		A	AX	10	1	1	4
5536A		PALE	06 14 1920	N24	E14	06 15.9		B	BXO		4	4	3
5536A		PALE	06 15 1953	N24	E00	06 15.8		A	AX		2	1	3
5536B	25315	MWIL	06 18 1430	N28	W34	06 15.9	4	(AF)					
5536C	25298	MWIL	06 11 1515	N09	E61	06 16.2	3	(AP)					
5533		RAMY	06 09 1425	S18	E83	06 15.9		A	HS	30	2	2	3
5533		HOLL	06 09 1445	S18	E79	06 15.6		A	HS	60	1	2	3
5533	25295	MWIL	06 09 1500	S18	E84	06 16.0	3	AP					
5533		PALE	06 09 1750	S19	E84	06 16.1		A	HA	120	2	4	4
5533		BOUL	06 10 1338	S17	E74	06 16.2		B	EKO	360	8	13	2
5533		RAMY	06 10 1410	S19	E77	06 16.5		BG	EKO	520	10	11	2
5533	25295	MWIL	06 10 1530	S18	E72	06 16.1	5	(BG)					
5533		HOLL	06 10 1919	S19	E70	06 16.1		B	ESI	430	16	11	4
5533		PALE	06 10 2105	S18	E70	06 16.2		B	EHI	630	9	13	2
5533		LEAR	06 11 0145	S18	E66	06 16.1		B	EKO	630	12	13	1
5533	25295	MWIL	06 11 1515	S18	E60	06 16.2	5	(D)					
5533		BOUL	06 11 1520	S19	E59	06 16.1		B	FKI	620	25	19	3
5533		HOLL	06 11 1630	S19	E60	06 16.3		BG	FKO	630	20	19	4
5533		RAMY	06 11 1734	S19	E62	06 16.5		BG	FKO	620	19	16	2
5533		PALE	06 11 2000	S18	E61	06 16.5		BG	FKI	600	29	25	3
5533		SVTO	06 12 0655	S19	E54	06 16.4		BG	FKO	700	29	23	2
5533		BOUL	06 12 1320	S19	E48	06 16.2		B	FKI	820	24	21	2
5533		HOLL	06 12 1435	S20	E49	06 16.3		BG	FHO	1140	22	21	3
5533	25295	MWIL	06 12 1600	S18	E47	06 16.2	5	(D)					
5533		PALE	06 12 1945	S19	E49	06 16.6		BG	FHI	910	31	22	3
5533		LEAR	06 13 0100	S18	E42	06 16.2		BGD	FHI	830	34	20	1
5533		SVTO	06 13 0905	S19	E40	06 16.4		BG	FKI	940	41	21	2
5533		RAMY	06 13 1307	S18	E38	06 16.4		BG	FKO	800	39	18	3
5533		BOUL	06 13 1321	S18	E35	06 16.2		B	FKI	610	26	20	1
5533	25295	MWIL	06 13 1600	S18	E34	06 16.2	5	(D)					
5533		PALE	06 13 1735	S19	E35	06 16.4		BG	FKO	730	31	20	3
5533		HOLL	06 13 1920	S20	E33	06 16.3		BGD	FHI	870	91	19	4
5533		LEAR	06 14 0109	S20	E31	06 16.4		BGD	FKO	780	43	21	3
5533		CULG	06 14 0425	S18	E28	06 16.3		BG	FAO	400	18	20	2
5533		SVTO	06 14 1430	S19	E27	06 16.7		BGD	FKI	890	56	25	2
5533		RAMY	06 14 1504	S19	E25	06 16.5		BG	FKO	820	34	22	2
5533		HOLL	06 14 1510	S20	E23	06 16.4		BG	FNI	860	44	22	4
5533	25295	MWIL	06 14 1530	S18	E22	06 16.3	6	(D)					
5533		BOUL	06 14 1707	S19	E19	06 16.2		B	FKI	510	18	18	1
5533		PALE	06 14 1920	S20	E20	06 16.3		BG	FKI	1050	42	23	3
5533		LEAR	06 15 0051	S21	E17	06 16.3		BG	FAO	850	47	21	3
5533		CULG	06 15 0450	S19	E15	06 16.3		BG	FKI	350	19	19	2

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5533		SVTO	06 15	1155	S20 E13	06 16.5		BGD FKI	890	38	20	2	
5533		BOUL	06 15	1348	S18 E12	06 16.5		B FKI	740	69	23	3	
5533		RAMY	06 15	1407	S18 E09	06 16.3		BG FKI	610	49	21	2	
5533	25295	MWIL	06 15	1430	S19 E15	06 16.7	5	(D)					
5533		HOLL	06 15	1640	S19 E11	06 16.5		BG FKO	950	27	21	4	
5533		PALE	06 15	1953	S20 E07	06 16.4		BG FKO	930	30	21	3	
5533		LEAR	06 16	0108	S19 E04	06 16.3		BGD FKO	1030	48	23	3	
5533		SVTO	06 16	0932	S20 E01	06 16.5		BGD FHI	630	47	23	2	
5533		RAMY	06 16	1353	S20 W02	06 16.4		BGD FKI	950	70	22	3	
5533		BOUL	06 16	1355	S20 W02	06 16.4		B FKI	430	33	21	2	
5533	25295	MWIL	06 16	1440	S20 E02	06 16.8	5	(D)					
5533		HOLL	06 16	1530	S19 W01	06 16.6		BGD FHI	750	64	24	3	
5533		PALE	06 16	1815	S20 W04	06 16.4		BG FHI	580	29	2	2	
5533		LEAR	06 17	0038	S18 W08	06 16.4		BG FHI	650	45	24	3	
5533		SVTO	06 17	0748	S18 W09	06 16.6		B FHI	570	62	22	2	
5533		RAMY	06 17	1240	S18 W13	06 16.5		BG FKI	740	95	22	4	
5533		BOUL	06 17	1400	S20 W14	06 16.5		B FKI	430	30	22	2	
5533	25295	MWIL	06 17	1430	S19 W11	06 16.8	6	(D)					
5533		PALE	06 17	1840	S21 W18	06 16.4		BG FHI	420	43	22	4	
5533		LEAR	06 18	0014	S19 W21	06 16.4		BG FKI	520	44	22	3	
5533		CULG	06 18	0115	S19 W21	06 16.4		B FKO	360	42	21	3	
5533		SVTO	06 18	0606	S18 W23	06 16.5		B FKI	500	44	24	2	
5533		RAMY	06 18	1245	S18 W25	06 16.6		BG FKI	550	61	24	3	
5533		BOUL	06 18	1415	S18 W26	06 16.6		B FKI	310	41	20	3	
5533		HOLL	06 18	1426	S19 W26	06 16.6		BG FKI	370	45	20	3	
5533	25295	MWIL	06 18	1430	S18 W25	06 16.7	5	(BG)					
5533		LEAR	06 19	0120	S19 W33	06 16.5		BG FHI	430	40	22	3	
5533		CULG	06 19	0210	S19 W34	06 16.5		B FKO	430	25	20	2	
5533		SVTO	06 19	0625	S20 W33	06 16.7		BG FHI	360	48	26	4	
5533		HOLL	06 19	1415	S20 W39	06 16.6		BG FKI	680	33	22	3	
5533		RAMY	06 19	1450	S18 W39	06 16.6		BG FAI	480	34	21	3	
5533		BOUL	06 19	1455	S18 W41	06 16.5		B FKI	510	27	22	3	
5533	25295	MWIL	06 19	1615	S18 W40	06 16.6	5	(D)					
5533		PALE	06 19	1925	S20 W49	06 16.1		B FHI	330	25	24	3	
5533		CULG	06 20	0220	S19 W47	06 16.5		B FAI	250	12	22	2	
5533		SVTO	06 20	0520	S20 W47	06 16.6		B FAO	260	15	23	3	
5533		BOUL	06 20	1336	S18 W50	06 16.7		B FKI	250	12	22	1	
5533		HOLL	06 20	1415	S19 W52	06 16.6		BG EKI	490	7	15	3	
5533		RAMY	06 20	1427	S18 W53	06 16.6		BG FAO	260	14	20	3	
5533	25295	MWIL	06 20	1500	S19 W51	06 16.7	5	(BG)					
5533		PALE	06 20	1925	S20 W58	06 16.4		BG FKO	360	9	24	2	
5533		LEAR	06 21	0045	S17 W66	06 16.0		BG FKO	300	8	18	3	
5533		CULG	06 21	0421	S19 W66	06 16.1		BG ESO	60	2	10	1	
5533		SVTO	06 21	0543	S19 W59	06 16.7		B FSO	170	12	23	3	
5533	25295	MWIL	06 21	1515	S19 W65	06 16.7	5	(BP)					
5533		RAMY	06 21	1515	S19 W69	06 16.4		B FAO	130	5	21	2	
5533		BOUL	06 21	1535	S19 W64	06 16.8		B FSO	110	3	21	2	
5533		HOLL	06 21	1545	S18 W67	06 16.5		BG FHO	240	4	23	3	
5533		LEAR	06 22	0011	S17 W80	06 15.9		A HA	180	1	9	3	
5533	25295	MWIL	06 22	1515	S19 W79	06 16.6	4	(AF)					
5534		RAMY	06 10	1410	N12 E79	06 16.5		A HA	30	1	2	2	
5534	25297	MWIL	06 10	1530	N14 E82	06 16.8	4	(AF)					
5534		HOLL	06 10	1919	N12 E78	06 16.7		A AX		1		4	
5534		PALE	06 10	2105	N12 E78	06 16.7		A AX	10	4	2	2	
5534		LEAR	06 11	0145	N13 E73	06 16.6		A AX	10	1	1	1	
5534	25297	MWIL	06 11	1515	N13 E68	06 16.8	4	(AF)					
5534		BOUL	06 11	1520	N13 E64	06 16.5		A AX		1		3	
5534		HOLL	06 11	1630	N12 E68	06 16.8		A AX		1		4	
5534		RAMY	06 11	1734	N12 E66	06 16.7		A AX	10	1	1	2	
5534		PALE	06 11	2000	N13 E65	06 16.7		A AX		1		3	
5534		SVTO	06 12	0655	N13 E61	06 16.9		A AX	10	1	1	2	
5534		BOUL	06 12	1320	N13 E52	06 16.5		A AX	10	1		2	
5534		HOLL	06 12	1435	N12 E56	06 16.8		A AX	20	1	1	3	
5534	25297	MWIL	06 12	1600	N13 E55	06 16.8	4	(AF)					
5534		PALE	06 12	1945	N13 E53	06 16.8		A AX		1		3	
5534		LEAR	06 13	0100	N13 E49	06 16.7		A AX	20	1	1	1	
5534		SVTO	06 13	0905	N14 E45	06 16.8		A AX		1		2	
5534		RAMY	06 13	1307	N14 E43	06 16.8		A AX	10	2	2	3	

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat Mo Day	Cmd Mo Day	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5534	25297	MWIL	06 13 1600	N13 E41		06 16.8	3	(AF)					
5534		PALE	06 13 1735	N13 E40		06 16.7		A	AX		1		3
5534		HOLL	06 13 1920	N13 E39		06 16.7		A	AX	10	1	1	4
5534		HOLL	06 14 1510	N17 E33		06 17.1		A	AX	10	1	1	4
5534A		LEAR	06 21 0045	S22 W50		06 17.2		B	BXO	20	4	6	3
5537		RAMY	06 13 1307	N30 E49		06 17.4		A	AX	10	2	2	3
5537	25302	MWIL	06 13 1600	N30 E48		06 17.4	4	(B)					
5537		PALE	06 13 1735	N31 E48		06 17.5		B	BXO		2	4	3
5537		HOLL	06 13 1920	N30 E46		06 17.4		B	BXO	10	2	5	4
5537		LEAR	06 14 0109	N29 E41		06 17.3		B	BXO	10	2	4	3
5537		RAMY	06 16 1353	N29 E08		06 17.2		A	AX	10	1	1	3
5537		BOUL	06 16 1355	N28 E08		06 17.2		A	AX		1		2
5537		HOLL	06 16 1530	N29 E08		06 17.3		A	AX	10	1	1	3
5537		RAMY	06 18 1245	N28 W17		06 17.2		B	BXO	10	2	3	3
5537		BOUL	06 18 1415	N29 W19		06 17.1		A	AX		1		3
5537		HOLL	06 18 1426	N30 W20		06 17.0		A	AX		2	2	3
5537	25316	MWIL	06 18 1430	N29 W19		06 17.1	4	(AP)					
5537		LEAR	06 19 0120	N29 W25		06 17.1		B	CAO	40	5	5	3
5537		CULG	06 19 0210	N29 W25		06 17.1		B	DRO	10	4	4	2
5537		SVTO	06 19 0625	N28 W27		06 17.1		B	CAO	50	6	4	4
5537		HOLL	06 19 1415	N30 W31		06 17.1		B	BXO	120	12	10	3
5537		RAMY	06 19 1450	N30 W31		06 17.2		B	BXO	20	11	5	3
5537		BOUL	06 19 1455	N29 W32		06 17.1		B	CAO	50	7	5	3
5537	25316	MWIL	06 19 1615	N29 W33		06 17.1	5	(BP)					
5537		PALE	06 19 1925	N29 W34		06 17.1		B	CAO	40	4	6	3
5537		CULG	06 20 0220	N30 W39		06 17.0		B	DAO	70	9	6	2
5537		SVTO	06 20 0520	N29 W40		06 17.1		B	CAO	60	7	6	3
5537		BOUL	06 20 1336	N29 W43		06 17.2		B	CAI	80	6	5	1
5537		HOLL	06 20 1415	N29 W48		06 16.8		B	DSO	140	5	8	3
5537		RAMY	06 20 1427	N29 W45		06 17.1		B	CAO	80	6	7	3
5537	25316	MWIL	06 20 1500	N29 W46		06 17.0	5	(BG)					
5537		PALE	06 20 1925	N29 W49		06 17.0		B	CAO	70	3	6	2
5537		LEAR	06 21 0045	N28 W52		06 17.0		B	CAO	110	5	8	3
5537		CULG	06 21 0421	N28 W52		06 17.1		B	CSO	20	2	6	1
5537		SVTO	06 21 0543	N29 W54		06 17.0		B	DAO	130	6	7	3
5537	25316	MWIL	06 21 1515	N29 W58		06 17.1	5	(BP)					
5537		RAMY	06 21 1515	N29 W59		06 17.0		B	DAO	60	7	6	2
5537		BOUL	06 21 1535	N30 W57		06 17.2		B	DAO	70	3	6	2
5537		HOLL	06 21 1545	N30 W52		06 17.6		B	DSI	70	3	4	3
5537		LEAR	06 22 0011	N28 W62		06 17.2		B	DAO	70	4	7	3
5537		SVTO	06 22 0541	N29 W67		06 17.0		B	DAO	60	5	8	2
5537		BOUL	06 22 1345	N29 W66		06 17.4		B	CSO	20	3	6	3
5537		HOLL	06 22 1500	N30 W69		06 17.2		B	BXO	10	2	5	4
5537	25316	MWIL	06 22 1515	N29 W70		06 17.1	4	(B)					
5537		RAMY	06 22 1520	N24 W70		06 17.2		B	BXO	20	3	7	2
5537		LEAR	06 23 0045	N24 W75		06 17.2		B	BXO	10	2	4	4
5535		BOUL	06 11 1520	N30 E84		06 18.2		A	HS	30	1	1	3
5535		HOLL	06 11 1630	N30 E85		06 18.4		A	HS	60	1	2	4
5535		RAMY	06 11 1734	N29 E81		06 18.1		A	HA	60	1	2	2
5535		PALE	06 11 2000	N31 E80		06 18.1		A	AX	10	2	1	3
5535		BOUL	06 12 1320	N30 E69		06 18.0		A	HS	50	1	1	2
5535		HOLL	06 12 1435	N28 E73		06 18.3		A	HH	140	1	3	3
5535	25300	MWIL	06 12 1600	N31 E72		06 18.3	5	(AP)					
5535		PALE	06 12 1945	N31 E72		06 18.5		A	HS	120	1	2	3
5535		LEAR	06 13 0100	N31 E66		06 18.2		A	HH	110	1	3	1
5535		SVTO	06 13 0905	N30 E57		06 17.9		B	CSO	80	2	11	2
5535		RAMY	06 13 1307	N30 E60		06 18.3		A	HA	80	1	2	3
5535		BOUL	06 13 1321	N30 E58		06 18.1		A	HS	30	1	2	1
5535	25300	MWIL	06 13 1600	N31 E58		06 18.2	5	(AP)					
5535		PALE	06 13 1735	N31 E59		06 18.4		A	HA	80	1	1	3
5535		HOLL	06 13 1920	N30 E58		06 18.4		A	HS	100	1	2	4
5535		LEAR	06 14 0109	N29 E55		06 18.3		A	HA	110	1	2	3
5535		CULG	06 14 0425	N30 E54		06 18.4		A	HS	50	1	2	2
5535		SVTO	06 14 1430	N30 E48		06 18.4		A	HS	90	1	2	2
5535		RAMY	06 14 1504	N31 E47		06 18.3		A	HA	70	1	2	2
5535		HOLL	06 14 1510	N31 E48		06 18.4		A	HS	90	1	3	4

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5535	25300	MWIL	06 14 1530	N31 E47	06 18.3	5	(AP)					
5535		BOUL	06 14 1707	N29 E43	06 18.1		A	HS	60	1	2	1
5535		PALE	06 14 1920	N31 E45	06 18.3		A	HS	90	1	2	3
5535		LEAR	06 15 0051	N33 E41	06 18.3		A	HS	60	1	2	3
5535		CULG	06 15 0450	N29 E41	06 18.4		A	HS	30	1	1	2
5535		SVTO	06 15 1155	N30 E36	06 18.3		A	HS	80	2	3	2
5535		BOUL	06 15 1348	N29 E33	06 18.2		A	HA	80	2	2	3
5535		RAMY	06 15 1407	N30 E34	06 18.3		A	HS	110	1	1	2
5535	25300	MWIL	06 15 1430	N30 E34	06 18.3	4	(AP)					
5535		HOLL	06 15 1640	N30 E35	06 18.4		A	HA	110	1	3	4
5535		PALE	06 15 1953	N31 E31	06 18.3		A	HS	100	1	2	3
5535		LEAR	06 16 0108	N31 E28	06 18.2		A	HS	80	2	2	3
5535		SVTO	06 16 0932	N31 E26	06 18.4		A	HS	70	2	2	2
5535		RAMY	06 16 1353	N30 E25	06 18.5		B	CAO	100	4	7	3
5535		BOUL	06 16 1355	N29 E22	06 18.3		A	HA	60	1	2	2
5535	25300	MWIL	06 16 1440	N30 E22	06 18.3	4	(AP)					
5535		HOLL	06 16 1530	N30 E24	06 18.5		A	DSO	90	4	6	3
5535		PALE	06 16 1815	N31 E19	06 18.2		A	HS	70	2	2	2
5535		LEAR	06 17 0038	N31 E16	06 18.3		A	HS	70	2	2	3
5535		SVTO	06 17 0748	N31 E14	06 18.4		A	HA	80	3	2	2
5535		RAMY	06 17 1240	N30 E10	06 18.3		A	HS	90	3	2	4
5535		BOUL	06 17 1400	N28 E08	06 18.2		A	HS	40	1	2	2
5535	25300	MWIL	06 17 1430	N30 E09	06 18.3	5	(AP)					
5535		PALE	06 17 1840	N31 E07	06 18.3		A	HS	70	1	2	4
5535		LEAR	06 18 0014	N31 E03	06 18.2		B	CAO	100	4	3	3
5535		CULG	06 18 0115	N30 E05	06 18.4		B	CAO	50	5	3	3
5535		SVTO	06 18 0606	N31 E01	06 18.3		A	HA	90	3	2	2
5535		RAMY	06 18 1245	N31 W02	06 18.4		B	CSO	70	5	4	3
5535		BOUL	06 18 1415	N31 W02	06 18.4		B	CAO	40	3	3	3
5535		HOLL	06 18 1426	N32 W01	06 18.5		B	CSO	50	6	6	3
5535	25300	MWIL	06 18 1430	N31 W02	06 18.4	4	(AP)					
5535		LEAR	06 19 0120	N32 W09	06 18.3		A	HS	40	2	2	3
5535		CULG	06 19 0210	N30 W09	06 18.4		A	HA	50	2	1	2
5535		SVTO	06 19 0625	N30 W12	06 18.3		A	HA	40	3	2	4
5535		HOLL	06 19 1415	N30 W17	06 18.2		B	CSO	100	3	3	3
5535		RAMY	06 19 1450	N31 W17	06 18.3		A	HA	70	2	1	3
5535		BOUL	06 19 1455	N31 W16	06 18.3		A	HA	40	2	2	3
5535	25300	MWIL	06 19 1615	N31 W16	06 18.4	5	(AP)					
5535		PALE	06 19 1925	N30 W21	06 18.1		B	CSO	50	3	3	3
5535		CULG	06 20 0220	N31 W22	06 18.4		A	HA	20	2	1	2
5535		SVTO	06 20 0520	N31 W24	06 18.3		A	HR	20	3	1	3
5535		BOUL	06 20 1336	N30 W28	06 18.4		A	AX	10	2		1
5535		HOLL	06 20 1415	N32 W28	06 18.4		A	CXO	40	3	2	3
5535		RAMY	06 20 1427	N30 W29	06 18.3		A	AX	10	4	2	3
5535	25300	MWIL	06 20 1500	N31 W29	06 18.3	5	(AP)					
5535		PALE	06 20 1925	N32 W31	06 18.3		A	AX	50	2	2	2
5535		LEAR	06 21 0045	N31 W35	06 18.3		A	AX	10	2	2	3
5535		CULG	06 21 0421	N30 W37	06 18.3		A	AX	10	1	1	1
5535		SVTO	06 21 0543	N31 W38	06 18.2		A	HR	20	2	1	3
5535		RAMY	06 21 1515	N31 W42	06 18.3		A	AX	10	1	1	2
5535	25300	MWIL	06 21 1515	N32 W42	06 18.3	4	(AP)					
5538		LEAR	06 13 0100	N21 E70	06 18.4		A	AX	30	1	1	1
5538		SVTO	06 13 0905	N20 E66	06 18.4		A	AX		2	1	2
5538		RAMY	06 13 1307	N20 E64	06 18.4		A	AX	10	2	1	3
5538	25303	MWIL	06 13 1600	N19 E62	06 18.4	4	(AP)					
5538		PALE	06 13 1735	N20 E63	06 18.5		A	AX		1		3
5538		HOLL	06 13 1920	N19 E61	06 18.5		A	AX	10	1		4
5538		LEAR	06 14 0109	N18 E57	06 18.4		A	AX	10	1	1	3
5538		SVTO	06 14 1430	N22 E53	06 18.7		B	BXO	20	3	4	2
5538		RAMY	06 14 1504	N21 E52	06 18.6		B	BXO	20	4	4	2
5538		HOLL	06 14 1510	N22 E52	06 18.6		A	AX	10	1	1	4
5538	25303	MWIL	06 14 1530	N21 E51	06 18.5	4	(BF)					
5538		PALE	06 14 1920	N21 E51	06 18.7		A	AX		1		3
5538		LEAR	06 15 0051	N20 E45	06 18.5		B	BXO	10	3	4	3
5538		SVTO	06 15 1155	N21 E41	06 18.6		B	BXO	10	2	1	2
5538		BOUL	06 15 1348	N19 E37	06 18.4		B	BXO		6	4	3
5538		RAMY	06 15 1407	N20 E39	06 18.6		B	BXO	10	3	3	2
5538	25303	MWIL	06 15 1430	N20 E38	06 18.5	3	(B)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	Cmd	CMP Mo Day	Max H	Hag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5538		HOLL	06 15 1640	N20	E39	06 18.7		B	BXO	20	3	3	4
5538		LEAR	06 16 0108	N20	E32	06 18.5		B	BXO	10	6	3	3
5538		SVTO	06 16 0932	N20	E30	06 18.7		B	BXO	10	2	3	2
5538		RAMY	06 16 1353	N19	E25	06 18.5		B	BXO	20	8	3	3
5538		BOUL	06 16 1355	N20	E24	06 18.4		B	BXO		6	3	2
5538	25303	MWIL	06 16 1440	N21	E25	06 18.5	4	(B)					
5538		HOLL	06 16 1530	N21	E29	06 18.9		B	BXO	70	10	10	3
5538		PALE	06 16 1815	N21	E22	06 18.4		B	BXO	10	6	4	2
5538		LEAR	06 17 0038	N21	E19	06 18.5		B	CRO	20	3	4	3
5538		SVTO	06 17 0748	N20	E17	06 18.6		B	BXO	10	3	3	2
5538		RAMY	06 17 1240	N21	E13	06 18.5		B	BXO	20	9	6	4
5538		BOUL	06 17 1400	N19	E12	06 18.5		B	BXO		4	2	2
5538	25303	MWIL	06 17 1430	N20	E13	06 18.6	3	(B)					
5538		PALE	06 17 1840	N20	E09	06 18.5		B	BXO		2	4	4
5538		LEAR	06 18 0014	N21	E08	06 18.6		B	BXO	20	2	3	3
5550	25312	MWIL	06 17 1430	S21	E25	06 19.5	4	(B)					
5550		PALE	06 17 1840	S21	E23	06 19.5		B	BXO		2	6	4
5550		CULG	06 18 0115	S21	E16	06 19.3		B	BXO		2	3	3
5550	25317	MWIL	06 18 1430	S20	E05	06 19.0	4	(AF)					
5550		SVTO	06 19 0625	S22	E01	06 19.3		B	BXO	10	7	13	4
5550		HOLL	06 19 1415	S20	E04	06 19.9		B	BXO	20	3	3	3
5550		RAMY	06 19 1450	S20	E04	06 19.9		A	AX	10	3	1	3
5550		BOUL	06 19 1455	S20	E06	06 20.1		A	AX	10	1	1	3
5550	25317	MWIL	06 19 1615	S20	W02	06 19.5	4	(B)					
5550		PALE	06 19 1925	S21	W02	06 19.6		B	BXO	10	6	6	3
5550		SVTO	06 20 0520	S22	W14	06 19.1		A	AX		2		3
5550	25317	MWIL	06 20 1500	S20	W15	06 19.5	4	(B)					
5541		RAMY	06 13 1307	S09	E89	06 20.2		A	AX		1		3
5541		PALE	06 13 1735	S09	E82	06 19.9		A	AX		1		3
5541		LEAR	06 14 0109	S10	E78	06 19.9		A	AX	10	2	1	3
5541		SVTO	06 14 1430	S10	E71	06 19.9		A	AX		1		2
5541		RAMY	06 14 1504	S09	E72	06 20.0		A	AX	10	1	1	2
5541		HOLL	06 14 1510	S10	E71	06 20.0		A	AX	30	1	1	4
5541	25305	MWIL	06 14 1530	S10	E70	06 19.9	4	(AP)					
5541		BOUL	06 14 1707	S11	E67	06 19.7		A	HS	20	1	1	1
5541		PALE	06 14 1920	S10	E68	06 19.9		A	AX		1		3
5541		LEAR	06 15 0051	S10	E65	06 19.9		B	CRO	20	2	2	3
5541		CULG	06 15 0450	S12	E63	06 19.9		A	AX		1		2
5541		SVTO	06 15 1155	S10	E59	06 19.9		A	AX	10	1		2
5541		BOUL	06 15 1348	S10	E57	06 19.8		A	HS	20	1	1	3
5541		RAMY	06 15 1407	S10	E56	06 19.8		A	AX	10	1	1	2
5541	25305	MWIL	06 15 1430	S10	E57	06 19.9	4	(AP)					
5541		HOLL	06 15 1640	S11	E57	06 20.0		A	AX	10	1	1	4
5541		PALE	06 15 1953	S10	E55	06 20.0		A	AX		1		3
5541		LEAR	06 16 0108	S10	E50	06 19.8		A	HS	20	1	1	3
5541		SVTO	06 16 0932	S10	E49	06 20.1		A	HR	20	1	1	2
5541		RAMY	06 16 1353	S10	E44	06 19.9		A	AX	10	1	1	3
5541		BOUL	06 16 1355	S10	E43	06 19.8		A	AX		1	1	2
5541	25305	MWIL	06 16 1440	S10	E44	06 19.9	4	(AP)					
5541		HOLL	06 16 1530	S10	E41	06 19.7		A	BXO	30	3	5	3
5541		LEAR	06 17 0038	S10	E34	06 19.6		B	BXO	10	3	5	3
5541		RAMY	06 17 1240	S09	E30	06 19.8		B	BXO		2	7	4
5541	25305	MWIL	06 17 1430	S10	E32	06 20.0	3	(AP)					
5541		LEAR	06 18 0014	S12	E20	06 19.5		B	BXO	20	3	5	3
5541		SVTO	06 19 0625	S09	E04	06 19.6		A	AX		3	2	4
5541		RAMY	06 19 1450	S09	E05	06 20.0		B	BXO	10	5	9	3
5541		SVTO	06 20 0520	S08	W08	06 19.6		A	AX	10	9	3	3
5546	25313	MWIL	06 17 1430	S09	E26	06 19.5	3	(AP)					
5546		PALE	06 17 1840	S09	E24	06 19.6		A	AX		2	2	4
5546A		HOLL	06 18 1426	N36	E15	06 19.8		A	AX		3	2	3
5546A	25318	MWIL	06 18 1430	N36	E15	06 19.8	4	(AF)					
5554		HOLL	06 19 1415	S30	E08	06 20.2		A	AX	10	1	1	3
5554		RAMY	06 19 1450	S29	E06	06 20.1		B	BXO	10	7	3	3
5554	25323	MWIL	06 19 1615	S28	E05	06 20.1	4	(AF)					

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	ChD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5554		PALE	06 19 1925	S29	E05	06 20.2		A	AX		4	1	3
5554		SVTO	06 20 0520	S29	W01	06 20.1		A	AX		2	1	3
5554		BOUL	06 20 1336	S28	W02	06 20.4		A	AX	10	1		1
5554		RAMY	06 20 1427	S26	W01	06 20.5		A	AX		1		3
5554	25323	MWIL	06 20 1500	S26	W04	06 20.3	4	(AF)					
5554A	25322	MWIL	06 20 1500	S09	W05	06 20.2	4	(AF)					
5543		SVTO	06 14 1430	N19	E79	06 20.6		A	AX	10	2	1	2
5543		HOLL	06 14 1510	N18	E80	06 20.7		A	AX	30	4	5	4
5543		PALE	06 14 1920	N18	E75	06 20.5		B	BXO	10	3	4	3
5543		LEAR	06 15 0051	N19	E72	06 20.5		B	BXO	10	3	2	3
5543		CULG	06 15 0450	N17	E70	06 20.5		A	AX		1		2
5543		SVTO	06 15 1155	N19	E69	06 20.8		A	AX	10	2	3	2
5543		BOUL	06 15 1348	N18	E64	06 20.4		B	CSO	20	2	4	3
5543		RAMY	06 15 1407	N19	E70	06 20.9		B	BXO	450	7	12	2
5543	25308	MWIL	06 15 1430	N19	E66	06 20.6	4	(B)					
5543		HOLL	06 15 1640	N18	E65	06 20.6		A	AX	10	2	2	4
5543		PALE	06 15 1953	N19	E62	06 20.5		B	BXO	20	4	4	3
5543		LEAR	06 16 0108	N19	E60	06 20.6		B	DAO	120	4	4	3
5543		SVTO	06 16 0932	N19	E58	06 20.8		B	DAO	60	5	5	2
5543		RAMY	06 16 1353	N18	E51	06 20.5		B	CAO	80	6	3	3
5543		BOUL	06 16 1355	N18	E52	06 20.5		B	DAO	40	4	4	2
5543	25308	MWIL	06 16 1440	N18	E52	06 20.6	4	(B)					
5543		HOLL	06 16 1530	N18	E53	06 20.7		B	CSO	80	7	5	3
5543		PALE	06 16 1815	N19	E50	06 20.6		B	CRO	20	5	3	2
5543		LEAR	06 17 0038	N18	E46	06 20.5		B	DRO	40	9	5	3
5543		SVTO	06 17 0748	N18	E44	06 20.7		B	DAO	60	10	5	2
5543		RAMY	06 17 1240	N18	E41	06 20.6		B	DAI	70	14	5	4
5543		BOUL	06 17 1400	N18	E37	06 20.4		B	DSI	70	5	4	2
5543	25308	MWIL	06 17 1430	N17	E40	06 20.6	4	(B)					
5543		PALE	06 17 1840	N19	E38	06 20.7		B	DAO	30	10	4	4
5543		LEAR	06 18 0014	N18	E34	06 20.6		B	CSO	70	9	5	3
5543		CULG	06 18 0115	N17	E35	06 20.7		B	DRO	40	9	6	3
5543		SVTO	06 18 0606	N18	E32	06 20.7		B	DAI	60	12	5	2
5543		RAMY	06 18 1245	N17	E28	06 20.6		B	DAI	80	16	4	3
5543		BOUL	06 18 1415	N18	E26	06 20.6		B	DRI	20	12	4	3
5543		HOLL	06 18 1426	N19	E27	06 20.7		B	BXO	20	13	4	3
5543	25308	MWIL	06 18 1430	N18	E27	06 20.7	5	(B)					
5543		LEAR	06 19 0120	N19	E21	06 20.6		B	DAO	70	8	5	3
5543		CULG	06 19 0210	N18	E20	06 20.6		B	DAI	70	12	3	2
5543		SVTO	06 19 0625	N16	E18	06 20.6		B	DAI	50	12	4	4
5543		HOLL	06 19 1415	N18	E14	06 20.6		B	DAO	170	11	6	3
5543		RAMY	06 19 1450	N18	E13	06 20.6		B	DAO	50	10	4	3
5543		BOUL	06 19 1455	N19	E13	06 20.6		B	DAO	90	9	4	3
5543	25308	MWIL	06 19 1615	N18	E14	06 20.7	4	(BP)					
5543		PALE	06 19 1925	N18	E11	06 20.6		B	DAO	70	8	4	3
5543		CULG	06 20 0220	N18	E08	06 20.7		B	DRO	40	9	4	2
5543		SVTO	06 20 0520	N18	E06	06 20.7		B	DAO	40	12	4	3
5543		BOUL	06 20 1336	N18	E02	06 20.7		B	CAI	40	9	4	1
5543		HOLL	06 20 1415	N18	E02	06 20.7		B	DAO	170	8	6	3
5543		RAMY	06 20 1427	N18	E01	06 20.7		B	CSO	30	12	5	3
5543	25308	MWIL	06 20 1500	N18	E00	06 20.6	5	(B)					
5543		PALE	06 20 1925	N18	W02	06 20.6		B	CSO	80	4	5	2
5543		LEAR	06 21 0045	N18	W06	06 20.6		B	CAO	60	7	5	3
5543		CULG	06 21 0421	N18	W07	06 20.6		B	CAO	10	3	4	1
5543		SVTO	06 21 0543	N18	W08	06 20.6		B	DSO	40	8	5	3
5543	25308	MWIL	06 21 1515	N17	W13	06 20.6	5	(BP)					
5543		RAMY	06 21 1515	N18	W14	06 20.6		B	CAO	30	4	4	2
5543		BOUL	06 21 1535	N17	W13	06 20.7		B	CAO	20	3	4	2
5543		HOLL	06 21 1545	N18	W14	06 20.6		B	CSC	40	5	6	3
5543		LEAR	06 22 0011	N18	W20	06 20.5		A	HA	20	2	2	3
5543		SVTO	06 22 0541	N18	W24	06 20.4		A	HA	20	2	2	2
5543		BOUL	06 22 1345	N17	W25	06 20.7		A	HA	10	2	1	3
5543		HOLL	06 22 1500	N18	W27	06 20.6		A	HR	10	1	1	4
5543	25308	MWIL	06 22 1515	N17	W27	06 20.6	5	(AP)					
5543		RAMY	06 22 1520	N18	W28	06 20.5		A	AX	10	2	1	2
5543		LEAR	06 23 0045	N17	W33	06 20.5		A	AX	10	1	1	4

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
5542		SVTO	06	14	1430	S20 E85	06 21.1		A	HS	30	1	1	2
5542		RAMY	06	14	1504	S19 E89	06 21.4		A	HA	60	1	2	2
5542		HOLL	06	14	1510	S21 E85	06 21.1		A	HS	50	1	1	4
5542	25306	MWIL	06	14	1530	S21 E82	06 20.9	3	AP					
5542		BOUL	06	14	1707	S22 E80	06 20.9		A	HS	60	1	1	1
5542		PALE	06	14	1920	S20 E80	06 20.9		A	HS	120	1	1	3
5542		LEAR	06	15	0051	S20 E77	06 20.9		A	CS	120	1	3	3
5542		CULG	06	15	0450	S23 E73	06 20.8		A	HS	100	1	1	2
5542		SVTO	06	15	1155	S20 E72	06 21.0		A	HS	170	3	6	2
5542		BOUL	06	15	1348	S20 E70	06 20.9		B	DAO	200	3	4	3
5542		RAMY	06	15	1407	S20 E70	06 20.9		A	HA	180	3	4	2
5542	25306	MWIL	06	15	1430	S20 E69	06 20.9	5	(BP)					
5542		HOLL	06	15	1640	S21 E70	06 21.1		A	HK	300	1	4	4
5542		PALE	06	15	1953	S20 E75	06 21.6		B	CAO	150	4	12	3
5542		LEAR	06	16	0108	S21 E69	06 21.3		B	CAO	200	5	4	3
5542		SVTO	06	16	0932	S21 E69	06 21.7		B	EAO	180	4	14	2
5542		RAMY	06	16	1353	S20 E63	06 21.4		B	EAO	240	4	11	3
5542		BOUL	06	16	1355	S20 E60	06 21.2		B	ESO	160	3	11	2
5542	25306	MWIL	06	16	1440	S20 E62	06 21.3	5	(BP)					
5542		HOLL	06	16	1530	S21 E61	06 21.3		B	ESO	240	5	11	3
5542		PALE	06	16	1815	S20 E61	06 21.4		B	CSO	180	4	13	2
5542		LEAR	06	17	0038	S20 E56	06 21.3		B	ESO	180	5	12	3
5542		SVTO	06	17	0748	S20 E54	06 21.4		B	CAO	180	7	12	2
5542		RAMY	06	17	1240	S20 E49	06 21.3		B	CAI	300	12	13	4
5542		BOUL	06	17	1400	S21 E46	06 21.1		B	CAO	180	6	12	2
5542	25306	MWIL	06	17	1430	S20 E48	06 21.3	5	(B)					
5542		PALE	06	17	1840	S20 E47	06 21.4		B	CHO	240	9	12	4
5542		LEAR	06	18	0014	S20 E43	06 21.3		B	CKO	260	9	13	3
5542		CULG	06	18	0115	S21 E44	06 21.4		B	CAO	200	8	12	3
5542		SVTO	06	18	0606	S20 E41	06 21.4		B	EHO	280	11	13	2
5542		RAMY	06	18	1245	S20 E38	06 21.4		B	CHO	270	10	13	3
5542		BOUL	06	18	1415	S18 E34	06 21.2		B	CAO	170	6	12	3
5542		HOLL	06	18	1426	S21 E40	06 21.7		B	CSO	260	14	16	3
5542	25306	MWIL	06	18	1430	S20 E39	06 21.6	5	(B)					
5542		LEAR	06	19	0120	S20 E33	06 21.6		B	CHO	280	8	19	3
5542		CULG	06	19	0210	S21 E30	06 21.4		B	CAO	240	5	13	2
5542		SVTO	06	19	0625	S22 E31	06 21.6		B	CAO	260	14	20	4
5542		HOLL	06	19	1415	S23 E30	06 21.9		B	FKO	400	11	20	3
5542		RAMY	06	19	1450	S20 E24	06 21.4		B	CAO	230	11	11	3
5542		BOUL	06	19	1455	S20 E18	06 21.0		A	HA	230	4	3	3
5542	25306	MWIL	06	19	1615	S20 E17	06 21.0	5	(AP)					
5542		PALE	06	19	1925	S21 E20	06 21.3		B	CHO	230	4	10	3
5542		CULG	06	20	0220	S19 E16	06 21.3		B	CAO	220	3	9	2
5542		SVTO	06	20	0520	S20 E16	06 21.4		B	EAO	230	7	13	3
5542		BOUL	06	20	1336	S20 E06	06 21.0		A	HA	100	1	3	1
5542		HOLL	06	20	1415	S20 E06	06 21.0		B	CSO	290	3	4	3
5542		RAMY	06	20	1427	S20 E10	06 21.4		B	CAO	230	5	8	3
5542	25306	MWIL	06	20	1500	S20 E05	06 21.0	5	(BP)					
5542		PALE	06	20	1925	S20 E03	06 21.0		B	CHO	200	2	3	2
5542		LEAR	06	21	0045	S20 E01	06 21.1		B	CAO	220	3	4	3
5542		CULG	06	21	0421	S20 W01	06 21.1		A	HS	150	1	3	1
5542		SVTO	06	21	0543	S19 W02	06 21.1		A	HS	200	5	4	3
5542	25306	MWIL	06	21	1515	S20 W08	06 21.0	6	(BP)					
5542		RAMY	06	21	1515	S21 W09	06 20.9		A	HA	190	3	2	2
5542		BOUL	06	21	1535	S18 W07	06 21.1		A	HS	120	1	2	2
5542		HOLL	06	21	1545	S19 W07	06 21.1		A	HH	200	2	3	3
5542		LEAR	06	22	0011	S19 W12	06 21.1		B	CSO	170	3	3	3
5542		SVTO	06	22	0541	S19 W16	06 21.0		A	HS	220	3	3	2
5542		BOUL	06	22	1345	S18 W18	06 21.2		B	CSO	130	4	3	3
5542		HOLL	06	22	1500	S19 W20	06 21.1		A	HS	140	2	2	4
5542	25306	MWIL	06	22	1515	S20 W20	06 21.1	6	(AP)					
5542		RAMY	06	22	1520	S20 W20	06 21.1		A	HS	210	1	2	2
5542		LEAR	06	23	0045	S21 W25	06 21.1		A	HS	140	3	3	4
5542		SVTO	06	23	0755	S20 W28	06 21.2		A	HS	120	2	4	2
5542		RAMY	06	23	1410	S19 W31	06 21.2		A	HS	170	2	4	3
5542		HOLL	06	23	1500	S20 W32	06 21.2		A	HS	100	3	3	4
5542	25306	MWIL	06	23	1530	S20 W34	06 21.0	5	(AP)					
5542		PALE	06	23	1938	S20 W36	06 21.1		A	HS	110	4	2	3
5542		LEAR	06	24	0153	S21 W38	06 21.2		B	CSO	130	6	3	4

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	ChD	ChP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5542		CULG	06 24 0423	S20	W40	06 21.1		A	HS	150	5	4	2
5542		SVTO	06 24 1041	S19	W44	06 21.1		B	DSO	120	12	5	2
5542		RAMY	06 24 1227	S18	W46	06 21.0		B	CAO	190	9	5	3
5542		BOUL	06 24 1340	S18	W45	06 21.1		B	CAO	140	9	5	3
5542	25306	MWIL	06 24 1500	S19	W48	06 21.0	5	(AP)					
5542		HOLL	06 24 1725	S19	W45	06 21.3		B	CKO	210	14	11	3
5542		PALE	06 24 1943	S20	W50	06 21.0		B	CSO	120	7	6	3
5542		LEAR	06 25 0045	S19	W53	06 21.0		B	CSO	150	12	7	4
5542		CULG	06 25 0400	S18	W54	06 21.0		B	DAI	130	7	5	3
5542		SVTO	06 25 1142	S18	W59	06 21.0		B	DAO	180	10	7	1
5542		RAMY	06 25 1349	S18	W59	06 21.1		B	DAO	160	8	8	2
5542		HOLL	06 25 1430	S18	W59	06 21.1		B	DAI	260	14	6	3
5542		BOUL	06 25 1515	S19	W61	06 21.0		B	CAO	130	6	7	2
5542	25306	MWIL	06 25 1515	S19	W61	06 21.0	4	(BG)					
5542		PALE	06 25 1830	S20	W63	06 20.9		B	DAO	170	8	6	3
5542		LEAR	06 26 0030	S19	W65	06 21.1		B	DKO	140	11	10	3
5542		CULG	06 26 0325	S19	W67	06 21.0		B	DAO	210	4	6	3
5542		SVTO	06 26 0715	S20	W71	06 20.9		B	DAO	140	5	7	3
5542		RAMY	06 26 1324	S18	W72	06 21.1		B	CAO	70	4	6	2
5542		BOUL	06 26 1325	S19	W73	06 21.0		B	CSO	80	3	5	1
5542		HOLL	06 26 1500	S18	W76	06 20.8		B	CSO	80	9	7	3
5542	25306	MWIL	06 26 1530	S18	W75	06 20.9	4	AF					
5542		PALE	06 26 2000	S20	W78	06 20.9		B	CAO	80	6	5	3
5542		LEAR	06 27 0100	S18	W78	06 21.1		A	HS	50	1	2	2
5542		SVTO	06 27 0520	S20	W83	06 20.9		A	HS	30	2	4	3
5551		RAMY	06 18 1245	S12	E48	06 22.1		B	BXO	10	3	3	3
5551		HOLL	06 18 1426	S12	E45	06 22.0		B	BXO	10	5	9	3
5551	25319	MWIL	06 18 1430	S12	E46	06 22.1	4	(BG)					
5551		LEAR	06 19 0120	S12	E35	06 21.7		B	BXO	20	5	4	3
5551		CULG	06 19 0210	S12	E35	06 21.7		B	CRO	10	4	3	2
5551		SVTO	06 19 0625	S14	E32	06 21.7		B	BXO	10	10	5	4
5551		HOLL	06 19 1415	S14	E28	06 21.7		B	CSO	200	5	7	3
5551		RAMY	06 19 1450	S11	E28	06 21.7		B	BXO	20	18	4	3
5551		BOUL	06 19 1455	S12	E27	06 21.6		B	DAO	80	7	5	3
5551	25319	MWIL	06 19 1615	S13	E27	06 21.7	5	(B)					
5551		PALE	06 19 1925	S12	E25	06 21.7		B	BXO	10	6	5	3
5551		CULG	06 20 0220	S11	E21	06 21.7		B	DAO	30	6	4	2
5551		SVTO	06 20 0520	S12	E20	06 21.7		B	BXO	20	10	5	3
5551		BOUL	06 20 1336	S12	E13	06 21.5		B	BXI	20	10	4	1
5551		HOLL	06 20 1415	S12	E12	06 21.5		B	DSO	80	10	6	3
5551		RAMY	06 20 1427	S13	E16	06 21.8		B	DSO	20	10	5	3
5551	25319	MWIL	06 20 1500	S13	E13	06 21.6	4	(BP)					
5551		PALE	06 20 1925	S12	E11	06 21.6		B	BXO	20	8	4	2
5551		LEAR	06 21 0045	S12	E09	06 21.7		B	CAO	40	7	5	3
5551		CULG	06 21 0421	S12	E06	06 21.6		A	HS	10	1	1	1
5551		SVTO	06 21 0543	S12	E05	06 21.6		B	CAO	10	9	5	3
5551		RAMY	06 21 1515	S12	E00	06 21.6		B	BXO	10	10	3	2
5551	25319	MWIL	06 21 1515	S12	E00	06 21.6	5	(BP)					
5551		BOUL	06 21 1535	S11	W01	06 21.6		B	BXO	10	6	4	2
5551		HOLL	06 21 1545	S12	E01	06 21.7		B	BXI	10	10	4	3
5551		LEAR	06 22 0011	S12	W04	06 21.7		A	AX	10	3	4	3
5551		SVTO	06 22 0541	S12	W09	06 21.5		B	DAO	30	4	5	2
5551		BOUL	06 22 1345	S10	W13	06 21.6		A	AX	3	3	1	3
5551		HOLL	06 22 1500	S11	W15	06 21.5		A	AX	2	2	1	4
5551	25319	MWIL	06 22 1515	S12	W15	06 21.5	5	(AP)					
5551		RAMY	06 22 1520	S11	W14	06 21.6		B	BXO	10	2	2	2
5551		LEAR	06 23 0045	S13	W19	06 21.6		A	HR	10	1	1	4
5551		SVTO	06 23 0755	S12	W22	06 21.7		A	HR	10	2	2	2
5551		RAMY	06 23 1410	S12	W26	06 21.6		A	AX	10	2	2	3
5551		HOLL	06 23 1500	S12	W28	06 21.5		A	AX	2	2		4
5551	25319	MWIL	06 23 1530	S12	W28	06 21.5	4	(AP)					
5551		PALE	06 23 1938	S12	W30	06 21.5		A	AX		1		3
5551		LEAR	06 24 0153	S14	W33	06 21.6		A	AX	10	1	1	4
5551		CULG	06 24 0423	S12	W34	06 21.6		A	AX	10	1	1	2
5551		SVTO	06 24 1041	S12	W35	06 21.8		A	AX		1		2
5551		RAMY	06 24 1227	S12	W39	06 21.6		A	AX		1		3
5551	25319	MWIL	06 24 1500	S12	W41	06 21.5	4	(AP)					
5551		HOLL	06 24 1725	S11	W41	06 21.6		B	BXO	10	2	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual
			Mo	Day (UT)										
5544		SVTO	06 15	1155	N21	E82	06 21.8		A	HS	20	1	2	2
5544	25309	BOUL	06 15	1348	N21	E78	06 21.5		A	HS	60	1	1	3
5544		MWIL	06 15	1430	N21	E80	06 21.7	4	(AP)					
5544		HOLL	06 15	1640	N20	E82	06 22.0		A	HA	60	1	3	4
5544		PALE	06 15	1953	N21	E75	06 21.6		A	AX	60	1	1	3
5544		LEAR	06 16	0108	N22	E77	06 22.0		B	CAO	40	5	7	3
5544		SVTO	06 16	0932	N21	E79	06 22.4		B	ESO	120	5	14	2
5544		RAMY	06 16	1353	N21	E70	06 21.9		B	DAO	250	6	10	3
5544	25309	BOUL	06 16	1355	N21	E68	06 21.8		B	DAO	140	5	8	2
5544		MWIL	06 16	1440	N22	E70	06 22.0	4	(B)					
5544		HOLL	06 16	1530	N21	E70	06 22.0		B	DHO	320	6	9	3
5544		PALE	06 16	1815	N22	E69	06 22.1		B	DAO	260	5	10	2
5544		LEAR	06 17	0038	N22	E64	06 21.9		B	DSO	240	6	8	3
5544		SVTO	06 17	0748	N22	E62	06 22.1		B	DAO	150	4	8	2
5544		RAMY	06 17	1240	N22	E58	06 22.0		B	DSO	290	4	9	4
5544	25309	BOUL	06 17	1400	N22	E56	06 21.9		B	DAO	220	4	7	2
5544		MWIL	06 17	1430	N21	E58	06 22.0	5	(B)					
5544		PALE	06 17	1840	N22	E56	06 22.1		B	DAO	320	4	9	4
5544		LEAR	06 18	0014	N22	E52	06 22.0		B	DHO	390	6	8	3
5544		CULG	06 18	0115	N21	E54	06 22.2		B	DAO	250	5	8	3
5544		SVTO	06 18	0606	N22	E49	06 22.0		B	DAO	290	6	8	2
5544		RAMY	06 18	1245	N22	E46	06 22.1		B	DKO	320	14	9	3
5544	25309	BOUL	06 18	1415	N21	E43	06 21.9		B	DAO	220	7	8	3
5544		HOLL	06 18	1426	N22	E45	06 22.0		B	DAO	310	12	8	3
5544		MWIL	06 18	1430	N21	E45	06 22.0	5	(B)					
5544		LEAR	06 19	0120	N22	E39	06 22.0		B	DKO	290	9	8	3
5544		CULG	06 19	0210	N21	E38	06 22.0		B	DAO	200	10	8	2
5544		SVTO	06 19	0625	N21	E36	06 22.0		B	DKO	250	11	8	4
5544		HOLL	06 19	1415	N20	E31	06 22.0		B	DSO	440	9	9	3
5544		RAMY	06 19	1450	N22	E32	06 22.1		B	DAO	250	14	8	3
5544	25309	BOUL	06 19	1455	N22	E32	06 22.1		B	DSO	230	7	7	3
5544		MWIL	06 19	1615	N22	E32	06 22.1	5	(BP)					
5544		PALE	06 19	1925	N21	E29	06 22.0		B	DAO	180	7	7	3
5544		CULG	06 20	0220	N22	E25	06 22.0		B	DAO	220	10	7	2
5544		SVTO	06 20	0520	N20	E25	06 22.1		B	DAO	200	18	9	3
5544		BOUL	06 20	1336	N22	E19	06 22.0		B	DKO	150	10	6	1
5544		HOLL	06 20	1415	N21	E19	06 22.0		B	DAO	300	9	8	3
5544	25309	RAMY	06 20	1427	N20	E18	06 22.0		B	DAO	140	12	7	3
5544		MWIL	06 20	1500	N22	E18	06 22.0	5	(BP)					
5544		PALE	06 20	1925	N20	E16	06 22.0		B	DAO	140	12	8	2
5544		LEAR	06 21	0045	N21	E12	06 21.9		B	DAO	180	12	8	3
5544		CULG	06 21	0421	N21	E12	06 22.1		B	DAO	70	6	7	1
5544		SVTO	06 21	0543	N20	E12	06 22.1		B	DSO	110	15	8	3
5544	25309	RAMY	06 21	1515	N20	E05	06 22.0		B	DAO	110	14	8	2
5544		MWIL	06 21	1515	N20	E05	06 22.0	5	(BP)					
5544		BOUL	06 21	1535	N20	E05	06 22.0		B	DAI	70	11	7	2
5544		HOLL	06 21	1545	N21	E06	06 22.1		B	ESI	170	14	9	3
5544		LEAR	06 22	0011	N20	E00	06 22.0		B	DAO	130	10	8	3
5544		SVTO	06 22	0541	N21	W03	06 22.0		B	DAO	60	7	9	2
5544	25309	BOUL	06 22	1345	N19	W06	06 22.1		B	DAO	50	10	8	3
5544		HOLL	06 22	1500	N21	W07	06 22.1		B	CAO	60	9	8	4
5544		MWIL	06 22	1515	N21	W08	06 22.0	5	(BG)					
5544		RAMY	06 22	1520	N20	W08	06 22.0		B	DAO	100	7	8	2
5544		LEAR	06 23	0045	N20	W14	06 22.0		B	DAO	70	13	10	4
5544		SVTO	06 23	0755	N22	W17	06 22.0		B	DAO	70	11	10	2
5544		RAMY	06 23	1410	N21	W21	06 22.0		B	DSO	80	16	10	3
5544	25309	HOLL	06 23	1500	N21	W20	06 22.1		B	DAO	50	14	10	4
5544		MWIL	06 23	1530	N22	W20	06 22.1	4	(BP)					
5544		PALE	06 23	1938	N20	W24	06 22.0		B	CRO	40	12	9	3
5544		LEAR	06 24	0153	N20	W27	06 22.0		B	DSO	70	8	9	4
5544		CULG	06 24	0423	N20	W29	06 22.0		B	DAO	50	9	9	2
5544		SVTO	06 24	1041	N22	W31	06 22.1		B	DAO	60	11	10	2
5544		RAMY	06 24	1227	N21	W33	06 22.0		B	DSO	50	11	10	3
5544	25309	BOUL	06 24	1340	N21	W32	06 22.1		B	CAO	20	12	10	3
5544		MWIL	06 24	1500	N19	W37	06 21.8	5	(BG)					
5544		HOLL	06 24	1725	N22	W33	06 22.2		B	CRO	60	18	11	3
5544		PALE	06 24	1943	N20	W37	06 22.0		B	CRO	20	9	10	3
5544		LEAR	06 25	0045	N22	W37	06 22.2		B	BXO	30	8	7	4

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
5544		CULG	06 25 0400	N22 W42	06 21.9		B	BXO	10	2	3	3
5544		SVTO	06 25 1142	N22 W48	06 21.8		B	DSO	30	2	3	1
5544		RAMY	06 25 1349	N22 W48	06 21.9		A	AX	10	2	3	2
5544		HOLL	06 25 1430	N22 W48	06 21.9		B	BXO	30	5	3	3
5544		BOUL	06 25 1515	N22 W47	06 22.0		B	BXO		3	3	2
5544	25309	MWIL	06 25 1515	N22 W48	06 21.9	5	(AP)					
5544		PALE	06 25 1830	N20 W50	06 21.9		B	CRO	20	2	3	3
5544		LEAR	06 26 0030	N22 W53	06 21.9		B	BXO	30	2	3	3
5544		CULG	06 26 0325	N21 W54	06 22.0		B	BXO	20	2	2	3
5544		SVTO	06 26 0715	N20 W58	06 21.9		A	AX	10	2	2	3
5544		RAMY	06 26 1324	N22 W61	06 21.9		A	AX	10	3	3	2
5544		BOUL	06 26 1325	N22 W58	06 22.1		B	BXO	20	3	2	1
5544		HOLL	06 26 1500	N22 W62	06 21.8		B	BXO	10	3	3	3
5544	25309	MWIL	06 26 1530	N22 W61	06 21.9	5	(AP)					
5544		PALE	06 26 2000	N21 W65	06 21.8		A	AX		1		3
5544		LEAR	06 27 0100	N21 W68	06 21.8		B	BXO	120	7	12	2
5544		SVTO	06 27 0520	N21 W71	06 21.8		A	AX		2	1	3
5544		RAMY	06 27 1247	N22 W74	06 21.8		A	AX	10	2	1	4
5553		CULG	06 19 0210	S24 E41	06 22.2		B	CRO	10	4	2	2
5553		RAMY	06 19 1450	S23 E36	06 22.4		A	AX	10	3	1	3
5553		BOUL	06 19 1455	S24 E34	06 22.2		A	AX	10	2	1	3
5553	25320	MWIL	06 19 1615	S24 E34	06 22.3	3	(AF)					
5553		PALE	06 19 1925	S24 E34	06 22.4		A	AX		2	2	3
5553		CULG	06 20 0220	S23 E29	06 22.3		A	AR		3	1	2
5553		SVTO	06 20 0520	S24 E27	06 22.3		A	AX	10	3	1	3
5553		RAMY	06 20 1427	S23 E23	06 22.4		A	AX		1		3
5553	25320	MWIL	06 20 1500	S23 E21	06 22.2	4	(B)					
5553		SVTO	06 21 0543	S25 E15	06 22.4		A	AX		3	1	3
5553	25320	MWIL	06 21 1515	S25 E09	06 22.3	4	(AF)					
5553		BOUL	06 22 1345	S23 W05	06 22.2		A	AX		3	1	3
5553		HOLL	06 22 1500	S23 W05	06 22.2		A	AX		2	1	4
5553	25320	MWIL	06 22 1515	S24 W06	06 22.2	4	(AF)					
5553		RAMY	06 22 1520	S24 W06	06 22.2		A	AX	10	2	1	2
5553		LEAR	06 23 0045	S25 W10	06 22.2		A	AX	10	3	2	4
5553		SVTO	06 23 0755	S24 W14	06 22.2		A	AX		2	1	2
5553		LEAR	06 24 0153	S24 W30	06 21.8		A	AX	10	3	2	4
5549		RAMY	06 17 1240	S16 E77	06 23.4		A	HS	60	1	2	4
5549		BOUL	06 17 1400	S17 E77	06 23.4		A	HS	60	1	2	2
5549	25314	MWIL	06 17 1430	S17 E79	06 23.6	4	(AP)					
5549		PALE	06 17 1840	S16 E79	06 23.8		A	HS	70	1	2	4
5549		LEAR	06 18 0014	S16 E72	06 23.5		A	HH	120	1	3	3
5549		CULG	06 18 0115	S17 E71	06 23.4		A	HS	60	1	2	3
5549		SVTO	06 18 0606	S17 E70	06 23.6		A	HS	120	1	1	2
5549		RAMY	06 18 1245	S16 E67	06 23.6		A	HS	70	1	2	3
5549		BOUL	06 18 1415	S16 E63	06 23.4		A	HS	70	1	1	3
5549		HOLL	06 18 1426	S15 E65	06 23.5		A	HS	50	1	2	3
5549	25314	MWIL	06 18 1430	S16 E66	06 23.6	5	(AP)					
5549		LEAR	06 19 0120	S14 E57	06 23.4		A	HS	110	1	2	3
5549		CULG	06 19 0210	S16 E58	06 23.5		A	HS	80	1	2	2
5549		SVTO	06 19 0625	S17 E57	06 23.6		A	HS	90	1	2	4
5549		HOLL	06 19 1415	S17 E53	06 23.6		A	HS	90	1	2	3
5549		RAMY	06 19 1450	S16 E52	06 23.6		A	HS	140	1	1	3
5549		BOUL	06 19 1455	S16 E51	06 23.5		A	HS	110	1	2	3
5549	25314	MWIL	06 19 1615	S16 E52	06 23.6	5	(AP)					
5549		PALE	06 19 1925	S16 E49	06 23.5		A	HS	110	1	1	3
5549		CULG	06 20 0220	S15 E46	06 23.6		A	HA	90	2	2	2
5549		SVTO	06 20 0520	S16 E44	06 23.5		A	HA	110	1	2	3
5549		BOUL	06 20 1336	S16 E38	06 23.4		A	HA	70	1	2	1
5549		HOLL	06 20 1415	S16 E38	06 23.5		A	HS	280	1	2	3
5549		RAMY	06 20 1427	S16 E39	06 23.6		A	HS	50	1	2	3
5549	25314	MWIL	06 20 1500	S16 E38	06 23.5	5	(AP)					
5549		PALE	06 20 1925	S16 E36	06 23.5		A	HS	100	1	2	2
5549		LEAR	06 21 0045	S15 E33	06 23.5		A	HS	100	1	3	3
5549		CULG	06 21 0421	S15 E32	06 23.6		A	HS	70	1	2	1
5549		SVTO	06 21 0543	S16 E33	06 23.7		A	HS	70	4	5	3
5549		RAMY	06 21 1515	S16 E25	06 23.5		A	HA	70	1	2	2
5549	25314	MWIL	06 21 1515	S16 E25	06 23.5	5	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5549		BOUL	06 21 1535	S15	E25	06 23.5		A	HS	60	1	2	2
5549		HOLL	06 21 1545	S16	E24	06 23.5		A	HS	90	1	2	3
5549		LEAR	06 22 0011	S15	E20	06 23.5		A	HS	90	2	3	3
5549		SVTO	06 22 0541	S16	E18	06 23.6		B	CAO	70	2	3	2
5549		BOUL	06 22 1345	S15	E12	06 23.5		A	HA	80	2	2	3
5549		HOLL	06 22 1500	S17	E15	06 23.8		B	CSO	70	2	8	4
5549	25314	MWIL	06 22 1515	S16	E13	06 23.6	5	(AP)					
5549		RAMY	06 22 1520	S16	E12	06 23.5		A	HS	80	1	1	2
5549		LEAR	06 23 0045	S17	E07	06 23.6		A	HS	90	2	2	4
5549		SVTO	06 23 0755	S16	E04	06 23.6		A	HA	60	1	2	2
5549		RAMY	06 23 1410	S15	E00	06 23.6		A	HS	70	2	3	3
5549		HOLL	06 23 1500	S15	E00	06 23.6		A	HS	70	2	3	4
5549	25314	MWIL	06 23 1530	S16	W02	06 23.5	5	(AP)					
5549		PALE	06 23 1938	S19	W03	06 23.6		B	CSO	80	2	4	3
5549		LEAR	06 24 0153	S17	W06	06 23.6		A	HS	70	1	2	4
5549		CULG	06 24 0423	S16	W08	06 23.6		A	HS	60	2	3	2
5549		SVTO	06 24 1041	S15	W10	06 23.7		A	HS	40	2	3	2
5549		RAMY	06 24 1227	S16	W12	06 23.6		A	HS	60	3	3	3
5549		BOUL	06 24 1340	S15	W13	06 23.6		B	CAO	70	3	3	3
5549	25314	MWIL	06 24 1500	S16	W13	06 23.6	5	(BP)					
5549		HOLL	06 24 1725	S15	W14	06 23.7		B	CSO	90	2	4	3
5549		PALE	06 24 1943	S17	W15	06 23.7		B	CSO	70	2	4	3
5549		LEAR	06 25 0045	S16	W18	06 23.7		B	CSO	80	5	4	4
5549		CULG	06 25 0400	S16	W21	06 23.6		A	HS	60	1	1	3
5549		SVTO	06 25 1142	S16	W27	06 23.4		A	HS	70	1	2	1
5549		RAMY	06 25 1349	S16	W26	06 23.6		A	HS	40	1	2	2
5549		HOLL	06 25 1430	S16	W27	06 23.5		A	HA	100	1	2	3
5549		BOUL	06 25 1515	S15	W27	06 23.6		A	HA	60	2	2	2
5549	25314	MWIL	06 25 1515	S16	W27	06 23.6	5	(AP)					
5549		PALE	06 25 1830	S17	W29	06 23.6		A	HS	70	2	2	3
5549		LEAR	06 26 0030	S16	W32	06 23.6		A	HS	50	1	1	3
5549		CULG	06 26 0325	S17	W34	06 23.5		A	HS	50	2	2	3
5549		SVTO	06 26 0715	S17	W36	06 23.6		A	HA	60	1	2	3
5549		RAMY	06 26 1324	S16	W38	06 23.7		A	HA	50	1	2	2
5549		BOUL	06 26 1325	S15	W37	06 23.7		A	HS	80	1	2	1
5549		HOLL	06 26 1500	S16	W42	06 23.4		A	HS	70	2	2	3
5549	25314	MWIL	06 26 1530	S16	W41	06 23.5	5	(AP)					
5549		PALE	06 26 2000	S17	W43	06 23.6		A	HS	60	1	2	3
5549		LEAR	06 27 0100	S15	W47	06 23.5		A	HS	50	1	2	2
5549		SVTO	06 27 0520	S16	W50	06 23.4		A	HS	60	1	1	3
5549		RAMY	06 27 1247	S16	W51	06 23.7		A	HA	30	1	2	4
5549		BOUL	06 27 1313	S14	W50	06 23.8		A	HS	50	1	2	1
5549		HOLL	06 27 1410	S15	W53	06 23.6		A	HS	30	1	1	4
5549	25314	MWIL	06 27 1530	S16	W54	06 23.5	5	(AP)					
5549		PALE	06 27 1920	S18	W56	06 23.5		A	HS	70	1	1	2
5549		LEAR	06 28 0214	S16	W59	06 23.6		A	HS	30	1	1	3
5549		CULG	06 28 0302	S17	W59	06 23.6		A	HS	20	1	1	2
5549		SVTO	06 28 0430	S16	W62	06 23.5		A	HS	30	1	1	3
5549		RAMY	06 28 1320	S17	W66	06 23.5		A	HA	60	1	1	3
5549		HOLL	06 28 1420	S16	W65	06 23.7		A	HS	50	1	1	3
5549		BOUL	06 28 1515	S15	W64	06 23.8		A	HS	40	1	1	3
5549	25314	MWIL	06 28 1515	S16	W67	06 23.5	5	(AP)					
5549		PALE	06 28 1747	S16	W67	06 23.6		A	HA	50	1	1	2
5549		CULG	06 29 0520	S18	W76	06 23.4		A	HS	30	1	1	3
5549		SVTO	06 29 0610	S17	W77	06 23.4		A	HS	30	1	1	3
5549		BOUL	06 29 1340	S15	W75	06 23.9		A	HS	30	1	1	3
5549		RAMY	06 29 1415	S16	W80	06 23.5		A	HS	60	1	2	4
5549	25314	MWIL	06 29 1430	S16	W80	06 23.5	3	AP					
5549		HOLL	06 29 1720	S15	W82	06 23.5		A	AX	30	1	2	3
5549		RAMY	06 30 1219	S17	W88	06 23.8		A	HA	50	2	2	3
5560		RAMY	06 20 1427	N26	E38	06 23.5		A	AX		1		3
5560	25324	MWIL	06 20 1500	N27	E40	06 23.7	4	(AP)					
5560		RAMY	06 21 1515	N28	E28	06 23.8		A	AX	10	2	1	2
5560	25324	MWIL	06 21 1515	N28	E28	06 23.8	4	(AP)					
5560		HOLL	06 21 1545	N28	E27	06 23.8		A	AX	10	3	2	3
5560		LEAR	06 22 0011	N29	E23	06 23.8		A	AX	10	3	2	3
5560		SVTO	06 22 0541	N30	E20	06 23.8		A	HR	10	1	1	2
5560		BOUL	06 22 1345	N28	E16	06 23.8		A	AX		3	1	3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP No Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5560		HOLL	06 22 1500	N30 E18	06 24.0		A	AX	10	5	2	4
5560	25324	MWIL	06 22 1515	N29 E16	06 23.9	4	(AP)					
5560		RAMY	06 22 1520	N29 E16	06 23.9		A	AX	10	3	1	2
5560		LEAR	06 23 0045	N29 E10	06 23.8		A	AX	10	3	2	4
5560		RAMY	06 23 1410	N29 E02	06 23.7		A	AX		1	1	3
5560		HOLL	06 23 1500	N29 E03	06 23.9		A	AX		1		4
5560	25324	MWIL	06 23 1530	N29 E02	06 23.8	3	(AP)					
5560		PALE	06 23 1938	N28 W01	06 23.7		A	AX		2	1	3
5560		LEAR	06 24 0153	N28 W04	06 23.8		A	AX	10	1	1	4
5560		HOLL	06 24 1725	N29 W10	06 23.9		A	AX	10	2	2	3
5560		PALE	06 24 1943	N27 W15	06 23.6		A	AX		2		3
5560		PALE	06 25 1830	N29 W27	06 23.6		A	AX		2	2	3
5560		SVTO	06 27 0520	N29 W43	06 23.8		A	AX		1		3
5568		SVTO	06 26 0715	S30 W32	06 23.8		B	BXO		2	3	3
5568		RAMY	06 26 1324	S29 W36	06 23.7		B	BXO	10	2	3	2
5568		BOUL	06 26 1325	S28 W35	06 23.8		B	BXO	10	2	2	1
5568		HOLL	06 26 1500	S28 W38	06 23.6		B	BXO	10	2	3	3
5568	25338	MWIL	06 26 1530	S29 W38	06 23.7	4	(BF)					
5568		PALE	06 26 2000	S30 W39	06 23.8		B	BXO	10	5	3	3
5568		SVTO	06 27 0520	S30 W46	06 23.6		B	BXO	10	6	4	3
5568		RAMY	06 27 1247	S29 W49	06 23.7		B	BXO	10	5	4	4
5568		BOUL	06 27 1313	S27 W49	06 23.7		A	AX	10	1		1
5568		HOLL	06 27 1410	S28 W49	06 23.8		B	BXO	10	3	3	4
5568	25338	MWIL	06 27 1530	S28 W50	06 23.7	4	(BF)					
5568		PALE	06 27 1920	S28 W54	06 23.6		A	AX		2	1	2
5568		SVTO	06 28 0430	S27 W60	06 23.5		A	AX		2		3
5568A	25336	MWIL	06 25 1515	S20 W12	06 24.7	4	(AP)					
5568B		LEAR	06 24 0153	N26 E10	06 24.8		A	AX	10	2	2	4
5568C		LEAR	06 19 0120	S16 E79	06 25.0		A	HK	120	1	3	3
5566		BOUL	06 24 1340	N13 E26	06 26.5		A	AX		1		3
5566		LEAR	06 25 0045	N16 E15	06 26.2		B	BXO	20	7	8	4
5566	25337	MWIL	06 25 1515	N15 W02	06 25.5	5	(BG)					
5566	25337	MWIL	06 26 1530	N16 W16	06 25.4	5	(BF)					
5566	25346	MWIL	06 30 1445	N17 W70	06 25.3	3	(AP)					
5567		PALE	06 19 1925	N15 E80	06 25.9		B	BXO	10	2	9	3
5567		SVTO	06 25 1142	N16 W03	06 25.3		B	DAO	30	8	9	1
5567		RAMY	06 25 1349	N16 W01	06 25.5		B	BXO	20	8	4	2
5567		HOLL	06 25 1430	N16 W01	06 25.5		B	BXO	20	6	5	3
5567		BOUL	06 25 1515	N15 W02	06 25.5		B	BXO		5	3	2
5567		PALE	06 25 1830	N15 W04	06 25.5		B	DSO	20	3	3	3
5567		LEAR	06 26 0030	N16 W08	06 25.4		B	BXO	20	5	4	3
5567		CULG	06 26 0325	N16 W09	06 25.4		B	BXO	10	4	4	3
5567		SVTO	06 26 0715	N15 W11	06 25.5		B	DRO	30	3	4	3
5567		RAMY	06 26 1324	N15 W13	06 25.6		B	BXO	10	3	3	2
5567		BOUL	06 26 1325	N15 W14	06 25.5		B	BXO	10	2	2	1
5567		HOLL	06 26 1500	N16 W15	06 25.5		B	BXO	10	3	4	3
5567		PALE	06 26 2000	N15 W18	06 25.5		B	BXO		2	3	3
5567		HOLL	06 30 1520	N17 W70	06 25.3		A	AX		1		3
5567A	25344	MWIL	06 29 1430	N13 W53	06 25.6	4	(AF)					
5552		CULG	06 19 0210	S17 E80	06 25.2		B	DSO	90	6	8	2
5552		SVTO	06 19 0625	S19 E85	06 25.7		B	EKI	120	9	11	4
5552		HOLL	06 19 1415	S20 E79	06 25.6		B	EKO	620	10	14	3
5552		RAMY	06 19 1450	S19 E82	06 25.9		B	EAO	260	12	12	3
5552		BOUL	06 19 1455	S18 E77	06 25.5		B	CKO	330	6	7	3
5552	25321	MWIL	06 19 1615	S17 E75	06 25.4	4	B					
5552		PALE	06 19 1925	S18 E74	06 25.4		B	DKI	440	11	9	3
5552		CULG	06 20 0220	S18 E74	06 25.7		B	EKI	510	14	12	2
5552		SVTO	06 20 0520	S18 E74	06 25.8		BG	FKI	530	21	18	3
5552		BOUL	06 20 1336	S17 E65	06 25.5		B	EKI	610	13	14	1
5552		HOLL	06 20 1415	S20 E69	06 25.9		B	EKO	1620	10	11	3
5552		RAMY	06 20 1427	S18 E69	06 25.8		B	EAO	600	24	14	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMP	Max	Mag	Spot	Corrected	Spot	Long.	Qual	
			Mo	Day	Cmd	Mo	H	Class	Class	Area (10-6 Hemi)	Count	(Deg)		
				(UT)		Day								
5552	25321	MWIL	06	20	S17 E65	06	25.6	5	BG					
5552		PALE	06	20	S18 E61	06	25.4		B	FKI	1080	19	21	2
5552		LEAR	06	21	S16 E61	06	25.6		B	EKI	550	15	13	3
5552		CULG	06	21	S16 E60	06	25.7		B	EKI	200	7	17	1
5552		SVTO	06	21	S18 E60	06	25.8		B	FKI	620	31	17	3
5552	25321	MWIL	06	21	S18 E54	06	25.7	5	(D)					
5552		RAMY	06	21	S19 E53	06	25.7		B	FAO	650	24	16	2
5552		BOUL	06	21	S17 E52	06	25.6		B	FAI	430	19	16	2
5552		HOLL	06	21	S18 E54	06	25.8		BG	FKC	720	47	20	3
5552		LEAR	06	22	S17 E50	06	25.8		BG	FAI	540	34	17	3
5552		SVTO	06	22	S17 E45	06	25.6		BGD	FAI	510	37	17	2
5552		BOUL	06	22	S19 E38	06	25.5		B	EAI	340	37	13	3
5552		HOLL	06	22	S18 E39	06	25.6		B	EKI	390	33	12	4
5552	25321	MWIL	06	22	S18 E42	06	25.8	5	(BG)					
5552		RAMY	06	22	S19 E41	06	25.8		BG	FKI	730	39	18	2
5552		LEAR	06	23	S18 E34	06	25.6		B	EKI	560	41	13	4
5552		SVTO	06	23	S17 E29	06	25.5		B	EAO	280	31	12	2
5552		RAMY	06	23	S18 E24	06	25.4		B	FAO	480	49	16	3
5552		HOLL	06	23	S19 E25	06	25.5		B	EKI	380	39	12	4
5552	25321	MWIL	06	23	S18 E25	06	25.5	5	(BG)					
5552		PALE	06	23	S19 E22	06	25.5		B	DKO	440	24	10	3
5552		LEAR	06	24	S19 E20	06	25.6		B	EKI	510	32	11	4
5552		CULG	06	24	S17 E20	06	25.7		B	EAI	240	34	14	2
5552		SVTO	06	24	S18 E13	06	25.4		B	EKO	290	25	11	2
5552		RAMY	06	24	S18 E14	06	25.6		B	EAI	240	49	12	3
5552		BOUL	06	24	S17 E11	06	25.4		B	EAI	160	60	11	3
5552	25321	MWIL	06	24	S18 E12	06	25.5	5	(D)					
5552		HOLL	06	24	S17 E12	06	25.6		B	EKI	360	84	14	3
5552		PALE	06	24	S19 E11	06	25.7		B	EKI	270	28	14	3
5552		LEAR	06	25	S18 E07	06	25.6		B	FKI	300	45	19	4
5552		CULG	06	25	S17 E05	06	25.5		B	EAO	130	27	12	3
5552		SVTO	06	25	S18 E01	06	25.6		B	EAO	160	30	11	1
5552		RAMY	06	25	S18 E01	06	25.6		B	EAO	160	29	13	2
5552		HOLL	06	25	S18 W02	06	25.4		B	EAO	350	45	15	3
5552		BOUL	06	25	S17 W02	06	25.5		B	DAI	130	27	10	2
5552	25321	MWIL	06	25	S18 E01	06	25.7	5	(D)					
5552		PALE	06	25	S19 E00	06	25.8		B	ESI	180	35	16	3
5552		LEAR	06	26	S18 W04	06	25.7		B	ESO	160	32	14	3
5552		CULG	06	26	S18 W06	06	25.7		B	EAI	120	22	13	3
5552		SVTO	06	26	S19 W10	06	25.5		B	EAO	80	19	11	3
5552		RAMY	06	26	S18 W14	06	25.5		B	EAO	150	27	13	2
5552		BOUL	06	26	S17 W13	06	25.6		B	DSO	90	18	10	1
5552		HOLL	06	26	S18 W12	06	25.7		B	DSI	180	49	17	3
5552	25321	MWIL	06	26	S18 W14	06	25.6	5	(BP)					
5552		PALE	06	26	S20 W14	06	25.8		B	EAO	120	19	13	3
5552		LEAR	06	27	S18 W20	06	25.5		B	ESO	80	16	12	2
5552		SVTO	06	27	S19 W23	06	25.5		B	EAO	90	12	12	3
5552		RAMY	06	27	S18 W26	06	25.5		B	DSO	50	14	10	4
5552		BOUL	06	27	S17 W26	06	25.6		B	DAI	70	9	10	1
5552		HOLL	06	27	S18 W28	06	25.4		B	ESO	80	18	11	4
5552	25321	MWIL	06	27	S18 W28	06	25.5	5	(BP)					
5552		PALE	06	27	S19 W30	06	25.5		B	CAO	60	12	14	2
5552		LEAR	06	28	S18 W33	06	25.6		B	ESO	50	10	11	3
5552		CULG	06	28	S19 W34	06	25.5		B	ESO	40	5	11	2
5552		SVTO	06	28	S19 W36	06	25.4		B	EAO	50	12	11	3
5552		RAMY	06	28	S18 W39	06	25.6		B	CSO	70	3	12	3
5552		HOLL	06	28	S18 W39	06	25.6		B	CSO	120	8	11	3
5552		BOUL	06	28	S17 W40	06	25.6		B	CAO	40	5	10	3
5552	25321	MWIL	06	28	S18 W42	06	25.4	5	(BP)					
5552		PALE	06	28	S20 W44	06	25.4		B	CAO	40	2	9	2
5552		CULG	06	29	S18 W55	06	25.0		A	HS	40	1	1	3
5552		SVTO	06	29	S19 W50	06	25.4		B	CSO	50	4	10	3
5552		BOUL	06	29	S15 W56	06	25.3		B	CAO	40	4	3	3
5552		RAMY	06	29	S17 W59	06	25.1		A	HA	40	3	2	4
5552	25321	MWIL	06	29	S17 W58	06	25.2	4	(AP)					
5552		HOLL	06	29	S17 W62	06	25.0		A	HS	80	1	3	3
5552		CULG	06	30	S18 W68	06	25.0		A	HS	20	1	1	1
5552		LEAR	06	30	S18 W67	06	25.1		A	HS	30	1	2	2
5552		BOUL	06	30	S15 W67	06	25.5		A	HS	40	1	1	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat Mo Day	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10 ⁶ Hemi)	Spot Count	Long. Extent (Deg)	Qual	
5552	25321	MWIL	06 30 1445	S17 W71	06 25.2	4	(AP)						
5552		HOLL	06 30 1520	S16 W71	06 25.2		A	HS	60	1	2	3	
5552		PALE	06 30 1958	S17 W77	06 25.0		A	HS	60	1	1	3	
5552		LEAR	07 01 0320	S17 W77	06 25.4		A	HS	50	1	2	3	
5552		CULG	07 01 0430	S17 W75	06 25.6		A	HS	20	1	1	3	
5552		SVTO	07 01 0804	S17 W76	06 25.7		B	CAO	30	3	11	2	
5570	25339	SVTO	06 26 0715	N10 W07	06 25.8	4	B	BXO		4	3	3	
5570		BOUL	06 26 1325	N09 W11	06 25.7		A	AX	10	1		1	
5570		HOLL	06 26 1500	N10 W12	06 25.7		A	AX	10	1	1	3	
5570		MWIL	06 26 1530	N10 W11	06 25.8		(B)						
5570		SVTO	06 29 0610	N12 W48	06 25.6		A	AX	10	2	3	3	
5570		BOUL	06 29 1340	N13 W50	06 25.8		A	AX		1		3	
5570		RAMY	06 29 1415	N13 W52	06 25.7		B	BXO	10	2	3	4	
5570A	25340	MWIL	06 26 1530	N19 W07	06 26.1	4	(AP)						
5555		SVTO	06 20 0520	N25 E77	06 26.2		A	AX	20	3	3	3	
5555	25325	HOLL	06 20 1415	N25 E70	06 26.0	5	B	BXI	170	10	7	3	
5555		RAMY	06 20 1427	N25 E72	06 26.2		B	BXO	70	10	7	3	
5555		MWIL	06 20 1500	N26 E74	06 26.4		BG						
5555		PALE	06 20 1925	N28 E70	06 26.3		B	DAO	300	11	7	2	
5555		LEAR	06 21 0045	N27 E68	06 26.3		B	DAI	430	13	9	3	
5555		CULG	06 21 0421	N27 E67	06 26.4		B	DKO	230	5	9	1	
5555		SVTO	06 21 0543	N27 E68	06 26.5		B	DKC	520	21	10	3	
5555	RAMY	06 21 1515	N25 E61	06 26.4	B	EKO	730	23	11	2			
5555	25325	MWIL	06 21 1515	N26 E60	06 26.3	6	(D)						
5555		BOUL	06 21 1535	N26 E57	06 26.1		B	DKI	460	13	9	2	
5555		HOLL	06 21 1545	N25 E61	06 26.4		BD	DKI	760	13	7	3	
5555		LEAR	06 22 0011	N27 E56	06 26.4		BG	EKI	900	20	12	3	
5555		SVTO	06 22 0541	N27 E51	06 26.2		BGD	EKI	770	18	12	2	
5555		BOUL	06 22 1345	N24 E45	06 26.0		B	DKI	600	23	10	3	
5555		HOLL	06 22 1500	N27 E50	06 26.5		BD	DKI	810	33	10	4	
5555	25325	MWIL	06 22 1515	N26 E46	06 26.2	6	(D)						
5555		RAMY	06 22 1520	N26 E46	06 26.2		BGD	EKI	900	22	11	2	
5555		LEAR	06 23 0045	N28 E42	06 26.3		BD	EKC	880	35	13	4	
5555		SVTO	06 23 0755	N27 E38	06 26.3		BGD	EKI	740	26	13	2	
5555		RAMY	06 23 1410	N26 E35	06 26.3		BG	EKI	920	29	12	3	
5555		HOLL	06 23 1500	N26 E35	06 26.3		BD	EKI	1000	43	12	4	
5555		25325	MWIL	06 23 1530	N26 E33		06 26.2	6	(D)				
5555	PALE		06 23 1938	N27 E32	06 26.3	BG	EKI		810	22	14	3	
5555	LEAR		06 24 0153	N27 E27	06 26.2	BGD	EKC		970	52	13	4	
5555	CULG		06 24 0423	N28 E26	06 26.2	BGD	EKI		850	26	13	2	
5555	SVTO		06 24 1041	N27 E24	06 26.3	B	EKI		850	26	14	2	
5555	RAMY		06 24 1227	N26 E23	06 26.3	B	EKI		850	38	13	3	
5555	BOUL		06 24 1340	N25 E21	06 26.2	B	EKC		540	42	12	3	
5555	25325	MWIL	06 24 1500	N25 E20	06 26.2	6	(D)						
5555		HOLL	06 24 1725	N27 E20	06 26.3		BGD	EKI	1080	56	14	3	
5555		PALE	06 24 1943	N27 E19	06 26.3		BG	EKI	1170	25	14	3	
5555		LEAR	06 25 0045	N26 E16	06 26.3		BG	EKC	740	46	14	4	
5555		CULG	06 25 0400	N27 E13	06 26.2		BG	EHI	660	17	12	3	
5555		SVTO	06 25 1142	N27 E11	06 26.3		B	EKI	990	41	15	1	
5555		RAMY	06 25 1349	N27 E11	06 26.4		B	EKI	830	44	13	2	
5555	25325	HOLL	06 25 1430	N25 E09	06 26.3	6	BGD	EKI	830	64	15	3	
5555		MWIL	06 25 1515	N25 E06	06 26.1		(D)						
5555		BOUL	06 25 1515	N25 E08	06 26.2		B	EKI	470	37	12	2	
5555		PALE	06 25 1830	N26 E06	06 26.2		B	EKI	880	43	13	3	
5555		LEAR	06 26 0030	N27 E04	06 26.3		BG	EKI	690	43	13	3	
5555		CULG	06 26 0325	N26 E01	06 26.2		BGD	EKI	680	31	13	3	
5555		SVTO	06 26 0715	N26 E00	06 26.3		BGD	EKI	650	47	11	3	
5555	25325	RAMY	06 26 1324	N26 W03	06 26.3	6	B	EKI	570	45	13	2	
5555		BOUL	06 26 1325	N25 W03	06 26.3		B	EKI	350	24	11	1	
5555		HOLL	06 26 1500	N26 W03	06 26.4		BGD	EHI	650	44	14	3	
5555		MWIL	06 26 1530	N25 W07	06 26.1		(BG)						
5555		PALE	06 26 2000	N26 W07	06 26.3		B	EHI	610	48	13	3	
5555		LEAR	06 27 0100	N26 W10	06 26.3		B	EKI	530	23	13	2	
5555		SVTO	06 27 0520	N26 W11	06 26.4		B	EKO	530	36	14	3	
5555	25325	RAMY	06 27 1247	N27 W15	06 26.4	6	B	EKO	510	18	14	4	
5555		BOUL	06 27 1313	N25 W14	06 26.5		B	EKI	500	24	11	1	

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

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NOAA/ USAF Group	Mt Wilson Group	Observation Time	Lat	CMP	Max	Mag	Spot	Corrected Area	Spot	Long.	
Group	Group	Mo Day (UT)	CMD	Mo Day	H	Class	Class	(10-6 Hemi)	Count	(Deg)	Qual
5555		HOLL 06 27 1410	N27 W15	06 26.4			EKI	430	24	13	4
5555	25325	MWIL 06 27 1530	N26 W19	06 26.2	6	(BP)					
5555		PALE 06 27 1920	N26 W20	06 26.2		B	EKI	420	17	13	2
5555		LEAR 06 28 0214	N26 W23	06 26.3		B	EKO	40	14	12	3
5555		CULG 06 28 0302	N26 W24	06 26.3		B	EKI	410	21	11	2
5555		SVTO 06 28 0430	N26 W24	06 26.3		B	EKO	470	27	12	3
5555		RAMY 06 28 1320	N26 W28	06 26.4		B	EKO	400	34	11	3
5555		HOLL 06 28 1420	N27 W29	06 26.3		BGD	EKO	440	27	11	3
5555		BOUL 06 28 1515	N26 W28	06 26.5		B	EKO	350	21	12	3
5555	25325	MWIL 06 28 1515	N26 W32	06 26.1	5	(BP)					
5555		PALE 06 28 1747	N26 W29	06 26.5		B	EHO	430	17	11	2
5555		CULG 06 29 0520	N26 W35	06 26.5		B	EHO	250	3	11	3
5555		SVTO 06 29 0610	N25 W38	06 26.3		B	CKO	430	11	10	3
5555		BOUL 06 29 1340	N27 W40	06 26.4		B	DKO	310	9	10	3
5555		RAMY 06 29 1415	N27 W44	06 26.2		B	EAO	390	8	11	4
5555	25325	MWIL 06 29 1430	N26 W43	06 26.3	5	(BP)					
5555		HOLL 06 29 1720	N28 W44	06 26.3		B	EKO	450	12	12	3
5555		CULG 06 30 0400	N27 W51	06 26.2		B	CHO	2780	2	4	1
5555		LEAR 06 30 0525	N24 W52	06 26.2		B	DAO	290	5	6	2
5555		RAMY 06 30 1219	N26 W53	06 26.4		B	CAO	410	4	11	3
5555		BOUL 06 30 1336	N27 W52	06 26.5		B	CAO	200	7	10	3
5555	25325	MWIL 06 30 1445	N26 W57	06 26.2	6	(BP)					
5555		HOLL 06 30 1520	N27 W57	06 26.2		B	CHO	340	5	10	3
5555		PALE 06 30 1958	N26 W62	06 26.0		B	CKO	200	5	6	3
5555		LEAR 07 01 0320	N26 W62	06 26.4		B	CKO	260	5	11	3
5555		CULG 07 01 0430	N25 W63	06 26.4		A	HK	100	2	2	3
5555		SVTO 07 01 0804	N28 W62	06 26.6		B	CKO	170	8	10	2
5555		RAMY 07 01 1320	N26 W68	06 26.4		B	CAO	310	3	12	2
5555		BOUL 07 01 1405	N31 W67	06 26.4		B	CAO	210	3	5	3
5555	25325	MWIL 07 01 1415	N26 W71	06 26.2	6	(BP)					
5555		HOLL 07 01 1440	N28 W70	06 26.2		B	CHO	260	3	10	4
5555		PALE 07 01 1825	N25 W73	06 26.2		A	HK	300	1	3	4
5555		LEAR 07 02 0110	N24 W75	06 26.3		A	HN	90	1	3	3
5555		CULG 07 02 0330	N27 W76	06 26.3		A	HS	90	1	2	3
5555		SVTO 07 02 0804	N25 W75	06 26.6		A	HK	120	1	2	3
5555		RAMY 07 02 1015	N25 W75	06 26.7		A	HK	160	1	7	2
5555		BOUL 07 02 1400	N26 W78	06 26.6		A	HS	150	1	2	3
5555	25325	MWIL 07 02 1430	N29 W86	06 26.0	5	AP					
5555		HOLL 07 02 1440	N26 W82	06 26.3		A	HN	120	11	3	3
5555		PALE 07 02 1907	N25 W82	06 26.5		A	HS	120	1	2	3
5556		RAMY 06 20 1427	S19 E88	06 27.3		A	HS	60	1	2	3
5556		LEAR 06 21 0045	S18 E74	06 26.7		B	EKO	300	2	12	3
5556		CULG 06 21 0421	S17 E79	06 27.2		A	HS	30	1	2	1
5556		SVTO 06 21 0543	S19 E80	06 27.3		B	DAO	180	2	8	3
5556		RAMY 06 21 1515	S20 E76	06 27.4		B	EAO	330	6	11	2
5556		BOUL 06 21 1535	S19 E70	06 27.0		B	DAO	210	3	8	2
5556		HOLL 06 21 1545	S21 E74	06 27.3		B	EHI	360	3	4	3
5556		LEAR 06 22 0011	S19 E59	06 26.5		B	DAO	350	9	9	3
5556		BOUL 06 22 1345	S18 E48	06 26.2		A	HS	100	1	2	3
5556		HOLL 06 22 1500	S19 E49	06 26.4		A	HS	60	1	2	4
5556	25331	MWIL 06 22 1515	S18 E49	06 26.4	5	(AP)					
5556		LEAR 06 23 0045	S18 E45	06 26.4		A	HS	150	2	3	4
5556		SVTO 06 23 0755	S19 E42	06 26.5		A	HS	80	3	4	2
5556		RAMY 06 23 1410	S18 E36	06 26.3		B	CAO	160	4	5	3
5556		HOLL 06 23 1500	S19 E35	06 26.3		B	CSO	110	4	3	4
5556	25331	MWIL 06 23 1530	S18 E36	06 26.4	5	(AP)					
5556		PALE 06 23 1938	S20 E37	06 26.6		B	ESO	240	5	11	3
5556		LEAR 06 24 0153	S18 E31	06 26.4		B	DAO	200	8	4	4
5556		CULG 06 24 0423	S18 E29	06 26.4		A	HS	110	1	3	2
5556		SVTO 06 24 1041	S20 E26	06 26.4		B	DSO	180	8	4	2
5556		RAMY 06 24 1227	S18 E24	06 26.3		B	CAO	140	8	5	3
5556		BOUL 06 24 1340	S19 E22	06 26.2		B	DSO	170	9	5	3
5556	25331	MWIL 06 24 1500	S19 E23	06 26.4	5	(AP)					
5556		HOLL 06 24 1725	S18 E21	06 26.3		B	DSO	180	16	5	3
5556		PALE 06 24 1943	S19 E23	06 26.6		B	ESO	370	10	11	3
5556		LEAR 06 25 0045	S18 E18	06 26.4		B	DSO	150	10	5	4
5556		CULG 06 25 0400	S19 E14	06 26.2		B	DAO	110	7	4	3
5556		SVTO 06 25 1142	S19 E11	06 26.3		B	DSO	240	15	6	1

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Hag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5556		RAMY	06 25 1349	S18 E09	06 26.3		B	CSO	130	12	6	2
5556		HOLL	06 25 1430	S19 E08	06 26.2		B	CSO	200	25	7	3
5556		BOUL	06 25 1515	S18 E08	06 26.2		B	CSO	100	13	6	2
5556	25331	MWIL	06 25 1515	S19 E11	06 26.5	6	(BG)					
5556		PALE	06 25 1830	S19 E13	06 26.8		B	DSO	250	6	10	3
5556		LEAR	06 26 0030	S19 E05	06 26.4		B	CHO	130	8	5	3
5556		CULG	06 26 0325	S18 E03	06 26.4		B	CSO	150	4	4	3
5556		SVTO	06 26 0715	S20 E01	06 26.4		B	CSO	160	11	6	3
5556		RAMY	06 26 1324	S19 W03	06 26.3		B	CSO	120	6	6	2
5556		BOUL	06 26 1325	S18 W02	06 26.4		B	CSO	100	2	3	1
5556		HOLL	06 26 1500	S22 W03	06 26.4		B	CSO	160	5	7	3
5556	25331	MWIL	06 26 1530	S19 W03	06 26.4	5	(BP)					
5556		PALE	06 26 2000	S20 W01	06 26.7		B	DSO	250	16	8	3
5556		LEAR	06 27 0100	S19 W08	06 26.4		A	HS	110	1	3	2
5556		SVTO	06 27 0520	S19 W11	06 26.4		A	HA	130	6	5	3
5556		RAMY	06 27 1247	S18 W14	06 26.5		A	HS	110	1	2	4
5556		BOUL	06 27 1313	S17 W14	06 26.5		A	HS	100	1	3	1
5556		HOLL	06 27 1410	S19 W15	06 26.4		A	HS	140	1	2	4
5556	25331	MWIL	06 27 1530	S18 W16	06 26.4	5	(AP)					
5556		PALE	06 27 1920	S19 W14	06 26.7		B	DSO	330	4	8	2
5556		LEAR	06 28 0214	S18 W21	06 26.5		A	HS	70	1	2	3
5556		CULG	06 28 0302	S19 W21	06 26.5		A	HS	100	1	2	2
5556		SVTO	06 28 0430	S20 W23	06 26.4		A	HA	120	1	2	3
5556		RAMY	06 28 1320	S19 W27	06 26.5		A	HS	100	1	2	3
5556		HOLL	06 28 1420	S18 W28	06 26.5		A	HS	120	1	2	3
5556		BOUL	06 28 1515	S17 W27	06 26.6		A	HS	80	1	2	3
5556	25331	MWIL	06 28 1515	S18 W28	06 26.5	5	(AP)					
5556		PALE	06 28 1747	S19 W27	06 26.7		B	DSO	200	3	6	2
5556		CULG	06 29 0520	S19 W37	06 26.4		A	HS	70	1	2	3
5556		SVTO	06 29 0610	S20 W37	06 26.4		A	HA	100	1	2	3
5556		BOUL	06 29 1340	S17 W39	06 26.6		A	HS	110	1	2	3
5556		RAMY	06 29 1415	S19 W40	06 26.5		A	HS	110	1	2	4
5556	25331	MWIL	06 29 1430	S19 W42	06 26.4	5	(BP)					
5556		HOLL	06 29 1720	S17 W43	06 26.4		B	CSO	110	2	4	3
5556		CULG	06 30 0400	S19 W50	06 26.3		A	HS	70	1	1	1
5556		LEAR	06 30 0525	S19 W48	06 26.6		A	HS	60	1	2	2
5556		RAMY	06 30 1219	S19 W52	06 26.5		A	HS	100	1	2	3
5556		BOUL	06 30 1336	S17 W52	06 26.6		A	HS	90	1	2	3
5556	25331	MWIL	06 30 1445	S18 W54	06 26.5	5	(AP)					
5556		HOLL	06 30 1520	S18 W55	06 26.4		A	HS	110	1	2	3
5556		PALE	06 30 1958	S19 W55	06 26.6		B	DSO	170	4	7	3
5556		LEAR	07 01 0320	S18 W60	06 26.7		A	HS	80	1	2	3
5556		CULG	07 01 0430	S19 W60	06 26.7		A	HS	60	1	1	3
5556		SVTO	07 01 0804	S18 W65	06 26.5		A	HS	90	1	2	2
5556		RAMY	07 01 1320	S18 W67	06 26.5		A	HS	80	1	2	2
5556		BOUL	07 01 1405	S14 W65	06 26.8		A	HS	100	1	2	3
5556	25331	MWIL	07 01 1415	S18 W67	06 26.6	5	(AP)					
5556		HOLL	07 01 1440	S18 W67	06 26.6		A	HS	70	1	1	4
5556		PALE	07 01 1825	S20 W68	06 26.7		B	DSO	190	2	7	4
5556		LEAR	07 02 0110	S19 W72	06 26.6		A	HS	90	1	2	3
5556		CULG	07 02 0330	S17 W73	06 26.7		A	HS	30	1	2	3
5556		SVTO	07 02 0804	S19 W75	06 26.7		A	HS	90	1	2	3
5556		RAMY	07 02 1015	S19 W80	06 26.4		A	HS	60	1	2	2
5556		BOUL	07 02 1400	S18 W74	06 27.0		A	HS	60	1	1	3
5556	25331	MWIL	07 02 1430	S19 W80	06 26.6	4	AP		60	1	3	3
5556		HOLL	07 02 1440	S18 W78	06 26.8		A	HS				
5556		PALE	07 02 1907	S19 W75	06 27.2		B	CSO	60	2	5	3
5556A		HOLL	06 22 1500	N38 E51	06 26.7		A	AX		2	2	4
5556A	25330	MWIL	06 22 1515	N39 E51	06 26.8	4	(B)					
5556B		RAMY	06 24 1227	N14 E29	06 26.7		A	AX	10	3	3	3
5556B	25335	MWIL	06 24 1500	N13 E27	06 26.7	3	(AP)					
5557	25327	MWIL	06 21 1515	N16 E76	06 27.4	5	(AP)					
5557		RAMY	06 21 1515	N18 E83	06 27.9		A	HA	90	1	1	2
5557		BOUL	06 21 1535	N16 E72	06 27.1		A	AX		1		2
5557		HOLL	06 21 1545	N15 E74	06 27.2		A	AX	30	2	2	3
5557		LEAR	06 22 0011	N17 E69	06 27.2		A	AX	10	2	1	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat	Long	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5557		SVTO	06 22	0541	N21 E74	06 27.9		A	HS	60	3	2	2	
5557		BOUL	06 22	1345	N16 E59	06 27.0		A	HA	20	1	1	3	
5557		HOLL	06 22	1500	N16 E62	06 27.3		A	AX		1		4	
5557	25327	MJIL	06 22	1515	N16 E62	06 27.3	4	(AP)						
5557		RAMY	06 22	1520	N19 E65	06 27.6		A	HS	100	1	2	2	
5557		LEAR	06 23	0045	N17 E56	06 27.3		A	AX	10	1	1	4	
5557		SVTO	06 23	0755	N16 E53	06 27.3		A	AX	10	1	1	2	
5557		RAMY	06 23	1410	N16 E50	06 27.4		A	AX	10	1	1	3	
5557		HOLL	06 23	1500	N16 E49	06 27.3		A	AX		1		4	
5557	25327	MJIL	06 23	1530	N16 E48	06 27.3	4	(AP)						
5557		PALE	06 23	1938	N15 E46	06 27.3		A	AX		1		3	
5557		LEAR	06 24	0153	N17 E42	06 27.3		A	AX	10	1	1	4	
5557		CULG	06 24	0423	N18 E41	06 27.3		A	AX	10	1	1	2	
5557		SVTO	06 24	1041	N16 E39	06 27.4		A	AX		1		2	
5557		RAMY	06 24	1227	N16 E37	06 27.3		A	AX	10	1	1	3	
5557		BOUL	06 24	1340	N15 E34	06 27.1		A	HA	10	1	1	3	
5557	25327	MJIL	06 24	1500	N15 E35	06 27.3	4	(AP)						
5557		HOLL	06 24	1725	N16 E34	06 27.3		A	AX	10	1	1	3	
5557		PALE	06 24	1943	N15 E33	06 27.3		A	AX	10	1		3	
5557		LEAR	06 25	0045	N16 E29	06 27.2		A	HR	20	1	1	4	
5557		CULG	06 25	0400	N17 E27	06 27.2		A	AX		1		3	
5557		SVTO	06 25	1142	N15 E24	06 27.3		A	HS	10	1	1	1	
5557		RAMY	06 25	1349	N16 E23	06 27.3		A	HS	10	1	1	2	
5557		HOLL	06 25	1430	N16 E22	06 27.3		A	AX	10	1	1	3	
5557		BOUL	06 25	1515	N15 E20	06 27.1		A	AX		1		2	
5557	25327	MJIL	06 25	1515	N15 E22	06 27.3	5	(AP)						
5557		PALE	06 25	1830	N15 E20	06 27.3		A	HR	10	2	2	3	
5557		LEAR	06 26	0030	N16 E16	06 27.2		A	AX	10	1	1	3	
5557		CULG	06 26	0325	N16 E14	06 27.2		A	AX	10	1	1	3	
5557		SVTO	06 26	0715	N15 E13	06 27.3		A	AX		1		3	
5557		RAMY	06 26	1324	N16 E08	06 27.2		A	AX	10	1	1	2	
5557		BOUL	06 26	1325	N16 E08	06 27.2		A	AX	10	1		1	
5557		HOLL	06 26	1500	N16 E08	06 27.2		A	AX	10	1	1	3	
5557	25327	MJIL	06 26	1530	N15 E07	06 27.2	4	(AP)						
5557		PALE	06 26	2000	N15 E06	06 27.3		A	AX		1		3	
5557		LEAR	06 27	0100	N15 E02	06 27.2		A	AX	10	2	2	2	
5557		SVTO	06 27	0520	N15 E00	06 27.2		A	AX		3	2	3	
5557		BOUL	06 29	1340	N14 W29	06 27.4		A	AX		1		3	
5557		RAMY	06 29	1415	N14 W30	06 27.3		A	AX	10	1	1	4	
5561		PALE	06 20	1925	S19 E85	06 27.3		A	HA	60	1	2	2	
5561	25326	MJIL	06 21	1515	S18 E75	06 27.3	5	(B						
5561		BOUL	06 22	1345	S19 E60	06 27.1		B	DAO	240	8	10	3	
5561	25326	MJIL	06 22	1515	S18 E61	06 27.3	5	(D)						
5561		LEAR	06 23	0045	S19 E58	06 27.4		B	EAO	350	11	11	4	
5561		SVTO	06 23	0755	S20 E53	06 27.4		B	ESO	320	9	12	2	
5561		RAMY	06 23	1410	S19 E49	06 27.3		B	DAO	140	7	10	3	
5561		HOLL	06 23	1500	S20 E48	06 27.3		B	EAO	220	11	13	4	
5561	25326	MJIL	06 23	1530	S19 E48	06 27.3	5	(B)						
5561		PALE	06 23	1938	S20 E51	06 27.7		B	DAO	220	2	4	3	
5561		LEAR	06 24	0153	S18 E44	06 27.4		B	ESO	290	9	12	4	
5561		CULG	06 24	0423	S18 E41	06 27.3		B	EAO	100	5	12	2	
5561		SVTO	06 24	1041	S20 E38	06 27.3		B	EAO	130	8	13	2	
5561		RAMY	06 24	1227	S19 E37	06 27.3		B	DSO	210	7	9	3	
5561		BOUL	06 24	1340	S19 E34	06 27.2		B	ESI	200	12	11	3	
5561	25326	MJIL	06 24	1500	S19 E35	06 27.3	5	(D)						
5561		HOLL	06 24	1725	S19 E35	06 27.4		B	DAO	320	18	5	3	
5561		PALE	06 24	1943	S19 E37	06 27.6		B	DAO	240	10	6	3	
5561		LEAR	06 25	0045	S18 E31	06 27.4		B	ESO	280	19	11	4	
5561		CULG	06 25	0400	S18 E26	06 27.1		B	EAO	210	10	11	3	
5561		SVTO	06 25	1142	S19 E24	06 27.3		B	EAO	260	18	12	1	
5561		RAMY	06 25	1349	S19 E25	06 27.5		B	EAO	200	20	13	2	
5561		HOLL	06 25	1430	S19 E22	06 27.3		B	EAO	280	28	11	3	
5561		BOUL	06 25	1515	S17 E21	06 27.2		B	ESI	200	17	12	2	
5561	25326	MJIL	06 25	1515	S19 E22	06 27.3	5	(D)						
5561		PALE	06 25	1830	S19 E25	06 27.7		B	DAO	100	8	4	3	
5561		LEAR	06 26	0030	S18 E17	06 27.3		B	DSI	230	26	12	3	
5561		CULG	06 26	0325	S18 E15	06 27.3		BD	EAO	180	20	12	3	
5561		SVTO	06 26	0715	S20 E14	06 27.4		BD	EAO	230	21	13	3	

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CHP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual
5561		RAMY	06 26 1324	S18 E12	06 27.5		B	EAO	160	26	13	2
5561		BOUL	06 26 1325	S17 E10	06 27.3		B	EAI	130	11	12	1
5561		HOLL	06 26 1500	S20 E09	06 27.3		B	DSO	150	25	13	3
5561	25326	MWIL	06 26 1530	S19 E07	06 27.2	5	(BP)					
5561		PALE	06 26 2000	S20 E11	06 27.7		B	CAI	40	16	5	3
5561		LEAR	06 27 0100	S19 E02	06 27.2		B	CSO	150	20	14	2
5561		SVTO	06 27 0520	S19 E00	06 27.2		B	EAO	140	27	13	3
5561		RAMY	06 27 1247	S18 W02	06 27.4		B	EAO	130	14	14	4
5561		BOUL	06 27 1313	S16 W04	06 27.2		B	EAI	140	13	12	1
5561		HOLL	06 27 1410	S19 E02	06 27.7		B	EAO	160	15	12	4
5561	25326	MWIL	06 27 1530	S18 W05	06 27.3	5	(BP)					
5561		PALE	06 27 1920	S18 W04	06 27.5		B	BXO	10	10	4	2
5561		LEAR	06 28 0214	S18 W11	06 27.2		B	ESO	170	10	11	3
5561		CULG	06 28 0302	S18 W11	06 27.3		B	EAO	140	13	12	2
5561		SVTO	06 28 0430	S20 W12	06 27.3		B	EAO	150	14	12	3
5561		RAMY	06 28 1320	S19 W17	06 27.2		B	CSO	160	28	12	3
5561		HOLL	06 28 1420	S18 W19	06 27.1		B	CSO	120	22	11	3
5561		BOUL	06 28 1515	S16 W18	06 27.3		B	CAO	80	13	10	3
5561	25326	MWIL	06 28 1515	S18 W18	06 27.3	5	(BG)					
5561		PALE	06 28 1747	S18 W16	06 27.5		B	BXO	20	8	3	2
5561		CULG	06 29 0520	S18 W25	06 27.3		B	CSO	60	6	11	3
5561		SVTO	06 29 0610	S20 W27	06 27.2		B	CAO	130	12	11	3
5561		BOUL	06 29 1340	S16 W29	06 27.4		B	CAO	70	21	10	3
5561		RAMY	06 29 1415	S19 W30	06 27.3		B	CSO	160	22	12	4
5561	25326	MWIL	06 29 1430	S18 W30	06 27.3	5	(B)					
5561		HOLL	06 29 1720	S18 W33	06 27.2		B	ESO	110	16	12	3
5561		PALE	06 29 2100	S19 W30	06 27.6		B	BXO	10	13	3	2
5561		LEAR	06 30 0525	S18 W36	06 27.5		B	CSO	100	9	4	2
5561		RAMY	06 30 1219	S19 W44	06 27.1		B	CAO	100	8	11	3
5561		BOUL	06 30 1336	S17 W42	06 27.4		B	CSO	70	4	10	3
5561	25326	MWIL	06 30 1445	S19 W49	06 26.9	5	(AP)					
5561		HOLL	06 30 1520	S18 W45	06 27.2		B	CSO	100	5	10	3
5561		PALE	06 30 1958	S18 W44	06 27.5		B	BXO		2	3	3
5561		LEAR	07 01 0320	S19 W55	06 27.0		A	HS	70	1	2	3
5561		CULG	07 01 0430	S21 W56	06 27.0		A	HS	60	1	1	3
5561		SVTO	07 01 0804	S19 W59	06 26.9		A	HA	40	2	1	2
5561		RAMY	07 01 1320	S19 W61	06 27.0		A	HS	90	1	2	2
5561		BOUL	07 01 1405	S15 W61	06 27.1		A	HS	90	1	2	3
5561	25326	MWIL	07 01 1415	S19 W62	06 27.0	5	(AP)					
5561		HOLL	07 01 1440	S19 W61	06 27.0		A	HS	60	1	1	4
5561		LEAR	07 02 0110	S20 W67	06 27.0		A	HS	70	1	2	3
5561		CULG	07 02 0330	S18 W68	06 27.1		A	HS	40	1	2	3
5561		SVTO	07 02 0804	S20 W69	06 27.1		A	HS	80	1	2	3
5561		RAMY	07 02 1015	S20 W74	06 26.9		A	HS	60	1	1	2
5561		BOUL	07 02 1400	S19 W70	06 27.3		A	HS	60	1	1	3
5561	25326	MWIL	07 02 1430	S20 W76	06 26.9	4	AP					
5561		HOLL	07 02 1440	S19 W73	06 27.1		A	HS	80	1	2	3
5561		LEAR	07 03 0010	S20 W78	06 27.1		A	HS	120	1	2	3
5561		SVTO	07 03 0605	S20 W87	06 26.7		A	HS	60	1	1	3
5561A	25341	MWIL	06 26 1530	N35 E09	06 27.4	3	(AP)					
5564		LEAR	06 23 0045	N27 E57	06 27.5		A	AX	10	1	1	4
5564		SVTO	06 23 0755	N27 E55	06 27.6		A	AX		1		2
5564		RAMY	06 23 1410	N26 E52	06 27.6		B	CAO	40	5	4	3
5564		HOLL	06 23 1500	N26 E52	06 27.7		B	CRO	20	7	4	4
5564	25333	MWIL	06 23 1530	N26 E50	06 27.5	5	(BP)					
5564		PALE	06 23 1938	N25 E47	06 27.4		B	CRO	50	5	4	3
5564		LEAR	06 24 0153	N27 E44	06 27.5		B	DSO	60	5	4	4
5564		CULG	06 24 0423	N28 E41	06 27.4		B	CSO	30	6	5	2
5564		SVTO	06 24 1041	N26 E41	06 27.6		B	CAO	30	5	4	2
5564		RAMY	06 24 1227	N26 E38	06 27.5		B	CSO	40	9	4	3
5564		BOUL	06 24 1340	N25 E36	06 27.3		B	CSO	10	5	5	3
5564	25333	MWIL	06 24 1500	N26 E36	06 27.4	4	(B)					
5564		HOLL	06 24 1725	N27 E37	06 27.6		B	BXO	40	13	5	3
5564		PALE	06 24 1943	N26 E36	06 27.6		B	CRO	30	3	5	3
5564		LEAR	06 25 0045	N26 E32	06 27.5		B	BXO	40	11	5	4
5564		CULG	06 25 0400	N27 E27	06 27.3		A	AX		1		3
5564		SVTO	06 25 1142	N26 E27	06 27.6		B	CSO	10	5	5	1

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation		Lat	CND	CHP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long- Extent (Deg)	Qual	
			Mo	Day											UT	Mo Day
5564		RAMY	06	25	1349	N26 E26	06 27.6		B	BXO	10	4	6	2	
5564		HOLL	06	25	1430	N26 E25	06 27.5		B	BXO	20	8	6	3	
5564		BOUL	06	25	1515	N25 E23	06 27.4		B	BXO		3	4	2	
5564	25333	MWIL	06	25	1515	N26 E23	06 27.4	5	(B)						
5564		PALE	06	25	1830	N27 E22	06 27.5		B	CRO	10	5	5	3	
5564		LEAR	06	26	0030	N26 E18	06 27.4		B	BXO	60	4	5	3	
5564		CULG	06	26	0325	N27 E14	06 27.2		A	AX	10	1	1	3	
5564		SVTO	06	26	0715	N26 E15	06 27.5		B	BXO		6	6	3	
5564		RAMY	06	26	1324	N27 E09	06 27.2		A	AX	10	3	2	2	
5564		HOLL	06	26	1500	N26 E12	06 27.5		B	BXO	10	4	6	3	
5564	25333	MWIL	06	26	1530	N27 E13	06 27.6	4	(BG)						
5564		PALE	06	26	2000	N27 E09	06 27.5		B	BXO		2	5	3	
5564		LEAR	06	27	0100	N25 E06	06 27.5		B	BXO	40	4	3	2	
5564		SVTO	06	27	0520	N24 E05	06 27.6		A	HA	20	3	1	3	
5564		RAMY	06	27	1247	N26 E00	06 27.5		A	AX	10	2	1	4	
5564		BOUL	06	27	1313	N26 E00	06 27.5		A	AX	10	1	1	1	
5564		HOLL	06	27	1410	N26 E00	06 27.6		A	AX		2	1	4	
5564	25333	MWIL	06	27	1530	N26 W02	06 27.5	4	(AF)						
5558		RAMY	06	21	1515	N07 E82	06 27.8		A	HA	40	1	2	2	
5558	25328	MWIL	06	21	1515	N08 E80	06 27.6	4	AP						
5558		BOUL	06	21	1535	N08 E76	06 27.3		A	HS	90	1	1	2	
5558		HOLL	06	21	1545	N07 E78	06 27.5		A	HH	180	1	3	3	
5558		LEAR	06	22	0011	N09 E74	06 27.6		A	HS	220	2	3	3	
5558		SVTO	06	22	0541	N10 E71	06 27.6		A	HH	170	1	3	2	
5558		BOUL	06	22	1345	N08 E65	06 27.4		A	HS	130	1	2	3	
5558		HOLL	06	22	1500	N08 E68	06 27.7		A	HS	130	1	2	4	
5558	25328	MWIL	06	22	1515	N08 E67	06 27.6	5	(AP)						
5558		RAMY	06	22	1520	N08 E68	06 27.7		A	HS	100	1	2	2	
5558		LEAR	06	23	0045	N09 E61	06 27.6		A	HS	160	2	2	4	
5558		SVTO	06	23	0755	N08 E59	06 27.7		A	HS	110	2	2	2	
5558		RAMY	06	23	1410	N08 E54	06 27.6		A	HS	140	1	2	3	
5558		HOLL	06	23	1500	N09 E55	06 27.7		A	HA	160	1	2	4	
5558	25328	MWIL	06	23	1530	N08 E54	06 27.7	5	(AP)						
5558		PALE	06	23	1938	N08 E51	06 27.6		A	HA	120	1	1	3	
5558		LEAR	06	24	0153	N09 E48	06 27.7		A	HA	150	4	3	4	
5558		CULG	06	24	0423	N10 E47	06 27.7		A	HS	210	5	5	2	
5558		SVTO	06	24	1041	N08 E44	06 27.7		A	HS	160	2	3	2	
5558		RAMY	06	24	1227	N08 E45	06 27.9		B	CAO	130	7	6	3	
5558		BOUL	06	24	1340	N08 E41	06 27.6		B	CAO	130	3	4	3	
5558	25328	MWIL	06	24	1500	N08 E40	06 27.6	5	(AP)						
5558		HOLL	06	24	1725	N08 E42	06 27.9		B	CSO	200	4	3	3	
5558		PALE	06	24	1943	N09 E38	06 27.7		B	CAO	150	5	3	3	
5558		LEAR	06	25	0045	N08 E38	06 27.9		B	CAO	180	8	9	4	
5558		CULG	06	25	0400	N09 E33	06 27.6		A	HS	170	1	2	3	
5558		SVTO	06	25	1142	N08 E30	06 27.7		B	DAO	140	8	4	1	
5558		RAMY	06	25	1349	N08 E30	06 27.8		B	CAO	140	10	5	2	
5558		HOLL	06	25	1430	N08 E29	06 27.8		B	DSO	190	15	6	3	
5558	25328	BOUL	06	25	1515	N07 E27	06 27.6	5	(BP)		90	13	6	2	
5558		MWIL	06	25	1515	N08 E28	06 27.7		B	CAO					
5558		PALE	06	25	1830	N09 E27	06 27.8		B	CAO	170	12	6	3	
5558		LEAR	06	26	0030	N08 E23	06 27.7		B	DSI	210	15	4	3	
5558		CULG	06	26	0325	N08 E21	06 27.7		B	DAO	180	8	4	3	
5558		SVTO	06	26	0715	N08 E20	06 27.8		B	DAC	220	16	5	3	
5558		RAMY	06	26	1324	N08 E17	06 27.8		B	CAO	230	12	5	2	
5558		BOUL	06	26	1325	N08 E15	06 27.7		B	DAC	150	10	4	1	
5558		HOLL	06	26	1500	N08 E16	06 27.8		B	DHO	190	13	5	3	
5558	25328	MWIL	06	26	1530	N08 E15	06 27.8	5	(BP)						
5558		PALE	06	26	2000	N09 E13	06 27.8		B	DSO	220	12	5	3	
5558		LEAR	06	27	0100	N08 E10	06 27.8		B	DSO	200	15	6	2	
5558		SVTO	06	27	0520	N07 E09	06 27.9		B	DAI	220	15	5	3	
5558		RAMY	06	27	1247	N08 E04	06 27.8		B	CAO	260	13	7	4	
5558		BOUL	06	27	1313	N08 E04	06 27.8		B	DAC	190	10	4	1	
5558		HOLL	06	27	1410	N09 E03	06 27.8		B	DSI	240	18	6	4	
5558	25328	MWIL	06	27	1530	N08 E02	06 27.8	5	(BP)						
5558		PALE	06	27	1920	N09 E00	06 27.8		B	DSO	270	19	5	2	
5558		LEAR	06	28	0214	N08 W05	06 27.7		B	DAI	170	17	5	3	
5558		CULG	06	28	0302	N08 W05	06 27.7		B	DAO	250	15	6	2	
5558		SVTO	06	28	0430	N07 W06	06 27.7		B	DAI	200	16	5	3	

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	Cmd	CMP No Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5558		RAMY	06 28 1320	N08	W10	06 27.8		B	DAO	210	26	5	3
5558		HOLL	06 28 1420	N08	W10	06 27.8		B	DAO	240	25	7	3
5558	25328	MWIL	06 28 1515	N08	W11	06 27.8	*	(D)*					
5558		BOUL	06 28 1515	N09	W11	06 27.8		B	DAI	90	25	5	3
5558		PALE	06 28 1747	N07	W14	06 27.7		B	DAO	230	12	6	2
5558		CULG	06 29 0520	N09	W20	06 27.7		B	DAO	120	4	6	3
5558		SVTO	06 29 0610	N07	W20	06 27.7		B	DAO	190	15	6	3
5558		BOUL	06 29 1340	N09	W24	06 27.8		B	DAI	110	22	6	3
5558		RAMY	06 29 1415	N09	W25	06 27.7		B	DAO	190	13	6	4
5558	25328	MWIL	06 29 1430	N09	W25	06 27.7	5	(B)					
5558		HOLL	06 29 1720	N08	W26	06 27.8		B	DSO	190	14	6	3
5558		CULG	06 30 0400	N09	W33	06 27.7		B	CSO	800	4	6	1
5558		LEAR	06 30 0525	N08	W34	06 27.7		B	DSO	140	9	6	2
5558		RAMY	06 30 1219	N08	W37	06 27.7		B	DAO	110	11	7	3
5558		BOUL	06 30 1336	N09	W36	06 27.9		B	DAO	70	12	6	3
5558	25328	MWIL	06 30 1445	N09	W39	06 27.7	5	(B)					
5558		HOLL	06 30 1520	N08	W39	06 27.7		B	DSI	130	10	6	3
5558		PALE	06 30 1958	N12	W42	06 27.7		B	CSO	110	6	7	3
5558		LEAR	07 01 0320	N08	W47	06 27.7		B	DAO	110	8	7	3
5558		CULG	07 01 0430	N08	W47	06 27.8		B	CSO	70	2	4	3
5558		SVTO	07 01 0804	N09	W48	06 27.8		B	DAO	120	8	7	2
5558		RAMY	07 01 1320	N09	W51	06 27.8		B	CAO	110	4	6	2
5558		BOUL	07 01 1405	N12	W50	06 27.9		B	CAO	50	5	6	3
5558	25328	MWIL	07 01 1415	N08	W53	06 27.7	5	(BP)					
5558		HOLL	07 01 1440	N09	W52	06 27.8		B	CSO	70	6	5	4
5558		PALE	07 01 1825	N08	W56	06 27.7		B	CSO	120	5	4	4
5558		LEAR	07 02 0110	N07	W59	06 27.7		B	CSO	90	6	4	3
5558		CULG	07 02 0330	N10	W60	06 27.7		B	CSO	40	4	4	3
5558		SVTO	07 02 0804	N08	W60	06 27.9		B	CSO	90	4	4	3
5558		RAMY	07 02 1015	N08	W65	06 27.6		B	BXO	40	7	5	2
5558		BOUL	07 02 1400	N09	W63	06 27.9		B	CAO	40	5	5	3
5558	25328	MWIL	07 02 1430	N08	W66	06 27.7	4	(AP)					
5558		HOLL	07 02 1440	N09	W65	06 27.8		B	CSO	60	6	6	3
5558		PALE	07 02 1907	N08	W67	06 27.9		B	BXO	30	3	3	3
5558		LEAR	07 03 0010	N08	W70	06 27.8		B	BXO	50	3	3	3
5558		SVTO	07 03 0605	N08	W78	06 27.5		B	CSO	30	2	5	3
5558		HOLL	07 03 1440	N09	W79	06 27.8		A	AX		1	1	3
5558	25328	MWIL	07 03 1515	N08	W78	06 27.9	3	AP					
5558		PALE	07 03 1830	N09	W80	06 27.9		A	AX	10	2	1	3
5559		RAMY	06 21 1515	N15	E77	06 27.5		A	AX	20	1	1	2
5559	25329	MWIL	06 21 1515	N18	E85	06 28.1	4	AP					
5559		BOUL	06 21 1535	N19	E78	06 27.6		A	HS	50	1	1	2
5559		HOLL	06 21 1545	N18	E80	06 27.7		A	HS	60	1	2	3
5559		LEAR	06 22 0011	N21	E77	06 27.9		A	HS	120	1	3	3
5559		SVTO	06 22 0541	N18	E67	06 27.3		A	HA	20	1	1	2
5559		BOUL	06 22 1345	N19	E67	06 27.7		A	HS	60	1	1	3
5559		HOLL	06 22 1500	N20	E75	06 28.4		B	CSO	70	5	15	4
5559	25329	MWIL	06 22 1515	N21	E72	06 28.1	5	(AP)					
5559		RAMY	06 22 1520	N16	E63	06 27.4		A	AX	20	2	1	2
5559		LEAR	06 23 0045	N21	E63	06 27.9		A	HS	80	1	2	4
5559		SVTO	06 23 0755	N20	E52	06 27.3		A	HS	40	1	3	2
5559		RAMY	06 23 1410	N16	E50	06 27.4		A	AX	10	1	1	3
5559		HOLL	06 23 1500	N19	E57	06 28.0		A	HS	70	1	2	4
5559	25329	MWIL	06 23 1530	N20	E56	06 27.9	5	(AP)					
5559		PALE	06 23 1938	N20	E58	06 28.2		B	DAO	110	6	8	3
5559		LEAR	06 24 0153	N20	E49	06 27.8		A	HA	80	2	2	4
5559		CULG	06 24 0423	N22	E48	06 27.9		A	HS	70	1	2	2
5559		SVTO	06 24 1041	N20	E46	06 28.0		A	HS	60	1	2	2
5559		RAMY	06 24 1227	N20	E44	06 27.9		A	HS	60	1	2	3
5559		BOUL	06 24 1340	N19	E42	06 27.8		A	HS	60	1	1	3
5559	25329	MWIL	06 24 1500	N19	E43	06 27.9	5	(AP)					
5559		HOLL	06 24 1725	N19	E42	06 27.9		A	HS	80	1	2	3
5559		PALE	06 24 1943	N22	E45	06 28.3		B	DAO	130	5	9	3
5559		LEAR	06 25 0045	N19	E37	06 27.8		A	HS	80	1	2	4
5559		CULG	06 25 0400	N20	E35	06 27.8		A	HS	80	1	1	3
5559		SVTO	06 25 1142	N19	E32	06 27.9		A	HS	100	1	2	1
5559		RAMY	06 25 1349	N19	E31	06 27.9		A	HS	50	1	2	2
5559		HOLL	06 25 1430	N20	E30	06 27.9		A	HS	70	1	2	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 Mo Day	Mag H	Spot Class	Corrected Area (10 ⁻⁶ Hemi)	Spot Count	Long. Extent (Deg)	Qual
5559		BOUL	06 25 1515	N19 E27	06 27.7	A	50	1	2	2
5559	25329	MMIL	06 25 1515	N19 E29	06 27.8	(AP)				
5559		PALE	06 25 1830	N21 E30	06 28.1	B	130	8	8	3
5559		LEAR	06 26 0030	N19 E25	06 27.9	A	110	4	3	3
5559		CULG	06 26 0325	N20 E22	06 27.8	A	70	2	1	3
5559		SVTO	06 26 0715	N20 E20	06 27.8	A	60	1	1	3
5559		RAMY	06 26 1324	N20 E17	06 27.8	A	40	1	2	2
5559		BOUL	06 26 1325	N19 E17	06 27.8	A	50	1	2	1
5559		HOLL	06 26 1500	N20 E20	06 28.1	B	120	6	8	3
5559	25329	MMIL	06 26 1530	N20 E16	06 27.9	(AP)				
5559		PALE	06 26 2000	N20 E13	06 27.8	A	40	2	2	3
5559		SVTO	06 27 0520	N20 E09	06 27.9	A	60	1	1	3
5559		RAMY	06 27 1247	N21 E06	06 28.0	B	70	2	4	4
5559		BOUL	06 27 1313	N19 E04	06 27.8	A	50	3	2	1
5559		HOLL	06 27 1410	N21 E05	06 28.0	B	50	2	4	4
5559	25329	MMIL	06 27 1530	N21 E03	06 27.9	(AF)				
5559		PALE	06 27 1920	N19 E02	06 27.9	B	60	7	6	2
5559		CULG	06 28 0302	N21 W05	06 27.7	A	60	1	2	2
5559		SVTO	06 28 0430	N20 W05	06 27.8	A	60	1	2	3
5559		RAMY	06 28 1320	N20 W09	06 27.9	A	80	3	1	3
5559		HOLL	06 28 1420	N21 W09	06 27.9	A	70	2	1	3
5559		BOUL	06 28 1515	N21 W09	06 27.9	A	40	2	1	3
5559	25329	MMIL	06 28 1515	N21 W10	06 27.9	(AP)				
5559		PALE	06 28 1747	N21 W11	06 27.9	A	80	1	1	2
5559		CULG	06 29 0520	N20 W17	06 27.9	A	60	1	1	3
5559		SVTO	06 29 0610	N19 W19	06 27.8	A	60	3	1	3
5559		BOUL	06 29 1340	N21 W21	06 27.9	A	60	3	2	3
5559		RAMY	06 29 1415	N21 W22	06 27.9	A	90	1	2	4
5559	25329	MMIL	06 29 1430	N21 W23	06 27.8	(AP)				
5559		HOLL	06 29 1720	N21 W25	06 27.8	A	90	1	2	3
5559		PALE	06 29 2100	N20 W27	06 27.8	A	70	1	2	2
5559		CULG	06 30 0400	N20 W30	06 27.9	A	40	1	1	1
5559		RAMY	06 30 1219	N20 W35	06 27.8	A	70	1	2	3
5559		BOUL	06 30 1336	N21 W34	06 28.0	A	90	1	2	3
5559	25329	MMIL	06 30 1445	N21 W36	06 27.8	(AP)				
5559		HOLL	06 30 1520	N21 W37	06 27.8	A	50	1	2	3
5559		PALE	06 30 1958	N20 W39	06 27.8	A	50	1	1	3
5559		CULG	07 01 0430	N20 W43	06 28.0	A	30	1	1	3
5559		SVTO	07 01 0804	N21 W45	06 28.0	A	60	1	2	2
5559		RAMY	07 01 1320	N21 W49	06 27.9	A	90	1	2	2
5559		BOUL	07 01 1405	N24 W45	06 28.2	A	60	1	2	3
5559	25329	MMIL	07 01 1415	N21 W49	06 27.9	(AP)				
5559		HOLL	07 01 1440	N21 W49	06 27.9	A	50	1	2	4
5559		PALE	07 01 1825	N20 W52	06 27.9	A	100	1	1	4
5559		LEAR	07 02 0110	N20 W54	06 28.0	A	50	1	2	3
5559		CULG	07 02 0330	N22 W56	06 27.9	A	30	1	1	3
5559		SVTO	07 02 0804	N21 W56	06 28.1	A	70	2	2	3
5559		RAMY	07 02 1015	N21 W63	06 27.7	A	40	1	1	2
5559		BOUL	07 02 1400	N21 W60	06 28.1	B	30	2	3	3
5559	25329	MMIL	07 02 1430	N21 W63	06 27.9	(AP)				
5559		HOLL	07 02 1440	N20 W65	06 27.7	A	80	2	3	3
5559		PALE	07 02 1907	N21 W65	06 27.9	B	50	2	3	3
5559		LEAR	07 03 0010	N20 W67	06 28.0	A	50	1	2	3
5559		SVTO	07 03 0605	N21 W72	06 27.8	A	80	1	1	3
5559		HOLL	07 03 1440	N21 W74	06 28.0	A	60	1	2	3
5559		BOUL	07 03 1513	N21 W70	06 28.4	A	50	1	2	1
5559	25329	MMIL	07 03 1515	N22 W76	06 27.9	(AP)				
5559		PALE	07 03 1830	N21 W78	06 27.9	A	60	1	1	3
5559		LEAR	07 04 0010	N21 W78	06 28.1	A	30	1	2	3
5559		CULG	07 04 0250	N20 W78	06 28.2	A	10	1	1	3
5559		SVTO	07 04 0703	N21 W82	06 28.1	A	30	1	2	3
5559A		SVTO	06 27 0520	S23 E13	06 28.2	B	10	3	2	3
5559A		HOLL	06 27 1410	S20 E09	06 28.3	A		2	1	4
5559A		SVTO	06 28 0430	S20 W02	06 28.0	A	10	3	3	3
5559A		HOLL	06 28 1420	S20 W08	06 28.0	A	10	3	2	3
5565		BOUL	06 22 1345	N22 E79	06 28.6	B		2	2	3
5565		RAMY	06 22 1520	N26 E80	06 28.8	B	30	4	6	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)		Lat	Cmd	OMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual	
5565		LEAR	06	23	0045	N23	E72	06	28.6	B	CSO	60	6	8	4
5565		SVTO	06	23	0755	N23	E70	06	28.7	B	CAO	30	4	11	2
5565		RAMY	06	23	1410	N22	E63	06	28.4	B	CAO	80	10	11	3
5565		HOLL	06	23	1500	N22	E65	06	28.6	B	CRO	40	7	10	4
5565	25334	MWIL	06	23	1530	N23	E64	06	28.6	5	(BF)				
5565		PALE	06	23	1938	N21	E67	06	28.9	A	AX	10	3		3
5565		LEAR	06	24	0153	N23	E58	06	28.5	B	DSO	120	10	9	4
5565		CULG	06	24	0423	N25	E57	06	28.6	B	DSO	90	4	10	2
5565		SVTO	06	24	1041	N23	E56	06	28.8	B	DAO	60	5	10	2
5565		RAMY	06	24	1227	N22	E54	06	28.7	B	CAO	90	15	7	3
5565		BOUL	06	24	1340	N21	E49	06	28.3	B	CAO	60	9	10	3
5565	25334	MWIL	06	24	1500	N22	E50	06	28.5	5	(B)				
5565		HOLL	06	24	1725	N21	E52	06	28.7	B	CSO	90	13	12	3
5565		PALE	06	24	1943	N21	E54	06	29.0	A	AX	10	3		3
5565		LEAR	06	25	0045	N23	E46	06	28.6	B	CSO	180	12	10	4
5565		CULG	06	25	0400	N23	E42	06	28.4	B	CSO	40	3	4	3
5565		SVTO	06	25	1142	N22	E41	06	28.6	B	CSO	40	6	9	1
5565		RAMY	06	25	1349	N23	E38	06	28.5	B	CSO	40	6	8	2
5565		HOLL	06	25	1430	N22	E36	06	28.4	B	CSO	50	8	5	3
5565		BOUL	06	25	1515	N21	E34	06	28.2	B	CSO	40	5	5	2
5565	25334	MWIL	06	25	1515	N22	E36	06	28.4	5	(BP)				
5565		PALE	06	25	1830	N22	E37	06	28.6	B	CAO	50	6	9	3
5565		LEAR	06	26	0030	N22	E35	06	28.7	B	CSO	10	9	14	3
5565		CULG	06	26	0325	N22	E27	06	28.2	A	HS	20	1	1	3
5565		SVTO	06	26	0715	N21	E32	06	28.7	B	CRO	40	28	16	3
5565		RAMY	06	26	1324	N22	E22	06	28.2	B	CAO	50	6	3	2
5565		BOUL	06	26	1325	N22	E22	06	28.2	A	HS	40	1	2	1
5565		HOLL	06	26	1500	N20	E30	06	28.9	B	DSO	40	11	5	3
5565	25334	MWIL	06	26	1530	N22	E22	06	28.3	5	(AP)				
5565		PALE	06	26	2000	N22	E20	06	28.4	B	CAO	20	5	3	3
5565		LEAR	06	27	0100	N21	E15	06	28.2	B	CSO	80	4	6	2
5565		SVTO	06	27	0520	N20	E13	06	28.2	A	HA	20	9	4	3
5565		RAMY	06	27	1247	N23	E10	06	28.3	A	AX	10	6	3	4
5565		BOUL	06	27	1313	N22	E09	06	28.2	B	CSI	20	6	2	1
5565		HOLL	06	27	1410	N22	E08	06	28.2	B	BXO	10	8	3	4
5565	25334	MWIL	06	27	1530	N23	E08	06	28.3	4	(AP)				
5565		PALE	06	27	1920	N22	E06	06	28.3	A	AX		2	2	2
5565		LEAR	06	28	0214	N22	W01	06	28.0	B	CSO	70	9	7	3
5565		CULG	06	28	0302	N22	E00	06	28.1	B	BXO	10	7	4	2
5565		SVTO	06	28	0430	N21	E00	06	28.2	A	AX	10	8	4	3
5565		RAMY	06	28	1320	N21	W04	06	28.2	B	BXO	20	10	6	3
5565		HOLL	06	28	1420	N22	W03	06	28.4	B	BXO	30	12	5	3
5565		BOUL	06	28	1515	N22	W04	06	28.3	B	BXO		5	4	3
5565	25334	MWIL	06	28	1515	N23	W05	06	28.2	4	(BP)				
5565		PALE	06	28	1747	N23	W06	06	28.3	B	BXO	30	5	4	2
5565		CULG	06	29	0520	N23	W12	06	28.3	B	BXI	10	5	3	3
5565		SVTO	06	29	0610	N21	W13	06	28.3	A	AX	10	2	3	3
5565		BOUL	06	29	1340	N21	W17	06	28.3	B	BXO	3	3	4	3
5565		RAMY	06	29	1415	N22	W18	06	28.2	B	BXO	10	5	6	4
5565	25334	MWIL	06	29	1430	N22	W18	06	28.2	4	(AP)				
5565		HOLL	06	29	1720	N23	W20	06	28.2	B	BXO	10	2	4	3
5565		PALE	06	29	2100	N20	W20	06	28.3	B	BXO	3	3	3	2
5565		LEAR	06	30	0525	N20	W31	06	27.8	A	HS	50	1	2	2
5565		RAMY	06	30	1219	N21	W29	06	28.3	A	AX	1	1		3
5565		PALE	06	30	1958	N23	W32	06	28.4	A	AX	1	1		3
5565		LEAR	07	01	0320	N21	W43	06	27.9	A	HS	80	1	2	3
5565		PALE	07	01	1825	N23	W45	06	28.4	A	AX	1	1		4
5565A	25343	MWIL	06	27	1530	S22	E07	06	28.2	4	(B)				
5563		HOLL	06	22	1500	S15	E79	06	28.6	B	BXO	10	3	5	4
5563	25332	MWIL	06	22	1515	S15	E78	06	28.5	4	(AP)				
5563		RAMY	06	22	1520	S16	E80	06	28.7	B	BXO	30	2	2	2
5563		LEAR	06	23	0045	S15	E73	06	28.5	B	CSO	60	2	4	4
5563		SVTO	06	23	0755	S16	E68	06	28.5	B	CAO	30	3	2	2
5563		RAMY	06	23	1410	S16	E65	06	28.5	B	CAO	130	7	6	3
5563		HOLL	06	23	1500	S15	E65	06	28.5	B	CAO	60	6	7	4
5563	25332	MWIL	06	23	1530	S15	E64	06	28.5	5	(B)				
5563		PALE	06	23	1938	S16	E65	06	28.7	B	CAO	120	6	8	3

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

JUNE 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day											(UT)
5563		LEAR	07 03	0010	S17	W61	06 28.5		B	DKO	200	9	4	3
5563		SVTO	07 03	0605	S16	W64	06 28.5		B	DSI	180	11	4	3
5563		HOLL	07 03	1440	S16	W68	06 28.5		B	DAO	200	7	5	3
5563		BOUL	07 03	1513	S16	W68	06 28.6		B	DAC	230	7	4	1
5563	25332	MWIL	07 03	1515	S16	W69	06 28.5	5	(AP)					
5563		PALE	07 03	1830	S17	W70	06 28.5		B	DAO	150	5	4	3
5563		LEAR	07 04	0010	S17	W75	06 28.4		B	DSO	60	3	4	3
5563		CULG	07 04	0250	S17	W72	06 28.7		B	DSO	70	3	4	3
5563		SVTO	07 04	0703	S18	W78	06 28.4		B	DSI	120	7	6	3
5563		BOUL	07 04	1311	S16	W80	06 28.6		B	DSO	120	2	9	1
5563		HOLL	07 04	1321	S16	W79	06 28.7		B	DAO	80	3	6	3
5563	25332	MWIL	07 04	1500	S15	W84	06 28.4	4	AP					
5563		RAMY	07 04	1528	S16	W80	06 28.7		B	CAO	80	4	6	3
5569		CULG	06 26	0325	N19	E38	06 29.0		B	BXO	10	3	3	3
5569		RAMY	06 26	1324	N20	E31	06 28.9		B	DAO	60	25	8	2
5569		BOUL	06 26	1325	N19	E32	06 29.0		B	DSI	100	19	8	1
5569		HOLL	06 26	1500	N17	E33	06 29.1		B	BXO	30	18	8	3
5569	25342	MWIL	06 26	1530	N19	E31	06 29.0	5	(D)*					
5569		PALE	06 26	2000	N19	E29	06 29.0		B	DAI	120	24	9	3
5569		LEAR	06 27	0100	N20	E25	06 28.9		B	DAO	380	29	10	2
5569		SVTO	06 27	0520	N19	E23	06 29.0		BG	EKI	380	51	11	3
5569		RAMY	06 27	1247	N20	E19	06 29.0		B	DAO	250	47	10	4
5569		BOUL	06 27	1313	N19	E19	06 29.0		B	DAI	340	37	10	1
5569		HOLL	06 27	1410	N20	E19	06 29.0		BG	EAI	280	49	11	4
5569	25342	MWIL	06 27	1530	N21	E15	06 28.8	5	(D)					
5569		PALE	06 27	1920	N20	E15	06 28.9		B	DKI	250	42	10	2
5569		LEAR	06 28	0214	N19	E12	06 29.0		BG	ESI	250	63	11	3
5569		CULG	06 28	0302	N20	E10	06 28.9		BG	EAI	190	39	11	2
5569		SVTO	06 28	0430	N18	E11	06 29.0		B	EAI	330	57	11	3
5569		RAMY	06 28	1320	N20	E06	06 29.0		B	EAI	510	84	11	3
5569		HOLL	06 28	1420	N21	E05	06 29.0		BG	EKI	500	58	12	3
5569		BOUL	06 28	1515	N19	E05	06 29.0		B	EAI	360	51	11	3
5569	25342	MWIL	06 28	1515	N21	E02	06 28.8	5	(BG)					
5569		PALE	06 28	1747	N21	E04	06 29.0		BG	EAI	370	30	12	2
5569		SVTO	06 29	0610	N19	W04	06 28.9		B	EAI	370	52	12	3
5569		BOUL	06 29	1340	N19	W07	06 29.0		B	EAI	250	41	11	3
5569		RAMY	06 29	1415	N20	W08	06 29.0		B	EAI	350	42	11	4
5569	25342	MWIL	06 29	1430	N19	W09	06 28.9	5	(D)					
5569		HOLL	06 29	1720	N20	W09	06 29.0		BG	EAI	3500	37	12	3
5569		PALE	06 29	2100	N20	W11	06 29.0		B	DAI	290	29	11	2
5569		CULG	06 30	0400	N20	W16	06 28.9		BG	DAI	190	15	11	1
5569		LEAR	06 30	0525	N20	W18	06 28.8		B	EKI	350	31	12	2
5569		RAMY	06 30	1219	N20	W21	06 28.9		B	EAI	320	40	13	3
5569		BOUL	06 30	1336	N21	W19	06 29.1		B	EAI	280	35	11	3
5569	25342	MWIL	06 30	1445	N21	W23	06 28.8	5	(BG)					
5569		HOLL	06 30	1520	N22	W22	06 28.9		BD	FKI	440	43	16	3
5569		PALE	06 30	1958	N21	W24	06 29.0		B	EKI	280	21	12	3
5569		LEAR	07 01	0320	N22	W29	06 29.0		B	EKI	290	27	12	3
5569		CULG	07 01	0430	N20	W28	06 29.1		B	DAO	170	8	9	3
5569		SVTO	07 01	0804	N22	W29	06 29.2		B	EAI	250	34	13	2
5569		RAMY	07 01	1320	N21	W33	06 29.1		B	EAO	250	25	13	2
5569		BOUL	07 01	1405	N22	W31	06 29.3		B	EAI	130	20	11	3
5569	25342	MWIL	07 01	1415	N21	W36	06 28.9	6	(D)					
5569		HOLL	07 01	1440	N21	W35	06 29.0		BG	EAI	190	29	14	4
5569		PALE	07 01	1825	N20	W36	06 29.1		B	EAI	230	20	11	4
5569		LEAR	07 02	0110	N20	W39	06 29.2		B	ESI	250	32	11	3
5569		CULG	07 02	0330	N22	W40	06 29.2		B	EAI	160	26	11	3
5569		SVTO	07 02	0804	N20	W42	06 29.2		B	EAI	210	25	11	3
5569		RAMY	07 02	1015	N19	W48	06 28.9		B	DAI	410	35	10	2
5569		BOUL	07 02	1400	N20	W44	06 29.3		B	DAI	110	46	10	3
5569	25342	MWIL	07 02	1430	N20	W48	06 29.0	4	(D)					
5569		HOLL	07 02	1440	N21	W48	06 29.0		B	ESI	250	43	12	3
5569		PALE	07 02	1907	N20	W50	06 29.1		BG	DAI	2200	18	10	3
5569		LEAR	07 03	0010	N19	W54	06 29.0		B	ESI	240	22	11	3
5569		SVTO	07 03	0605	N21	W57	06 29.0		B	DAI	240	16	10	3
5569		HOLL	07 03	1440	N20	W60	06 29.1		B	DAI	220	12	10	3
5569		BOUL	07 03	1513	N20	W59	06 29.2		B	DAI	120	12	8	1
5569	25342	MWIL	07 03	1515	N20	W63	06 28.9	5	(D)					

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

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JUNE 1989

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
5569		PALE	07 03	1830	N20	W64	06 29.0		B	DAO	160	8	9	3
5569		LEAR	07 04	0010	N20	W70	06 28.7		B	DSO	60	5	4	3
5569		CULG	07 04	0250	N19	W66	06 29.2		B	DSI	60	6	8	3
5569		SVTO	07 04	0703	N19	W74	06 28.7		B	DSO	120	5	5	3
5569		BOUL	07 04	1311	N20	W72	06 29.1		B	DSO	160	3	6	1
5569		HOLL	07 04	1321	N20	W73	06 29.1		B	CAO	80	6	9	3
5569	25342	MWIL	07 04	1500	N20	W77	06 28.8	5	(AP)					
5569		RAMY	07 04	1528	N19	W78	06 28.8		B	CAO	90	6	6	3
5569		PALE	07 04	1910	N18	W79	06 28.9		B	BXO	20	5	3	3
5569		LEAR	07 05	0029	N19	W80	06 29.0		B	DSO	20	4	3	3
5569		CULG	07 05	0255	N19	W78	06 29.3		B	DRO	30	2	3	2

Stations reporting:

BOUL = Boulder
CULG = Culgoora

HOLL = Holloman
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palihua

RAMY = Ramey
SVTO = San Vito

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
01	0117	0126	0149	1-	3			1	1		0117	C1.9	5517
01	0327	0339	0402	1-	3			1	1		0332	C1.7	
01	0448	0511	0538	1-	1			1			No flare		
01	1301	1303	1309	1-	1					1	1303	C1.5	5517
01	1540	1545	1600	1-	5	1			1	1	1538		5505
01	2017	2019U	2032	1-	1					1	2019E	C2.0	5517
01	2129	2132	2146	1	3					4	2125	C3.0	5517
01	2331	2335	0000	1-	1			1			2338	C2.4	5517
02	0022	0039	0116	1-	1			1			No flare		
02	0442	0449	0514D	2	5	2	1	1	1	2	0442E	C9.8	5517
02	0517	0554	0850E	3	5	3	2	1	1	4	0605	M2.0	5517
02	0557	0605	0620	1	1		1				0605	M2.0	5517
02	0850E	0859	0951	3-	5	1		1	1	2	0843		5517
02	1015	1019	1105	1	5	4	3	1	1	4	1012	M1.5	
02	1330	1335	1357	1	5					4	1331	C4.6	
02	1600	1612	1812	3-	5	4	3	1	1	8	1557	X1.3	
02	1700	1709	1725	1-	5	1	1		1	5	No flare		
02	1754	1757	1811	1-	5					5	1735	M1.3	5511
02	1814	1816	1839	1	5					6	1811	M1.7	5517
02	2041	2045	2055	2+	1	1					2052		
02	2149	2200	2237	1-	1			1			*		
03	0034	0045	0217	1-	3			1	1		0034	C5.3	5517
03	0129	0136	0150	1-	1				1		No flare		
03	0311	0320	0411	3	5	1		1	1	2	0308	M2.1	5517
03	0412E	0419	0447D	1-	1			1			No flare		
03	0447E	0453	0616	1	3			1	1		0443		5517
03	0753	0809	0916	1-	5	1		1	2	1	No flare		
03	0927	0929	0933	1+	1	1					0920		5517
03	0952	1001	1017D	1-	1			1			No flare		
03	1011	1029	1119	2-	5	4	3	1	1	5	1017E	M1.5	5517
03	1040	1050	1108	1+	1					1	No flare		
03	1125	1154	1154D	2	3	1	1		1	1	1130	M2.5	5520
03	1219	1228	1259	1-	5	4	2	1	1	6	1130	M2.5	5520
03	1314	1324	1440	2	5	4	2		1	8	1313	M3.2	5517
03	1319	1340	1434	2	1			1			1313	M3.2	5517
03	1440	1444	1515	2	1					1	1437		5507
03	1543	1550	1605	1-	5				1	1	No flare		
03	1625	1634	1733	1-	5	2	1	1	1	7	1620	C9.8	
03	1700	1705	1720	1-	5	2	1		1	7	1656	M2.0	5507
03	1827	1838	2019	3-	5	4	2	1	1	6	1827	X1.0	
03	2051	2055	2119	1-	5			1		4	2050	C4.0	5521
03	2053	2106	2121	1-	5			1		1	2050	C4.0	5521
03	2241	2255	2306D	1-	1			1			2243		5515
03	2307E	2316	0032D	2+	5			1		7	2303	M1.8	5516
04	0022	0023	0031	1-	1					1	No flare		
04	0032	0045	0053D	1-	3			1	1		0033	C2.3	5521
04	0053E	0141	0205	1-	3			1	1		0133	C2.0	5517
04	0213	0224	0247D	2	3	1		1	1		0212	M1.0	5517
04	0246E	0300	0452	3	3	1		1	1		0240	M3.4	5521
04	0720U	0739U	0825D	3	1					1	0743	M1.0	5507
04	0743	0757	0829D	2	5	3	2	1	2	4	0743	M1.0	5507
04	0829E	0901	1033	3	5	2	2	1	2	4	0851	M3.7	
04	0830E	0916	1104	3	5	1	3	1	2	2	0851	M3.7	
04	1143	1146	1155	1-	1				1		1142	C2.6	
04	1225	1237	1307	1-	5	2	1	1	1	4	No flare		
04	1319	1323	1323D	1-	5	1	1	1	1	6	1320	C3.4	5521
04	1407E	1421	1500	2	5	3	3	1	1	10	1404	M2.5	5517
04	1522	1524	1530	1-	1					1	1519	C3.9	5517
04	1618	1627	1627D	1	5	1	1		1	7	1616	C9.5	5521
04	1635	1644	1753	1+	5	3	3	1	1	8	1631	M2.9	
04	1715	1717	1717U		1						1715		5521
04	2115	2127	2307	3-	5	1		1		7	2112	M6.0	5521
04	2257	2257	2355	2+	1					1	2256		5514

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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Jun 89

JUNE 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
05	0114	0119	0129D	1-	3			1	1		0110		5521
05	0130	0135	0302	2	5	1		1	1	1	0130	M1.0	5521
05	0304	0315	0437	1	5	1		1	1	1	0305	C6.7	
05	0422	0424	0438	1-	1					1	No flare		
05	0538	0559	0632	1-	1			1			No flare		
05	0647	0657	0711	1-	1			1			0651	C2.7	5506
05	0717	0725	0809D	2+	5	4	4	1	2	5	0718	M1.0	
05	0805	0808	0836D	1+	1					1	No flare		
05	0809E	0823	0847D	2	1			1			0816		5521
05	0835E	0906	0919D	3	5	2		1	2	3	0827	M1.3	5521
05	0919E	0925	1056	3-	5			1	2	3	No flare		
05	1111	1122	1215	2	5	4	4	1	1	11	0112	M3.4	5521
05	1149	1151	1159	1-	1					1	No flare		
05	1223	1231	1237D	1-	3	1	1		1		1214		5506
05	1256	1310	1344	1-	5		1	1	1	3	1254		5521
05	1421	1429	1445	1-	5	1	1		1	3	1421		5521
05	1544	1553	1630	1	5	1	1		1	4	1540	C4.9	5521
05	1919E	1922	1950	2+	5			1		6	1918		5521
05	2009	2028	2125	1	5			1		5	1955	M1.2	
05	2127	2143	2338	3	5	1		1		6	1926E	X1.0	5521
05	2345	2350	0030	1-	5			1	1	1	2344E		5521
06	0008E	0011	0026	1-	3			1	1		No flare		
06	0105	0126	0323	3-	5	1		1	1	1	0103	M2.1	5521
06	0654	0713	0844	2	5	2	1	1	2	1	0655	C7.9	
06	0818	0820	0840U	1	1					1	*		
06	0908	0912	0936	1+	3		1			1	*		
06	0922	0939	0957	1-	5	1		1	2		0917	C5.5	
06	1057	1114	1211	2	5	2	6	1	1	9	1054	M3.1	
06	1228	1238	1321	1-	5	2	2	1	1	4	1226	C5.4	
06	1334	1345U	1451	1	1		1				No flare		
06	1444	1447	1501	1-	5	1			1	1	No flare		
06	1635	1639	1709	1-	5	1	3	1	1	8	1632	M1.0	5521
06	1820	1822	1840	1	3					2	No flare		
06	2014	2020	2125	1-	5			1		7	2017		5521
06	2239	2245	2321	1-	1			1			2216		5521
07	0013	0027	0020	1-	3			1	1		No flare		
07	0100	0120	0130D	2	1			1			0051		5521
07	0133	0155	0314D	3-	5	1		1	1	3	0129	M3.0	5521
07	0312E	0349	0349D	1	3			1	1		0350E		5521
07	0409E	0416	0438	1-	3			1	1		No flare		
07	0444	0459	0528D	1+	5		1	1	2		0430		5521
07	0528E	0534	0620	1-	1			1			No flare		
07	0649	0657	0730D	1-	5	1		1	1	1	0648	C7.8	5521
07	0733E	0743	0810	1-	5			1		1	0731		5521
07	0755	0757	0806	1-	1					1	No flare		
07	0817	0822	0853	1-	5	1		1	1	1	0823	C4.2	
07	0856	0858	0906	1-	1					1	No flare		
07	0936	0936U	1020	1	1	1					No flare		
07	0949	1007	1033	1	5		1	1	1	1	1008	M1.8	5521
07	1010E	1015	1050D	1+	5	2	1	1	1	3	1008	M1.8	5521
07	1050E	1057	1139	1	5	2	4	1	1	5	1049	M1.1	5521
07	1146	1153	1205	1-	3		1		1	1	No flare		
07	1210	1217	1225	1-	3	1			1	2	No flare		
07	1252	1255	1325	1-	5	1	1		1	7	1252	C7.4	
07	1328	1333	1355	1-	5	1			1	6	1326	C4.8	
07	1338	1341	1355	1-	1					1	No flare		
07	1456	1459	1510	1-	1				1		No flare		
07	1640	1643	1702	1	1					1	1643		5521
07	1716	1721	1736	1-	1			1			1713		5517
07	1905	1921	2004	1+	5			1		7	1908	M1.1	5521
07	2008	2015	2022	1-	5			1		5	No flare		
07	2031	2059	2142	2	5	1		1		7	2036	M2.4	5521
07	2209	2253	2347	1-	1			1			2249		5521

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	SPA	SES			
08	0002	0010	0032D	2-	3	1		1	1		0001	C9.4	
08	0033E	0035	0150	1-	1			1			0021		5528
08	0248	0300	0320	1-	1				1		No flare		
08	0618	0630	0647	1-	3			1	1		No flare		
08	0658	0715	0747D	2	5	3	3	1	2	4	0650	C9.9	5521
08	0747E	0751	0810D	1-	5			1	2	2	0746	C4.5	
08	0810E	0823	0908	2-	5	1	2	1	2	3	0805	C6.4	
08	0915	0922	1049	2	5	4	1	1	2	6	0908	M1.2	5521
08	1049	1059	1113	1	5		1			1	No flare		
08	1115	1121	1123	1	1	1					No flare		
08	1128	1150	1235	1+	3		1		1	1	1134E		5528
08	1304	1307	1328	1	5		1			5	No flare		
08	1354	1409	1452	2+	5	4	4	1	1	10	1349	M2.1	
08	1721	1746	1851	1	5	1	1	1	1	7	1715	M1.8	
08	1938	1957	2054	1-	1			1			No flare		
08	2230	2239	2323	1-	5	1		1		5	2225	C6.8	
09	0000	0005	0037	1-	1			1			0006	M2.3	5521
09	0000	0051	0305D	2+	3			1	1		0006	M2.3	5521
09	0305E	0308	0417	1	3			1	1		*		
09	0518	0528	0543	1-	1			1			0517		5516
09	0547E	0554	0647	1	5	1		1	1	3	0544	C8.3	5528
09	0748	0816	0943D	3	5	4	2	1	2	5	0711	M2.4	5521
09	0943E	0952	1114	1+	5	1	1	1	1	2	0942		
09	1012	1026	1045	1-	1				1		1012		5521
09	1118	1131	1210	1	3	1			1	1	1126		
09	1245	1253	1308	1	3		1			1	1245		5521
09	1325	1345	1400	1-	3	1	2		1		1332		5530
09	1528	1532	1539		3	1			1		1532		5528
09	1553	1608	1608D	1-	5	1	1		1	7	1554	C7.7	
09	1632	1641	1730	1-	5	3	2	1	1	10	1627	M1.9	
09	1748	1753	1815	1	3					5	1749	C7.3	
09	1919	1927	2007	1-	5			1		7	1913E	C7.8	5530
09	2023	2026	2104	2-	3					6	2024	M2.4	
09	2027	2034	2133	2	5			1		3	2024	M2.4	
09	2134	2143	2208	1-	5			1		7	2137	M1.0	
09	2229	2232	2345	2+	1					1	No flare		
09	2243	2258	2352D	3-	5			1	1	8	2252	M6.3	5533
09	2357	0038	0320D	2+	5			1			2357		5521
10	0056E	0119	0216D	1	3	1		1	1		0101		5533
10	0208	0225	0303	1-	3			1	1		0157		5533
10	0322	0328	0414	1-	3			1	1		*		
10	0448	0451	0504	1-	1				1		No flare		
10	0524	0533	0551D	1-	3			1	1		0527		5532
10	0550E	0556	0613D	1	5	1	1	1	2	3	0552	C7.1	5528
10	0613E	0625	0816	3	5	4	3	1	2	5	0614	M5.0	5533
10	0824	0827	0909	2-	3					3	0825	C5.8	5528
10	0827	0845	0915	1-	5	1	2	1	2		No flare		
10	0914	0920	0921	1	3	1	1		1		No flare		
10	0939	0952	1028	1+	5	3	4	1	2	5	0938	M1.3	5533
10	1020	1024	1130	2+	1					1	1022	C8.1	5533
10	1031	1042	1109	1-	5	2	2	1	1	2	No flare		
10	1154	1217	1250D	1	5	3	2	1	1	7	1207	M1.2	5521
10	1250E	1307	1340	2-	5	3	3	1	1	10	1253	M1.5	5528
10	1409	1419	1438	1-	5	1	3	1	1	7	1408	C6.8	5533
10	1451	1502	1521	1-	1				1		No flare		
10	1614	1628	1628D	1	5	1	1		1	5	No flare		
10	1650	1704	1725	1-	5	2	4	1	1	9	1650	M1.7	5533
10	1904	1915	1959	1-	5			1		6	1904	M1.2	5533
10	2056	2100	2124	1-	5			1		5	2054E	C6.8	5521
10	2220	2228	2309	1-	1			1			2221	C4.3	5533
10	2338	2342	0003	1-	1			1			2335	C3.6	5521

* = No flare patrol.

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Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
11	0032	0038	0052	1-	3			1	1		No flare		
11	0104	0114	0147	1-	3			1	1		0108		5528
11	0137	0153	0214	1-	3			1	1		No flare		
11	0220	0227	0246	1-	1			1			No flare		
11	0248	0252	0310	1-	3			1	1		0249	C3.1	5533
11	0434	0438	0457	1-	1			1			No flare		
11	0629	0639	0652	1-	1			1			*		
11	0656	0712	0750	1-	5			1	2	3	0654	C3.8	
11	0735	0747	0815	1-	5			1	2	3	0738	C4.0	
11	0842	0847	0857	1-	3		2			1	No flare		
11	0858	0918	1015	3	5	2	2		1	3	0902	M1.5	5533
11	0903	0929	1106	2+	5	2	2	1	1	2	0902	M1.5	5533
11	1022	1025	1025D	1-	3	1		1	1	1	No flare		
11	1040	1043	1043D	1-	3	1		1			1039		5533
11	1055	1103	1115	1-	3	1		1	1		1056		5533
11	1145	1150	1150D	1-	3	1	1		1	1	1144		5533
11	1207	1210	1230	1-	3	1		1			1206	C4.3	5533
11	1345	1401	1436	1	5	3	4	1	1	9	1343	C7.3	5533
11	1535	1539	1600	1-	5	1			1	5	1533	C4.3	5533
11	1854	1903	1955	1-	5			1		9	1853	C9.4	5533
11	1933	1936	1958	1	1					1	No flare		
11	2033	2036	2055	1	1					1	No flare		
11	2110	2115	2147	2	1					1	2110		5521
11	2254	2259	2319D	1-	1			1			2253	C4.0	5533
11	2321E	2325	0000	1-	5			1	1	1	2320	C5.8	5533
12	0010	0030	0046D	1-	1				1		0024		5533
12	0106	0116	0147	1-	3			1	1		0109		5528
12	0151	0201	0216D	1-	3			1	1		0149		5528
12	0216E	0221	0321D	2-	3	1		1	1		0219	M1.2	5533
12	0321E	0326	0412	1-	3			1	1		No flare		
12	0435	0441	0506	1-	3			1	1		No flare		
12	0604	0625	0640D	1-	1			1			No flare		
12	0640E	0650	0804	1-	5	1		1	2	1	0645		5533
12	0717	0752	0750	1-	1	1			1		0717		5528
12	0824	0827	0833	0	3	1	1		1		0820	C4.5	5533
12	0840	0843	0918	2	1					1	0820	C4.5	5533
12	0853	0903	0924	1-	5	1	2	1	1		0820	C4.5	5533
12	1050	1100	1144	1-	5	3	3	1	1	4	1050	C6.4	5533
12	1120	1122	1129	1-	1		1				No flare		
12	1139	1144	1144D	1-	3	1			1		No flare		
12	1229	1240	1240D	1-	5				1	2	1228	C4.6	5533
12	1259	1306	1330	1-	5		1		1	7	1242	C7.6	5533
12	1430	1449	1525	1	3		2				1450		5533
12	1555	1559	1620	1-	5	1			1	3	1555	C3.1	5528
12	1656	1707	1730	1-	5	2	1		1	6	1656	C7.0	5533
12	1903	1906	1928	1+	3					4	1902	C4.4	5533
12	1940	1942	1947	1-	1					1	1938	C3.4	5528
12	2104	2119	2150D	1-	5			1		3	2101	C4.0	5528
12	2150E	2200	2309	1-	5			1		3	2149	C4.0	5533
13	0028	0033	0052	1-	3			1	1		0025		5528
13	0202	0215	0232D	1	3			1	1		0201	C4.8	5528
13	0232E	0239	0316	1+	3			1	1		0235E		5533
13	0316E	0322	0359	1-	3			1	1		0315		5533
13	0416	0455	0658	1-	1			1	1		No flare		
13	0528	0531	0605	1-	1			1			No flare		
13	0754	0800	0800D	1-	3				1	1	*		
13	0811	0820	0840	1-	5	1		1	1		*		
13	1033	1040	1100	1-	3				1	1	No flare		
13	1105	1107	1113	1-	5	2	1			4	1049		5536
13	1107	1126	1230D	2	5	2	2	1	1	2	1049		5536
13	1230E	1252	1415	1	5			1		1	1244		5528
13	1433	1444	1515	1	5	2	2		1	4	1433		5533
13	1942	1953	2052	1-	5			1		4	1942	C7.0	5528
13	2014	2024	2144	1	1			1			No flare		
13	2317	2324	2345D	1-	1			1			2319	C4.4	5533
13	2345E	2351	0028	1-	1			1			2349		5528

No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
14	0037	0050	0105D	1-	3			1	1		No flare		
14	0105E	0117	0140	1-	3			1	1		0112		5533
14	0146	0159	0216	1-	3			1	1		0148		5536
14	0255	0327	0416	1-	3			1	1		0255		
14	0550	0600	0608D	1-	3			1	1		0549	C4.2	
14	0608E	0620	0727D	2+	5	3	2	1	2	3	0606	M1.0	
14	0721	0744	0818D	1+	5	1	1	1	2	3	0730E	C7.7	5528
14	0820E	0827	0900	1-	5	1		1	1	2	*		
14	1043	1049	1109	1-	5	2	2	1	1	2	1042	C6.7	
14	1109	1112	1115	1-	1		1				No flare		
14	1138	1144	1144D	1-	3				1	1	1139	C4.4	5528
14	1148	1152	1152D	1-	3				1	1	*		
14	1209	1215	1244	1-	5	1	3	1	1	1	1218		5528
14	1346	1351	1359	1+	5	3	2		1	4	1350	M2.7	5521
14	1355	1402	1448	2-	5	2	2	1	1	7	1350	M2.7	5521
14	1551	1555	1610	1-	5	2	3	1	1	8	1547	M1.0	5528
14	1630	1645	1755	2-	5	2	4	1	1	10	1629	M1.6	5521
14	1738	1745	1751	1	1						1739		5533
14	1819	1826	1946	1-	5		1	1	1	7	1819	M1.3	5528
14	2000	2012	2103	1-	5				1	1	No flare		
14	2133	2142	2227	1-	5				1	4	2130E	C7.3	5521
14	2237	2243	2305	1-	1				1		No flare		
14	2312	2319	0017	1	5				1	1	2313E	C7.8	5533
15	0033	0039	0057	1-	1				1		No flare		
15	0133	0139	0221	1-	3				1	1	0132	C5.1	5528
15	0224E	0239	0323D	1-	3				1	1	0220		5526
15	0323	0339	0456D	1	3				1	1	No flare		
15	0456E	0511	0540D	1-	3				1	1	No flare		
15	0540E	0551	0657	1-	5		1	1	2	4	0542	C6.3	5533
15	0741	0749	0844	1-	5	1		1	2	3	0736	C6.3	
15	0916	0927	0937	1-	5	1	2	1	1	1	0912	C5.1	
15	0944	0952	1002D	1	5	1	4	1	1	3	0942	M1.0	
15	1002E	1028	1128D	3	5	4	2	1	2	6	1002E		5521
15	1027	1045	1205	3-	1		1				1037E		5528
15	1112	1117	1146	1+	5					2	No flare		
15	1128E	1135	1212	1	5	2	3	1	1	5	1139	M1.6	
15	1322	1325	1405	2	1					1	1331E		5524
15	1329	1343	1420D	1-	5	1	1	1	1	2	1331E		5524
15	1356	1357	1405	1-	1					1	1354		5521
15	1420E	1427	1450	1-	5	1	4	1	1	8	1419	M1.0	
15	1459	1506	1526	1-	5	1	1		1	2	1500		5528
15	1544	1546	1609	1	3					3	1534		5528
15	1627	1633	1652	1	3					4	1624		
15	1713	1718	1746	1+	3					4	1720		5533
15	1758	1801	1813	1-	3					3	No flare		
15	1812	1838	1917	2-	3					2	1813	X4.1	5533
15	1848	1922	2055	3	5	4	2	1	1	5	1842	M2.4	5528
15	2217	2225	2335	1	5	1		1		7	2132	M1.2	5528
16	0001	0009	0024U	1-	1				1		No flare		
16	0053	0100	0122	1-	1			1			No flare		
16	0150	0151	0200	1-	1					1	No flare		
16	0205	0207	0215	1-	1					1	No flare		
16	0240	0254	0334	1-	3				1	1	No flare		
16	0450E	0455	0514D	3	5	1	1	1	2	4	0505E	M2.5	5533
16	0514E	0526	0614D	3	5	3	2	1	2	5	0505	M6.8	5533
16	0614E	0619	0700D	3-	5			1		2	0614		5528
16	0700E	0709	0739D	2	5				1	3	No flare		
16	0739E	0746	0916D	3	5	4	1	1	2	5	No flare		
16	0838	0840	0852	1-	1					1	No flare		
16	0903	0908	1015	2+	1					1	0903		5536
16	0916E	0925	1027	2	5	2	1	1	2	4	No flare		
16	1022	1045	1152D	2+	1					1	No flare		
16	1204	1206	1215	1-	5	1	1		1	5	1203	M1.0	5524
16	1226	1233	1356	1-	5	1	2	1	1	6	1223	M1.4	5533
16	1443	1448	1500	1-	5	1	1		1	1	1444		5528

* = No flare patrol.

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Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
16	1503	1505	1510	1	5	1	1		1	3	1502	C8.4	5536
16	1658	1708	1810	1-	5	3	4	1	1	8	1657		5542
16	1705	1719	1800	2+	1					1	1707		5534
16	1901	1913	2033	2+	5	1	1	1	1	8	1840	M4.9	5533
16	2150	2157	2255D	2-	5			1		8	2148	M2.5	5533
16	2234	2259	2353	1-	5			1		1	2255	C7.6	
17	0028	0038	0058D	1-	3			1	1		0029	C4.7	5533
17	0058E	0105	0247	1	5			1	1	1	0059	C9.3	5533
17	0309	0318	0354	1-	1				1		No flare		
17	0410	0428	0632	2	5	1		1	1	2	0413	C9.1	5533
17	0823	0826	0852	1-	5	1		1	2	4	No flare		
17	0904	0909	0922	1-	5			1	1		No flare		
17	0935	0937	1005D	2	1					1	0940	C9.7	5533
17	1017E	1028	1102D	2	5	4	3	1	2	5	1014	M1.6	
17	1102E	1106	1213	1	5	1	1	1	1	1	1057	C8.3	5533
17	1139	1145	1200	1-	1		1		1		1141		5528
17	1537	1543U	1552	1	1		1				1529		5528
17	1553	1618	1758	3-	5	4	3	1	1	11	1549	M8.7	5528
17	1723	1723	1730	1-	1					1	1716		5533
17	2247	2302	0005	1-	5			1			2248	C5.9	
17	2341	2342	2356	1-	1					1	No flare		
18	0114	0120	0129U	1-	1				1		No flare		
18	0339	0410	0503	1-	3			1	1		No flare		
18	0537	0555	0730	2-	5	1		1	2	3	0534		5528
18	0744	0755	0842	1-	5	1		1	1		0744		5533
18	1444	1450	1500	1-	5				1	6	1441		5534
18	1620	1625	1710	1-	5		2		1	8	1620	C6.8	5528
18	1904	1915	1955	1-	5			1		7	1900	M1.0	5528
18	2000	2008	2046	1-	5			1		6	1956	C6.4	
18	2046	2052	2122	1-	5			1		4	No flare		
18	2342	2349	0041D	1	5			1	1	2	2340E	M1.0	
19	0041E	0053	0217	1-	3			1	1		0039		5536
19	0312	0321	0341	1-	3			1	1		0310	C3.2	
19	0411	0418	0457	1-	3			1	1		No flare		
19	0527	0551	0743D	3	5	4	3	1	2	4	0532	M2.5	5528
19	0730	0732	0841	2+	1					1	0744	M3.1	
19	0743E	0752	0851	3-	5	4	3	1	2	5	0744	M3.1	
19	0830E	0834	0949	1-	5		2	1			No flare		
19	0932	0940	1000	1-	3	1	1		1		No flare		
19	1205	1207	1250	2	1					1	No flare		
19	1212	1225	1225D	2	3	1	1		1		1210	C6.8	
19	1311	1321	1350	1-	3		2		1	1	No flare		
19	1654	1656	1713	1-	5					3	1656		5528
19	1758	1800	1826	1	3					3	1803E	C6.5	
19	1930	1932	1946	1-	1					1	1933	C4.2	
19	2139	2205	2315	1	5			1		6	2138	M1.0	5533
19	2341	2349	0003	1-	1			1			2342		5533
20	0031	0041	0118	1-	3			1	1		No flare		
20	0146	0153	0208	1-	3			1	1		*		
20	0212	0221	0236D	1-	1				1		*		
20	0234	0246	0312D	1-	3			1	1		0236	C4.8	
20	0312E	0316	0401	1-	3			1	1		*		
20	0442	0455	0516	1-	3			1	1		No flare		
20	0604	0614	0635	1-	3			1	1		No flare		
20	0705	0719	0747	1-	1			1			No flare		
20	0754	0756	0830	1+	1					1	No flare		
20	0815	0822	0911D	1-	5	1		1	2	3	0815	C6.1	5552
20	0911	0919	0954	1-	5	1		1	1	1	No flare		
20	1217	1233	1337	1	3		2				No flare		
20	1312	1320	1415	2+	1					1	No flare		
20	1345	1353	1427	1-	5	1	2	1	1	1	1350E		5533
20	1419	1516	1711	3	5	4	4	1	1	6	1508	X1.6	
20	1727	1733	1750	1-	5	1	1		1	5	1725E	M1.5	5552

* = No flare patrol.

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Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
20	1853	1900	2015	2+	1					1	1859E		5555
20	2008	2028	2128	1-	5			1		5	2012E	M1.1	5533
20	2053	2101	2253	2	1					1	No flare		
20	2152	2213	0020	3	5	1		1		4	2201E	M9.3	5528
21	0136E	0144	0409	2	5	1		1	1	3	0142	M1.7	5552
21	0440	0459	0709	2	5	1		1	1	3	0446E	M1.4	5552
21	0808	0822	0909	1-	5	1	1	1	1	1	0802		5555
21	1018	1020	1025	1-	1		1				No flare		
21	1051	1102	1132	1-	5	1		1	1	1	No flare		
21	1133	1152	1316	2+	5	3	3	1	1	7	1125	M1.9	5555
21	1209	1221	1310	1-	5		1		1	3	No flare		
21	1320	1325	1340	1-	5				1	1	1310E		5555
21	1406	1420	1447	1-	5			1	1	2	1445E		5555
21	1620	1635	1700	1-	1				1		1547E		5555
21	1720	1737	1751	1-	5	1	3	1	1	7	1701E	M3.0	5555
21	1850	1859	1938	1-	5			1		4	1849	M1.1	5555
21	2005	2013	2032	1-	1			1		1	2016		5541
21	2040	2045	2052	1-	1					1	*		
21	2043	2114	2140	1-	1			1			2054E	C6.6	5555
21	2203	2221	2306	1-	5			1		1	2212		5555
21	2305	2337	0033	1-	1			1			No flare		
22	0102	0118	0138D	1-	3			1	1		0105		5555
22	0130E	0143	0222D	1	3			1	1		0138E		5555
22	0226	0236	0246	1-	3			1	1		No flare		
22	0256	0311	0325D	1-	3			1	1		No flare		
22	0323E	0331	0409	1-	3			1	1		No flare		
22	0430	0450	0513	1-	1			1			No flare		
22	0620	0656	0753D	1-	5		1	1	1	1	0630	C4.2	5556
22	0753E	0758	0850	1-	5	1	1	1	1	4	0752	C3.7	
22	0914	0917	0949	1-	5			1		2	0912	C3.8	5552
22	1118	1120	1210	2	5					2	1117E	C4.1	5555
22	1124	1143	1208D	1-	5			1	1		No flare		
22	1208E	1224	1233	1-	1			1			1200		5555
22	1247	1257	1338	1-	5	1	1	1	1	5	1242	C3.6	
22	1315	1317	1321	1-	1		1				No flare		
22	1348	1358	1427	1-	5	1		1	1	7	1353		5555
22	1444	1451	1510	1-	5	1		1	1	5	1444	C8.4	5555
22	1601	1604	1612	1-	1			1			No flare		
22	2119	2130	2213D	1-	5			1		3	2124	C7.8	5557
22	2213E	2220	2238	1-	1			1			2217		5561
22	2307	2311	2338	1-	5			1		1	2307	C3.6	5555
22	2341	2343	0029	1-	5			1	1	1	2345	C3.3	5555
23	0009	0015	0015D	1-	3			1	1		No flare		
23	0037	0050	0128	1-	3			1	1		0039		5555
23	0137	0145	0212	1-	3			1	1		No flare		
23	0214	0224	0255	1-	3			1	1		0217	C3.8	5555
23	0304	0310	0327D	1-	1			1			0303	C2.7	
23	0329	0335	0425	1-	3			1	1		0326	C3.9	
23	0430	0431	0436	1-	1			1			No flare		
23	0459	0506	0546	1-	3			1	1		0456		5552
23	0553	0600	0633	1-	5			1	1	2	No flare		
23	0901	0906	0959	1-	5	1	1	1	2	1	0859	C4.1	5555
23	1023	1025	1050	2	1					1	No flare		
23	1240	1253	1335	1-	5	1			1	2	1236		5544
23	1530	1543	1554	1-	1			1			No flare		
23	1751	1754	1814	1	3					2	1727	C3.8	5555
23	2356	0000	0021D	1-	5			1		2	2357E	C2.2	
24	0022	0033	0112	1-	3			1	1		No flare		
24	0050	0058	1134D	1-	1			1	1		0050	C2.4	5542
24	0143	0147	0202	1-	3			1	1		0140		5565
24	0229	0233	0253	1-	3			1	1		2226	C3.0	5565
24	0320	0329	0519D	3-	3	1		1	1		0320	M2.4	5555
24	0519E	0530	0557D	1-	3			1	1		0516	C2.1	5565

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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Jun 89

JUNE 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
24	0602	0619	0641	1-	5			1	2		No flare		
24	0651E	0655	0715	1-	1			1			No flare		
24	1226	1231	1250	1-	5	1			1	3	1225	C3.0	
24	1356	1409	1452	1-	5	2	1	1	1	6	1350	C4.1	5555
24	1604	1616	1657	1-	5	2	1	1	1	5	1603	C7.6	5555
24	1852	1901	1954	1-	5			1		6	1852	C7.0	5555
24	2115	2124	2158	1-	1			1			No flare		
24	2210	2221	2308	1-	5			1		1	2219E	C3.6	
25	0106	0119	0143	1-	3			1	1		0104		5542
25	0349	0357	0515	2	3	1		1	1		0351	M1.1	5555
25	0538	0544	0625	1-	1			1			0541	C2.7	5555
25	0833	0843	0912	1-	5			1	1	1	0827	C2.1	
25	1809	1811	1830	1-	3					2	1809	C1.9	5561
26	0139	0143	0154	1-	1				1		0138E	C1.5	
26	0347	0400	0433	1-	3			1	1		0358	C2.6	5555
26	0957	1000	1020	1	1					1	0958	C1.9	
26	1048	1052	1116	1+	3		1			1	1049	C2.5	5565
26	1302	1312	1332	1+	1		1				No flare		
26	1547	1602	1727	2	5	4	2	1	1	7	1541	M1.9	5569
26	1938	1957	2038	1-	1			1			1950E	C4.1	5569
26	2107	2113	2157	1-	5			1		5	2058	C8.6	5569
26	2301	2314	0001	1-	1			1			2243	C4.9	5569
27	0009	0017	0125	1-	3			1	1		0009	C5.7	5569
27	0203	0214	0248	1-	3			1	1		0204	C4.9	5544
27	0252	0303	0336	1-	3			1	1		0252	C4.9	
27	0403	0410	0442	1-	1				1		No flare		
27	0538	0551	0611	1-	1		1	1	1		0554	C2.4	5558
27	0613	0618	0638	1-	1			1			0613	C3.1	5569
27	0717	0721	0750	2	1					1	0717	C2.0	5569
27	0803	0811	0849	1-	5	1	1	1	1	1	0704	C2.5	5569
27	0858	0911	0938	1	1		1				No flare		
27	1007	1013	1020	1-	1		1				No flare		
27	1215	1232	1300	1-	5	1		1	1	3	1203	C3.6	5569
27	1337	1348	1435	1-	5			1	1	3	1333		5555
27	1820	1830	1901	2-	3					2	1755	C5.0	5569
27	2122	2123	2140	1-	1					1	2122		5565
27	2325	2347	0037D	1-	1			1			2326	C2.1	5555
28	0037E	0052	0147	1-	3			1	1		0040		5569
28	0257	0315	0402	1-	3			1	1		No flare		
28	0832	0852	0950D	1	5		2	1	1	4	0826	C4.7	5555
28	0950E	0954	1041	1-	1			1			No flare		
28	1138	1143	1205	1+	1					1	1129	C1.7	
28	1306	1312	1330	1-	5	3		1	1	5	1302	C8.4	5558
28	1740	1742	1754	1-	3					2	1742	C2.6	5555
28	1816	1835	2004	2-	5	3	1	1	1	5	1808	M2.4	5569
29	0303	0326	0511	1	3			1	1		0258	C7.3	5555
29	0405E	0412	0425	1-	3			1	1		No flare		
29	0946	1011U	1046	1	1		1				No flare		
29	1227	1228	1243	1-	1					1	No flare		
29	2106	2130	2342	2+	5	1		1		3	2057	M3.7	5555
29	2113	2230	2245	2+	1					1	2214E		5555
30	0602	0616	0715D	3	5	4	4	1	2	5	0600	M3.6	
30	0715E	0743	0938	3	5	4		1	1	3	No flare		
30	1118	1128	1138	1-	5	1	3	1	1	1	1113	C4.8	5558
30	1234	1239	1301	1-	5			1		1	No flare		
30	1306	1312	1332D	1-	1			1			1302	C6.2	5569
30	1332E	1346	1411	1-	5	1	3	1	1	5	1324	C6.2	5569
30	1419	1429	1446	1-	5	2	4	1	1	6	1403	C6.5	5569
30	1459	1509	1550	1+	5	3	4	1	1	7	1451	M2.5	5569
30	1641	1643	1700	1	1					1	1625	C3.3	5569
30	1707	1709	1717	1-	1					1	1658	C3.9	5569
30	1738	1745	1813	1-	5	3	3	1	1	5	1736	M2.1	5569
30	1838	1842	1915	2	1					1	1830	C3.7	5569
30	2215	2219	2230	1-	1					1	No flare		

* = No flare patrol.

OBSERVATORIES REPORTING FOR JUNE 1989

Amherst, New Hampshire, USA	SES	LaCrescenta, California, USA	SES
Darmstadt, German Fed Rep	SWF	Latrobe, Pennsylvania	SES
Edenvale, Rep of S. Africa	SES	Lintong, People's Rep of China	SPA
Farsta, Sweden	SES	Panska Ves, Czechoslovakia	SES, SWF, SEA
Gainesville, Florida, USA	SES	Paterson, New Jersey, USA	SES
Hiraiso, Japan	SWF	San Jose, California, USA	SES
Houston, Texas, USA	SES	Sofia, Bulgaria	SES
Hudson, Ohio, USA	SES	Somersworth, New Hampshire, USA	SES
Inubo, Japan	SPA	Tavares, Florida, USA	SES
Johannesburg, Rep of So. Africa	SES	Tucson, Arizona, USA	SES
Juliusruh, German Dem Rep	SWF	Upice, Czechoslovakia	SEA
Kandilli, Turkey	SEA	Valley Cottage, New York, USA	SES
Kuhlungsborn, German Dem Rep	SEA, SPA	Vlasim, Czechoslovakia	SEA

Observations are not necessarily continuous.

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1989

SIDs BY NOAA/SESC REGIONS

Reg. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
5505	1																													
5506					2																									
5507			2	2																										
5511	1																													
5514				1																										
5515			1																											
5516			1							1																				
5517	5	5	7	4			1																							
5520			2																											
5521		2	6	11	4	13	2	6	3	1				4	2															
5524															2	1														
5526															1															
5528							2	2	3	1	6	5	5	6	2	3	3	2	1											
5530							2																							
5532									1																					
5533							1	9	12	12	4	3	3	5	6				2	2										
5534															1			1												
5536												2	1		2		1	1												
5541																					1									
5542															1															
5544																								1					1	
5552																					2	2	1	1						
5555																				1	9	8	4	4	2	1	2	2	3	
5556																						1								
5557																							1							
5558																												1	1	1
5561																					1			1						
5565																								3		1	1			
5569																											4	6	2	8

Number of events with X-Ray flares

6 8 13 15 9 6 10 8 12 13 11 13 3 12 10 8 8 4 8 6 6 9 6 9 4 8 10 5 2 10

Number of events with no flare reported

1 2 6 2 5 4 10 6 1 6 8 5 4 4 5 10 4 3 5 9 4 7 6 4 1 3 2 3 3

Number of events with no flare patrol

1 2 1 1 1 2 2 3 1

Total SID events

8 13 23 19 21 14 28 16 22 23 25 24 17 23 25 23 15 10 16 20 17 21 15 14 5 9 15 8 6 13

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

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Jun 89

JUNE 1989

Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
01	LEAR			0031.0	0046.0	2				S
	PALE			0031.0	0036.0	2				V
	PALE			0045.0	0045.0	1				III
	LEAR			0059.0	0128.0	2				S
	PALE			0059.0	0118.0	2				S
	PALE			0245.0	0245.0	1				III
	LEAR			0315.0	0316.0	2				III
	LEAR			0327.0	0327.0	2				III
	PALE			0350.0	0351.0	1				III
	WEIS			0451.1	0451.3	1				U
	LEAR			0458.0	0511.0	2				S
0413 1847	WEIS			0458.0	1846.0	3				IIIN
	LEAR			0553.0	0612.0	2				S
	SVTO			0600.0	0603.0	3				III
	LEAR			0639.0	0711.0	1				S
	SVTO			0651.0	0725.0	2				S
	SVTO			0747.0	0846.0	2				S
	LEAR			0753.0	0805.0	3				S
	WEIS			0802.2	0802.8	3				IIIG
	LEAR			0822.0	0824.0	2				III
	WEIS			0823.8	0824.2	3				IIIB
	LEAR			0831.0	0839.0	2				III
	SVTO			0937.0	0938.0	2				III
	SGMR			1033.0	1034.0	1				III
	SGMR			1115.0	1126.0	1				S
	SVTO			1116.0	1740.0	3				CONT
	SGMR			1148.0	1152.0	2				III
	WEIS			1148.3	1150.1	3				IIIG
	WEIS			1151.1	1152.6	3				IIIG
	SGMR			1213.0	1217.0	1				III
	WEIS	1236.6	1237.2	2						IIIG
	SGMR				1238.0	1307.0	2			S
	WEIS				1244.2	1244.7	2			U
	WEIS				1247.0	1247.9	3			IIIG
	WEIS				1301.3	1304.5	3			IIIG
	SGMR				1314.0	1334.0	1			S
	SGMR				1321.0	1323.0	2			III
	SGMR				1348.0	1357.0	2			V
	WEIS				1352.4	1353.6	3			IIIG
	SGMR				1353.0	1354.0	3			V
	SGMR				1426.0	1433.0	1			V
	WEIS				1439.7	1443.2	3			IIIGG
	SGMR				1440.0	1443.0	2			V
	SGMR				1447.0	1501.0	1			S
	SGMR				1509.0	1511.0	2			V
	SGMR				1517.0	1528.0	1			S
	WEIS				1520.3	1520.6	1			IIIG
	SGMR				1555.0	1623.0	1			S
	SGMR				1630.0	2204.0	1			CONT
	SGMR				1647.0	1653.0	2			V
	PALE				1650.0	1651.0	1			III
	SGMR				1728.0	1732.0	2			V
	PALE				1803.0	1812.0	2			V
	SGMR				1803.0	1812.0	2			V
	PALE				1844.0	1845.0	2			III
	SGMR				1844.0	1845.0	2			V
	PALE				1903.0	1909.0	2			III
	SGMR				1903.0	1910.0	2			V
	PALE				1943.0	1953.0	2			V
	SGMR				1943.0	1950.0	2			V
	PALE				2010.0	2010.0	1			III
	PALE				2014.0	2016.0	3			V
	SGMR				2014.0	2016.0	3			V
	PALE				2017.0	2026.0	1			III
	PALE				2052.0	2054.0	3			V
	SGMR				2052.0	2054.0	3			V
	PALE				2130.0	2134.0	3			V
	SGMR				2130.0	2132.0	3			V
	PALE				2217.0	2217.0	1			V

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Jun 89

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

JUNE 1989

Observation Start End Day (UT) (UT)	Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
01	PALE				2227.0	2235.0	3				V	
	SGMR				2227.0	2235.0	2				V	
	PALE				2302.0	2308.0	3				V	
	LEAR				2330.0	2333.0	2				III	
	PALE				2330.0	2333.0	3				V	
02	LEAR				0017.0	0019.0	2				III	
	LEAR				0047.0	0049.0	2				III	
	PALE				0047.0	0056.0	3				V	
	LEAR				0106.0	0107.0	1				III	
	PALE				0106.0	0106.0	1				III	
	LEAR				0129.0	0143.0	2				S	
	LEAR				0207.0	0221.0	2				S	
	PALE				0218.0	0218.0	1				III	
	LEAR				0233.0	0249.0	3				S	
	PALE				0233.0	0249.0	3				S	
	LEAR				0300.0	0321.0	2				S	
	PALE				0300.0	0300.0	1				III	
	PALE				0313.0	0313.0	1				III	
	PALE				0333.0	0334.0	2				III	
	LEAR				0334.0	0341.0	2				III	
	LEAR				0350.0	0351.0	1				III	
	LEAR				0418.0	0420.0	2				III	
	LEAR				0433.0	0449.0	2				S	
	0411 0437	WEIS				0434.0	1841.0					IIIN
		PALE				0442.0	0446.0	1				III
		LEAR				0539.0	0603.0	1				CONT
		LEAR				0603.0	0614.0	3				S
	0508 1846	SVTO				0603.0	0615.0	2				S
WEIS					0603.3	0605.5	3				IIIGG	
WEIS					0610.0	0612.1	3				IIIG	
LEAR					0708.0	0718.0	2				V	
SVTO					0708.0	0715.0	3				V	
WEIS					0710.9	0715.6	3				IIIGG,RS	
LEAR					0723.0	0723.0	1				III	
SVTO					0828.0	0828.0	2				III	
SVTO					0840.0	0912.0	2				S	
WEIS					0840.6	0846.1	2				IIIGG	
LEAR					0841.0	0842.0	1				III	
WEIS					0848.9	0900.2	3				IIIGG	
LEAR					0856.0	0900.0	2				III	
LEAR					0906.0	0912.0	1				III	
WEIS					0957.3	0958.1	3				IIIG	
WEIS					1011.8	1016.1	3				IIIGG	
SGMR					1013.0	1015.0	2				V	
WEIS					1201.2	1204.1	2				IIIGG	
SGMR					1203.0	1204.0	1				V	
SVTO					1203.0	1204.0	2				V	
SGMR					1246.0	1247.0	2				III	
SVTO					1246.0	1247.0	3				V	
SGMR					1352.0	1438.0	2				S	
SVTO					1352.0	1427.0	3				S	
WEIS					1356.7	1400.0	2				IIIGG	
SGMR					1401.0	1402.0	3				III	
WEIS					1401.6	1402.7	3				IIIG	
WEIS				1405.1	1419.4	3				IIIGG		
SVTO				1438.0	1438.0	2				III		
SGMR				1454.0	1550.0	2				S		
WEIS				1601.0	1619.0	3				IV dm		
SVTO				1602.0	1606.0	2				II		
WEIS				1602.2	1607.8	3				IIIGG		
WEIS				1602.2	1611.7	3				II H,HB		
SGMR				1603.0	1612.0	2				II		
SGMR				1616.0	1630.0	2				S		
SGMR				1630.0	2300.0	1				CONT		
PALE				1726.0	1738.0	1				S		
SGMR				1727.0	1739.0	2				S		
WEIS				1735.7	1738.1	2				IIIG		
PALE				1755.0	1757.0	2				V		

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
02	SGMR			1755.0	1757.0	3				V
	WEIS			1755.2	1757.2	3				IIIGG,U
	PALE			1813.0	1821.0	3				V
	SGMR			1813.0	1823.0	3				S
	WEIS			1813.0	1819.0	3				IIIGG,DP,Spikes
	SGMR			1837.0	1842.0	2				III
	PALE			1839.0	1845.0	1				III
	PALE			1915.0	1918.0	1				III
	PALE			1939.0	1945.0	1				III
	PALE			2046.0	2120.0	2				S
	SGMR			2117.0	2120.0	2				V
	PALE			2150.0	2212.0	2				S
	PALE			2344.0	2345.0	1				III
	03	LEAR			0123.0	0134.0	1			
PALE				0123.0	0123.0	1				III
LEAR				0222.0	0234.0	2				S
PALE				0222.0	0229.0	2				V
LEAR				0248.0	0248.0	2				III
PALE				0249.0	0249.0	2				III
LEAR				0308.0	0308.0	3				V
PALE				0308.0	0314.0	3				V
PALE				0316.0	0317.0	2				III
PALE				0351.0	0351.0	1				III
LEAR				0446.0	0450.0	2				V
0411 1030 WEIS				0446.0	1806.0	2				IIIN
LEAR				0551.0	0551.0	1				III
LEAR				0631.0	0634.0	2				V
LEAR				0643.0	0643.0	1				III
LEAR				0654.0	0655.0	1				III
LEAR				0705.0	0725.0	2				S
LEAR				0741.0	0742.0	1				III
LEAR				0809.0	0816.0	3				III
SVTO				0809.0	0820.0	2				S
WEIS				0809.3	0811.9	2				IIIG
WEIS				0814.8	0816.2	3				IIIG
WEIS				0856.8	0903.2	3				IIIGG
LEAR				0857.0	0903.0	2				III
SVTO				0857.0	0903.0	2				III
SVTO				1004.0	1028.0	3				S
SGMR				1009.0	1009.0	1				III
SGMR				1016.0	1018.0	2				III
WEIS				1016.6	1018.6	3				IIIGG
SVTO				1044.0	1045.0	2				III
SGMR				1045.0	1045.0	1				III
SGMR				1216.0	1217.0	1				V
SVTO				1216.0	1233.0	3				S
1038 1849 WEIS				1216.4	1219.2	3				IIIGG
WEIS				1219.9	1221.2	2			II	HB
SGMR				1233.0	1233.0	1				III
SGMR				1313.0	1314.0	1				III
SVTO				1313.0	1324.0	3				III
WEIS				1313.6	1314.7	2				IIIG
WEIS				1321.0	1333.0	2			IV	dm
WEIS				1323.7	1324.1	2				IIIG
SGMR				1324.0	1324.0	1				III
SGMR			1328.0	1331.0	2			II		
SVTO			1328.0	1331.0	3			II		
WEIS			1328.2	1330.7	2			II	H,HB	
SGMR			1347.0	1348.0	1				V	
WEIS			1406.6	1407.4	2				IIIG	
SGMR			1422.0	1422.0	1				V	
SGMR			1436.0	1444.0	1				S	
SVTO			1436.0	1446.0	2				III	
SVTO			1515.0	1516.0	1				III	
SGMR			1516.0	1517.0	2				V	
SGMR			1522.0	1529.0	1				V	
SGMR			1545.0	1554.0	1				S	
WEIS			1653.3	1700.6	3				IIIG	

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
03	PALE			1656.0	1656.0	2				V	
	SGMR			1656.0	1708.0	2				S	
	SGMR			1708.0	2200.0	1				CONT	
	PALE			1805.0	1805.0	1				III	
	PALE			1900.0	1901.0	1				III	
	SGMR			1901.0	1902.0	2				V	
	PALE			2114.0	2115.0	1				III	
	PALE			2126.0	2128.0	1				V	
	PALE			2223.0	2224.0	1				V	
	PALE			2305.0	2313.0	2				V	
SGMR			2309.0	2311.0	1				III		
04	LEAR			0149.0	0154.0	2				III	
	PALE			0149.0	0152.0	2				III	
	LEAR			0212.0	0219.0	3				III	
	LEAR			0230.0	0449.0	1				CONT	
	0410 1848	WEIS			0435.8	0436.4	2				III
		LEAR			0436.0	0444.0	2				III
	WEIS			0443.3	0443.5	1				III	
	WEIS			0450.1	0450.2	1				III	
	LEAR			0608.0	0608.0	1				III	
	LEAR			0630.0	0631.0	2				III	
	WEIS			0630.2	0631.6	2				III	
	WEIS			0744.0	0750.3	2				III	
	LEAR			0745.0	0750.0	2				III	
	SVTO			0745.0	0750.0	2				V	
	SVTO			0913.0	0917.0	2				III	
	WEIS			0915.2	0916.9	1				III	
	WEIS			1138.9	1140.4	2				III	
	WEIS			1351.3	1351.4	1				III	
	SVTO			1352.0	1352.0	2				III	
	WEIS	1519.9	1520.1	2						III	
SGMR				1620.0	1626.0	2				V	
WEIS				1620.1	1621.9	1				III	
WEIS				1624.6	1625.5	2				III	
PALE				1714.0	1714.0	2				III	
PALE				2339.0	2339.0	1				III	
05	LEAR			0621.0	0622.0	1				III	
	LEAR			0740.0	0745.0	2				III	
	SVTO			0740.0	0745.0	3				V	
	0411 1722	WEIS			0740.1	0747.2	3				III
		LEAR			0844.0	0847.0	2				III
	SVTO			0844.0	0847.0	2				III	
	WEIS			0844.5	0847.1	3				III	
	WEIS			1038.4	1038.6	3				III	
	SGMR			1306.0	1307.0	1				III	
	SVTO			1306.0	1306.0	2				III	
	WEIS			1306.1	1306.8	1				III	
	SGMR			1518.0	1519.0	2				V	
	WEIS			1518.4	1519.1	2				III	
	SGMR			1758.0	1758.0	1				III	
	PALE			1819.0	1821.0	2				V	
	SGMR			1819.0	1822.0	2				V	
1733 1850	WEIS			1819.3	1819.7	1				III	
	PALE			1956.0	1956.0	1				III	
	SGMR			1956.0	1956.0	2				III	
06	LEAR			0454.0	0454.0	2				III	
	0409 1849	WEIS			0454.3	0454.7	1				III
		LEAR			0542.0	0543.0	1				III
	LEAR			0609.0	0613.0	2				III	
	WEIS			0612.3	0613.3	1				III	
	SVTO			0904.0	0905.0	2				III	
	SVTO			0914.0	0915.0	2				III	
	WEIS			0914.4	0914.7	2				III	
	WEIS			0938.8	0940.0	1				III	
	SVTO			0939.0	0940.0	2				III	
WEIS			1041.7	1049.2	1				III		

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Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
Day	Start (UT)	End (UT)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
06						1047.0	1048.0	1				V	
						1531.0	1539.0	1				V	
						1535.6	1535.8	1				IIIG,DP	
						1539.0	1539.1	1				IIIB	
						1652.0	1708.0	1				S	
						1652.2	1653.3	1				IIIG	
						1703.7	1703.9	1				IIIB	
						1707.8	1708.0	1				IIIB	
						1733.0	1734.0	2				V	
						1733.5	1734.4	1				IIIG	
						2009.0	2012.0	2				III	
						2010.0	2012.0	2				V	
07						0215.0	0216.0	2				III	
						0215.0	0215.0	2				III	
	0411	1851										IIIG	
				0513.2	0514.4	2	0516.0	0517.0	1				III
							0516.4	0516.5	1				IIIG
				0550.7	0550.8	2							IIIG,RS
							0602.0	0603.0	2				III
							0602.8	0603.6	3				IIIG
							0603.0	0603.0	2				III
				0607.6	0607.8	3							Spikes
							0616.0	0616.0	1				III
							0616.0	0616.0	1				III
							0654.4	0654.5	1				Spikes
							0953.2	0954.7	3				IIIG,Spikes
							1011.0	1012.0	1				III
							1011.2	1012.2	3				IIIG
							1142.8	1143.0	1				IIIB
							1534.4	1534.6	2				IIIG
							1725.0	2155.0	1				CONT
							2036.0	2037.0	2				V
							2036.0	2037.0	2				III
						2037.0	2038.0	2				III	
08						0535.0	0541.0	2				III	
	0408	0930				0535.4	0535.6	1				IIIB	
						0540.6	0540.7	1				IIIG	
						0702.0	0702.0	1				III	
						0702.2	0702.3	1				IIIB	
				0807.8	0808.1	1							IIIG
				0814.1	0814.9	2							DCIM
							1420.0	1422.0	1				III
	0936	1851				1420.8	1420.9	1					IIIB
						1620.0	1620.0	2					III
						1620.2	1620.4	2					IIIG
	09						0029.0	0035.0	2				II
						0029.0	0034.0	1				II	
						0041.0	0741.0	2				IV	
						0111.0	0210.0	1					CONT
						0517.0	0519.0	2					III
0410		0957				0517.1	0517.3	1					IIIG
						1700.0	1701.0	1					III
1102		1853		1708.4	1708.6	2							IIIG
						1722.0	1726.0	1					III
						1722.3	1722.7	2					IIIGG
						1831.0	1832.0	1					III
						1831.8	1832.0	1					IIIB
						1832.0	1835.0	2					III
						1858.0	1859.0	1					III
						1858.0	1900.0	2					V
						1941.0	1942.0	1					III
						2036.0	2036.0	1					V
						2036.0	2037.0	1					V
					2238.0	2238.0	2					V	
10						0225.0	0233.0	2				III	

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Day (UT)	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
10			PALE				0227.0	0232.0	2				III
			LEAR				0508.0	0509.0	2				III
			LEAR				0536.0	0538.0	2				III
			SVTO				0536.0	0537.0	2				III
	0408	1717	WEIS				0537.4	0537.5	1				III B
			LEAR				0621.0	0625.0	2				III
			SVTO				0621.0	0624.0	3				III
			SVTO				0742.0	0742.0	1				III
			LEAR				0754.0	0755.0	2				III
			SVTO				0754.0	0755.0	3				III
			WEIS				0754.5	0755.0	2				III G
			SVTO				1223.0	1223.0	2				III
			WEIS				1223.8	1224.3	1				III G
			SGMR				1224.0	1224.0	1				III
			SVTO				1300.0	1305.0	1				III
			SGMR				1305.0	1305.0	1				III
			SGMR				1345.0	1354.0	1				III
			SVTO				1345.0	1345.0	1				III
			SVTO				1410.0	1410.0	1				III
			SGMR				1453.0	1806.0	1				CONT
			SVTO				1456.0	1456.0	1				III
			SGMR				1504.0	1505.0	2				III
			SVTO				1504.0	1504.0	2				III
			WEIS				1504.1	1504.4	2				III G
			WEIS				1626.2	1626.3	1				III B
		WEIS				1640.0	1640.3	1				III G	
1730	1853	WEIS				1751.0	1853.0	2				I, P	
		PALE				1805.0	0217.0	2				CONT	
		SGMR				1806.0	1952.0	2				CONT	
		SGMR				1952.0	2222.0	1				CONT	
		LEAR				2337.0	0325.0	1				CONT	
11			LEAR				0022.0	0023.0	2				III
			PALE				0022.0	0023.0	2				III
			LEAR				0212.0	0213.0	2				III
			PALE				0212.0	0212.0	2				III
			LEAR				0231.0	0232.0	2				III
			PALE				0231.0	0231.0	2				III
			LEAR				0306.0	0307.0	2				III
			PALE				0307.0	0307.0	2				III
			LEAR				0440.0	0928.0	1				CONT
	0410	1854	WEIS				0501.0	1756.0	2				III N
			SVTO				0618.0	0637.0	2				S
			LEAR				0636.0	0637.0	2				III
			LEAR				0652.0	0705.0	2				S
			LEAR				0751.0	0751.0	2				III
			SVTO				0751.0	0821.0	2				S
			SVTO				0852.0	0855.0	2				III
			SVTO				0852.0	0855.0	2				S
			SVTO				0924.0	0926.0	2				V
			SGMR				1010.0	1011.0	1				III
			SVTO				1010.0	1014.0	3				III
			SGMR				1110.0	1117.0	2				III
			SGMR				1130.0	0000.0	1				CONT
			SVTO				1135.0	1137.0	2				III
			SVTO				1156.0	1156.0	1				III
			SVTO				1240.0	1441.0	1				CONT
			SVTO				1301.0	1319.0	2				S
			SGMR				1336.0	1436.0	2				S
			SGMR				1436.0	1524.0	2				S
			SGMR				1608.0	1611.0	1				V
			SGMR				1751.0	1754.0	2				V
			PALE				2012.0	2013.0	2				V
			SGMR				2012.0	2014.0	2				V
		PALE				2053.0	2117.0	1				S	
		PALE				2139.0	2147.0	1				III	
		PALE				2209.0	2210.0	2				III	
		PALE				2250.0	2311.0	2				S	
		PALE				2347.0	2347.0	1				III	

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
12	LEAR			0024.0	0024.0	1				III
	PALE			0024.0	0024.0	1				III
	LEAR			0047.0	0054.0	2				S
	PALE			0047.0	0058.0	2				S
	LEAR			0120.0	0133.0	2				S
	PALE			0120.0	0124.0	2				III
	LEAR			0145.0	0145.0	1				III
	PALE			0145.0	0145.0	1				III
	LEAR			0157.0	0224.0	3				S
	PALE			0157.0	0223.0	2				S
	LEAR			0313.0	0313.0	1				III
	LEAR			0339.0	0340.0	2				III
	LEAR			0427.0	0428.0	2				III
	SVTO			0427.0	0428.0	2				III
0408 1853	WEIS			0427.7	0427.9	1				IIIG
	WEIS			0516.8	0518.3	2				IIIG
	LEAR			0517.0	0522.0	2				III
	WEIS			0522.2	0522.4	2				IIIG
	LEAR			0608.0	0613.0	1				III
	WEIS			0608.3	0609.4	1				IIIG
	WEIS			0935.3	0935.4	1				IIIB
	SGMR			1037.0	1037.0	1				III
	WEIS			1037.5	1038.0	1				IIIG
	SGMR			1306.0	1306.0	1				III
	SGMR			1327.0	1328.0	1				III
	SGMR			1723.0	1723.0	1				V
	SGMR			1724.0	2200.0	1				CONT
	PALE			1906.0	1906.0	1				III
	SGMR			2037.0	2037.0	1				III
	PALE			2054.0	2054.0	1				III
	PALE			2237.0	0100.0	1				CONT
	LEAR			2337.0	2337.0	1				III
	PALE			2337.0	2342.0	3				V
13	LEAR			0038.0	0039.0	2				III
	PALE			0038.0	0039.0	2				V
	PALE			0047.0	0048.0	2				V
	LEAR			0049.0	0050.0	2				III
	LEAR			0113.0	0928.0	1				CONT
	LEAR			0241.0	0241.0	2				III
	PALE			0241.0	0241.0	2				III
	LEAR			0340.0	0340.0	1				III
	LEAR			0549.0	0550.0	2				III
0409 0914	WEIS			0549.6	0549.9	2				IIIG
	SVTO			0806.0	0807.0	2				III
	WEIS			0806.8	0806.9	1				IIIB
	SGMR			1234.0	2215.0	1				CONT
	WEIS			1559.0	1833.0	2				IN, Cont
1558 1855	WEIS			1607.2	1608.3	1				IIIB
	SGMR			2037.0	2037.0	1				III
	PALE			2337.0	2342.0	3				V
14	LEAR			0006.0	0007.0	1				III
	PALE			0006.0	0007.0	2				V
	LEAR			0044.0	0045.0	1				III
	PALE			0044.0	0044.0	1				III
	LEAR			0146.0	0206.0	1				S
	PALE			0146.0	0206.0	1				S
	LEAR			0306.0	0312.0	2				III
0407 1854	WEIS			0407.0	0758.0	2				IS, DC, Cont
	WEIS			0437.0	1804.0	2				IIIN
	LEAR			0438.0	0438.0	1				III
	SVTO			0512.0	0512.0	2				III
	WEIS			0654.1	0654.2	2				IIIB
	WEIS			0909.6	0910.0	3				IIIB
	SGMR			1013.0	1013.0	1				III
	WEIS			1013.5	1014.2	3				IIIG
	SGMR			1026.0	1027.0	2				III
	SVTO			1027.0	1027.0	2				III

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Day (UT)	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
14			WEIS				1037.9	1038.1	2				IIIG	
			WEIS				1040.3	1044.4	3				IIIGG	
			SGMR				1042.0	1044.0	2				V	
			SVTO				1042.0	1043.0	3				V	
			SGMR				1105.0	1106.0	1				III	
			SGMR				1210.0	1229.0	1				S	
			SVTO				1219.0	1219.0	1				III	
			SGMR				1240.0	1240.0	1				III	
			SGMR				1258.0	2300.0	1				CONT	
			WEIS				1316.5	1316.7	2				IIIG	
			SGMR				1349.0	1350.0	3				III	
			SVTO				1349.0	1350.0	2				V	
			WEIS				1349.4	1350.4	3				IIIG	
			SGMR				1352.0	1406.0	3			IV		
			SVTO				1352.0	1401.0	3			IV		
			WEIS				1352.3	1355.7	3				IIIGG	
			WEIS				1354.5	1406.0	1			II		
			PALE				1625.0	1626.0	3				V	
			SGMR				1625.0	1631.0	3				V	
			SVTO				1625.0	1630.0	3				V	
			WEIS				1625.1	1631.0	3				IIIGG/V,RS	
			WEIS				1627.6	1629.9	2				DCIM	
			WEIS				1637.9	1645.3	1			II	HB	
			WEIS				1640.2	1644.6	1				DCIM	
			WEIS				1644.7	1645.3	2				IIIG	
			PALE				1654.0	1655.0	3				III	
			SGMR				1654.0	1657.0	3				V	
			WEIS				1654.2	1656.1	3				IIIG	
			PALE				1721.0	1721.0	2				III	
			PALE				1747.0	1753.0	3				V	
			SGMR				1747.0	1805.0	3				S	
			PALE				1953.0	1956.0	2				III	
			PALE				2019.0	2020.0	3				III	
		SGMR				2019.0	2020.0	2				III		
		PALE				2227.0	2228.0	1				V		
15			LEAR				0107.0	0108.0	1				III	
			PALE				0107.0	0108.0	1				V	
			LEAR				0143.0	0143.0	1				III	
			PALE				0143.0	0143.0	1				III	
			LEAR				0204.0	0204.0	1				III	
			PALE				0204.0	0204.0	1				III	
			LEAR				0303.0	0309.0	2				III	
			PALE				0304.0	0304.0	1				III	
			LEAR				0345.0	0346.0	1				III	
			LEAR				0400.0	0730.0	1				CONT	
	0409	1856		WEIS			0433.0	1844.0	2				IIIN	
				SVTO			0446.0	0502.0	3				V	
				LEAR			0456.0	0504.0	2				III	
				WEIS			0456.2	0502.8	3				IIIGG	
				LEAR			0540.0	0544.0	2				III	
				SVTO			0540.0	0543.0	2				III	
				SVTO			0547.0	0000.0	2				CONT	
				WEIS	0744.0	1627.0	2						IN	
				LEAR				0753.0	0756.0	2				III
				SVTO				0753.0	0805.0	2				S
				SVTO				1003.0	1009.0	3				V
				WEIS				1003.6	1005.8	3				IIIG
				SGMR				1004.0	1005.0	2				V
				SVTO				1013.0	1053.0	2				CONT
				SGMR				1025.0	0000.0	1				CONT
				WEIS				1033.7	1038.3	2				IIIGG,RS
				SGMR				1052.0	1052.0	2				V
				WEIS				1229.5	1229.8	3				IIIG
				SGMR				1251.0	1252.0	2				V
				SVTO				1251.0	1258.0	3				III
				SGMR				1257.0	1258.0	2				V
				SGMR				1353.0	1355.0	2				V
				WEIS				1418.3	1422.2	3				IIIG,DCIM,RS

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
15				1442.0	1445.0	2				V
				1501.0	1503.0	2				V
				1615.0	1617.0	2				V
				1626.0	1628.0	2				V
				1735.0	1741.0	2				V
				1736.0	1740.0	2				III
				1843.0	1844.0	1				V
				1900.0	1901.0	2				V
				1900.0	1903.0	2				V
				1914.0	0258.0	3				IV
				1914.0	1927.0	3				II
				1932.0	1933.0	2				V
				1933.0	2358.0	2				CONT
				2319.0	0800.0	1				CONT
				2330.0	2330.0	2				V
				2343.0	2343.0	1				V
16				0003.0	0003.0	2				V
				0449.0	0456.0	3				III
				0449.0	1344.0	2				CONT
0407 0742				0449.5	0452.6	3				III G
				0450.0	0452.0	2				V
				0539.0	0540.0	2				III
				0539.0	0539.0	2				III
				0539.0	1525.0	2				IIIN
				0644.1	0644.6	2				III G
				0744.0	0751.0	3				II
				0747.0	0751.0	1				II
0750 1855				0758.0	1735.0	1				IN
				0831.0	0832.0	2				III
				0907.0	0912.0	3				III
				0930.0	0931.0	3				III
				1001.3	1001.7	2				III G
				1030.0	2215.0	1				CONT
				1203.0	1205.0	2				III
				1203.0	1205.0	3				III
				1203.0	1205.2	3				III G
				1647.0	1650.0	2				V
				1647.4	1649.6	2				III G
				1702.6	1714.7	3				II H, HB
				1705.0	0000.0	2				II
				1707.0	1709.0	1				II
				1710.0	1710.0	1				III
				1910.0	1910.0	1				III
				2016.0	2017.0	2				III
				2017.0	2017.0	2				III
17 0409 1857				0713.0	1759.0	2				IN, DC
				1015.0	1016.0	2				V
				1015.7	1016.5	2				III G
				1016.0	1016.0	1				III
				1112.0	1544.0	1				CONT
				1112.0	1630.0	2				IIIN
				1132.0	1259.0	2				CONT
				1259.0	1259.0	2				V
				1408.0	1409.0	2				V
				1544.0	1919.0	2				CONT
				1555.0	1650.0	1				Cont, P
				1604.0	1607.0	2				II
				1620.0	1835.0	2				Cont
				1838.0	1838.0	2				III
				2121.0	2122.0	2				III
				2233.0	2233.0	1				III
				2247.0	2247.0	1				III
18				0104.0	0137.0	1				S
				0107.0	0107.0	1				III
				0119.0	0142.0	1				S
				0234.0	0234.0	1				III

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Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
18 0407 1429	PALE			0234.0	0234.0	1				III	
	LEAR			0336.0	0337.0	2				III	
	PALE			0336.0	0336.0	1				III	
	WEIS			0428.0	0547.0	1				I	
	LEAR			0446.0	0447.0	1				III	
	WEIS			0446.9	0447.0	2				IIIB	
	LEAR			0447.0	0515.0	1				CONT	
	LEAR			0737.0	0740.0	2				III	
	SVTO			0737.0	0737.0	3				III	
	SVTO			0737.0	0740.0	3				V	
	WEIS			0737.7	0740.3	3				IIIG	
	WEIS			1121.6	1121.7	1				IIIB	
	SGMR			1201.0	1201.0	1				III	
	WEIS			1201.6	1201.8	1				IIIB	
	SGMR			1440.0	1440.0	1				III	
	SGMR			1442.0	0000.0	2				S	
	SGMR			1450.0	1513.0	2				II	
	SGMR			1450.0	1513.0	2				II	
	SVTO			1451.0	1457.0	3				II	
	SVTO			1457.0	1511.0	3				S	
	SGMR			1513.0	0000.0	1				CONT	
	1542 1857	WEIS			1547.2	1547.4	1				IIIG
		WEIS			1601.0	1601.1	1				IIIB
WEIS				1627.0	1627.7	1				IIIG	
PALE				2344.0	2345.0	2				III	
19 0409 1857	PALE			0038.0	0040.0	1				III	
	LEAR			0052.0	0054.0	2				III	
	PALE			0052.0	0054.0	2				V	
	LEAR			0231.0	0232.0	2				III	
	PALE			0231.0	0231.0	1				III	
	LEAR			0307.0	0313.0	1				III	
	LEAR			0329.0	0334.0	2				III	
	PALE			0332.0	0333.0	2				III	
	SVTO			0332.0	0332.0	2				III	
	LEAR			0453.0	0454.0	2				III	
	0409 1857	WEIS			0453.0	1856.0	3				IIIN
		LEAR			0500.0	0501.0	1				III
	LEAR			0538.0	0929.0	1				CONT	
	SVTO			0544.0	0805.0	2				CONT	
	SVTO			0557.0	0557.0	3				III	
	LEAR			0638.0	0643.0	2				III	
	SVTO			0744.0	0748.0	3				V	
	LEAR			0745.0	0747.0	3				III	
	WEIS			0745.0	0747.6	3				IIIG	
	WEIS			0747.7	0750.0	1				II	
	LEAR			0827.0	0827.0	1				III	
	SVTO			1025.0	1046.0	2				CONT	
	SGMR			1036.0	2045.0	1				CONT	
	SVTO			1046.0	1208.0	2				CONT	
	SGMR			1135.0	1137.0	2				V	
	SGMR			1418.0	1429.0	2				V	
	SGMR			1435.0	1438.0	3				V	
	WEIS			1435.0	1437.7	3				IIIGG	
	SVTO			1436.0	1436.0	3				V	
	PALE			1757.0	1804.0	2				V	
	SGMR			1757.0	1801.0	3				V	
	WEIS			1757.6	1800.2	3				IIIG	
	WEIS	1758.6	1759.4	3						Spikes	
	PALE				1819.0	1834.0	2				S
SGMR				1828.0	1829.0	2				V	
PALE				1957.0	2005.0	1				III	
PALE				2017.0	2039.0	2				S	
PALE				2043.0	2046.0	3				V	
SGMR				2043.0	2045.0	3				III	
SGMR				2058.0	2102.0	3				V	
PALE				2119.0	2119.0	1				III	
PALE				2205.0	2216.0	2				S	
SGMR				2215.0	2215.0	2				III	

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Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type	
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)		
19			PALE				2248.0	2259.0	1				S	
			LEAR				2340.0	2344.0	2				III	
			PALE				2340.0	2345.0	2				III	
			PALE				2351.0	0011.0	1				S	
20			LEAR				0005.0	0825.0	1				CONT	
			PALE				0018.0	0050.0	2				CONT	
			LEAR				0040.0	0041.0	2				III	
			LEAR				0140.0	0141.0	2				III	
			PALE				0140.0	0200.0	1				S	
			LEAR				0213.0	0218.0	2				III	
			PALE				0213.0	0217.0	2				V	
			LEAR				0313.0	0313.0	2				III	
			PALE				0313.0	0313.0	1				III	
			LEAR				0326.0	0327.0	2				III	
			PALE				0326.0	0327.0	2				III	
			PALE				0338.0	0340.0	2				III	
			LEAR				0339.0	0442.0	2				III	
		0408	1317	WEIS				0436.0	1729.0	3				IIIN
				LEAR				0603.0	0604.0	2				III
				SVTO				0603.0	0603.0	2				III
				SVTO				0608.0	0751.0	2				CONT
				LEAR				0634.0	0635.0	2				III
				SGMR				1008.0	1009.0	1				III
				SVTO				1008.0	1010.0	2				V
				SVTO				1018.0	1019.0	1				III
				SVTO				1049.0	1055.0	1				III
				SVTO				1119.0	1135.0	2				S
				SVTO				1156.0	1200.0	1				III
				SVTO				1232.0	1233.0	1				III
				SVTO				1326.0	1337.0	2				S
				SGMR				1337.0	1337.0	1				III
				SGMR				1353.0	1400.0	1				III
				SVTO				1353.0	1359.0	2				III
		1422	1856	WEIS										
				SGMR				1445.0	1451.0	2				III
				SVTO				1445.0	1450.0	2				IV
		1325	1420	WEIS				1450.3	1450.7	3				IIIG
			SVTO				1501.0	1508.0	2				III	
			SVTO				1525.0	1640.0	1				CONT	
			SGMR				1600.0	1855.0	1				CONT	
			SGMR				1640.0	1641.0	2				V	
			SVTO				1640.0	1640.0	2				V	
			PALE				1714.0	1728.0	2				S	
			SGMR				1714.0	1728.0	2				S	
			SVTO				1714.0	1725.0	1				III	
			PALE				2024.0	2025.0	1				III	
			PALE				2104.0	2114.0	1				III	
			PALE				2206.0	2219.0	1				S	
			SGMR				2207.0	2207.0	1				III	
			SGMR				2220.0	2318.0	1				CONT	
			PALE				2221.0	2318.0	2				CONT	
			PALE				2338.0	2339.0	1				III	
			LEAR				2356.0	0930.0	1				CONT	
			PALE				2356.0	0004.0	1				III	
21			LEAR				0114.0	0125.0	2				S	
			PALE				0114.0	0141.0	3				S	
			LEAR				0137.0	0141.0	3				III	
			PALE				0154.0	0205.0	2				S	
			LEAR				0205.0	0205.0	2				III	
			LEAR				0338.0	0343.0	2				III	
			PALE				0338.0	0343.0	2				III	
			LEAR				0439.0	0442.0	2				III	
			PALE				0439.0	0441.0	2				V	
			SVTO				0439.0	0442.0	2				V	
		0410	0738	WEIS				0439.1	0442.1	2				IIIGG
				WEIS				0445.0	1710.0	3				IIIS
				SVTO				0506.0	1038.0	1				CONT

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Observation			Decimetric Band			Metric Band			Dekametric Band			Spectral Type
Day	Start (UT)	End (UT)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
21						0534.0	0543.0	2				III
						0613.0	0614.0	2				III
						0629.0	0638.0	2				V
						0632.0	0638.0	2				III
			0638.6	0638.7	2							DCIM
						0653.0	0702.0	2				III
						0728.0	0728.0	2				III
						0752.0	0814.0	2				S
						0814.0	0847.0	2				S
						0944.0	0948.0	3				III
0751	1858					0944.4	0944.8	3				IIIIGG
						1028.2	1030.6	2				Spikes
						1130.0	1146.0	2				S
						1145.0	1238.0	1				CONT
						1224.0	1238.0	2				S
						1238.0	1522.0	2				CONT
						1242.0	2138.0	1				CONT
						1251.0	1254.0	3				V
						1252.0	1252.0	3				III
						1352.0	0000.0	1				CONT
						1401.0	1402.0	2				III
						1401.0	1434.0	3				S
						1409.0	1411.0	2				III
						1414.0	1415.0	1				II
						1427.0	1427.0	2				III
						1502.0	1526.0	2				S
						1611.0	1634.0	2				S
						1649.0	1651.0	1				V
						1649.0	1653.0	2				V
						1649.0	1651.0	2				V
						1822.0	1822.0	1				III
									1851.0	1859.0	2	III
						1953.0	1954.0	2				III
						1954.0	1955.0	2				III
						2006.0	2343.0	2				CONT
22						0120.0	0930.0	1				CONT
						0317.0	0318.0	2				III
						0338.0	0339.0	2				III
						0357.0	0358.0	2				III
						0357.0	0357.0	2				III
						0357.0	0357.0	1				III
0408	1856					0420.0	1853.0	2				IIIN
						0443.0	0445.0	2				III
						0443.0	0451.0	1				III
						0453.0	0853.0	1				CONT
						0633.0	0635.0	2				III
						0726.0	0727.0	2				III
						0836.0	0838.0	2				III
						0911.8	0914.2	1				Spikes
						1131.0	1230.0	3				S
						1132.0	0000.0	1				CONT
						1212.0	1214.0	2				V
						1212.6	1214.7	3				IIIIGG
						1227.0	1228.0	2				V
						1230.0	1414.0	1				CONT
						1242.0	1248.0	2				V
						1320.0	1417.0	2				S
						1441.0	1517.0	3				S
						1444.0	1446.0	3				III
						1444.6	1447.7	3				IIIIGG
			1444.7	1447.6	1							Spikes
						1517.0	1617.0	1				CONT
						1652.0	1659.0	1				III
						1713.6	1714.3	2				IIIIG
						1838.0	1838.0	1				III
						1853.0	1858.0	1				III
						1909.0	1909.0	1				III
						1921.0	0459.0	1				CONT

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Observation Day (UT)	Start End (UT)	Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
			Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
22		PALE				2038.0	2039.0	2				V
		PALE				2056.0	2059.0	3				V
		SGMR				2057.0	2059.0	2				V
		PALE				2307.0	2314.0	2				V
23		LEAR				0022.0	0029.0	1				III
		LEAR				0045.0	0930.0	2				CONT
		LEAR				0202.0	0212.0	2				III
		LEAR				0238.0	0238.0	2				III
		LEAR				0326.0	0329.0	2				III
		SVTO				0357.0	0358.0	1				III
0410	1051	WEIS				0410.0	1858.0	2				IIIS,RS,DP
		WEIS	0451.7	0452.5	1							Spikes
		WEIS				0456.4	0457.4	2				IIIG,Spikes
		WEIS	0533.9	0534.3	2							Spikes
		WEIS	0604.9	0607.2	1							Spikes
		WEIS				0612.8	0612.9	2				Spikes
		SGMR				1031.0	2113.0	1				CONT
		SGMR				1503.0	1506.0	2				III
1118	1425	WEIS				1541.8	1543.4	1				DCIM
		WEIS				1705.0	1728.0	2				I
		PALE				1743.0	0000.0	2				CONT
		SGMR				1757.0	1758.0	2				III
		SGMR				1805.0	1900.0	2				S
		LEAR				2356.0	2357.0	2				III
		PALE				2357.0	2357.0	3				V
24		LEAR				0054.0	0054.0	1				III
		LEAR				0103.0	0110.0	2				III
		SVTO				0330.0	1016.0	1				CONT
0409	1857	WEIS				0427.0	1724.0	2				IIIN,DP,RS
		SVTO				0613.0	0613.0	2				III
		SVTO				0656.0	0749.0	2				S
		SVTO				0759.0	0823.0	2				S
		SVTO				0834.0	0834.0	2				III
		SVTO				0848.0	0912.0	2				S
		WEIS				0908.7	0909.4	3				IIIG
		SGMR				1115.0	1115.0	1				III
		SVTO				1115.0	1116.0	2				III
		WEIS				1115.1	1116.1	3				IIIG
		SVTO				1116.0	1759.0	1				CONT
		SGMR				1126.0	1127.0	2				V
		WEIS				1126.7	1128.1	3				IIIG
		SGMR				1127.0	0000.0	1				CONT
		WEIS				1137.7	1138.1	2				U
		SGMR				1354.0	1355.0	2				V
		SVTO				1354.0	1450.0	2				S
		SGMR				1513.0	1513.0	2				V
		PALE				1923.0	0240.0	2				CONT
		SGMR				1925.0	1929.0	2				II
		SGMR				1934.0	2053.0	2				IV
		SGMR				2135.0	2210.0	2				S
		LEAR				2357.0	0015.0	1				S
25		LEAR				0021.0	0931.0	1				CONT
		LEAR				0104.0	0105.0	2				III
		LEAR				0201.0	0202.0	2				III
		SVTO				0331.0	0554.0	1				CONT
		LEAR				0340.0	0341.0	2				III
		PALE				0340.0	0340.0	1				III
		SVTO				0554.0	1229.0	1				CONT
0410	1858	WEIS				0652.0	1802.0	2				IIIN,DP,RS
		SGMR				1001.0	1002.0	1				III
		SVTO				1001.0	1006.0	3				III
		WEIS				1001.3	1003.2	3				IIIG
		WEIS				1006.3	1006.5	3				IIIG
		SGMR				1154.0	0000.0	1				CONT
		SVTO				1207.0	1229.0	2				S
		SVTO				1229.0	1723.0	2				CONT

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

JUNE 1989

Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
25				1343.0	1344.0	2				V
				1602.0	0226.0	1				CONT
				1658.0	1658.0	2				V
				1713.5	1713.7	2				IIIG
				1802.0	1802.0	2				V
				2043.0	2059.0	2				S
26				0112.0	0112.0	2				V
				0140.0	0141.0	2				III
				0140.0	0141.0	2				V
				0520.0	1733.0	2				CONT
0409 0632				0552.0	1725.0					IIIN
				0647.0	0653.0	2				III
				0724.0	0726.0	2				III
				0724.0	0726.0	2				V
				0732.0	0739.0	2				III
0659 1856			0759.3 0759.4 1							Spikes
				0934.0	0949.0	2				V
				1110.0	1126.0	2				S
				1111.0	1112.0	1				III
				1122.0	1126.0	2				III
				1123.4	1124.2	2				IIIG
				1125.7	1126.6	3				IIIG
				1223.0	1223.0	1				III
				1223.0	1230.0	2				III
				1227.0	0000.0	1				CONT
				1243.0	1302.0	2				S
				1327.0	1327.0	2				III
				1327.0	1327.0	2				III
				1548.9	1555.2	2				II
				1724.0	1724.0	1				III
				1854.0	1854.0	1				III
				1947.0	1950.0	1				III
				2033.0	2033.0	1				III
				2123.0	2123.0	1				III
				2209.0	0500.0	1				CONT
27 0411 1858				0428.0	0516.0	1				IN
				0601.0	0755.0	1				CONT
				0823.0	0823.0	1				III
				0902.0	0902.0	1				III
				1025.0	1025.0	2				III
				1031.0	0000.0	1				CONT
				1031.0	1713.0	2				IIIN
				1125.0	1125.0	1				III
				1125.0	1125.0	2				III
				1319.0	1320.0	1				III
				1331.0	1332.0	1				III
				1350.0	1351.0	1				III
				1422.0	1435.0	1				S
				1423.0	1424.0	2				III
				1435.0	1435.0	1				III
				1437.0	1439.0	1				III
				1447.0	1449.0	1				III
				1447.0	1447.0	1				III
				1525.0	1526.0	1				V
				1525.0	1525.0	1				III
				1558.0	1559.0	2				III
				1558.0	1558.0	2				III
				1559.0	2200.0	1				CONT
				1636.0	1643.0	2				III
				1642.0	1642.0	1				III
				1642.0	1642.0	3				III
				1642.2	1642.9	3				IIIG
				1814.0	1814.0	1				III
				2356.0	0323.0	1				CONT
28				0001.0	0004.0	1				III
				0220.0	0222.0	2				III

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

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Jun 89

JUNE 1989

Observation Start End Day (UT) (UT) Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
28				0611.0	0611.0	1				III
				0618.0	0621.0	1				III
	0410	1314		0630.0	0639.0	1				III
				0639.2	0639.3	1				IIIB
			0640.7	0641.4	2					Spikes
						0729.4	0729.6	3		IIIG
						0918.0	0922.0	3		V
						0918.8	0920.2	2		Spikes
						0919.0	0921.0	2		III
						0919.7	0921.3	3		IIIG
			1032.7	1032.9	2					Spikes,RS
						1150.0	1115.0	1		III
						1150.8	1151.1	2		U
						1259.0	1305.0	1		II
						1259.0	1306.0	2		II
						1310.0	1311.0	1		S
	1334	1857	1358.4	1359.7	1					Spikes
						1633.0	1633.0	1		III
						1658.0	1703.0	2		III
						1658.2	1658.5	2		IIIG
						1701.3	1702.8	2		IIIG,U
			1732.8	1733.0	2					IIIG
						1737.8	1739.0	2		IIIGG,Spikes
						1738.0	1738.0	1		III
						1738.0	1738.0	2		III
						1925.0	1925.0	1		III
						1925.0	1925.0	1		III
						2124.0	2126.0	1		III
						2345.0	2346.0	2		III
29						0255.0	0536.0	2		CONT
						0301.0	0302.0	2		III
						0304.0	0316.0	2		S
	0411	1024	0439.3	0439.5	2					Spikes,RS
						0444.4	0447.3	1		IIIG
			0444.6	0444.8	1					DCIM
			0447.2	0449.4	1					Spikes
						0706.0	0707.0	2		III
						0706.0	0710.0	2		III
						0706.2	0706.4	2		IIIG
						0709.0	0710.0	1		III
						0709.8	0710.7	2		IIIG
						0751.1	0753.2	3		Spikes
						0804.0	0805.0	1		III
						0816.0	0817.0	2		III
						0816.1	0817.4	3		IIIG
						0839.0	0840.0	1		III
						1006.0	1006.0	2		III
						1215.0	1215.0	2		III
						1215.0	1216.0	2		III
	1102	1857				1215.3	1215.7	2		IIIB
						1713.8	1715.3	2		IIIG
						1714.0	1715.0	1		III
						1735.0	1746.0	1		S
						2103.0	2204.0	3		IV
						2104.0	0000.0	1		CONT
						2107.0	2121.0	3		IV
30						0641.0	0645.0	1		III
						0701.0	0738.0	1		CONT
						0707.0	0742.0	1		CONT
						0718.0	0724.0	2		II
	0411	1335				0719.1	0722.6	2		II H
						0750.6	0750.7	2		Spikes
			0806.8	0808.7	3					Spikes
						1207.0	1210.0	2		III
			1208.7	1209.3	1					Spikes
						1209.0	1210.0	1		III
						1209.6	1210.5	1		IIIG,U

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

JUNE 1989

Day	Observation		Sta	Decimetric Band			Metric Band			Dekametric Band			Spectral Type
	Start (UT)	End (UT)		Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	
30	1430	1858	SGMR				1719.0	1720.0	1				V
			WEIS				1719.9	1719.9	1				IIIG
			PALE				1743.0	1746.0	3				V
			SGMR				1743.0	1748.0	3				V
			SVTO				1743.0	1746.0	2				III
			WEIS				1743.6	1747.4	3				IIIGG
			SGMR				1805.0	1805.0	1				III
			SGMR				1858.0	1858.0	1				III
			PALE				1916.0	1916.0	2				III
			SGMR				1916.0	1917.0	2				V

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

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

Stations Reporting:

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

COSMIC RAY INDICES
(Neutron Monitor)

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Jun 89

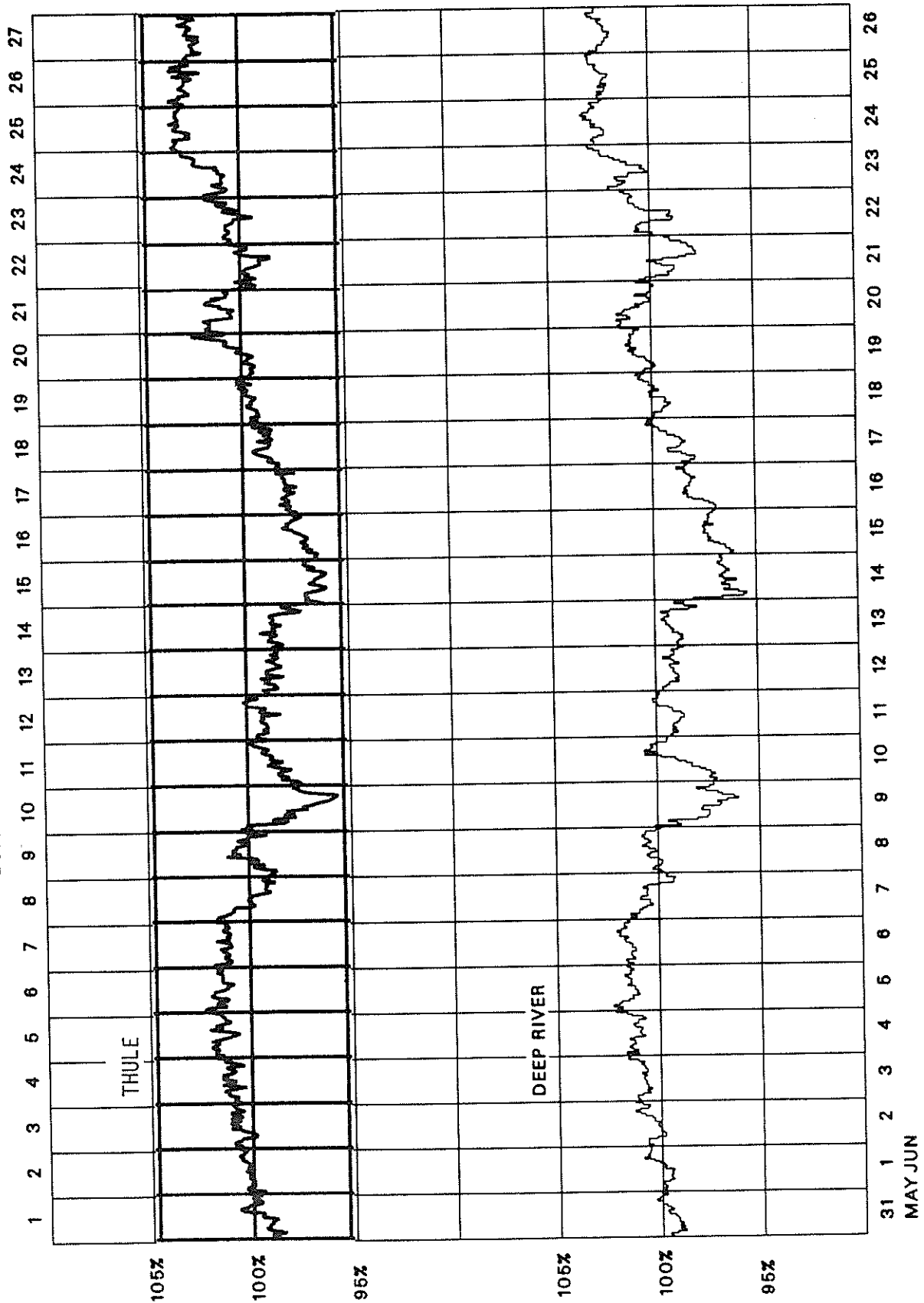
JUNE 1989

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	3828	5958.8	5406.7	3421.1	3430.2	
2	3845	5985.7	5420.8	3439.2	3432.3	
3	3862	6009.5	5448.8	3460.3	3433.6	
4	3879	6030.8	5458.1	3486.2	3445.4	
5	3879	6047.7	5448.6	3473.0	3433.6	
6	3867	6049.3	5456.6	3474.1	3441.4	
7	3815	5983.9	5406.0	3474.8	3452.0	
8	3815	5973.7	5396.0	3429.5	3421.9	
9	3723	5814.6	5253.3	3324.5	3384.7	
10	3765	5890.0	5331.2	3399.6	3433.2	
11	3792	5918.7	5329.2	3395.6	3420.5	
12	3766	5907.9	5311.2	3390.5	3416.7	
13	3755	5899.5	5300.7	3379.3	3404.2	
14	3679	5751.0	5206.5	3277.3	3352.8	
15	3705	5783.8	5247.1	3304.3	3364.8	
16	3732	5842.8	5290.4	3334.8	3377.3	
17	3773	5900.4	5321.9	3370.4	3388.6	
18	3805	5950.7	5362.5	3398.9	3404.3	
19	3827	5998.8	5411.4	3433.5	3414.3	
20	3863	6000.5	5447.5	3454.5	3417.7	
21	3801	5893.5	5342.3	3377.0	3387.3	
22	3844	5975.7	5426.9	3439.9	3397.0	
23	3881	6050.1	5473.3	3497.5	3423.8	
24	3940	6117.8	5543.6	3538.5	3437.5	
25	3930	6104.2	5534.1	3523.7	3437.0	
26	3915	6097.7	5522.8	3520.0	3431.6	
27	3901	6077.3	5496.5	3506.7	3425.7	
28	3905	6103.5	5510.5	3508.3	3425.7	
29	3936	6148.6	5532.2	3524.4	3452.2	
30	3932	6162.0	5560.4	3543.1	3457.7	
Mean	3832	5981.0	5406.6	3436.5	3418.1	

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.

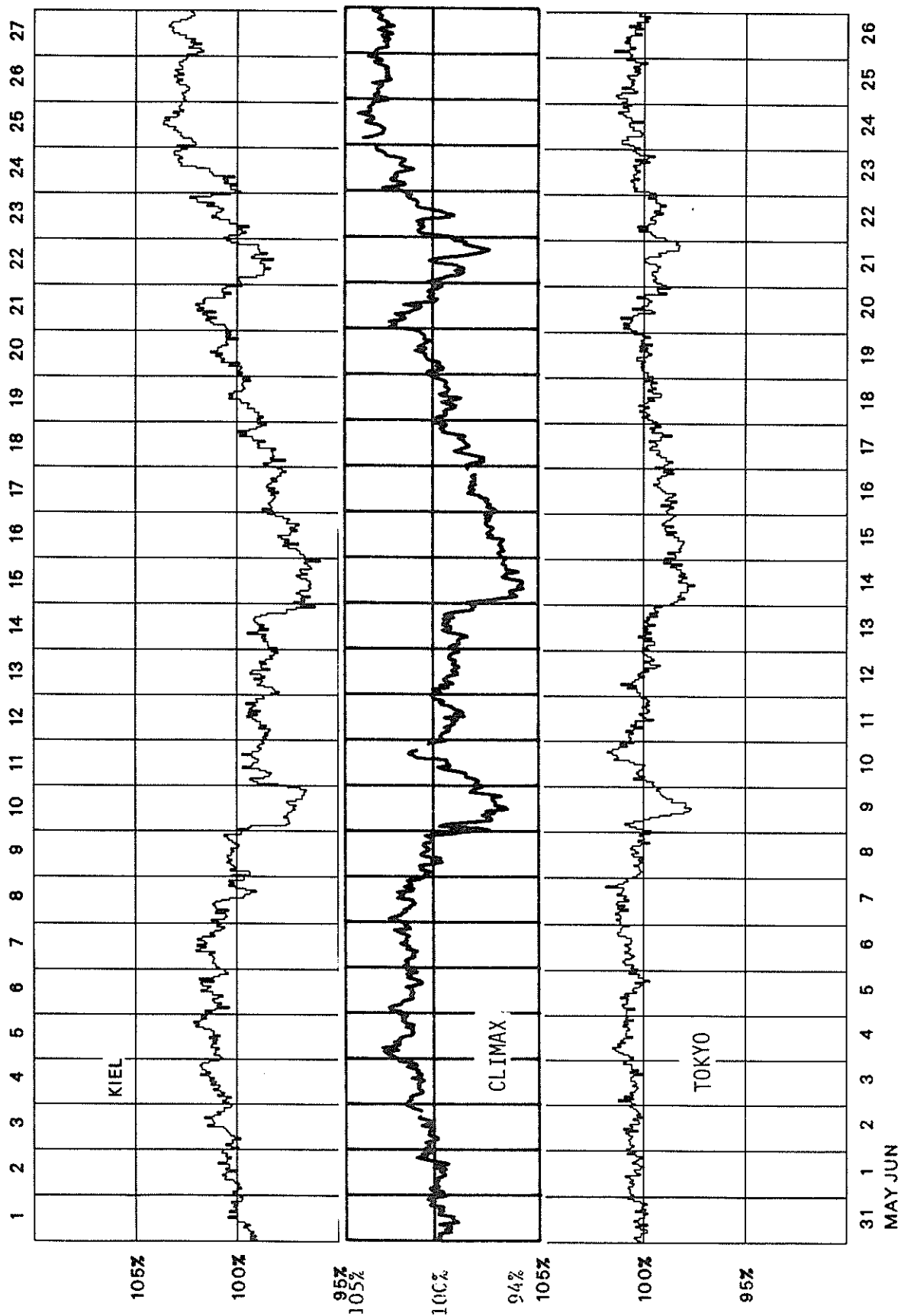
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2129 (May 1989-June 1989)



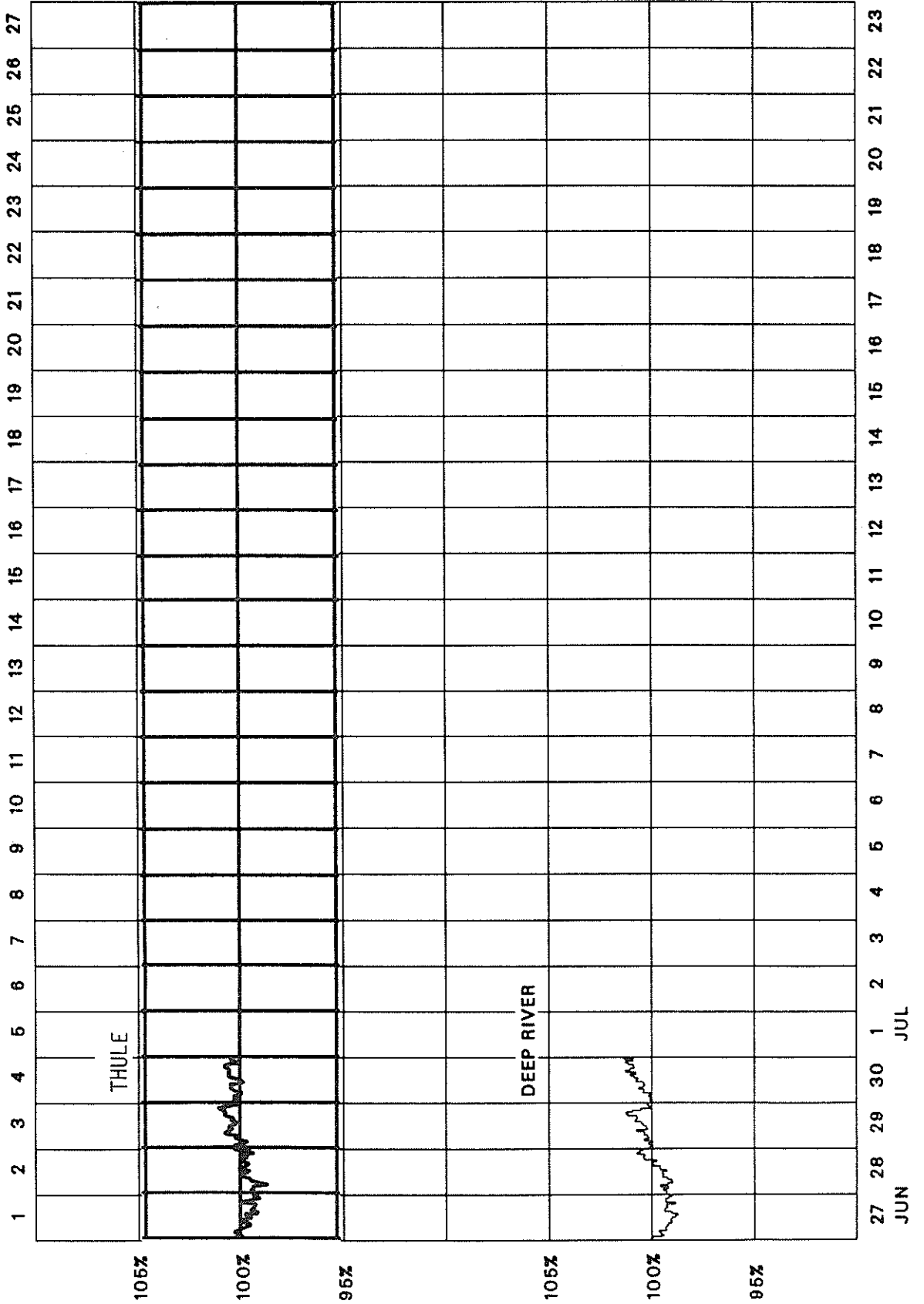
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2129 (May 1989-June 1989)



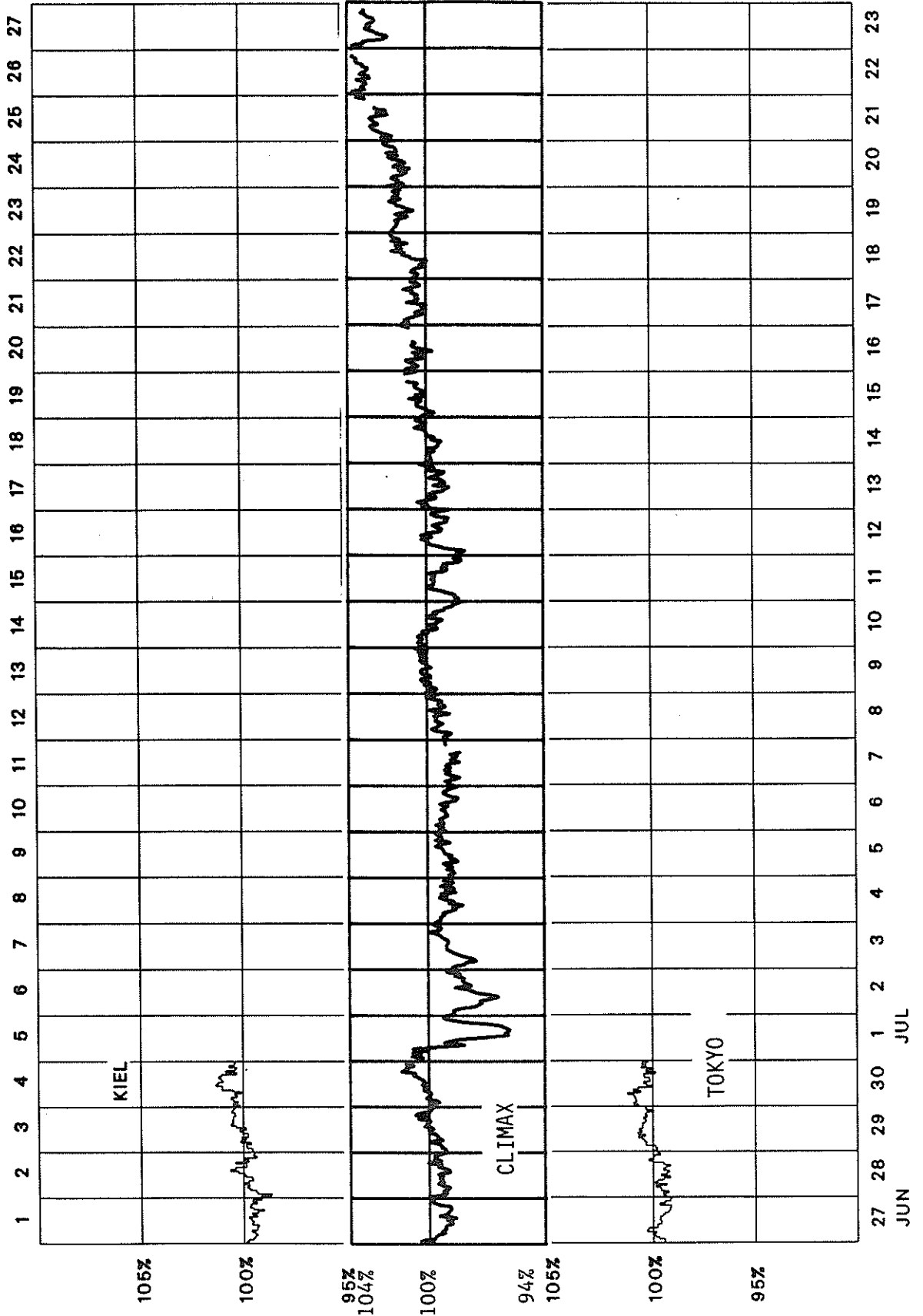
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2130 (June 1989-July 1989)



COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2130 (June 1989-July 1989)



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

June 1989

Day	Kp Three-Hourly Indices								Sum	Ap	Cp	Km Three-Hourly Indices								aa Provisional									
	1	2	3	4	5	6	7	8				1	2	3	4	5	6	7	8	Am	N	S	M						
1	3-	3-	1+	2+	2+	3-	3	3	20	11	0.6	2+	3-	1+	2	2+	2	2	3	18	28	16	20	24					
2	2+	2+	3+	4-	5-	3+	3+	3+	26+	19	1.0	2+	2+	4-	3+	4	3	3-	3+	32	29	33	26	37					
3	4-	3	2	1+	2+	4-	3+	3	22+	14	0.8	3+	3-	2-	1+	2	3+	2+	3-	22	27	17	14	30					
4	4	5	1+	2-	1+	1+	1+	2	18	14	0.8	3+	4	2+	1+	1+	1+	1+	2-	19	32	9	30	11					
5	Q8A	2	1	1+	2-	1	3-	2-	3-	14	7	0.4	2	1-	1+	2-	1	2	2-	3-	12	19	8	11	17	K			
6		3-	2+	2-	1+	2-	1	1+	5-	17-	11	0.6	3-	2+	2	2	2	1+	1-	4	19	29	16	17	29				
7	D4	6	4+	5-	6-	3+	1-	3	4-	31+	34	1.4	6-	4+	5-	5	4-	1-	2+	3+	58	52	47	77	22				
8		3	2+	3-	2-	2-	1+	6	5	24-	23	1.1	3	3-	3-	2	2	1+	5-	4	30	38	22	21	39				
9	D3	6+	5-	2+	2+	3-	3+	4+	5+	31+	34	1.3	6-	4+	2+	2+	2+	2+	4-	5-	49	56	26	45	38				
10	D1	5+	6-	5+	6-	7-	7	6+	5-	47-	78	1.8	5-	5	5	5	5	5+	5-	4	88	93	66	63	96				
11		4	4+	4+	2+	3	3+	4-	3+	28+	22	1.1	3+	4-	4	2+	3-	3-	3-	3	31	43	23	35	31				
12		3	3	3+	3-	2	2+	3-	1+	20+	12	0.7	3-	3-	3	3-	2	2	2-	1	19	25	14	24	15				
13		2-	2-	2	3-	3+	4+	4+	3-	23-	16	0.9	2-	1+	2+	3-	3-	4-	3+	3-	24	37	20	15	42				
14	D2	3+	4+	5-	6-	5+	5+	6	5	40-	50	1.6	3	4-	4	5-	4	4-	4+	4	56	68	47	47	68				
15	D5	5-	3+	5	4+	5	5	5	3	35+	37	1.4	4	4-	4-	4	4	4-	4	3	50	62	35	45	53				
16		3	4-	3-	2	1-	2-	1-	0+	15-	9	0.5	3-	3-	3	2+	1-	1	0+	0	13	24	6	21	9				
17	Q5K	0	0+	1-	1	1+	3+	1	2	10-	5	0.2	0	0+	0+	1+	1	2+	1-	2-	7	14	6	4	16	KK			
18	Q3	2-	1+	1-	1	1+	1+	2	1-	10	5	0.2	1	1	1-	1	1	1	1+	0+	6	11	4	7	8	CK			
19		1+	2+	2-	2-	2	1+	3-	3+	16+	8	0.5	1-	2	2	2+	2	2-	2+	3	16	18	12	12	18				
20		3-	3	3	4+	5	4	5+	3+	31-	28	1.2	2+	3-	3-	4	4-	3+	4	3	38	43	40	36	47				
21	Q1	1+	1	2-	1	1+	1-	1-	2-	9+	4	0.2	1+	1	1+	1	1	1-	1-	1+	7	12	5	8	9	C			
22	Q2	1-	1	1+	1-	1+	1+	2-	2	10	5	0.2	1	1-	1+	1	1	1	1+	2	8	13	6	7	12	CC			
23	Q4	2-	1	1	1	2-	2	2-	1+	11+	5	0.2	2-	1	2-	2-	1+	2-	1+	1+	10	14	8	9	13	CC			
24		1	1+	2	3	4	2	2-	1+	16+	10	0.5	1	1+	2+	3	3+	2-	1+	1+	17	22	12	13	21				
25	Q9A	2	1+	2	2-	2	1+	1	2+	15+	7	0.4	2	2+	2+	2	2	1+	1	2-	13	19	11	16	14				
26	Q10A	1	1+	2-	3-	2+	2+	2-	3-	16-	8	0.4	1-	1+	2	3-	2+	2+	2	2	15	16	12	12	16	C			
27	Q6	2+	1+	1-	1	2-	1	1+	2+	12-	6	0.3	2-	1+	1	1	1+	1	1	2	9	15	6	8	13	CC			
28	Q7A	3-	1+	1+	2-	1+	2+	1+	2	14	7	0.3	2+	1+	1+	1+	1+	2	1	2-	11	19	8	13	14	C			
29		3-	3+	2+	3	3+	3	2+	2+	22+	13	0.8	3-	3+	2+	3	3	3	2	2-	24	24	28	29	24				
30		3	4	3-	2-	1+	1-	2-	2	17	10	0.6	3-	3	3-	2+	1-	1-	1+	2-	16	19	10	21	8				
Mean												17	0.73											24.6	30.7	19.2	24.9		
Day	Kn Three-Hourly indices								An	Ks Three-Hourly Indices								As	Sa	Prov									
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			Ri	Ra	Rs	IMF						
1	3-	3-	2-	2+	2+	2+	2+	3	20	2+	3-	1	1+	2+	2-	2+	3-	16	191.6*	136	163	145							
2	3-	3-	4	4-	4	3+	3	3+	37	2-	2	3+	3	4-	3-	3-	3	26	208.2*	148	171	163							
3	3+	3	2	2-	3-	3+	3-	3-	25	3	2+	1+	1-	1+	3+	2+	2+	19	203.3*	154	168	158							
4	3+	4	2-	2	2-	1+	1+	2+	21	4-	4	1+	1	1-	1+	1+	1+	17	221.3*	157	168	177							
5	3-	1+	2-	2	2-	3-	2	3-	16	1+	0	1	1+	0+	2-	1+	3-	8	213.2*	171	173	168							
6	3-	3-	2+	2	2+	2-	1	5-	24	3	2+	2-	2-	1+	1-	0	3+	15	212.2*	145	150	167							
7	5+	4	5-	5	3+	0+	3	3	56	6-	5-	4+	5	4	1-	2-	3+	61	205.3	130	143	160							
8	3-	3	3-	2+	2+	2-	5+	5-	38	3	2+	2+	2-	1+	1-	4	3	22	222.9	143	169	179							
9	6	5-	3-	3-	3-	3	4-	4+	54	5+	4-	2	2	2	2-	4-	5-	43	241.9	168	199	199							
10	5-	5	5	5+	5	5+	4+	4+	89	5-	5	5	4+	5+	5+	5	4-	87	250.9*	192	214	209							
11	3	4-	4	2+	3	3-	3	3+	34	3+	3+	4	2+	2	2+	2+	3-	28	270.3	203	238	230							
12	3	3	3+	3	2	2+	2-	1+	23	3-	2+	3-	2+	2-	1+	1+	1	15	285.8*	218	232	247							
13	2	2-	3-	3	3-	4	4-	3-	29	2-	1	2-	2+	3-	3	3	3-	19	319.2	253	280	283							
14	3+	4	4	5	4+	4+	5-	4+	65	3-	4-	4-	4+	4	3+	4	4	48	327.2	251	274	291							
15	4	4-	4	4+	5-	4+	4+	3	56	4+	4-	4-	4	3+	3	4-	3+	44	334.7*	264	295	299							
16	3-	3	3+	2+	1	2-	1-	0+	17	2+	2+	2+	2	0+	1-	0	0	10	320.9*	265	288	285							
17	0+	0+	1	2-	1+	3-	1	2	10	0	0	0	1-	1-	1	0+	1	3	303.7*	233	257	266							
18	2-	2-	1	2-	2-	2-	2-	1	10	0+	0+	0+	0+	0+	0+	0+	0	2	271.5	216	244	231							
19	1	2	2+	2+	2+	2+	2+	4-	20	0+	2-	2	2	1+	1+	2	2	12	270.6	235	252	230							
20	3-	3+	3	4	4+	4	4+	3+	45	2	2	2	4-	3+	3	4	3-	30	249.3*	232	244	207							
21	1+	1	2-	2-	2-	1+	1	2-	10	1	1-	1+	0+	0	0	1-	1	4	242.8	187	220	200							
22	1	1+	1+	1+	2-	2-	1+	2+	11	1-	0+	1	1-	0+	0+	1	1+	5	233.1	174	219	190							
23	2-	1+	2-	2-	2-	2	2-	1+	12	2-	1	1+	2-	1	2-	1	1	8	238.7	196	227	196							
24	1	2-	3-	3+	4-	2+	2-	2-	21	1-	1+	2	2+	3	1	1+	1	12	227.6	215	242	184							
25	2	2	2+	2+	2	1+	1+	2-	15	2-	2+	2	2-	2-	1	1-	2-	12	221.6	227	248	177							
26	1	2	2+	3-	3-	3-	2+	2+	18	1-	1	2-	3	2+	2-	2	2-	13	233.0	237	265	190							
27	2-	2-	1-	1+	2-	1+	2	2+	11	2-	1+	1	1-	1	1-	1-	2-	7	227.5	206	231	184							
28	2+	2-	1+	1+	2-	3-	1	2+	13	2+	1+	2-	1+	1-	1+	1-	1+	9	227.4	187	201	184							
29	3-	3	2+	3	3	3	2	2-	24	2+	3+	2+	3	3+	3	2+	2-	25	223.0	182	195	179							
30	3-	3	3-	2	1+	1	2-	2	16	3	3	3	2+	0	1-	1	1+	15	217.4	156	155	173							
Mean												28.0									21.2	247.2	196.0	217.5	205.0				

DAILY AVERAGE INDICES Ap

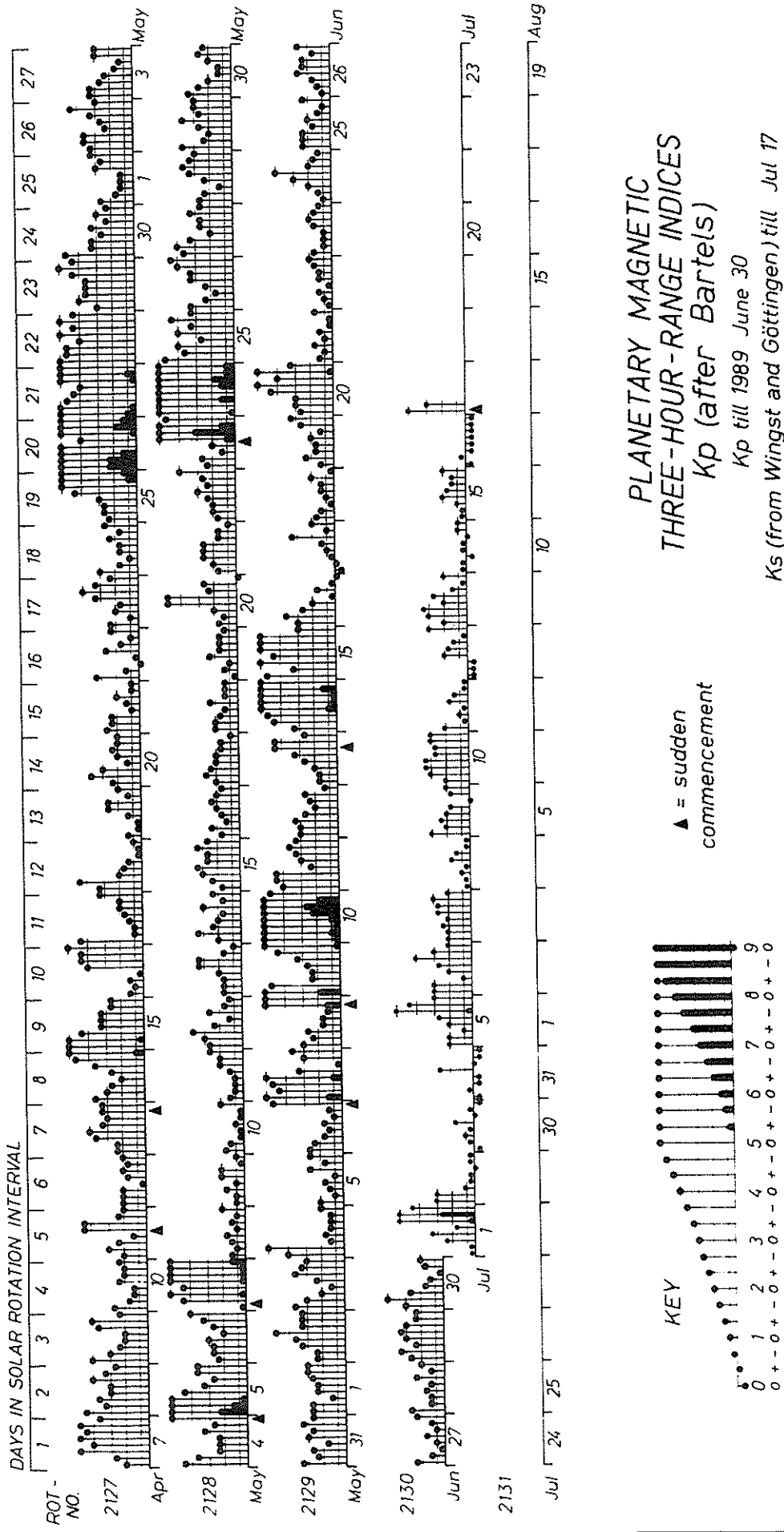
July 1988 to June 1989

DAY	JUL 88	AUG	SEP	OCT	NOV	DEC	JAN 89	FEB	MAR	APR	MAY	JUN
1	14	8	21	11	7	5	15	29	12	42	10	11
2	10	5	12	5	30	15	6	21	25	26	18	19
3	7	6	8	3	26	18	4	44	37	21	12	14
4	4	2	7	9	8	10	9	24	13	46	20	14
5	5	6	4	18	10	4	33	22	30	42	44	7
6	11	5	3	38	13	3	10	23	24	14	14	11
7	8	5	5	6	17	3	10	25	18	27	46	34
8	10	3	6	7	18	5	17	14	24	20	5	23
9	3	13	4	17	12	4	16	19	31	15	5	34
10	7	9	7	85	14	8	12	12	19	8	4	78
11	21	8	51	13	10	17	37	10	17	14	6	22
12	15	16	20	6	18	14	20	14	23	6	11	12
13	5	17	10	6	8	20	11	21	246	17	9	16
14	7	21	11	6	11	13	14	14	158	24	10	50
15	11	16	12	6	13	10	38	14	49	27	13	37
16	22	8	6	10	18	25	43	17	50	20	7	9
17	6	5	20	15	11	35	28	5	34	10	7	5
18	9	8	34	30	8	25	15	9	15	10	6	5
19	9	8	23	12	4	20	7	9	55	6	6	8
20	3	17	11	18	2	7	45	21	14	10	15	28
21	26	7	11	7	6	11	28	11	22	7	8	4
22	27	24	20	3	4	13	30	13	39	7	12	5
23	12	10	11	6	2	4	22	5	36	12	47	5
24	7	11	8	6	4	4	10	9	16	8	68	10
25	6	15	12	4	7	22	12	7	10	34	24	7
26	16	9	8	7	20	25	10	4	14	76	17	8
27	12	15	5	8	12	20	12	6	44	49	16	6
28	11	9	5	9	9	14	13	13	39	39	14	7
29	7	13	4	3	8	20	10		71	28	14	13
30	6	12	8	5	37	11	12		47	17	9	10
31	8	13		10		12	32		52		13	
MEAN	10	10	12	13	12	13	19	15	41	23	16	17

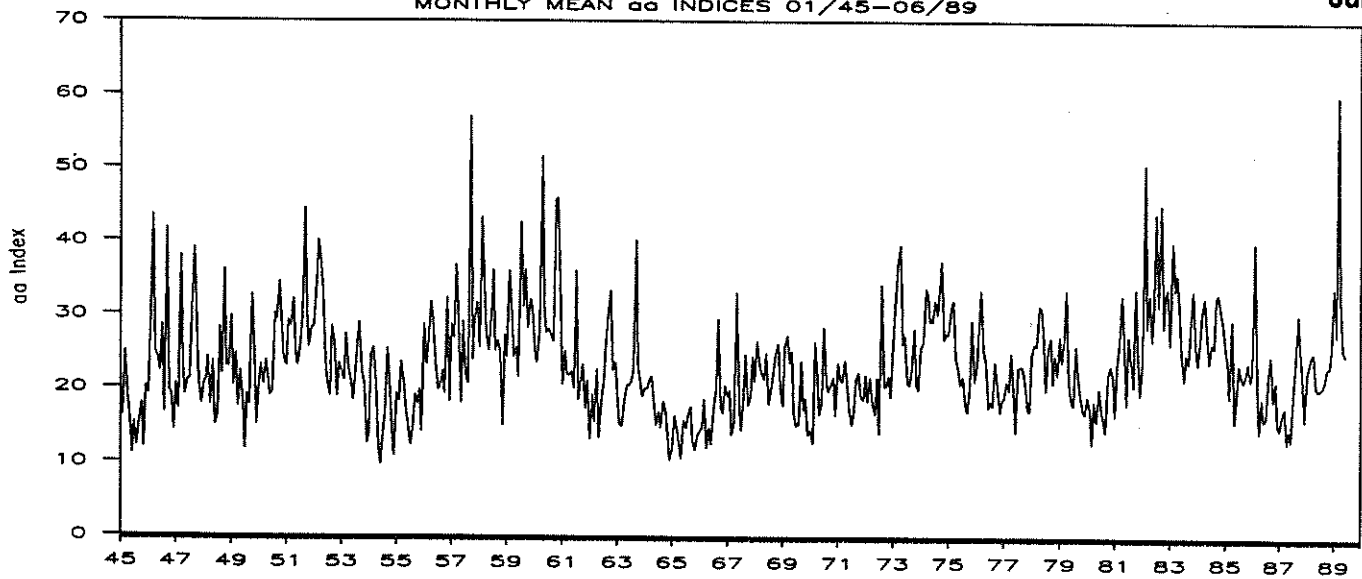
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Göttingen

Kp through June 30, 1989



MONTHLY MEAN aa INDICES 01/45-06/89



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							34.1

PRINCIPAL MAGNETIC STORMS

JUNE 1989

Sta	Geomag		Commencement		SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour Day (UT)
	Lat	Long	Time Day (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)		D K (Min)	H (Gamma)	Z (Gamma)	
COL 64.6N	06	2314	SC	24	31	28	07(4)	6	134	1280	690	07 13
SIT 60.0N	06	2315	SC	..	80	11	07(4)	7	--	--	620	07 12
FRD 49.6N	06	2314	SC	2.9	88	- 10	07(1)	6	13	184	56	07 14
BJI 28.5N	06	2315	SC	2.9	32	1	07(1)	6	20	155	45	07 14
UJJ 13.5N	06	2312	SC	..	45	- 8		-	8	159	40	17 20
ABG 09.5N	06	2312	SC	..	38	- 2	07(4)	6	8	146	58	07 20
HYB 07.6N	06	2315	SC	..	36	- 3	07(4)	6	8	163	36	07 23
GUA 04.0N	06	2313	SC	..	44	- 16	07(1)	7	10	250	30	07 14
ETT 00.6S	06	2313	SC	..	27	30		-	7	192	80	07 22
HER 33.7S	06	2315	SC	3	28	24	07(1,4)	5	21	123	78	07 14
GNA 43.2S	06	2315	SC*	4.2*	29	34	* 07(1,4)	6	21	150	120	07 14
KGL 56.5S	06	2314	SC	9	24	4	07(1)	5	35	178	--	08 15
KRC 16.4N	07	2324	..	..	..	..	10(6)	6	8	200	40	12 12
COL 64.6N	08	1952	SC	- 21	113	- 21	09(1)	5	127	785	665	09 07
SIT 60.0N	08	1955	SC*	..	117	47	* 09(1)	7	--	720	290	09 04
FRD 49.6N	08	1953	SC*	3.6	106	- 16	08(7) 09(1) 10(4)	6	27	347	130	12 --
BJI 28.5N	08	1953	SC	1.3	58	3	09(1)	6	21	172	38	09 12
UJJ 13.5N	08	1800	..	..	..	..		-	11	218	60	11 24
ABG 09.5N	08	1800	..	..	..	..	08(7,8) 09(1) 10(2,6,7)	5	9	243	74	11 24
HYB 07.6N	08	1953	SC	..	45	- 3	10(5,6)	6	10	240	44	11 10
GUA 04.0N	08	1953	SC	1.2	33	- 12	09(1)	7	10	190	40	09 08
ETT 00.6S	08	1952	SC	..	37	39		-	9	283	103	11 22
HER 33.7S	08	18--	..	..	..	..	09(1)	5	13	76	61	09 05
KGL 56.5S	08	1954	SC	6	32	8	10(6,7)	8	128	936	455	11 18
COL 64.6N	09	22--	..	..	..	..	10(4,5,6)	6	183	1250	1180	11 10
HER 33.7S	09	18--	..	..	..	..	09(7,8) 10(6)	5	29	141	122	11 02
GNA 43.2S	09	19--	..	..	..	..	10(5)	6	33	140	190	11 10
CNB 43.9S	09	10--	..	..	..	..	10(5,6,7)	5	21	149	59	11 09
SIT 60.0N	10	00--	..	..	..	..	10(2)	7	--	--	680	10 18
GUA 04.0N	10	00--	..	..	..	..	10(6)	5	10	180	50	11 08
COL 64.6N	13	1741	SC	9	171	5	14(3,5)	6	142	1390	800	15 20
FRD 49.6N	13	1742	SC*	4.6	19	- 4	14(4,5,7,8) 15(5)	5	30	180	94	16 09
BJI 28.5N	13	1743	SC	..	36	2	14(4)	5	11	127	61	15 20
KRC 16.4N	13	1740	SC	- 1.7	38	17	13(6) 14(4,5,8)	5	5	118	54	16 14
UJJ 13.5N	13	1739	SC	..	32	- 7		-	11	99	54	15 24
ABG 09.5N	13	1739	SC	..	26	- 4	14(8)	5	10	116	67	15 24
HYB 07.6N	13	1741	SC	..	26	- 3	14(8)	5	9	120	48	15 23
ETT 00.6S	13	1740	SC	..	22	20		-	8	217	75	16 14
HER 33.7S	13	1742	SC	2	16	13	14(4) 15(1)	5	20	103	85	15 05
KGL 56.5S	13	1743	SC	5	31	7	15(7)	6	36	321	218	16 09
GUA 04.0N	14	03--	..	..	..	..	14(2)	5	--	140	20	14 18
GUA 04.0N	14	20--	..	..	..	..	15(2)	5	10	90	40	15 19
KGL 56.5S	14	0106	SC	..	..	..	15(7)	6	36	321	218	16 09
HYB 07.6N	19	0800	..	..	..	..	20(4,5)	5	7	157	34	20 23
GUA 04.0N	20	05--	..	..	..	..	20(5)	5	--	110	30	20 23

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
KGL = KERGUELEN
KRC = KARACHI

PMG = PORT MORESBY
SHL = SHILLONG
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN

C O N T E N T S

Prompt Reports

LATE DATA

Number 540 Part I

Page

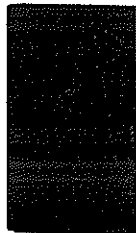
COSMIC RAYS NEUTRON MONITORS May 1989

Chart of Variations Kiel and Huancayo150-151

Daily Counting Rate.152

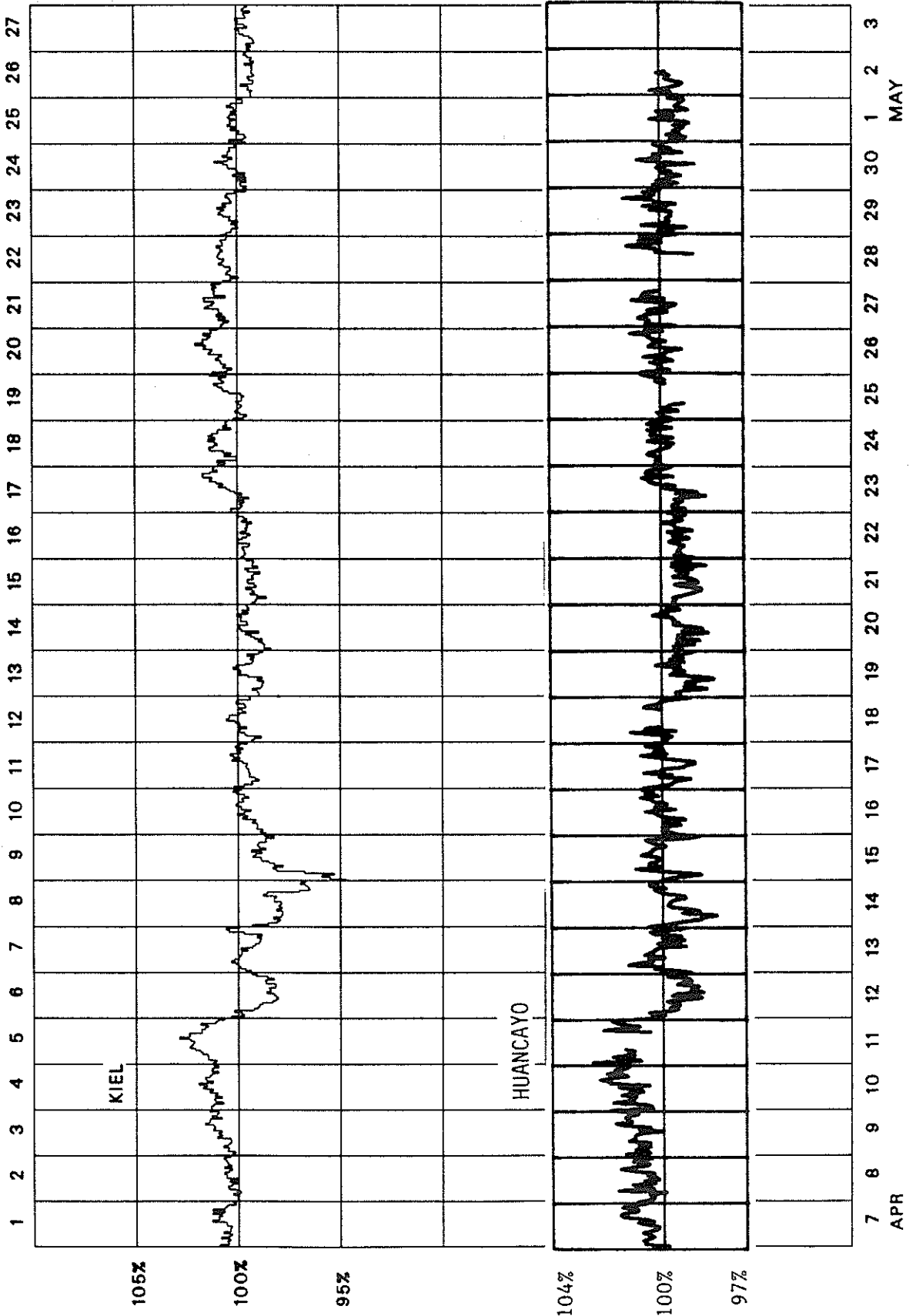
GEOMAGNETIC INDICES March-April 1989

Sudden Commencements/Solar Flare Effects153-154



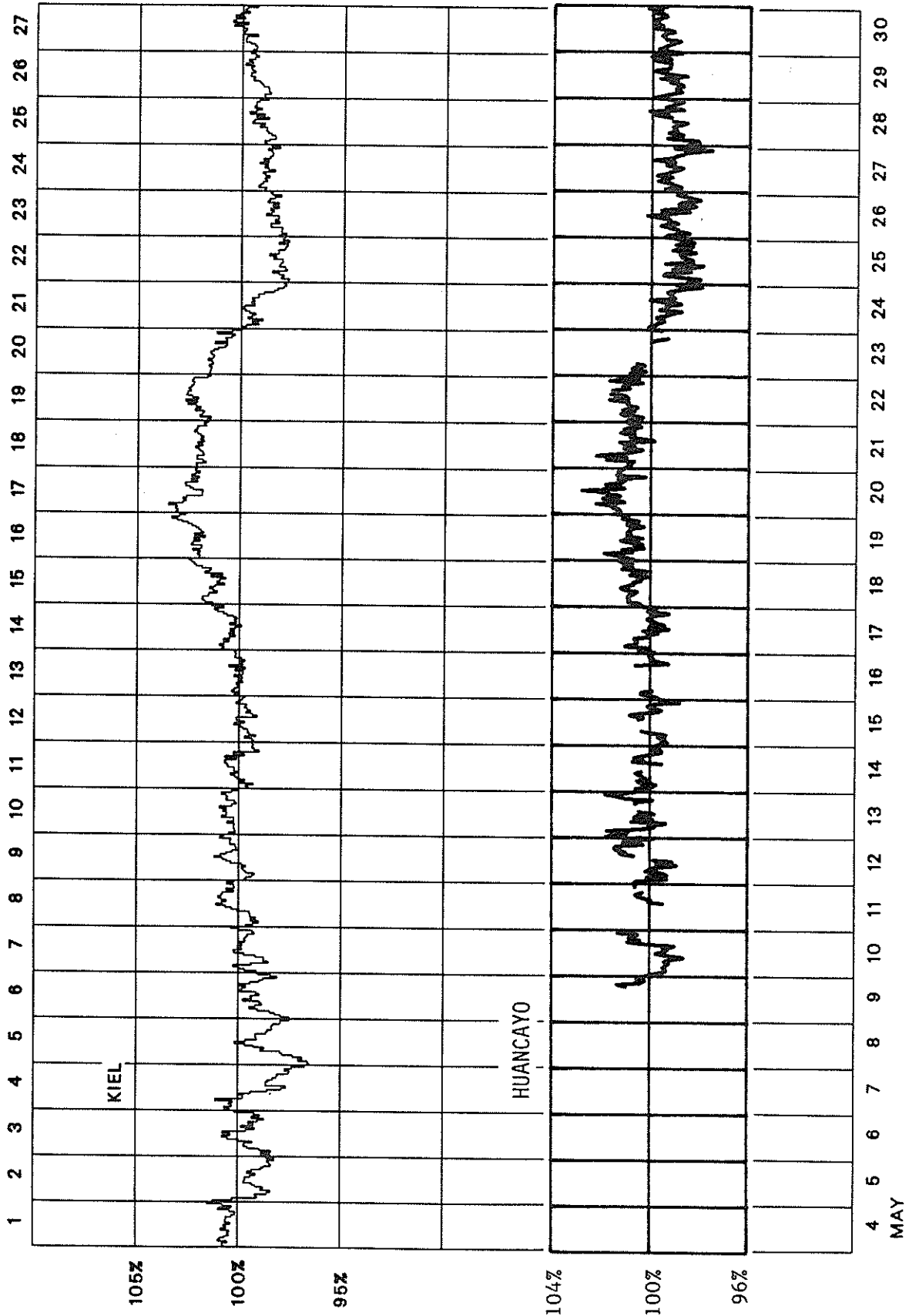
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2127 (April 1989-May 1989)



COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2128 (May 1989)



152
Late
May 89

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

MAY 1989

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	3860	6052.1	5430.3	3472.4	3419.2	1639.5
2	3839	6031.6	5391.6	3456.8	3422.0	1644.1(26)
3	3857	6039.8	5404.4	3442.6	3426.3	---
4	3842	6040.2	5385.3	3441.5	3419.3	---
5	3769	5925.8	5306.1	3385.5	3388.7	---
6	3777	5940.8	5326.1	3391.8	3399.0	---
7	3776	5879.7	5293.8	3345.0	3412.4	---
8	3721	5864.0	5263.4	3318.2	3396.0	---
9	3764	5917.2	5300.7	3354.5	3404.6	1656.2(12)
10	3793	5942.9	5333.2	3373.4	3397.5	1642.0
11	3804	5972.5	5362.5	3397.0	3402.6	1650.2(18)
12	3817	5977.1	5364.0	3413.5	3416.7	1650.4
13	3826	5992.4	5377.0	3421.3(34)	3417.6	1656.8
14	3799	5976.5	5351.2	3409.4	3412.4	1649.0
15	3798	5968.2	5336.6	3406.0	3411.7	1643.3(38)
16	3818	5983.9	5356.8	3412.4	3408.7	1645.2(24)
17	3840	6011.8	5383.8	3433.1	3409.5	1646.8
18	3857	6048.5	5433.9	3458.8	3429.5	1658.2
19	3903	6100.3	5474.8	3489.2	3442.5	1660.2
20	3892	6119.5	5486.8	3505.9(36)	3442.6	1670.0
21	3886	6084.2	5458.3	3476.7	3438.1	1660.8
22	3890	6095.7	5469.4	3483.3	3438.0	1662.7
23	3846	6005.7	5412.3	3427.5	3412.7	1650.1(22)
24	3798	5892.7	5309.0	3366.8	3382.2	1635.0
25	3746	5800.0	5248.5	3313.0	3364.5	1624.0
26	3748	5815.6	5265.5	3326.6	3389.4	1629.5
27	3754	5851.4	5287.2	3330.0	3387.0	1631.1
28	3761	5879.0	5299.9	3343.6	3381.3	1629.9
29	3762	5891.6	5314.0	3363.4	3397.6	1634.5
30	3775	5905.8	5343.2	3387.8	3411.3	1638.7
31	3800	5930.5	5374.7	3407.5	3419.5	1649.8
Mean	3810	5965.7	5359.5	3404.3	3409.6	1645.8

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

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

MARCH 1989

Storm Sudden Commencements (ssc)				Solar Flare Effects (sfe)		
Day	Time	Quality:	Station Group*	Day	Begin-End	Station(s)
02	0247	A:	COI	06	0054-0103	<u>LNP</u>
		B:	SOD* WNG* HRB NAG AQU KNY* LNP		1354-1506	WNG <u>BDV</u> CLF <u>EBR</u> SPT TEN
			MPO KGL			(si: ALM)
		C:	NGK BDV* CLF GCK MMB EBR* BJI	07	0545-0550	<u>LNP</u>
			QUE		1451-1520	WNG <u>BDV</u> <u>EBR</u> TEN
		-:	NUR ETT	08	0251-0257	<u>LNP</u>
		si:	ALM		0522-0531	<u>LNP</u>
08	1755	A:	SOD* DOB* WNG* CLF* HRB* NAG* GCK*		0830-0903	WNG <u>BDV</u>
			AQU* EBR* BJI SPT* ALM TEN* LNP	09	0233-0243	<u>LNP</u>
			MPO CZT* DUM*		0401-0406	<u>LNP</u>
		B:	NGK* BDV* MMB* KAK KNY* QUE GNA*		1525-1610	WNG <u>EBR</u>
			CNB* AMS* KGL*	10	0108-0113	<u>LNP</u>
		C:	FRD*		0229-0234	<u>LNP</u>
		-:	NUR HYD ETT	11	0330-0337	<u>LNP</u>
13	0127	A:	SOD* DOB* WNG* NGK BDV* CLF HRB*		0642-0645	<u>LNP</u>
			NAG* GCK* MMB* AQU* EBR* BJI* SPT*		0900-0922	<u>BDV</u> <u>LNP</u> HYD ETT MPO
			FRD* ALM KAK* KNY* QUE LNP GNA*	12	0809-0814	CLF <u>LNP</u>
			CNB* MPO CZT*		2325-2327	<u>LNP</u>
		B:	TEN AMS* KGL DUM*	13	0103-0106	<u>LNP</u>
		-:	NUR HYD ETT		0252-0257	<u>LNP</u>
16	0532	A:	HRB* MMB* COI* BJI* ALM KAK* KNY*	15	0625-0630	<u>LNP</u>
			LNP AMS* CZT* KGL*	16	0307-0318	<u>LNP</u>
		B:	DOB* WNG* NGK* BDV* AQU SPT* FRD	17	0236-0245	<u>LNP</u>
			QUE GNA* CNB*		2245-2254	<u>LNP</u>
		C:	CLF* NAG* CGK* EBR*	19	0330-0334	<u>LNP</u>
		-:	NUR HYD ETT	20	1151-1214	<u>BDV</u>
19	0423	A:	SOD* DOB* WNG* HRB* COI* BJI SPT*	21	1329-1352	ALM (si: HRB)
			KNY* LNP MPO CNB*	22	1109-1145	MPO
		B:	NGK* BDV* NAG* MMB* AQU FRD* ALM		1325-1352	CLF
			KAK* QUE TEN* GNA* AMS* CZT* KGL	24	0645-0715	MPO
			DUM	26	1307-1330	WNG TEN
		C:	CLF* GCK EBR*	27	0315-0324	<u>LNP</u>
		-:	NUR HYD ETT	31	0452-0459	<u>LNP</u>
26	2249	A:	WNG* HRB* MMB* AQU* COI* BJI SPT*			
			FRD* ALM KNY* MPO			
		B:	BDV* CLF* GCK* EBR* KAK* QUE TEN			
			GNA* CNB* AMS* CZT*			
		C:	NGK			
		-:	NUR HYD ETT			
27	1343	A:	SOD* WNG* NGK* BDV* CLF* HRB* NAG*			
			EBR* COI* BJI* SPT* ALM LNP MPO			
			KGL			
		B:	GCK* AMS* DUM			
		-:	NUR ETT			
		si:	FRD			

Reporting Observatories: (up to the 1st of May 1989)

SOD DOB NUR WNG NGK BDV CLF HRB NAG GCK MMB AQU EBR COI BJI SPT
FRD ALM KAK KNY QUE TEN LNP HYD ETT 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.

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Late
Apr 89

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

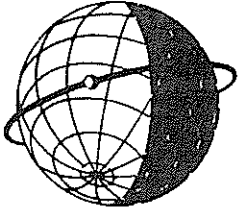
APRIL 1989

Storm Sudden Commencements (ssc)						Solar Flare Effects (sfe)				
Day	Time	Quality:	Station	Group*		Day	Begin-End	Station(s)		
11	1435	A:	WNG*	NAG*	AQU*	COI*	BJI	LNP	MPO	
		B:	SOD	BDV*	CLF*	GCK*	EBR*	SPT*	QUE	
			TEN	CNB						
		C:	NGK*	KGL						
13	2224	B:	WNG*	NAG	GCK*	SPT	FRD*	TEN	KGL	
		C:	NGK	BDV*	CLF	AQU	EBR	BJI	LNP	

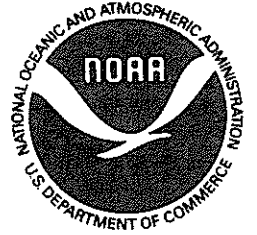
Reporting Observatories: (up to the 1st of June 1989)

SOD DOB NUR WNG NGK BDV CLF NAG GCK MMB AQU EBR COI BJI
SPT FRD KAK KNY QUE TEN LNP 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."