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Summary of the Geoalert Messages JUNE 1989

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat	Location °Long	Flares Total	Flares M	Flares X	Date of Forecast	Location °Lat	Location °Long	Region Forecast[1]	Geoalerts
01	01	31	149	189	009	S20	W29	0	0	0	01	S20	W29	E	Solnil, Magquiet.
						N20	W21	1	0	0		N20	W21	Q	
						N28	W20	0	0	0		N28	W20	Q	
						S22	W06	2	0	0		S22	W06	E	
						N18	E45	2	0	0		N18	E45	E	
						S22	W15	0	0	0		S22	W15	E	
						N15	E44	1	0	0		N15	E44	E	
						S19	E79	3	0	0		S19	E79	E	
02	02	01	220	192	011	S18	W44	1	0	0	02	S18	W44	E	Solquiet, Magquiet.
						N21	W38	1	0	0		N21	W38	E	
						N29	W33	0	0	0		N29	W33	E	
						S15	W65	2	0	0		S15	W65	E	
						S21	W19	2	0	0		S21	W19	E	
						S16	W04	0	0	0		S16	W04	Q	
						N19	E33	0	0	0		N19	E33	Q	
						S21	W28	1	0	0		S21	W28	E	
						N15	E29	0	0	0		N15	E29	Q	
						S19	E68	13	0	0		S19	E68	E	
						N30	E05	0	0	0		N30	E05	Q	
						S21	E29	0	0	0		S21	E29	Q	
03	03	02	235	202	016	S17	W58	0	0	0	03	S17	W58	E	Solalert 03/XX,
						N21	W49	2	0	0		N21	W49	E	Magquiet.
						N28	W47	0	0	0		N28	W47	E	
						S16	W78	1	0	0		S16	W78	E	
						S21	W31	1	1	0		S21	W31	A	
						S16	W17	0	0	0		S16	W17	Q	
						N19	E21	0	0	0		N19	E21	Q	
						S22	W41	0	0	0		S22	W41	A	
						N14	E15	0	0	0		N14	E15	Q	
						S18	E53	8	3	1		S18	E53	A	
						N31	W08	0	0	0		N31	W08	Q	
						S21	E16	0	0	0		S21	E16	Q	
		Presto:[2]	Boulder	X-ray event X1/2B S24 E59 02/1557 UT duration 36 minutes.											
				Tenflare 460 flux units began 02/1558 UT duration 17 minutes.											
04	04	03	218	200	011	S17	W71	0	0	0	04	S17	W71	E	Solalert 04/05,
						N22	W64	2	0	0		N22	W64	E	Magquiet.
						N29	W60	2	1	0		N29	W60	A	
						S16	W88	0	0	0		S16	W88	E	
						S20	W46	0	0	0		S20	W46	A	
						N21	E11	0	0	0		N21	E11	Q	
						S22	W55	2	0	0		S22	W55	A	
						N15	E02	1	1	0		N15	E02	Q	
						S18	E40	9	3	0		S18	E40	A	
						S21	E02	0	0	0		S21	E02	Q	
						S23	E65	5	1	0		S23	E65	A	
						S19	E73	2	0	1		S19	E73	Q	
		Presto:[2]	Boulder	X-ray event X1/1F S22 E77 03/1819 UT duration 64 minutes.											
			Toyokawa	Tenflare 120 flux units began 03/0309 UT duration 9 minutes.											
05	05	04	232	218	011	S17	W83	0	0	0	05	S17	W83	Q	Solalert 05/XX,
						N21	W76	1	0	0		N21	W76	Q	Magquiet.
						N29	W74	2	1	0		N29	W74	E	
						S20	W59	0	0	0		S20	W59	A	
						N21	W03	1	0	0		N21	W03	Q	
						S22	W69	3	0	0		S22	W69	E	
						N15	W11	0	0	0		N15	W11	E	
						S18	E27	4	2	0		S18	E27	A	
						S20	W11	0	0	0		S20	W11	Q	
						S26	E50	0	0	0		S26	E50	A	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **JUNE 1989**

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
05	05	04				S19 E61	11	3	0	05	S19 E61	A	
						N26 E62	0	0	0		N26 E62	Q	
		Presto:[2] Toyokawa Tenflare 110 flux units began 04/0211 UT duration 11 minutes.											
						Tenflare 190 flux units began 04/0248 UT duration 19 minutes.							
06	06	05	264	209	008	N20 W88	4	0	0	06	N20 W88	Q	Solalert 06/XX,
						N29 W86	1	0	0		N29 W86	Q	Magquiet.
						S20 W73	0	0	0		S20 W73	E	
						N20 W16	0	0	0		N20 W16	Q	
						S22 W82	0	0	0		S22 W82	Q	
						N17 W22	0	0	0		N17 W22	Q	
						S18 E15	4	0	0		S18 E15	E	
						N24 W56	0	0	0		N24 W56	Q	
						S22 W26	0	0	0		S22 W26	Q	
						S27 E38	0	0	0		S27 E38	Q	
						S19 E49	11	3	1		S19 E49	A	
						N26 E49	0	0	0		N29 E49	Q	
						N29 W27	0	0	0		N29 W27	Q	
						S18 E66	1	0	0		S18 E66	Q	
						N13 E02	1	0	0		N13 E02	Q	
		Presto:[2] Boulder X-ray event X1/2B S21 E52 05/2133 UT duration 51 minutes.											
						Toyokawa Tenflare 350 flux units began 05/2134 UT duration 10 minutes.							
07	07	06	188	211	012	S19 W86	0	0	0	07	S19 W86	Q	Solalert 07/XX,
						N19 W29	0	0	0		N19 W29	Q	Magalert 07/XX.
						N18 W37	0	0	0		N18 W37	Q	
						S18 E02	1	0	0		S18 E02	E	
						S26 E24	1	0	0		S26 E24	Q	
						S19 E36	7	2	0		S19 E36	A	
						N26 E36	0	0	0		N26 E36	Q	
						N29 W40	0	0	0		N29 W40	Q	
						S18 E52	0	0	0		S18 E52	Q	
						N13 W12	0	0	0		N13 W12	Q	
		Presto:[2] Kakioka Magstorm began 06/2314 UT.											
08	08	07	218	201	030	N20 W42	0	0	0	08	N20 W42	Q	Solalert 08/XX,
						N17 W51	0	0	0		N17 W51	Q	Magnil.
						S18 W13	3	0	0		S18 W13	E	
						S26 E10	0	0	0		S26 E10	Q	
						S19 E24	15	5	0		S19 E24	A	
						N27 E23	0	0	0		N27 E23	Q	
						N28 W51	0	0	0		N28 W51	Q	
						S19 E39	0	0	0		S19 E39	Q	
						N14 W24	0	0	0		N14 W24	Q	
						N14 E41	0	0	0		N14 E41	Q	
						N27 E54	0	0	0		N27 E54	Q	
						N20 E77	5	0	0		N20 E77	E	
						N10 W67	1	0	0		N10 W67	Q	
09	09	08	245	218	019	N17 W64	0	0	0	09	N17 W64	Q	Solalert 09/XX,
						S18 W29	0	0	0		S18 W29	E	Magquiet.
						S26 W03	1	0	0		S26 W03	Q	
						S19 E11	7	1	0		S19 E11	A	
						N26 E10	0	0	0		N26 E10	Q	
						N28 W66	0	0	0		N28 W66	Q	
						S19 E26	0	0	0		S19 E26	Q	
						N27 E41	0	0	0		N27 E41	Q	
						N21 E72	8	0	0		N21 E72	E	
						N10 W77	2	0	0		N10 W77	E	

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INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **JUNE 1989**

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
09	09	08				S09 E73	1	0	0	09	S09 E73	Q	
						N16 E07	0	0	0		N16 E07	Q	
		Presto:[2] Boulder Tenflare 160 flux units began 08/0913 UT duration 11 minutes.											
10	10	09	280	236	021	S18 W45	0	0	0	10	S18 W45	Q	Solalert 10/XX,
						S20 W83	0	0	0		S20 W83	Q	Magalert 10/11.
						S25 W17	1	0	0		S25 W17	Q	
						S21 W02	4	1	0		S21 W02	A	
						N26 W01	0	0	0		N26 W01	Q	
						S19 E13	0	0	0		S19 E13	Q	
						N13 E11	0	0	0		N13 E11	Q	
						N27 E28	0	0	0		N27 E28	Q	
						N21 E62	5	0	0		N21 E62	A	
						S10 E61	3	0	0		S10 E61	E	
						N15 W07	0	0	0		N15 W07	Q	
						S11 W08	1	0	0		S11 W08	Q	
						S18 E78	9	2	0		S18 E78	E	
		Presto:[2] Toyokawa Tenflare 150 flux units began 09/0000 UT in progress.											
		Boulder Tenflare 240 flux units began 09/0015 UT duration 21 minutes.											
		Sydney Culgoora Weak Type II began 09/0029 UT and weak Type IV began 09/0032 UT.											
11	11	10	300	266	042	S18 W59	1	0	0	11	S18 W59	Q	Solalert 11/XX,
						S26 W26	1	0	0		S26 W26	Q	Magalert 11/XX.
						S20 W16	8	1	0		S20 W16	A	
						N26 W14	0	0	0		N26 W14	Q	
						S18 W01	1	0	0		S18 W01	Q	
						N14 W01	0	0	0		N14 W01	Q	
						N27 E15	0	0	0		N27 E15	Q	
						N20 E49	9	1	0		N20 E49	A	
						S10 E46	0	0	0		S10 E46	E	
						N17 W19	1	0	0		N17 W19	Q	
						S11 W22	1	0	0		S11 W22	Q	
						S19 E67	18	4	0		S19 E67	A	
						N12 E75	0	0	0		N12 E75	Q	
12	12	11	335	266	016	S18 W72	0	0	0	12	S18 W72	Q	Solalert 12/XX,
						S18 W29	4	0	0		S18 W29	E	Magalert 12/13.
						N26 W27	0	0	0		N26 W27	Q	
						S18 W13	1	0	0		S18 W13	Q	
						N13 W15	0	0	0		N13 W15	Q	
						N27 W00	0	0	0		N27 W00	Q	
						N20 E37	6	0	0		N20 E37	A	
						S10 E33	2	0	0		S10 E33	Q	
						N17 W33	0	0	0		N17 W33	Q	
						S11 W37	1	0	0		S11 W37	Q	
						S19 E55	17	1	0		S19 E55	A	
						N12 E62	1	0	0		N12 E62	Q	
						N30 E79	0	0	0		N30 E79	Q	
13	13	12	287	284	017	S19 W44	1	0	0	13	S19 W44	Q	Solalert 13/XX,
						S18 W27	1	0	0		S18 W27	Q	Magnil.
						N16 W28	1	0	0		N16 W28	Q	
						N28 W12	0	0	0		N28 W12	Q	
						N21 E24	12	0	0		N21 E24	A	
						S10 E20	0	0	0		S10 E20	Q	
						N17 W48	4	0	0		N17 W48	Q	
						S19 E45	14	1	0		S19 E45	A	
						N13 E50	0	0	0		N13 E50	Q	
						N30 E68	0	0	0		N30 E68	Q	

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INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages JUNE 1989

Julian Day	Date of Issue	Date of Observation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
14	14	13	386	309	014	S18 W59	0	0	0	14	S18 W59	Q	Solalert 14/XX, Magquiet.
						S18 W43	2	0	0		S18 W43	Q	
						N13 W43	0	0	0		N13 W43	Q	
						N22 W21	0	0	0		N22 W21	Q	
						N21 E14	13	1	0		N21 E14	P	
						S10 E05	1	0	0		S10 E05	Q	
						N16 W63	5	0	0		N16 W63	E	
						S19 E31	11	0	0		S19 E31	A	
						N13 E37	0	0	0		N13 E37	Q	
						N30 E52	0	0	0		N30 E52	Q	
						N16 E22	8	0	0		N16 E22	E	
						N30 E43	0	0	0		N30 E43	Q	
						N19 E58	0	0	0		N19 E58	Q	
						S06 W80	0	0	0		S06 W80	Q	
		Presto:[2] Kakioka Magstorm began 13/1742 UT.											
15	15	14	345	314	034	S16 W75	8	2	0	15	S16 W75	E	Solalert 15/XX, Magalert 15/16.
						S19 W55	1	0	0		S19 W55	Q	
						N13 W57	1	0	0		N13 W57	Q	
						N21 W04	10	2	0		N21 W04	P	
						S18 W07	0	0	0		S18 W07	Q	
						N16 W72	1	0	0		N16 W72	Q	
						S19 E18	4	0	0		S19 E18	A	
						N17 E28	0	0	0		N17 E28	Q	
						N30 E43	0	0	0		N30 E43	Q	
						N16 E10	3	0	0		N16 E10	E	
						N29 E28	0	0	0		N29 E28	Q	
						N21 E47	0	0	0		N21 E47	Q	
						S06 W93	0	0	0		S06 W93	Q	
						S12 W23	0	0	0		S12 W23	Q	
						S10 E66	0	0	0		S10 E66	Q	
						S20 E80	0	0	0		S20 E80	Q	
		Presto:[2] Toyokawa Tenflare 180 flux units began 14/0239 UT in progress.											
		Tenflare 120 flux units began 14/0606 UT duration 12 minutes.											
		Boulder Tenflare 390 flux units began 14/1351 UT duration 6 minutes.											
16	16	15	387	327	030	S15 W86	2	0	0	16	S15 W86	E	Major Flare Alert 16/XX N20 W16, Magalert 16/18.
						S19 W68	6	0	0		S19 W68	Q	
						N13 W71	1	0	0		N13 W71	Q	
						N20 W16	12	3	0		N20 W16	A	
						S10 W19	0	0	0		S10 W19	E	
						N17 W80	1	0	0		N17 W80	E	
						S19 E05	8	0	1		S19 E05	A	
						N31 E29	0	0	0		N31 E29	Q	
						N16 W03	4	0	0		N16 W03	E	
						N20 E33	0	0	0		N20 E33	Q	
						S23 W16	0	0	0		S23 W16	Q	
						S11 E52	0	0	0		S11 E52	Q	
						S21 E64	0	0	0		S21 E64	Q	
						N18 E60	0	0	0		N18 E60	Q	
						N21 E75	2	1	0		N21 E75	Q	
						N11 W45	0	0	0		N11 W45	Q	
						N27 W35	0	0	0		N27 W35	Q	
		Presto:[2] Boulder X-ray event X4/3B S19 E08 15/1912 UT duration 79 minutes.											
		Tenflare 1100 flux units began 15/1911 UT duration 7 minutes.											
17	17	16	401	321	014	S19 W80	2	1	0	17	S19 W80	Q	Major Flare Alert 17/XX S20 W08. Magalert 17/18.
						N13 W85	0	0	0		N13 W85	Q	
						N20 W30	7	0	0		N20 W30	A	
						S10 W32	0	0	0		S10 W32	E	
						N18 W93	1	0	0		N18 W93	E	
						S20 W08	9	6	1		S20 W08	A	

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17	17	16				N30 E17	0	0	0	17	N30 E17	Q	
						N17 W17	2	0	0		N17 W17	E	
						N29 E02	0	0	0		N29 E02	Q	
						N20 E20	0	0	0		N20 E20	Q	
						S22 W29	0	0	0		S22 W29	Q	
						S10 E37	0	0	0		S10 E37	Q	
						S21 E56	1	0	0		S21 E56	E	
						N18 E47	1	0	0		N18 E47	E	
						N21 E65	0	0	0		N21 E65	E	
						N11 W61	1	0	0		N11 W61	E	
						N08 W70	0	0	0		N08 W70	Q	
						S22 W65	0	0	0		S22 W65	Q	
		Presto:[2]	Boulder	X-ray event X3/2B S17 W01 16/0739 UT duration 115 minutes. Tenflare 270 flux units began 16/0738 UT duration 5 minutes.									
18	18	17	358	288	007	S19 W94	0	0	0	18	S19 W94	Q	Solalert 18/XX,
						N20 W42	5	1	0		N20 W42	A	Magalert 18/XX.
						S10 W45	0	0	0		S10 W45	E	
						S19 W20	11	0	0		S19 W20	A	
						N30 E04	0	0	0		N30 E04	Q	
						N17 W29	1	0	0		N17 W29	Q	
						N20 E07	0	0	0		N20 E07	Q	
						S23 W44	0	0	0		S23 W44	Q	
						S09 E23	0	0	0		S09 E23	Q	
						S20 E43	1	0	0		S20 E43	E	
						N18 E36	0	0	0		N18 E36	E	
						N22 E52	2	0	0		N22 E52	Q	
						N10 W74	1	0	0		N10 W74	Q	
						S16 E73	0	0	0		S16 E73	Q	
						S21 E20	0	0	0		S21 E20	Q	
		Presto:[2]	Sydney	Culgoora Weak Type II began 17/2249 UT in progress.									
19	19	18	326	260	005	N20 W54	6	1	0	19	N20 W54	A	Solalert 19/XX,
						S09 W58	0	0	0		S09 W58	E	Magalert 19 Flare.
						S19 W33	5	0	0		S19 W33	A	
						N31 W08	0	0	0		N31 W08	Q	
						N17 W42	2	0	0		N17 W42	Q	
						N29 W24	0	0	0		N29 W24	Q	
						S23 W53	0	0	0		S23 W53	Q	
						S20 E31	1	0	0		S20 E31	E	
						N18 E22	0	0	0		N18 E22	E	
						N22 E40	0	0	0		N22 E40	E	
						N10 W92	0	0	0		N10 W92	Q	
						S16 E60	0	0	0		S16 E60	Q	
						S21 E03	0	0	0		S21 E03	Q	
						S12 E41	0	0	0		S12 E41	Q	
		Presto:[2]	Boulder	Proton event began 18/1650 UT, maximum of 18 particles/cm^2-s-ster at greater than 10 MeV 18/1910 UT ended 18/2225 UT.									
20	20	19	340	258	010	N21 W69	6	1	0	20	N21 W69	A	Solalert 20/XX,
						S09 W71	0	0	0		S09 W71	E	Magalert 20/XX.
						S19 W46	3	1	0		S19 W46	E	
						N31 W22	0	0	0		N31 W22	Q	
						N18 W55	1	0	0		N18 W55	Q	
						N29 W37	1	0	0		N29 W37	Q	
						S23 W68	0	0	0		S23 W68	Q	
						S09 W03	0	0	0		S09 W03	Q	
						S21 E20	0	0	0		S21 E20	Q	
						N18 E08	0	0	0		N18 E08	E	
						N21 E27	1	0	0		N21 E27	E	
						S16 E47	0	0	0		S16 E47	Q	
						S22 W06	0	0	0		S22 W06	Q	

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20	20	19				S13 E23	0	0	0	20	S13 E23	Q	
						S18 E72	4	1	0		S18 E72	E	
						S24 E30	0	0	0		S24 E30	Q	
						S29 E02	0	0	0		S29 E02	Q	
		Presto:[2] Boulder				Tenflare 220 flux units began 19/0530 UT duration 27 minutes.							
						Tenflare 420 flux units began 19/0745 UT duration 2 minutes.							
21	21	20	322	244	026	N20 W83	3	1	1	21	N20 W83	A	Solalert 21/XX,
						S10 W81	0	0	0		S10 W81	Q	Magnil.
						S19 W60	2	1	0		S19 W60	E	
						N31 W34	0	0	0		N31 W34	Q	
						N18 W71	0	0	0		N18 W71	Q	
						N29 W51	0	0	0		N29 W51	Q	
						S23 W82	0	0	0		S23 W82	Q	
						S08 W18	0	0	0		S08 W18	Q	
						S20 E03	0	0	0		S20 E03	Q	
						N16 W04	0	0	0		N16 W04	Q	
						N21 E13	0	0	0		N21 E13	Q	
						S16 E33	0	0	0		S16 E33	Q	
						S22 W24	0	0	0		S22 W24	Q	
						S12 E09	0	0	0		S12 E09	Q	
						S18 E64	4	1	0		S18 E64	A	
						S23 E17	0	0	0		S23 E17	Q	
						S23 W09	0	0	0		S23 W09	Q	
						N25 E66	2	0	0		N25 E66	E	
						S19 E83	0	0	0		S19 E83	Q	
		Presto:[2] Boulder				X-ray event X1/3B N24 W68 20/1448 UT duration 152 minutes.							
						Tenflare 560 flux units began 20/1455 UT duration 14 minutes.							
						Tenflare 320 flux units began 20/2154 UT duration 26 minutes.							
22	22	21	287	236	006	N24 W90	0	0	0	22	N24 W90	A	Solalert 22/XX,
						S10 W93	0	0	0		S10 W93	Q	Magquiet.
						S18 W73	0	0	0		S18 W73	E	
						N31 W48	0	0	0		N31 W48	Q	
						N19 W84	0	0	0		N19 W84	Q	
						N29 W62	0	0	0		N29 W62	Q	
						S19 W12	0	0	0		S19 W12	Q	
						N18 W18	0	0	0		N18 W18	Q	
						N21 E01	1	0	0		N21 E01	E	
						S16 E21	0	0	0		S16 E21	Q	
						S12 W05	0	0	0		S12 W05	Q	
						S17 E49	2	2	0		S17 E49	A	
						N26 E56	13	3	0		N26 E56	A	
						S20 E67	2	0	0		S20 E67	E	
						N15 E69	0	0	0		N15 E69	Q	
						N07 E74	0	0	0		N07 E74	Q	
						N19 E76	1	0	0		N19 E76	Q	
						N28 E22	0	0	0		N28 E22	Q	
23	23	22	284	225	007	S17 W93	0	0	0	23	S17 W93	Q	Solalert 23/XX,
						N30 W74	0	0	0		N30 W74	Q	Magalert 23/24.
						S19 W25	0	0	0		S19 W25	Q	
						N18 W32	0	0	0		N18 W32	Q	
						N20 W12	2	0	0		N20 W12	E	
						S16 E08	1	0	0		S16 E08	Q	
						S11 W19	0	0	0		S11 W19	Q	
						S18 E35	4	0	0		S18 E35	E	
						S23 W11	0	0	0		S23 W11	Q	
						N26 E42	10	0	0		N26 E42	A	
						S19 E44	1	0	0		S19 E44	Q	
						N16 E56	4	0	0		N16 E56	Q	
						N08 E62	0	0	0		N08 E62	Q	

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23	23	22				N20 E65	1	0	0	23	N20 E65	Q	
						N29 E08	0	0	0		N29 E08	Q	
						S19 E54	2	0	0		S19 E54	E	
						N38 E46	0	0	0		N38 E46	Q	
						S15 E74	3	0	0		S15 E74	Q	
24	24	23	320	230	009	N28 W88	0	0	0	24	N28 W88	Q	Solalert 24/25,
						S20 W37	2	0	0		S20 W37	Q	Magalert 24.
						N17 W46	0	0	0		N16 W46	Q	
						N21 W26	1	0	0		N21 W26	E	
						S16 W05	0	0	0		S16 W05	Q	
						S12 W32	0	0	0		S12 W32	Q	
						S18 E20	3	0	0		S18 E20	E	
						S25 W23	0	0	0		S25 W23	Q	
						N27 E30	10	0	0		N27 E30	A	
						S18 E34	0	0	0		S18 E34	Q	
						N17 E46	0	0	0		N17 E46	Q	
						N09 E49	0	0	0		N09 E49	Q	
						N19 E50	0	0	0		N19 E50	Q	
						N29 W03	0	0	0		N29 W03	Q	
						S19 E44	0	0	0		S19 E44	E	
						S15 E60	8	0	0		S15 E60	E	
						N26 E46	0	0	0		N26 E46	Q	
						N22 E59	4	0	0		N22 E59	E	
25	25	24	340	219	011	S19 W51	1	0	0	25	S19 W51	E	Solalert 25/26,
						N21 W39	0	0	0		N21 W39	Q	Magnil.
						S16 W18	0	0	0		S16 W18	Q	
						S12 W45	0	0	0		S12 W45	Q	
						S18 E08	0	0	0		S18 E08	E	
						S24 W42	0	0	0		S24 W42	Q	
						N27 E16	7	1	0		N27 E16	A	
						S19 E18	0	0	0		S19 E18	E	
						N16 E30	0	0	0		N16 E30	Q	
						N09 E37	0	0	0		N09 E37	Q	
						N20 E38	0	0	0		N20 E38	Q	
						N28 W16	0	0	0		N28 W16	Q	
						S19 E31	0	0	0		S19 E31	E	
						S15 E46	1	0	0		S15 E46	E	
						N26 E32	0	0	0		N26 E32	Q	
						N22 E47	4	0	0		N22 E47	Q	
						N14 E22	0	0	0		N14 E22	Q	
		Presto:[2] Toyokawa Tenflare 220 flux units began 24/0319 UT duration 12 minutes.											
26	26	25	323	213	006	S19 W65	1	0	0	26	S19 W65	E	Solalert 26/XX,
						N22 W52	0	0	0		N22 W52	Q	Magquiet.
						S16 W32	0	0	0		S16 W32	Q	
						S18 W06	2	0	0		S18 W06	E	
						N26 E03	6	1	0		N26 E03	E	
						S19 E05	3	0	0		S19 E05	E	
						N16 E16	0	0	0		N16 E16	Q	
						N09 E24	0	0	0		N09 E24	Q	
						N20 E25	0	0	0		N20 E25	Q	
						N29 W30	0	0	0		N29 W30	Q	
						S18 E18	2	0	0		S18 E18	E	
						S16 E33	3	0	0		S16 E33	E	
						N26 E19	0	0	0		N26 E19	Q	
						N22 E33	0	0	0		N22 E33	Q	
						N16 W07	0	0	0		N16 W07	Q	

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27	27	26	360	227	011	S19 W79	0	0	0	27	S19 W79	E	Solalert 27/XX,
						N21 W66	4	0	0		N21 W66	Q	Magquiet.
						S16 W45	0	0	0		S16 W45	Q	
						S18 W18	0	0	0		S18 W18	E	
						N26 W09	2	0	0		N26 W09	A	
						S20 W08	0	0	0		S20 W08	E	
						N16 E03	0	0	0		N16 E03	Q	
						N08 E11	0	0	0		N08 E11	E	
						N20 E12	0	0	0		N20 E12	Q	
						S19 E05	0	0	0		S19 E05	E	
						S16 E20	3	0	0		S16 E20	E	
						N25 E07	1	0	0		N25 E07	Q	
						N22 E20	1	0	0		N22 E20	Q	
						N16 W20	0	0	0		N16 W20	Q	
						S29 W42	0	0	0		S29 W42	Q	
						N19 E27	10	1	0		N19 E27	E	
						N10 W17	0	0	0		N10 E17	Q	
28	28	27	338	223	008	S19 W92	0	0	0	28	S19 W92	Q	Solalert 28/XX,
						N21 W81	2	0	0		N21 W81	Q	Magquiet.
						S16 W58	0	0	0		S16 W58	Q	
						S18 W33	2	0	0		S18 W33	E	
						N26 W21	7	0	0		N26 W21	A	
						S19 W20	1	0	0		S19 W20	E	
						N11 W10	0	0	0		N11 W10	Q	
						N08 W02	6	0	0		N08 W02	E	
						N20 W00	0	0	0		N20 W00	Q	
						N29 W53	0	0	0		N29 W53	Q	
						S18 W07	4	0	0		S18 W07	E	
						S16 E07	4	0	0		S16 E07	E	
						N25 W06	0	0	0		N25 W06	Q	
						N22 E03	2	0	0		N22 E03	Q	
						S29 W55	0	0	0		S29 W55	Q	
						N20 E13	11	0	0		N20 E13	A	
29	29	28	280	225	010	S16 W71	0	0	0	29	S16 W71	Q	Solalert 29/XX,
						S18 W45	5	0	0		S18 W45	E	Magquiet.
						N26 W34	4	0	0		N26 W34	E	
						S19 W33	0	0	0		S19 W33	E	
						N08 W15	5	0	0		N08 W15	E	
						N21 W15	0	0	0		N21 W15	Q	
						S18 W23	1	0	0		S18 W23	E	
						S16 W06	0	0	0		S16 W06	A	
						N22 W10	1	0	0		N22 W10	Q	
						S27 W71	0	0	0		S27 W71	Q	
						N20 W00	5	1	0		N20 W00	A	
		Presto:[2] Boulder Tenflare 370 flux units began 28/1812 UT duration 16 minutes.											
30	30	29	289	216	018	S16 W85	0	0	0	30	W16 W85	Q	Solalert 30/XX,
						S17 W63	0	0	0		S17 W63	Q	Magquiet.
						N27 W47	7	1	0		N27 W47	E	
						S19 W46	0	0	0		S19 W46	Q	
						N14 W35	0	0	0		N14 W35	Q	
						N08 W30	1	0	0		N08 W30	E	
						N20 W28	0	0	0		N20 W28	Q	
						S18 W35	4	0	0		S18 W35	E	
						S16 W20	0	0	0		S16 W20	A	
						N22 W23	0	0	0		N22 W23	Q	
						N19 W13	4	0	0		N19 W13	A	
						N13 W57	0	0	0		N13 W57	Q	
						N19 E22	0	0	0		N19 E22	Q	

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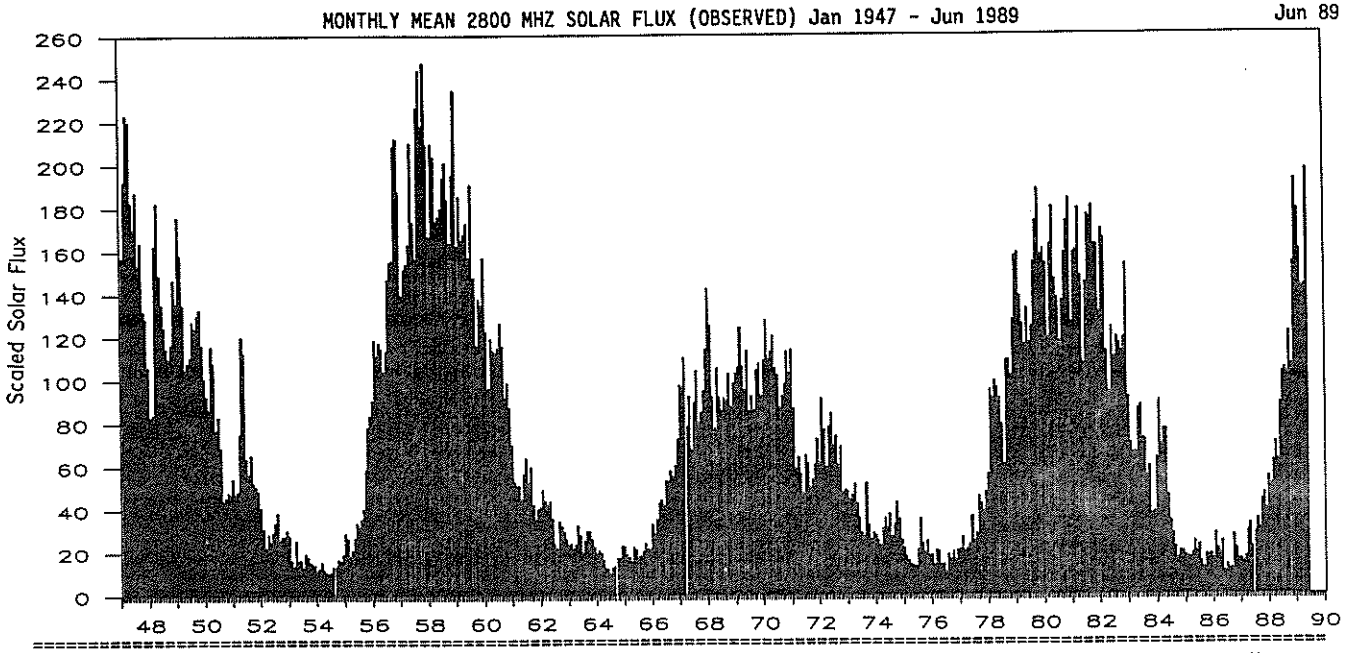
30	30	29				S15 E78	0	0	0	30	S15 E78	Q	
						N15 E83	0	0	0		N15 E83	Q	
		Presto:[2]	Toyokawa	Tenflare 870 flux units began 29/2102 UT duration 60 minutes.									
			Boulder	Tenflare 770 flux units began 29/2103 UT duration 46 minutes.									
			Sydney	Culgoora Strong Type II 29/2109 UT followed by moderate Type IV 29/2115 UT.									
01	01	30	211	213	010	S17 W77	0	0	0	01	S17 W77	Q	Solalert 01/XX,
						N26 W61	0	0	0		N26 W61	E	Magalert 01/02.
						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	
		Presto:[2]	Boulder	Proton event began 30/0655 UT, maximum of 17 particles/cm^2-s-ster at greater than 10 MeV 30/0710 UT in progress. Tenflare 370 flux units began 30/0712 UT in progress. Tenflare 230 flux units began 30/1500 UT duration 3 minutes.									

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

MONTHLY MEAN 2800 MHZ SOLAR FLUX (OBSERVED) Jan 1947 - Jun 1989



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1947		202.8	235.7	264.2	261.2	226.6	215.2	231.2	199.7	209.1	179.8	176.4	219.1
1948	155.7	134.3	135.5	208.1	226.5	195.5	182.8	172.8	163.7	159.2	165.4	193.3	174.7
1949	183.5	220.2	203.9	182.5	154.9	157.5	159.9	175.2	172.5	178.2	180.4	165.2	177.7
1950	150.7	143.3	137.8	164.4	157.1	128.7	134.1	120.9	98.5	99.9	101.9	101.1	128.1
1951	107.9	101.8	102.5	127.1	168.6	161.7	116.4	109.8	117.8	106.0	104.4	102.4	119.4
1952	95.4	86.2	78.5	83.9	80.8	84.8	88.8	93.2	81.5	82.8	83.3	85.7	85.4
1953	83.1	72.8	70.4	80.9	72.5	73.0	69.8	75.4	74.3	71.9	71.4	70.7	73.7
1954	68.7	69.1	71.9	68.7	68.0	67.3	67.7	69.8	70.1	73.1	72.5	75.4	70.2
1955	84.2	82.0	74.8	77.3	82.7	88.8	87.3	90.6	95.0	111.8	130.0	134.6	95.8
1956	141.2	167.2	160.6	165.9	163.4	154.0	162.8	193.8	200.9	201.6	250.4	253.7	184.9
1957	231.2	186.7	197.8	200.0	208.5	252.1	218.0	202.3	267.1	283.1	259.2	286.5	232.9
1958	251.5	212.2	251.6	245.9	218.6	220.5	224.1	237.0	243.5	228.0	209.2	238.2	231.9
1959	274.5	207.9	229.1	210.6	212.7	217.5	203.0	234.2	194.3	165.1	184.8	182.2	210.2
1960	202.6	170.9	146.8	167.6	162.7	161.9	163.9	174.4	164.5	142.3	148.9	138.1	162.0
1961	121.9	106.4	104.8	105.0	99.3	109.9	116.5	106.2	112.7	96.6	90.4	94.8	105.4
1962	95.7	102.9	98.2	96.8	97.9	90.6	80.1	78.3	89.3	87.4	84.8	81.9	90.4
1963	79.5	79.7	77.8	79.4	87.7	83.5	75.9	80.9	85.1	85.0	81.6	78.4	81.2
1964	75.4	76.7	75.8	72.6	69.4	69.0	67.0	69.3	70.1	73.3	73.7	78.8	72.6
1965	78.5	75.2	74.1	72.0	78.2	77.0	74.3	74.7	76.5	80.1	77.6	77.7	76.3
1966	87.9	84.2	90.3	97.2	98.5	96.3	106.7	106.6	110.9	108.6	113.3	124.6	102.2
1967	147.7	147.0	159.3	129.9	143.0	120.2	140.3	153.7	131.9	136.1	145.3	163.0	143.2
1968	189.1	173.2	142.6	129.5	154.9	142.3	137.2	142.2	141.0	152.5	138.5	148.4	149.3
1969	152.7	155.2	172.3	155.5	145.4	162.2	136.6	143.0	137.3	154.0	156.7	143.6	151.2
1970	158.3	175.4	158.4	162.0	168.4	154.9	152.0	138.2	143.2	148.3	162.0	152.8	156.0
1971	162.6	137.8	111.9	116.7	109.9	101.7	117.4	114.1	104.0	107.2	114.0	124.5	118.4
1972	114.8	141.8	128.5	112.9	129.6	135.4	122.0	125.7	113.7	121.1	101.6	102.9	120.8
1973	102.2	98.7	100.4	105.0	97.0	91.2	84.5	82.9	105.6	87.7	81.5	84.2	93.3
1974	83.1	80.9	79.2	86.1	90.6	86.3	92.5	83.0	87.8	97.6	90.3	81.1	86.6
1975	77.5	74.2	72.4	70.7	70.1	69.7	77.2	90.4	79.6	75.7	80.8	74.6	76.1
1976	74.7	70.5	76.7	76.3	70.6	70.6	67.5	74.8	73.1	75.9	72.9	76.7	73.4
1977	77.4	82.3	76.6	77.6	79.6	91.5	81.1	84.3	100.2	96.9	93.7	102.1	86.9
1978	109.6	145.4	141.8	149.4	146.5	142.2	131.1	114.0	157.9	158.2	151.5	175.5	143.5
1979	203.0	204.1	185.8	173.8	165.2	180.3	165.9	172.7	200.2	217.9	231.8	203.5	191.9
1980	206.2	200.0	168.1	207.9	224.0	193.2	184.8	166.2	183.9	204.2	218.1	227.4	198.6
1981	174.6	204.5	205.3	223.2	194.6	156.9	191.9	220.6	219.5	224.3	207.8	207.8	202.6
1982	179.0	214.2	210.5	161.8	144.7	171.9	159.6	167.9	165.3	161.9	167.4	199.4	175.1
1983	142.3	122.6	118.6	118.9	137.1	138.6	125.0	124.4	109.0	112.4	92.5	93.4	119.7
1984	116.1	140.6	122.0	128.7	128.3	100.3	89.3	83.7	78.1	73.5	76.3	75.9	100.9
1985	74.5	73.7	73.3	75.1	80.2	76.1	78.7	71.5	69.5	74.7	74.2	74.8	74.7
1986	73.2	83.6	77.0	75.1	80.2	67.6	70.2	68.4	68.7	83.0	77.1	72.6	74.7
1987	72.5	71.5	74.0	84.9	87.8	77.9	84.2	90.0	86.1	98.1	101.2	94.4	85.2
1988	108.0	105.0	114.9	122.7	115.2	139.4	152.7	154.2	152.5	169.8	156.2	199.8	140.9
1989	235.4	222.4	205.1	189.6	190.1	239.6							213.7*

*Preliminary

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Jul 88	Aug	Sep	Oct	Nov	Dec	Jan 89	Feb	Mar	Apr†	May†	Jun†
01	139	142	137	109	126	128	148	141	127	104	93	136
02	145	143	144	117	114	114	173	144	107	122	94	148
03	142	146	129	129	121	139	146	164	103	140	85	154
04	129	135	148	128	104	122	120	133	98	126	97	157
05	119	120	128	130	129	149	155	127	90	94	83	171
06	108	123	93	123	124	149	142	127	103	139	105	145
07	103	144	97	128	114	144	165	132	98	170	134	130
08	106	160	88	131	95	111	155	161	109	185	149	143
09	82	171	74	125	110	122	165	172	133	153	137	168
10	78	152	76	146	131	133	190	192	163	122	123	192
11	102	135	81	148	155	152	211	190	155	106	115	203
12	109	133	88	169	159	175	229	216	140	96	115	218
13	103	122	91	150	147	187	206	219	162	92	129	253
14	121	128	94	131	139	213	189	208	181	98	123	251
15	121	121	89	109	156	225	177	191	165	120	148	264
16	111	91	89	108	181	226	164	195	187	130	161	265
17	124	67	79	125	196	232	155	209	168	144	161	233
18	136	47	97	134	175	222	160	163	164	137	177	216
19	105	57	113	133	147	223	140	164	148	151	191	235
20	106	57	153	119	112	218	126	169	158	155	195	232
21	103	40	168	117	145	210	114	149	155	161	168	187
22	106	21	168	109	131	255	165	142	155	167	156	174
23	116	26	190	104	117	235	171	134	145	128	180	196
24	81	43	172	121	116	199	142	153	155	135	196	215
25	76	76	149	124	89	183	144	189	131	132	173	227
26	76	93	151	119	73	174	152	163	117	116	157	237
27	101	142	157	120	69	175	157	147	102	126	163	206
28	117	146	143	119	86	196	172	128	89	109	130	187
29	157	164	111	128	86	194	169		95	107	121	182
30	161	163	106	115	107	178	157		78	114	122	156
31	146	151		111		172	140		91		111	
Mean	113.8	111.6	120.1	125.1	125.1	179.2	161.3	165.1	131.4	129.3	138.4	196.0

† = 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	Jul 88	Aug	Sep	Oct	Nov	Dec	Jan 89	Feb	Mar	Apr	May	Jun
01	194.4*	180.9	191.3	179.4	157.2*	150.5	179.5*	184.8	168.8*	173.8*	180.5	191.6*
02	198.9	187.6	178.9	197.0	156.5*	149.4	193.7	171.2	173.7	183.5	184.5*	208.2*
03	190.2	172.2*	177.3	200.4	164.0	147.3	189.2	185.8*	169.0	196.5*	190.6	203.3*
04	181.0	163.6	165.9	189.2	159.7	142.7	195.7*	183.4	163.6	188.9	198.2	221.3*
05	171.2	159.2	166.3	191.0	163.8	154.6*	201.6	195.1	183.5	191.1	193.7	213.2*
06	156.7	163.4	152.4	193.4	161.2	157.7	198.7	205.3*	201.1J	196.5	195.9*	212.2*
07	152.4	170.4	145.4	182.4	151.6	152.9*	239.5	210.5	190.3*	199.8	200.6	205.3
08	142.4	186.9	138.9	172.6	143.5	164.1	260.2	243.9	202.6	207.1	212.4	222.9
09	137.7	182.4	128.0	176.5	152.4	165.2	251.3	259.3	204.2*	194.0	205.1*	241.9
10	138.3	181.8	117.6	177.8	147.7	161.2*	250.0	269.8	212.4*	182.3	208.7	250.9*
11	137.7*	178.2	121.9	168.2	153.8	176.4	254.7*	257.0	232.4*	180.7	198.9	270.3
12	137.9	161.2	127.0	148.4	150.6*	173.9	263.2	257.3	237.6*	181.3	197.2	285.8*
13	141.3*	159.7	124.8	157.5	157.8*	181.1	291.7*	258.4	253.0	185.3*	197.5	319.2
14	150.1	151.6	130.2	150.4	173.2*	204.4*	274.9	260.7	263.8J	198.1	193.1*	327.2
15	150.7	144.0	126.1	149.1	161.1*	212.0	280.1	241.3	255.8J	199.5	195.8	334.7*
16	153.3*	137.8	128.5	152.3	186.1*	232.1	292.1	241.1	261.6J	203.9	188.6	320.9*
17	152.8*	145.6	135.3	175.0	175.6	241.7	266.7*	233.9*	240.7	210.6*	187.0	303.7*
18	152.3	128.5	139.5	162.3	161.8	243.5	271.2	213.8	234.2	204.1	184.9	271.5
19	142.1	123.9	138.6	164.0	151.2	240.2	241.6	214.0	221.1	209.7	188.6	270.6
20	141.3	118.1	151.4	166.0	146.6	238.8	222.0*	202.2*	218.2*	192.5	203.1	249.3*
21	145.8	116.1	157.8	165.9	152.9	245.2	198.2*	217.8	213.5*	196.1	211.9*	242.8
22	141.2	114.9	178.6	166.2	153.1	246.6	203.6	213.9	222.5	193.6*	203.9	233.1
23	144.6	121.7A	177.8*	171.1	135.7	234.8	205.6	214.7*	216.1*	183.1*	212.2	238.7
24	138.6	133.7	178.6	168.4	138.0	221.6	211.0	213.4	193.2*	189.0	210.0	227.6
25	140.9	144.3	177.4	162.1	137.5	210.5	227.3	203.8*	186.2*	179.7	194.6*	221.6
26	149.7	157.1	172.0	155.4	137.4	193.0	206.3	190.3*	171.6*	176.9	188.0	233.0
27	161.5	166.8	179.6*	161.8	140.9	201.9	211.1	168.6*	162.6	176.9	176.6	227.5
28	175.4	174.0	171.0	156.0	138.8	201.6	207.1	163.5	157.3	183.2	173.5	227.4
29	185.9	189.0	172.0	155.9	137.6	196.7	200.5		155.8	189.5	173.6	223.0
30	188.3	190.0	173.1	154.2*	135.8	179.5	187.3		159.8	180.6	183.0	217.4
31	192.5	194.5		160.4		177.6	187.5		167.5		194.2	
Mean	157.6	158.0	154.1	168.7	152.8	193.5	227.8	217.0	203.0	190.9	194.4	247.2

* = 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

June 1989

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers Int	Sunspot Numbers Amer	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
01	152	2	136	163	186.3*	525	336	231	191.6*	175	127	68	36	21
02	153	3	148	171	202.4*	546	353	254	208.2*	190	143	71	38	23
03	154	4	154	168	197.5*	557	376	264	203.3*	192	144	71	38	27
04	155	5	157	168	215.0*	543	368	262	221.3*	199	144	78	37	19
05	156	6	171	173	207.0*	548	358	251	213.2*	187	152	76	40	18
06	157	7	145	150	206.0*	472	312	224	212.2*	184	154	75	38	21
07	158	8	130	143	199.3	530	345	239	205.3	182	155	80	39	19
08	159	9	143	169	216.3	570	303	211	222.9	183	160	83	47	34
09	160	10	168	199	234.7	544	377	279	241.9	212	172	84	43	32
10	161	11	192	214	243.3*	549	391	303	250.9*	224	179	88	50	60
11	162	12	203	238	262.1	554	377	311	270.3	240	186	93	58	55
12	163	13	218	232	277.1*	550	428	347	285.8*	257	193	83	66	--
13	164	14	253	280	309.4	520	399	348	319.2	274	203	80	70	--
14	165	15	251	274	317.1	579	486	400	327.2	284	203	91	76	--
15	166	16	264	295	324.3*	555	513	422	334.7*	299	213	86	59	42
16	167	17	265	288	310.9*	555	492	405	320.9*	291	213	112	--	--
17	168	18	233	257	294.2*	569	506	411	303.7*	302	234	95	64	--
18	169	19	216	244	262.9	555	399	312	271.5	243	181	82	49	55
19	170	20	235	252	262.0	548	392	307	270.6	234	177	80	48	60
20	171	21	232	244	241.4*	575	410	320	249.3*	244	186	78	45	35
21	172	22	187	220	235.1	558	384	286	242.8	213	162	75	37	24
22	173	23	174	219	225.6	551	361	267	233.1	212	160	71	36	18
23	174	24	196	227	231.0	546	372	272	238.7	211	161	72	40	42
24	175	25	215	242	220.3	530	362	264	227.6	204	164	113	53	33
25	176	26	227	248	214.5	525	343	250	221.6	200	157	74	37	46
26	177	27	237	265	225.5	---	333	251	233.0	211	166	75	44	--
27	178	1	206	231	220.1	521	340	250	227.5	203	155	72	40	37
28	179	2	187	201	220.0	519	347	264	227.4	204	159	75	38	18
29	180	3	182	195	215.8	536	350	254	223.0	195	154	75	39	24
30	181	4	156	155	210.3	539	349	248	217.4	190	142	73	40	20
Mean			196.0	217.5	239.6	544	382	290	247.2	221	170	81	46	33

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	141	144	150	157	163	168	171	173	180	185	187	189
	(3)	(6)	(11)	(15)	(16)	(20)	(25)	(29)	(33)	(35)	(38)	(39)
1990	190	191	190	185	180	175	174	172	165	156	149	145
	(39)	(40)	(40)	(39)	(36)	(32)	(30)	(31)	(31)	(31)	(28)	(25)
1991	143	140	135	134	136	134	130	125	120	118	119	119
	(26)	(27)	(29)	(34)	(35)	(31)	(28)	(25)	(21)	(20)	(21)	(23)

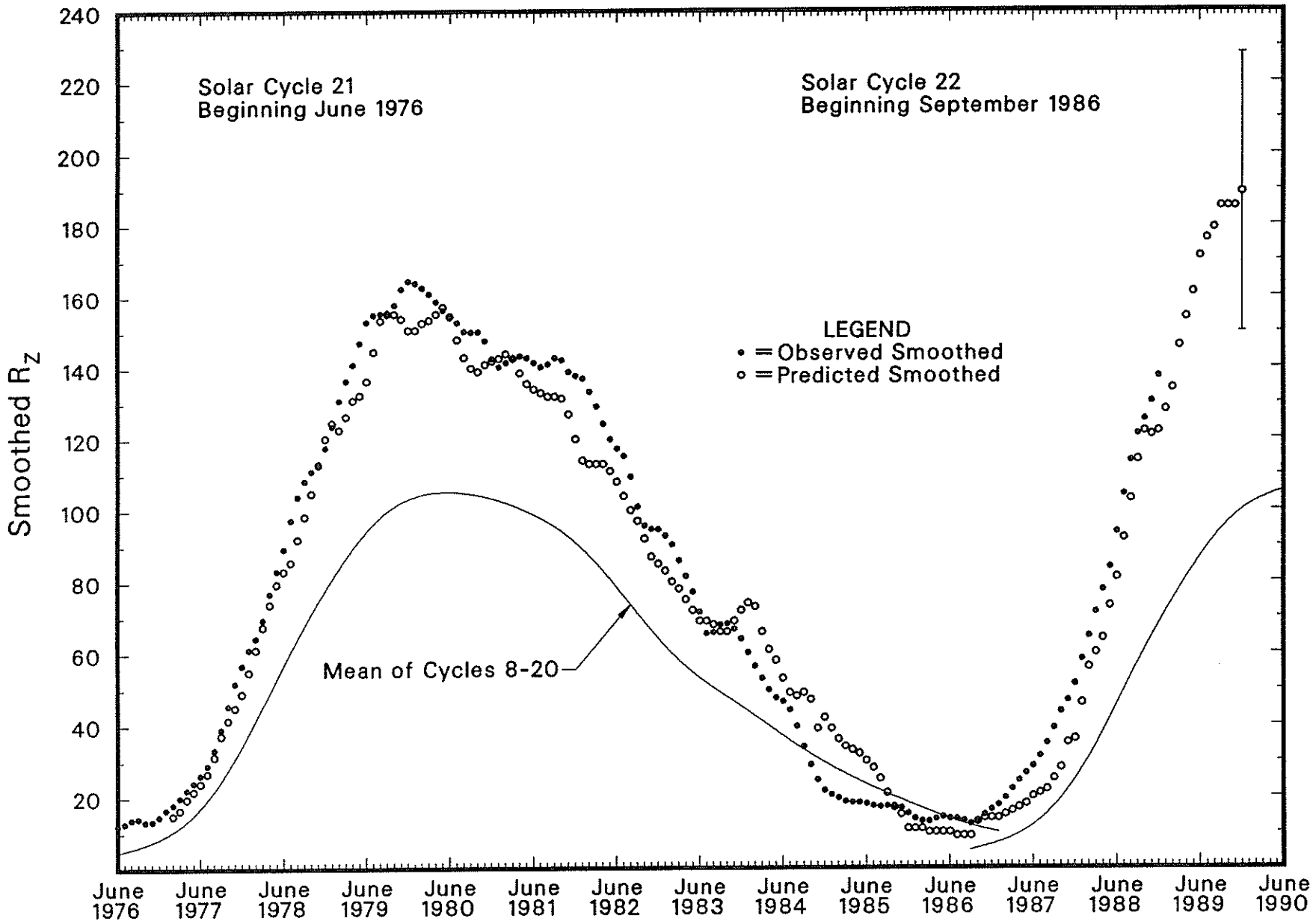
*September 1986 marks the onset of Sunspot Cycle 22.

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 December 1989 prediction. There exists a 90% chance that in December 1989 the actual smoothed sunspot number will fall somewhere between 150 and 228.

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



17 Jun 89

Hα SOLAR FLARES

JUNE 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	01	0117	0120	0131	S21	E76	5517	06	6.9	14	SF	C 1.9	3	E		65		
GOES		0332	0337	0342						10		C 1.7						
LEAR		0417	0431	0453	S22	W17	5515	05	31.0	36	SF	C 2.1	3	E		18		
LEAR		0637	0642	0647	S21	E73	5517	06	6.9	10	SF		3	E		42		
LEAR		0653	0654	0701	S21	E75	5517	06	7.0	8	SF		3	E		16		
SVTO		0802E	0805U	0854D	S15	E75	5517	06	7.0	52D	SF		2	E		79		H
SVTO		1015	1026	1113	S16	E71	5517	06	6.8	58	SF		2	E		37		FH
HOLL		1303	1305	1310	S26	E82	5517	06	7.9	7	SF	C 1.5	3	E		62		H
HOLL		1325	1330	1336	N23	W33	5506	05	30.1	11	SF		3	E		11		
HOLL		1357	1406	1412	S20	E71	5517	06	7.0	15	SF		3	E		33		
HOLL		1438	1441	1453	S24	W15	5511	05	31.4	15	SF		4	E		18		
HOLL		1527	1527	1530	S20	E72	5517	06	7.1	3	SF		4	E		16		
HOLL		1538	1538	1632	S18	W45	5505	05	29.3	54	SF		4	E		20		F
HOLL		1550	1551	1600	S17	W61	5510	05	28.1	10	SF		4	E		18		
HOLL		1558	1558	1603	S18	E70	5517	06	7.0	5	SF		4	E		20		
HOLL		1707	1709	1722	S19	E70	5517	06	7.0	15	SF		4	E		57		
RAMY		1708E	1712U	1717	S19	E70	5517	06	7.0	9D	SF		2	E		29		
RAMY		1745	1752U	1822D	S20	W15	5511	05	31.6	37D	SF	C 1.5	2	E		29		
HOLL		1750	1753	1817	S21	W17	5511	05	31.4	27	SF	C 1.5	4	E		32		
HOLL		2019E	2021U	2035D	S18	E56	5517	06	6.1	16D	SF	C 2.0	4	E		46		
RAMY		2100	2132U	2135D	S18	E68	5517	06	7.0	35D	1N		2	E		227		
HOLL		2125	2131	2201	S18	E67	5517	06	7.0	36	1N	C 3.0	3	E		116		
HOLL		2125	2147	2201	S18	E67	5517			36	SF			E		23		K
HOLL		2202	2206U	2219D	S15	W64	5510	05	28.2	17D	SF		3	E		25		
HOLL		2334E	2338	2350	S18	E64	5517	06	6.8	16D	1F	C 2.4	3	E		117		
LEAR	02	0217	0225	0244	S15	W69	5510	05	28.0	27	SF		2	E		49		
LEAR		0235	0236	0241	S21	E65	5517	06	7.1	6	SF		2	E		32		
LEAR		0414	0446	0503	S20	E60	5517	06	6.8	49	2N	C 9.8	3	E		327		H
SVTO		0442E	0449	0504	S17	E60	5517	06	6.7	22D	1N	C 9.8	2	E		142		H
LEAR		0605	0606	0619	S20	E61	5517	06	6.9	14	SF	M 2.0	3	E		44		
LEAR		0714	0715	0723	S19	E59	5517	06	6.8	9	SF		3	E		39		
LEAR		0820	0828	0835	N24	W44	5506	05	30.0	15	SF		3	E		25		
LEAR		0843	0853	0907	S19	E57	5517	06	6.7	24	1F		3	E		107		F
GOES		1012	1016	1021						9		M 1.5						
GOES		1331	1337	1342						11		C 4.6						
HOLL		1400	1406	1427	S18	E56	5517	06	6.8	27	SF		3	E		55		H
HOLL		1400	1410	1427	S18	E56	5517			27	1F			E		155		K
SVTO		1406	1409	1428	S15	E55	5517	06	6.7	22	SN		3	E		69		
HOLL		1412	1418	1425	N22	W46	5507	05	30.1	13	SF		3	E		22		
SVTO		1415	1417	1429	N21	W48	5506	05	30.0	14	SF		3	E		26		
HOLL		1557	1607	1657	S24	E59	5517	06	7.2	60	2B	X 1.3	3	E		256		YF
HOLL		1557	1610	1657	S24	E59	5517			60	2B	X 1.3		E		251		K
SVTO		1559	1601	1636D	S17	E59	5517	06	7.1	37D	1B		2	E		189		F
RAMY		1605E	1607U	1712D	S19	E59	5517	06	7.2	67D	1B		2	E		186		F
PALE		1628E	1628U	1659	S22	E58	5517	06	7.1	31D	SF		3	E		14		F
HOLL		1732	1741	1746	S27	E90		06	9.7	14	SF		3	E		25		
HOLL		1735	1738	1752	S22	W31	5511	05	31.3	17	SF	M 1.3	3	E		30		
PALE		1757	1758	1806	S22	E58	5517	06	7.2	9	SF		3	E		17		
HOLL		1758	1803	1818	S27	E90		06	9.8	20	SN		3	E		80		
HOLL		1759	1759	1808	S19	E54	5517	06	6.9	9	SF		3	E		12		
PALE		1810	1815	1946	S19	E53	5517	06	6.8	96	1N	M 1.4	3	E		208		
HOLL		1811	1815	1843	S20	E56	5517	06	7.0	32	1B	M 1.7	3	E		240		EH
HOLL		1811	1821	1843	S20	E56	5517			32	SN			E		135		K
HOLL		1835	1842	1944	S27	E84				69	SN			E		26		K
HOLL		1835	1908	1944	S27	E84		06	9.3	69	SN		3	E		61		
HOLL		2007	2012	2048	S27	E82				41	SN			E		33		K
HOLL		2007	2022	2048	S27	E82		06	9.2	41	SN		3	E		10		
HOLL		2052	2056	2103	S27	E83		06	9.3	11	SF		3	E		52		
HOLL		2252	2254	2300	S27	E80		06	9.2	8	SF		3	E		14		
HOLL		2313	2314	2324	S27	E82		06	9.3	11	SN		3	E		27		
HOLL	03	0034	0039	0056	S19	E53	5517	06	7.1	22	SF	C 5.3	3	E		39		F
LEAR		0053	0056	0103	S28	E76		06	9.0	10	SF		3	E		23		
HOLL		0055	0056	0059	S27	E77		06	9.0	4	SF		3	E		16		
LEAR		0308	0314	0403	S19	E46	5517	06	6.6	55	3B	M 2.1	3	E		690		Z
PALE		0309	0313	0428D	S21	E47	5517	06	6.7	79D	2N	M 2.1	3	E		530		
GOES		0328	0333	0337						9		C 5.5						

Hα S O L A R F L A R E S

JUNE 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	03	0443	0453	0527	S19	W52	5517	05	30.3	44	SF		3	E		32		F
LEAR		0446	0452	0511	S20	E52	5517	06	7.2	25	SF		3	E		18		
LEAR		0451	0458	0504	N24	W50	5506	05	30.4	13	SF		3	E		16		
SVTO		0709	0709	0717	S26	E75	5520	06	9.1	8	SF		3	E		12		
SVTO		0716	0718	0721	S16	E45	5517	06	6.7	5	SF		3	E		16		
SVTO		0723	0723	0729	S16	E45	5517	06	6.7	6	SF		3	E		16		
SVTO		0858	0905	0918	S17	E44	5517	06	6.7	20	SF		3	E		25		F
LEAR		0859	0904	0908	S19	E43	5517	06	6.6	9	SF		3	E		16		
SVTO		0911	0911	0932	S22	E77	5520	06	9.3	21	SF		3	E		14		F
SVTO		0920	0928	0934	S19	E54	5517	06	7.5	14	SF		3	E		17		
SVTO		1017E	1017U	1020	N22	W59	5506	05	30.0	3D	SF		2	E		14		
SVTO		1017E	1020U	1034	S16	E43	5517	06	6.7	17D	1B	M 1.5	2	E		168		
SVTO		1130	1218	1243	S21	E78	5520	06	9.4	73	1N	M 2.5	3	E		135		F
RAMY		1131	1134	1227D	N24	W72	5520	05	29.0	56D	SF		2	E		54		F
SVTO		1139	1145	1208	S25	E69	5520	06	8.8	29	SF		3	E		41		
RAMY		1300	1318U	1422D	S19	E46	5517	06	7.0	82D	SN		2	E		98		F
SVTO		1313	1325	1412	S18	E48	5517	06	7.2	59	2B	M 3.2	3	E		317		F
SVTO		1353	1356	1409	S22	W49	5515	05	30.9	16	SF		3	E		49		
SVTO		1437	1442	1503	N28	W56	5507	05	30.3	26	SF		3	E		85		
RAMY		1441E	1442U	1459D	N31	W54	5507	05	30.4	18D	SF		2	E		59		
GOES		1620	1628	1650						30		C 9.8						
PALE		1656	1705	1721	N32	W56	5507	05	30.4	25	SF	M 2.0	3	E		63		
RAMY		1707E	1707U	1707D	N31	W56	5507	05	30.4	25D	1F	M 2.0	1	E		109		F
PALE		1819	1823	1847	S21	E47	5517	06	7.4	28	SF		3	E		29		
PALE		1829	1830	1940	S22	E77				71	1N			E		184		K
PALE		1829	1844	1940	S22	E77		06	9.7	71	1F	X 1.0	3	E		74		
PALE		2050	2050	2059	S19	E75	5521	06	9.6	9	SF	C 4.0	3	E		35		F
HOLL		2243	2248	2259	S21	W52	5515	05	31.0	16	SF		2	E		55		FE
PALE		2246	2249	2309	S18	W55	5515	05	30.9	23	SF		3	E		26		F
PALE		2303	2304	2313	N13	E04	5516	06	4.3	10	SF	M 1.8	3	E		22		F
PALE		2306	2308	2315	S21	E43	5517	06	7.2	9	SF		3	E		31		F
PALE	04	0033	0033	0053	S21	E77	5521	06	9.9	20	SF	C 2.3	3	E		28		F
LEAR		0033	0034	0049	S21	E76	5521	06	9.8	16	SF	C 2.3	3	E		26		
LEAR		0133	0136	0158	S20	E39	5517	06	7.0	25	SF	C 2.0	3	E		48		
PALE		0133	0137	0151	S21	E40	5517	06	7.1	18	SF	C 2.0	3	E		32		
PALE		0212	0216	0314	S20	E34	5517	06	6.7	62	1N	M 1.0	3	E		127		F
LEAR		0213	0216	0304	S19	E34	5517	06	6.7	51	SN	M 1.0	3	E		67		E
LEAR		0240	0251	0355	S21	E76	5521	06	9.9	75	1B	M 3.4	3	E		143		
LEAR		0240	0310	0355	S21	E76	5521			75	1B			E		72		K
PALE		0241	0255	0402	S16	E72	5521	06	9.6	81	2N	M 3.4	3	E		297		
LEAR		0621	0621	0627	S19	W59	5515	05	30.9	6	SF		3	E		16		F
LEAR		0743	0747	0818	N31	W64	5507	05	30.4	35	2N	M 1.0	3	E		284		F
SVTO		0752E	0807U	0825D	N28	W67	5507	05	30.2	33D	SF		1	E		59		F
LEAR		0817	0834	0916	S20	E71	5521	06	9.8	59	2N	M 1.6	3	E		367		F
GOES		0851	0900	0953						62		M 3.7						
RAMY		1129	1230	1237	S20	E70	5521	06	9.8	68	SN	C 5.6	3	E		82		
GOES		1142	1146	1149						7		C 2.6						
RAMY		1320	1321	1328	S20	E73	5521	06	10.1	8	SF	C 3.4	3	E		12		
RAMY		1336	1349	1406	S21	E73	5521	06	10.2	30	SF	C 8.0	3	E		32		F
HOLL		1404	1412	1509	S20	E32	5517	06	7.0	65	1B	M 2.5	3	E		193		FE
RAMY		1408	1408	1432	S22	E74	5521	06	10.3	24	SF		3	E		41		
HOLL		1408	1408	1433	S21	E74	5521	06	10.3	25	SF		3	E		36		
HOLL		1516	1521	1540	S21	E32	5517	06	7.1	24	SF	C 3.9	3	E		38		FE
RAMY		1519	1521	1539	S21	E33	5517	06	7.2	20	SF	C 3.9	3	E		26		
HOLL		1616	1624	1747	S20	E69	5521	06	9.9	91	1N	C 9.5	3	E		175		FE
HOLL		1616	1641	1747	S20	E69	5521			91	1N			E		119		K
RAMY		1617	1622	1656D	S20	E69	5521	06	9.9	39D	1F	C 9.5	2	E		120		F
GOES		1631	1641	1711						40		M 2.9						
PALE		1715	1716	1721	S19	E72	5521	06	10.2	6	SF		3	E		42		
HOLL		1748	1750	1755	S20	E70	5521	06	10.1	7	SF		3	E		11		
HOLL		1828	1831	1845	S20	W65	5505	05	30.9	17	SF		3	E		19		
PALE		1830	1831	1835	S18	W65	5515	05	30.9	5	SF		3	E		17		
RAMY		2021	2024	2027	S22	W66	5515	05	30.9	6	SF		3	E		18		
PALE		2022	2023	2026	S18	W67	5515	05	30.8	4	SF		3	E		25		
HOLL		2023	2024	2034D	S22	W66	5515	05	30.9	11D	SF		3	E		18		
HOLL		2112	2122	2257	S20	E70	5521	06	10.2	105	1B		3	E		222		FE
HOLL		2112	2131	2257	S20	E70	5521			105	2B	M 6.0		E		312		K

Hα SOLAR FLARES

JUNE 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	04	2116	2129	2225	S23	E67	5521	06	10.0	69	2F	M 6.0	3	E		355		F
HOLL		2256	2300	2313	N21	W08	5514	06	4.3	17	SF		3	E		24		
HOLL		2334	2334	2338	N20	W73	5506	05	30.5	4	SF		3	E		12		
HOLL		2348	2348	2355	N20	W75	5506	05	30.3	7	SF		3	E		13		
LEAR	05	0017	0018	0022	N20	W75	5506	05	30.4	5	SF		3	E		17		
LEAR		0034	0036	0040	N20	W75	5506	05	30.4	6	SF		3	E		11		
HOLL		0034	0036	0042	N20	W75	5506	05	30.4	8	SF		3	E		16		
PALE		0108	0109	0121	S23	E65	5521	06	10.0	13	SF		3	E		21		
HOLL		0109	0110	0116	S21	E66	5521	06	10.1	7	SF		3	E		32		
LEAR		0110	0110	0113	S20	E64	5521	06	9.9	3	SF		3	E		21		
PALE		0130	0131	0144	S22	E64	5521	06	10.0	14	SF	M 1.0	3	E		40		
LEAR		0131	0131	0141	S21	E64	5521	06	10.0	10	SF	M 1.0	3	E		32		
LEAR		0240	0242	0250D	N31	W74	5507	05	30.4	10D	SF		2	E		68		
PALE		0241	0244	0252	N33	W74	5507	05	30.3	11	SF		3	E		54		F
GOES		0305	0309	0319						14		C 6.7						
SVTO		0648	0651	0659	S22	W73	5515	05	30.8	11	SF		3	E		30		
SVTO		0651	0653	0700	S23	E23	5517	06	7.0	9	SF		3	E		17		
SVTO		0651	0654	0658	N17	W81	5506	05	30.2	7	SF	C 2.7	3	E		14		
GOES		0718	0725	0734						16		M 1.0						
SVTO		0816	0818	0826	S20	E58	5521	06	9.8	10	SF		2	E		32		
SVTO		0827	0858	0938D	S18	E62	5521	06	10.1	71D	SB	M 1.3	3	E		78		F
SVTO		0827	0908	0938D	S18	E62	5521			71D	SB			E		67		K
RAMY		1112	1114	1209	S21	E59	5521	06	10.0	57	1B	M 3.4	3	E		102		
SVTO		1113	1116	1144D	S18	E58	5521	06	9.9	31D	SN	M 3.4	2	E		69		UF
SVTO		1113	1128	1144D	S18	E58	5521			31D	SN			E		51		K
RAMY		1214	1215	1219	N20	W79	5506	05	30.6	5	SF		4	E		22		
SVTO		1215	1215	1218	N18	W86	5506	05	30.1	3	SF		2	E		11		
SVTO		1254	1259	1316	S19	E58	5521	06	10.0	22	SF		2	E		23		
RAMY		1257	1301	1312D	S20	E58	5521	06	10.0	15D	SF		3	E		17		F
HOLL		1421	1425	1432	S19	E57	5521	06	9.9	11	SF		3	E		19		
HOLL		1508	1517	1626	S20	E57	5521			78	SF			E		47		K
HOLL		1508	1546	1626	S20	E57	5521	06	10.0	78	SF	C 4.9	3	E		70		
RAMY		1540	1549	1616	S20	E56	5521	06	9.9	36	SF	C 4.9	3	E		43		
HOLL		1622	1631	1710	S19	E20	5517	06	7.2	48	SF		3	E		65		F
RAMY		1634	1637	1656	S19	E20	5517	06	7.2	22	SF		3	E		59		F
HOLL		1652	1659	1750	S20	E60	5521	06	10.3	58	SF		3	E		62		F
HOLL		1652	1743	1750	S20	E60	5521			58	SF			E		51		K
HOLL		1658	1700	1705	S18	E73		06	11.3	7	SF		3	E		19		
RAMY		1712	1716	1723	S19	E55	5521	06	9.9	11	SF		3	E		35		F
HOLL		1818E	1822	1912	S20	E18	5517	06	7.1	54D	1N		3	E		113		UH
HOLL		1818E	1839	1912	S20	E18	5517			54D	1N			E		91		K
PALE		1819	1825	1908D	S20	E16	5517	06	7.0	49D	SF		3	E		65		F
HOLL		1918	1926	2233	S21	E53	5521			195	1B			E		105		K
HOLL		1918	2137	2233	S21	E53	5521	06	9.9	195	2B		3	E		298		UF
PALE		1926E	1927	2315D	S21	E52	5521			229D	2B			E		95		KT
PALE		1926E	2136U	2315D	S21	E52	5521	06	9.8	229D	2B	X 1.0	3	E		261		UF
HOLL		1931E	1938U	2015	N12	W03		06	5.6	44D	1F	C 8.4	3	E		102		U
PALE		1932E	1933	1958	N12	E01		06	5.9	26D	SF	C 8.4	3	E		38		F
GOES		1955	2013	2116						81		M 1.2						
HOLL		2216	2222	2245	S18	E17	5517	06	7.2	29	SF		3	E		39		F
PALE		2257E	2257U	2347	S19	E16	5517	06	7.2	50D	SF		3	E		20		F
HOLL		2301	2305	2346	S19	E17	5517	06	7.2	45	SF		3	E		46		F
HOLL		2344E	2344U	2354	S18	E52	5521	06	9.9	10D	SN		3	E		78		FE
HOLL	06	0103	0107	0202D	S20	E50	5521			59D	SN			E		68		K
HOLL		0103	0116	0202D	S20	E50	5521	06	9.9	59D	SN	M 2.1	3	E		90		FE
PALE		0104E	0118	0210	S22	E49	5521	06	9.8	66D	1F	M 2.1	3	E		128		F
GOES		0655	0707	0716						21		C 7.9						
GOES		0917	0922	0926						9		C 5.5						
GOES		1054	1104	1127						33		M 3.1						
GOES		1226	1235	1247						21		C 5.4						
HOLL		1525E	1533	1545	S27	E30	5520	06	9.0	20D	SF		3	E		18		F
RAMY		1527	1529	1538	S17	E39	5520	06	9.6	11	SF		4	E		14		F
HOLL		1632	1634	1825	S19	E41	5521	06	9.8	113	SN	M 1.0	4	E		92		FE
HOLL		1632	1709	1825	S19	E41	5521			113	SF			E		40		K
RAMY		1633	1633	1653	S20	E41	5521	06	9.8	20	SF		3	E		62		F
RAMY		1708	1717	1741	S19	E40	5521	06	9.8	33	SF		3	E		22		F

Hα S O L A R F L A R E S

JUNE 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	06	1708	1734	1741	S19	E40	5521			33	SF			E		40		K
HOLL		1714	1718	1743D	S17	E02	5517	06	6.9	29D	SF		4	E		50		
RAMY		1717	1717	1727	S20	W02	5517	06	6.6	10	SF		3	E		21		FH
RAMY		1717	1718	1754	S18	E05	5517	06	7.1	37	SF		3	E		21		
HOLL		1938	1940	1947	S22	E43	5521	06	10.1	9	SF		3	E		14		
HOLL		2017	2026	2048	S18	E38	5521	06	9.7	31	SF		3	E		39		
HOLL		2201	2217	2251	S19	E38	5521	06	9.8	50	SF		4	E		23		F
HOLL		2201	2240	2251	S19	E38	5521			50	SF			E		27		K
PALE		2216	2220	2232	S21	E39	5521	06	9.9	16	SF		3	E		16		
HOLL		2302	2303	2307	S18	E39	5521	06	9.9	5	SF		4	E		27		
HOLL		2355	2357	2408	S18	E36	5521			13	SF			E		29		K
HOLL		2355	2403	2408	S18	E36	5521	06	9.7	13	SF		4	E		26		F
HOLL	07	0051	0100	0116	S20	E37	5521	06	9.9	25	SF		4	E		18		
PALE		0059	0100	0104	S21	E37	5521	06	9.9	5	SF		3	E		25		
HOLL		0129	0135	0201D	S20	E36	5521	06	9.8	32D	SN	M 3.0	4	E		63		FE
PALE		0134	0135	0228	S21	E36	5521	06	9.8	54	SN	M 3.0	3	E		97		F
SVTO		0350E	0354U	0425	S18	E36	5521	06	9.9	35D	SF		2	E		34		F
SVTO		0430	0501	0544	S18	E34	5521	06	9.8	74	SF		3	E		40		F
SVTO		0648	0649	0659	S18	E37	5521	06	10.1	11	SF	C 7.8	3	E		49		
SVTO		0731	0734	0745	S18	E33	5521	06	9.8	14	SF		3	E		16		F
GOES		0823	0823	0840D						17D		C 4.2						
SVTO		1008	1010	1020D	S16	E35	5521	06	10.1	12D	1N	M 1.8	3	E		104		FH
SVTO		1049	1051	1113	S20	E33	5521	06	10.0	24	SN	M 1.1	3	E		56		F
SVTO		1101	1111	1136	S18	W04	5517	06	7.1	35	SF		3	E		28		F
SVTO		1252	1253	1312D	N19	E90		06	14.4	20D	1F	C 7.4	2	E		146		
HOLL		1255E	1257U	1305	N16	E90		06	14.4	10D	1N	C 7.4	3	E		155		
GOES		1326	1331	1335						9		C 4.8						
SVTO		1643	1645	1703	S18	E29	5521	06	9.9	20	SF		3	E		19		F
HOLL		1644	1646	1710	S18	E28	5521	06	9.8	26	SF		3	E		22		
HOLL		1646	1646	1702	S10	E85		06	14.1	16	SF		3	E		14		
RAMY		1656E	1656U	1706	S19	E27	5521	06	9.8	10D	SF		3	E		13		
HOLL		1713	1719	1745	S18	W07	5517	06	7.2	32	SF		3	E		17		
HOLL		1738	1741	1815	S19	E29	5521			37	SF			E		13		K
HOLL		1738	1804	1815	S19	E29	5521	06	9.9	37	SF		4	E		15		
RAMY		1738	1810	1827	S20	E29	5521	06	9.9	49	SF		3	E		21		
HOLL		1746	1746	1754	S18	W06	5517	06	7.3	8	SF		3	E		15		
HOLL		1905	1906	1918	N17	E85	5528	06	14.2	13	1N		4	E		105		
RAMY		1905	1906	1920	N19	E83	5528	06	14.1	15	1N		3	E		127		
HOLL		1908	1911	1958	S20	E29	5521	06	10.0	50	SN	M 1.1	3	E		76		UF
RAMY		1908	1911	1959	S19	E28	5521	06	9.9	51	SN	M 1.1	3	E		71		F
HOLL		1908	1922	1958	S20	E29	5521			50	SB			E		72		K
PALE		1910	1911	1943	S19	E24	5521	06	9.6	33	SF		3	E		23		F
PALE		1910E	1915U	1945D	N18	E85	5528	06	14.3	35D	1N		3	E		154		
HOLL		1920	1922	1928	S10	E82		06	14.0	8	SF		4	E		17		
HOLL		1944	1944	1953	N10	W62		06	3.2	9	SF		3	E		11		
HOLL		1949	1951	2006	S10	E82		06	14.0	17	SF	C 7.0	3	E		28		
RAMY		1950	1951	2016	S10	E86		06	14.3	26	SF	C 7.0	3	E		15		
HOLL		2030	2039	2145	S20	E26	5521	06	9.8	75	1N		3	E		117		UE
HOLL		2030	2044	2145	S20	E26	5521			75	1N			E		156		K
RAMY		2036	2050	2132	S19	E27	5521	06	9.9	56	1N	M 2.4	3	E		145		F
PALE		2037	2053	2131	S19	E23	5521	06	9.6	54	1F		3	E		140		F
RAMY		2045	2047	2050	S11	E90		06	14.6	5	SF		3	E		33		
HOLL		2154	2157	2205	S18	E25	5521	06	9.8	11	SF		3	E		13		
HOLL		2155	2205	2232	S21	W15	5517	06	6.8	37	SF		3	E		63		F
PALE		2202	2209	2223	S20	W15	5517	06	6.8	21	SF		3	E		17		
HOLL		2211E	2214U	2312	N28	E73	5528	06	13.6	61D	1F		3	E		105		F
HOLL		2211E	2241	2312	N28	E73	5528			61D	1F			E		24		K
PALE		2218	2219	2224	N22	E77	5528	06	13.8	6	SF		3	E		33		F
PALE		2232	2241	2257	N25	E78	5528	06	14.0	25	SF		3	E		26		F
HOLL		2249	2252	2308	S18	E26	5521	06	9.9	19	SF		3	E		13		F
HOLL		2317	2319	2332	N21	E90	5528	06	14.9	15	SF		3	E		43		
GOES	08	0001	0006	0018						17		C 9.4						
HOLL		0007	0007	0016	S17	E25	5521	06	9.9	9	SF		3	E		17		F
HOLL		0020	0020	0032	S17	E25	5521	06	9.9	12	SF		3	E		19		F
HOLL		0021	0033	0042	N20	E84	5528	06	14.4	21	SF		3	E		51		FE
PALE		0148	0150	0155	S20	E24	5523	06	9.9	7	SB		3	E		90		

Hα SOLAR FLARES

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
SVTO	08	0437E	0445	0507	N20	E83	5528	06	14.5	30D	1F		3	E		115		
SVTO		0609	0609	0632	S24	E06	5520	06	8.7	23	SF		3	E		15		
SVTO		0609	0614	0633	N21	E81	5528	06	14.5	24	SF		3	E		30		F
SVTO		0650	0703	0716	S20	E25	5521	06	10.2	26	SN	C 9.9	3	E		61		F
GOES		0746	0751	0754						8		C 4.5						
GOES		0805	0817	0822						17		C 6.4						
SVTO		0908	0909	0953	S20	E24	5521			45	1B			E		135		K
SVTO		0908	0920	0953	S20	E24	5521	06	10.2	45	1N	M 1.2	3	E		129		F
SVTO		0922	0927	0939	N09	W71	5529	06	3.1	17	SF		3	E		25		
SVTO		1105	1107	1123	N09	W73	5529	06	3.0	18	SF		3	E		12		
SVTO		1125	1127	1130	N22	E80	5528	06	14.6	5	SF		3	E		21		
RAMY		1134E	1135	1139	N19	E78	5528	06	14.4	5D	SF		3	E		15		
SVTO		1157	1158	1238	S19	E16	5521	06	9.7	41	SF		3	E		34		FH
RAMY		1159	1211	1218	S19	E17	5521	06	9.8	19	SF		3	E		17		
RAMY		1243	1244	1251	N19	E74	5528	06	14.2	8	SF		3	E		17		
SVTO		1243	1257	1327	S19	E16	5521	06	9.7	44	SF		3	E		26		
RAMY		1253	1257	1306	S19	E16	5521	06	9.7	13	SF		3	E		12		F
SVTO		1314	1322	1326	S07	E79	5530	06	14.5	12	SF		3	E		17		
RAMY		1327	1329	1333	N19	E74	5528	06	14.2	6	SF		3	E		17		F
GOES		1349	1405	1437						48		M 2.1						
RAMY		1646	1646	1653	S19	E16	5521	06	9.9	7	SF		3	E		17		
GOES		1715	1753	1850						95		M 1.8						
HOLL		1734	1734	1740	N20	E77	5528	06	14.6	6	SF		3	E		28		
RAMY		1734	1735	1740	N21	E75	5528	06	14.5	6	SF		3	E		21		
PALE		2017	2017	2021	S20	E13	5521	06	9.8	4	SF		3	E		12		
GOES		2225	2228	2238						13		C 6.8						
PALE	09	0006	0013	0028	S24	W03	5520	06	8.8	22	SF		3	E		50		F
PALE		0006	0032U	0159D	S22	E09	5521	06	9.7	113D	2F	M 2.3	3	E		317		UF
HOLL		0130E	0130U	0138	S19	E10	5521	06	9.8	8D	1F		2	E		152		F
PALE		0248	0248	0253	N18	E75	5528	06	14.8	5	SF		3	E		24		F
PALE		0403	0407	0413	N18	E74	5528	06	14.8	10	SF		3	E		36		
SVTO		0516	0518U	0523	S07	E69	5530	06	14.4	7	SF		3	E		31		
SVTO		0517	0524	0556	N16	W65	5516	06	4.3	39	1F		3	E		104		F
SVTO		0544	0548	0557	N23	E72	5528	06	14.8	13	SF	C 8.3	3	E		104		
SVTO		0711	0806	0855	S20	E10	5521			104	SN			E		64		K
SVTO		0711	0816	0855	S20	E10	5521	06	10.1	104	SF	M 2.4	3	E		64		F
SVTO		0751	0758	0816	S19	E90		06	16.2	25	SF		3	E				
SVTO		0942	0944	0956	S16	E85		06	15.8	14	1F		3	E		117		
SVTO		1012	1021	1033	S18	E08	5521	06	10.0	21	SF		3	E		54		
SVTO		1126	1127	1131	S17	E90		06	16.3	5	SF		3	E		38		
SVTO		1245	1254	1314	S19	E10	5521	06	10.3	29	SF		3	E		47		
RAMY		1248	1254	1330	S19	E09	5521	06	10.2	42	SF		3	E		38		
SVTO		1308	1312	1315	S15	E83	5533	06	15.8	7	SF		3	E		22		
SVTO		1324	1326	1333	S16	E88		06	16.2	9	SF		3	E		30		
HOLL		1332	1332	1340	S10	E68	5530	06	14.7	8	SF		3	E		20		
SVTO		1332	1334	1355	S08	E69	5530	06	14.7	23	SF		3	E		24		
SVTO		1455	1456	1504	N18	E65	5528	06	14.6	9	SF		3	E		43		
HOLL		1505	1508	1512	S18	E90		06	16.5	7	SF		3	E		16		
HOLL		1513	1521	1528	S21	E02	5521	06	9.8	15	SF		3	E		27		
HOLL		1532	1535	1548	N17	E56	5528	06	13.9	16	SF		3	E		69		
RAMY		1533	1535	1548	N16	E56	5528	06	13.9	15	SF		3	E		37		
GOES		1554	1604	1613						19		C 7.7						
HOLL		1625	1625	1629	S20	E04	5521	06	10.0	4	SF		3	E		25		
HOLL		1625	1632	1641	S21	E77		06	15.6	16	SF		3	E		40		
RAMY		1627	1631	1637D	S20	E90		06	16.6	10D	SF	M 1.9	3	E		80		
GOES		1749	1756	1801						12		C 7.3						
HOLL		1802	1804	1818	S11	W05	5532	06	9.4	16	SF		3	E		19		
RAMY		1806E	1806U	1819	S12	W04	5532	06	9.4	13D	SF		2	E		14		
HOLL		1841	1842	1845	S18	E82	5533	06	16.0	4	SF		3	E		11		
HOLL		1913E	1923U	1957	S10	E65	5530	06	14.7	44D	1N	C 7.8	3	E		165		F
RAMY		1917E	1917U	1950	S11	E67	5530	06	14.8	33D	SN	C 7.8	2	E		86		FE
GOES		2024	2029	2054						30		M 2.4						
GOES		2137	2141	2147						10		M 1.0						
HOLL		2252	2255	2258	S20	E90	5533	06	16.8	6	SF	M 6.3	3	E		31		
HOLL		2351	2402	2409	S20	E02	5521	06	10.1	18	SF		3	E		22		
PALE		2357	2401	2408	S21	E01	5521	06	10.1	11	SF		3	E		18		
PALE	10	0003	0011	0018	S20	E74	5533	06	15.7	15	SF		3	E		15		

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JUNE 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
HOLL	10	0004	0014	0019	S19	E84	5533	06	16.4	15	SF		3	E		19		
HOLL		0016	0027	0040	N18	E59	5528	06	14.5	24	SF		3	E		31		
PALE		0020	0038	0043	N21	E64	5528	06	14.9	23	SF		3	E		17		
PALE		0042	0050	0058	S20	E74	5533	06	15.7	16	SF		3	E		28		
PALE		0101	0113	0137	S21	E85	5533	06	16.5	36	SF		3	E		76		
PALE		0157	0158	0202	S21	E84	5533	06	16.5	5	SF		3	E		20		
PALE		0224	0228	0233	S20	E83	5533	06	16.4	9	SF		3	E		18		
PALE		0354	0354	0356	N15	E61	5528	06	14.8	2	SF		3	E		19		
SVTO		0527	0533	0601	S12	W11	5532	06	9.4	34	1F		3	E		167		U
SVTO		0552	0552	0605	N28	E65	5528	06	15.3	13	SF	C 7.1	3	E		27		
SVTO		0614	0620	0635	S18	E90	5533	06	17.1	21	2N	M 5.0	3	E		289		
SVTO		0725	0726	0733	S20	W01	5521	06	10.2	8	SF		3	E		30		
SVTO		0752	0755	0801	S16	E81	5533	06	16.5	9	SF		3	E		14		
SVTO		0825	0829	0841	N27	E63	5528	06	15.2	16	SF	C 5.8	3	E		37		
SVTO		0938	0946	0957	S17	E90	5533	06	17.2	19	1N	M 1.3	3	E		153		
SVTO		1022	1029	1036	S16	E78	5533	06	16.3	14	SF	C 8.1	2	E		26		
SVTO		1137	1137	1143	S20	W05	5521	06	10.1	6	SF		2	E		18		F
SVTO		1207	1207	1217	S21	W09	5521	06	9.8	10	SF	M 1.2	3	E		13		F
RAMY		1213	1213	1223	S20	E81	5533	06	16.7	10	SF		2	E		16		
RAMY		1213	1213	1231	S21	W04	5521	06	10.2	18	SF		2	E		23		
RAMY		1213E	1223	1254D	N16	E45	5528	06	13.9	41D	SN		2	E		85		F
SVTO		1220	1224U	1313	N21	E54	5528	06	14.6	53	1N		3	E		177		F
SVTO		1220	1243	1313	N21	E54	5528			53	1N			E		191		K
HOLL		1224E	1227U	1252	N19	E54	5528	06	14.6	28D	SN		3	E		79		
HOLL		1253	1256	1302	N25	E61	5528	06	15.3	9	SN	M 1.5	3	E		48		
RAMY		1254E	1256	1308D	N24	E59	5528	06	15.1	14D	SN	M 1.5	2	E		52		
HOLL		1408	1414	1425	S20	E85	5533	06	17.1	17	SB	C 6.8	4	E		88		
RAMY		1409	1416	1436D	S21	E84	5533	06	17.0	27D	SN	C 6.8	2	E		82		
SVTO		1410	1416	1421	S18	E83	5533	06	16.9	11	SF	C 6.8	2	E		35		
HOLL		1605	1616	1718	S27	W18	5520	06	9.3	73	2N		4	E		272		F
RAMY		1610E	1610U	1700D	S25	W23	5520	06	8.9	50D	SF		1	E		81		F
SVTO		1627E	1627U	1725	S23	W26	5520	06	8.7	58D	SF		2	E		168		
HOLL		1629	1634	1637	S19	E73	5533	06	16.2	8	SF		4	E		13		
RAMY		1641E	1700U	1713D	S28	E78	5533	06	16.8	32D	1N		2	E		216		
SVTO		1643	1656	1659	S25	W11	5521	06	9.8	16	SF		2	E		14		
HOLL		1650	1656	1725	S20	E81	5533	06	16.9	35	1N	M 1.7	4	E		189		E
SVTO		1652	1656	1712	S16	E75	5533	06	16.4	20	1N	M 1.7	2	E		113		E
RAMY		1736	1756	1849	N19	E52	5528	06	14.7	73	SF		3	E		35		
RAMY		1739	1750	1756	S19	E74	5533	06	16.4	17	SF		3	E		21		
HOLL		1749	1756	1801	N20	E53	5528	06	14.8	12	SF		4	E		14		
RAMY		1800	1802	1812	S21	W12	5521	06	9.8	12	SF		3	E		18		
HOLL		1839	1840	1849	N18	W86	5516	06	4.2	10	SF		4	E		27		
HOLL		1904	1905	1920	S20	E80	5533			16	SB			E		62		K
RAMY		1904	1905	1923	S20	E83	5533			19	1B			E		72		K
HOLL		1904	1911	1920	S20	E80	5533	06	16.9	16	SB	M 1.2	4	E		92		
RAMY		1904	1911	1923	S20	E83	5533	06	17.1	19	1N	M 1.2	3	E		115		E
PALE		1905	1905	1921	S16	E73	5533	06	16.3	16	SF		3	E		54		
HOLL		1907	1907	1927	N21	E50	5528	06	14.6	20	SF		4	E		56		
PALE		1914	1915	1929	N21	E49	5528	06	14.5	15	SF		3	E		18		
HOLL		1957	1958	2002	S20	E77	5533	06	16.7	5	SF		3	E		17		
RAMY		1958	2001	2004	S20	E77	5533	06	16.7	6	SF		4	E		13		
HOLL		2051	2100	2116	S20	E03	5524	06	11.1	25	SF		3	E		51		F
RAMY		2054E	2057U	2102D	S18	W14	5521	06	9.8	8D	S	C 6.8	2	E		14		H
RAMY		2054E	2057U	2113	S21	E03	5524	06	11.1	19D	SF		2	E		39		F
HOLL		2220	2220	2230	S19	W12	5521	06	10.0	10	SF		3	E		36		
HOLL		2221	2223	2226	S20	E77	5533	06	16.8	5	SF	C 4.3	3	E		25		
HOLL		2335	2339	2349	S19	W13	5521	06	10.0	14	SF	C 3.6	3	E		18		F
HOLL		2349	2353	2359	S18	E73	5533	06	16.5	10	SF		3	E		21		
HOLL		2350	2354	2358	N17	W19	5531	06	9.5	8	SF		3	E		17		
HOLL	11	0108	0109	0117	N20	E48	5528	06	14.7	9	SF		3	E		19		F
LEAR		0249	0259	0306D	S21	E74	5533	06	16.8	17D	SF	C 3.1	3	E		31		
GOES		0654	0701	0706						12		C 3.8						
GOES		0738	0742	0750						12		C 4.0						
SVTO		0817	0818	0826	S18	E73	5533	06	16.9	9	SF		2	E		22		
SVTO		0902	0911	0932	S18	E72	5533	06	16.8	30	SF	M 1.5	2	E		54		
SVTO		1039	1039	1044D	S18	E74	5533	06	17.1	5D	SF		2	E		20		
SVTO		1056	1057	1108	S18	E73	5533	06	17.0	12	SF		2	E		29		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
SVTO	11	1144	1146	1204	S18	E71	5533	06	16.9	20	SF		2	E		34		
RAMY		1144	1146	1204D	S20	E71	5533	06	16.9	20D	SF		3	E		39		
RAMY		1150	1150	1204D	S12	E41	5530	06	14.6	14D	SF		3	E		24		
SVTO		1150	1151	1206	S10	E41	5530	06	14.6	16	SF		2	E		28		
SVTO		1206	1208	1222	S16	E64	5533	06	16.3	16	SF	C 4.3	2	E		61		
SVTO		1342	1343	1421	S16	E70	5533	06	16.9	39	SF	C 7.3	3	E		38		F
HOLL		1343	1348	1402	S19	E68	5533	06	16.8	19	SF	C 7.3	3	E		82		
RAMY		1350E	1350U	1354D	S19	E68	5533	06	16.8	4D	SF	C 7.3	1	E		73		F
SVTO		1353	1356	1417	N22	E45	5528	06	15.0	24	SF		3	E		26		F
HOLL		1426	1439	1457	S16	E63	5533	06	16.4	31	SN		3	E		64		E
SVTO		1434	1438	1447	S16	E63	5533	06	16.4	13	SF		3	E		11		
SVTO		1530	1530	1538	S20	W20	5521	06	10.1	8	SF		3	E		13		F
HOLL		1533	1535	1544	S20	E63	5533	06	16.5	11	SN	C 4.3	3	E		68		H
SVTO		1533	1536	1555	S18	E62	5533	06	16.4	22	1F	C 4.3	3	E		111		
SVTO		1556	1601	1606	S18	E69	5533	06	16.9	10	SF		3	E		20		
HOLL		1559	1600	1605	S21	E71	5533	06	17.1	6	SF		3	E		14		
HOLL		1641	1647	1701	N15	E28	5528	06	13.8	20	SF		3	E		12		
HOLL		1647	1651	1654	S21	E70	5533	06	17.1	7	SF		3	E		23		
HOLL		1706	1712	1731	N10	E63	5534	06	16.4	25	SF		3	E		20		
HOLL		1729	1733	1745	S20	E68	5533	06	16.9	16	SF		3	E		45		
SVTO		1731E	1731U	1737	S18	E70	5533	06	17.1	6D	SF		2	E		23		
RAMY		1733E	1733	1740	S20	E68	5533	06	16.9	7D	SF		2	E		30		F
PALE		1733	1733	1746	S16	E61	5533	06	16.3	13	SF		3	E		39		
HOLL		1754	1754	1803	N22	E41	5528	06	14.9	9	SF		3	E		13		
HOLL		1853	1856	1918	S20	E66	5533	06	16.8	25	SN	C 9.4	3	E		40		
PALE		1856	1859	1918	S16	E60	5533	06	16.3	22	SF		3	E		27		F
HOLL		1941	1942	1955	N23	E46	5528	06	15.4	14	SF		3	E		22		
GOES		2052	2055	2104						12		C 2.8						
HOLL		2110	2110	2123	S18	W27	5521	06	9.8	13	SF		3	E		11		
PALE		2110	2118	2122	S14	W32	5532	06	9.5	12	SF		3	E		21		
HOLL		2158	2159	2206	S10	E40	5530	06	14.9	8	SF		3	E		43		
HOLL		2216	2219	2251	N20	E39	5528	06	14.9	35	SF		3	E		19		
HOLL		2253	2254	2257	S19	E57	5533	06	16.3	4	SF	C 4.0	3	E		17		
HOLL		2316	2319	2333	S17	E56	5533	06	16.2	17	SN	C 5.8	3	E		52		E
PALE		2320	2321	2340	S16	E58	5533	06	16.4	20	SN	C 5.8	3	E		56		
HOLL		2348	2348	2404	S20	W12	5524	06	11.1	16	SF		3	E		11		
HOLL		2359	2401	2407	S22	E66	5533	06	17.1	8	SF		3	E		16		
PALE	12	0017	0021	0037	N21	E44	5528	06	15.4	20	SF		3	E		28		
HOLL		0024	0035	0049	S19	E59	5533	06	16.5	25	SF		3	E		37		
HOLL		0105	0108	0112	N13	W16	5526	06	10.8	7	SF		3	E		19		
HOLL		0105	0108	0121	N13	W16	5526	06	10.8	16	SF		3	E		19		
PALE		0109	0110	0140	N19	E41	5528	06	15.2	31	SF		3	E		33		F
PALE		0141	0144	0159	S23	E64	5533	06	17.0	18	SF		3	E		25		
HOLL		0149E	0151U	0204D	N19	E38	5528	06	15.0	15D	SN		2	E		47		E
PALE		0149	0155	0225	N19	E37	5528	06	14.9	36	SF		3	E		21		F
PALE		0219	0219	0236	S22	E61	5533	06	16.8	17	SF	M 1.2	3	E		86		
SVTO		0645	0648	0656	S19	E54	5533	06	16.4	11	SF		3	E		37		F
SVTO		0717	0718	0739	N23	E37	5528	06	15.1	22	SF		3	E		17		F
SVTO		0820	0826	0909	S19	E61	5533			49	SN			E		32		K
SVTO		0820	0858	0909	S19	E61	5533	06	17.0	49	SF	C 4.5	3	E		53		F
SVTO		0825	0829	0840	N22	E30	5528	06	14.6	15	SF		3	E		10		F
SVTO		0923	0923	0926	S20	W18	5524	06	11.0	3	SF		3	E		16		
SVTO		0929	0933	0939	S20	E59	5533	06	16.9	10	SF		3	E		16		
SVTO		1050	1053	1119	S18	E59	5533	06	16.9	29	SF	C 6.4	2	E		59		
GOES		1223	1226	1228						5		C 2.7						
GOES		1228	1246	1251						23		C 4.6						
HOLL		1242	1305	1339	S16	E51	5533	06	16.4	57	SN	C 7.6	3	E		93		FE
HOLL		1242	1320	1339	S16	E51	5533			57	SN			E		67		K
HOLL		1450	1450	1458	S21	E57	5533	06	17.0	8	SF		3	E		30		
HOLL		1456	1501	1536	N15	W42	5531	06	9.4	40	SF		3	E		48		
SVTO		1555	1555	1600	N19	E29	5528	06	14.9	5	SF		2	E		13		
HOLL		1555	1555	1603	N24	E33	5528	06	15.2	8	SF	C 3.1	3	E		24		
HOLL		1600	1606	1632	S21	E57	5533			32	SF			E		12		K
HOLL		1600	1620	1632	S21	E57	5533	06	17.0	32	SF		3	E		14		
HOLL		1656	1701	1732	S19	E55	5533	06	16.9	36	1N	C 7.0	3	E		100		UF
HOLL		1656	1720	1732	S19	E55	5533			36	1F			E		22		K
SVTO		1702E	1704U	1732D	S19	E53	5533	06	16.7	30D	SF		2	E		40		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	12	1801	1802	1809	N15	W43	5531	06	9.5	8	SF		3	E		27		
HOLL		1853	1853	1903	N20	E31	5528	06	15.1	10	SF		3	E		19		
PALE		1853	1856	1903	N21	E29	5528	06	15.0	10	SF		3	E		11		
HOLL		1902	1906	1927	S16	E47	5533	06	16.3	25	SF	C 4.4	3	E		54		
PALE		1902	1907	1923	S23	E54	5533	06	16.9	21	SF		3	E		59		F
HOLL		1908	1912	1931	S16	W47	5521	06	9.2	23	SF		3	E		50		
PALE		1910	1911	1925	S14	W47	5521	06	9.2	15	SF		3	E		23		FH
PALE		1938	1939	1943	N20	E30	5528	06	15.1	5	SF	C 3.4	3	E		38		F
HOLL		1938	1939	1944	N20	E29	5528	06	15.0	6	SN	C 3.4	3	E		45		
HOLL		2014	2022	2032	N15	W45	5531	06	9.4	18	SF		3	E		28		
PALE		2018	2021	2029	N17	W46	5531	06	9.3	11	SF		3	E		15		
HOLL		2101	2108	2123	N19	E25	5528	06	14.8	22	SF	C 4.0	3	E		74		
PALE		2101	2110	2124	N18	E25	5528	06	14.8	23	SF	C 4.0	3	E		58		F
HOLL		2110	2110U	2120	S21	E54	5533	06	17.0	10	SF		3	E		21		
PALE		2134	2135	2159	N21	E28	5528	06	15.0	25	SF		3	E		57		F
PALE		2143	2151	2229	S20	E46	5533	06	16.4	46	SF		3	E		76		F
HOLL		2149	2200	2229	S20	E53	5533	06	17.0	40	SN	C 4.0	3	E		99		FE
PALE		2208	2214	2222	N18	W50	5531	06	9.1	14	SF		3	E		15		
HOLL		2219	2219	2224	N15	E21	5528	06	14.5	5	SF		3	E		18		
HOLL		2345	2345	2352	N19	E26	5528	06	15.0	7	SF		3	E		11		
HOLL	13	0025	0027	0034	N21	E25	5528	06	14.9	9	SF		3	E		16		
LEAR		0201	0211	0224	N20	E22	5528	06	14.8	23	SF	C 4.8	3	E		63		F
PALE		0219E	0219U	0222D	N20	E27	5528	06	15.2	3D	SF		3	E		13		
LEAR		0235E		0252	S22	E49	5533	06	16.9	17D	SF		3	E		16		F
LEAR		0315	0316	0320	S20	E47	5533	06	16.7	5	SF		3	E		21		
LEAR		0617	0619	0639	N16	W54	5531	06	9.2	22	SF		3	E		36		F
SVTO		1049	1108	1209	N19	E28	5536			80	1N			E		155		K
SVTO		1049	1117	1209	N19	E28	5536	06	15.6	80	1N		3	E		146		UF
SVTO		1130	1131	1134	S21	W32	5524	06	11.0	4	SF		3	E		14		
RAMY		1222	1232	1314	N20	E16	5528	06	14.7	52	SF		3	E		27		F
RAMY		1224	1231	1252	N16	E29	5536	06	15.7	28	SF		3	E		19		F
SVTO		1243	1246	1251	N18	E30	5536	06	15.8	8	SF		3	E		27		
SVTO		1243	1249	1252	N14	W56	5531	06	9.3	9	SF		3	E		13		
SVTO		1244	1245	1252	N23	E20	5528	06	15.1	8	SF		3	E		18		
SVTO		1256	1300	1307	N23	E19	5528	06	15.0	11	SN		3	E		24		
RAMY		1257	1259	1304	N14	W59	5525	06	9.1	7	SF		3	E		14		
SVTO		1259	1303	1307	N17	E30	5536	06	15.8	8	SF		3	E		25		
SVTO		1300	1308	1316	N22	E17	5528	06	14.8	16	SF		3	E		13		
HOLL		1311	1311	1336	N16	E30	5536	06	15.8	25	SF		3	E		36		
SVTO		1321	1325	1334	S18	E43	5533	06	16.8	13	SN		3	E		83		
RAMY		1321	1325	1408	S19	E42	5533	06	16.8	47	SF		3	E		48		F
SVTO		1321	1328	1331	N18	E29	5536	06	15.8	10	SF		3	E		59		
HOLL		1325	1327	1333	S19	E42	5533	06	16.8	8	SF		3	E		21		F
RAMY		1326	1327	1331	N20	E17	5528	06	14.9	5	SF	M 1.3	3	E		12		F
RAMY		1415	1418	1434	N14	W58	5525	06	9.2	19	SF		3	E		27		
HOLL		1415	1418U	1443	N14	W56	5531	06	9.4	28	SF		3	E		66		
RAMY		1417	1418	1430	N16	W52	5531	06	9.6	13	SF		3	E		26		F
HOLL		1433	1435	1500	S21	E43	5533	06	16.9	27	SF		3	E		34		F
RAMY		1433	1436	1456	S22	E43	5533	06	16.9	23	SF		3	E		32		
SVTO		1441	1443	1523	S19	E43	5533			42	SF			E		50		K
SVTO		1441	1450	1523	S19	E43	5533	06	16.9	42	SF		3	E		41		
HOLL		1506	1507	1550	N16	E28	5536	06	15.7	44	SF		3	E		23		
SVTO		1544	1548	1603	S18	E42	5533	06	16.8	19	SF		3	E		39		
RAMY		1545	1546	1557	S20	E36	5533	06	16.4	12	SF		3	E		32		F
HOLL		1546	1546	1551	S20	E42	5533	06	16.9	5	SF		3	E		12		F
HOLL		1600	1602	1606	N18	E14	5528	06	14.7	6	SF		3	E		20		F
PALE		1715	1720	1747	N15	E26	5536	06	15.7	32	SF		3	E		35		F
HOLL		1719	1720	1723	N15	W56	5531	06	9.5	4	SF		3	E		16		
PALE		1720	1720	1725	N19	E15	5528	06	14.9	5	SF		3	E		13		
HOLL		1808	1808	1821	S25	W58	5520	06	9.3	13	SF		3	E		11		
HOLL		1818	1821	1825	N16	E26	5536	06	15.7	7	SF		3	E		12		
RAMY		1937	1943	2025	N19	E14	5528	06	14.9	48	SF	C 4.2	3	E		45		F
HOLL		1942	1943	2008	N19	E14	5528	06	14.9	26	SF	C 7.0	4	E		31		FE
HOLL		2041	2041	2044	S11	E09	5530	06	14.5	3	SF		3	E		27		
HOLL		2050	2052	2111	N16	W54	5531	06	9.8	21	SF		3	E		92		FE
RAMY		2053	2058	2109	N15	W56	5531	06	9.6	16	SF		3	E		39		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	13	2319	2319	2328	S21	E37	5533	06	16.8	9	SF	C 4.4	3	E		45		F
PALE		2349	2350	2357	N17	E04	5528	06	14.3	8	SF		3	E		20		
LEAR	14	0112	0113	0121	S20	E31	5533	06	16.4	9	SF		3	E		21		F
LEAR		0148	0152	0206	N15	E23	5536	06	15.8	18	SF		3	E		26		F
PALE		0240	0240	0248	N10	E02	5528	06	14.3	8	SF		3	E		25		
PALE		0255	0306	0324	N13	W03		06	13.9	29	1F		3	E		101		F
LEAR		0300E	0300U	0325	N14	W04		06	13.8	25D	SF		3	E		76		
LEAR		0303	0306	0323	N17	E06	5528			20	SF			E		54		K
LEAR		0303	0318	0323	N17	E06	5528	06	14.6	20	SF		3	E		54		
PALE		0318	0318	0323	N17	E06	5528	06	14.6	5	SF		3	E		58		F
PALE		0318	0322	0326	N15	E22	5536	06	15.8	8	SF		3	E		13		
GOES		0549	0555	0603						14		C 4.2						
GOES		0606	0618	0629						23		M 1.0						
LEAR		0730E	0730U	0749D	N15	E01	5528	06	14.4	19D	SF	C 7.7	2	E		47		F
GOES		0931	0935	0940						9		C 4.4						
GOES		1042	1045	1047						5		C 6.7						
RAMY		1139	1140	1156D	N14	W02	5528	06	14.3	17D	SF	C 4.4	3	E		26		F
RAMY		1218	1219	1259	N16	E01	5528	06	14.6	41	SF		3	E		17		F
HOLL		1219E	1221U	1222D	N20	E05	5528	06	14.9	3D	SF		3	E		35		
RAMY		1258	1258	1443D	S18	E21	5533	06	16.1	105D	SF		3	E		61		F
HOLL		1316E	1330U	1334D	S17	W73	5521	06	9.0	18D	SF		2	E		20		
HOLL		1350	1355	1413	S16	W75	5521	06	8.9	23	1N	M 2.7	3	E		174		E
SVTO		1354E	1354U	1414	S13	W82	5521	06	8.4	20D	1N	M 2.7	2	E		139		
HOLL		1421	1421	1429	S15	W65	5521	06	9.7	8	SF		3	E		20		
HOLL		1430	1431	1452	S16	W75	5521	06	8.9	22	SF		3	E		29		
HOLL		1547	1547	1559	N17	W01	5528	06	14.6	12	SF	M 1.0	3	E		15		F
RAMY		1550	1551	1602	N17	W02	5528	06	14.5	12	SF		3	E		29		F
RAMY		1629	1637	1704	S18	W80	5521	06	8.6	35	SF	M 1.6	3	E		24		
HOLL		1638	1639	1647	N16	W66	5531	06	9.7	9	SF		4	E		18		
PALE		1653	1656U	1714D	N21	E00	5528	06	14.7	21D	SF		3	E		33		F
RAMY		1656	1657	1702	N15	W04	5528	06	14.4	6	SF		3	E		15		F
RAMY		1738	1747	1756	S17	W71	5521	06	9.3	18	SF		3	E		34		
PALE		1739	1744	1751	S19	E21	5533	06	16.3	12	SF		3	E		48		
HOLL		1739	1744	1815	S19	E23	5533	06	16.5	36	SB		3	E		96		
RAMY		1743	1743	1752	S21	E23	5533	06	16.5	9	SN		3	E		60		E
RAMY		1819	1819U	1934D	N14	W06	5528	06	14.3	75D	SN	M 1.3	2	E		99		FE
RAMY		1819	1833	1934D	N14	W06	5528			75D	SN			E		38		K
PALE		1820	1820U	1859D	N16	W05	5528	06	14.4	39D	SF	M 1.3	3	E		79		F
HOLL		2016E	2016U	2046D	S23	W54	5524	06	10.7	30D	1F		2	E		125		F
PALE		2130E	2135U	2159	S15	W77	5521	06	9.1	29D	SF	C 7.3	3	E		23		
PALE		2313E	2313U	2339	S21	E25	5533	06	16.9	26D	SF	C 7.8	3	E		25		F
PALE		2334E	2336U	2357	N13	W63	5526	06	10.2	23D	SF		3	E		30		
PALE		2338E	2338U	2414D	S17	W78	5521	06	9.0	36D	SF		3	E		31		
HOLL	15	0003E	0004	0017D	S19	E19	5533	06	16.4	14D	SF		2	E		71		
LEAR		0132	0134	0141	N17	W09	5528	06	14.4	9	SF	C 5.1	3	E		33		UF
HOLL		0136E	0136U	0137D	N20	W05	5528	06	14.7	1D	SF		1	E		21		F
LEAR		0220	0223	0244	N13	W59	5526	06	10.6	24	SF		3	E		24		
LEAR		0505	0506	0513	N17	W12	5528	06	14.3	8	SF		3	E		31		
LEAR		0542	0543	0600	S22	E20	5533	06	16.8	18	SF	C 6.3	3	E		40		
GOES		0736	0742	0747						11		C 6.3						
GOES		0912	0917	0923						11		C 5.1						
GOES		0942	0945	0949						7		M 1.0						
SVTO		1002E	1002U	1006	S17	W81	5521	06	9.3	4D	SF		2	E		16		
SVTO		1037E	1038U	1058	N16	W12	5528	06	14.5	21D	SF		3	E		18		
RAMY		1125	1132	1214D	N20	E03	5536	06	15.7	49D	1N		2	E		183		F
SVTO		1125E	1136	1207	N23	E02	5536	06	15.6	42D	2N		2	E		267		F
RAMY		1139	1140	1147	N20	E90		06	22.4	8	SF	M 1.6	2	E		12		
SVTO		1211	1216	1247	S20	W59	5524	06	11.0	36	SN		3	E		63		F
HOLL		1213E	1217U	1301	S16	W56	5524	06	11.3	48D	SN		2	E		80		U
RAMY		1227E	1234U	1306D	S18	W61	5524	06	10.9	39D	SF		2	E		53		F
RAMY		1229	1235	1419	S19	E07	5533	06	16.0	110	SF		2	E		17		
HOLL		1251E	1259U	1311	N20	E00	5536	06	15.5	20D	SF		2	E		73		
HOLL		1331E	1336U	1347	S17	W57	5524	06	11.2	16D	SF		3	E		35		
RAMY		1334	1337U	1350D	S16	W62	5524	06	10.9	16D	SF		2	E		41		
RAMY		1345E	1345U	1351D	N18	E02	5536	06	15.7	6D	SF		2	E		24		
RAMY		1354	1355	1359	S15	W89	5521	06	8.8	5	SF		2	E		39		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	15	1408	1409	1413	N18	E02	5536	06	15.7	5	SF		3	E		32		
HOLL		1416	1420	1444	N16	W12	5528	06	14.7	28	SF		3	E		54		E
RAMY		1416	1420	1445D	N16	W17	5528	06	14.3	29D	SF		2	E		80		
SVTO		1418	1420	1435	N17	W16	5528	06	14.4	17	SN		3	E		65		F
HOLL		1419	1420	1507	N15	W22		06	13.9	48	SN	M 1.0	3	E		58		E
HOLL		1500	1503	1522	N16	W14	5528	06	14.6	22	SF		3	E		40		F
HOLL		1518	1521	1525	S20	E12	5533	06	16.5	7	SF		3	E		10		
HOLL		1532	1537	1615	N16	W13	5528			43	SF			E		66		K
HOLL		1532	1545	1615	N16	W13	5528	06	14.7	43	SF		3	E		66		F
RAMY		1534	1544	1614	N09	W27	5528	06	13.6	40	SF		3	E		36		
RAMY		1553	1553	1557	S19	E10	5533	06	16.4	4	SF		3	E		17		H
RAMY		1624	1635	1715	N15	W26		06	13.7	51	SF		3	E		40		
HOLL		1644	1714	1807	S19	E11	5533	06	16.5	83	SF		3	E		35		
HOLL		1644	1754	1807	S19	E11	5533			83	SF			E		40		K
HOLL		1651	1657	1704	N20	W10	5528	06	14.9	13	SF		3	E		40		
PALE		1720	1725	1806	S27	E06	5533	06	16.2	46	SF		3	E		37		F
HOLL		1743E	1750	1759	N20	W11	5528	06	14.9	16D	SF		3	E		27		
HOLL		1813	1855	2041	S21	E08	5533			148	3N			E		154		K
HOLL		1813	1914	2041	S21	E08	5533	06	16.4	148	3B	X 4.1	3	E		632		UF
HOLL		1829	1854	1859	S19	W61	5524	06	11.1	30	SF		3	E		17		
HOLL		1841	1855	1936	N16	W16	5528	06	14.6	55	SF	M 2.4	3	E		35		
RAMY		1842	1855	1912	N16	W16	5528	06	14.6	30	SF	M 2.4	3	E		15		
PALE		1855	1919	2050	S18	E07	5533	06	16.3	115	2B		3	E		554		
PALE		1855	1923	2050	S18	E07	5533			115	2B			E		481		K
RAMY		1859	1859	1905	N13	W85	5531	06	9.4	6	SF		3	E		11		
HOLL		1917	1919	1922	N21	E78		06	21.8	5	SF		3	E		18		
RAMY		1917	1920	1923	N21	E80		06	21.9	6	SF		3	E		22		
HOLL		1925	1927	1932	S19	W61	5524	06	11.1	7	SF		3	E		20		
HOLL		1945	1949	1955	S19	W62	5524	06	11.1	10	SF		3	E		17		
HOLL		1948	2002	2050	N20	W13	5528	06	14.8	62	SF		3	E		26		
HOLL		2132	2223	2243	N16	W17	5528	06	14.6	71	SN	M 1.2	3	E		55		E
PALE		2207	2219	2223	N20	W15	5528	06	14.8	16	SF		3	E		42		
PALE		2224	2226	2248	N20	W15	5528	06	14.8	24	SF		3	E		44		
LEAR	16	0414	0423	0931D	S17	W01	5533			317D	2B			E		263		KT
LEAR		0414	0741	0931D	S17	W01	5533	06	16.1	317D	2B		3	E		368		FT
PALE		0415	0425	0451	S17	E03	5533	06	16.4	36	1F	X 3.0	3	E		101		F
LEAR		0429	0432	0433	N16	W90	5531	06	9.4	4	SF		3	E		15		
SVTO		0505E	0517U	0517D	S16	E04	5533	06	16.5	12D	1N	M 2.5	2	E		215		
SVTO		0505	0537	0751D	S16	E04	5533			166D	1N	M 6.8		E		303		K
SVTO		0505E	0748	1032	S16	E04	5533	06	16.5	327D	2B		2	E		373		FT
SVTO		0505E	0810	1032	S16	E04	5533			327D	2N			E		303		KT
LEAR		0614	0615	0631	N24	W13	5528	06	15.2	17	SF		3	E		69		F
SVTO		0614	0615	0637	N24	W13	5528	06	15.2	23	SN		3	E		60		
SVTO		0903	0904	0915	N17	W07	5536	06	15.8	12	SF		2	E		25		
RAMY		1033E	1133	1240	N14	W23	5528	06	14.7	127D	SF		3	E		93		F
RAMY		1203	1205	1211	S19	W70	5524	06	11.2	8	SF	M 1.0	2	E		51		
RAMY		1223	1226	1240	S18	W01	5533	06	16.4	17	SN	M 1.4	3	E		43		E
HOLL		1421	1426	1453	S17	W06	5533	06	16.1	32	SF		3	E		25		
HOLL		1444	1445	1450	N15	W26	5528	06	14.6	6	SF		3	E		10		F
HOLL		1502	1513	1549	N17	W11	5536	06	15.8	47	1F	C 8.4	3	E		115		F
RAMY		1504	1516	1549	N16	W11	5536	06	15.8	45	SF	C 8.4	3	E		40		F
HOLL		1518	1523	1536	N21	W28	5528	06	14.5	18	SF		3	E		23		F
HOLL		1537	1538	1543	N18	W24	5528	06	14.8	6	SF		3	E		18		
HOLL		1622	1625	1646	N10	W57	5545	06	12.4	24	SF		3	E		29		
HOLL		1644	1654	1748	S18	W08	5533	06	16.1	64	1N	M 2.4	3	E		134		
HOLL		1645	1646	1704	N13	W05	5534	06	16.3	19	SF		3	E		27		
RAMY		1645	1655	1721	S19	W09	5533	06	16.0	36	SF		3	E		79		F
RAMY		1646	1647	1656	N13	W04	5534	06	16.4	10	SF		3	E		17		
HOLL		1646	1707	1718	N10	W58	5545	06	12.3	32	SF		3	E		32		
PALE		1647E	1647U	1649D	S19	W03	5533	06	16.5	2D	SF		2	E		37		
RAMY		1649	1655	1659	N10	W57	5545	06	12.4	10	SF		3	E		18		
HOLL		1652	1658	1710	S19	W82	5524	06	10.4	18	1N		3	E		131		
HOLL		1657	1705	1737	S23	E67	5542	06	21.9	40	1B		3	E		132		
HOLL		1657	1713	1737	S23	E67	5542			40	1F			E		112		K
RAMY		1659	1707	1717	N09	W59	5545	06	12.3	18	SF		3	E		23		
RAMY		1701	1705	1734	S23	E72	5542	06	22.2	33	1F		3	E		102		F
HOLL		1707	1719	1736	N17	W05	5534	06	16.3	29	SF		3	E		43		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	16	1711	1720	1729	N15	W05	5536	06	16.3	18	SF		3	E		18		F
HOLL		1726	1731	1737	N17	W27	5528	06	14.7	11	SF		3	E		18		
RAMY		1733	1733	1742	S18	W07	5533	06	16.2	9	SF		3	E		14		F
HOLL		1752	1752	1759	N17	E52	5543	06	20.7	7	SF		3	E		13		
RAMY		1753	1753	1759	N18	E52	5543	06	20.7	6	SF		3	E		14		
HOLL		1833	1833U	1841	N17	W28	5528	06	14.6	8	SF		3	E		13		F
HOLL		1840	1841	2022	S21	W02	5533			102	SN			E		16		K
HOLL		1840	1903	2022	S21	W02	5533	06	16.6	102	1B	M 4.9	3	E		203		
RAMY		1842E	1906U	2023D	S20	W02	5533	06	16.6	101D	1N	M 4.9	2	E		224		FE
PALE		1905E	1914	1955	S18	W04	5533	06	16.5	50D	1F		3	E		167		F
PALE		2004	2004	2010	S19	W09	5533	06	16.1	6	SF		3	E		29		
HOLL		2102	2103	2117	S18	W05	5533	06	16.5	15	SF		3	E		21		F
HOLL		2148	2151	2218	S21	W07	5533	06	16.4	30	SB	M 2.5	3	E		78		
HOLL		2148	2155	2218	S21	W07	5533			30	SB			E		88		K
HOLL		2241	2246	2252	S17	W07	5533	06	16.4	11	SF		3	E		17		
GOES		2255	2259	2304						9		C 7.6						
GOES		2317	2321	2332						15		C 6.6						
LEAR	17	0029	0030	0038	S17	W08	5533	06	16.4	9	SF	C 4.7	3	E		14		
LEAR		0059	0101	0113	S18	W08	5533	06	16.4	14	SF	C 9.3	4	E		22		
LEAR		0413	0419	0545	S20	W11	5533	06	16.3	92	1F	C 9.1	4	E		116		F
LEAR		0413	0526	0545	S20	W11	5533			92	1F			E		17		K
LEAR		0439	0440	0456	N16	W43	5528	06	13.9	17	SF		3	E		14		
SVTO		0453E	0454U	0546	S18	W09	5533	06	16.5	53D	1F		2	E		175		F
LEAR		0732	0742	0757	S15	W05	5533	06	16.9	25	SF		3	E		18		F
LEAR		0803	0815	0842	N17	W37	5528	06	14.5	39	SF		3	E		19		
LEAR		0848	0905	0912	N10	W70	5545	06	12.1	24	SF		3	E		24		F
SVTO		0940	0944	0952	S19	W17	5533	06	16.1	12	SN	C 9.7	3	E		54		
GOES		1014	1020	1039						25		M 1.6						
RAMY		1057	1100	1126	S19	W13	5533	06	16.5	29	SF	C 8.3	3	E		34		F
SVTO		1141	1141	1146	N16	W40	5528	06	14.4	5	SN		3	E		19		E
SVTO		1150	1151	1157	S15	W07	5533	06	17.0	7	SN		3	E		54		FE
RAMY		1312	1314	1329	S19	W13	5533	06	16.5	17	SF		3	E		19		
HOLL		1344E	1344U	1410D	S18	W14	5533	06	16.5	26D	SF		3	E		21		
RAMY		1414	1415	1423	S18	W16	5533	06	16.4	9	SF		3	E		12		
SVTO		1435	1441	1451	N23	E60	5544	06	22.2	16	SF		3	E		23		
RAMY		1529	1531	1536	N17	W42	5528	06	14.4	7	SF		3	E		19		
HOLL		1529	1531	1536	N18	W41	5528	06	14.5	7	SF		3	E		26		
HOLL		1547	1602	1850	N17	W40	5528	06	14.6	183	2B		3	E		413		UY
HOLL		1547	1646	1850	N17	W40	5528			183	2B			E		300		K
SVTO		1549	1616	1750D	N16	W40	5528	06	14.6	121D	2B	M 8.7	3	E		442		UY
RAMY		1555E	1604	1836	N16	W39	5528	06	14.7	161D	2B		3	E		425		ZY
HOLL		1559	1603	1610	N15	W22	5536	06	16.0	11	SF		3	E		17		
SVTO		1600	1604	1612	N14	W25	5536	06	15.8	12	SF		3	E		22		
HOLL		1615	1617	1628	S19	E47	5542	06	21.3	13	SF		3	E		12		
HOLL		1716	1716	1723	S17	W18	5533	06	16.3	7	SF		3	E		15		
HOLL		2058	2100	2110	N15	W49	5528	06	14.2	12	SN		3	E		20		F
HOLL		2155	2156	2219	N21	E55	5544	06	22.1	24	SF		3	E		17		
HOLL		2246	2251	2314D	S17	W26	5533	06	16.0	28D	SN		3	E		65		FE
HOLL		2246	2313	2314D	S17	W26	5533			28D	SN			E		34		K
GOES		2248	2252	2317						29		C 5.9						
LEAR	18	0350	0355	0423	N18	W40	5536	06	15.1	33	SF		3	E		29		
LEAR		0534	0549	0605	N17	W56	5528	06	14.0	31	SF		3	E		43		
LEAR		0628	0629	0640	S19	W29	5533	06	16.0	12	SF		3	E		31		
SVTO		0738	0739	0758	N13	W27	5534	06	16.3	20	SF		3	E		47		F
LEAR		0739	0740	0754	N14	W26	5534	06	16.3	15	SF		3	E		23		F
LEAR		0743	0749	0804	S17	W30	5533	06	16.0	21	SF		3	E		36		
SVTO		0744	0752	0805	S18	W29	5533	06	16.1	21	SF		3	E		25		F
LEAR		0822	0825	0831	S19	E41	5542	06	21.5	9	SF		3	E		19		
RAMY		1037E	1040	1103	N17	W53	5528	06	14.4	26D	SF		2	E		49		
RAMY		1218	1221	1245	N16	W34	5536	06	15.9	27	SF		4	E		42		F
RAMY		1220	1221	1228	S19	W32	5533	06	16.1	8	SF		4	E		66		
HOLL		1220E	1226U	1234	S10	W49	5533	06	14.8	14D	SF		2	E		23		
SVTO		1221	1222	1229	S18	W32	5533	06	16.1	8	SF		3	E		60		
SVTO		1221	1222	1240	N17	W34	5536	06	15.9	19	SF		3	E		52		
RAMY		1312	1312	1318	N15	W57	5528	06	14.2	6	SF		3	E		15		F
SVTO		1440	1447	1506	N12	W31	5534	06	16.3	26	SF		3	E		47		

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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	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
HOLL	18	1441	1444	1508	N13	W30	5534	06 16.3	27	SF		3	E		61		F
RAMY		1441	1447	1505	N12	W30	5534	06 16.3	24	SF		3	E		49		FH
HOLL		1618	1620	1640	N16	W56	5528	06 14.4	22	SN	C 6.8	3	E		64		FE
HOLL		1618	1624	1640	N16	W56	5528		22	SN	C 6.8		E		59		K
SVTO		1619	1622	1645	N15	W57	5528	06 14.4	26	SF	C 6.8	3	E		45		F
RAMY		1620	1620	1636	N16	W56	5528	06 14.4	16	SF	C 6.8	3	E		39		F
HOLL		1751	1806	1839	S18	W28	5533	06 16.6	48	SF		3	E		35		
HOLL		1900	1900	1920	N20	W60	5528	06 14.2	20	SN	M 1.0	3	E		66		FE
HOLL		1902	1902	1919	N26	W69	5527	06 13.4	17	SF		3	E		17		
GOES		1956	2004	2015					19		C 6.4						
PALE		2220	2220	2232	N20	W58	5528	06 14.5	12	SF		3	E		25		
GOES		2340E	2343	2350	S21	E85			10D		M 1.0						
LEAR	19	0039	0050	0110	N19	W43	5536	06 15.7	31	SF		3	E		71		
PALE		0042E	0048U	0108	N15	W40	5536	06 16.0	26D	SF		3	E		46		
HOLL		0118E	0120U	0134	N21	W56	5528	06 14.8	16D	SN		3	E		42		F
GOES		0310	0315	0318					8		C 3.2						
LEAR		0532	0540	0653D	N25	W53	5328	06 15.1	81D	SN	M 2.5	3	E		67		F
SVTO		0532	0558	0653	N25	W53	5528	06 15.1	81	SN	M 2.5	4	E		81		F
SVTO		0744	0748	0754	S17	E81		06 25.5	10	1N	M 3.1	3	E		173		F
SVTO		0853	0854	0858	N21	W59	5528	06 14.8	5	SF		3	E		18		
GOES		1210	1225	1237					27		C 6.8						
HOLL		1351	1353	1403	N16	W64	5528	06 14.7	12	SF		3	E		38		
RAMY		1435	1436	1442	S18	E75	5552	06 25.3	7	SF		3	E		44		
SVTO		1435	1436	1443	S16	E73	5552	06 25.1	8	SF		3	E		44		
HOLL		1436	1436	1445	S18	E75	5552	06 25.3	9	SF		3	E		72		
HOLL		1542	1545	1551	S18	E74	5552	06 25.3	9	SF		3	E		21		
HOLL		1544	1548	1603	N20	E34	5544	06 22.2	19	SF		3	E		23		
HOLL		1603	1606	1612	N18	W69	5528	06 14.4	9	SF		3	E		22		
HOLL		1656	1656	1705	N18	W67	5528	06 14.6	9	SF		3	E		31		
HOLL		1723	1724	1733	S17	E73	5552	06 25.3	10	SF		3	E		26		
HOLL		1725E	1726U	1745D	S19	E68	5552	06 24.9	20D	SN		3	E		55		HZ
RAMY		1803E	1804U	1808	N27	E88		06 26.6	5D	SF	C 6.5	3	E		103		H
GOES		1933	1938	1944					11		C 4.2						
HOLL		2006	2008	2013	S18	W42	5533	06 16.6	7	SF		3	E		14		
HOLL		2138	2158U	2237	S17	W40	5533	06 16.9	59	1N	M 1.0	3	E		120		E
HOLL		2138	2218	2237	S17	W40	5533		59	1N			E		47		K
HOLL		2154	2154	2158D	N28	W36	5537	06 17.1	4D	SF		3	E		48		
HOLL		2342	2347	2353	S23	W37	5533	06 17.1	11	SF		3	E		30		
GOES	20	0236	0241	0248					12		C 4.8						
PALE		0258	0259	0318	N19	W64	5528	06 15.2	20	SF		3	E		17		
SVTO		0815	0817	0828	S18	E85	5552	06 26.8	13	SN	C 6.1	3	E		59		
SVTO		1345	1345	1406	S19	W55	5533	06 16.4	21	SF		3	E		35		F
RAMY		1347E	1348U	1414	S18	W55	5533	06 16.4	27D	SF		2	E		48		
HOLL		1350E	1353U	1410D	S18	W56	5533	06 16.3	20D	SF		2	E		60		F
GOES		1448	1508	1720					152		X 1.6						
RAMY		1455	1501	1630D	N24	W68	5528	06 15.4	95D	3N		3	E		897		UF
SVTO		1455	1503	1600D	N25	W73	5528	06 15.0	65D	2N		2	E		455		ZY
RAMY		1455	1508	1630D	N24	W68	5528		95D	3N			E		509		K
HOLL		1504E	1511U	1651D	N24	W68	5528	06 15.4	107D	3B		3	E				U
HOLL		1506	1524	1551	S20	E68	5552	06 25.8	45	SF		3	E		75		
HOLL		1509	1509	1610	N16	W64	5534	06 15.8	61	SF		3	E		27		E
RAMY		1520	1526	1611	N17	W61	5534	06 16.0	51	SF		3	E		24		F
HOLL		1558	1600	1606	S17	E69	5552	06 25.9	8	SF		3	E		16		
HOLL		1607	1611	1623	S17	E69	5552	06 25.9	16	SF		3	E		54		F
HOLL		1610	1611	1619	S25	E65		06 25.7	9	SF		3	E		16		
HOLL		1725E	1726U	1745	S19	E68	5552	06 25.9	20D	SN	M 1.5	3	E		55		HZ
RAMY		1859E	1900	1904	N25	E73	5555	06 26.4	5D	SF		3	E		10		
PALE		2002	2003U	2027	S16	W55	5533	06 16.7	25	SF		2	E		16		
HOLL		2012E	2020	2047	S18	W54	5533	06 16.7	35D	1F	M 1.1	3	E		141		
RAMY		2019E	2019	2049	S19	W60	5533	06 16.3	30D	1F		3	E		122		F
HOLL		2029	2029	2036	S16	E73	5552	06 26.4	7	SF		3	E		25		
PALE		2201E	2208U	2315	N18	W81	5528	06 14.7	74D	1N	M 9.3	3	E		116		Y
HOLL		2204E	2207U	2208D	N17	W84	5528	06 14.5	4D	SN	M 9.3	1	E		74		
LEAR	21	0142	0142	0156	S18	E56	5552	06 25.3	14	SF	M 1.7	3	E		28		H
LEAR		0446E	0452U	0453D	S19	E60	5552	06 25.8	7D	SF	M 1.4	1	E		86		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
SVTO	21	0447E	0451U	0503	S19	E61	5552	06	25.8	16D	1N	M 1.4	2	E		105		
SVTO		0802	0805U	0849	N28	E67	5555	06	26.6	47	SN		1	E		69		
SVTO		1125	1137	1332	N27	E60	5555	06	26.1	127	SN	M 1.9	3	E		99		
RAMY		1310E	1321U	1339	N28	E61	5555	06	26.3	29D	SF		2	E		70		F
SVTO		1321	1323	1326	S16	E87	5556	06	28.1	5	SF		3	E		27		
RAMY		1445E	1445U	1544	N28	E64	5555	06	26.6	59D	SF		2	E		83		
HOLL		1524E	1631U	1701	N20	E92	5555	06	28.7	97D	SN		3	E		84		FE
RAMY		1547E	1649U	1707D	N27	E60	5555	06	26.3	80D	SF		1	E		96		F
HOLL		1701E	1704	1802	N26	E60	5555			61D	1F			E		157		K
HOLL		1701E	1726	1802	N26	E60	5555	06	26.4	61D	1N	M 3.0	3	E		101		F
HOLL		1812	1815	1834	N21	E04	5544	06	22.1	22	SF		3	E		26		
HOLL		1834	1835	1844	N26	E61	5555	06	26.5	10	SF		3	E		23		
PALE		1834	1922	1933	N26	E61	5555	06	26.5	59	SF		3	E		67		F
HOLL		1849	1851	1937	N26	E59	5555	06	26.4	48	SN	M 1.1	3	E		40		F
HOLL		1849	1906	1937	N26	E59	5555			48	SB			E		35		K
PALE		1908E	1922	1933	N26	E61	5555	06	26.5	25D	SF		3	E		67		F
HOLL		1916	1922	1935	S22	E80	5556	06	27.9	19	SF		3	E		29		
HOLL		1949	2002	2028	N62	E59	5555			39	SN			E		54		K
HOLL		1949	2009	2028	N26	E59	5555	06	26.4	39	SN		3	E		35		FE
HOLL		2016	2016	2018D	S06	W28	5541	06	19.7	2D	SF		3	E		17		
HOLL		2054E	2108	2123	N27	E59	5555	06	26.5	29D	SN	C 6.6	3	E		44		
HOLL		2212	2213	2220	N26	E58	5555	06	26.4	8	SN		3	E		29		
HOLL		2229	2235	2241	N26	E58	5555	06	26.4	12	SF		3	E		13		F
LEAR		2355	2408	2410	N25	E56	5555	06	26.3	15	SF		3	E		32		
LEAR	22	0105	0112	0122	N26	E54	5555	06	26.2	17	SF		3	E		34		
LEAR		0127	0138	0216	N25	E55	5555	06	26.3	49	SF		3	E		58		F
HOLL		0138E	0141U	0149D	N25	E56	5555	06	26.4	11D	SF		2	E		32		
LEAR		0413	0414	0434	N26	E51	5555	06	26.1	21	SF		3	E		33		
SVTO		0600	0606	0750	N29	E53	5555	06	26.4	110	SF		3	E		90		
LEAR		0623	0635	0730	N26	E50	5555			67	SF			E		48		K
LEAR		0623	0650	0730	N26	E50	5555	06	26.1	67	SF		3	E		36		ZF
SVTO		0629	0630	0637	S16	E70	5556	06	27.6	8	SF	C 4.2	3	E		17		
LEAR		0630	0631	0636	S19	E69	5556	06	27.5	6	SF	C 4.2	3	E		18		
LEAR		0635	0635	0650	S19	E26	5549	06	24.2	15	SF		3	E		12		F
LEAR		0715	0715	0719	N16	E77	5559	06	28.1	4	SF		3	E		15		
GOES		0752	0757	0803						11		C 3.7						
SVTO		0911	0913	0930	S17	E46	5552	06	25.9	19	SF		3	E		33		
LEAR		0912	0916	0925	S16	E36	5552	06	25.1	13	SF	C 3.8	3	E		27		
SVTO		1114	1115	1120	N29	E49	5555	06	26.3	6	SF		3	E		16		
RAMY		1117E	1124U	1310D	N24	E51	5555	06	26.4	113D	SF	C 4.1	3	E		60		
SVTO		1200	1213	1223	N26	E49	5555	06	26.3	23	SF		3	E		30		
SVTO		1213	1214	1216	S16	E36	5552	06	25.2	3	SF		3	E		17		
HOLL		1242E	1244U	1255	N26	E50	5555	06	26.4	13D	SF		1	E		30		FH
GOES		1242	1246	1252						10		C 3.6						
RAMY		1353	1436	1619	N25	E46	5555			146	SN			E		78		K
RAMY		1353	1445	1619	N25	E46	5555	06	26.1	146	SN	C 6.7	3	E		58		
HOLL		1444	1445	1520	N27	E50	5555	06	26.5	36	SN	C 8.4	3	E		47		
SVTO		1444	1445	1520	N29	E48	5555	06	26.4	36	SN		2	E		64		F
HOLL		1539	1541	1605	N21	W08	5544	06	22.0	26	SF		3	E		36		
SVTO		1540	1540	1600	N23	W09	5544	06	21.9	20	SF		3	E		36		
RAMY		1540	1541	1557	N25	W09	5544	06	21.9	17	SF		3	E		21		
HOLL		1653	1710	1734	S19	E38	5552	06	25.6	41	SF		3	E		34		
HOLL		1808	1818	1821	S16	E77		06	28.6	13	SF		3	E		19		
HOLL		1858	1900	1949	N21	E72	5557	06	28.3	51	SF		3	E		16		
HOLL		1858	1923	1949	N21	E72	5557			51	SB			E		25		K
HOLL		1900	1902	1909	S16	E77		06	28.6	9	SF		3	E		24		
RAMY		1917E	1917U	1953D	N24	E79		06	28.9	36D	SF		1	E		14		
HOLL		1944	1944	1947	S16	E79		06	28.8	3	SF		3	E		12		
HOLL		1956	1956	2002	N21	E63	5557	06	27.7	6	SF		3	E		19		
HOLL		2036	2047	2059	N21	E62	5557	06	27.6	23	SF		3	E		20		
HOLL		2047	2047	2101	S20	E60	5561	06	27.4	14	SF		3	E		29		F
HOLL		2121	2123	2127	N26	E45	5555	06	26.4	6	SF		3	E		25		
HOLL		2124	2125	2143	N22	E76	5557	06	28.7	19	SF	C 7.8	3	E		22		
HOLL		2217	2222	2231	S20	E58	5561	06	27.4	14	SF		3	E		24		
HOLL		2307	2308	2316	N26	E41	5555	06	26.1	9	SF	C 3.6	3	E		21		
HOLL		2345	2346	2353	N27	E43	5555	06	26.3	8	SF	C 3.3	3	E		24		
HOLL	23	0011	0012	0017	N25	E40	5555	06	26.1	6	SF	C 3.1	3	E		14		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	23	0022	0025	0100	S16	E72	5563	06	28.5	38	SF		3	E		59		
LEAR		0025	0028	0037	N22	E70		06	28.4	12	SF		3	E		37		
HOLL		0039	0041	0116	N28	E41	5555			37	SF			E		30		K
HOLL		0039	0100	0116	N28	E41	5555	06	26.2	37	SF	C 3.8	3	E		25		
LEAR		0108	0114	0121	N22	E71	5557	06	28.5	13	SF		3	E		13		
LEAR		0124	0134	0136	N22	E71		06	28.5	12	SF		3	E		22		
PALE		0216	0218	0224	N25	E43	5555	06	26.4	8	SF	C 3.8	3	E		44		F
LEAR		0217	0218	0221	N26	E41	5555	06	26.3	4	SF	C 3.8	3	E		30		
GOES		0303	0306	0310						7		C 2.7						
GOES		0326	0332	0337						11		C 3.9						
SVTO		0453	0453	0504	N27	E41	5555	06	26.4	11	SF		3	E		11		
SVTO		0456	0507	0522	S14	E27	5552	06	25.2	26	SF		3	E		19		
LEAR		0457	0458	0516	S16	E27	5552	06	25.2	19	SF		3	E		31		
LEAR		0523	0535	0550	N24	E71		06	28.7	27	SF	C 3.7	3	E		16		
SVTO		0859	0904	0924	N28	E43	5555	06	26.7	25	SN	C 4.1	3	E		50		
LEAR		0902	0902	0913	N26	E43	5555	06	26.7	11	SF	C 4.1	3	E		15		
SVTO		1216	1241	1301	N21	W19	5544	06	22.0	45	SF		3	E		58		
RAMY		1236	1241	1258	N24	W18	5544	06	22.1	22	SF		2	E		24		
RAMY		1253	1313	1342	S15	E67	5563	06	28.6	49	SF		3	E		28		
SVTO		1312	1316	1333	S12	E66	5563	06	28.5	21	SF		3	E		26		F
SVTO		1312	1327	1333	S12	E66	5563			21	SF			E		42		K
HOLL		1326	1327	1332	S15	E67	5563	06	28.6	6	SF		3	E		23		
HOLL		1505	1506	1518	N26	E35	5555	06	26.3	13	SF		3	E		21		F
SVTO		1506	1507	1520	N28	E32	5555	06	26.1	14	SF		3	E		12		F
RAMY		1507	1507	1540	N28	E35	5555	06	26.4	33	SF		3	E		18		F
RAMY		1600	1634U	1653D	S15	E65	5563	06	28.6	53D	SF		2	E		86		
SVTO		1601	1630	1705	S13	E65	5563	06	28.6	64	SF		2	E		73		
HOLL		1624	1631	1653	S15	E66	5563	06	28.7	29	SF		3	E		66		
PALE		1635	1635	1646	S17	E66	5563	06	28.7	11	SF		3	E		31		
HOLL		1726	1727	1731	S18	W35	5542	06	21.1	5	SF		3	E		12		
PALE		1727	1754	1850	N28	E33	5555	06	26.3	83	SF	C 3.8	3	E		68		
HOLL		1745	1748	1810	N27	E36	5555			25	SF			E		69		K
HOLL		1745	1754	1810	N27	E36	5555	06	26.5	25	SN	C 3.8	3	E		80		FE
HOLL		1821	1829	1832	S15	E64	5563	06	28.6	11	SF		3	E		36		
PALE		1936	1936	1947	S18	E66	5563	06	28.8	11	SF		3	E		24		
RAMY		1954E	1959U	2101D	S16	E65	5563	06	28.7	67D	SF		1	E		14		
PALE		2039	2054	2104	N26	E32	5555	06	26.3	25	SF		3	E		16		
HOLL		2150	2153	2217	N26	E33	5555	06	26.5	27	SF		3	E		30		
HOLL		2214	2226	2258	S15	E63	5563	06	28.7	44	SF		3	E		49		
HOLL		2342	2343	2349	S15	E16	5552	06	25.2	7	SF		3	E		24		
LEAR		2357	2357	2402	S15	E16	5552	06	25.2	5	SF		3	E		16		
GOES		2357E	2358	2402D						5D		C 2.2						
LEAR		2359	2401	2406	S14	E58	5563	06	28.4	7	SF		3	E		13		
LEAR	24	0050	0051	0055	S18	W38	5542	06	21.1	5	SF	C 2.4	3	E		34		
LEAR		0102	0107	0120	S15	E62	5563	06	28.7	18	SF		3	E		23		
LEAR		0140	0142	0215	N22	E57	5565	06	28.4	35	SF		3	E		56		
LEAR		0226	0230	0246	N22	E55	5565	06	28.3	20	SF	C 3.0	3	E		33		
LEAR		0320	0328	0347	N26	E29	5555	06	26.4	27	SF	M 2.4	3	E		70		F
LEAR		0516	0522	0531	N22	E54	5565	06	28.4	15	SF	C 2.1	3	E		21		
LEAR		0544	0602	0622	N22	E53	5565	06	28.3	38	SF	C 1.9	3	E		34		
SVTO		1149	1201	1252	N27	E23	5555	06	26.3	63	SF		3	E		26		F
RAMY		1156E	1201	1207	N26	E24	5555	06	26.4	11D	SF		3	E		42		F
GOES		1225	1229	1233						8		C 3.0						
RAMY		1344	1356	1418	N27	E24	5555	06	26.4	34	SF	C 4.1	3	E		29		F
SVTO		1350	1352	1420	N28	E23	5555	06	26.4	30	SF	C 4.1	3	E		28		F
HOLL		1538	1538	1545	N25	E22	5555	06	26.3	7	SF		3	E		28		
HOLL		1546	1547	1552	N26	E22	5555	06	26.4	6	SF		3	E		26		
SVTO		1558	1604	1614D	N27	E20	5555	06	26.2	16D	SF	C 7.6	2	E		36		F
RAMY		1603	1605	1619	N25	E21	5555	06	26.3	16	SF	C 7.6	3	E		42		F
GOES		1821	1825	1830						9		C 2.0						
HOLL		1850	1852	1916	N26	E21	5555			26	SN			E		53		K
HOLL		1850	1859	1916	N26	E21	5555	06	26.4	26	SF	C 7.0	3	E		50		
PALE		1852	1855	1916	N27	E20	5555	06	26.3	24	SF	C 7.0	3	E		45		F
GOES		2219E	2222	2245D						26D		C 3.6						
HOLL	25	0008E	0011U	0033	S18	E17	5556	06	26.3	25D	SF		3	E		26		F
HOLL		0104	0112	0143	S18	W54	5542	06	20.9	39	SF		3	E		27		

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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 Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
PALE	25	0351	0351	0407	N27	E14	5555	06 26.2	16	SF	M 1.1	3	E		78		F
LEAR		0541	0541	0549	N26	E13	5555	06 26.2	8	SF	C 2.7	4	E		34		
LEAR		0608	0612	0619	N26	E12	5555	06 26.2	11	SF		4	E		19		
SVTO		0733	0734	0748	S19	E30	5561	06 27.6	15	SF		3	E		15		
LEAR		0738	0740	0746	S22	E28	5561	06 27.5	8	SF		4	E		11		
LEAR		0817	0819	0844	N27	E10	5555	06 26.1	27	SF	C 1.5	3	E		37		
GOES		0827	0841	0849					22		C 2.1						
SVTO		0829	0829	0838	N28	E09	5555	06 26.0	9	SF		3	E		22		
LEAR		0838	0839	0843	S20	E11	5556	06 26.2	5	SF		3	E		14		F
SVTO		0943	0944	0957	N28	E11	5555	06 26.3	14	SF	C 1.8	3	E		31		
GOES		1038	1041	1051					13		C 1.4						
SVTO		1158	1158	1213	S18	E10	5556	06 26.3	15	SF		3	E		30		F
SVTO		1308	1323	1332	S15	W03	5552	06 25.3	24	SF		3	E		13		
PALE		1809	1810	1820	S21	E24	5561	06 27.6	11	SF	C 1.9	3	E		23		
HOLL		2118	2120	2136	S16	E36	5563	06 28.6	18	SF		3	E		10		
LEAR	26	0008	0010	0016	S14	E34	5563	06 28.6	8	SF		3	E		22		
GOES		0138E	0141	0151D					13D		C 1.5						
LEAR		0349	0351	0400	N18	E39	5565	06 29.1	11	SF		3	E		24		
LEAR		0358	0358	0407	N26	E02	5555	06 26.3	9	SF	C 2.6	3	E		24		
SVTO		0537	0538	0546	N28	E16	5564	06 27.5	9	SF		3	E		14		
LEAR		0727	0729	0746	N20	W57	5544	06 21.9	19	SF		3	E		26		
SVTO		0727	0732	0751	N18	W57	5544	06 22.0	24	SF		3	E		35		
GOES		0958	1007	1024					26		C 1.9						
SVTO		1025	1027	1048	N20	E34	5565	06 29.0	23	SF		3	E		24		
SVTO		1025	1041	1048	N20	E34	5565		23	SF			E		31		K
SVTO		1049	1054	1109	N20	E34	5565	06 29.0	20	SF	C 2.5	3	E		69		
SVTO		1049	1104	1109	N20	E34	5558		20	SF			E		47		K
SVTO		1229	1232	1253	N17	W61	5544	06 21.9	24	SF		3	E		45		
SVTO		1246	1246	1256	N21	E30	5565	06 28.8	10	SF		3	E		18		
RAMY		1247	1248	1257	N22	E32	5565	06 29.0	10	SF		2	E		12		
RAMY		1325	1331	1340	N20	E30	5565	06 28.8	15	SF		3	E		16		
RAMY		1345	1351	1401	N21	W62	5544	06 21.8	16	SF		3	E		17		
HOLL		1346	1349	1402	N21	W63	5544	06 21.7	16	SF		3	E		32		
RAMY		1358	1408	1449	N19	E26	5565	06 28.6	51	SF		3	E		21		
HOLL		1410	1410	1416	S20	E12	5561	06 27.5	6	SF	C 2.4	3	E		21		F
SVTO		1539	1554	1701	N21	E29	5565	06 28.9	82	1F		3	E		155		F
RAMY		1541	1549	1620D	N18	E29	5569	06 28.9	39D	1N	M 1.9	3	E		115		FH
GOES		1837	1857	1909					32		C 3.3						
PALE		1950E	1950U	2003	N19	E29	5569	06 29.0	13D	SF	C 4.1	3	E		11		
HOLL		2058	2108	2153	N21	E27	5569	06 28.9	55	2B	C 8.6	4	E		279		FE
HOLL		2107	2109	2123	S14	E22	5563	06 28.5	16	SF		3	E		33		
PALE		2108	2109	2118D	N20	E29	5569	06 29.1	10D	1N		3	E		221		FE
HOLL		2136	2158	2202	N30	W02	5555	06 26.7	26	SF		3	E		17		F
HOLL		2205	2206	2212	N20	E28	5569	06 29.1	7	SF		3	E		13		
HOLL		2205	2207	2228	N21	W61	5544	06 22.2	23	SF		3	E		22		F
HOLL		2243	2251	2327	N20	E28	5569		44	SF			E		57		K
HOLL		2243	2315	2327	N20	E28	5569	06 29.1	44	SF	C 4.9	3	E		29		FE
HOLL	27	0009	0010	0032	N21	E26	5569	06 29.0	23	SN	C 5.7	4	E		56		FE
HOLL		0050	0056	0111	N22	E24	5569	06 28.9	21	SF		4	E		15		F
HOLL		0056	0100	0134	N21	E16	5565	06 28.3	38	SF		3	E		15		
HOLL		0109	0110	0116	S18	W20	5552	06 25.5	7	SF		3	E		14		
LEAR		0204	0207	0221	N22	W71	5544	06 21.6	17	SF	C 4.9	3	E		35		
GOES		0252	0258	0305					13		C 4.9						
SVTO		0442	0511	0654	N20	E22	5569	06 28.9	132	SF		3	E		41		F
SVTO		0522	0524	0533	N24	W08	5555	06 26.6	11	SF		3	E		27		F
SVTO		0554	0556	0559	N06	E09	5558	06 27.9	5	SF	C 2.4	3	E		13		
SVTO		0604	0605	0610	N07	E08	5558	06 27.8	6	SF		3	E		11		F
SVTO		0611	0611	0617	N07	E08	5558	06 27.8	6	SF		3	E		12		F
LEAR		0613	0614	0618	N19	E25	5569	06 29.2	5	SF	C 3.1	3	E		15		
SVTO		0622	0623	0625	N11	E09	5558	06 27.9	3	SF		3	E		15		F
SVTO		0644	0649	0658	N07	E07	5558	06 27.8	14	SF		3	E		14		F
LEAR		0648	0648	0657	N22	W73	5544	06 21.7	9	SF		3	E		10		
SVTO		0703	0703	0708	S18	E01	5561	06 27.4	5	SF		3	E		23		F
SVTO		0704	0804	0958	N21	E19	5569	06 28.7	174	SF	C 2.5	3	E		88		F
SVTO		0710	0710	0717	S20	W14	5556	06 26.2	7	SF		3	E		17		
SVTO		0710	0710	0717	N07	E07	5558	06 27.8	7	SF		3	E		19		F

Hα S O L A R F L A R E S

JUNE 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	27	0717	0718	0725	N18	E23	5569	06	29.0	8	SF	C 2.0	3	E		16		
SVTO		0832	0833	0838	S16	E15	5563	06	28.5	6	SF		3	E		17		
SVTO		0832	0841	0843	N25	W08	5555	06	26.7	11	SF		3	E		12		F
SVTO		1053	1057	1101	N07	E06	5558	06	27.9	8	SF		3	E		10		F
SVTO		1203	1217	1255	N21	E21	5569	06	29.1	52	SN	C 3.6	3	E		82		
RAMY		1225	1244	1314	N18	E20	5569	06	29.0	49	SF		4	E		29		F
HOLL		1331	1339	1421	N26	W15	5555	06	26.4	50	1F		3	E		122		F
SVTO		1332	1339	1425	N26	W15	5555	06	26.4	53	SF		3	E		73		UF
RAMY		1333	1337	1413	N27	W14	5555	06	26.5	40	SF		4	E		63		F
HOLL		1441	1441	1502	S19	W02	5561	06	27.4	21	SF		3	E		25		
HOLL		1647	1658	1718	S14	E11	5563	06	28.5	31	SF		3	E		45		
HOLL		1755	1806	1915	N20	E16	5569			80	SN			E		73		K
HOLL		1755	1833	1915	N20	E16	5569	06	29.0	80	SN	C 5.0	3	E		72		FE
HOLL		1846	1846	1854	N27	W17	5555	06	26.4	8	SF		3	E		12		F
HOLL		1907	1909	1946	N28	W20	5555	06	26.2	39	SF		3	E		20		F
HOLL		1945	1956	2016	S13	E10	5563	06	28.6	31	SF		3	E		96		UF
HOLL		1948	1949	1958	S15	W34	5552	06	25.2	10	SF		3	E		40		F
PALE		1952	1956	2004	S16	E09	5563	06	28.5	12	SF		3	E		23		
HOLL		2000	2004	2015	N20	E15	5569	06	29.0	15	SF		3	E		20		FE
HOLL		2022	2033	2118	N21	E16	5569			56	SF			E		28		K
HOLL		2022	2052	2118	N21	E16	5569	06	29.1	56	SF		3	E		27		
HOLL		2023	2026	2046	N28	W20	5555	06	26.3	23	SF		3	E		21		
HOLL		2052	2053	2113	S13	E08	5563	06	28.5	21	SF		3	E		35		F
HOLL		2053	2053	2058	S20	W04	5561	06	27.6	5	SF		3	E		12		
HOLL		2122	2125	2140	N21	E01	5565	06	28.0	18	SF		3	E		13		
HOLL		2129	2132	2135	N20	E14	5569	06	29.0	6	SF		3	E		10		
HOLL		2326	2333	2436	N27	W20	5555	06	26.4	70	SF	C 2.1	3	E		66		
HOLL	28	0040	0047	0059	N20	E12	5569	06	28.9	19	SF		3	E		22		
HOLL		0105	0105	0110	N11	W02	5558	06	27.9	5	SF		3	E		11		
SVTO		0444E	0446	0503	N18	W85	5544	06	21.7	19D	SF		3	E				
SVTO		0537	0541	0553	N21	E09	5569	06	28.9	16	SF		3	E		28		
SVTO		0635	0643	0700	N19	W77	5544	06	22.4	25	SF		3	E		20		
LEAR		0825	0830U	0831D	N27	W25	5555	06	26.4	6D	SF		2	E		63		
SVTO		0826	0833	0917	N27	W26	5555	06	26.3	51	SF	C 4.7	3	E		59		F
SVTO		0919	0921	0930	S15	W40	5552	06	25.4	11	SF		3	E		72		
SVTO		0938	0943	0947	N29	W25	5555	06	26.4	9	SF		3	E		15		
GOES		1050	1053	1056						6		C 1.7						
GOES		1109	1113	1118						9		C 1.8						
GOES		1129	1132	1135						6		C 1.7						
RAMY		1139E	1139U	1245	N21	E08	5569	06	29.1	66D	SF		2	E		17		F
SVTO		1302	1302	1353	N10	W09	5558	06	27.9	51	SN	C 8.4	3	E		63		F
SVTO		1302	1320	1353	N10	W09	5558			51	SN			E		49		K
RAMY		1308	1319U	1348D	N07	W08	5558	06	27.9	40D	SF		2	E		35		
HOLL		1323E	1327	1349	N08	W09	5558	06	27.9	26D	SF	C 2.7	3	E		50		
SVTO		1503	1506	1515	S16	W14	5561	06	27.6	12	SF		3	E		22		
SVTO		1616	1617	1630	N10	W11	5558	06	27.8	14	SF		3	E		17		
HOLL		1631	1635	1641	S16	W45	5552	06	25.3	10	SF		3	E		18		F
HOLL		1638	1639	1657	N27	W31	5555	06	26.3	19	SN		3	E		47		FE
PALE		1639	1639	1648	N29	W29	5555	06	26.4	9	SF		3	E		32		F
SVTO		1639	1639	1651	N28	W32	5555	06	26.2	12	SF		3	E		28		
RAMY		1644E	1644U	1655	N26	W30	5555	06	26.4	11D	SF		1	E		79		
HOLL		1653	1654	1708	N20	E06	5569	06	29.2	15	SF		3	E		16		
RAMY		1654	1655	1713	N20	E04	5569	06	29.0	19	SF		3	E		17		F
PALE		1701	1702	1710	N21	E07	5569	06	29.2	9	SF		3	E		10		F
SVTO		1702	1702	1710	S15	W45	5552	06	25.3	8	SF		3	E		48		
PALE		1702	1702	1711	S14	W46	5552	06	25.2	9	SF		3	E		39		F
RAMY		1702	1702	1712	S15	W45	5552	06	25.3	10	SF		3	E		50		
HOLL		1702	1705	1717	S15	W46	5552	06	25.2	15	SF		3	E		45		F
HOLL		1738	1738	1747	S15	W46	5552	06	25.2	9	SF	C 1.6	3	E		50		F
PALE		1738	1739	1744	S19	W43	5552	06	25.4	6	SF	C 1.6	3	E		29		F
RAMY		1738	1739	1747	S16	W46	5552	06	25.2	9	SF	C 1.6	3	E		39		F
PALE		1742	1746	1813	N28	W29	5555	06	26.5	31	SF	C 2.6	3	E		26		
HOLL		1743	1747	1813	N27	W29	5555	06	26.5	30	SF	C 2.6	3	E		38		FE
PALE		1746	1746	1750D	N09	W10	5558	06	28.0	4D	SF		3	E		18		
RAMY		1746	1746	1803	N09	W11	5558	06	27.9	17	SF		3	E		30		
HOLL		1746	1747	1800	N09	W11	5558	06	27.9	14	SF		3	E		33		
RAMY		1808	1818	1913	N20	E03	5569	06	29.0	65	1N	M 2.4	3	E		222		FE

Hα SOLAR FLARES

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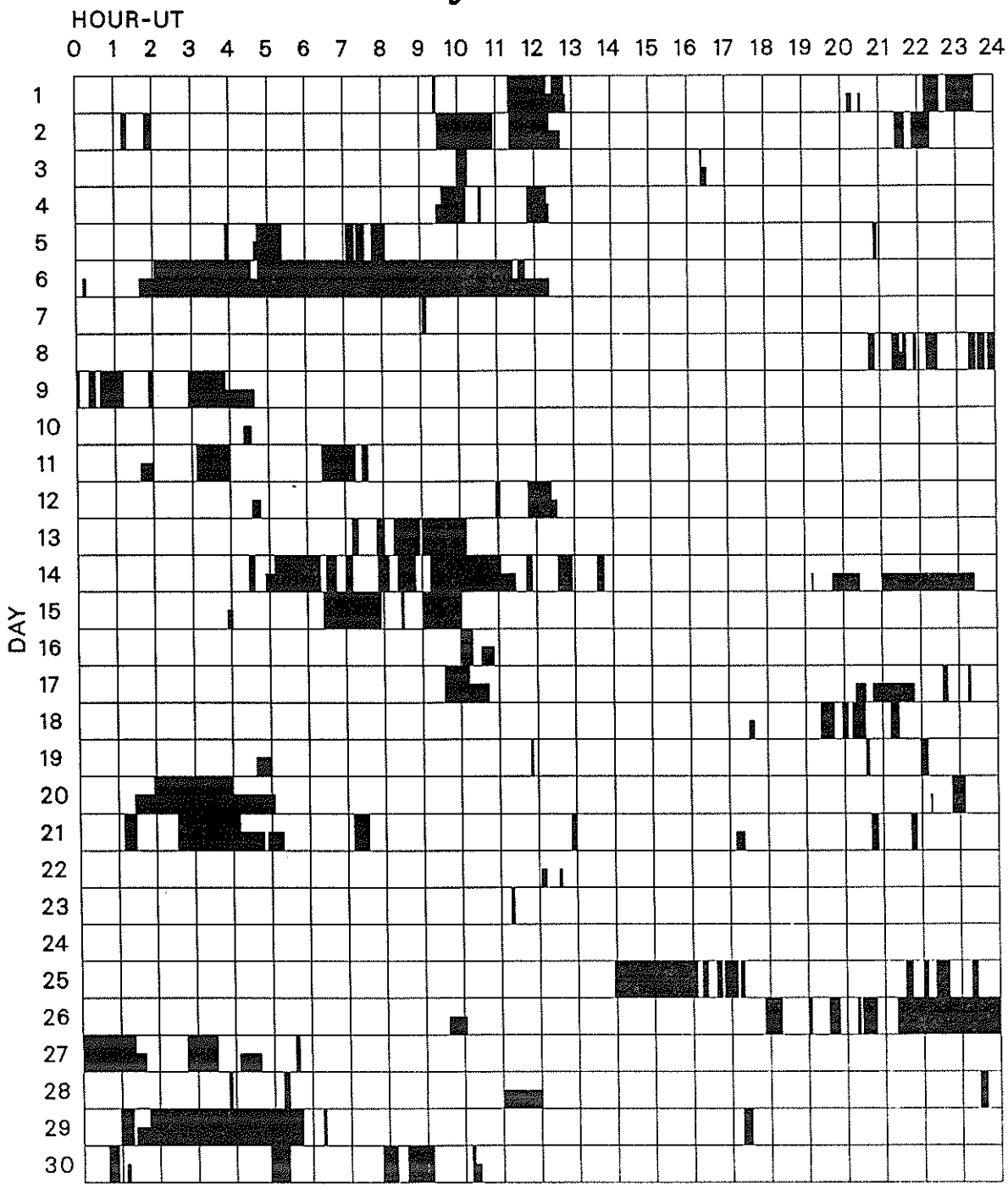
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
HOLL	28	1808	1819	1915	N19	E05	5569	06	29.1	67	2B	M 2.4	3	E		294		ZU
PALE		1812E	1819	1917D	N20	E04	5569	06	29.1	65D	1F	M 2.4	3	E		201		F
RAMY		1816	1817	1836	N08	W12	5558	06	27.9	20	SF		3	E		14		F
HOLL		2215	2216	2226	N23	W07	5565	06	28.4	11	SF		3	E		31		
HOLL	29	0013	0014	0030	N26	W33	5555	06	26.4	17	SF		3	E		20		F
PALE		0015	0022	0034	N29	W33	5555	06	26.4	19	SF		3	E		36		
PALE		0258	0309	0425	N29	W27	5555	06	27.0	87	2F	C 7.3	3	E		346		FU
SVTO		0550	0557	0603	S20	W22	5561	06	27.6	13	SF		3	E		19		
SVTO		0653	0703	0725	N06	W19	5558	06	27.9	32	SF		3	E		32		
SVTO		0743	0745	0756	N26	W39	5555	06	26.3	13	SF		3	E		16		
RAMY		1819E	1819U	1831	S18	W29	5561	06	27.5	12D	SF		3	E		14		F
HOLL		1854	1857	1904	N14	W56	5567	06	25.5	10	SF		3	E		16		
HOLL		2010	2013	2039	S18	W31	5561			29	SF			E		50		K
HOLL		2010	2021	2039	S18	W31	5561	06	27.5	29	SF	C 2.7	3	E		55		
HOLL		2026	2027	2032	N27	W45	5555	06	26.3	6	SF		3	E		15		
HOLL		2057	2114	2342	N32	W41	5555	06	26.6	165	2B	M 3.7	3	E		365		F
HOLL		2128	2133	2135	N21	W12	5569	06	29.0	7	SF		3	E		16		
HOLL		2203	2204	2210	N21	W12	5569	06	29.0	7	SF		3	E		13		
RAMY		2214E	2215U	2234D	N28	W39	5555	06	26.9	20D	SF		1	E		45		Y
HOLL		2308	2312	2329	N23	W18	5569	06	28.6	21	SF		3	E		44		
HOLL		2326	2326	2337	S18	W31	5561	06	27.6	11	SF		3	E		16		
HOLL		2341	2341	2353	N20	W12	5569	06	29.1	12	SF		3	E		21		
GOES	30	0600	0616	0923						203		M 3.6						
SVTO		0913	0914	0948	N08	W34	5558	06	27.8	35	SF		2	E		56		
RAMY		1113	1120	1146	N08	W36	5558	06	27.8	33	1F	C 4.8	3	E		204		
SVTO		1120E	1122U	1149D	N08	W35	5558	06	27.8	29D	1F	C 4.8	1	E		111		F
RAMY		1302	1335	1348	N20	W23	5569	06	28.8	46	SF	C 6.2	3	E		34		
HOLL		1324	1336	1347	N20	W22	5569	06	28.9	23	SN	C 6.2	3	E		57		FE
HOLL		1402	1409	1444	N20	W24	5569			42	SF			E		43		K
HOLL		1402	1429	1444	N20	W24	5569	06	28.7	42	SF		3	E		42		FE
HOLL		1403	1410	1422	N15	W67	5567	06	25.5	19	SF		3	E		14		
RAMY		1403	1428	1439	N18	W23	5569	06	28.8	36	SF	C 6.5	3	E		37		FH
HOLL		1451	1452	1536	N21	W21	5569			45	1N			E		48		K
RAMY		1451	1501	1530	N18	W23	5569	06	28.9	39	SN	M 2.5	3	E		84		FE
HOLL		1451	1501	1536	N21	W21	5569	06	29.0	45	1N	M 2.5	3	E		109		ZE
HOLL		1452	1513	1530	S19	E77	5572	07	6.5	38	SF		3	E		50		F
RAMY		1456	1457	1503	S17	E72	5572	07	6.1	7	SF		3	E		21		
HOLL		1623	1627	1657	N21	W22	5569			34	SN			E		18		K
HOLL		1623	1643	1657	N21	W22	5569	06	29.0	34	SN	C 3.3	3	E		37		FE
RAMY		1625	1643	1657	N18	W25	5569	06	28.8	32	SF	C 3.3	3	E		26		FE
HOLL		1658	1704	1731	N20	W25	5569			33	SF			E		65		K
HOLL		1658	1722	1731	N20	W25	5569	06	28.8	33	SN	C 3.9	3	E		62		FE
RAMY		1701	1704	1715	N18	W25	5569	06	28.8	14	SF		4	E		23		
RAMY		1719	1722	1734	N18	W24	5569	06	28.9	15	SF	C 3.9	4	E		42		FH
PALE		1720	1722	1728	N20	W24	5569	06	28.9	8	SF	C 3.9	3	E		27		
RAMY		1736	1739	1811	N19	W24	5569			35	SF			E		73		K
RAMY		1736	1747	1811	N19	W24	5569	06	28.9	35	SN	M 2.1	4	E		71		FE
HOLL		1737	1738	1816	N21	W24	5569	06	28.9	39	SN		3	E		72		UE
HOLL		1737	1747	1816	N21	W24	5569			39	SF	M 2.1		E		90		K
HOLL		1830	1831	1857	N20	W25	5569			27	SN			E		79		K
HOLL		1830	1840	1857	N20	W25	5569	06	28.8	27	SN	C 3.7	3	E		76		EH
RAMY		1843E	1843U	1848D	N18	W25	5569	06	28.9	5D	SF	C 3.7	2	E		34		FH
HOLL		1859	1901	1906	N08	W40	5558	06	27.8	7	SF		3	E		19		F
HOLL		2017	2024	2040	N21	W24	5569	06	29.0	23	SF		3	E		32		F
HOLL		2112	2113	2119	S15	E78	5572	07	6.8	7	SF		3	E		32		F
HOLL		2349	2351	2443	N16	W24	5569	06	29.2	54	SF		3	E		34		
PALE		2353	2353	2404	N17	W25	5569	06	29.1	11	SF		3	E		17		

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

JUNE 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.

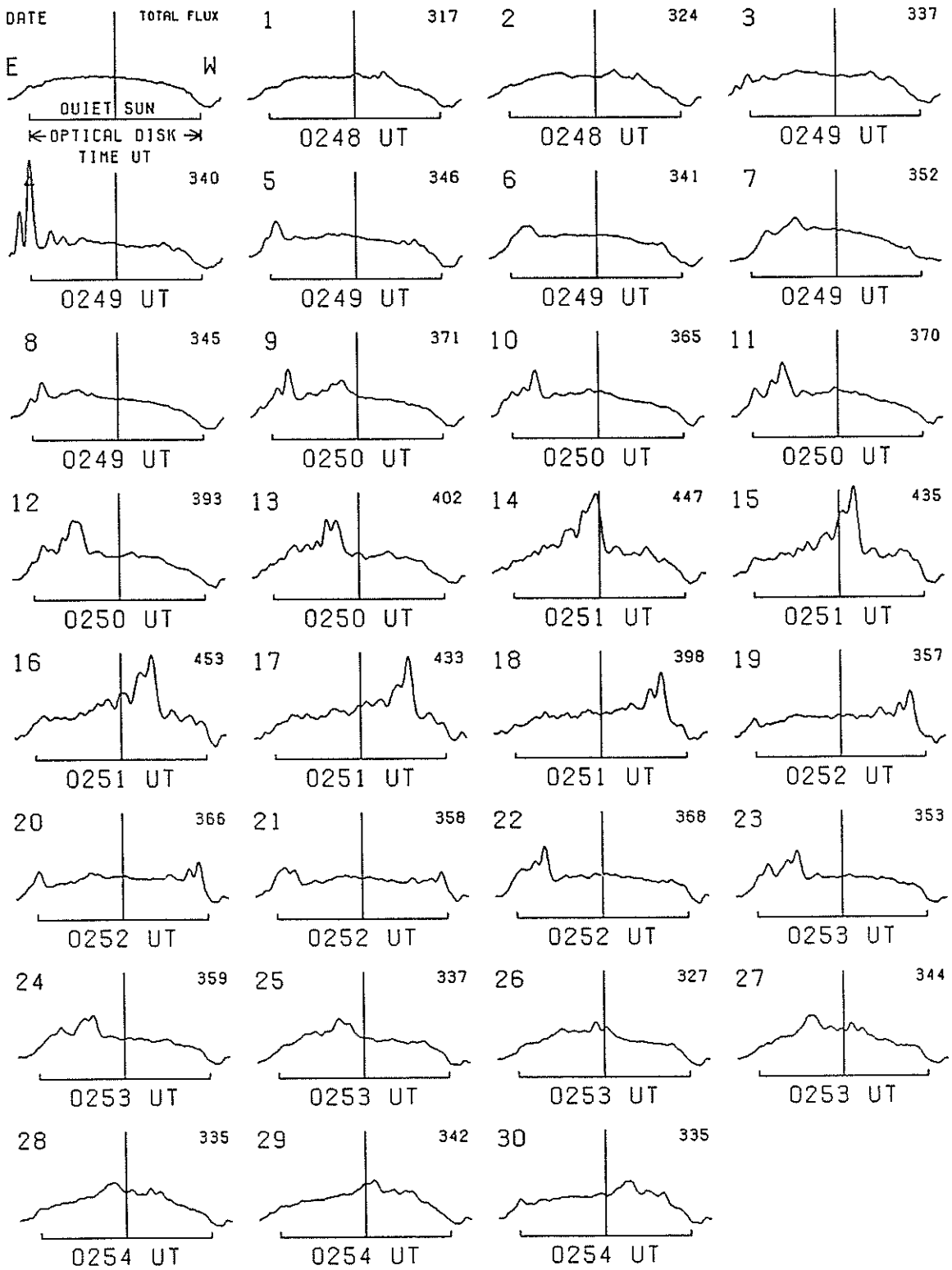
Holloman Learmonth Palehua Ramey San Vito

EAST-WEST SOLAR SCANS

JUNE 1989

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

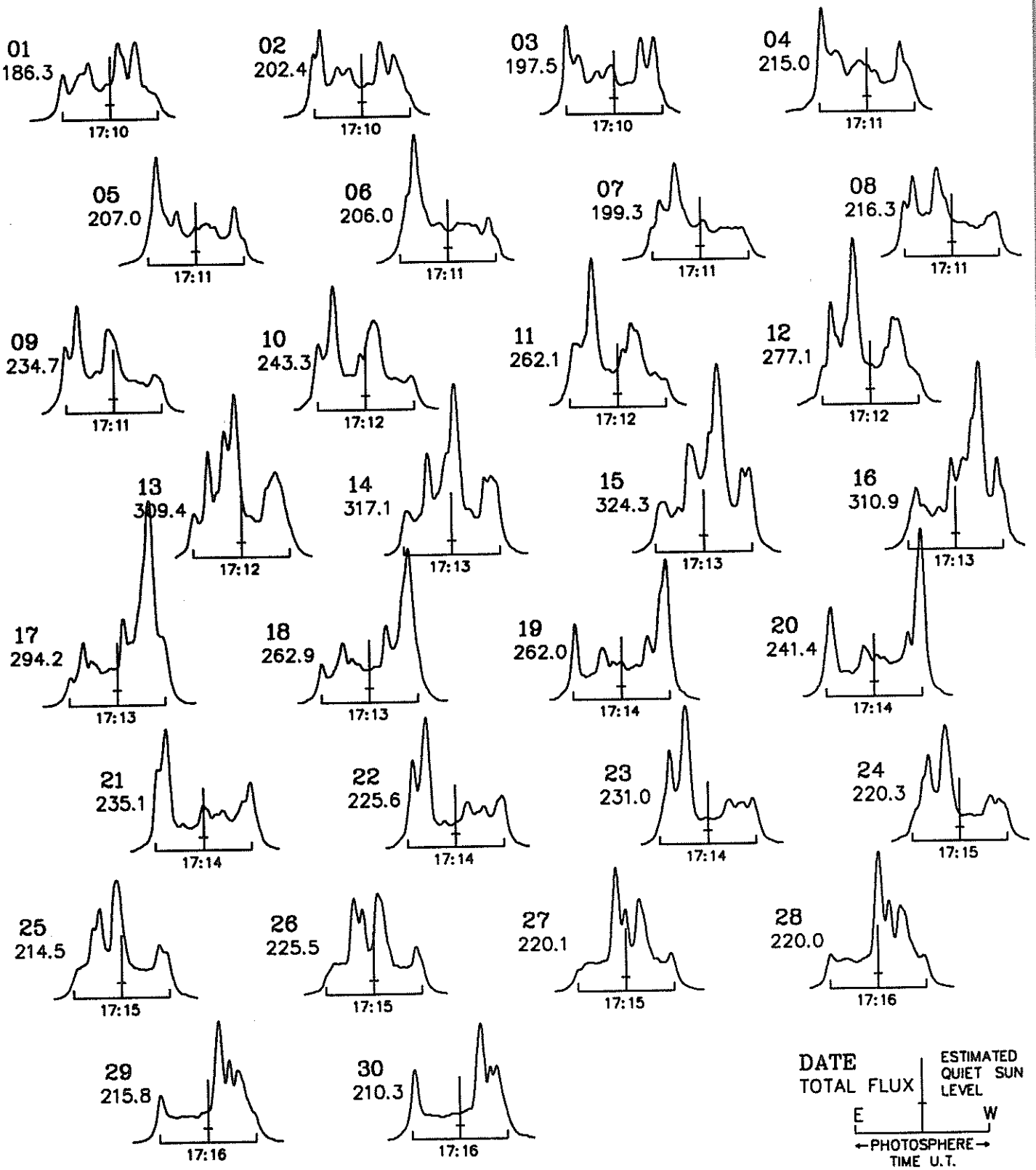


Note: All scans taken with 3 dB attenuation. This means all scans are one-half normal height.

EAST – WEST SOLAR SCANS
JUNE 1989

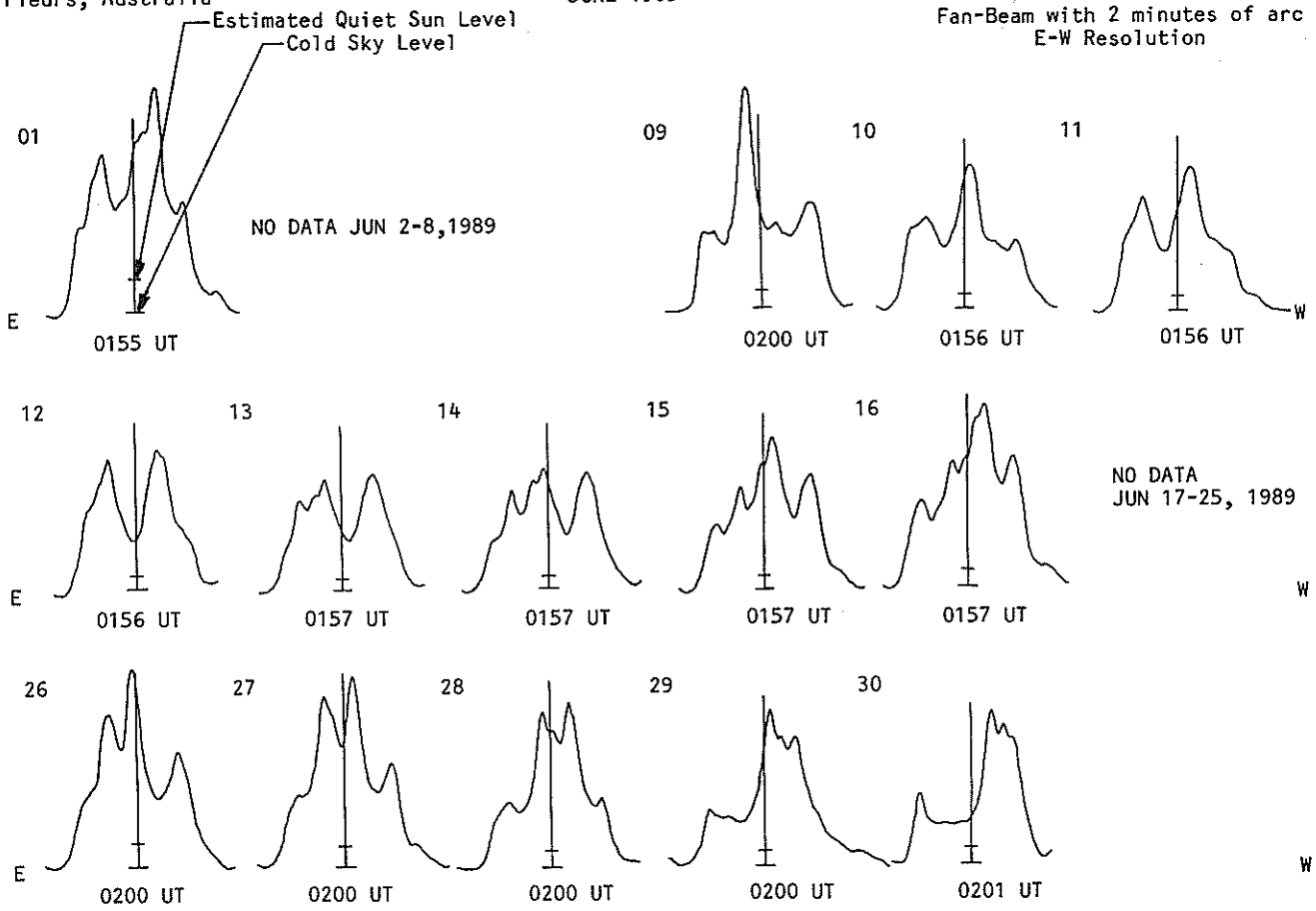
ALGONQUIN RADIO OBSERVATORY
CANADA

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

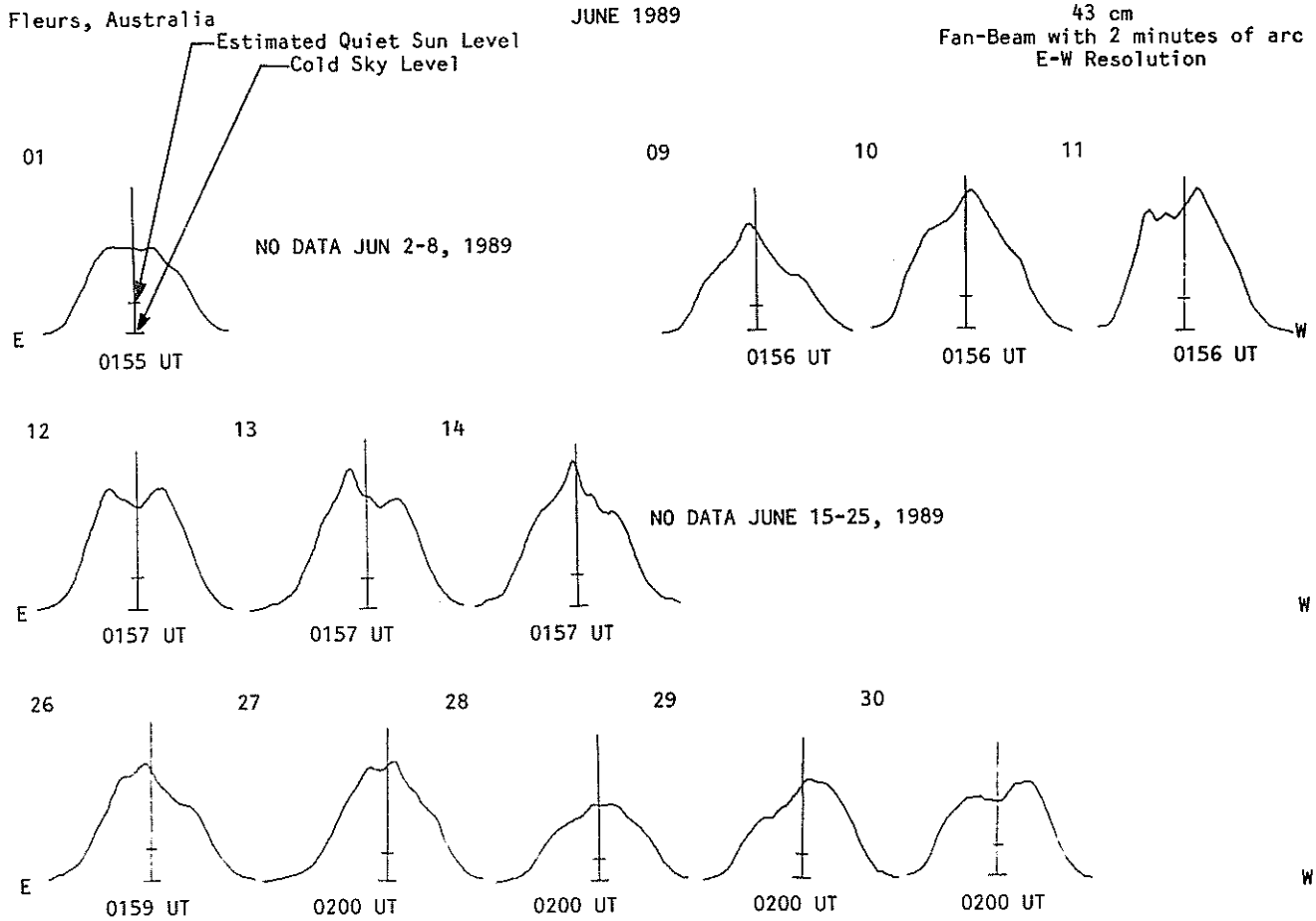


EAST-WEST SOLAR SCANS

Fleurs, Australia — JUNE 1989 — 21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

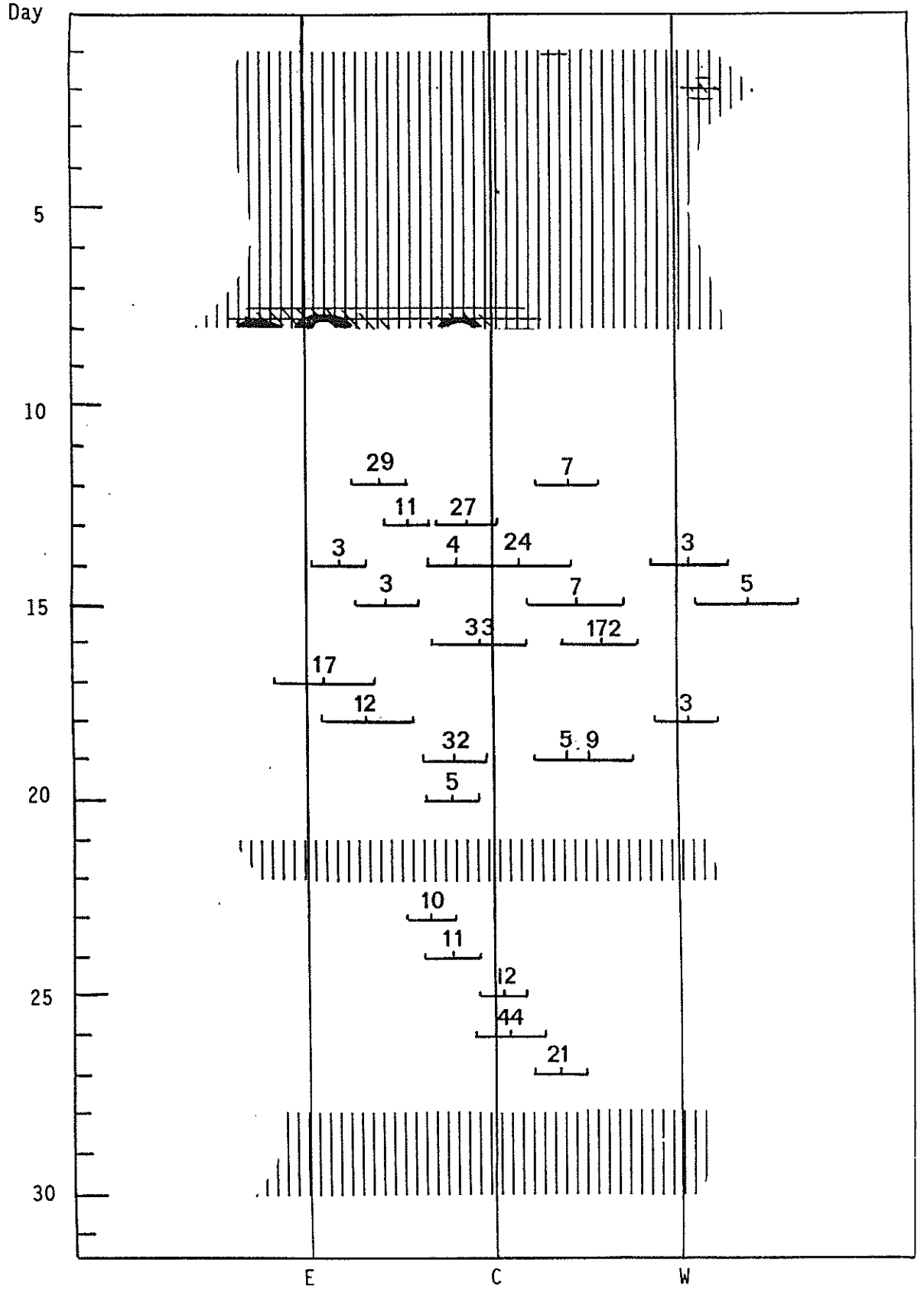


Fleurs, Australia — JUNE 1989 — 43 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



SOLAR INTERFEROMETRIC OBSERVATIONS

Nancay JUNE 1989 164 MHz



SOLAR RADIO EMISSION
Selected Fixed Frequency Events

JUNE 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2800	OTTA	20	GRF	1434.0	1441.0	30.0	7.6	3.0		
	2800	OTTA	20	GRF	1529.0	1619.0	300.0	6.8	3.0		
02	2695	SGMR	8	S	1013.0E	1014.0	2.0D	120.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1014.0E	1014.0	1.0D	70.0			QL=1 ST=3 TYP=3
	2800	OTTA	40	F	1328.0	1430.0	90.0	-4.0	1.0		
	8800	SVTO	49	GB	1550.0E	1602.0	490.0D	1100.0			QL=1 ST=1 TYP=7
	2800	OTTA	47	GB	1557.0	1604.0	11.5	598.0	180.0		
	2695	SGMR	49	GB	1558.0E	1603.0	17.0D	460.0			QL=1 ST=2 TYP=7
	2695	SVTO	49	GB	1558.0E	1603.0	13.0D	450.0			QL=1 ST=3 TYP=7
	8800	SVTO	49	GB	1559.0E	1602.0	13.0D	1100.0			QL=1 ST=3 TYP=7
	8800	SGMR	49	GB	1559.0E	1602.0	28.0D	1400.0			QL=1 ST=2 TYP=7
	3200	BERN	46	C	1559.0	1602.3	14.0	265.0			
	8400	BERN	46	C	1559.0	1602.3	14.0	733.0			
	2800	OTTA	29	PBI	1608.5	1608.5	158.0	24.9	12.0		
	2800	OTTA	4	S/F	1608.5	1610.7	31.0	176.4	53.0		
	2800	OTTA	20	GRF	1732.0	1736.5	33.0	8.1	2.0		
03	8800	LEAR	4	S/F	0309.0E	0313.0	6.0D	170.0			QL=1 ST=2 TYP=5
	2695	LEAR	4	S/F	0309.0E	0310.0	8.0D	140.0			QL=1 ST=2 TYP=5
	2695	PALE	8	S	0309.0E	0310.0	2.0D	130.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0309.0E	0310.0	1.0D	66.0			QL=1 ST=2 TYP=3
	8400	BERN	4	S/F	1016.5	1017.3	1.5	241.0			
	3200	BERN	4	S/F	1016.5	1017.3	1.5	71.0			
	8800	SGMR	8	S	1017.0E	1017.0	1.0D	160.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1017.0E	1017.0	1.0D	67.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1017.0E	1017.0	U	63.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1017.0E	1017.0	1.0D	180.0			QL=1 ST=2 TYP=3
	2800	OTTA	24	R	1132.0	1200.0	95.0	7.7	3.0		
	2800	OTTA	3	S	1216.0	1218.0	4.5	127.1	25.0		
	2695	SGMR	8	S	1217.0E	1217.0	1.0D	110.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1217.0E	1217.0	U	96.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1308.0	1325.5	21.0	170.5	51.0		
	3200	BERN	46	C	1317.0	1325.0	15.0	147.0			
	8400	BERN	46	C	1317.0	1322.3	15.0	290.0			
	8800	SGMR	4	S/F	1318.0E	1322.0	14.0D	370.0			QL=1 ST=2 TYP=5
	2695	SVTO	4	S/F	1318.0E	1325.0	12.0D	140.0			QL=1 ST=2 TYP=5
	8800	SVTO	4	S/F	1318.0E	1322.0	12.0D	260.0			QL=1 ST=2 TYP=5
	2695	SGMR	20	GRF	1323.0E	1325.0	9.0D	150.0			QL=1 ST=2 TYP=2
	2800	OTTA	29	PBI	1334.0	1334.0	107.0	13.4	6.0		
	2800	OTTA	23	GRF	1347.0	1353.0	80.0	6.9	3.0		
	2800	OTTA	22	GRF	1617.0	1625.0	90.0	4.1	2.0		
	2800	OTTA	4	S/F	1654.0	1658.5	21.0	23.1	6.0		
	2800	OTTA	3	S	1828.0	1830.5	10.0	138.9	42.0		
	3200	BERN	3	S	1828.0	1830.4	7.0	136.0			
	2800	OTTA	29	PBI	1838.0	1838.0	103.0	22.3	11.0		
04	2695	LEAR	4	S/F	0212.0E	0216.0	1308.0D	160.0			QL=1 ST=1 TYP=3
	8800	LEAR	4	S/F	0213.0E	0216.0	1307.0D	66.0			QL=1 ST=1 TYP=3
	2695	PALE	4	S/F	0214.0E	0216.0	3.0D	190.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0215.0E	0216.0	2.0D	73.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0249.0E	0250.0	8.0D	280.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0249.0E	0250.0	6.0D	170.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	0249.0E	0250.0	3.0D	290.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	0250.0E	0250.0	2.0D	170.0			QL=1 ST=2 TYP=3
	8400	BERN	46	C	0743.0	0746.0	8.0	72.0			
	3200	BERN	46	C	0743.0	0746.0	8.0	36.0			
	2695	LEAR	4	S/F	0743.0E	0745.0	6.0D	34.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0745.0E	0746.0	4.0D	71.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	1320.0	1600.0	280.0	11.0	5.0		
	2800	OTTA	4	S/F	1404.0	1414.0	20.0	36.2	10.0		
	3200	BERN	4	S/F	1407.0	1412.5	8.0	32.0			
	2800	OTTA	3	S	1518.5	1520.0	5.0	27.4	8.0		
	2800	OTTA	23	GRF	1632.0	1638.0	55.0	16.4	6.0		
	8800	SVTO	4	S/F	1636.0E	1638.0	3.0D	55.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	2115.0E	2117.0	7.0D	410.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	2115.0E	2117.0	20.0D	590.0			QL=1 ST=2 TYP=6
	2800	OTTA	22	GRF	2116.0	2131.0	165.0	28.6	14.0		

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

JUNE 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
05	2695	PENT	22	GRF	0104.0	0115.5	40.0D	35.7	10.0		
	8800	LEAR	4	S/F	0130.0E	0131.0	3.0D	280.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0130.0E	0131.0	2.0D	290.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0131.0E	0131.0	U	19.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0308.0E	0308.0	U	26.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0719.0E	0720.0	4.0D	280.0			QL=1 ST=2 TYP=3
	3200	BERN	3	S	0719.2	0720.3	2.5	53.0			
	8400	BERN	3	S	0719.2	0720.3	2.5	279.0			
	2695	SVTO	8	S	0720.0E	0720.0	1.0D	51.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1112.0E	1113.0	8.0D	200.0			QL=1 ST=2 TYP=3
	8800	SGMR	4	S/F	1113.0E	1113.0	3.0D	220.0			QL=1 ST=2 TYP=3
	8400	BERN	4	S/F	1113.0	1113.5	4.0	170.0			
	3200	BERN	4	S/F	1113.0	1114.5	4.0	40.0			
	2800	OTTA	24	R	1500.0	2120.0	480.0	12.2	6.0		
	2800	OTTA	40	F	1544.0	1658.0	100.0	6.9	2.0		
	2800	OTTA	4	S/F	1816.0	1822.0	8.0	24.8	11.0		
	2800	OTTA	29	PBI	1824.0	1824.0	62.0	8.5	4.0		
	2800	OTTA	3	S	2134.0	2136.0	6.0	220.2	66.0		
	8800	SGMR	49	GB	2134.0E	2135.0	11.0D	600.0			QL=1 ST=2 TYP=6
	2695	PALE	8	S	2135.0E	2135.0	2.0D	190.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	2135.0E	2135.0	8.0D	190.0			QL=1 ST=2 TYP=3
	2800	OTTA	29	PBI	2141.0	2141.0	31.0	20.4	10.0		
	2695	PENT	3	S	2341.5	2343.0	3.0	67.8	13.0		
06	8400	BERN	3	S	1056.0	1058.5	3.5	119.0			
	3200	BERN	3	S	1056.0	1058.5	3.5	30.0			
	8800	SGMR	4	S/F	1057.0E	1058.0	3.0D	150.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1632.0	1632.5	2.0	32.8	9.0		
	8800	SVTO	8	S	1632.0E	1632.0	1.0D	140.0			QL=1 ST=2 TYP=3
	8400	BERN	3	S	1632.1	1632.3	1.0	98.0			
	3200	BERN	3	S	1632.1	1632.3	1.0	30.0			
	2800	OTTA	29	PBI	1634.0	1634.0		4.9			
	2800	OTTA	20	GRF	1639.0	1726.0	165.0	5.0	2.0		
07	8800	PALE	4	S/F	0134.0E	0135.0	3.0D	220.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1008.0E	1009.0	4.0D	640.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	1008.0E	1010.0	3.0D	80.0			QL=1 ST=2 TYP=3
	3200	BERN	46	C	1008.0	1009.3	3.5	83.0			
	8400	BERN	46	C	1008.0	1009.3	3.5	520.0			
	2695	SGMR	4	S/F	1009.0E	1010.0	6.0D	110.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	1009.0E	1009.0	6.0D	650.0			QL=1 ST=2 TYP=6
	3200	BERN	3	S	1047.0	1049.0	4.5	48.0			
	8400	BERN	3	S	1047.0	1049.0	4.5	114.0			
	8800	SVTO	4	S/F	1047.0E	1049.0	4.0D	120.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1048.0E	1049.0	2.0D	96.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	1905.0E	1906.0	1.0D	55.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1905.0E	1906.0	1.0D	68.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	1907.0	1910.5	75.0	25.7	7.0		
	8800	SGMR	4	S/F	1910.0E	1912.0	5.0D	69.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	2027.0	2044.0	87.0	16.3	6.0		
	2800	OTTA	22	GRF	2204.0	2212.5	108.0	28.2	8.0		
08	2695	SVTO	8	S	0814.0E	0814.0	1.0D	68.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0814.0E	0814.0	1.0D	86.0			QL=1 ST=2 TYP=3
	8400	BERN	4	S/F	0814.0	0814.3	1.5	85.0			
	3200	BERN	4	S/F	0814.0	0814.3	1.5	78.0			
	2695	SVTO	4	S/F	0913.0E	0914.0	3.0D	130.0			QL=1 ST=2 TYP=3
	3200	BERN	4	S/F	0913.2	0914.1	4.0	135.0			
	8400	BERN	4	S/F	0913.2	0914.1	4.0	129.0			
	2800	OTTA	3	S	1307.0	1308.0	5.0	36.1	7.0		
	2800	OTTA	3	S	1325.0	1326.0	6.0	12.6	3.0		
09	2695	PALE	4	S/F	0015.0E	0020.0	21.0D	240.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0021.0E	0021.0	U	60.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1911.0	1912.0	5.0	46.1	13.0		
	8800	SGMR	8	S	1916.0E	1916.0	2.0D	60.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	2251.0	2253.0	9.0	72.0	22.0		
	8800	SGMR	4	S/F	2251.0E	2252.0	3.0D	89.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	2252.0E	2252.0	1.0D	73.0			QL=1 ST=2 TYP=3

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

JUNE 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
10	2695	SVTO	4	S/F	0824.0E	0826.0	3.0D	61.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1221.0	1224.0	8.0	61.3	18.0		
	2695	SGMR	4	S/F	1222.0E	1223.0	4.0D	54.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1222.0E	1224.0	2.0D	59.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	1449.0	1700.0	511.0	19.6	9.0		
12	8800	SVTO	8	S	0619.0E	0619.0	U	70.0			QL=1 ST=2 TYP=3
	8400	BERN	3	S	0635.4	0635.5	0.5	21.0			
	8400	BERN	4	S/F	1200.3	1200.5	1.0	27.0			
	2800	OTTA	3	S	1227.0	1229.5	5.0	48.4	14.0		
	2800	OTTA	24	R	1232.0	1232.0	640.0D	10.5			
	8400	BERN	3	S	1629.1	1629.3	1.5	26.0			
	2800	OTTA	21	GRF	1650.0	1658.0	35.0	12.6	5.0		
13	8400	BERN	3	S	0812.3	0812.5	1.5	18.0			
	2800	OTTA	22	GRF	1208.0	1322.0	245.0	22.2	11.0		
	8800	PALE	4	S/F	1941.0E	1942.0	3.0D	120.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	2349.0E	2350.0	1.0D	70.0			QL=1 ST=2 TYP=3
14	2695	PALE	8	S	0239.0E	0239.0	1.0D	220.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0239.0E	0239.0	1.0D	190.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0317.0E	0317.0	1.0D	80.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0606.0E	0607.0	2.0D	150.0			QL=1 ST=2 TYP=3
	3200	BERN	4	S/F	0606.4	0608.0	2.0	87.0			
	8400	BERN	4	S/F	0606.4	0607.2	2.0	145.0			
	2695	SVTO	4	S/F	0607.0E	0608.0	3.0D	200.0			QL=1 ST=2 TYP=3
	3200	BERN	4	S/F	0835.0	0839.0	8.0	27.0			
	2800	OTTA	22	GRF	1250.0	1309.0	35.0	8.5	4.0		
	8800	SGMR	8	S	1250.0E	1250.0	2.0D	59.0			QL=1 ST=2 TYP=5
	8800	SVTO	8	S	1250.0E	1250.0	1.0D	59.0			QL=1 ST=2 TYP=3
	2800	OTTA	28	PRE	1331.0	1352.5	21.5	19.5	9.0		
	2800	OTTA	3	S	1343.0	1344.0	2.0	13.7	4.0		
	8800	SVTO	8	S	1343.0E	1343.0	1.0D	45.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1343.0E	1343.0	U	40.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1346.0	1347.0	3.0	21.5	6.0		
	2695	SVTO	8	S	1346.0E	1346.0	1.0D	56.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1346.0E	1347.0	3.0D	56.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1352.0E	1352.0	6.0D	320.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1352.0E	1352.0	1.0D	320.0			QL=1 ST=2 TYP=3
	8400	BERN	47	GB	1352.4	1352.4	0.3	665.0			
	3200	BERN	47	GB	1352.4	1352.4	0.3	266.0			
	2800	OTTA	4	S/F	1352.5	1352.9	10.5	433.0	87.0		
	2800	OTTA	29	PBI	1403.0	1403.0	95.0	35.8	18.0		
	2800	OTTA	22	GRF	1542.0	1552.0	40.0	11.7	6.0		
	2800	OTTA	4	S/F	1625.0	1630.0	7.0	35.8	11.0		
	3200	BERN	46	C	1625.0	1629.0	7.0	24.0			
	8800	SGMR	4	S/F	1625.0E	1625.0	4.0D	93.0			QL=1 ST=3 TYP=3
	8400	BERN	46	C	1625.0	1626.4	7.0	61.0			
	2800	OTTA	4	S/F	1817.0	1818.5	4.0	69.6	21.0		
	8800	SGMR	49	GB	1818.0E	1818.0	4.0D	560.0			QL=1 ST=2 TYP=6
	2695	SGMR	8	S	1818.0E	1818.0	1.0D	56.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	2019.0E	2019.0	1.0D	60.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	2019.0E	2019.0	1.0D	88.0			QL=1 ST=2 TYP=3
15	2695	PALE	8	S	0320.0E	0320.0	U	120.0			QL=1 ST=2 TYP=3
	3200	BERN	4	S/F	0541.0	0543.0	3.5	25.0			
	2695	SVTO	8	S	0942.0E	0942.0	1.0D	92.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0942.0E	0942.0	1.0D	79.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1001.0E	1003.0	4.0D	300.0			QL=1 ST=2 TYP=3
	8400	BERN	4	S/F	1002.0	1004.0	4.0	243.0			
	3200	BERN	4	S/F	1002.0	1004.0	4.0	132.0			
	8800	SGMR	8	S	1002.0E	1003.0	2.0D	180.0			QL=1 ST=3 TYP=3
	2695	SGMR	4	S/F	1003.0E	1004.0	4.0D	150.0			QL=1 ST=3 TYP=3
	8800	SGMR	8	S	1003.0E	1003.0	1.0D	110.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	1003.0E	1004.0	3.0D	190.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1033.0E	1035.0	3.0D	57.0			QL=1 ST=3 TYP=3
	8800	SGMR	8	S	1035.0E	1035.0	U	60.0			QL=1 ST=3 TYP=3
	2800	OTTA	3	S	1413.5	1420.0	8.0	179.7	54.0		
	2695	SGMR	4	S/F	1418.0E	1419.0	5.0D	170.0			QL=1 ST=2 TYP=3

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

JUNE 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
15	8800	SVTO	4	S/F	1418.0E	1419.0	7.0D	350.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	1418.0E	1419.0	5.0D	190.0			QL=1 ST=2 TYP=3
	8800	SGMR	4	S/F	1418.0E	1419.0	11.0D	380.0			QL=1 ST=2 TYP=3
	8400	BERN	46	C	1418.0	1419.4	3.5	212.0			
	3200	BERN	46	C	1418.0	1419.4	3.5	83.0			
	2800	OTTA	29	PBI	1425.5	1425.5	230.0	18.8	9.0		
	2800	OTTA	3	S	1708.0	1715.0	12.0	95.2	29.0		
	8400	BERN	3	S	1713.3	1714.4	2.5	50.0			
	3200	BERN	3	S	1713.3	1714.4	2.5	41.0			
	8800	PALE	8	S	1714.0E	1714.0	1.0D	76.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	1714.0E	1714.0	2.0D	110.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1714.0E	1714.0	2.0D	86.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1714.0E	1714.0	3.0D	93.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1714.0E	1714.0	2.0D	92.0			QL=1 ST=3 TYP=3
	8800	SVTO	8	S	1714.0E	1714.0	1.0D	68.0			QL=1 ST=3 TYP=3
	2800	OTTA	29	PBI	1720.0	1720.0	44.0	21.9	11.0		
	2800	OTTA	28	PRE	1809.0	1911.0	62.0	34.4	17.0		
	8800	SGMR	4	S/F	1854.0E	1855.0	3.0D	81.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	1910.0E	1912.0	26.0D	1800.0			QL=1 ST=2 TYP=6
	2800	OTTA	47	GB	1911.0	1912.3	7.0	1100.0	220.0		
	2695	SGMR	49	GB	1911.0E	1912.0	7.0D	1100.0			QL=1 ST=2 TYP=6
	2800	OTTA	29	PBI	1918.0	1918.0	222.0	50.1	25.0		
	2695	PALE	4	S/F	1927.0E	1928.0	7.0D	86.0			QL=1 ST=2 TYP=3
16	8800	SVTO	8	S	0449.0E	0449.0	U	42.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0450.0E	0450.0	U	78.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0522.0E	0523.0	8.0D	110.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0614.0E	0614.0	1.0D	73.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	0738.0E	0739.0	3.0D	240.0			QL=1 ST=3 TYP=3
	8400	BERN	47	GB	0738.3	0739.0	4.0	878.0			
	2800	OTTA	26	FAL	1200.0	1200.0	105.0	15.9	8.0		
	8800	SGMR	8	S	1203.0E	1203.0	U	67.0			QL=1 ST=3 TYP=3
	8400	BERN	3	S	1203.0	1203.3	1.0	45.0			
	8400	BERN	4	S/F	1222.3	1223.4	2.0	44.0			
	3200	BERN	4	S/F	1222.3	1223.4	2.0	24.0			
	2800	OTTA	3	S	1223.0	1224.0	10.0	39.3	8.0		
	8800	SGMR	8	S	1223.0E	1223.0	1.0D	89.0			QL=1 ST=3 TYP=3
	8800	SVTO	8	S	1223.0E	1223.0	1.0D	80.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	1452.0	1522.0	100.0	15.9	8.0		
	2800	OTTA	24	R	1643.0	1725.0	137.0	19.0	13.0		
	2800	OTTA	4	S/F	1656.0	1657.0	4.0	12.7	5.0		
	2800	OTTA	4	S/F	1701.0	1703.0	5.0	36.7	11.0		
	2800	OTTA	3	S	1900.0	1902.0	5.0	44.4	13.0		
	8800	SGMR	20	GRF	1901.0E	1901.0	7.0D	210.0			QL=1 ST=2 TYP=2
	8800	PALE	4	S/F	1903.0E	1907.0	7.0D	99.0			QL=1 ST=2 TYP=5
	2800	OTTA	29	PBI	1905.0	1905.0	120.0	21.6	11.0		
17	8400	BERN	3	S	0940.0	0944.0	8.0	25.0			
	3200	BERN	3	S	0940.0	0944.0	8.0	9.0			
	2695	SGMR	8	S	1149.0E	1150.0	1.0D	57.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1544.5	1602.5	22.8	352.6	105.0		
	3200	BERN	46	C	1552.0	1604.0	45.0	192.0			
	8400	BERN	46	C	1552.0	1604.0	45.0	164.0			
	2695	SVTO	4	S/F	1554.0E	1602.0	486.0D	330.0			QL=1 ST=1 TYP=3
	8800	SVTO	4	S/F	1554.0E	1602.0	486.0D	200.0			QL=1 ST=1 TYP=3
	8800	SGMR	20	GRF	1555.0E	1601.0	6.0D	160.0			QL=1 ST=2 TYP=2
	8800	SGMR	20	GRF	1601.0E	1602.0	5.0D	250.0			QL=1 ST=2 TYP=2
	2695	SGMR	20	GRF	1601.0E	1602.0	5.0D	350.0			QL=1 ST=2 TYP=2
	2800	OTTA	4	S/F	1607.3	1611.2	13.0	76.9	23.0		
	8800	SGMR	20	GRF	1608.0E	1610.0	10.0D	180.0			QL=1 ST=2 TYP=2
	2695	SGMR	4	S/F	1608.0E	1611.0	10.0D	140.0			QL=1 ST=2 TYP=3
	2800	OTTA	29	PBI	1620.2	1620.2	170.0	51.3	15.0		
	2695	SGMR	8	S	1634.0E	1634.0	U	75.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1718.0	1721.0	13.0	44.9	13.0		
	2695	PALE	8	S	1720.0E	1720.0	1.0D	60.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	1720.0E	1720.0	1.0D	69.0			QL=1 ST=2 TYP=3
18	2695	LEAR	8	S	0209.0E	0209.0	1.0D	56.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0533.0E	0533.0	3.0D	85.0			QL=1 ST=2 TYP=3

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

JUNE 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
18	8800	LEAR	4	S/F	0533.0E	0533.0	4.0D	120.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0533.0E	0533.0	3.0D	120.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	0533.0E	0533.0	1107.0D	79.0			QL=1 ST=1 TYP=3
	3200	BERN	46	C	0533.1	0533.5	2.5	48.0			
	8400	BERN	46	C	0533.1	0533.5	2.5	80.0			
	2800	OTTA	3	S	1445.0	1446.5	7.0	34.4	10.0		
	8400	BERN	3	S	1618.4	1619.4	3.0	48.0			
	8800	SGMR	8	S	1619.0E	1619.0	1.0D	71.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1859.0E	1900.0	1.0D	280.0			QL=1 ST=2 TYP=3
	2695	PENT	3	S	2343.0	2344.5	9.0	77.3	23.0		
	2695	LEAR	8	S	2343.0E	2344.0	2.0D	64.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	2343.0E	2344.0	2.0D	32.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	2343.0E	2344.0	1.0D	84.0			QL=1 ST=2 TYP=3
19	2695	LEAR	20	GRF	0528.0E	0542.0	28.0D	160.0			QL=1 ST=2 TYP=2
	8800	LEAR	20	GRF	0530.0E	0542.0	38.0D	280.0			QL=1 ST=2 TYP=2
	8800	SVTO	4	S/F	0534.0E	0542.0	15.0D	270.0			QL=1 ST=2 TYP=3
	2695	SVTO	20	GRF	0536.0E	0543.0	14.0D	160.0			QL=1 ST=2 TYP=2
	8800	SVTO	4	S/F	0536.0E	0542.0	13.0D	270.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0745.0E	0745.0	3.0D	290.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0745.0E	0745.0	1.0D	180.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0745.0E	0745.0	2.0D	280.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0745.0E	0745.0	1.0D	190.0			QL=1 ST=2 TYP=3
	2800	OTTA	28	PRE	1442.0	1449.0	12.0	11.6	3.0		
	2800	OTTA	47	GB	1454.0	1458.5	18.0	742.0	222.0		
	2800	OTTA	29	PBI	1512.0	1535.0	348.0	40.2	16.0		
	2800	OTTA	4	S/F	1723.0	1725.5	10.0	124.7	25.0		
	2800	OTTA	3	S	2028.0	2028.5	2.0	59.9	20.0		
	2800	OTTA	4	S/F	2146.0	2157.5	62.0	253.5	76.0		
20	8800	LEAR	8	S	0814.0E	0814.0	1.0D	130.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0814.0E	0814.0	1.0D	160.0			QL=1 ST=2 TYP=3
	2695	SGMR	49	GB	1455.0E	1458.0	16.0D	590.0			QL=1 ST=2 TYP=6
	2695	SVTO	49	GB	1455.0E	1457.0	14.0D	560.0			QL=1 ST=2 TYP=6
	8800	SGMR	4	S/F	1455.0E	1457.0	20.0D	420.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1456.0E	1457.0	15.0D	320.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1529.0E	1529.0	U	38.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1645.0E	1645.0	U	80.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	1724.0E	1724.0	1.0D	110.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1724.0E	1724.0	U	98.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	2155.0E	2159.0	19.0D	760.0			QL=1 ST=2 TYP=7
	2695	SGMR	4	S/F	2155.0E	2157.0	16.0D	240.0			QL=1 ST=2 TYP=5
	2695	PALE	20	GRF	2156.0E	2157.0	14.0D	230.0			QL=1 ST=2 TYP=2
	8800	PALE	49	GB	2156.0E	2159.0	15.0D	520.0			QL=1 ST=2 TYP=6
21	2695	LEAR	8	S	0041.0E	0041.0	1.0D	57.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0445.0E	0449.0	13.0D	48.0			QL=1 ST=2 TYP=5
	2695	LEAR	8	S	0449.0E	0449.0	U	23.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1136.0E	1136.0	2.0D	130.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1136.0E	1136.0	2.0D	240.0			QL=1 ST=2 TYP=3
22	8800	SGMR	4	S/F	1444.0E	1444.0	5.0D	230.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1444.0E	1445.0	2.0D	83.0			QL=1 ST=2 TYP=3
23	8800	LEAR	8	S	0011.0E	0011.0	1.0D	40.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0134.0E	0135.0	3.0D	46.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0134.0E	0135.0	3.0D	17.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0135.0E	0135.0	U	59.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0456.0E	0457.0	2.0D	40.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0456.0E	0457.0	1.0D	33.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0748.0E	0748.0	1.0D	13.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0748.0E	0749.0	1.0D	22.0			QL=1 ST=2 TYP=3
24	2695	LEAR	4	S/F	0319.0E	0320.0	10.0D	190.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0319.0E	0320.0	11.0D	270.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0320.0E	0320.0	1.0D	230.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	0320.0E	0320.0	1.0D	160.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	1350.0	1356.5	24.0	15.2	4.0		
	2800	OTTA	3	S	1831.5	1832.5	4.0	29.0	8.0		

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

JUNE 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
25	2800	OTTA	3	S	1849.0	1850.0	9.0	44.0	13.0		
26	2800	OTTA	22	GRF	1545.0	1550.5	75.0	25.4	10.0		
28	2695	LEAR	8	S	0641.0E	0641.0	U	11.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1302.0E	1302.0	U	72.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1302.0E	1302.0	U	64.0			QL=1 ST=2 TYP=3
	2800	OTTA	20	GRF	1745.0	1746.5	15.0	10.1	5.0		
	2800	OTTA	3	S	1805.5	1806.5	4.5	7.6	2.0		
	2800	OTTA	4	S/F	1810.0	1815.7	15.5	432.0	86.0		
	2695	SGMR	4	S/F	1812.0E	1815.0	16.0D	370.0			QL=1 ST=2 TYP=3
	8800	SGMR	20	GRF	1812.0E	1817.0	16.0D	290.0			QL=1 ST=2 TYP=2
	2695	PALE	4	S/F	1813.0E	1815.0	8.0D	430.0			QL=1 ST=2 TYP=3
	8800	PALE	49	GB	1813.0E	1822.0	13.0D	340.0			QL=1 ST=2 TYP=7
	2800	OTTA	29	PBI	1825.5	1825.5	85.0	25.3	12.0		
29	2800	OTTA	47	GB	2042.0	2114.5	72.0	973.0	195.0		
	2695	PALE	49	GB	2103.0E	2114.0	46.0D	770.0			QL=1 ST=2 TYP=7
	2695	SGMR	49	GB	2103.0E	2114.0	44.0D	800.0			QL=1 ST=2 TYP=7
	8800	SGMR	49	GB	2104.0E	2114.0	40.0D	890.0			QL=1 ST=2 TYP=6
	8800	PALE	49	GB	2108.0E	2114.0	31.0D	690.0			QL=1 ST=2 TYP=6
	2800	OTTA	29	PBI	2154.0	2154.0	150.0	21.3	10.0		
	2800	OTTA	4	S/F	2200.0	2206.5	17.5	40.6	16.0		
30	2695	LEAR	8	S	0602.0E	0602.0	1.0D	13.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0604.0E	0610.0	14.0D	70.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0607.0E	0610.0	9.0D	81.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	0608.0E	0610.0	4.0D	59.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0608.0E	0610.0	3.0D	59.0			QL=1 ST=2 TYP=3
	2695	LEAR	49	GB	0710.0E	0741.0	67.0D	730.0			QL=1 ST=2 TYP=7
	8800	LEAR	4	S/F	0712.0E	0741.0	63.0D	240.0			QL=1 ST=2 TYP=5
	2695	SVTO	49	GB	0712.0E	0741.0	62.0D	620.0			QL=1 ST=2 TYP=7
	8800	SVTO	4	S/F	0715.0E	0741.0	54.0D	200.0			QL=1 ST=2 TYP=5
	2800	OTTA	46	C	1330.0	1330.5	3.4	21.6	5.0		
	8800	SGMR	8	S	1403.0E	1404.0	1.0D	130.0			QL=1 ST=3 TYP=3
	2695	SGMR	8	S	1404.0E	1404.0	U	50.0			QL=1 ST=3 TYP=3
	2695	SVTO	8	S	1404.0E	1404.0	U	50.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1404.0E	1404.0	1.0D	81.0			QL=1 ST=2 TYP=3
	2800	OTTA	42	SER	1449.5	1451.5	4.2	12.2	5.0		
	2695	SGMR	8	S	1454.0E	1455.0	1.0D	48.0			QL=1 ST=2 TYP=3
	2800	OTTA	42	SER	1454.9	1455.2	1.8	42.7	9.0		
	2800	OTTA	42	SER	1457.0	1457.7	2.5	13.0	4.0		
	2695	SGMR	4	S/F	1500.0E	1500.0	3.0D	310.0			QL=1 ST=3 TYP=3
	8800	SGMR	4	S/F	1500.0E	1500.0	3.0D	270.0			QL=1 ST=3 TYP=3
	2695	SVTO	4	S/F	1500.0E	1500.0	3.0D	230.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1500.0E	1500.0	2.0D	190.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1500.2	1500.9	5.3	471.0	95.0		
	2800	OTTA	29	PBI	1505.5	1505.5	55.0	23.2	9.0		
	2800	OTTA	3	S	1731.0	1731.3	2.0	32.6	7.0		
	8800	SGMR	8	S	1737.0E	1737.0	1.0D	120.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1737.5	1737.8	3.0	28.5	6.0		
	2800	OTTA	3	S	1745.6	1746.2	2.5	25.6	5.0		
	8800	PALE	8	S	1944.0E	1945.0	1.0D	340.0			QL=1 ST=2 TYP=3

Reports are received routinely from the following observatories:

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

Explanation of Type Code:

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

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

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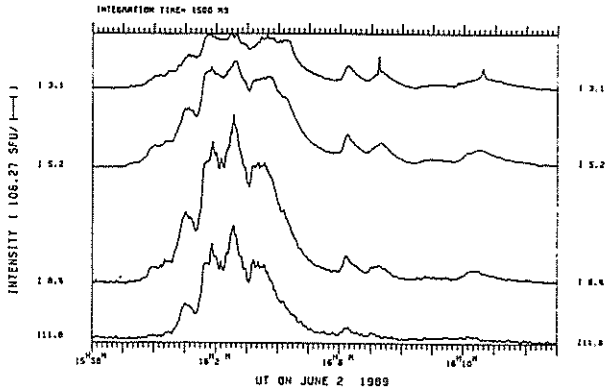

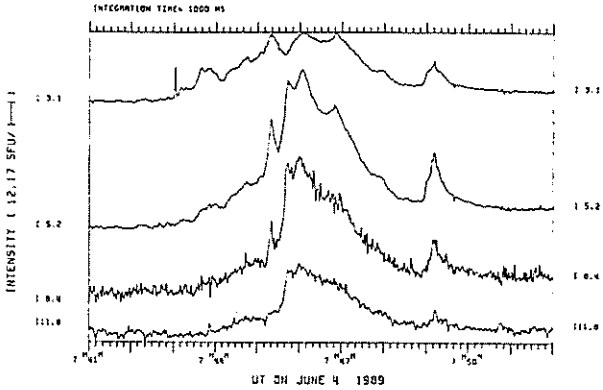

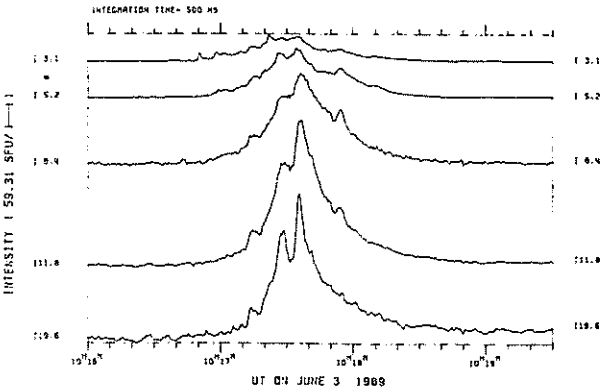

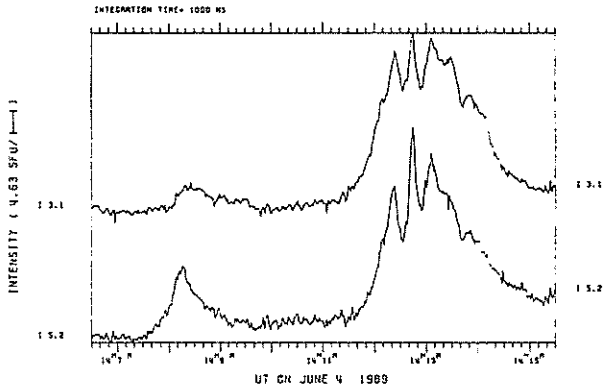

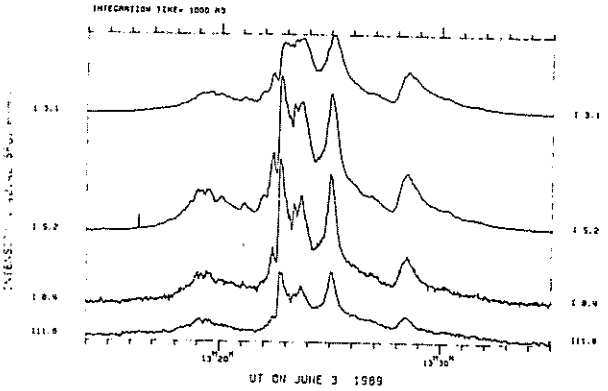

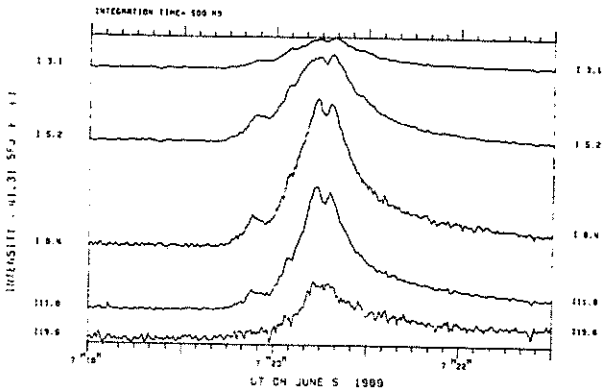

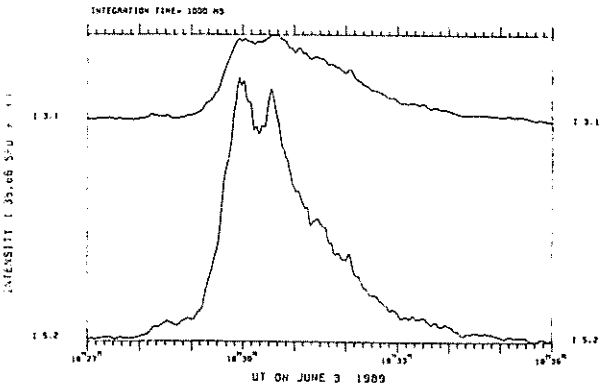

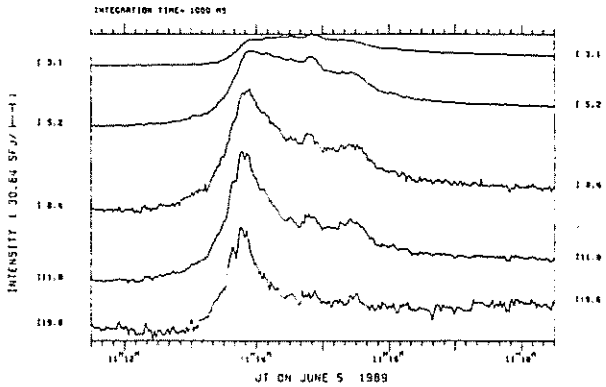

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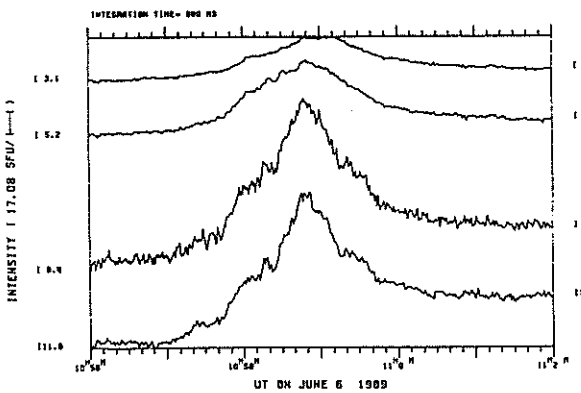

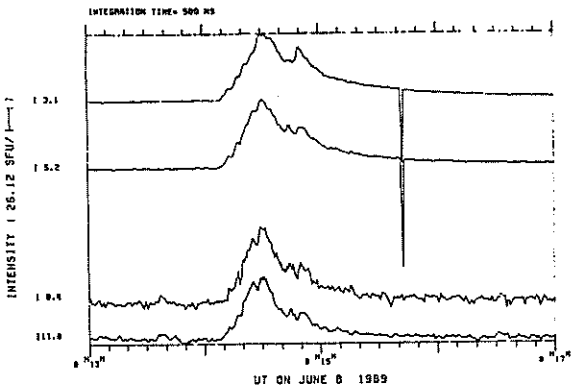

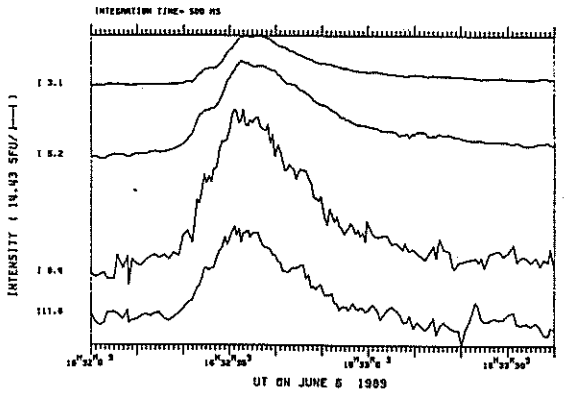

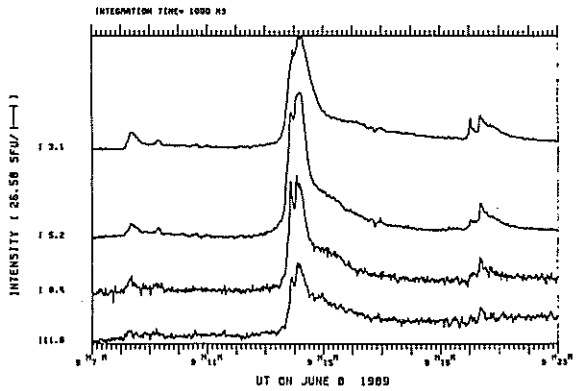

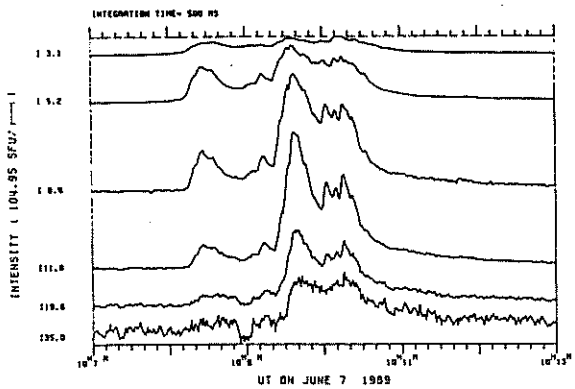

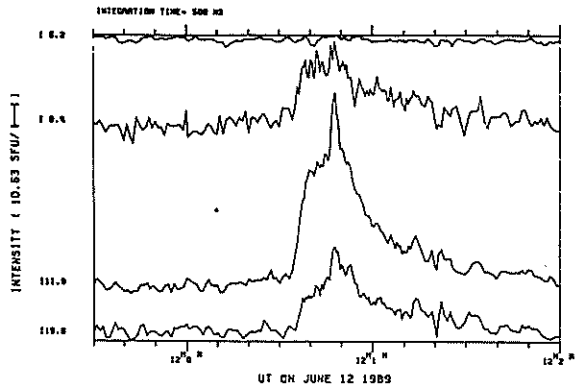

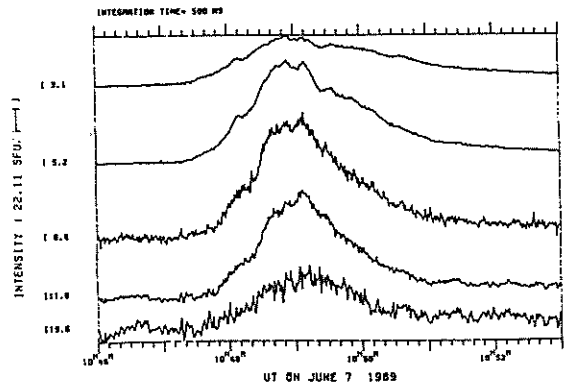

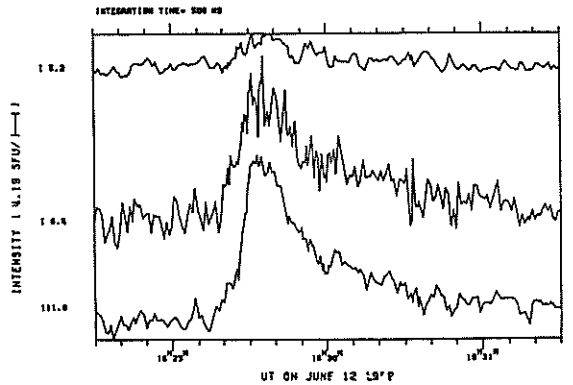

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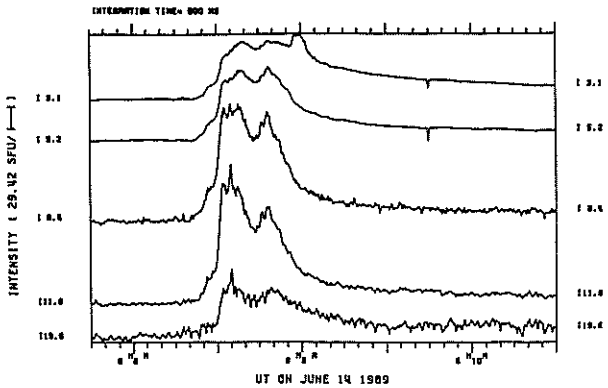

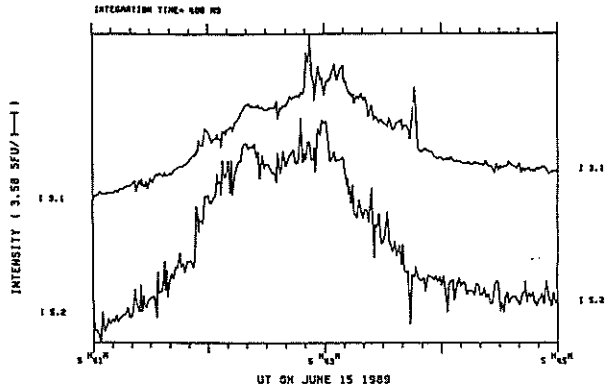

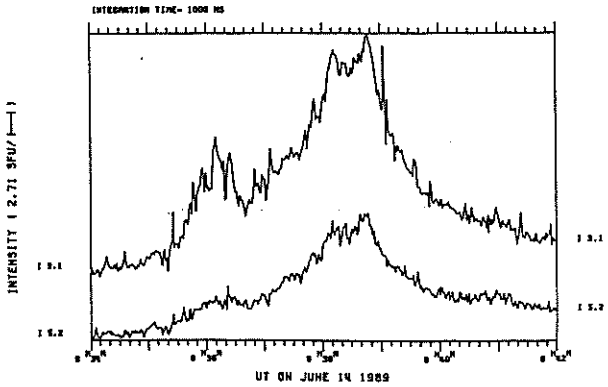

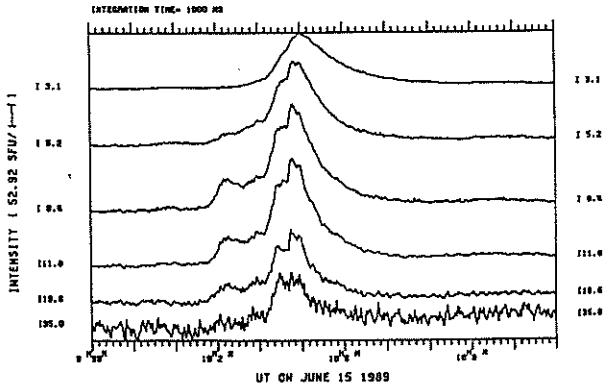

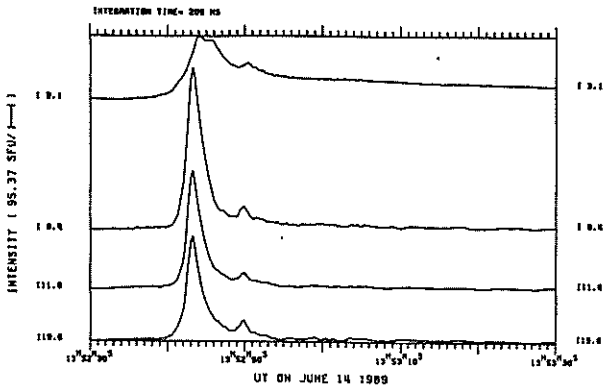

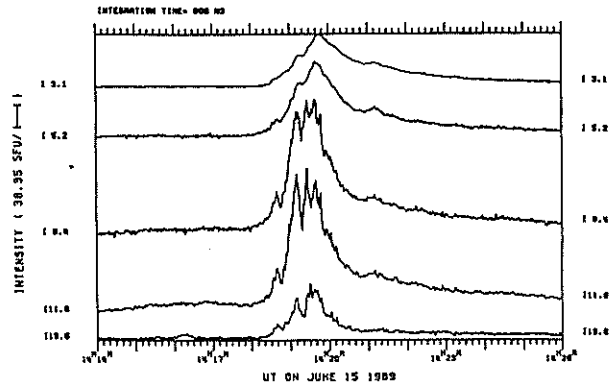

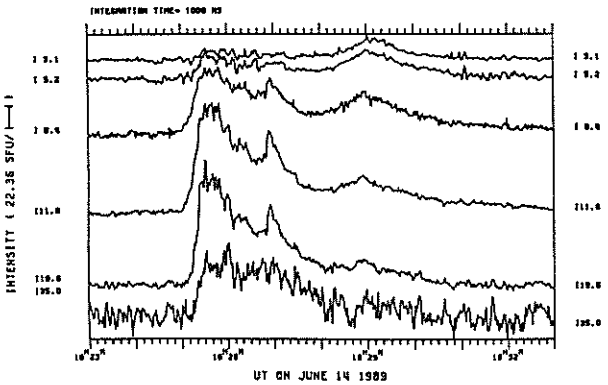

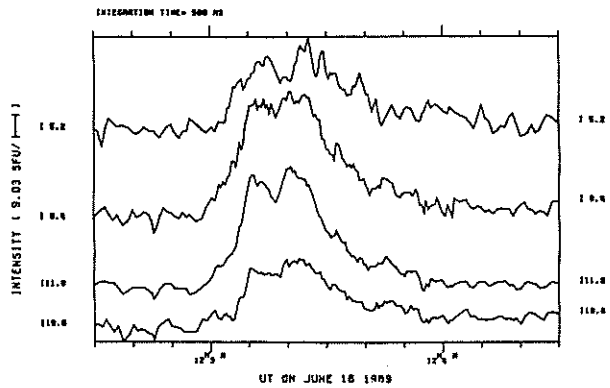

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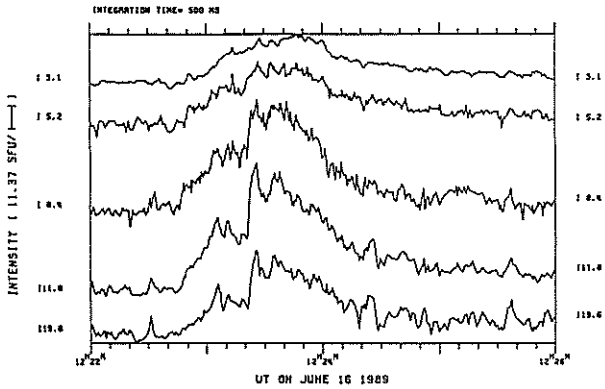
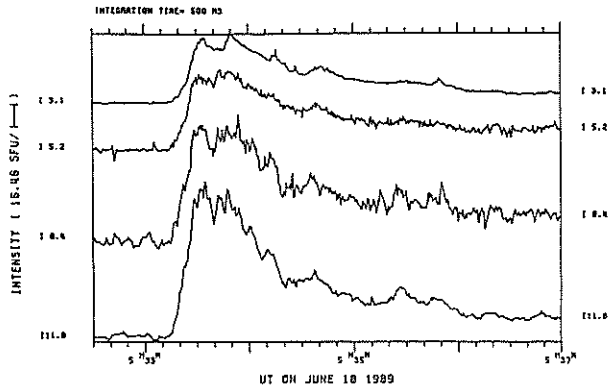
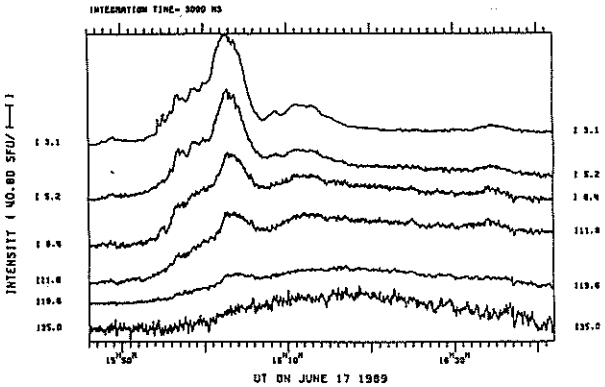
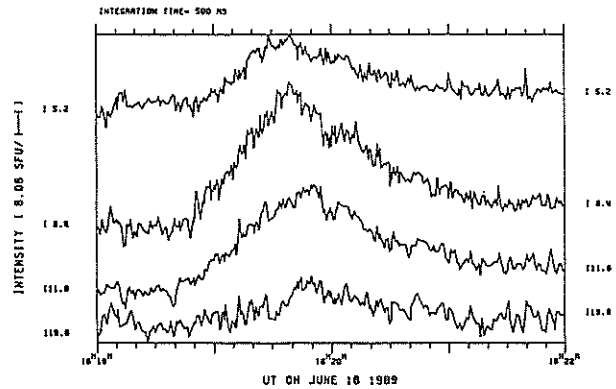
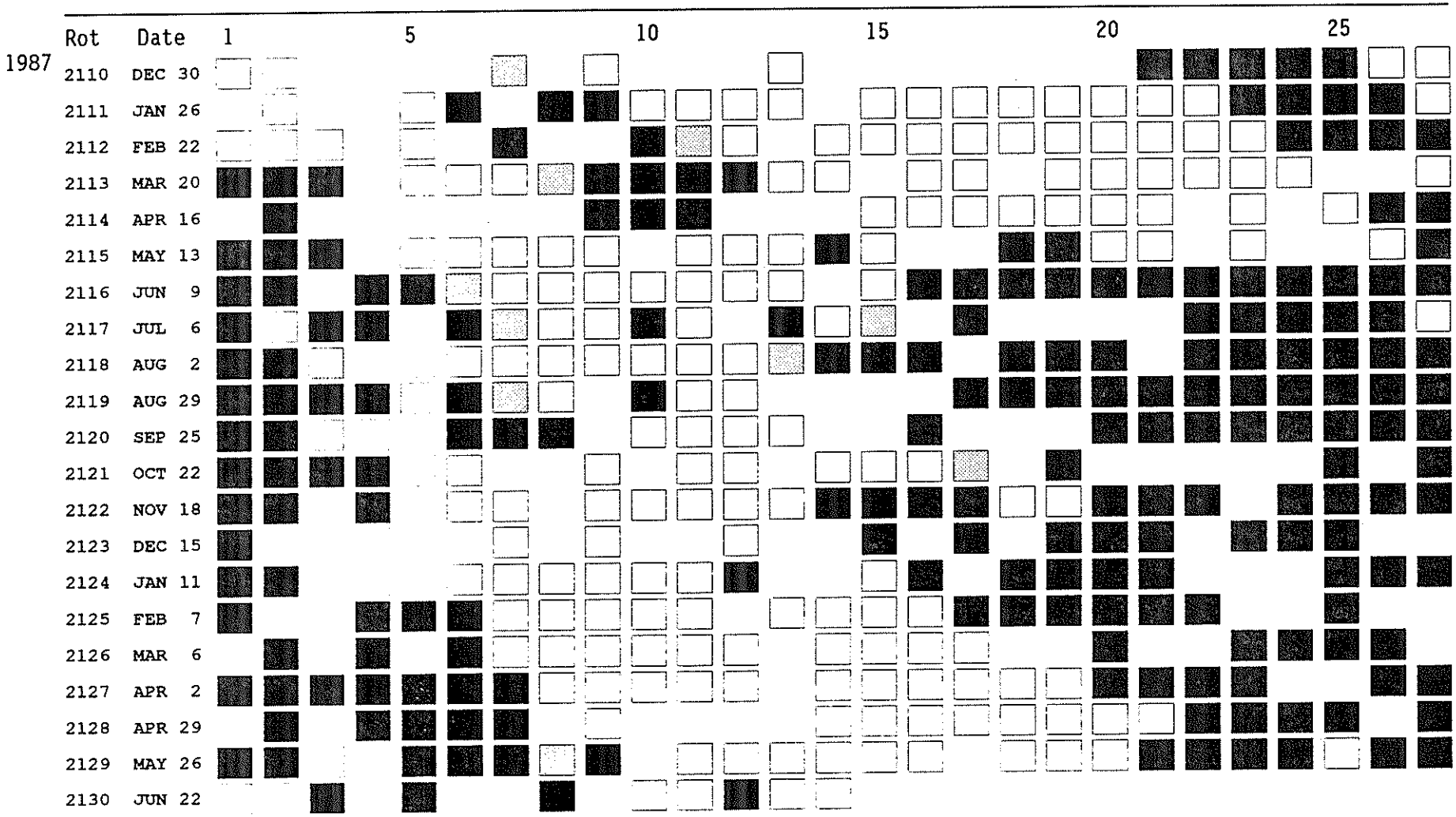








STANFORD MEAN SOLAR MAGNETIC FIELD



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

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

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

Dot symbol indicates no data available for the day.

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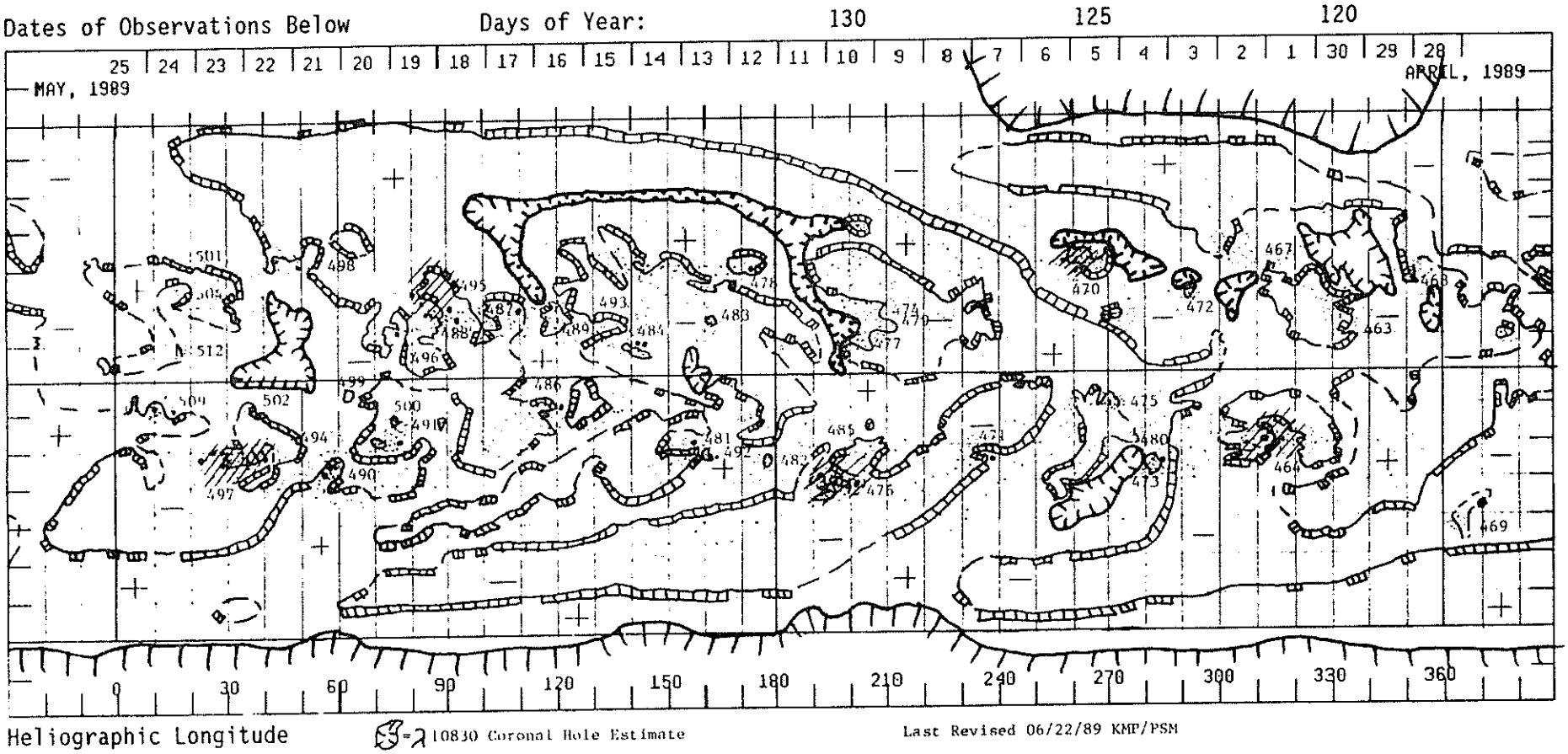
*** Data no longer available in SGD because of extremely low usage. Please contact the data center for further information on data availability.

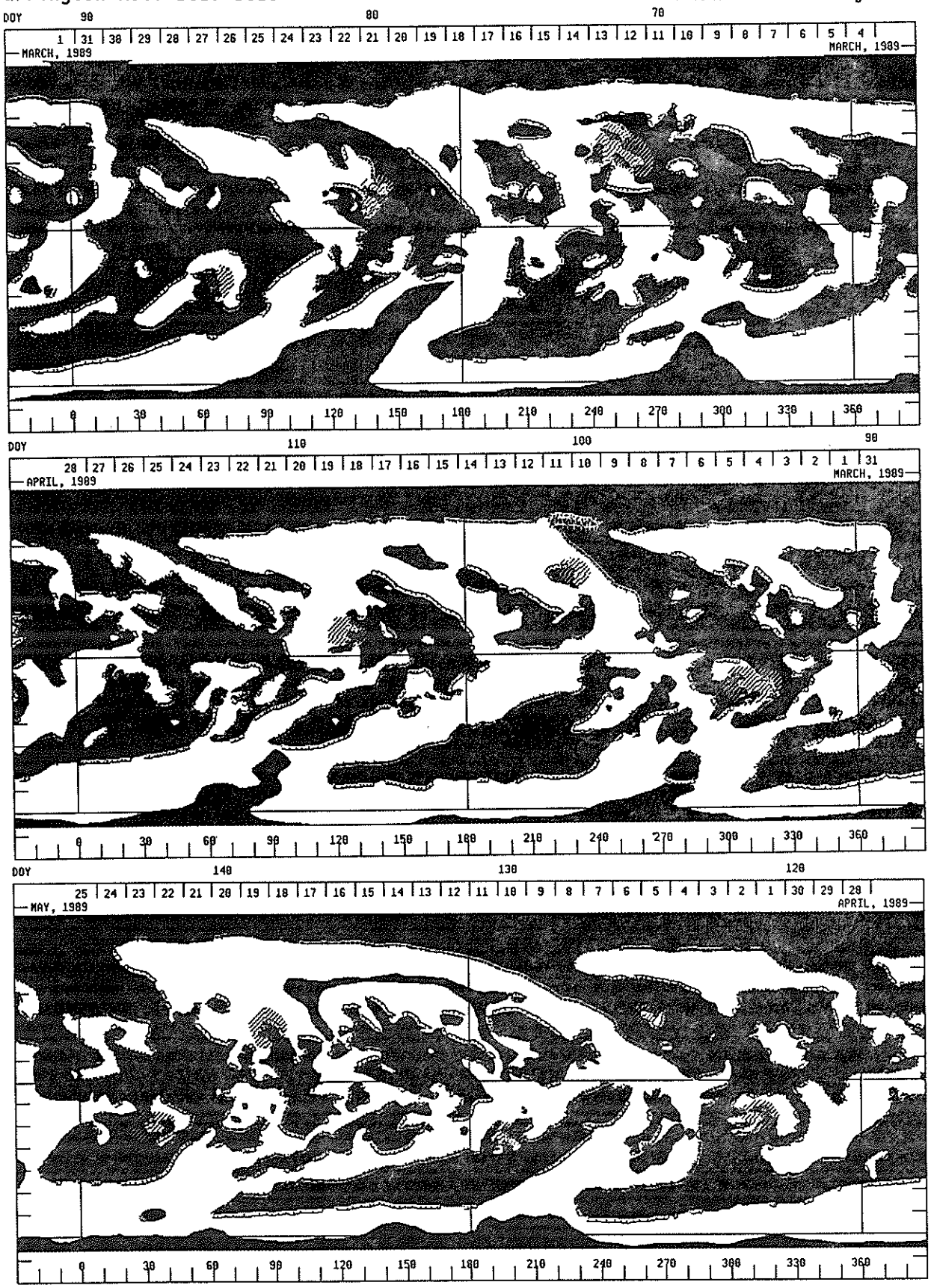
PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1815
(28 April to 25 May 1989)



SHADED H-ALPHA SOLAR SYNOPTIC CHARTS

Carrington Rot. 1813-1815 4 March to 25 May 1989



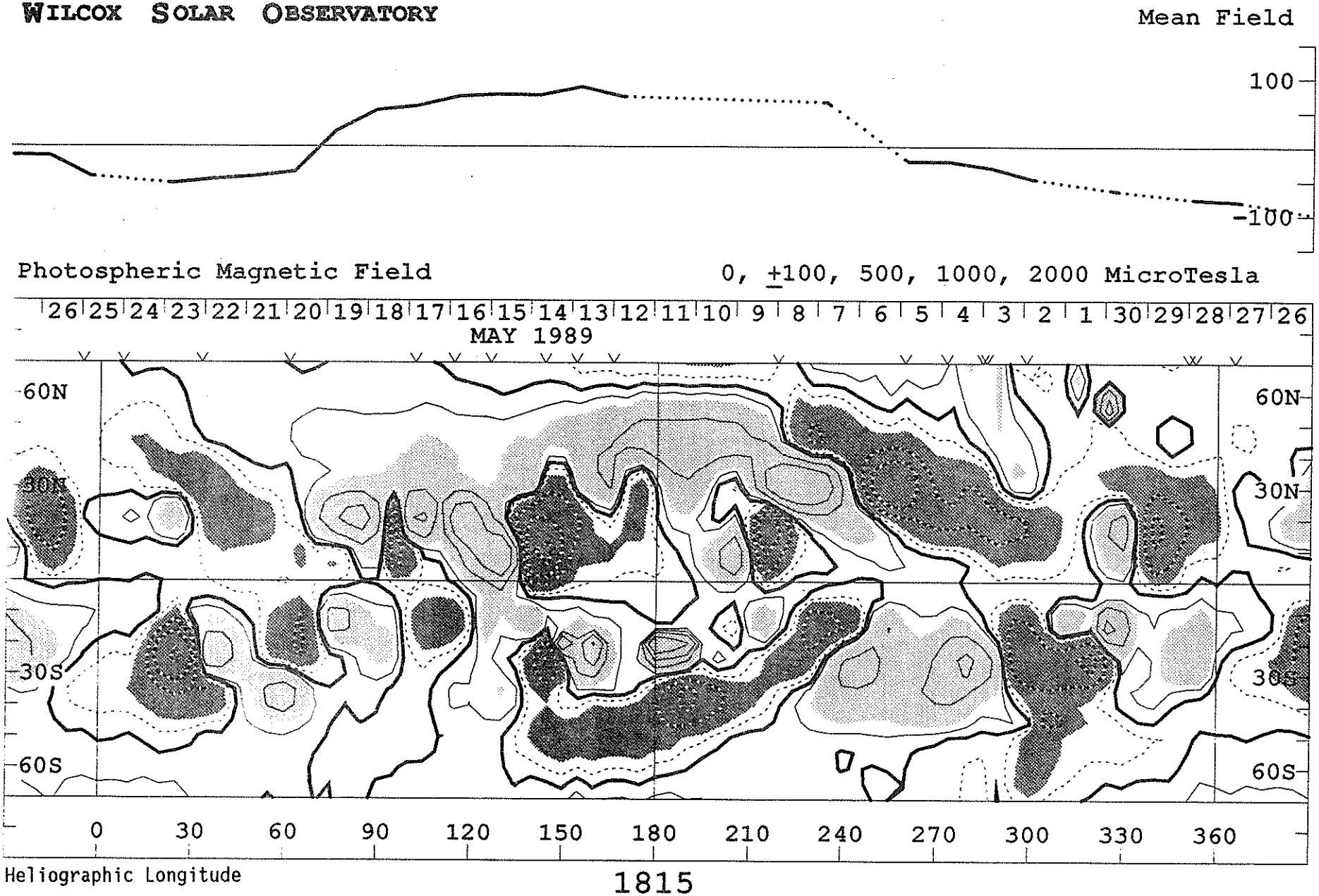
□ = *Positive Polarity* ■ = *Negative Polarity* ■ = *10830 Coronal Hole Estimate* ▨ = *X-Ray Flares > M1*

Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1815
(28 April to 25 May 1989)

WILCOX SOLAR OBSERVATORY



1815

SOLAR MAGNETIC FIELD SYNOPTIC CHART

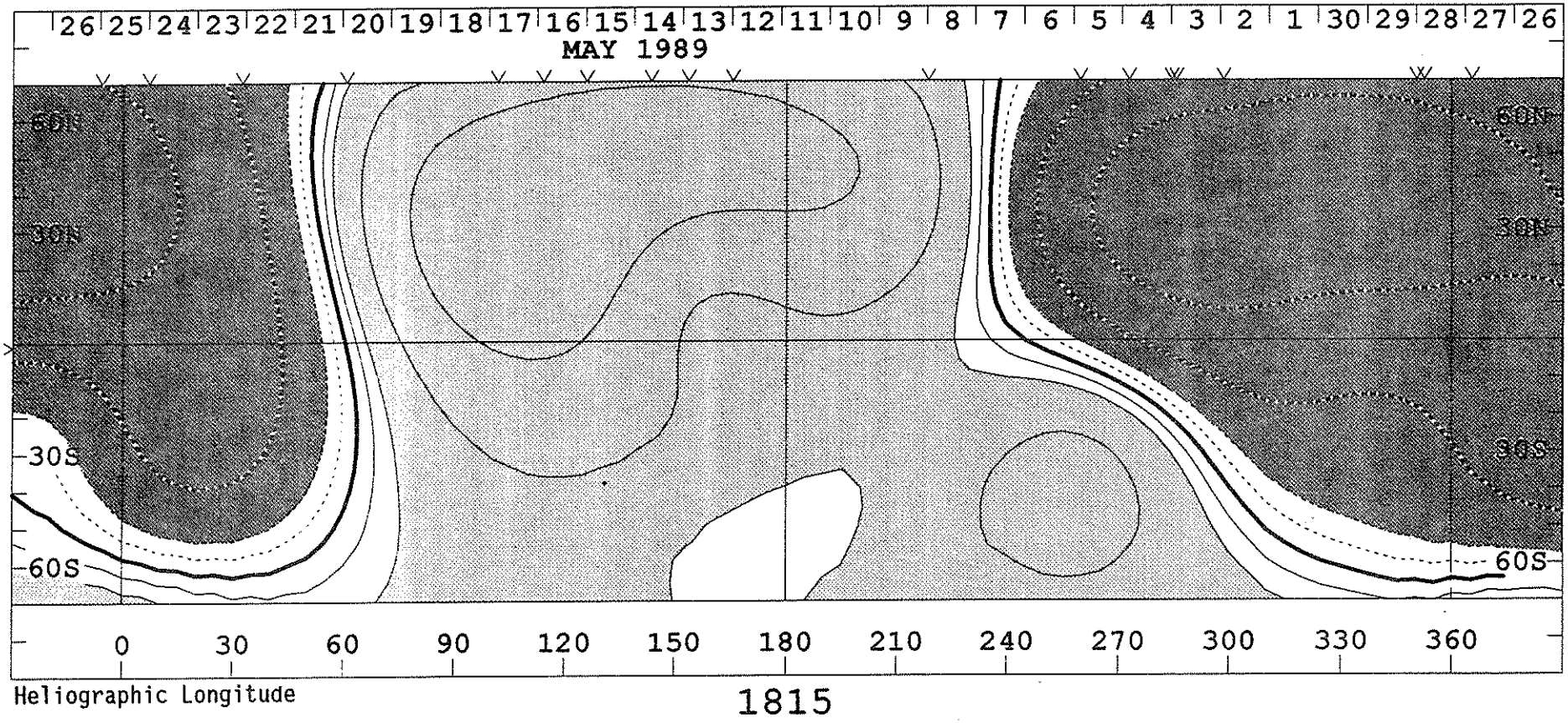
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1815

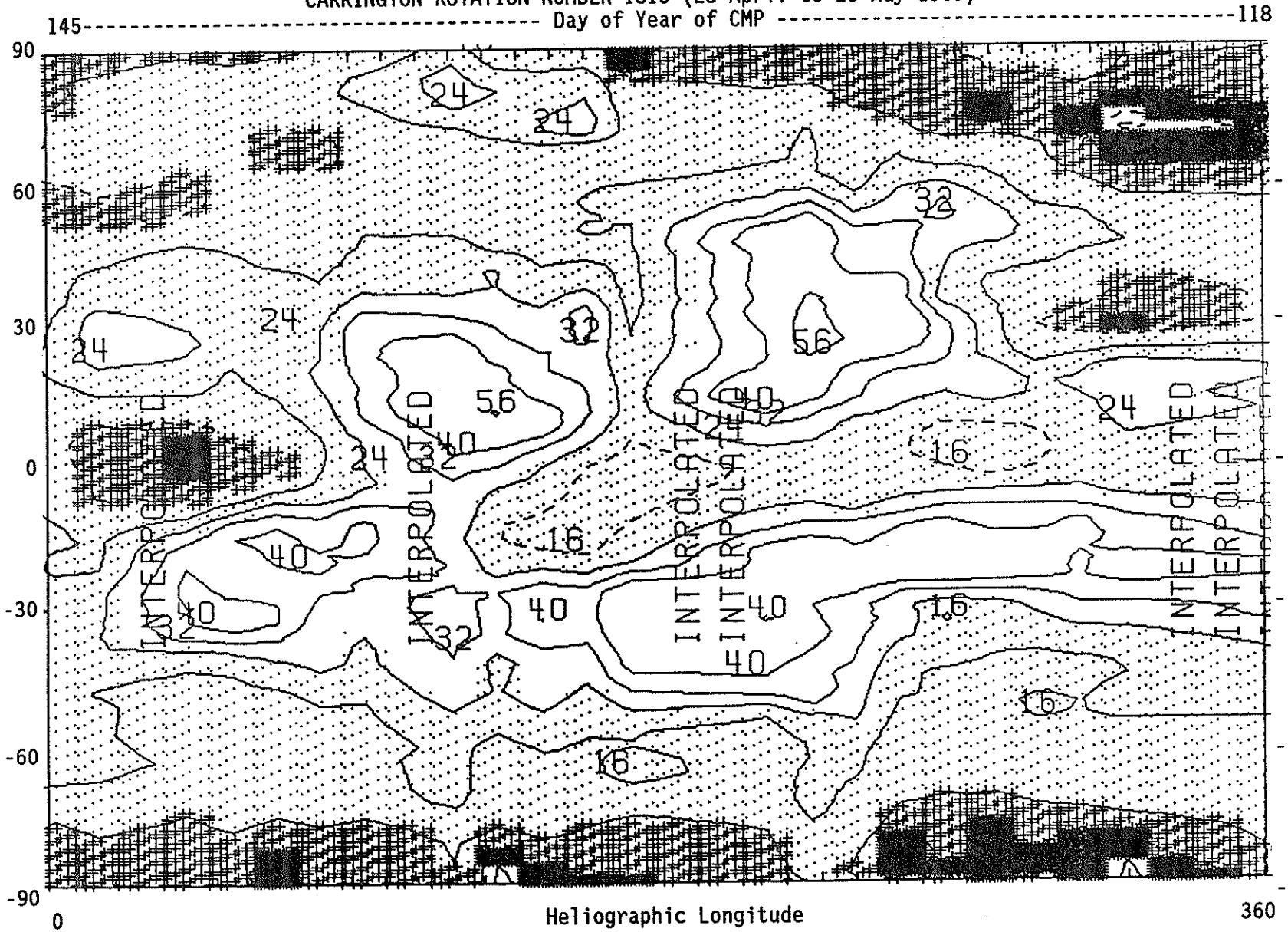
(28 April to 25 May 1989)

Wilcox Solar Observatory

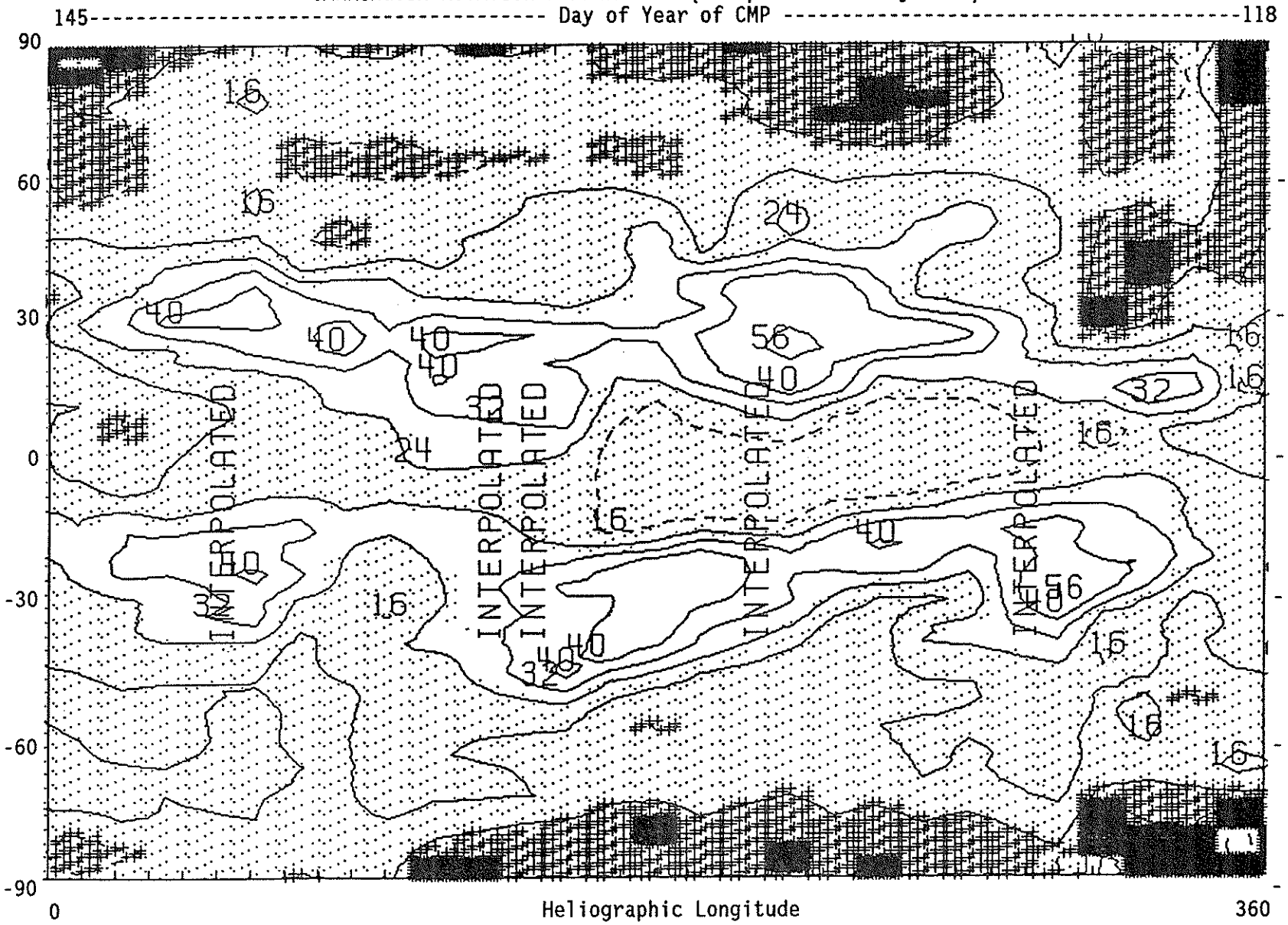
0, ±1, 2, 5, 10, 20 microTesla



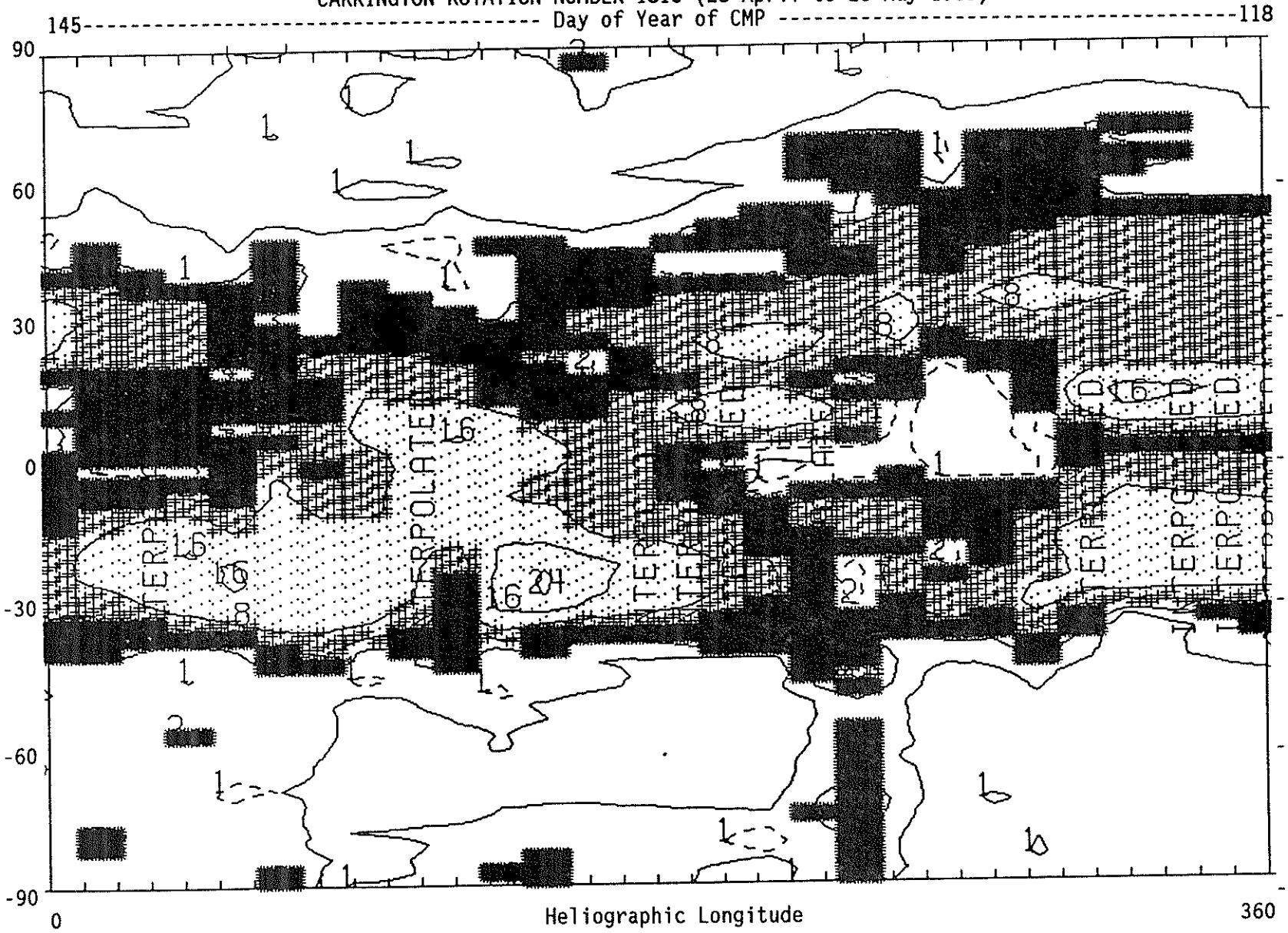
SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1815 (28 April to 25 May 1989)



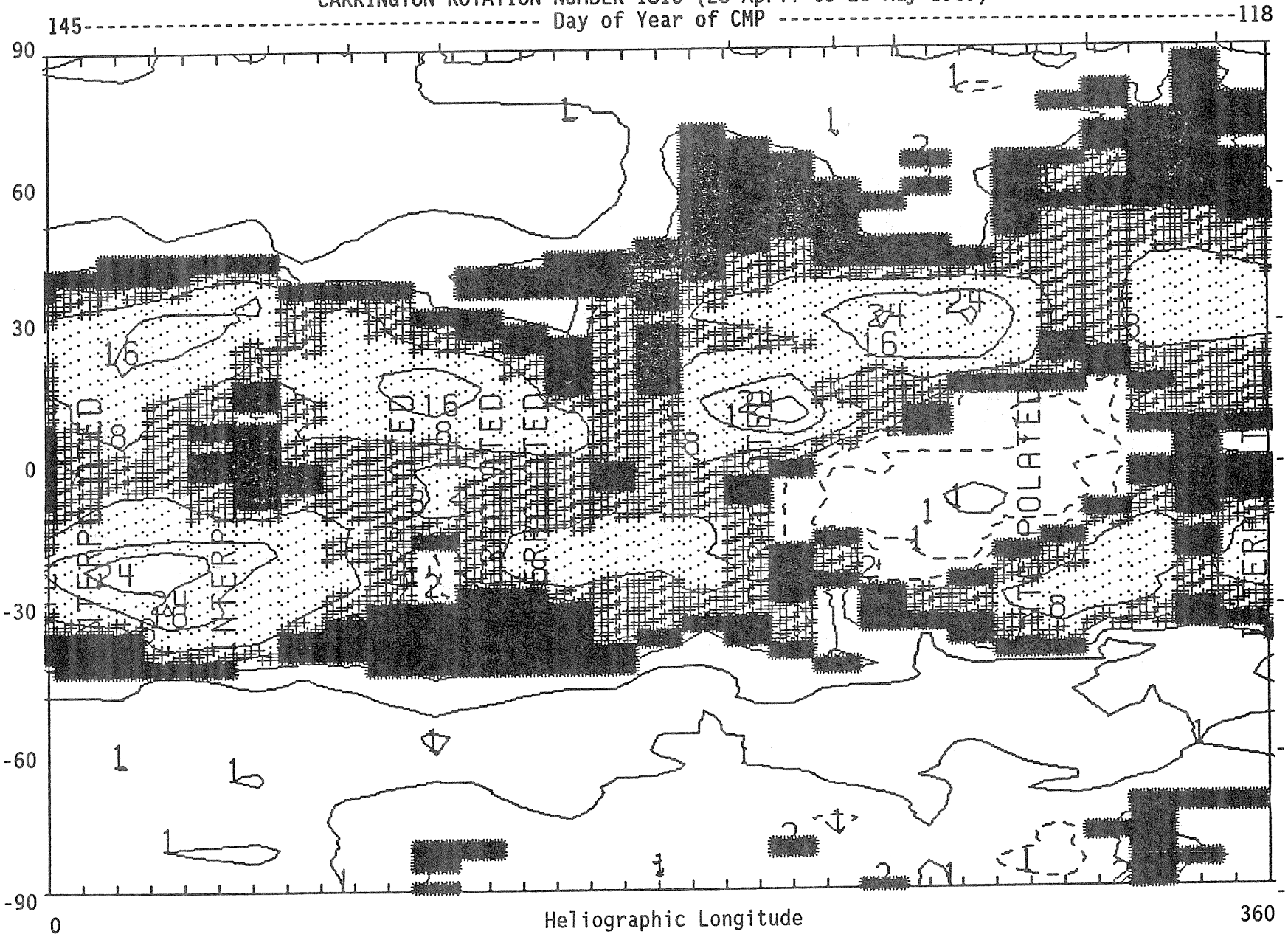
SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1815 (28 April to 25 May 1989)



SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1815 (28 April to 25 May 1989)



SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1815 (28 April to 25 May 1989)

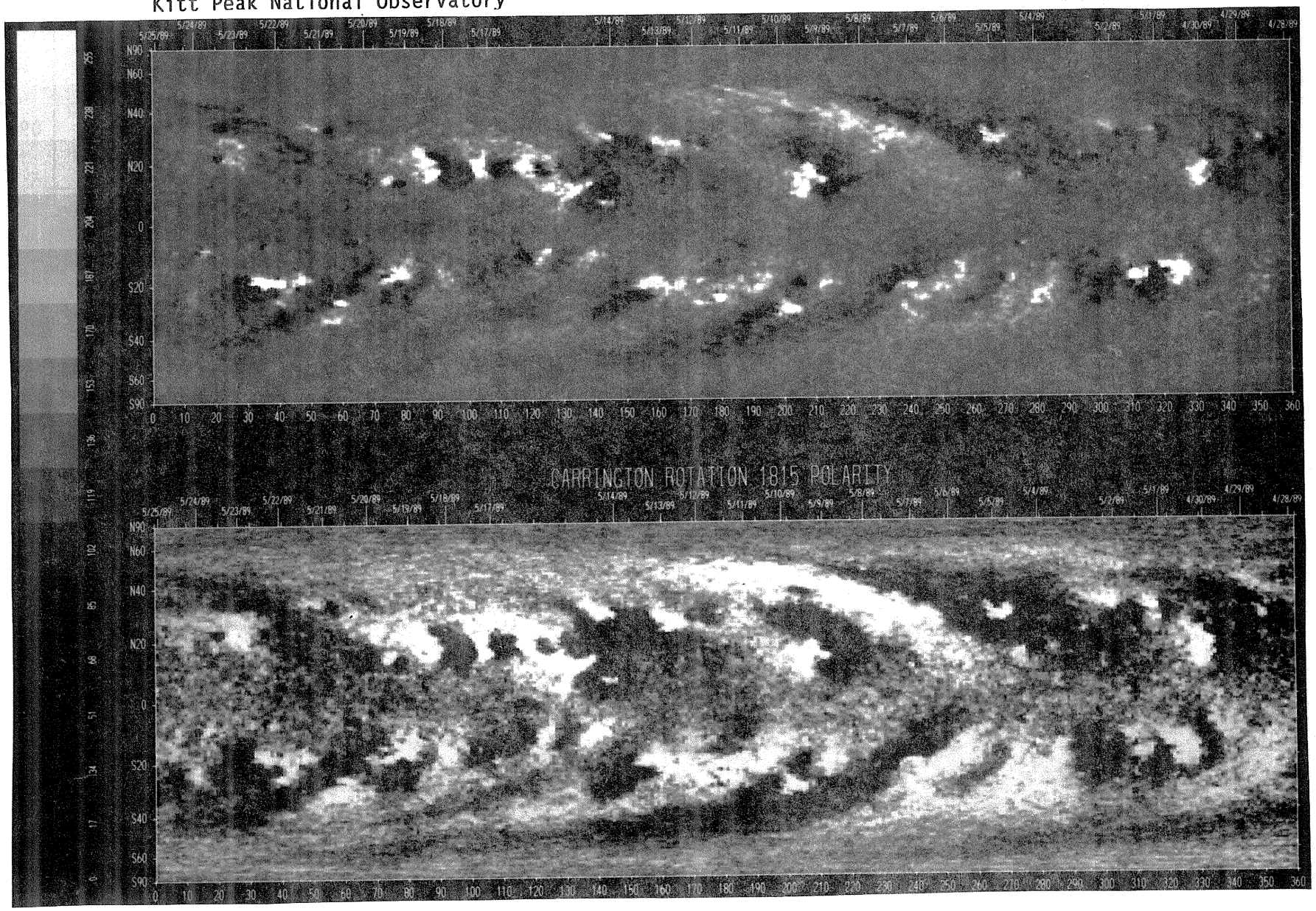


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1815
(28 April to 25 May 1989)

Kitt Peak National Observatory

Dates of Observation

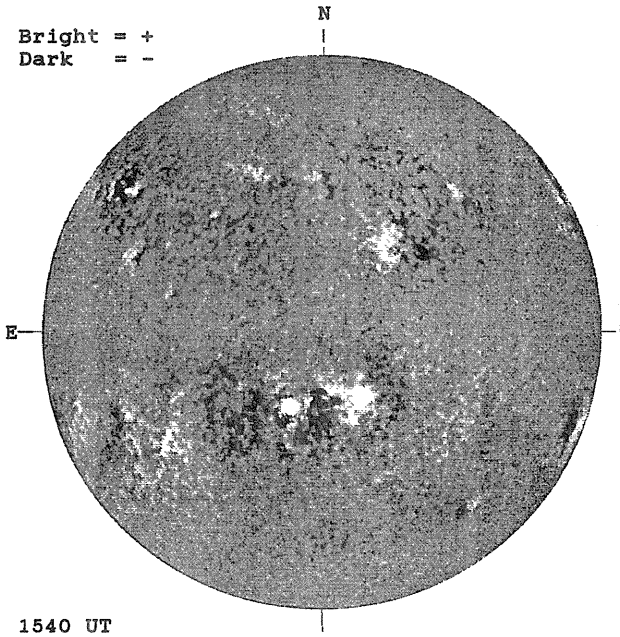


Heliographic Longitude

MAY 1, 1989 (P=-24.16, B_o =-4.15, L_o = 325.91)

KITT PEAK MAGNETOGRAM

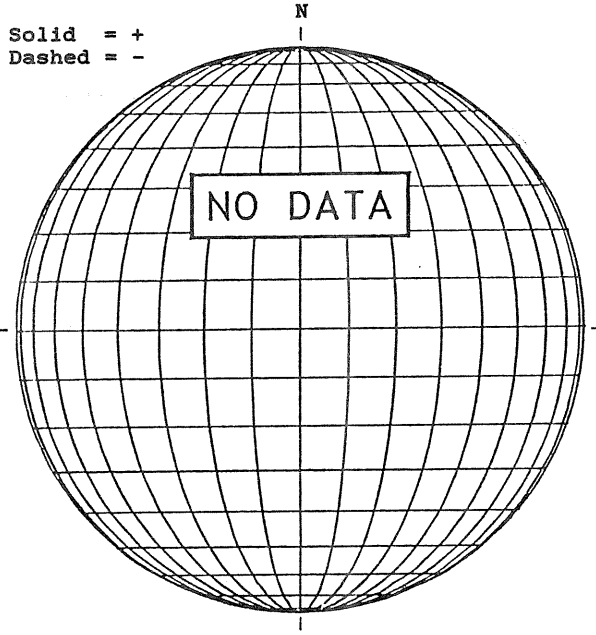
Bright = +
Dark = -



1540 UT

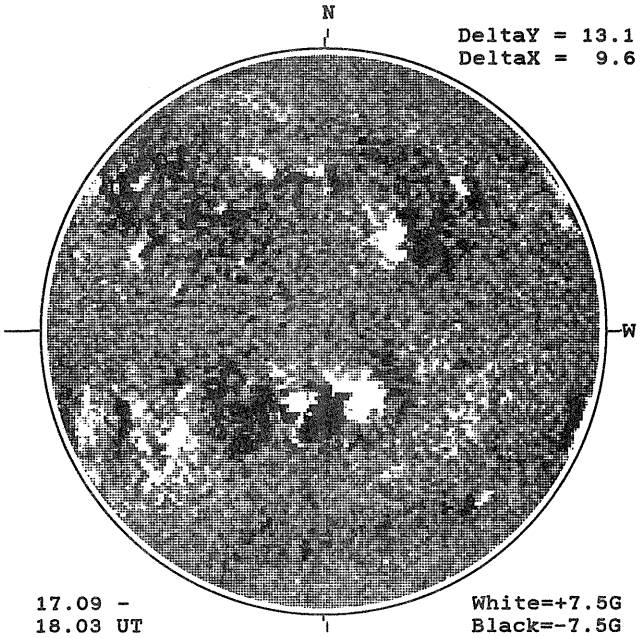
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

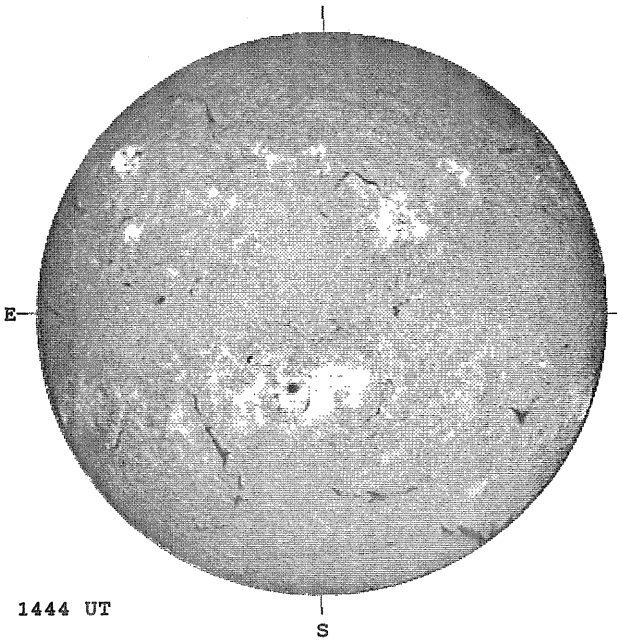
DeltaY = 13.1
DeltaX = 9.6



17.09 -
18.03 UT

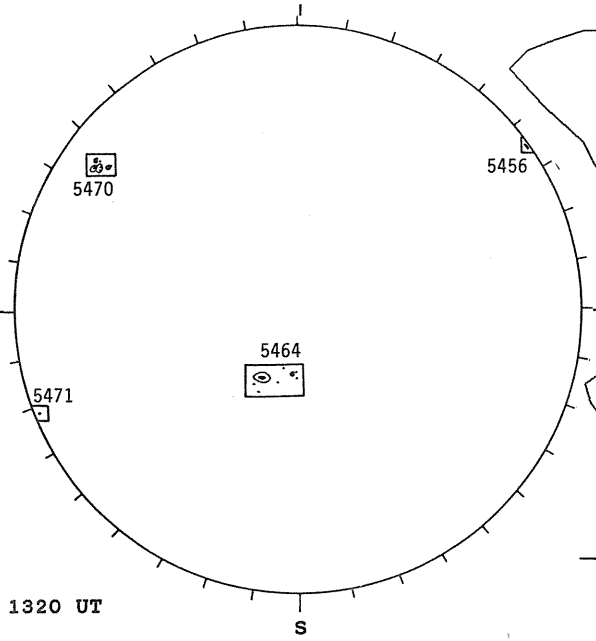
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



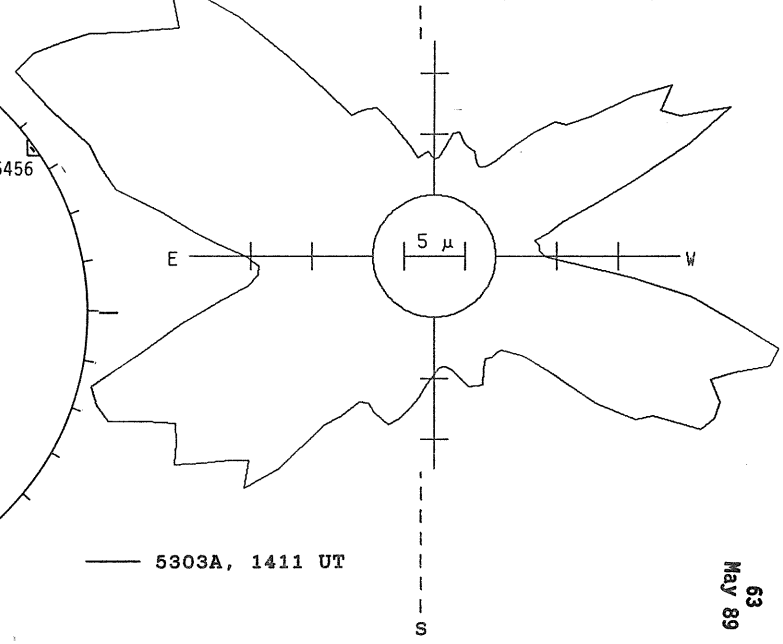
1444 UT

BOULDER SUNSPOT



1320 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

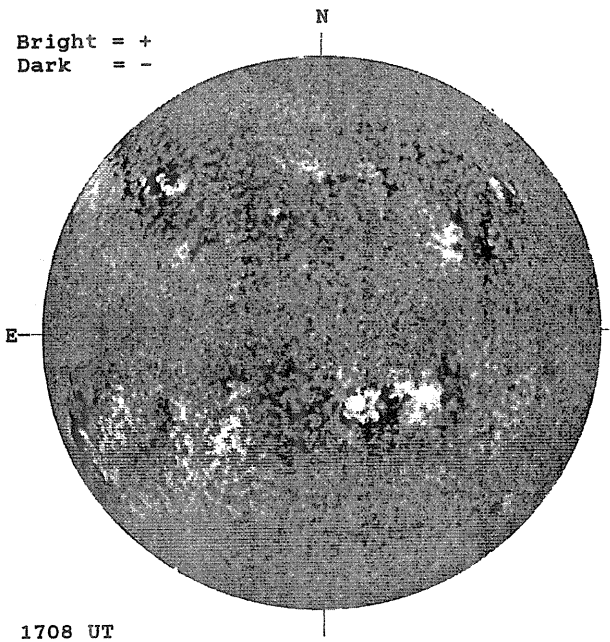


—— 5303A, 1411 UT

MAY 2, 1989 (P=-23.98, B_o =-4.05, L_o = 312.70)

KITT PEAK MAGNETOGRAM

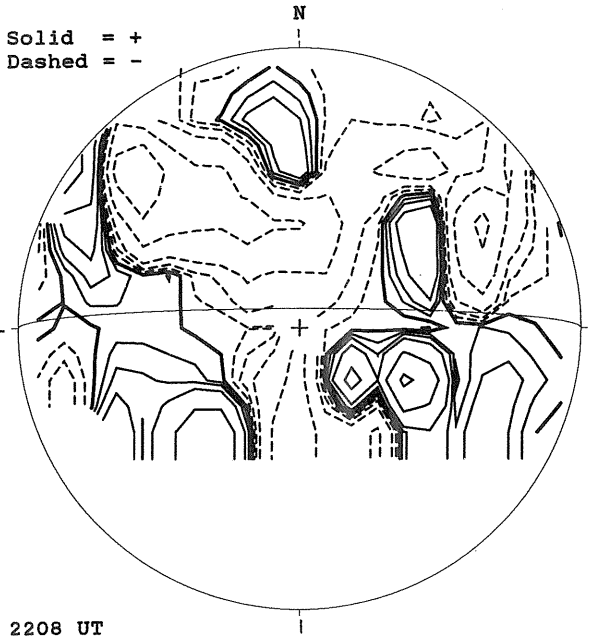
Bright = +
Dark = -



1708 UT

STANFORD MAGNETOGRAM

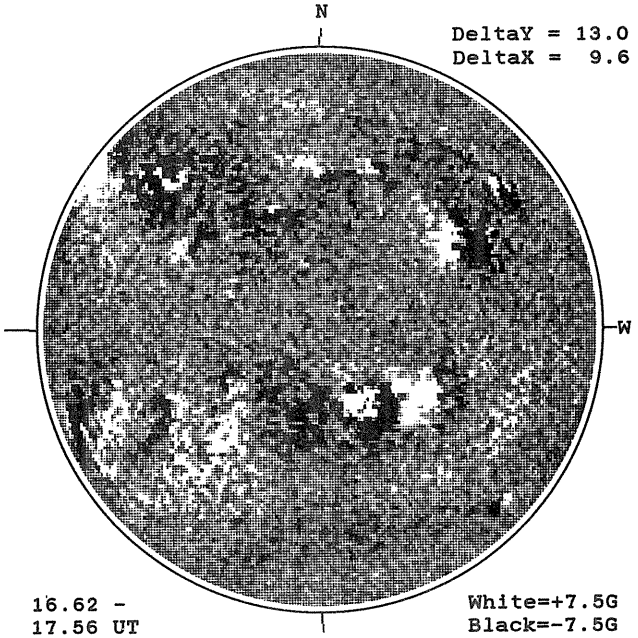
Solid = +
Dashed = -



2208 UT

MT. WILSON MAGNETOGRAM

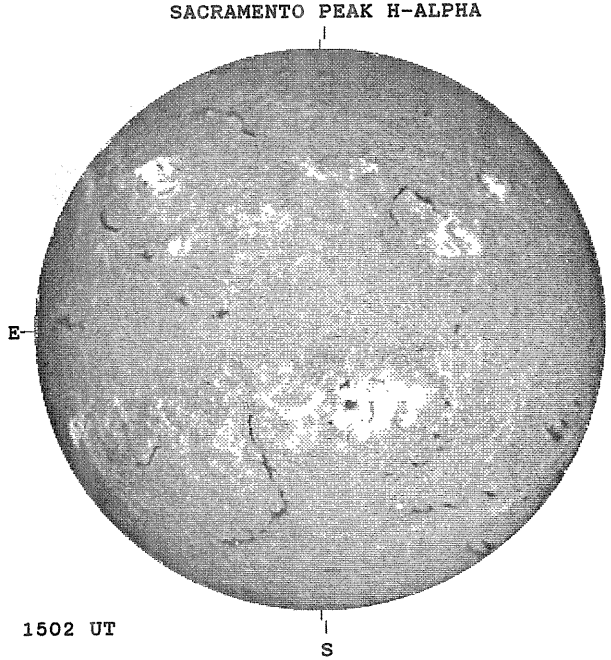
DeltaY = 13.0
DeltaX = 9.6



16.62 -
17.56 UT

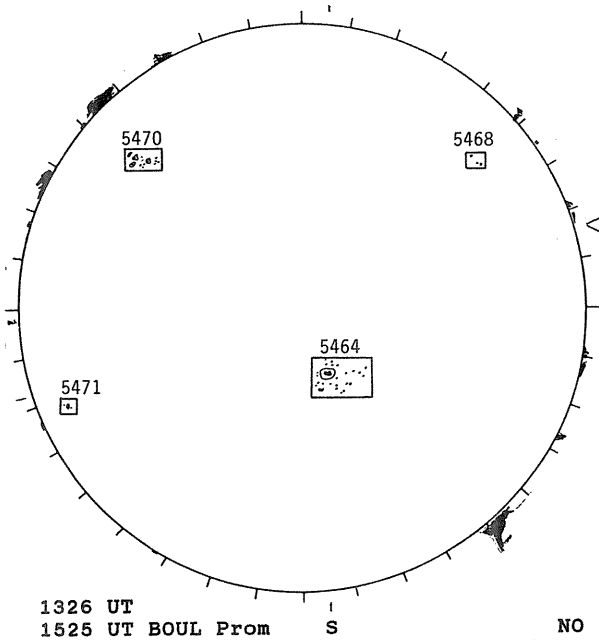
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



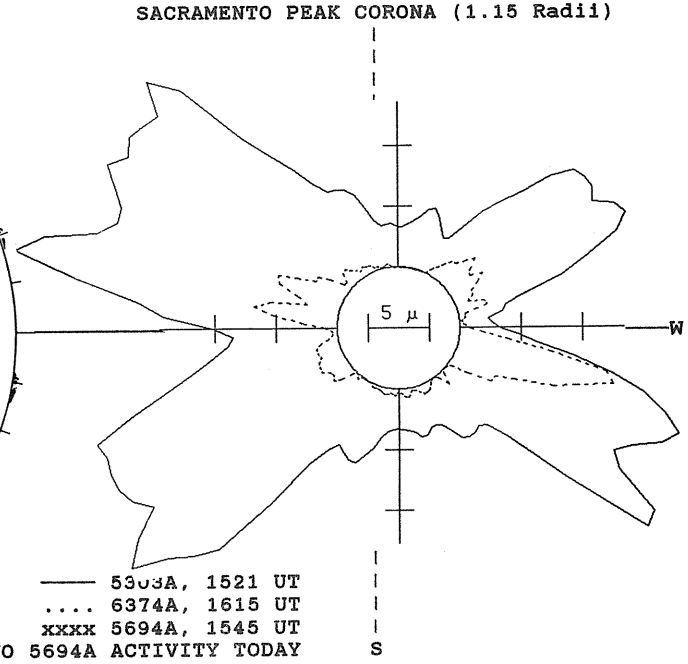
1502 UT

BOULDER SUNSPOT



1326 UT
1525 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

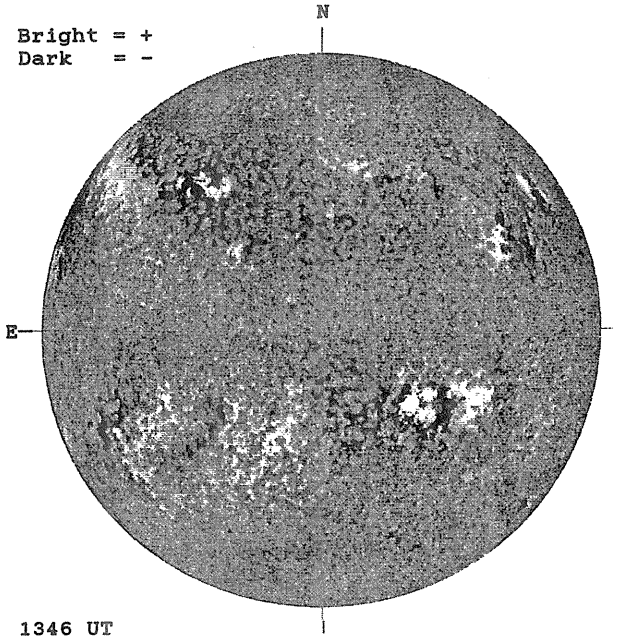


—— 5303A, 1521 UT
.... 6374A, 1615 UT
xxxx 5694A, 1545 UT
NO 5694A ACTIVITY TODAY

MAY 3, 1989 (P=-23.79, B_o =-3.94, L_o = 299.48)

KITT PEAK MAGNETOGRAM

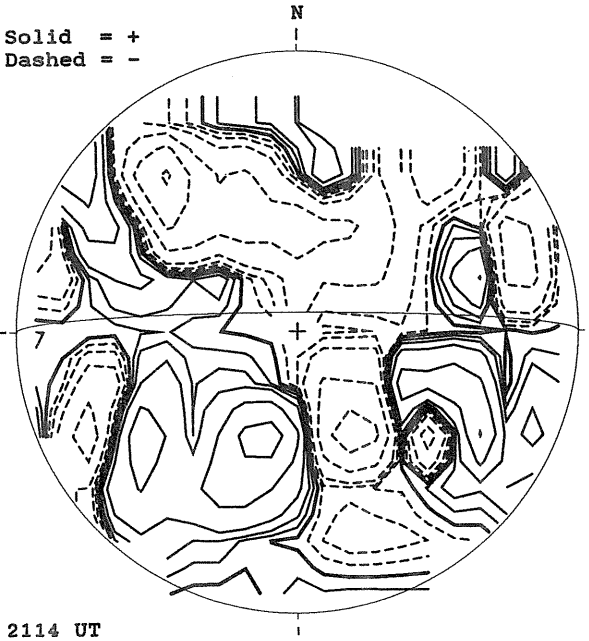
Bright = +
Dark = -



1346 UT

STANFORD MAGNETOGRAM

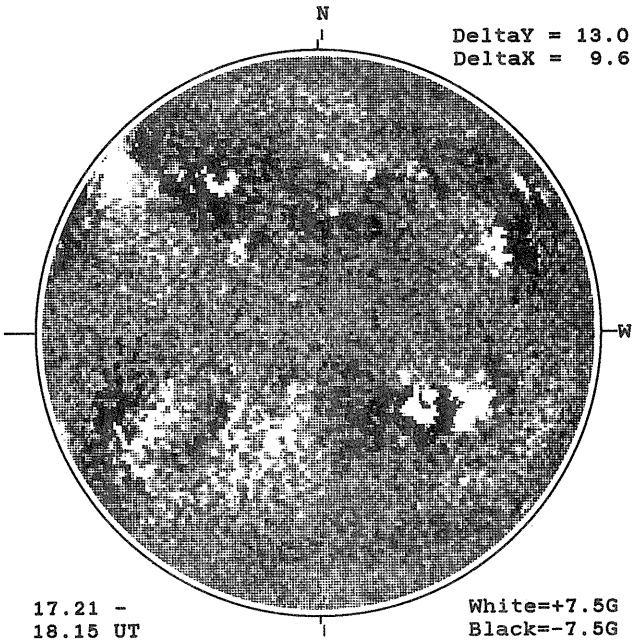
Solid = +
Dashed = -



2114 UT

MT. WILSON MAGNETOGRAM

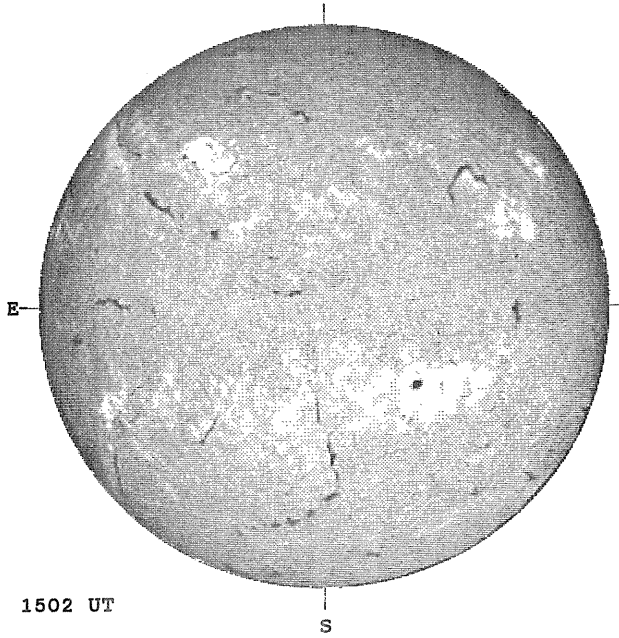
DeltaY = 13.0
DeltaX = 9.6



17.21 -
18.15 UT

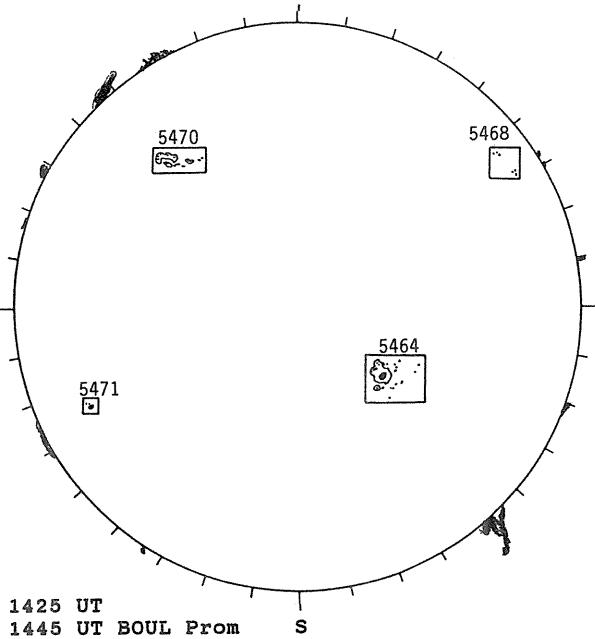
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



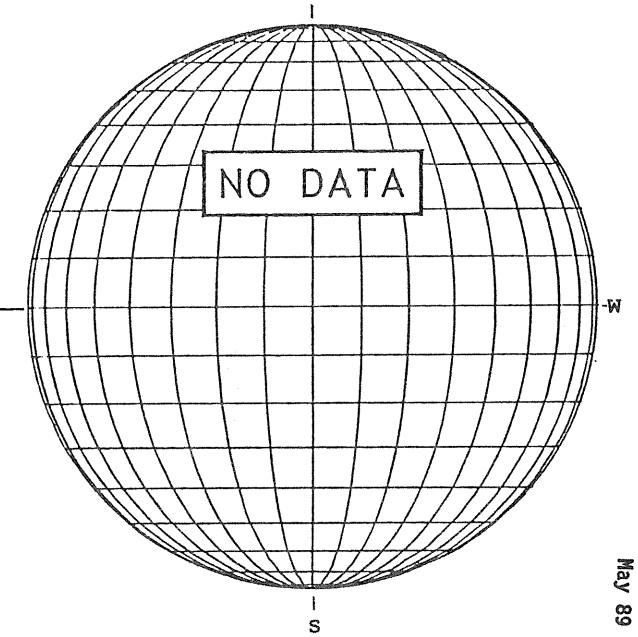
1502 UT

BOULDER SUNSPOT



1425 UT
1445 UT BOUL Prom

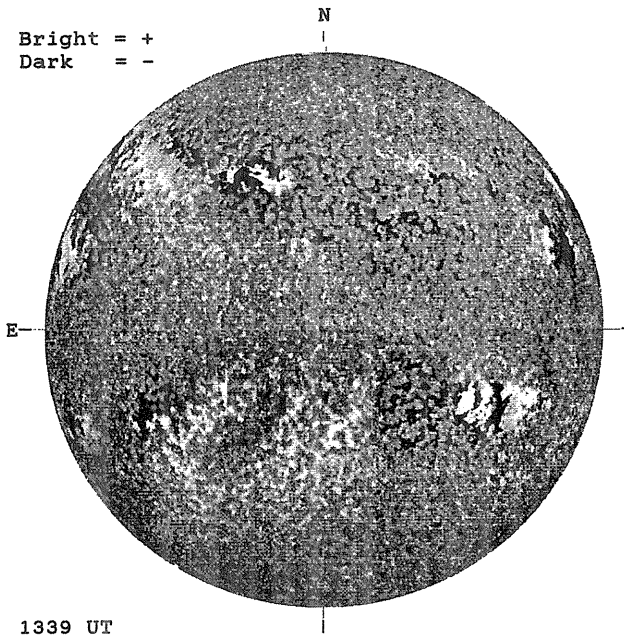
SACRAMENTO PEAK CORONA (1.15 Radii)



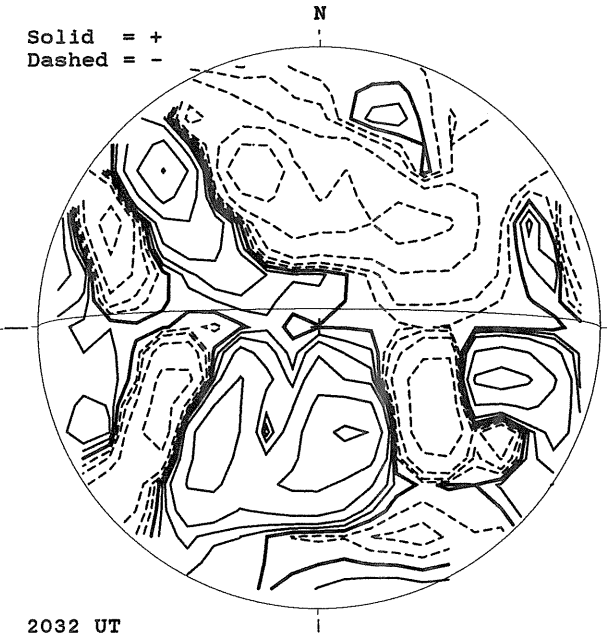
65
May 89

MAY 4, 1989 (P=-23.59, B_o =-3.84, L_o = 286.26)

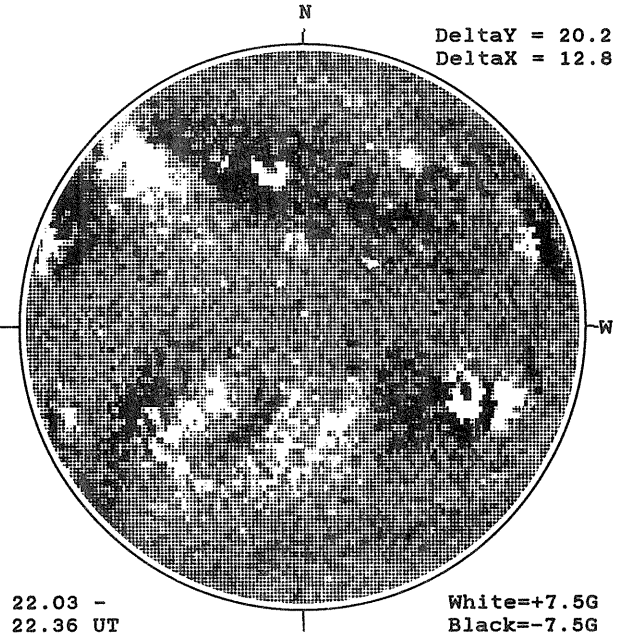
KITT PEAK MAGNETOGRAM



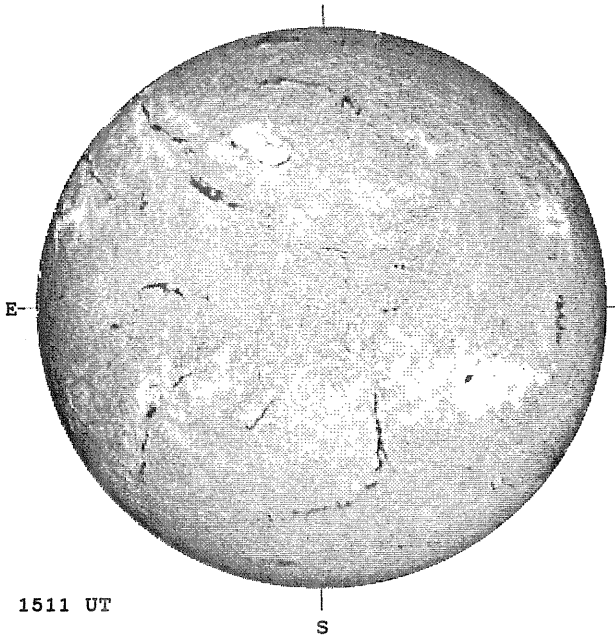
STANFORD MAGNETOGRAM



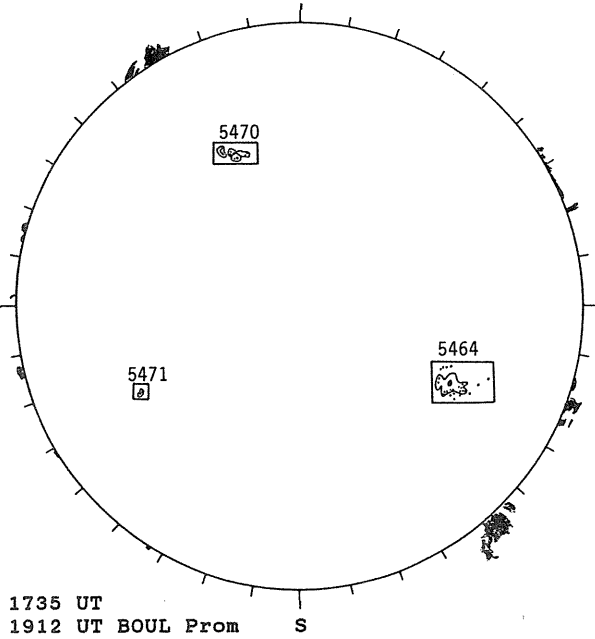
MT. WILSON MAGNETOGRAM



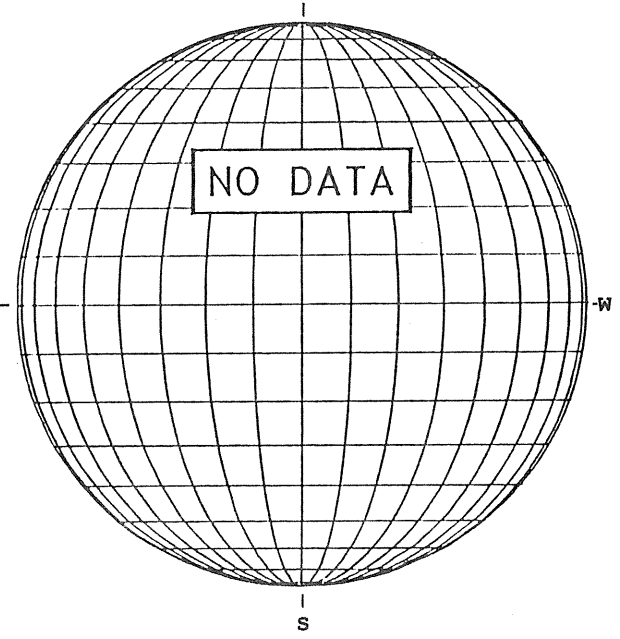
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



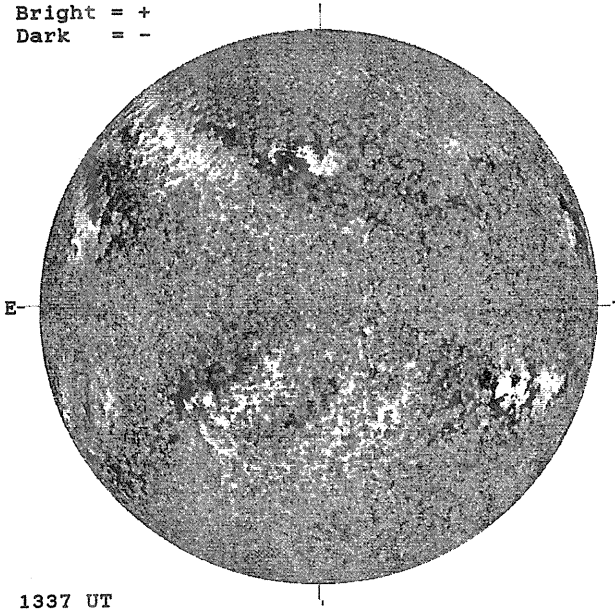
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 5, 1989 (P=-23.39, B_o =-3.74, L_o = 273.04)

KITT PEAK MAGNETOGRAM

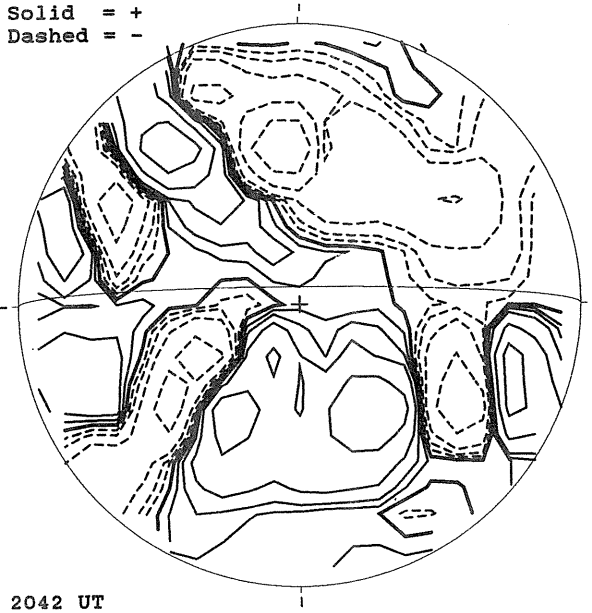
Bright = +
Dark = -



1337 UT

STANFORD MAGNETOGRAM

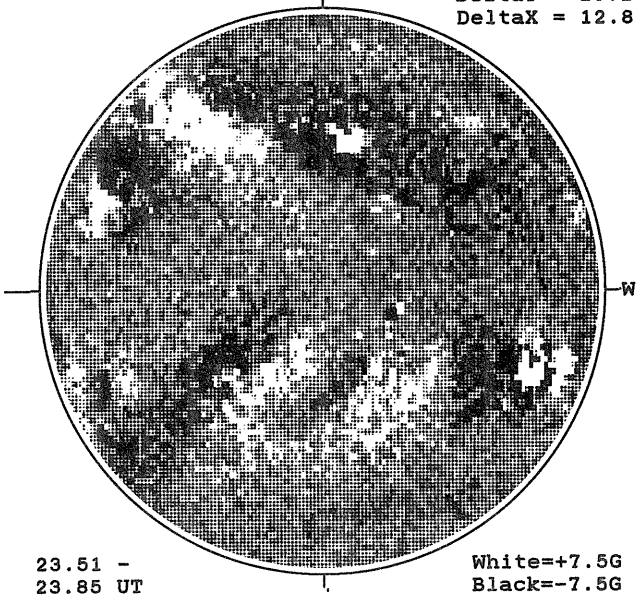
Solid = +
Dashed = -



2042 UT

MT. WILSON MAGNETOGRAM

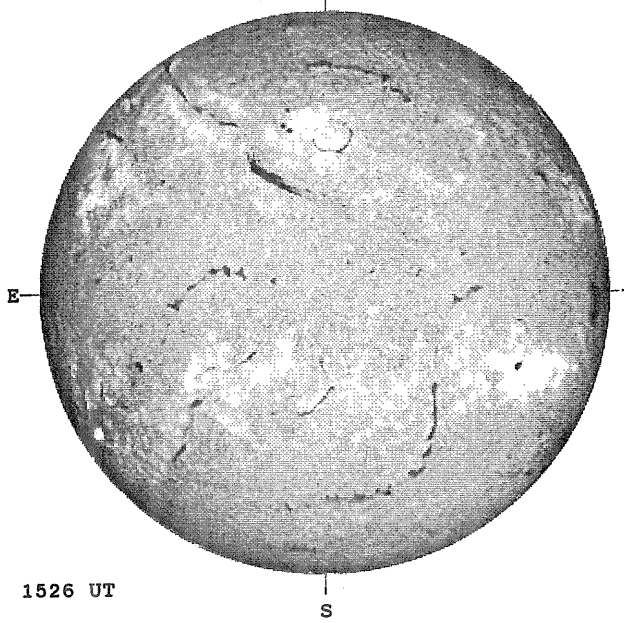
DeltaY = 20.2
DeltaX = 12.8



23.51 -
23.85 UT

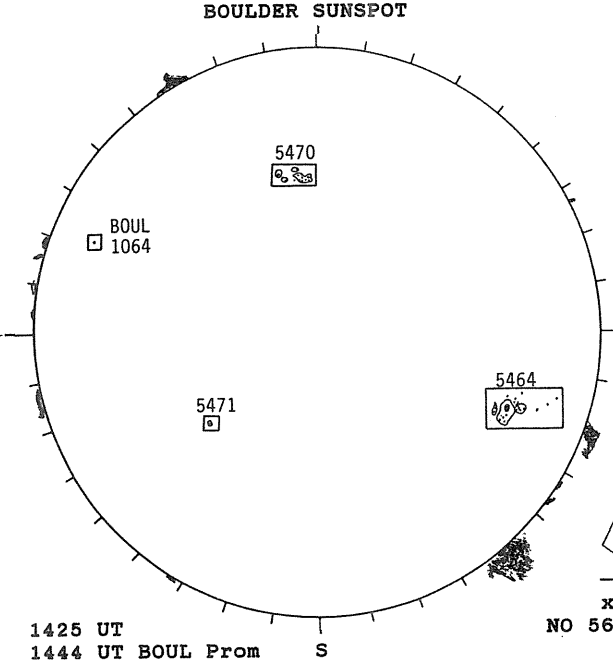
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



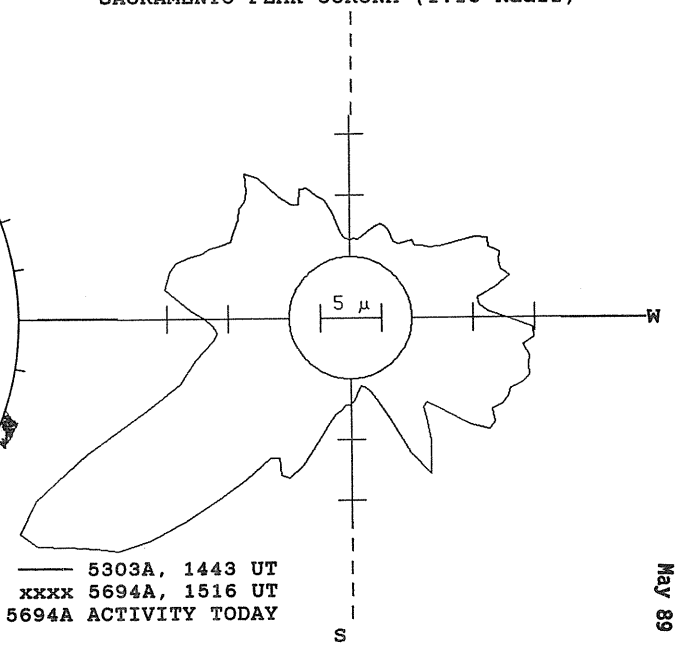
1526 UT

BOULDER SUNSPOT



1425 UT
1444 UT BOUL Prom

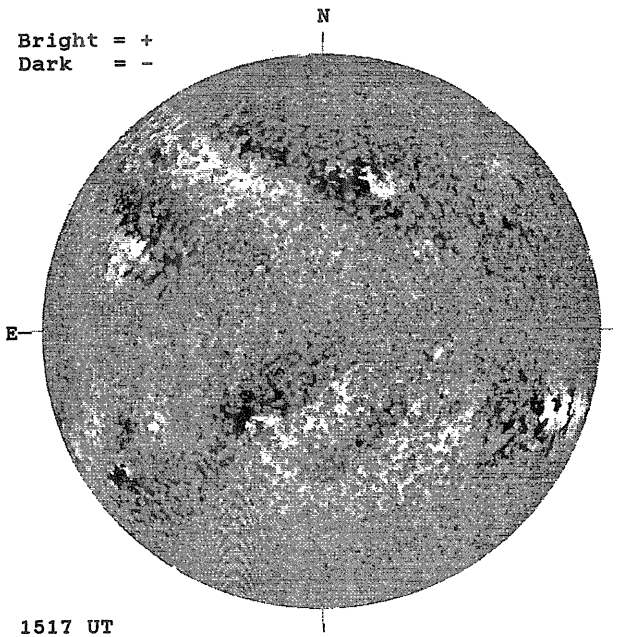
SACRAMENTO PEAK CORONA (1.15 Radii)



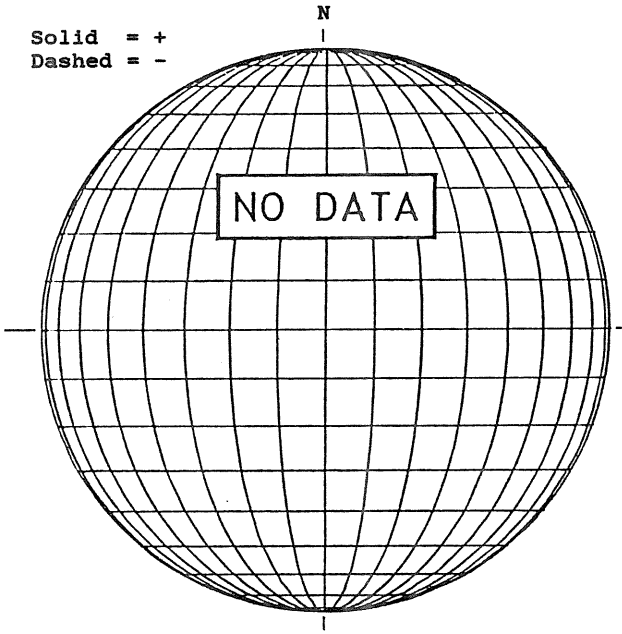
—— 5303A, 1443 UT
xxxx 5694A, 1516 UT
NO 5694A ACTIVITY TODAY

MAY 6, 1989 (P=-23.18, B_o =-3.63, L_o = 259.82)

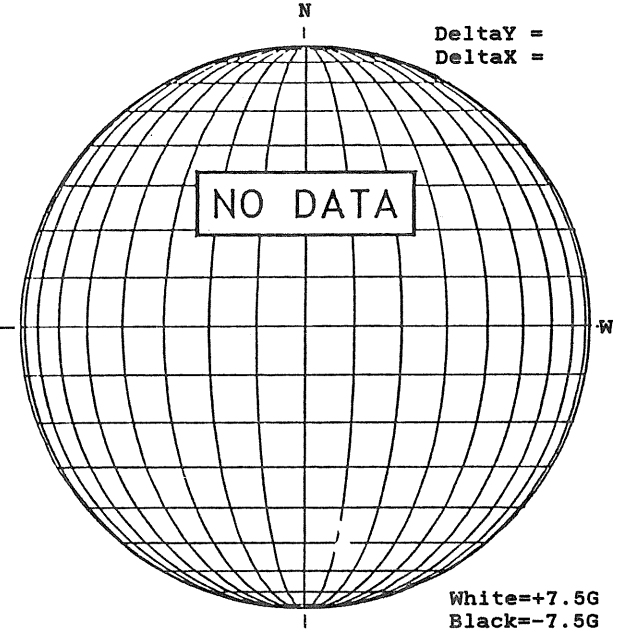
KITT PEAK MAGNETOGRAM



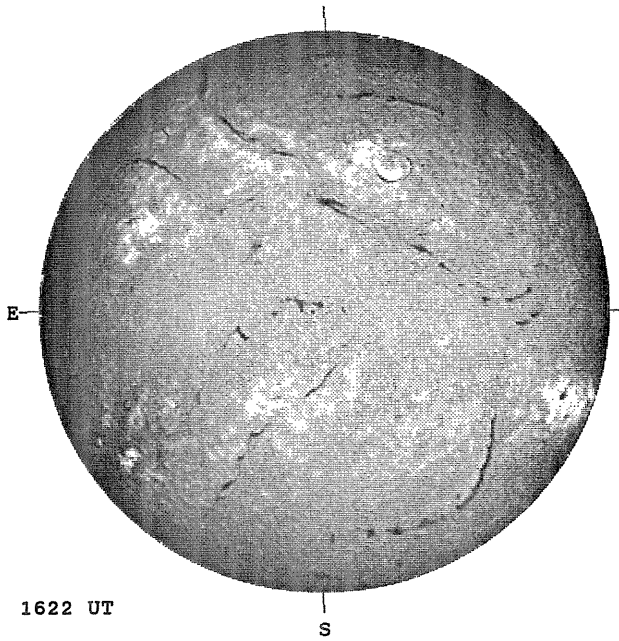
STANFORD MAGNETOGRAM



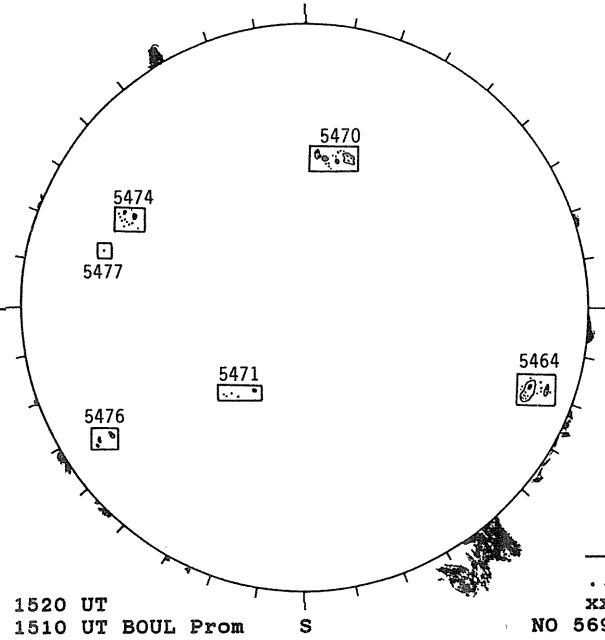
MT. WILSON MAGNETOGRAM



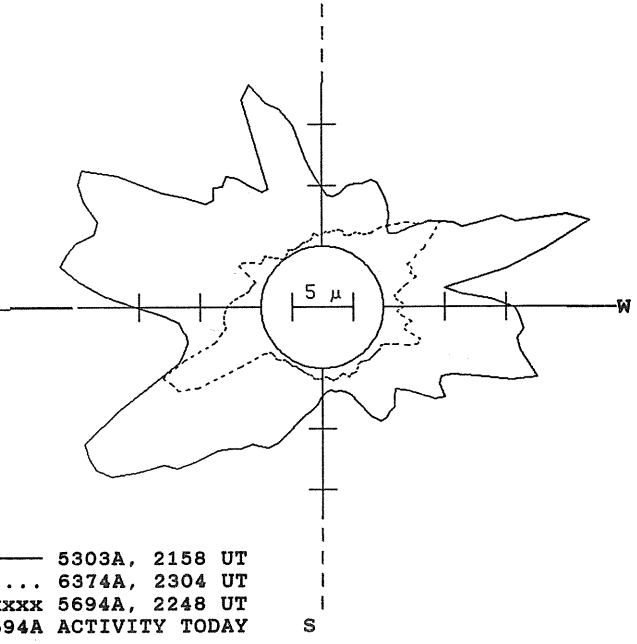
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



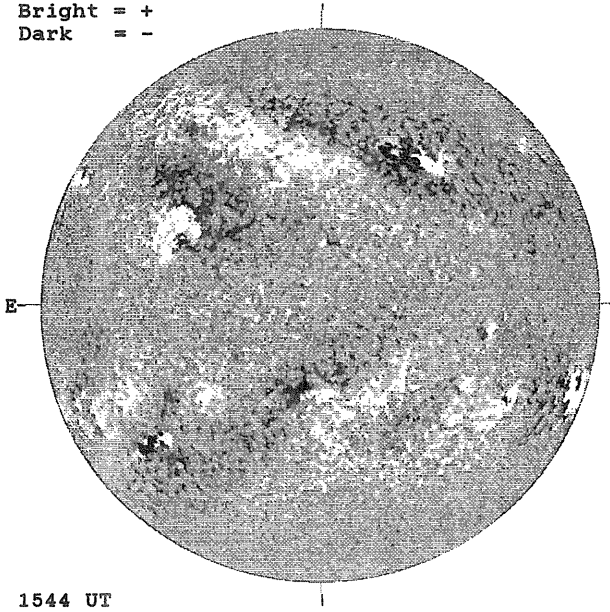
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 7, 1989 (P=-22.96, B_o =-3.53, L_o = 246.60)

KITT PEAK MAGNETOGRAM

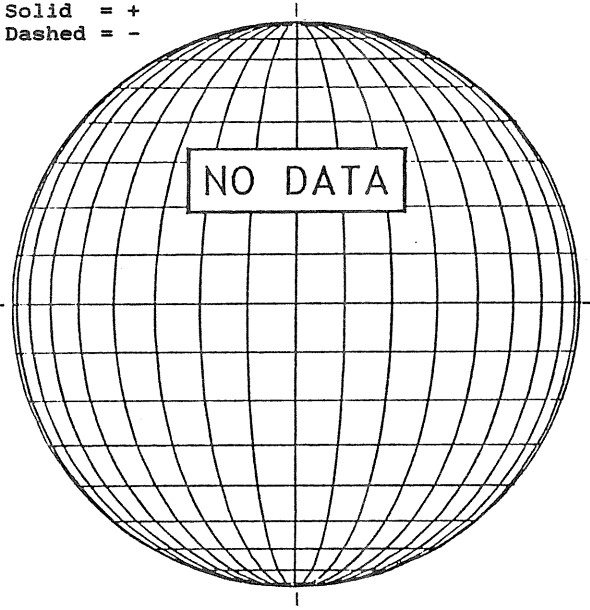
Bright = +
Dark = -



1544 UT

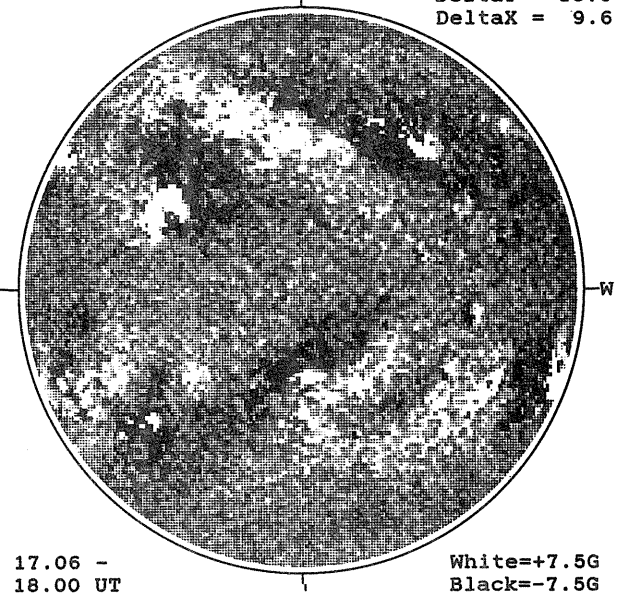
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

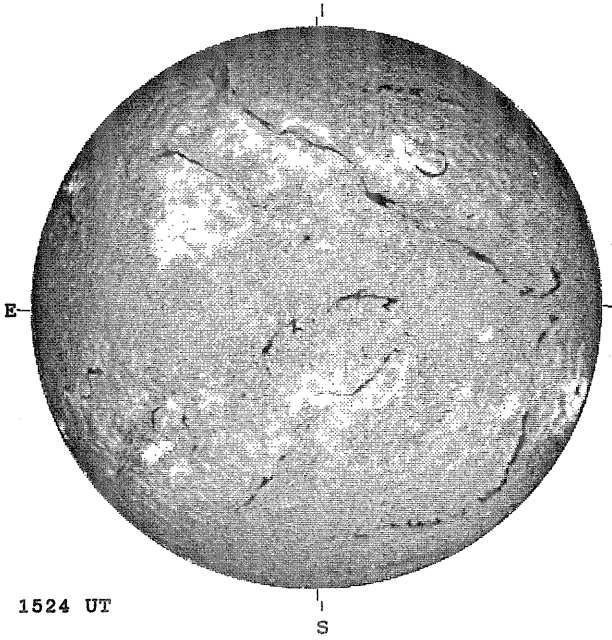
DeltaY = 13.0
DeltaX = 9.6



17.06 -
18.00 UT

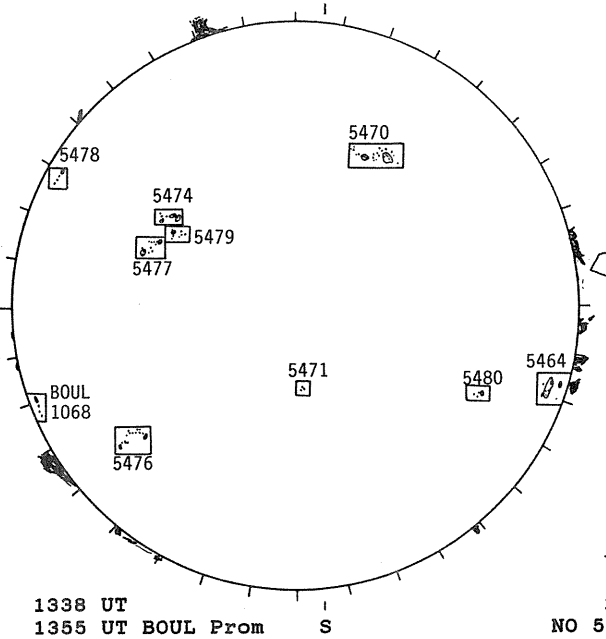
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



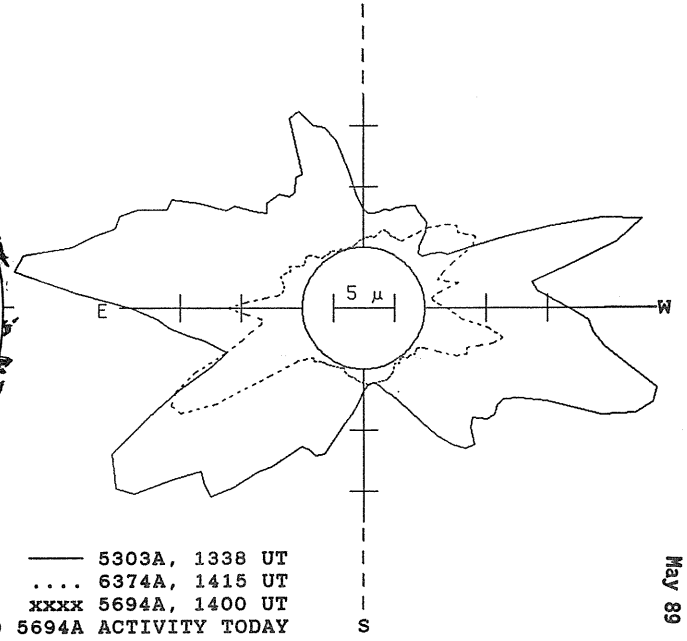
1524 UT

BOULDER SUNSPOT



1338 UT
1355 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

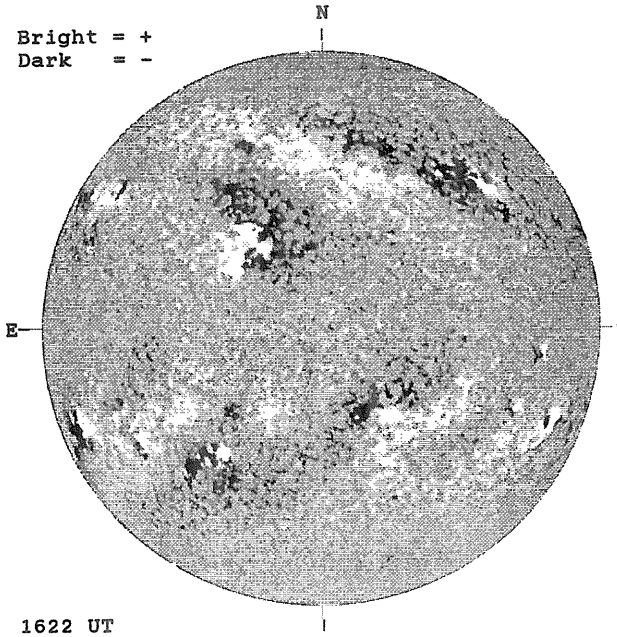


—— 5303A, 1338 UT
.... 6374A, 1415 UT
xxxx 5694A, 1400 UT
NO 5694A ACTIVITY TODAY

MAY 8, 1989 (P=-22.74, B_o =-3.42, L_o = 233.38)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1622 UT

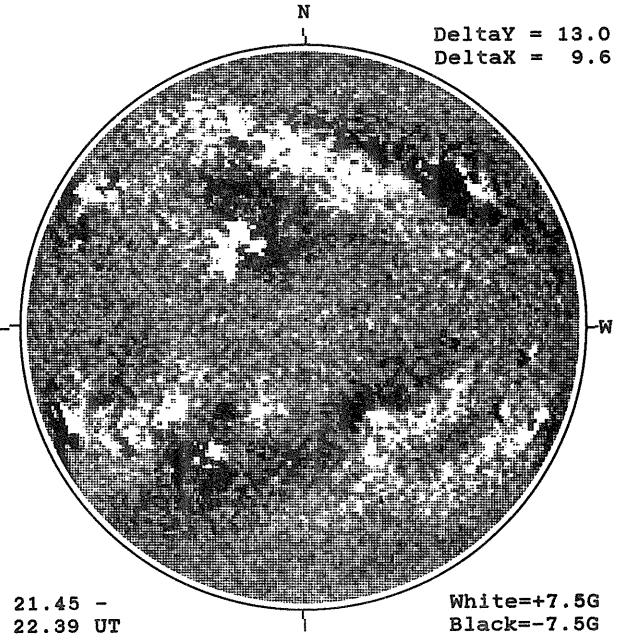
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2308 UT

MT. WILSON MAGNETOGRAM

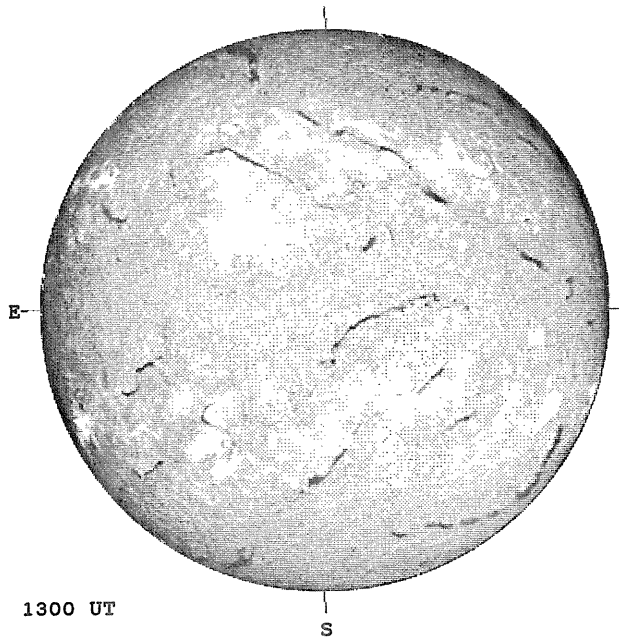
DeltaY = 13.0
DeltaX = 9.6



21.45 -
22.39 UT

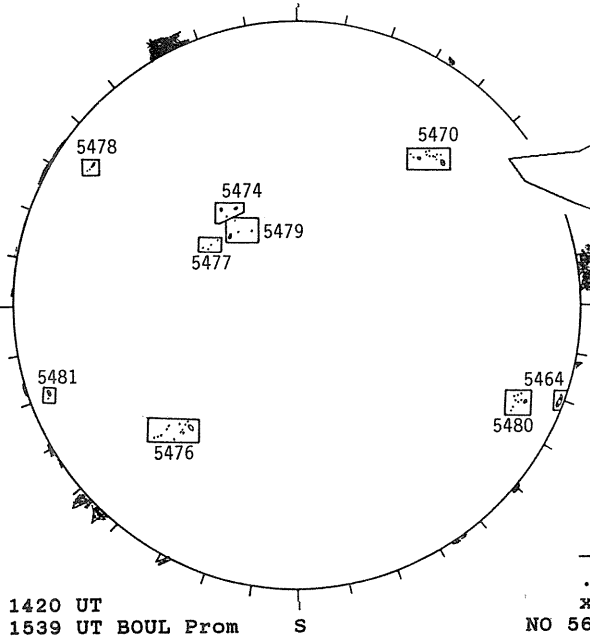
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



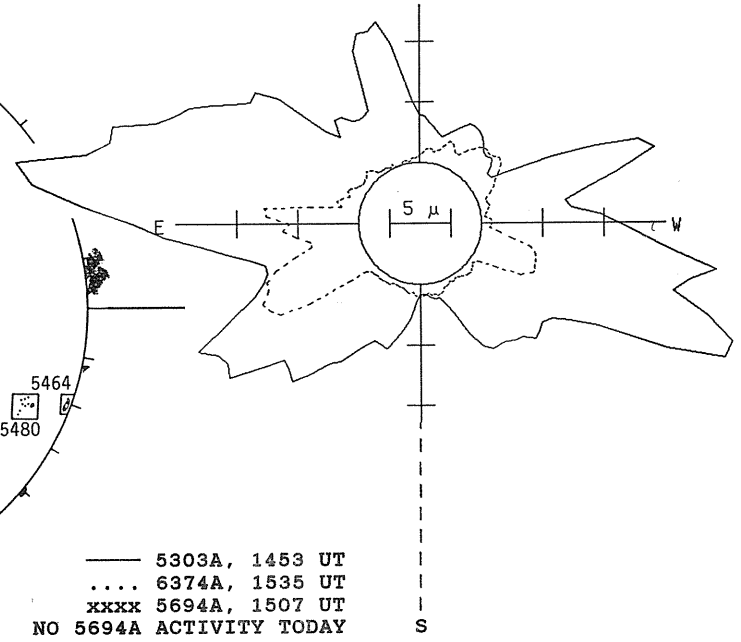
1300 UT

BOULDER SUNSPOT



1420 UT
1539 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

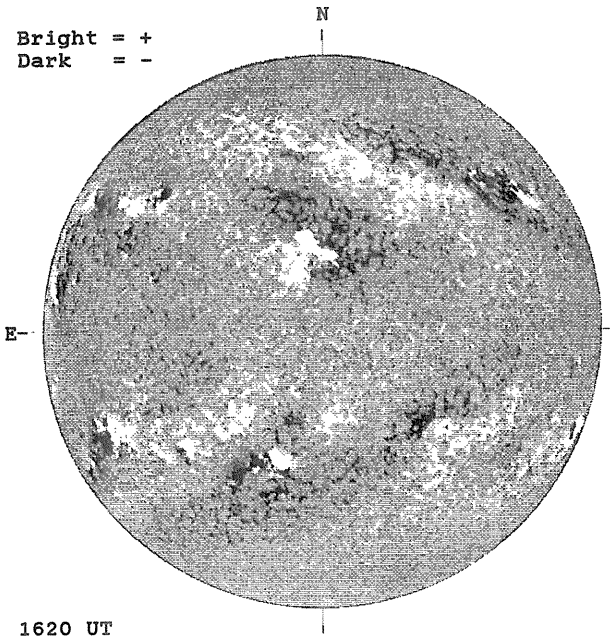


—— 5303A, 1453 UT
.... 6374A, 1535 UT
xxxx 5694A, 1507 UT
NO 5694A ACTIVITY TODAY

MAY 9, 1989 (P=-22.51, B_o =-3.31, L_o = 220.16)

KITT PEAK MAGNETOGRAM

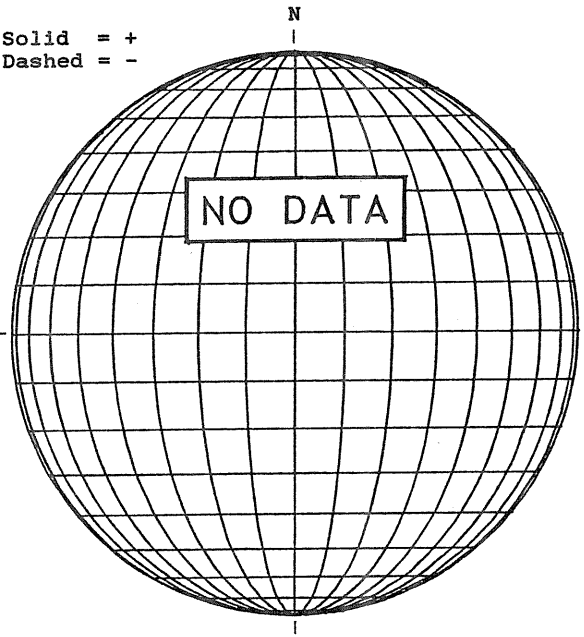
Bright = +
Dark = -



1620 UT

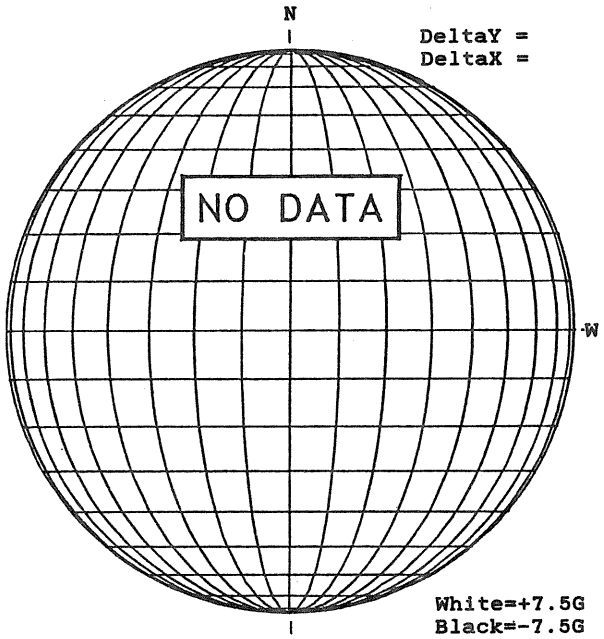
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



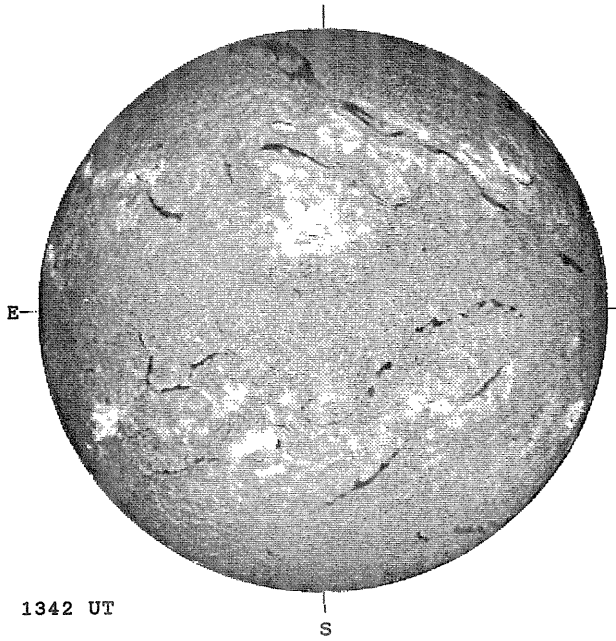
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



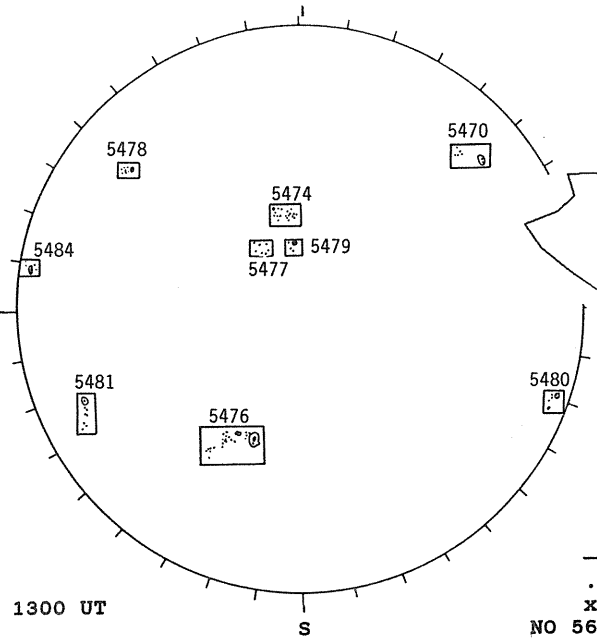
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



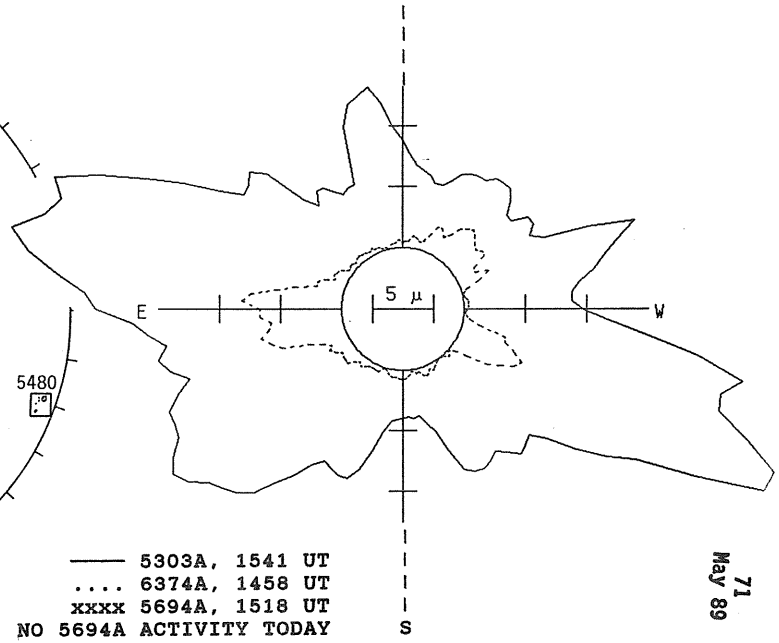
1342 UT

RAMEY SUNSPOT



1300 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

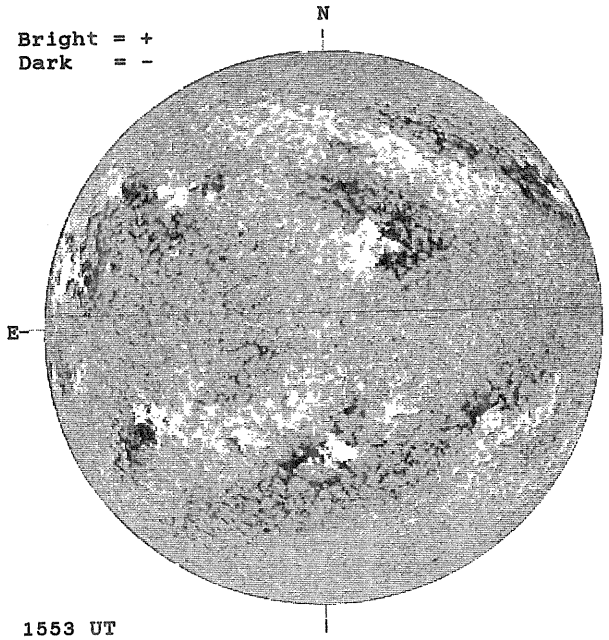


—— 5303A, 1541 UT
.... 6374A, 1458 UT
xxxx 5694A, 1518 UT
NO 5694A ACTIVITY TODAY

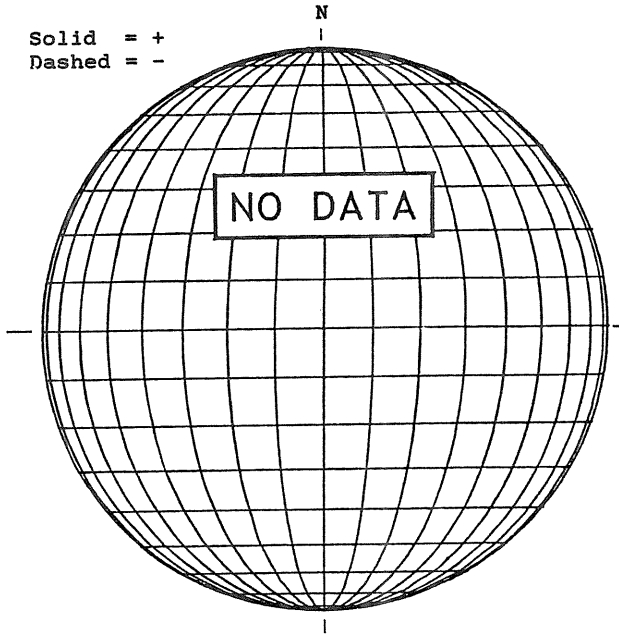
71
May 89

MAY 10, 1989 (P=-22.27, B_o =-3.20, L_o = 206.94)

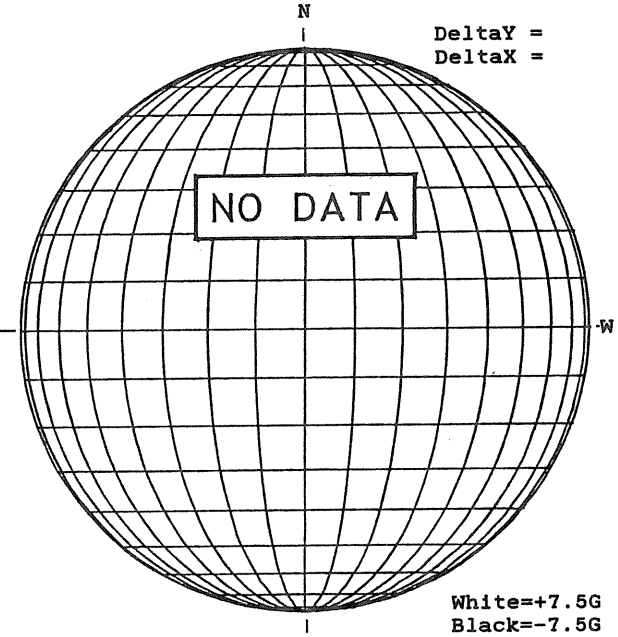
KITT PEAK MAGNETOGRAM



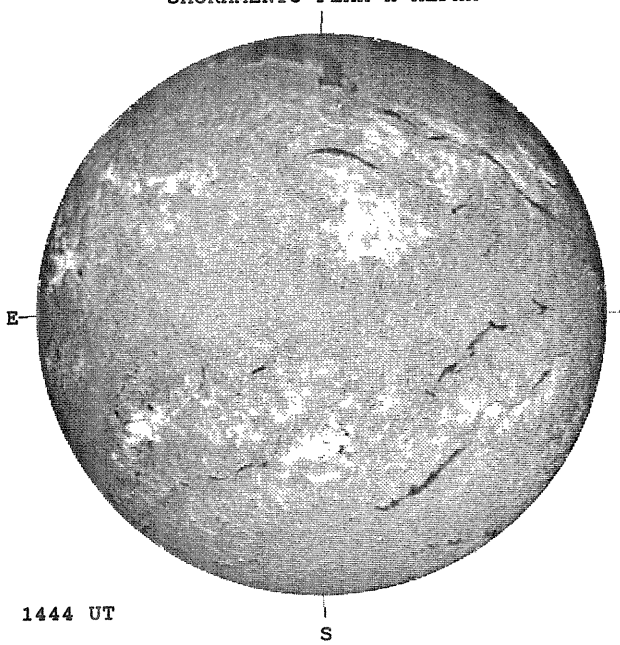
STANFORD MAGNETOGRAM



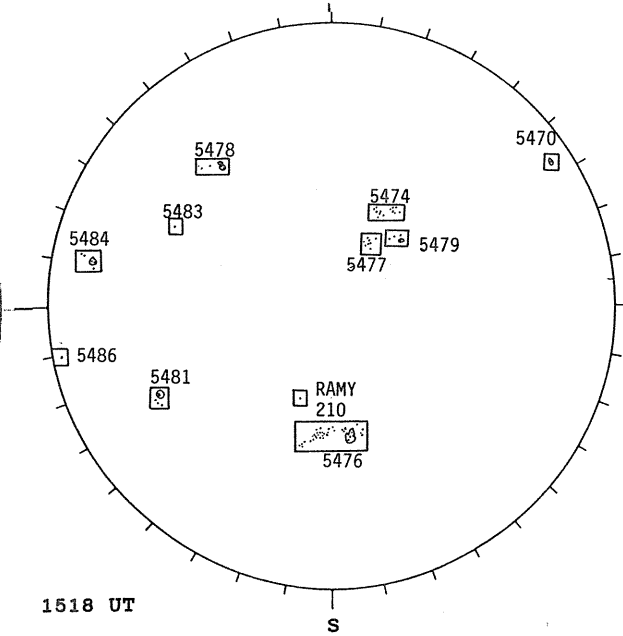
MT. WILSON MAGNETOGRAM



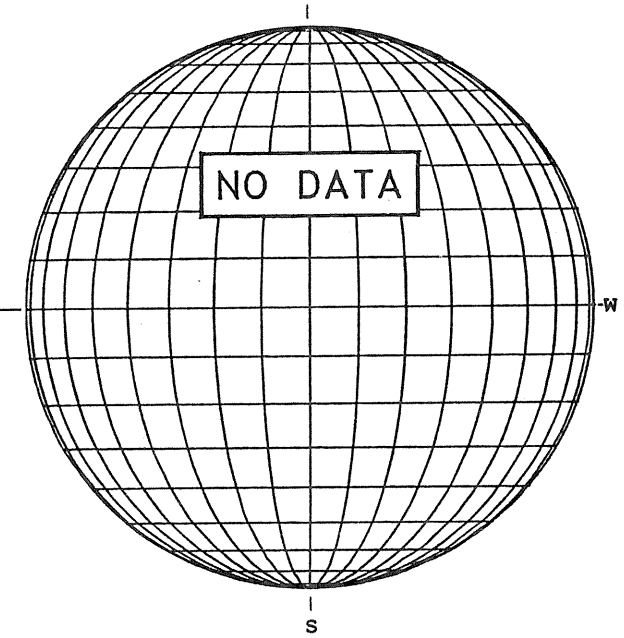
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOT



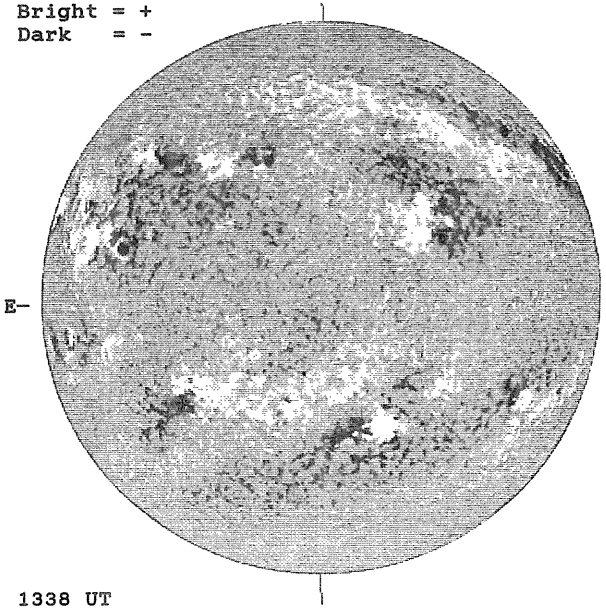
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 11, 1989 (P=-22.03, B_o =-3.09, L_o = 193.72)

KITT PEAK MAGNETOGRAM

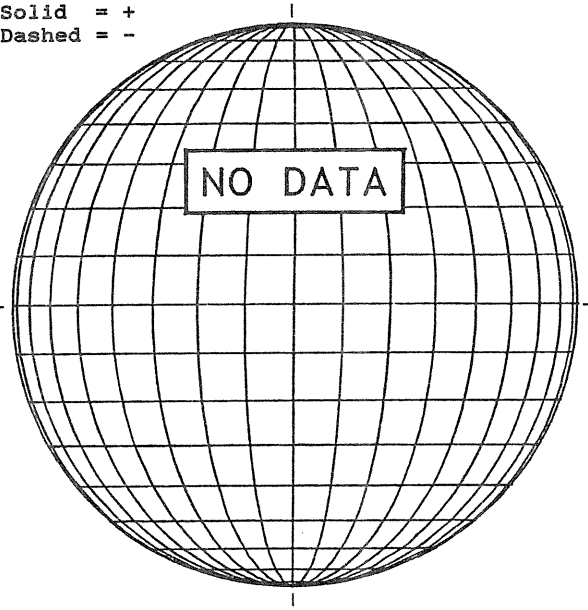
Bright = +
Dark = -



1338 UT

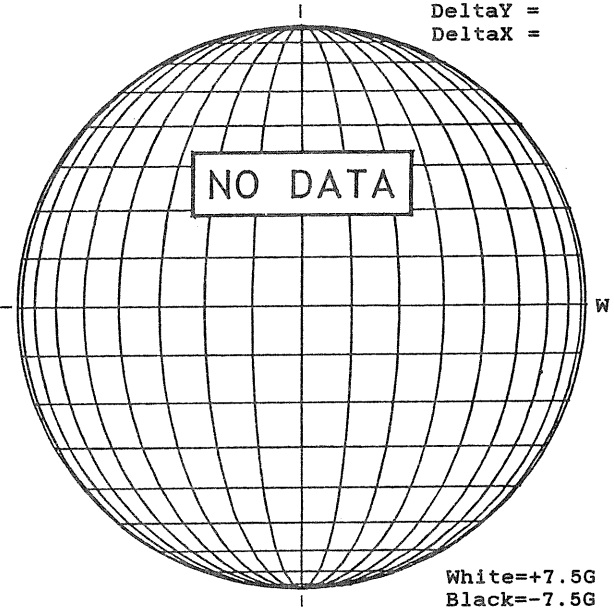
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



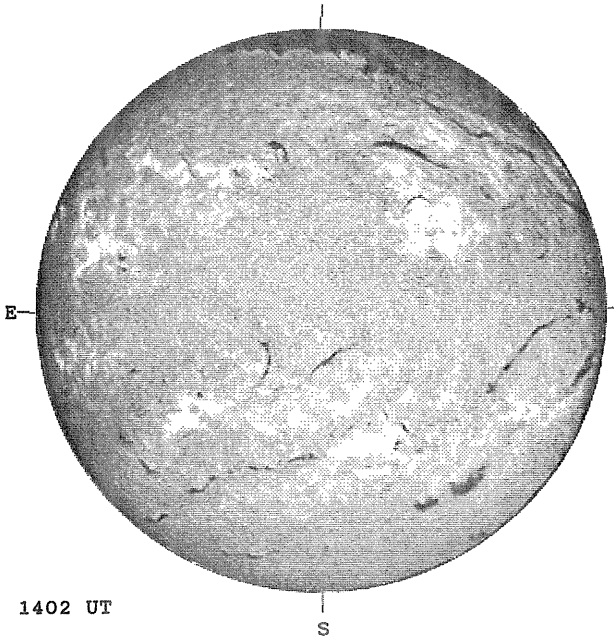
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



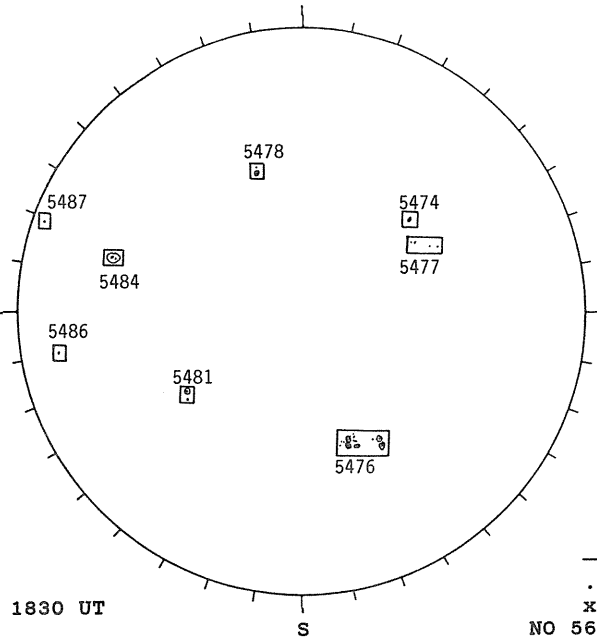
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



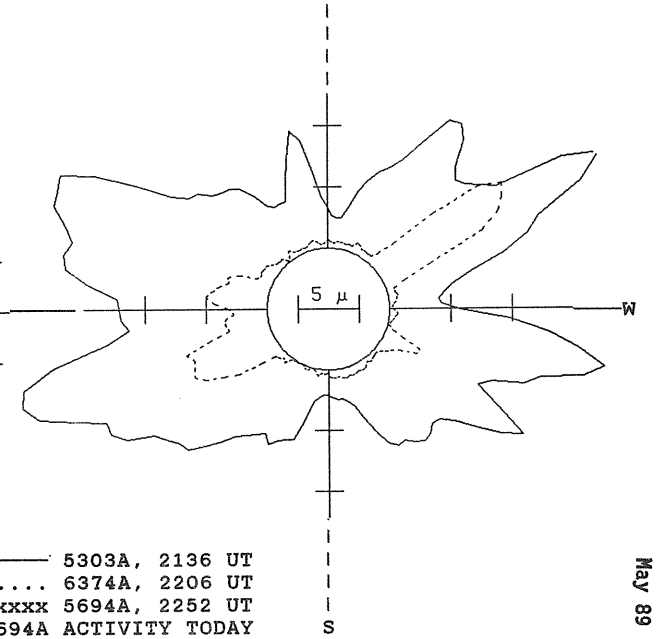
1402 UT

BOULDER SUNSPOT



1830 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

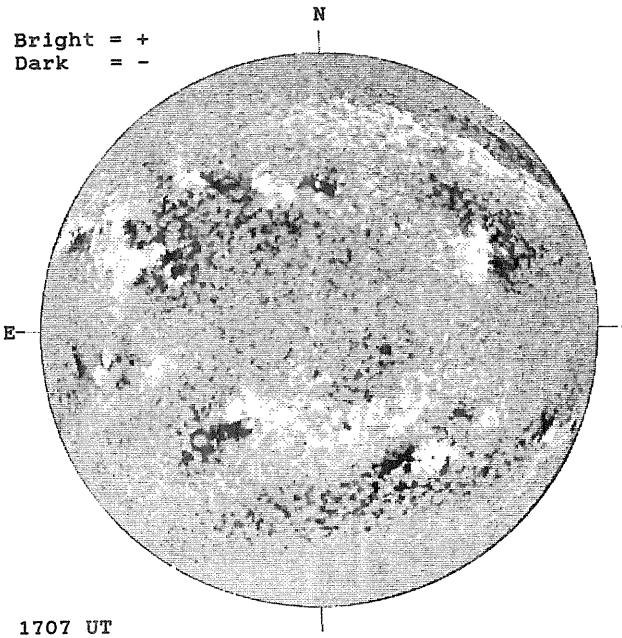


—— 5303A, 2136 UT
.... 6374A, 2206 UT
xxxx 5694A, 2252 UT
NO 5694A ACTIVITY TODAY

MAY 12, 1989 (P=-21.78, B_o =-2.98, L_o = 180.49)

KITT PEAK MAGNETOGRAM

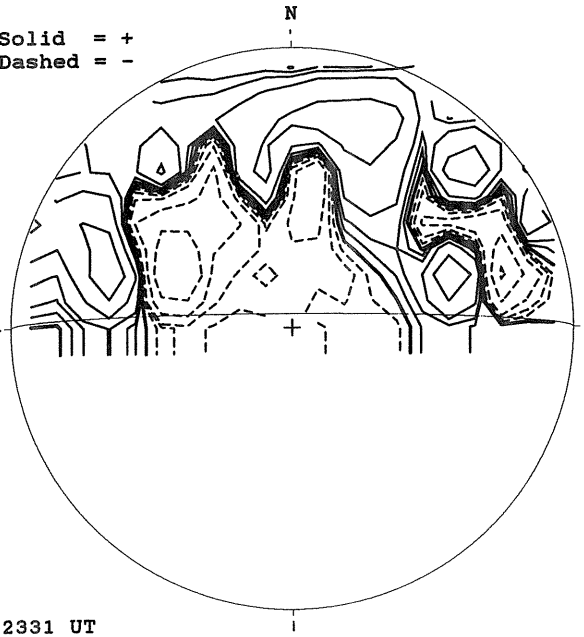
Bright = +
Dark = -



1707 UT

STANFORD MAGNETOGRAM

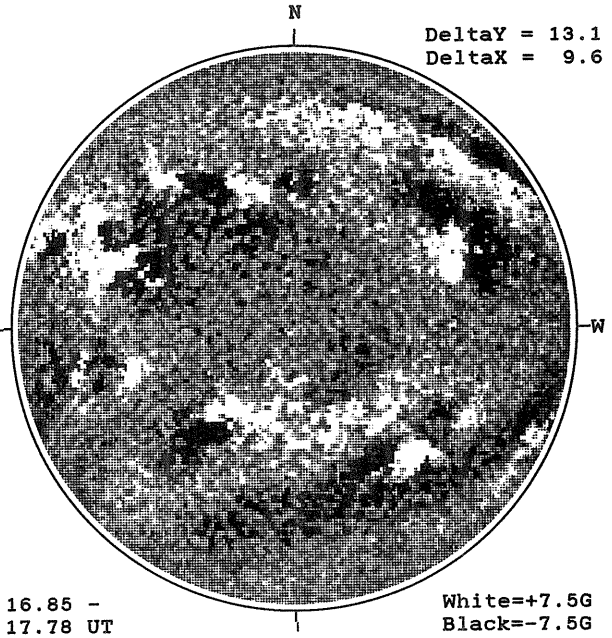
Solid = +
Dashed = -



2331 UT

MT. WILSON MAGNETOGRAM

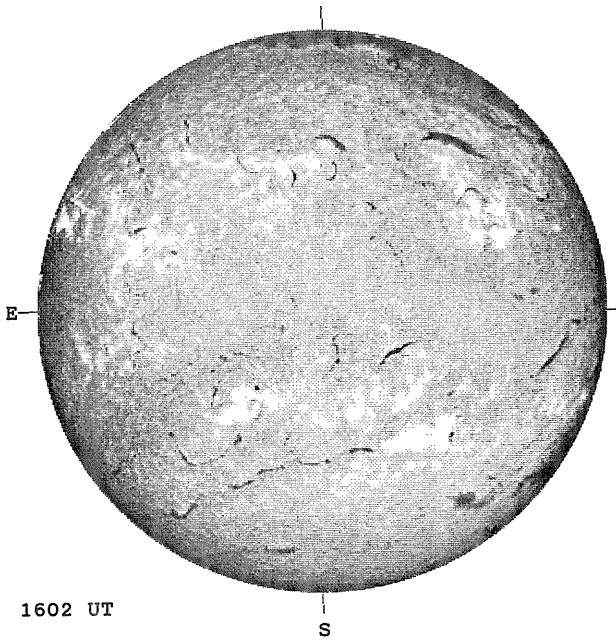
DeltaY = 13.1
DeltaX = 9.6



16.85 -
17.78 UT

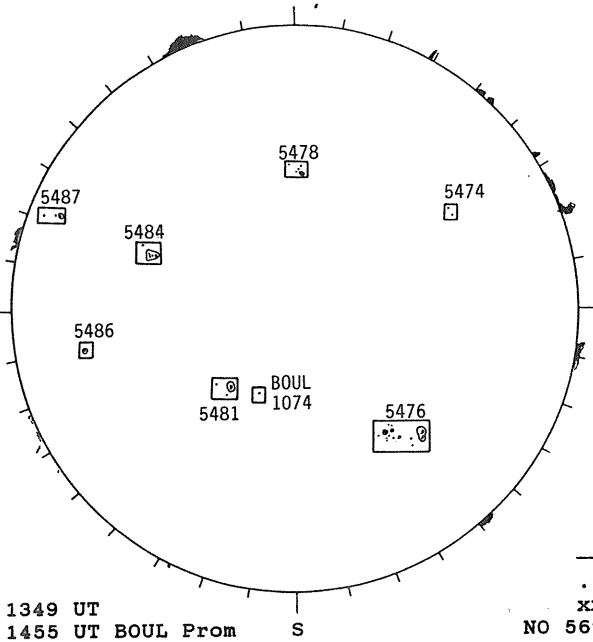
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



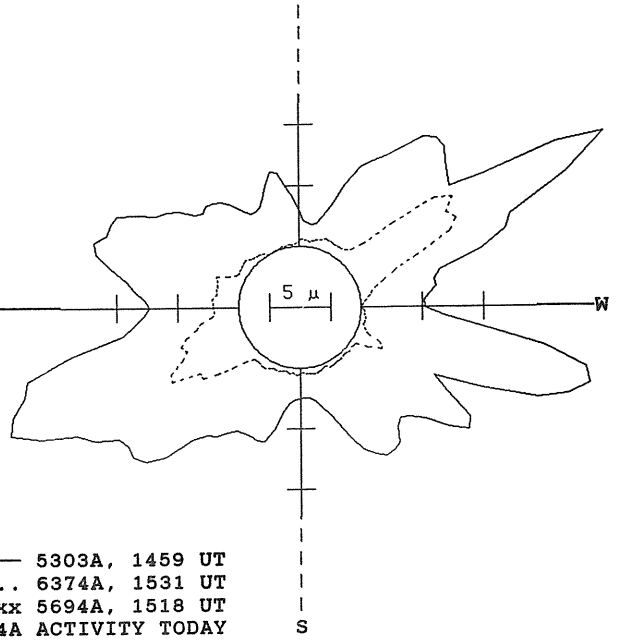
1602 UT

BOULDER SUNSPOT



1349 UT
1455 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

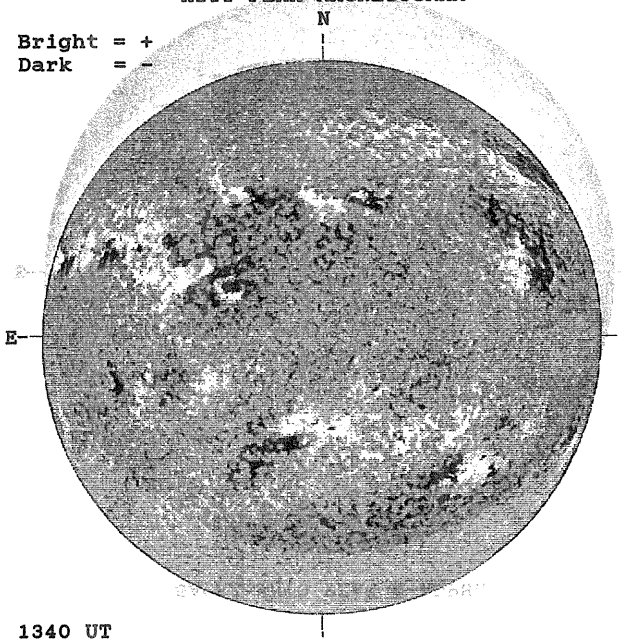


—— 5303A, 1459 UT
.... 6374A, 1531 UT
xxxx 5694A, 1518 UT
NO 5694A ACTIVITY TODAY

MAY 13, 1989 (P=-21.52, B_o =-2.87, L_o = 167.27)

KITT PEAK MAGNETOGRAM

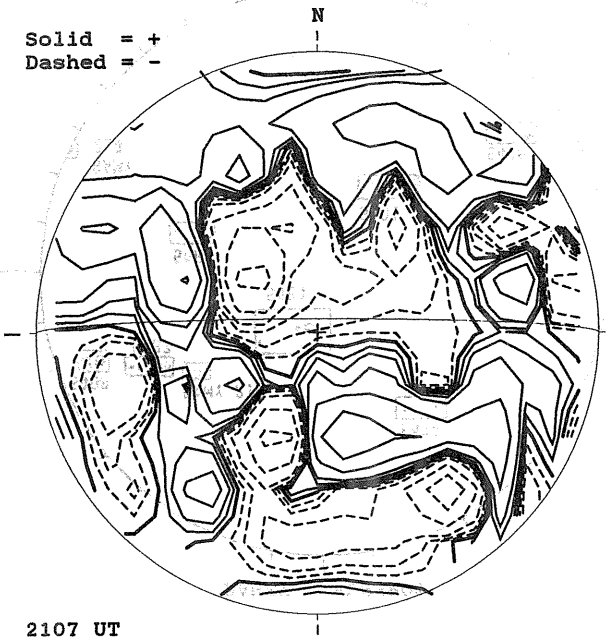
Bright = +
Dark = -



1340 UT

STANFORD MAGNETOGRAM

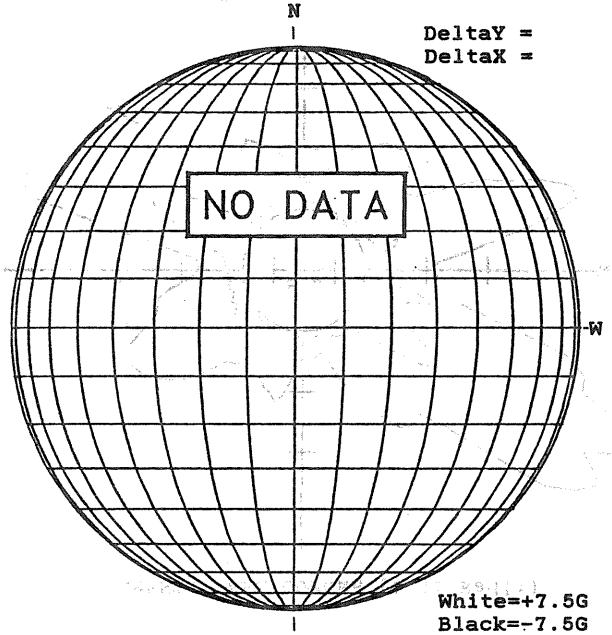
Solid = +
Dashed = -



2107 UT

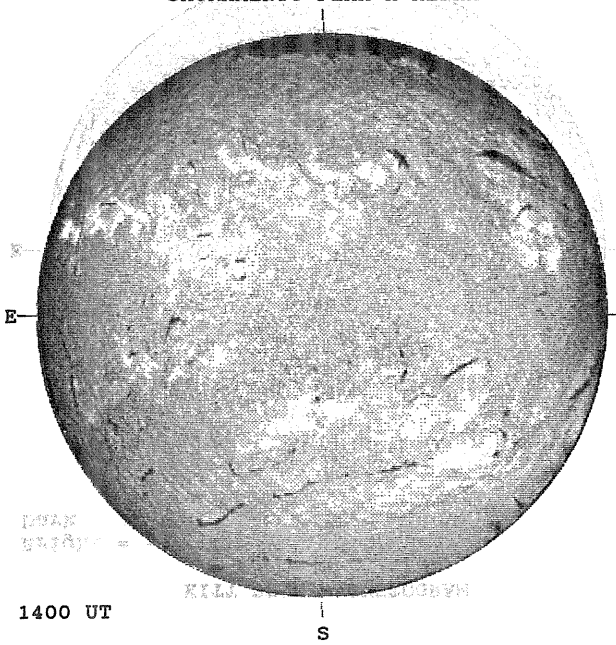
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



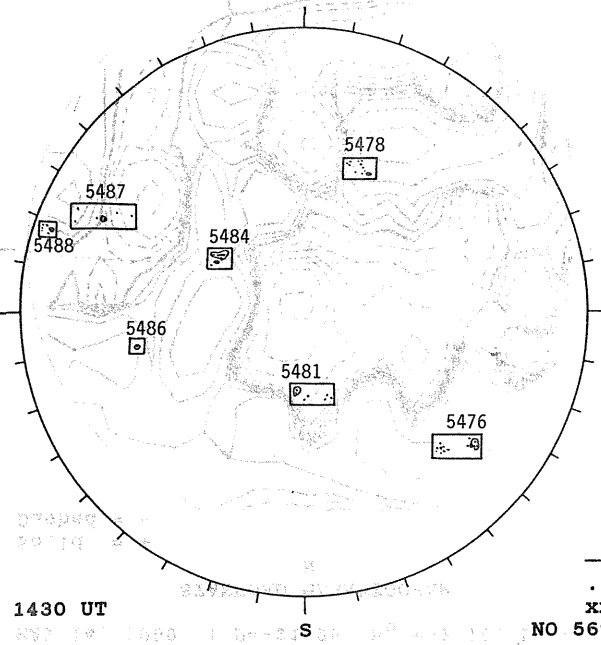
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



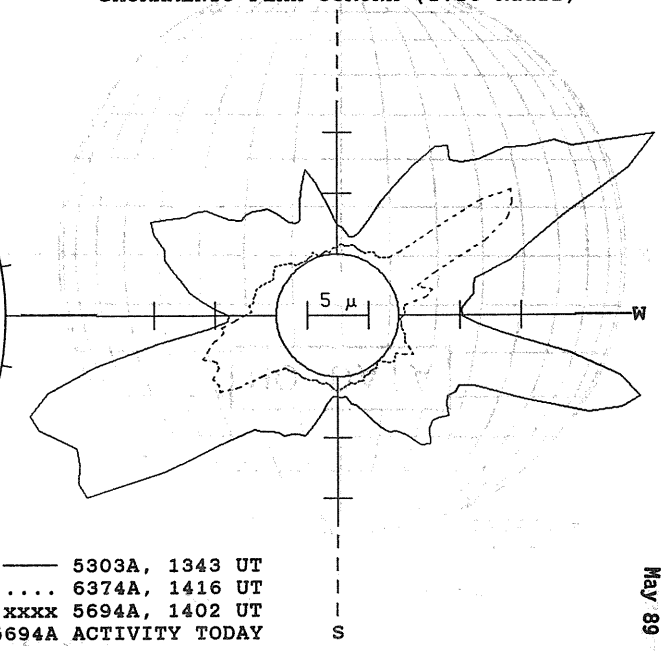
1400 UT

RAMEY SUNSPOT



1430 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

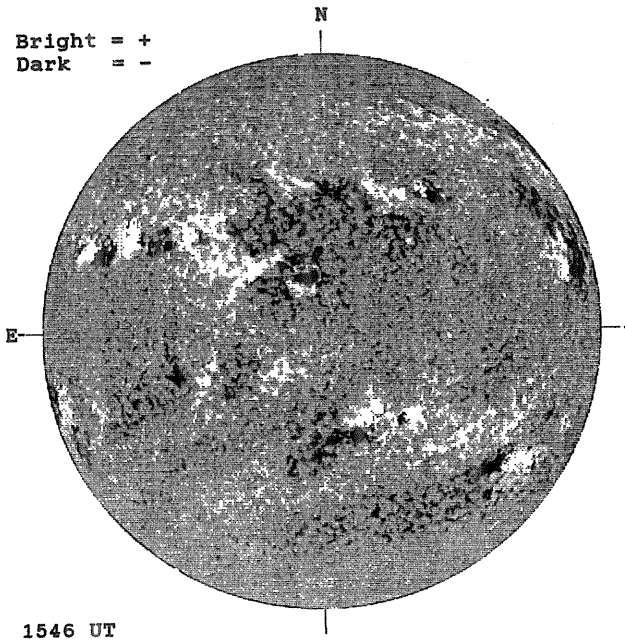


—— 5303A, 1343 UT
.... 6374A, 1416 UT
xxxx 5694A, 1402 UT
NO 5694A ACTIVITY TODAY

MAY 14, 1989 (P=-21.26, B_o =-2.76, L_o = 154.04)

KITT PEAK MAGNETOGRAM

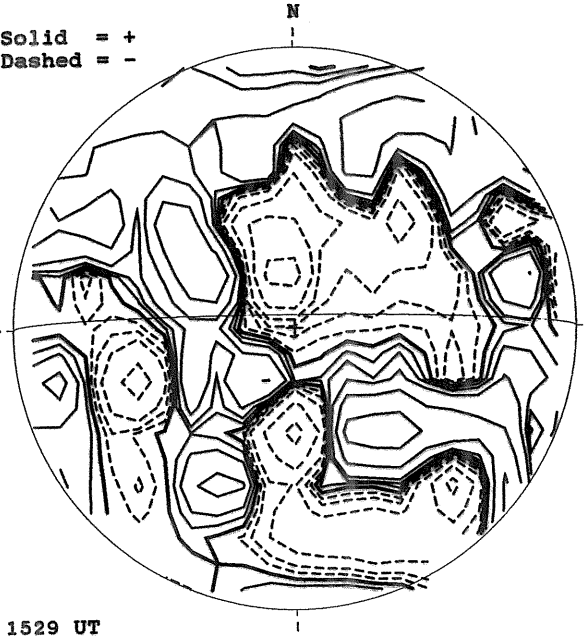
Bright = +
Dark = -



1546 UT

STANFORD MAGNETOGRAM

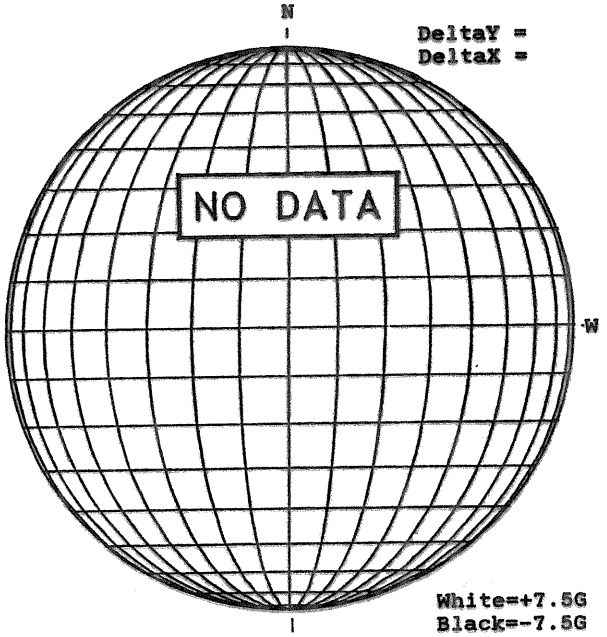
Solid = +
Dashed = -



1529 UT

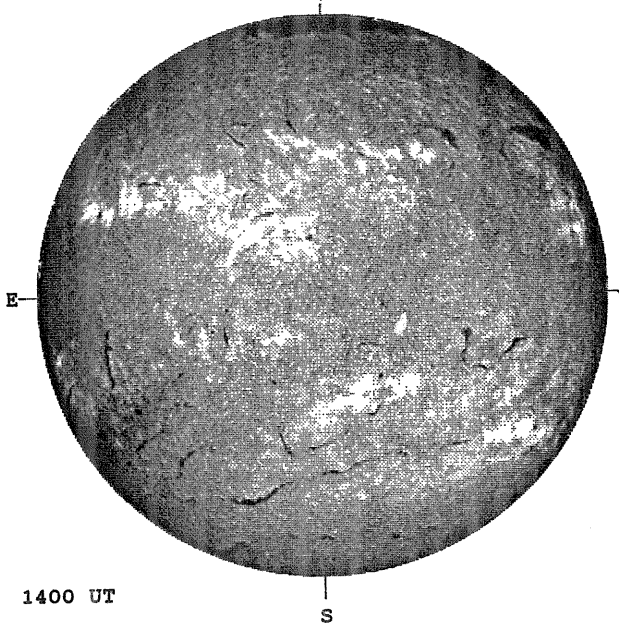
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



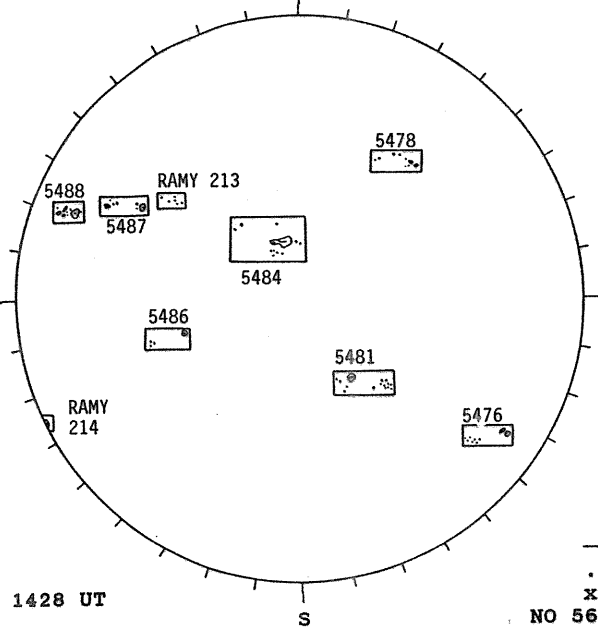
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



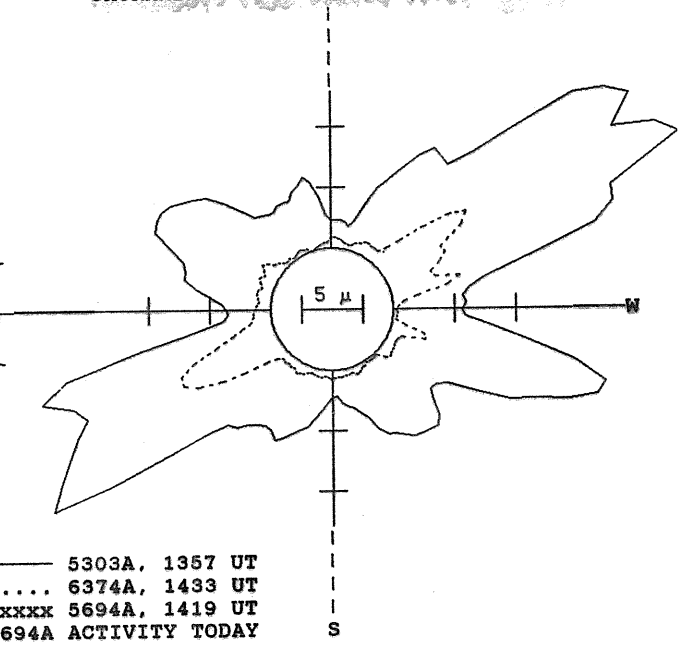
1400 UT

RAMEY SUNSPOT



1428 UT

SACRAMENTO PEAK CORONA (1.15 Radii)

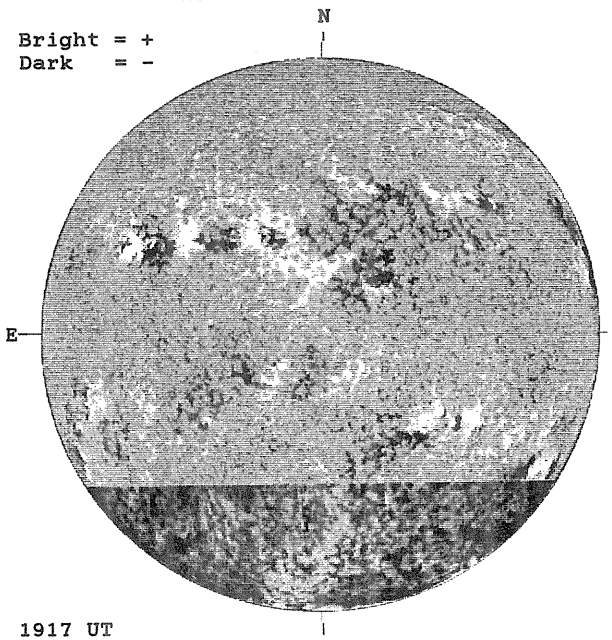


—— 5303A, 1357 UT
.... 6374A, 1433 UT
xxxx 5694A, 1419 UT
NO 5694A ACTIVITY TODAY

MAY 15, 1989 (P=-20.99, B_o =-2.65, L_o = 140.82)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1917 UT

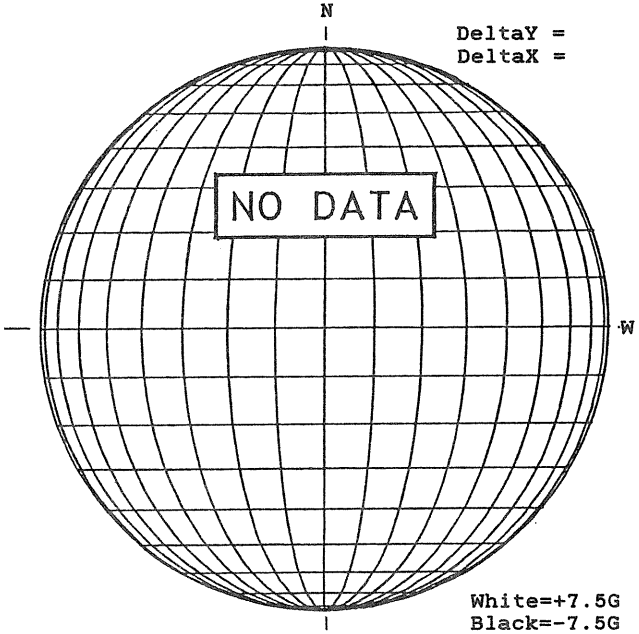
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2331 UT

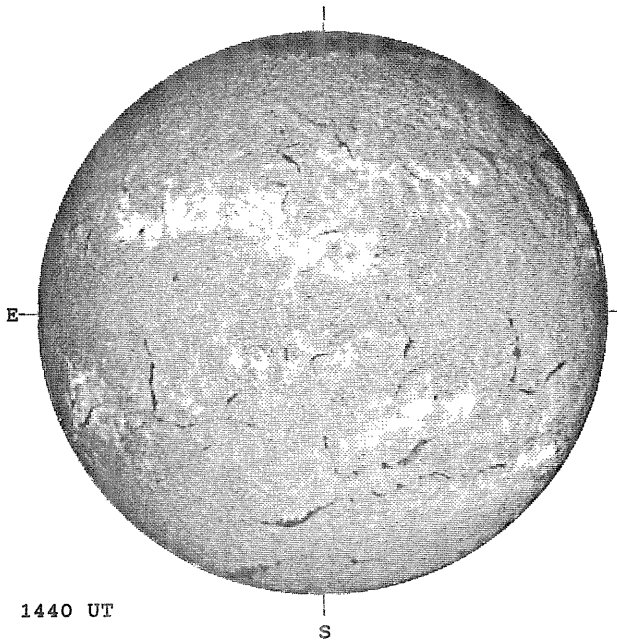
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



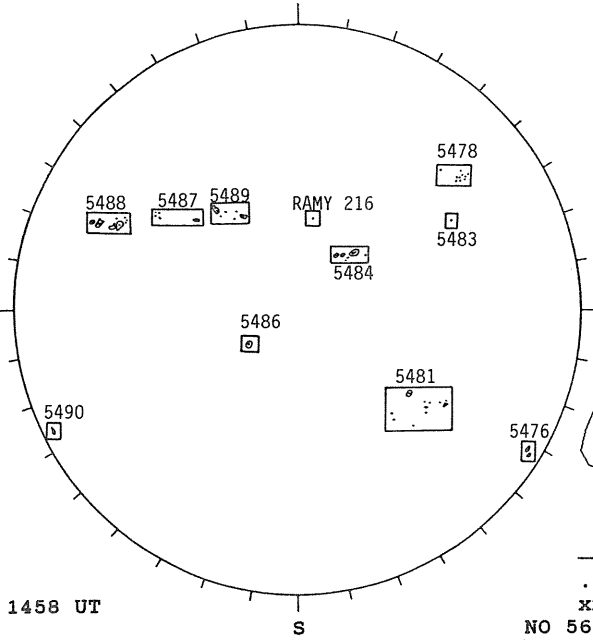
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



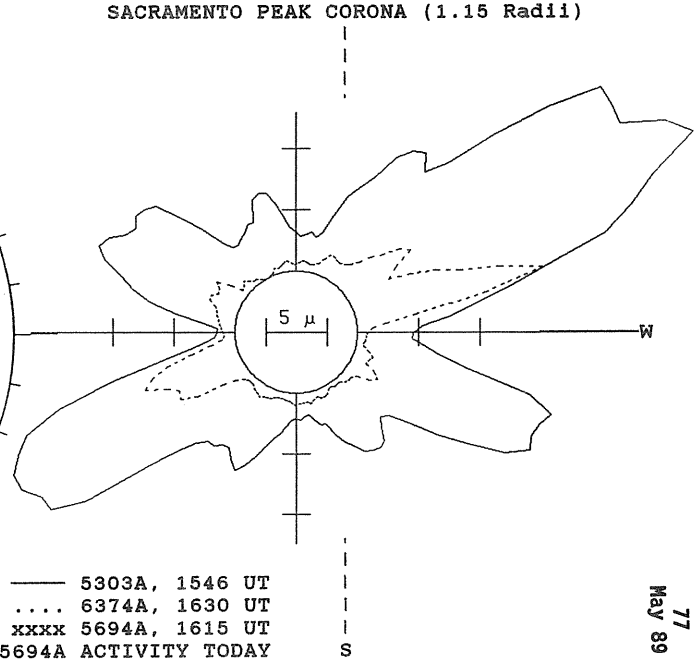
1440 UT

RAMEY SUNSPOT



1458 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A, 1546 UT
.... 6374A, 1630 UT
xxxx 5694A, 1615 UT
NO 5694A ACTIVITY TODAY

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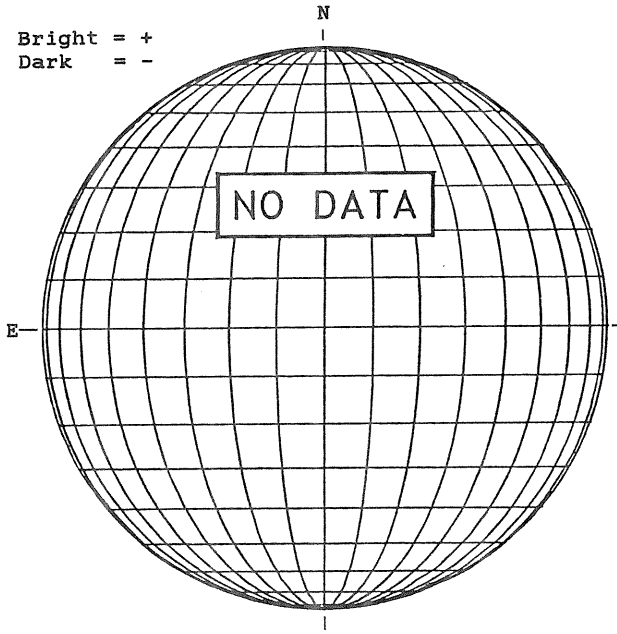
May 89

MAY 16, 1989 (P=-20.71, B_o =-2.53, L_o = 127.59)

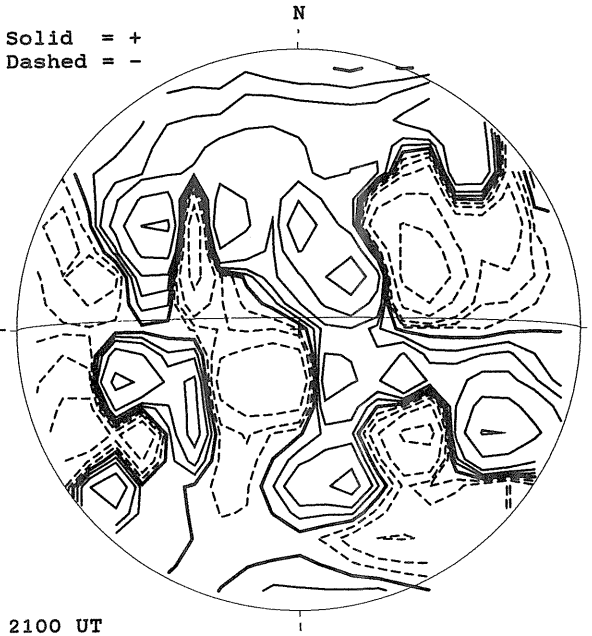
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

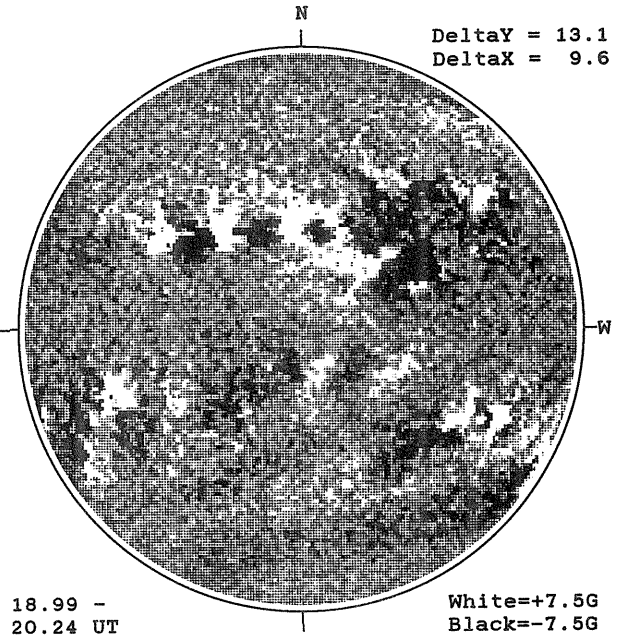
Solid = +
Dashed = -



2100 UT

MT. WILSON MAGNETOGRAM

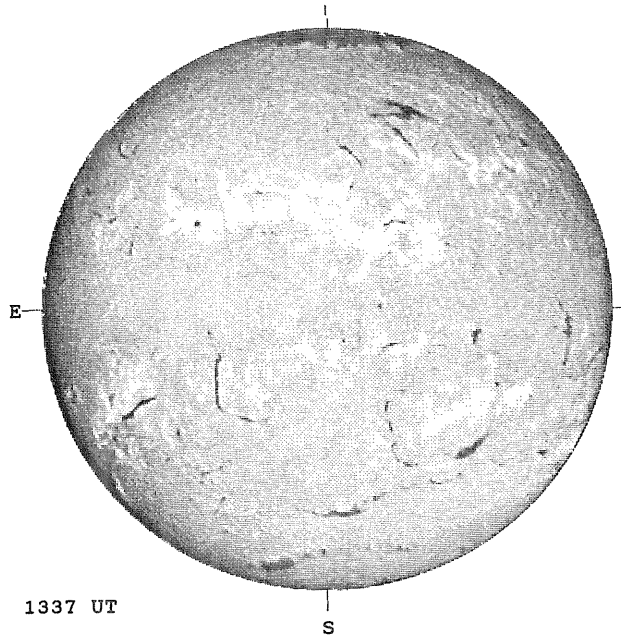
DeltaY = 13.1
DeltaX = 9.6



18.99 -
20.24 UT

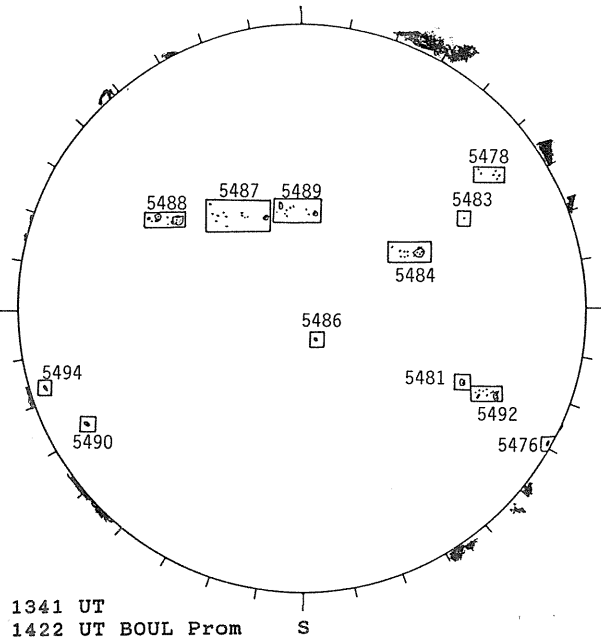
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



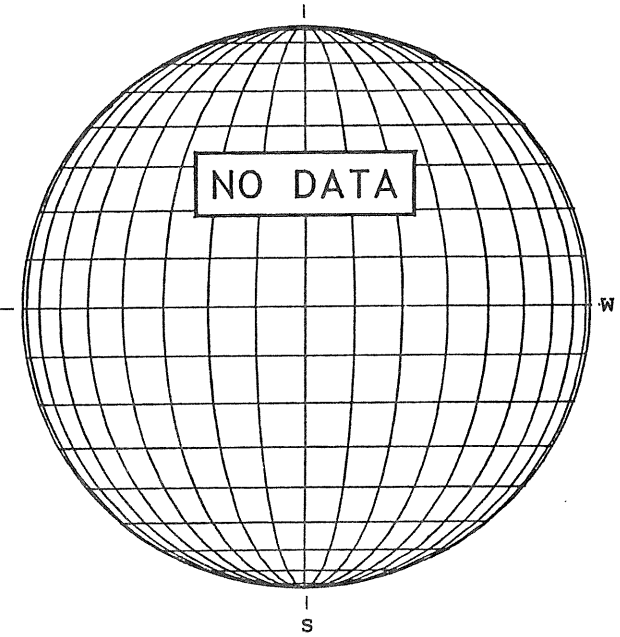
1337 UT

BOULDER SUNSPOT



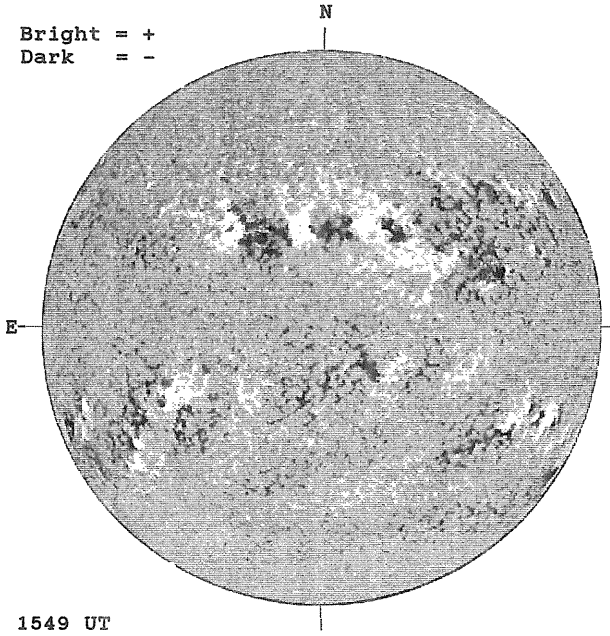
1341 UT
1422 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

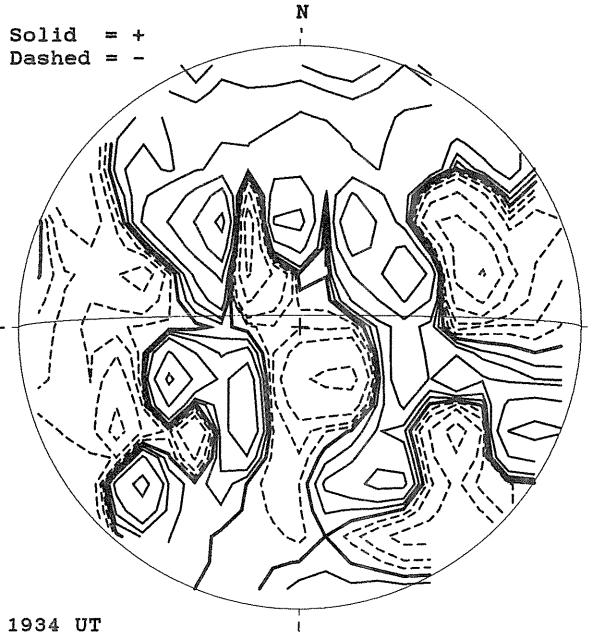


MAY 17, 1989 (P=-20.42, B_o =-2.42, L_o = 114.37)

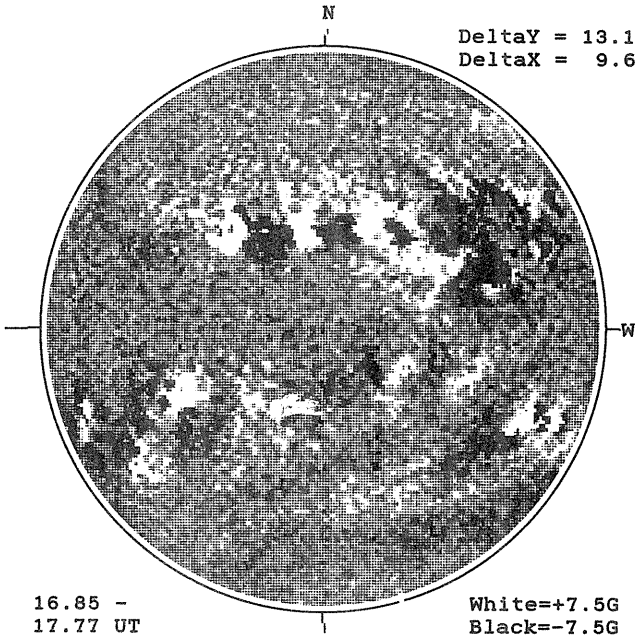
KITT PEAK MAGNETOGRAM



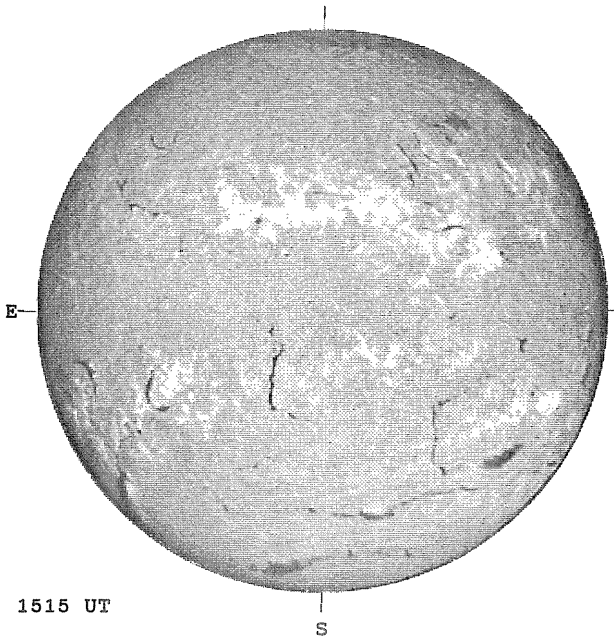
STANFORD MAGNETOGRAM



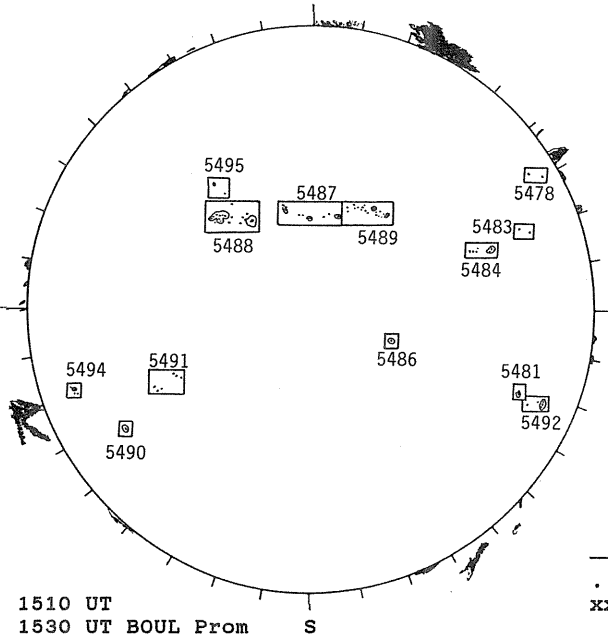
MT. WILSON MAGNETOGRAM



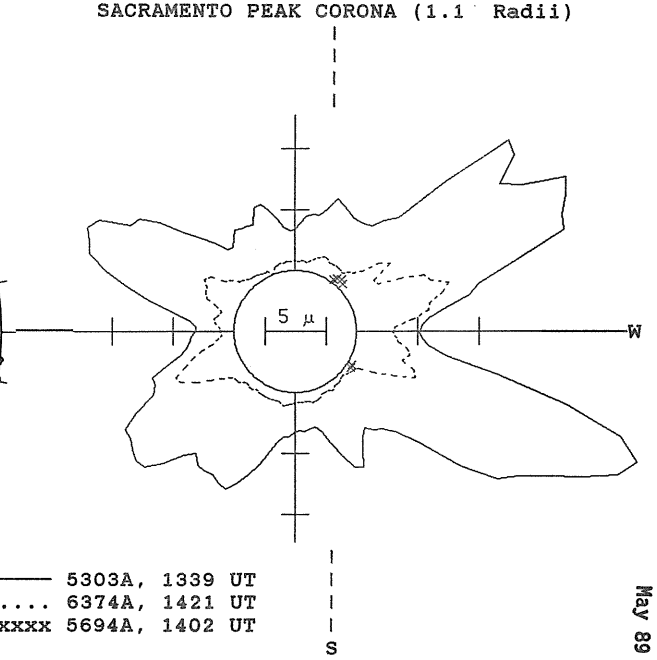
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



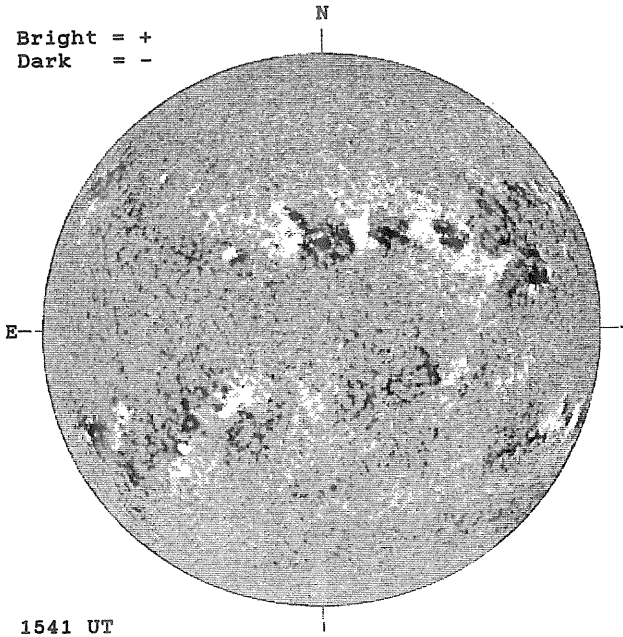
SACRAMENTO PEAK CORONA (1.1 Radii)



MAY 18, 1989 (P=-20.13, B_o =-2.30, L_o = 101.14)

KITT PEAK MAGNETOGRAM

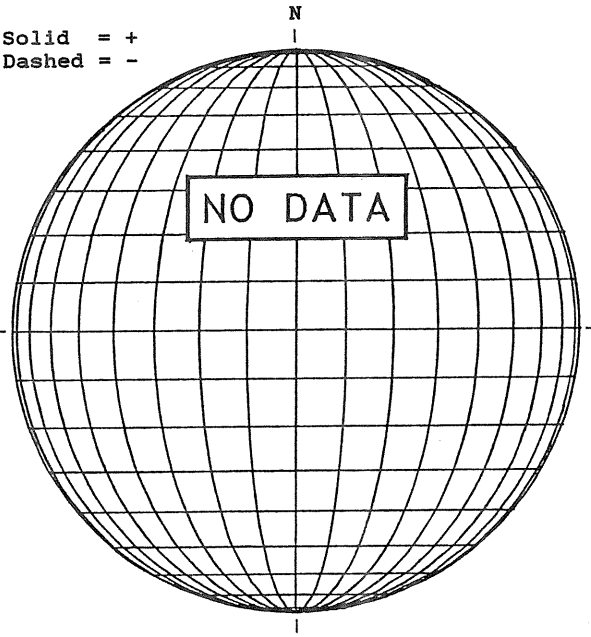
Bright = +
Dark = -



1541 UT

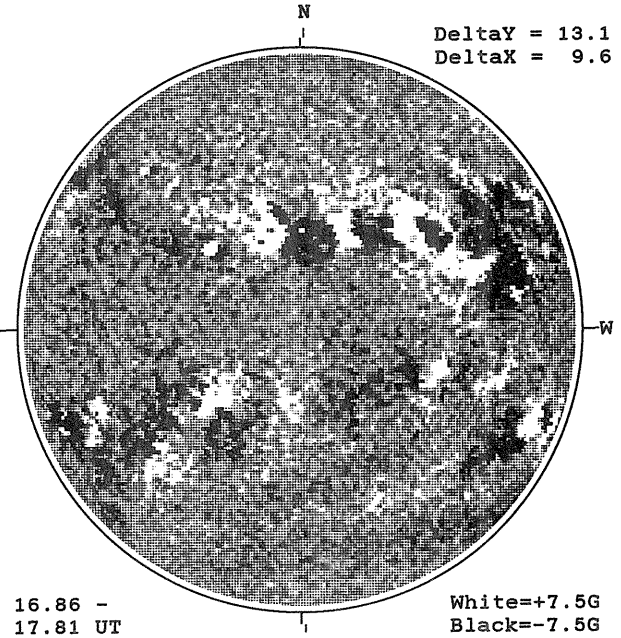
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

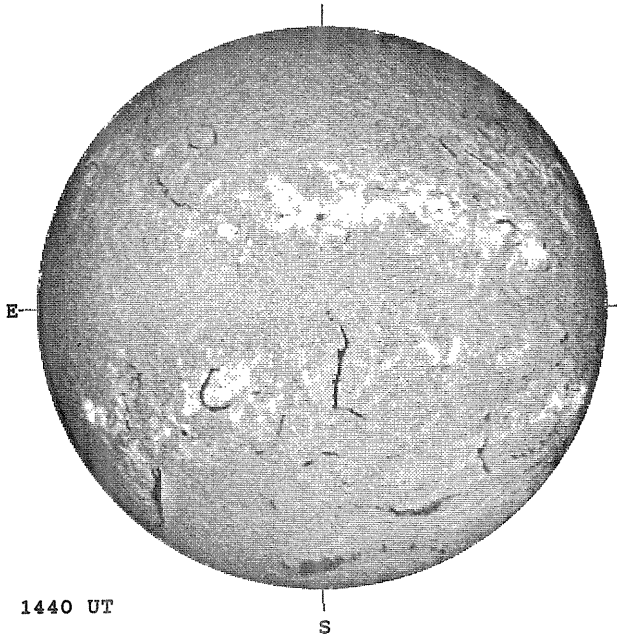
DeltaY = 13.1
DeltaX = 9.6



16.86 -
17.81 UT

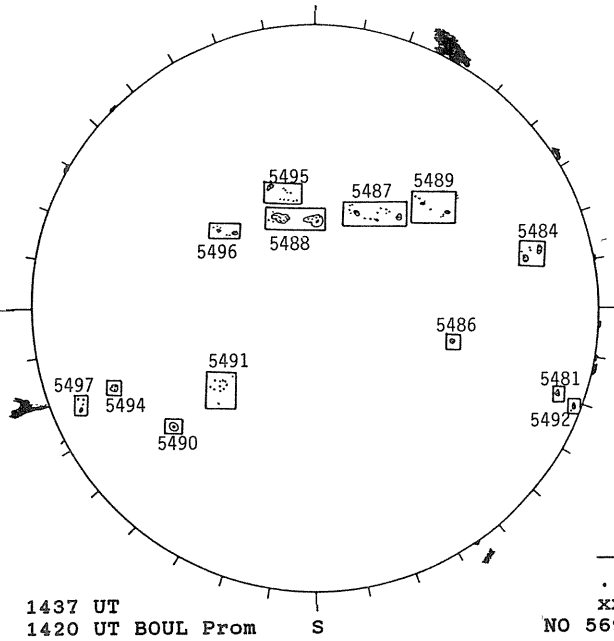
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



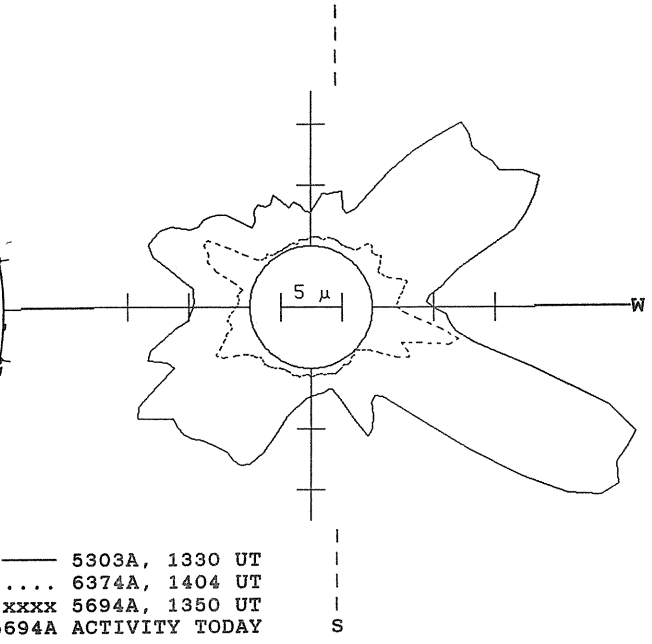
1440 UT

BOULDER SUNSPOT



1437 UT
1420 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

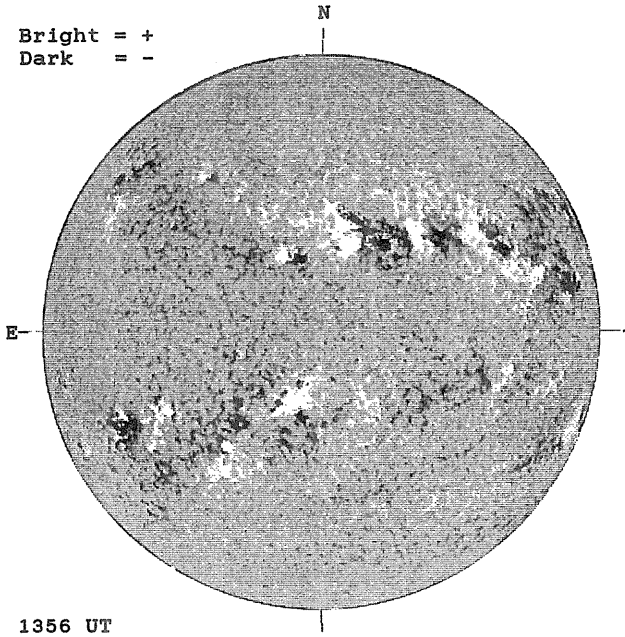


—— 5303A, 1330 UT
.... 6374A, 1404 UT
xxxx 5694A, 1350 UT
NO 5694A ACTIVITY TODAY

MAY 19, 1989 (P=-19.84, B_o =-2.19, L_o = 87.91)

KITT PEAK MAGNETOGRAM

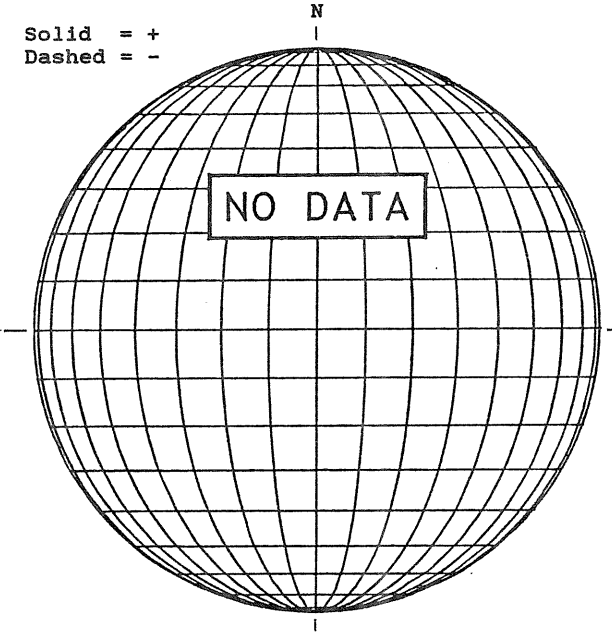
Bright = +
Dark = -



1356 UT

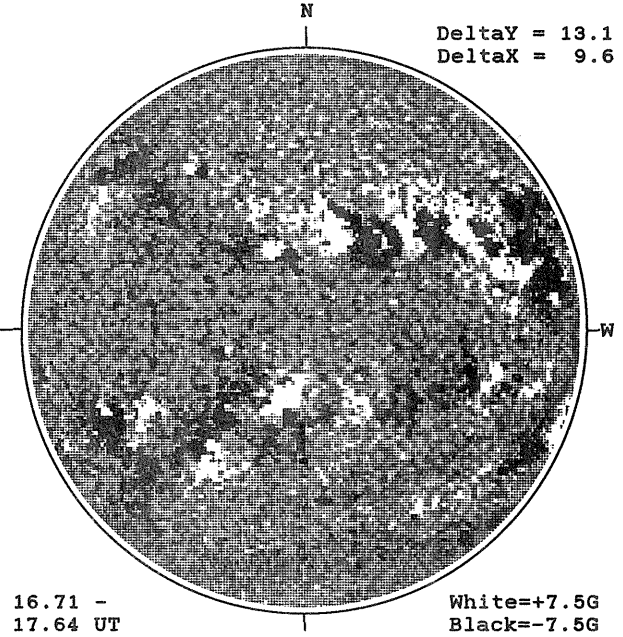
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

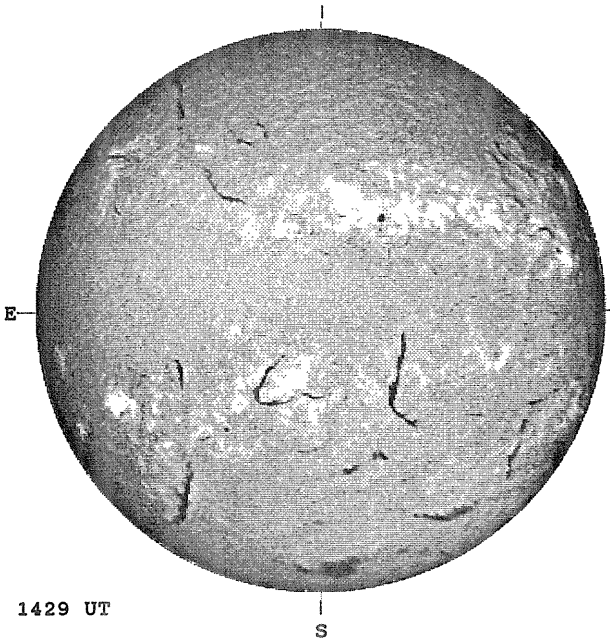
DeltaY = 13.1
DeltaX = 9.6



16.71 -
17.64 UT

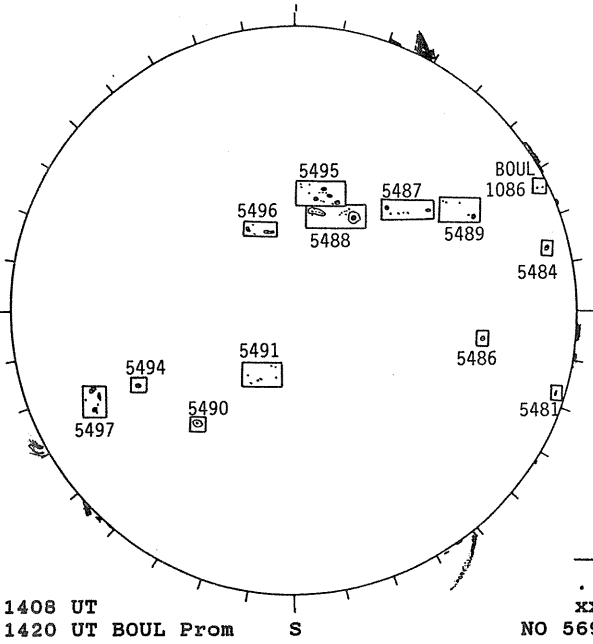
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



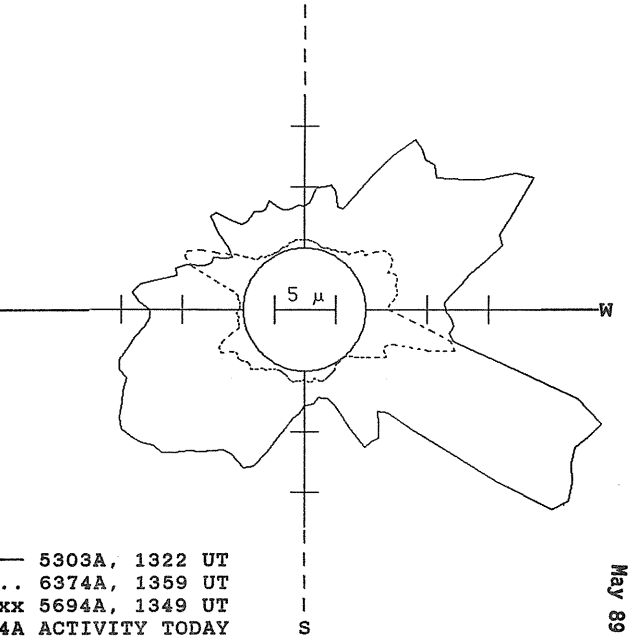
1429 UT

BOULDER SUNSPOT



1408 UT
1420 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



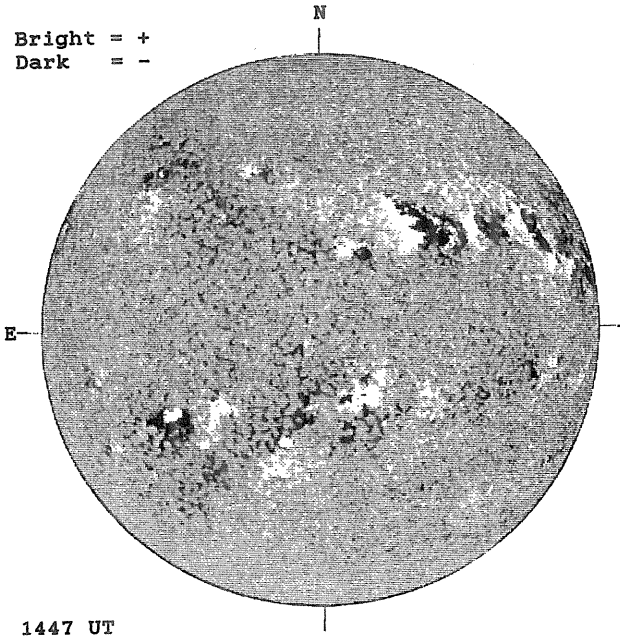
—— 5303A, 1322 UT
.... 6374A, 1359 UT
xxxx 5694A, 1349 UT
NO 5694A ACTIVITY TODAY

81
May 89

MAY 20, 1989 (P=-19.53, B_o =-2.07, L_o = 74.68)

KITT PEAK MAGNETOGRAM

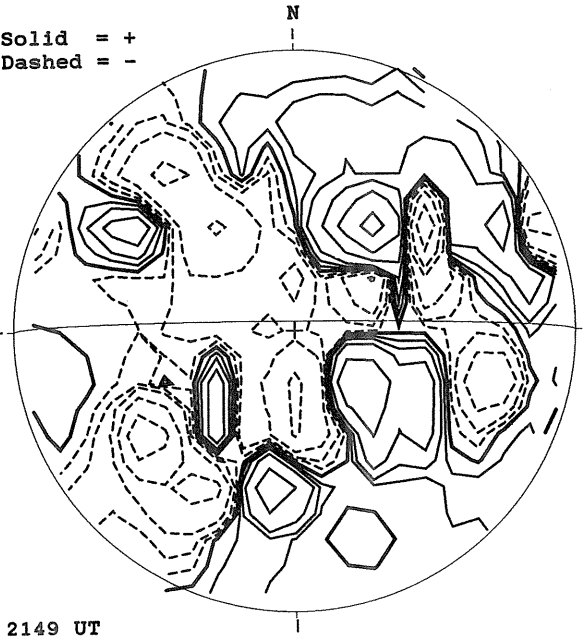
Bright = +
Dark = -



1447 UT

STANFORD MAGNETOGRAM

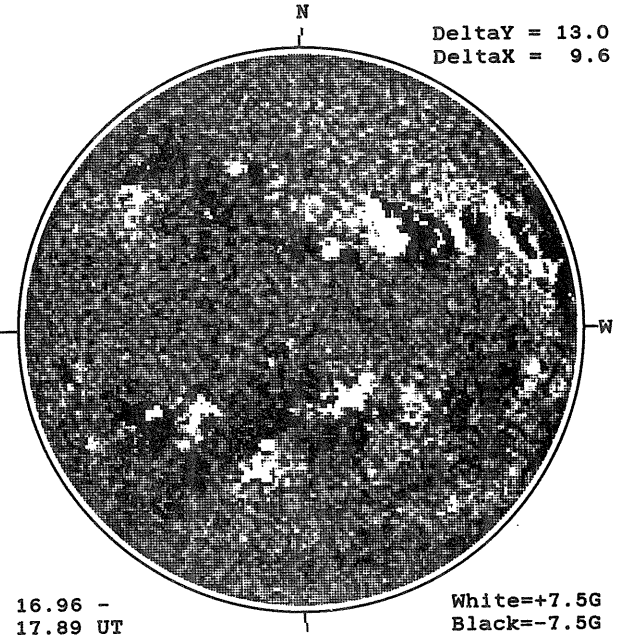
Solid = +
Dashed = -



2149 UT

MT. WILSON MAGNETOGRAM

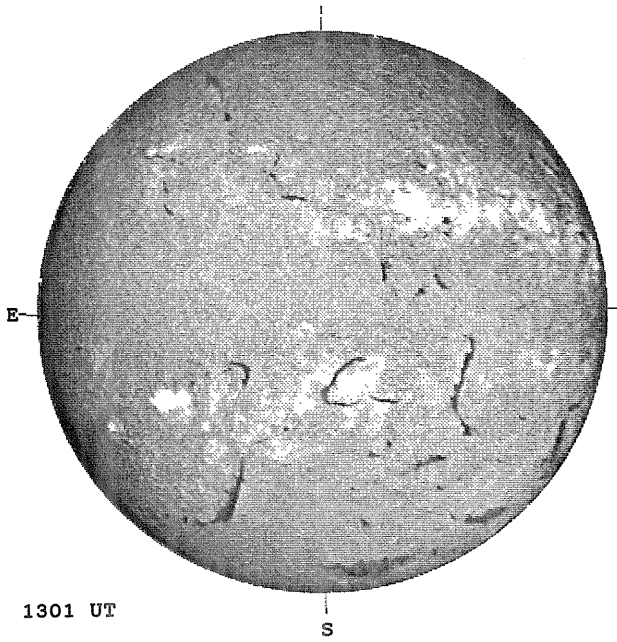
DeltaY = 13.0
DeltaX = 9.6



16.96 -
17.89 UT

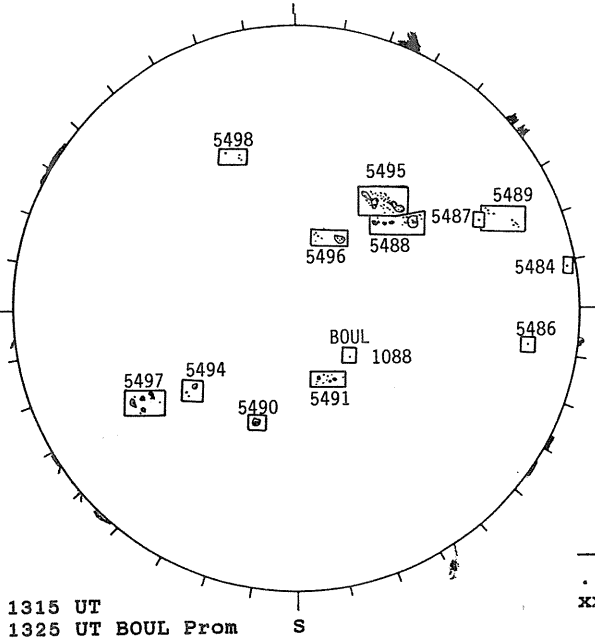
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



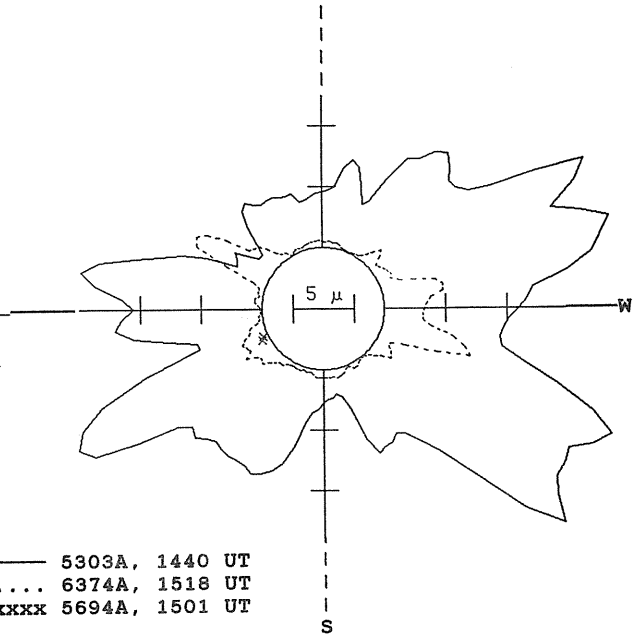
1301 UT

BOULDER SUNSPOT



1315 UT
1325 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

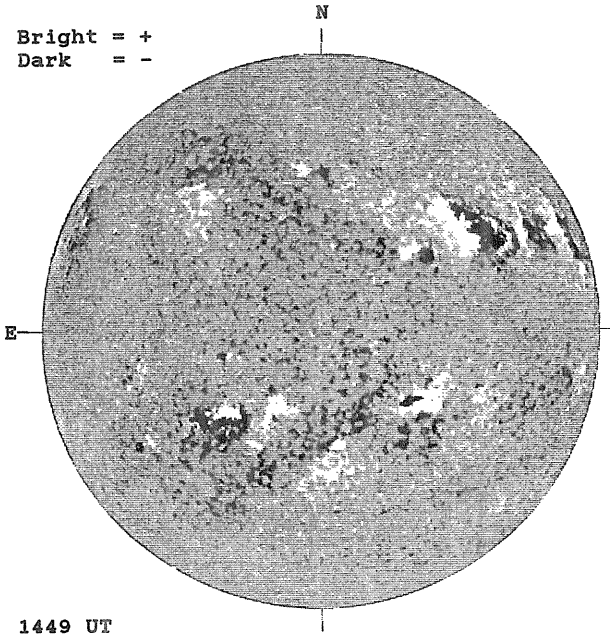


—— 5303A, 1440 UT
.... 6374A, 1518 UT
xxxx 5694A, 1501 UT

MAY 21, 1989 (P=-19.23, B_o =-1.96, L_o = 61.45)

KITT PEAK MAGNETOGRAM

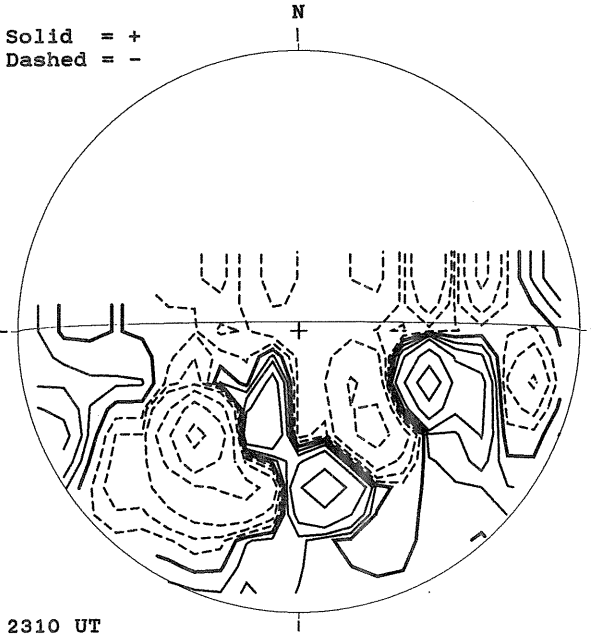
Bright = +
Dark = -



1449 UT

STANFORD MAGNETOGRAM

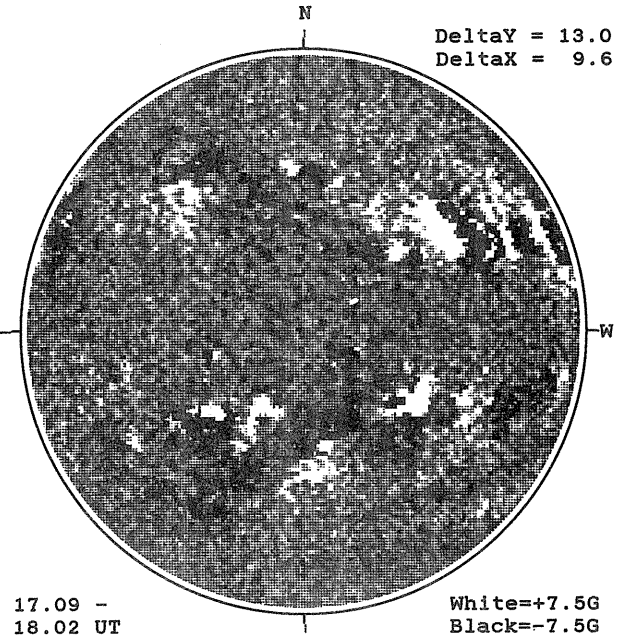
Solid = +
Dashed = -



2310 UT

MT. WILSON MAGNETOGRAM

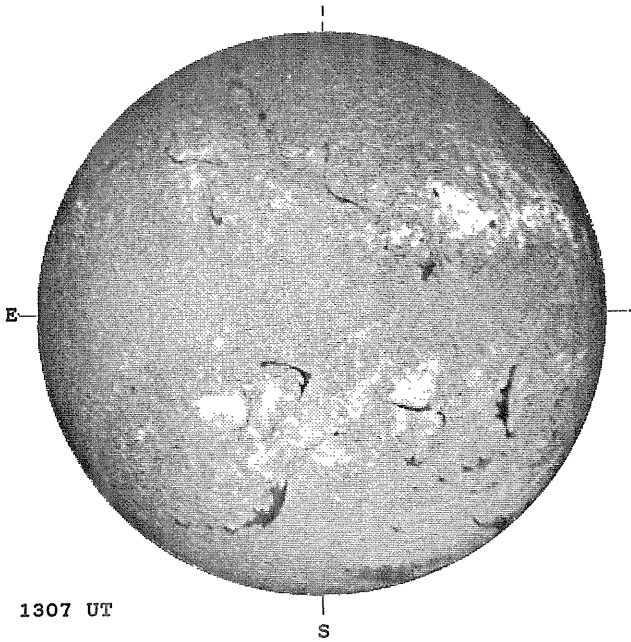
DeltaY = 13.0
DeltaX = 9.6



17.09 -
18.02 UT

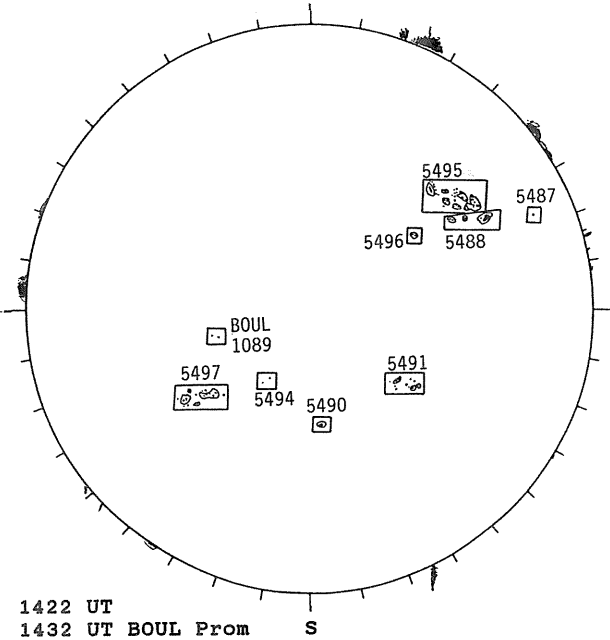
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



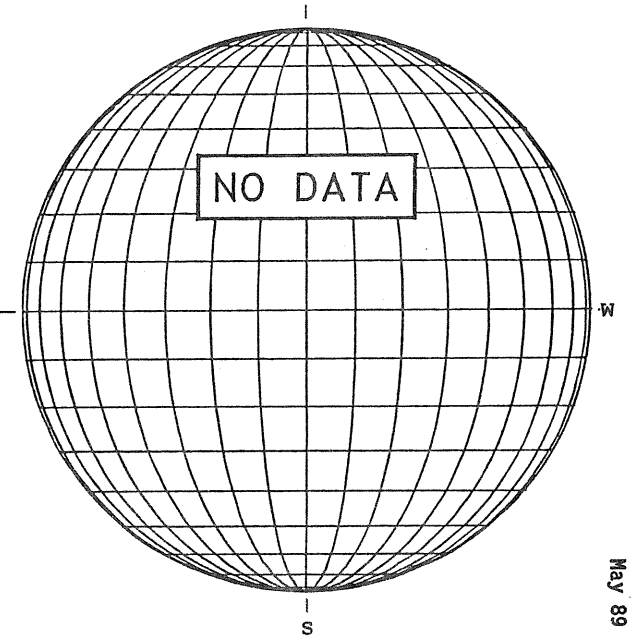
1307 UT

BOULDER SUNSPOT



1422 UT
1432 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

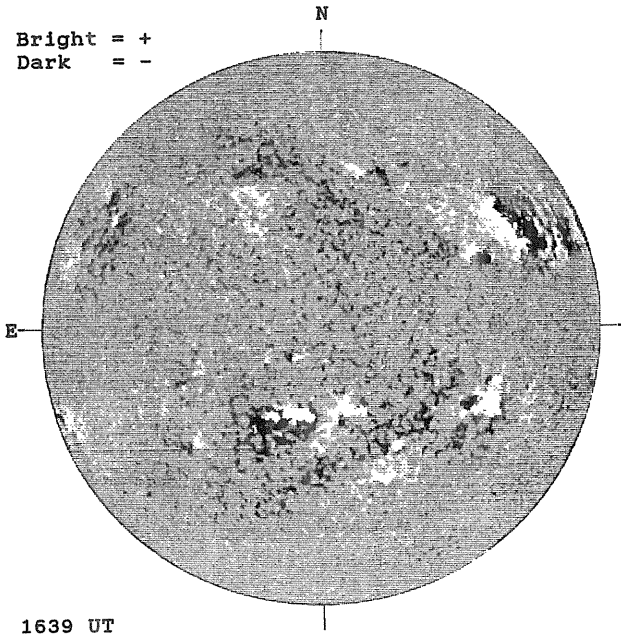


83
May 89

MAY 22, 1989 (P=-18.91, B_o =-1.84, L_o = 48.22)

KITT PEAK MAGNETOGRAM

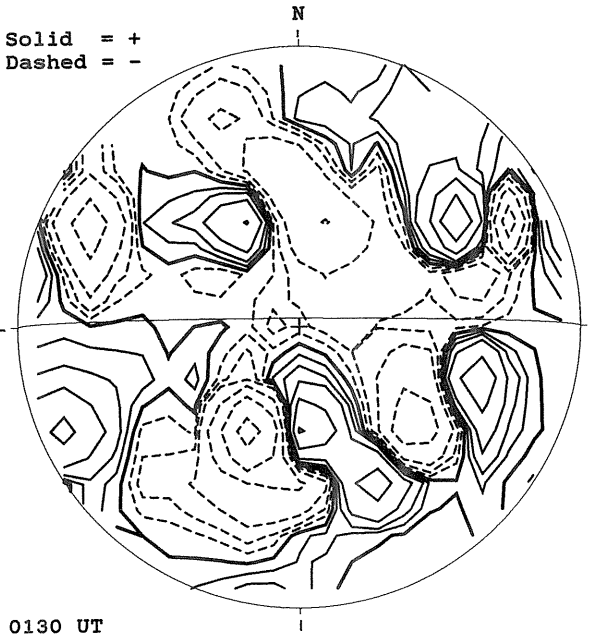
Bright = +
Dark = -



1639 UT

STANFORD MAGNETOGRAM

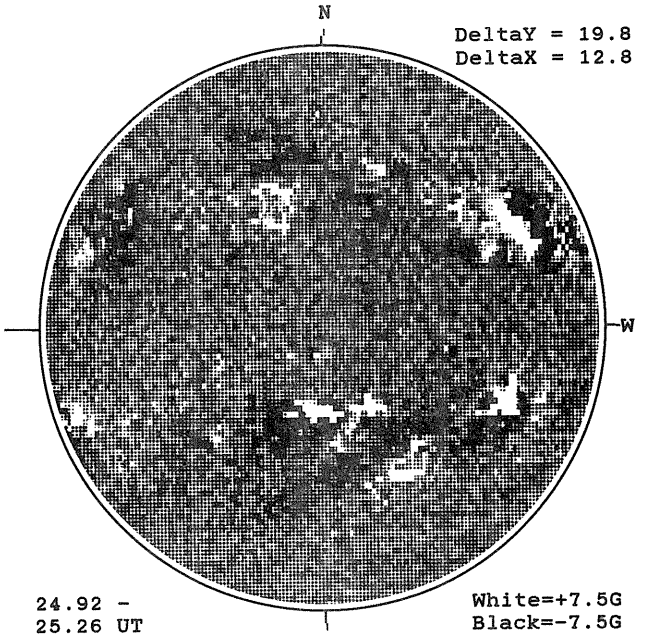
Solid = +
Dashed = -



0130 UT
May 23

MT. WILSON MAGNETOGRAM

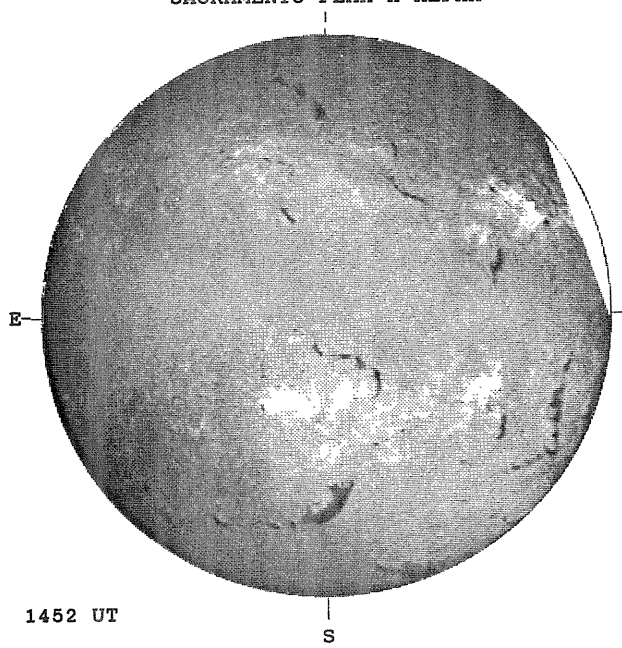
DeltaY = 19.8
DeltaX = 12.8



24.92 -
25.26 UT

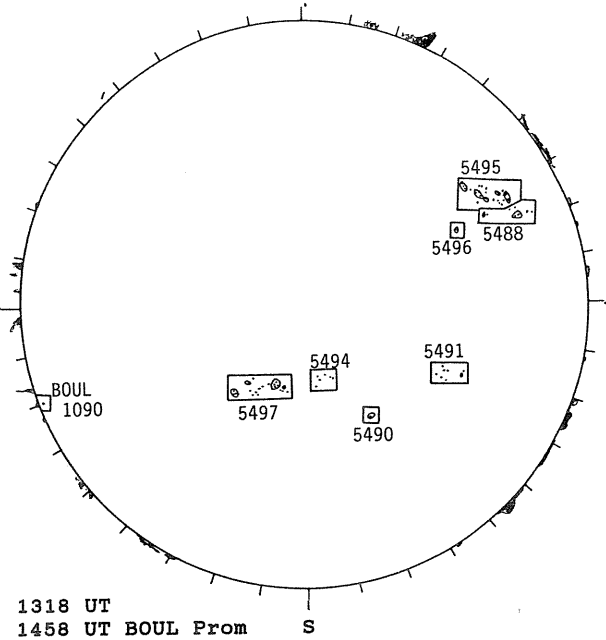
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



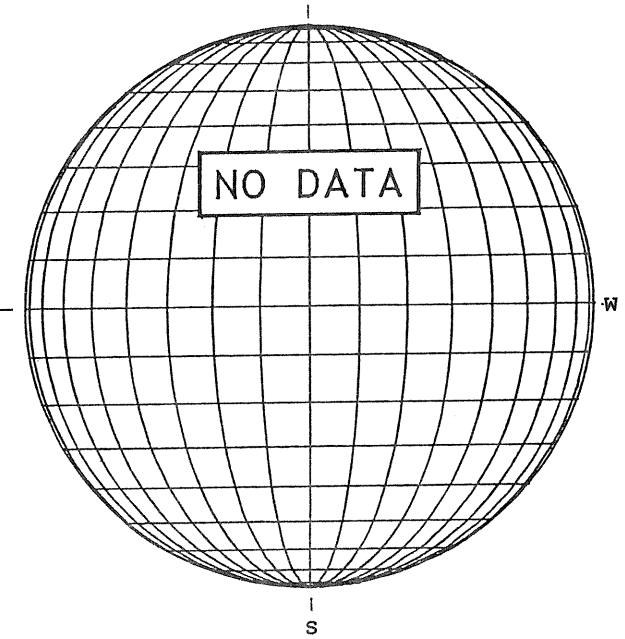
1452 UT

BOULDER SUNSPOT



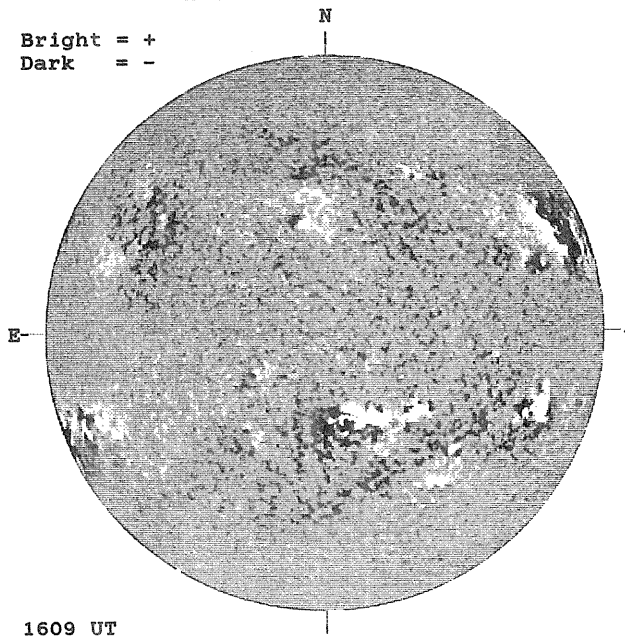
1318 UT
1458 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

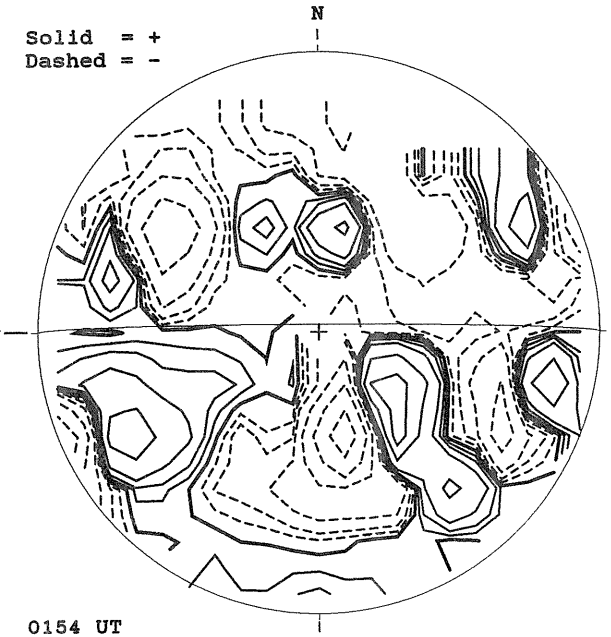


MAY 23, 1989 (P=-18.59, B_o =-1.72, L_o = 34.99)

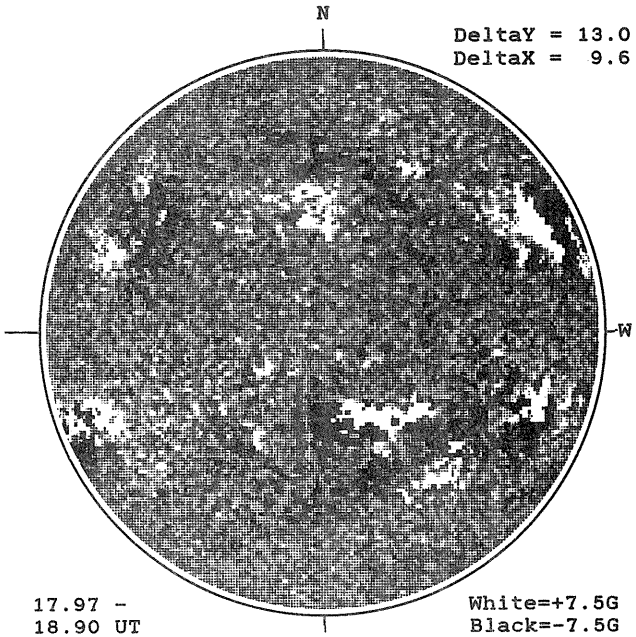
KITT PEAK MAGNETOGRAM



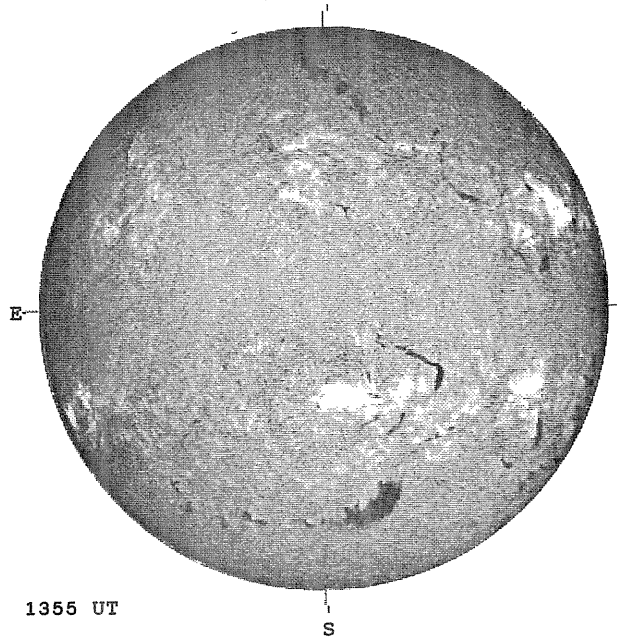
STANFORD MAGNETOGRAM



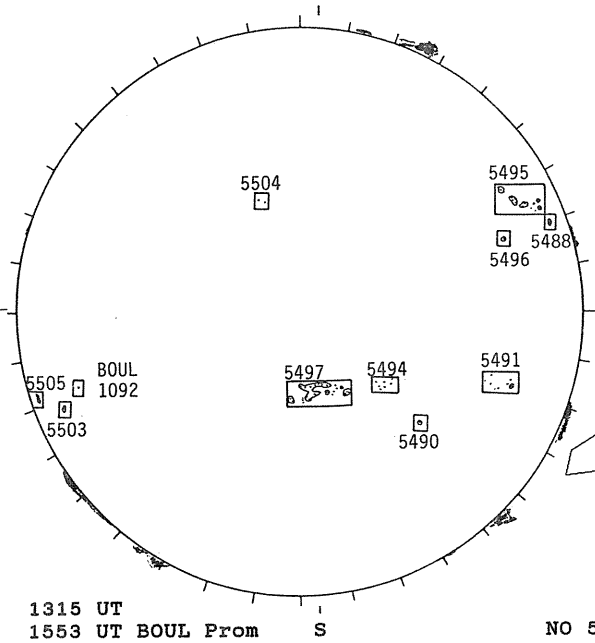
MT. WILSON MAGNETOGRAM



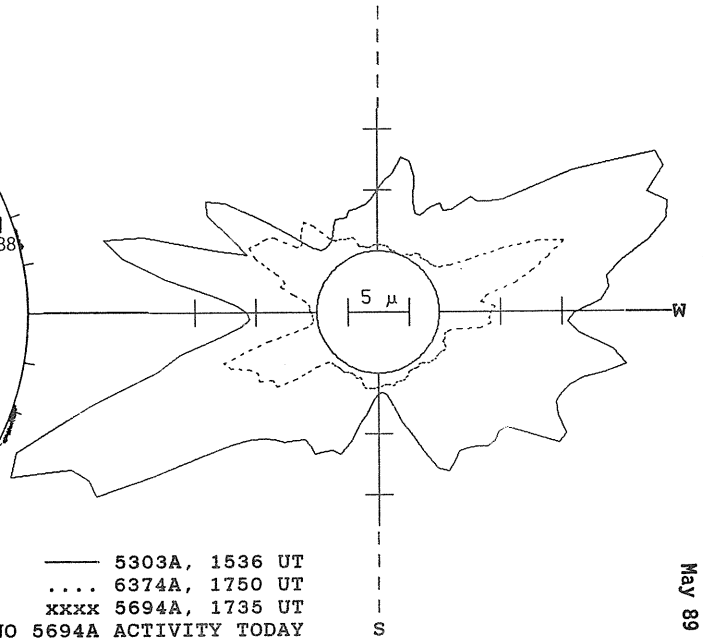
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



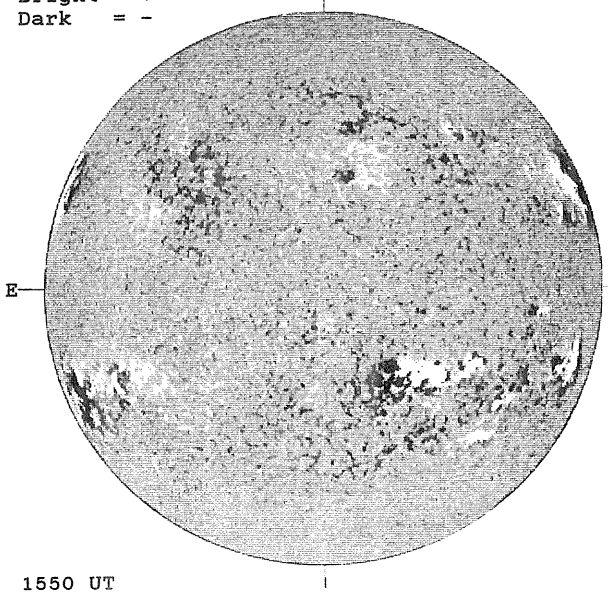
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 24, 1989 (P=-18.26, B_o =-1.60, L_o = 21.76)

KITT PEAK MAGNETOGRAM

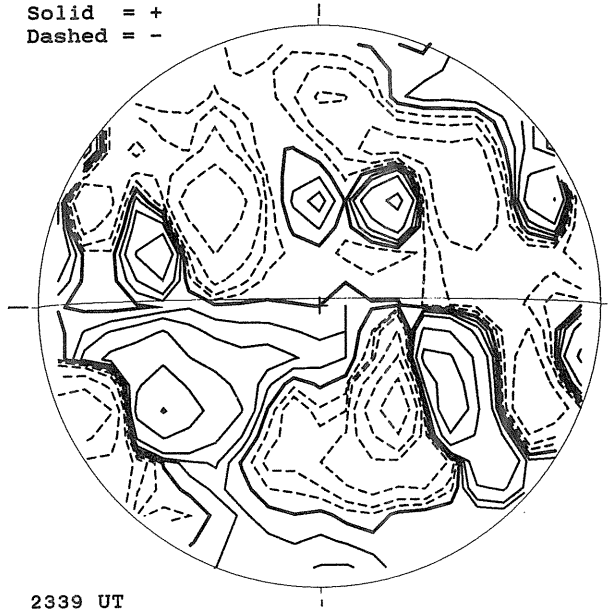
Bright = +
Dark = -



1550 UT

STANFORD MAGNETOGRAM

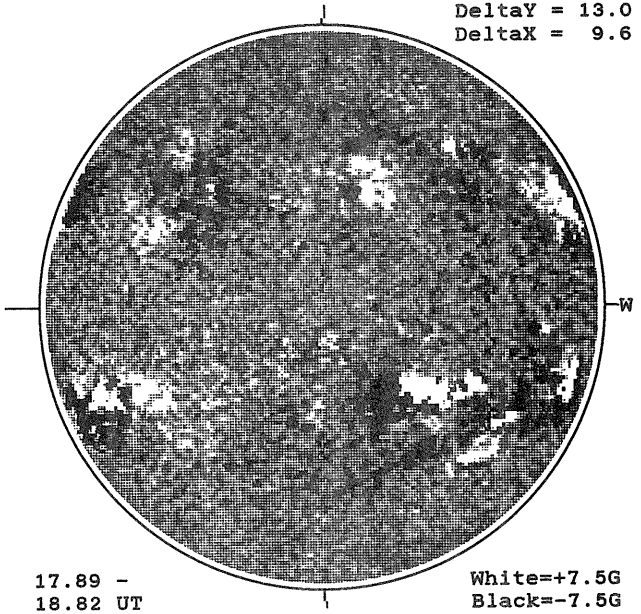
Solid = +
Dashed = -



2339 UT

MT. WILSON MAGNETOGRAM

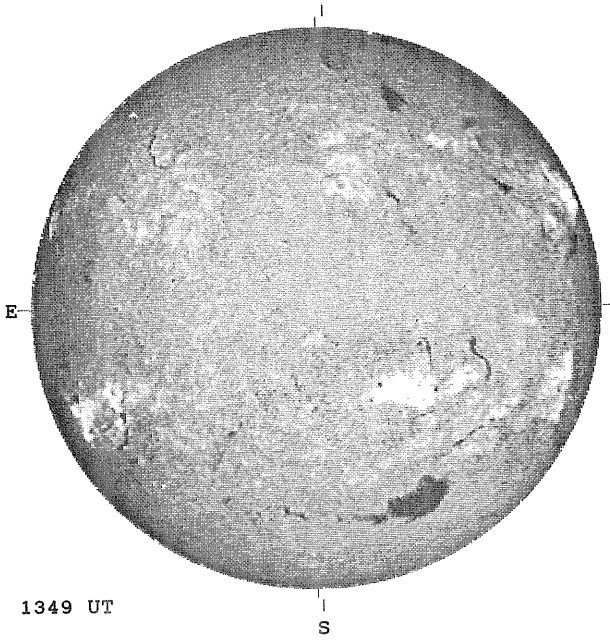
DeltaY = 13.0
DeltaX = 9.6



17.89 -
18.82 UT

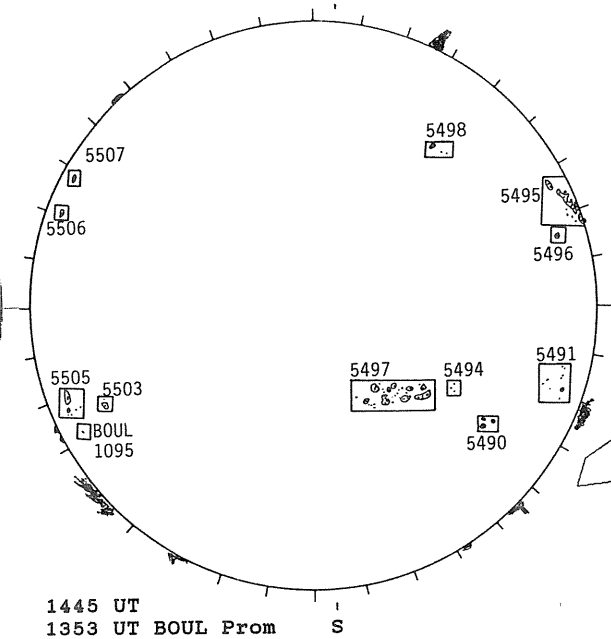
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



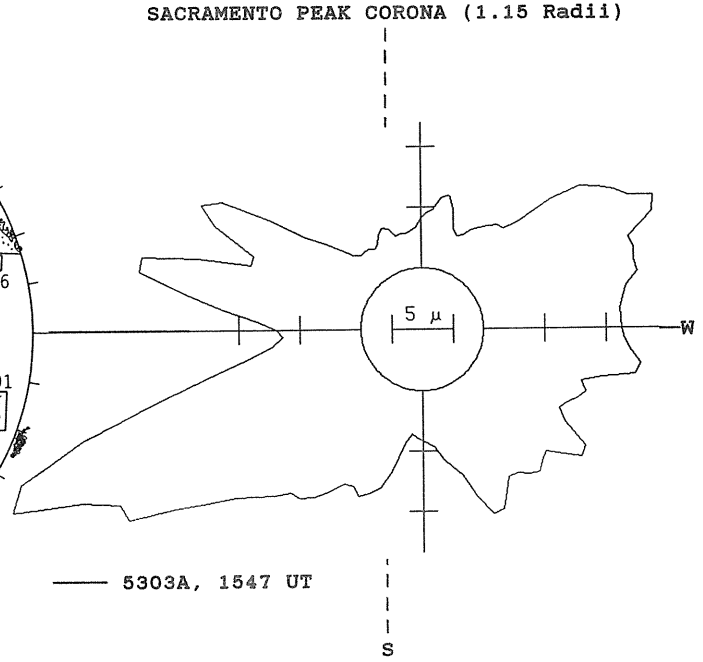
1349 UT

BOULDER SUNSPOT



1445 UT
1353 UT BOUL Prom

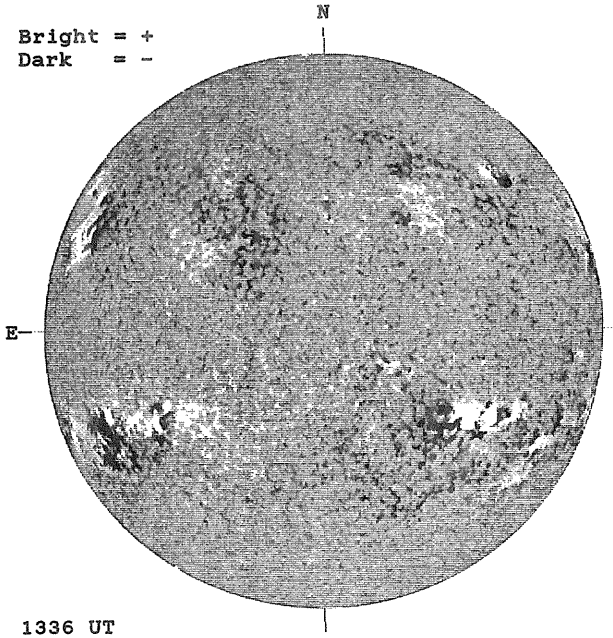
SACRAMENTO PEAK CORONA (1.15 Radii)



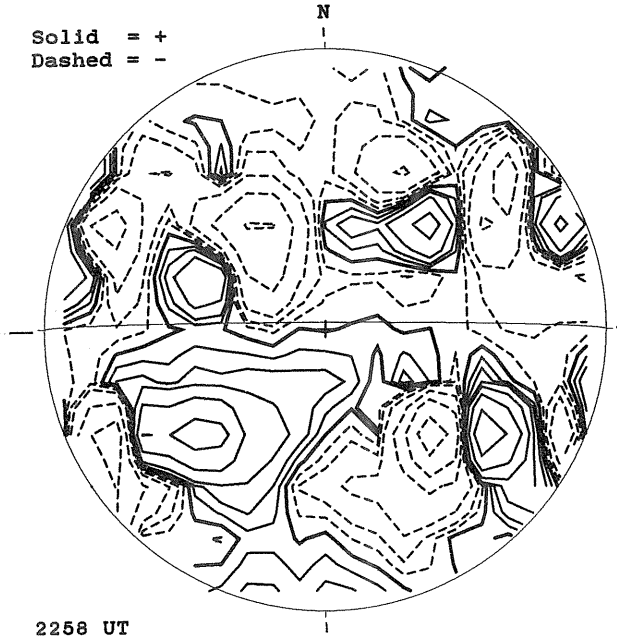
—— 5303A, 1547 UT

MAY 25, 1989 (P=-17.93, B_o =-1.49, L_o = 8.53)

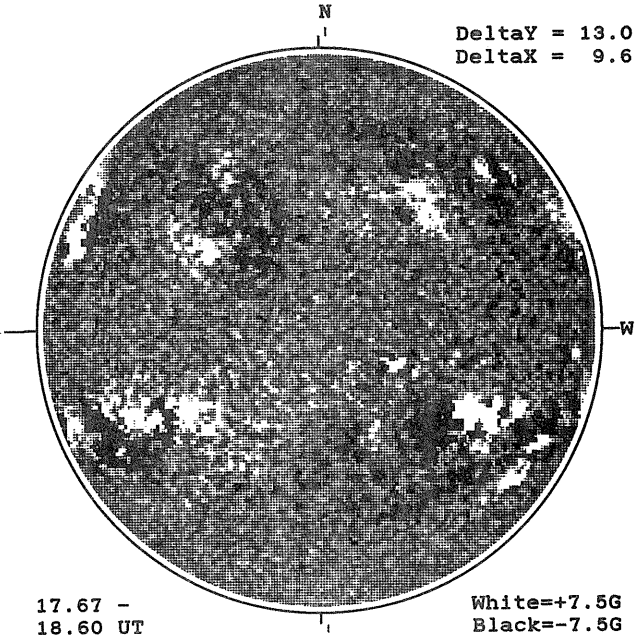
KITT PEAK MAGNETOGRAM



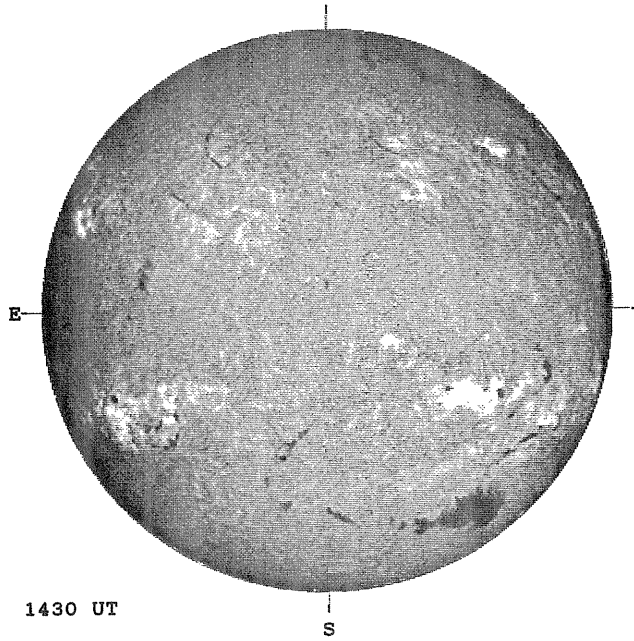
STANFORD MAGNETOGRAM



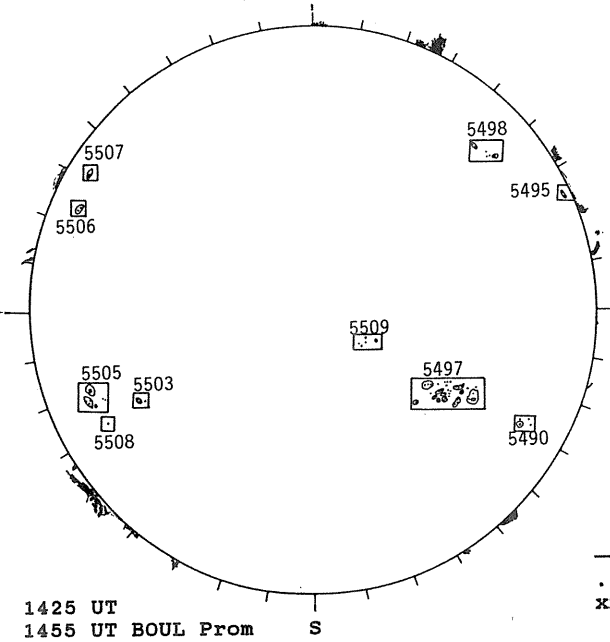
MT. WILSON MAGNETOGRAM



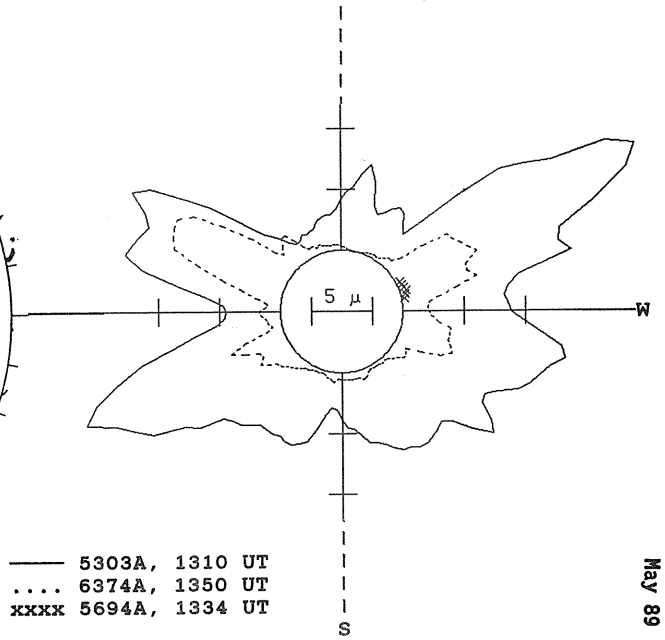
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOT



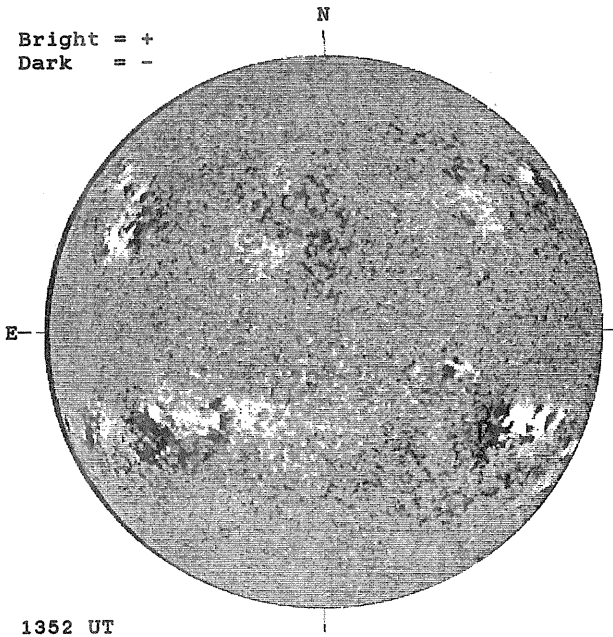
SACRAMENTO PEAK CORONA (1.15 Radii)



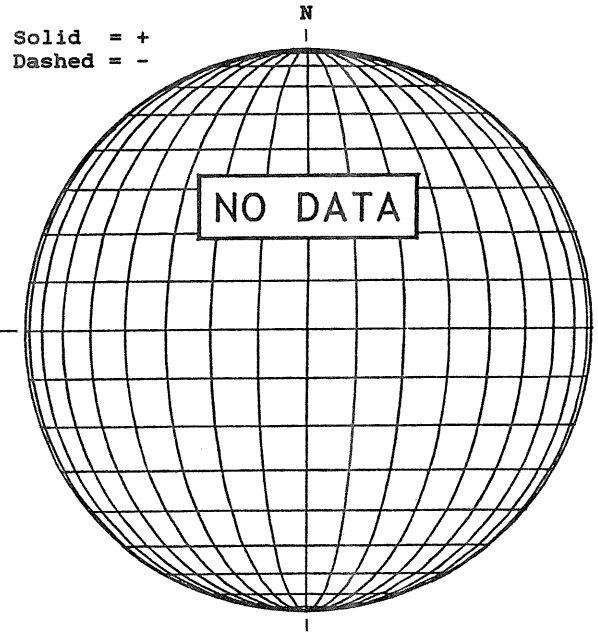
87
May 89

MAY 26, 1989 (P=-17.59, B_o =-1.37, L_o = 355.30)

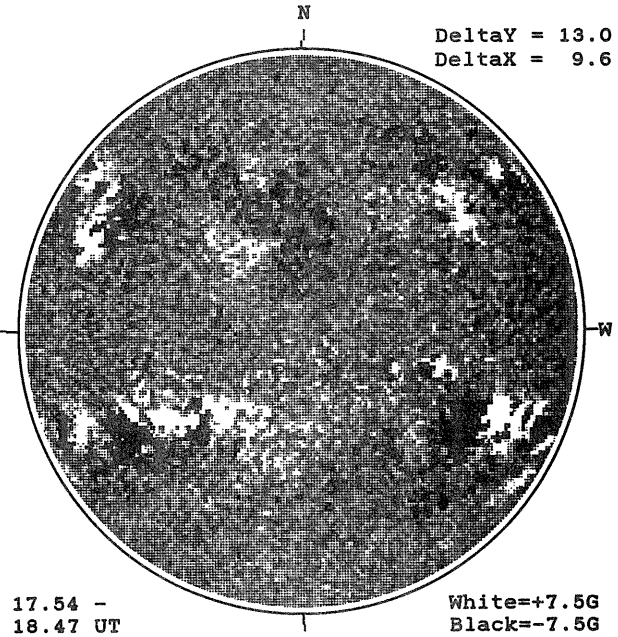
KITT PEAK MAGNETOGRAM



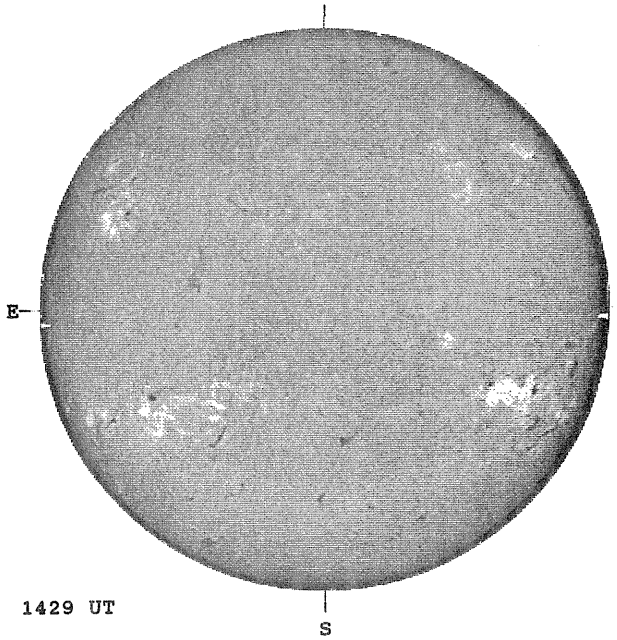
STANFORD MAGNETOGRAM



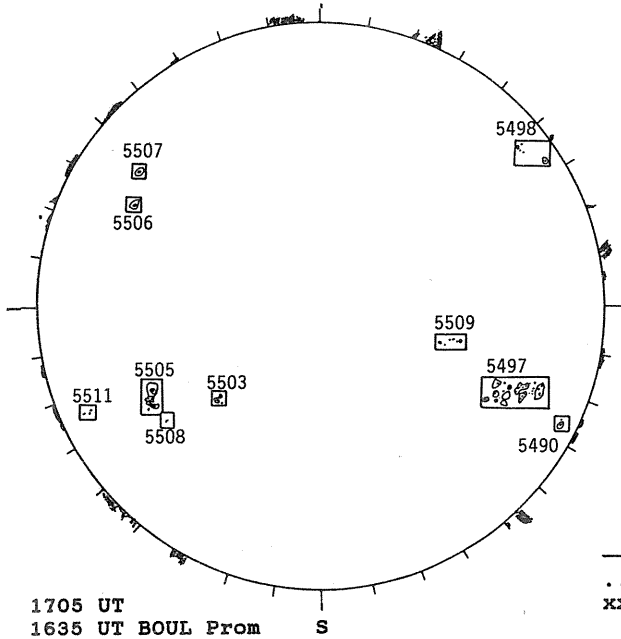
MT. WILSON MAGNETOGRAM



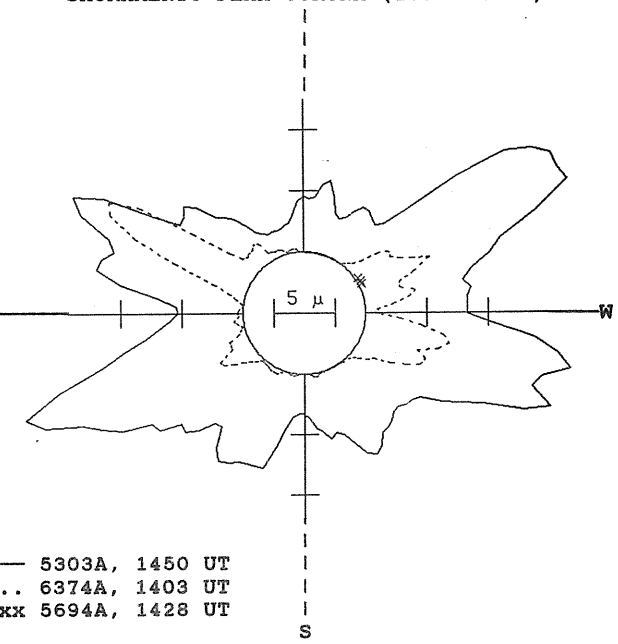
HOLLOMAN H-ALPHA



BOULDER SUNSPOT



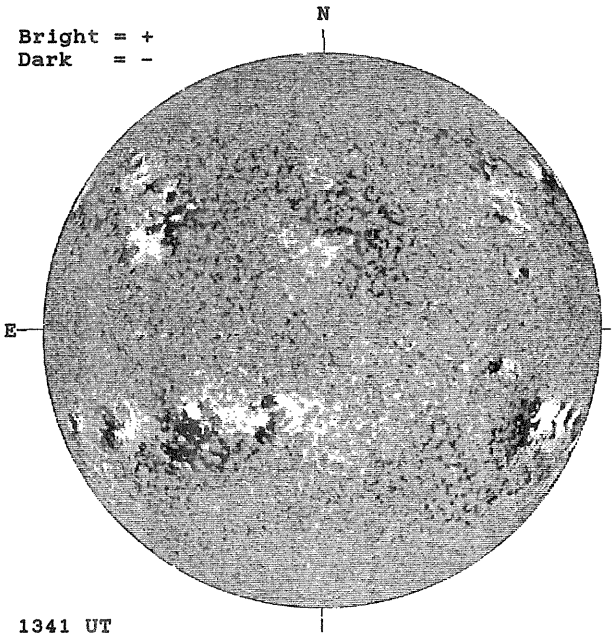
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 27, 1989 (P=-17.25, B_o =-1.25, L_o = 342.07)

KITT PEAK MAGNETOGRAM

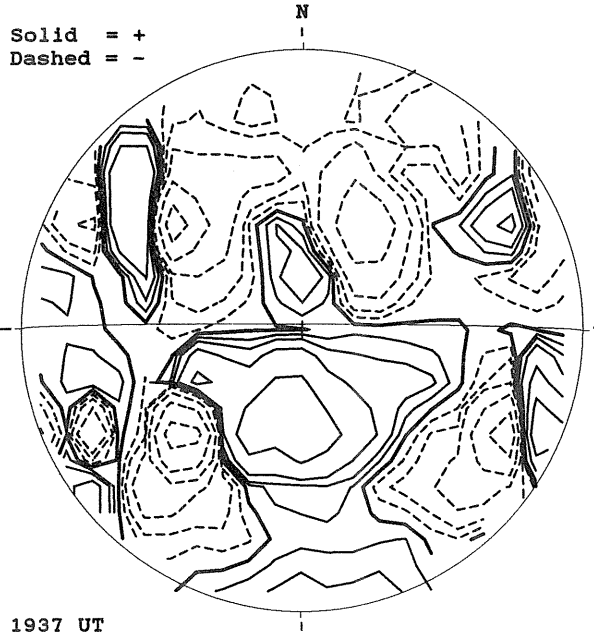
Bright = +
Dark = -



1341 UT

STANFORD MAGNETOGRAM

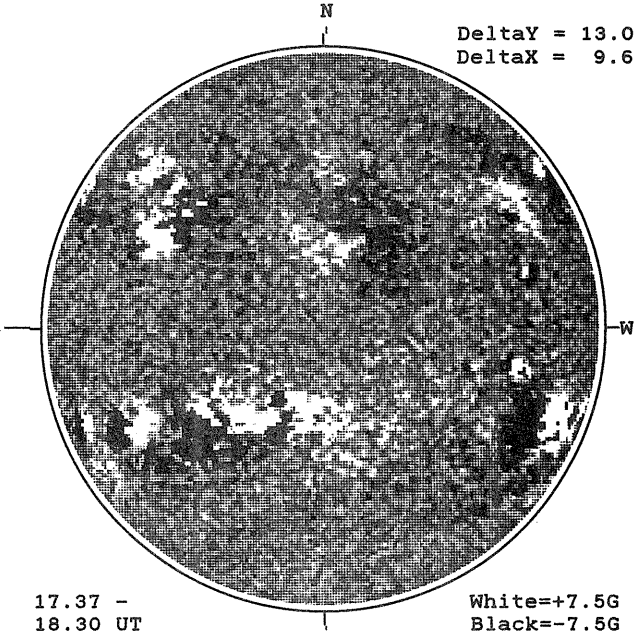
Solid = +
Dashed = -



1937 UT

MT. WILSON MAGNETOGRAM

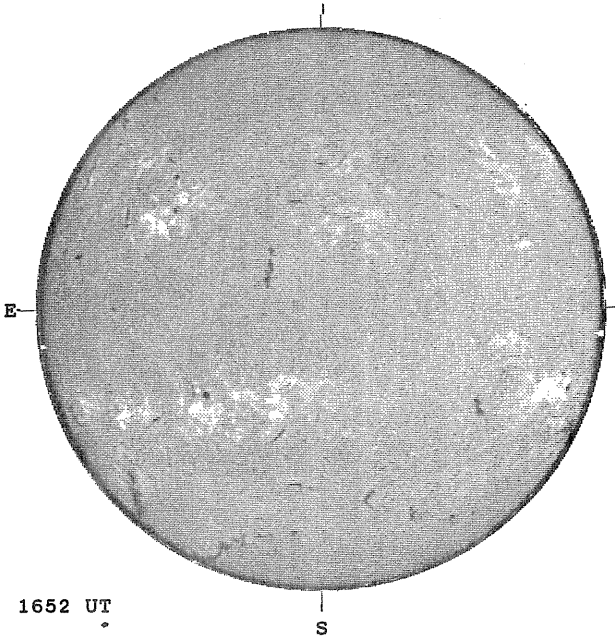
DeltaY = 13.0
DeltaX = 9.6



17.37 -
18.30 UT

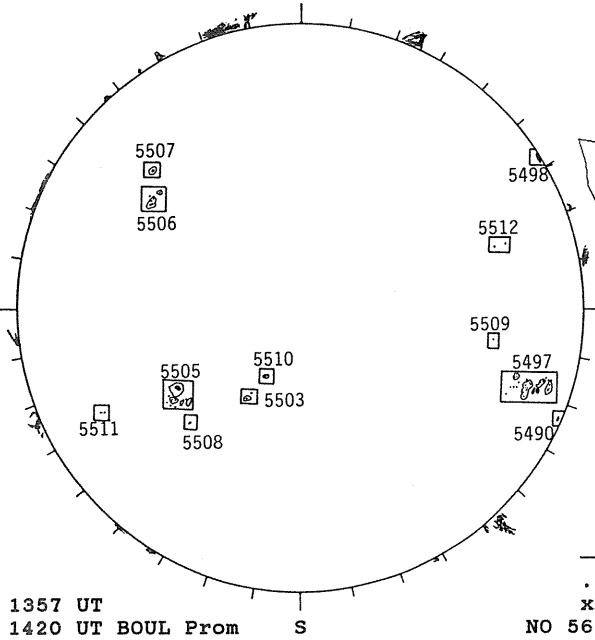
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



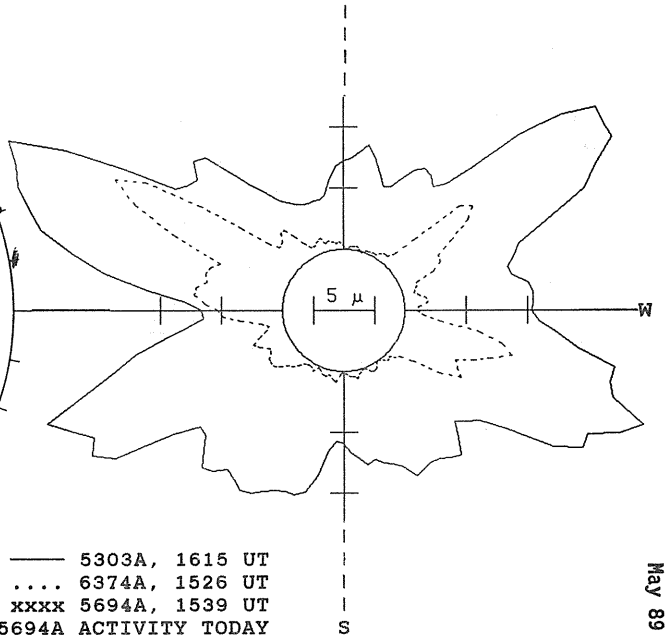
1652 UT

BOULDER SUNSPOT



1357 UT
1420 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



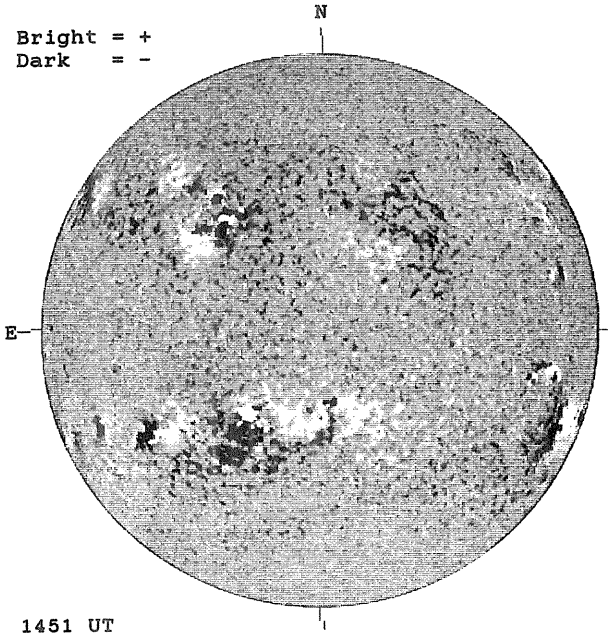
—— 5303A, 1615 UT
.... 6374A, 1526 UT
xxxx 5694A, 1539 UT
NO 5694A ACTIVITY TODAY

89
May 89

MAY 28, 1989 (P=-16.90, B_o =-1.13, L_o = 328.84)

KITT PEAK MAGNETOGRAM

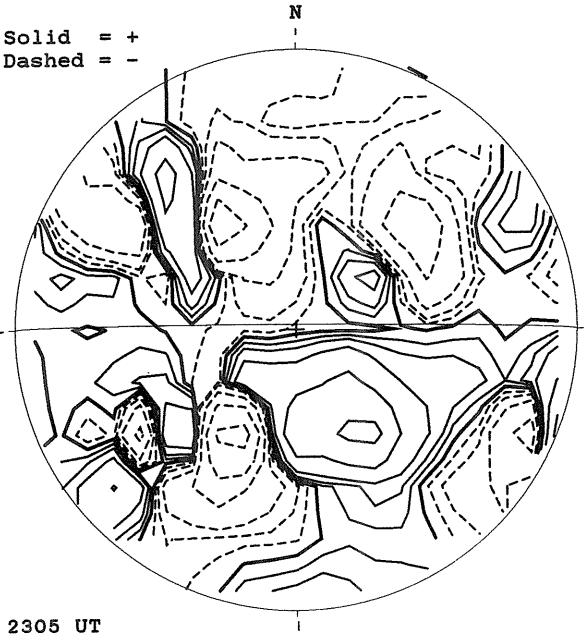
Bright = +
Dark = -



1451 UT

STANFORD MAGNETOGRAM

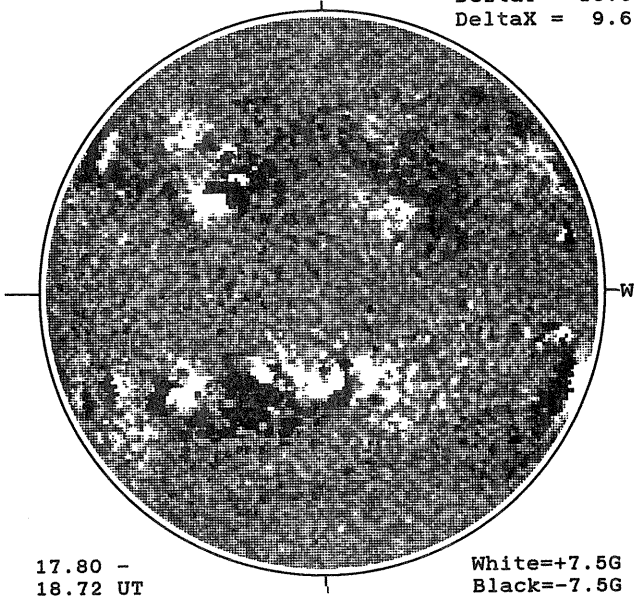
Solid = +
Dashed = -



2305 UT

MT. WILSON MAGNETOGRAM

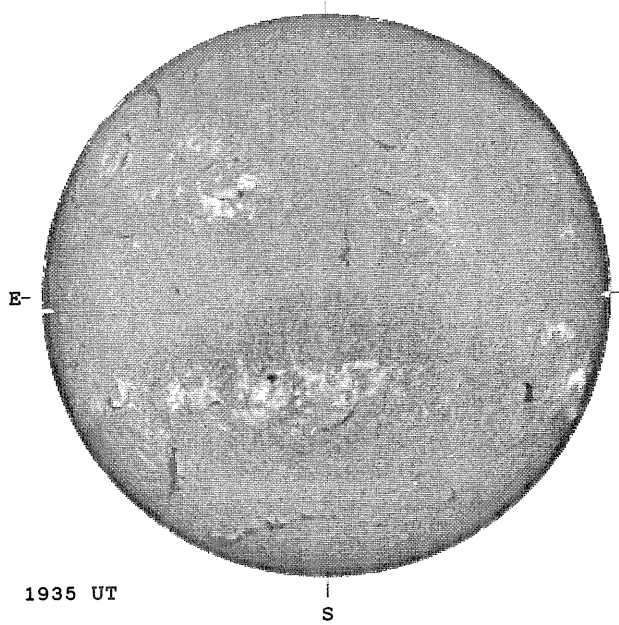
DeltaY = 13.0
DeltaX = 9.6



17.80 -
18.72 UT

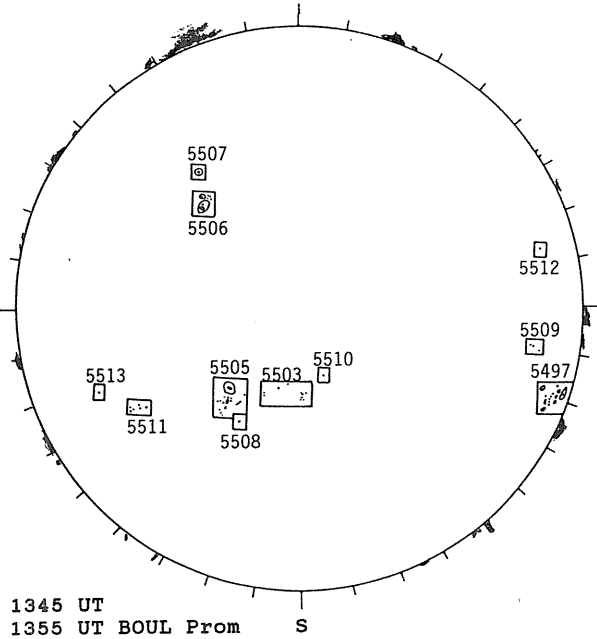
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



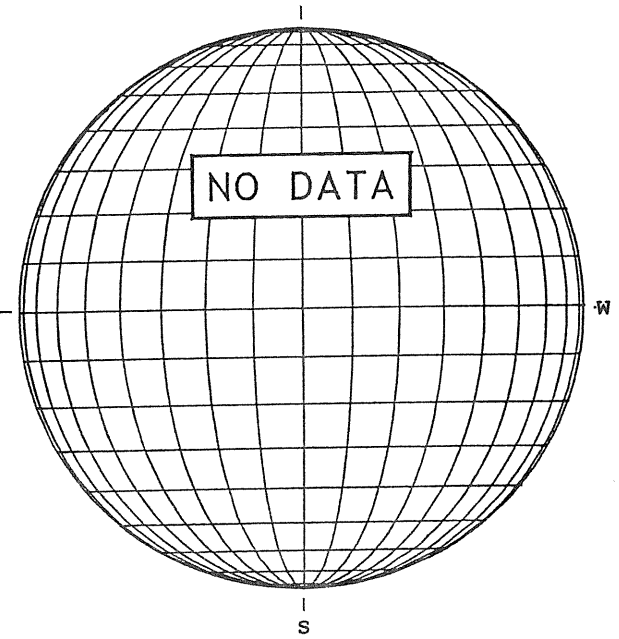
1935 UT

BOULDER SUNSPOT



1345 UT
1355 UT BOUL Prom

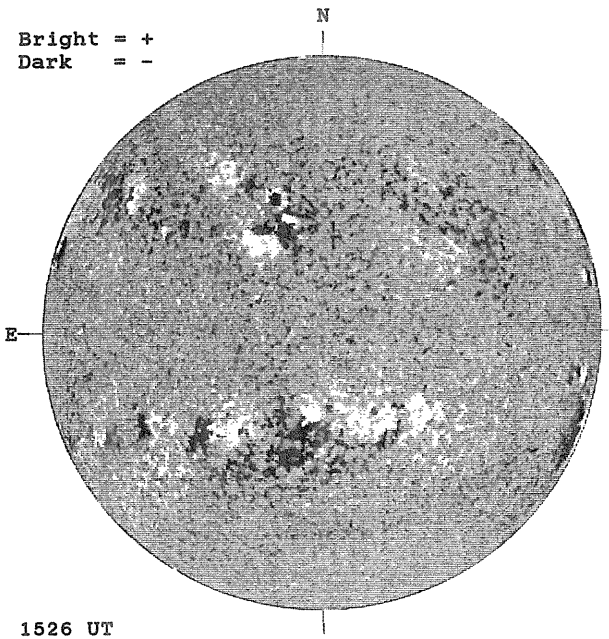
SACRAMENTO PEAK CORONA (1.15 Radii)



MAY 29, 1989 (P=-16.54, B_o =-1.01, L_o = 315.61)

KITT PEAK MAGNETOGRAM

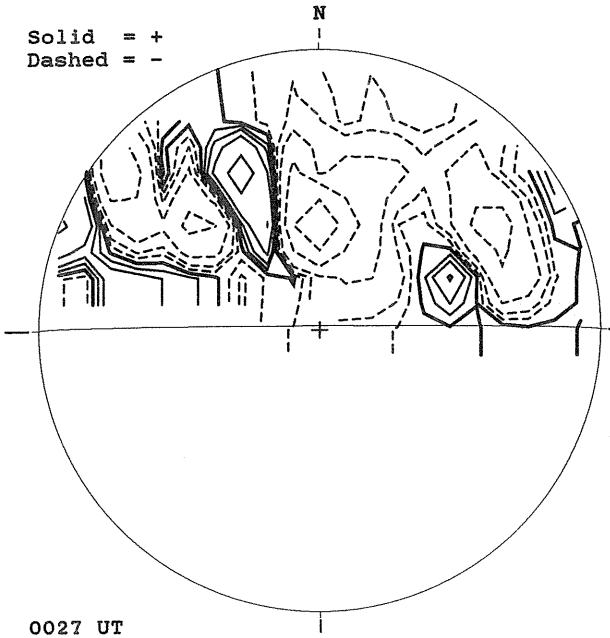
Bright = +
Dark = -



1526 UT

STANFORD MAGNETOGRAM

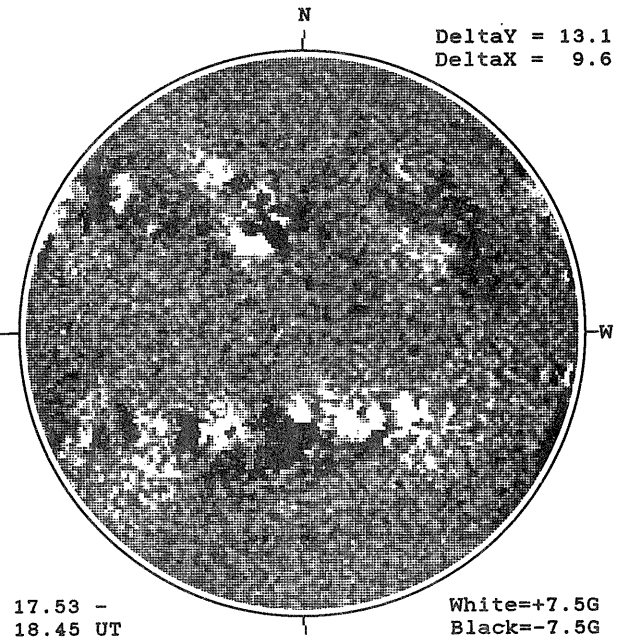
Solid = +
Dashed = -



0027 UT
May 30

MT. WILSON MAGNETOGRAM

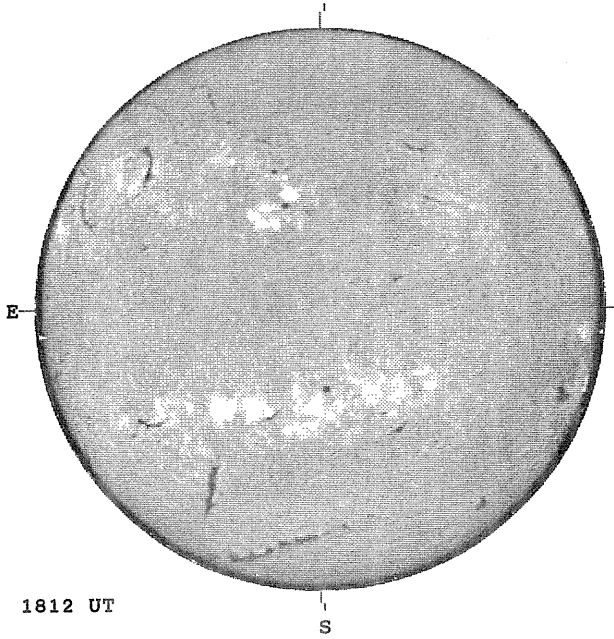
DeltaY = 13.1
DeltaX = 9.6



17.53 -
18.45 UT

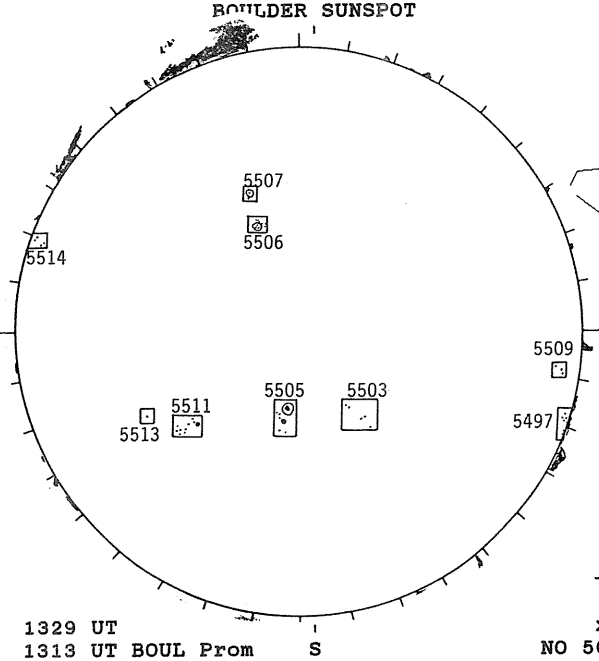
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



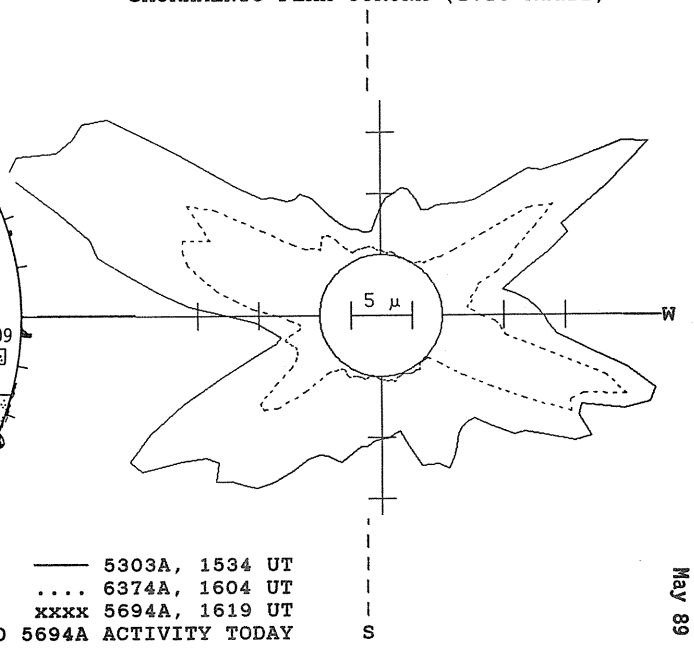
1812 UT

BOULDER SUNSPOT



1329 UT
1313 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



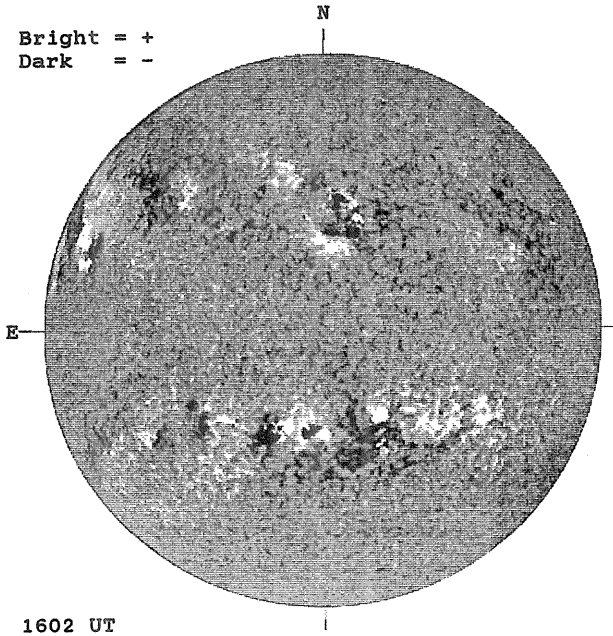
—— 5303A, 1534 UT
.... 6374A, 1604 UT
xxxx 5694A, 1619 UT
NO 5694A ACTIVITY TODAY

91
May 89

MAY 30, 1989 (P=-16.18, B_o =-0.89, L_o = 302.37)

KITT PEAK MAGNETOGRAM

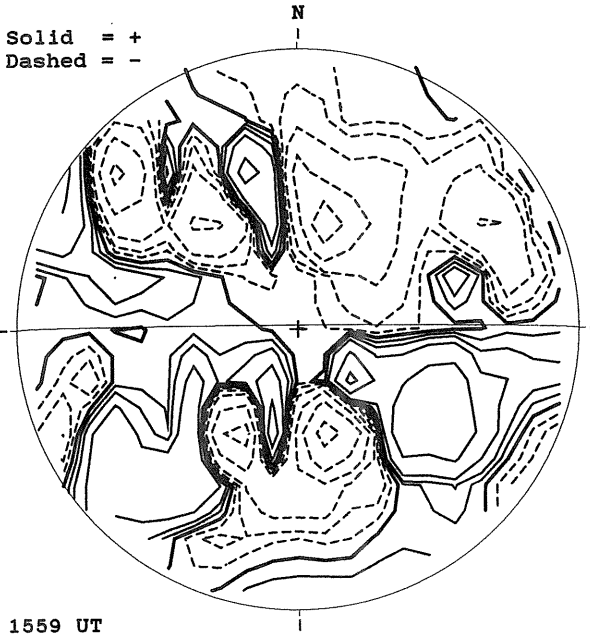
Bright = +
Dark = -



1602 UT

STANFORD MAGNETOGRAM

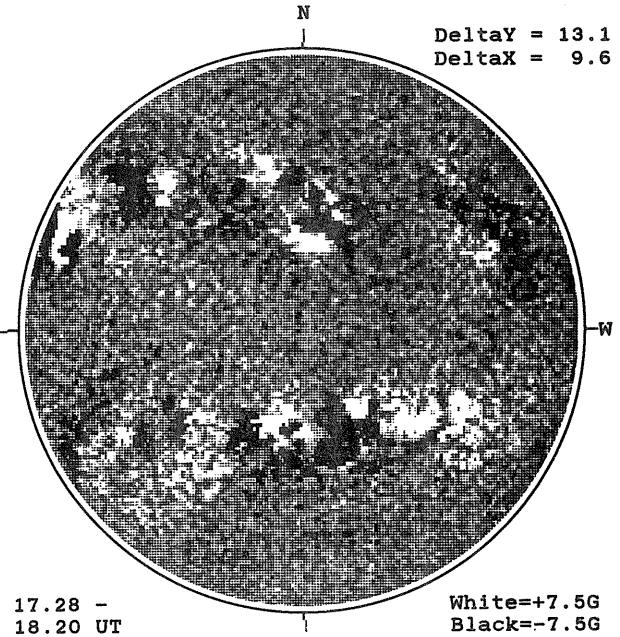
Solid = +
Dashed = -



1559 UT

MT. WILSON MAGNETOGRAM

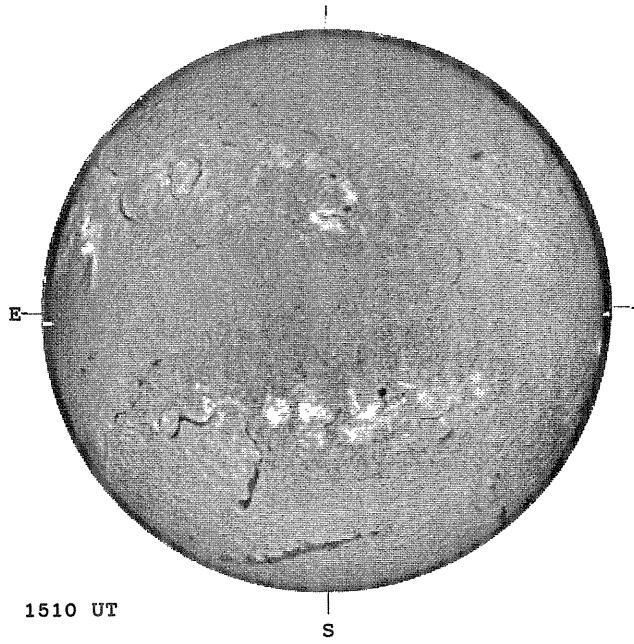
DeltaY = 13.1
DeltaX = 9.6



17.28 -
18.20 UT

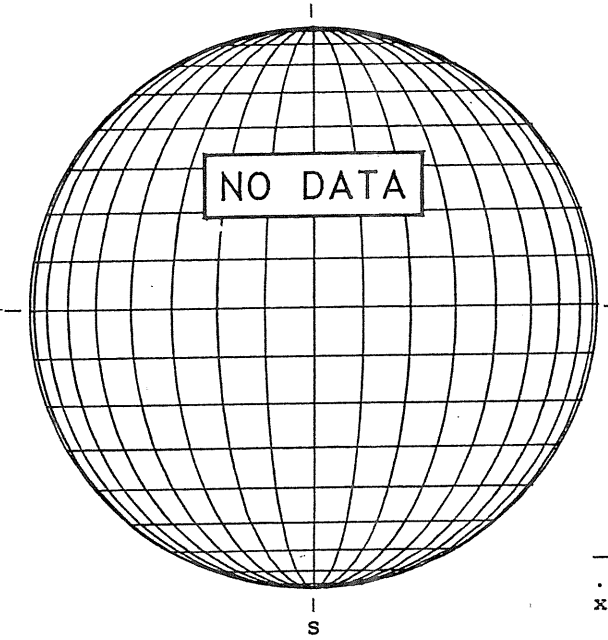
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA

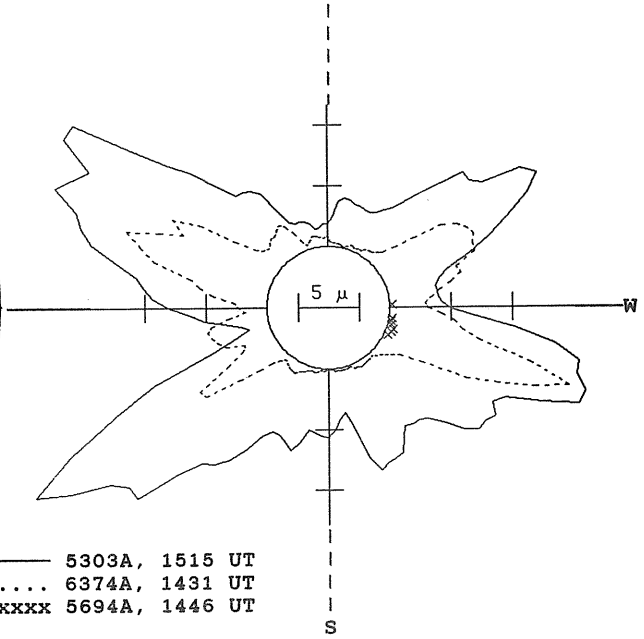


1510 UT

RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

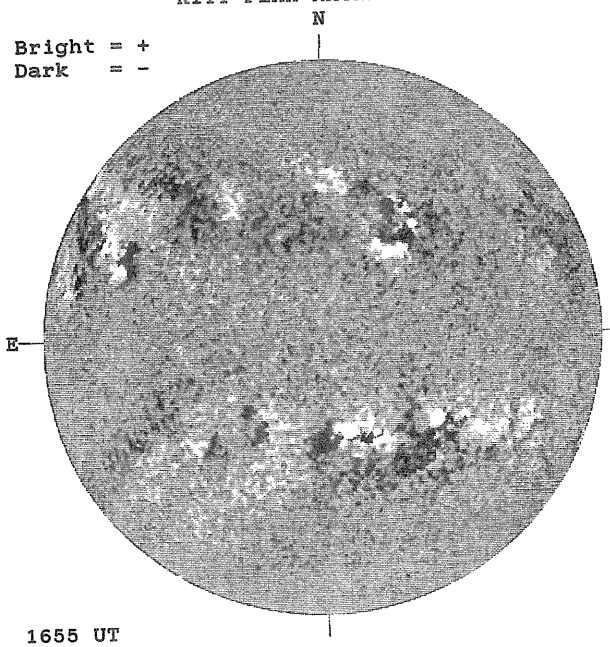


—— 5303A, 1515 UT
.... 6374A, 1431 UT
xxxx 5694A, 1446 UT

MAY 31, 1989 (P=-15.82, B_o =-0.77, L_o = 289.14)

KITT PEAK MAGNETOGRAM

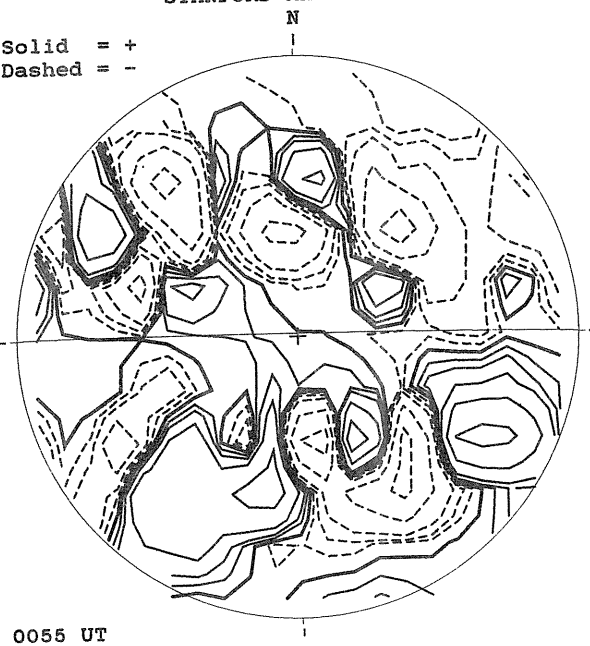
Bright = +
Dark = -



1655 UT

STANFORD MAGNETOGRAM

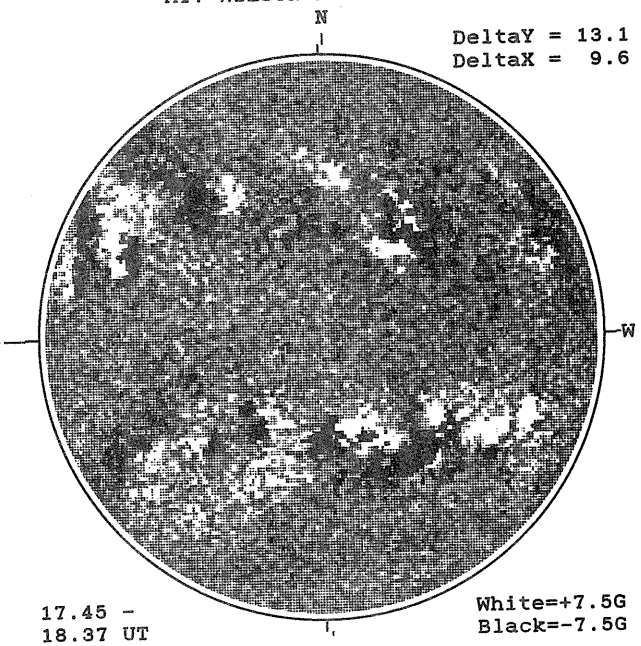
Solid = +
Dashed = -



0055 UT
June 01

MT. WILSON MAGNETOGRAM

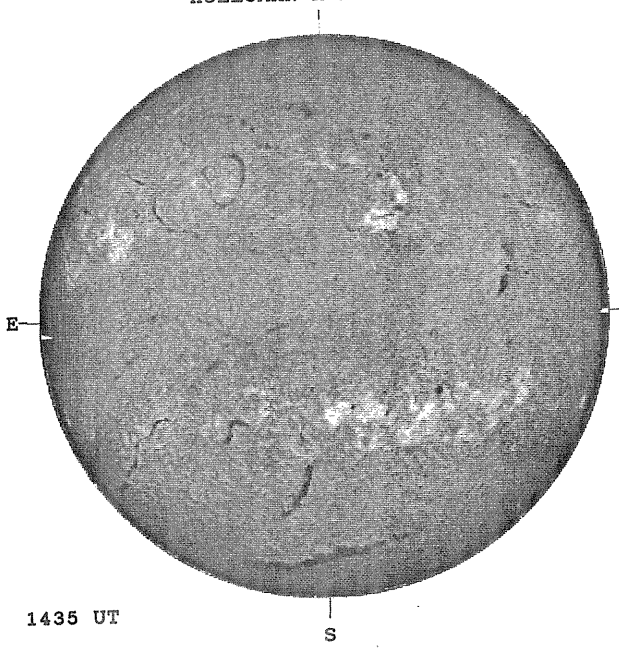
DeltaY = 13.1
DeltaX = 9.6



17.45 -
18.37 UT

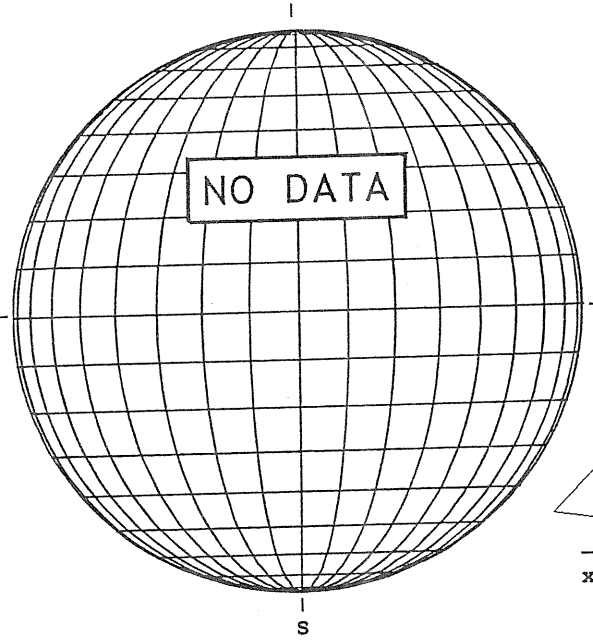
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA

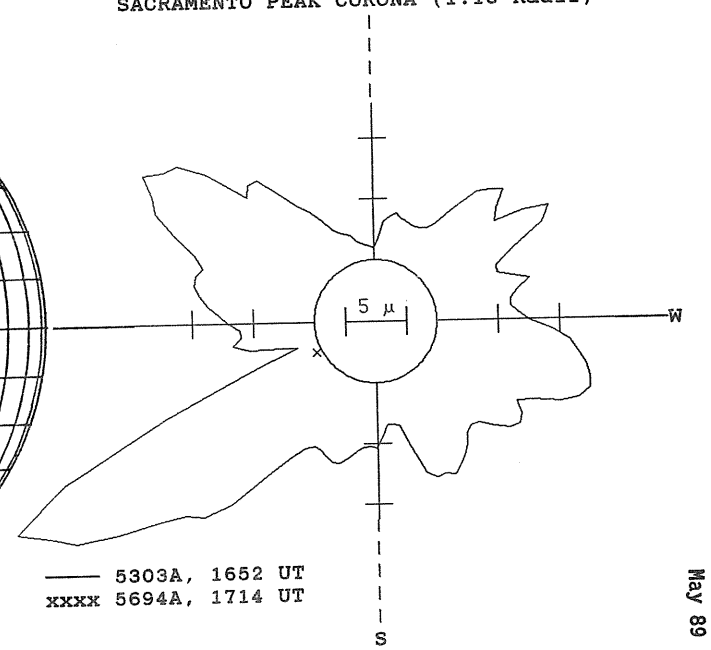


1435 UT

RAMEY SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A, 1652 UT
xxxx 5694A, 1714 UT

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

MAY 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
5464		LEAR	04	25	0018	S18	E78	04	30.9		B	BXO	90	3	4	2
5464		CULG	04	25	0320	S19	E80	05	1.2		B	BXO	30	2	3	2
5464		SVTO	04	25	0751	S19	E69	04	30.6		B	CHI	300	10	14	2
5464		RAMY	04	25	1348	S19	E76	05	1.4		B	EHO	380	11	13	4
5464		BOUL	04	25	1432	S19	E79	05	1.6		B	CSO	200	4	9	2
5464		HOLL	04	25	1505	S21	E75	05	1.4		B	CAO	330	7	12	3
5464	25196	MWIL	04	25	1530	S18	E80	05	1.7	4	(BF					
5464		PALE	04	25	2047	S18	E70	05	1.2		B	CRO	100	5	9	2
5464		LEAR	04	26	0010	S18	E72	05	1.5		B	CSO	210	9	12	2
5464		RAMY	04	26	1225	S20	E67	05	1.6		BG	EHI	290	21	14	4
5464		BOUL	04	26	1452	S19	E68	05	1.8		B	CKI	480	7	10	1
5464		PALE	04	26	1810	S19	E65	05	1.7		B	EKI	440	18	14	4
5464		HOLL	04	26	1840	S19	E65	05	1.7		B	EKI	360	15	13	2
5464		LEAR	04	27	0004	S19	E64	05	1.9		B	EKI	440	21	13	2
5464		CULG	04	27	0308	S17	E60	05	1.7		B	EHI	420	14	13	1
5464		SVTO	04	27	1025	S21	E55	05	1.6		BG	EKO	390	13	12	1
5464		RAMY	04	27	1320	S19	E53	05	1.6		BG	EHI	560	22	13	3
5464	25196	MWIL	04	27	1500	S18	E55	05	1.8	6	(BG)					
5464		HOLL	04	27	1507	S18	E54	05	1.7		BG	EHI	590	26	15	3
5464		LEAR	04	28	0020	S18	E47	05	1.6		BG	EKI	600	22	14	3
5464		CULG	04	28	0327	S18	E47	05	1.7		BG	EHI	510	22	14	2
5464		RAMY	04	28	1330	S19	E39	05	1.5		BG	EHI	610	43	14	3
5464		SVTO	04	28	1347	S20	E40	05	1.6		BG	EHI	530	24	14	2
5464	25196	MWIL	04	28	1500	S18	E42	05	1.8	6	(BG)					
5464		HOLL	04	28	1500	S20	E39	05	1.6		BG	EHI	530	24	13	3
5464		PALE	04	28	1740	S19	E37	05	1.5		BG	FKI	630	22	16	3
5464		LEAR	04	29	0015	S19	E35	05	1.7		BG	EHI	480	38	15	3
5464		CULG	04	29	0300	S18	E32	05	1.6		B	EHI	450	17	13	3
5464		SVTO	04	29	1010	S18	E28	05	1.5		BG	FHI	540	46	18	2
5464		RAMY	04	29	1345	S17	E26	05	1.5		BG	FHI	480	41	16	3
5464		BOUL	04	29	1438	S18	E26	05	1.6		B	EHI	320	22	15	2
5464	25196	MWIL	04	29	1500	S18	E28	05	1.7	6	(BG)					
5464		HOLL	04	29	1635	S19	E22	05	1.4		BG	FHO	670	57	21	3
5464		LEAR	04	30	0021	S18	E20	05	1.5		B	EHO	410	27	16	3
5464		CULG	04	30	0350	S18	E18	05	1.5		BG	FHI	350	11	17	2
5464		RAMY	04	30	1349	S18	E13	05	1.6		BG	FHI	450	31	18	2
5464	25196	MWIL	04	30	1530	S18	E16	05	1.9	6	(BG)					
5464		HOLL	04	30	1618	S19	E12	05	1.6		BG	FHO	420	26	17	2
5464		PALE	04	30	2053	S20	E07	05	1.4		BG	FKI	510	46	21	3
5464		LEAR	05	01	0011	S17	E09	05	1.7		BG	FHO	520	26	17	3
5464		CULG	05	01	0230	S18	E10	05	1.9		B	DHO	340	5	9	3
5464		RAMY	05	01	1318	S18	E00	05	1.5		BG	FHI	480	31	18	4
5464		BOUL	05	01	1320	S18	E05	05	1.9		B	EHO	310	8	10	1
5464	25196	MWIL	05	01	1515	S18	E03	05	1.9	5	(BG)					
5464		HOLL	05	01	1600	S18	W01	05	1.6		BG	CHO	580	56	19	3
5464		PALE	05	01	2006	S18	W05	05	1.4		BG	FKI	550	29	16	3
5464		LEAR	05	02	0045	S18	W04	05	1.7		B	EHO	420	29	14	4
5464		CULG	05	02	0415	S18	W05	05	1.8		B	CHO	400	11	14	3
5464		RAMY	05	02	1140	S20	W08	05	1.9		BG	EKI	520	39	11	3
5464		HOLL	05	02	1320	S20	W07	05	2.0		BG	EHO	490	31	12	3
5464		BOUL	05	02	1326	S18	W07	05	2.0		B	EHI	360	25	11	1
5464	25196	MWIL	05	02	1430	S19	W08	05	2.0	6	(BG)					
5464		PALE	05	02	1745	S19	W10	05	2.0		BG	EHI	400	30	14	3
5464		LEAR	05	03	0050	S18	W15	05	1.9		B	ESO	370	27	11	2
5464		CULG	05	03	0230	S18	W16	05	1.9		B	CHI	450	15	10	3
5464		RAMY	05	03	1213	S19	W18	05	2.1		BG	EKI	480	33	14	4
5464		BOUL	05	03	1425	S18	W21	05	2.0		B	EKI	540	28	11	2
5464	25196	MWIL	05	03	1500	S18	W21	05	2.0	6	(D)					
5464		HOLL	05	03	1515	S19	W21	05	2.0		BG	EKI	480	43	12	3
5464		PALE	05	03	1745	S19	W23	05	2.0		BG	EKI	530	43	14	4
5464		LEAR	05	04	0008	S19	W25	05	2.1		BG	EKI	700	41	12	4
5464		CULG	05	04	0305	S19	W27	05	2.1		BGD	EKC	680	36	11	2
5464		SVTO	05	04	0900	S18	W31	05	2.0		BGD	EKC	770	53	13	2
5464		RAMY	05	04	1330	S18	W34	05	2.0		BGD	EKC	940	62	14	4
5464	25196	MWIL	05	04	1500	S19	W34	05	2.0	6	(D)					
5464		HOLL	05	04	1500	S19	W35	05	1.9		BGD	EKI	900	68	15	3
5464		BOUL	05	04	1735	S18	W37	05	1.9		B	EKI	860	27	14	1
5464		PALE	05	04	1910	S20	W38	05	1.9		BG	EKI	720	42	14	4
5464		LEAR	05	05	0015	S19	W40	05	1.9		BGD	EKC	950	45	14	2

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5464		CULG	05	05	0350	S17	W43	05	1.9		B	EKC	740	32	14	3
5464		SVTO	05	05	0825	S19	W45	05	1.9		BGD	EKC	800	44	15	4
5464		BOUL	05	05	1425	S18	W50	05	1.8		BGD	FKI	980	26	21	3
5464	25196	MWIL	05	05	1500	S19	W47	05	2.0	6	(D)					
5464		HOLL	05	05	1506	S18	W45	05	2.2		BGD	EKI	990	48	15	3
5464		LEAR	05	06	0039	S18	W55	05	1.8		BGD	EKI	880	33	14	4
5464		SVTO	05	06	1204	S18	W56	05	2.2		BGD	EKI	700	23	13	4
5464		RAMY	05	06	1228	S19	W59	05	2.0		BGD	EKI	990	35	15	4
5464	25196	MWIL	05	06	1430	S19	W59	05	2.1	6	(D)					
5464		BOUL	05	06	1520	S19	W58	05	2.2		B	EKI	680	21	12	3
5464		HOLL	05	06	1600	S19	W60	05	2.1		BGD	EHI	720	15	12	2
5464		LEAR	05	07	0037	S19	W67	05	1.9		BGD	EKI	920	25	14	4
5464		CULG	05	07	0240	S17	W65	05	2.2		B	EKI	590	11	11	2
5464		SVTO	05	07	0839	S19	W70	05	2.0		BGD	EKI	810	12	12	2
5464		RAMY	05	07	1328	S19	W72	05	2.1		BGD	EKO	760	9	11	2
5464		BOUL	05	07	1338	S19	W69	05	2.3		B	EKO	550	9	11	3
5464	25196	MWIL	05	07	1440	S19	W73	05	2.0	6	(D)					
5464		HOLL	05	07	1500	S19	W72	05	2.1		BD	EHI	700	10	11	4
5464		PALE	05	07	1920	S18	W75	05	2.1		BD	DKO	840	11	10	3
5464		LEAR	05	08	0040	S19	W77	05	2.1		B	EKO	600	5	11	4
5464		SVTO	05	08	0837	S18	W79	05	2.3		BD	DKI	240	7	10	3
5464		RAMY	05	08	1305	S18	W80	05	2.4		BD	DKC	330	3	6	3
5464		BOUL	05	08	1420	S19	W80	05	2.5		A	HA	180	2	3	1
5464	25196	MWIL	05	08	1530	S19	W85	05	2.1	5	D					
5464		HOLL	05	08	1745	S18	W82	05	2.5		BD	DHI	270	4	6	3
5464		PALE	05	08	1825	S19	W88	05	2.0		BD	DKC	240	4	5	4
5470B	25207	MWIL	05	05	1500	S27	W42	05	2.3	3	X					
5467		SVTO	04	25	0751	N28	E76	05	1.3		A	AX	10	1		2
5467		RAMY	04	25	1348	N28	E76	05	1.5		A	AX	10	1	1	4
5467		RAMY	04	26	1225	N27	E62	05	1.3		A	AX	10	1	1	4
5467		PALE	04	26	1810	N28	E65	05	1.8		B	BXO	10	2	10	4
5467		HOLL	04	26	1840	N29	E60	05	1.5		A	AX	10	1		2
5467		LEAR	04	27	0004	N28	E57	05	1.4		A	AX	20	1	1	2
5467		HOLL	04	27	1507	N28	E49	05	1.4		A	AX		1		3
5467		PALE	05	01	2006	N28	E07	05	2.4		B	BXO		2	3	3
5467		LEAR	05	02	0045	N28	E04	05	2.3		B	BXO	10	3	4	4
5467		RAMY	05	02	1140	N29	E02	05	2.6		B	BXO	10	2	2	3
5467		HOLL	05	02	1320	N29	W02	05	2.4		A	AX		1		3
5467	25204	MWIL	05	02	1430	N29	W01	05	2.5	4	(AP)					
5467		LEAR	05	03	0050	N29	W07	05	2.5		A	AX	10	1	1	2
5472	25202	MWIL	05	01	1515	N22	E23	05	3.4	5	(B)					
5472		HOLL	05	01	1600	N22	E25	05	3.6		A	AX	20	6	2	3
5472		PALE	05	01	2006	N21	E20	05	3.4		A	AX		3	2	3
5472		LEAR	05	02	0045	N21	E18	05	3.4		B	BXO	20	5	3	4
5472		RAMY	05	02	1140	N21	E12	05	3.4		B	BXO	10	2	2	3
5472		HOLL	05	02	1320	N22	E09	05	3.2		A	AX		2	2	3
5472	25202	MWIL	05	02	1430	N22	E10	05	3.4	4	(B)					
5472		PALE	05	02	1745	N22	E08	05	3.3		A	AX	10	2	2	3
5480		SVTO	05	07	0839	S22	W43	05	4.0				20	2	3	2
5480		RAMY	05	07	1328	S21	W45	05	4.1		B	CRO	40	4	3	2
5480	25211	MWIL	05	07	1440	S22	W46	05	4.1	4	(B)					
5480		HOLL	05	07	1500	S21	W45	05	4.2		B	CRO	40	8	4	4
5480		PALE	05	07	1920	S21	W47	05	4.2		B	DAO	70	5	3	3
5480		LEAR	05	08	0040	S22	W51	05	4.1		B	CRO	60	12	5	4
5480		SVTO	05	08	0837	S22	W55	05	4.1		B	DAO	60	8	6	3
5480		RAMY	05	08	1305	S20	W58	05	4.1		B	CSO	110	5	5	3
5480		BOUL	05	08	1420	S22	W56	05	4.3		B	CSI	80	9	5	1
5480	25211	MWIL	05	08	1530	S22	W59	05	4.1	5	(B)					
5480		HOLL	05	08	1745	S22	W58	05	4.3		B	CAO	70	9	6	3
5480		PALE	05	08	1825	S22	W60	05	4.1		B	DSO	90	8	5	4
5480		LEAR	05	09	0100	S22	W64	05	4.1		B	DAO	90	10	8	3
5480		SVTO	05	09	0628	S21	W67	05	4.1		B	DAO	110	6	6	4
5480		RAMY	05	09	1300	S21	W69	05	4.2		B	DAO	140	7	7	3
5480		HOLL	05	09	1454	S22	W72	05	4.1		B	CRO	80	2	6	2
5480	25211	MWIL	05	09	1830	S22	W72	05	4.2	4	B					

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5480		PALE	05	09	1905	S23	W75	05	4.0		B	DAO	110	4	7	3
5480		LEAR	05	10	0012	S23	W76	05	4.1		B	DAO	150	5	7	2
5480		SVTO	05	10	1018	S22	W86	05	3.8		B	DAO	40	2	8	3
5473		HOLL	05	02	1320	S22	E25	05	4.5		A	AX		1		3
5473		PALE	05	02	1745	S23	E21	05	4.3		A	AX		1		3
5473		LEAR	05	03	0050	S24	E17	05	4.3		A	AX	10	2	1	2
5473		HOLL	05	03	1515	S27	E11	05	4.5		A	AX		1		3
5473A		LEAR	05	01	0011	N14	E49	05	4.7		B	BXO	10	2	7	3
5467A	25201	MWIL	04	30	1530	N14	E54	05	4.7	4	(B)					
5467A		PALE	04	30	2053	N14	E52	05	4.8		B	BXO		2	4	3
5475		SVTO	05	05	0825	S08	W06	05	4.9		B	CRO		2	2	4
5475	25208	MWIL	05	05	1500	S08	W10	05	4.9	4	(AP)					
5475		HOLL	05	05	1506	S07	W10	05	4.9		A	AX	20	4	2	3
5475		LEAR	05	06	0039	S08	W15	05	4.9		B	BXO	10	3	3	4
5475		SVTO	05	06	1204	S08	W21	05	4.9		B	DAO	20	3	3	4
5475		RAMY	05	06	1228	S09	W22	05	4.9		B	BXO	10	5	4	4
5475	25208	MWIL	05	06	1430	S08	W23	05	4.9	4	(B)					
5475		LEAR	05	07	0037	S09	W28	05	4.9		B	BXO	10	7	3	4
5475		CULG	05	07	0240	S08	W30	05	4.9		B	BXO		3	2	2
5475		SVTO	05	07	0839	S09	W33	05	4.9		B	CRO	20	3	2	2
5475		RAMY	05	07	1328	S07	W36	05	4.9		B	BXO	10	3	3	2
5475	25208	MWIL	05	07	1440	S09	W38	05	4.7	4	(B)					
5475		HOLL	05	07	1500	S08	W36	05	4.9		B	BXO	10	4	3	4
5475		PALE	05	07	1920	S07	W39	05	4.9		B	BXO		2	3	3
5475A		RAMY	05	07	1328	S19	W32	05	5.1		A	AX		1		2
5475A		HOLL	05	07	1500	S19	W32	05	5.2		A	AX		1		4
5470		RAMY	04	29	1345	N29	E80	05	5.8		B	BXO	10	3	4	3
5470	25198	MWIL	04	29	1500	N29	E77	05	5.7	3	AP					
5470		HOLL	04	29	1635	N29	E75	05	5.6		A	AX	30	4	2	3
5470		LEAR	04	30	0021	N29	E70	05	5.5		A	HS	60	1	2	3
5470		CULG	04	30	0350	N29	E70	05	5.6		A	HA	100	2	2	2
5470	25198	MWIL	04	30	1530	N28	E64	05	5.6	5	(B)					
5470		HOLL	04	30	1618	N29	E65	05	5.8		B	DAO	160	4	8	2
5470		PALE	04	30	2053	N29	E62	05	5.7		B	DAI	190	13	8	3
5470		LEAR	05	01	0011	N28	E59	05	5.6		B	DAO	310	9	7	3
5470		CULG	05	01	0230	N31	E59	05	5.7		B	DAI	90	6	5	3
5470		RAMY	05	01	1318	N29	E53	05	5.7		BG	DKI	440	12	10	4
5470		BOUL	05	01	1320	N29	E52	05	5.6		B	DAC	360	11	7	1
5470	25198	MWIL	05	01	1515	N28	E53	05	5.8	5	(B)					
5470		HOLL	05	01	1600	N29	E54	05	5.9		BG	ESI	420	34	11	3
5470		PALE	05	01	2006	N29	E50	05	5.7		B	DAI	300	20	9	3
5470		LEAR	05	02	0045	N29	E47	05	5.7		B	DSI	470	24	10	4
5470		CULG	05	02	0415	N30	E45	05	5.7		BG	EAI	160	11	11	3
5470		RAMY	05	02	1140	N29	E43	05	5.8		BG	ESI	330	23	12	3
5470		HOLL	05	02	1320	N31	E40	05	5.7		BG	EAI	210	21	11	3
5470		BOUL	05	02	1326	N29	E40	05	5.7		B	DAC	220	15	9	1
5470	25198	MWIL	05	02	1430	N29	E41	05	5.8	5	(B)					
5470		PALE	05	02	1745	N29	E38	05	5.7		BG	EAI	350	27	12	3
5470		LEAR	05	03	0050	N28	E34	05	5.7		B	EAI	320	24	13	2
5470		CULG	05	03	0230	N29	E38	05	6.1		BG	DAI	160	11	12	3
5470		RAMY	05	03	1213	N29	E30	05	5.9		BGD	EKI	470	27	11	4
5470		BOUL	05	03	1425	N28	E28	05	5.8		B	EAI	490	17	12	2
5470	25198	MWIL	05	03	1500	N29	E28	05	5.8	5	(BG)					
5470		HOLL	05	03	1515	N30	E28	05	5.8		BGD	EKI	300	21	12	3
5470		PALE	05	03	1745	N28	E26	05	5.8		BD	EKI	460	32	13	4
5470		LEAR	05	04	0008	N28	E23	05	5.8		BG	EKI	510	36	13	4
5470		CULG	05	04	0305	N29	E20	05	5.7		BGD	EKI	540	33	13	2
5470		SVTO	05	04	0900	N28	E18	05	5.8		BGD	EKC	550	32	13	2
5470		RAMY	05	04	1330	N27	E17	05	5.9		BG	EKI	530	38	13	4
5470		HOLL	05	04	1500	N29	E15	05	5.8		BGD	EKI	430	56	13	3
5470	25198	MWIL	05	04	1500	N29	E18	05	6.0	5	(D)*					
5470		BOUL	05	04	1735	N29	E16	05	6.0		B	DAI	470	11	9	1
5470		PALE	05	04	1910	N29	E12	05	5.7		BGD	EKI	570	26	13	4

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5470		LEAR	05	05	0015	N29	E11	05	5.9		BGD	EKI	460	25	13	2
5470		CULG	05	05	0350	N29	E09	05	5.9		B	EKI	360	31	14	3
5470		SVTO	05	05	0825	N29	E08	05	6.0		BGD	FAC	430	45	18	4
5470		BOUL	05	05	1425	N29	E06	05	6.1		BGD	DAI	500	14	8	3
5470	25198	MWIL	05	05	1500	N29	E05	05	6.0	5	(D)*					
5470		HOLL	05	05	1506	N29	E03	05	5.9		BGD	EKO	610	39	13	3
5470		LEAR	05	06	0039	N30	W01	05	5.9		BGD	DKI	560	27	10	4
5470		SVTO	05	06	1204	N29	W05	05	6.1		BGD	DAI	300	21	10	4
5470		RAMY	05	06	1228	N29	W05	05	6.1		BG	DKI	420	31	10	4
5470	25198	MWIL	05	06	1430	N29	W07	05	6.0	5	(D)*					
5470		BOUL	05	06	1520	N27	W06	05	6.2		B	DAI	260	24	8	3
5470		HOLL	05	06	1600	N29	W07	05	6.1		BG	DAI	300	20	9	2
5470		LEAR	05	07	0037	N29	W12	05	6.1		BGD	EKI	410	30	11	4
5470		CULG	05	07	0240	N29	W12	05	6.2		B	DAI	230	22	10	2
5470		SVTO	05	07	0839	N29	W16	05	6.1		BGD	DAI	220	18	10	2
5470		RAMY	05	07	1328	N30	W20	05	6.0		BGD	DAI	360	24	10	2
5470		BOUL	05	07	1338	N28	W17	05	6.2		B	EAO	160	26	11	3
5470	25198	MWIL	05	07	1440	N29	W20	05	6.0	5	(D)					
5470		HOLL	05	07	1500	N29	W19	05	6.1		BGD	DAI	80	22	10	4
5470		PALE	05	07	1920	N30	W23	05	6.0		BGD	DAI	240	19	10	3
5470		LEAR	05	08	0040	N29	W26	05	6.0		B	EAO	210	25	13	4
5470		SVTO	05	08	0837	N29	W27	05	6.2		B	EAO	130	28	12	3
5470		RAMY	05	08	1305	N31	W30	05	6.2		B	CSI	230	16	9	3
5470		BOUL	05	08	1420	N29	W32	05	6.1		B	DAI	120	12	10	1
5470	25198	MWIL	05	08	1530	N29	W34	05	6.0	5	(D)					
5470		HOLL	05	08	1745	N30	W35	05	6.0		BD	CSO	210	20	12	3
5470		PALE	05	08	1825	N30	W35	05	6.0		B	CSI	160	16	12	4
5470		LEAR	05	09	0100	N30	W37	05	6.1		B	CAO	150	19	12	3
5470		SVTO	05	09	0628	N30	W41	05	6.0		B	CAO	170	9	8	4
5470		RAMY	05	09	1300	N30	W44	05	6.1		B	CSO	180	8	9	3
5470		HOLL	05	09	1454	N30	W46	05	6.0		B	CAO	90	6	8	2
5470	25198	MWIL	05	09	1830	N29	W49	05	5.9	5	B+					
5470		PALE	05	09	1905	N29	W47	05	6.1		B	CAO	170	6	8	3
5470		LEAR	05	10	0012	N28	W52	05	5.9		B	CAO	130	8	12	2
5470		SVTO	05	10	1018	N28	W60	05	5.7		A	HA	140	3	4	3
5470		RAMY	05	10	1518	N29	W61	05	5.8		A	HA	100	1	2	3
5470		HOLL	05	10	1540	N28	W59	05	6.0		A	HS	130	1	2	2
5470		PALE	05	10	1725	N28	W61	05	5.9		A	HA	130	1	2	3
5470		LEAR	05	11	0013	N28	W68	05	5.7		A	HH	170	2	3	3
5470		SVTO	05	11	1155	N28	W78	05	5.4		A	HA	30	1	3	3
5470		RAMY	05	11	1400	N30	W75	05	5.7		A	HS	70	2	2	3
5470		HOLL	05	11	1650	N27	W79	05	5.5		A	HA	40	1	1	2
5470		PALE	05	11	1725	N28	W81	05	5.4		A	HA	130	1	2	3
5470		LEAR	05	12	0020	N28	W79	05	5.8		A	HS	30	1	2	3
5470A		PALE	05	04	1910	S08	E21	05	6.4		A	AX		2	1	4
5470A	25218	MWIL	05	12	1500	S10	W75	05	7.0	4	(AP)					
5471		BOUL	05	01	1320	S22	E80	05	7.7		A	AX	10	1	1	1
5471	25203	MWIL	05	01	1515	S22	E79	05	7.7	4	(AP					
5471		HOLL	05	01	1600	S22	E80	05	7.8		B	BXO	40	2	10	3
5471		PALE	05	01	2006	S23	E76	05	7.7		B	CAO	70	3	5	3
5471		LEAR	05	02	0045	S22	E75	05	7.8		B	CAO	110	5	7	4
5471		CULG	05	02	0415	S22	E75	05	7.9		B	CSO	30	2	5	3
5471		RAMY	05	02	1140	S22	E68	05	7.7		B	CSO	70	4	5	3
5471		HOLL	05	02	1320	S19	E70	05	7.9		B	CRO	30	3	7	3
5471		BOUL	05	02	1326	S22	E64	05	7.5		B	CSO	40	2	3	1
5471	25203	MWIL	05	02	1430	S22	E66	05	7.7	5	(BP)					
5471		PALE	05	02	1745	S22	E62	05	7.5		B	CSO	40	4	3	3
5471		LEAR	05	03	0050	S22	E59	05	7.6		B	CAO	60	3	3	2
5471		CULG	05	03	0230	S22	E64	05	8.0		A	HA	40	2	1	3
5471		RAMY	05	03	1213	S22	E53	05	7.6		A	HA	70	3	2	4
5471		BOUL	05	03	1425	S23	E52	05	7.6		B	DSO	60	3	3	2
5471	25203	MWIL	05	03	1500	S22	E53	05	7.7	5	(BP)					
5471		HOLL	05	03	1515	S19	E54	05	7.7		B	CAO	70	4	6	3
5471		PALE	05	03	1745	S23	E50	05	7.6		B	DAO	120	8	5	4
5471		LEAR	05	04	0008	S22	E48	05	7.7		B	CSO	80	4	6	4
5471		CULG	05	04	0305	S22	E45	05	7.6		A	HA	50	2	1	2
5471		SVTO	05	04	0900	S21	E45	05	7.8		B	CAO	70	9	8	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
5471		RAMY	05	04	1330	S23	E41	05	7.7		B	CSO	80	3	6	4
5471		HOLL	05	04	1500	S21	E44	05	8.0		B	CSO	120	16	10	3
5471	25203	MWIL	05	04	1500	S22	E38	05	7.5	4	(AP)					
5471		BOUL	05	04	1735	S21	E36	05	7.5		A	HA	50	3	2	1
5471		PALE	05	04	1910	S21	E35	05	7.5		A	HS	70	1	2	4
5471		LEAR	05	05	0015	S21	E32	05	7.5		B	CSO	80	5	3	2
5471		CULG	05	05	0350	S22	E30	05	7.5		A	HA	40	3	1	3
5471		SVTO	05	05	0825	S22	E28	05	7.5		B	CAO	70	5	3	4
5471		BOUL	05	05	1425	S22	E24	05	7.4		A	HS	40	1	2	3
5471	25203	MWIL	05	05	1500	S22	E27	05	7.7	4	(BP)					
5471		HOLL	05	05	1506	S18	E25	05	7.5		B	CAO	80	7	11	3
5471		LEAR	05	06	0039	S21	E23	05	7.8		B	CAO	80	3	8	4
5471		SVTO	05	06	1204	S22	E17	05	7.8		B	DAO	40	7	8	4
5471		RAMY	05	06	1228	S22	E16	05	7.7		B	CSO	50	11	8	4
5471	25203	MWIL	05	06	1430	S23	E15	05	7.7	4	(BP)					
5471		BOUL	05	06	1520	S22	E14	05	7.7		B	CRO	10	5	7	3
5471		HOLL	05	06	1600	S22	E15	05	7.8		B	CSO	20	6	8	2
5471		LEAR	05	07	0037	S19	E09	05	7.7		B	CAO	80	11	8	4
5471		CULG	05	07	0240	S21	E08	05	7.7		B	CAO	10	4	7	2
5471		SVTO	05	07	0839	S22	E05	05	7.7		B	CRO	30	3	9	2
5471		RAMY	05	07	1328	S21	E02	05	7.7		B	CSO	10	3	6	2
5471		BOUL	05	07	1338	S21	W01	05	7.5		A	HA	20	2	1	3
5471	25203	MWIL	05	07	1440	S22	W02	05	7.4	4	(AP)					
5471		HOLL	05	07	1500	S21	E02	05	7.8		B	BXO	20	6	9	4
5471		PALE	05	07	1920	S21	E00	05	7.8		B	CAO	20	3	9	3
5471		LEAR	05	08	0040	S21	W04	05	7.7		B	BXO	20	5	9	4
5471		SVTO	05	08	0837	S21	W06	05	7.9		B	CRO	20	8	9	3
5471	25203	MWIL	05	08	1530	S21	W12	05	7.7	4	(BF)					
5471		HOLL	05	08	1745	S20	W13	05	7.7		B	BXO	30	8	9	3
5471		PALE	05	08	1825	S19	W16	05	7.5		B	BXO		3	3	4
5471		LEAR	05	09	0100	S20	W16	05	7.8		B	BXO	20	5	9	3
5471		LEAR	05	10	0012	S21	W24	05	8.2		B	BXO	20	2	3	2
5471		SVTO	05	10	1018	S21	W32	05	8.0		A	AX	10	4	2	3
5471A	25205	MWIL	05	03	1500	N13	E71	05	9.0	3	(AP)					
5471A		RAMY	05	07	1328	N14	E19	05	9.0		A	AX		1		2
5471A	25212	MWIL	05	07	1440	N12	E18	05	9.0	4	(AP)					
5471A		HOLL	05	07	1500	N14	E19	05	9.1		A	AX		1		4
5479		RAMY	05	07	1328	N13	E26	05	9.5		B	CRO	30	9	3	2
5479		BOUL	05	07	1338	N12	E25	05	9.4		B	CAO	20	9	3	3
5479	25213	MWIL	05	07	1440	N12	E26	05	9.6	4	(B)					
5479		HOLL	05	07	1500	N13	E25	05	9.5		B	BXO	10	7	3	4
5479		PALE	05	07	1920	N13	E24	05	9.6		B	CSO	20	8	3	3
5479		LEAR	05	08	0040	N13	E20	05	9.5		B	BXO	30	17	7	4
5479		SVTO	05	08	0837	N14	E18	05	9.7		B	DAO	40	13	6	3
5479		RAMY	05	08	1305	N13	E12	05	9.4		B	CSO	60	4	4	3
5479		BOUL	05	08	1420	N12	E12	05	9.5		B	CAO	30	4	4	1
5479	25213	MWIL	05	08	1530	N13	E12	05	9.5	5	(B)					
5479		HOLL	05	08	1745	N14	E10	05	9.5		B	BXO	30	12	5	3
5479		PALE	05	08	1825	N12	E11	05	9.6		B	CSO	40	9	6	4
5479		LEAR	05	09	0100	N13	E07	05	9.6		B	BXO	10	8	5	3
5479		SVTO	05	09	0628	N12	E04	05	9.6		B	CAO	40	14	7	4
5479		RAMY	05	09	1300	N10	W01	05	9.5		B	CRO	30	4	6	3
5479		HOLL	05	09	1454	N12	W04	05	9.3		A	AX	20	3	3	2
5479	25213	MWIL	05	09	1830	N11	W02	05	9.6	5	AP					
5479		PALE	05	09	1905	N10	W03	05	9.6		B	CAO	30	8	6	3
5479		LEAR	05	10	0012	N11	W04	05	9.7		B	CAO	40	5	4	2
5479		SVTO	05	10	1018	N11	W10	05	9.7		B	DAO	30	9	6	3
5479		RAMY	05	10	1518	N11	W14	05	9.6		B	CSO	20	4	3	3
5479		HOLL	05	10	1540	N10	W13	05	9.7		B	BXO	40	4	4	2
5479		PALE	05	10	1725	N10	W15	05	9.6		B	DAO	50	4	4	3
5479		LEAR	05	11	0013	N11	W18	05	9.6		B	CSO	40	5	2	3
5479		SVTO	05	11	1155	N11	W25	05	9.6		B	BXO	10	3	5	3
5479		RAMY	05	11	1400	N12	W27	05	9.5		A	AX	10	2	3	3
5479		HOLL	05	11	1650	N10	W28	05	9.6		B	BXO	20	6	7	2
5479		PALE	05	11	1930	N10	W31	05	9.5		B	BXO	10	2	2	2
5479		LEAR	05	12	0020	N10	W33	05	9.5		B	BXO	20	3	3	3
5479		CULG	05	12	0320	N12	W33	05	9.6		B	BXO		2	1	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5479		HOLL	05	12	1450	N11	W40	05	9.6		A	AX		1		3
5479	25213	MWIL	05	12	1500	N11	W37	05	9.8	4	(B)					
5474		HOLL	05	03	1515	N15	E71	05	9.0		A	AX		1		3
5474		LEAR	05	04	0008	N18	E70	05	9.3		B	BXO	30	2	4	4
5474		RAMY	05	04	1330	N16	E67	05	9.6		B	BXO	20	3	6	4
5474		HOLL	05	04	1500	N18	E65	05	9.6		B	BXO	20	3	6	3
5474	25206	MWIL	05	04	1500	N18	E67	05	9.7	4	AP					
5474		PALE	05	04	1910	N18	E66	05	9.8		A	AX		2	1	4
5474		LEAR	05	05	0015	N18	E61	05	9.6		B	BXO	40	2	7	2
5474		CULG	05	05	0350	N17	E59	05	9.6		B	BXO		2	4	3
5474		SVTO	05	05	0825	N18	E55	05	9.5		B	CRO	10	2	5	4
5474		BOUL	05	05	1425	N17	E55	05	9.8		A	AX	20	1	1	3
5474	25206	MWIL	05	05	1500	N17	E52	05	9.6	4	(AP)					
5474		HOLL	05	05	1506	N18	E52	05	9.6		B	BXO	20	2	7	3
5474		LEAR	05	06	0039	N18	E47	05	9.6		B	BXO	10	4	6	4
5474		SVTO	05	06	1204	N17	E43	05	9.8		B	CAO	30	11	6	4
5474		RAMY	05	06	1228	N16	E43	05	9.8		B	CRO	40	13	5	4
5474	25206	MWIL	05	06	1430	N15	E41	05	9.7	5	(B)					
5474		BOUL	05	06	1520	N15	E40	05	9.7		B	DRO	30	15	6	3
5474		HOLL	05	06	1600	N17	E41	05	9.8		B	CRO	30	13	8	2
5474		LEAR	05	07	0037	N17	E35	05	9.7		B	DAI	90	15	8	4
5474		CULG	05	07	0240	N15	E34	05	9.7		B	DAI	20	11	6	2
5474		SVTO	05	07	0839	N15	E31	05	9.7		B	CAO	50	18	7	2
5474		RAMY	05	07	1328	N18	E28	05	9.7		B	DAI	80	13	5	2
5474		BOUL	05	07	1338	N15	E28	05	9.7		B	DAI	60	9	5	3
5474	25206	MWIL	05	07	1440	N16	E28	05	9.7	5	(B)					
5474		HOLL	05	07	1500	N18	E28	05	9.7		B	CAI	50	15	5	4
5474		PALE	05	07	1920	N17	E26	05	9.8		B	DAI	90	11	5	3
5474		LEAR	05	08	0040	N17	E21	05	9.6		B	DAO	70	12	6	4
5474		SVTO	05	08	0837	N18	E19	05	9.8		B	DAO	70	18	6	3
5474		RAMY	05	08	1305	N16	E16	05	9.7		B	DAI	150	15	3	3
5474		BOUL	05	08	1420	N16	E14	05	9.6		B	DAO	30	3	4	1
5474	25206	MWIL	05	08	1530	N16	E15	05	9.8	5	(BG)					
5474		HOLL	05	08	1745	N18	E14	05	9.8		B	BXI	90	33	5	3
5474		PALE	05	08	1825	N17	E14	05	9.8		B	DAI	70	17	4	4
5474		LEAR	05	09	0100	N17	E09	05	9.7		B	BXO	40	22	6	3
5474		SVTO	05	09	0628	N17	E07	05	9.8		B	DAI	110	21	4	4
5474		RAMY	05	09	1300	N16	E04	05	9.8		B	DAI	80	20	6	3
5474		HOLL	05	09	1454	N17	E02	05	9.8		B	DAO	90	9	5	2
5474	25206	MWIL	05	09	1830	N16	E00	05	9.8	5	B					
5474		PALE	05	09	1905	N15	W03	05	9.6		B	BXO	40	19	7	3
5474		LEAR	05	10	0012	N17	W03	05	9.8		B	CAO	80	19	8	2
5474		SVTO	05	10	1018	N17	W09	05	9.7		B	DAO	40	12	6	3
5474		RAMY	05	10	1518	N17	W11	05	9.8		B	CSI	30	14	6	3
5474		HOLL	05	10	1540	N16	W12	05	9.7		B	BXO	40	10	6	2
5474		PALE	05	10	1725	N16	W12	05	9.8		B	CSI	40	10	7	3
5474		PALE	05	10	1930	N16	W17	05	9.5		B	BXO	20	2	2	2
5474		LEAR	05	11	0013	N16	W15	05	9.9		B	CSO	40	8	4	3
5474		SVTO	05	11	1155	N17	W21	05	9.9		B	CRO	20	6	2	3
5474		RAMY	05	11	1400	N17	W22	05	9.9		A	HR	10	4	3	3
5474		HOLL	05	11	1650	N15	W26	05	9.7		B	BXO	20	4	3	2
5474		PALE	05	11	1725	N16	W22	05	10.0		B	CSI	40	10	7	3
5474		BOUL	05	11	1830	N17	W23	05	10.0		A	HA	20	2	1	1
5474		PALE	05	11	1930	N16	W27	05	9.8		B	BXO	20	2	2	2
5474		LEAR	05	12	0020	N17	W28	05	9.9		B	BXO	40	7	3	3
5474		CULG	05	12	0320	N16	W29	05	9.9		A	AX		3	1	2
5474		BOUL	05	12	1349	N17	W34	05	10.0		B	BXO	10	2	2	3
5474		HOLL	05	12	1450	N16	W37	05	9.8		A	AX	10	1		3
5474	25206	MWIL	05	12	1500	N16	W35	05	10.0	4	(AP)					
5474		LEAR	05	13	0006	N18	W41	05	9.9		B	BXO	10	3	2	3
5477		SVTO	05	06	1204	N09	E48	05	10.1		A	AX		1	1	4
5477		RAMY	05	06	1228	N09	E48	05	10.1		A	AX		1		4
5477	25210	MWIL	05	06	1430	N09	E46	05	10.0	5	(AF)					
5477		BOUL	05	06	1520	N09	E45	05	10.0		A	AX		1		3
5477		HOLL	05	06	1600	N09	E46	05	10.1		A	AX		1		2
5477		LEAR	05	07	0037	N11	E38	05	9.9		B	CAO	70	6	7	4
5477		CULG	05	07	0240	N09	E38	05	10.0		B	CAO	20	3	4	2

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MAY 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
5477		SVTO	05	07	0839	N09	E34	05	9.9		B	DSO	40	5	5	2
5477		RAMY	05	07	1328	N11	E32	05	10.0		B	DAO	60	11	5	2
5477		BOUL	05	07	1338	N09	E31	05	9.9		B	DAO	60	15	5	3
5477	25210	MWIL	05	07	1440	N08	E33	05	10.1	4	(B)					
5477		HOLL	05	07	1500	N11	E31	05	9.9		B	CSO	70	15	6	4
5477		PALE	05	07	1920	N10	E29	05	10.0		B	DAO	110	10	6	3
5477		LEAR	05	08	0040	N09	E25	05	9.9		B	DAO	70	16	7	4
5477		SVTO	05	08	0837	N10	E24	05	10.2		B	DAO	60	15	5	3
5477		RAMY	05	08	1305	N10	E20	05	10.0		B	CSO	60	7	4	3
5477		BOUL	05	08	1420	N09	E18	05	9.9		B	BXO	20	4	4	1
5477	25210	MWIL	05	08	1530	N10	E17	05	9.9	5	(B)					
5477		HOLL	05	08	1745	N11	E15	05	9.9		B	CSO	110	21	8	3
5477		PALE	05	08	1825	N10	E17	05	10.0		B	CSO	20	10	5	4
5477		LEAR	05	09	0100	N10	E12	05	9.9		B	CAO	60	12	7	3
5477		SVTO	05	09	0628	N12	E12	05	10.2		B	DAO	40	8	4	4
5477		RAMY	05	09	1300	N10	E08	05	10.1		B	BXO	20	7	3	3
5477		HOLL	05	09	1454	N10	E03	05	9.8		B	DAO	50	10	8	2
5477	25210	MWIL	05	09	1830	N09	E05	05	10.1	4	AP					
5477		PALE	05	09	1905	N12	E03	05	10.0		B	CSO	30	13	6	3
5477		LEAR	05	10	0012	N10	E01	05	10.1		B	BXO	40	7	3	2
5477		SVTO	05	10	1018	N11	W05	05	10.0		B	DAO	20	8	6	3
5477		RAMY	05	10	1518	N10	W08	05	10.0		B	BXO	10	8	3	3
5477		HOLL	05	10	1540	N10	W08	05	10.0		B	BXO	20	4	3	2
5477		PALE	05	10	1725	N08	W09	05	10.0		B	DSO	20	4	3	3
5477		LEAR	05	11	0013	N10	W13	05	10.0		B	BXO	30	4	3	3
5477		SVTO	05	11	1155	N10	W20	05	10.0		B	DRO	20	7	3	3
5477		RAMY	05	11	1400	N11	W21	05	10.0		B	BXO	10	6	4	3
5477		BOUL	05	11	1830	N11	W26	05	9.8		B	CSO	30	4	6	1
5477		PALE	05	11	1930	N11	W25	05	9.9		B	CSO	20	5	3	2
5477		LEAR	05	12	0020	N11	W27	05	10.0		B	BXO	10	5	3	3
5477		CULG	05	12	0320	N11	W28	05	10.0		A	HR	10	2	2	2
5477		PALE	05	12	2035	N09	W41	05	9.8		B	BXO	10	2	2	3
5477A		LEAR	05	12	0020	N27	W22	05	10.3		B	BXO	10	2	2	3
5476	25209	MWIL	05	05	1500	S32	E68	05	11.0	4	(AP)					
5476		HOLL	05	05	1506	S33	E61	05	10.5		B	BXO	40	11	8	3
5476		LEAR	05	06	0039	S31	E63	05	11.0		B	DAO	180	9	8	4
5476		SVTO	05	06	1204	S31	E59	05	11.1		B	DAO	60	5	8	4
5476		RAMY	05	06	1228	S31	E57	05	11.0		B	DAO	120	9	7	4
5476	25209	MWIL	05	06	1430	S32	E57	05	11.1	5	(B)					
5476		BOUL	05	06	1520	S31	E55	05	11.0		B	DAO	60	6	9	3
5476		HOLL	05	06	1600	S31	E55	05	11.0		B	DSO	60	6	8	2
5476		LEAR	05	07	0037	S29	E52	05	11.1		B	DAO	170	14	10	4
5476		CULG	05	07	0240	S31	E50	05	11.0		B	DAO	110	7	10	2
5476		SVTO	05	07	0839	S32	E45	05	10.9		B	EAO	90	10	11	2
5476		RAMY	05	07	1328	S31	E44	05	11.0		B	DAO	90	12	8	2
5476		BOUL	05	07	1338	S30	E43	05	10.9		B	ESI	80	17	11	3
5476	25209	MWIL	05	07	1440	S31	E43	05	11.0	5	(B)					
5476		HOLL	05	07	1500	S30	E44	05	11.1		B	CSO	80	19	10	4
5476		PALE	05	07	1920	S31	E42	05	11.1		B	DAI	110	14	9	3
5476		LEAR	05	08	0040	S30	E37	05	10.9		B	EAO	210	25	11	4
5476		SVTO	05	08	0837	S29	E34	05	11.0		B	EAO	130	28	12	3
5476		RAMY	05	08	1305	S30	E31	05	11.0		B	EAI	280	16	11	3
5476		BOUL	05	08	1420	S29	E29	05	10.9		B	EAI	110	13	10	1
5476	25209	MWIL	05	08	1530	S30	E28	05	10.8	5	(BG)					
5476		HOLL	05	08	1745	S29	E27	05	10.8		B	EAO	300	38	13	3
5476		PALE	05	08	1825	S31	E27	05	10.9		B	EAI	240	20	12	4
5476		LEAR	05	09	0100	S29	E24	05	10.9		B	EKO	220	27	12	3
5476		SVTO	05	09	0628	S29	E20	05	10.8		B	EAI	350	43	13	4
5476		RAMY	05	09	1300	S30	E16	05	10.8		B	EKI	300	29	13	3
5476		HOLL	05	09	1454	S30	E16	05	10.9		BG	EAO	250	16	14	2
5476	25209	MWIL	05	09	1830	S29	E11	05	10.6	5	(B)					
5476		PALE	05	09	1905	S30	E14	05	10.9		BG	EAO	300	31	14	3
5476		LEAR	05	10	0012	S29	E10	05	10.8		B	EHI	370	29	14	2
5476		SVTO	05	10	1018	S29	E05	05	10.8		B	EKI	390	35	14	3
5476		RAMY	05	10	1518	S30	E00	05	10.6		B	EKI	360	36	15	3
5476		HOLL	05	10	1540	S29	E02	05	10.8		B	EKO	360	38	15	2
5476		PALE	05	10	1725	S29	W02	05	10.6		B	EKI	370	20	15	3

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5476		LEAR	05	11	0013	S30	W04	05	10.7		B	EKI	330	40	14	3
5476		SVTO	05	11	1155	S30	W08	05	10.9		B	EKI	230	36	14	3
5476		RAMY	05	11	1400	S30	W09	05	10.9		B	EAI	290	48	14	3
5476		HOLL	05	11	1650	S31	W14	05	10.6		B	EKI	290	30	14	2
5476		BOUL	05	11	1830	S30	W14	05	10.7		B	EAI	240	19	11	1
5476		PALE	05	11	1930	S30	W16	05	10.5		B	EAI	280	20	12	2
5476		LEAR	05	12	0020	S30	W16	05	10.7		B	EKI	300	30	14	3
5476		CULG	05	12	0320	S31	W17	05	10.8		B	EAI	200	26	14	2
5476		BOUL	05	12	1349	S30	W25	05	10.6		B	EKI	270	16	12	3
5476		HOLL	05	12	1450	S31	W25	05	10.6		B	EAI	260	18	14	3
5476	25209	MWIL	05	12	1500	S30	W27	05	10.5	5	(B)					
5476		PALE	05	12	2035	S32	W28	05	10.6		B	DAO	150	12	11	3
5476		LEAR	05	13	0006	S31	W28	05	10.8		B	EKI	220	24	14	3
5476		CULG	05	13	0400	S29	W33	05	10.6		B	EAO	140	7	16	2
5476		SVTO	05	13	1318	S30	W36	05	10.7		B	EAO	240	16	14	1
5476		RAMY	05	13	1430	S30	W37	05	10.7		B	EAO	260	16	13	2
5476	25209	MWIL	05	13	1500	S30	W40	05	10.5	5	(B)					
5476		HOLL	05	13	1600	S30	W38	05	10.7		B	EAO	210	20	14	2
5476		PALE	05	13	1735	S31	W39	05	10.6		B	EAO	170	13	13	3
5476		LEAR	05	14	0010	S31	W43	05	10.6		B	EKO	110	12	13	3
5476		SVTO	05	14	1059	S31	W46	05	10.8		B	EAO	100	24	15	1
5476		RAMY	05	14	1428	S31	W49	05	10.7		B	EAO	120	9	12	2
5476		HOLL	05	14	1510	S31	W53	05	10.4		B	CAO	100	9	16	3
5476		PALE	05	14	1810	S31	W52	05	10.6		B	CAO	120	9	14	3
5476		LEAR	05	15	0023	S32	W55	05	10.7		B	CAO	120	8	13	4
5476		SVTO	05	15	0558	S31	W58	05	10.7		B	FAO	80	8	16	4
5476		HOLL	05	15	1415	S30	W65	05	10.5		B	DSO	80	3	3	3
5476		RAMY	05	15	1458	S31	W69	05	10.2		B	DAO	170	2	8	2
5476		PALE	05	15	1735	S30	W68	05	10.4		B	DSO	120	3	4	4
5476		LEAR	05	16	0230	S31	W73	05	10.3		B	DAO	180	2	4	3
5476		SVTO	05	16	1158	S29	W80	05	10.2		A	HA	30	1	4	2
5476		RAMY	05	16	1300	S30	W81	05	10.2		B	CSO	60	4	3	3
5476		BOUL	05	16	1341	S29	W79	05	10.4		A	HA	60	1	2	2
5476	25209	MWIL	05	16	1445	S29	W82	05	10.2	5	AP					
5476		PALE	05	16	1740	S28	W78	05	10.6		A	HA	60	1	2	3
5476A		RAMY	05	10	1518	S21	E07	05	11.2		A	AX		1		3
5476A		HOLL	05	10	1540	S21	E07	05	11.2		A	AX	10	1	1	2
5476A		PALE	05	10	1725	S21	E04	05	11.0		A	AX		1		3
5482		SVTO	05	08	0837	S24	E51	05	12.3		A	AX	10	1	1	3
5482		RAMY	05	08	1305	S25	E47	05	12.2		A	AX	20	1	1	3
5482	25216	MWIL	05	08	1530	S27	E45	05	12.1	4	(BP)					
5482		HOLL	05	08	1745	S26	E46	05	12.3		B	BXO	20	3	4	3
5482		PALE	05	08	1825	S28	E44	05	12.2		A	AX	10	2	2	4
5482		LEAR	05	09	0100	S27	E40	05	12.1		B	BXO	10	4	3	3
5482		LEAR	05	10	0012	S24	E27	05	12.1		A	AX	10	1	1	2
5482		RAMY	05	11	1400	S24	E06	05	12.0		B	BXO	10	4	4	3
5482		PALE	05	11	1725	S21	E04	05	12.0		A	AX		1		3
5485		LEAR	05	11	0013	S22	E03	05	11.2		A	AX	10	1	1	3
5485		SVTO	05	11	1155	S23	E08	05	12.1		A	AX	10	4	3	3
5485		LEAR	05	12	0020	S20	E00	05	12.0		B	BXO	20	5	3	3
5478		LEAR	05	07	0037	N28	E79	05	13.2		B	CAO	60	4	5	4
5478		CULG	05	07	0240	N27	E80	05	13.3		A	HS	20	1	2	2
5478		SVTO	05	07	0839	N27	E72	05	13.0		A	HR	50	1	2	2
5478		RAMY	05	07	1328	N28	E71	05	13.1		B	CSO	60	4	4	2
5478		BOUL	05	07	1338	N26	E69	05	12.9		B	CSO	40	4	3	3
5478	25214	MWIL	05	07	1440	N28	E70	05	13.1	5	(AP)					
5478		HOLL	05	07	1500	N28	E70	05	13.1		B	CSO	40	3	8	4
5478		PALE	05	07	1920	N28	E68	05	13.1		B	CAO	70	4	4	3
5478		LEAR	05	08	0040	N27	E62	05	12.8		B	CAO	130	7	9	4
5478		SVTO	05	08	0837	N28	E62	05	13.2		B	DAO	130	12	9	3
5478		RAMY	05	08	1305	N28	E58	05	13.1		B	CSO	120	5	4	3
5478		BOUL	05	08	1420	N26	E54	05	12.8		B	CAI	60	4	3	1
5478	25214	MWIL	05	08	1530	N27	E56	05	13.0	5	(BP)					
5478		HOLL	05	08	1745	N29	E55	05	13.0		B	CAO	170	15	9	3
5478		PALE	05	08	1825	N28	E56	05	13.1		B	CAO	90	7	8	4

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5478		LEAR	05	09	0100	N27	E52	05	13.1		B	CAO	130	15	9	3
5478		SVTO	05	09	0628	N26	E49	05	13.1		B	CAO	130	16	9	4
5478		RAMY	05	09	1300	N26	E44	05	13.0		B	CAO	70	9	9	3
5478		HOLL	05	09	1454	N28	E41	05	12.8		B	CAO	70	3	3	2
5478	25214	MWIL	05	09	1830	N27	E37	05	12.6	5	AP					
5478		PALE	05	09	1905	N28	E37	05	12.7		B	DSO	110	3	4	3
5478		LEAR	05	10	0012	N28	E34	05	12.7		B	CAO	70	5	4	2
5478		SVTO	05	10	1018	N28	E31	05	12.8		B	DSO	50	8	8	3
5478		RAMY	05	10	1518	N27	E29	05	12.9		B	CSO	60	6	8	3
5478		HOLL	05	10	1540	N28	E27	05	12.8		B	CSO	90	7	7	2
5478		PALE	05	10	1725	N28	E27	05	12.8		B	DSO	80	6	8	3
5478		PALE	05	10	1930	N27	E28	05	13.0		B	CSO	60	3	2	2
5478		LEAR	05	11	0013	N28	E22	05	12.7		B	DSO	60	5	6	3
5478		SVTO	05	11	1155	N28	E13	05	12.5		A	HA	50	4	2	3
5478		RAMY	05	11	1400	N27	E13	05	12.6		A	HS	40	3	2	3
5478		HOLL	05	11	1650	N28	E11	05	12.6		B	CSO	50	3	1	2
5478		BOUL	05	11	1830	N27	E11	05	12.6		A	HS	30	2	1	1
5478		PALE	05	11	1930	N27	E08	05	12.4		B	CSO	60	3	2	2
5478		LEAR	05	12	0020	N27	E06	05	12.5		B	CSO	70	3	3	3
5478		CULG	05	12	0320	N27	E06	05	12.6		A	HS	20	3	2	2
5478		BOUL	05	12	1349	N26	E01	05	12.6		B	CAO	30	5	3	3
5478		HOLL	05	12	1450	N26	E03	05	12.8		B	CSO	50	6	10	3
5478	25214	MWIL	05	12	1500	N26	E00	05	12.6	5	(BP)					
5478		PALE	05	12	2035	N26	W03	05	12.6		B	EAI	30	5	4	3
5478		LEAR	05	13	0006	N27	W05	05	12.6		B	CSO	30	6	4	3
5478		CULG	05	13	0400	N28	W05	05	12.8		B	CSO	20	2	3	2
5478		SVTO	05	13	1318	N28	W11	05	12.7		B	DAO	40	13	6	1
5478		RAMY	05	13	1430	N27	W12	05	12.7		B	CSI	130	11	5	2
5478	25214	MWIL	05	13	1500	N26	W13	05	12.6	5	(BG)					
5478		HOLL	05	13	1600	N28	W12	05	12.7		B	CRO	70	16	5	2
5478		PALE	05	13	1735	N27	W14	05	12.6		B	CSO	40	10	5	3
5478		LEAR	05	14	0010	N27	W18	05	12.6		B	DSO	40	9	5	3
5478		SVTO	05	14	1059	N27	W19	05	13.0		B	EAO	60	24	12	1
5478		RAMY	05	14	1428	N28	W22	05	12.9		B	DAO	70	9	10	2
5478		HOLL	05	14	1510	N25	W25	05	12.7		B	CRO	40	9	10	3
5478		PALE	05	14	1810	N26	W27	05	12.6		B	CSO	40	11	6	3
5478		LEAR	05	15	0023	N26	W30	05	12.7		B	DRO	50	11	6	4
5478		SVTO	05	15	0558	N27	W33	05	12.7		B	DRO	40	9	8	4
5478		HOLL	05	15	1415	N26	W37	05	12.7		B	BXO	60	7	7	3
5478		RAMY	05	15	1458	N26	W37	05	12.7		B	DRO	120	10	9	2
5478		PALE	05	15	1735	N26	W38	05	12.8		B	CRO	30	7	7	4
5478		LEAR	05	16	0230	N27	W42	05	12.8		B	DSO	60	6	7	3
5478		SVTO	05	16	1158	N26	W49	05	12.7		B	DRO	30	6	8	2
5478		RAMY	05	16	1300	N27	W48	05	12.8		B	BXO	20	5	6	3
5478		BOUL	05	16	1341	N26	W47	05	12.9		B	BXO	40	6	6	2
5478	25214	MWIL	05	16	1445	N27	W49	05	12.8	4	(B)					
5478		HOLL	05	16	1705	N29	W54	05	12.5		B	BXO	30	5	8	3
5478		PALE	05	16	1740	N27	W52	05	12.7		B	BXO	10	4	6	3
5478		LEAR	05	17	0025	N27	W54	05	12.8		B	BXO	40	4	7	4
5478		CULG	05	17	0545	N27	W55	05	12.9		B	BXO	10	7	13	3
5478		SVTO	05	17	1058	N27	W58	05	12.9		B	BXO	20	4	8	2
5478		RAMY	05	17	1325	N27	W62	05	12.7		B	BXO	10	2	6	3
5478	25214	MWIL	05	17	1415	N27	W62	05	12.8	5	(B)					
5478		HOLL	05	17	1425	N27	W59	05	13.0		B	BXO	20	2	9	3
5478		BOUL	05	17	1510	N27	W62	05	12.8		B	BXO	20	2	6	3
5478		LEAR	05	19	0100	N24	W67	05	13.9		B	BXO	20	2	3	3
5478		SVTO	05	19	1258	N26	W71	05	14.0		B	CAO	30	2	7	2
5478		RAMY	05	19	1545	N25	W72	05	14.1		A	HA	20	1	2	1
5478		HOLL	05	19	1605	N22	W78	05	13.7		B	BXO	30	2	4	4
5483		RAMY	05	08	1305	N16	E60	05	13.1		A	AX	20	1	1	3
5483		HOLL	05	08	1745	N17	E58	05	13.1		A	AX	20	2	1	3
5483		PALE	05	08	1825	N16	E58	05	13.2		A	AX		1		4
5483		RAMY	05	10	1518	N14	E35	05	13.3		A	AX		1		3
5483		HOLL	05	10	1540	N15	E35	05	13.3		A	AX	10	1	1	2
5483		PALE	05	10	1725	N14	E32	05	13.1		A	AX		1		3
5483		LEAR	05	11	0013	N16	E28	05	13.1		A	AX	10	1	1	3
5483		PALE	05	11	1725	N14	E22	05	13.4		A	AX		1		3
5483		HOLL	05	14	1510	N15	W21	05	13.0		A	AX		1		3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5483		PALE	05	14	1810	N16	W21	05	13.2		A	AX		1		3
5483		LEAR	05	15	0023	N16	W25	05	13.1		B	BXO	10	2	3	4
5483		SVTO	05	15	0558	N16	W29	05	13.0		A	AX		1		4
5483		HOLL	05	15	1415	N17	W33	05	13.1		A	AX		1		3
5483		RAMY	05	15	1458	N16	W34	05	13.0		A	AX	10	1	1	2
5483		PALE	05	15	1735	N16	W33	05	13.2		A	AX		1		4
5483		SVTO	05	16	1158	N15	W42	05	13.3		B	CRO	10	3	9	2
5483		RAMY	05	16	1300	N15	W42	05	13.4		B	BXO	10	2	10	3
5483		BOUL	05	16	1341	N16	W36	05	13.8		A	AX	10	1		2
5483	25224	MWIL	05	16	1445	N13	W38	05	13.7	4	(B)					
5483	25223	MWIL	05	16	1445	N15	W48	05	13.0	3	(AP)					
5483		HOLL	05	16	1705	N16	W40	05	13.7		B	BXO	10	2	2	3
5483		PALE	05	16	1740	N15	W38	05	13.8		B	BXO	10	3	3	3
5483		LEAR	05	17	0025	N14	W43	05	13.8		B	BXO	30	4	3	4
5483		CULG	05	17	0545	N15	W44	05	13.9		A	AX	10	1	1	3
5483		SVTO	05	17	1058	N15	W49	05	13.7		B	BXO	10	2	3	2
5483		RAMY	05	17	1325	N14	W50	05	13.8		B	BXO	10	2	3	3
5483	25224	MWIL	05	17	1415	N14	W50	05	13.8	4	(B)					
5483		HOLL	05	17	1425	N14	W49	05	13.9		B	BXO	20	2	5	3
5483		BOUL	05	17	1510	N15	W51	05	13.8		B	BXO	10	2	4	3
5492		BOUL	05	12	1349	S21	E08	05	13.2		A	AX	10	1	1	3
5492		LEAR	05	16	0230	S22	W37	05	13.3		B	DAO	110	13	6	3
5492		SVTO	05	16	1158	S21	W43	05	13.2		B	DAI	80	12	8	2
5492		RAMY	05	16	1300	S21	W43	05	13.2		B	DAI	110	14	7	3
5492		BOUL	05	16	1341	S20	W44	05	13.2		B	DAI	80	12	6	2
5492		HOLL	05	16	1705	S19	W47	05	13.1		B	CAO	100	8	6	3
5492		PALE	05	16	1740	S20	W46	05	13.2		B	CAI	100	12	8	3
5492		LEAR	05	17	0025	S21	W50	05	13.2		B	CSO	100	8	7	4
5492		CULG	05	17	0545	S20	W52	05	13.3		B	DAO	30	4	5	3
5492		SVTO	05	17	1058	S21	W56	05	13.2		B	DAO	70	7	8	2
5492		RAMY	05	17	1325	S21	W57	05	13.2		B	CAO	100	9	7	3
5492		HOLL	05	17	1425	S21	W55	05	13.4		B	CAO	110	8	8	3
5492		BOUL	05	17	1510	S21	W58	05	13.2		B	CAO	230	7	7	3
5492		PALE	05	17	1926	S19	W59	05	13.3		B	DAO	50	6	9	2
5492		LEAR	05	18	0025	S21	W64	05	13.1		B	CAO	110	3	7	4
5492		CULG	05	18	0440	S18	W68	05	13.0		A	HA	30	2	1	1
5492		SVTO	05	18	1009	S22	W70	05	13.0		B	DAO	60	3	4	1
5492		RAMY	05	18	1310	S20	W72	05	13.0		A	HA	60	3	3	3
5492		HOLL	05	18	1416	S21	W70	05	13.2		B	BXO	70	6	3	3
5492		BOUL	05	18	1437	S21	W75	05	12.8		A	HA	70	3	2	3
5492		PALE	05	18	1845	S21	W75	05	13.0		A	HA	60	2	1	3
5492		LEAR	05	19	0100	S21	W78	05	13.1		A	HS	30	1	1	3
5481		SVTO	05	07	0839	S22	E80	05	13.5		B	DAO	100	4	4	2
5481		RAMY	05	07	1328	S22	E81	05	13.8		B	DAO	170	3	10	2
5481		BOUL	05	07	1338	S21	E78	05	13.5		B	DSO	90	4	3	3
5481	25215	MWIL	05	07	1440	S21	E80	05	13.7	5	AP					
5481		HOLL	05	07	1500	S20	E78	05	13.6		B	DSO	90	4	10	4
5481		PALE	05	07	1920	S21	E78	05	13.8		B	DAO	180	5	4	3
5481		LEAR	05	08	0040	S20	E72	05	13.5		B	DAO	230	6	6	4
5481		SVTO	05	08	0837	S19	E70	05	13.7		B	DAO	100	4	3	3
5481		RAMY	05	08	1305	S20	E68	05	13.7		B	DSO	160	4	3	3
5481		BOUL	05	08	1420	S20	E62	05	13.3		B	CSO	80	2	3	1
5481	25215	MWIL	05	08	1530	S21	E66	05	13.7	5	(BP)					
5481		HOLL	05	08	1745	S19	E65	05	13.7		B	CSO	200	9	5	3
5481		PALE	05	08	1825	S21	E66	05	13.8		B	DSO	130	7	3	4
5481		LEAR	05	09	0100	S20	E60	05	13.6		B	DAO	220	6	4	3
5481		SVTO	05	09	0628	S22	E59	05	13.8		B	DAO	180	6	3	4
5481		RAMY	05	09	1300	S23	E56	05	13.8		B	CSI	160	11	6	3
5481		HOLL	05	09	1454	S22	E57	05	14.0		B	DSO	160	6	9	2
5481	25215	MWIL	05	09	1830	S21	E52	05	13.7	5	BP					
5481		PALE	05	09	1905	S22	E51	05	13.7		B	CSO	120	9	7	3
5481		LEAR	05	10	0012	S21	E50	05	13.8		B	DHO	190	9	6	2
5481		SVTO	05	10	1018	S21	E45	05	13.9		B	DSO	130	8	8	3
5481		RAMY	05	10	1518	S20	E40	05	13.7		B	DAO	110	5	3	3
5481		HOLL	05	10	1540	S20	E40	05	13.7		B	CSO	90	4	3	2
5481		PALE	05	10	1725	S21	E38	05	13.6		B	CSO	110	3	3	3
5481		LEAR	05	11	0013	S19	E37	05	13.8		B	CSO	110	4	4	3

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5481		SVTO	05	11	1155	S19	E30	05	13.8		B	DSO	110	5	7	3
5481		RAMY	05	11	1400	S21	E29	05	13.8		B	CSO	120	4	5	3
5481		HOLL	05	11	1650	S21	E28	05	13.8		B	CSO	110	6	8	2
5481		BOUL	05	11	1830	S19	E26	05	13.7		A	HS	80	2	2	1
5481		PALE	05	11	1930	S19	E25	05	13.7		B	DSO	110	3	2	2
5481		LEAR	05	12	0020	S19	E20	05	13.5		B	DSO	130	10	10	3
5481		CULG	05	12	0320	S19	E19	05	13.6		B	CSO	100	3	5	2
5481		BOUL	05	12	1349	S19	E16	05	13.8		B	CAO	110	3	4	3
5481		HOLL	05	12	1450	S20	E12	05	13.5		A	HS	80	6	6	3
5481	25215	MWIL	05	12	1500	S19	E13	05	13.6	5	(AP)					
5481		PALE	05	12	2035	S20	E09	05	13.5		B	EAO	110	9	11	3
5481		LEAR	05	13	0006	S19	E10	05	13.8		B	CSO	70	10	9	3
5481		CULG	05	13	0400	S19	E04	05	13.5		B	CSO	70	3	6	2
5481		SVTO	05	13	1318	S19	E01	05	13.6		B	DSO	110	5	10	1
5481		RAMY	05	13	1430	S19	W01	05	13.5		B	CSO	170	7	8	2
5481	25215	MWIL	05	13	1500	S19	E02	05	13.8	5	(AP)					
5481		HOLL	05	13	1600	S19	W01	05	13.6		B	CSO	140	11	11	2
5481		PALE	05	13	1735	S20	W02	05	13.6		B	CSO	100	9	10	3
5481		LEAR	05	14	0010	S20	W06	05	13.5		B	CAO	70	7	8	3
5481		SVTO	05	14	1059	S20	W10	05	13.7		B	ESO	140	24	12	1
5481		RAMY	05	14	1428	S19	W14	05	13.5		B	ESO	140	16	12	2
5481		HOLL	05	14	1510	S20	W17	05	13.3		B	CSO	90	15	10	3
5481		PALE	05	14	1810	S20	W16	05	13.5		B	CSO	90	20	10	3
5481		LEAR	05	15	0023	S20	W21	05	13.4		B	DAO	110	17	10	4
5481		SVTO	05	15	0558	S20	W24	05	13.4		B	ESO	140	12	11	4
5481		HOLL	05	15	1415	S21	W27	05	13.5		B	ESO	200	16	15	3
5481		RAMY	05	15	1458	S21	W28	05	13.5		B	ESI	160	11	13	2
5481		PALE	05	15	1735	S20	W29	05	13.5		B	ESO	170	12	12	4
5481		LEAR	05	16	0230	S19	W31	05	13.7		A	HH	70	3	3	3
5481		SVTO	05	16	1158	S18	W35	05	13.8		B	CSO	50	2	5	2
5481		RAMY	05	16	1300	S18	W37	05	13.7		A	HS	80	1	2	3
5481		BOUL	05	16	1341	S18	W36	05	13.8		B	HA	70	12	2	2
5481	25226	MWIL	05	16	1445	S18	W38	05	13.7	5	(AP)					
5481	25215	MWIL	05	16	1445	S21	W42	05	13.4	5	(BG)					
5481		HOLL	05	16	1705	S18	W40	05	13.7		A	HS	100	1	2	3
5481		PALE	05	16	1740	S18	W39	05	13.8		A	HS	100	1	2	3
5481		LEAR	05	17	0025	S18	W43	05	13.7		A	HS	60	1	2	4
5481		CULG	05	17	0545	S18	W45	05	13.8		A	HS	40	1	1	3
5481		SVTO	05	17	1058	S18	W48	05	13.8		A	HA	50	2	2	2
5481		RAMY	05	17	1325	S18	W49	05	13.8		A	HS	80	1	2	3
5481	25226	MWIL	05	17	1415	S18	W50	05	13.8	5	(AP)					
5481	25215	MWIL	05	17	1415	S20	W58	05	13.1	4	(BP)					
5481		HOLL	05	17	1425	S19	W49	05	13.9		A	HS	60	1	2	3
5481		BOUL	05	17	1510	S18	W50	05	13.8		A	HS	60	1	2	3
5481		PALE	05	17	1926	S17	W54	05	13.7		B	CAO	80	2	3	2
5481		LEAR	05	18	0025	S18	W54	05	13.9		A	HS	70	1	2	4
5481		CULG	05	18	0440	S17	W57	05	13.9		A	HS	40	1	1	1
5481		SVTO	05	18	1009	S18	W59	05	13.9		A	HA	40	1	1	1
5481		RAMY	05	18	1310	S18	W62	05	13.8		A	HS	90	1	2	3
5481		HOLL	05	18	1416	S18	W61	05	13.9		A	HS	120	1	2	3
5481	25226	MWIL	05	18	1430	S18	W64	05	13.7	5	(AP)					
5481	25215	MWIL	05	18	1430	S21	W75	05	12.8	4	(AP)					
5481		BOUL	05	18	1437	S18	W63	05	13.8		A	HS	80	1	2	3
5481		PALE	05	18	1845	S19	W66	05	13.7		A	HS	40	1	1	3
5481		LEAR	05	19	0100	S19	W67	05	13.9		A	HS	50	1	1	3
5481		CULG	05	19	0420	S16	W70	05	13.9		A	HS	20	1	1	2
5481		SVTO	05	19	1258	S18	W75	05	13.8		A	HA	30	1	2	2
5481		BOUL	05	19	1408	S17	W75	05	13.9		A	HA	60	2	2	2
5481	25226	MWIL	05	19	1430	S18	W76	05	13.8	4	AP					
5481		RAMY	05	19	1545	S18	W73	05	14.1		A	HA	30	1	2	1
5481		HOLL	05	19	1605	S19	W76	05	13.9		A	HS	30	1	2	4
5481		PALE	05	19	2038	S18	W76	05	14.1		A	HS	50	1	1	3
5481		LEAR	05	20	0040	S18	W80	05	13.9		A	HS	30	1	1	3
5481		CULG	05	20	0310	S19	W82	05	13.9		A	HS	20	1	1	3
5481A	25225	MWIL	05	16	1445	N25	W35	05	13.9	4	(AP)					
5481A		BOUL	05	19	1408	N26	W74	05	13.8		B	BXO	30	2	8	2
5481A	25235	MWIL	05	19	1430	N24	W74	05	13.9	4	X					

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5481B		LEAR	05	12	0020	N28	E33	05	14.6		A	AX	10	1	1	3
5481C		PALE	05	15	1735	S10	W07	05	15.2		A	AX		1		4
5484		HOLL	05	08	1745	N09	E88	05	15.3		A	HH	80	1	6	3
5484		PALE	05	08	1825	N09	E89	05	15.4		A	HA	120	1	5	4
5484		LEAR	05	09	0100	N09	E78	05	14.9		B	DAO	150	3	6	3
5484		SVTO	05	09	0628	N09	E79	05	15.2		B	CAO	200	3	7	4
5484		RAMY	05	09	1300	N09	E74	05	15.1		B	CSO	200	5	7	3
5484		HOLL	05	09	1454	N10	E74	05	15.2		B	CSO	180	3	8	2
5484	25217	MWIL	05	09	1830	N09	E70	05	15.0	5	AP					
5484		PALE	05	09	1905	N08	E68	05	14.9		B	CSO	250	3	4	3
5484		LEAR	05	10	0012	N10	E67	05	15.0		B	CHO	290	8	5	2
5484		SVTO	05	10	1018	N11	E64	05	15.2		B	DAO	220	9	8	3
5484		RAMY	05	10	1518	N09	E60	05	15.1		B	CAO	300	5	9	3
5484		HOLL	05	10	1540	N09	E58	05	15.0		B	CSO	240	5	8	2
5484		PALE	05	10	1725	N09	E58	05	15.1		B	CAO	280	6	8	3
5484		LEAR	05	11	0013	N10	E55	05	15.1		B	DSO	340	9	8	3
5484		SVTO	05	11	1155	N10	E48	05	15.1		B	CAO	210	6	7	3
5484		RAMY	05	11	1400	N08	E48	05	15.2		B	CHO	290	8	8	3
5484		HOLL	05	11	1650	N09	E46	05	15.1		B	CAO	210	4	3	2
5484		BOUL	05	11	1830	N09	E42	05	14.9		A	HA	230	2	4	1
5484		PALE	05	11	1930	N09	E41	05	14.9		B	CKO	240	3	3	2
5484		LEAR	05	12	0020	N10	E40	05	15.0		B	CHO	210	7	4	3
5484		CULG	05	12	0320	N09	E38	05	15.0		A	HA	230	6	3	2
5484		BOUL	05	12	1349	N09	E32	05	15.0		B	CAO	230	5	4	3
5484		HOLL	05	12	1450	N08	E31	05	14.9		B	CAO	170	7	3	3
5484	25217	MWIL	05	12	1500	N08	E32	05	15.0	5	(BG)					
5484		PALE	05	12	2035	N10	E29	05	15.0		B	CKO	220	8	5	3
5484		LEAR	05	13	0006	N09	E26	05	14.9		B	CAO	200	10	4	3
5484		CULG	05	13	0400	N09	E24	05	15.0		A	HA	150	2	2	2
5484		SVTO	05	13	1318	N08	E19	05	15.0		B	DAI	220	8	4	1
5484		RAMY	05	13	1430	N08	E18	05	14.9		B	DKO	250	4	4	2
5484	25217	MWIL	05	13	1500	N08	E18	05	15.0	5	(B)					
5484		HOLL	05	13	1600	N09	E17	05	14.9		B	CAO	240	10	4	2
5484		PALE	05	13	1735	N09	E17	05	15.0		B	CKO	240	7	4	3
5484		LEAR	05	14	0010	N08	E12	05	14.9		B	CKO	220	11	4	3
5484		SVTO	05	14	1059	N09	E09	05	15.1		B	CAO	210	15	13	1
5484		RAMY	05	14	1428	N10	E08	05	15.2		B	EKO	240	14	13	2
5484		HOLL	05	14	1510	N09	E05	05	15.0		B	CKO	240	15	6	3
5484		PALE	05	14	1810	N09	E03	05	15.0		B	CAO	10	8	5	3
5484		LEAR	05	15	0023	N09	W02	05	14.9		B	DAI	180	15	4	4
5484		SVTO	05	15	0558	N09	W01	05	15.2		B	CAO	150	10	15	4
5484		HOLL	05	15	1415	N13	W07	05	15.1		B	ESO	180	17	13	3
5484		RAMY	05	15	1458	N09	W10	05	14.9		B	DHI	200	6	7	2
5484		PALE	05	15	1735	N08	W11	05	14.9		B	DAO	160	11	7	4
5484		LEAR	05	16	0230	N09	W17	05	14.8		B	DKO	200	11	6	3
5484		SVTO	05	16	1158	N09	W23	05	14.8		B	DSO	90	10	6	2
5484		RAMY	05	16	1300	N09	W22	05	14.9		B	DKI	200	11	7	3
5484		BOUL	05	16	1341	N09	W23	05	14.8		B	CKI	150	15	7	2
5484	25217	MWIL	05	16	1445	N09	W25	05	14.7	5	(AP)					
5484		HOLL	05	16	1705	N11	W26	05	14.7		B	CSO	140	7	5	3
5484		PALE	05	16	1740	N10	W27	05	14.7		B	CAO	170	7	8	3
5484		LEAR	05	17	0025	N10	W30	05	14.8		B	DAO	130	12	6	4
5484		CULG	05	17	0545	N10	W31	05	14.9		B	CSO	50	4	5	3
5484		SVTO	05	17	1058	N10	W38	05	14.6		B	EAO	70	10	7	2
5484		RAMY	05	17	1325	N09	W37	05	14.8		B	DSO	110	13	7	3
5484	25217	MWIL	05	17	1415	N09	W37	05	14.8	5	(BP)					
5484		HOLL	05	17	1425	N09	W36	05	14.9		B	CAO	120	9	6	3
5484		BOUL	05	17	1510	N11	W38	05	14.8		B	DAO	120	7	7	3
5484		PALE	05	17	1926	N11	W42	05	14.6		B	CKO	50	3	7	2
5484		LEAR	05	18	0025	N09	W43	05	14.8		B	CAO	80	7	6	4
5484		CULG	05	18	0440	N11	W45	05	14.8		B	DSO	40	3	4	1
5484		SVTO	05	18	1009	N09	W47	05	14.9		B	DAO	90	13	7	1
5484		RAMY	05	18	1310	N10	W50	05	14.8		B	DAO	130	6	7	3
5484		HOLL	05	18	1416	N09	W49	05	14.9		B	DAO	160	10	8	3
5484	25217	MWIL	05	18	1430	N09	W52	05	14.7	5	(B)					
5484		BOUL	05	18	1437	N09	W50	05	14.8		B	DAO	180	9	6	3
5484		PALE	05	18	1845	N09	W53	05	14.8		B	DAO	100	5	6	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5484		LEAR	05	19	0100	N09	W56	05	14.8		B	DSO	20	6	6	3
5484		CULG	05	19	0420	N11	W58	05	14.8		B	DSO	50	4	6	2
5484		SVTO	05	19	1258	N09	W62	05	14.9		B	DAO	70	5	7	2
5484		BOUL	05	19	1408	N12	W65	05	14.7		A	HS	40	1	2	2
5484	25217	MWIL	05	19	1430	N08	W64	05	14.8	4	(BP)					
5484		RAMY	05	19	1545	N08	W62	05	15.0		B	DAO	80	4	5	1
5484		HOLL	05	19	1605	N09	W66	05	14.7		B	CSO	80	5	8	4
5484		PALE	05	19	2038	N08	W65	05	15.0		B	CAO	70	7	7	3
5484		LEAR	05	20	0040	N08	W68	05	14.9		B	CAO	30	6	4	3
5484		CULG	05	20	0310	N11	W70	05	14.9		B	CSO	30	3	4	3
5484		SVTO	05	20	0716	N09	W73	05	14.8		B	CAO	30	2	6	2
5484		BOUL	05	20	1315	N08	W74	05	15.0		A	HS	30	1	1	3
5484		RAMY	05	20	1336	N10	W76	05	14.8		B	BXO	20	4	6	3
5484	25217	MWIL	05	20	1430	N08	W76	05	14.9	3	AF)					
5484		HOLL	05	20	1450	N08	W77	05	14.8		B	BXO	10	3	9	3
5493		RAMY	05	15	1458	N16	W03	05	15.4		A	AX	10	1	1	2
5493		LEAR	05	16	0230	N16	W09	05	15.4		B	BXO	20	3	1	3
5493		SVTO	05	16	1158	N14	W13	05	15.5		B	BXO	10	3	3	2
5493		RAMY	05	16	1300	N17	W15	05	15.4		A	AX		2	2	3
5493	25227	MWIL	05	16	1445	N16	W16	05	15.4	2	AP					
5493		SVTO	05	17	1058	N12	W24	05	15.6		A	AX		1	1	2
5493		RAMY	05	17	1325	N13	W28	05	15.4		A	AX		1		3
5493	25227	MWIL	05	17	1415	N13	W29	05	15.4	4	(AF)					
5493		HOLL	05	17	1425	N13	W28	05	15.5		A	AX		1		3
5493A	25228	MWIL	05	16	1445	N11	W15	05	15.5	3	(AF)					
5486		SVTO	05	10	1018	S09	E79	05	16.3		A	HR	20	1	1	3
5486		RAMY	05	10	1518	S11	E75	05	16.3		A	HS	60	1	1	3
5486		HOLL	05	10	1540	S09	E73	05	16.1		A	AX	30	1	1	2
5486		LEAR	05	11	0013	S09	E70	05	16.3		A	AX	50	1	1	3
5486		SVTO	05	11	1155	S08	E65	05	16.4		B	CSO	30	2	3	3
5486		RAMY	05	11	1400	S12	E63	05	16.3		A	HS	30	1	2	3
5486		HOLL	05	11	1650	S10	E66	05	16.7		A	AX	20	1	1	2
5486		BOUL	05	11	1830	S10	E60	05	16.3		A	AX	10	1	1	1
5486		PALE	05	11	1930	S11	E58	05	16.2		A	HS	40	2	1	2
5486		LEAR	05	12	0020	S08	E58	05	16.4		A	HS	40	1	2	3
5486		CULG	05	12	0320	S09	E56	05	16.3		A	HS	20	1	1	2
5486		BOUL	05	12	1349	S10	E50	05	16.3		A	HS	30	1	1	3
5486		HOLL	05	12	1450	S10	E49	05	16.3		A	HR	30	1	2	3
5486	25219	MWIL	05	12	1500	S09	E50	05	16.4	5	(AP)					
5486		PALE	05	12	2035	S10	E47	05	16.4		B	CSO	30	2	2	3
5486		LEAR	05	13	0006	S09	E45	05	16.4		A	HS	60	1	1	3
5486		CULG	05	13	0400	S09	E43	05	16.4		A	AX	10	1	1	2
5486		SVTO	05	13	1318	S09	E38	05	16.4		A	HA	20	1	1	1
5486		RAMY	05	13	1430	S09	E37	05	16.4		A	HS	30	1	2	2
5486	25219	MWIL	05	13	1500	S09	E37	05	16.4	5	(AP)					
5486		HOLL	05	13	1600	S09	E36	05	16.4		A	AX	20	2	1	2
5486		PALE	05	13	1735	S10	E36	05	16.4		A	HS	20	1	2	3
5486		LEAR	05	14	0010	S09	E32	05	16.4		A	HS	20	1	1	3
5486		SVTO	05	14	1059	S11	E31	05	16.8		B	CAO	30	5	9	1
5486		RAMY	05	14	1428	S10	E27	05	16.6		B	CSO	40	5	9	2
5486		HOLL	05	14	1510	S11	E28	05	16.7		B	CSO	30	5	8	3
5486		PALE	05	14	1810	S10	E22	05	16.4		A	HS	20	1	1	3
5486		LEAR	05	15	0023	S09	E18	05	16.4		A	HS	30	1	1	4
5486		SVTO	05	15	0558	S09	E15	05	16.4		A	HS	40	1	1	4
5486		HOLL	05	15	1415	S09	E11	05	16.4		A	HS	30	1	1	3
5486		RAMY	05	15	1458	S10	E10	05	16.4		A	HS	50	1	2	2
5486		PALE	05	15	1735	S09	E09	05	16.4		A	HS	40	1	1	4
5486		LEAR	05	16	0230	S09	E04	05	16.4		A	HS	40	1	2	3
5486		SVTO	05	16	1158	S09	W02	05	16.3		A	HA	20	1	1	2
5486		RAMY	05	16	1300	S10	E02	05	16.7		B	CSO	20	2	9	3
5486		BOUL	05	16	1341	S09	W02	05	16.4		A	HS	20	1	1	2
5486	25219	MWIL	05	16	1445	S09	W03	05	16.4	5	(AP)					
5486		HOLL	05	16	1705	S08	W06	05	16.3		A	HS	40	1	1	3
5486		PALE	05	16	1740	S08	W04	05	16.4		A	HS	20	1	2	3
5486		LEAR	05	17	0025	S08	W08	05	16.4		A	HS	150	1	2	4
5486		CULG	05	17	0545	S09	W12	05	16.3		A	HS	20	1	1	3

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5486		SVTO	05	17	1058	S08	W15	05	16.3		B	CSO	20	3	3	2
5486		RAMY	05	17	1325	S08	W15	05	16.4		B	CSO	20	2	5	3
5486	25219	MWIL	05	17	1415	S09	W16	05	16.4	5	(AP)					
5486		HOLL	05	17	1425	S09	W16	05	16.4		A	HS	40	1	1	3
5486		BOUL	05	17	1510	S08	W17	05	16.3		A	HS	30	1	1	3
5486		PALE	05	17	1926	S07	W21	05	16.2		A	HS	20	1	1	2
5486		LEAR	05	18	0025	S08	W22	05	16.4		A	HS	20	1	2	4
5486		CULG	05	18	0440	S08	W24	05	16.4		A	HS	30	1	1	1
5486		SVTO	05	18	1009	S08	W26	05	16.5		A	HA	20	1	1	1
5486		RAMY	05	18	1310	S08	W28	05	16.4		A	HA	20	1	2	3
5486		HOLL	05	18	1416	S09	W29	05	16.4		A	HS	20	1	1	3
5486	25219	MWIL	05	18	1430	S09	W30	05	16.3	4	(AP)					
5486		BOUL	05	18	1437	S09	W28	05	16.5		A	HS	20	1	1	3
5486		PALE	05	18	1845	S09	W32	05	16.4		A	HS	20	1	1	3
5486		LEAR	05	19	0100	S09	W36	05	16.3		A	HS	20	1	1	3
5486		CULG	05	19	0420	S07	W37	05	16.4		A	HR	10	1	1	2
5486		SVTO	05	19	1258	S09	W41	05	16.5		A	HA	10	1	1	2
5486		BOUL	05	19	1408	S07	W42	05	16.4		A	HS	30	1	1	2
5486	25219	MWIL	05	19	1430	S09	W44	05	16.3	4	(AP)					
5486		RAMY	05	19	1545	S09	W43	05	16.4		A	AX	10	1	1	1
5486		HOLL	05	19	1605	S10	W43	05	16.4		A	AX	10	1	1	4
5486		PALE	05	19	2038	S09	W45	05	16.5		B	BXO	20	5	3	3
5486		LEAR	05	20	0040	S09	W49	05	16.3		A	HA	20	1	1	3
5486		CULG	05	20	0310	S08	W50	05	16.4		A	AX		1		3
5486		SVTO	05	20	0716	S08	W53	05	16.3		A	HR	10	2	1	2
5486		BOUL	05	20	1315	S09	W55	05	16.4		A	AX		1		3
5486		RAMY	05	20	1336	S08	W56	05	16.4		A	AX		1	1	3
5486	25219	MWIL	05	20	1430	S09	W57	05	16.3	4	(AP)					
5486		HOLL	05	20	1450	S09	W57	05	16.3		A	AX	10	1	1	3
5486		PALE	05	20	1745	S10	W58	05	16.4		A	AX	10	1	1	3
5489	25220	MWIL	05	12	1500	N18	E56	05	16.9	4	(B)					
5489	25220	MWIL	05	13	1500	N17	E42	05	16.8	4	(B)					
5489		RAMY	05	14	1428	N18	E28	05	16.7		B	BXO	10	6	5	2
5489		HOLL	05	14	1510	N18	E29	05	16.8		B	BXO	10	7	5	3
5489		PALE	05	14	1810	N17	E28	05	16.9		B	BXO	10	10	6	3
5489		LEAR	05	15	0023	N19	E22	05	16.7		B	DRO	60	14	6	4
5489		SVTO	05	15	0558	N18	E20	05	16.8		B	DAI	70	12	7	4
5489		HOLL	05	15	1415	N18	E15	05	16.7		B	EAO	180	16	11	3
5489		RAMY	05	15	1458	N17	E14	05	16.7		B	DSI	130	7	7	2
5489		PALE	05	15	1735	N16	E15	05	16.9		B	ESI	130	12	15	4
5489		LEAR	05	16	0230	N17	E08	05	16.7		B	DAO	110	11	7	3
5489		SVTO	05	16	1158	N18	E04	05	16.8		B	EAO	80	10	12	2
5489		RAMY	05	16	1300	N18	E03	05	16.8		B	DSO	70	15	10	3
5489		BOUL	05	16	1341	N18	E01	05	16.6		B	DAI	50	12	8	2
5489	25220	MWIL	05	16	1445	N17	W02	05	16.5	5	(B)					
5489		HOLL	05	16	1705	N20	E01	05	16.8		B	DSO	110	8	12	3
5489		PALE	05	16	1740	N18	W01	05	16.7		B	DAO	50	10	9	3
5489		LEAR	05	17	0025	N18	W06	05	16.6		B	CSO	50	15	9	4
5489		CULG	05	17	0545	N18	W06	05	16.8		B	CAI	30	12	8	3
5489		SVTO	05	17	1058	N18	W10	05	16.7		B	DAO	40	13	10	2
5489		RAMY	05	17	1325	N18	W12	05	16.6		B	CAI	50	18	10	3
5489	25220	MWIL	05	17	1415	N18	W13	05	16.6	4	(B)					
5489		HOLL	05	17	1425	N18	W11	05	16.8		B	DAO	160	30	10	3
5489		BOUL	05	17	1510	N18	W12	05	16.7		B	DAO	70	19	9	3
5489		PALE	05	17	1926	N19	W15	05	16.7		B	EAI	80	13	12	2
5489		LEAR	05	18	0025	N17	W19	05	16.6		B	DSO	80	10	7	4
5489		CULG	05	18	0440	N18	W20	05	16.7		B	CSI	30	7	7	1
5489		SVTO	05	18	1009	N18	W22	05	16.7		B	DAO	60	17	8	1
5489		RAMY	05	18	1310	N18	W25	05	16.6		B	DAI	50	17	9	3
5489		HOLL	05	18	1416	N18	W25	05	16.7		B	CRO	70	15	11	3
5489	25220	MWIL	05	18	1430	N18	W27	05	16.5	5	(B)					
5489		BOUL	05	18	1437	N19	W26	05	16.6		B	DAO	60	11	7	3
5489		PALE	05	18	1845	N18	W28	05	16.6		B	CRO	20	9	7	3
5489		LEAR	05	19	0100	N18	W32	05	16.6		B	CSO	50	12	9	3
5489		CULG	05	19	0420	N19	W31	05	16.8		B	CRO	20	6	9	2
5489		SVTO	05	19	1258	N18	W36	05	16.8		B	DAO	40	10	9	2
5489		BOUL	05	19	1408	N19	W38	05	16.7		B	CSO	40	5	7	2
5489	25220	MWIL	05	19	1430	N18	W40	05	16.5	4	(B)					

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5489		RAMY	05	19	1545	N18	W39	05	16.7		B	DAO	50	4	7	1
5489		HOLL	05	19	1605	N16	W40	05	16.6		B	CSO	60	10	9	4
5489		PALE	05	19	2038	N17	W41	05	16.7		B	CAI	50	18	10	3
5489		LEAR	05	20	0040	N18	W45	05	16.6		B	CAO	30	9	9	3
5489		CULG	05	20	0310	N19	W46	05	16.6		B	CAO	10	3	9	3
5489		SVTO	05	20	0716	N19	W48	05	16.6		B	DAO	20	3	8	2
5489		BOUL	05	20	1315	N18	W49	05	16.8		B	BXO		9	10	3
5489		RAMY	05	20	1336	N17	W54	05	16.5		B	BXO	20	6	4	3
5489	25220	MWIL	05	20	1430	N18	W52	05	16.6	4	(B)					
5489		HOLL	05	20	1450	N18	W55	05	16.4		B	CRO	30	10	11	3
5489		PALE	05	20	1745	N17	W58	05	16.3		B	CSO	40	5	7	3
5489		LEAR	05	21	0018	N17	W59	05	16.5		B	BXO	10	6	8	3
5489		CULG	05	21	0310	N17	W63	05	16.3		A	HR	10	1	1	3
5489		SVTO	05	21	0510	N17	W57	05	16.9		B	CRO	10	3	10	4
5489		SVTO	05	22	1235	N17	W70	05	17.2		A	HA	30	1	1	2
5487		PALE	05	10	1930	N18	E83	05	17.1		B	CSO	60	2	5	2
5487		SVTO	05	11	1155	N18	E78	05	17.4		A	HA	30	1	2	3
5487		RAMY	05	11	1400	N16	E78	05	17.5		B	CAO	30	2	4	3
5487		HOLL	05	11	1650	N19	E78	05	17.6		B	BXO	40	3	8	2
5487		BOUL	05	11	1830	N17	E72	05	17.2		A	AX	10	1	1	1
5487		LEAR	05	12	0020	N18	E74	05	17.6		B	DAO	150	5	10	3
5487		CULG	05	12	0320	N17	E72	05	17.6		B	ESO	50	4	11	2
5487		BOUL	05	12	1349	N18	E65	05	17.5		B	CAO	60	4	9	3
5487		HOLL	05	12	1450	N16	E66	05	17.6		B	CAO	90	5	10	3
5487	25221	MWIL	05	12	1500	N16	E65	05	17.5	5	(B)					
5487		PALE	05	12	2035	N17	E64	05	17.7		B	CAO	80	8	10	3
5487		LEAR	05	13	0006	N18	E58	05	17.4		B	CAO	90	12	9	3
5487		CULG	05	13	0400	N17	E57	05	17.5		A	HS	30	1	1	2
5487		SVTO	05	13	1318	N18	E51	05	17.4		B	FAO	50	9	18	1
5487		RAMY	05	13	1430	N18	E49	05	17.3		B	CSO	120	7	18	2
5487	25221	MWIL	05	13	1500	N16	E50	05	17.4	5	(BP)					
5487		HOLL	05	13	1600	N17	E46	05	17.2		B	CSO	90	11	16	2
5487		PALE	05	13	1735	N17	E44	05	17.1		B	CAO	40	6	11	3
5487		LEAR	05	14	0010	N17	E42	05	17.2		B	FAO	70	11	16	3
5487		SVTO	05	14	1059	N16	E38	05	17.3		B	FAO	90	19	20	1
5487		RAMY	05	14	1428	N18	E40	05	17.6		B	ESO	90	11	11	2
5487		HOLL	05	14	1510	N18	E40	05	17.7		B	ESO	60	9	11	3
5487		PALE	05	14	1810	N16	E36	05	17.5		B	CAO	70	8	10	3
5487		LEAR	05	15	0023	N17	E34	05	17.6		B	CAO	60	14	12	4
5487		SVTO	05	15	0558	N17	E33	05	17.7		B	EAO	60	12	12	4
5487		HOLL	05	15	1415	N18	E31	05	17.9		A	AX	20	4	2	3
5487		RAMY	05	15	1458	N16	E27	05	17.7		B	CSO	100	5	11	2
5487		PALE	05	15	1735	N16	E30	05	18.0		B	BXO	10	6	3	4
5487		LEAR	05	16	0230	N16	E21	05	17.7		B	CSO	40	8	12	3
5487		SVTO	05	16	1158	N17	E18	05	17.9		B	CRO	20	7	9	2
5487		RAMY	05	16	1300	N17	E15	05	17.7		B	CAO	60	18	13	3
5487		BOUL	05	16	1341	N17	E14	05	17.6		B	CAI	70	12	13	2
5487	25221	MWIL	05	16	1445	N17	E14	05	17.7	5	(B)					
5487		HOLL	05	16	1705	N20	E15	05	17.8		B	BXO	20	9	4	3
5487		PALE	05	16	1740	N18	E11	05	17.6		B	CAO	80	10	8	3
5487		LEAR	05	17	0025	N18	E09	05	17.7		B	CSO	120	20	13	4
5487		CULG	05	17	0545	N17	E07	05	17.8		B	ESI	30	7	11	3
5487		SVTO	05	17	1058	N18	E03	05	17.7		B	EAO	70	19	13	2
5487		RAMY	05	17	1325	N18	E02	05	17.7		B	EAI	100	12	12	3
5487	25221	MWIL	05	17	1415	N17	W00	05	17.6	5	(B)					
5487		HOLL	05	17	1425	N18	E01	05	17.7		B	CRO	40	13	9	3
5487		BOUL	05	17	1510	N18	E01	05	17.7		B	EAI	100	14	12	3
5487		PALE	05	17	1926	N20	E00	05	17.8		B	CAO	40	12	7	2
5487		LEAR	05	18	0025	N18	W05	05	17.6		B	CSO	90	19	13	4
5487		CULG	05	18	0440	N17	W06	05	17.7		B	ERI	30	9	12	1
5487		SVTO	05	18	1009	N18	W09	05	17.7		B	EAO	80	28	12	1
5487		RAMY	05	18	1310	N17	W11	05	17.7		B	EAI	100	26	13	3
5487		HOLL	05	18	1416	N18	W12	05	17.7		B	CSO	100	24	12	3
5487	25221	MWIL	05	18	1430	N17	W13	05	17.6	5	(B)					
5487		BOUL	05	18	1437	N17	W12	05	17.7		B	EAI	110	19	11	3
5487		PALE	05	18	1845	N18	W15	05	17.6		B	CSO	50	9	12	3
5487		LEAR	05	19	0100	N18	W18	05	17.7		B	CAO	40	13	11	3
5487		CULG	05	19	0420	N18	W19	05	17.7		B	CRO	20	6	11	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
5487		SVTO	05 19 1258	N17 W23	05 17.8		B	EAO	40	15	12	2
5487		BOUL	05 19 1408	N19 W25	05 17.7		B	DAO	60	7	10	2
5487	25221	MWIL	05 19 1430	N18 W26	05 17.6	5	(B)					
5487		RAMY	05 19 1545	N17 W25	05 17.7		B	DRO	40	10	10	1
5487		HOLL	05 19 1605	N17 W28	05 17.5		B	CSO	30	10	9	4
5487		PALE	05 19 2038	N17 W29	05 17.6		B	CSO	40	9	10	3
5487		LEAR	05 20 0040	N18 W30	05 17.7		B	CSO	20	6	12	3
5487		CULG	05 20 0310	N19 W32	05 17.7		B	CSO	10	5	11	3
5487		SVTO	05 20 0716	N19 W35	05 17.6		B	CAO	20	4	10	2
5487		BOUL	05 20 1315	N17 W42	05 17.4		A	AX		1		3
5487		RAMY	05 20 1336	N19 W45	05 17.1		B	CSO	30	5	6	3
5487	25221	MWIL	05 20 1430	N17 W44	05 17.3	5	(AP)					
5487		HOLL	05 20 1450	N18 W45	05 17.2		A	AX	10	1	1	3
5487		PALE	05 20 1745	N17 W44	05 17.4		B	CSO	10	3	6	3
5487		LEAR	05 21 0018	N18 W47	05 17.4		B	CAO	30	3	7	3
5487		CULG	05 21 0310	N18 W51	05 17.2		A	AX		1		3
5487		RAMY	05 21 1255	N18 W56	05 17.3		A	AX	20	1	1	3
5487		BOUL	05 21 1422	N17 W56	05 17.3		A	AX	10	1		3
5487	25221	MWIL	05 21 1430	N18 W58	05 17.2	5	(AP)					
5487		HOLL	05 21 1440	N17 W58	05 17.2		A	AX	10	1	1	2
5487		PALE	05 21 1910	N16 W59	05 17.3		A	AX	10	1	1	4
5487		LEAR	05 22 0010	N17 W62	05 17.3		A	AX	20	1	1	4
5487		CULG	05 22 0335	N19 W64	05 17.3		A	AX		1		2
5487		RAMY	05 22 1400	N18 W64	05 17.7		B	BXO	10	3	10	3
5487		HOLL	05 22 1710	N18 W66	05 17.7		A	AX	10	2	2	2
5487		PALE	05 22 1715	N16 W70	05 17.4		A	AX	10	1	1	3
5487	25221	MWIL	05 22 1745	N17 W68	05 17.6	4	(B)					
5487A		SVTO	05 21 0510	S14 W30	05 18.9		A	AX		1		4
5487A	25241	MWIL	05 21 1430	S14 W36	05 18.9	4	(AP)					
5487A		HOLL	05 21 1440	S13 W36	05 18.9		A	AX	10	2	1	2
5488	25222	MWIL	05 12 1500	N15 E83	05 18.9	3	AP					
5488		PALE	05 12 2035	N16 E80	05 18.9		A	HS	40	1	2	3
5488		LEAR	05 13 0006	N18 E76	05 18.8		B	CAO	60	3	5	3
5488		CULG	05 13 0400	N16 E77	05 19.0		A	AX	10	1	1	2
5488		SVTO	05 13 1318	N16 E72	05 19.0		B	DAO	90	8	8	1
5488		RAMY	05 13 1430	N16 E70	05 18.9		B	DSO	170	8	9	2
5488	25222	MWIL	05 13 1500	N15 E70	05 18.9	4	(B)					
5488		HOLL	05 13 1600	N16 E66	05 18.7		B	CSO	100	8	7	2
5488		PALE	05 13 1735	N16 E70	05 19.0		B	DAO	110	5	9	3
5488		LEAR	05 14 0010	N17 E65	05 18.9		B	DSO	120	6	9	3
5488		SVTO	05 14 1059	N15 E60	05 19.0		B	DAO	140	13	9	1
5488		RAMY	05 14 1428	N17 E58	05 19.0		B	DAI	300	12	10	2
5488		HOLL	05 14 1510	N17 E57	05 19.0		B	DAI	220	16	10	3
5488		PALE	05 14 1810	N15 E56	05 19.0		B	DAO	230	11	9	3
5488		LEAR	05 15 0023	N17 E52	05 19.0		B	DAI	210	25	10	4
5488		SVTO	05 15 0558	N16 E49	05 19.0		B	DAI	320	17	10	4
5488		HOLL	05 15 1415	N17 E43	05 18.9		B	DSI	340	41	10	3
5488		RAMY	05 15 1458	N16 E43	05 18.9		B	DKO	460	8	10	2
5488		PALE	05 15 1735	N15 E41	05 18.8		BG	DAI	450	21	10	4
5488		LEAR	05 16 0230	N15 E37	05 18.9		B	DAI	310	19	9	3
5488		SVTO	05 16 1158	N17 E32	05 18.9		B	EAI	250	22	11	2
5488		RAMY	05 16 1300	N17 E32	05 19.0		B	EKI	470	29	11	3
5488		BOUL	05 16 1341	N16 E30	05 18.8		B	DAI	350	17	8	2
5488	25222	MWIL	05 16 1445	N25 E31	05 19.0	5	(B)					
5488		HOLL	05 16 1705	N18 E29	05 18.9		B	DAI	310	22	9	3
5488		PALE	05 16 1740	N16 E28	05 18.8		B	DKI	400	31	10	3
5488		LEAR	05 17 0025	N17 E25	05 18.9		B	DHI	300	26	10	4
5488		CULG	05 17 0545	N16 E23	05 19.0		B	DAI	160	15	8	3
5488		SVTO	05 17 1058	N17 E19	05 18.9		B	DAI	250	26	10	2
5488		RAMY	05 17 1325	N17 E18	05 18.9		B	EKO	410	20	11	3
5488	25222	MWIL	05 17 1415	N17 E18	05 19.0	5	(B)					
5488		HOLL	05 17 1425	N17 E17	05 18.9		B	DKI	400	33	10	3
5488		BOUL	05 17 1510	N18 E16	05 18.8		B	EAI	390	23	11	3
5488		PALE	05 17 1926	N18 E14	05 18.9		B	DKI	350	17	10	2
5488		LEAR	05 18 0025	N18 E12	05 18.9		B	EKI	370	20	11	4
5488		CULG	05 18 0440	N16 E11	05 19.0		B	DKO	180	9	8	1
5488		SVTO	05 18 1009	N17 E07	05 18.9		B	EAO	350	38	11	1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5488		RAMY	05	18	1310	N17	E04	05	18.8		B	EKO	440	32	12	3
5488		HOLL	05	18	1416	N17	E04	05	18.9		B	EKO	430	25	12	3
5488	25222	MWIL	05	18	1430	N17	E03	05	18.8	5	(B)					
5488		BOUL	05	18	1437	N16	E04	05	18.9		B	EKI	340	27	12	3
5488		PALE	05	18	1845	N16	E02	05	18.9		B	EKO	420	15	12	3
5488		LEAR	05	19	0100	N17	W02	05	18.9		B	EKO	280	21	11	3
5488		CULG	05	19	0420	N17	W03	05	18.9		B	EKO	250	5	11	2
5488		SVTO	05	19	1258	N17	W07	05	19.0		B	EAO	200	26	11	2
5488		BOUL	05	19	1408	N17	W08	05	19.0		B	EKI	430	12	11	2
5488	25222	MWIL	05	19	1430	N17	W09	05	18.9	6	(B)					
5488		RAMY	05	19	1545	N16	W10	05	18.9		B	DAI	330	13	10	1
5488		HOLL	05	19	1605	N17	W11	05	18.8		B	DAI	370	16	12	4
5488		PALE	05	19	2038	N16	W11	05	19.0		B	EKI	480	27	12	3
5488		LEAR	05	20	0040	N16	W15	05	18.9		B	EHI	300	23	11	3
5488		CULG	05	20	0310	N18	W17	05	18.8		B	EKI	290	20	11	3
5488		SVTO	05	20	0716	N18	W18	05	18.9		B	EAO	340	25	13	2
5488		BOUL	05	20	1315	N16	W21	05	18.9		B	EKI	280	18	11	3
5488		RAMY	05	20	1336	N18	W22	05	18.9		B	EKI	410	26	12	3
5488	25222	MWIL	05	20	1430	N17	W23	05	18.8	6	(B)					
5488		HOLL	05	20	1450	N18	W23	05	18.9		B	EAI	320	32	12	3
5488		PALE	05	20	1745	N17	W23	05	19.0		B	EKI	360	18	11	3
5488		LEAR	05	21	0018	N17	W28	05	18.9		B	EKI	350	15	12	3
5488		CULG	05	21	0310	N18	W29	05	18.9		B	EAI	220	14	11	3
5488		SVTO	05	21	0510	N16	W31	05	18.9		B	EKO	340	16	12	4
5488		RAMY	05	21	1255	N17	W36	05	18.8		B	EKI	330	7	13	3
5488		BOUL	05	21	1422	N16	W36	05	18.9		B	EKO	350	7	12	3
5488	25222	MWIL	05	21	1430	N17	W38	05	18.7	5	(B)					
5488		HOLL	05	21	1440	N17	W37	05	18.8		B	CKO	270	29	12	2
5488		PALE	05	21	1910	N16	W38	05	18.9		B	EKI	330	14	14	4
5488		LEAR	05	22	0010	N17	W42	05	18.8		B	EKI	310	19	12	4
5488		CULG	05	22	0335	N19	W44	05	18.8		B	EAO	190	12	12	2
5488		SVTO	05	22	1235	N16	W50	05	18.7		B	EAO	220	13	16	2
5488		BOUL	05	22	1318	N17	W50	05	18.7		B	EAO	180	8	17	1
5488		RAMY	05	22	1400	N17	W49	05	18.8		B	EHO	360	17	14	3
5488		HOLL	05	22	1710	N17	W51	05	18.8		B	CAO	240	14	12	2
5488		PALE	05	22	1715	N15	W49	05	19.0		B	CKO	360	10	13	3
5488	25222	MWIL	05	22	1745	N16	W55	05	18.6	5	(BP)					
5488		LEAR	05	23	0025	N17	W56	05	18.8		B	CKO	220	9	12	3
5488		CULG	05	23	0215	N18	W53	05	19.0		B	CSI	70	6	8	3
5488		SVTO	05	23	1046	N16	W58	05	19.0		B	EAO	80	4	11	2
5488		BOUL	05	23	1315	N17	W67	05	18.5		A	HA	100	1	2	1
5488		RAMY	05	23	1335	N18	W62	05	18.8		B	CSI	170	10	12	3
5488		HOLL	05	23	1515	N18	W63	05	18.8		B	CAO	210	8	15	3
5488	25222	MWIL	05	23	1530	N17	W68	05	18.5	5	(BP)					
5488		PALE	05	23	1840	N18	W65	05	18.8		B	CAO	160	5	11	3
5488		CULG	05	24	0210	N18	W70	05	18.7		B	CSO	90	3	7	3
5488		SVTO	05	24	1329	N16	W78	05	18.6		A	HA	60	1	3	2
5488		RAMY	05	24	1431	N19	W77	05	18.7		B	CSO	120	2	5	3
5488		HOLL	05	24	1447	N18	W78	05	18.7		B	CSO	60	7	7	3
5488	25222	MWIL	05	24	1515	N17	W79	05	18.6	5	(BP)					
5488		LEAR	05	25	0040	N19	W82	05	18.8		A	HA	60	1	2	3
5495		SVTO	05	15	0558	N22	E52	05	19.2		B	BXO	10	3	3	4
5495		SVTO	05	17	1058	N25	E23	05	19.2		B	CRO	10	2	3	2
5495		RAMY	05	17	1325	N23	E23	05	19.3		B	BXO	10	4	4	3
5495	25232	MWIL	05	17	1415	N24	E22	05	19.3	4	(B)					
5495		HOLL	05	17	1425	N22	E20	05	19.1		B	BXO	20	5	6	3
5495		BOUL	05	17	1510	N24	E21	05	19.2		B	CSO	10	2	4	3
5495		PALE	05	17	1926	N24	E18	05	19.2		B	BXO	10	4	5	2
5495		LEAR	05	18	0025	N24	E17	05	19.3		B	BXO	30	6	4	4
5495		CULG	05	18	0440	N21	E16	05	19.4		B	BXO	10	3	4	1
5495		SVTO	05	18	1009	N23	E12	05	19.3		B	DAO	30	13	6	1
5495		RAMY	05	18	1310	N23	E08	05	19.2		B	CRO	30	15	8	3
5495		HOLL	05	18	1416	N23	E07	05	19.1		B	BXO	40	13	7	3
5495	25232	MWIL	05	18	1430	N23	E08	05	19.2	4	(B)					
5495		BOUL	05	18	1437	N22	E07	05	19.1		B	CAO	60	13	6	3
5495		PALE	05	18	1845	N23	E06	05	19.2		B	CRO	20	12	7	3
5495		LEAR	05	19	0100	N22	E01	05	19.1		B	CAO	30	15	9	3
5495		CULG	05	19	0420	N23	E04	05	19.5		B	BXI	10	13	9	2

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5495		SVTO	05	19	1258	N22	W05	05	19.1		B	DAI	70	27	8	2
5495		BOUL	05	19	1408	N22	W05	05	19.2		B	DAI	120	20	8	2
5495	25232	MWIL	05	19	1430	N22	W07	05	19.1	4	(B)					
5495		RAMY	05	19	1545	N21	W07	05	19.1		B	CAI	130	22	9	1
5495		HOLL	05	19	1605	N22	W09	05	19.0		B	CAI	110	22	9	4
5495		PALE	05	19	2038	N23	W10	05	19.1		B	EKI	310	36	12	3
5495		LEAR	05	20	0040	N22	W12	05	19.1		B	EAI	180	39	11	3
5495		CULG	05	20	0310	N22	W12	05	19.2		B	DAC	230	31	10	3
5495		SVTO	05	20	0716	N23	W15	05	19.1		B	DAI	240	43	10	2
5495		BOUL	05	20	1315	N21	W19	05	19.1		B	DKI	310	48	10	3
5495		RAMY	05	20	1336	N23	W19	05	19.1		B	EKC	570	35	11	3
5495	25232	MWIL	05	20	1430	N22	W19	05	19.1	5	(D)					
5495		HOLL	05	20	1450	N22	W20	05	19.1		B	EKC	400	53	10	3
5495		PALE	05	20	1745	N20	W22	05	19.0		B	EKC	350	44	11	3
5495		LEAR	05	21	0018	N21	W26	05	19.0		B	EKC	670	24	13	3
5495		CULG	05	21	0310	N22	W27	05	19.0		B	EKC	540	43	11	3
5495		SVTO	05	21	0510	N22	W28	05	19.1		B	EKO	580	36	15	4
5495		RAMY	05	21	1255	N23	W33	05	19.0		B	EKC	650	26	12	3
5495		BOUL	05	21	1422	N22	W33	05	19.1		B	EKC	930	50	13	3
5495	25232	MWIL	05	21	1430	N22	W33	05	19.1	5	(D)					
5495		HOLL	05	21	1440	N23	W35	05	18.9		B	EKO	520	68	15	2
5495		PALE	05	21	1910	N20	W35	05	19.1		B	EKC	870	33	12	4
5495		LEAR	05	22	0010	N22	W38	05	19.1		B	EKI	590	40	13	4
5495		CULG	05	22	0335	N23	W40	05	19.1		B	EKI	390	30	14	2
5495		SVTO	05	22	1235	N21	W45	05	19.1		B	EKC	600	24	13	2
5495		BOUL	05	22	1318	N22	W44	05	19.2		B	EKI	480	23	14	1
5495		RAMY	05	22	1400	N23	W46	05	19.0		B	EKI	800	44	15	3
5495		HOLL	05	22	1710	N22	W50	05	18.9		B	FAI	620	45	20	2
5495		PALE	05	22	1715	N20	W46	05	19.2		B	EKI	900	31	14	3
5495	25232	MWIL	05	22	1745	N22	W47	05	19.1	6	(BG)					
5495		LEAR	05	23	0025	N22	W52	05	19.0		B	EKI	710	29	15	3
5495		CULG	05	23	0215	N23	W50	05	19.2		B	EAI	170	20	13	3
5495		SVTO	05	23	1046	N22	W55	05	19.2		B	EAI	490	40	15	2
5495		BOUL	05	23	1315	N22	W57	05	19.2		B	EKI	350	14	13	1
5495		RAMY	05	23	1335	N23	W59	05	19.0		B	FKI	590	36	17	3
5495		HOLL	05	23	1515	N23	W60	05	19.0		B	FAI	590	39	20	3
5495	25232	MWIL	05	23	1530	N22	W60	05	19.0	5	(BG)					
5495		PALE	05	23	1840	N22	W60	05	19.2		B	FAI	400	35	16	3
5495		CULG	05	24	0210	N22	W63	05	19.2		B	FAI	320	27	16	3
5495		SVTO	05	24	1329	N20	W68	05	19.4		B	FAI	360	23	17	2
5495		RAMY	05	24	1431	N22	W71	05	19.1		B	FAI	470	19	17	3
5495		BOUL	05	24	1445	N22	W72	05	19.1		B	FKI	1050	27	16	2
5495		HOLL	05	24	1447	N23	W72	05	19.1		B	FAI	420	20	17	3
5495	25232	MWIL	05	24	1515	N22	W71	05	19.2	5	(D)					
5495		PALE	05	24	1958	N21	W80	05	18.7		B	FKI	270	8	20	3
5495		LEAR	05	25	0040	N22	W78	05	19.0		B	EAO	210	19	12	3
5495		CULG	05	25	0255	N25	W72	05	19.5		B	FAI	60	1	2	3
5495		SVTO	05	25	0547	N21	W80	05	19.1		B	EAO	140	6	14	4
5495		RAMY	05	25	1148	N23	W81	05	19.2		B	CSO	90	5	14	2
5495		BOUL	05	25	1425	N25	W78	05	19.5		A	HA	60	2	2	3
5495		HOLL	05	25	1455	N23	W84	05	19.1		B	CSO	90	2	5	3
5495	25232	MWIL	05	25	1515	N23	W79	05	19.5	5	BF					
5495		PALE	05	25	1847	N24	W85	05	19.2		B	CAO	60	2	2	3
5495		LEAR	05	26	0027	N24	W83	05	19.6		A	HS	60	1	2	4
5500		CULG	05	20	0310	S12	W05	05	19.7		A	AX		2	2	3
5500		BOUL	05	20	1315	S11	W10	05	19.8		A	AX		1		3
5500	25239	MWIL	05	20	1430	S12	W12	05	19.7	4	(B)					
5500		HOLL	05	20	1450	S12	W12	05	19.7		A	AX		2	1	3
5500		PALE	05	20	1745	S13	W13	05	19.7		A	AX		1	1	3
5500		HOLL	05	24	1447	S13	W66	05	19.6		A	AX	10	3	2	3
5500	25250	MWIL	05	24	1515	S13	W66	05	19.6	4	(AP)					
5500		LEAR	05	25	0040	S12	W70	05	19.7		B	BXO	10	3	3	3
5500		HOLL	05	25	1455	S12	W80	05	19.6		A	AX		1		3
5491		SVTO	05	15	0558	S18	E68	05	20.4		A	AX		1		4
5491		SVTO	05	16	1158	S18	E50	05	20.3		A	AX		1	1	2
5491		RAMY	05	16	1300	S16	E47	05	20.1		B	BXO	10	4	7	3
5491	25229	MWIL	05	16	1445	S16	E44	05	19.9	3	(B)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5491		PALE	05	16	1740	S14	E42	05	19.9		B	BXO	10	2	3	3
5491		LEAR	05	17	0025	S17	E40	05	20.0		B	BXO	40	5	6	4
5491		CULG	05	17	0545	S17	E37	05	20.0		B	BXO	10	4	7	3
5491		SVTO	05	17	1058	S16	E36	05	20.2		B	CRO	20	6	7	2
5491		RAMY	05	17	1325	S18	E33	05	20.1		B	BXO	20	7	8	3
5491	25229	MWIL	05	17	1415	S16	E33	05	20.1	4	(BP)					
5491		HOLL	05	17	1425	S15	E34	05	20.2		B	BXO	20	4	6	3
5491		BOUL	05	17	1510	S16	E32	05	20.0		B	BXO	20	5	6	3
5491		LEAR	05	18	0025	S17	E27	05	20.1		B	BXO	40	9	6	4
5491		CULG	05	18	0440	S20	E27	05	20.2		B	BXO	10	4	4	1
5491		SVTO	05	18	1009	S17	E23	05	20.2		B	DAO	30	8	7	1
5491		RAMY	05	18	1310	S17	E22	05	20.2		B	BXI	40	19	8	3
5491		HOLL	05	18	1416	S16	E20	05	20.1		B	BXO	70	27	7	3
5491	25229	MWIL	05	18	1430	S17	E20	05	20.1	3	(BP)					
5491		BOUL	05	18	1437	S17	E21	05	20.2		B	CAO	40	15	5	3
5491		PALE	05	18	1845	S16	E19	05	20.2		B	BXO	10	11	6	3
5491		LEAR	05	19	0100	S15	E12	05	19.9		B	BXO	20	9	4	3
5491		CULG	05	19	0420	S18	E12	05	20.1		B	BXO	10	4	3	2
5491		SVTO	05	19	1258	S16	E12	05	20.4		B	CAO	40	23	16	2
5491		BOUL	05	19	1408	S15	E07	05	20.1		B	BXO	30	7	7	2
5491	25229	MWIL	05	19	1430	S16	E06	05	20.0	4	(B)					
5491		RAMY	05	19	1545	S15	E06	05	20.1		B	CRO	50	12	8	1
5491		HOLL	05	19	1605	S14	E05	05	20.0		B	BXI	30	12	8	4
5491		PALE	05	19	2038	S15	E01	05	19.9		B	BXO	20	20	13	3
5491		LEAR	05	20	0040	S15	W01	05	19.9		B	BXO	20	13	8	3
5491		CULG	05	20	0310	S16	W01	05	20.0		B	BXO	10	10	6	3
5491		SVTO	05	20	0716	S15	W06	05	19.8		B	CAO	20	9	8	2
5491		BOUL	05	20	1315	S16	W06	05	20.1		B	DAI	40	14	6	3
5491		RAMY	05	20	1336	S15	W07	05	20.0		B	DAO	60	15	9	3
5491	25229	MWIL	05	20	1430	S17	W07	05	20.1	4	(BP)					
5491		HOLL	05	20	1450	S17	W07	05	20.1		B	DAO	40	17	8	3
5491		PALE	05	20	1745	S18	W09	05	20.0		B	DAO	60	13	6	3
5491		LEAR	05	21	0018	S17	W13	05	20.0		B	CHO	70	15	7	3
5491		CULG	05	21	0310	S16	W15	05	20.0		B	DAO	30	15	7	3
5491		SVTO	05	21	0510	S17	W16	05	20.0		B	DAI	50	20	8	4
5491		RAMY	05	21	1255	S16	W20	05	20.0		B	DAO	190	13	9	3
5491		BOUL	05	21	1422	S17	W20	05	20.1		B	DAO	120	16	8	3
5491	25229	MWIL	05	21	1430	S17	W22	05	19.9	5	(B)					
5491		HOLL	05	21	1440	S18	W22	05	19.9		B	CAO	90	26	9	2
5491		PALE	05	21	1910	S17	W23	05	20.0		B	DAO	80	15	8	4
5491		LEAR	05	22	0010	S16	W27	05	19.9		B	DAO	110	21	10	4
5491		CULG	05	22	0335	S16	W28	05	20.0		B	DRI	40	20	8	2
5491		SVTO	05	22	1235	S17	W35	05	19.9		B	DAI	50	16	9	2
5491		BOUL	05	22	1318	S16	W32	05	20.1		B	DAO	50	8	8	1
5491		RAMY	05	22	1400	S16	W35	05	19.9		B	DAI	90	19	9	3
5491		HOLL	05	22	1710	S17	W38	05	19.8		B	CSO	70	9	7	2
5491		PALE	05	22	1715	S16	W37	05	19.9		B	CAI	30	14	8	3
5491	25229	MWIL	05	22	1745	S17	W37	05	19.9	4	(BP)					
5491		LEAR	05	23	0025	S18	W42	05	19.8		B	DAO	120	14	8	3
5491		CULG	05	23	0215	S15	W43	05	19.8		B	DSI	40	11	9	3
5491		SVTO	05	23	1046	S16	W44	05	20.1		B	DAO	50	13	8	2
5491		BOUL	05	23	1315	S16	W46	05	20.1		B	CSI	70	8	9	1
5491		RAMY	05	23	1335	S16	W48	05	19.9		B	CSO	60	13	10	3
5491		HOLL	05	23	1515	S17	W49	05	19.9		B	BXO	90	16	9	3
5491	25229	MWIL	05	23	1530	S17	W49	05	19.9	4	(BG)					
5491		PALE	05	23	1840	S17	W50	05	20.0		B	CRO	30	11	8	3
5491		CULG	05	24	0210	S17	W55	05	19.9		B	CAI	60	11	10	3
5491		SVTO	05	24	1329	S16	W60	05	20.0		B	DAO	80	13	11	2
5491		RAMY	05	24	1431	S15	W60	05	20.1		B	CSO	60	9	11	3
5491		BOUL	05	24	1445	S16	W61	05	20.0		B	CSO	90	9	10	2
5491		HOLL	05	24	1447	S16	W61	05	20.0		B	CSO	30	9	9	3
5491	25229	MWIL	05	24	1515	S17	W62	05	19.9	5	(B)					
5491		PALE	05	24	1958	S17	W69	05	19.6		B	CSO	40	6	11	3
5491		LEAR	05	25	0040	S17	W67	05	19.9		B	CAO	120	9	9	3
5491		CULG	05	25	0255	S17	W71	05	19.7		A	HA	30	2	1	3
5491		SVTO	05	25	0547	S15	W70	05	19.9		B	CAO	80	5	10	4
5491		RAMY	05	25	1148	S16	W75	05	19.8		A	BXO	30	11	11	2
5491		HOLL	05	25	1455	S16	W82	05	19.4		A	HS	30	1	2	3
5491	25229	MWIL	05	25	1515	S17	W81	05	19.5	4	AP					

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5496		LEAR	05	18	0025	N14	E28	05	20.1		B	BXO	30	3	3	4
5496		CULG	05	18	0440	N13	E25	05	20.1		B	CRO	20	3	4	1
5496		SVTO	05	18	1009	N15	E23	05	20.2		B	DAO	40	7	4	1
5496		RAMY	05	18	1310	N14	E20	05	20.1		B	CSI	40	15	5	3
5496		HOLL	05	18	1416	N15	E19	05	20.0		B	CSO	70	10	4	3
5496	25233	MWIL	05	18	1430	N14	E19	05	20.0	5	(B)					
5496		BOUL	05	18	1437	N14	E18	05	20.0		B	DAO	50	7	4	3
5496		PALE	05	18	1845	N14	E18	05	20.1		B	CAO	50	9	5	3
5496		LEAR	05	19	0100	N14	E14	05	20.1		B	DSO	60	11	5	3
5496		CULG	05	19	0420	N13	E12	05	20.1		B	CSO	40	4	5	2
5496		SVTO	05	19	1258	N14	E08	05	20.1		B	DAO	60	9	7	2
5496		BOUL	05	19	1408	N14	E07	05	20.1		B	DAO	70	7	6	2
5496	25233	MWIL	05	19	1430	N14	E07	05	20.1	4	(B)					
5496		RAMY	05	19	1545	N14	E06	05	20.1		B	CAO	80	7	6	1
5496		HOLL	05	19	1605	N13	E02	05	19.8		B	CAO	70	8	5	4
5496		PALE	05	19	2038	N13	E03	05	20.1		B	CAO	90	8	6	3
5496		LEAR	05	20	0040	N14	E01	05	20.1		B	CAO	90	7	6	3
5496		CULG	05	20	0310	N14	E00	05	20.1		B	DAO	60	5	5	3
5496		SVTO	05	20	0716	N14	W04	05	20.0		B	DAO	80	5	6	2
5496		BOUL	05	20	1315	N13	W06	05	20.1		B	CAO	20	8	6	3
5496		RAMY	05	20	1336	N15	W06	05	20.1		B	CAO	90	8	7	3
5496	25233	MWIL	05	20	1430	N14	W07	05	20.1	5	(B)					
5496		HOLL	05	20	1450	N15	W06	05	20.2		B	CAO	90	7	7	3
5496		PALE	05	20	1745	N13	W09	05	20.1		B	CAO	100	7	7	3
5496		LEAR	05	21	0018	N13	W13	05	20.0				120	44	7	3
5496		CULG	05	21	0310	N14	W14	05	20.1		B	CAO	80	5	6	3
5496		SVTO	05	21	0510	N14	W15	05	20.1		B	CAO	70	5	6	4
5496		RAMY	05	21	1255	N13	W22	05	19.9		A	HS	80	2	2	3
5496		BOUL	05	21	1422	N13	W22	05	19.9		A	HA	70	3	2	3
5496	25233	MWIL	05	21	1430	N13	W23	05	19.9	4	(AP)					
5496		HOLL	05	21	1440	N14	W22	05	19.9		A	HS	90	2	2	2
5496		PALE	05	21	1910	N12	W26	05	19.8		A	HA	90	2	2	4
5496		LEAR	05	22	0010	N13	W28	05	19.9		A	HS	70	2	2	4
5496		CULG	05	22	0335	N15	W30	05	19.9		A	HA	30	2	2	2
5496		SVTO	05	22	1235	N13	W35	05	19.9		A	HS	50	3	2	2
5496		BOUL	05	22	1318	N13	W34	05	20.0		A	HA	50	1	2	1
5496		RAMY	05	22	1400	N14	W36	05	19.9		A	HA	50	1	2	3
5496		HOLL	05	22	1710	N13	W38	05	19.8		A	HS	80	1	1	2
5496		PALE	05	22	1715	N13	W38	05	19.8		A	HA	40	1	2	3
5496	25233	MWIL	05	22	1745	N13	W38	05	19.9	5	(AP)					
5496		LEAR	05	23	0025	N13	W42	05	19.8		B	CSO	60	3	3	3
5496		CULG	05	23	0215	N15	W39	05	20.1		A	HA	50	2	1	3
5496		SVTO	05	23	1046	N13	W46	05	20.0		A	HS	20	2	1	2
5496		BOUL	05	23	1315	N14	W47	05	20.0		A	HS	60	1	2	1
5496		RAMY	05	23	1335	N13	W49	05	19.9		A	HA	30	2	2	3
5496		HOLL	05	23	1515	N13	W49	05	19.9		A	HS	60	2	2	3
5496	25233	MWIL	05	23	1530	N13	W50	05	19.9	5	(AP)					
5496		PALE	05	23	1840	N13	W51	05	19.9		A	HS	30	2	2	3
5496		CULG	05	24	0210	N14	W54	05	20.0		A	HS	20	2	1	3
5496		SVTO	05	24	1329	N13	W61	05	19.9		A	HA	20	1	2	2
5496		RAMY	05	24	1431	N14	W61	05	20.0		A	HS	40	1	1	3
5496		BOUL	05	24	1445	N14	W62	05	19.9		A	HS	40	1	2	2
5496		HOLL	05	24	1447	N14	W64	05	19.8		A	HS	40	1	2	3
5496	25233	MWIL	05	24	1515	N13	W63	05	19.9	5	(AP)					
5496		PALE	05	24	1958	N11	W67	05	19.8		A	AX	10	2	1	3
5496		LEAR	05	25	0040	N13	W69	05	19.8		B	CSO	50	2	2	3
5496		CULG	05	25	0255	N15	W70	05	19.8		A	HS	30	1	1	3
5496		SVTO	05	25	0547	N14	W71	05	19.9		B	CSO	70	4	3	4
5496		RAMY	05	25	1148	N14	W74	05	19.9		A	HA	30	2	1	2
5496		HOLL	05	25	1455	N15	W78	05	19.7		A	HS	30	1	1	3
5496	25233	MWIL	05	25	1515	N13	W76	05	19.9	5	(AP)					
5496		PALE	05	25	1847	N12	W73	05	20.3		A	AX		1	1	3
5496		LEAR	05	26	0027	N13	W79	05	20.0		A	AX	10	1	1	4
5496A	25238	MWIL	05	19	1430	S06	E18	05	20.9	4	(AF)					
5496A		LEAR	05	20	0040	S05	E12	05	20.9		A	AX	10	1	1	3
5496B	25237	MWIL	05	19	1430	S18	E17	05	20.9	4	(AP)					

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5496B	25236	MWIL	05	19	1430	S21	E17	05	20.9	4	(AF)					
5496B	25244	MWIL	05	23	1530	S15	W36	05	20.9	4	(AP)					
5496B	25244	MWIL	05	24	1515	S15	W49	05	20.9	3	(B)					
5499		RAMY	05	19	1545	S06	E16	05	20.8		B	BXO	10	2	3	1
5499		HOLL	05	19	1605	S04	E19	05	21.1		A	AX	10	1	1	4
5499		PALE	05	19	2038	S05	E14	05	20.9		B	BXO	10	8	4	3
5499		CULG	05	20	0310	S05	E12	05	21.0		A	AX		1		3
5499		HOLL	05	20	1450	S06	E05	05	21.0		A	AX		2	2	3
5499		RAMY	05	23	1335	S06	W36	05	20.9		A	AX		1		3
5499		PALE	05	23	1840	S06	W38	05	20.9		A	AX		1		3
5499		RAMY	05	24	1431	S05	W47	05	21.1		B	BXO	10	2	4	3
5499		HOLL	05	24	1447	S05	W50	05	20.9		B	BXO	10	2	3	3
5499		SVTO	05	25	0547	S05	W60	05	20.7		A	AX		1		4
5490		RAMY	05	14	1428	S25	E86	05	21.3		A	HS	60	1	2	2
5490		HOLL	05	14	1510	S25	E86	05	21.3		A	HS	50	1	2	3
5490		PALE	05	14	1810	S26	E84	05	21.3		A	HS	60	1	3	3
5490		LEAR	05	15	0023	S25	E78	05	21.0		A	HS	140	1	1	4
5490		SVTO	05	15	0558	S26	E78	05	21.3		A	HS	60	1	1	4
5490		HOLL	05	15	1415	S26	E69	05	20.9		A	HX	60	1	2	3
5490		RAMY	05	15	1458	S26	E71	05	21.1		A	HS	110	2	2	2
5490		PALE	05	15	1735	S27	E67	05	20.9		A	HA	100	1	2	4
5490		LEAR	05	16	0230	S28	E68	05	21.4		A	HH	160	1	3	3
5490		SVTO	05	16	1158	S26	E60	05	21.2		A	HA	60	1	2	2
5490		RAMY	05	16	1300	S26	E61	05	21.3		A	HS	90	1	2	3
5490		BOUL	05	16	1341	S26	E58	05	21.1		A	HA	80	1	2	2
5490	25230	MWIL	05	16	1445	S27	E60	05	21.3	5	(AP)					
5490		HOLL	05	16	1705	S26	E55	05	21.0		A	HS	80	2	2	3
5490		PALE	05	16	1740	S26	E57	05	21.2		A	HS	180	1	2	3
5490		LEAR	05	17	0025	S27	E54	05	21.2		A	HH	110	1	3	4
5490		CULG	05	17	0545	S27	E52	05	21.3		A	HS	70	1	1	3
5490		SVTO	05	17	1058	S26	E49	05	21.3		A	HA	60	1	2	2
5490		RAMY	05	17	1325	S27	E48	05	21.3		A	HS	120	1	2	3
5490	25230	MWIL	05	17	1415	S27	E48	05	21.3	5	(AP)					
5490		HOLL	05	17	1425	S25	E47	05	21.2		A	HS	100	1	2	3
5490		BOUL	05	17	1510	S27	E47	05	21.3		A	HS	90	1	2	3
5490		PALE	05	17	1926	S25	E44	05	21.2		A	HS	110	1	2	2
5490		LEAR	05	18	0025	S26	E42	05	21.3		A	HH	110	1	3	4
5490		CULG	05	18	0440	S29	E39	05	21.2		A	HS	80	1	1	1
5490		SVTO	05	18	1009	S26	E37	05	21.3		A	HA	80	1	2	1
5490		RAMY	05	18	1310	S26	E34	05	21.2		A	HS	120	1	2	3
5490		HOLL	05	18	1416	S25	E35	05	21.3		A	HS	130	2	2	3
5490	25230	MWIL	05	18	1430	S26	E35	05	21.3	5	(AP)					
5490		BOUL	05	18	1437	S27	E34	05	21.2		A	HS	160	1	3	3
5490		PALE	05	18	1845	S26	E33	05	21.3		A	HS	100	1	2	3
5490		LEAR	05	19	0100	S26	E29	05	21.3		A	HS	70	1	2	3
5490		CULG	05	19	0420	S28	E27	05	21.3		A	HS	70	1	1	2
5490		SVTO	05	19	1258	S26	E24	05	21.4		A	HA	70	1	3	2
5490		BOUL	05	19	1408	S25	E23	05	21.4		A	HS	120	1	3	2
5490	25230	MWIL	05	19	1430	S27	E22	05	21.3	5	(AP)					
5490		RAMY	05	19	1545	S26	E23	05	21.4		A	HS	70	1	2	1
5490		HOLL	05	19	1605	S26	E21	05	21.3		A	HS	110	1	2	4
5490		PALE	05	19	2038	S26	E19	05	21.3		A	HH	90	1	3	3
5490		LEAR	05	20	0040	S26	E16	05	21.3		A	HS	80	1	2	3
5490		CULG	05	20	0310	S26	E16	05	21.4		A	HS	100	1	2	3
5490		SVTO	05	20	0716	S26	E13	05	21.3		A	HA	110	1	3	2
5490		BOUL	05	20	1315	S25	E09	05	21.2		A	HA	70	1	2	3
5490		RAMY	05	20	1336	S26	E10	05	21.3		A	HS	110	1	2	3
5490	25230	MWIL	05	20	1430	S26	E09	05	21.3	5	(AP)					
5490		HOLL	05	20	1450	S26	E10	05	21.4		A	HS	80	1	2	3
5490		PALE	05	20	1745	S26	E08	05	21.4		A	HS	110	1	2	3
5490		LEAR	05	21	0018	S26	E04	05	21.3		A	HS	90	1	2	3
5490		CULG	05	21	0310	S26	E02	05	21.3		A	HA	100	2	2	3
5490		SVTO	05	21	0510	S27	E01	05	21.3		A	HS	90	1	2	4
5490		RAMY	05	21	1255	S26	W03	05	21.3		A	HS	70	1	2	3
5490		BOUL	05	21	1422	S26	W03	05	21.4		A	HS	110	1	3	3
5490	25230	MWIL	05	21	1430	S27	W03	05	21.4	5	(AP)					
5490		HOLL	05	21	1440	S26	W04	05	21.3		A	HS	110	1	2	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5490		PALE	05	21	1910	S27	W07	05	21.2		A	HS	110	1	2	4
5490		LEAR	05	22	0010	S27	W08	05	21.4		A	HS	70	1	3	4
5490		CULG	05	22	0335	S25	W11	05	21.3		A	HS	70	1	2	2
5490		SVTO	05	22	1235	S26	W14	05	21.4		A	HS	80	1	2	2
5490		BOUL	05	22	1318	S25	W16	05	21.3		A	HS	70	1	2	1
5490		RAMY	05	22	1400	S26	W17	05	21.3		A	HS	90	1	2	3
5490		HOLL	05	22	1710	S26	W18	05	21.3		A	HS	110	1	2	2
5490		PALE	05	22	1715	S27	W18	05	21.3		A	HS	110	1	2	3
5490	25230	MWIL	05	22	1745	S26	W17	05	21.4	5	(AP)					
5490		LEAR	05	23	0025	S26	W22	05	21.3		A	HS	70	1	2	3
5490		CULG	05	23	0215	S26	W22	05	21.4		A	HS	50	1	1	3
5490		SVTO	05	23	1046	S26	W26	05	21.4		A	HA	50	2	2	2
5490		BOUL	05	23	1315	S25	W28	05	21.4		A	HS	50	1	2	1
5490		RAMY	05	23	1335	S26	W28	05	21.4		A	HS	100	1	2	3
5490		HOLL	05	23	1515	S26	W30	05	21.3		A	HS	100	1	2	3
5490	25230	MWIL	05	23	1530	S26	W29	05	21.4	5	(AP)					
5490		PALE	05	23	1840	S27	W31	05	21.4		A	HS	100	2	2	3
5490		CULG	05	24	0210	S26	W35	05	21.4		A	HS	90	1	2	3
5490		SVTO	05	24	1329	S26	W42	05	21.3		B	DAO	70	4	4	2
5490		RAMY	05	24	1431	S25	W42	05	21.3		B	CSO	100	4	5	3
5490		BOUL	05	24	1445	S25	W42	05	21.4		B	DSO	140	3	4	2
5490		HOLL	05	24	1447	S25	W43	05	21.3		B	CSO	120	3	4	3
5490	25230	MWIL	05	24	1515	S26	W42	05	21.4	5	(BP)					
5490		PALE	05	24	1958	S27	W47	05	21.2		B	CAO	120	4	4	3
5490		LEAR	05	25	0040	S26	W48	05	21.3		B	CSO	110	5	6	3
5490		CULG	05	25	0255	S24	W49	05	21.3		B	CSO	60	5	6	3
5490		SVTO	05	25	0547	S26	W52	05	21.2		B	DSO	90	7	5	4
5490		RAMY	05	25	1148	S24	W54	05	21.3		B	CSO	100	7	6	2
5490		BOUL	05	25	1425	S24	W56	05	21.3		B	CSO	140	4	4	3
5490		HOLL	05	25	1455	S25	W56	05	21.3		B	CSO	100	4	4	3
5490	25230	MWIL	05	25	1515	S26	W55	05	21.4	5	(BP)					
5490		PALE	05	25	1847	S25	W56	05	21.4		B	CAO	100	5	6	3
5490		LEAR	05	26	0027	S25	W59	05	21.4		B	CAO	80	3	4	4
5490		CULG	05	26	0250	S23	W61	05	21.4		A	HS	70	2	2	2
5490		SVTO	05	26	0825	S26	W63	05	21.4		A	HS	40	1	2	2
5490		RAMY	05	26	1238	S23	W67	05	21.4		A	HS	50	2	3	3
5490		HOLL	05	26	1320	S25	W65	05	21.5		A	HS	50	2	2	3
5490	25230	MWIL	05	26	1515	S26	W68	05	21.3	5	(AP)					
5490		BOUL	05	26	1705	S26	W69	05	21.3		B	CAO	100	3	3	3
5490		PALE	05	26	1920	S26	W73	05	21.1		A	HS	150	1	2	3
5490		CULG	05	27	0302	S24	W74	05	21.4		A	HS	30	1	1	2
5490		SVTO	05	27	0639	S25	W77	05	21.3		A	HS	60	1	2	2
5490		BOUL	05	27	1357	S24	W79	05	21.5		A	HA	60	1	1	3
5490		HOLL	05	27	1428	S25	W79	05	21.5		A	HS	50	3	2	2
5490	25230	MWIL	05	27	1515	S26	W81	05	21.3	5	(AP)					
5490		PALE	05	27	2000	S26	W87	05	21.1		A	HS	60	1	3	4
5498		PALE	05	18	1845	N33	E39	05	21.9		A	AX		1		3
5498		LEAR	05	19	0100	N32	E33	05	21.6		A	AX	10	1	1	3
5498		SVTO	05	19	1258	N32	E29	05	21.8		B	BXO	10	4	3	2
5498		RAMY	05	19	1545	N32	E28	05	21.9		B	BXO	20	7	4	1
5498		HOLL	05	19	1605	N33	E29	05	22.0		B	BXO	10	4	3	4
5498		PALE	05	19	2038	N31	E26	05	21.9		B	BXO		3	4	3
5498		LEAR	05	20	0040	N32	E22	05	21.8		B	BXO	10	3	4	3
5498		CULG	05	20	0310	N32	E22	05	21.9		B	BXO		3	4	3
5498		SVTO	05	20	0716	N33	E19	05	21.8		B	CAO	20	2	5	2
5498		BOUL	05	20	1315	N31	E15	05	21.7		B	BXO		4	5	3
5498		RAMY	05	20	1336	N33	E15	05	21.7		B	BXO	10	5	5	3
5498	25240	MWIL	05	20	1430	N33	E15	05	21.8	4	(B)					
5498		HOLL	05	20	1450	N33	E15	05	21.8		B	BXO	10	5	5	3
5498		PALE	05	20	1745	N32	E12	05	21.7		B	CSO	10	3	6	3
5498		CULG	05	21	0310	N32	E08	05	21.8		B	BXO		2	5	3
5498		SVTO	05	21	0510	N32	E07	05	21.8		B	CRO	10	2	5	4
5498	25240	MWIL	05	21	1430	N32	W01	05	21.5	4	(AP)					
5498		HOLL	05	21	1440	N31	W02	05	21.4		B	BXO	10	3	6	2
5498		SVTO	05	24	1329	N31	W30	05	22.2		B	DRO	20	3	4	2
5498		RAMY	05	24	1431	N33	W31	05	22.1		B	CSO	20	4	5	3
5498		BOUL	05	24	1445	N33	W31	05	22.1		B	CAO	40	4	4	2
5498		HOLL	05	24	1447	N32	W33	05	22.0		B	BXO	10	7	5	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5498	25251	MWIL	05	24	1515	N32	W33	05	22.0	4	(B)					
5498		PALE	05	24	1958	N31	W38	05	21.8		B	BXO	30	4	4	3
5498		LEAR	05	25	0040	N32	W39	05	21.9		B	DAO	80	10	7	3
5498		CULG	05	25	0255	N33	W39	05	22.0		B	CAO	30	5	6	3
5498		SVTO	05	25	0547	N32	W41	05	22.0		B	DAO	80	9	7	4
5498		RAMY	05	25	1148	N33	W44	05	22.0		B	DSO	60	7	7	2
5498		BOUL	05	25	1425	N33	W47	05	21.9		B	DAO	90	7	7	3
5498		HOLL	05	25	1455	N34	W48	05	21.8		B	DAO	100	12	9	3
5498	25251	MWIL	05	25	1515	N32	W46	05	22.0	5	(B)					
5498		PALE	05	25	1847	N31	W46	05	22.1		B	DAO	90	11	8	3
5498		LEAR	05	26	0027	N32	W53	05	21.8		B	EAO	180	16	11	4
5498		CULG	05	26	0250	N34	W54	05	21.8		B	EAO	120	12	11	2
5498		SVTO	05	26	0825	N33	W56	05	21.9		B	DAO	140	5	10	2
5498		RAMY	05	26	1238	N34	W58	05	21.9		B	DAO	160	7	10	3
5498		HOLL	05	26	1320	N34	W57	05	22.0		B	DAO	90	7	10	3
5498	25251	MWIL	05	26	1515	N33	W61	05	21.8	5	(BP)					
5498		BOUL	05	26	1705	N32	W57	05	22.2		B	CSO	130	5	4	3
5498		PALE	05	26	1920	N32	W60	05	22.0		B	EAO	150	8	12	3
5498		CULG	05	27	0302	N34	W67	05	21.8		B	CSO	40	6	12	2
5498		SVTO	05	27	0639	N33	W70	05	21.7		B	EAO	150	6	14	2
5498		BOUL	05	27	1357	N32	W79	05	21.3		A	HA	90	1	2	3
5498		HOLL	05	27	1428	N32	W79	05	21.3		A	HH	120	1	4	2
5498	25251	MWIL	05	27	1515	N33	W75	05	21.7	4	(B)					
5498		PALE	05	27	2000	N31	W81	05	21.4		A	HA	60	1	2	4
5494		SVTO	05	16	1158	S17	E76	05	22.3		B	CAO	20	2	6	2
5494		RAMY	05	16	1300	S17	E76	05	22.3		A	HA	60	1	2	3
5494		BOUL	05	16	1341	S17	E71	05	22.0		A	HA	60	1	1	2
5494	25231	MWIL	05	16	1445	S17	E77	05	22.5	4	(AP)					
5494		HOLL	05	16	1705	S17	E70	05	22.0		B	HS	30	1	1	3
5494		PALE	05	16	1740	S17	E70	05	22.0		A	HA	100	1	2	3
5494		LEAR	05	17	0025	S17	E68	05	22.2		A	HA	100	3	2	4
5494		CULG	05	17	0545	S19	E67	05	22.3		A	HS	10	1	1	3
5494		SVTO	05	17	1058	S17	E64	05	22.3		A	HA	40	4	3	2
5494		RAMY	05	17	1325	S17	E62	05	22.3		A	HS	70	2	2	3
5494	25231	MWIL	05	17	1415	S17	E62	05	22.3	4	(AP)					
5494		HOLL	05	17	1425	S16	E60	05	22.1		A	HS	60	2	1	3
5494		BOUL	05	17	1510	S17	E60	05	22.2		A	HS	60	3	1	3
5494		PALE	05	17	1926	S17	E56	05	22.1		A	HA	70	1	1	2
5494		LEAR	05	18	0025	S17	E56	05	22.3		B	CAO	50	3	3	4
5494		CULG	05	18	0440	S20	E54	05	22.3		A	HS	20	1	1	1
5494		SVTO	05	18	1009	S18	E49	05	22.1		B	CAO	40	4	3	1
5494		RAMY	05	18	1310	S17	E48	05	22.2		A	HA	70	2	2	3
5494		HOLL	05	18	1416	S17	E48	05	22.2		A	HS	60	7	2	3
5494	25231	MWIL	05	18	1430	S18	E49	05	22.3	5	(AP)					
5494		BOUL	05	18	1437	S17	E49	05	22.3		A	HA	80	4	2	3
5494		PALE	05	18	1845	S17	E48	05	22.4		A	HA	60	2	2	3
5494		LEAR	05	19	0100	S17	E42	05	22.2		A	HA	50	3	2	3
5494		CULG	05	19	0420	S19	E39	05	22.1		A	HA	40	3	1	2
5494		SVTO	05	19	1258	S18	E37	05	22.3		A	HA	40	4	3	2
5494		BOUL	05	19	1408	S17	E35	05	22.2		A	HA	50	2	2	2
5494	25231	MWIL	05	19	1430	S18	E36	05	22.3	4	(AP)					
5494		RAMY	05	19	1545	S18	E37	05	22.5		B	CAO	40	3	2	1
5494		HOLL	05	19	1605	S17	E35	05	22.3		B	CSO	30	3	2	4
5494		PALE	05	19	2038	S18	E32	05	22.3		B	CSO	30	2	2	3
5494		LEAR	05	20	0040	S18	E30	05	22.3		B	CAO	30	5	3	3
5494		CULG	05	20	0310	S18	E29	05	22.3		A	HA	20	4	3	3
5494		SVTO	05	20	0716	S18	E27	05	22.3		B	CAO	20	4	3	2
5494		BOUL	05	20	1315	S18	E23	05	22.3		B	CAO	20	7	3	3
5494		RAMY	05	20	1336	S18	E23	05	22.3		B	CAO	20	8	4	3
5494	25231	MWIL	05	20	1430	S18	E23	05	22.3	4	(AP)					
5494		HOLL	05	20	1450	S18	E23	05	22.4		B	CRO	20	8	4	3
5494		PALE	05	20	1745	S18	E20	05	22.3		B	CSO	20	6	3	3
5494		LEAR	05	21	0018	S18	E17	05	22.3		B	CAO	30	5	3	3
5494		CULG	05	21	0310	S18	E15	05	22.3		B	CRO	10	5	2	3
5494		SVTO	05	21	0510	S19	E15	05	22.4		B	CSO	20	9	2	4
5494		RAMY	05	21	1255	S18	E11	05	22.4		B	CSO	50	6	5	3
5494		BOUL	05	21	1422	S16	E09	05	22.3		B	BXO	10	2	3	3
5494	25231	MWIL	05	21	1430	S18	E09	05	22.3	4	(AP)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5494		HOLL	05	21	1440	S19	E09	05	22.3		B	BXO	30	9	4	2
5494		PALE	05	21	1910	S19	E07	05	22.3		B	BXO	20	11	5	4
5494		LEAR	05	22	0010	S19	E04	05	22.3		B	BXO	70	11	6	4
5494		CULG	05	22	0335	S18	E01	05	22.2		B	CRO	20	7	3	2
5494		SVTO	05	22	1235	S18	W04	05	22.2		B	CAO	40	11	6	2
5494		BOUL	05	22	1318	S17	W04	05	22.2		B	BXO	20	6	4	1
5494		RAMY	05	22	1400	S18	W04	05	22.3		B	CRI	30	13	7	3
5494		HOLL	05	22	1710	S18	W07	05	22.2		B	BXO	60	12	8	2
5494		PALE	05	22	1715	S18	W05	05	22.3		B	BXO	20	10	8	3
5494	25231	MWIL	05	22	1745	S18	W06	05	22.3	4	(BG)					
5494		LEAR	05	23	0025	S19	W11	05	22.2		B	BXO	70	8	4	3
5494		CULG	05	23	0215	S19	W10	05	22.3		A	HR	20	9	3	3
5494		SVTO	05	23	1046	S18	W15	05	22.3		B	CAO	20	10	5	2
5494		BOUL	05	23	1315	S17	W17	05	22.3		B	BXO	30	7	4	1
5494		RAMY	05	23	1335	S17	W18	05	22.2		A	HR	30	12	7	3
5494		HOLL	05	23	1515	S17	W19	05	22.2		B	BXO	60	18	5	3
5494	25231	MWIL	05	23	1530	S18	W19	05	22.2	4	(BG)					
5494		PALE	05	23	1840	S18	W20	05	22.2		B	CRO	30	12	4	3
5494		CULG	05	24	0210	S17	W24	05	22.3			CA	10	7	1	3
5494		SVTO	05	24	1329	S18	W30	05	22.3		B	CAO	20	5	4	2
5494		RAMY	05	24	1431	S17	W31	05	22.2		B	BXO	20	8	4	3
5494		BOUL	05	24	1445	S18	W30	05	22.3		B	BXO	10	3	1	2
5494		HOLL	05	24	1447	S17	W32	05	22.2		B	BXO	10	8	5	3
5494	25231	MWIL	05	24	1515	S18	W32	05	22.2	3	(BP)					
5494		PALE	05	24	1958	S20	W36	05	22.1		A	AX		3	1	3
5494		LEAR	05	25	0040	S16	W37	05	22.2		B	BXO	10	3	3	3
5494		PALE	05	25	1847	S20	W45	05	22.3		A	AX		3	2	3
5494A	25245	MWIL	05	23	1530	S31	W12	05	22.7	4	(AF)					
5502		BOUL	05	21	1422	S07	E19	05	23.0		B	BXO	10	2	2	3
5502	25242	MWIL	05	21	1430	S07	E21	05	23.2	4	(B)					
5502		HOLL	05	21	1440	S06	E20	05	23.1		A	AX	10	2	2	2
5502		PALE	05	21	1910	S07	E18	05	23.1		A	AX	10	2	2	4
5502		LEAR	05	22	0010	S07	E13	05	23.0		A	AX	10	1	1	4
5497		LEAR	05	16	0230	S17	E85	05	22.6		A	HH	60	1	4	3
5497		LEAR	05	18	0025	S20	E70	05	23.4		B	BXO	30	2	2	4
5497		SVTO	05	18	1009	S21	E63	05	23.2		B	CAO	40	3	3	1
5497		RAMY	05	18	1310	S20	E62	05	23.3		B	CAO	60	11	5	3
5497		HOLL	05	18	1416	S19	E61	05	23.2		B	BXO	50	12	4	3
5497	25234	MWIL	05	18	1430	S21	E63	05	23.4	5	(B)					
5497		BOUL	05	18	1437	S21	E63	05	23.4		B	DAO	100	9	3	3
5497		PALE	05	18	1845	S21	E61	05	23.4		B	CAO	100	7	4	3
5497		LEAR	05	19	0100	S20	E56	05	23.3		B	CAO	120	10	3	3
5497		CULG	05	19	0420	S23	E52	05	23.2		B	DSO	80	5	4	2
5497		SVTO	05	19	1258	S20	E51	05	23.4		B	DAI	150	20	6	2
5497		BOUL	05	19	1408	S20	E49	05	23.3		B	DAO	170	7	5	2
5497	25234	MWIL	05	19	1430	S20	E49	05	23.3	5	(B)					
5497		RAMY	05	19	1545	S21	E49	05	23.4		B	CAI	130	9	5	1
5497		HOLL	05	19	1605	S19	E49	05	23.4		B	CAI	120	12	6	4
5497		PALE	05	19	2038	S21	E47	05	23.5		B	CKI	150	16	7	3
5497		LEAR	05	20	0040	S20	E44	05	23.4		B	DAO	120	12	7	3
5497		CULG	05	20	0310	S20	E42	05	23.3		B	DAI	50	14	7	3
5497		SVTO	05	20	0716	S21	E42	05	23.5		B	DAO	100	21	8	2
5497		BOUL	05	20	1315	S21	E35	05	23.2		B	DAI	130	16	9	3
5497		RAMY	05	20	1336	S20	E37	05	23.4		B	DAI	190	26	8	3
5497	25234	MWIL	05	20	1430	S20	E36	05	23.3	5	(BG)					
5497		HOLL	05	20	1450	S20	E36	05	23.4		B	DAI	170	31	10	3
5497		PALE	05	20	1745	S20	E34	05	23.3		B	DAI	140	22	10	3
5497		CULG	05	21	0310	S20	E29	05	23.4		B	DAI	230	28	9	3
5497		SVTO	05	21	0510	S20	E28	05	23.3		B	DAI	230	31	10	4
5497		RAMY	05	21	1255	S20	E25	05	23.4				330	16	9	3
5497		BOUL	05	21	1422	S20	E24	05	23.4		B	DAI	380	26	10	3
5497	25234	MWIL	05	21	1430	S20	E23	05	23.4	5	(B)					
5497		HOLL	05	21	1440	S21	E24	05	23.4		B	EAO	310	53	12	2
5497		PALE	05	21	1910	S20	E20	05	23.3		B	DAI	490	33	10	4
5497		LEAR	05	22	0010	S20	E18	05	23.4		BG	EKI	500	30	12	4
5497		CULG	05	22	0335	S20	E16	05	23.4		B	EAI	320	25	12	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
5497		SVTO	05	22	1235	S19	E12	05	23.4		BG	EKI	280	35	14	2
5497		BOUL	05	22	1318	S19	E11	05	23.4		B	EAI	290	25	11	1
5497		RAMY	05	22	1400	S20	E09	05	23.3		B	EKI	410	45	14	3
5497		HOLL	05	22	1710	S20	E07	05	23.2		B	EKO	440	40	13	2
5497		PALE	05	22	1715	S21	E08	05	23.3		B	EKI	340	39	14	3
5497	25234	MWIL	05	22	1745	S20	E07	05	23.3	5	(BG)					
5497		LEAR	05	23	0025	S20	E06	05	23.5		BG	EKI	470	60	13	3
5497		CULG	05	23	0215	S21	E01	05	23.2		B	EAI	300	35	12	3
5497		SVTO	05	23	1046	S19	W01	05	23.4		BG	EKI	370	64	15	2
5497		BOUL	05	23	1315	S19	W04	05	23.2		B	EKC	560	26	13	1
5497		RAMY	05	23	1335	S19	W04	05	23.3		BD	EKC	780	91	15	3
5497		HOLL	05	23	1515	S19	W05	05	23.2		BG	EAI	560	85	15	3
5497	25234	MWIL	05	23	1530	S19	W05	05	23.3	5	(D)					
5497		PALE	05	23	1840	S20	W07	05	23.2		B	FAI	500	63	15	3
5497		CULG	05	24	0210	S19	W11	05	23.2		BG	FAI	510	54	17	3
5497		SVTO	05	24	1329	S20	W16	05	23.3		BG	FAI	420	72	18	2
5497		BOUL	05	24	1445	S19	W17	05	23.3		B	FAI	720	46	17	2
5497		HOLL	05	24	1447	S19	W19	05	23.2		BG	FAI	720	86	17	3
5497	25234	MWIL	05	24	1515	S19	W18	05	23.3	5	(D)					
5497		RAMY	05	24	1531	S20	W17	05	23.3		BG	FKC	760	13	19	3
5497		PALE	05	24	1958	S20	W21	05	23.2		B	FKI	740	60	18	3
5497		LEAR	05	25	0040	S18	W24	05	23.2		BG	FKI	540	64	17	3
5497		CULG	05	25	0255	S19	W25	05	23.2		BG	FKI	600	50	16	3
5497		SVTO	05	25	0547	S19	W27	05	23.2		BG	FKI	800	62	17	4
5497		RAMY	05	25	1148	S17	W30	05	23.2		B	FKC	610	57	17	2
5497		BOUL	05	25	1425	S17	W31	05	23.2		BG	FKC	910	56	16	3
5497		HOLL	05	25	1455	S18	W32	05	23.2		BG	FKI	780	61	16	3
5497	25234	MWIL	05	25	1515	S19	W32	05	23.2	6	(D)					
5497		PALE	05	25	1847	S19	W32	05	23.3		B	FKI	790	96	17	3
5497		LEAR	05	26	0027	S18	W36	05	23.3		BG	FKC	830	58	18	4
5497		CULG	05	26	0250	S18	W40	05	23.1		B	FKI	630	58	18	2
5497		SVTO	05	26	0825	S19	W41	05	23.2		BG	FKI	830	43	17	2
5497		RAMY	05	26	1238	S18	W43	05	23.2		B	FKC	750	42	17	3
5497		HOLL	05	26	1320	S19	W42	05	23.3		BG	FKI	660	40	17	3
5497	25234	MWIL	05	26	1515	S18	W45	05	23.2	6	(D)					
5497		BOUL	05	26	1705	S18	W46	05	23.2		BG	FKC	1120	42	18	3
5497		PALE	05	26	1920	S20	W48	05	23.1		BG	FKI	1000	62	18	3
5497		CULG	05	27	0302	S18	W53	05	23.1		BG	FKI	780	39	22	2
5497		SVTO	05	27	0639	S19	W53	05	23.2		BG	FKI	990	40	19	2
5497		BOUL	05	27	1357	S17	W58	05	23.2		B	FKC	1020	29	18	3
5497		HOLL	05	27	1428	S18	W57	05	23.3		BG	FKI	700	50	17	2
5497	25234	MWIL	05	27	1515	S18	W58	05	23.2	5	(D)					
5497		PALE	05	27	2000	S20	W62	05	23.1		B	FKI	840	45	16	4
5497		LEAR	05	28	0135	S19	W63	05	23.2		B	FKC	640	25	15	3
5497		CULG	05	28	0330	S17	W65	05	23.2		B	EKI	620	26	14	2
5497		SVTO	05	28	0748	S19	W63	05	23.5		B	FKI	540	34	16	3
5497		RAMY	05	28	1314	S18	W70	05	23.2		B	FKI	500	11	16	2
5497		BOUL	05	28	1345	S20	W72	05	23.1		B	FHI	470	16	16	3
5497	25234	MWIL	05	28	1515	S19	W72	05	23.1	5	(BG)					
5497		PALE	05	28	1735	S19	W76	05	22.9		B	FKI	420	19	18	4
5497		HOLL	05	28	1810	S18	W73	05	23.2		B	EAI	370	9	13	2
5497		LEAR	05	29	0020	S19	W75	05	23.3		B	EKI	420	9	11	3
5497		SVTO	05	29	0800	S20	W77	05	23.4		B	FAI	150	11	17	2
5497		BOUL	05	29	1329	S20	W85	05	23.1		B	BXI	90	6	12	1
5497		RAMY	05	29	1429	S20	W79	05	23.6		B	DAI	70	6	10	1
5497	25234	MWIL	05	29	1530	S18	W80	05	23.5	4	B					
5497		HOLL	05	29	1600	S20	W81	05	23.5		B	BXO	60	4	5	3
5497		PALE	05	29	1803	S18	W88	05	23.0		B	BXO	10	2	4	3
5501		HOLL	05	20	1450	N33	E40	05	23.8		A	AX	10	1		3
5501		PALE	05	20	1745	N32	E38	05	23.7		A	AX	10	1	1	3
5501		CULG	05	21	0310	N33	E34	05	23.8		A	AX		1		3
5512		SVTO	05	27	0639	N11	W43	05	24.0		B	CRO	20	4	3	2
5512		BOUL	05	27	1357	N12	W45	05	24.2		B	BXO	30	2	4	3
5512		HOLL	05	27	1428	N11	W46	05	24.1		B	BXO	20	5	5	2
5512	25258	MWIL	05	27	1515	N11	W47	05	24.1	5	(B)					
5512		PALE	05	27	2000	N11	W50	05	24.1		B	CRO	20	5	4	4
5512		LEAR	05	28	0135	N11	W52	05	24.1		B	BXO	10	3	5	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5512		CULG	05	28	0330	N12	W52	05	24.2		B	BXO		3	4	2
5512		SVTO	05	28	0748	N11	W56	05	24.1		B	DRO	20	4	6	3
5512		RAMY	05	28	1314	N12	W58	05	24.2		B	DRO	40	3	5	2
5512		BOUL	05	28	1345	N11	W59	05	24.1		A	AX		1		3
5512	25258	MWIL	05	28	1515	N11	W61	05	24.0	4	(B)					
5512		PALE	05	28	1735	N11	W65	05	23.8		A	AX		1		4
5512	25258	MWIL	05	29	1530	N11	W73	05	24.1	3	X					
5512		PALE	05	29	1803	N12	W79	05	23.8		A	AX	10	2	1	3
5504		LEAR	05	23	0025	N22	E16	05	24.2		B	BXO	20	4	3	3
5504		SVTO	05	23	1046	N22	E10	05	24.2		B	CRO	20	5	4	2
5504		BOUL	05	23	1315	N22	E08	05	24.2		B	BXO	10	2	2	1
5504		RAMY	05	23	1335	N22	E07	05	24.1		B	BXO	10	6	4	3
5504		HOLL	05	23	1515	N23	E07	05	24.2		B	BXO	30	5	3	3
5504	25246	MWIL	05	23	1530	N22	E06	05	24.1	4	(B)					
5504		PALE	05	23	1840	N22	E06	05	24.2		B	BXO	10	6	4	3
5504		CULG	05	24	0210	N22	E01	05	24.2		B	BXO	20	3	3	3
5504		SVTO	05	24	1329	N21	W06	05	24.1		B	CAO	10	3	5	2
5504		RAMY	05	24	1431	N22	W05	05	24.2		B	BXO	10	6	5	3
5504		HOLL	05	24	1447	N23	W07	05	24.1		B	BXO	10	5	6	3
5504	25246	MWIL	05	24	1515	N22	W07	05	24.1	4	(BP)					
5509		PALE	05	24	1958	S10	W01	05	24.7		A	AX		3	1	3
5509		CULG	05	25	0255	S07	W07	05	24.6		B	BXO	10	2	1	3
5509		SVTO	05	25	0547	S07	W09	05	24.6		A	HR	10	1		4
5509		RAMY	05	25	1148	S07	W11	05	24.7		B	BXO	10	5	4	2
5509		BOUL	05	25	1425	S07	W12	05	24.7		B	CRO	20	5	4	3
5509		HOLL	05	25	1455	S07	W13	05	24.6		B	BXO	10	7	4	3
5509	25255	MWIL	05	25	1515	S08	W13	05	24.7	4	(BG)					
5509		PALE	05	25	1847	S08	W15	05	24.6		B	BXO	20	8	5	3
5509		LEAR	05	26	0027	S08	W18	05	24.7				60	9	6	4
5509		CULG	05	26	0250	S06	W11	05	25.3		B	DAO	40	7	5	2
5509		SVTO	05	26	0825	S08	W21	05	24.8		B	CRO	20	8	6	2
5509		RAMY	05	26	1238	S08	W25	05	24.6		B	CSO	20	5	6	3
5509		HOLL	05	26	1320	S08	W25	05	24.7		B	CRO	20	7	5	3
5509	25255	MWIL	05	26	1515	S08	W26	05	24.7	4	(BP)					
5509		BOUL	05	26	1705	S09	W27	05	24.7		B	DSO	30	6	5	3
5509		PALE	05	26	1920	S07	W29	05	24.6		B	BXO	100	7	5	3
5509		CULG	05	27	0302	S07	W34	05	24.6		B	BXO	10	6	6	2
5509		SVTO	05	27	0639	S08	W37	05	24.5		B	BXO	10	6	4	2
5509		BOUL	05	27	1357	S07	W43	05	24.4		A	AX	10	1	1	3
5509		HOLL	05	27	1428	S08	W41	05	24.5		A	AX	10	1	1	2
5509	25255	MWIL	05	27	1515	S08	W42	05	24.5	5	(BP)					
5509		PALE	05	27	2000	S09	W49	05	24.1		B	BXO	10	2	3	4
5509		LEAR	05	28	0135	S09	W50	05	24.3		B	BXO	10	3	3	3
5509		CULG	05	28	0330	S07	W49	05	24.5		A	AX		3	2	2
5509		SVTO	05	28	0748	S10	W52	05	24.4		B	CRO	30	4	6	3
5509		RAMY	05	28	1314	S09	W58	05	24.2		B	BXO	10	3	5	2
5509		BOUL	05	28	1345	S09	W56	05	24.4		B	BXO		3	4	3
5509	25255	MWIL	05	28	1515	S09	W59	05	24.2	4	(AP)					
5509		PALE	05	28	1735	S09	W60	05	24.2		A	AX	20	2	1	4
5509		HOLL	05	28	1810	S08	W58	05	24.4		B	BXO	10	3	4	2
5509		LEAR	05	29	0020	S09	W61	05	24.4		B	BXO	40	3	3	3
5509		SVTO	05	29	0800	S09	W67	05	24.3		B	CAO	20	5	4	2
5509		BOUL	05	29	1329	S09	W67	05	24.5		B	BXO	10	3	4	1
5509		RAMY	05	29	1429	S09	W69	05	24.4		B	CSO	60	2	6	1
5509	25255	MWIL	05	29	1530	S08	W71	05	24.3	4	(BP)					
5509		HOLL	05	29	1600	S09	W70	05	24.4		B	CAO	60	3	7	3
5509		PALE	05	29	1803	S09	W75	05	24.1		A	HS	60	1	1	3
5509		LEAR	05	30	0015	S09	W75	05	24.4		B	CAO	90	2	4	3
5509		CULG	05	30	0300	S08	W73	05	24.6		B	CSO	30	2	6	2
5509		SVTO	05	30	0755	S09	W77	05	24.5		B	DAO	60	7	7	3
5509		HOLL	05	30	1435	S08	W80	05	24.6		A	HS	30	1	2	4
5509	25255	MWIL	05	30	1515	S08	W81	05	24.6	5	AP					
5509		PALE	05	30	1809	S10	W82	05	24.6		A	AX	30	1	1	3
5509A		HOLL	05	24	1447	N11	E05	05	25.0		A	AX		1		3
5509A	25252	MWIL	05	24	1515	N11	E05	05	25.0	3	(AP)					

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5509B		SVTO	05	25	0547	N28	E04	05	25.5		A	AX		1		4
5509C		SVTO	05	23	1046	N04	E31	05	25.8		A	AX	10	6	2	2
5509D		PALE	05	21	1910	N24	E58	05	26.3		A	AX	10	2	2	4
5509D		LEAR	05	22	0010	N23	E58	05	26.5		B	BXO	40	2	2	4
5509D		PALE	05	25	1847	N24	E00	05	25.8		B	BXO	10	9	7	3
5509D		HOLL	05	30	1435	N25	W57	05	26.2		B	BXO		2	5	4
5509E		PALE	05	25	1847	S06	E15	05	26.9		A	AX		3	1	3
5509E		SVTO	05	28	0748	S04	W23	05	26.6		A	AX		1	1	3
5509F		HOLL	05	24	1447	N30	E34	05	27.3		A	AX		1		3
5509F		PALE	05	27	2000	N29	W09	05	27.1		A	AX		1		4
5509G		LEAR	05	25	0040	N19	E27	05	27.1		A	AX	10	1	1	3
5509G		PALE	05	25	1847	N19	E22	05	27.5		B	BXO	10	5	6	3
5509H		BOUL	05	23	1315	S16	E55	05	27.7		A	AX	10	1		1
5509H		PALE	05	25	1847	S12	E14	05	26.8		A	AX		3	1	3
5509H		SVTO	05	28	0748	S13	W06	05	27.9		A	AX	10	2	3	3
5509H		HOLL	05	30	1435	S15	W35	05	27.9		A	AX		1		4
5510	25247	MWIL	05	23	1530	S16	E58	05	28.0	4	(AP)					
5510	25247	MWIL	05	24	1515	S17	E44	05	28.0	4	(BG)					
5510	25247	MWIL	05	25	1515	S17	E34	05	28.2	5	(AP)					
5510		HOLL	05	26	1320	S15	E21	05	28.1		B	BXO		2	3	3
5510	25247	MWIL	05	26	1515	S16	E21	05	28.2	3	(B)					
5510		CULG	05	27	0302	S15	E16	05	28.3		B	BXO	10	3	4	2
5510		SVTO	05	27	0639	S15	E14	05	28.3		B	CRO	10	4	3	2
5510		BOUL	05	27	1357	S15	E07	05	28.1		A	HA	20	2	2	3
5510		HOLL	05	27	1428	S15	E08	05	28.2		A	AX	20	6	2	2
5510	25247	MWIL	05	27	1515	S15	E07	05	28.2	4	(BP)					
5510		PALE	05	27	2000	S15	E05	05	28.2		A	AX		3	2	4
5510		LEAR	05	28	0135	S15	E02	05	28.2		A	AX	10	2	2	3
5510		CULG	05	28	0330	S15	E00	05	28.1		A	AX		1		2
5510		SVTO	05	28	0748	S15	E00	05	28.3		B	CRO	20	8	5	3
5510		RAMY	05	28	1314	S15	W05	05	28.2		A	AX		1		2
5510		BOUL	05	28	1345	S15	W04	05	28.3		A	AX		1		3
5510	25247	MWIL	05	28	1515	S15	W05	05	28.2	4	(BP)					
5510		PALE	05	28	1735	S16	W07	05	28.2		A	AX		1		4
5510		HOLL	05	28	1810	S19	W02	05	28.6		B	BXO	10	5	5	2
5510		SVTO	05	29	0800	S16	W07	05	28.8		A	HR	10	1		2
5510	25247	MWIL	05	29	1530	S16	W12	05	28.7	3	(B)					
5510		HOLL	05	29	1600	S19	W15	05	28.5		B	BXO	20	8	6	3
5510		SVTO	05	30	0755	S15	W28	05	28.2		A	AX		1	1	3
5510		HOLL	05	30	1435	S17	W26	05	28.6		A	AX		1		4
5510	25265	MWIL	05	31	1515	S15	W48	05	28.0	4	(AP)					
5510		LEAR	06	01	0034	S16	W53	05	28.1		B	BXO	30	3	4	4
5510		CULG	06	01	0315	S15	W54	05	28.1		B	BXO	10	2	5	2
5510		SVTO	06	01	0935	S16	W58	05	28.1		B	CRO	30	3	5	2
5510		HOLL	06	01	1437	S15	W59	05	28.2		B	CRO	30	7	8	4
5510	25265	MWIL	06	01	1445	S16	W60	05	28.2	4	(BF)					
5510		BOUL	06	01	1450	S15	W59	05	28.2		B	CAO	70	6	5	3
5510		RAMY	06	01	1800	S16	W60	05	28.3		A	HA	40	1	1	2
5510		LEAR	06	02	0020	S16	W65	05	28.2		B	CSO	70	3	8	3
5510		CULG	06	02	0430	S16	W66	05	28.3		B	CSO	40	4	6	2
5510		SVTO	06	02	0713	S15	W70	05	28.1		B	DAO	90	8	7	1
5510		BOUL	06	02	1355	S16	W73	05	28.1		B	CAO	30	5	9	3
5510	25265	MWIL	06	02	1440	S16	W74	05	28.1	4	AF)					
5510		HOLL	06	02	1515	S15	W71	05	28.4		B	CSO	40	8	8	3
5510		RAMY	06	02	1946	S17	W77	05	28.1		B	DAO	120	3	10	1
5510		LEAR	06	03	0105	S16	W77	05	28.3		B	DSO	60	2	9	3
5510	25265	MWIL	06	03	1430	S16	W85	05	28.2	3	AP					
5510		RAMY	06	03	1536	S17	W80	05	28.7		A	HA	30	1	2	2
5503		LEAR	05	22	0010	S16	E77	05	27.8		A	AX	30	1	1	4
5503		SVTO	05	22	1235	S20	E78	05	28.5		A	HA	60	1	2	2
5503		BOUL	05	22	1318	S21	E78	05	28.5		A	AX	10	1		1

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5503		RAMY	05	22	1400	S21	E77	05	28.5		A	HA	50	2	2	3
5503		PALE	05	22	1715	S19	E62	05	27.4		A	HA	60	1	1	3
5503	25243	MWIL	05	22	1745	S21	E76	05	28.6	4	(AP)					
5503		LEAR	05	23	0025	S17	E67	05	28.1		B	CAO	80	4	8	3
5503		CULG	05	23	0215	S23	E72	05	28.6		A	HS	20	1	1	3
5503		SVTO	05	23	1046	S18	E61	05	28.1		B	CAO	20	4	9	2
5503		BOUL	05	23	1315	S20	E63	05	28.4		A	HA	110	1	2	1
5503		HOLL	05	23	1515	S17	E60	05	28.2		B	CAO	60	4	6	3
5503	25243	MWIL	05	23	1530	S21	E65	05	28.6	5	(AP)					
5503		PALE	05	23	1840	S18	E60	05	28.3		B	CAO	40	3	6	3
5503		CULG	05	24	0210	S18	E55	05	28.3		B	CSO	60	2	10	3
5503		SVTO	05	24	1329	S19	E47	05	28.1		B	CSO	30	4	10	2
5503		RAMY	05	24	1431	S21	E53	05	28.7		A	HA	70	2	2	3
5503		BOUL	05	24	1445	S21	E52	05	28.6		B	CAO	80	3	2	2
5503		HOLL	05	24	1447	S18	E47	05	28.2		B	CSO	60	4	11	3
5503	25243	MWIL	05	24	1515	S21	E52	05	28.6	5	(AP)					
5503		RAMY	05	24	1531	S21	E53	05	28.7		A	HA	70	2	2	3
5503		PALE	05	24	1958	S18	E44	05	28.2		B	CRO	60	4	11	3
5503		LEAR	05	25	0040	S20	E47	05	28.6		B	CAO	90	3	3	3
5503		CULG	05	25	0255	S20	E45	05	28.6		A	HS	40	1	1	3
5503		SVTO	05	25	0547	S18	E42	05	28.4		B	CAO	60	6	6	4
5503		RAMY	05	25	1148	S20	E40	05	28.5		A	HS	70	5	3	2
5503		BOUL	05	25	1425	S21	E39	05	28.6		B	CAO	60	3	2	3
5503		HOLL	05	25	1455	S20	E38	05	28.5		B	CSO	50	7	5	3
5503	25243	MWIL	05	25	1515	S21	E38	05	28.5	5	(BG)					
5503		LEAR	05	26	0027	S17	E33	05	28.5		B	CAO	80	9	5	4
5503		CULG	05	26	0250	S20	E31	05	28.5		B	DAO	80	5	2	2
5503		SVTO	05	26	0825	S18	E26	05	28.3		B	CRO	60	11	8	2
5503		RAMY	05	26	1238	S21	E26	05	28.5		A	HA	50	5	3	3
5503		HOLL	05	26	1320	S20	E26	05	28.5		A	HS	40	5	2	3
5503	25243	MWIL	05	26	1515	S20	E25	05	28.5	5	(BG)					
5503		BOUL	05	26	1705	S20	E23	05	28.5		B	DAO	70	4	3	3
5503		CULG	05	27	0302	S20	E17	05	28.4		B	CAO	20	6	2	2
5503		SVTO	05	27	0639	S20	E18	05	28.6		B	CAO	30	6	5	2
5503		BOUL	05	27	1357	S19	E12	05	28.5		B	CAO	40	3	2	3
5503		HOLL	05	27	1428	S19	E12	05	28.5		B	BXO	30	10	3	2
5503	25243	MWIL	05	27	1515	S20	E12	05	28.5	4	(AP)					
5503		PALE	05	27	2000	S18	E08	05	28.4		B	CAO	10	5	3	4
5503		LEAR	05	28	0135	S20	E06	05	28.5		B	CRO	20	5	3	3
5503		CULG	05	28	0330	S20	E05	05	28.5		B	CAO	20	6	3	2
5503		SVTO	05	28	0748	S20	E04	05	28.6		B	DAO	30	11	4	3
5503		RAMY	05	28	1314	S19	E02	05	28.7		B	BXO	20	8	5	2
5503		BOUL	05	28	1345	S18	E04	05	28.9		B	BXO		10	9	3
5503	25260	MWIL	05	28	1515	S18	E07	05	29.2	4	(AP)					
5503	25243	MWIL	05	28	1515	S20	W01	05	28.5	4	(BG)					
5503		PALE	05	28	1735	S19	W02	05	28.6		B	CRO	10	5	4	4
5503		HOLL	05	28	1810	S19	E05	05	29.1		A	AX		3		2
5503		LEAR	05	29	0020	S20	W07	05	28.5		B	BXO	20	3	3	3
5503		SVTO	05	29	0800	S20	W11	05	28.5		A	HR	10	2	1	2
5503		BOUL	05	29	1329	S18	W12	05	28.6		B	BXO	10	5	6	1
5503		RAMY	05	29	1429	S18	W11	05	28.8		B	BXO	10	3	6	1
5503	25260	MWIL	05	29	1530	S18	W06	05	29.2	3	(AP)					
5503	25243	MWIL	05	29	1530	S20	W15	05	28.5	4	(AP)					
5503		HOLL	05	29	1600	S19	W05	05	29.3		B	BXO	20	8	5	3
5503		PALE	05	29	1803	S18	W18	05	28.4		B	BXO	10	8	8	3
5503		LEAR	05	30	0015	S21	W20	05	28.5		B	BXO	10	2	3	3
5503		SVTO	05	30	0755	S22	W21	05	28.7		B	BXO	10	4	4	3
5503		PALE	05	30	1809	S19	W34	05	28.2		A	AX		2	1	3
5503	25260	MWIL	05	31	1515	S18	W34	05	29.0	4	(AP)					
5503	25260	MWIL	06	01	1445	S18	W43	05	29.4	3	(B)					
5503	25260	MWIL	06	02	1440	S19	W57	05	29.4	4	(B)					
5503	25260	MWIL	06	03	1430	S18	W71	05	29.3	4	(B)					
5503A		LEAR	06	01	0034	S28	W36	05	29.3		B	BXO	10	2	4	4
5503B	25259	MWIL	05	27	1515	N26	E28	05	29.8	4	(B)					
5503B	25259	MWIL	05	29	1530	N26	E01	05	29.7	4	(AP)					
5503B	25272	MWIL	06	02	1440	N26	W51	05	29.7	4	(AP)					

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5505		SVTO	05	23	1046	S18	E79	05	29.5		B	CAO	70	3	3	2
5505		BOUL	05	23	1315	S17	E78	05	29.5		A	HS	120	1	3	1
5505		RAMY	05	23	1335	S19	E77	05	29.4		B	DHI	260	8	6	3
5505		HOLL	05	23	1515	S20	E79	05	29.7		B	CAO	210	6	5	3
5505	25249	MWIL	05	23	1530	S18	E78	05	29.6	5	(AP					
5505		PALE	05	23	1840	S19	E79	05	29.8		B	CKO	260	4	5	3
5505		CULG	05	24	0210	S18	E71	05	29.5		B	CHO	280	4	8	3
5505		SVTO	05	24	1329	S21	E67	05	29.7		B	DKO	200	9	8	2
5505		RAMY	05	24	1431	S24	E67	05	29.8		B	CKO	310	10	16	3
5505		BOUL	05	24	1445	S20	E66	05	29.7		B	DKO	490	7	9	2
5505		HOLL	05	24	1447	S21	E65	05	29.6		B	CKO	350	13	9	3
5505	25249	MWIL	05	24	1515	S18	E67	05	29.7	6	(BG)					
5505		PALE	05	24	1958	S20	E57	05	29.2		B	DKI	460	8	6	3
5505		LEAR	05	25	0040	S21	E59	05	29.5		B	DKO	420	15	7	3
5505		CULG	05	25	0255	S18	E59	05	29.6		B	CKO	280	10	6	3
5505		SVTO	05	25	0547	S19	E59	05	29.7		B	DHI	380	12	5	4
5505		RAMY	05	25	1148	S23	E55	05	29.7		B	CKI	450	18	15	2
5505		BOUL	05	25	1425	S19	E54	05	29.7		B	DKO	520	11	7	3
5505		HOLL	05	25	1455	S19	E53	05	29.7		B	CSI	430	11	6	3
5505	25249	MWIL	05	25	1515	S18	E54	05	29.7	5	(BG)					
5505		PALE	05	25	1847	S19	E52	05	29.7		B	DKI	500	17	7	3
5505		LEAR	05	26	0027	S19	E47	05	29.6		B	DKI	350	9	6	4
5505		CULG	05	26	0250	S19	E47	05	29.7		B	DKO	370	13	7	2
5505		SVTO	05	26	0825	S20	E46	05	29.9		B	DHO	300	17	4	2
5505		RAMY	05	26	1238	S21	E43	05	29.8		B	CKO	500	12	6	3
5505		HOLL	05	26	1320	S20	E42	05	29.8		B	DHI	320	13	8	3
5505	25249	MWIL	05	26	1515	S18	E41	05	29.7	6	(BG)					
5505		BOUL	05	26	1705	S19	E39	05	29.7		B	DKI	520	16	5	3
5505		PALE	05	26	1920	S20	E38	05	29.7		B	DKO	540	24	6	3
5505		CULG	05	27	0302	S19	E35	05	29.8		B	DKO	370	19	6	2
5505		SVTO	05	27	0639	S19	E34	05	29.9		B	DHI	430	15	6	2
5505		BOUL	05	27	1357	S18	E28	05	29.7		B	DKI	450	15	5	3
5505		HOLL	05	27	1428	S21	E28	05	29.7		B	DHI	460	31	10	2
5505	25249	MWIL	05	27	1515	S18	E28	05	29.8	6	(BG)					
5505		PALE	05	27	2000	S20	E26	05	29.8		B	DKI	440	20	6	4
5505		LEAR	05	28	0135	S20	E22	05	29.7		B	DHI	370	14	6	3
5505		CULG	05	28	0330	S19	E21	05	29.7		B	DKO	310	10	5	2
5505		SVTO	05	28	0748	S19	E20	05	29.8		B	DKI	420	31	8	3
5505		RAMY	05	28	1314	S20	E14	05	29.6		B	EKI	370	21	12	2
5505		BOUL	05	28	1345	S19	E15	05	29.7		B	DHI	300	19	6	3
5505	25249	MWIL	05	28	1515	S18	E15	05	29.8	6	(BG)					
5505		PALE	05	28	1735	S20	E12	05	29.6		B	DKI	350	23	11	4
5505		HOLL	05	28	1810	S20	E12	05	29.7		B	DKI	310	11	7	2
5505		LEAR	05	29	0020	S20	E07	05	29.5		B	EKI	420	15	11	3
5505		SVTO	05	29	0800	S20	E04	05	29.6		B	DHO	240	19	10	2
5505		BOUL	05	29	1329	S19	E03	05	29.8		B	DHI	250	9	4	1
5505		RAMY	05	29	1429	S21	E04	05	29.9		B	DHI	320	7	8	1
5505	25249	MWIL	05	29	1530	S18	E02	05	29.8	6	(BP)					
5505		HOLL	05	29	1600	S19	E02	05	29.8		B	DHO	360	14	5	3
5505		PALE	05	29	1803	S20	W02	05	29.6		B	EKI	420	20	11	3
5505		LEAR	05	30	0015	S20	W05	05	29.6		B	EKI	290	11	11	3
5505		CULG	05	30	0300	S19	W04	05	29.8		B	DHI	300	8	3	2
5505		SVTO	05	30	0755	S19	W06	05	29.9		B	DHO	290	10	5	3
5505		HOLL	05	30	1435	S19	W10	05	29.8		B	DHO	300	7	5	4
5505	25249	MWIL	05	30	1515	S18	W11	05	29.8	6	(BG)					
5505		PALE	05	30	1809	S19	W12	05	29.8		B	DKO	350	10	5	3
5505		LEAR	05	31	0110	S21	W17	05	29.7		B	CHO	260	16	7	3
5505		SVTO	05	31	0935	S20	W21	05	29.8		B	DHO	230	4	3	2
5505		HOLL	05	31	1310	S19	W22	05	29.9		B	CHO	270	5	5	3
5505	25249	MWIL	05	31	1515	S18	W24	05	29.8	6	(BG)					
5505		PALE	05	31	1810	S18	W25	05	29.8		B	CHO	330	4	3	2
5505		LEAR	06	01	0034	S20	W31	05	29.7		B	CHO	260	11	14	4
5505		CULG	06	01	0315	S18	W33	05	29.7		B	CHO	280	7	9	2
5505		SVTO	06	01	0935	S18	W38	05	29.6		B	DKO	270	8	8	2
5505		HOLL	06	01	1437	S17	W39	05	29.7		BG	CHO	290	12	10	4
5505	25249	MWIL	06	01	1445	S18	W37	05	29.9	6	(AP)					
5505		BOUL	06	01	1450	S18	W39	05	29.7		B	CSO	210	10	9	3
5505		RAMY	06	01	1800	S17	W43	05	29.6		B	CKO	280	6	8	2
5505		LEAR	06	02	0020	S18	W46	05	29.6		B	CHO	260	5	8	3

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5505		CULG	06	02	0430	S17	W47	05	29.7		B	CHO	230	2	5	2
5505		SVTO	06	02	0713	S17	W50	05	29.6		B	CHO	280	8	10	1
5505		BOUL	06	02	1355	S17	W51	05	29.8		B	CHO	260	5	9	3
5505	25249	MWIL	06	02	1440	S18	W50	05	29.9	6	(AP)					
5505		HOLL	06	02	1515	S16	W52	05	29.8		B	CSO	240	5	11	3
5505		RAMY	06	02	1946	S18	W55	05	29.7		A	CKO	210	3	10	1
5505		LEAR	06	03	0105	S17	W58	05	29.7		B	CHO	270	3	9	3
5505		SVTO	06	03	0645	S17	W65	05	29.4		B	CHO	310	6	14	2
5505	25249	MWIL	06	03	1430	S17	W63	05	29.9	5	(AP)					
5505		RAMY	06	03	1536	S18	W63	05	29.9		A	HK	180	1	3	2
5505		PALE	06	03	2030	S17	W66	05	29.9		A	HH	80	1	3	3
5505		HOLL	06	03	2150	S16	W65	05	30.1		A	HS	140	1	2	2
5505		LEAR	06	04	0020	S18	W69	05	29.8		A	HS	200	1	2	3
5505		SVTO	06	04	1016	S17	W79	05	29.5		A	HS	150	1	3	2
5505		RAMY	06	04	1357	S17	W77	05	29.8		A	HK	120	1	3	3
5505		HOLL	06	04	1545	S17	W78	05	29.8		A	HS	150	1	2	3
5505		PALE	06	04	1935	S18	W80	05	29.8		A	HS	120	1	2	3
5505		LEAR	06	05	0025	S18	W85	05	29.6		A	HS	150	2	2	3
5505		SVTO	06	05	0655	S17	W88	05	29.7		A	AX	10	3	2	2
5508	25248	MWIL	05	23	1530	S25	E78	05	29.7	2	AP					
5508		CULG	05	24	0210	S25	E73	05	29.7		A	AX	10	1	1	3
5508		BOUL	05	24	1445	S27	E66	05	29.7		A	AX	10	1		2
5508	25248	MWIL	05	24	1515	S26	E66	05	29.8	4	(BP)					
5508		PALE	05	24	1958	S26	E66	05	29.9		B	BXO	20	7	8	3
5508		CULG	05	25	0255	S25	E58	05	29.6		A	AX		1		3
5508		SVTO	05	25	0547	S26	E59	05	29.8		B	BXO	10	3	3	4
5508		RAMY	05	25	1148	S26	E53	05	29.6		A	AX	20	1	1	2
5508		BOUL	05	25	1425	S25	E52	05	29.6		A	AX	10	1	1	3
5508		HOLL	05	25	1455	S25	E51	05	29.6		A	AX	10	1	1	3
5508	25248	MWIL	05	25	1515	S26	E52	05	29.7	4	(AP)					
5508		PALE	05	25	1847	S25	E52	05	29.8		B	BXO		2	6	3
5508		LEAR	05	26	0027	S25	E46	05	29.6		A	AX	10	1	1	4
5508		CULG	05	26	0250	S25	E45	05	29.6		A	AX		1		2
5508		SVTO	05	26	0825	S26	E43	05	29.7		A	AX	10	1		2
5508		RAMY	05	26	1238	S26	E39	05	29.5		A	AX	10	1	1	3
5508		HOLL	05	26	1320	S25	E40	05	29.6		A	AX	10	1		3
5508	25248	MWIL	05	26	1515	S25	E38	05	29.6	5	(AP)					
5508		BOUL	05	26	1705	S25	E37	05	29.6		A	AX	10	1	1	3
5508		PALE	05	26	1920	S26	E36	05	29.6		A	AX	10	1	1	3
5508		CULG	05	27	0302	S25	E31	05	29.5		A	AX	10	1	1	2
5508		SVTO	05	27	0639	S25	E33	05	29.8		B	BXO	10	5	3	2
5508		BOUL	05	27	1357	S25	E25	05	29.5		A	AX	10	1	1	3
5508		HOLL	05	27	1428	S25	E26	05	29.6		A	AX	10	1	1	2
5508	25248	MWIL	05	27	1515	S25	E26	05	29.6	4	(BP)					
5508		PALE	05	27	2000	S26	E24	05	29.7		A	AX		1		4
5508		LEAR	05	28	0135	S26	E21	05	29.7		A	AX	10	1	1	3
5508		CULG	05	28	0330	S25	E18	05	29.5		A	AX		1		2
5508		SVTO	05	28	0748	S26	E20	05	29.9		B	BXO	10	3	5	3
5508		RAMY	05	28	1314	S26	E15	05	29.7		A	AX		1		2
5508		BOUL	05	28	1345	S25	E14	05	29.6		A	AX		1		3
5508	25248	MWIL	05	28	1515	S25	E13	05	29.6	4	(AP)					
5508		PALE	05	28	1735	S26	E12	05	29.7		A	AX		1		4
5508		HOLL	05	28	1810	S25	E10	05	29.5		A	AX		1		2
5508		LEAR	05	29	0020	S26	E08	05	29.6		A	AX	10	1	1	3
5508		SVTO	05	29	0800	S26	E06	05	29.8		B	BXO	10	2	6	2
5508		HOLL	05	29	1600	S25	E03	05	29.9		B	BXO	30	12	8	3
5508		HOLL	05	30	1435	S23	W12	05	29.7		B	BXO	10	4	3	4
5508		CULG	06	01	0315	S24	W27	05	30.1		A	AX	10	1		2
5508A		BOUL	06	02	1355	N25	W47	05	30.0		B	BXO		3	4	3
5508B		HOLL	05	31	1310	S12	W20	05	30.0		A	AX		1		3
5508B	25266	MWIL	05	31	1515	S12	W20	05	30.1	4	(AF)					
5508C		SVTO	05	31	0935	S30	W17	05	30.1		A	AX		1		2
5508C		HOLL	05	31	1310	S29	W19	05	30.0		A	AX		1		3
5508C	25267	MWIL	05	31	1515	S29	W19	05	30.1	4	(AF)					
5508C		PALE	05	31	1810	S30	W20	05	30.2		A	AX		1		2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5506		PALE	05	23	1840	N21	E85	05	30.3		A	HA	60	1	3	3
5506		CULG	05	24	0210	N20	E79	05	30.1		A	HS	90	1	2	3
5506		SVTO	05	24	1329	N20	E71	05	30.0		B	CAO	120	2	6	2
5506		RAMY	05	24	1431	N19	E73	05	30.2		A	HA	120	1	2	3
5506		BOUL	05	24	1445	N19	E70	05	29.9		A	HA	120	1	1	2
5506		HOLL	05	24	1447	N22	E73	05	30.2		B	CSO	180	2	6	3
5506	25253	MWIL	05	24	1515	N21	E73	05	30.2	5	(AP)					
5506		PALE	05	24	1958	N21	E70	05	30.2		A	HS	170	1	1	3
5506		LEAR	05	25	0040	N22	E68	05	30.2		A	HA	110	1	2	3
5506		CULG	05	25	0255	N21	E68	05	30.3		A	HS	100	2	2	3
5506		SVTO	05	25	0547	N20	E66	05	30.3		A	HS	190	1	2	4
5506		RAMY	05	25	1148	N20	E61	05	30.1		A	HS	80	1	2	2
5506		BOUL	05	25	1425	N19	E60	05	30.2		A	HA	160	2	3	3
5506		HOLL	05	25	1455	N21	E60	05	30.2		A	HS	160	3	2	3
5506	25253	MWIL	05	25	1515	N20	E60	05	30.2	5	(AP)					
5506		PALE	05	25	1847	N20	E59	05	30.3		B	CKO	140	7	3	3
5506		LEAR	05	26	0027	N22	E55	05	30.2		B	CAO	190	3	4	4
5506		CULG	05	26	0250	N20	E54	05	30.2		A	HA	140	5	2	2
5506		SVTO	05	26	0825	N21	E53	05	30.4		A	HA	140	4	3	2
5506		RAMY	05	26	1238	N20	E49	05	30.3		A	HA	120	2	2	3
5506		HOLL	05	26	1320	N21	E49	05	30.3		A	HS	100	4	2	3
5506	25253	MWIL	05	26	1515	N21	E47	05	30.2	5	(BP)					
5506		BOUL	05	26	1705	N21	E45	05	30.2		A	HA	180	1	3	3
5506		PALE	05	26	1920	N21	E45	05	30.2		A	HK	160	8	4	3
5506		CULG	05	27	0302	N22	E41	05	30.3		B	CAO	130	7	5	2
5506		SVTO	05	27	0639	N21	E40	05	30.3		B	DKO	210	10	4	2
5506		BOUL	05	27	1357	N22	E34	05	30.2		B	DKO	220	10	4	3
5506		HOLL	05	27	1428	N22	E35	05	30.3		B	DAI	200	14	5	2
5506	25253	MWIL	05	27	1515	N22	E34	05	30.2	5	(BG)					
5506		PALE	05	27	2000	N22	E31	05	30.2		B	CKO	250	11	4	4
5506		LEAR	05	28	0135	N22	E28	05	30.2		B	CKO	240	11	4	3
5506		CULG	05	28	0330	N22	E27	05	30.2		B	DKC	310	7	3	2
5506		SVTO	05	28	0748	N21	E26	05	30.3		B	DKO	210	14	4	3
5506		RAMY	05	28	1314	N22	E22	05	30.2		B	DKI	290	7	6	2
5506		BOUL	05	28	1345	N21	E21	05	30.2		B	DAO	230	9	3	3
5506	25253	MWIL	05	28	1515	N22	E21	05	30.2	5	(D)					
5506		PALE	05	28	1735	N22	E18	05	30.1		B	CKO	290	11	6	4
5506		HOLL	05	28	1810	N21	E20	05	30.3		B	DHI	290	7	5	2
5506		LEAR	05	29	0020	N21	E16	05	30.2		B	CKO	290	15	5	3
5506		SVTO	05	29	0800	N21	E11	05	30.2		B	DKI	260	14	6	2
5506		BOUL	05	29	1329	N21	E08	05	30.2		B	DAI	130	9	3	1
5506		RAMY	05	29	1429	N22	E08	05	30.2		B	DHI	250	6	4	1
5506	25253	MWIL	05	29	1530	N22	E07	05	30.2	5	(D)					
5506		HOLL	05	29	1600	N21	E08	05	30.3		B	CHI	260	18	4	3
5506		PALE	05	29	1803	N22	E06	05	30.2		B	CKO	310	17	4	3
5506		LEAR	05	30	0015	N22	E02	05	30.2		B	DHO	220	11	4	3
5506		CULG	05	30	0300	N22	E01	05	30.2		B	DKO	180	11	4	2
5506		SVTO	05	30	0755	N21	W01	05	30.2		B	DHI	230	10	4	3
5506		HOLL	05	30	1435	N22	W05	05	30.2		B	CHO	210	8	4	4
5506	25253	MWIL	05	30	1515	N22	W06	05	30.2	5	(BG)					
5506		PALE	05	30	1809	N22	W06	05	30.3		B	CKO	120	6	4	3
5506		LEAR	05	31	0110	N21	W08	05	30.4		B	CHO	220	5	9	3
5506		SVTO	05	31	0935	N20	W16	05	30.2		B	DHO	200	5	3	2
5506		HOLL	05	31	1310	N19	W13	05	30.5		B	CHO	200	7	9	3
5506	25253	MWIL	05	31	1515	N22	W18	05	30.2	5	(BG)					
5506		PALE	05	31	1810	N20	W18	05	30.4		B	CHO	280	6	3	2
5506		LEAR	06	01	0034	N21	W23	05	30.4		B	CHO	240	10	8	4
5506		CULG	06	01	0315	N21	W25	05	30.3		A	HA	250	3	3	2
5506		SVTO	06	01	0935	N21	W28	05	30.3		B	CKO	210	5	3	2
5506		HOLL	06	01	1437	N21	W30	05	30.4		BD	CAO	170	5	5	4
5506	25253	MWIL	06	01	1445	N22	W31	05	30.3	5	(BF)					
5506		BOUL	06	01	1450	N21	W30	05	30.4		B	CAO	240	5	4	3
5506		RAMY	06	01	1800	N20	W32	05	30.4		B	CKO	170	6	4	2
5506		LEAR	06	02	0020	N21	W36	05	30.3		B	CKO	250	8	6	3
5506		CULG	06	02	0430	N21	W39	05	30.3		A	HA	180	5	3	2
5506		SVTO	06	02	0713	N22	W41	05	30.2		B	DSI	140	8	3	1
5506		BOUL	06	02	1355	N20	W42	05	30.5		B	CAI	110	11	3	3
5506	25253	MWIL	06	02	1440	N21	W44	05	30.3	5	(AP)					

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5506		HOLL	06	02	1515	N22	W44	05	30.3		B	CAO	100	7	4	3
5506		RAMY	06	02	1946	N21	W47	05	30.3		B	CAO	120	4	3	1
5506		LEAR	06	03	0105	N23	W52	05	30.1		B	CKO	190	11	11	3
5506		SVTO	06	03	0645	N22	W54	05	30.2		B	CAO	120	10	7	2
5506	25253	MWIL	06	03	1430	N21	W57	05	30.3	5	(BP)					
5506		RAMY	06	03	1536	N21	W57	05	30.4		B	DAO	150	3	5	2
5506		PALE	06	03	2030	N20	W61	05	30.3		B	CKO	200	5	7	3
5506		HOLL	06	03	2150	N22	W60	05	30.4		B	CAO	100	4	3	2
5506		LEAR	06	04	0020	N20	W63	05	30.3		B	CAO	90	6	2	3
5506		SVTO	06	04	1016	N22	W74	05	29.8		B	CAO	90	3	8	2
5506		RAMY	06	04	1357	N20	W69	05	30.4		A	HA	100	1	2	3
5506		HOLL	06	04	1545	N23	W70	05	30.4		B	CAO	170	5	5	3
5506		PALE	06	04	1935	N21	W72	05	30.4		A	HA	120	3	3	3
5506		LEAR	06	05	0025	N20	W77	05	30.2		B	CAO	70	4	2	3
5506		SVTO	06	05	0655	N20	W85	05	29.9		B	CAO	60	5	10	2
5506		RAMY	06	05	1410	N20	W82	05	30.4		B	BXO	20	3	3	3
5506		HOLL	06	05	1450	N21	W77	05	30.8		A	AX	10	1	1	3
5506	25253	MWIL	06	05	1515	N22	W83	05	30.3	3	AP					
5506		PALE	06	05	1815	N21	W86	05	30.3		A	AX	10	2	1	3
5507		CULG	05	24	0210	N29	E80	05	30.4		A	HS	30	1	1	3
5507		SVTO	05	24	1329	N28	E72	05	30.2		A	HS	60	1	3	2
5507		RAMY	05	24	1431	N28	E76	05	30.5		A	HA	60	1	1	3
5507		BOUL	05	24	1445	N27	E72	05	30.2		A	HA	90	1	1	2
5507		HOLL	05	24	1447	N29	E76	05	30.6		A	HS	120	1	2	3
5507	25254	MWIL	05	24	1515	N28	E75	05	30.5	5	AP					
5507		PALE	05	24	1958	N29	E71	05	30.4		A	HS	120	1	2	3
5507		LEAR	05	25	0040	N29	E70	05	30.5		A	HA	120	1	2	3
5507		CULG	05	25	0255	N29	E70	05	30.6		A	HS	80	1	2	3
5507		SVTO	05	25	0547	N30	E72	05	30.9		B	CSO	120	4	9	4
5507		RAMY	05	25	1148	N28	E64	05	30.5		A	HS	100	1	2	2
5507		BOUL	05	25	1425	N27	E62	05	30.4		A	HA	130	1	2	3
5507		HOLL	05	25	1455	N28	E62	05	30.5		A	HS	140	1	2	3
5507	25254	MWIL	05	25	1515	N28	E62	05	30.5	5	(AP)					
5507		PALE	05	25	1847	N30	E61	05	30.6		A	HS	170	1	2	3
5507		LEAR	05	26	0027	N29	E56	05	30.4		A	HS	130	1	2	4
5507		CULG	05	26	0250	N28	E56	05	30.5		A	HS	150	1	2	2
5507		SVTO	05	26	0825	N28	E55	05	30.6		A	HS	140	1	3	2
5507		RAMY	05	26	1238	N27	E51	05	30.5		A	HA	140	1	2	3
5507		HOLL	05	26	1320	N29	E51	05	30.5		A	HS	70	1	2	3
5507	25254	MWIL	05	26	1515	N28	E48	05	30.4	6	(AP)					
5507		BOUL	05	26	1705	N28	E47	05	30.4		A	HS	160	1	2	3
5507		PALE	05	26	1920	N29	E48	05	30.6		A	HS	130	1	3	3
5507		CULG	05	27	0302	N28	E43	05	30.5		A	HS	120	1	3	2
5507		SVTO	05	27	0639	N28	E42	05	30.5		A	HS	150	1	3	2
5507		BOUL	05	27	1357	N28	E37	05	30.5		A	HS	110	1	2	3
5507		HOLL	05	27	1428	N29	E36	05	30.4		A	HS	110	1	2	2
5507	25254	MWIL	05	27	1515	N28	E36	05	30.4	6	(AP)					
5507		PALE	05	27	2000	N29	E34	05	30.5		A	HS	130	1	3	4
5507		LEAR	05	28	0135	N29	E30	05	30.4		A	HS	100	1	2	3
5507		CULG	05	28	0330	N29	E30	05	30.5		A	HS	110	1	2	2
5507		SVTO	05	28	0748	N28	E28	05	30.5		A	HS	100	1	3	3
5507		RAMY	05	28	1314	N27	E25	05	30.5		A	HA	100	1	2	2
5507		BOUL	05	28	1345	N28	E24	05	30.4		A	HS	100	1	2	3
5507	25254	MWIL	05	28	1515	N28	E23	05	30.4	5	(AP)					
5507		PALE	05	28	1735	N29	E22	05	30.4		A	HS	70	1	2	4
5507		HOLL	05	28	1810	N30	E22	05	30.5		A	HS	70	1	2	2
5507		LEAR	05	29	0020	N28	E18	05	30.4		A	HH	100	1	3	3
5507		SVTO	05	29	0800	N28	E14	05	30.4		A	HS	70	3	3	2
5507		BOUL	05	29	1329	N28	E12	05	30.5		A	HS	90	2	2	1
5507		RAMY	05	29	1429	N28	E11	05	30.5		A	HS	120	2	3	1
5507	25254	MWIL	05	29	1530	N28	E10	05	30.4	6	(AP)					
5507		HOLL	05	29	1600	N28	E10	05	30.4		A	HS	160	2	2	3
5507		PALE	05	29	1803	N29	E09	05	30.4		B	CSO	120	3	2	3
5507		LEAR	05	30	0015	N27	E05	05	30.4		B	CHO	80	3	3	3
5507		CULG	05	30	0300	N28	E03	05	30.3		B	CSO	100	9	5	2
5507		SVTO	05	30	0755	N29	E01	05	30.4		B	DSO	130	7	4	3
5507		HOLL	05	30	1435	N28	W03	05	30.4		B	CSO	90	5	5	4
5507	25254	MWIL	05	30	1515	N28	W03	05	30.4	6	(BG)					

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5507		PALE	05	30	1809	N29	W04	05	30.4		B	DKO	120	5	5	3
5507		LEAR	05	31	0110	N28	W09	05	30.3		B	CSO	100	4	5	3
5507		SVTO	05	31	0935	N28	W12	05	30.5		B	CSO	80	2	2	2
5507		HOLL	05	31	1310	N29	W13	05	30.5		A	HS	60	1	2	3
5507	25254	MWIL	05	31	1515	N28	W15	05	30.5	6	(AP)					
5507		PALE	05	31	1810	N28	W16	05	30.5		A	HS	30	1	2	2
5507		LEAR	06	01	0034	N28	W21	05	30.5		A	HS	100	1	2	4
5507		CULG	06	01	0315	N29	W21	05	30.6		A	HS	120	1	2	2
5507		SVTO	06	01	0935	N29	W26	05	30.5		A	HS	80	1	2	2
5507		HOLL	06	01	1437	N29	W28	05	30.5		A	HS	90	1	2	4
5507	25254	MWIL	06	01	1445	N28	W27	05	30.6	5	(AP)					
5507		BOUL	06	01	1450	N28	W27	05	30.6		A	HA	130	1	3	3
5507		RAMY	06	01	1800	N28	W30	05	30.5		A	HA	80	1	2	2
5507		LEAR	06	02	0020	N27	W35	05	30.4		B	CAO	90	4	8	3
5507		CULG	06	02	0430	N29	W35	05	30.5		A	HS	80	1	2	2
5507		SVTO	06	02	0713	N29	W38	05	30.4		A	HS	90	1	2	1
5507		BOUL	06	02	1355	N27	W37	05	30.8		A	HA	110	2	2	3
5507	25254	MWIL	06	02	1440	N29	W40	05	30.6	5	(AP)					
5507		HOLL	06	02	1515	N28	W45	05	30.2		B	CSO	90	3	11	3
5507		RAMY	06	02	1946	N29	W43	05	30.5		A	HA	130	1	2	1
5507		LEAR	06	03	0105	N29	W47	05	30.5		B	CSO	80	2	3	3
5507		SVTO	06	03	0645	N29	W51	05	30.4		A	HA	100	2	2	2
5507	25254	MWIL	06	03	1430	N29	W55	05	30.4	6	(BP)					
5507		RAMY	06	03	1536	N29	W55	05	30.4		B	CSO	90	2	5	2
5507		PALE	06	03	2030	N29	W59	05	30.3		B	CAO	90	6	5	3
5507		HOLL	06	03	2150	N30	W59	05	30.4		B	CSO	60	2	4	2
5507		LEAR	06	04	0020	N29	W61	05	30.3		B	CSO	80	2	7	3
5507		SVTO	06	04	1016	N30	W70	05	30.0		A	HA	60	1	2	2
5507		RAMY	06	04	1357	N29	W67	05	30.4		A	HA	50	1	2	3
5507		HOLL	06	04	1545	N29	W68	05	30.4		A	HS	110	1	2	3
5507		PALE	06	04	1935	N29	W70	05	30.4		A	HS	60	1	2	3
5507		LEAR	06	05	0025	N28	W73	05	30.4		A	HA	80	2	2	3
5507		SVTO	06	05	0655	N29	W86	05	29.6		A	HA	50	1	6	2
5507		BOUL	06	05	1300	N29	W80	05	30.4		A	HS	60	1	2	1
5507		RAMY	06	05	1410	N28	W78	05	30.6		A	HA	30	1	2	3
5507		HOLL	06	05	1450	N29	W78	05	30.6		A	HS	30	1	2	3
5507	25254	MWIL	06	05	1515	N29	W79	05	30.5	4	(AP)					
5507		PALE	06	05	1815	N29	W81	05	30.5		A	HS	50	1	2	3
5515	25261	MWIL	05	29	1530	S20	E16	05	30.9	3	(BP)					
5515		HOLL	05	30	1435	S22	E04	05	30.9		B	CAO	40	15	6	4
5515	25261	MWIL	05	30	1515	S22	E04	05	30.9	5	(BG)					
5515		PALE	05	30	1809	S21	E03	05	31.0		B	CAI	90	15	6	3
5515		LEAR	05	31	0110	S21	W03	05	30.8		B	DAO	110	18	6	3
5515		SVTO	05	31	0935	S23	W07	05	30.8		B	DAO	130	11	7	2
5515		HOLL	05	31	1310	S22	W09	05	30.8		B	DAI	120	12	6	3
5515	25261	MWIL	05	31	1515	S22	W10	05	30.9	5	(BG)					
5515		PALE	05	31	1810	S23	W11	05	30.9		B	CAO	120	9	7	2
5515		LEAR	06	01	0034	S22	W16	05	30.9		B	DAI	170	13	5	4
5515		CULG	06	01	0315	S20	W18	05	30.8		B	DAO	150	8	6	2
5515		SVTO	06	01	0935	S22	W20	05	31.0		B	DAO	240	16	6	2
5515		HOLL	06	01	1437	S21	W22	05	31.0		B	DAI	170	19	5	4
5515	25261	MWIL	06	01	1445	S22	W22	05	31.0	5	(BP)					
5515		BOUL	06	01	1450	S22	W23	05	30.9		B	DAO	200	13	5	3
5515		RAMY	06	01	1800	S22	W24	05	31.0		B	DAO	290	9	6	2
5515		LEAR	06	02	0020	S22	W28	05	31.0		B	DKI	190	14	7	3
5515		CULG	06	02	0430	S21	W31	05	30.9		B	DAC	200	9	22	2
5515		SVTO	06	02	0713	S21	W32	05	30.9		B	DAI	250	12	6	1
5515		BOUL	06	02	1355	S23	W35	05	31.0		B	DAI	190	18	6	3
5515	25261	MWIL	06	02	1440	S22	W37	05	30.9	4	(B)					
5515		HOLL	06	02	1515	S21	W37	05	30.9		B	DAI	200	24	5	3
5515		LEAR	06	03	0105	S21	W42	05	30.9		B	DKI	220	17	8	3
5515		SVTO	06	03	0645	S22	W46	05	30.8		B	DAO	310	6	6	2
5515	25261	MWIL	06	03	1430	S21	W50	05	30.9	5	(B)					
5515		RAMY	06	03	1536	S22	W49	05	31.0		B	DAI	190	5	6	2
5515		PALE	06	03	2030	S21	W54	05	30.8		B	DKI	260	6	7	3
5515		HOLL	06	03	2150	S21	W52	05	31.0		B	DAO	150	7	6	2
5515		LEAR	06	04	0020	S22	W55	05	30.9		B	DAI	210	9	6	3
5515		SVTO	06	04	1016	S22	W63	05	30.7		B	CAI	120	8	8	2

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

MAY 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
5515		RAMY	06	04	1357	S22	W62	05	30.9		B	DAI	210	7	6	3
5515		HOLL	06	04	1545	S22	W65	05	30.8		B	CAO	150	12	6	3
5515		PALE	06	04	1935	S21	W66	05	30.8		B	CAO	170	7	6	3
5515		LEAR	06	05	0025	S22	W68	05	30.9		B	CAO	140	5	5	3
5515		SVTO	06	05	0655	S22	W75	05	30.6		A	HK	120	1	3	2
5515		RAMY	06	05	1410	S23	W77	05	30.7		A	HA	80	4	2	3
5515		HOLL	06	05	1450	S21	W78	05	30.7		A	HS	120	1	2	3
5515	25261	MWIL	06	05	1515	S22	W80	05	30.6	4	(BP)					
5515		PALE	06	05	1815	S21	W80	05	30.7		A	HA	60	2	2	3
5515		CULG	06	06	0310	S22	W85	05	30.7		A	HA	20	1	2	3
5515A		HOLL	05	30	1435	N24	E06	05	31.1		A	AX		1		4
5515B		HOLL	05	30	1435	S35	E10	05	31.4		A	AX		1		4
5511		LEAR	05	25	0040	S18	E79	05	31.0		A	AX	10	1	1	3
5511		SVTO	05	25	0547	S19	E75	05	31.0		A	AX	10	1		4
5511		LEAR	05	26	0027	S22	E70	05	31.4		A	AX	10	4	6	4
5511		CULG	05	26	0250	S22	E73	05	31.7		B	CSO	30	2	4	2
5511		SVTO	05	26	0825	S23	E68	05	31.6		A	AX		1		2
5511		RAMY	05	26	1238	S23	E67	05	31.7		B	BXO	10	3	4	3
5511		HOLL	05	26	1320	S22	E66	05	31.6		B	BXO	10	4	5	3
5511	25256	MWIL	05	26	1515	S22	E64	05	31.5	4	(B)					
5511		BOUL	05	26	1705	S23	E63	05	31.6		B	BXO	20	3	4	3
5511		PALE	05	26	1920	S22	E61	05	31.5		B	BXO	10	3	5	3
5511		CULG	05	27	0302	S23	E56	05	31.4		A	AX	10	2	1	2
5511		SVTO	05	27	0639	S22	E59	05	31.8		B	BXO	10	5	5	2
5511		BOUL	05	27	1357	S23	E49	05	31.3		B	BXO	10	2	2	3
5511		HOLL	05	27	1428	S22	E49	05	31.4		A	AX	20	2	1	2
5511	25256	MWIL	05	27	1515	S22	E51	05	31.5	4	(BP)					
5511		PALE	05	27	2000	S22	E48	05	31.5		A	AX	10	2	2	4
5511		LEAR	05	28	0135	S22	E46	05	31.6		B	CRO	20	3	5	3
5511		CULG	05	28	0330	S21	E42	05	31.4		B	CSO	20	3	4	2
5511		SVTO	05	28	0748	S22	E43	05	31.6		B	CRO	20	7	6	3
5511		RAMY	05	28	1314	S23	E40	05	31.6		B	DRI	40	9	6	2
5511		BOUL	05	28	1345	S21	E38	05	31.5		B	DRO	20	6	5	3
5511	25256	MWIL	05	28	1515	S22	E38	05	31.5	5	(B)					
5511		PALE	05	28	1735	S22	E36	05	31.5		B	DAO	30	9	6	4
5511		HOLL	05	28	1810	S21	E35	05	31.4		B	DSO	40	4	6	2
5511		LEAR	05	29	0020	S21	E32	05	31.5		B	DSO	80	8	6	3
5511		SVTO	05	29	0800	S22	E29	05	31.6		B	DAO	40	16	7	2
5511		BOUL	05	29	1329	S21	E26	05	31.5		B	CRI	20	10	6	1
5511		RAMY	05	29	1429	S22	E25	05	31.5		B	CRI	40	13	7	1
5511	25256	MWIL	05	29	1530	S22	E25	05	31.6	5	(BF)					
5511		HOLL	05	29	1600	S22	E24	05	31.5		B	BXO	60	19	6	3
5511		PALE	05	29	1803	S22	E20	05	31.3		B	EAI	70	22	14	3
5511		LEAR	05	30	0015	S22	E16	05	31.2		B	EAI	170	29	13	3
5511		CULG	05	30	0300	S20	E15	05	31.3		B	CAI	70	19	14	2
5511		SVTO	05	30	0755	S22	E13	05	31.3		BG	FAO	140	42	16	3
5511		HOLL	05	30	1435	S22	E11	05	31.4		B	DAI	90	26	8	4
5511	25256	MWIL	05	30	1515	S22	E12	05	31.5	5	(BG)					
5511		PALE	05	30	1809	S21	E09	05	31.4		B	DAI	210	31	8	3
5511		LEAR	05	31	0110	S22	E06	05	31.5		B	DAO	180	38	8	3
5511		SVTO	05	31	0935	S23	E02	05	31.5		B	DAO	210	24	9	2
5511		HOLL	05	31	1310	S21	E00	05	31.5		B	DAI	130	25	8	3
5511	25256	MWIL	05	31	1515	S22	W02	05	31.5	5	(BG)					
5511		PALE	05	31	1810	S22	W03	05	31.5		B	DAI	220	12	8	2
5511		LEAR	06	01	0034	S22	W07	05	31.5		B	DKI	220	43	8	4
5511		CULG	06	01	0315	S20	W09	05	31.4		BG	DKI	200	19	10	2
5511		SVTO	06	01	0935	S21	W11	05	31.5		B	DKI	320	36	8	2
5511		HOLL	06	01	1437	S21	W14	05	31.5		BG	DAC	300	40	10	4
5511	25256	MWIL	06	01	1445	S22	W13	05	31.6	5	(B)					
5511		BOUL	06	01	1450	S21	W13	05	31.6		B	EKC	680	35	11	3
5511		RAMY	06	01	1800	S21	W15	05	31.6		BG	DAI	400	24	9	2
5511		LEAR	06	02	0020	S21	W20	05	31.5		B	DKI	400	28	9	3
5511		CULG	06	02	0430	S21	W22	05	31.5		B	DKC	350	31	9	2
5511		SVTO	06	02	0713	S20	W24	05	31.5		B	DKI	510	35	9	1
5511		BOUL	06	02	1355	S21	W26	05	31.6		B	DKI	380	40	8	3
5511	25256	MWIL	06	02	1440	S21	W28	05	31.5	5	(D)					

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

MAY 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
5511		HOLL	06	02	1515	S20	W28	05	31.5		B	DAI	430	33	8	3
5511		RAMY	06	02	1946	S20	W29	05	31.6		B	DKI	480	20	10	1
5511		LEAR	06	03	0105	S20	W34	05	31.4		B	DKI	370	27	10	3
5511		SVTO	06	03	0645	S20	W37	05	31.4		B	DKO	560	20	10	2
5511	25256	MWIL	06	03	1430	S20	W41	05	31.5	5	(D)					
5511		RAMY	06	03	1536	S20	W40	05	31.6		BG	DKC	480	16	8	2
5511		PALE	06	03	2030	S20	W44	05	31.5		BG	DKI	500	24	8	3
5511		HOLL	06	03	2150	S19	W43	05	31.6		BG	DKI	360	20	9	2
5511		LEAR	06	04	0020	S21	W46	05	31.5		B	DKI	410	22	9	3
5511		SVTO	06	04	1016	S19	W53	05	31.4		B	DKI	290	19	9	2
5511		RAMY	06	04	1357	S20	W54	05	31.4		B	DKI	370	13	9	3
5511		HOLL	06	04	1545	S19	W55	05	31.4		B	DAI	310	32	9	3
5511		PALE	06	04	1935	S20	W56	05	31.5		B	CKO	360	15	10	3
5511		LEAR	06	05	0025	S21	W59	05	31.5		B	DKI	340	15	9	3
5511		SVTO	06	05	0655	S21	W64	05	31.4		BD	CKO	240	7	8	2
5511		BOUL	06	05	1300	S19	W68	05	31.3		B	DKO	250	5	9	1
5511		RAMY	06	05	1410	S21	W68	05	31.4		B	DKI	210	13	7	3
5511		HOLL	06	05	1450	S18	W68	05	31.4		B	DAI	180	6	4	3
5511	25256	MWIL	06	05	1515	S20	W72	05	31.1	5	(BG)					
5511		PALE	06	05	1815	S20	W70	05	31.4		A	HA	240	4	3	3
5511		CULG	06	06	0310	S20	W75	05	31.4		B	CAO	60	3	3	3
5511		BOUL	06	06	1316	S19	W80	05	31.4		A	HA	90	2	2	2
5511		RAMY	06	06	1320	S19	W80	05	31.4		B	DAI	100	6	4	4
5511		HOLL	06	06	1450	S18	W80	05	31.5		B	DSO	70	2	6	3
5511	25256	MWIL	06	06	1515	S19	W85	05	31.1	4	AF					

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	0056	0116	0400	3	3	1		1	1		0108E	M5.5	5470
01	0740	0815U	0859	1	1		1				*		
01	1303	1308	1333	1+	1		1				1315	C1.8	5470
01	1346	1353	1429	1	3		2				No flare		
01	1527	1537	1600	1	3		4		1	1	1433	C3.0	5470
01	1942	1944	2010	1+	1					1	1930	C2.1	5470
01	2046	2055	2109D	1-	5			1		3	2045	C2.8	5470
01	2109E	2130	2200D	1-	5			1		3	2109	C5.5	5470
01	2200E	2206	2233	1-	5			1		1	No flare		
01	2249	2307	0000	1-	1			1			2245	C3.5	5470
02	0115	0120	0130U	1-	1				1		0115	C4.4	5470
02	0134	0210	0304	1+	3			1	1		0154E	C9.0	5470
02	0315E	0319	0349	1-	3			1	1		No flare		
02	0410	0422	0618D	3	3	1		1	1		0407	M2.1	5470
02	0625	0631	0652	1-	1			1			0616	C3.2	
02	0750	0801	0830D	1-	5	1	1	1	1		0750E	C3.5	
02	0830E	0838	0913	1-	5		1	1	1		0825	C2.7	
02	0958	1022	1128	3	1		1				1021E		5470
02	1404	1419	1509	1	5	3	5	1	1	5	1400	C7.4	5470
02	1600	1619	1711	2+	3					3	1602	M1.4	5470
02	1611	1633	1723	1	5	3	4	1	1	5	1602	M1.4	5470
02	1844	1852	1953	2	3					2	1828	M3.0	5464
02	1847	1919	2043	2	5		1	1		5	1841		5464
03	0324	0358	0652	3	5	3		1	1	1	0326	X2.3	5470
03	1012	1028	1047	1	1		1				1018E		5470
03	1125	1137	1200	1	5	2	3		1	2	1123	C5.3	5470
03	1303	1315	1330	1-	5		2		1	3	1258	C2.9	5470
03	1544	1548	1559	1-	3					2	1544	C2.7	
03	1727	1730	1744	1-	3		1			3	1726	C2.0	5464
03	1925	1938	2028	2+	3		1			4	1927	M1.4	5464
03	1935	2000	2048	1	5			1		1	1927	M1.4	5464
03	2058	2107	2153	1	5		1	1		7	2054	M1.6	5470
03	2149	2201	2223U	2	1		1				2211		5464
03	2307	2311	2339	1-	1			1			2300	C3.6	5464
04	0101	0110	0134	1-	3	1		1	1		0100	C3.4	5464
04	0247	0259	0330	1	3	1		1	1		0246	C3.7	5464
04	0334	0342	0418D	2+	3	1		1	1		0335	M1.1	
04	0418E	0426	0521D	3	5	3	2	1	2	1	0313	M4.4	5464
04	0526E	0530	0553D	1	1			1			0524	C3.4	5464
04	0552E	0600	0645	1-	1			1			0555E	C2.9	
04	0620	0628	0655	1	1		1				0621		5468
04	0708	0718	0739D	2	5	1	5	1	2	2	0707E	C5.2	
04	0712	0729	0743D	1+	5	1		1		1	0716		5464
04	0739E	0742	0817	1+	5	1	2	1	1	1	0738	C5.5	5464
04	0819E	0825	0949	2-	5	4	7	1	2	3	0819	M2.8	5464
04	0957	1006	1015	1-	5	1	5	1	1	2	0954	C5.9	
04	1018E	1041	1100	1-	5	3	4	1	1	2	1040	C7.2	5470
04	1103	1128	1234	3-	5	3	5	1	1	5	1106E	M5.4	5464
04	1518	1527	1610	1-	5		5	1	1	4	1516	C4.7	5470
04	1616	1627	1725	1-	5	3	5	1	1	7	1607	C8.8	5464
04	1731	1737	1807	1-	5		2	1	1	6	1719	C9.7	5464
04	1802	1808	1838	2	1	1					No flare		
04	1839	1842	1859	1-	3		1			3	1838	M1.1	5464
04	1909	1926	2018	2	5		1	1		4	1857	M2.3	
04	2030	2045	2120	1	5		1	1		6	2028	M1.1	5464
04	2220	2225	2302	1	5	1	1	1		3	2220	M1.0	5464
05	0001	0001	0016U	1-	1					1	No flare		
05	0032	0045	0054D	1-	3			1	1		0030E	C3.1	
05	0054E	0108	0208	2-	3			1	1		*		
05	0248	0254	0341D	2	3	1		1	1		0243	C7.5	5464
05	0341E	0347	0408D	1-	1			1			0243	C7.5	5464
05	0408E	0416	0513	1	3			1	1		0406	C4.8	5470
05	0523	0535	0709	2+	5	2	3	1	2	3	0524E	M1.1	

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
05	0723	0739	1057	3	5	3	5	1	2	3	0723E	X2.4	5470
05	1030	1031	1048	1-	1					1	No flare		
05	1209	1237	1302	1-	5		3	1	1	3	1208	C5.0	5464
05	1307	1316	1335	1-	5	1	2		1	2	1257	C3.5	5464
05	1718	1722	1730	1-	5				1	4	1718	C4.3	5470
05	1835	1842	1854	1-	3		1			1	1837		5464
05	2023	2027	2039	1-	1					1	2023	C2.0	
05	2342	2358	0035	1-	3			1		1	No flare		
06	0109	0133	0241	1-	3			1	1		0127		5464
06	0206	0216	0224	1-	1				1		*		
06	0254	0301	0320	1-	3			1	1		No flare		
06	0508	0516	0528D	2	5	1		1	2	1	0520E	M2.0	
06	0528E	0539	0646	3	5	3	2	1	2	2	0520E	M2.0	
06	0651	0659	0733	1-	1			1			0654	C2.6	5463
06	0850	0856	0928	1-	5	1	1	1	2		0843	C2.9	5464
06	1447	1513	1648	2+	5	3	3	1	1	5	1443	M1.7	5464
06	1701	1713	1803	1	5	3	3	1	1	8	1659	M4.2	5476
06	1933	1952	2045	1-	5			1		3	1925	C6.0	5470
06	2117	2119	2150	1-	1			1			2127		5476
06	2206	2212	2227	1-	1			1			No flare		
06	2256	2258	2319	1-	1			1			2243	C3.4	
07	0009	0022	0047	1-	3			1	1		0012	C8.9	5470
07	0110	0115	0128	1-	1					1	0117		5476
07	0117E	0127	0220	1-	3			1	1		No flare		
07	0319	0327	0338	1-	1				1		No flare		
07	0455	0507	0518	1-	1				1		0454	C4.3	
07	0457	0533	0547D	1-	3			1	1		0454	C4.3	
07	0547E	0557	0658D	1	3			1	1		0454	C4.3	
07	0659	0715	0820	2	5	2	4	1	2	3	0651	C9.6	5476
07	0826	0833	0850	1-	1				1		0823	C2.0	
07	0937	0940	0950	1-	3	1			1		0936	C2.7	
07	1332	1346U	1451	1	1		1				No flare		
07	1753	1756	1815	1	3					3	1752	C5.0	5464
07	1913	1915	1936	1-	5			1		6	1910	C6.8	5464
07	1938	1947	2012	1-	1			1			1933	C7.0	5464
07	2017	2025	2049	1-	1			1			2010	C6.6	5470
07	2113	2120	2302	2-	5	1	1	1		6	2113	M2.0	5464
07	2339	2350	0020	1-	3			1	1		2344	C4.3	5470
07	2357	0019	0117D	1+	1			1			No flare		
08	0114	0147	0222D	2	1	1		1	1		0110	M1.2	5470
08	0222E	0233	0308D	2-	3	1		1	1		0221	M1.1	
08	0308E	0316	0408	1-	1			1			No flare		
08	0515	0530	0548	1	3			1	1		0517	C5.2	5474
08	0700	0704	0730	1+	1					1	No flare		
08	1014	1022	1100	1-	5		1	1	1	2	1010	C3.9	
08	1540	1552U	1626	1	1		1				1526		5481
08	2112	2131	2257	1-	1			1			2102	C4.9	5474
08	2333	2340	2348	1-	1				1		2336		5481
09	0454	0510	0615	1+	5	1	2	1	2		0453	C5.6	
09	0857	0911	0945	1	1				1		No flare		
09	1105	1117	1201	1-	5	3	3	1	1	1	1116	C5.4	5476
09	1407	1412	1430	1	1					1	No flare		
09	1641	1646	1715	2	3					2	1653	M1.0	5474
09	1652	1715	1815	1	5	1	2	1	1	6	1653	M1.0	5474
10	0029	0032	0147	1-	3			1	1		0026	C3.4	
10	0205	0210	0229D	1-	3			1	1		0204	C3.3	5476
10	0229E	0233	0315	1-	3			1	1		0228	C3.4	
10	0421	0429	0638	2+	5	2		1	2	1	0419	M1.4	
10	1103	1114	1125	1-	5	1	2	1	1	2	No flare		
10	1502	1504	1517	1-	1					1	No flare		
10	1630	1635	1648D	1-	1					1	1631	C2.5	5476
10	2358	0020	0048U	1-	5				1	1	0023	C3.9	

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
11	0023	0035	0112	1-	3			1	1		0023	C3.9	
11	0124	0139	0215	1-	3			1	1		0122	C2.6	
11	0511	0530	0611D	1-	3			1	1		0522		5476
11	0611E	0637	0718	1-	5	1		1	2	1	0629	C4.8	
11	0725	0728	0745	1	1					1	0729	C8.2	5476
11	0752	0801	0902	1+	5	4	1	1	2	2	0749	C8.2	5476
11	1742	1745	1801	1-	1					1	1740	C2.6	
11	2304	2307	2324	1-	1			1			2316	C2.1	5482
12	0152	0200	0225	1-	1			1			*		
12	0641	0649	0716	1-	5	1		1	1		0639	C2.6	
12	0722	0731	0809	1-	5	1		1	2		0720	C2.5	
12	1039	1042	1053	1-	1					1	*		
12	1059	1119	1159	2-	5	4	4	1	1	4	1119E	M1.2	5476
12	1227	1235	1300	1-	5	1			1	2	1225	C4.2	5476
12	1304	1311	1325	1-	5	1			1	2	1303	C3.6	
12	1412	1415	1429	1-	3					2	1402	C3.6	5476
12	1520	1525	1547	2-	1					1	1532		5478
12	2310	2320	2346	1-	1			1			2308		5479
13	0016	0021	0045	1-	3			1	1		No flare		
13	0900	0903	0931	2	1		1				No flare		
13	1503	1506	1558	1-	5		3	1	1	5	1455	C4.4	5488
14	0000	0020	0035U	1-	1				1		0021		5488
14	0552	0557	0640	1-	1			1			0548	C3.4	5474
14	0652	0656	0737	1-	5	2	1	1	1	2	0654	C4.9	5484
14	1627	1628	1631	1	1	1					1623		5481
14	1643	1655	1720	1-	5		2		1	7	1643	C5.7	5478
15	0045	0100	0115U	1-	1				1		0045		5488
15	0533	0541	0641	1	5	1	1	1	1	1	0531	C6.5	5481
16	0314	0330	0349U	1-	1				1		0305	C3.7	
16	0510	0516	0521D	1-	1			1			*		
17	0904	0907	0911	1	1	1					0908	C3.7	5491
17	0910	0928	1049	1-	5		1	1	1		0908	C3.7	5491
17	0954	1000	1020	1-	3	1			1	1	No flare		
17	2329	2335	0019	1-	1			1			No flare		
18	0136	0144	0156U	1-	1				1		No flare		
18	1812	1813	1829	1-	3					2	1812	C3.1	5488
19	1446	1449	1505	1-	5				1	1	1443	C1.8	5488
19	1654	1657	1712	1-	1					1	1627	C2.2	5488
20	0231	0258	0333	1-	1				1		0258		5495
20	0355	0404	0427	1-	1			1			No flare		
20	0433	0436	0515	1-	3			1	1		0424	C3.3	5495
20	0645	0653	0721	1-	1			1			No flare		
20	0921	0930	1022	1-	5		1	1	2	1	0919	C1.9	
20	1120	1130	1225	2	3					2	0929	C5.2	
20	1154	1200	1215	1-	3		1		1	1	0929	C5.2	
20	1309	1317	1350	1-	5	1	1		1	5	1307	C4.3	5488
20	1459	1501	1521	1-	5				1	4	1500	C3.5	5483
20	2125	2135	2220	1-	1			1			2120	C4.0	
21	0010	0020	0037	1-	1				1		No flare		
21	0210	0227	0309	1-	1			1			No flare		
21	0316	0326	0416	1-	3			1	1		0318	C2.7	
21	0636	0647	0745	1+	5	1	3	1	2	2	0638	C5.8	5495
21	1148	1157	1157D	1-	3	1			1	1	1133	C3.3	5495
21	1202	1217	1250	1	5	1			1	3	1201	C4.0	5495
21	1441	1445	1502D	1	1					1	1434	M1.1	5495
21	1454	1504	1511D	1-	5	1	1	1	1	3	1434	M1.1	5495
21	1511E	1519	1605	1-	5	1	1	1	1	3	1434	M1.1	5495
21	1737	1744	1801	1	5	3	3	1	1	10	1734	M1.9	5495

* = No flare patrol.

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Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
21	1801E	1807	1845D	1+	5	1	1	1	1	8	1738	M3.0	5495
21	1845E	1904	1951	1+	5			1		5	1842	M1.0	5495
21	2233	2254	2359D	1+	5			1		5	2247	C8.3	5495
22	0006	0037	0243	3-	3	1		1	1		0002	M5.7	5497
22	0429	0442	0557D	1+	3	1		1	1		0431	C5.7	5495
22	0546	0549	0558D	1-	5				1		0546	C5.6	5497
22	0557E	0608	0742	2-	5	1		1	2	1	No flare		
22	0653	0701	0710	1-	1				1		0655E		5497
22	0753	0801	0921	1-	5		1	1	2		0801E	C4.5	5497
22	1016	1025	1108	1	5	1	2	1	1	2	1016	C5.8	5497
22	1120	1125	1135	1-	5	1			1	2	1123E	C3.7	
22	1140	1146	1200	1-	3	1			1		1123E	C3.7	
22	1202	1229	1309	1-	5	1		1	1	1	1206	C5.2	5497
22	1517	1535	1700	2	5	3	3	1	1	9	1515	M1.6	5495
22	1845	1851	1919	1+	3					2	1847	C3.9	5497
22	1938	1949	2006	1-	1			1			1938	C4.0	5494
22	2304	2313	2334	1-	1			1		4	*		
22	2359E	0033	0332	3	1			1			0001	C4.0	
23	0002	0009	0038	1-	3			1	1		0001	C4.0	
23	0049	0055	0109U	1-	1				1		0057		5495
23	0126	0133	0145D	1-	1				1		0126E		5503
23	0143	0148	0259D	2+	3	1		1	1		0146		5495
23	0258E	0330	0430	1+	1	1		1	1		0300	C7.4	5497
23	0440	0458	0534D	2	5	2		1	2		0441	C9.0	
23	0621E	0631	0706D	1-	1			1			No flare		
23	0703	0722	0732D	2-	5		1	1	1	2	0707	C8.6	5497
23	0732E	0741	0801D	2-	5	1	1	1	1	2	0733	C8.9	5497
23	0801E	0812	0936	2+	5	3	2	1	1	3	0800	M1.0	
23	0851	0853	0859	1-	1					1	No flare		
23	1200	1210	1225	1-	3				1	1	No flare		
23	1254	1312	1351	1	5	2	4	1	1	6	1253		5497
23	1442	1455	1520	1+	5	1	3		1	4	1438	C7.4	5488
23	1725	1728	1755	2-	3					2	1720	C4.5	
23	1820	1826	1837	1-	3					2	1820	C5.0	5495
23	2003	2015	2044	1-	5			1		6	2003	C7.8	5497
23	2105	2134	2211	1-	5			1		4	2105	C9.2	5497
23	2314	2325	2354	1-	1			1			2316		5495
24	0008	0014	0107	1-	3			1	1		0006		5505
24	0108	0120	0136	1-	1				1		No flare		
24	0142	0157	0208	1-	1				1		No flare		
24	0217	0235	0313	1-	3			1	1		No flare		
24	0319	0328	0346	1-	1			1			0301		5505
24	0347	0357	0416	1-	1			1			No flare		
24	0433	0440	0502	1-	1			1			No flare		
24	0611	0618	0643	1-	5		1	1	1		0609E		5488
24	0751	0801	0832	1-	5			1	1	1	0749	C5.7	5495
24	0850	0856	1010	1-	5		1	1	1		0847	C4.0	
24	1347	1402	1455	2	5	3	6	1	1	10	1346	M1.2	5497
24	1505	1508	1525	1-	5				1	4	No flare		
24	1929	1937	2012	2-	3					7	1926	C7.4	5497
24	2130	2155	2304	2-	5	1		1		8	2134	M2.8	
24	2320	2324	2343	1-	5			1	1	1	2323	C6.1	5495
											No flare		
25	0014	0018	0038	1-	3			1	1				
25	0037	0042	0101	1-	1			1			0032		5497
25	0509	0539	0627D	2	5			1	2		0513		5497
25	0627E	0635	0709	1-	5		1	1	1		0634		5490
25	0737	0743U	0811	1	1		1				0750		5498
25	0840	0846	0913	1-	5		2	1	1		0838	C2.7	
25	0924	0939	1000	1-	1		1		1		*		
25	1038	1051	1157	2	5	3	5	1	1	2	1040	C8.8	5497
25	1107	1115	1200	1-	1		1		1		1108E		5497
25	1256	1307	1315	1-	3		3		1		No flare		
25	1321	1327	1342	1	1					1	1318		5506
25	1523	1602	1721	2-	5	2	4	1	1	8	1521	M1.9	5497
25	2321	2333	0006	1-	3			1	1		2320	C4.0	5497

* = No flare patrol.

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Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
26	0023	0038	0054	1-	1				1		No flare		
26	0100	0118	0135	1-	1				1		No flare		
26	0354	0359	0415	1-	3			1	1		0353	C3.4	5506
26	0558	0605	0617	1-	3			1	1		0559E	C3.0	5497
26	0637	0639	0704	1-	1			1			No flare		
26	0826	0831	0924	1-	5			1	1		0824	C2.5	
26	0925	0927	0947	1-	1			1			No flare		
26	1136	1145	1200	1-	3	1			1		1136	C2.1	
26	1347	1355	1416		3	1			1		No flare		
26	1442	1450	1500	1-	1				1		1442	C2.3	5497
26	1848	1856	1912	1	3					4	1849	C3.8	5497
26	2052	2103	2119	1-	5			1		6	2048	C4.0	5497
26	2212	2241	0003	2	5			1		8	2218	M1.6	5497
27	0457	0509	0605	1-	3			1	1		No flare		
27	0838	0845	0917	2	1		1				*		
27	1646	1649	1702	1-	1		1				No flare		
28	0735	0745	0816	1-	1			1	2		0737E	C1.9	5497
28	0825	0830	0921	1-	1			1			No flare		
28	1104	1110	1115	1-	3	1			1	1	1107E	C2.1	5497
28	1218	1239	1359	3	5	3	4	1	1	10	1209	M4.0	5497
28	1550	1552	1606	1-	5		1			1	1556	C2.4	5506
28	2209	2233	2300D	1	5			1		6	2208E	M1.0	5506
28	2300E	2309	0026D	1	5			1		1	2258	C8.1	5497
29	0024	0040	0120	1-	3			1	1		No flare		
29	0222	0226	0235	1-	3			1	1		No flare		
29	0246	0255	0327D	2	3	1		1	1		0248	M1.2	5506
29	0327E	0346	0415D	3	3	1		1	1		0329		5497
29	0415E	0435	0632	3	5	3		1	2	1	0337	M2.1	5497
29	0739	0751	0819	1-	5	2	2	1	1	2	0726	C3.5	5506
29	0858	0904	0916	1-	5	1		1	1	1	0859	C2.3	
29	0932	0940	1003	1-	5	1	1	1	1	1	0929	C3.3	5497
29	1054	1103	1136	1-	5	1	1	1	1	1	1056E	C4.9	
29	1309	1331	1424	1	5	2		1	1	9	1325	C5.3	5497
29	1645	1648	1700	1-	1					1	1644	C1.8	
29	1832	1839	1929	1-	5			1		8	1830	C5.0	
29	2217	2220	2249	1-	1			1			2216	C1.5	
30	0026	0049	0106D	1-	3			1	1		0028	C2.5	
30	0106E	0113	0329D	3	3	1		1	1		0111	M6.6	5497
30	0329E	0342	0432D	1-	3			1	1		0330	C2.3	5507
30	0428	0437	0503	1-	3			1	1		0429	C1.4	
30	0519	0524	0617	1-	3			1	1		0519	C1.8	
30	0657	0706	0736	2	3		2			2	0712	M3.8	
30	0713	0723	0752	3	5	4	4	1	2	2	0712	M3.8	
30	0919	0935	1006	1-	5	1		1	1	1	0918	C3.5	
30	1142	1143	1156	1-	1					1	*		
30	1308	1330	1500	3-	5	4	2	1	1	8	1310	M2.7	
30	1734	1738	1802	1	5		1			2	1732	C4.4	5515
30	1905	1918	1933	1	3					3	1909	C3.9	5516
30	1934	1939	2010	2-	3					3	1938	C5.0	
31	0017	0034	0219	2+	3	1		1	1		0017	M1.1	
31	0403	0415	0433	1-	3			1	1		0407	C2.1	5511
31	0533	0542	0604	1-	1			1			No flare		
31	0717	0735	0758	1-	1			1			0718	C2.2	5516
31	0812	0825	0847	1-	5	1		1	1		0807	C2.5	5514
31	1156	1157	1205	1-	1		1				*		
31	1316	1330	1340	1-	5				1	2	No flare		
31	1837	1839	1902	1	3					2	1842E	C3.0	

* = No flare patrol.

OBSERVATORIES REPORTING FOR MAY 1989

Amherst, New Hampshire, USA	SES	Latrobe, Pennsylvania	SES
Darmstadt, German Fed Rep	SWF	Lintong, People's Rep of China	SPA
Edenvale, Rep of S. Africa	SES	Louisville, Kentucky, USA	SES
Gainesville, Florida, USA	SES	Nerja, Spain	SEA
Hiraiso, Japan	SWF	Panska Ves, Czechoslovakia	SES, SWF, SEA
Houston, Texas, USA	SES	Paterson, New Jersey, USA	SES
Hudson, Ohio, USA	SEA, SES	Tavares, Florida, USA	SES
Inubo, Japan	SPA	Tucson, Arizona, USA	SES
Juliusruh, German Dem Rep	SWF	Uccle, Belgium	SEA
Kandilli, Turkey	SEA	Upice, Czechoslovakia	SEA
Kuhlungsborn, German Dem Rep	SEA, SPA	Valley Cottage, New York, USA	SES
LaCrescenta, California, USA	SES	Vlasim, Czechoslovakia	SEA

Observations are not necessarily continuous.

SUDDEN IONOSPHERIC DISTURBANCES

MAY 1989

SIDs BY NOAA/SESC REGIONS

Day :	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Reg. No.																															
5463						1																									
5464		2	5	13	5	3	4																								
5468				1																											
5470	7	7	5	2	3	1	3	1																							
5474								2	2					1																	
5476						2	2		1	2	3	3																			
5478												1		1																	
5479												1																			
5481								2						1	1																
5482											1																				
5483																				1											
5484														1																	
5488													1	1	1			1	2	1			1	1							
5490																									1						
5491																	2														
5494																						1									
5495																				2	10	2	4	2							
5497																						7	6	2	6	5		4	4	1	
5498																									1						
5503																							1								
5505																								2							
5506																									1	1		2	2		
5507																														1	
5511																															1
5514																															1
5515																														1	
5516																														1	1
Number of events with X-Ray flares	7	10	9	19	10	8	13	5	4	6	7	6	1	3	1	1	2	1	2	7	11	12	11	6	4	8		6	10	12	5
Number of events with no flare reported	2	1		1	3	2	4	2	2	2				2			2	1		2	2	1	3	6	2	5	2	1	2		2
Number of events with no flare patrol	1				1	1						2				1						1			1		1			1	1
Total SID events	10	13	11	22	15	13	18	9	6	8	8	10	3	5	2	2	4	2	2	10	13	15	19	15	13	13	3	7	13	13	8

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Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01			LEAR				0005.0	0120.0	2				S
			LEAR				0057.0	0103.0	2				III
			PALE				0059.0	0119.0	2				S
			LEAR				0708.0	0709.0	1				III
			SVTO				0708.0	0709.0	2				III
			SGMR				1518.0	1520.0	1				V
	0447	1812	WEIS				1518.2	1520.2	2				IIIG
			PALE				2147.0	2148.0	1				III
			SGMR				2147.0	2148.0	2				III
02			LEAR				0138.0	0142.0	2				III
			PALE				0141.0	0142.0	1				V
			LEAR				0312.0	0314.0	2				III
			LEAR				0410.0	0411.0	2				III
			PALE				0411.0	0411.0	2				III
			SVTO				0426.0	0427.0	2				III
			LEAR				0456.0	0457.0	3				III
			SVTO				0456.0	0457.0	3				III
	0444	1215	WEIS				0456.0	0456.8	3				IIIG,U
			WEIS				0931.0	0932.7	1				IIIG
			SGMR				1118.0	1125.0	1				III
			WEIS				1118.3	1125.0	2				IIIG
			SGMR				1245.0	1245.0	1				V
	1222	1811	WEIS				1245.3	1245.5	1				IIIB
			SGMR				1257.0	1257.0	1				III
			SGMR				1401.0	1407.0	1				III
			WEIS				1438.7	1439.3	2				IIIG,Spikes
			SGMR				1500.0	1501.0	2				V
			WEIS				1500.8	1501.6	2				IIIG,U
			WEIS				1626.1	1632.6	1				IIIG
			WEIS				1637.2	1637.6	1				IIIG
			SGMR				1644.0	1908.0	1				CONT
			WEIS				1658.6	1659.7	1				IIIG
			WEIS				1730.3	1730.6	1				IIIG
			PALE				1735.0	1737.0	2				V
			SGMR				1735.0	1738.0	2				V
			WEIS				1735.8	1736.8	2				IIIG
			PALE				1755.0	1756.0	2				III
			SGMR				1755.0	1756.0	2				V
			WEIS				1755.5	1755.8	2				IIIG
			PALE				1813.0	1814.0	1				III
			PALE				1827.0	1828.0	1				III
			PALE				1835.0	1840.0	3				IV
			SGMR				1835.0	1839.0	3				IV
			SGMR				1855.0	1908.0	2				II
			PALE				1856.0	1907.0	2				II
			PALE				1907.0	2105.0	2				CONT
			SGMR				1908.0	2025.0	2				CONT
			PALE				2002.0	2008.0	3				V
			SGMR				2002.0	2004.0	3				V
			SGMR				2025.0	2322.0	1				CONT
			SGMR				2055.0	2058.0	2				III
			PALE				2056.0	2059.0	2				III
03			LEAR				0252.0	0254.0	1				III
			LEAR				0339.0	0413.0	3				S
			PALE				0341.0	0400.0	3				S
			SVTO				0411.0	0415.0	3				V
			LEAR				0427.0	0433.0	2				III
			LEAR				0516.0	0526.0	2				III
			SVTO				0516.0	0521.0	3				III
	0444	1814	WEIS				0516.0	1807.0	2				IIIN
			LEAR				0605.0	0608.0	1				III
			LEAR				0625.0	0634.0	2				III
			SVTO				0625.0	0625.0	2				III
			SVTO				0634.0	0634.0	2				III
			SVTO				0820.0	0820.0	1				III
			SVTO				0832.0	0832.0	1				III
			SVTO				0855.0	0855.0	2				III

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Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
03			SVTO				0932.0	0944.0	2				S
			WEIS				1009.0	1116.0	2				IN
			SGMR				1120.0	1123.0	1				III
			SGMR				1142.0	1142.0	1				III
			SVTO				1142.0	1142.0	2				III
			SGMR				1154.0	1154.0	1				III
			SGMR				1240.0	1240.0	1				III
			SVTO				1240.0	1241.0	2				III
			SGMR				1259.0	2323.0	1				CONT
			PALE				1806.0	1808.0	2				III
			SGMR				1806.0	1808.0	2				V
			PALE				1909.0	1910.0	2				III
			SGMR				1909.0	1910.0	2				III
			SGMR				1940.0	1954.0	2				II
			PALE				1941.0	1954.0	3				II
			PALE				2015.0	2015.0	1				III
			PALE				2023.0	0000.0	1				CONT
			PALE				2210.0	2215.0	3				V
			SGMR				2210.0	2211.0	2				V
			LEAR				2329.0	2331.0	2				III
			PALE				2329.0	2331.0	3				III
			LEAR				2345.0	2346.0	1				III
			PALE				2345.0	2346.0	2				III
04			LEAR				0026.0	0033.0	2				III
			PALE				0031.0	0033.0	2				III
			LEAR				0100.0	0104.0	2				III
			PALE				0100.0	0101.0	2				III
			LEAR				0121.0	0127.0	2				III
			PALE				0121.0	0126.0	2				III
			LEAR				0138.0	0215.0	2				S
			PALE				0140.0	0145.0	2				III
			LEAR				0244.0	0255.0	1				III
			LEAR				0310.0	0334.0	2				S
			PALE				0310.0	0329.0	1				S
			LEAR				0400.0	0427.0	3				S
			PALE				0400.0	0407.0	2				III
			PALE				0417.0	0422.0	3				V
			SVTO				0417.0	0419.0	3				V
			SVTO				0421.0	0423.0	3				III
			LEAR				0438.0	0831.0	2				CONT
			SVTO				0439.0	0445.0	2				V
	0441	1813	WEIS				0440.6	0443.3	2				I
			WEIS				0511.0	1731.0	2				IIIN,RS
			SVTO				0513.0	0527.0	3				S
			LEAR				0523.0	0527.0	3				III
			WEIS				0523.7	0526.7	3				IIIG
			SVTO				0541.0	0556.0	3				S
			SVTO				0714.0	0723.0	2				III
			SVTO				0724.0	0832.0	3				S
			WEIS				0737.8	0741.7	3				IIIGG
			SVTO				0738.0	0744.0	2				IV
			WEIS				0818.1	0819.9	3				IIIG,RS,Spikes,DCIM
			WEIS	0822.0	0823.7	1							RS
			WEIS				0828.8	0829.6	3				IIIG
			WEIS				0831.4	0831.7	2				IIIG
			SVTO				0900.0	0913.0	2				S
			WEIS				0922.3	0924.7	2				IIIG,Spikes
			SVTO				0942.0	0958.0	2				S
			WEIS				0954.4	0958.3	3				IIIGG
			SGMR				0956.0	0957.0	2				V
			WEIS				1000.0	1003.3	1				II
			SGMR				1033.0	1037.0	1				III
			WEIS				1033.3	1038.6	3				IIIGG,U
			SGMR				1109.0	1119.0	3				S
			SVTO				1109.0	1127.0	3				IV
			WEIS				1109.3	1110.4	3				IIIG,U
			WEIS				1111.9	1114.8	3				IIIGG,RS
			WEIS				1113.9	1121.1	3				II H

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04			SGMR				1119.0	1124.0	1				II
			SGMR				1138.0	1138.0	1				III
			SVTO				1139.0	1140.0	2				III
			SGMR				1209.0	1210.0	1				III
			SGMR				1254.0	1254.0	1				III
			SGMR				1321.0	1330.0	1				S
			SVTO				1321.0	1321.0	2				III
			SGMR				1330.0	1904.0	1				CONT
			SVTO				1341.0	1343.0	2				III
			WEIS				1341.8	1342.7	3				IIIG
			SGMR				1354.0	1354.0	1				III
			WEIS				1514.7	1515.2	2				IIIG
			SGMR				1515.0	1525.0	2				III
			WEIS	1524.4	1525.0	2							Spikes,RS
			SGMR				1603.0	1616.0	2				S
			WEIS	1723.3	1723.5	2							DCIM,RS
			PALE				1726.0	1727.0	2				III
			SGMR				1726.0	1727.0	2				V
			WEIS	1726.2	1726.4	2							Spikes
			SGMR				1838.0	1841.0	3				V
			PALE				1839.0	1841.0	3				V
			PALE				1904.0	1940.0	2				CONT
			SGMR				1904.0	1929.0	2				CONT
			SGMR				1929.0	2324.0	1				CONT
			PALE				2058.0	2122.0	1				S
			PALE				2135.0	2151.0	1				S
			PALE				2219.0	2222.0	3				V
			SGMR				2219.0	2220.0	2				III
			PALE				2226.0	2227.0	1				III
			LEAR				2306.0	2306.0	2				III
			PALE				2306.0	2306.0	2				III
05			LEAR				0037.0	0727.0	1				CONT
			PALE							0037.0	0059.0	1	S
			LEAR				0303.0	0304.0	2				III
			PALE				0303.0	0304.0	2				III
			LEAR				0438.0	0442.0	2				V
			SVTO				0438.0	0440.0	2				III
	0451	0748	WEIS				0557.0	1723.0	2				IIIN
			SVTO				0559.0	0729.0	2				CONT
			WEIS				0726.0	0745.7	3				IIIGG,RS
			LEAR				0727.0	0940.0	2				IV
			WEIS	0728.5	0736.6	1							IV dm
			SVTO				0729.0	0800.0	3				IV
			WEIS				0745.8	0748.0	2				II H
	0813	1849	WEIS				0820.0	1707.0	3				IS
			WEIS				1018.4	1018.8	2				U
			WEIS				1020.7	1021.1	2				U
			SGMR				1208.0	1209.0	2				V
			SVTO				1208.0	1209.0	2				V
			WEIS				1208.3	1209.7	2				IIIG,Spikes
			SGMR				1209.0	1458.0	1				CONT
			SGMR				1639.0	1957.0	1				CONT
			PALE				1717.0	1719.0	2				V
			PALE				1801.0	1802.0	2				V
			SGMR				1801.0	1802.0	2				V
			PALE				2202.0	2203.0	1				III
			SGMR				2202.0	2202.0	1				III
			PALE				2232.0	2240.0	2				V
			PALE				2311.0	2312.0	1				III
06			PALE				0019.0	0030.0	2				V
			LEAR				0020.0	0027.0	1				III
			LEAR				0247.0	0251.0	2				III
			PALE				0248.0	0249.0	1				III
			LEAR				0541.0	0544.0	1				III
			LEAR				0648.0	0713.0	1				II
	0438	1817	WEIS				0649.1	0654.7	2				II H
			SVTO				0651.0	0658.0	2				II

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06			SGMR				1439.0	1440.0	1				III
			SGMR				1455.0	1456.0	1				III
			SGMR				1500.0	1519.0	3				II
			SVTO				1500.0	1507.0	3				II
			WEIS				1500.6	1519.0	3				II H,HB
			SGMR				1502.0	1511.0	3				IV
			SVTO				1503.0	1514.0	3				IV
			SGMR				1520.0	1706.0	1				CONT
			SGMR				1907.0	1916.0	1				III
			PALE				2141.0	2141.0	2				V
			SGMR				2141.0	2141.0	1				V
07			LEAR				0642.0	0938.0	1				CONT
			SGMR				1230.0	0000.0	1				CONT
	0438	1716	WEIS				1412.2	1412.4	1				IIIG
			PALE				1811.0	0334.0	1				CONT
			PALE				2113.0	2114.0	1				III
			LEAR				2326.0	0938.0	1				CONT
08			LEAR				0351.0	0352.0	2				III
			PALE				0351.0	0351.0	1				III
			PALE				0411.0	0411.0	2				III
			SVTO				0547.0	1503.0	2				CONT
			LEAR				0618.0	0618.0	2				III
			SVTO				0752.0	0753.0	3				III
			LEAR				0753.0	0754.0	3				III
			SGMR				1003.0	2215.0	1				CONT
			SGMR				1551.0	1554.0	2				V
	0848	1819	WEIS				1552.7	1554.7	2				IIIG
			SGMR				1721.0	1724.0	3				V
			WEIS				1723.5	1725.1	2				IIIG
			PALE				1724.0	1724.0	3				III
			SGMR				1937.0	1938.0	2				III
			PALE				2057.0	2057.0	2				III
			SGMR				2057.0	2057.0	2				V
			PALE				2141.0	2142.0	1				III
			PALE				2341.0	2343.0	2				V
			LEAR				2344.0	2346.0	2				III
09			LEAR				0048.0	0049.0	1				III
			PALE				0048.0	0049.0	2				III
			LEAR				0415.0	0415.0	2				III
			LEAR				0530.0	0530.0	1				III
	0435	1822	WEIS				0753.9	0754.3	1				IIIG
			LEAR				0754.0	0754.0	1				III
			SVTO				0754.0	0754.0	2				III
			WEIS				0832.9	0833.3	2				IIIG
			LEAR				0833.0	0833.0	2				III
			SVTO				0833.0	0833.0	2				III
			SVTO				1310.0	1315.0	2				V
			SGMR				1313.0	1315.0	2				V
			WEIS				1313.5	1314.9	2				IIIG
			SGMR				1516.0	1517.0	2				V
			WEIS				1519.2	1521.3	2				IIIG
			SGMR				1714.0	1718.0	1				V
			SGMR				1741.0	1746.0	2				V
			WEIS				1743.7	1745.2	2				IIIG
			SGMR				1757.0	1822.0	1				S
			SGMR				1958.0	2000.0	1				III
			PALE				2031.0	2031.0	2				III
			SGMR				2031.0	2032.0	2				III
			PALE				2203.0	2207.0	2				III
			SGMR				2207.0	2207.0	1				III
			PALE				2316.0	2317.0	1				III
10			LEAR				0531.0	0538.0	1				III
	0432	1639	WEIS				1023.5	1023.8	2				IIIG,U
			SGMR				1221.0	1222.0	1				III
			WEIS				1221.3	1222.3	1				IIIG

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10			SGMR				1427.0	1427.0	1				III
			WEIS				1458.9	1501.9	1				IIIG
			SGMR				1459.0	1502.0	2				III
			SGMR				1601.0	1601.0	1				V
			WEIS				1601.1	1601.3	1				IIIB
			WEIS				1627.4	1627.7	1				IIIB
	1656	1821	WEIS										
			SGMR				1932.0	1932.0	1				III
11			LEAR				0147.0	0147.0	1				III
			LEAR				0254.0	0254.0	1				III
			LEAR				0605.0	0621.0	2				S
	0432	1824	WEIS				0605.8	0607.3	1				IIIG
			WEIS				0611.3	0611.8	2				IIIG
			WEIS				0618.9	0619.3	2				IIIG
			WEIS				0620.7	0620.8	2				IIIB
			LEAR				0716.0	0725.0	2				III
			SVTO				0719.0	0724.0	2				III
			WEIS				0724.3	0724.6	3				IIIB
			SVTO				0916.0	0916.0	2				III
			WEIS				0916.7	0916.9	1				IIIB
			WEIS				1010.4	1010.9	1				IIIG
			SGMR				1302.0	1311.0	1				III
			WEIS				1302.3	1302.6	1				IIIB
			WEIS				1310.8	1311.0	1				IIIB
			SGMR				1325.0	1330.0	3				III
			SVTO				1325.0	1329.0	2				III
			WEIS				1325.6	1325.9	2				IIIB
			WEIS				1327.7	1328.1	3				IIIB
			WEIS				1329.3	1330.5	3				IIIG
			WEIS				1409.2	1409.4	1				IIIB
			WEIS				1425.2	1426.4	1				IIIG
			SGMR				1525.0	1526.0	1				III
			SGMR				1741.0	1743.0	2				III
			WEIS				1742.6	1742.8	1				IIIG
			SGMR				1842.0	1842.0	1				III
			PALE				1936.0	1936.0	1				III
			SGMR				1936.0	1936.0	2				III
			SGMR				1944.0	1944.0	1				III
			SGMR				2020.0	2021.0	1				III
			PALE				2044.0	2045.0	2				III
			PALE				2251.0	2251.0	2				III
			PALE				2315.0	2317.0	2				V
			LEAR				2316.0	2317.0	1				III
12			LEAR				0321.0	0324.0	1				III
			LEAR				0658.0	0659.0	2				III
			SVTO				0658.0	0658.0	3				III
	0430	1156	WEIS				0658.6	0658.8	3				IIIG
			LEAR				0746.0	0748.0	2				III
			SVTO				0746.0	0747.0	3				V
			WEIS				0746.4	0747.6	3				IIIG
			SVTO				0815.0	0853.0	2				CONT
			SGMR				1216.0	1217.0	2				III
	1212	1824	WEIS				1216.6	1217.2	3				IIIB
			SGMR				1317.0	1318.0	3				III
			SVTO				1317.0	1318.0	3				III
			WEIS				1317.8	1318.5	3				IIIG
			SGMR				1423.0	1434.0	2				S
			WEIS				1423.1	1423.3	2				IIIB
			WEIS				1427.3	1428.3	2				IIIG
			SGMR				1508.0	1508.0	1				III
			SGMR				1608.0	1608.0	1				III
			PALE				2348.0	2348.0	1				III
13			LEAR				0018.0	0021.0	1				III
			PALE				0018.0	0021.0	1				III
			LEAR				0301.0	0302.0	2				III
			PALE				0301.0	0301.0	2				III

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13	0430	1130	WEIS				0740.6	0740.7	1				IIIB
			SGMR				1010.0	1011.0	2				III
			SVTO				1010.0	1012.0	3				V
			WEIS				1010.6	1012.3	3				IIIG
			SGMR				1211.0	1212.0	2				III
			SVTO				1211.0	1211.0	2				III
			SGMR				1429.0	1429.0	2				V
	1229	1827	WEIS				1429.1	1429.9	2				IIIB
			SGMR				1601.0	1603.0	2				V
			WEIS				1601.9	1603.0	2				IIIG,U
			SGMR				1642.0	1643.0	1				III
			WEIS				1642.6	1642.8	1				IIIB
			SGMR				1733.0	1736.0	2				V
			WEIS				1733.8	1735.9	3				IIIG,U
			PALE				1734.0	1736.0	2				V
			PALE				2145.0	2146.0	1				V
			SGMR				2145.0	2146.0	2				III
			LEAR				2357.0	0000.0	1				III
			PALE				2357.0	0000.0	2				V
14			LEAR				0151.0	0152.0	1				III
			PALE				0151.0	0152.0	1				III
			LEAR				0204.0	0204.0	1				III
			LEAR				0208.0	0212.0	2				III
			PALE				0208.0	0212.0	2				V
			LEAR				0511.0	0511.0	2				III
			SVTO							0511.0	0511.0	2	III
	0427	1826	WEIS				0511.5	0511.7	1				IIIB
			LEAR				0709.0	0710.0	2				III
			SVTO				0709.0	0710.0	3				V
			WEIS				0709.3	0710.4	2				IIIG
			LEAR				0852.0	0858.0	2				III
			SVTO				0852.0	0850.0	3				V
			WEIS				0852.1	0855.2	3				IIIG
			WEIS				0857.5	0858.3	2				IIIG
			WEIS				1020.2	1020.4	1				IIIG
			SGMR				1641.0	1648.0	2				V
			WEIS				1641.3	1645.3	2				IIIGG,RS,Spikes
			SGMR				1647.0	1702.0	2				II
			WEIS				1647.2	1701.7	3				II H,HB
			PALE				1648.0	1653.0	1				II
			SGMR				1745.0	2130.0	1				CONT
			SGMR				1908.0	1912.0	1				III
			PALE				1911.0	1911.0	1				III
			PALE				2019.0	2019.0	1				III
			SGMR				2019.0	2019.0	1				III
15	0428	1829	WEIS										
16	0425	0644	WEIS										
	0652	1829	WEIS										
			SGMR				2011.0	2011.0	1				III
17			LEAR				0922.0	0927.0	1				II
	0426	1832	WEIS				0922.1	0939.8	2				II H
			SGMR				1135.0	1136.0	1				III
			SGMR				1252.0	1254.0	1				III
			PALE				2339.0	2340.0	1				III
18			SGMR				1240.0	1241.0	1				III
	0423	1500	WEIS				1240.8	1241.2	2				IIIG
			SGMR				1351.0	1352.0	1				III
			SGMR				1537.0	1538.0	1				V
	1510	1831	WEIS				1537.7	1538.2	1				IIIG
			SGMR				1610.0	1611.0	1				III
			SGMR				1800.0	1801.0	1				V
			SGMR				1811.0	1812.0	1				V
			SGMR				1911.0	1912.0	1				III
			PALE				2144.0	2144.0	1				III

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18			PALE				2339.0	2340.0	1				III
19			LEAR				0656.0	0657.0	2				III
	0424	1834	WEIS				0656.6	0657.5	1				IIIG
			LEAR				0729.0	0733.0	1				III
			SVTO				0937.0	0939.0	2				III
			WEIS				0938.6	0939.3	2				IIIG
			SGMR				1100.0	1101.0	1				III
			SGMR				1125.0	1133.0	1				III
			WEIS				1133.1	1133.3	1				IIIB
			SGMR				1145.0	1153.0	1				III
			WEIS				1148.1	1148.3	1				IIIB
			WEIS				1151.3	1153.4	1				IIIG
			SGMR				1218.0	1224.0	1				III
			SVTO				1218.0	1220.0	2				III
			WEIS				1218.7	1221.4	1				IIIG,U
			SGMR				1527.0	1527.0	1				III
			SGMR				1530.0	1749.0	1				CONT
			SGMR				1935.0	2001.0	1				S
20			LEAR				0034.0	0330.0	1				CONT
	0421	0647	WEIS										
			LEAR				0700.0	0701.0	2				III
			SVTO				0700.0	0701.0	2				III
	0706	1834	WEIS				0921.5	0924.3	3				II
			SVTO				0922.0	0956.0	2				IV
			WEIS				0924.4	0926.6	1				II
			WEIS				0926.1	0930.6	2				IIIG
			LEAR				0929.0	0932.0	1				III
			SVTO				0930.0	0934.0	2				II
			WEIS				0930.7	0955.3	2				II H
			SGMR				0934.0	1530.0	1				CONT
			PALE				1923.0	1923.0	1				III
			SGMR				1923.0	0000.0	1				CONT
			PALE				1959.0	2042.0	2				S
			PALE				2046.0	2216.0	2				CONT
21			LEAR				0056.0	0056.0	1				III
			PALE				0056.0	0056.0	1				III
			LEAR				0116.0	0117.0	1				III
			PALE				0116.0	0116.0	1				III
			LEAR				0431.0	0431.0	1				III
			LEAR				0458.0	0459.0	2				III
	0422	1836	WEIS				0458.1	0459.1	1				IIIG
			LEAR				0646.0	0931.0	1				CONT
			WEIS	0930.3	0930.6	2							IIIG
			WEIS				0935.7	0936.3	3				IIIG,U
			WEIS				1159.6	1200.2	2				Spikes
			WEIS				1203.6	1204.8	2				IIIB,U,Spikes
			WEIS				1345.9	1347.3	1				IIIG
			SGMR				1346.0	1347.0	1				III
			SGMR				1506.0	1508.0	2				V
			SVTO				1507.0	1508.0	3				III
			WEIS				1507.2	1508.2	1				IIIG
			SGMR				1508.0	2245.0	1				CONT
			WEIS				1609.3	1609.4	1				IIIB
			PALE				1800.0	1801.0	3				V
			SGMR				1800.0	1801.0	3				V
			WEIS				1800.6	1801.8	3				IIIG
			PALE				2258.0	2259.0	1				III
			PALE				2349.0	2351.0	1				III
22			LEAR				0027.0	0037.0	2				CONT
			LEAR				0037.0	0657.0	2				IV
			PALE				0046.0	0055.0	2				II
			PALE				0120.0	0355.0	2				CONT
	0419	1439	WEIS				0516.7	0516.8	3				RS
			LEAR				0626.0	0629.0	3				V
			WEIS				0626.4	0629.6	3				IIIGG,Spikes

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22			SVTO				0627.0	0629.0	3				V
			LEAR				0805.0	0806.0	2				III
			SVTO				0805.0	0806.0	2				III
			WEIS				0805.8	0806.7	1				IIIG
			WEIS				0927.0	1050.0	1				IIIN
			WEIS				0956.7	0956.8	1				DCIM
			SVTO				1016.0	1042.0	3				CONT
			SGMR				1021.0	1026.0	1				III
			SGMR				1207.0	1500.0	1				CONT
	1455	1836	WEIS										
			SGMR				1702.0	1703.0	2				V
			PALE				1937.0	1941.0	2				V
			SGMR				1937.0	1942.0	2				V
			LEAR				2324.0	2324.0	1				III
			PALE				2324.0	2324.0	1				III
23			LEAR				0034.0	0035.0	2				III
			PALE				0034.0	0035.0	2				V
			LEAR				0048.0	0050.0	2				III
			PALE				0048.0	0049.0	2				V
			LEAR				0150.0	0931.0	1				CONT
			SVTO				0624.0	0625.0	3				V
			SVTO				0631.0	0955.0	3				CONT
			SVTO				0653.0	0654.0	3				V
	0420	1838	WEIS				0840.4	0840.7	2				IIIG
			SGMR				1103.0	1104.0	1				V
			WEIS				1103.9	1104.1	1				IIIB
			SGMR				1130.0	1130.0	1				V
			SVTO				1130.0	1130.0	2				III
			WEIS				1130.4	1130.6	2				IIIB
			SGMR				1226.0	1227.0	1				III
			SVTO				1345.0	1606.0	2				CONT
			SGMR				1426.0	1427.0	1				V
			SGMR				1445.0	0000.0	1				CONT
			SVTO				1459.0	1459.0	2				III
			WEIS				1459.2	1459.4	2				IIIB
			PALE				2020.0	2022.0	2				III
			LEAR				2347.0	0930.0	1				CONT
24			PALE				0011.0	0344.0	1				CONT
	0417	0617	WEIS										
			SVTO				0442.0	0544.0	1				CONT
			SVTO				0544.0	1254.0	2				CONT
	0633	1838	WEIS				1000.0	1234.0	1				IIIN
			SGMR				1010.0	2100.0	1				CONT
			SVTO				1254.0	1507.0	1				CONT
			WEIS				1346.5	1346.7	1				IIIB
			WEIS	1410.1	1411.2	1							Spikes,RS
			WEIS				1412.7	1412.8	1				IIIB
			SGMR				2140.0	2204.0	1				S
			PALE				2144.0	2144.0	1				III
			PALE				2154.0	2154.0	1				III
25			LEAR				0129.0	0129.0	1				III
			PALE				0129.0	0129.0	1				III
			LEAR				0145.0	0930.0	1				CONT
			LEAR				0309.0	0309.0	1				III
			SVTO				0401.0	0401.0	2				III
			LEAR				0402.0	0403.0	1				III
	0418	1840	WEIS				1023.6	1023.9	1				IIIG
			WEIS				1050.4	1051.4	2				IIIGG
			WEIS				1056.0	1056.1	2				IIIB
			WEIS				1057.6	1058.3	3				IIIG,Spikes
			WEIS				1104.7	1105.7	2				IIIG,Spikes
			SGMR				1105.0	1112.0	1				V
			WEIS				1109.1	1111.7	3				IIIG
			SGMR				1216.0	1219.0	1				III
			SGMR				1409.0	1409.0	1				V
			SGMR				1503.0	1504.0	1				V

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25			WEIS				1503.5	1503.8	1				IIIB
			SGMR				1520.0	1537.0	2				V
			WEIS				1520.2	1522.7	2				IIIG
			WEIS				1525.1	1526.7	2				I,RS
			WEIS				1528.7	1531.8	2				IIIG
			WEIS				1534.8	1536.6	2				IIIG
			SGMR				1647.0	1648.0	1				III
26			LEAR				0116.0	0116.0	1				III
			PALE				0116.0	0116.0	1				III
			LEAR				0243.0	0244.0	1				III
	0415	1352	WEIS				0446.6	0446.8	2				IIIB
			WEIS				0451.3	0451.7	2				IIIG
			LEAR				0500.0	0501.0	1				III
			WEIS				0556.7	0600.7	1				IIIG,Spikes
			LEAR				0626.0	0627.0	1				III
			SVTO				0626.0	0626.0	2				III
			WEIS				0626.3	0628.2	2				IIIG
			LEAR				0730.0	0730.0	1				III
			SVTO				0730.0	0730.0	2				III
			WEIS				0730.0	0730.2	1				IIIB
			SVTO				0745.0	0745.0	2				III
			WEIS	0748.8	0749.1	1							RS
			WEIS				0838.3	0838.4	2				IIIB,U
			WEIS	0844.4	0845.2	1							Spikes
			WEIS				0948.5	0948.8	1				IIIG
			SGMR				1401.0	1433.0	1				S
			SVTO				1412.0	1412.0	1				III
			SGMR				1603.0	1612.0	2				V
	1508	1840	WEIS				1603.9	1609.3	2				IIIG,U
			WEIS				1611.5	1612.6	1				IIIB
			SGMR				1644.0	1644.0	1				V
			SGMR				1700.0	1701.0	1				III
			SGMR				1714.0	0000.0	1				CONT
			PALE				1909.0	1909.0	1				III
			PALE				2028.0	2029.0	1				III
			PALE				2128.0	2129.0	1				III
			PALE				2241.0	2242.0	1				III
27			LEAR				0041.0	0041.0	1				III
			PALE				0041.0	0041.0	1				III
	0417	1842	WEIS				0538.5	0538.6	1				IIIG
			LEAR				0727.0	0728.0	2				III
			SVTO				0727.0	0728.0	2				III
			WEIS				0727.4	0728.0	2				IIIG
			LEAR				0740.0	0740.0	1				III
			SVTO				0741.0	0742.0	2				III
			WEIS				0741.3	0741.4	1				IIIG
			WEIS				0911.8	0912.7	1				IIIG
			WEIS				1105.9	1106.4	1				IIIG,DCIM
			WEIS				1116.7	1117.4	1				IIIG
			SGMR				1359.0	1359.0	1				III
			WEIS				1359.6	1359.8	1				IIIB
			SGMR				1753.0	1759.0	1				III
			SGMR				1923.0	1923.0	1				III
28			LEAR				0234.0	0235.0	2				III
			PALE				0234.0	0235.0	1				III
			WEIS				0527.6	0527.9	1				DCIM
			WEIS				0530.4	0530.6	1				IIIG
			LEAR				0655.0	0655.0	1				III
			LEAR				0724.0	0728.0	1				III
	0414	1842	WEIS				0724.0	1721.0	2				IIIN
			WEIS				1138.7	1138.9	1				IIIG
			SGMR				1216.0	1221.0	2				V
			WEIS				1217.0	1225.4	2				Spikes
			WEIS				1227.7	1228.7	2				IIIG
			SGMR				1232.0	1236.0	2				II
			WEIS				1232.1	1235.2	2				IIIGG

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28			WEIS				1232.4	1235.4	1				II H
			SGMR				1310.0	1313.0	1				V
			SGMR				1331.0	1332.0	2				V
			SGMR				1359.0	1359.0	1				III
			SGMR				1444.0	1457.0	2				S
			SVTO				1448.0	1455.0	2				V
			SGMR				1515.0	2109.0	1				CONT
			PALE				2105.0	2106.0	1				III
			PALE				2132.0	2134.0	1				III
			SGMR				2132.0	2132.0	1				III
			SGMR				2209.0	2213.0	2				V
			SGMR				2231.0	2236.0	1				III
			PALE				2301.0	0022.0	1				CONT
			LEAR				2338.0	2338.0	1				III
			LEAR				2358.0	0002.0	1				III
29			LEAR				0002.0	0603.0	1				CONT
			PALE				0055.0	0056.0	1				III
			PALE				0120.0	0127.0	1				III
			LEAR				0126.0	0127.0	2				III
			LEAR				0303.0	0305.0	2				III
			PALE				0304.0	0305.0	1				III
			LEAR				0349.0	0357.0	3				V
			PALE				0349.0	0352.0	3				V
			SVTO				0349.0	0351.0	3				V
			LEAR				0402.0	0403.0	2				III
			PALE				0402.0	0408.0	1				III
			SVTO				0402.0	0402.0	2				III
	0415	0747	WEIS										
			LEAR				0421.0	0425.0	2				V
			LEAR				0429.0	0429.0	2				III
			LEAR				0503.0	0507.0	2				III
			SVTO				0503.0	0508.0	3				V
			WEIS				0503.7	0505.4	2				IIIGG
			LEAR				0712.0	0713.0	2				III
			SVTO				0712.0	0713.0	3				III
			WEIS				0712.7	0713.4	3				IIIG
			LEAR				0912.0	0912.0	2				III
			SVTO				0912.0	0912.0	2				III
			WEIS				0912.2	0912.6	2				IIIG,RS,Spikes
			WEIS				0923.9	0926.0	1				IIIG
			WEIS				0931.9	0936.8	3				IIIGG,U,Spikes,RS
			SVTO				0932.0	0935.0	3				V
			SGMR				0933.0	0934.0	1				V
	0757	1844	WEIS				1037.0	1808.0	2				IIIN,DP,RS
			SGMR				1057.0	1058.0	1				V
			SVTO				1057.0	1058.0	2				V
			WEIS				1057.2	1057.9					IIIG,U,Spikes
			SVTO				1133.0	1133.0	2				III
			SGMR				1149.0	1150.0	1				III
			SGMR				1232.0	1238.0	1				V
			SVTO				1232.0	1235.0	2				III
			SVTO				1342.0	1345.0	2				III
			SGMR				1405.0	1406.0	1				V
			SGMR				1456.0	1458.0	2				V
			SGMR				1527.0	1546.0	2				S
			SGMR				1619.0	1624.0	2				V
			SGMR				1703.0	1704.0	2				V
			SGMR				1707.0	1722.0	1				S
			PALE				1807.0	1807.0	1				III
			SGMR				1807.0	1808.0	2				V
			PALE				2126.0	2140.0	1				III
			SGMR				2132.0	2140.0	1				III
30			LEAR				0127.0	0128.0	2				III
			PALE				0127.0	0128.0	1				III
			LEAR				0148.0	0219.0	1				CONT
			LEAR				0235.0	0238.0	2				III
			PALE				0236.0	0236.0	1				III

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

MAY 1989

Observation Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
Day												
30		LEAR				0328.0	0336.0	3				III
		PALE				0329.0	0333.0	2				III
		SVTO				0330.0	0333.0	2				III
		LEAR				0400.0	0929.0	1				CONT
0413	1210	WEIS				0426.0	1821.0	2				IIIN,RS,DP
		LEAR				0503.0	0504.0	3				III
		SVTO				0503.0	0503.0	2				III
		LEAR				0543.0	0546.0	2				III
		SVTO				0545.0	0546.0	2				V
		SVTO				0549.0	0550.0	2				V
		SVTO				0704.0	0704.0	1				III
		SVTO				0725.0	0731.0	2				III
		SVTO				0821.0	0821.0	2				III
		SVTO				0838.0	0859.0	2				S
		WEIS				0840.7	0846.4	3				IIIGG
		SGMR				1037.0	1037.0	1				III
		SGMR				1113.0	1115.0	2				V
		SGMR				1140.0	1145.0	1				V
		SVTO				1140.0	1145.0	3				V
		WEIS				1143.4	1144.6	1				Spikes
		SGMR				1206.0	1240.0	2				S
		SVTO				1240.0	1240.0	3				III
		SGMR				1358.0	1403.0	1				V
		SVTO				1401.0	1403.0	3				V
		SGMR				1417.0	1554.0	2				S
		SVTO				1439.0	1440.0	2				III
		SVTO				1452.0	1453.0	2				III
		SGMR				1519.0	1528.0	1				S
		SGMR				1544.0	1556.0	1				S
		SGMR				1609.0	1610.0	1				III
		SGMR				1631.0	1715.0	2				S
1213	1845	WEIS				1701.8	1702.9	2				IIIG,U
		SGMR				1744.0	1745.0	1				V
		PALE				1818.0	1819.0	3				V
		SGMR				1818.0	1824.0	2				V
		PALE				1858.0	1858.0	1				III
		SGMR				1858.0	1858.0	1				V
		SGMR				1910.0	1916.0	1				V
		SGMR				2000.0	0000.0	1				CONT
		PALE				2055.0	2055.0	1				III
		SGMR				2055.0	2055.0	2				III
		PALE				2100.0	2100.0	1				III
		PALE				2112.0	2113.0	2				V
		PALE				2149.0	2156.0	2				III
		PALE				2235.0	2235.0	2				V
		SGMR				2235.0	2235.0	1				III
		PALE				2328.0	2332.0	1				V
31		PALE				0014.0	0018.0	2				V
		LEAR				0015.0	0018.0	2				III
		LEAR				0047.0	0051.0	1				III
		PALE				0048.0	0052.0	1				III
		LEAR				0108.0	0117.0	2				III
		PALE				0109.0	0117.0	1				III
		LEAR				0312.0	0313.0	1				III
		SVTO				0325.0	0352.0	2				S
		LEAR				0433.0	0434.0	1				III
		LEAR				0459.0	0459.0	1				III
0414	1844	WEIS				0459.0	1851.0	2				IIIN,RS
		SVTO				0508.0	0509.0	2				III
		LEAR				0509.0	0510.0	1				III
		LEAR				0608.0	0608.0	1				III
		LEAR				0646.0	0647.0	1				III
		LEAR				0651.0	0658.0	2				III
		WEIS				0652.6	0653.3	3				IIIG
		LEAR				0708.0	0709.0	2				III
		LEAR				0711.0	0711.0	1				III
		LEAR				0731.0	0732.0	1				III
		LEAR				0746.0	0746.0	1				III

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

MAY 1989

Observation Day	Start (UT)	End (UT)	Sta	Decimetric Band Start (UT)	End (UT)	Int (1-3)	Metric Band Start (UT)	End (UT)	Int (1-3)	Dekametric Band Start (UT)	End (UT)	Int (1-3)	Spectral Type
31			LEAR				0819.0	0823.0	2				III
			WEIS				0910.4	0916.1	3				Spikes
			LEAR				0911.0	0912.0	1				III
			LEAR				0913.0	0914.0	2				III
			WEIS				0945.4	0946.2	3				IIIG
			SGMR				1215.0	1226.0	1				S
			SVTO				1215.0	1229.0	2				S
			SGMR				1331.0	1336.0	2				V
			SVTO				1331.0	1336.0	2				III
			SGMR				1356.0	1357.0	2				V
			SVTO				1356.0	1357.0	2				III
			SVTO				1404.0	1405.0	2				III
			SGMR				1405.0	1405.0	1				III
			SGMR				1426.0	1429.0	2				V
			SVTO				1426.0	1436.0	2				S
			SGMR				1436.0	1438.0	1				III
			SGMR				1515.0	1515.0	1				III
			SGMR				1611.0	1621.0	1				V
			SGMR				1627.0	1634.0	1				V
			SGMR				1728.0	1729.0	1				V
			PALE				1729.0	1729.0	3				V
			SGMR				1729.0	1730.0	3				V
			WEIS				1729.2	1729.8	3				IIIB
			PALE				1747.0	1800.0	2				S
			SGMR				1748.0	1801.0	2				S
			WEIS				1759.7	1800.0	1				IIIB,U
			PALE				1837.0	1841.0	3				V
			SGMR				1838.0	1841.0	3				V
			SGMR				1842.0	0000.0	1				CONT
			SGMR				2226.0	2226.0	1				III
			PALE				2312.0	2312.0	1				III
			PALE				2328.0	2332.0	1				V

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

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

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

Stations Reporting:

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

COSMIC RAY INDICES
(Neutron Monitor)

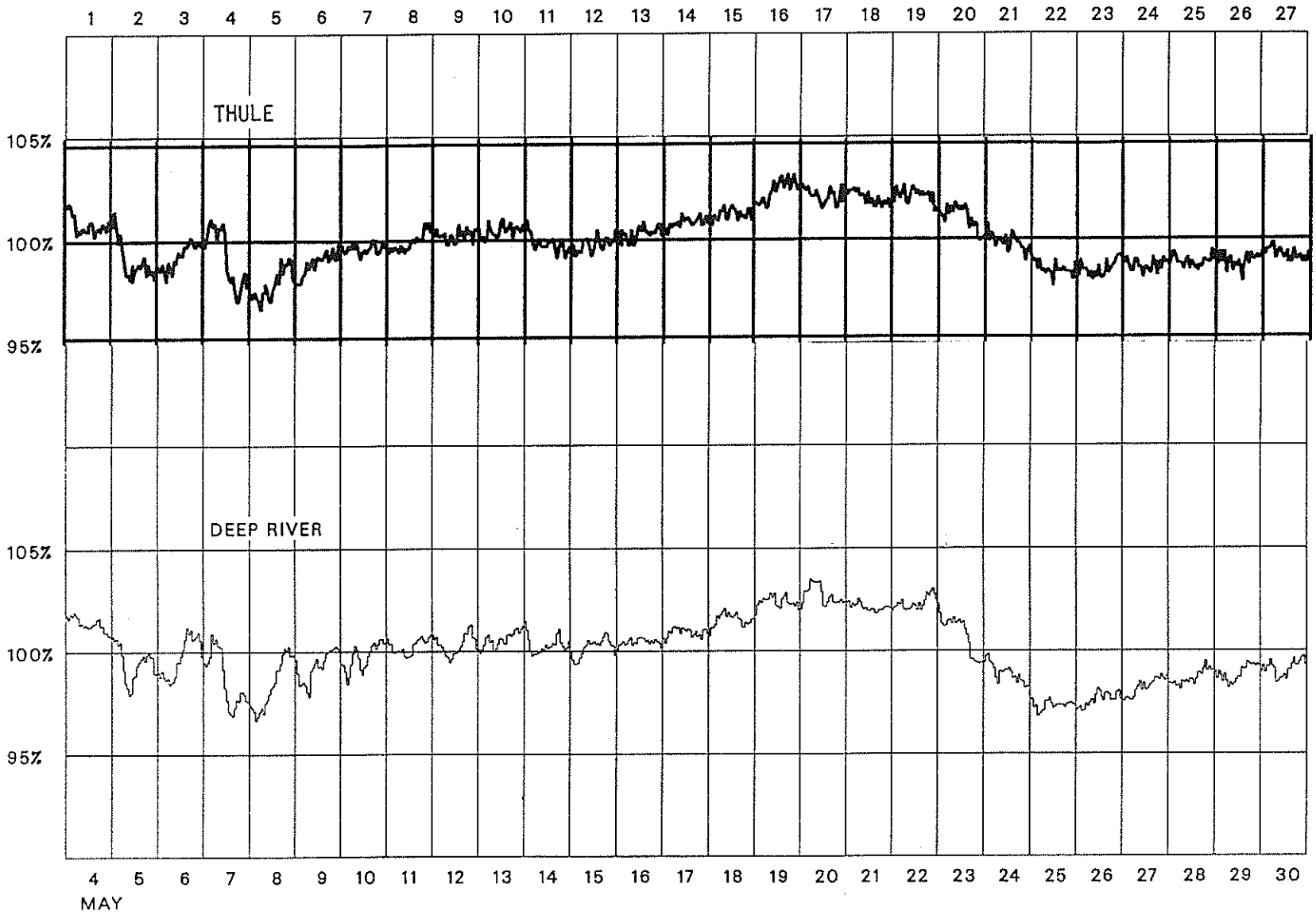
MAY 1989

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	
2	3839	6031.6	5391.6	3456.8	3422.0	
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	
10	3793	5942.9	5333.2	3373.4	3397.5	
11	3804	5972.5	5362.5	3397.0	3402.6	
12	3817	5977.1	5364.0	3413.5	3416.7	
13	3826	5992.4	5377.0	3421.3(34)	3417.6	
14	3799	5976.5	5351.2	3409.4	3412.4	
15	3798	5968.2	5336.6	3406.0	3411.7	
16	3818	5983.9	5356.8	3412.4	3408.7	
17	3840	6011.8	5383.8	3433.1	3409.5	
18	3857	6048.5	5433.9	3458.8	3429.5	
19	3903	6100.3	5474.8	3489.2	3442.5	
20	3892	6119.5	5486.8	3505.9(36)	3442.6	
21	3886	6084.2	5458.3	3476.7	3438.1	
22	3890	6095.7	5469.4	3483.3	3438.0	
23	3846	6005.7	5412.3	3427.5	3412.7	
24	3798	5892.7	5309.0	3366.8	3382.2	
25	3746	5800.0	5248.5	3313.0	3364.5	
26	3748	5815.6	5265.5	3326.6	3389.4	
27	3754	5851.4	5287.2	3330.0	3387.0	
28	3761	5879.0	5299.9	3343.6	3381.3	
29	3762	5891.6	5314.0	3363.4	3397.6	
30	3775	5905.8	5343.2	3387.8	3411.3	
31	3800	5930.5	5374.7	3407.5	3419.5	
Mean	3810	5965.7	5359.5	3404.3	3409.6	

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

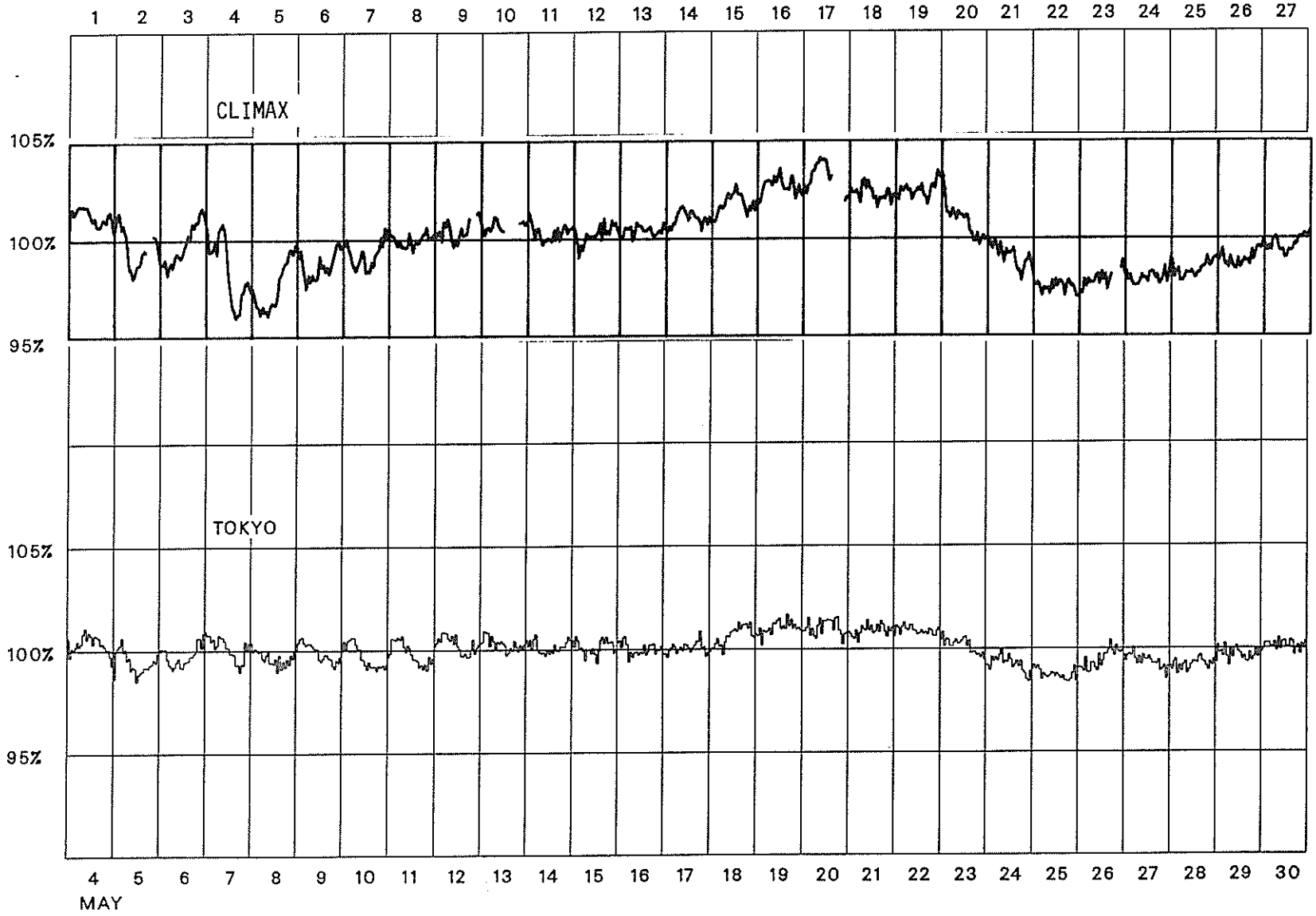
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2128 (May 1989)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2128 (May 1989)



GEOMAGNETIC ACTIVITY INDICES

May 1989

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1		3-	2-	1+	1+	1+	3	3-	3+	17+	10	0.5	3-	2-	2-	1+	2-	3	3-	3+	19	20	17	13	23	
2		3+	4-	4-	2+	3-	3+	4+	3	26+	18	1.0	3	3	3+	3-	2+	3-	4-	3-	29	32	19	21	31	
3		3+	3+	3-	2+	2-	1+	3	3	21-	12	0.7	3	3	2+	2	2-	2-	3-	3	21	22	11	17	16	
4		4+	4-	2+	2+	2+	3+	3-	5	26	20	1.0	4	3+	2	2-	2	3+	3	4	31	41	24	26	39	
5	D2	7-	6	5+	4+	3+	3-	4-	4-	36-	44	1.5	6	5+	5-	4-	3-	2	3	3	60	76	49	89	36	
6		2+	3-	3-	3	2	3-	3+	4	23-	14	0.8	2+	3	3-	3	2+	2+	3-	3+	25	30	20	25	25	
7	D3	1-	4+	5+	4+	5+	5+	5+	6	37-	46	1.5	1	4+	5	5-	5-	4	5-	5	69	56	65	50	72	
8	Q2	1+	1	1+	2-	1	1+	1	2	11-	5	0.2	1+	1+	1+	2	1+	2-	1+	2+	11	15	7	10	12	C
9	Q3	1	1	2-	1	2	2	1-	1	10+	5	0.2	1	1	2-	1	2	2-	1-	1-	9	10	8	8	10	CC
10	Q1	2-	1+	1-	1-	1	1-	1-	2	9-	4	0.1	2-	1	0+	1-	1	1-	1	2-	7	9	6	8	8	CC
11	Q5	1+	1	1	1	1+	2	2	3-	12+	6	0.3	1	1	1+	1+	2-	2	2	2+	11	17	11	9	19	
12		3-	3	4-	2+	1+	3-	2-	1+	19-	11	0.6	2+	3+	3+	3-	1+	2+	2	2-	21	24	20	28	16	
13	Q10A	2-	2-	2-	2	3+	3+	2-	1	16+	9	0.5	1+	2-	1+	2	3	3-	2	1-	15	23	12	12	24	
14		2	3+	2+	2	2-	3	2-	2+	18+	10	0.5	2-	3+	3-	2	2-	3-	2	2	18	22	14	20	16	
15		2-	2+	3	3+	3-	3-	3+	3-	22-	13	0.7	1+	2	3+	3	3-	2	3-	3-	21	27	21	24	24	
16	Q7A	2-	2+	1+	2-	2	2+	2	2-	15	7	0.3	2-	2+	2-	2-	2	2	2-	1+	13	21	8	14	15	
17	Q8A	2	3-	2+	2	2	2-	2-	1	15+	7	0.4	2	3-	2+	2	2+	2-	1+	1+	14	19	10	18	11	
18	Q6	2	2	2-	1+	2+	1+	1+	1+	13+	6	0.3	2-	2	2-	2-	2+	2-	1+	1	12	12	9	11	10	CC
19	Q4	1-	1+	1	2+	2-	2-	2-	1+	12-	6	0.2	1-	2-	1+	2+	2-	2-	1+	1	10	15	7	12	11	C
20		2-	1+	2	5-	5-	2+	3-	0+	20-	15	0.8	1+	1+	2	5-	4	2+	2+	1-	26	25	27	25	27	
21	Q9A	2-	2	3-	3-	3-	2-	2-	1	16	8	0.4	1+	2	3-	3-	2+	2-	2-	1-	15	22	15	23	14	
22		2-	2	2	2+	3	2+	3-	4	20	12	0.7	1+	2-	2+	2+	3	2+	2+	3+	20	31	17	17	30	
23	D4	2+	3-	1+	2	6-	7+	6	5-	32	47	1.5	2+	2+	2-	2	5	6-	5-	5-	54	72	37	15	94	
24	D1	5+	5	6	5	6	6+	6-	6-	45	68	1.7	4+	5-	5+	5	5	5	5-	5-	85	88	60	68	80	
25	D5	5-	4-	4	3-	4	3+	4+	3+	30	24	1.2	4	3	4	3-	3+	3	3	3	36	40	34	35	39	
26		3+	2+	2-	2+	3+	3+	4	4+	25-	17	0.9	3-	2	1+	2+	3-	3+	3+	4	27	29	22	15	35	
27		4-	4	3+	2	3-	3-	3+	3-	24+	16	0.9	3+	3+	3	3-	2+	2+	3	3-	27	35	22	32	26	
28		3-	2+	1+	2+	3+	4-	3+	3	22	14	0.8	3	3-	2-	2+	3-	3	3	3-	23	31	20	22	29	
29		4-	2+	2	3-	4-	3-	3	3	23	14	0.8	4-	2+	3-	3	3	2+	3-	3-	26	31	20	25	26	
30		3+	3-	2	1+	1+	2	3-	2+	18-	9	0.5	3-	3-	2+	2-	2-	2-	2+	2+	18	25	12	20	17	
31		3+	2+	3-	2-	3	3-	3+	3-	22-	13	0.7	3	2+	2+	2-	3	2+	3-	3-	22	28	18	19	27	
Mean											16	0.72									25.6	30.6	20.9		25.7

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1	2+	2-	2-	2	2	3	3-	3	20	3	2-	2-	1-	1+	3-	2	3+	18	180.5	93	109	133	
2	3	3+	4-	3-	3-	3	4-	3	33	3	3	3	3-	2	2	3+	3-	25	184.5*	94	121	137	
3	3	3+	3-	2+	2	2	3-	3	23	3+	3-	2	2	1+	1+	3-	3	20	190.6	85	98	144	
4	4-	3+	2+	2	2+	3+	3-	5-	34	4	3	2	2-	2-	3+	3	3+	29	198.2	97	109	152	
5	6	5+	4+	4	3-	2+	3	3+	63	6-	5	5	3+	3	1+	3	3-	57	193.7	83	108	147	
6	3-	3	3-	3	3-	3-	3	3+	27	2+	3+	2+	3	2+	2	3-	3	23	195.9*	105	129	150	
7	1+	5-	5+	5-	5-	4+	5	5	76	1-	4	5-	4+	5-	4-	5-	5+	62	200.6	134	160	155	
8	2-	2-	2-	2+	2-	2-	1+	2	13	1+	1-	1	2-	1	2-	1+	2+	10	212.4	149	178	167	
9	1+	1	2	1+	2+	2	1	1+	11	1	1	1+	1	2-	1+	0	0	6	205.1*	137	153	160	
10	2-	1	1-	1	1	1-	1+	2-	8	2-	1	0+	0+	1-	0+	0+	2-	6	208.7	123	149	163	
11	1+	1+	1+	2-	2-	2+	2+	3-	14	1-	0+	1	1+	1+	2-	2-	2-	8	198.9	115	138	153	
12	3-	3+	3+	3-	2-	3-	2	2-	23	2+	3	3+	3-	1	2	2	1+	19	197.2	115	124	151	
13	1+	1+	2-	3-	3+	3+	2+	1	19	1	2	1+	1+	2+	2	2-	1-	11	197.5	129	110	151	
14	2	3	3-	2+	2	3	2+	2+	21	1+	3+	3-	2-	1+	2	2-	2-	16	193.1*	123	142	147	
15	2-	2+	4-	3+	3-	2+	3	3	27	1-	2	3-	3-	2+	2-	2	2	16	195.8	148	164	149	
16	2-	3-	2-	2+	2+	2+	2	2	17	1+	2	2-	1+	1+	2-	1+	1	10	188.6	161	174	142	
17	2+	3-	3-	2+	3-	2	2-	1+	17	2-	3	2-	2-	2-	1+	1	1	12	187.0	161	175	140	
18	2	2	2-	2-	3-	2-	2-	1+	14	1+	2	2	2-	2	1+	1	0+	10	184.9	177	195	138	
19	1	2	1+	3-	2-	2+	2-	1+	13	1-	1+	1	2-	2-	1+	1+	0+	8	188.6	191	217	142	
20	2-	2-	2	5-	4	3	3-	1+	28	1+	1	2-	5	4	2	2-	0	25	203.1	195	222	157	
21	2	2	3-	3-	3-	2	2	1+	18	1	2-	3-	3-	2-	1	1	0	11	211.9*	168	189	167	
22	1+	2-	2+	2+	3+	3-	3	4-	24	1+	2-	2-	2	2+	2	1+	3	15	203.9	156	174	158	
23	3-	3-	2	3-	5+	6	5-	4	64	2	2-	2-	1+	4+	5-	4+	5	44	212.2	180	198	167	
24	4+	5-	5+	5-	5	5+	5-	5-	85	5-	4+	5	5+	5	5-	4+	5-	84	210.0	196	217	165	
25	4	3+	4+	3-	4-	3	3+	3-	39	4	3-	4-	2	3+	3	3	3	33	194.6#	173	187	148	
26	3-	2+	2	3	3	3+	3	4-	29	2+	2	1	1+	2+	3	3+	4+	26	188.0	157	172	141	
27	3	3+	3	3-	3	3-	3+	3-	29	4-	3+	3	3-	2-	2+	3-	3	26	176.6	163	178	129	
28	3-	3-	2-	3-	3	3+	3	3-	26	3	2+	1+	2	2	3-	3-	2+	19	173.5	130	151	125	
29	3+	3-	3-	3	3+	3-	3-	3	29	4-	2	3-	3-	3	1+	3-	2+	24	173.6	121	140	125	
30	3	3-	2+	2-	2-	2+	3-	2+	20	3-	3-	2+	2-	1+	1+	2+	2	15	183.0	122	142	136	
31	3-	3-	2+	2	3	3-	3	3-	23	3	2-	2+	2-	3	2+	2+	3	21	194.2	111	124	148	
Mean									28.6									22.9	194.4	138.4	156.4	148.0	

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

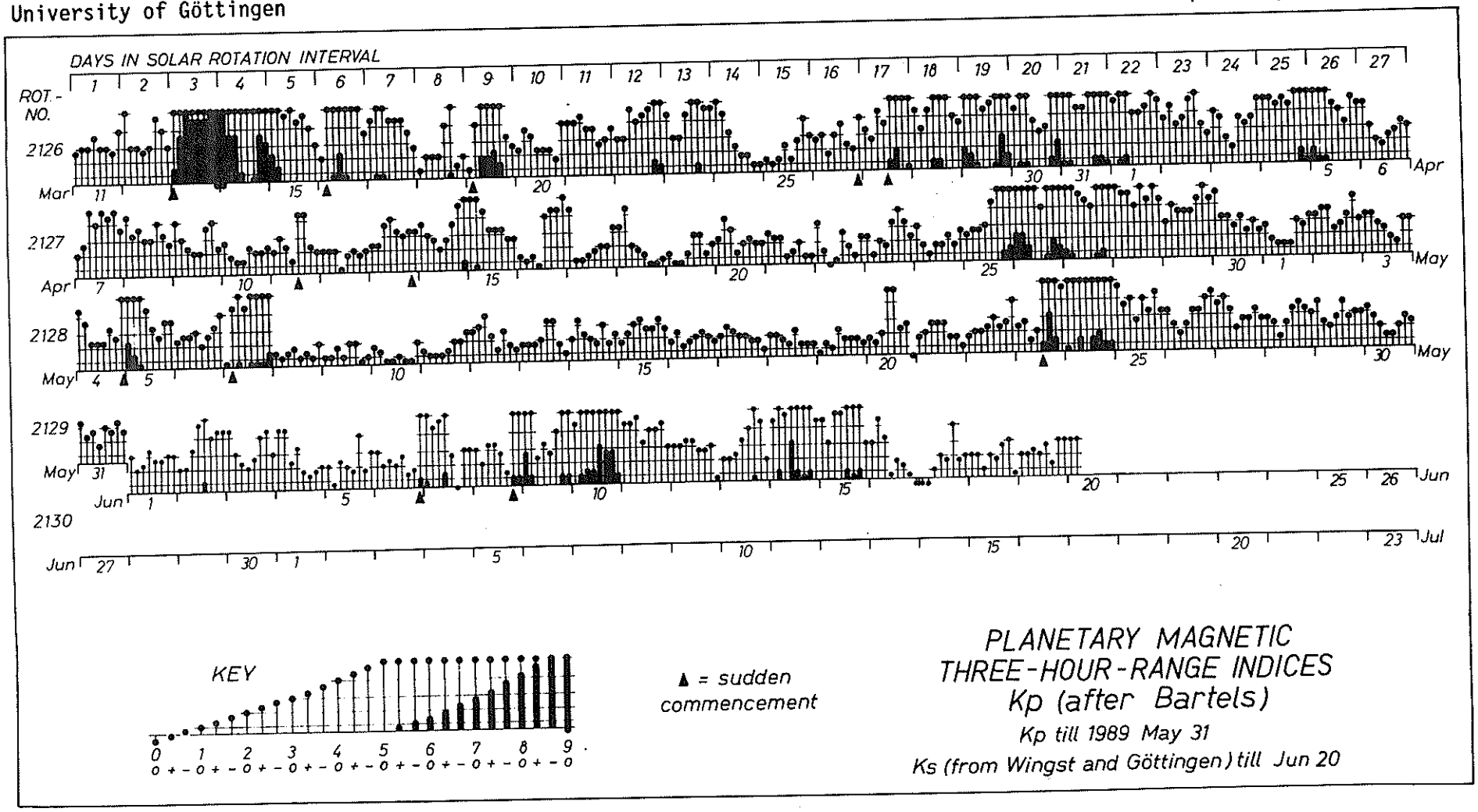
June 1988 to May 1989

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

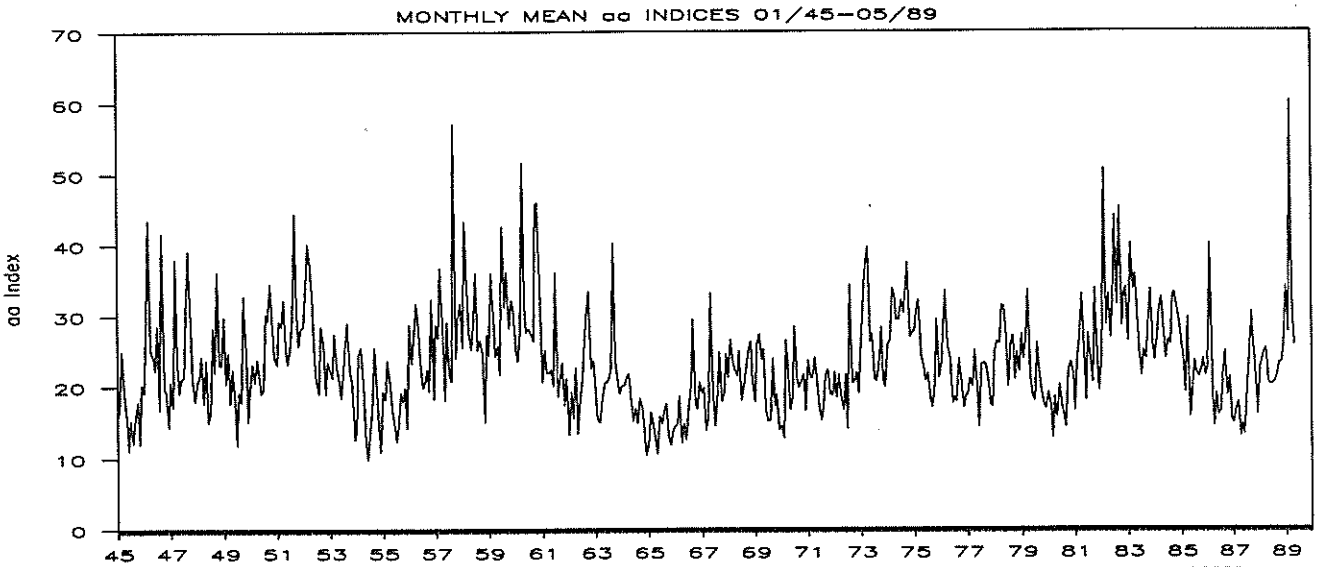
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

Kp through May 31, 1989

University of Göttingen



MONTHLY MEAN aa INDICES 01/45–05/89



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								36.0

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

MAY 1989

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
COL	64.6N	04	2352	SC*	- 10	273	- 15	05(1,2,3)	6	157	1310	880	05	14
SIT	60.0N	04	2351	SC	..	113	15	05(1)	7	--	900	490	05	13
FRD	49.6N	04	2351	SC	2.5	94	- 13	04(8) 05(1)	5	20	178	51	05	--
BJI	28.5N	04	2351	SC	5.4	19	- 1	05(1)	6	20	139	43	05	18
KRC	16.4N	04	2348	SC	- 1.0	38	18	05(1)	6	10	120	50	07	00
HYB	07.6N	04	2352	SC	.2	24	- 3	05(1,3)	5	10	128	46	06	23
GUA	04.0N	04	2351	SC*	.8	51	- 17	05(1)	7	10	200	30	05	14
ETT	00.6S	04	2351	SC	.3	20	- 18		-	6	217	84	05	23
HER	33.7S	04	2351	SC	7	29	24	05(1,2)	5	31	99	70	05	13
KGL	56.5S	04	2351	SC	9	- 32	- 12	05(1)	7	53	431	287	06	09
COL	64.6N	07	0512	SC	- 27	335	- 89	07(3,4,5)	6	166	1135	700	07	24
FRD	49.6N	07	0512	SC	1.5	81	- 11	07(2,3,8)	5	22	166	123	07	23
BJI	28.5N	07	0512	SC	.9	82	4	07(2)	6	14	195	36	07	22
KRC	16.4N	07	0512	SC	- 3.0	80	38	07(2)	6	4	196	64	08	03
HYB	07.6N	07	0513	SC	- 1.1	71	- 9	07(2,3,4,5)	6	8	264	38	08	09
GUA	04.0N	07	0515	SC	- 1.1	66	- 19	07(3)	6	--	220	60	07	17
ETT	00.6S	07	0513	SC	- 2.9	127	96		-	8	346	173	08	23
HER	33.7S	07	0511	SC	3	17	16	07(8)	5	19	138	97	08	02
KGL	56.5S	07	1228	SC	- 10	36	16	07(7,8)	7	61	516	298	08	01
BJI	28.5N	20	0957	SC	.6	17	1	20(4)	6	3	98	5	20	19
KRC	16.4N	20	0955	SC	- 0.8	12	10	20(4)	6	5	95	30	20	19
HYB	07.6N	20	0956	SC	- .2	7	- 2	20(4,5)	5	5	143	34	21	19
GUA	04.0N	20	08--	..	..	..	..	20(4)	6	--	70	10	20	20
ETT	00.6S	20	0958	SC	- .4	17	12		-	--	--	--	--	--
COL	64.6N	23	13--	..	..	..	..	25(3)	7	181	1405	985	25	21
SIT	60.0N	23	1348	SC	..	90	..	24(5)	7	--	--	670	25	10
FRD	49.6N	23	1346	SC	5.4	37	- 8	23(6)	6	33	195	123	26	04
BJI	28.5N	23	1346	SC	4.6	103	4	23(6)	7	13	268	45	25	09
KRC	16.4N	23	1348	SC	- 5.1	112	62	23(5,6)	7	9	270	99	26	--
HYB	07.6N	23	1346	SC	- .8	68	- 4	23(6)	7	6	265	43	25	21
GUA	04.0N	23	1346	SC*	- .3	70	- 20	23(6)	6	10	210	50	24	20
ETT	00.6S	23	1346	SC	- .9	54	54		-	7	236	116	25	19
HER	33.7S	23	1346	SC	3	14	11	23(6,8)	6	32	202	176	25	05
KGL	56.5S	23	1346	SC	- 07	- 20	8	24(6,8)	7	75	627	378	26	06
GUA	04.0N	24	22--	..	..	..	..	24(8)	5	--	60	20	25	16

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
WIT = WITTEVEEN

C O N T E N T S

Prompt Reports **LATE DATA** Number 539 Part I

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SOLAR RADIO EMISSION
Nancay 169 MHz Solar Interferometric Chart May 1989 156

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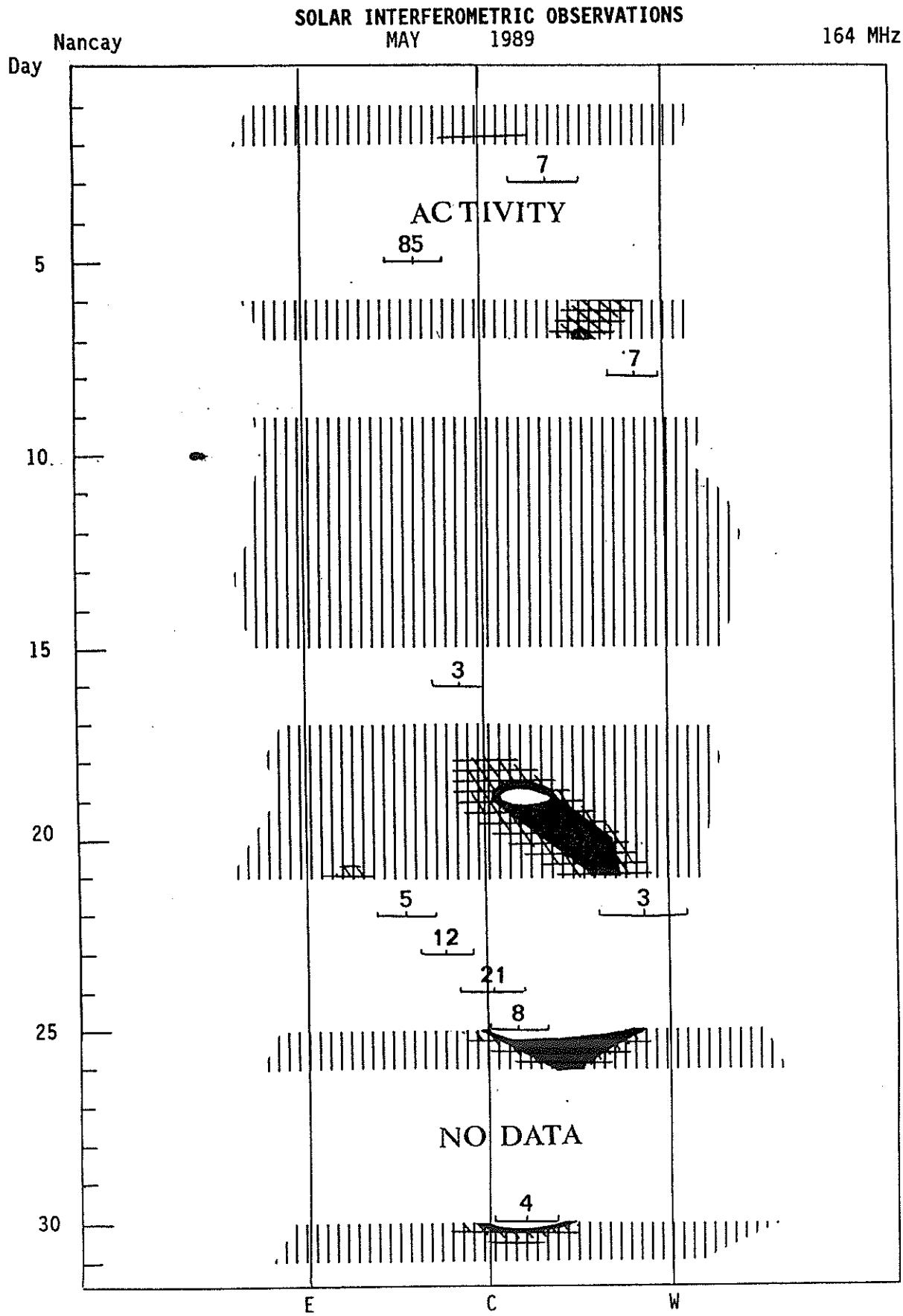
Late
May 89



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."