U.S. DEPARTMENT OF COMMERCE
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
William E. Evans, Under Secretary for Oceans and Atmosphere

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Solar-Geophysical Data prompt reports

Data for October, September 1988, and Late Data

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

NUMBER 531

(Issued in Two Parts)

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C O N T E N T S

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PART II (COMPREHENSIVE REPORTS)

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C O N T E N T S

Prompt Reports DATA FOR **OCTOBER 1988** Number 531 Part I

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages OCTOBER 1988

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
275	01	30	127	172	010	N27 W75	1	0	0	01	N27 W75	Q	Solalert 01/XX,
						N23 W74	0	0	0		N23 W74	Q	Magalert 01/02.
						N24 W53	1	0	0		N23 W53	Q	
						N19 W18	4	0	0		N19 W18	E	
						S26 E21	5	1	0		S26 E21	E	
						N17 W08	0	0	0		N17 W08	Q	
276	02	01	148	179	014	N28 W89	0	0	0	02	N28 W89	Q	Solalert 02/XX,
						N22 W88	1	1	0		N22 W88	Q	Magalert 02/03 Flare.
						N22 W67	1	0	0		N22 W67	Q	
						N20 W31	1	0	0		N20 W31	E	
						S25 E07	7	0	0		S25 E07	E	
						N17 W23	4	0	0		N17 W23	Q	
						S15 E72	4	0	0		S15 E72	Q	
						N28 W63	0	0	0		N28 W63	Q	
277	03	02	144	195	004	N22 W80	2	0	0	03	N22 W80	Q	Solalert 03/XX,
						N20 W45	0	0	0		N20 W45	E	Magnil.
						S25 W06	7	0	0		S25 W06	E	
						N17 W36	6	0	0		N17 W36	E	
						S15 E61	1	0	0		S15 E61	E	
						N28 W76	2	0	0		N28 W76	Q	
						N24 E84	1	0	0		N24 E84	Q	
278	04	03	132	202	001	N21 W58	10	0	0	04	N21 W58	E	Solalert 04/XX,
						S25 W19	12	2	2		S25 W19	A	Magquiet.
						N17 W49	0	0	0		N17 W49	E	
						S15 E47	3	0	0		S15 E47	E	
						N23 E71	0	0	0		N23 E71	E	
						N29 E83	0	0	0		N29 E83	Q	
		Presto:[2]	Boulder	Tenflare 880 flux units 03/1505 UT.									
			Boulder	X-ray event X3/2B S27 W16 03/1504 UT.									
			Meudon	Weak Type IV 03/1505 UT.									
			Boulder	X-ray event X1 03/2325 UT.									
279	05	04	149	189	006	N21 W72	3	0	0	05	N21 W72	E	Solalert 05/XX,
						S25 W31	6	0	0		S25 W31	A	Magalert 05/07 Flare.
						N17 W64	0	0	0		N17 W64	E	
						S14 E35	1	0	0		S14 E35	E	
						N24 E61	5	0	0		N24 E61	E	
						N28 E70	0	0	0		N28 E70	Q	
						S28 E40	0	0	0		S28 E40	Q	
		Presto:	Boulder	Tenflare 220 flux units duration 1 minute 03/2337 UT.									
			Sydney	Soflare Culgoora 2B S27 W18 began 03/2335 UT.									
280	06	05	167	189	018	N22 W84	2	0	0	06	N22 W84	E	Solalert 06/XX.
						S26 W45	5	1	0		S26 W45	A	Magalert 06/XX.
						N16 W78	0	0	0		N16 W78	E	
						S15 E21	1	0	0		S15 E21	E	
						N24 E48	2	0	0		N24 E48	E	
						N27 E58	0	0	0		N27 E58	Q	
						S28 E24	0	0	0		S28 E24	Q	
						N14 E69	0	0	0		N14 E69	Q	
						N18 W05	0	0	0		N18 W05	Q	
		Presto:	Toyokawa	Tenflare 140 flux units duration 10 minutes 05/0613 UT.									

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **OCTOBER 1988**

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
281	07	06	152	188	024	N23 W92	0	0	0	07	N23 W92	E	Solalert 07/10
						S26 W57	4	1	0		S26 W57	A	Magalert 07/07.
						S15 E08	2	0	0		S15 E08	E	
						N23 E36	6	0	0		N23 E36	E	
						N28 E45	1	0	0		N28 E45	Q	
						S28 E11	0	0	0		S28 E11	Q	
						N13 E56	0	0	0		N13 E56	Q	
						N13 E73	1	0	0		N13 E73	Q	
282	08	07	164	181	005	S25 W72	0	0	0	08	S25 W72	E	Solalert 08/10,
						S15 W04	4	0	0		S15 W04	A	Magnil.
						N23 E21	2	0	0		N23 E321	E	
						N28 E32	0	0	0		N28 E32	Q	
						S28 W02	5	0	0		S28 W02	Q	
						N13 E43	1	0	0		N13 E43	Q	
						N12 E59	0	0	0		N12 E59	Q	
						S30 E59	2	0	0		S30 E59	Q	
283	09	08	139	174	006	S26 W86	1	0	0	09	S26 W86	Q	Solnil, Magquiet.
						S16 W20	0	0	0		S16 W20	E	
						N25 E13	0	0	0		N25 E13	E	
						S27 W16	0	0	0		S27 W16	Q	
						N13 E29	0	0	0		N13 E29	Q	
						N12 E45	0	0	0		N12 E45	Q	
						S11 E72	0	0	0		S11 E72	Q	
284	10	09	155	176	014	S16 W33	2	0	0	10	S16 W33	E	Solquiet, Magquiet.
						N25 W01	0	0	0		N25 W01	E	
						S27 W29	0	0	0		S27 W29	Q	
						N13 E16	0	0	0		N13 E16	Q	
						N13 E32	0	0	0		N13 E32	Q	
						S12 E57	0	0	0		S12 E57	Q	
						S16 W08	0	0	0		S16 W08	Q	
						S32 E01	0	0	0		S32 E01	Q	
285	11	10	189	179	041	S16 W48	3	1	0	11	S16 W48	E	Solquiet,
						N25 W14	0	0	0		N25 W14	E	Magalert 11/XX.
						S26 W44	1	0	0		S26 W44	Q	
						N13 E02	0	0	0		N13 E02	Q	
						N12 E19	0	0	0		N12 E19	Q	
						S12 E44	0	0	0		S12 E44	Q	
						S15 W22	0	0	0		S15 W22	Q	
						S32 W12	0	0	0		S32 W12	Q	
						S23 E28	0	0	0		S23 E28	Q	
						N18 E73	0	0	0		N18 E73	Q	

Presto:[2] Kakioka Magstorm begins 10/0230 UT.
Boulder Tenflare 210 flux units duration 19 minutes 10/1804 UT.

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages OCTOBER 1988

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location	Flares			Date of Forecast	Location	Region Forecast[1]	Geoalerts
						°Lat °Long	Total	M	X		°Lat °Long		
286	12	11	187	170	017	S16 W61	2	0	0	12	S16 W61	E	Solquiet, Magnil.
						N25 W27	0	0	0		N25 W27	E	
						S27 W54	0	0	0		S27 W54	E	
						N14 W11	0	0	0		N14 W11	Q	
						N12 E05	0	0	0		N12 E05	Q	
						S32 E09	0	0	0		S32 E09	Q	
						S09 E31	0	0	0		S09 E31	Q	
						S14 W36	0	0	0		S14 W36	Q	
						S32 W25	0	0	0		S32 W25	Q	
						S22 E14	0	0	0		S22 E14	Q	
						N18 E63	3	0	0		N18 E63	E	
287	13	12	220	149	009	S16 W73	1	0	1	13	S16 W73	E	Solalert 13/14,
						N26 W39	0	0	0		N26 W39	E	Magalert 13/14 Flare.
						S27 W65	1	0	0		S27 W65	E	
						N12 W21	0	0	0		N12 W21	Q	
						N13 W09	0	0	0		N13 W09	Q	
						S30 W03	0	0	0		S30 W03	Q	
						S11 E18	0	0	0		S11 E18	Q	
						S13 W47	0	0	0		S13 W47	Q	
						S22 E01	0	0	0		S22 E01	Q	
						N18 E49	1	0	0		N18 E49	E	
						N25 E35	1	0	0		N25 E35	Q	
						S20 E13	0	0	0		S20 E13	Q	
						S23 E28	0	0	0		S23 E28	Q	
						N20 E57	0	0	0		N20 E57	Q	

Presto:[2] Boulder Tenflare 490 flux units duration 16 minutes 12/0457 UT.
Boulder X-ray event X2/2N S20 W66 12/0511 UT.
Boulder Proton event began 12/0920 UT, maximum of 12 pfu at greater than 10 MeV 12/0930 UT, ended 12/0945 UT.
Sydney Soflare Culgoora 2B S18 W48 began 12/0520 UT.

288	14	13	197	159	007	S16 W85	2	1	0	14	S16 W85	E	Solnil,
						N25 W53	0	0	0		N25 W53	Q	Magalert 14 Flare.
						S27 W78	6	0	0		S27 W78	E	
						N13 W22	0	0	0		N13 W22	Q	
						S30 W17	0	0	0		S30 W17	Q	
						S11 E05	0	0	0		S11 E05	Q	
						S14 W61	0	0	0		S14 W61	Q	
						N19 E34	1	0	0		N19 E34	Q	
						N26 E19	0	0	0		N26 E19	Q	
						S20 W01	0	0	0		S20 W01	Q	
						S23 E15	0	0	0		S23 E15	Q	
						N19 E45	1	0	0		N19 E45	E	
						N25 E30	0	0	0		N25 E30	Q	

Presto: Boulder Tenflare 230 flux units duration 3 minutes 13/2029 UT.

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages — OCTOBER 1988

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
289	15	14	166	151	004	N24 W74	0	0	0	15	N24 W74	Q	Solquiet,
						N14 W35	3	0	0		N14 W35	Q	Magalert 15 Flare.
						S30 W29	0	0	0		S30 W29	Q	
						S11 W09	0	0	0		S11 W09	Q	
						S15 W73	1	0	0		S15 W73	Q	
						N18 E20	0	0	0		N18 E20	Q	
						S20 W15	0	0	0		S20 W15	Q	
						S23 E02	0	0	0		S23 E02	Q	
						N19 E31	0	0	0		N19 E31	Q	
						N24 E14	0	0	0		N24 E14	Q	
						N15 E63	0	0	0		N15 E63	Q	
						S22 W62	0	0	0		S22 W62	Q	
290	16	15	159	150	004	N24 W86	0	0	0	16	N24 W86	Q	Solquiet, Magnil.
						N14 W48	0	0	0		N14 W48	Q	
						S30 W44	0	0	0		S30 W44	Q	
						S11 W22	0	0	0		S11 W22	Q	
						N18 E09	0	0	0		N18 E09	Q	
						S20 W26	0	0	0		S20 W26	Q	
						S23 W10	0	0	0		S23 W10	Q	
						N19 E18	0	0	0		N19 E18	Q	
						N25 E04	2	0	0		N25 E04	Q	
						N14 E50	0	0	0		N14 E50	Q	
						S22 W79	4	0	0		S22 W79	Q	
						S36 E76	0	0	0		S36 E76	Q	
291	17	16	191	155	006	N14 W62	1	0	0	17	N14 W62	Q	Solquiet, Magquiet.
						S11 W35	0	0	0		S11 W35	Q	
						N18 W06	0	0	0		N18 W06	Q	
						S19 W39	1	0	0		S19 W39	Q	
						S23 W22	0	0	0		S23 W22	Q	
						N20 E05	1	0	0		N20 E05	Q	
						N25 W09	0	0	0		N25 W09	Q	
						N15 E36	0	0	0		N15 E36	Q	
						S21 W89	5	0	0		S21 W89	E	
						S37 E60	0	0	0		S37 E60	Q	
						S17 W77	0	0	0		S17 W77	Q	
						N29 E78	0	0	0		N29 E78	Q	
						N32 E06	0	0	0		N32 E06	Q	
292	18	17	163	178	011	N15 W74	0	0	0	18	N15 W74	Q	Solalert 18/18,
						S11 W48	1	0	0		S11 W48	Q	Magquiet.
						N19 W21	0	0	0		N19 W21	Q	
						S18 W52	3	0	0		S18 W52	Q	
						N21 W07	0	0	0		N21 W07	Q	
						N25 W21	1	0	0		N25 W21	Q	
						S37 E47	0	0	0		S37 E47	Q	
						N27 E66	1	0	0		N27 E66	Q	
						N33 W05	0	0	0		N33 W05	Q	
						N20 E75	8	3	0		N20 E75	A	

Presto:[2] Boulder Tenflare 300 flux units duration 5 minutes 17/0016 UT.

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages OCTOBER 1988

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
293	19	18	177	162	025	N14 W88	0	0	0	19	N14 W88	Q	Solalert 19/XX,
						S12 W62	1	0	0		S12 W62	Q	Magalert 19/XX.
						S19 W65	12	0	0		S19 W65	E	
						N21 W21	0	0	0		N21 W21	Q	
						N25 W35	3	0	0		N25 W35	E	
						S36 E35	0	0	0		S36 E35	Q	
						N29 E54	0	0	0		N29 E54	Q	
						N33 W20	0	0	0		N33 W20	Q	
						N21 E66	10	1	0		N21 E66	A	
						S17 W66	0	0	0		S17 W66	Q	
						S13 E64	0	0	0		S13 E64	Q	
294	20	19	160	166	011	S12 W75	1	0	0	20	S12 W75	Q	Solalert 20/XX,
						S20 W76	1	0	0		S20 W76	E	Magnil.
						N20 W35	0	0	0		N20 W35	Q	
						N25 W47	1	0	0		N25 W47	E	
						S36 E23	0	0	0		S36 E23	Q	
						N28 E40	1	0	0		N28 E40	E	
						N32 W37	0	0	0		N32 W37	Q	
						N21 E54	10	2	0		N21 E54	A	
						S18 W79	0	0	0		S18 W79	Q	
						S14 E51	0	0	0		S14 E51	Q	
295	21	20	196	168	013	S12 W90	0	0	0	21	S12 W90	Q	Solalert 21/XX,
						S19 W94	1	0	0		S19 W94	Q	Magquiet.
						N21 W46	0	0	0		N21 W46	Q	
						N24 W60	3	0	0		N24 W60	E	
						N13 W18	0	0	0		N13 W18	Q	
						S36 E12	0	0	0		S36 E12	Q	
						N29 E27	1	0	0		N29 E27	E	
						N20 E41	1	0	0		N20 E41	A	
						S16 W92	0	0	0		S16 W92	Q	
						S13 E39	0	0	0		S13 E39	Q	
						S23 W54	0	0	0		S23 W54	Q	
						N21 W30	0	0	0		N21 W30	Q	
296	22	21	157	166	007	N24 W74	1	0	0	22	N24 W74	E	Solalert, Magquiet.
						S37 W01	0	0	0		S37 W01	Q	
						N21 E28	1	0	0		N21 E28	A	
						S14 E26	0	0	0		S14 E26	Q	
						S23 W69	1	0	0		S23 W69	E	
						N21 W45	0	0	0		N21 W45	Q	
						N16 E56	0	0	0		N16 E56	Q	
						S38 E76	0	0	0		S38 E76	Q	
297	23	22	158	166	000	N23 W87	0	0	0	23	N23 W87	E	Solalert, Magquiet.
						S36 W13	0	0	0		S36 W13	Q	
						N21 E16	13	0	0		N21 E16	A	
						S19 W79	0	0	0		S19 W79	Q	
						N17 E40	0	0	0		N17 E40	Q	
						S38 E61	0	0	0		S38 E61	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **OCTOBER 1988**

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
298	24	23	130	171	006	S36 W26	0	0	0	24	S36 W26	Q	Solalert, Magquiet.
						N21 E02	15	0	0		N21 E02	E	
						S37 E46	0	0	0		S37 E46	Q	
299	25	24	166	170	005	S36 W38	0	0	0	25	S36 W38	Q	Solalert, Magquiet.
						N21 W11	7	0	0		N21 W11	E	
						N19 E21	2	0	0		N19 E21	Q	
						S37 E35	0	0	0		S37 E35	Q	
						S26 E71	0	0	0		S26 E71	Q	
300	26	25	176	164	003	S36 W50	0	0	0	26	S36 W50	Q	Solnil, Magquiet.
						N21 W24	2	0	0		N21 W24	E	
						N19 E06	0	0	0		N19 E06	Q	
						S36 E22	0	0	0		S36 E22	Q	
						S27 E55	2	0	0		S27 E55	Q	
						N21 E63	0	0	0		N21 E63	Q	
						N29 W28	0	0	0		N29 W28	Q	
301	27	26	161	157	006	S36 W61	0	0	0	27	S36 W61	Q	Solquiet, Magquiet.
						N21 W36	3	0	0		N21 W36	E	
						N18 W08	0	0	0		N18 W08	Q	
						S37 E10	0	0	0		S37 E10	Q	
						S26 E43	1	0	0		S26 E43	Q	
						N21 E49	0	0	0		N21 E49	Q	
						N29 W41	0	0	0		N29 W41	Q	
302	28	27	170	163	006	S36 W75	0	0	0	28	S36 W75	Q	Solquiet, Magquiet.
						N21 W50	1	0	0		N21 W50	Q	
						N18 W23	0	0	0		N18 W23	Q	
						S36 W03	0	0	0		S36 W03	Q	
						S26 E32	0	0	0		S26 E32	Q	
						N20 E36	0	0	0		N20 E36	Q	
						N29 E23	0	0	0		N29 E23	Q	
						N15 E65	0	0	0		N15 E65	Q	
303	29	28	144	158	006	S36 W86	0	0	0	29	S36 W86	Q	Solquiet, Magquiet.
						N22 W62	5	0	0		N22 W62	E	
						S36 W16	0	0	0		S36 W16	Q	
						S26 E18	0	0	0		S26 E18	Q	
						N19 E22	0	0	0		N19 E22	Q	
						N28 E11	4	0	0		N28 E11	E	
						N15 E52	0	0	0		N15 E52	Q	
						S16 E74	3	0	0		S16 E74	E	
304	30	29	162	156	002	N21 W78	2	0	0	30	N21 W78	E	Solquiet, Magquiet.
						N21 W44	0	0	0		N21 W44	Q	
						S36 W28	0	0	0		S36 W28	Q	
						S26 E06	1	0	0		S26 E06	Q	
						N20 E07	0	0	0		N20 E07	Q	
						N29 W04	1	0	0		N29 W04	E	
						N15 E38	0	0	0		N15 E38	Q	
						S16 E61	13	1	0		S16 E61	E	
						S27 E71	0	0	0		S27 E71	Q	
						N18 W51	0	0	0		N18 W51	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages OCTOBER 1988

Julian Day	Date of Issue	Date of Obser-vation	Wolf No.	10-cm Solar Flux	A-index	Location °Lat °Long	Flares Total	M	X	Date of Forecast	Location °Lat °Long	Region Forecast[1]	Geoalerts
305	31	30	140	167	003	N21 W89	3	0	0	31	N21 W89	E	Solquiet, Magquiet.
						S36 W40	0	0	0		S36 W40	Q	
						S27 W09	0	0	0		S27 W09	Q	
						N29 W18	0	0	0		N29 W18	Q	
						N16 E25	0	0	0		N16 E25	Q	
						S16 E48	4	0	0		S16 E48	E	
						S28 E61	0	0	0		S28 E61	Q	
						N24 E59	0	0	0		N24 E59	Q	
						N25 E78	0	0	0		N25 E78	Q	
		Presto:[2]	Kakioka		Magstorm begins 30/2000 UT.								
306	01	31	157	161	011	S36 W53	0	0	0	01	S36 W53	Q	Solquiet, Magquiet.
						S28 W22	0	0	0		S28 W22	Q	
						N22 W17	1	0	0		N22 W17	Q	
						N28 W30	0	0	0		N28 W30	Q	
						N16 E12	0	0	0		N16 E12	Q	
						S17 E34	3	0	0		S17 E34	E	
						S28 E49	0	0	0		S28 E49	Q	
						N24 E46	0	0	0		N24 E46	Q	
						N25 E66	0	0	0		N25 E66	Q	
						N16 E48	0	0	0		N16 E48	Q	

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

INTERNATIONAL RELATIVE SUNSPOT NUMBERS

Day	Nov 87	Dec	Jan 88	Feb	Mar	Apr	May	Jun	Jul†	Aug†	Sep†	Oct†
01	56	17	47	63	68	110	69	95	139	142	137	109
02	57	16	31	68	66	96	84	96	145	143	153	117
03	57	16	25	68	72	94	76	100	142	146	129	129
04	46	15	23	74	77	74	101	105	129	135	148	128
05	47	19	32	58	64	66	103	125	119	120	128	130
06	27	24	40	43	61	62	77	145	103	123	93	131
07	31	34	58	44	65	84	50	141	103	144	97	128
08	43	36	57	46	67	92	63	151	106	160	88	138
09	42	41	62	50	49	115	74	173	82	171	74	112
10	30	34	68	38	36	107	87	144	78	152	76	146
11	28	22	75	26	20	115	65	108	95	135	87	148
12	25	13	67	14	39	118	56	77	100	133	83	156
13	18	20	76	23	53	120	44	47	103	122	91	150
14	23	26	91	28	62	138	37	53	114	128	94	131
15	22	42	90	33	63	145	44	65	111	121	89	109
16	33	40	83	42	74	157	53	81	111	85	97	120
17	46	39	72	35	99	144	57	76	116	67	79	125
18	48	39	68	55	95	137	44	67	136	44	97	134
19	51	28	73	66	105	108	20	70	105	57	113	133
20	49	26	85	51	85	88	20	77	106	57	153	119
21	51	14	78	27	81	79	25	95	103	40	168	117
22	70	24	66	15	76	72	30	92	106	22	168	109
23	83	17	47	13	74	43	40	91	109	26	190	104
24	56	13	44	23	83	30	48	93	81	43	166	121
25	42	25	33	19	92	40	54	111	76	71	143	124
26	47	27	44	15	93	44	63	107	76	93	151	110
27	21	29	54	31	103	36	66	111	111	142	157	120
28	11	28	67	40	109	41	70	116	122	146	148	119
29	20	30	59	52	104	39	74	121	157	164	111	122
30	16	42	56		108	47	83	121	161	163	117	115
31		43	57		120		86		146	151		111
Mean	39.9	27.1	59.0	40.0	76.2	88.0	60.1	101.8	112.6	111.2	120.8	124.7

† = preliminary. The yearly mean sunspot number equaled 29.2 in 1987.

OTTAWA 2800 MHz (10.7 cm) SOLAR FLUX

Algonquin Radio Observatory — Adjusted to 1 AU

Day	Nov 87	Dec	Jan 88	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
01	99.1	87.6	100.1	105.5	99.8*	127.2	108.8	149.3*	194.4*	180.9	191.3	179.4
02	105.0	86.5	93.7	104.3	99.1	126.5	113.1*	147.6	198.9	187.6	178.9	197.0
03	98.0	85.8	101.2	103.6	101.9*	127.6	116.4*	149.5	190.2	172.2*	177.3	200.4
04	101.1*	85.1	98.2	103.1	102.6*	122.6	127.4	150.9	181.0	163.6	165.9	189.2
05	99.2	86.8	99.5	102.6	106.7*	114.6	121.1	151.2	171.2	159.2	166.3	191.0
06	94.9	85.7	101.7	103.6	107.6	116.8	116.5	159.0	156.7	163.4	152.4	193.4
07	94.4	85.3	102.1	105.3	107.3	120.0	112.9	164.6	152.4	170.4	145.4	182.4
08	92.7	88.7	105.6	102.5	104.1*	121.8*	116.7	168.3	142.4	186.9	138.9	172.6
09	90.3	91.2	100.6*	101.0	101.5	121.8*	121.9	165.9*	137.7	182.4	128.0	176.5
10	89.2	90.1	100.9	100.2	99.2	127.2	116.4	149.8	138.3	181.8	117.6	177.8
11	92.6	91.1	101.7*	99.6	102.9	128.0*	114.6	137.8	137.7*	178.2	121.9	168.2
12	92.6	91.5*	107.5*	101.3	103.5	130.6*	111.6	125.9	137.9	161.2	127.0	148.4
13	92.9	91.1	108.1*	102.9	107.8	134.6	105.9	115.0	141.3*	159.7	124.8	157.5
14	92.3	91.5	113.7	102.6	108.9*	146.3	105.2	111.7	150.1	151.6	130.2	150.4
15	93.7	92.0*	112.4	100.4	112.6*	143.5	103.4	113.5	150.7	144.0	126.1	149.1
16	95.0	93.4*	121.8*	101.0	114.1*	147.6	103.3	121.7	153.3*	137.8	128.5	152.3
17	96.8	92.2	116.4*	106.2	117.4	145.5	103.7	124.8	152.8*	145.6	135.3	175.0
18	100.0	90.2	110.9	112.5	116.1	145.3	106.7	125.7	152.3	128.5	139.5	162.3
19	106.6	88.4	114.2	109.0	116.1*	138.5	104.8	119.4	142.1	123.9	138.6	164.0
20	112.2	86.9	112.7	106.5	116.3*	134.9	106.1	118.5	141.3	118.1	151.4	166.0
21	115.3	90.7	111.6	104.7	117.5*	127.6	112.6	122.8*	145.8	116.1	157.8	165.9
22	117.8	88.1	104.5	102.5	117.6	120.1	114.0	124.4*	141.2	114.9	178.6	166.2
23	115.1	88.2	104.7	100.2	120.9*	111.5	122.2	129.3	144.6	121.7A	177.8*	171.1
24	109.4	89.9	102.2	99.6	123.0*	105.6	119.8	135.7*	138.6	133.7	178.6	168.4
25	104.9	96.2*	94.9	96.4	128.5*	106.7	123.8*	153.7	140.9	144.3	177.4	162.1
26	101.3	96.8*	93.5	96.7	127.5*	103.8	127.8	157.6*	149.7	157.1	172.0	155.4
27	94.9	101.4	101.6	96.3	128.0*	101.9	130.0	160.5	161.5	166.8	179.6*	161.8
28	92.3	102.5	103.0	97.1	129.8	101.6	130.1	183.2	175.4	174.0	171.0	156.0
29	90.7	101.4	99.1	103.3	131.7	102.1	140.2	189.5	185.9	189.0	172.0	155.9
30	89.1	99.2	100.1		128.3	104.8	142.8	187.4*	188.3	190.0	173.1	154.2*
31		99.7	103.1		130.6*		153.6*		192.5	194.5		160.4
Mean	99.0	91.5	104.6	102.4	113.8	123.6	117.9	143.8	157.6	158.0	154.1	168.7

* = corrected for burst in progress; A = interpolation - interference during calibration. The yearly mean flux equaled 85.3 in 1987.

DAILY SOLAR INDICES

October 1988

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers Int	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	275	2	109	117	179.1	509	288	189	179.4	168	131	61	34	24
02	276	3	117	120	196.8	548	301	199	197.0	175	134	60	34	18
03	277	4	129	122	200.3	593	313	214	200.4	174	139	62	46	--
04	278	5	128	128	189.2	516	306	200	189.2	171	131	61	35	32
05	279	6	130	125	191.1	511	312	200	191.0	174	134	67	43	43
06	280	7	131	120	193.6	590	303	197	193.4	173	134	72	44	--
07	281	8	128	124	182.7	589	304	194	182.4	164	129	67	49	--
08	282	9	138	120	173.0	510	251	168	172.6	152	126	63	40	42
09	283	10	112	122	177.0	576	297	191	176.5	159	128	59	35	34
10	284	11	146	149	178.4	548	306	191	177.8	159	127	57	38	28
11	285	12	148	153	168.9	485	---	---	168.2	---	---	57	34	42
12	286	13	156	160	149.1	523	284	181	148.4	152	118	61	34	21
13	287	14	150	153	158.3	518	278	168	157.5	142	113	56	33	29
14	288	15	131	134	151.3	560	267	158	150.4	136	112	58	33	24
15	289	16	109	121	150.0	573	267	159	149.1	132	112	53	31	39
16	290	17	120	118	153.3	571	262	167	152.3	146	112	48	30	22
17	291	18	125	120	176.3	597	285	185	175.0	157	124	57	30	12
18	292	19	134	135	163.6	566	272	175	162.3	146	113	56	41	26
19	293	20	133	128	165.4	599	289	187	164.0	150	116	60	33	21
20	294	21	119	133	167.5	547	281	186	166.0	152	114	54	32	21
21	295	22	117	119	167.5	530	287	196	165.9	156	115	59	31	19
22	296	23	109	121	167.9	496	274	197	166.2	157	115	59	31	21
23	297	24	104	113	173.0	577	273	194	171.1	157	118	57	35	20
24	298	25	121	123	170.3	549	264	191	168.4	163	119	57	39	42
25	299	26	124	127	164.0	586	267	187	162.1	153	114	59	37	34
26	300	27	110	119	157.3	591	266	180	155.4	145	114	59	41	42
27	301	1	120	123	163.9	577	269	181	161.8	153	120	61	35	36
28	302	2	119	118	158.1	---	274	179	156.0	150	118	60	34	21
29	303	3	122	119	158.1	602	274	172	155.9	147	118	65	34	21
30	304	4	115	111	156.5*	619	299	184	154.2*	155	122	65	32	25
31	305	5	111	111	162.8	604	290	175	160.4	146	119	61	32	25
Mean			124.7	126.0	169.8	559	283	185	168.7	155	121	60	36	28

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

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

* = corrected for burst in progress

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

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

OCTOBER 1988

Date	RELATIVE SUNSPOT NUMBERS International (R_i) Monthly Mean	International (R_i) Smoothed	American (R_a) Monthly Mean	American (R_a) Smoothed	Derived (R_s) Monthly Mean	Derived (R_s) Smoothed	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Monthly Mean	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Smoothed
Oct 84	12.0	29	9.8	27	16.9	31	73.1	86
Nov	22.8	25	19.4	23	18.6	26	74.6	72
Dec	18.7	22	17.0	20	17.4	23	73.5	79
Jan 85	16.5	20	14.5	19	15.9	21	72.1	77
Feb	15.9	20	16.3	18	15.7	20	71.9	76
Mar	17.2	19	11.8	16	16.3	19	72.5	75
Apr	16.2	18	17.1	17	19.8	19	75.7	75
May	27.5	18	24.0	17	26.6	19	82.0	75
Jun	24.2	18	22.2	16	22.8	19	78.5	75
Jul	30.7	17	30.8	16	25.8	19	81.3	75
Aug	11.1	17	10.7	15	17.2	19	73.3	75
Sep	3.9	17	3.4	16	13.8	20	70.2	76
Oct	18.6	17	16.5	16	18.1	20	74.2	76
Nov	16.2	17	16.4	15	16.4	19	72.6	75
Dec	17.3	15	10.1	14	16.2	19	72.4	75
Jan 86	2.5	14	2.3	12	14.6	18	70.9	74
Feb	23.2	13	23.8	11	26.0	17	81.5	74
Mar	15.1	13	12.5	11	20.3	17	76.2	73
Apr	18.5	14	13.8	12	19.6	18	75.6	74
May	13.7	14	11.6	12	18.1	18	74.2	74
Jun	1.1	14	0.8	11	13.3	18	69.7	74
Jul	18.1	14	17.7	11	16.3	18	72.5	74
Aug	7.4	13	7.6	11	13.7	17	70.1	73
Sep	3.8	12	3.5	10	13.0	17	69.4	73
Oct	35.4	13	19.8	11	27.0	17	82.4	73
Nov	15.2	15	14.7	13	19.5	18	75.5	74
Dec	6.8	16	5.1	14	14.0	19	70.4	75
Jan 87	10.4	18	9.4	16	13.8	20	70.2	76
Feb	2.4	20	3.0	18	13.4	22	69.8	78
Mar	14.7	22	13.3	20	17.2	24	73.3	80
Apr	39.6	24	39.4	23	30.3	25	85.5	81
May	33.0	26	30.7	26	35.0	27	89.8	83
Jun	17.4	28	18.0	28	24.8	29	80.4	84
Jul	33.0	31	34.3	31	32.0	32	87.0	87
Aug	38.7	35	39.0	34	37.6	35	92.2	89
Sep	33.9	39	34.0	38	32.0	38	87.0	93
Oct	60.6	44	55.8	43	43.2	41	97.4	96
Nov	39.9	47	42.5	47	44.9	44	99.0	99
Dec	27.1	51	26.7	52	36.8	49	91.5	102
Jan 88	59.0	58*	56.8	59	51.0	55	104.6	108
Feb	40.0	64*	39.1	65	48.6	61	102.4	114
Mar	76.2	71*	77.5	72	60.9	67	113.8	119
Apr	88.0	77*	90.9	78	71.5	73	123.6	124
May	60.1	84(4)*	64.7	84	65.3	79	117.9	--
Jun	101.8	90(6)*	106.4	91	93.3	85	143.8	--
Jul	112.6*	99(8)*	108.7	100	108.2	93	157.6	--
Aug	111.2*	108(11)*	111.2	108	108.6	102	158.0	--
Sep	120.8*	115(14)*	122.2	116	104.4	109	154.1	--
Oct	124.7*	122(17)*	126.0	123	120.2	115	168.7	--
Nov	----	127(20)*	----	128	----	121	----	--
Dec	----	132(23)*	----	133	----	125	----	--
Jan 89	----	135(23)*	----	136	----	128	----	--
Feb	----	139(22)*	----	140	----	132	----	--
Mar	----	147(22)*	----	148	----	139	----	--
Apr	----	154(21)*	----	155	----	146	----	--

*An asterisk marks either a preliminary value or one based in part on preliminary observations.

Underlined entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 astronomical unit) and the Zurich sunspot number.

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	64	71	77	84	90	99	108	115	122	127	132
					(4)	(6)	(8)	(11)	(14)	(17)	(20)	(23)
1989	135	139	147	154	161	166	169	172	179	184	185	186
	(23)	(22)	(22)	(21)	(22)	(25)	(29)	(32)	(35)	(37)	(39)	(42)
1990	186	186	184	178	172	168	167	164	157	149	142	138
	(45)	(48)	(49)	(48)	(45)	(41)	(39)	(40)	(39)	(38)	(34)	(31)

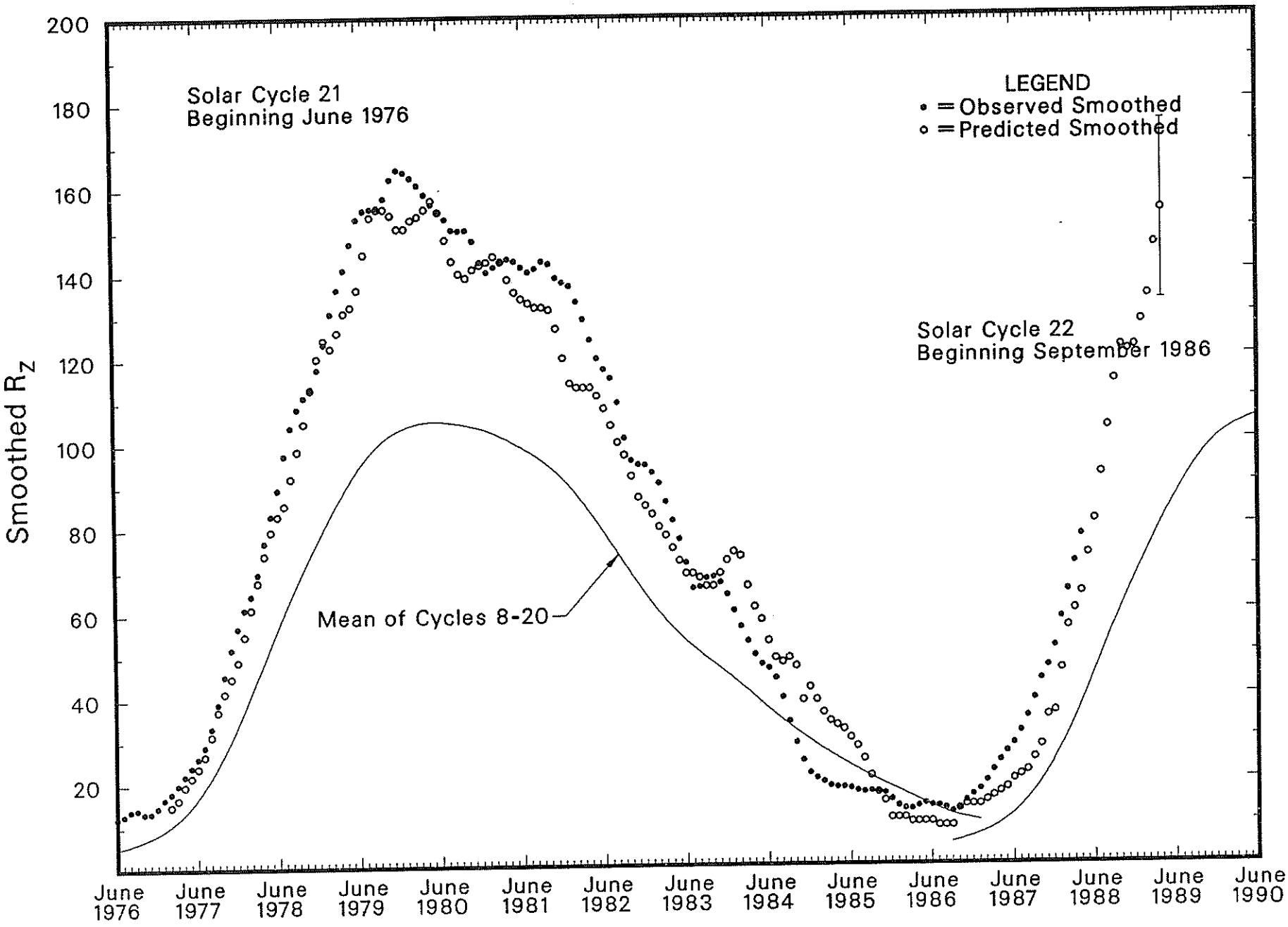
*September 1986 marks the onset of Sunspot Cycle 22.

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 June 1988 and on provisional numbers thereafter.

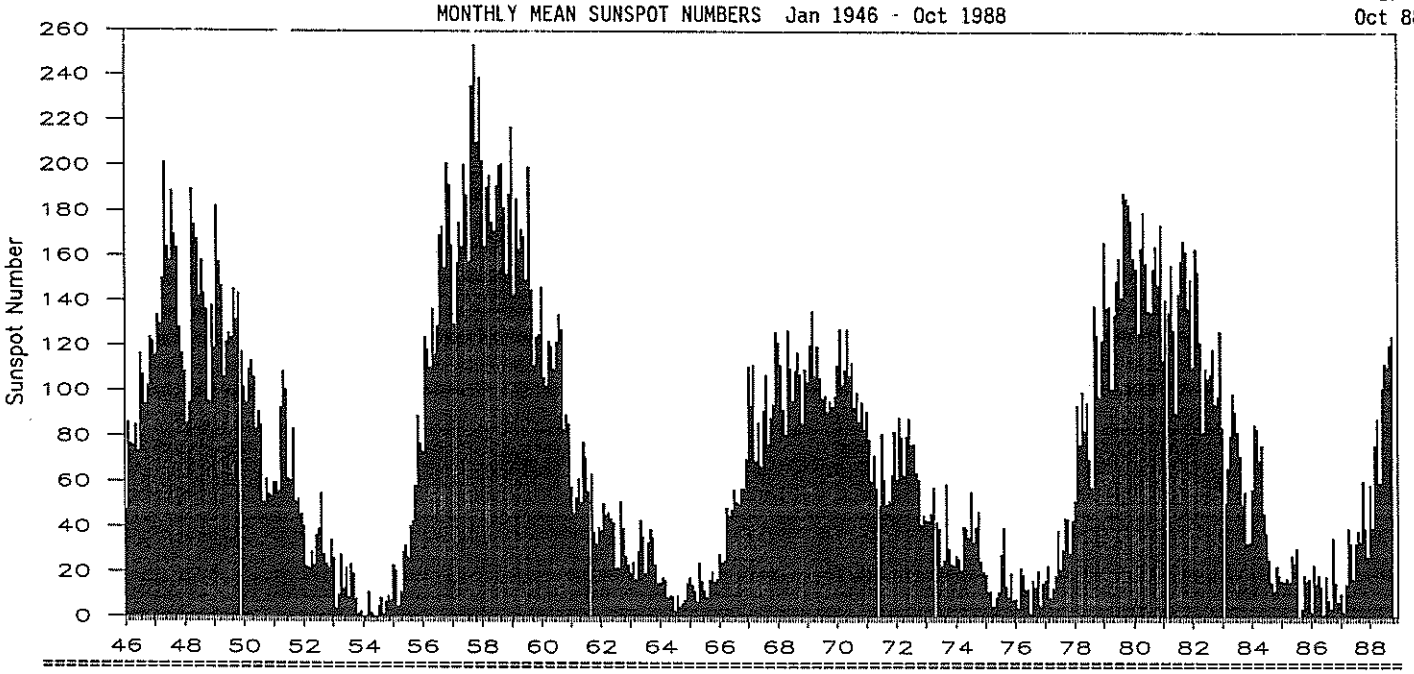
Table entries, with numbers in parentheses below them, denote predictions by the McNish-Lincoln method. (See page 9 in the July 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number from the predicted value generates the lower limit. Consider, for example, the April 1989 prediction. There exists a 90% chance that in April 1989 the actual smoothed sunspot number will fall somewhere between 133 and 175.

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



MONTHLY MEAN SUNSPOT NUMBERS Jan 1946 - Oct 1988



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean	
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7	92.6	
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5	151.6	M
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0	136.3	
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6	134.7	
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1	83.9	
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8	69.4	
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3	31.5	
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5	13.9	
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6	4.4	m
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9	38.0	
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1	141.7	
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4	190.2	M
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6	184.8	
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0	159.0	
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6	112.3	
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.8	63.6	37.7	32.6	39.9	53.9	
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2	37.6	
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9	27.9	
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1	10.2	m
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0	15.1	
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4	47.0	
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4	93.8	
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8	105.9	M
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9	105.5	
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5	104.5	
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2	66.6	
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3	68.9	
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3	38.0	
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5	34.5	
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8	15.5	
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3	12.6	m
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2	27.5	
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7	92.5	
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3	155.4	M
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4	154.6	
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1	140.4	
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0	115.9	
1983	84.3	51.0	66.5	80.7	99.2	91.1	82.2	71.8	50.3	55.8	33.3	33.4	66.6	
1984	57.0	85.4	83.5	69.7	76.4	46.1	37.4	25.5	15.7	12.0	22.8	18.7	45.9	
1985	16.5	15.9	17.2	16.2	27.5	24.2	30.7	11.1	3.9	18.6	16.2	17.3	17.9	
1986	2.5	23.2	15.1	18.5	13.7	1.1	18.1	7.4	3.8	35.4	15.2	6.8	13.4	m
1987	10.4	2.4	14.7	39.6	33.0	17.4	33.0	38.7	33.9	60.6	39.9	27.1	29.2	
1988	59.0	40.0	76.2	88.0	60.1	101.8	112.6*	111.2*	120.8*	124.7*			89.4*	

*Preliminary

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

H - ALPHA S O L A R F L A R E S

OCTOBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0001	LEAR	01	0007	0012	0022	N21	W74	5166	09	25.4	15	SF		4	E		22		
0002	LEAR	01	0723	0727	0732	N22	W75	5162	09	25.6	9	1N	M 1.8	3	E		154		
0003	BUCA	01	0725	0727	0730	S15	E80	5175	10	7.4	5	1N			C	0727	64		
0004		01	08031	08063	0833	S28	E23	5171	10	3.1	30	SF					19		
	SVTO	01	0803	0809	0835D	S27	E23	5171	10	3.1	32D	SF		3	E		24		
	LEAR	01	0804	0806	0833	S28	E23	5171	10	3.1	29	SF		3	E		14		
0005		01	1000	1006	1037	S27	E20	5171	10	3.0	37	SN C	4.4				96	1.4	F
	SVTO	01	1000	1006	1107	S27	E20	5171	10	3.0	67	SF C	4.4	3	E		80		F
	ATHN	01	1002E		1007	S27	E20	5171	10	3.0	5D	SN C	4.4	2	V	1007	111	1.4	
0006	SVTO	01	1128	1129	1140	S26	E12	5171	10	2.4	12	SF		3	E		18		
0007	SVTO	01	1157	1209	1257	S25	E18	5171	10	2.9	60	SF		3	E		43		F
0008	SVTO	01	1305	1309	1316	S27	E16	5171	10	2.8	11	SF		3	E		18		
0009		01	14014	14046	1422	N22	W63	5163	09	26.8	21	SF					44		F
	HOLL	01	1401	1404	1421	N22	W62	5163	09	26.9	20	SF		3	E		51		F
	RAMY	01	1405	1410	1422	N21	W64	5163	09	26.8	17	SF		3	E		38		
0010	RAMY	01	1408	1409	1414	S27	E14	5717	10	2.7	6	SF		3	E		14		
0011	HOLL	01	1607	1609	1622	N21	W25	5168	09	29.8	15	SF		3	E		41		F
0012	HOLL	01	1853	1855	1908	N17	W19	5174	09	30.3	15	SF		3	E		25		
0013		01	19351	19361	1952	S27	E12	5171	10	2.7	17	1N C	5.4				66		EH
	HOLL	01	1935	1936	1956	S27	E11	5171	10	2.7	21	1N C	5.4	4	E		101		EH
	PALE	01	1936	1937	1948	S27	E12	5171	10	2.7	12	SF C	5.4	3	E		32		
0014	HOLL	01	2150	2151	2156	N17	W23	5174	09	30.2	6	SF		4	E		16		F
0015	HOLL	01	2227	2230	2235	N16	W23	5174	09	30.2	8	SF		3	E		14		
0016	LEAR	01	2326	2334	2412	N16	W21	5174	09	30.4	46	SF		3	E		85		F
0017	LEAR	01	2338	2342	2354	S16	E68	5175	10	7.1	16	SF		3	E		28		F
0018		02	00419	0042*	0054	S26	E06	5171	10	2.5	13	SF C	4.4				20		F
	LEAR	02	0041	0042	0045	S25	E09	5171	10	2.7	4	SF		3	E		20		F
	LEAR	02	0050	0054	0104	S27	E04	5171	10	2.3	14	SF C	4.4	3	E		21		F
0019	LEAR	02	0417	0426	0437	S28	E02	5171	10	2.3	20	SF C	9.4	3	E		49		F
0020		02	0723*	07424	0811	S13	E74	5175	10	7.9	48	SF C	2.3				40		F
	SVTO	02	0723	0746	0816	S12	E73	5175	10	7.8	53	SF C	2.3	3	E		57		F
	LEAR	02	0734	0742	0806	S14	E74	5175	10	7.9	32	SF C	2.3	3	E		23		
0021	SVTO	02	0812	0812	0827	N24	W69	5176	09	27.1	15	SF		3	E		15		
0022		02	0837*	08518	0928	N24	W70	5163	09	27.0	51	SF					32		F
	SVTO	02	0837	0851	0949	N23	W71	5163	09	27.0	72	SF		3	E		41		F
	LEAR	02	0856	0859	0906	N26	W69	5163	09	27.1	10	SF		3	E		23		
0023	SVTO	02	1044	1049	1108	N16	W27	5174	09	30.4	24	SF		3	E		17		
0024		02	11472	11501	1202	N16	W30	5174	09	30.2	15	SF					30		F
	SVTO	02	1147	1150	1158	N15	W30	5174	09	30.2	11	SF		3	E		20		
	RAMY	02	1149	1151	1205	N16	W31	5174	09	30.1	16	SF		3	E		41		F
0025	SVTO	02	1330	1332	1335	N15	W32	5174	09	30.1	5	SF		3	E		10		
0026	HOLL	02	1436	1436	1450	N16	W31	5174	09	30.2	14	SF		3	E		14		
0027	RAMY	02	1446E	1449U	1503	S26	W05	5171	10	2.2	17D	SF		3	E		18		

OCTOBER 1988

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0028	HOLL	02	1502	1526	1537	N16	W32	5174	09	30.2	35	SF	C 3.2	3	E		25		
0029		02	17282	1741	1758	S26	E06	5171	10	3.2	30	SF	C 4.0				23		F
	PALE	02	1728	1741	1759	S26	E07	5171	10	3.3	31	SF	C 4.0	3	E		25		
	HOLL	02	1730	1741	1758	S26	E06	5171	10	3.2	28	SF	C 4.0	3	E		21		F
0030		02	19304	19352	1950	N16	W34	5174	09	30.2	20	SF	C 2.6				32		F
	HOLL	02	1930	1937	1956	N16	W33	5174	09	30.3	26	SF	C 2.6	3	E		47		F
	PALE	02	1934	1935	1944	N15	W35	5174	09	30.2	10	SF	C 2.6	3	E		16		
0031	HOLL	02	2016	2017	2022	N21	W81	5163	09	26.7	6	SF		3	E		11		
0032	HOLL	02	2322	2325	2341	N16	W38	5174	09	30.1	19	SF		3	E		25		
0033	LEAR	03	0525	0527	0549	S28	W11	5171	10	2.4	24	SF	C 7.3	3	E		73		H
0034		03	0747	07501	0757	N20	W50	5168	09	29.6	10	SF					41		
	LEAR	03	0747	0750	0756	N21	W48	5168	09	29.7	9	SF		3	E		38		
	SVTO	03	0747	0751	0758	N19	W51	5168	09	29.5	11	SF		3	E		44		
0035	SVTO	03	0907	0910	0918	N19	W52	5168	09	29.5	11	SF		3	E		36		
0036	LEAR	03	0936	0936	0939	S26	W15	5171	10	2.2	3	SF	C 1.8	3	E		14		
0037	SVTO	03	0951	0951	0959	N20	W50	5168	09	29.7	8	SF		3	E		28		
0038	SVTO	03	1044	1044	1102	S25	W10	5171	10	2.7	18	SF	C 4.0	3	E		42		
0039	SVTO	03	1124	1126	1129	S15	E55	5175	10	7.6	5	SF		3	E		23		
0040	RAMY	03	1129	1131	1139	N22	W55	5168	09	29.3	10	SF		2	E		70		
0041	RAMY	03	1205	1217	1316D	N19	W51	5168	09	29.7	71D	SF		3	E		34		
		03	1317		1318	No Flare Patrol													
0042		03	1322E	1326	1342	S29	W16	5171	10	2.3	20D	1N	M 1.9				104		EFZ
	HOLL	03	1322E	1326	1339	S28	W15	5171	10	2.4	17D	1N	M 1.9	3	E		100		FE
	RAMY	03	1323E	1329U	1346	S30	W16	5171	10	2.3	23D	SN	M 1.9	3	E		107		FZ
0043	RAMY	03	1331	1336	1342	N20	W51	5168	09	29.8	11	SF		3	E		26		
0044		03	1453	15112	1542	S27	W16	5171	10	2.4	49	2B	X 3.2				303		FUY
	HOLL	03	1453	1511	1542	S27	W16	5171	10	2.4	49	2B	X 3.2	3	E		274		UY
	RAMY	03	1453	1513	1545D	S27	W17	5171	10	2.3	52D	2B	X 3.2	3	E		332		F
0045	HOLL	03	1609	1609	1615	S24	W13	5171	10	2.7	6	SF		3	E		14		
0046	HOLL	03	1709	1711	1719	S23	W57	5169	09	29.4	10	SF		3	E		33		H
0047	HOLL	03	1717	1717	1724	S27	W18	5171	10	2.3	7	SF		3	E		20		F
0048	HOLL	03	1730	1737	1741	S14	E54	5175	10	7.8	11	SF		3	E		22		F
0049	HOLL	03	1911	1911	1915	S23	W58	5169	09	29.4	4	SF		3	E		19		
0050		03	1913	19142	1928	S28	W18	5171	10	2.4	15	SN	C 7.6				36		EF
	PALE	03	1913	1914	1923	S29	W17	5171	10	2.5	10	SF	C 7.6	3	E		28		F
	HOLL	03	1913	1916	1932	S28	W18	5171	10	2.4	19	SN	C 7.6	3	E		43		E
0051	HOLL	03	1939	1943	1947	N20	W55	5168	09	29.7	8	SF		3	E		23		
0052	HOLL	03	2032	2036	2043	S14	E45	5175	10	7.2	11	SF		3	E		46		
0053		03	20541	2057	2121	S28	W16	5171	10	2.6	27	1B	C 7.5				78		EF
	PALE	03	2054	2057	2108	S29	W17	5171	10	2.5	14	SN	C 7.5	3	E		43		F
	HOLL	03	2055	2057	2134	S27	W16	5171	10	2.6	39	1B	C 7.5	3	E		113		FE
0054	HOLL	03	2055	2102	2138	N21	W57	5168	09	29.6	43	1F		3	E		107		F

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Xray	See	Obs	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0055	HOLL	03	2115	2117	2133	N31	W68	5173	09	28.6	18	SF		3	E			42		
0056	HOLL	03	2152	2154	2213	N20	W54	5168	09	29.9	21	SF		3	E			27		
0057		03	2154*	22351	2300	S27	W18	5171	10	2.5	66	1N	M 1.0					96		EF
	HOLL	03	2154	2235	2309	S28	W18	5171	10	2.5	75	1N	M 1.0	3	E			155		FE
	LEAR	03	2232	2236	2251	S26	W19	5171	10	2.5	19	SF	M 1.0	3	E			37		
0058		03	22411	2243	2300	N22	W56	5168	09	29.7	19	1N						86		E
	HOLL	03	2241	2243	2312	N21	W56	5168	09	29.7	31	1N		3	E			115		E
	LEAR	03	2242	2243	2249	N22	W57	5168	09	29.7	7	SF		3	E			58		
0059		03	23223	23331	2416	S28	W19	5171	10	2.5	54	2B	X 1.1					312		F
	LEAR	03	2322	2334	2419	S27	W20	5171	10	2.4	57	2B	X 1.1	3	E			368		F
	HOLL	03	2325	2333	2414	S28	W19	5171	10	2.5	49	2B	X 1.1	3	E			326		F
	PALE	03	2329E	2333U	2356D	S28	W19	5171	10	2.5	27D	1N	X 1.1	3	E			242		F
0060	LEAR	03	2357	2358	2412	N20	W56	5168	09	29.8	15	SF		3	E			15		
0061	LEAR	04	0017	0018	0027	N21	W56	5168	09	29.8	10	SF		3	E			38		
0062	LEAR	04	0028	0030	0043	S28	W21	5171	10	2.4	15	SF		3	E			19		
0063	LEAR	04	0254	0302	0321	S26	W24	5171	10	2.2	27	SF	C 9.7	3	E			35		
0064	LEAR	04	0542	0544	0553	N21	E73	5177	10	9.8	11	SF	C 5.4	3	E			48		
0065	LEAR	04	0634	0636	0643	N22	E76	5177	10	10.1	9	SF		3	E			26		
0066		04	06577	07123	0725	N25	E75	5177	10	10.1	28	1F						74		
	SVTO	04	0657	0715	0740D	N27	E74	5177	10	10.0	43D	1F		3	E			123		
	LEAR	04	0704	0712	0725	N23	E76	5177	10	10.1	21	SF		3	E			26		
0067	LEAR	04	0741	0750	0753	N23	E75	5177	10	10.1	12	SF		3	E			16		
0068	LEAR	04	0850	0858	0904	N23	E73	5177	10	10.0	14	SF		3	E			24		
0069	SVTO	04	0858	0858	0912	S26	W19	5171	10	2.9	14	SF		3	E			16		
0070	SVTO	04	1137	1141	1146	S19	W55	5169	09	30.3	9	SF		3	E			21		
0071	SVTO	04	1139	1145	1210	N22	E73	5177	10	10.1	31	SF	C 2.8	3	E			65		
0072		04	1346*	1356*	1422	N20	W64	5168	09	29.8	36	SF						37		F
	HOLL	04	1346	1356	1418	N22	W65	5168	09	29.7	32	SF		3	E			54		F
	HOLL	04	1422	1423	1426	N19	W64	5168	09	29.8	4	SF		3	E			20		
0073		04	15213	15241	1534	S28	W25	5171	10	2.7	13	SF						20		
	SVTO	04	1521	1525	1540	S28	W25	5171	10	2.7	19	SF		3	E			29		
	HOLL	04	1524	1524	1528	S27	W25	5171	10	2.7	4	SF		3	E			11		
0074	RAMY	04	1828E	1830U	1840	S25	W26	5171	10	2.7	12D	SF		2	E			13		
0075	RAMY	04	1848	1849	1857	S26	W24	5171	10	2.9	9	SF		2	E			30		
0076		04	2042	2045	2055	S14	E28	5175	10	7.0	13	SF	C 1.6					50		FH
	HOLL	04	2042	2045	2055	S14	E30	5175	10	7.1	13	SF	C 1.6	3	E			86		FH
	RAMY	04	2049E	2049U	2052D	S14	E27	5175	10	6.9	3D	SF	C 1.6	1	E			15		H
0077	LEAR	05	0334	0335	0337	N24	E57	5177	10	9.5	3	SF		3	E			28		
0078	ATHN	05	0618E	0618U	0637D	S21	W41	5171	10	2.1	19D	2B	M 3.3	2	V		0618	318	5.5	
0079	RAMY	05	1209E	1210U	1223	N19	E01		10	5.6	14D	SF		2	E			20		F
0080	RAMY	05	1222	1226	1234	S29	W36	5171	10	2.7	12	SF		4	E			19		
0081	HOLL	05	1554	1556	1603	S13	E25	5175	10	7.5	9	SF	C 1.4	3	E			13		

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0082		05	1600	1603	1606	N27	E50	5177	10	9.6	6	SF					23		
	RAMY	05	1600	1603	1606	N27	E49	5177	10	9.5	6	SF		3	E		17		
	HOLL	05	1600	1603	1607	N27	E50	5177	10	9.6	7	SF		3	E		29		
0083	HOLL	05	1646	1650	1659	S26	W39	5171	10	2.7	13	SF		3	E		10		
0084	HOLL	05	1738	1745	1801	S26	W40	5171	10	2.6	23	SF		4	E		26		F
0085	RAMY	05	1837	1844	1847	N16	W90	5168	09	29.0	10	SF		3	E		26		
0086	RAMY	05	1854	1925U	1927	N17	W88	5168	09	29.2	33	SF		3	E		15		
0087	HOLL	05	2143	2146	2203	S21	W43	5171	10	2.6	20	SF	C 2.7	4	E		21		
0088		06	01222	0128	0150	S26	W46	5171	10	2.5	28	SF	M 1.6				75		F
	PALE	06	0122	0128	0150	S26	W47	5171	10	2.4	28	SF	M 1.6	3	E		90		F
	LEAR	06	0124	0128	0150	S27	W46	5171	10	2.5	26	SF	M 1.6	3	E		60		F
0089	RAMY	06	1309	1311	1319	N23	E35	5177	10	9.2	10	SF		3	E		24		H
0090		06	14331	1438	1451	N23	E43	5177	10	9.9	18	SF					20		F
	HOLL	06	1433	1438	1450	N23	E43	5177	10	9.9	17	SF		3	E		12		F
	RAMY	06	1434	1438	1452	N23	E43	5177	10	9.9	18	SF		3	E		28		F
0091		06	1445	1451	1510	S19	E06	5175	10	7.1	25	SF					33		F
	HOLL	06	1445	1451	1509	S19	E06	5175	10	7.1	24	SF		3	E		34		F
	RAMY	06	1450E	1451	1510	S19	E06	5175	10	7.1	20D	SF		3	E		32		F
0092		06	15341	15353	1542	N31	E49	5178	10	10.5	8	SF	C 2.7				54		H
	HOLL	06	1534	1538	1544	N31	E47	5178	10	10.3	10	SF	C 2.7	3	E		76		H
	RAMY	06	1535	1535	1541	N31	E51	5178	10	10.7	6	SF	C 2.7	3	E		31		
0093	HOLL	06	1623	1637	1659	N23	E43	5177	10	10.0	36	SF		3	E		22		F
0094		06	16291	1637	1718	S28	W54	5171	10	2.5	49	1N	C 9.5				122		EF
	HOLL	06	1629	1637	1726	S27	W52	5171	10	2.6	57	1N	C 9.5	3	E		178		FE
	RAMY	06	1630	1637	1710	S28	W55	5171	10	2.4	40	SF	C 9.5	3	E		67		FE
0095	HOLL	06	1713	1713	1722	N25	E37	5177	10	9.6	9	SF		3	E		13		
0096	HOLL	06	1753	1755	1804	N14	E80	5182	10	12.8	11	SF		3	E		11		
0097	HOLL	06	1813	1814	1926	S29	W66	5171	10	1.6	73	SF	C 3.0	3	E		65		F
0098	HOLL	06	1902	1910	1920	N23	E41	5177	10	9.9	18	SF		3	E		12		F
0099		06	2031	2032	2110	S23	W56	5171	10	2.5	39	SF					47		
	HOLL	06	2031	2032	2116	S23	W56	5171	10	2.5	45	SF		4	E		29		
	RAMY	06	2042E	2044U	2104	S23	W57	5171	10	2.5	22D	SF		2	E		65		
0100	HOLL	06	2106	2108	2115	N23	E40	5177	10	10.0	9	SF		4	E		12		
0101		07	0244	02451	0258	S19	W02	5175	10	7.0	14	SN	C 2.4				14		
	LEAR	07	0244	0245	0300	S19	W01	5175	10	7.0	16	SN	C 2.4	3	E		15		
	PALE	07	0244	0246	0256	S19	W02	5175	10	7.0	12	SF	C 2.4	3	E		13		
0102	ATHN	07	0824E		0826D	S17	W02	5175	10	7.2	2D	SN		1	V	0826	64	0.7	
0103	RAMY	07	1203	1207	1216	S27	E06	5179	10	8.0	13	SF		3	E		21		F
0104	SVTO	07	1224	1226	1230	S29	E67	5183	10	12.8	6	SF		3	E		21		
0105	HOLL	07	1347	1405	1420	S27	E06	5179	10	8.0	33	SF	C 3.9	3	E		24		F
0106	HOLL	07	1442	1445	1452	S28	E06	5179	10	8.1	10	SF		3	E		27		
0107		07	18108	18232	1838	S19	W10	5175	10	7.0	28	SF	C 4.8				34		F
	RAMY	07	1810	1823	1843	S20	W10	5175	10	7.0	33	SF	C 4.8	3	E		50		F
	PALE	07	1818	1825	1833	S18	W11	5175	10	6.9	15	SF	C 4.8	3	E		17		

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Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Corr (Sq Deg)	Remarks
0108		07	18211	18231	1840	S27	E02	5179	10	7.9	19	SF						32		
	HOLL	07	1821	1824	1836	S27	E02	5179	10	7.9	15	SF			3	E		35		
	RAMY	07	1822	1823	1843	S27	E01	5179	10	7.8	21	SF			3	E		28		
0109	HOLL	07	2042	2046	2145	S27	E01	5179	10	7.9	63	SF			4	E		22		
0110	HOLL	07	2112	2114	2123	N22	E23	5177	10	9.6	11	SF	C	1.1	4	E		29		F
0111	HOLL	07	2251	2251	2257	S19	W09	5175	10	7.3	6	SF			3	E		10		
0112	HOLL	07	2258	2259	2328	N16	E47	5180	10	11.5	30	SF			4	E		52		H
0113	HOLL	08	2149	2156	2213	S27	W89	5171	10	2.0	24	1F	C	4.1	3	E		114		
0114	RAMY	09	1530	1532	1546	S34	E32	5183	10	12.2	16	SF			4	E		22		F
0115		09	22581	23001	2304	S19	W32	5175	10	7.5	6	SF	C	1.1				12		
	PALE	09	2258	2300	2304	S19	W33	5175	10	7.4	6	SF	C	1.1	3	E		10		
	LEAR	09	2259	2301	2304	S19	W32	5175	10	7.5	5	SF	C	1.1	3	E		15		
0116		09	23121	23281	2345D	S20	W33	5175	10	7.4	33D	SF						20		
	LEAR	09	2312	2328	2345D	S20	W33	5175	10	7.4	33D	SF			3	E		25		
	PALE	09	2313	2329	2339D	S19	W33	5175	10	7.4	26D	SF			3	E		15		
0117	SVTO	10	0552	0553	0557	S20	W41	5175	10	7.1	5	SF			3	E		16		
0118	RAMY	10	1613	1613	1618	S24	W37	5179	10	7.8	5	SF	C	2.8	3	E		10		
0119	RAMY	10	1615	1626	1635	S20	W43	5175	10	7.4	20	SF	C	2.5	3	E		40		F
0120	PALE	10	1803	1823	1853D	S19	W47	5175	10	7.2	50D	SN	M	2.7	3	E		88		F
0121	LEAR	11	0504	0623	0634	N18	E75	5188	10	16.9	90	SF			3	E		25		
0122	SVTO	11	0552E	0552U	0613	N19	W64	5175	10	6.4	21D	SF			2	E		77		
0123		11	0645	0645*	0745	S18	W56	5175	10	7.0	60	SN	C	2.9				39	1.0	DF
	LEAR	11	0645	0645	0721	S19	W55	5175	10	7.1	36	SN	C	2.9	3	E		18		F
	ATHN	11	0656E	0659U	0710	S18	W59	5175	10	6.8	14D	SN	C	2.9	2	V	0659	57	1.2	
	BUCA	11	0710E	0715	0845	S17	W55	5175	10	7.1	95D	SN				C	0715	43	0.8	D
0124	LEAR	11	0718	0722	0740	N17	E69	5188	10	16.5	22	SF			3	E		20		
0125	SVTO	11	1215E	1217U	1233	N18	E54	5188	10	15.6	18D	SF			2	E		68		
0126	RAMY	11	1443	1444	1449	N16	E64	5188	10	16.5	6	SF			3	E		12		
0127	RAMY	11	2031	2032	2045	S20	W58	5175	10	7.4	14	SF	C	2.0	2	E		19		
0128	LEAR	12	0437	0442	0445	S19	W67	5175	10	7.1	8	SF			3	E		19		
0129	LEAR	12	0457	0502	0610	S20	W66	5175	10	7.1	73	2N	X	2.5	4	E		267		Y
0130	LEAR	12	0501	0502	0509	S28	W52	5179	10	8.1	8	SF			3	E		38		
0131	SVTO	12	0552E	0552U	0613	N19	W64	5175	10	7.4	21D	SF			2	E		77		
0132	LEAR	12	0613	0613	0621	N18	E55	5188	10	16.4	8	SF			3	E		25		
0133	ATHN	12	1108E	1109	1116	S12	E58		10	16.8	8D	1B			2	C	1109	255	5.0	
0134	HOLL	12	2140	2145	2208	N26	E39	5189	10	15.9	28	SF			3	E		40		F
0135		13	03141	0321	0326	N22	E55	5192	10	17.4	12	SF						22		
	PALE	13	0314	0320U	0344D	N23	E55	5192	10	17.4	30D	SF			3	E		25		
	LEAR	13	0315	0321	0326	N21	E55	5192	10	17.3	11	SF			4	E		20		
0136	LEAR	13	0632	0644	0713	S27	W73	5179	10	7.6	41	SF	C	2.2	3	E		26		

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Grp #	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
0137		13	0710*	0730*	0758	S27	W72	5179	10	7.7	48	SF					32		D
	BUCA	13	0710	0730	0800	S25	W75	5179	10	7.5	50	SN			C	0730	43		D
	LEAR	13	0748	0750	0755	S27	W72	5179	10	7.7	7	SF		3	E		36		
	SVTO	13	0748	0750	0800	S28	W69	5179	10	7.9	12	SF		2	E		18		
0138	BUCA	13	0840	0845	0900D	S25	W75	5179	10	7.5	20D	SN			C	0845	43		D
0139	SVTO	13	1026	1028	1039	S23	W77	5175	10	7.5	13	SF	C 1.5	2	E		12		
0140	SVTO	13	1036	1044	1048	S28	W69	5179	10	8.0	12	SF	C 3.7	2	E		13		
0141	HOLL	13	1402	1403	1415	S27	W78	5179	10	7.5	13	SF		3	E		17		
0142	HOLL	13	1535	1538	1558	N19	E40	5188	10	16.7	23	SF		3	E		14		F
0143	HOLL	13	1616	1630	1646	S28	W80	5179	10	7.4	30	SF		3	E		48		
0144		13	18264	18279	1843	S28	W79	5179	10	7.6	17	SF					20		
	HOLL	13	1826	1827	1844	S27	W80	5179	10	7.5	18	SF		3	E		23		
	RAMY	13	1830	1836	1842	S28	W78	5179	10	7.7	12	SF		2	E		16		
0145		13	2030	2034	2049	S20	W88	5175	10	7.1	19	SN	M 6.4				65		E
	HOLL	13	2030	2034	2048	S20	W88	5175	10	7.1	18	SN	M 6.4	4	E		65		E
	PALE	13	2041E	2043U	2050	S20	W88	5175	10	7.1	9D	SN	M 6.4	3	E		65		
0146		14	0854	08571	0912	N14	W24	5182	10	12.5	18	1F					126	2.5	EF
	LEAR	14	0854	0857	0912	N14	W24	5182	10	12.5	18	SF		3	E		38		F
	BUCA	14	0854E	0858	0912	N15	W25	5182	10	12.5	18D	1F			C	0858	215	2.5	E
0147		14	1435	1436	1443	N14	W28	5182	10	12.5	8	SF					21		
	RAMY	14	1435	1436	1443	N14	W28	5182	10	12.5	8	SF		3	E		20		
	HOLL	14	1435	1436	1455D	N14	W29	5182	10	12.4	20D	SF		2	E		22		
0148		14	1528*	15581	1638	N14	W29	5182	10	12.4	70	SF	C 1.1				63		F
	HOLL	14	1528	1559	1637	N13	W29	5182	10	12.4	69	SF	C 1.1	3	E		88		
	RAMY	14	1555	1558	1639	N14	W29	5182	10	12.5	44	SF	C 1.1	4	E		38		F
0149	HOLL	14	2002	2002	2010	S15	W74	5185	10	9.2	8	SF	C 1.3	2	E		16		
0150	HOLL	15	1904	1906	1917	S22	W80	5195	10	9.6	13	SF		3	E		11		
0151	HOLL	15	1934	1935	1943	S23	W73	5195	10	10.2	9	SF		3	E		19		
0152	PALE	15	2054	2059	2105	S24	W81	5195	10	9.6	11	SF		3	E		22		
0153		15	23053	23112	2320	S22	W83	5195	10	9.6	15	SN	C 2.5				61		
	PALE	15	2305	2313	2320	S24	W87	5195	10	9.2	15	SN	C 2.5	3	E		91		
	LEAR	15	2308	2311	2319	S21	W79	5195	10	9.9	11	SF	C 2.5	3	E		31		
0154	LEAR	16	0051	0104	0129	S22	W82	5195	10	9.7	38	SF		3	E		21		
0155		16	01478	0155	0200	S24	W84	5195	10	9.6	13	SF					22		
	LEAR	16	0147	0155	0200	S23	W82	5195	10	9.7	13	SF		3	E		25		
	PALE	16	0155	0155	0159	S24	W87	5195	10	9.3	4	SF		3	E		19		
0156	LEAR	16	0220	0221	0247	S21	W26	5190	10	14.1	27	SF	C 2.1	3	E		30		FU
0157		16	02235	02282	0237	S24	W84	5195	10	9.6	14	SF					44		
	LEAR	16	0223	0228	0242	S23	W82	5195	10	9.8	19	SF		3	E		42		
	PALE	16	0228	0230	0232	S24	W87	5195	10	9.4	4	SF		3	E		45		
0158	LEAR	16	0309	0310	0324	S22	W88	5195	10	9.4	15	SF		3	E		43		
0159		16	12151	1223	1307	N12	W54	5182	10	12.4	52	SF					33		
	SVTO	16	1215	1223	1314	N11	W55	5182	10	12.4	59	SF		1	E		35		
	RAMY	16	1216	1223	1300	N14	W54	5182	10	12.4	44	SF		3	E		31		
0160		16	1355	1358*	1428	N20	E13	5192	10	17.6	33	SF					16		F
	RAMY	16	1355	1358	1428	N21	E12	5192	10	17.5	33	SF		3	E		13		
	HOLL	16	1355	1411	1428	N20	E14	5192	10	17.6	33	SF		3	E		18		F

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Grp #	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
0161	LEAR	17	0026	0026	0031	N20	E86	5200	10	23.6	5	SF	C 8.1	3	E		35		
0162	LEAR	17	0410	0411	0416	N19	E88	5200	10	23.9	6	SF	M 2.3	3	E		51		
0163	LEAR	17	0456	0457	0503	S24	W26	5191	10	15.2	7	SF		3	E		14		F
0164	SVTO	17	1143	1145	1151	N32	E74	5198	10	23.3	8	SF		3	E		29		
0165	RAMY	17	1252	1301	1303	N19	E85	5200	10	24.0	11	SF		3	E		26		
0166		17	1319*	13442	1400	N20	E82	5200	10	23.8	41	SF					43		
	RAMY	17	1319	1344	1357	N19	E87	5200	10	24.2	38	SF		3	E		43		
	SVTO	17	1333	1346	1403	N22	E81	5200	10	23.8	30	SF		3	E		40		
	HOLL	17	1343E	1345	1401	N20	E79	5200	10	23.6	18D	SF		3	E		45		
0167		17	1408*	1425*	1438	N20	E82	5200	10	23.9	30	SF	M 1.0				15		
	RAMY	17	1408	1427U	1519D	N20	E83	5200	10	23.9	71D	SF	M 1.0	3	E		14		
	HOLL	17	1410	1425	1427	N20	E79	5200	10	23.6	17	SF	M 1.0	3	E		16		
	SVTO	17	1412	1437	1446	N23	E82	5200	10	23.9	34	SF		3	E		16		
	HOLL	17	1436	1436	1440	N19	E83	5200	10	23.9	4	SF		3	E		15		
0168	RAMY	17	1608	1609	1614	N20	E84	5200	10	24.1	6	SF	M 2.0	3	E		20		
0169		17	16491	1657	1708	S20	W44	5190	10	14.3	19	SF					25		H
	HOLL	17	1649	1657	1713	S19	W45	5190	10	14.3	24	SF		3	E		28		H
	RAMY	17	1650	1657	1704	S21	W44	5190	10	14.3	14	SF		3	E		22		
0170	HOLL	17	1731	1737	1755	S10	W45	5184	10	14.3	24	SF		3	E		19		
0171	HOLL	17	1809	1813	1822	N25	E82	5200	10	24.1	13	SF		3	E		23		
0172	HOLL	17	1907	1908	1916	S22	W49	5190	10	14.0	9	SF		3	E		13		
0173		17	2012	2012	2015	N24	W16	5193	10	16.6	3	SF	C 3.5				14		
	RAMY	17	2010E	2015U	2020D	N25	W17	5193	10	16.5	10D	SF	C 3.5	2	E		13		
	HOLL	17	2012	2012	2015	N24	W15	5193	10	16.7	3	SF	C 3.5	3	E		14		
0174	HOLL	17	2218	2218	2223	S21	W47	5190	10	14.3	5	SF		3	E		13		
0175	HOLL	17	2336	2336	2349	S13	E78		10	23.9	13	SF		3	E		11		
0176		17	23431	2346	2411	N16	E80	5200	10	24.0	28	1N	C 7.8				110		E
	HOLL	17	2343	2346	2412	N17	E78	5200	10	23.9	29	1N	C 7.8	3	E		115		E
	LEAR	17	2344	2346	2410	N16	E81	5200	10	24.1	26	1F	C 7.8	3	E		104		
0177	LEAR	18	0032	0034	0051	N24	W17	5193	10	16.7	19	SF		3	E		16		
0178	LEAR	18	0034	0039	0122	N18	E84	5200	10	24.4	48	1F	M 1.6	3	E		144		
0179	LEAR	18	0123	0129	0137	N17	E79	5200	10	24.1	14	SF		3	E		38		
0180	LEAR	18	0541	0542	0553	N17	E77	5200	10	24.1	12	SF	C 3.2	3	E		35		
0181	LEAR	18	0743	0748	0755	S21	W54	5190	10	14.2	12	SF		3	E		12		
0182		18	09362	09391	0949	N18	E72	5200	10	23.9	13	SB	C 7.6				61	3.7	
	LEAR	18	0936	0939	0949	N17	E71	5200	10	23.8	13	SN	C 7.6	2	E		43		
	ATHN	18	0938E	0940	0946	N15	E75	5200	10	24.1	8D	1B	C 7.6	2	V	0940	111	3.7	
	SVTO	18	0938	0940	0952	N22	E69	5200	10	23.7	14	SB	C 7.6	2	E		29		
0183	SVTO	18	1052	1052	1059	S24	W57	5190	10	14.0	7	SF	C 3.1	2	E		10		
0184		18	1154	11551	1206	S22	W56	5190	10	14.2	12	SF	C 3.6				22		
	RAMY	18	1144E	1156	1203	S21	W55	5190	10	14.3	19D	SF	C 3.6	3	E		32		
	SVTO	18	1154	1155	1209	S24	W57	5190	10	14.1	15	SF	C 3.6	2	E		11		
0185	RAMY	18	1241	1242	1301	S22	W55	5190	10	14.3	20	SF		3	E		25		
0186	RAMY	18	1356	1357	1401	N23	E83	5200	10	25.0	5	SF		3	E		13		

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Grp #	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
0187	HOLL	18	1406	1407	1415	S21	W56	5190	10	14.3	9	SF		3	E		17		
0188	RAMY	18	1423	1423	1429	N23	E83	5200	10	25.0	6	SF		3	E		18		H
0189		18	14286	14351	1454	N23	W28	5193	10	16.4	26	SF					27		FH
	HOLL	18	1428	1435	1459	N23	W28	5193	10	16.4	31	SF		3	E		37		F
	RAMY	18	1434	1436	1448	N23	W27	5193	10	16.5	14	SF		3	E		17		FH
0190		18	1519	1521	1526	S22	W56	5190	10	14.3	7	SF					22		H
	HOLL	18	1519	1521	1525	S22	W56	5190	10	14.3	6	SF		3	E		19		H
	RAMY	18	1519	1521	1526	S22	W57	5190	10	14.2	7	SF		3	E		25		
0191		18	1545	15482	1558	N23	W28	5193	10	16.5	13	SF	C 1.3				60		F
	HOLL	18	1545	1548	1600	N23	W29	5193	10	16.4	15	SF	C 1.3	3	E		79		F
	RAMY	18	1545	1550	1556	N23	W28	5193	10	16.5	11	SF	C 1.3	3	E		40		F
0192		18	15513	1554	1608	S22	W57	5190	10	14.3	17	SF					22		
	HOLL	18	1551	1554	1609	S22	W57	5190	10	14.3	18	SF		3	E		28		
	RAMY	18	1554	1554	1606	S22	W57	5190	10	14.3	12	SF		3	E		17		
0193	RAMY	18	1654	1705	1707	S22	W58	5190	10	14.2	13	SF		3	E		19		MZ
0194	RAMY	18	1659	1713	1724	S12	W58	5184	10	14.3	25	SF	C 2.5	3	E		39		F
0195	HOLL	18	1806	1811	1821	N18	E69	5200	10	24.0	15	SF		3	E		15		
0196	HOLL	18	1831	1848	1855	N21	E70	5200	10	24.1	24	SF		3	E		27		
0197	HOLL	18	1852	1853	1904	S22	W61	5190	10	14.1	12	SF		3	E		15		
0198	HOLL	18	1943	1944	1951	N19	E69	5200	10	24.1	8	SF	C 1.5	3	E		42		
0199		18	1952*	1956*	2007	S21	W59	5190	10	14.3	15	SF					16		
	HOLL	18	1952	1956	1959	S21	W59	5190	10	14.3	7	SF		3	E		16		
	HOLL	18	2005	2007	2015	S21	W59	5190	10	14.3	10	SF		3	E		16		
0200	LEAR	19	0107	0108	0118	S21	W63	5190	10	14.2	11	SF		3	E		41		
0201	LEAR	19	0630	0632	0639	N17	E66	5200	10	24.3	9	SF		3	E		23		
0202	SVTO	19	0915	0915	0930	N21	E54	5200	10	23.5	15	SF		3	E		16		
0203	SVTO	19	0959	1003	1012	N21	E54	5200	10	23.5	13	SF		3	E		35		
0204		19	1246	1254	1313D	S14	W70	5184	10	14.2	27D	SF	C 5.1				28		
	SVTO	19	1246	1254	1257D	S14	W70	5184	10	14.2	11D	SF	C 5.1	2	E		28		
	RAMY	19	1257E	1257U	1313D	S13	W69	5184	10	14.3	16D	SF	C 5.1	2	E		29		
0205	HOLL	19	1434	1438	1450D	N22	W44	5193	10	16.2	16D	SF		3	E		29		E
0206	HOLL	19	1536E	1536U	1549	N32	E51	5198	10	23.7	13D	SN		3	E		94		F
0207	HOLL	19	1536E	1536U	1544	N20	E61	5200	10	24.3	8D	SF		3	E		19		F
0208	HOLL	19	1638	1641	1647	N20	E61	5200	10	24.3	9	SF	C 3.4	3	E		25		E
0209		19	18128	1820	1832	N20	E60	5200	10	24.3	20	SF	C 1.7				17		E
	RAMY	19	1812	1820U	1842D	N20	E60	5200	10	24.3	30D	SF	C 1.7	2	E		20		
	PALE	19	1819	1820	1830	N19	E61	5200	10	24.4	11	SF	C 1.7	3	E		18		
	HOLL	19	1820	1820	1833	N20	E59	5200	10	24.3	13	SF	C 1.7	3	E		14		E
0210		19	1904*	1909*	2009	N24	E58	5200	10	24.3	65	1N	M 1.0				130		EF
	HOLL	19	1904	1909	2005	N26	E58	5200	10	24.3	61	1B	M 1.0	4	E		145		FE
	PALE	19	1907	1914	2006	N26	E59	5200	10	24.4	59	1F	M 1.0	3	E		155		F
	RAMY	19	1910E	1912U	1924D	N26	E57	5200	10	24.2	14D	1N	M 1.0	2	E		176		
	HOLL	19	2009	2009	2017	N20	E58	5200	10	24.3	8	SF		4	E		45		F
0211		19	22054	22103	2221	N19	E54	5200	10	24.0	16	SN	M 1.1				42		EF
	HOLL	19	2205	2210	2222	N19	E54	5200	10	24.0	17	SN	M 1.1	4	E		41		FE
	PALE	19	2209	2213	2220	N19	E55	5200	10	24.1	11	SF	M 1.1	3	E		42		

H - ALPHA SOLAR FLARES

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Grp #	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
0212	HOLL	20	1817	1819	1833	N24	W57	5193	10	16.3	16	SF		3	E		14		
0213	HOLL	20	1857	1857	1901	S19	W90	5190	10	13.9	4	SF		3	E		23		
0214	HOLL	20	1910E	1912U	1933	N22	E80	5205	10	26.9	23D	SF		3	E		50		F
0215	HOLL	20	2225	2227	2248	N23	W59	5193	10	16.4	23	SF	C 1.3	3	E		68		F
0216	HOLL	20	2308	2310	2316	N22	E41	5200	10	24.1	8	SF	C 1.4	3	E		23		
0217		20	23544	23565	2409	N29	E29	5198	10	23.3	15	SF					24		F
	HOLL	20	2354	2356	2408D	N29	E28	5198	10	23.2	14D	SF		3	E		37		F
	LEAR	20	2358	2401	2409	N29	E30	5198	10	23.3	11	SF		3	E		12		F
0218	LEAR	21	0216	0217	0242	N20	E42	5200	10	24.3	26	SF	C 1.2	3	E		42		F
0219	LEAR	21	0414	0444	0518	N24	W63	5193	10	16.3	64	SF	C 4.1	3	E		48		
0220		21	1912	1912	1924	S23	W64	5203	10	16.9	12	SF					29		F
	PALE	21	1912	1912	1920	S23	W63	5203	10	16.9	8	SF		3	E		25		F
	RAMY	21	1912	1912	1928	S23	W64	5203	10	16.9	16	SF		3	E		33		
0221	LEAR	22	0101	0107	0116	N20	E32	5200	10	24.5	15	SF		3	E		19		
0222	LEAR	22	0430	0432	0443	N21	E24	5200	10	24.0	13	SF		3	E		17		
0223		22	14227	14311	1448	N20	E16	5200	10	23.8	26	SF					23		F
	RAMY	22	1422	1432	1455	N19	E13	5200	10	23.6	33	SF		3	E		26		F
	HOLL	22	1429	1431	1442	N21	E19	5200	10	24.1	13	SF		3	E		20		
0224		22	1501*	15142	1549	N22	E19	5200	10	24.1	48	SF					18		F
	RAMY	22	1501	1516	1539	N22	E20	5200	10	24.2	38	SF		3	E		20		F
	HOLL	22	1511	1514	1559	N21	E18	5200	10	24.0	48	SF		4	E		17		F
0225	HOLL	22	1626	1636	1642	N12	E06	5200	10	23.1	16	SF		4	E		12		H
0226	HOLL	22	1657	1659	1704	N24	E21	5200	10	24.3	7	SF		4	E		20		
0227	HOLL	22	1728	1728	1737	N21	E21	5200	10	24.3	9	SF		4	E		12		
0228		22	1748*	1749*	1808	N20	E15	5200	10	23.9	20	SF					18		EF
	HOLL	22	1748	1749	1757	N19	E12	5200	10	23.6	9	SF		4	E		15		E
	HOLL	22	1800	1801	1818	N21	E18	5200	10	24.1	18	SF		4	E		21		F
0229		22	1823	1823	1840	N18	E10	5200	10	23.5	17	SN	C 4.3				40		EF
	PALE	22	1823	1823	1837	N19	E11	5200	10	23.6	14	SF	C 4.3	3	E		18		F
	HOLL	22	1823	1823	1844	N18	E10	5200	10	23.5	21	SN	C 4.3	4	E		63		FE
0230	HOLL	22	1901	1902	1912	N20	E20	5200	10	24.3	11	SF		4	E		13		
0231	HOLL	22	2018	2023	2146	N23	E16	5200	10	24.1	88	SN	C 4.6	4	E		65		EF
0232		22	23133	23171	2336	N18	E08	5200	10	23.6	23	1N	C 6.3				119		EFH
	LEAR	22	2313	2318	2336	N18	E09	5200	10	23.6	23	1F	C 6.3	3	E		142		FH
	HOLL	22	2316	2317	2336	N18	E08	5200	10	23.6	20	SN	C 6.3	4	E		96		FE
0233	HOLL	23	0003	0003	0014D	N17	W08	5200	10	22.4	11D	SF		3	E		35		F
0234	LEAR	23	0211	0212	0214	S24	W86	5203	10	16.4	3	SF		3	E		20		
0235	LEAR	23	0226	0226	0233	N20	E14	5200	10	24.2	7	SF		3	E		26		
0236	LEAR	23	0349	0350	0406	N21	E13	5200	10	24.1	17	SF		3	E		46		FH
0237	LEAR	23	0513	0516	0528	N17	E05	5200	10	23.6	15	SF		4	E		20		
0238	LEAR	23	0555	0558	0627	N18	E05	5200	10	23.6	32	SN	C 4.9	4	E		82		
0239	LEAR	23	0653	0720	0732	N19	E05	5200	10	23.7	39	SF		4	E		34		

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Grp #	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
0240	LEAR	23	0812	0817	0827	N23	E10	5200	10	24.1	15	SF	C 1.2	4	E		30		F
0241	RAMY	23	1109E	1109U	1116	N20	E02	5200	10	23.6	7D	SF	C 4.4	2	E		24		
0242		23	1459	1500	1513	N22	E08	5200	10	24.2	14	SF	C 2.0				24		F
	HOLL	23	1459	1500	1514	N22	E07	5200	10	24.2	15	SF	C 2.0	3	E		28		F
	RAMY	23	1503E	1504U	1512	N22	E08	5200	10	24.2	9D	SF	C 2.0	3	E		21		F
0243		23	15212	1527	1542	N20	E02	5200	10	23.8	21	SF	C 2.1				44		FH
	HOLL	23	1521	1527	1545	N21	E04	5200	10	23.9	24	SF	C 2.1	4	E		53		FH
	RAMY	23	1523	1527	1539	N18	E00	5200	10	23.6	16	SF	C 2.1	3	E		36		FH
0244		23	1558	15591	1615	N22	E06	5200	10	24.1	17	SF	C 1.7				24		F
	RAMY	23	1558	1559	1615	N22	E07	5200	10	24.2	17	SF	C 1.7	3	E		21		F
	HOLL	23	1558	1600	1615	N21	E05	5200	10	24.0	17	SF	C 1.7	4	E		27		F
0245	HOLL	23	1630	1630	1648	N21	E06	5200	10	24.1	18	SF		4	E		16		F
0246		23	1927	19271	1947	N22	E05	5200	10	24.2	20	SF					25		EF
	HOLL	23	1927	1927	1947	N22	E04	5200	10	24.1	20	SF		4	E		15		E
	RAMY	23	1927	1927	1948	N22	E04	5200	10	24.1	21	SF		3	E		17		E
	PALE	23	1927	1928	1946	N23	E08	5200	10	24.4	19	SF		3	E		43		F
0247	HOLL	23	2158	2158	2212	N20	W05	5200	10	23.5	14	SN	C 6.0	4	E		62		EF
0248	HOLL	23	2233	2234	2258	N18	W05	5200	10	23.5	25	SF	C 1.4	3	E		29		F
0249	HOLL	23	2243	2256	2331	N20	E38	5205	10	26.8	48	SF		3	E		72		FH
0250		23	2326	23265	2407	N17	W06	5200	10	23.5	41	SF					21		
	HOLL	23	2326	2326	2358	N17	W06	5200	10	23.5	32	SF		3	E		15		
	LEAR	23	2326	2331	2416	N17	W06	5200	10	23.5	50	SF		3	E		27		
0251	LEAR	24	0047	0048	0101	N19	W06	5200	10	23.6	14	SF	C 3.5	3	E		81		F
0252	LEAR	24	0140	0140	0145	N21	E01	5200	10	24.1	5	SF	C 1.5	3	E		13		F
0253	RAMY	24	1158	1158	1204	N22	W06	5200	10	24.0	6	SF	C 1.0	3	E		27		
0254		24	1602	1603	1623	N19	W14	5200	10	23.6	21	SB	C 4.9				74		F
	RAMY	24	1601E	1603	1618	N18	W14	5200	10	23.6	17D	SN	C 4.9	3	E		63		F
	HOLL	24	1602	1603	1628	N20	W14	5200	10	23.6	26	SB	C 4.9	3	E		86		F
0255	HOLL	24	1727	1728	1741	N22	E35	5205	10	27.4	14	SF		3	E		17		
0256		24	20033	20051	2012	N20	W14	5200	10	23.8	9	SN	C 6.0				44		
	PALE	24	2003	2005	2011	N21	W11	5200	10	24.0	8	SN	C 6.0	3	E		51		
	RAMY	24	2006	2006	2012	N20	W16	5200	10	23.6	6	SF	C 6.0	2	E		36		
0257		24	2115E	2115U	2234	N21	W12	5200	10	24.0	79D	SF	C 4.9				38		F
	RAMY	24	2115E	2115U	2122D	N21	W14	5200	10	23.8	7D	SF	C 4.9	1	E		26		F
	HOLL	24	2116E	2117U	2234	N21	W09	5200	10	24.2	78D	SF	C 4.9	3	E		51		F
0258	HOLL	24	2128	2129	2135	N21	E35	5205	10	27.6	7	SF		3	E		28		
0259	LEAR	25	0324	0324	0327	S26	E63	5207	10	30.0	3	SF		3	E		15		
0260	LEAR	25	0448	0450	0456	S26	E63	5207	10	30.1	8	SF	C 1.6	3	E		10		
0261	SVTO	25	1059	1101	1118	N29	W10	5200	10	24.7	19	SN		2	E		25		
0262		25	1911	1912	1917	N23	W15	5200	10	24.6	6	SF	C 1.1				22		F
	RAMY	25	1911	1912	1915	N23	W14	5200	10	24.7	4	SF	C 1.1	3	E		16		
	PALE	25	1911	1912	1917	N24	W13	5200	10	24.8	6	SF	C 1.1	3	E		20		
	HOLL	25	1911	1912	1918	N21	W17	5200	10	24.5	7	SF	C 1.1	4	E		31		F
0263	LEAR	26	0230	0233	0236	S26	E52	5207	10	30.1	6	SF		4	E		25		
0264	LEAR	26	0313	0316	0327	N27	W25	5200	10	24.2	14	SF		3	E		27		

H - ALPHA S O L A R F L A R E S

OCTOBER 1988

Grp #	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
0265	RAMY	26	1532E	1534	1601	N23	W35	5200	10	23.9	29D	SF		3	E		16		F
0266	RAMY	26	1634	1635	1638	N25	W29	5200	10	24.4	4	SF		3	E		24		
0267	HOLL	27	1434	1439	1446	N19	W46	5200	10	24.1	12	SF		3	E		22		
0268		27	1837	1840	1910	S18	E88	5212	11	3.5	33	SF	M 3.9				38		
	HOLL	27	1837	1840	1910	S18	E88	5212	11	3.5	33	SF	M 3.9	4	E		39		
	RAMY	27	1837	1840	1910	S19	E88	5212	11	3.5	33	SF	M 3.9	4	E		36		
0269	LEAR	28	0402	0406	0412	N20	W53	5200	10	24.1	10	SF		3	E		36		
0270	LEAR	28	0523	0523	0539	N23	W54	5200	10	24.1	16	SF		3	E		14		
0271	SVTO	28	0616	0633	0733	N29	E19	5210	10	29.7	77	SF		3	E		50		
0272		28	0805	08072	0814	N24	W58	5200	10	23.8	9	SF	C 1.7				16		
	SVTO	28	0805	0807	0815	N23	W58	5200	10	23.9	10	SF	C 1.7	3	E		17		
	LEAR	28	0805	0809	0814	N25	W58	5200	10	23.8	9	SF	C 1.7	3	E		15		
0273		28	0830*	0846	0856	N22	W60	5200	10	23.7	26	SF	C 3.2				78		
	SVTO	28	0830	0846	0855	N21	W60	5200	10	23.7	25	SF	C 3.2	3	E		77		
	LEAR	28	0845	0846	0856	N24	W60	5200	10	23.7	11	SF	C 3.2	3	E		79		
0274	RAMY	28	1111E	1133	1154	N28	E14	5210	10	29.6	43D	SF		2	E		35		
0275	RAMY	28	1530E	1533U	1543	N28	E15	5210	10	29.8	13D	SF		2	E		20		
0276		28	17321	1734	1738	N23	W63	5200	10	23.9	6	SF	C 1.1				46		
	RAMY	28	1732	1734	1738	N23	W66	5200	10	23.6	6	SF	C 1.1	3	E		45		
	HOLL	28	1733	1734	1738	N23	W60	5200	10	24.1	5	SF	C 1.1	3	E		48		
0277	RAMY	28	1843	1844	1850	N27	E12	5210	10	29.7	7	SF		3	E		21		
0278		28	23061	23071	2326	S18	E72	5212	11	3.4	20	SF					19		
	HOLL	28	2306	2307	2327	S20	E74	5212	11	3.6	21	SF		3	E		27		
	LEAR	28	2307	2308	2325	S16	E71	5212	11	3.3	18	SF		3	E		11		
0279		28	23372	23391	2345	S16	E72	5212	11	3.4	8	SN	C 3.3				35		
	HOLL	28	2337	2339	2345	S17	E70	5212	11	3.3	8	SB	C 3.3	3	E		37		
	LEAR	28	2339	2340	2345	S16	E74	5212	11	3.6	6	SF	C 3.3	3	E		33		
0280	LEAR	29	0040	0041	0115	N34	W63	5209	10	24.0	35	SF		3	E		50		
0281		29	0028*	0028*	0100	S17	E72	5212	11	3.5	32	SF	C 2.9				16		
	LEAR	29	0028	0028	0057	S19	E76	5212	11	3.8	29	SF	C 2.9	3	E		18		
	PALE	29	0052	0059	0104	S15	E69	5212	11	3.2	12	SF		2	E		13		
0282		29	0227*	0236*	0248	S16	E74	5212	11	3.7	21	SF	C 7.3				34		
	LEAR	29	0227	0236	0238	S19	E75	5212	11	3.8	11	SF		3	E		14		
	PALE	29	0233	0236	0244	S17	E76	5212	11	3.9	11	SF		3	E		66		
	PALE	29	0246	0248	0257	S14	E72	5212	11	3.5	11	SF	C 7.3	3	E		33		
	LEAR	29	0246	0250	0253	S16	E71	5212	11	3.5	7	SF	C 7.3	3	E		24		
0283		29	0327*	0328*	0403	S20	E72	5212	11	3.6	36	SF	C 7.5				46		
	LEAR	29	0327	0328	0336	S20	E73	5212	11	3.7	9	SF		3	E		36		
	LEAR	29	0339	0420	0430	S19	E70	5212	11	3.5	51	SF	C 7.5	3	E		57		
0284	LEAR	29	0927	0927	0934	S16	E66	5212	11	3.4	7	SF	C 3.3	3	E		13		
0285	RAMY	29	1302E	1303	1310D	S15	E61	5212	11	3.2	8D	SF	C 3.8	1	E		32		
0286	RAMY	29	1336E	1336U	1339	S19	E68	5212	11	3.7	3D	SF		2	E		12		H
0287		29	1423*	1427*	1447	S16	E62	5212	11	3.3	24	SF	M 1.0				100		EF
	RAMY	29	1423	1427	1436	S15	E62	5212	11	3.3	13	SF		3	E		60		F
	HOLL	29	1437	1439	1454	S17	E63	5212	11	3.4	17	SN	M 1.0	3	E		91		FE
	RAMY	29	1440	1442U	1451	S15	E62	5212	11	3.3	11	1F	M 1.0	3	E		149		
0288	HOLL	29	1545	1601	1620	N28	E00	5210	10	29.6	35	SF	C 1.9	4	E		14		

H - ALPHA SOLAR FLARES

OCTOBER 1988

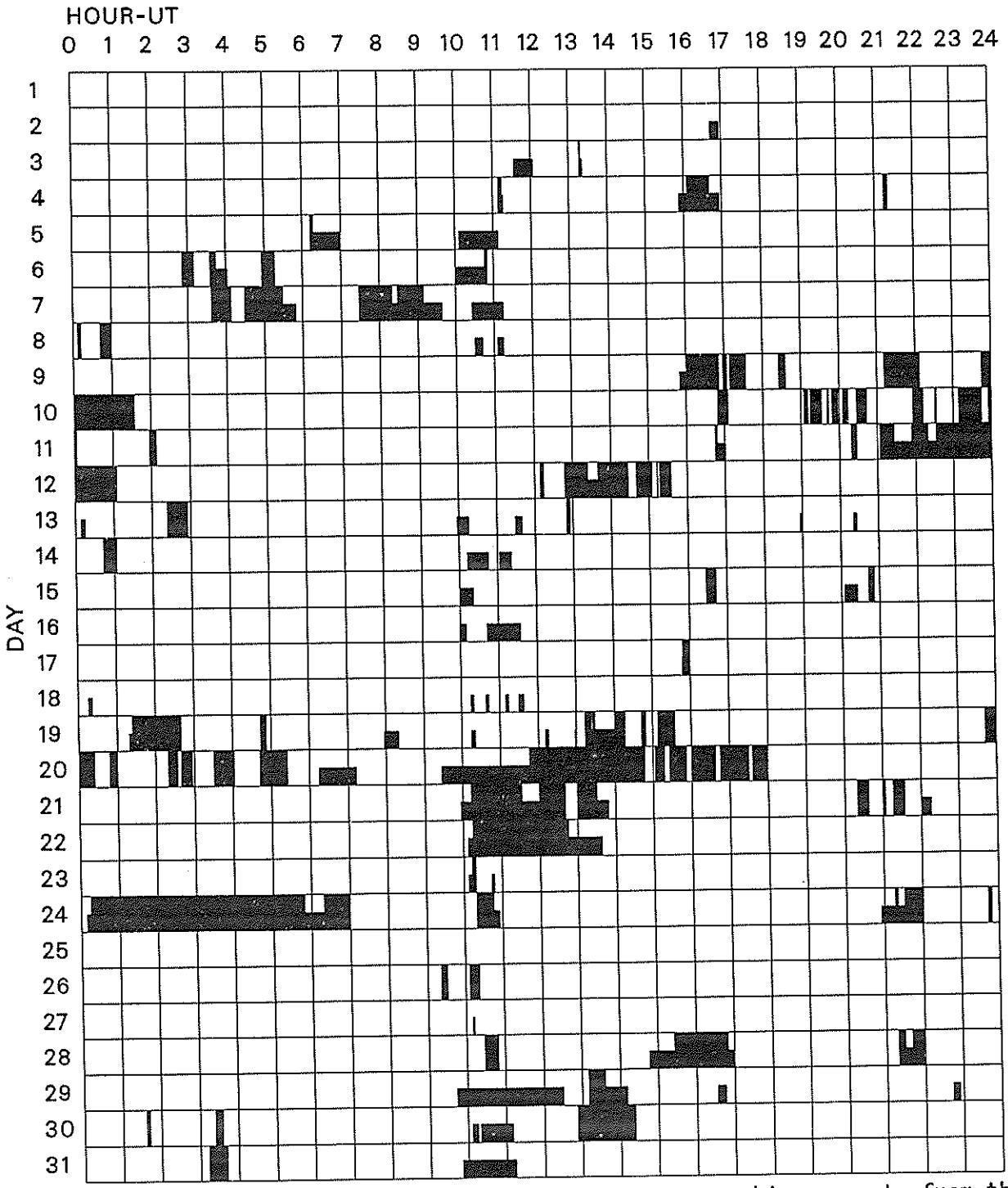
Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
0289	HOLL	29	1625	1625	1629	S18	E65	5212	11	3.6	4	SF		3	E		11		
0290		29	16388	16406	1654	N19	W75	5200	10	24.0	16	SF	C 2.7				22		
	HOLL	29	1638	1640	1657	N19	W75	5200	10	24.0	19	SF	C 2.7	4	E		34		
	RAMY	29	1646	1646	1652	N19	W75	5200	10	24.0	6	SF	C 2.7	3	E		11		
0291	RAMY	29	1651	1654	1700	S13	E59	5212	11	3.1	9	SF	C 1.9	3	E		48		FH
0292		29	17203	17271	1736	S28	E06	5207	10	30.2	16	SF					18		F
	RAMY	29	1720	1727	1736	S28	E07	5207	10	30.3	16	SF		3	E		17		
	HOLL	29	1723	1728	1737	S27	E05	5207	10	30.1	14	SF		4	E		20		F
0293	HOLL	29	1747	1748	1750	N22	W75	5200	10	24.0	3	SF		4	E		24		
0294	LEAR	30	0125	0125	0131	N23	W78	5200	10	24.0	6	SF	C 2.2	3	E		13		
0295	LEAR	30	0349	0350	0357	S16	E57	5212	11	3.5	8	SF		3	E		15		
0296	LEAR	30	0436	0436	0443	S16	E58	5212	11	3.6	7	SF		3	E		22		
0297	LEAR	30	0449	0456	0510	N23	W77	5200	10	24.3	21	SF	C 5.9	3	E		87		
0298	LEAR	30	0702	0702	0706	N22	W76	5200	10	24.4	4	SF		3	E		49		
0299	RAMY	30	1606	1637	1703	S18	E56	5212	11	3.9	57	SF		3	E		81		F
0300	RAMY	30	1703	1703	1730	S21	E55	5212	11	3.9	27	SF		3	E		21		
0301		31	00443	00443	0050	S20	E50	5212	11	3.8	6	SF	C 1.3				13		
	LEAR	31	0044	0044	0050	S21	E51	5212	11	3.9	6	SF	C 1.3	3	E		12		
	PALE	31	0047	0047	0049	S20	E49	5212	11	3.8	2	SF	C 1.3	3	E		14		
0302	RAMY	31	1152	1153	1202	S20	E45	5212	11	3.9	10	SF	C 4.5	3	E		25		
0303	HOLL	31	1810	1812	1822	S15	E37	5212	11	3.5	12	SF		3	E		15		
0304	HOLL	31	1815	1821	1829	N18	W14	5208	10	30.7	14	SF		3	E		15		

"Remarks"

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

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

OCTOBER 1988



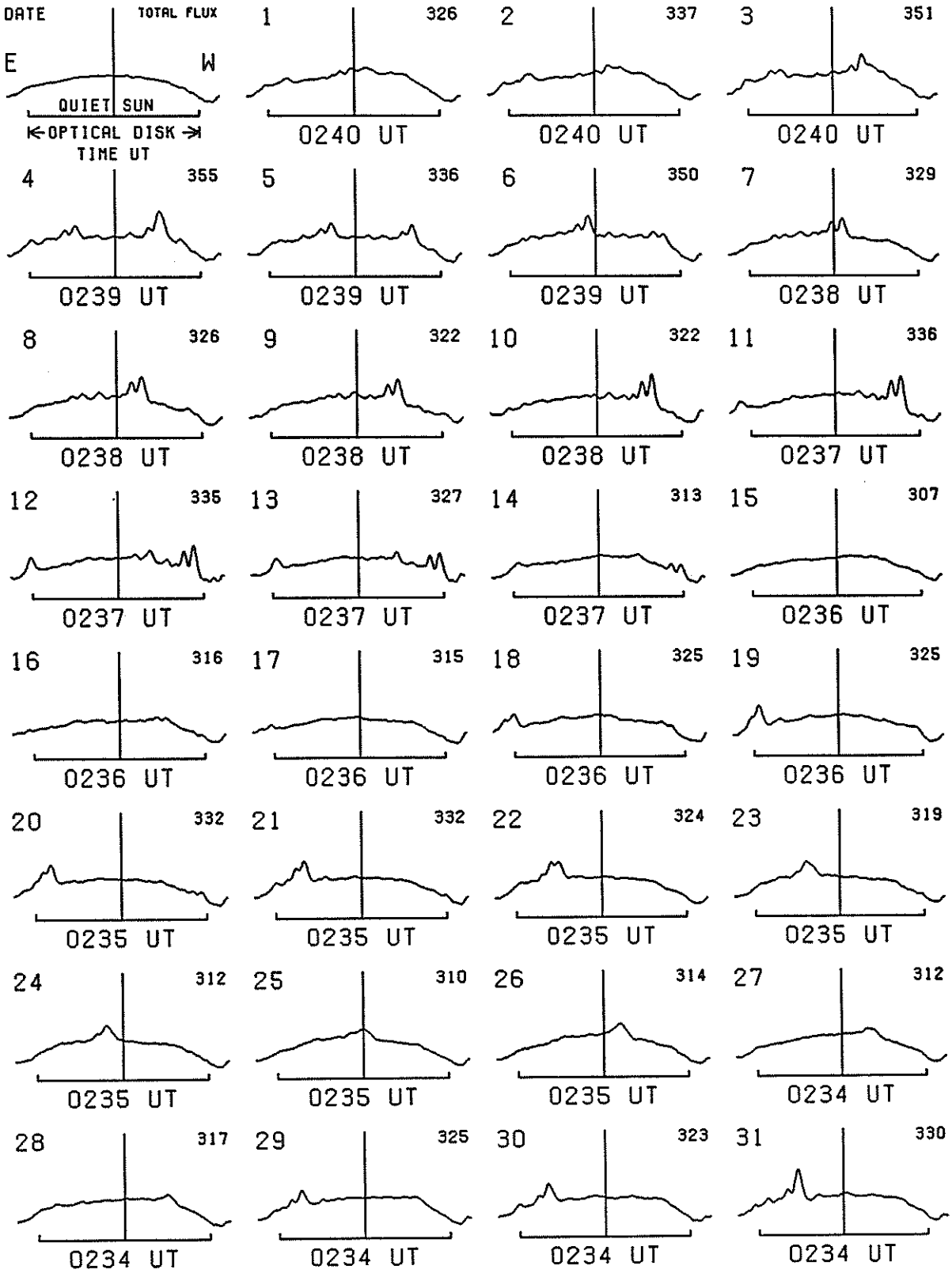
Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

Athens
Bucharest
Holloman
Learmonth
Palehua
Ramey
San Vito

EAST-WEST SOLAR SCANS
OCTOBER 1988

TOYOKAWA, JAPAN

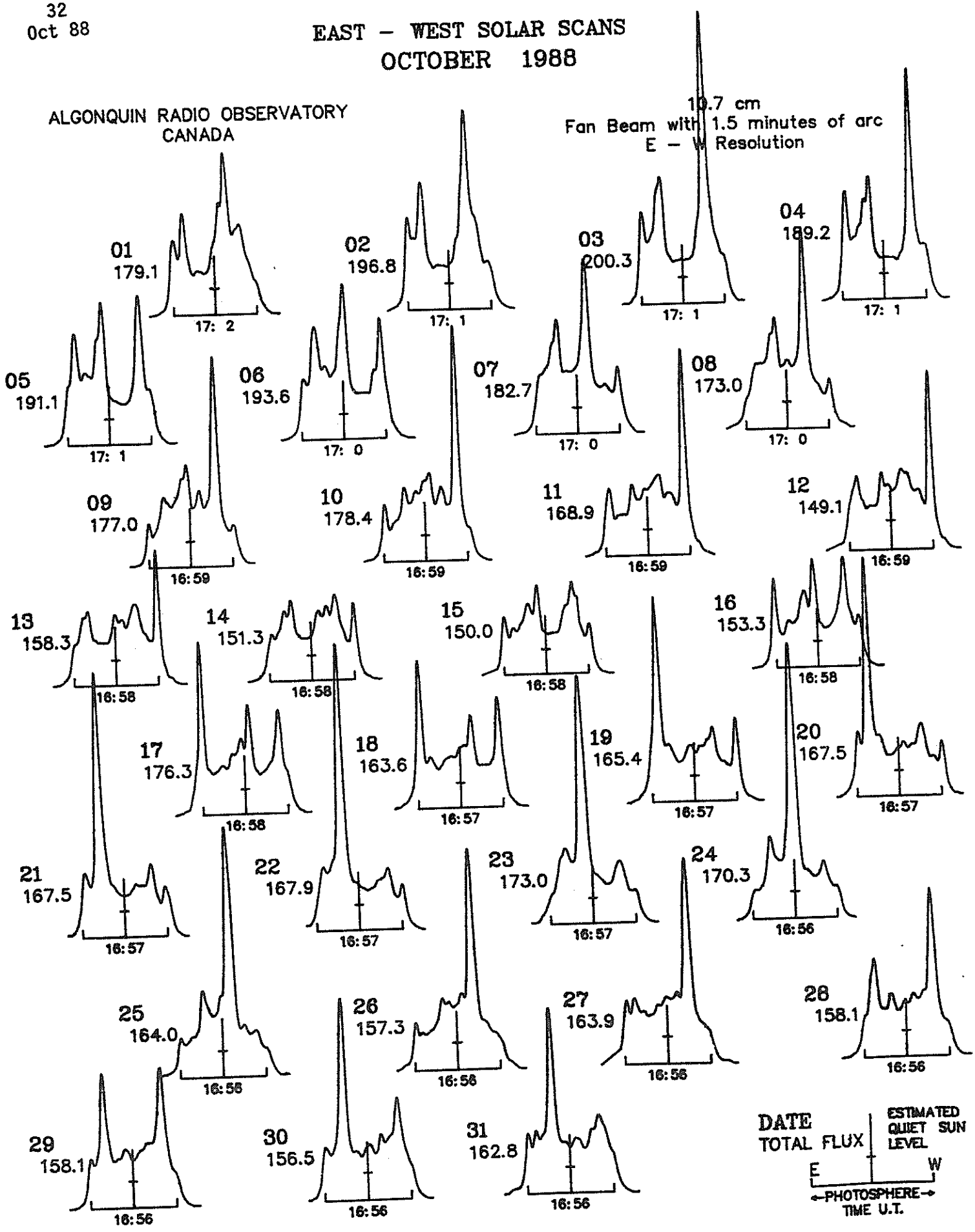
3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



EAST – WEST SOLAR SCANS
OCTOBER 1988

ALGONQUIN RADIO OBSERVATORY
CANADA

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

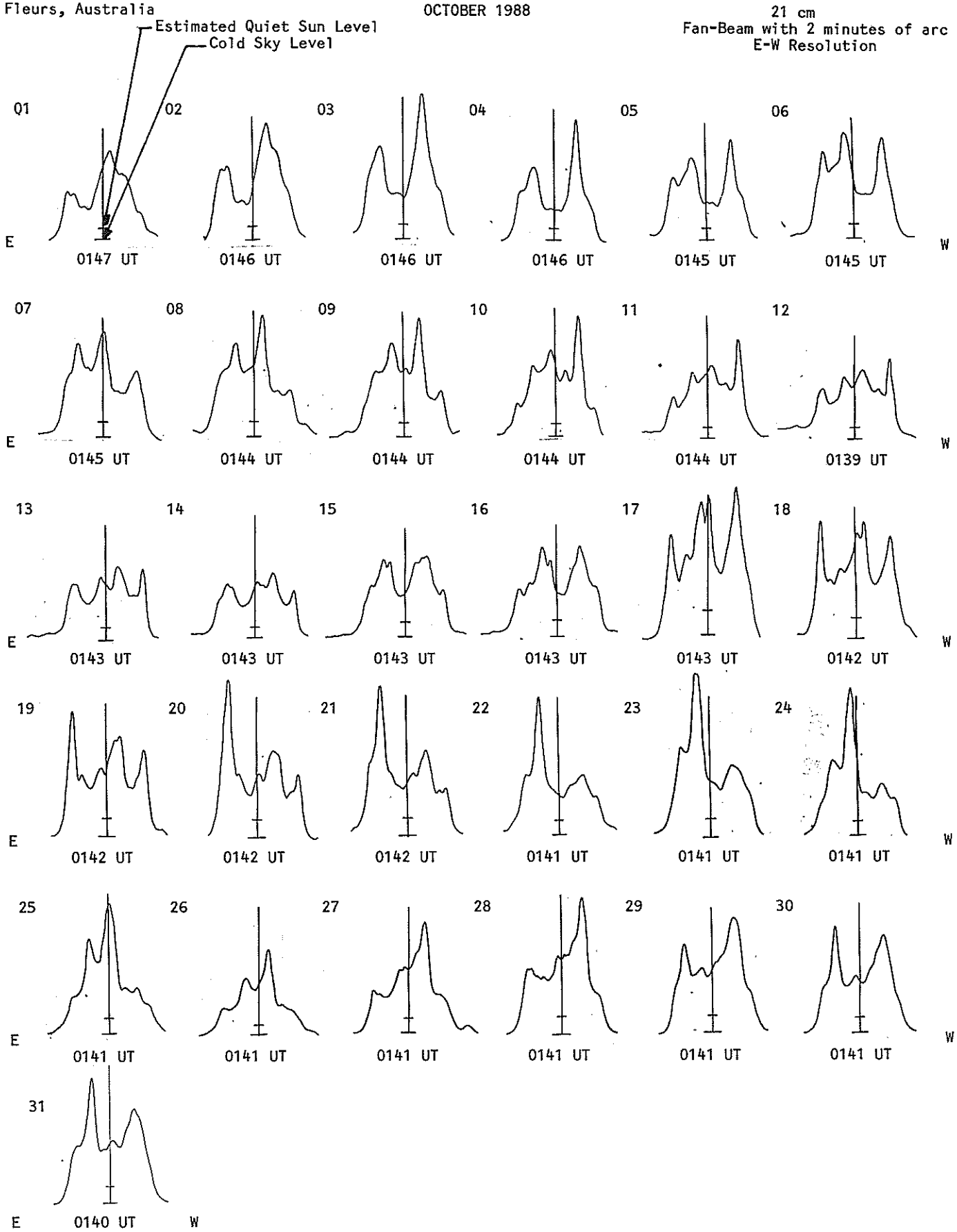


EAST-WEST SOLAR SCANS

Fleurs, Australia

OCTOBER 1988

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



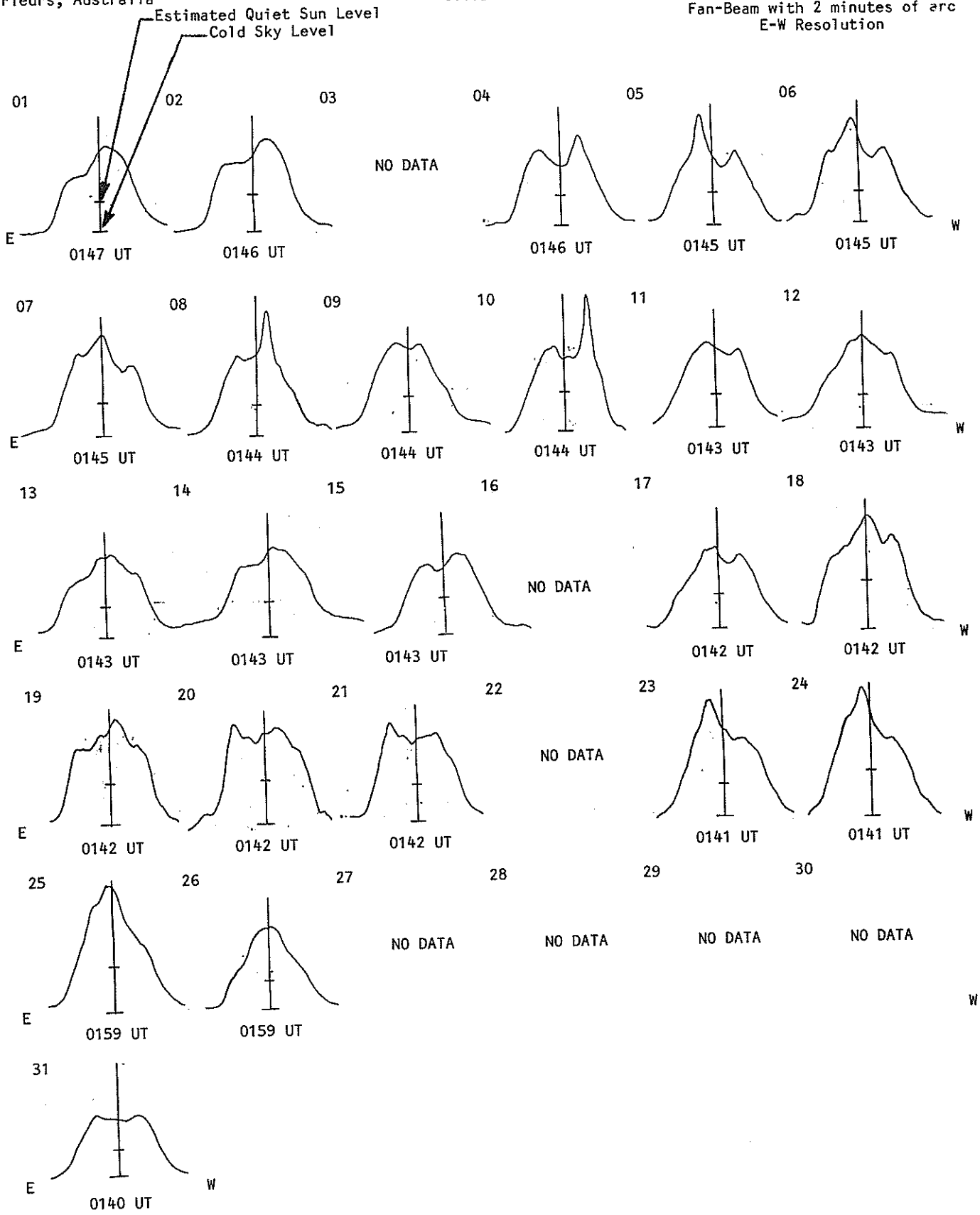
34
Oct 88

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

Fleurs, Australia

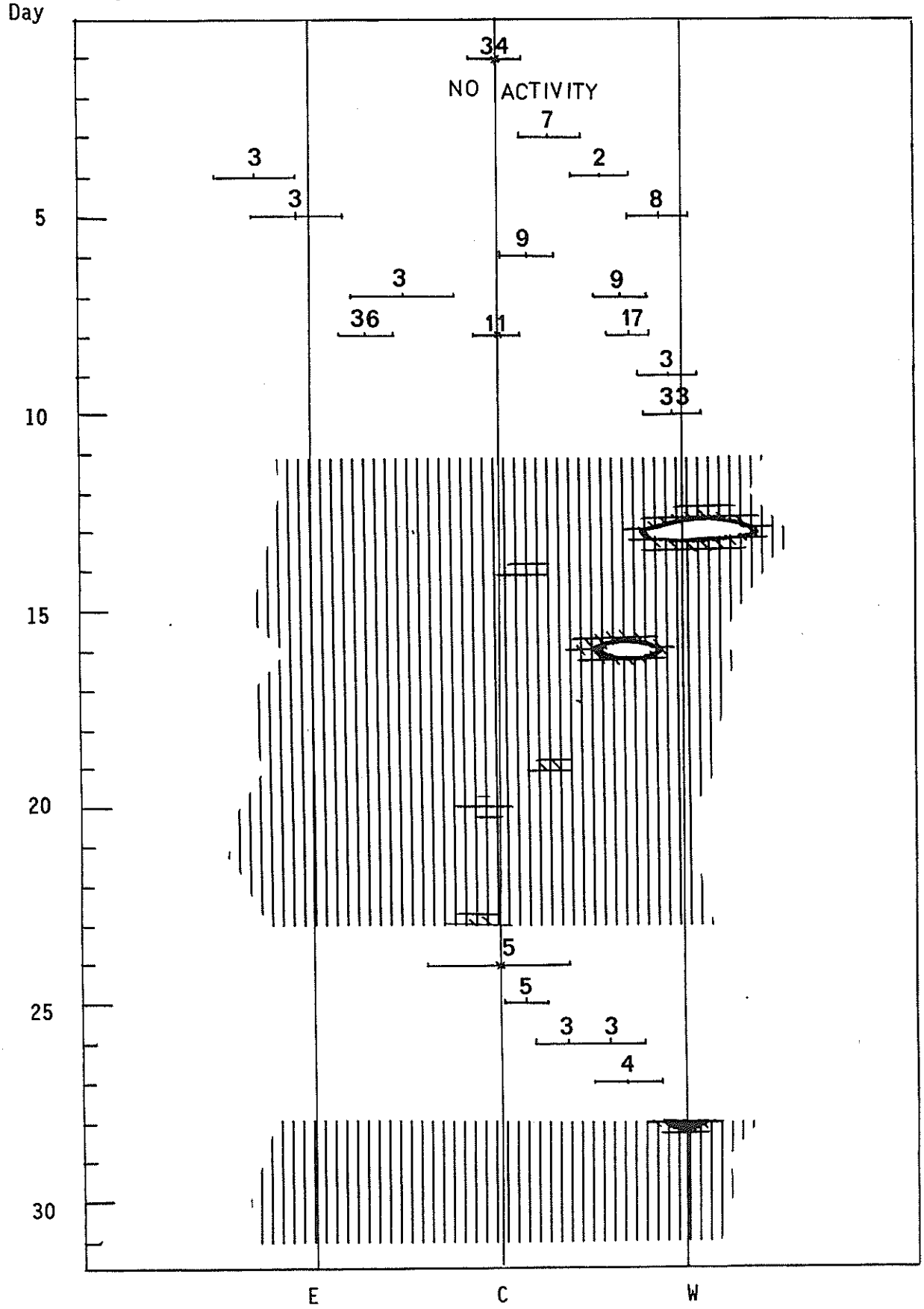
OCTOBER 1988

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



SOLAR INTERFEROMETRIC OBSERVATIONS

Nancay — OCTOBER 1988 — 164 MHz



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

OCTOBER 1988

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	3200	BERN	3	S	0722.0	0723.2	1.5	56.0			
	8800	LEAR	8	S	0722.0	0723.0	2.0	99.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0723.0	0723.0		39.0			QL=1 ST=1 TYP=3
	8800	SVTO	8	S	0723.0	0723.0	1.0	100.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0725.0	0726.0	2.0	75.0			QL=1 ST=2 TYP=3
	3200	BERN	46	C	1002.0	1006.0	8.0	22.0			
	3200	BERN	3	S	1203.0	1206.5	6.0	8.0			
	2800	OTTA	22	GRF	1914.0	1953.0	100.0	8.7	4.0		
	2800	OTTA	3	S	1932.8	1934.5	5.0	34.9	17.0		
	2695	SGMR	4	S/F	1933.0	1934.0	3.0	48.0			QL=1 ST=2 TYP=3
02	8800	LEAR	4	S/F	0050.0	0051.0	3.0	160.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0050.0	0051.0	2.0	150.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0421.0	0425.0	7.0	290.0			QL=1 ST=2 TYP=3
	3200	BERN	3	S	0733.0	0734.1	2.0	11.0			
	2800	OTTA	22	GRF	1720.0	1746.0	100.0	7.9	4.0		
03	3200	BERN	46	C	1041.0	1043.2	15.0	17.0			
	2800	OTTA	3	S	1320.6	1322.9	9.3	39.5	16.0		
	8800	SGMR	4	S/F	1322.0	1324.0	5.0	150.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1322.0	1324.0	5.0	150.0			QL=1 ST=3 TYP=3
	2695	SGMR	49	GB	1505.0E	1508.0	8.0D	880.0			QL=1 ST=3 TYP=6
	2695	SVTO	49	GB	1505.0E	1508.0	8.0D	960.0			QL=1 ST=2 TYP=6
	8800	SGMR	49	GB	1505.0E	1508.0	18.0D	3600.0			QL=1 ST=3 TYP=6
	8800	SVTO	49	GB	1505.0	1508.0	17.0	3200.0			QL=1 ST=2 TYP=6
	3200	BERN	47	GB	1505.0	1508.2	10.0	970.0			
	2800	OTTA	47	GB	1505.5	1509.0	26.0	799.0	400.0		
	8800	LEAR	49	GB	2328.0E	2332.0	27.0D	780.0			QL=1 ST=2 TYP=7
	2695	LEAR	4	S/F	2331.0	2332.0	13.0	220.0			QL=1 ST=2 TYP=3
	8800	PALE	49	GB	2331.0E	2332.0	11.0D	780.0			QL=1 ST=2 TYP=6
	2695	PALE	4	S/F	2332.0	2332.0	3.0	220.0			QL=1 ST=2 TYP=3
04	8800	LEAR	4	S/F	0252.0	0255.0	28.0	110.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	0253.0	0255.0	3.0	91.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0308.0	0309.0	2.0	90.0			QL=1 ST=2 TYP=3
	3200	BERN	47	GB	1227.0	1236.2	18.0	40.0			
	8800	SGMR	4	S/F	1229.0	1236.0	10.0	300.0			QL=1 ST=2 TYP=5
	8800	SVTO	4	S/F	1231.0	1236.0	8.0	310.0			QL=1 ST=2 TYP=5
	2695	SGMR	4	S/F	1236.0	1236.0	8.0	68.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1236.0	1236.0	1.0	67.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1913.0	1913.0	1.0	56.0			QL=1 ST=3 TYP=3
05	3200	BERN	47	GB	0613.0	0616.2	13.0	125.0			
	8800	SVTO	4	S/F	0614.0	0616.0	7.0	420.0			QL=1 ST=2 TYP=3
	2695	SVTO	4	S/F	0615.0	0616.0	3.0	120.0			QL=1 ST=2 TYP=3
06	2695	LEAR	4	S/F	0124.0	0127.0	8.0	52.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0124.0	0126.0	13.0	100.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0125.0	0126.0	2.0	93.0			QL=1 ST=3 TYP=3
	8400	BERN	3	S	1553.3	1553.4	2.5	62.0			
	2800	OTTA	28	PRE	1627.8	1636.0	8.2	13.5	9.0		
	8800	SGMR	4	S/F	1636.0	1644.0		460.0			QL=1 ST=3 TYP=3
	2800	OTTA	3	S	1636.0	1638.3	5.8	16.6	8.3		
	2695	SGMR	4	S/F	1637.0	1641.0		130.0			QL=1 ST=3 TYP=3
	2800	OTTA	29	PBI	1641.8	1641.8	50.0	22.0	8.0		
07	3200	BERN	3	S	0817.0	0818.5	9.0	67.0			
	2695	SVTO	4	S/F	0817.0	0820.0	8.0	58.0			QL=1 ST=3 TYP=3
	2695	LEAR	4	S/F	0818.0	0820.0	6.0D	63.0			QL=1 ST=3 TYP=3
	8800	LEAR	8	S	0819.0	0820.0	1.0	18.0			QL=1 ST=2 TYP=3
	2800	OTTA	22	GRF	1805.0	1809.0	60.0	29.0	9.0		
09	2800	OTTA	3	S	1756.8	1800.0	14.2	46.0	23.0		
	2695	PALE	8	S	1759.0	1800.0	2.0	59.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1759.0	1800.0	2.0	61.0			QL=1 ST=3 TYP=3
	8800	SGMR	8	S	1759.0	1759.0	2.0	68.0			QL=1 ST=3 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

OCTOBER 1988

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
09	2800	OTTA	29	PBI	1811.0	1811.0	80.0	5.7	3.0		
10	2800	OTTA	46	C	1754.2	1806.3	47.8	261.0	75.0		
	8800	PALE	4	S/F	1758.0	1806.0		390.0			QL=1 ST=3 TYP=5
	8800	SGMR	49	GB	1758.0	1806.0	39.0	540.0			QL=1 ST=3 TYP=7
	2695	SGMR	4	S/F	1759.0	1759.0		210.0			QL=1 ST=3 TYP=3
	2695	PALE	4	S/F	1803.0	1806.0		210.0			QL=1 ST=3 TYP=3
	2695	PALE	4	S/F	1803.0	1806.0		210.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	1830.0	1830.0	3.0	69.0			QL=1 ST=2 TYP=3
12	2695	SYDN	4	S/F	0414.0	0416.0	3.0	23.0			
	8800	LEAR	4	S/F	0416.0E	0416.0		79.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0457.0	0500.0	16.0	490.0			QL=1 ST=2 TYP=3
	8800	LEAR	49	GB	0457.0	0502.0	41.0	3000.0			QL=1 ST=2 TYP=6
	8800	SVTO	8	S	1209.0	1209.0	1.0	81.0			QL=1 ST=2 TYP=3
	8400	BERN	3	S	1209.0	1210.2	2.0	95.0			
13	2800	OTTA	46	C	2029.0	2030.0	9.1	282.0	80.0		
	8800	PALE	8	S	2029.0	2029.0	1.0	110.0			QL=1 ST=2 TYP=3
	2695	PALE	4	S/F	2029.0	2029.0	3.0	230.0			QL=1 ST=2 TYP=3
	8800	SGMR	4	S/F	2029.0	2029.0		180.0			QL=1 ST=1 TYP=3
	2695	SGMR	4	S/F	2029.0	2029.0		230.0			QL=1 ST=1 TYP=3
17	2695	SYDN	4	S/F	0014.0	0018.0	8.0	165.0			
	2695	LEAR	4	S/F	0016.0	0018.0	5.0	300.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	0017.0	0018.0	2.0	260.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0420.0	0421.0	6.0	23.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0420.0	0436.0	30.0	78.0			QL=1 ST=2 TYP=5
	2695	LEAR	4	S/F	0618.0	0621.0	20.0	54.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0753.0	0753.0	1.0	48.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0753.0	0753.0		66.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0754.0	0754.0	1.0	92.0			QL=1 ST=2 TYP=3
18	3200	BERN	3	S	0936.0	0937.0	2.5	15.0			
19	2695	SVTO	8	S	1255.0	1256.0	1.0	82.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1256.0	1256.0		68.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1256.0	1256.0	2.0	120.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1256.0	1256.0	2.0	99.0			QL=1 ST=2 TYP=3
	8400	BERN	3	S	1356.4	1357.1	1.5	24.0			
	2800	OTTA	3	S	1856.0	1906.0	24.5	47.0	23.0		
	2800	OTTA	29	PBI	1920.5	1920.5	240.0D	19.0	9.0		
	2695	SYDN	8	S	2050.0	2051.0	2.0	26.0			
	8800	PALE	8	S	2207.0	2209.0	2.0	150.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	2310.0	2310.0	1.0	29.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	2310.0	2310.0	1.0	18.0			QL=1 ST=2 TYP=3
20	8800	LEAR	8	S	0117.0	0117.0	1.0	37.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0207.0	0207.0	1.0	28.0			QL=1 ST=2 TYP=3
	3200	BERN	46	C	0946.2	0947.1	2.0	30.0			
	2800	OTTA	3	S	1521.0	1527.0	7.5	32.0	16.0		
	8800	SGMR	4	S/F	1526.0	1526.0		100.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1526.0	1526.0	2.0	80.0			QL=1 ST=2 TYP=3
	2800	OTTA	31	ABS	1533.5	1543.0	55.0	-7.0	3.0		
21	8400	BERN	3	S	1042.3	1043.3	3.0	20.0			
22	8800	PALE	8	S	0342.0	0342.0	1.0	79.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	0342.0	0343.0	1.0	120.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	2314.0	2316.0	3.0	31.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	2316.0	2316.0	1.0	100.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	2316.0	2316.0	1.0	110.0			QL=1 ST=2 TYP=3
23	8800	LEAR	4	S/F	0555.0	0555.0		17.0			QL=1 ST=1 TYP=3
	8800	PALE	8	S	2157.0	2157.0	1.0	110.0			QL=1 ST=2 TYP=3
24	8800	SGMR	4	S/F	1156.0	1158.0	4.0	200.0			QL=1 ST=3 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

OCTOBER 1988

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
24	8400	BERN	3	S	1157.0	1158.0	4.5	234.0			
	2800	OTTA	3	S	1602.4	1603.5	2.6	110.0	55.0		
	2695	SGMR	4	S/F	1603.0	1603.0		110.0			QL=1 ST=2 TYP=3
	8800	SGMR	4	S/F	1603.0	1603.0		64.0			QL=1 ST=2 TYP=3
	2800	OTTA	29	PBI	1605.0	1605.0	23.0	11.0	5.0		
	8800	PALE	8	S	2004.0	2005.0	1.0	180.0			QL=1 ST=2 TYP=3
25	2695	LEAR	8	S	0256.0	0257.0	1.0	6.0			QL=1 ST=2 TYP=3
27	2800	OTTA	3	S	1820.9	1826.7	17.5	82.0	40.0		
	2695	SGMR	4	S/F	1822.0	1826.0	11.0	80.0			QL=1 ST=2 TYP=3
	2695	PALE	4	S/F	1823.0	1827.0	15.0	78.0			QL=1 ST=2 TYP=5
	8800	PALE	4	S/F	1824.0	1829.0	12.0	190.0			QL=1 ST=1 TYP=3
	8800	SGMR	4	S/F	1825.0	1825.0		130.0			QL=1 ST=2 TYP=5
	8800	SGMR	4	S/F	1829.0	1829.0	4.0	220.0			
	2800	OTTA	29	PBI	1838.4	1838.4	50.0	6.0	3.0		
28	8800	LEAR	8	S	0121.0	0122.0	1.0	48.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	2339.0	2339.0	1.0	54.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	2339.0	2339.0	1.0	46.0			QL=1 ST=2 TYP=3
29	2695	LEAR	8	S	0454.0	0455.0	1.0	33.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0454.0	0454.0	1.0	22.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1300.0	1300.0	1.0	56.0			QL=1 ST=2 TYP=3
	3200	BERN	3	S	1300.3	1301.0	1.0	66.0			
	8400	BERN	3	S	1300.3	1300.5	1.0	60.0			
	2695	SGMR	4	S/F	1301.0	1301.0	11.0	55.0			QL=1 ST=2 TYP=3

Reports are received routinely from the following observatories:

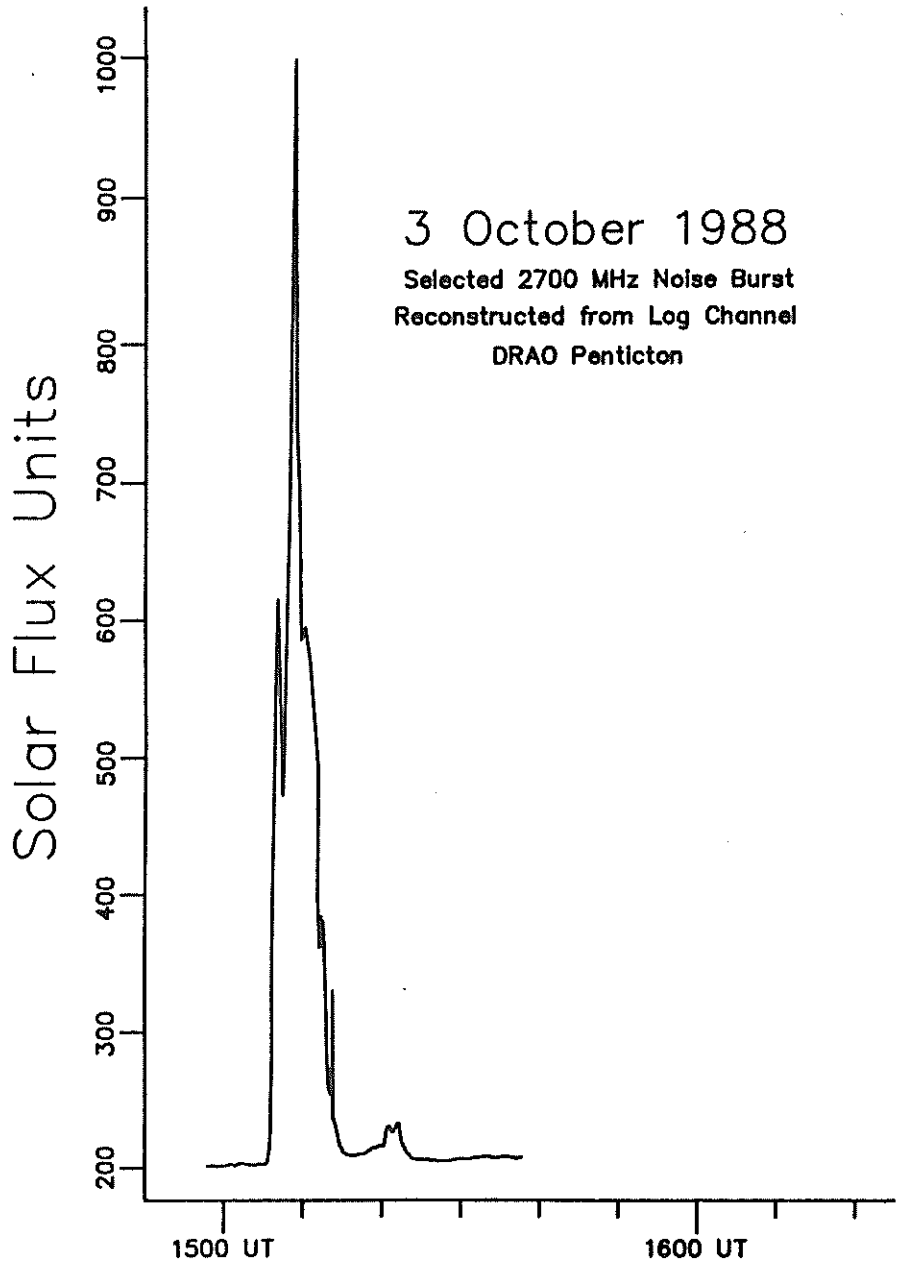
BERN = Berne
LEAR = Learmonth
OTTA = Ottawa
PALE = Palehua
PENT = Penticton
SGMR = Sagamore Hill
SVTO = San Vito

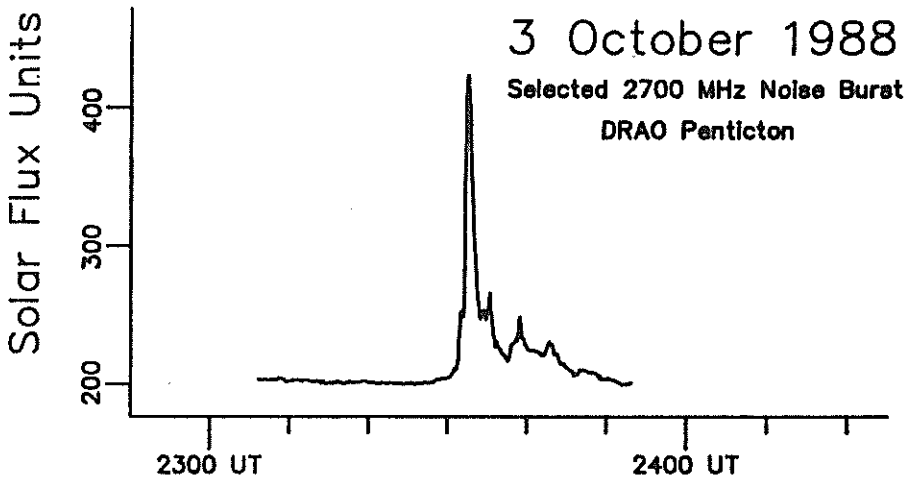
Explanation of Type Code:

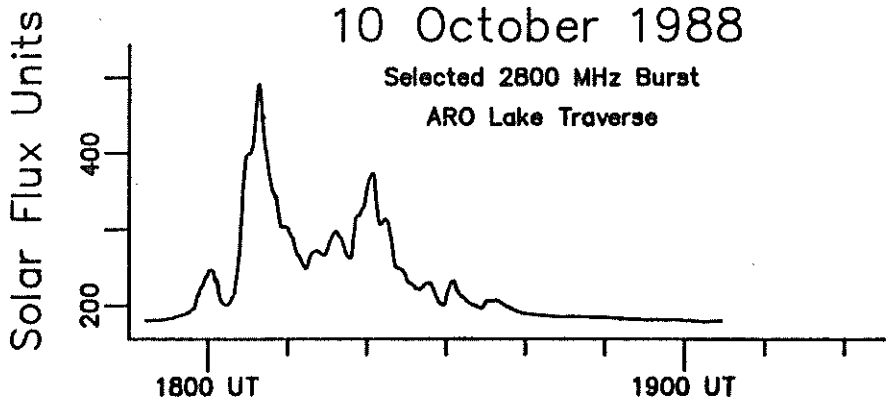
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precusor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
33 Absorption
40 Fluctuation
41 Group of Bursts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

1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
40 Rise Only
40F Rise Only F
4P Post Rise
24PF Post Rise F
16A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A Post Burst Decrease A
32A Absorption A
46F Complex F

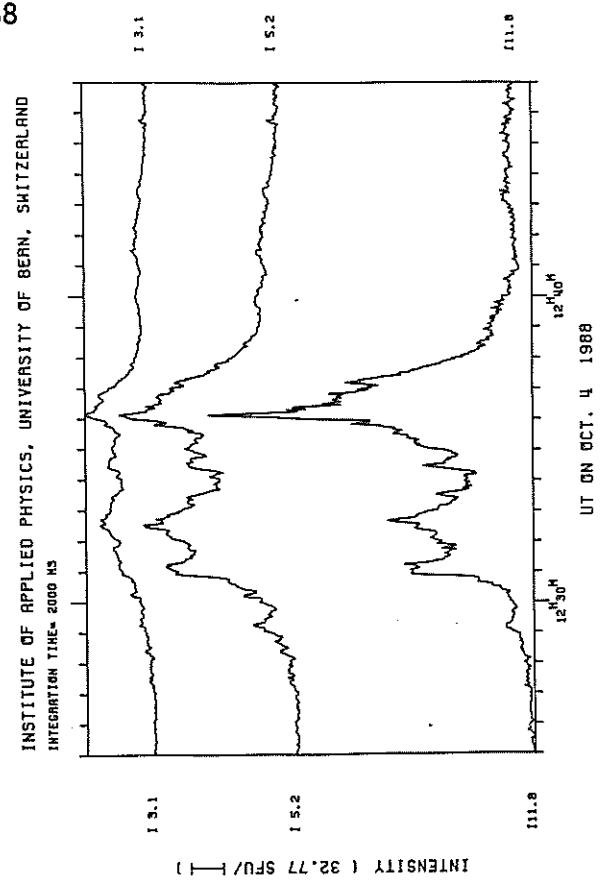
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and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

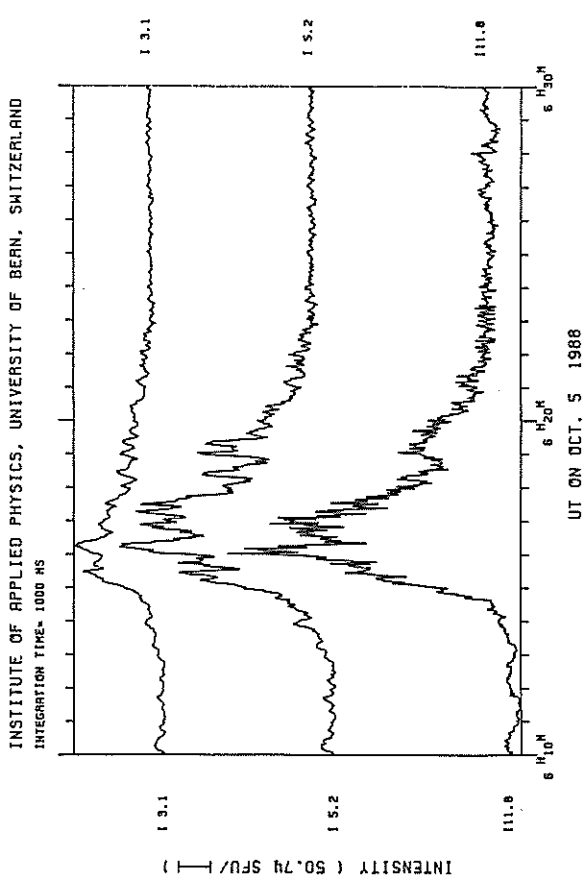

3 October 1988
Selected 2700 MHz Noise Burst
Reconstructed from Log Channel
DRAO Penticton
Solar Flux Units
200
300
400
500
600
700
800
900
1000
1500 UT
1600 UT

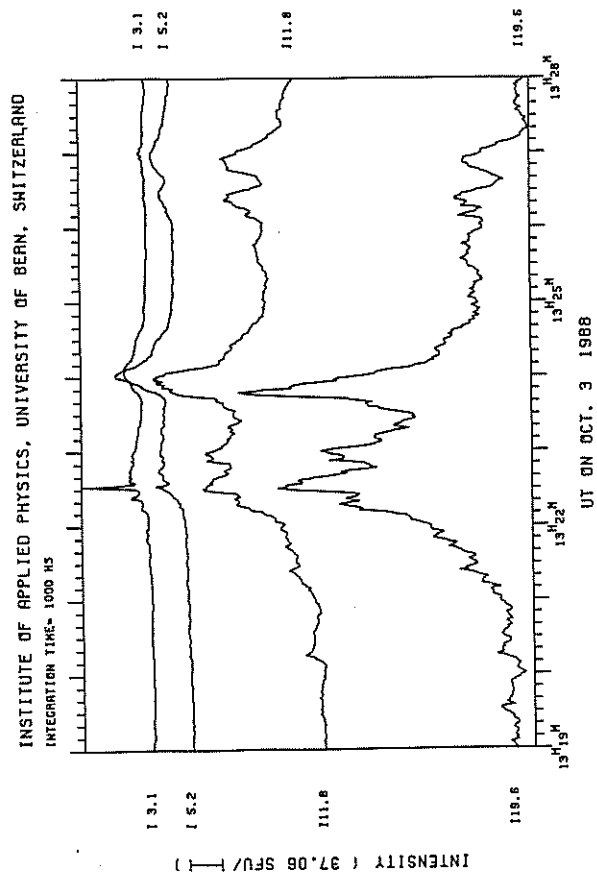

3 October 1988
Selected 2700 MHz Noise Burst
DRAO Penticton
Solar Flux Units
200
300
400
2300 UT
2400 UT

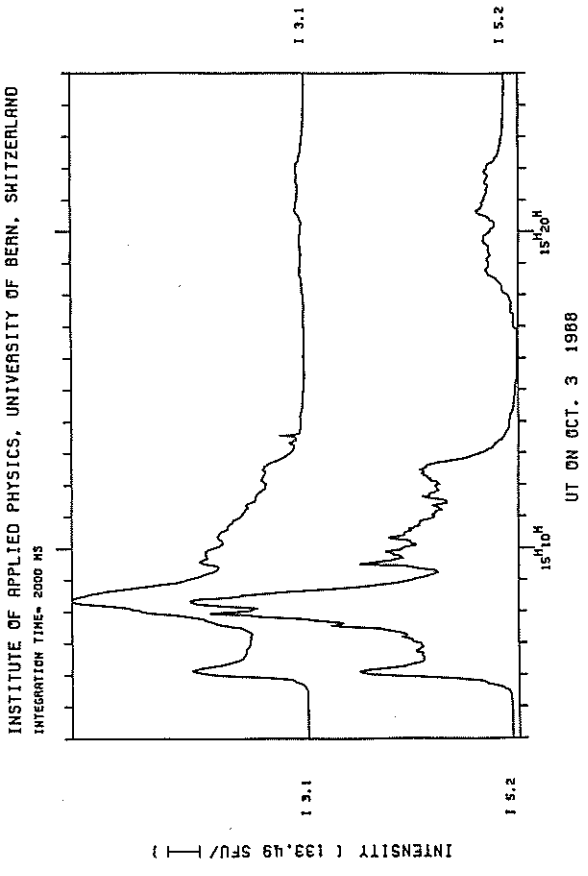

10 October 1988
Selected 2800 MHz Burst
ARO Lake Traverse
Solar Flux Units
200
400
1800 UT
1900 UT

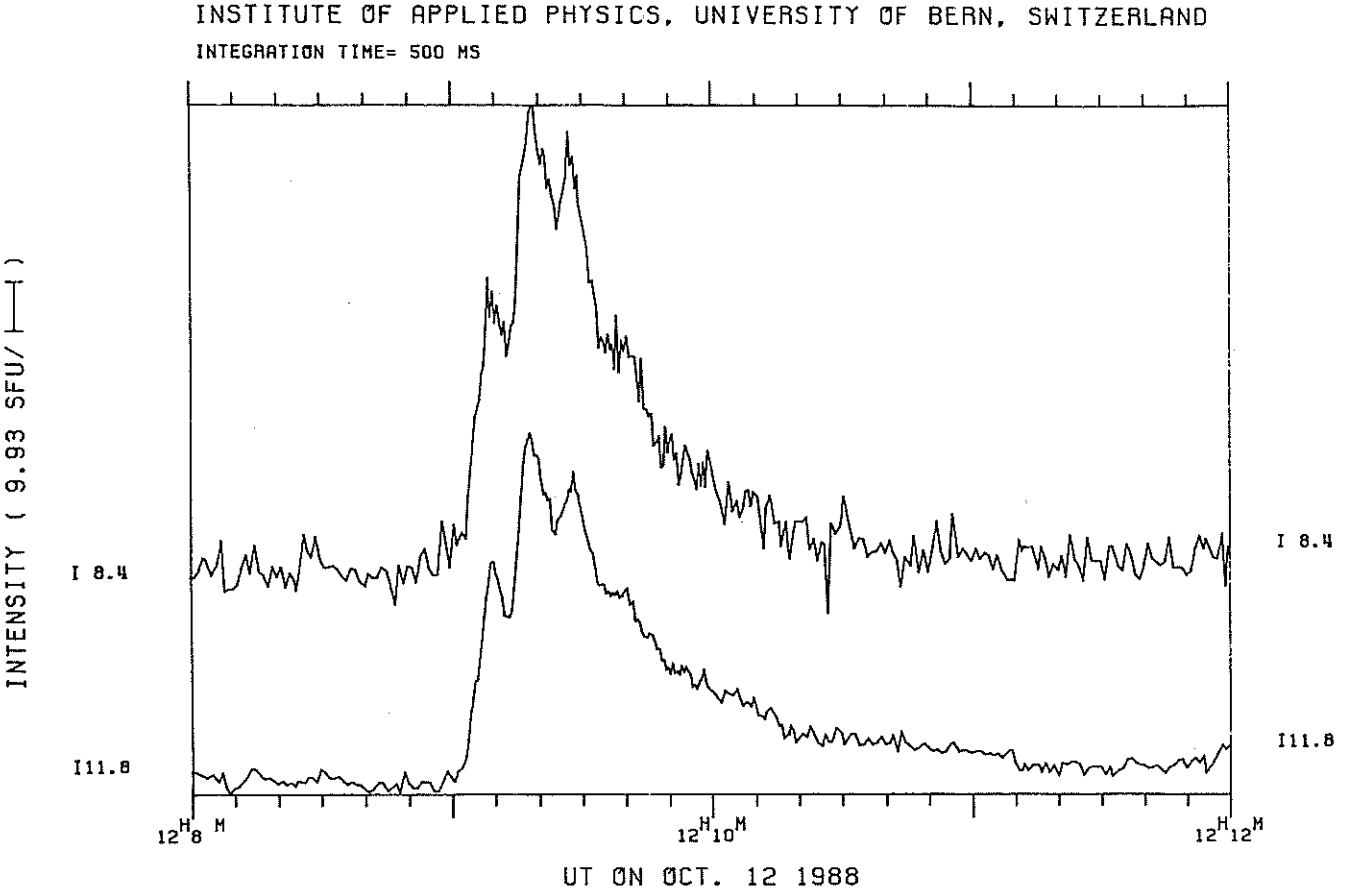
40
Oct 88

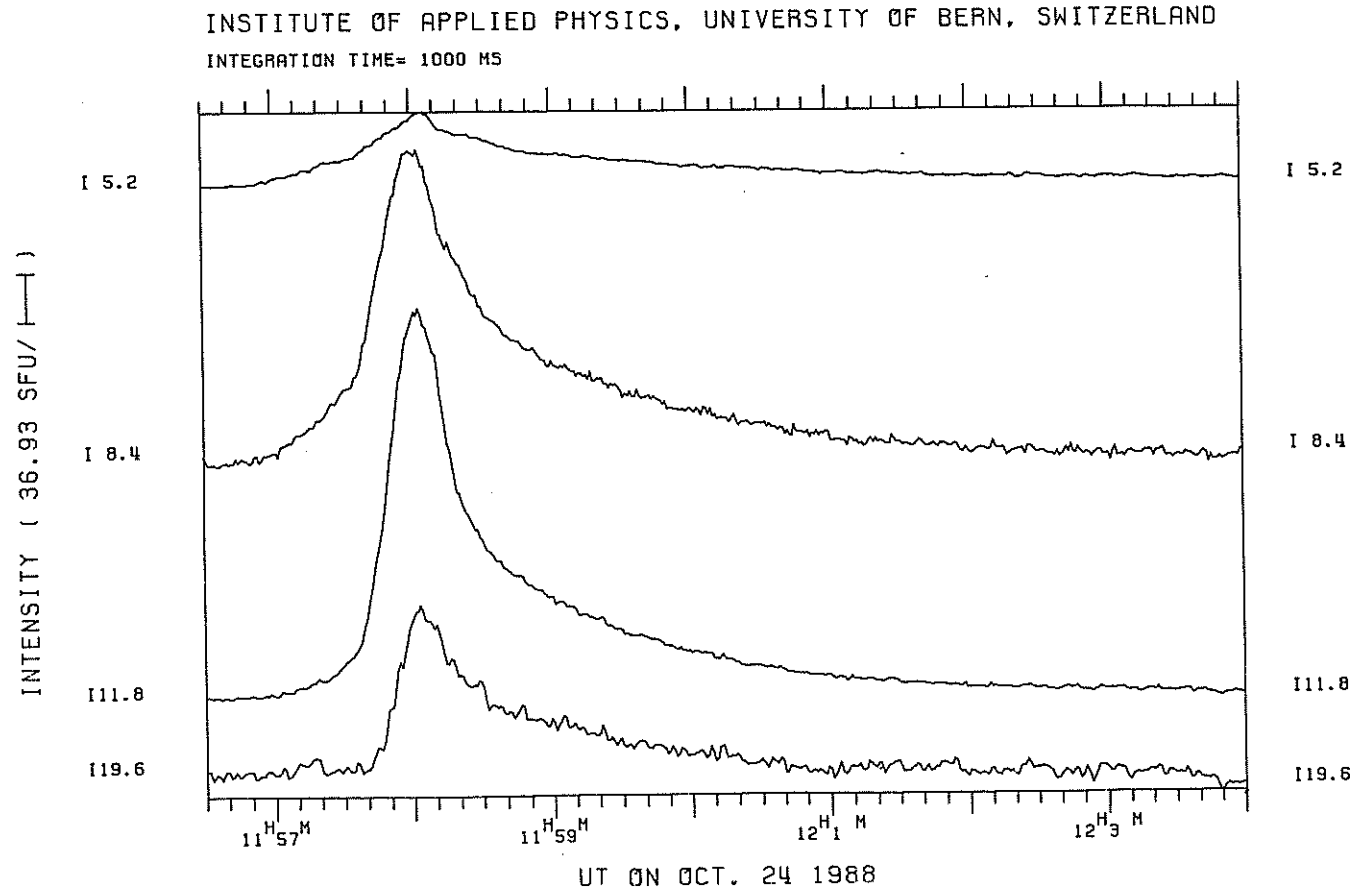

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 2000 MS
I 3.1
I 5.2
III.8
12H30M
12H40M
UT ON OCT. 4 1988
INTENSITY (32.77 SFU/ ⊢⊣)


INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 1000 MS
I 3.1
I 5.2
III.8
6H10M
6H20M
6H30M
UT ON OCT. 5 1988
INTENSITY (50.74 SFU/ ⊢⊣)

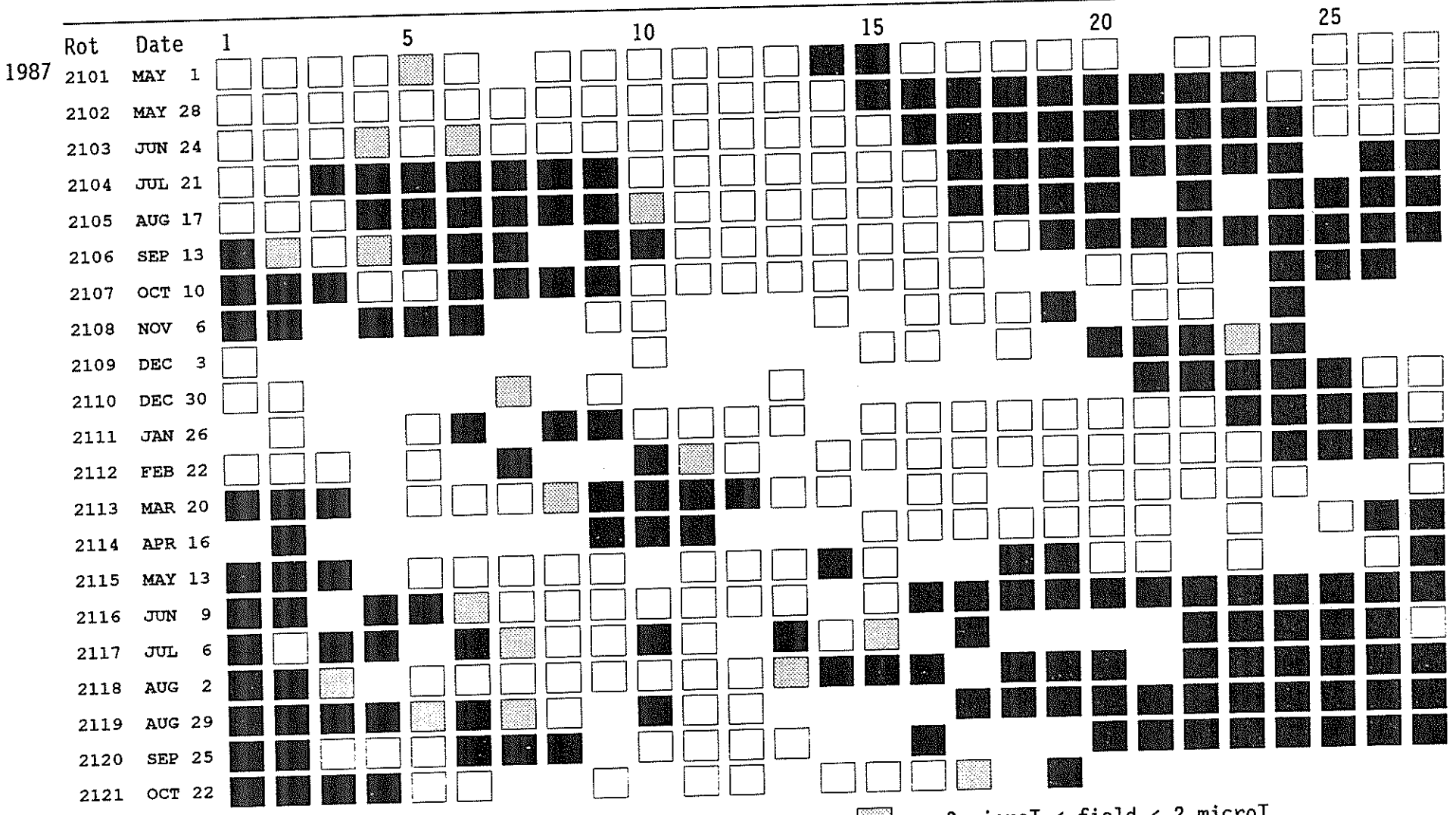

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 1000 MS
I 3.1
I 5.2
III.8
II9.6
13H19M
13H22M
13H25M
13H28M
UT ON OCT. 3 1988
INTENSITY (37.08 SFU/ ⊢⊣)


INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 2000 MS
I 3.1
I 5.2
15H10M
15H20M
UT ON OCT. 3 1988
INTENSITY (133.49 SFU/ ⊢⊣)


INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 500 MS
INTENSITY (9.93 SFU/)
I 8.4
I11.8
I 8.4
I11.8
12H8 M
12H10M
12H12M
UT ON OCT. 12 1988


INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 1000 MS
INTENSITY (36.93 SFU/)
I 5.2
I 8.4
I11.8
I19.6
I 5.2
I 8.4
I11.8
I19.6
11H57M
11H59M
12H1 M
12H3 M
UT ON OCT. 24 1988

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	1987 Nov	Dec	1988 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	.	.	.	.	.	12	13	14	-35	5	-27	-15
2	-20	.	.	-16	-16	21	12	7	-51	-22	-2	-19
3	-19	2	.	-5	1	.	28	.	-29	-14	-4	.
4	-24	.	.	16	22	35	29	33	-9	1	-2	8
5	.	.	0	25	.	42	25	.	-13	.	16	12
6	-10	.	.	42	49	.	37	.	-39	5	.	15
7	-12	.	20	40	50	45	.	12	39	18	-22	10
8	.	.	.	.	49	41	39	-14	-18	43	43	.
9	-28	.	.	62	44	53	.	-25	-29	48	45	.
10	-28	.	.	56	53	47	6	-17	.	51	.	-8
11	-20	.	29	58	52	43	-8	.	-16	22	.	.
12	.	19	.	58	49	36	-11	-14	-1	25	.	.
13	.	.	.	48	36	.	-22	-11	14	23	.	.
14	4	.	.	47	35	.	-29	-1	15	1	-30	-36
15	5	.	.	23	21	8	-25	13	-6	-14	-44	-33
16	.	.	.	16	-13	.	.	22	2	-15	-50	-43
17	.	22	.	-13	-9	-25	10	28	.	-20	-54	-39
18	.	30	.	-22	-13	.	17	27	-3	.	-46	-52
19	18	.	-12	-25	-9	.	15	30	3	-36	-49	-53
20	.	20	-22	-13	-20	.	12	37	-1	-38	-64	-40
21	21	.	-35	11	-14	.	22	35	.	-49	-67	-37
22	30	-10	-28	14	-8	.	.	.	-16	.	-64	-34
23	3	-17	-15	35	.	.	5	15	.	-57	-57	-38
24	-10	-18	4	37	18	-6	5	-3	.	-79	-36	-36
25	.	-1	15	.	21	-20	4	-35	.	-91	-29	-17
26	4	-3	.	17	12	-26	-6	-67	.	-77	-8	14
27	4	.	23	.	-1	.	7	-75	-49	-57	6	15
28	.	.	.	-14	-13	.	.	-80	-79	-24	34	.
29	-5	.	.	.	-43	.	.	-57	-51	-10	13	.
30	.	24	3		-40	18	-19	-29	-15	-20	-6	15
31		24	-15		-11		-13		-3	-20		.

Dot symbol indicates no data available for the day.

C O N T E N T S

Prompt Reports DATA FOR **SEPTEMBER 1988** Number 531 Part I

P R E L I M I N A R Y H - ALPHA S O L A R S Y N O P T I C C H A R T

CARRINGTON ROTATION NUMBER 1806
(25 August to 21 September 1988)

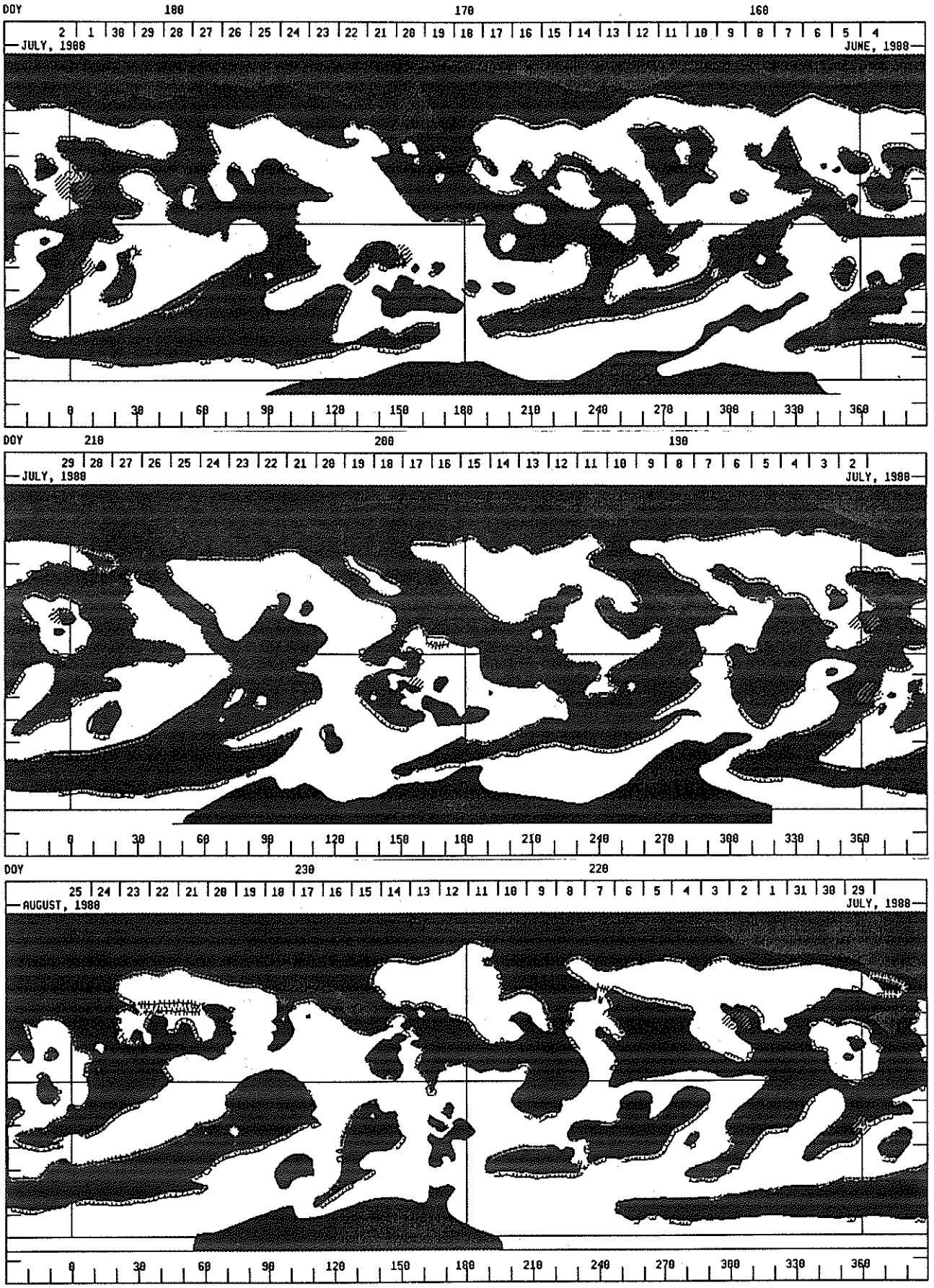
Dates of Observations Below Days of Year: 250 245 240

Chart unavailable at time of publication.

Heliographic Longitude

SHADED H-ALPHA SOLAR SYNOPTIC CHARTS

Carrington Rot. 1803-1805 5 June to 25 August 1988



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

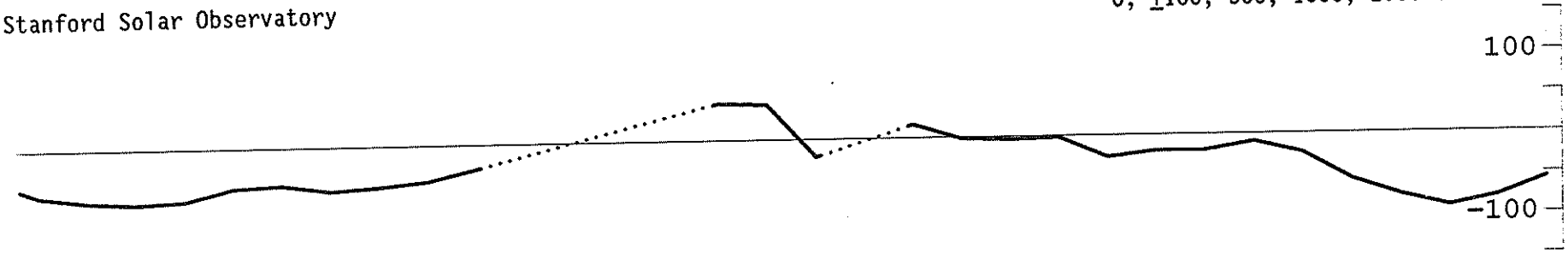
Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1806
(25 August to 21 September 1988)

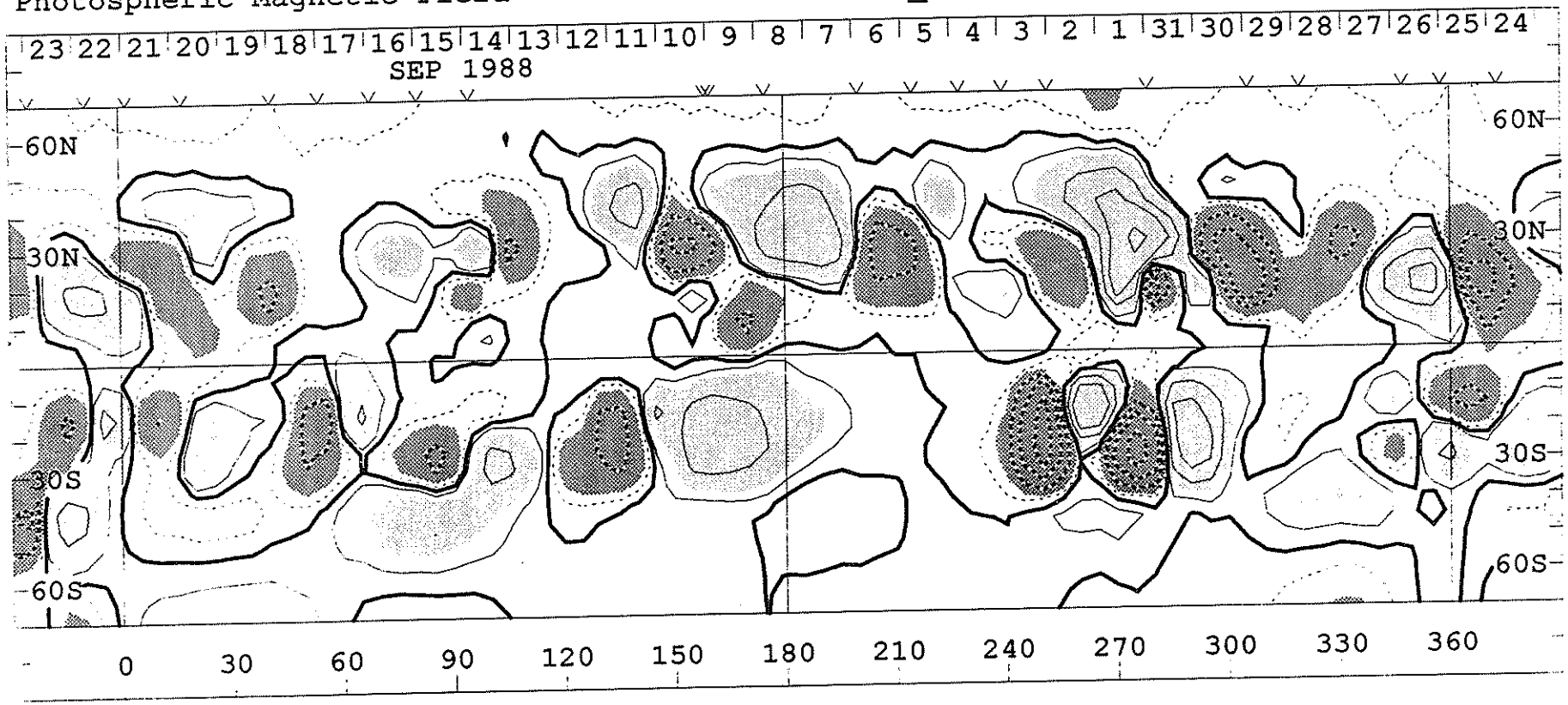
Stanford Solar Observatory

0, ±100, 500, 1000, 2000 microTesla



Photospheric Magnetic Field

0, ±100, 500, 1000, 2000 MicroTesla



Heliographic Longitude

SOLAR MAGNETIC FIELD SYNOPTIC CHART

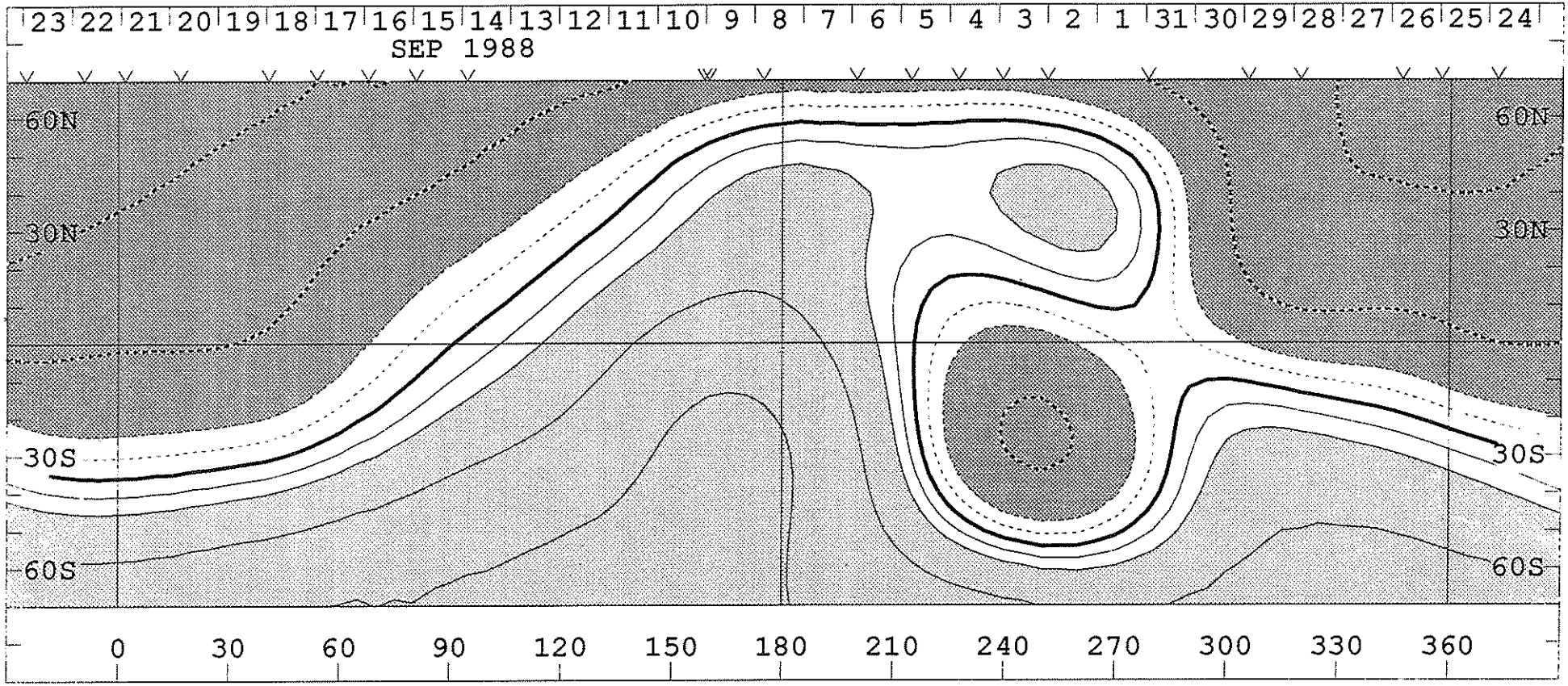
SOURCE SURFACE FIELD

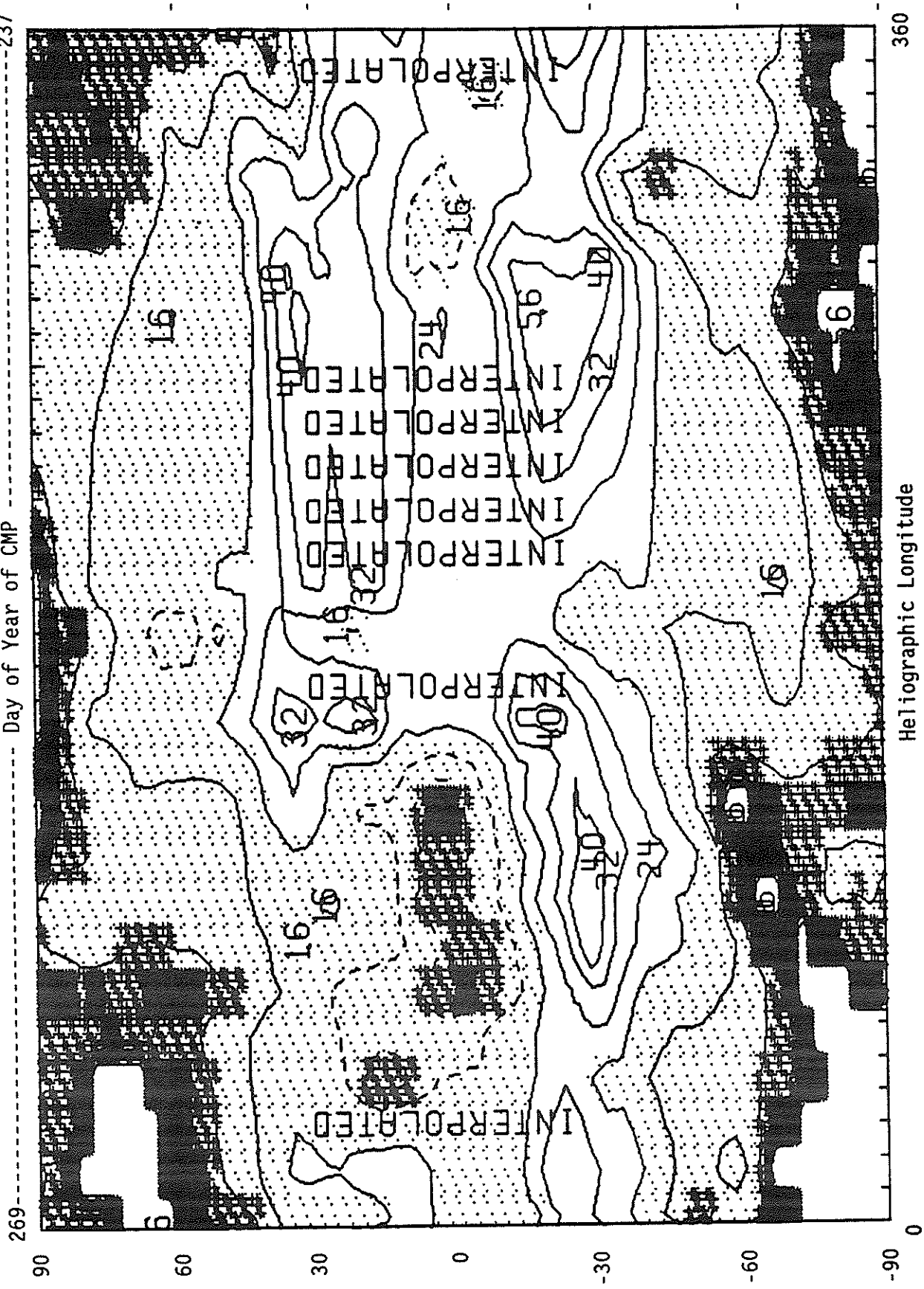
CARRINGTON ROTATION NUMBER 1806

(25 August to 21 September 1988)

Stanford Solar Observatory

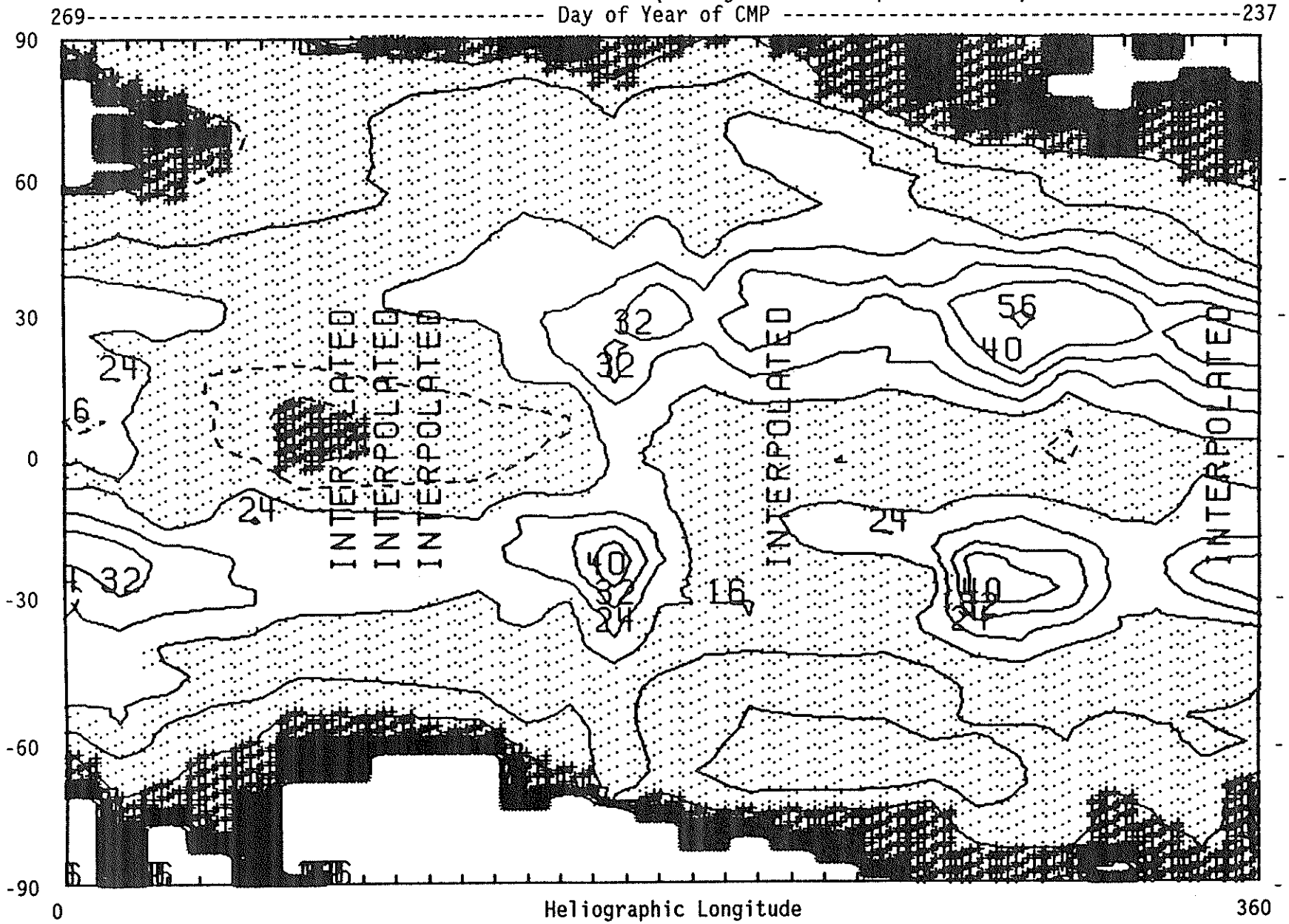
0, ±1, 2, 5, 10, 20 microTesla



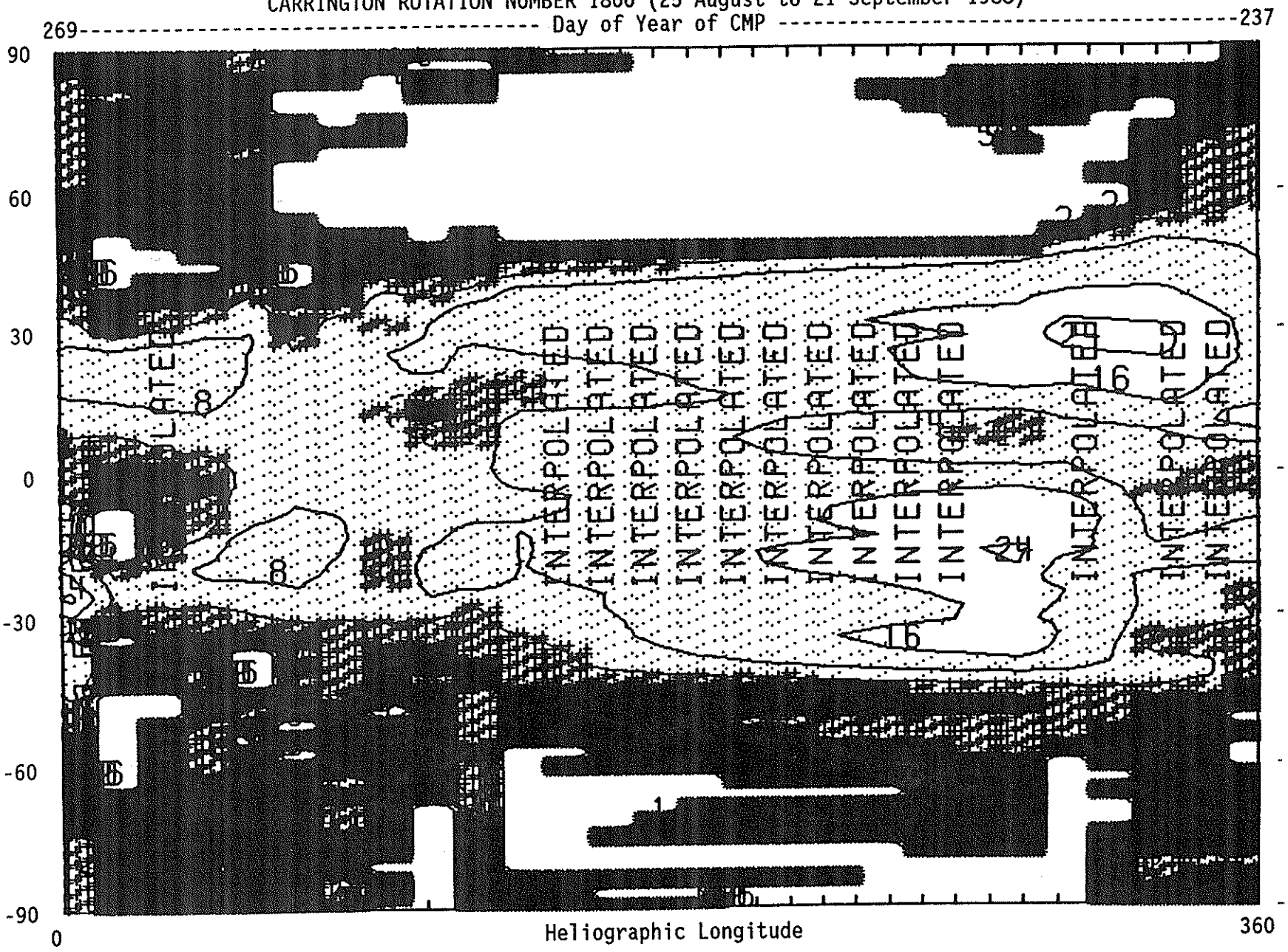

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1806 (25 August to 21 September 1988)
269 Day of Year of CMP 237
90
60
30
0
-30
-60
-90
0
360
Heliographic Longitude
INTERPOLATED

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--WEST LIMB

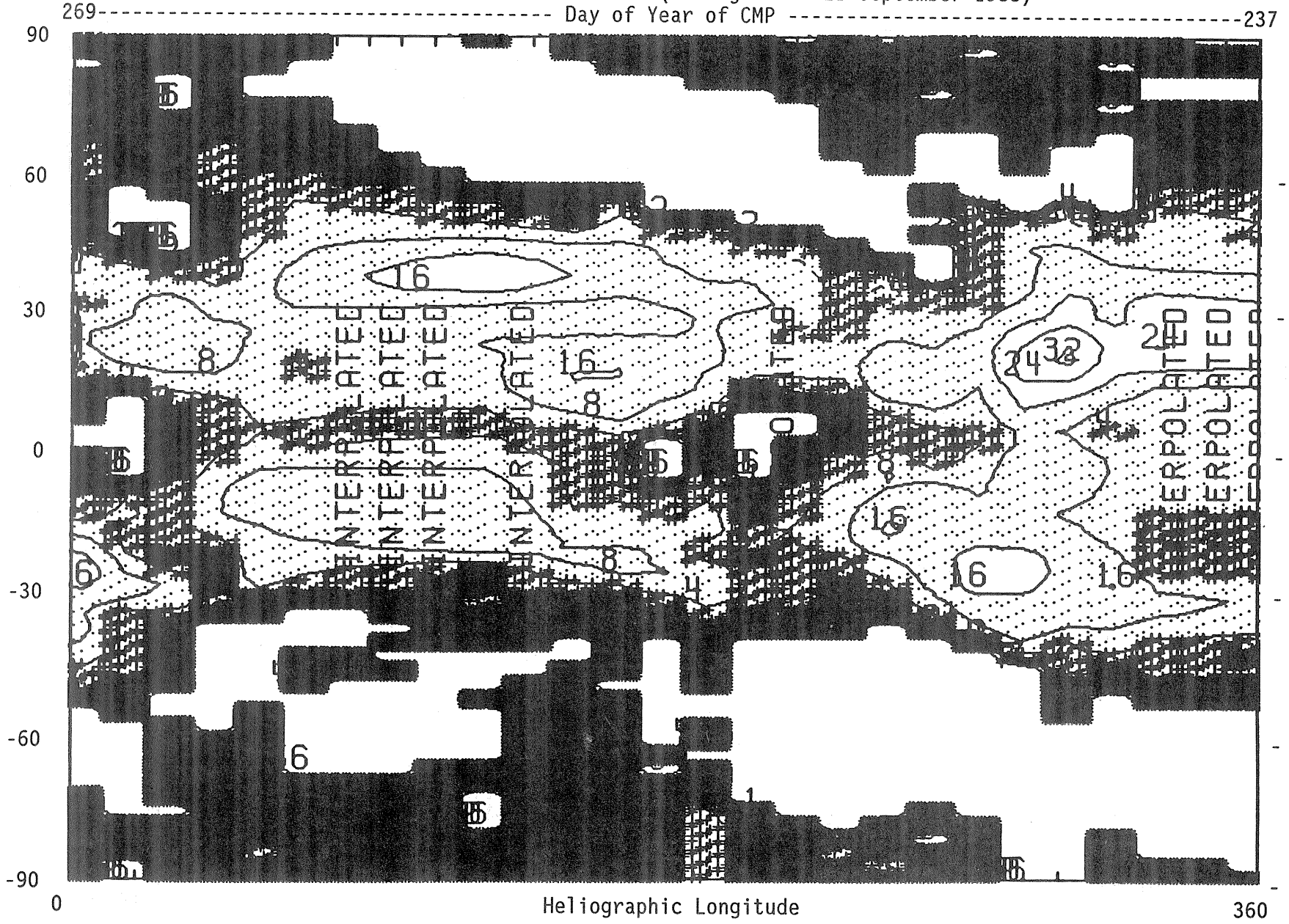
CARRINGTON ROTATION NUMBER 1806 (25 August to 21 September 1988)



SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1806 (25 August to 21 September 1988)



SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1806 (25 August to 21 September 1988)

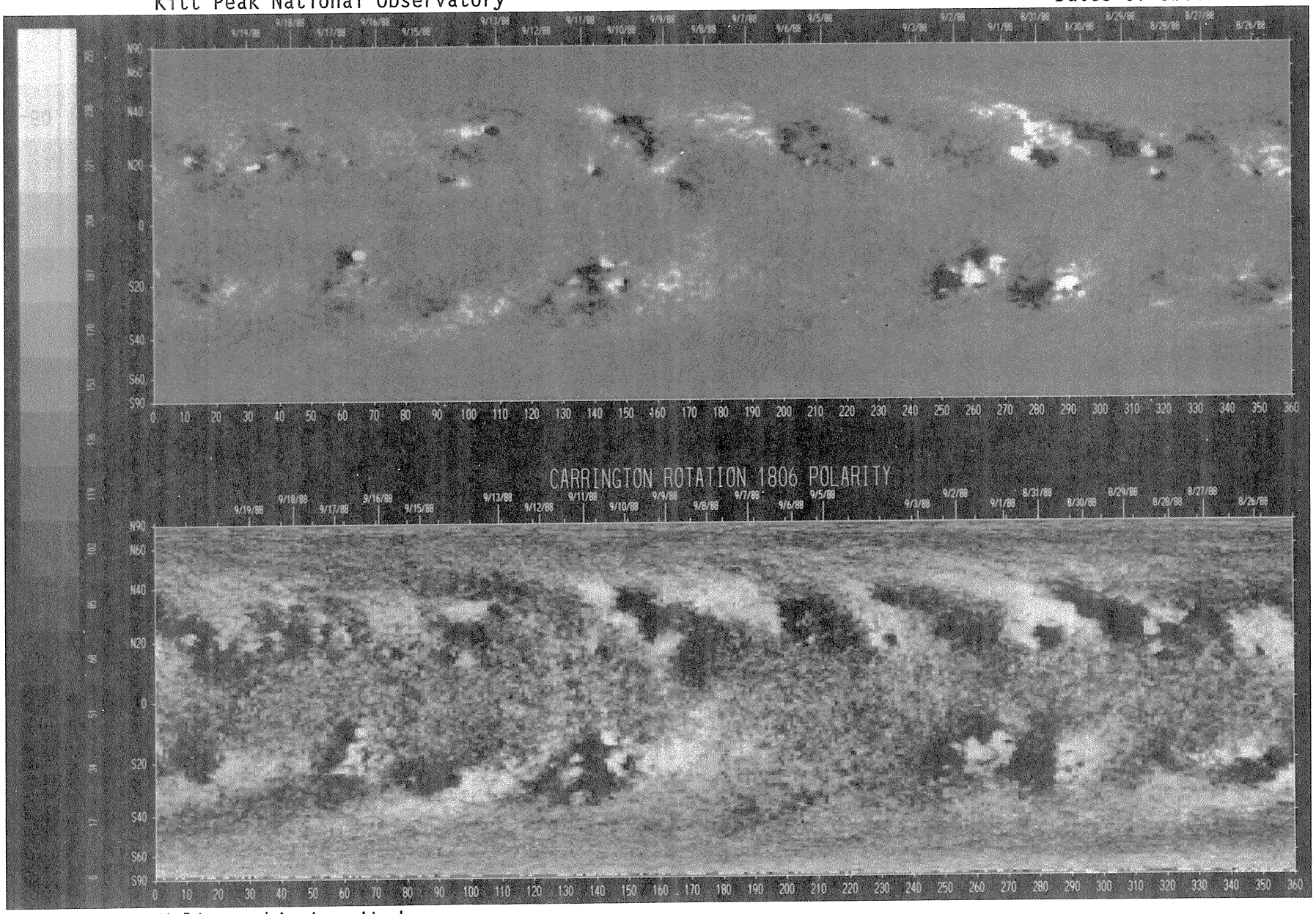


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1806
(25 August to 21 September 1988)

Kitt Peak National Observatory

Dates of Observation

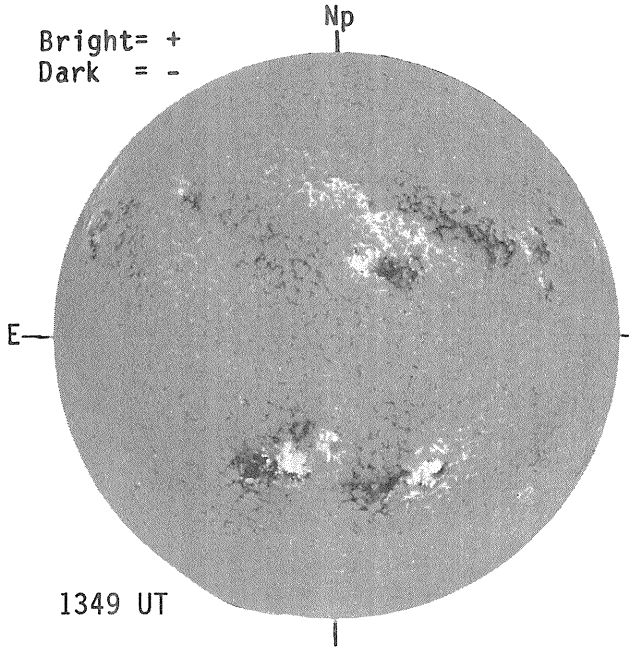


Heliographic Longitude

SEPTEMBER 01, 1988 (P= 21.14, B_o= 7.18, L_o= 276.45)

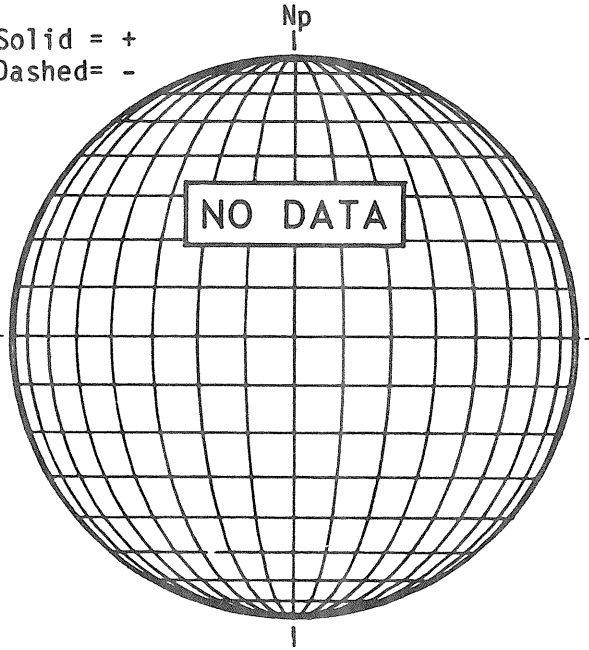
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



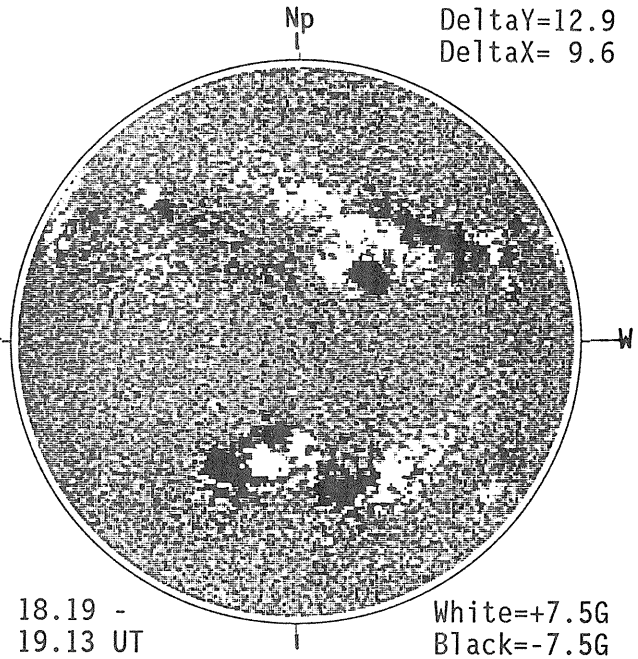
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

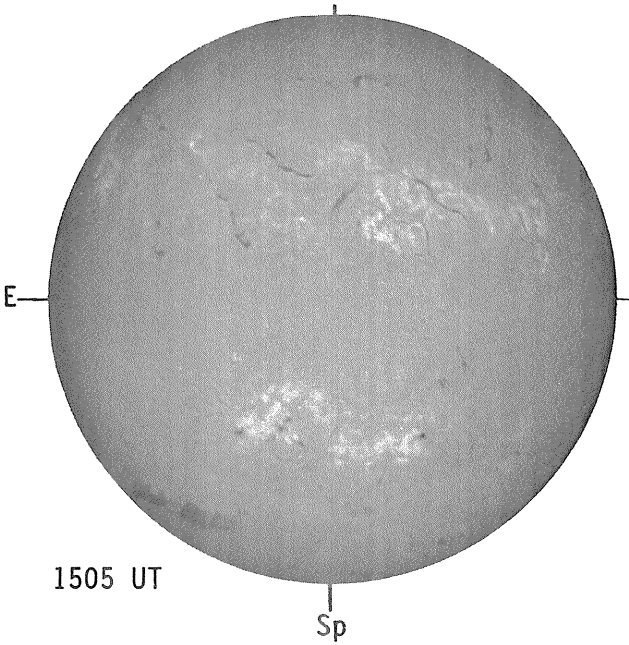


MT. WILSON MAGNETOGRAM

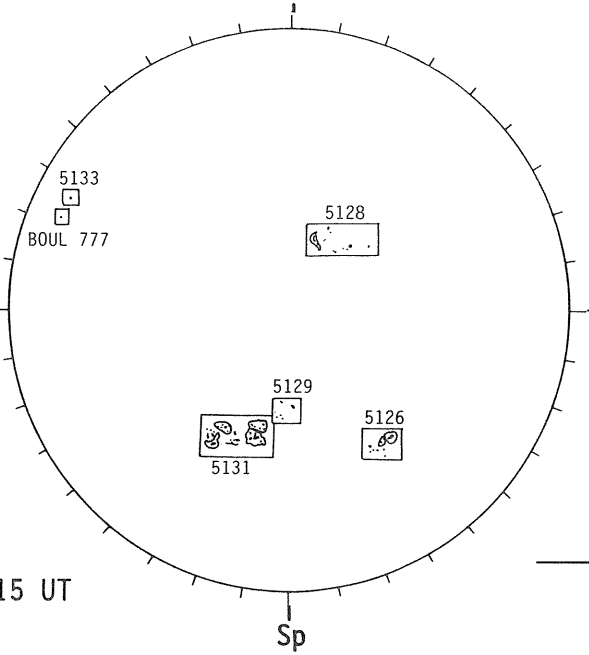
DeltaY=12.9
DeltaX= 9.6



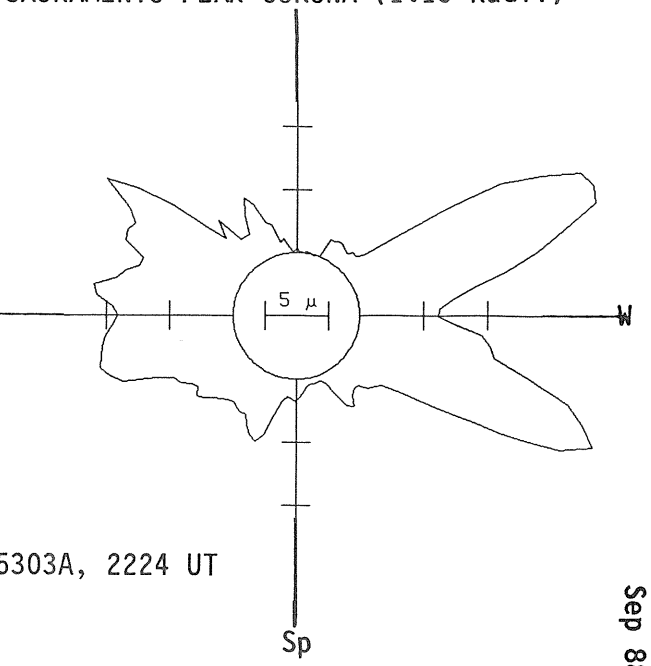
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

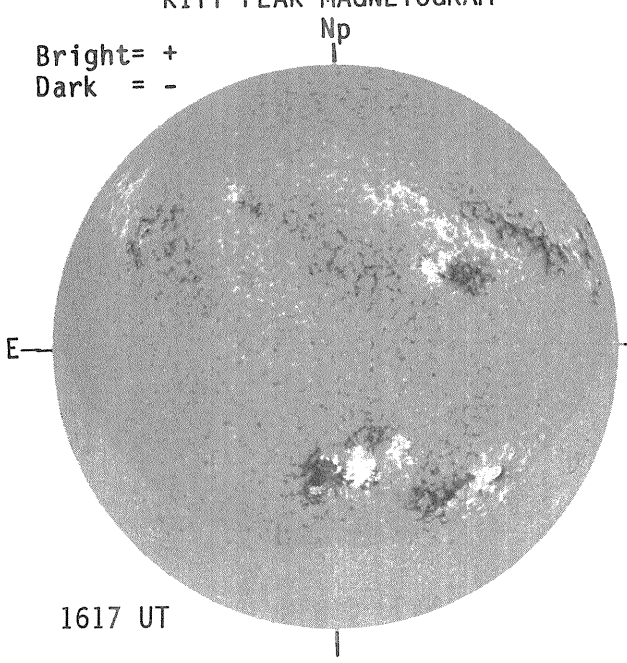


—— 5303A, 2224 UT

SEPTEMBER 02, 1988 (P= 21.39, B_o= 7.20, L_o= 263.24)

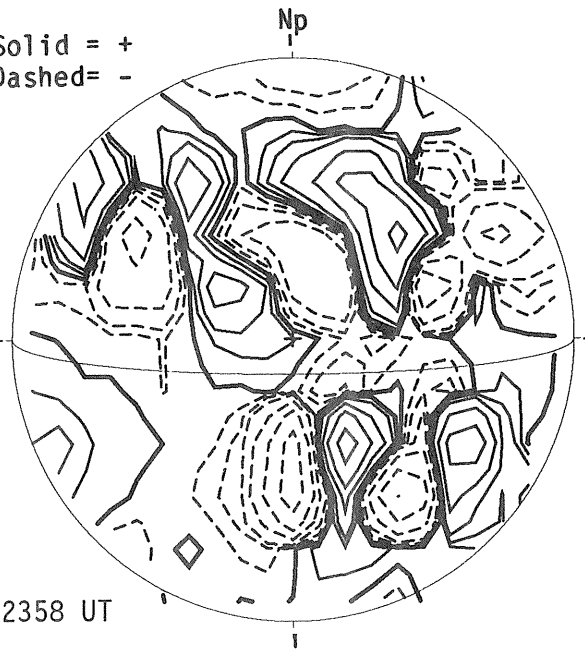
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



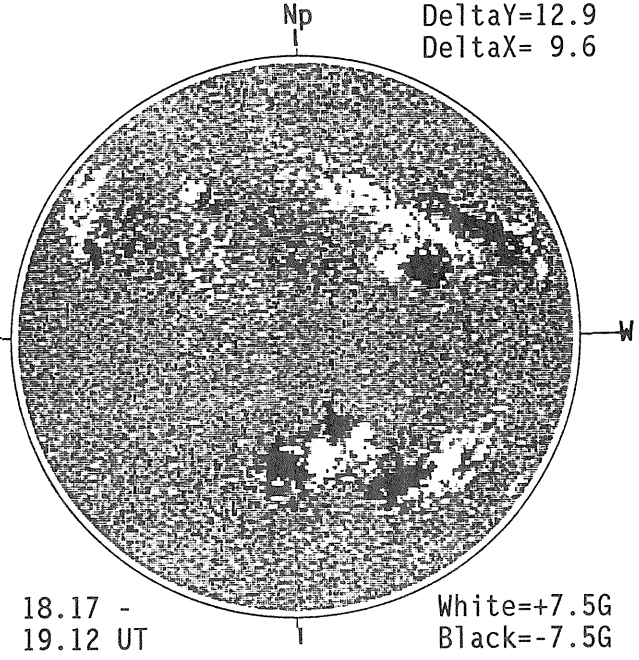
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

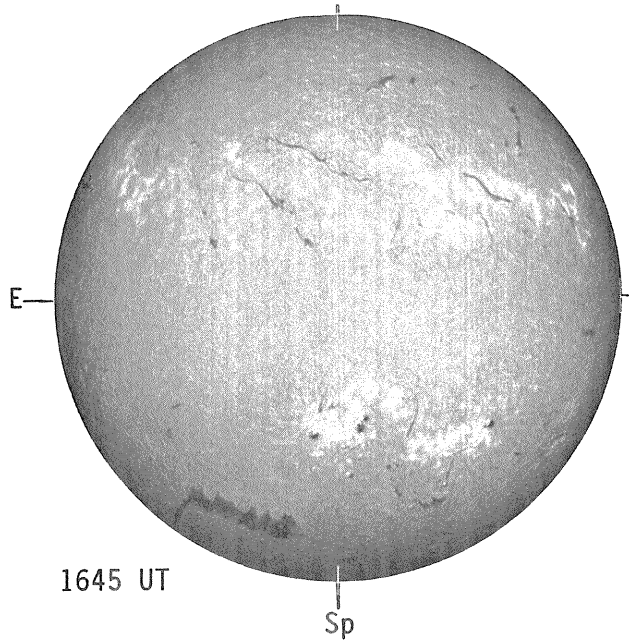


MT. WILSON MAGNETOGRAM

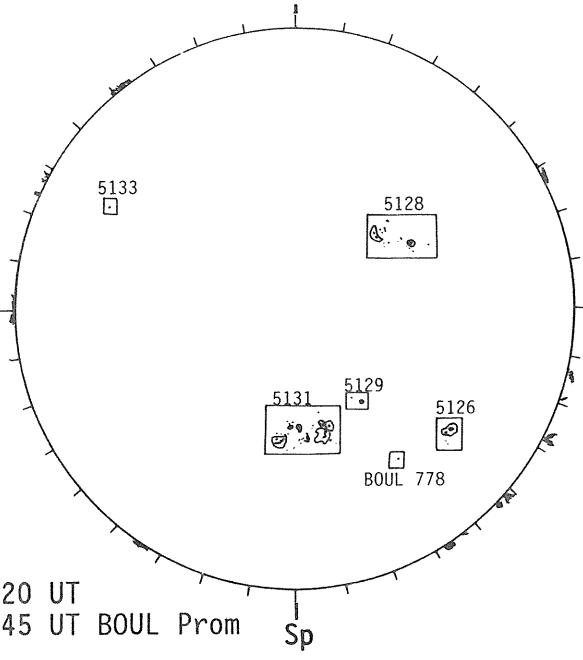
DeltaY=12.9
DeltaX= 9.6



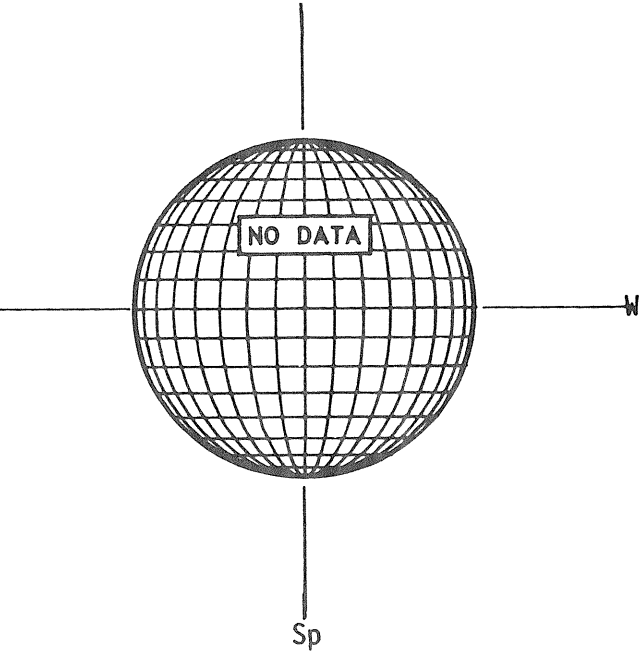
BOULDER H-ALPHA



BOULDER SUNSPOTS



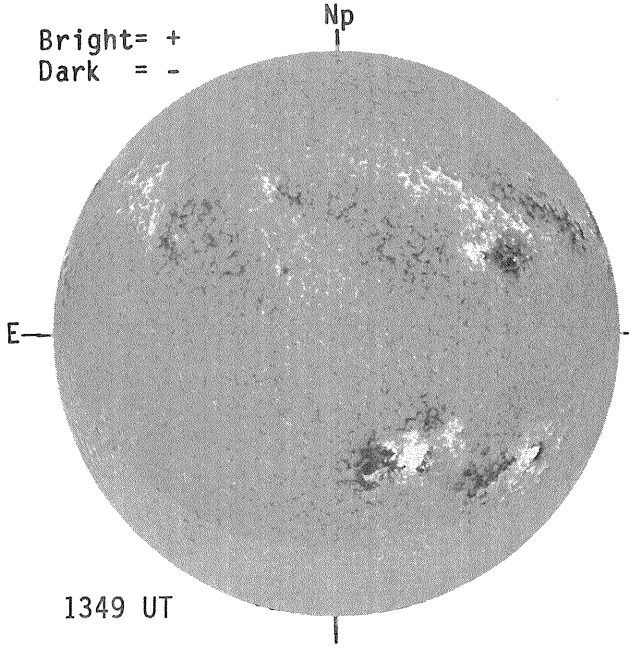
SACRAMENTO PEAK CORONA (1.15 Radii)



SEPTEMBER 03, 1988 (P= 21.63, B_o= 7.21, L_o= 250.03)

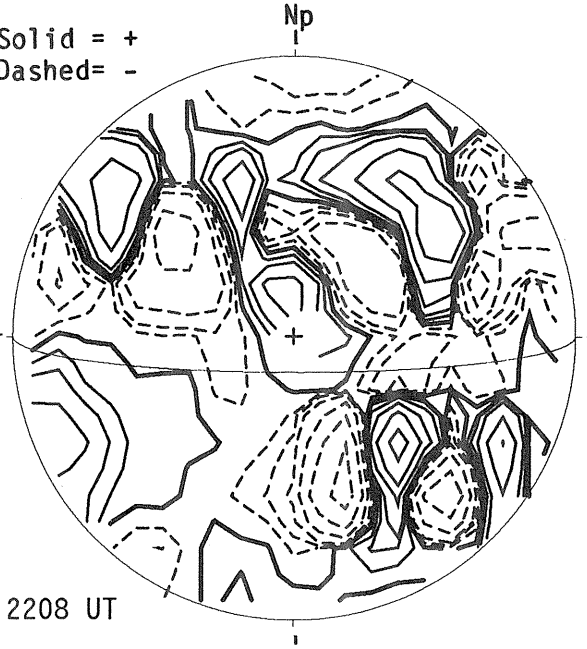
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



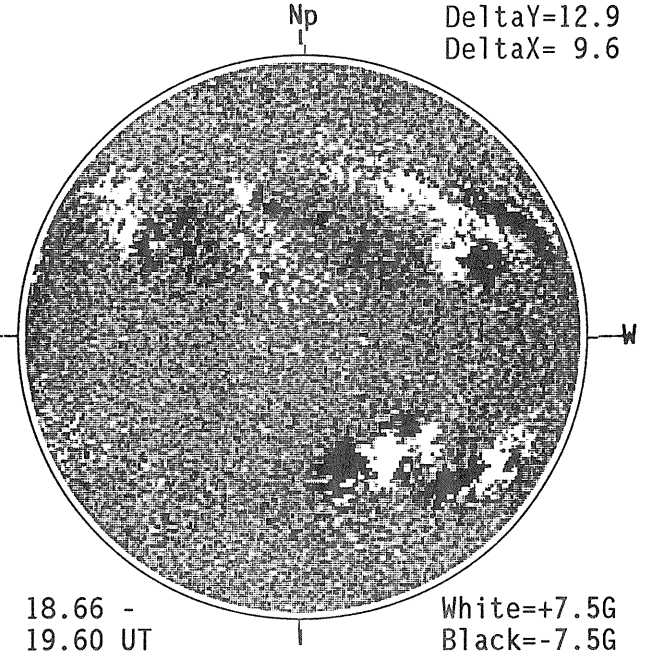
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

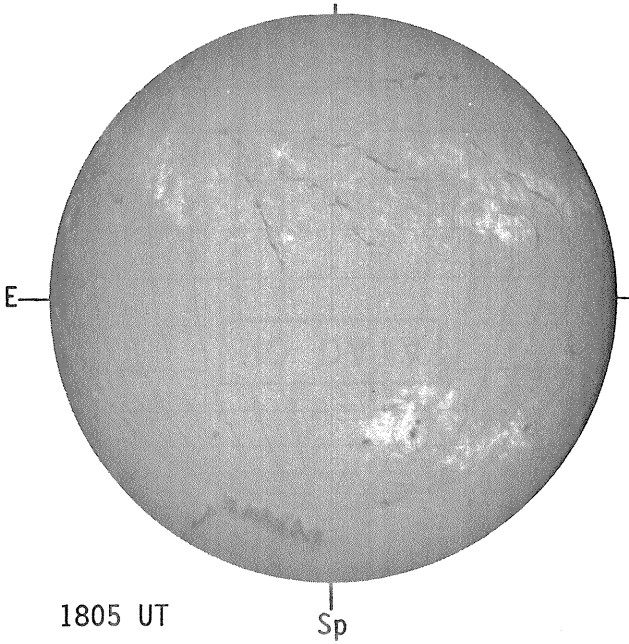


MT. WILSON MAGNETOGRAM

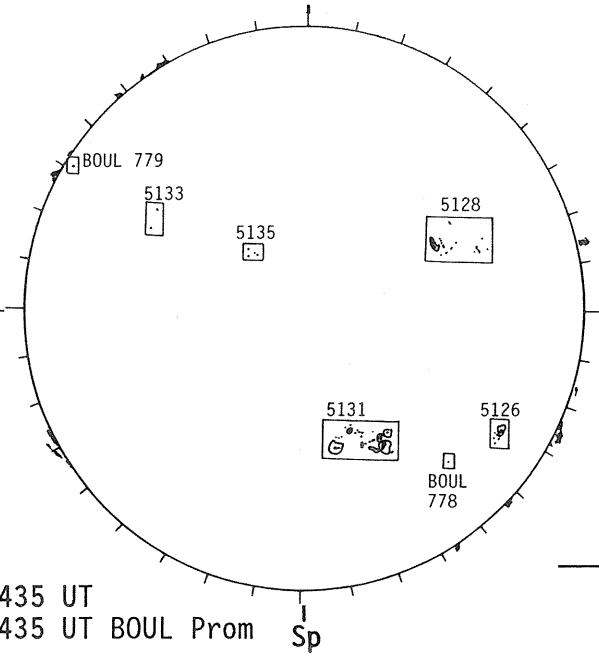
DeltaY=12.9
DeltaX= 9.6



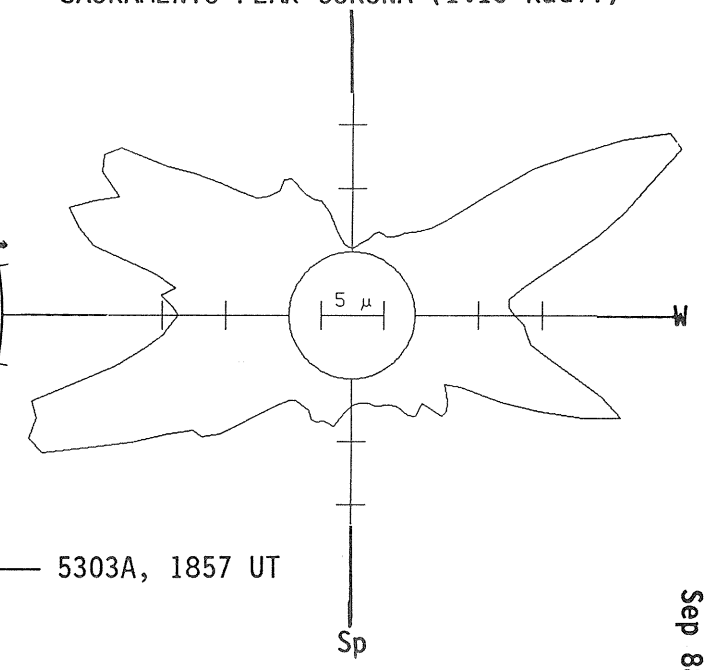
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



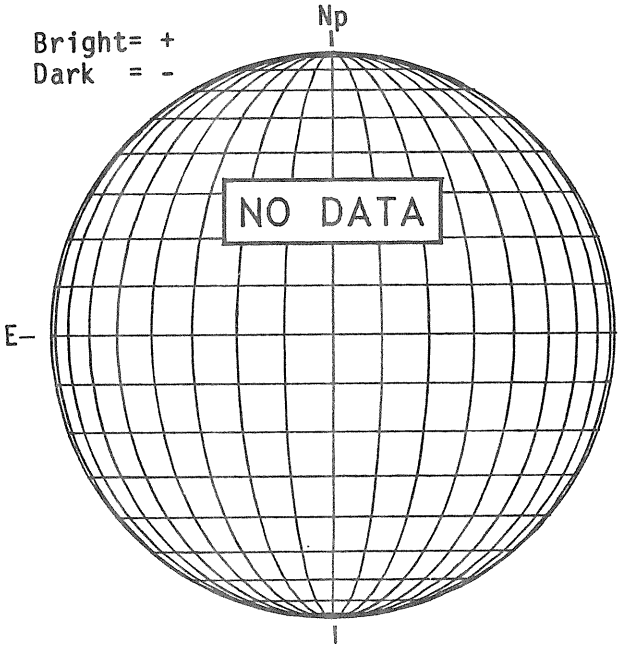
—— 5303A, 1857 UT

57
Sep 88

SEPTEMBER 04, 1988 (P= 21.87, B_o= 7.22, L_o= 236.83)

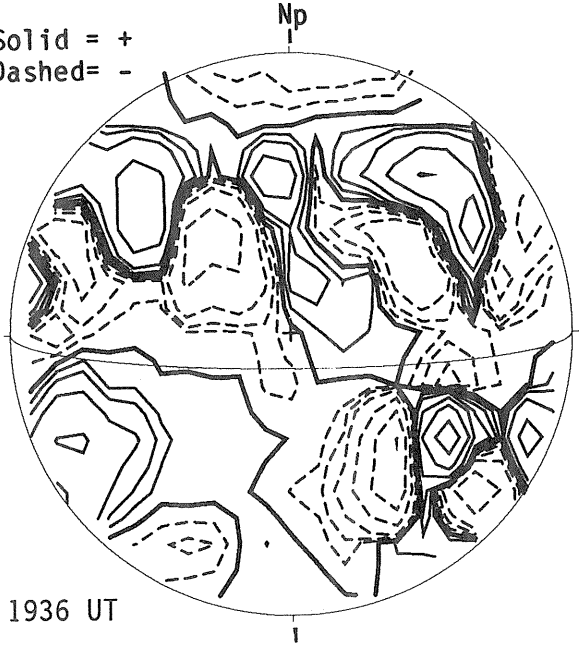
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

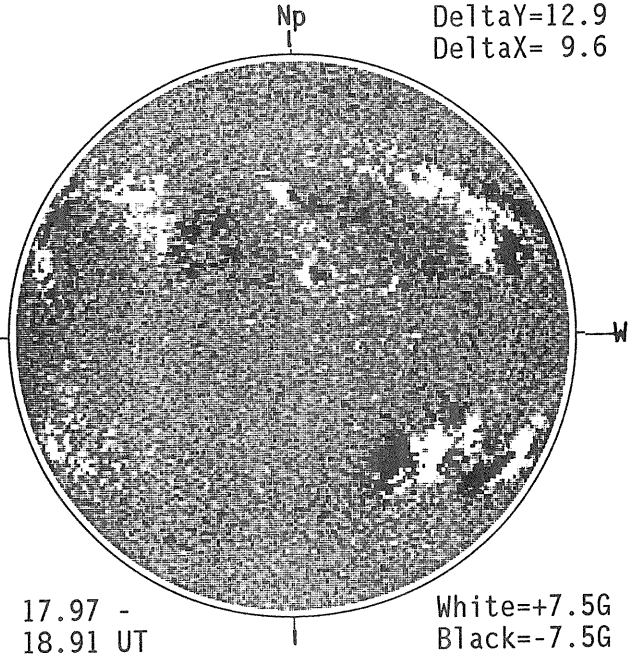
Solid = +
Dashed= -



1936 UT

MT. WILSON MAGNETOGRAM

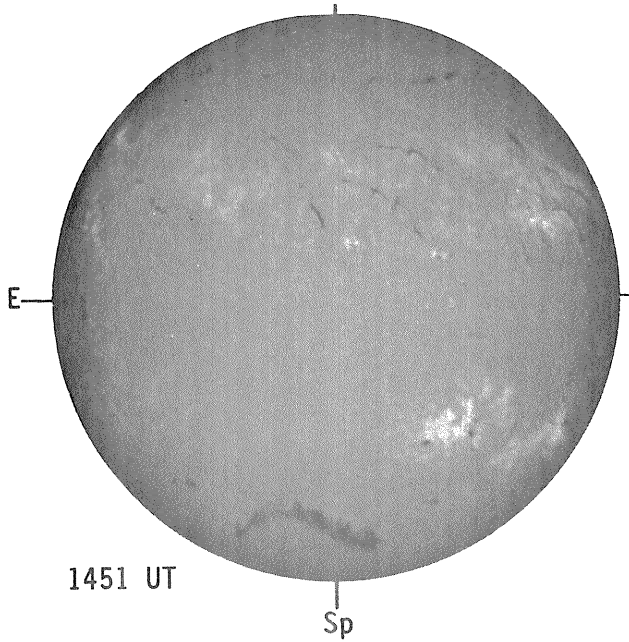
DeltaY=12.9
DeltaX= 9.6



17.97 -
18.91 UT

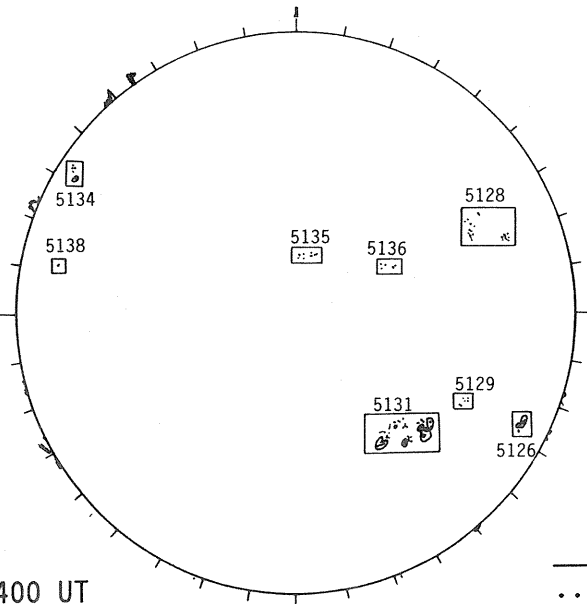
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



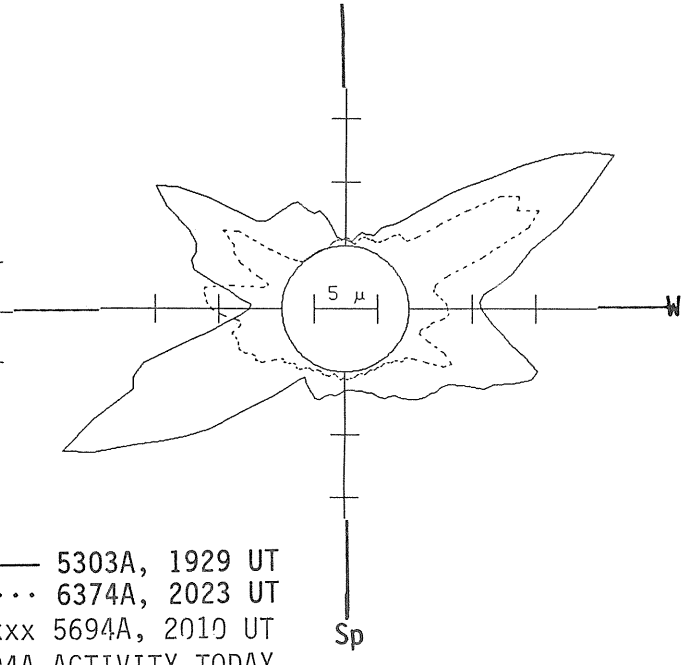
1451 UT

BOULDER SUNSPOTS



1400 UT
1340 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

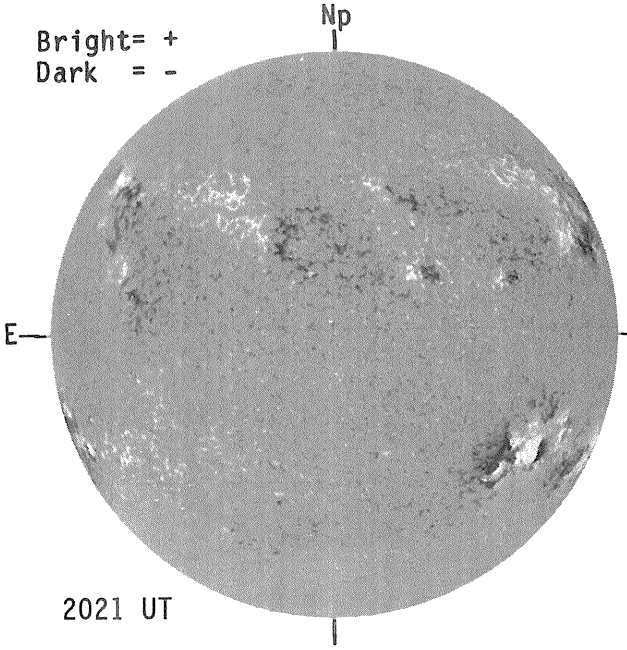


—— 5303A, 1929 UT
···· 6374A, 2023 UT
xxxx 5694A, 2010 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 05, 1988 (P= 22.11, B_o= 7.23, L_o= 223.62)

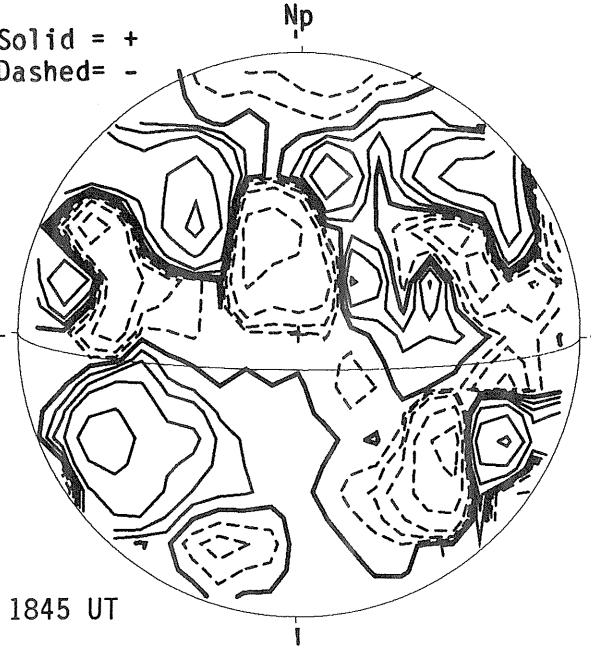
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



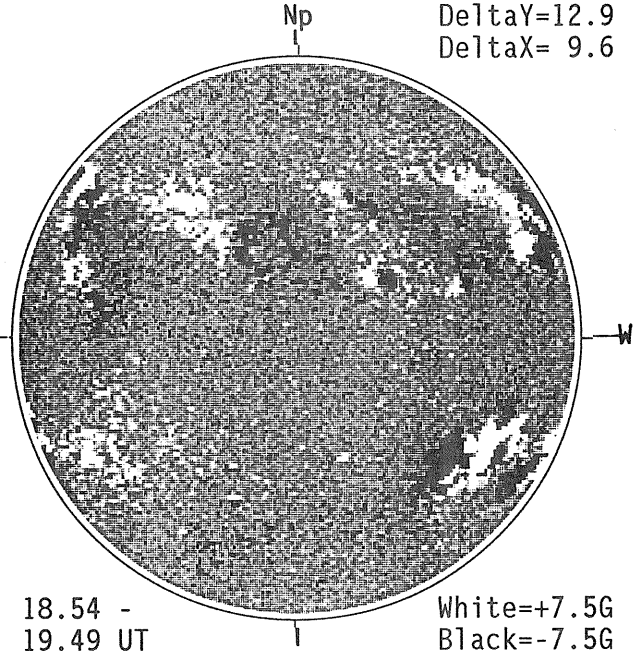
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

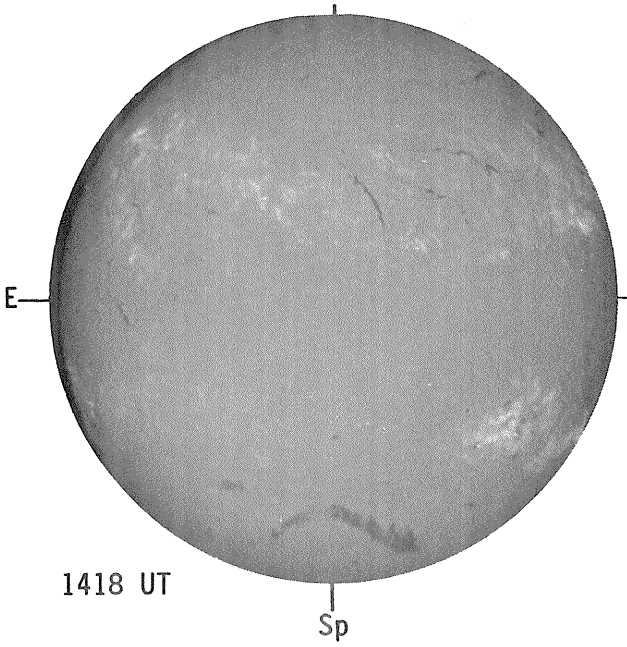


MT. WILSON MAGNETOGRAM

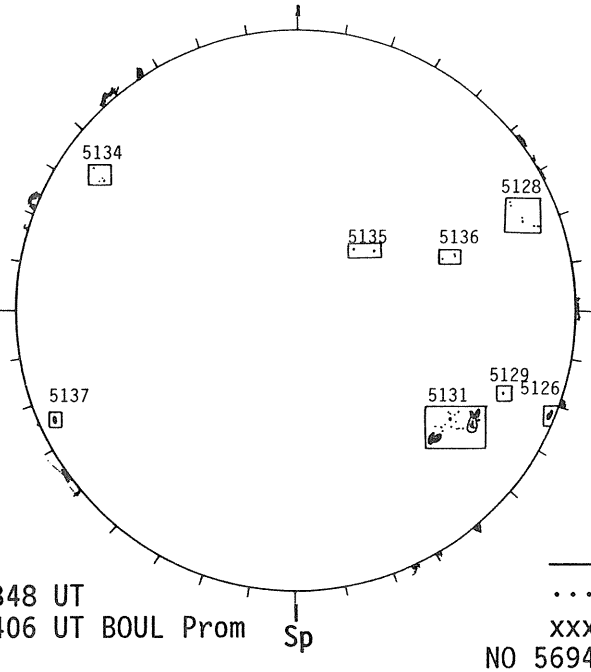
DeltaY=12.9
DeltaX= 9.6



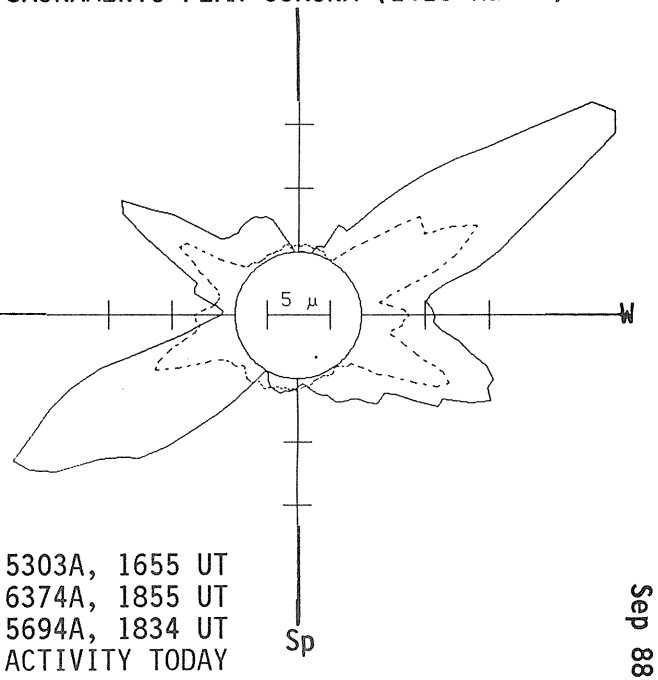
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



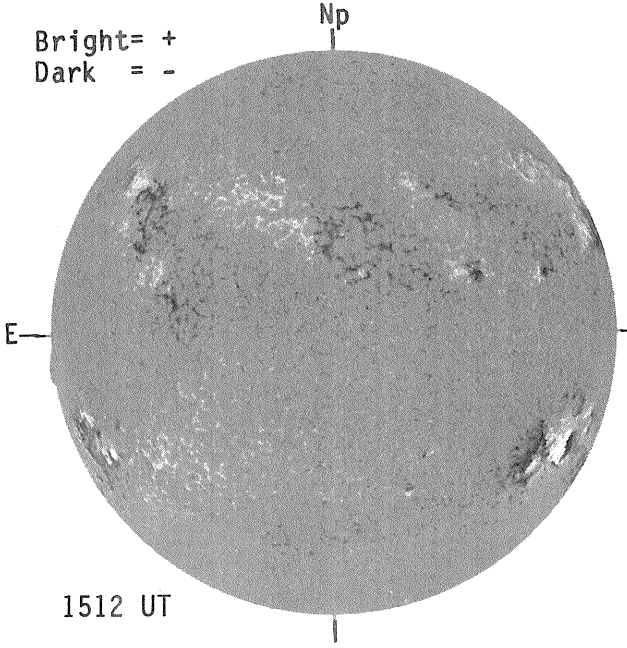
—— 5303A, 1655 UT
···· 6374A, 1855 UT
xxxx 5694A, 1834 UT
NO 5694A ACTIVITY TODAY

59
Sep 88

SEPTEMBER 06, 1988 (P= 22.33, B_o= 7.23, L_o= 210.41)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



1512 UT

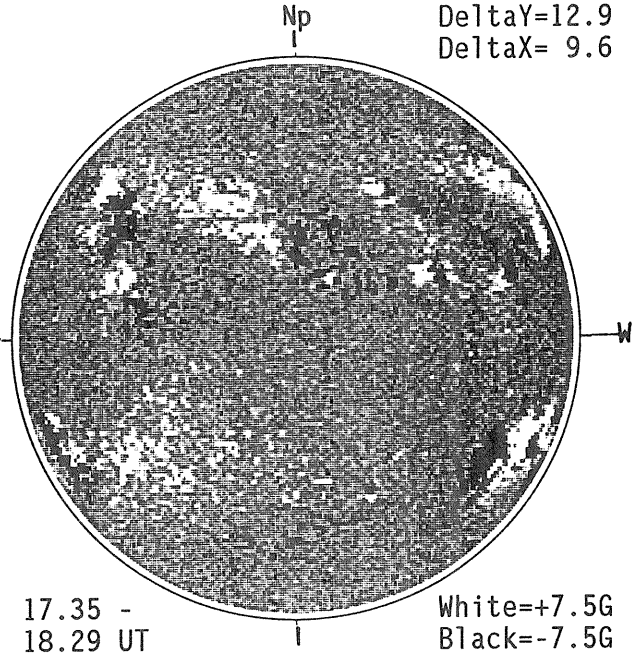
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

2128 UT

MT. WILSON MAGNETOGRAM

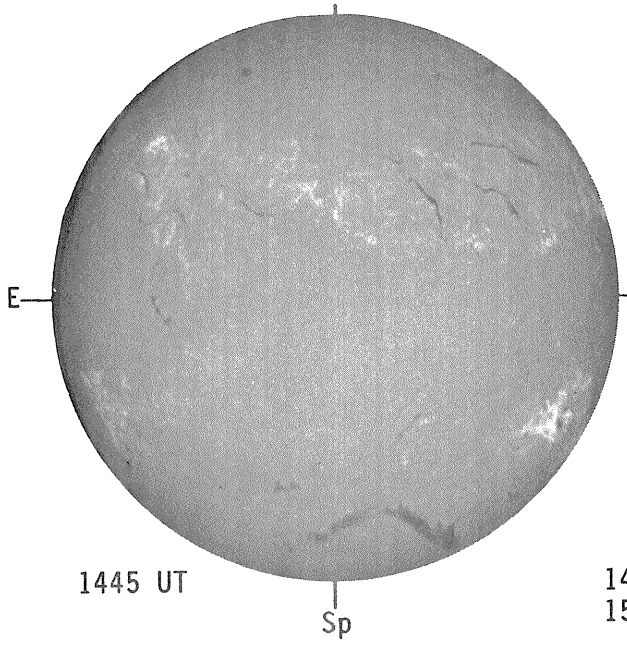
DeltaY=12.9
DeltaX= 9.6



17.35 -
18.29 UT

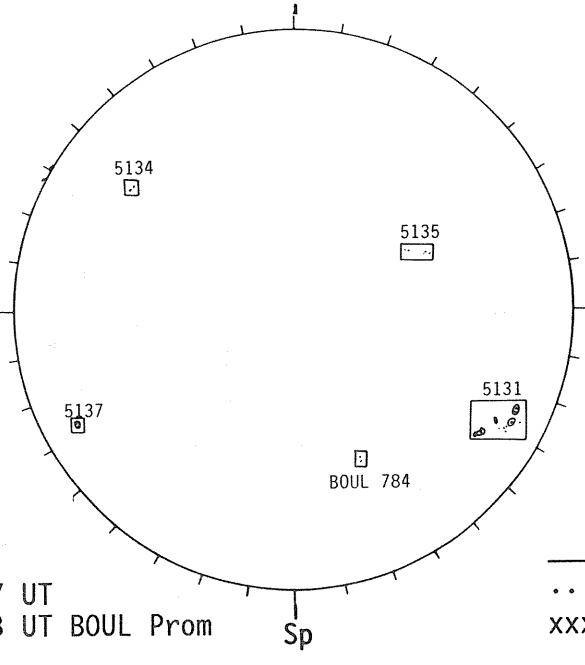
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



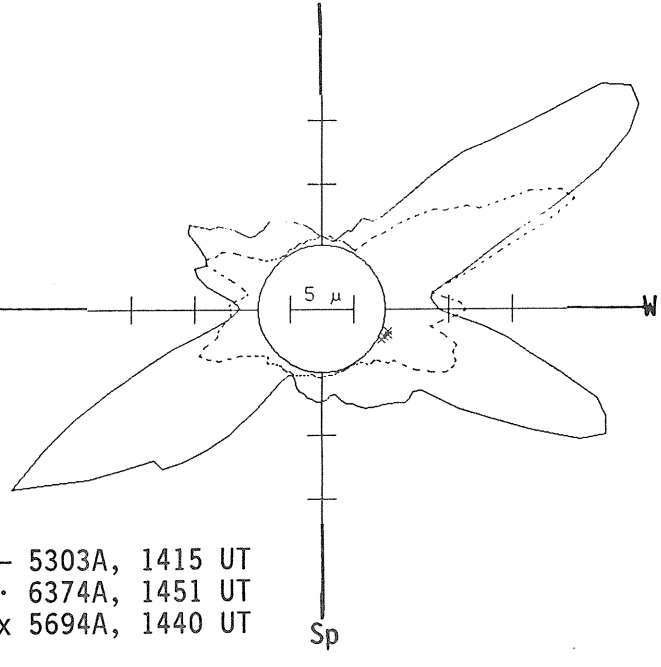
1445 UT

BOULDER SUNSPOTS



1407 UT
1503 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

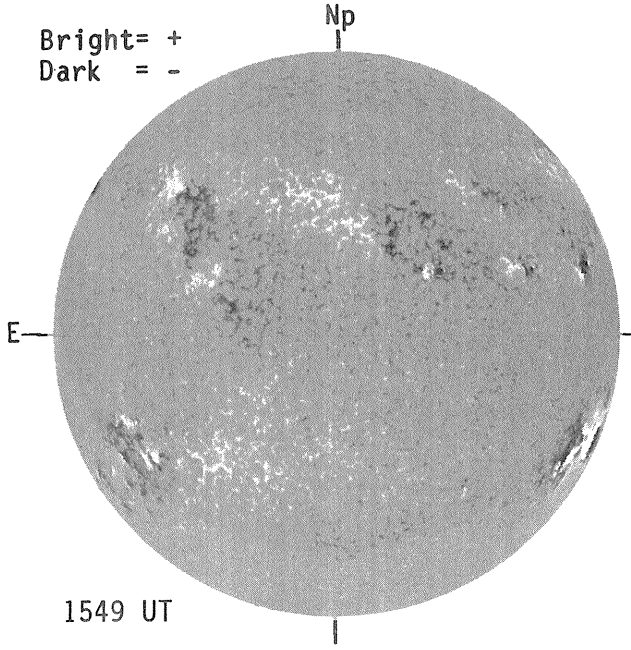


—— 5303A, 1415 UT
···· 6374A, 1451 UT
xxxx 5694A, 1440 UT

SEPTEMBER 07, 1988 (P= 22.55, B_o= 7.23, L_o= 197.21)

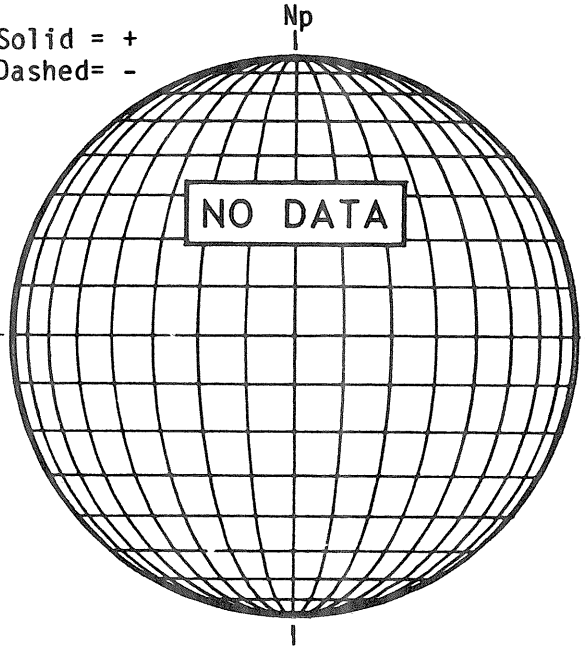
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



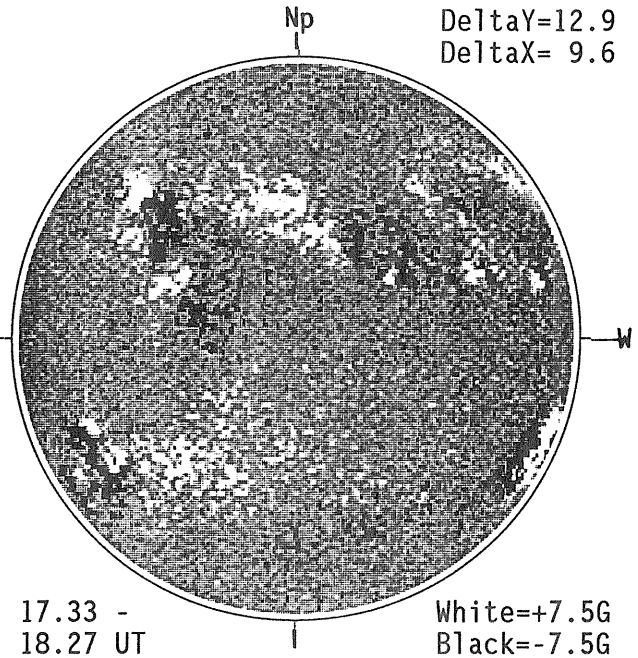
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

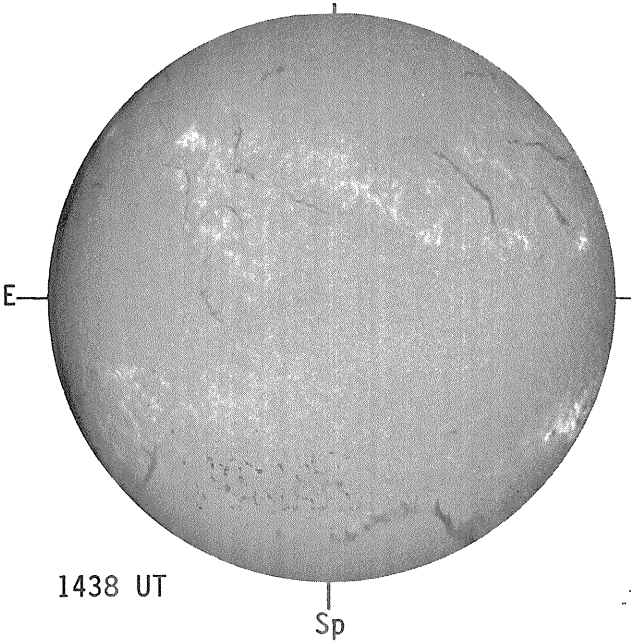


MT. WILSON MAGNETOGRAM

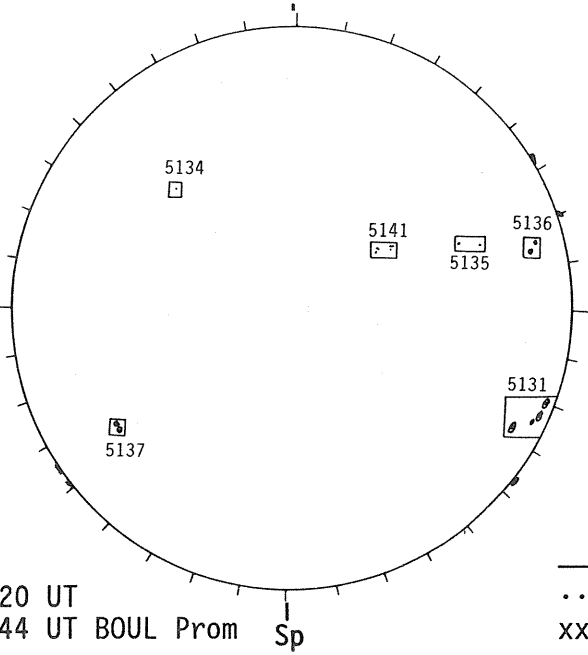
DeltaY=12.9
DeltaX= 9.6



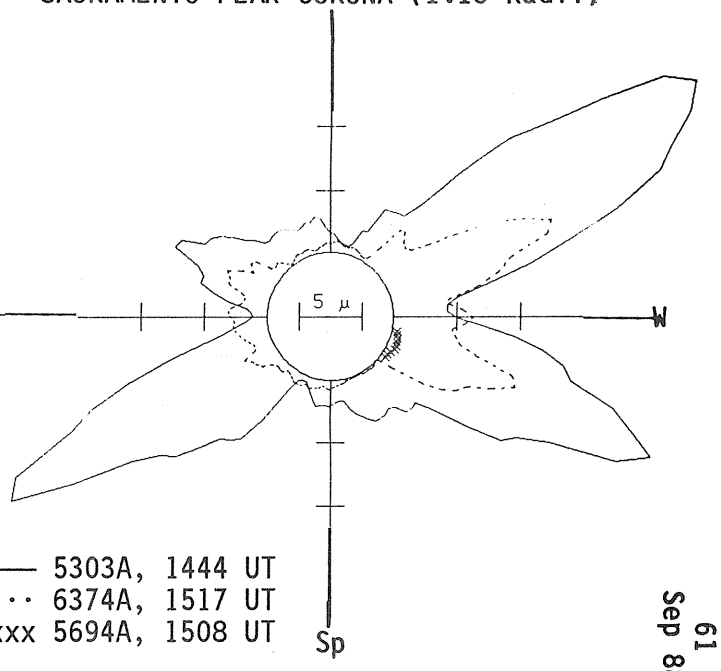
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

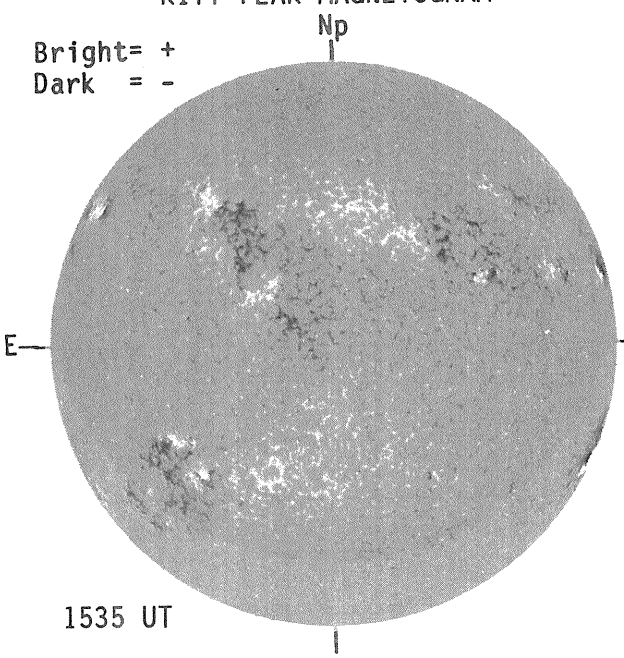


—— 5303A, 1444 UT
···· 6374A, 1517 UT
xxxx 5694A, 1508 UT

SEPTEMBER 08, 1988 (P= 22.77, B_o= 7.24, L_o= 184.00)

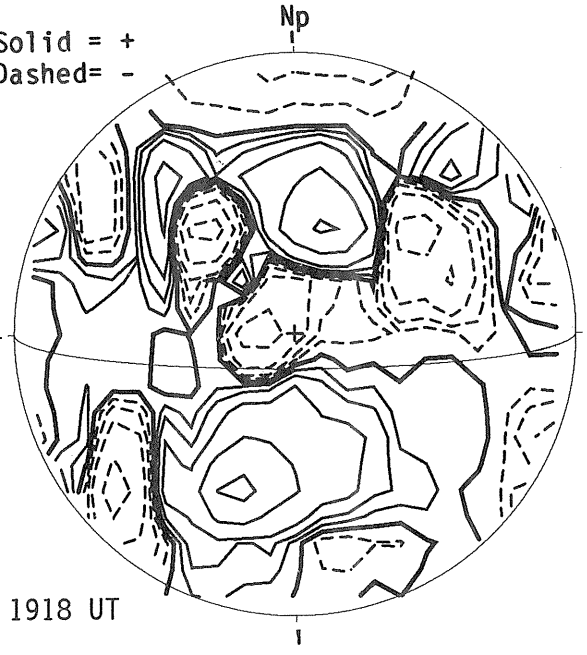
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



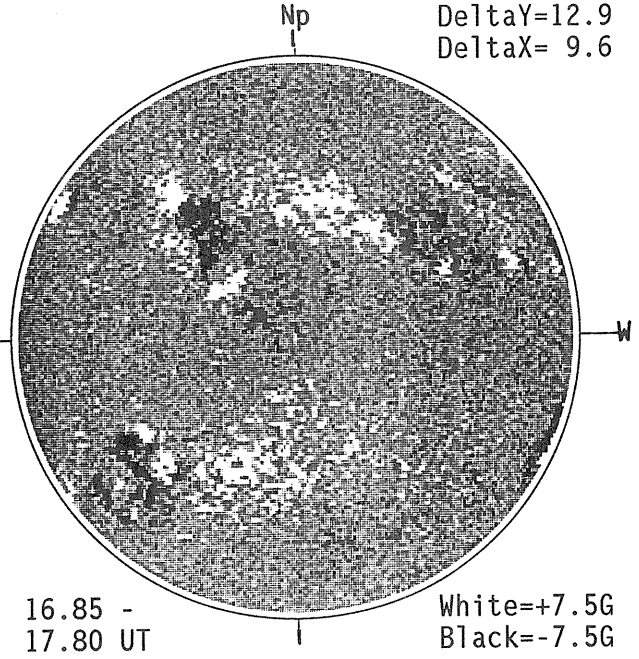
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

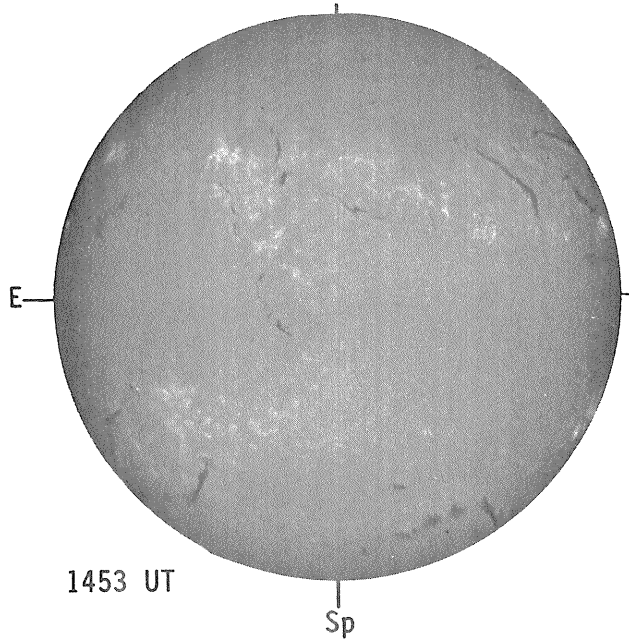


MT. WILSON MAGNETOGRAM

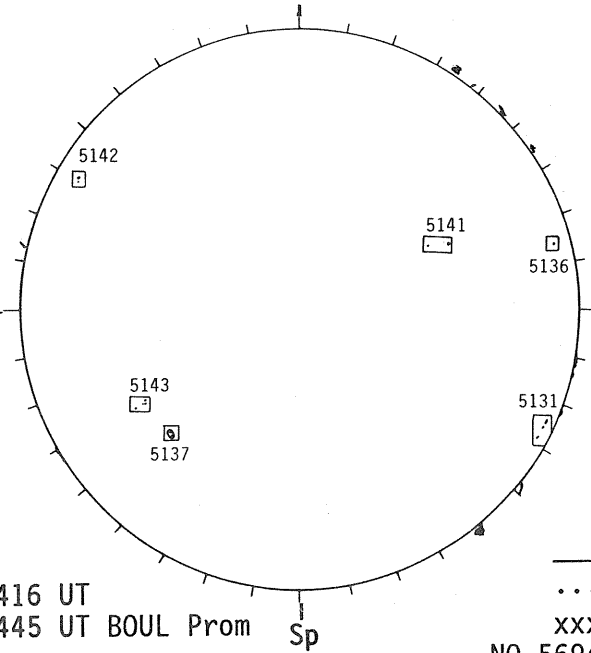
DeltaY=12.9
DeltaX= 9.6



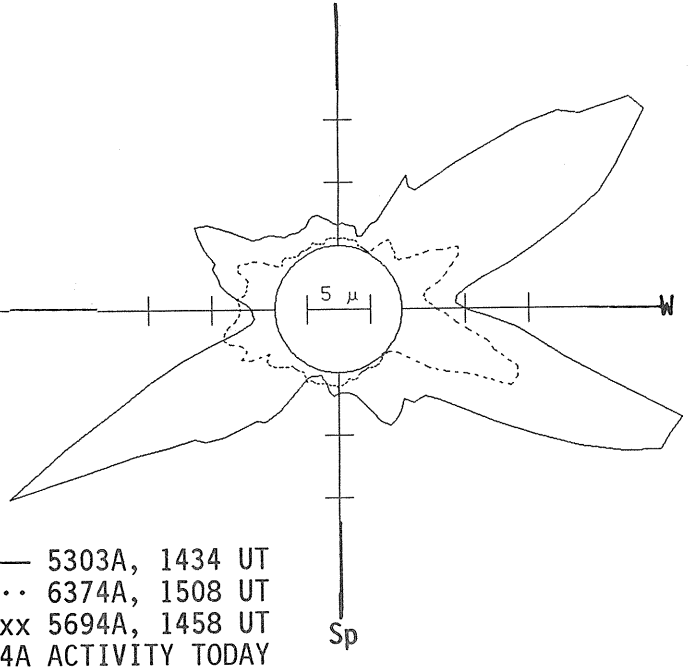
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



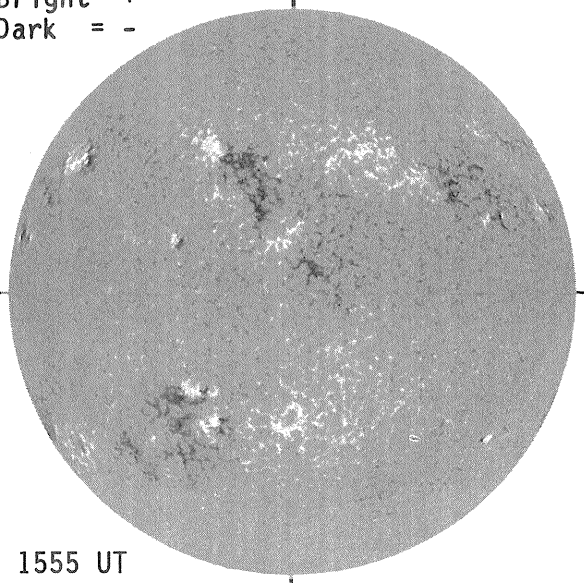
—— 5303A, 1434 UT
···· 6374A, 1508 UT
xxxx 5694A, 1458 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 09, 1988 (P= 22.98, B_o= 7.23, L_o= 170.80)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



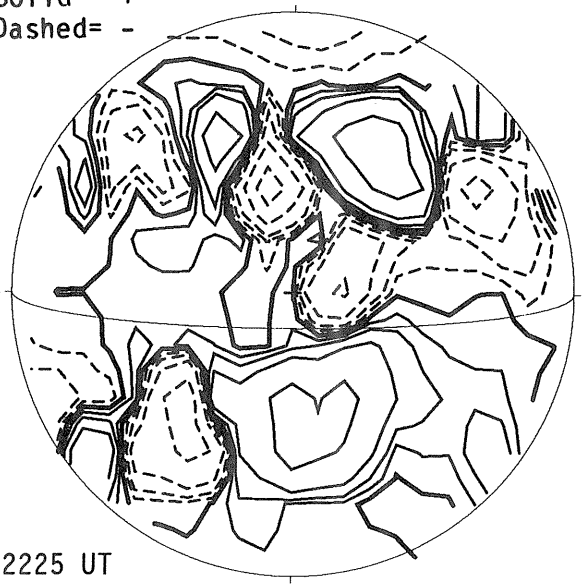
E

1555 UT

STANFORD MAGNETOGRAM

Np

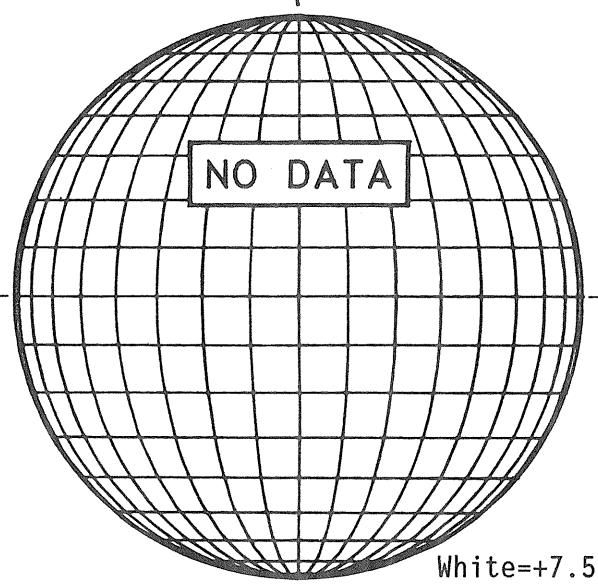
Solid = +
Dashed= -



2225 UT

MT. WILSON MAGNETOGRAM

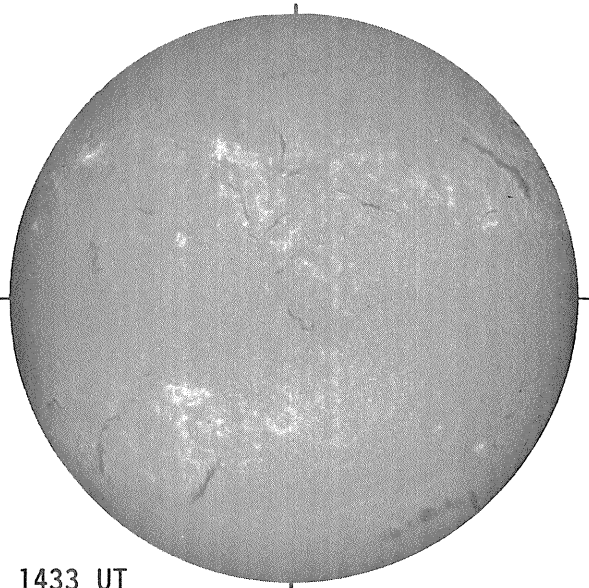
Np



W

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

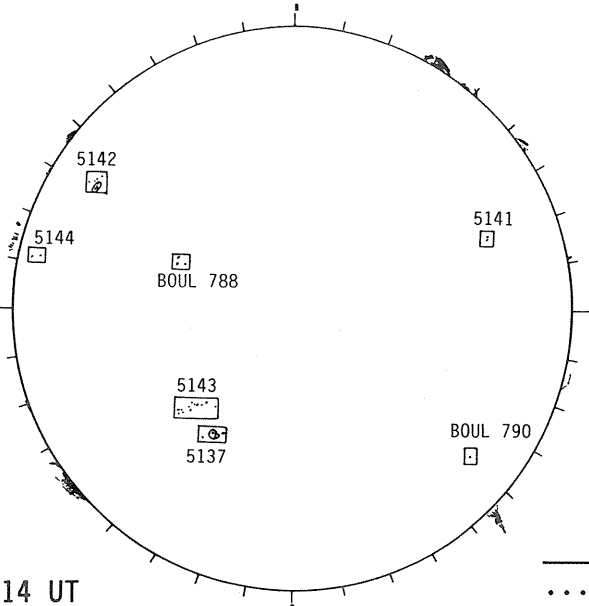


E

1433 UT

Sp

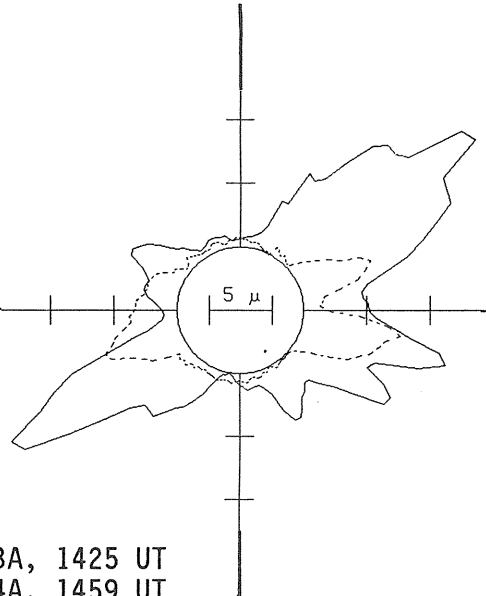
BOULDER SUNSPOTS



1414 UT
1426 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (1.15 Radii)



W

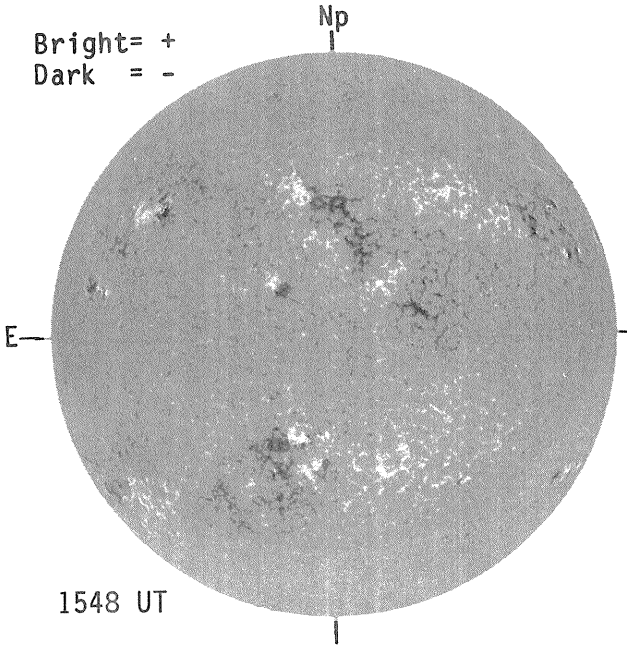
Sp

—— 5303A, 1425 UT
···· 6374A, 1459 UT
xxxx 5694A, 1449 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 10, 1988 (P= 23.18, B_o= 7.23, L_o= 157.59)

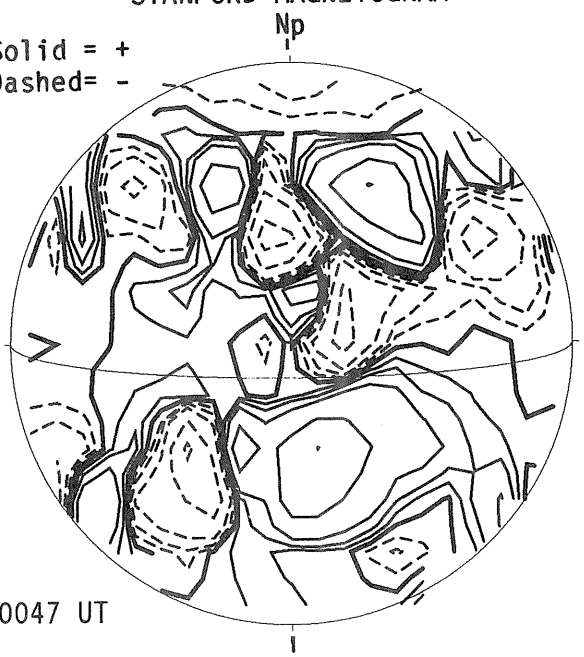
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



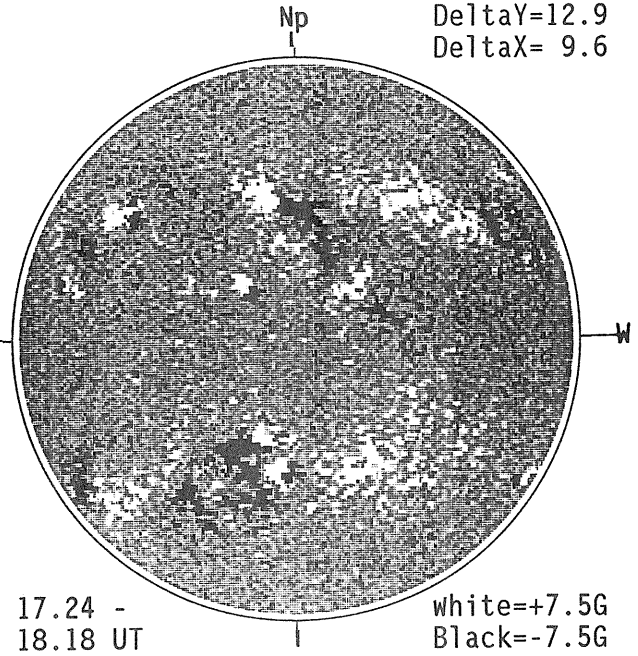
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

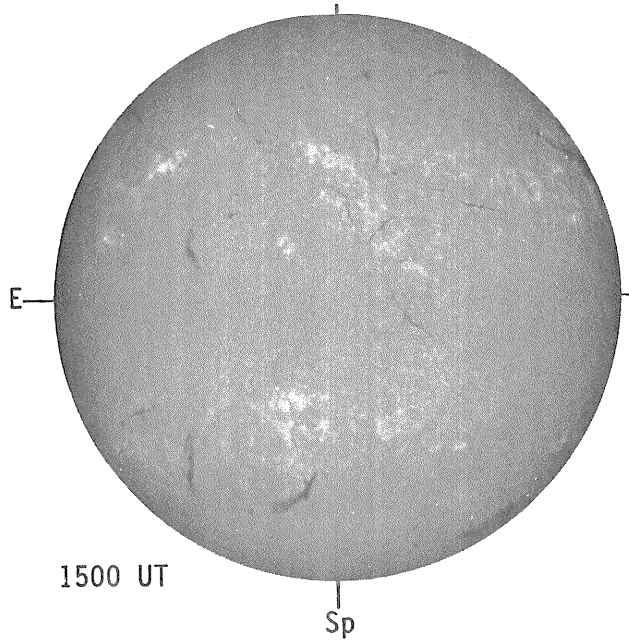


MT. WILSON MAGNETOGRAM

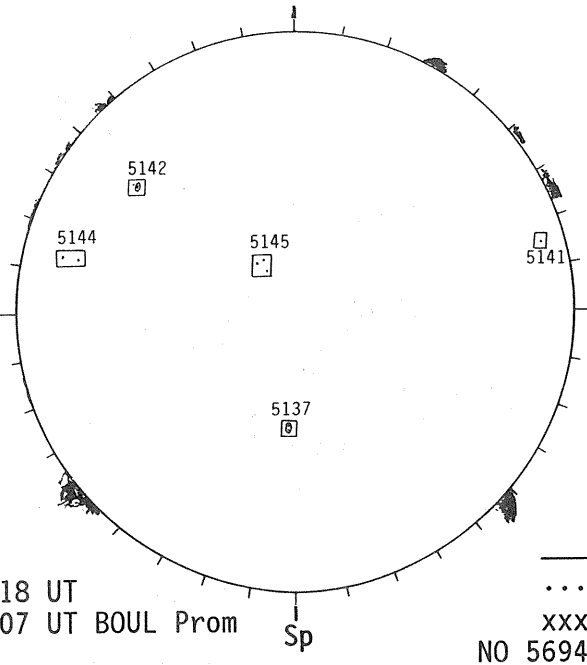
DeltaY=12.9
DeltaX= 9.6



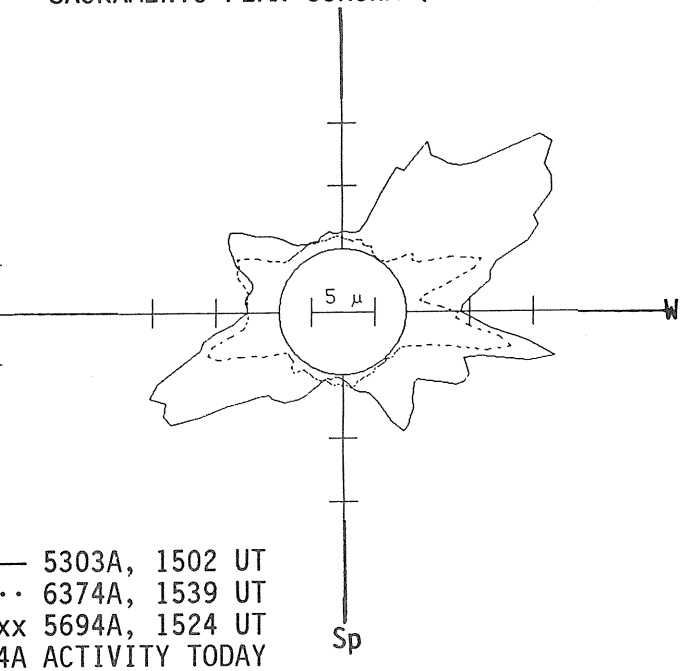
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

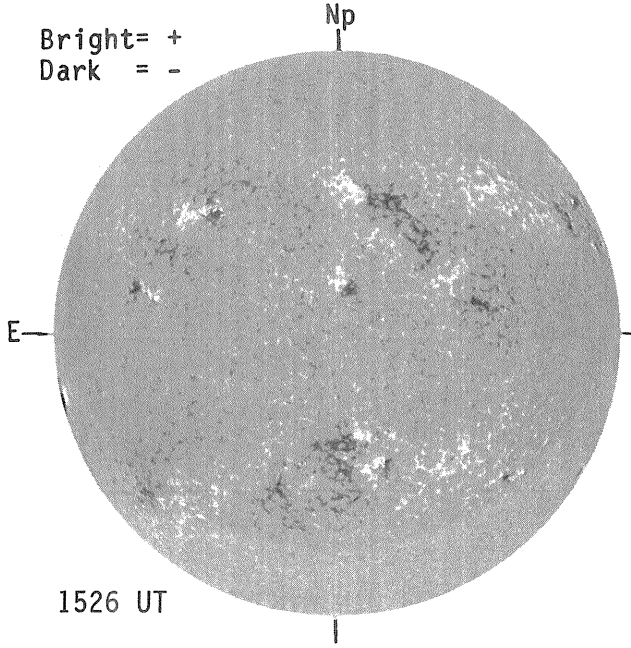


—— 5303A, 1502 UT
···· 6374A, 1539 UT
xxxx 5694A, 1524 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 11, 1988 (P= 23.38, B_o= 7.23, L_o= 144.39)

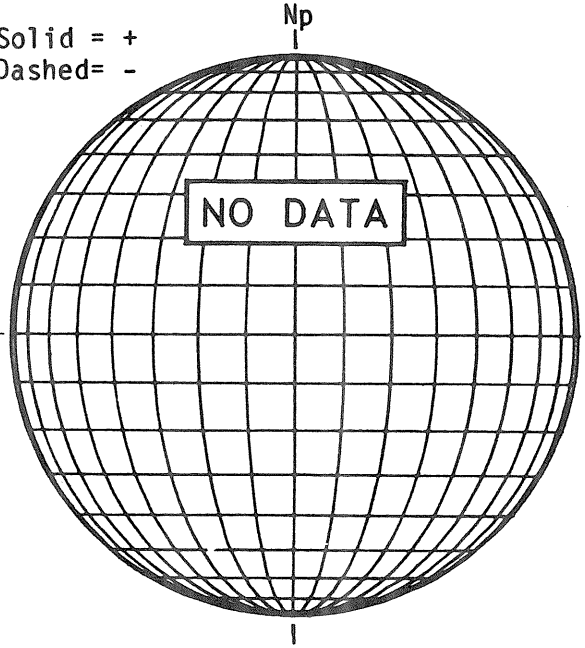
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



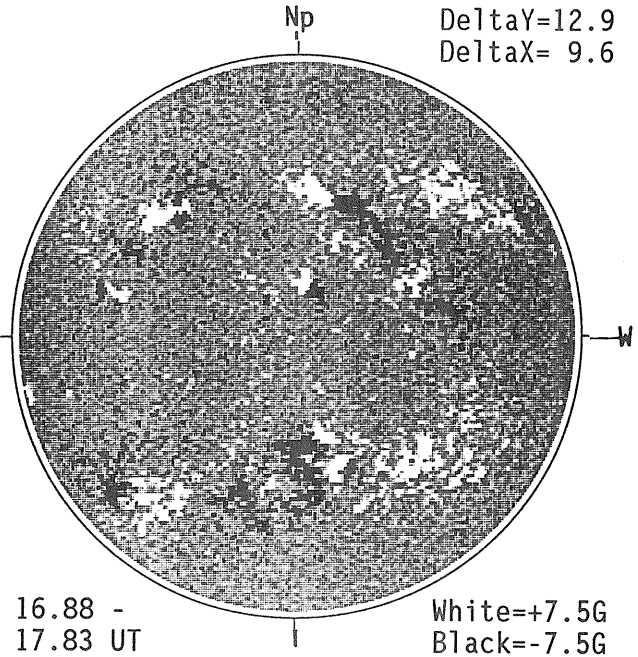
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

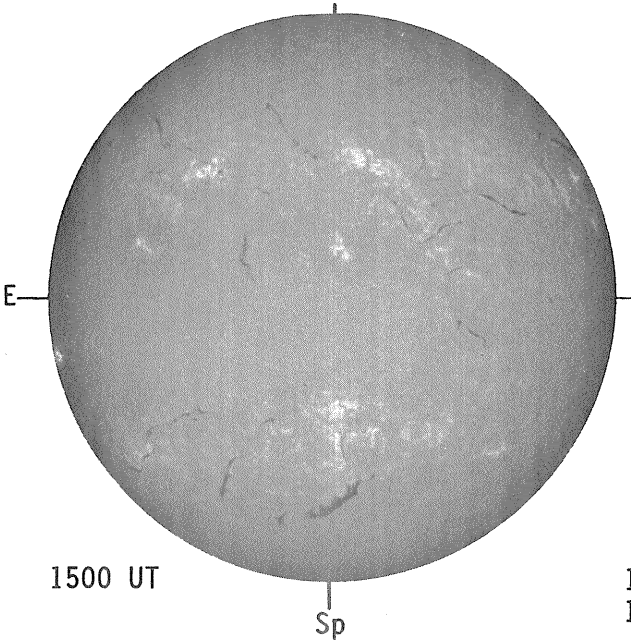


MT. WILSON MAGNETOGRAM

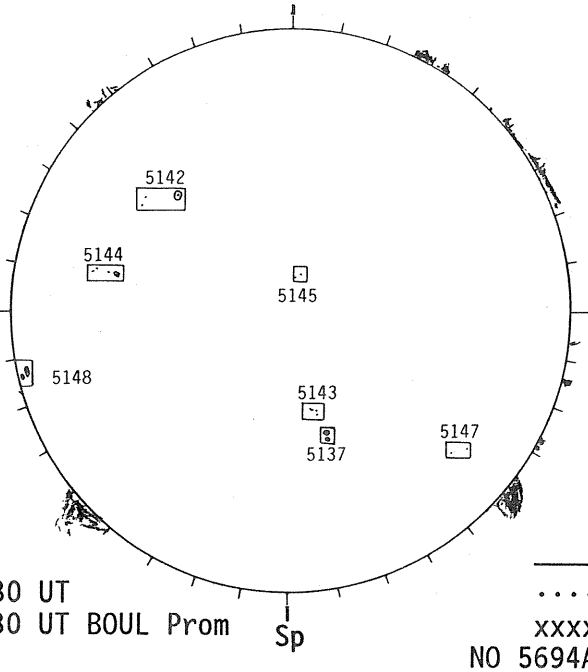
DeltaY=12.9
DeltaX= 9.6



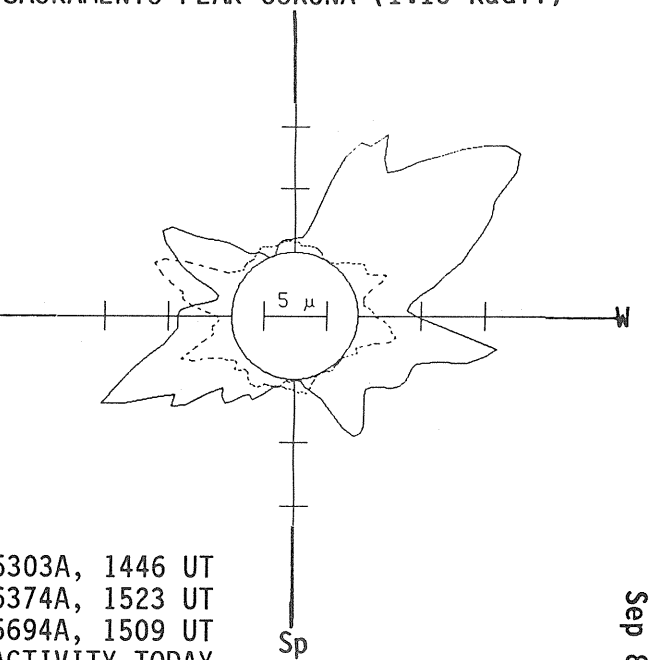
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

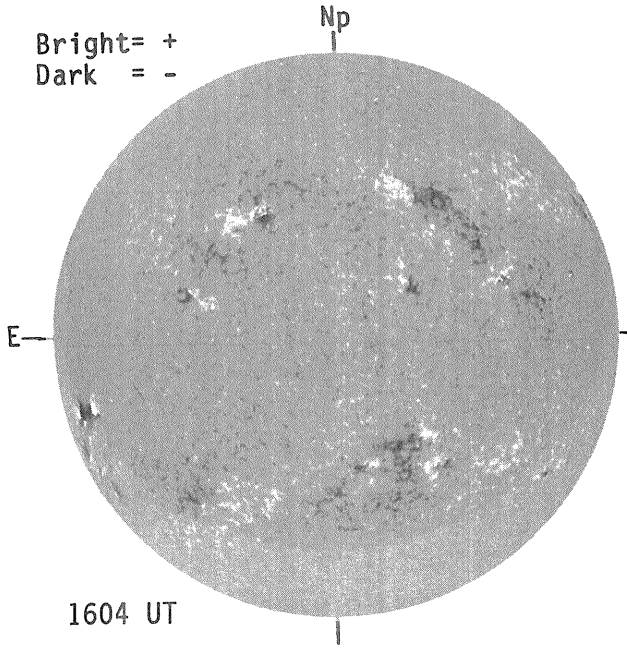


—— 5303A, 1446 UT
···· 6374A, 1523 UT
xxxx 5694A, 1509 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 12, 1988 (P= 23.57, B_o= 7.22, L_o= 131.18)

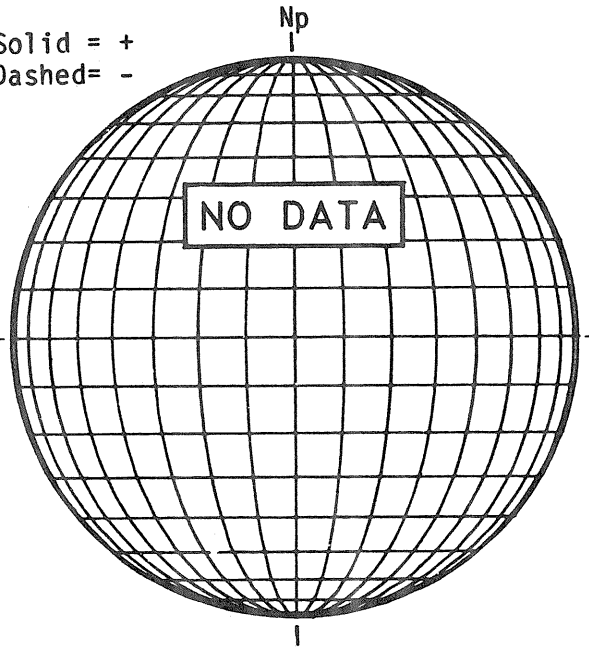
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

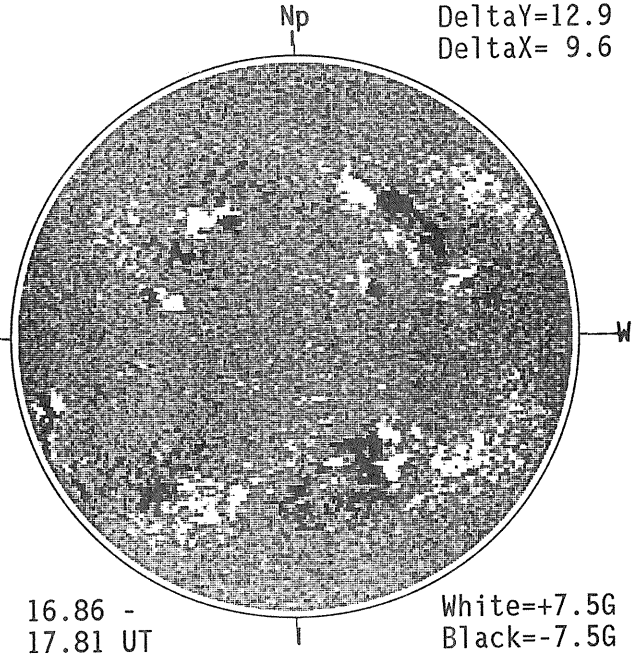


STANFORD MAGNETOGRAM

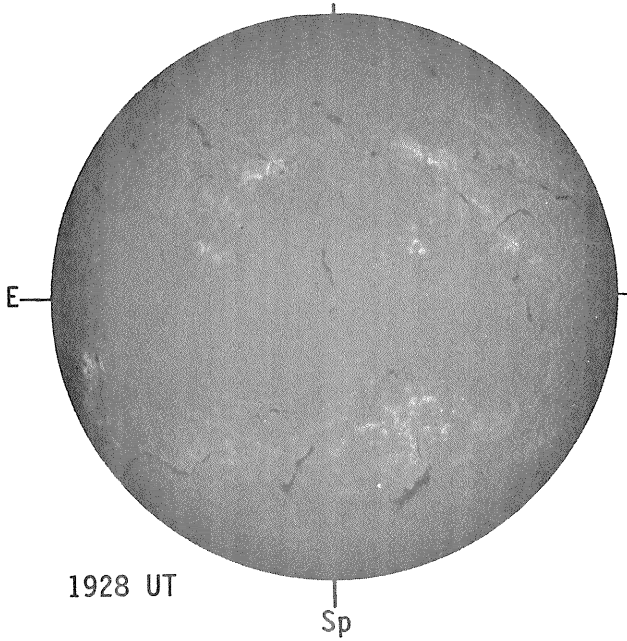
Solid = +
Dashed= -



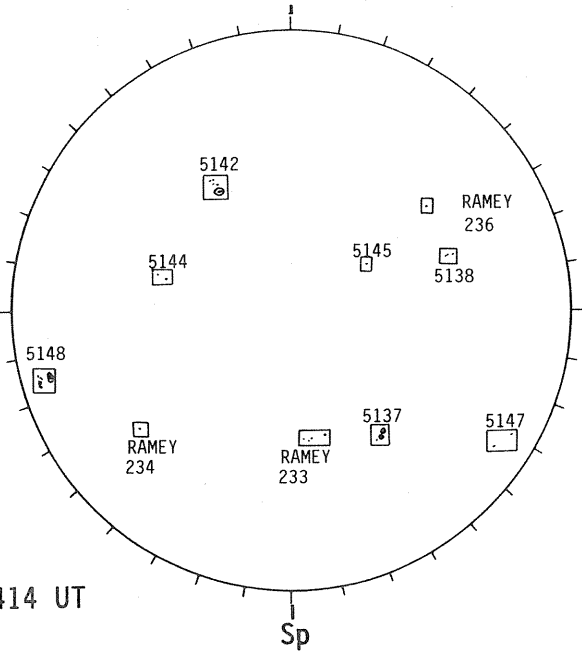
MT. WILSON MAGNETOGRAM



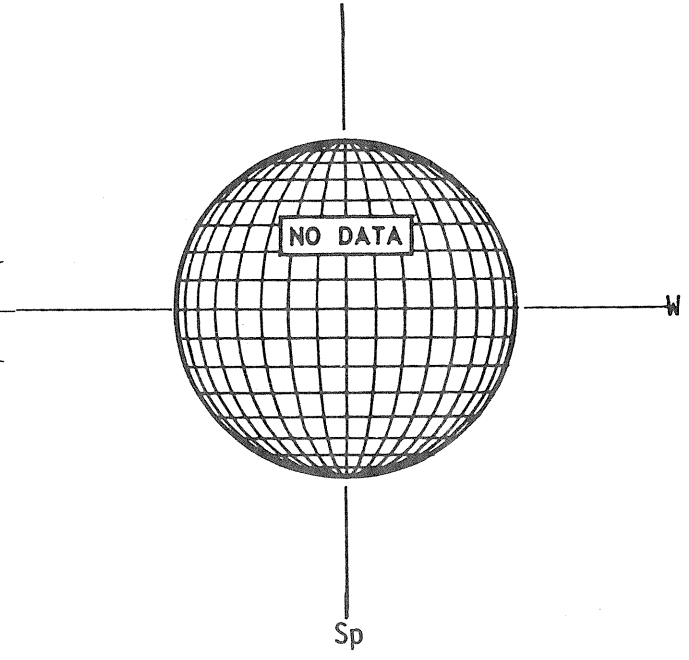
SACRAMENTO PEAK H-ALPHA



RAMEY SUNSPOTS



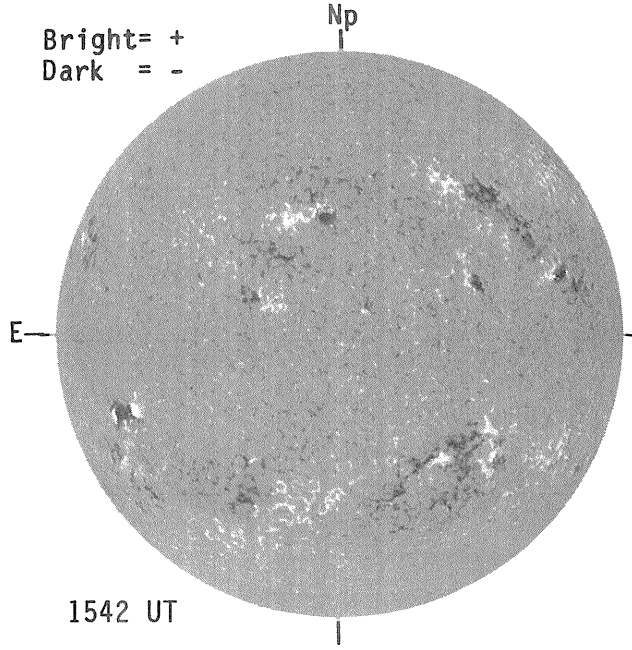
SACRAMENTO PEAK CORONA (1.15 Radii)



SEPTEMBER 13, 1988 (P= 23.76, B_o= 7.21, L_o= 117.98)

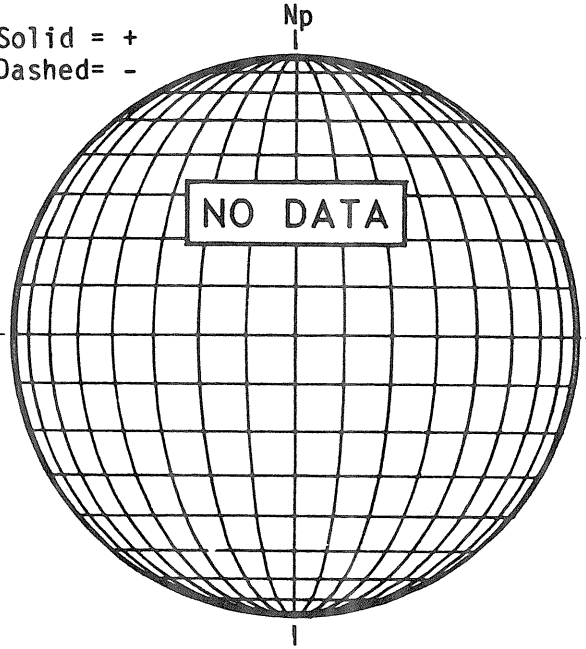
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



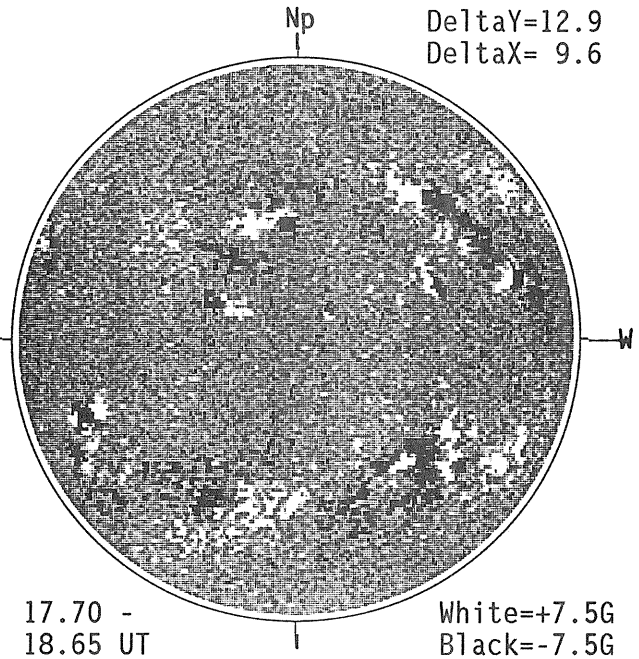
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

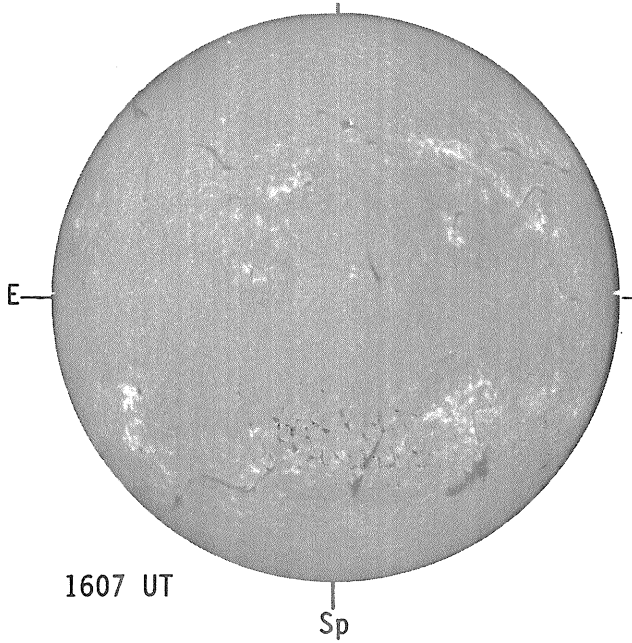


MT. WILSON MAGNETOGRAM

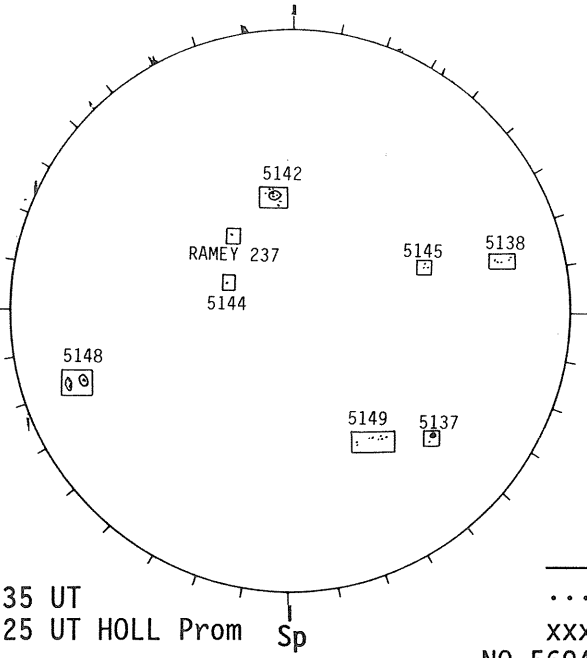
DeltaY=12.9
DeltaX= 9.6



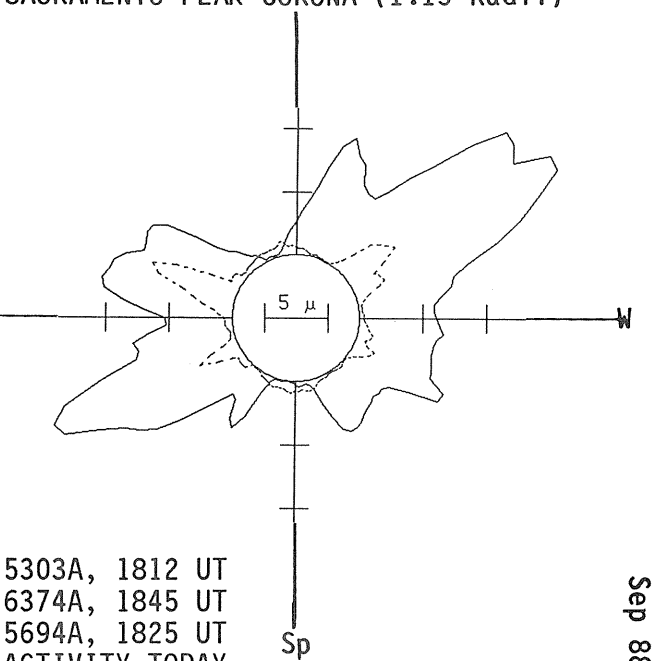
HOLLOMAN H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

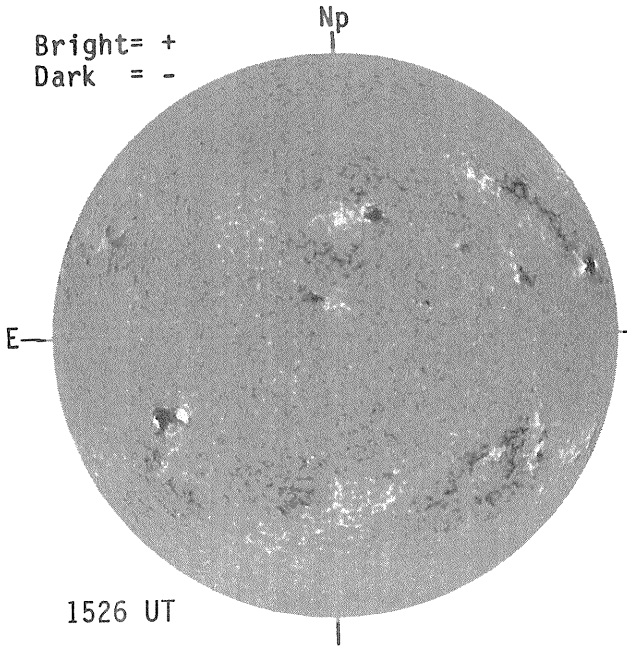


—— 5303A, 1812 UT
···· 6374A, 1845 UT
xxxx 5694A, 1825 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 14, 1988 (P= 23.94, B_o= 7.20, L_o= 104.78)

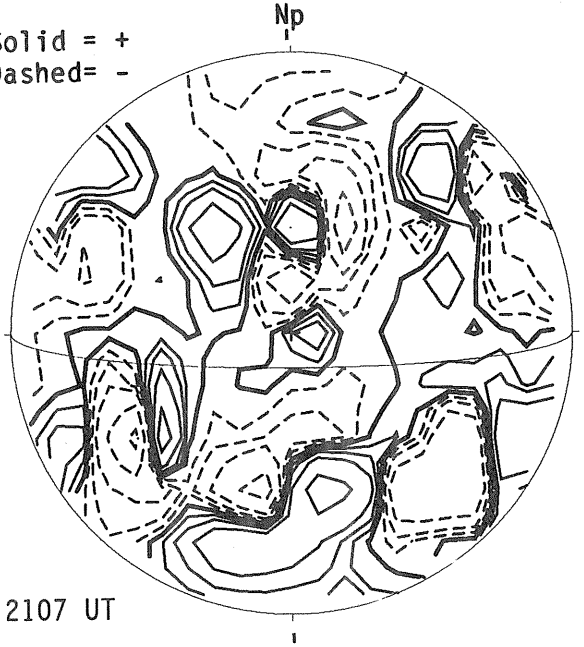
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



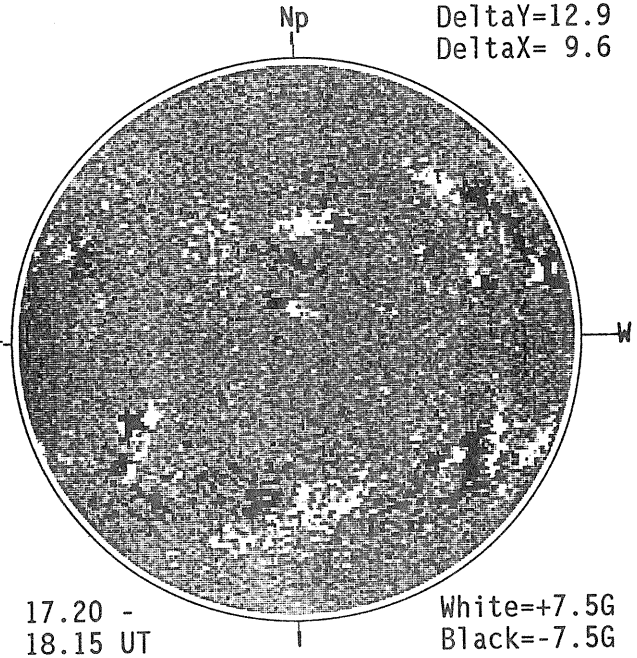
STANFORD MAGNETOGRAM

Solid = +
Dashed= -



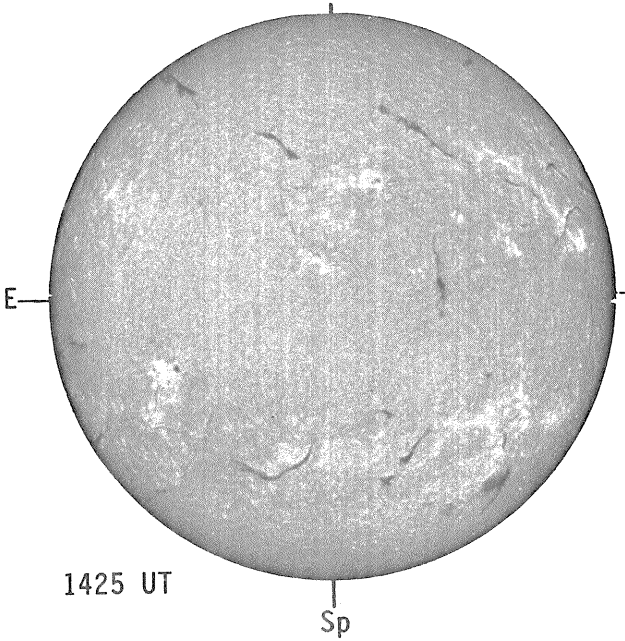
MT. WILSON MAGNETOGRAM

DeltaY=12.9
DeltaX= 9.6

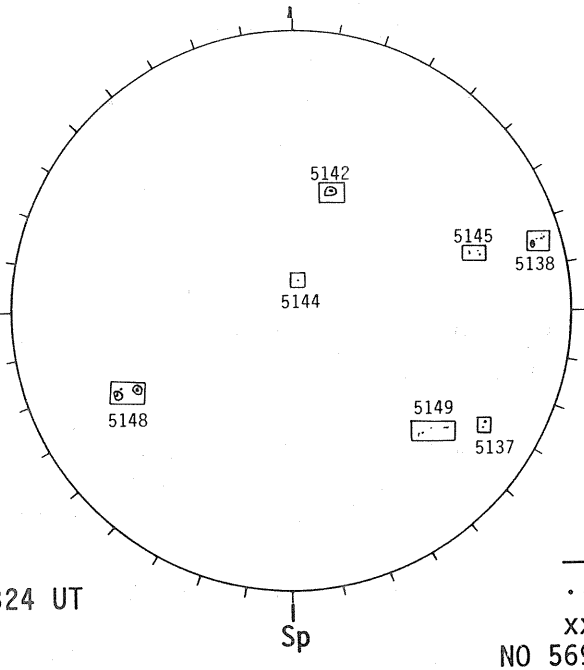


White=+7.5G
Black=-7.5G

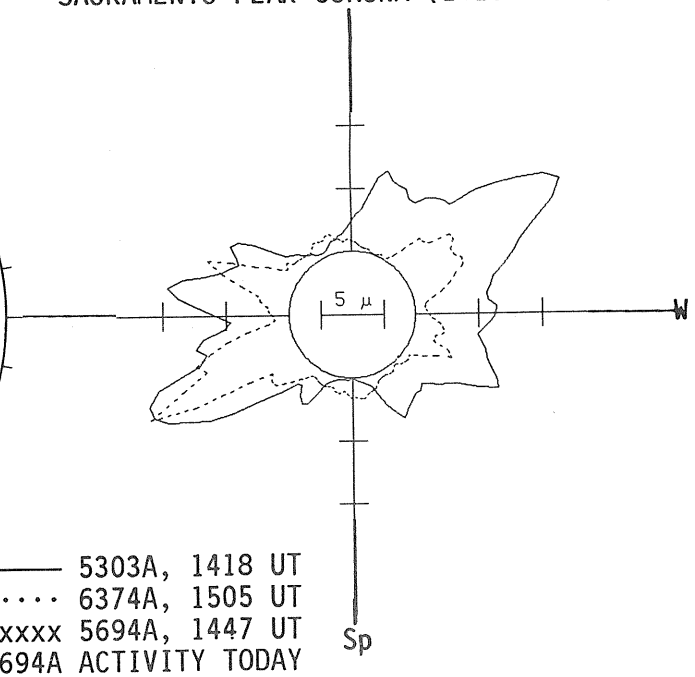
HOLLOMAN H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

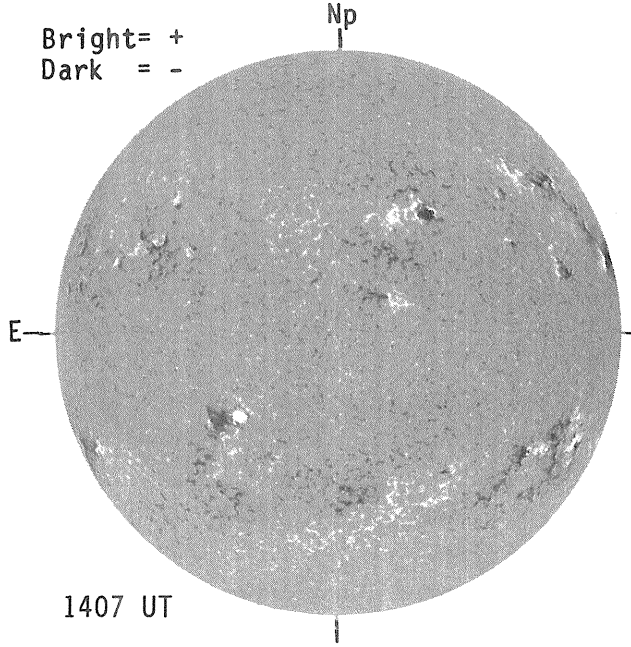


—— 5303A, 1418 UT
···· 6374A, 1505 UT
xxxx 5694A, 1447 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 15, 1988 (P= 24.11, B_o= 7.19, L_o= 91.58)

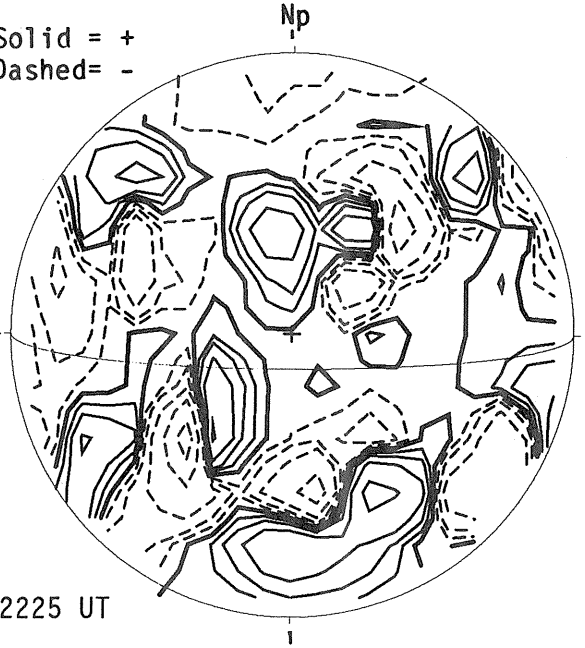
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



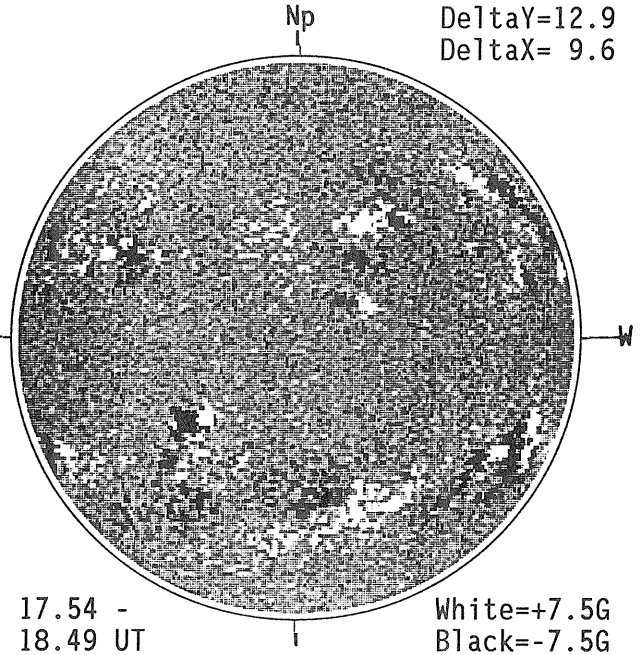
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

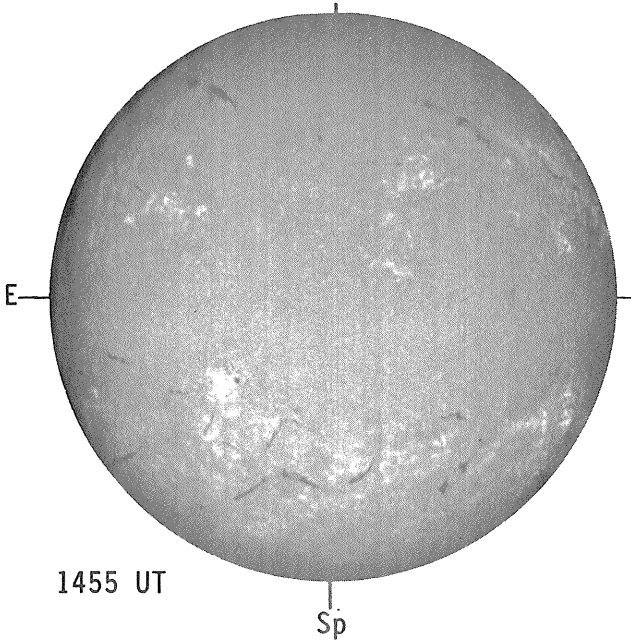


MT. WILSON MAGNETOGRAM

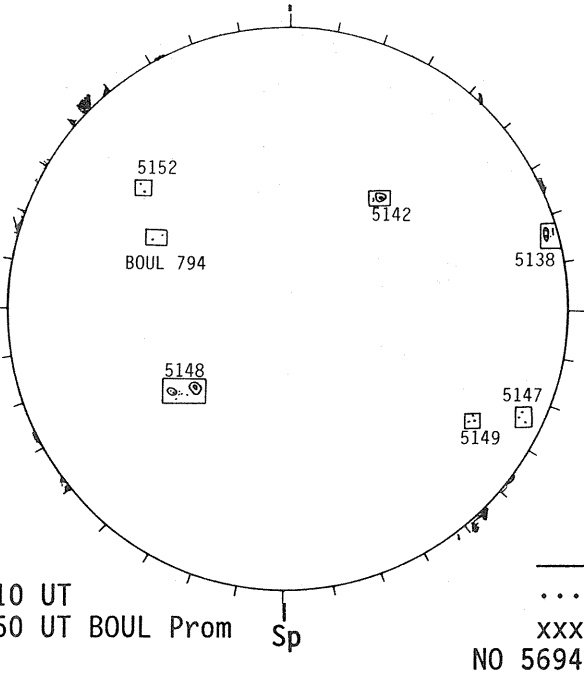
DeltaY=12.9
DeltaX= 9.6



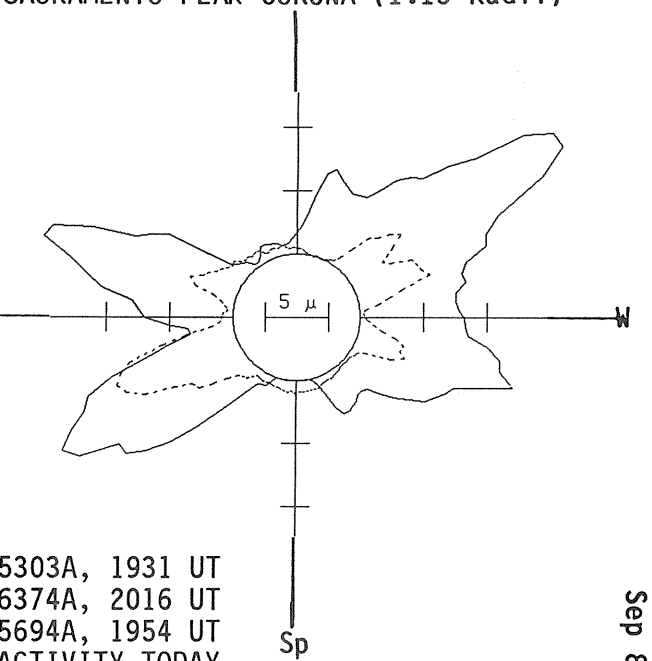
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



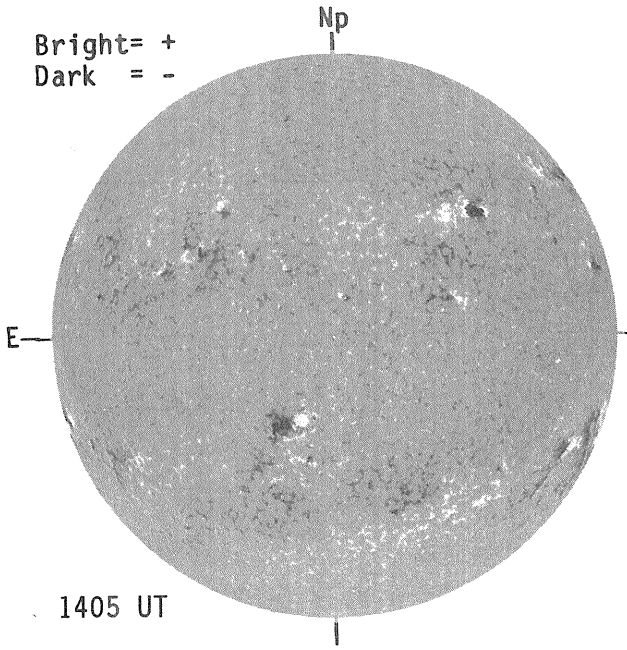
SACRAMENTO PEAK CORONA (1.15 Radii)



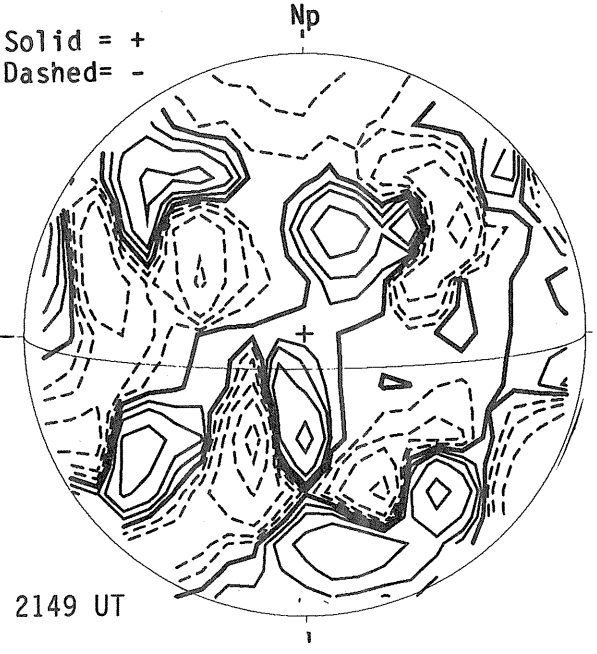
—— 5303A, 1931 UT
···· 6374A, 2016 UT
xxxx 5694A, 1954 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 16, 1988 (P= 24.28, B_o= 7.17, L_o= 78.37)

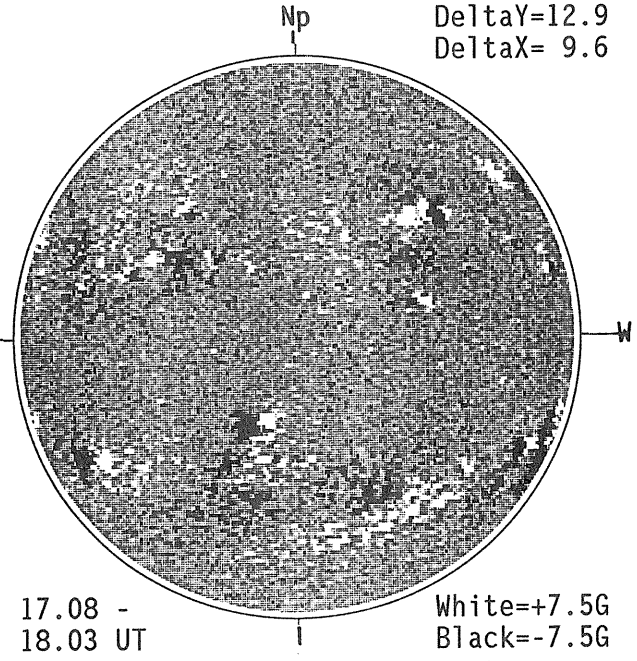
KITT PEAK MAGNETOGRAM



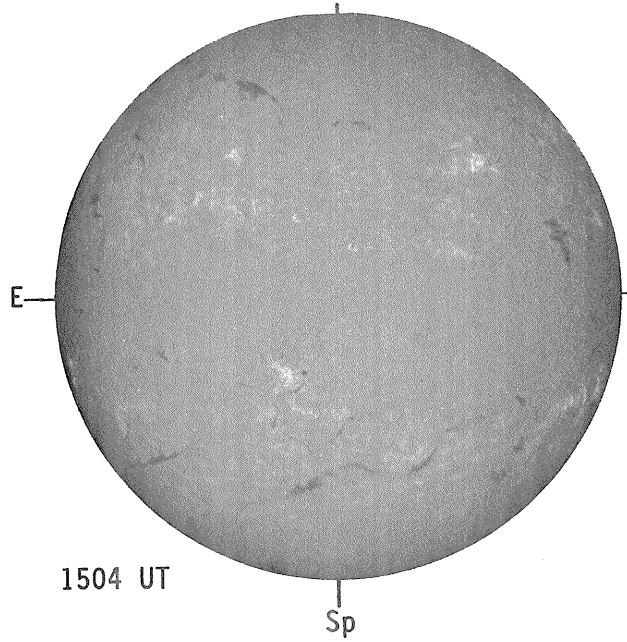
STANFORD MAGNETOGRAM



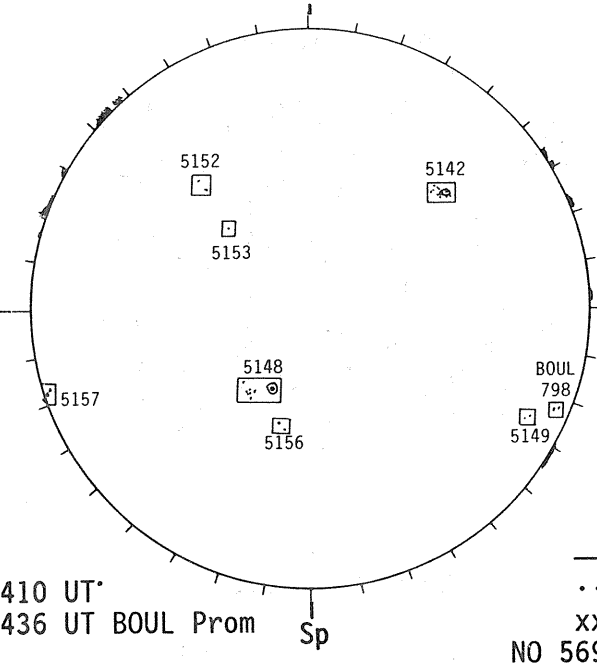
MT. WILSON MAGNETOGRAM



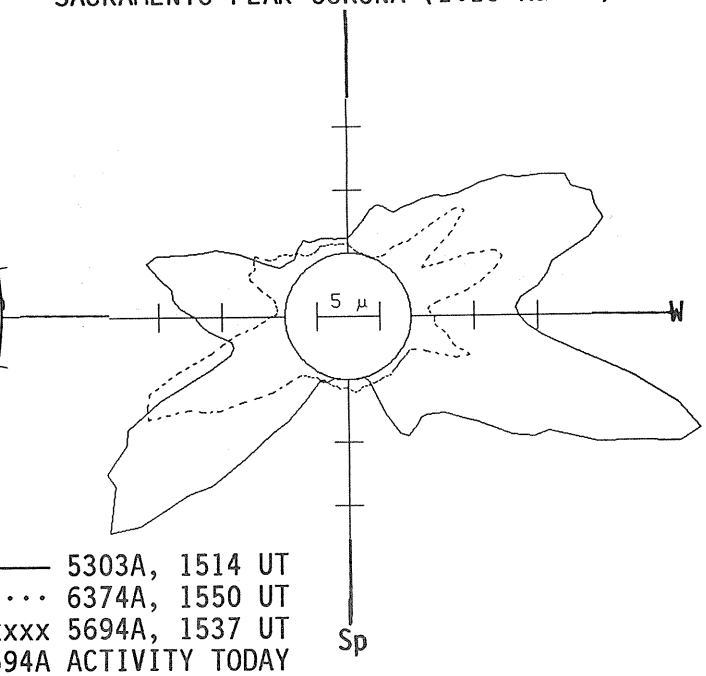
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



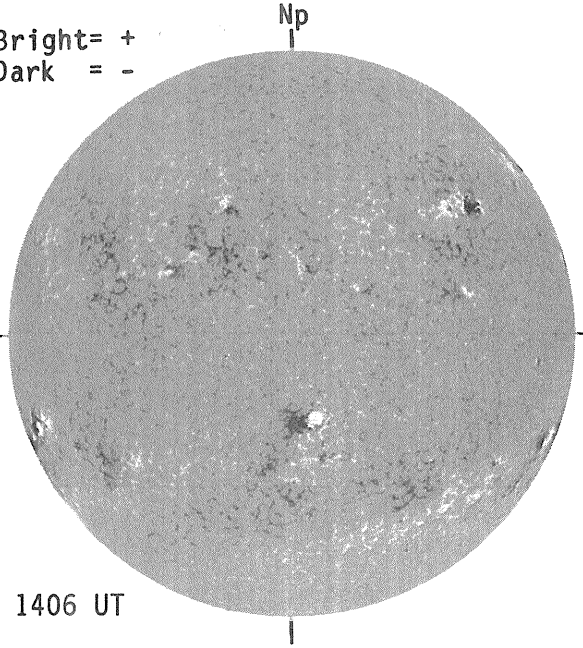
SACRAMENTO PEAK CORONA (1.15 Radii)



SEPTEMBER 17, 1988 (P= 24.44, B_o= 7.15, L_o= 65.17)

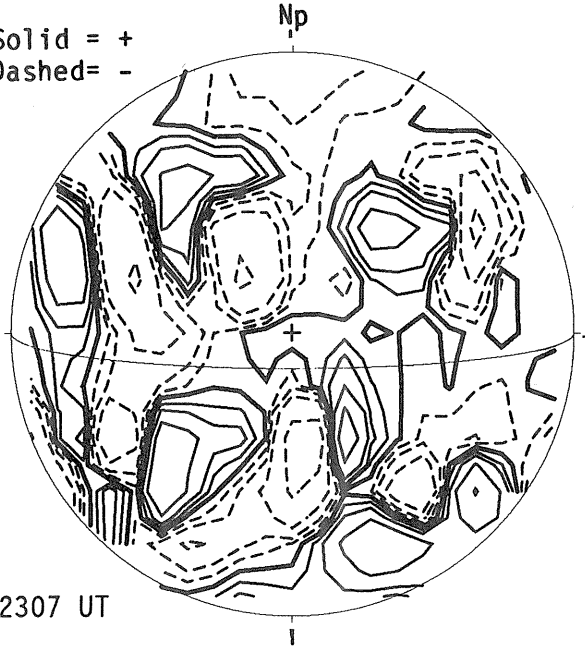
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



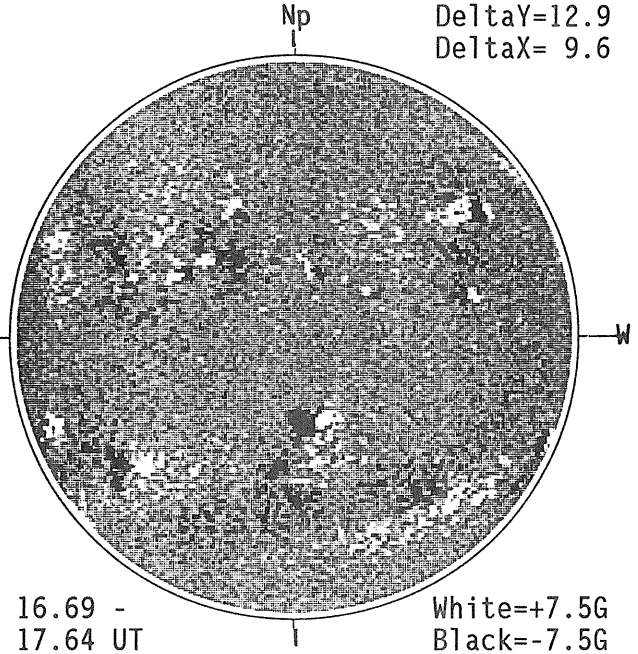
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

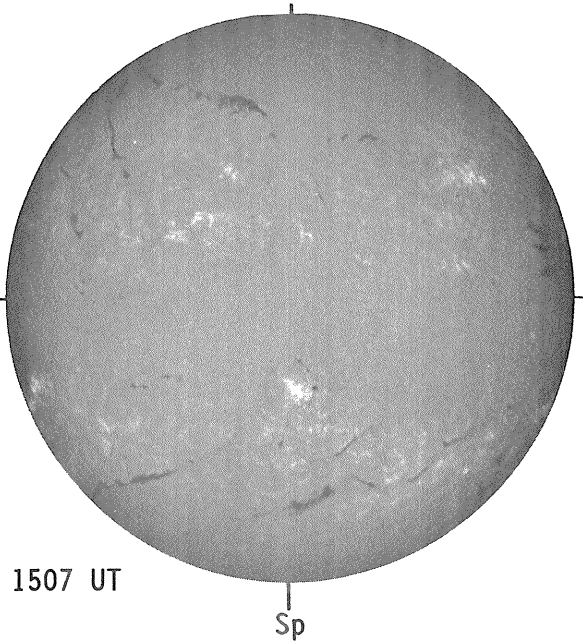


MT. WILSON MAGNETOGRAM

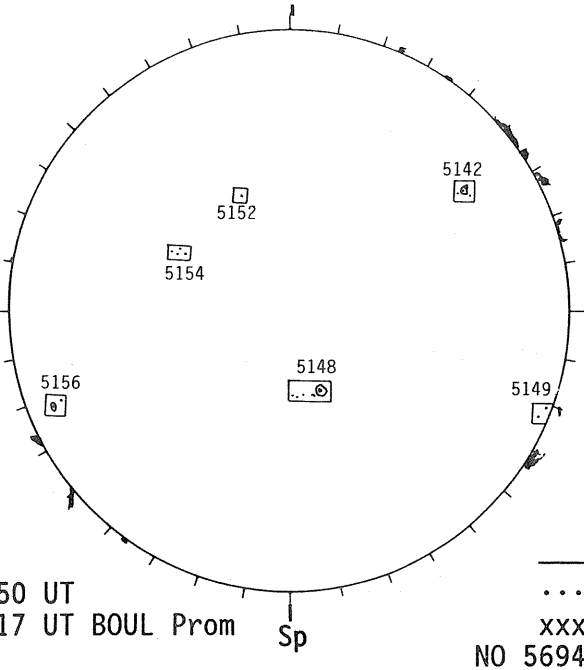
DeltaY=12.9
DeltaX= 9.6



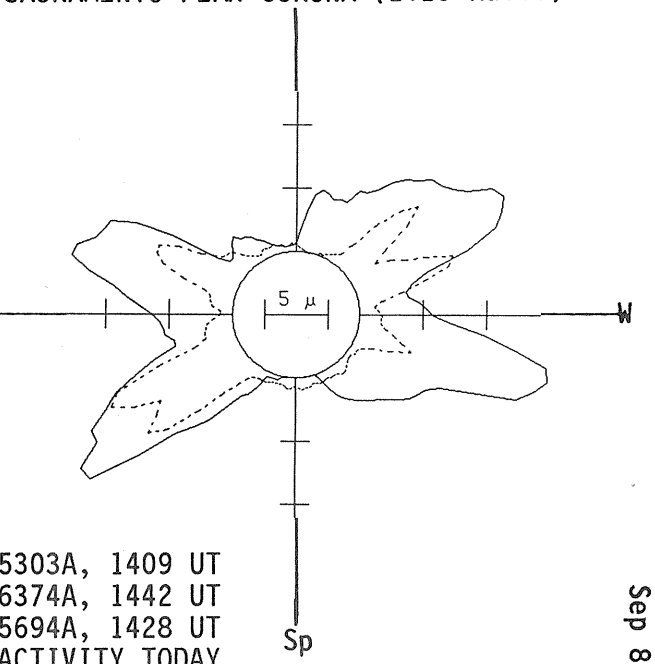
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A, 1409 UT
···· 6374A, 1442 UT
xxxx 5694A, 1428 UT
NO 5694A ACTIVITY TODAY

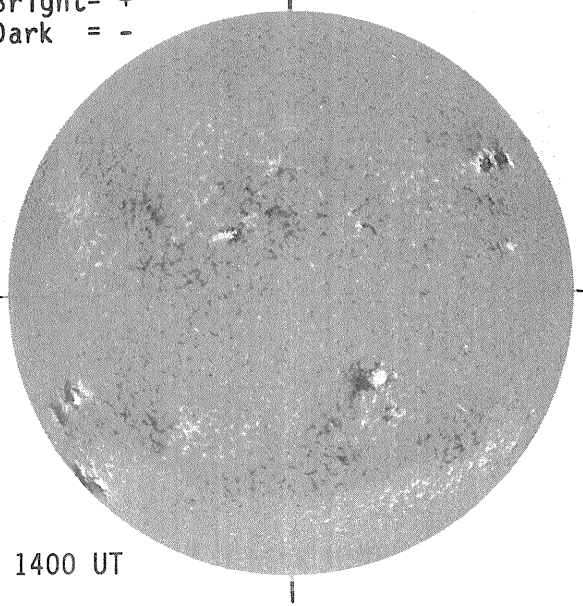
71
Sep 88

SEPTEMBER 18, 1988 (P= 24.59, B_o= 7.13, L_o= 51.97)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



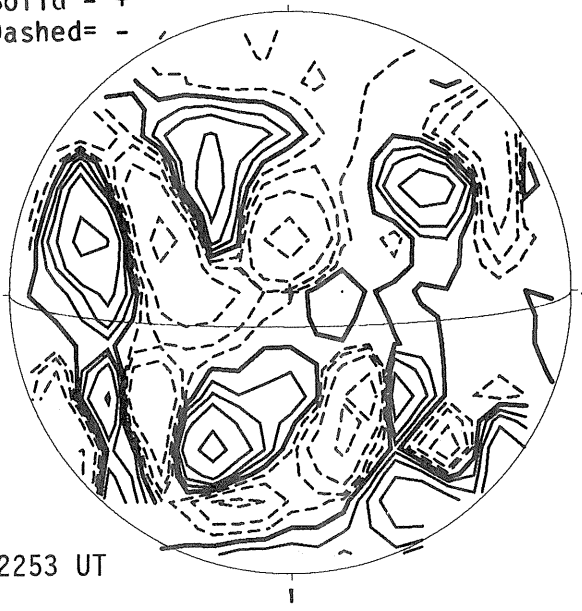
E

1400 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

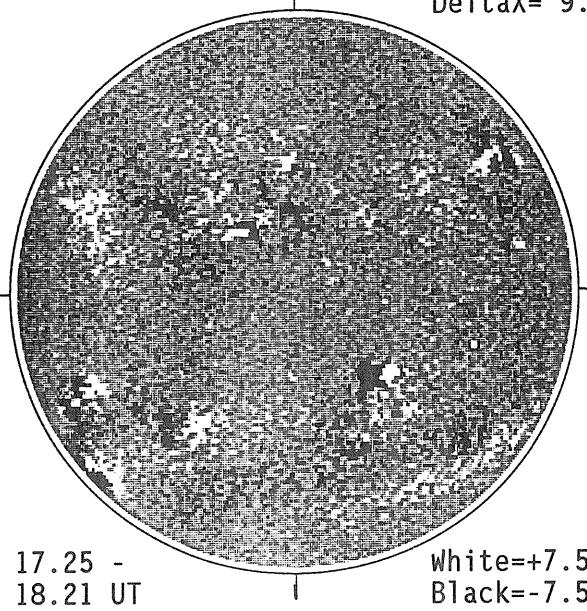


2253 UT

MT. WILSON MAGNETOGRAM

Np

DeltaY=12.9
DeltaX= 9.6

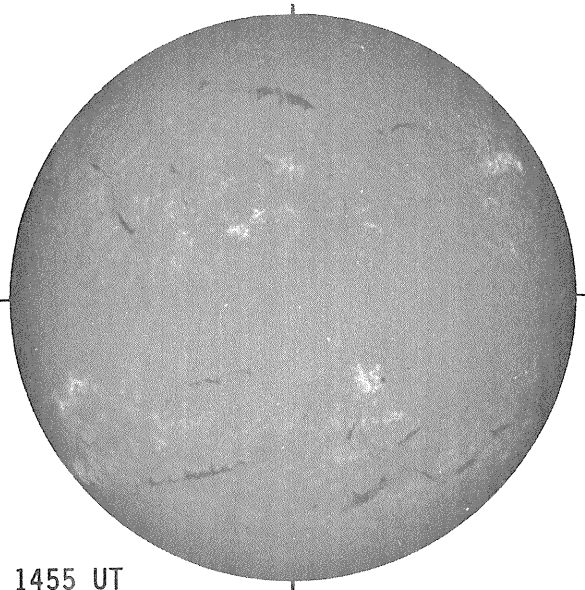


W

17.25 -
18.21 UT

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

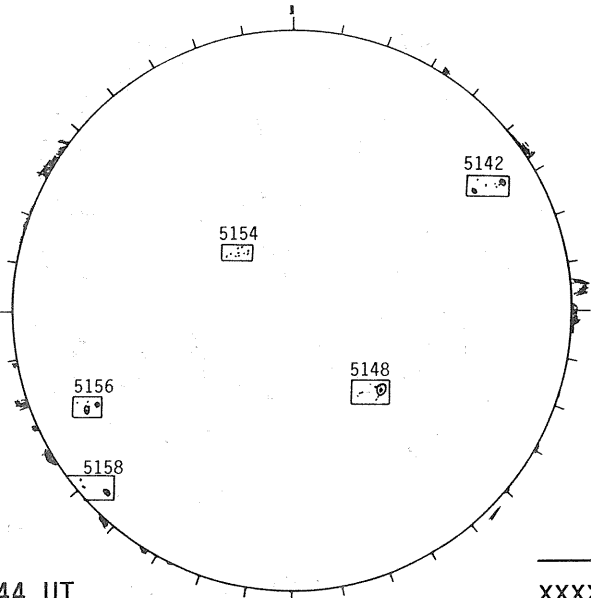


E

1455 UT

Sp

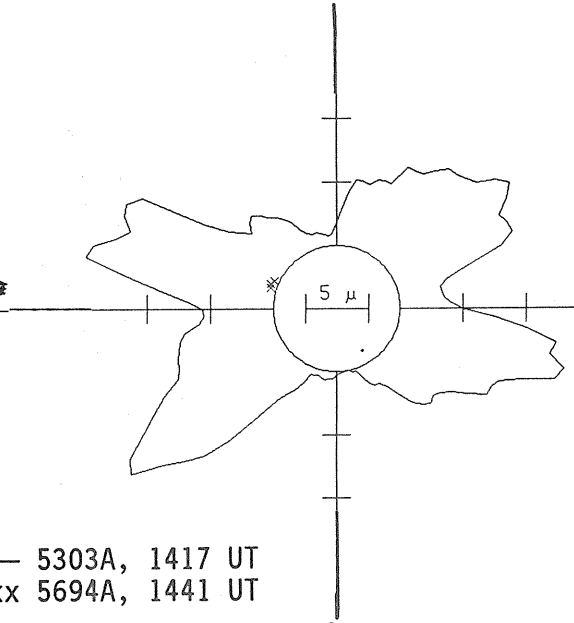
BOULDER SUNSPOTS



1444 UT
1508 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (1.15 Radii)



W

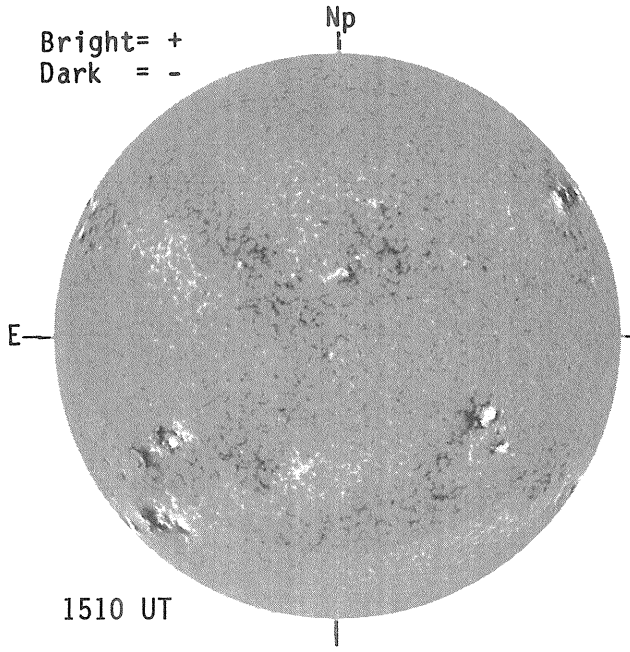
—— 5303A, 1417 UT
xxxx 5694A, 1441 UT

Sp

SEPTEMBER 19, 1988 (P= 24.74, B_o= 7.11, L_o= 38.77)

KITT PEAK MAGNETOGRAM

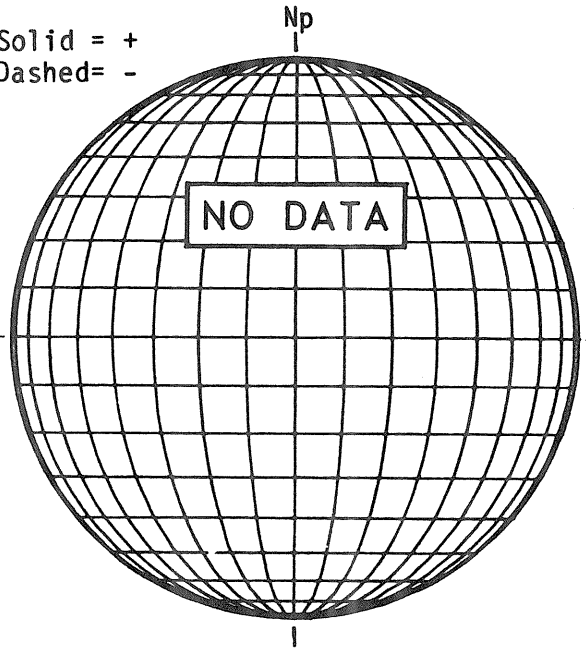
Bright= +
Dark = -



1510 UT

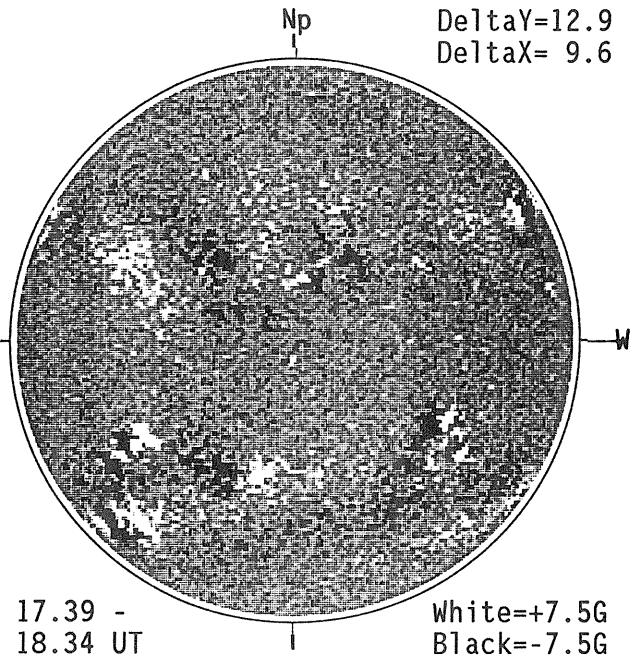
STANFORD MAGNETOGRAM

Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

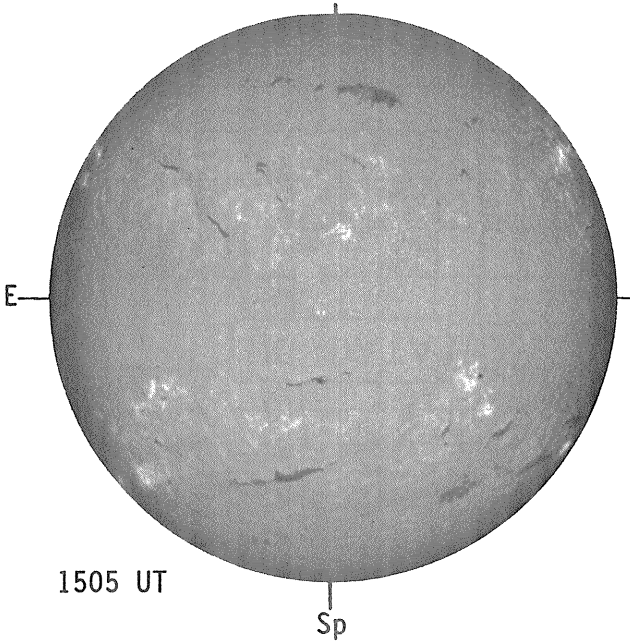
DeltaY=12.9
DeltaX= 9.6



17.39 -
18.34 UT

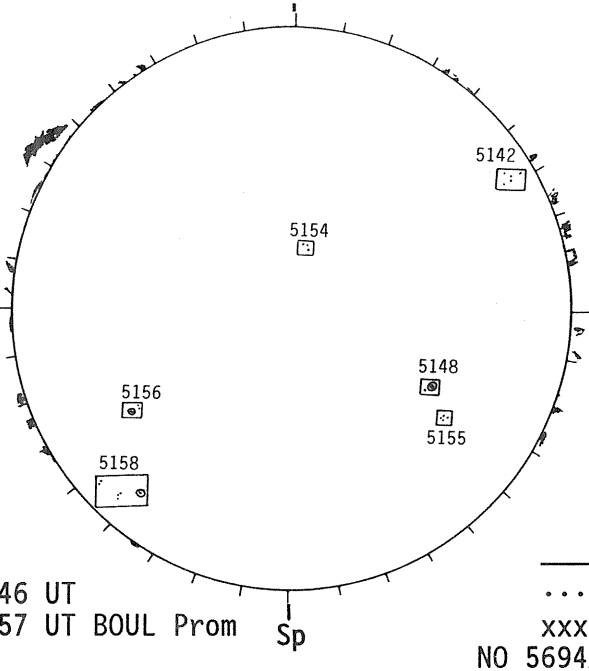
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



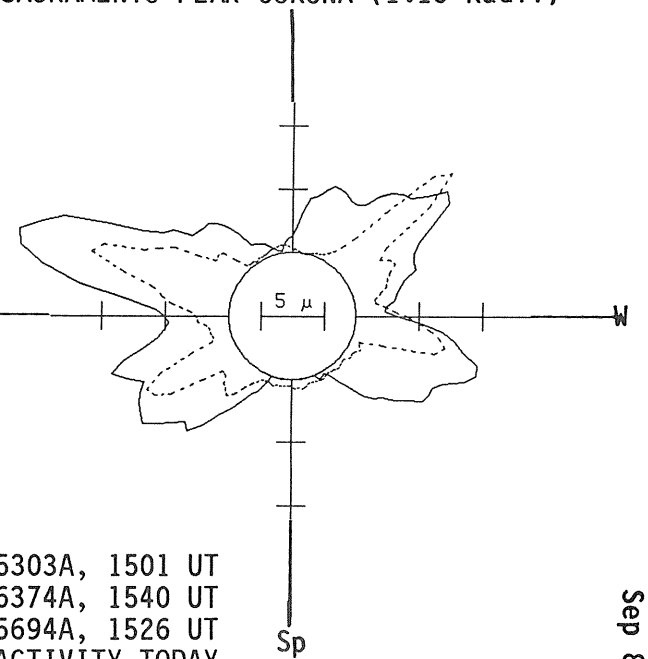
1505 UT

BOULDER SUNSPOTS



1446 UT
1457 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A, 1501 UT
···· 6374A, 1540 UT
xxxx 5694A, 1526 UT
NO 5694A ACTIVITY TODAY

73
Sep 88

SEPTEMBER 20, 1988 (P= 24.88 B_o= 7.09, L_o= 25.57)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -

NO DATA

E

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

1832 UT

MT. WILSON MAGNETOGRAM

Np

NO DATA

W

White=+7.5G
Black=-7.5G

BOULDER H-ALPHA

E

1432 UT

Sp

BOULDER SUNSPOTS

5159
5161
5142
BOUL 804
BOUL 806
BOUL 808
5154
BOUL 807
5148
5156
5155
5158

1400 UT
1432 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (1.15 Radii)

NO DATA

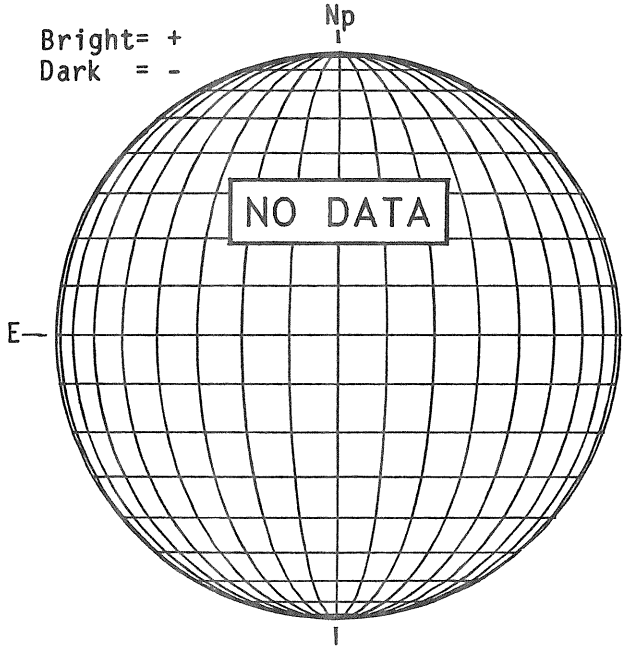
W

Sp

SEPTEMBER 21, 1988 (P= 25.02, B_o= 7.06, L_o= 12.37)

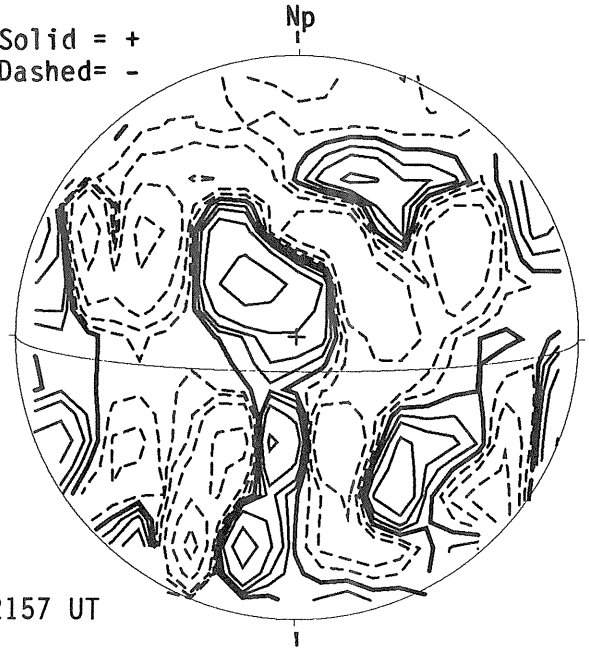
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

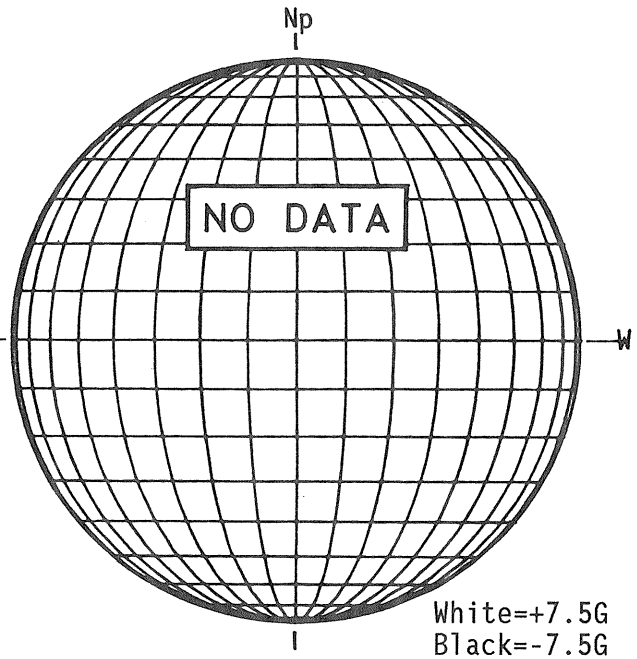


STANFORD MAGNETOGRAM

Solid = +
Dashed= -

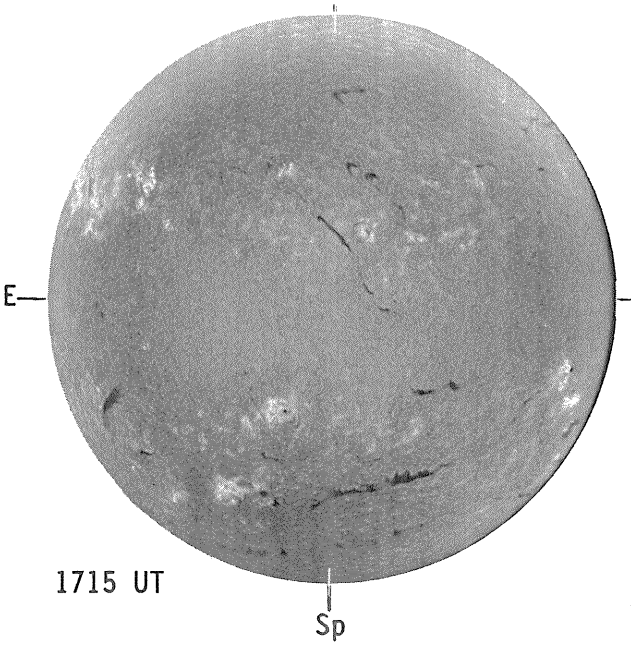


MT. WILSON MAGNETOGRAM

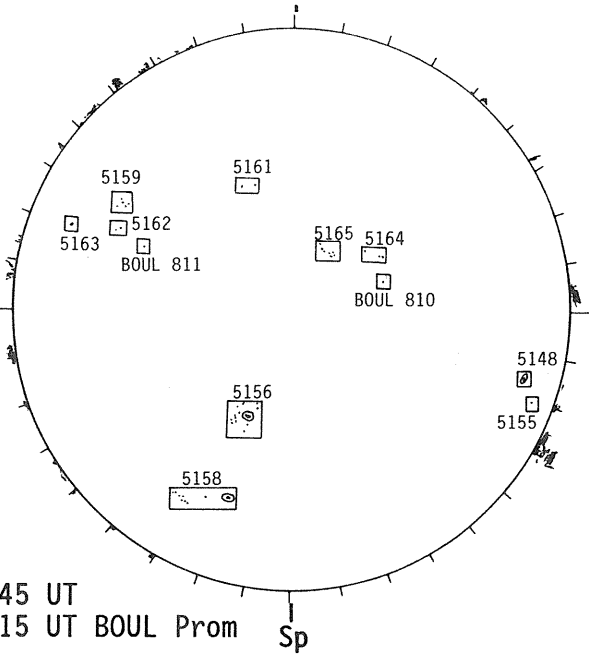


White=+7.5G
Black=-7.5G

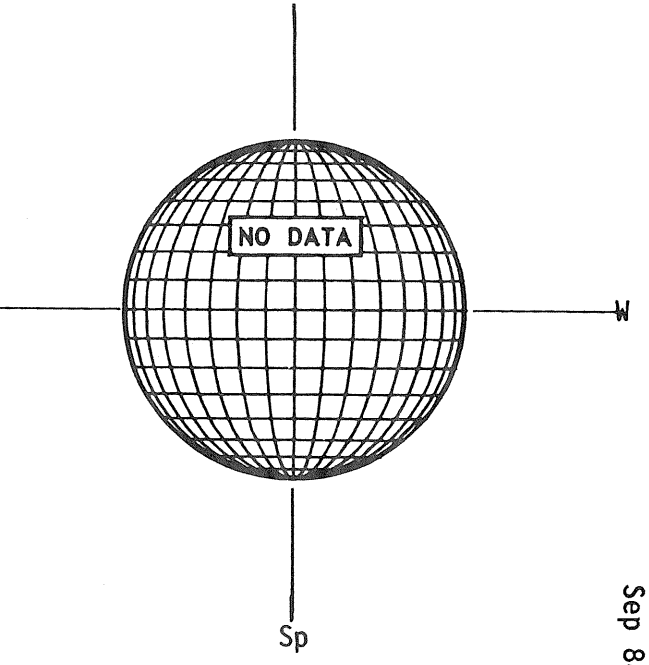
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



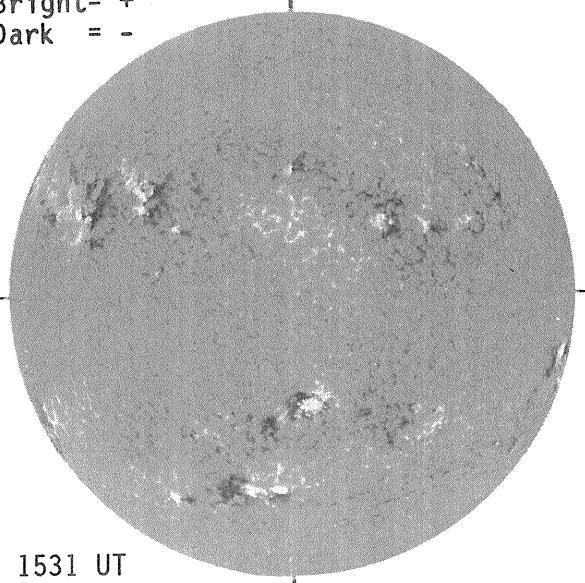
75
Sep 88

SEPTEMBER 22, 1988 (P= 25.15, B_o= 7.03, L_o= 359.17)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



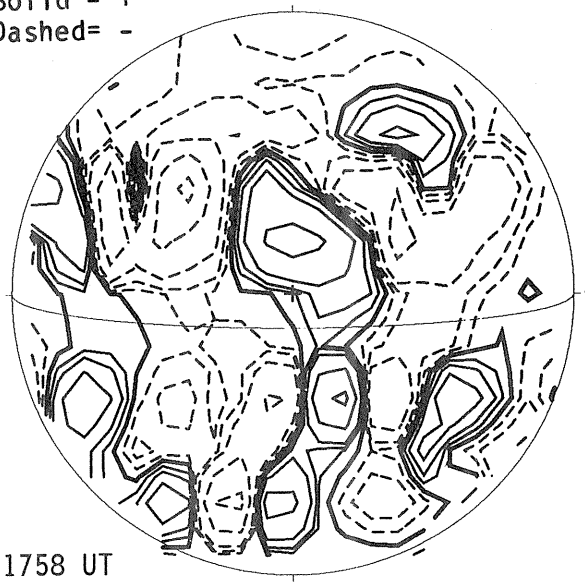
E

1531 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

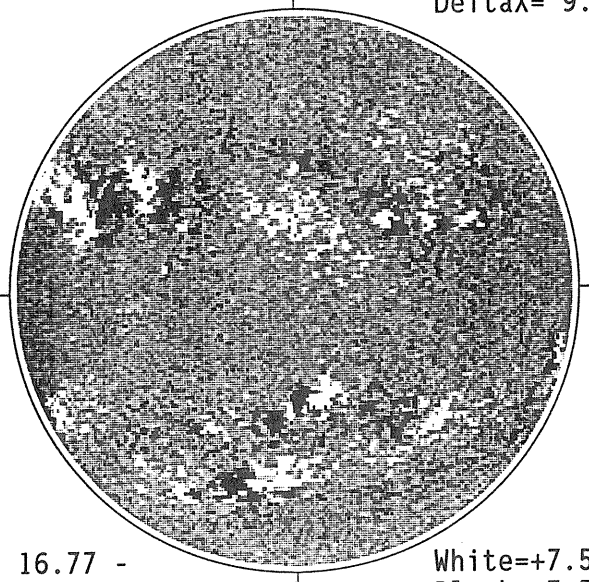


1758 UT

MT. WILSON MAGNETOGRAM

Np

DeltaY=13.0
DeltaX= 9.6

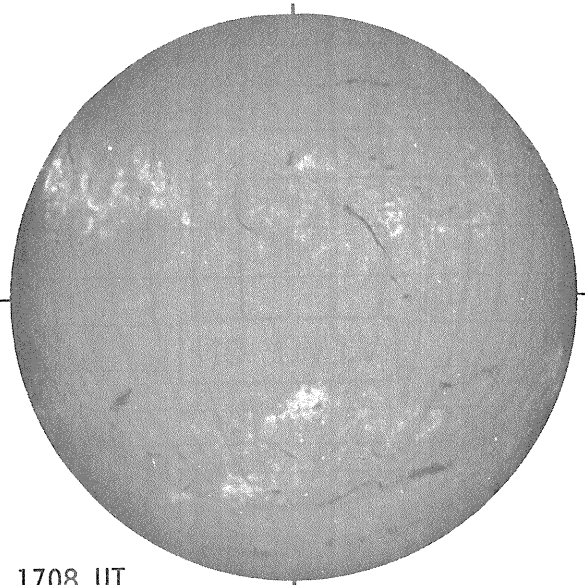


W

16.77 -
17.72 UT

White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA

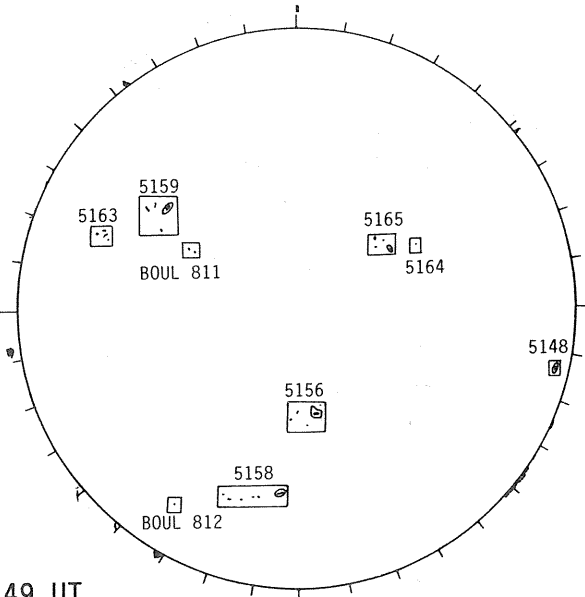


E

1708 UT

Sp

BOULDER SUNSPOTS



1349 UT
1430 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (1.15 Radii)

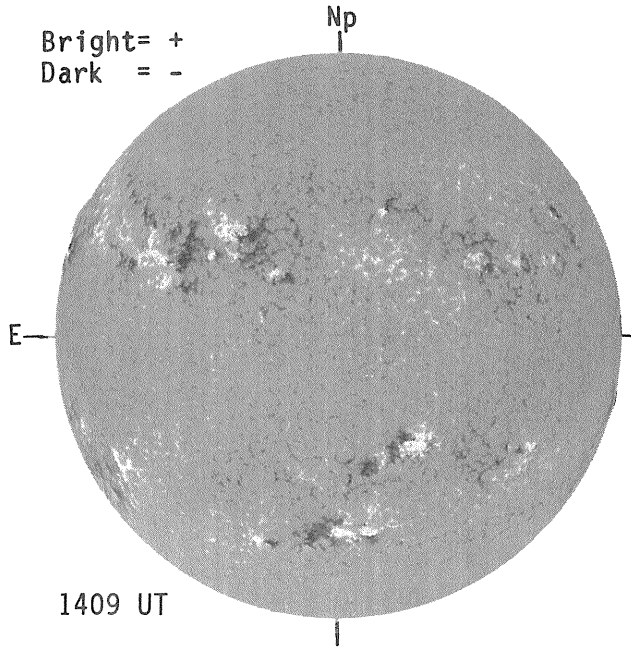
W

Sp

SEPTEMBER 23, 1988 (P= 25.27, B_o= 7.00, L_o= 345.97)

KITT PEAK MAGNETOGRAM

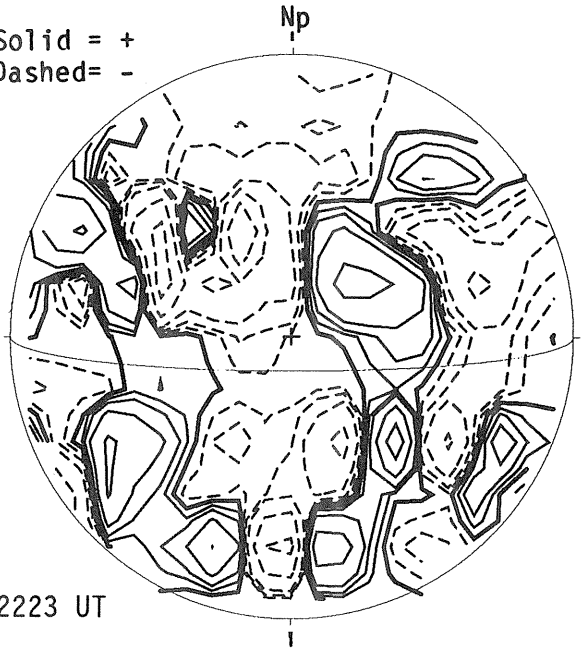
Bright= +
Dark = -



1409 UT

STANFORD MAGNETOGRAM

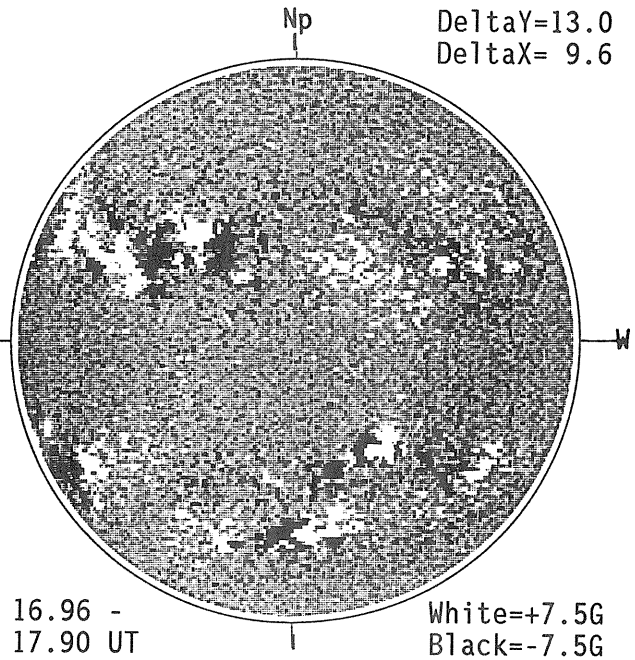
Solid = +
Dashed= -



2223 UT

MT. WILSON MAGNETOGRAM

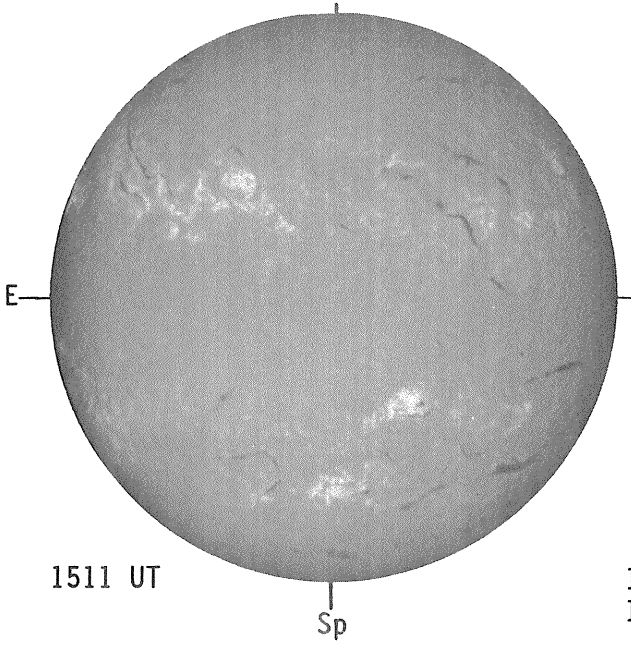
DeltaY=13.0
DeltaX= 9.6



16.96 -
17.90 UT

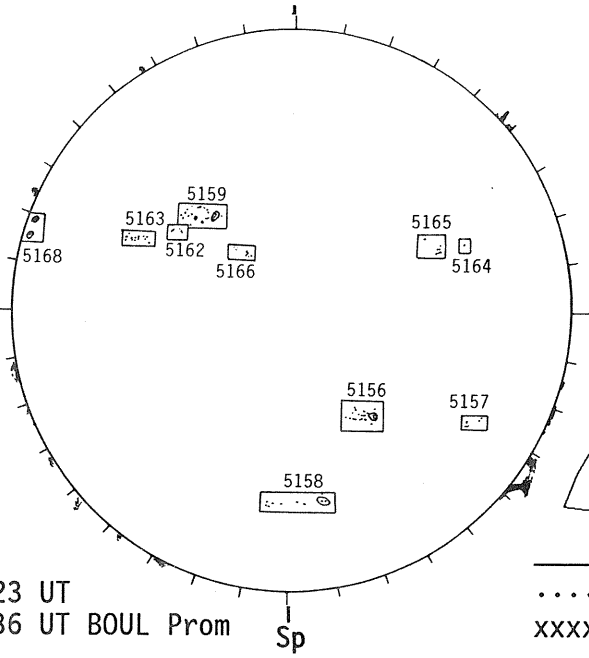
White=+7.5G
Black=-7.5G

SACRAMENTO PEAK H-ALPHA



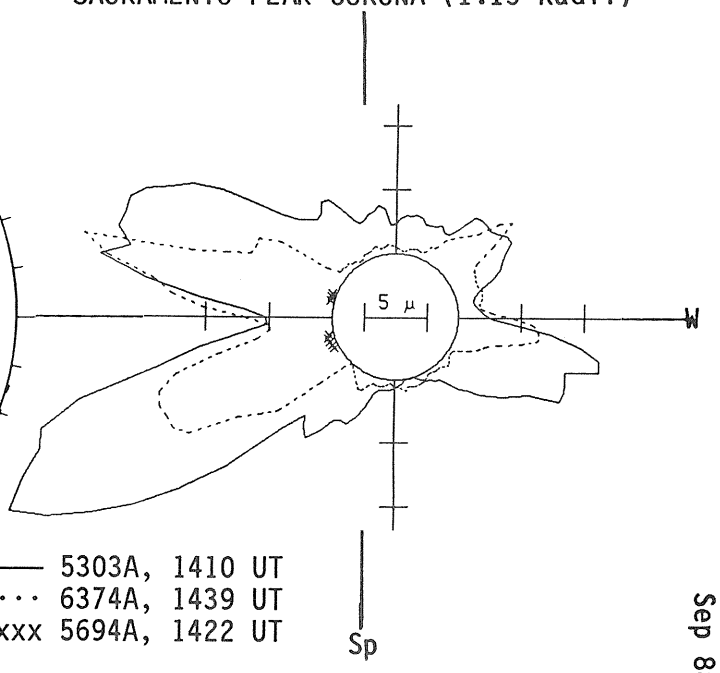
1511 UT

BOULDER SUNSPOTS



1423 UT
1436 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



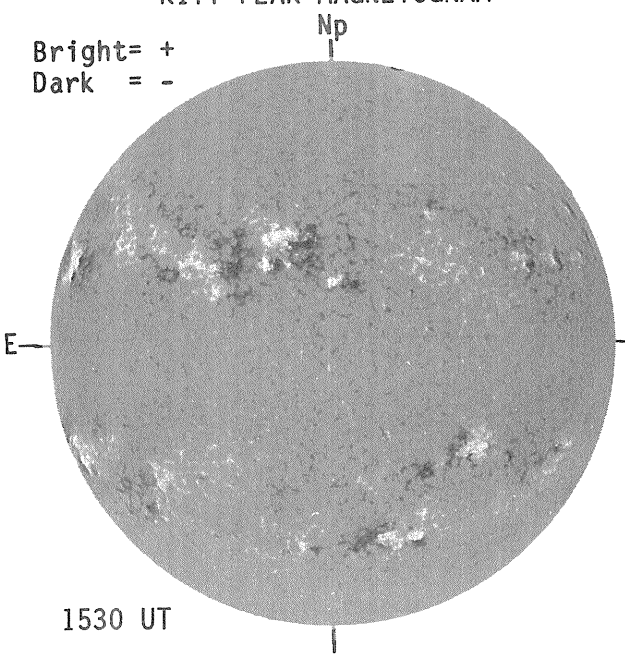
—— 5303A, 1410 UT
···· 6374A, 1439 UT
xxxx 5694A, 1422 UT

77
Sep 88

SEPTEMBER 24, 1988 (P= 25.39, B_o= 6.97, L_o= 332.77)

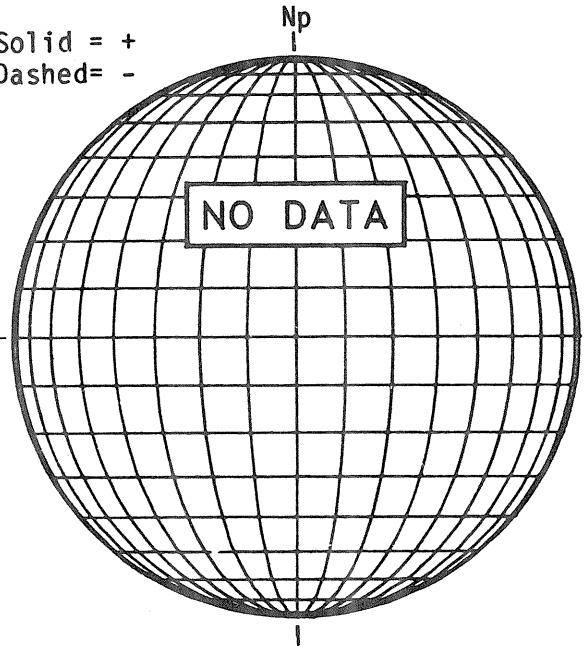
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

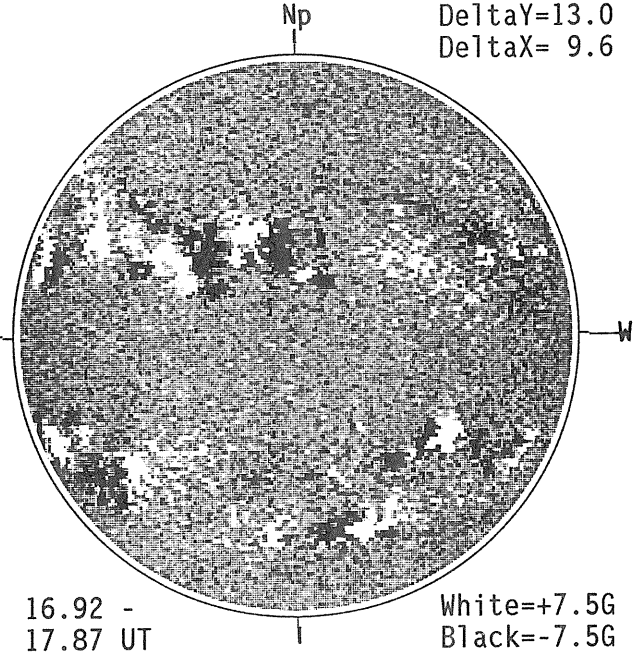


STANFORD MAGNETOGRAM

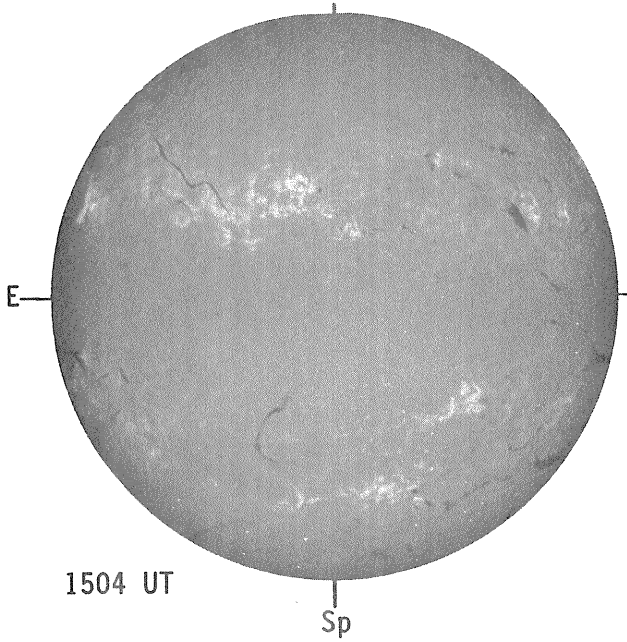
Solid = +
Dashed= -



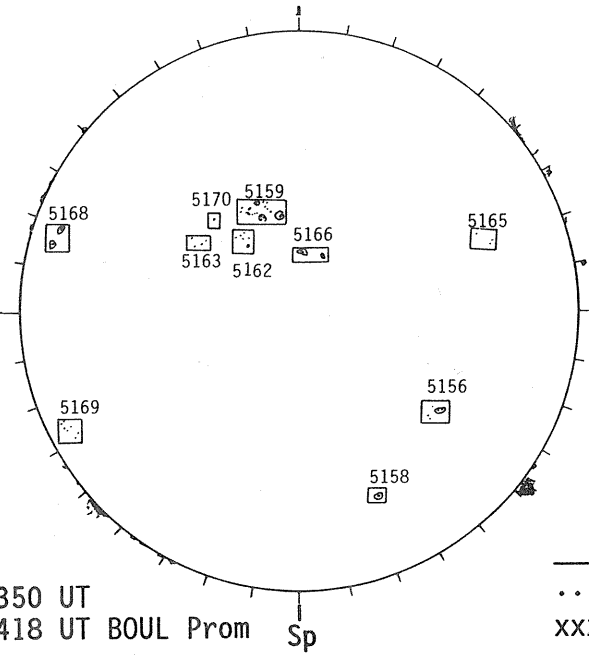
MT. WILSON MAGNETOGRAM



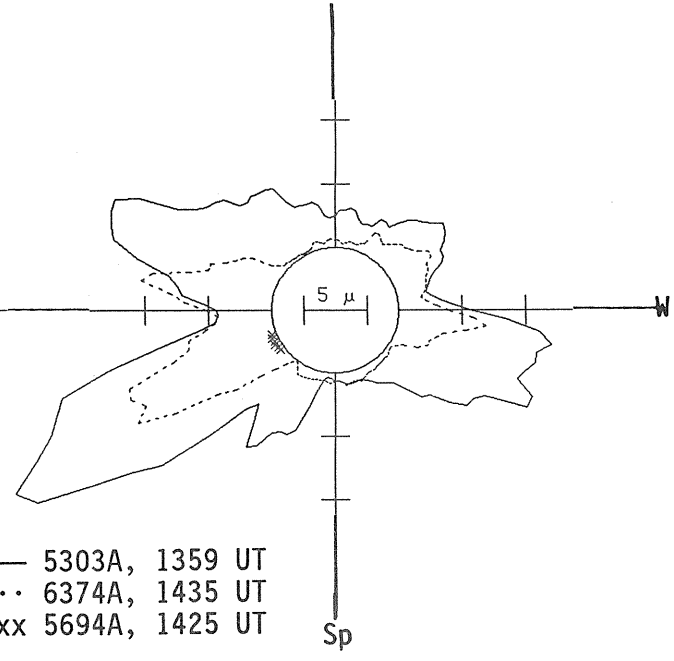
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

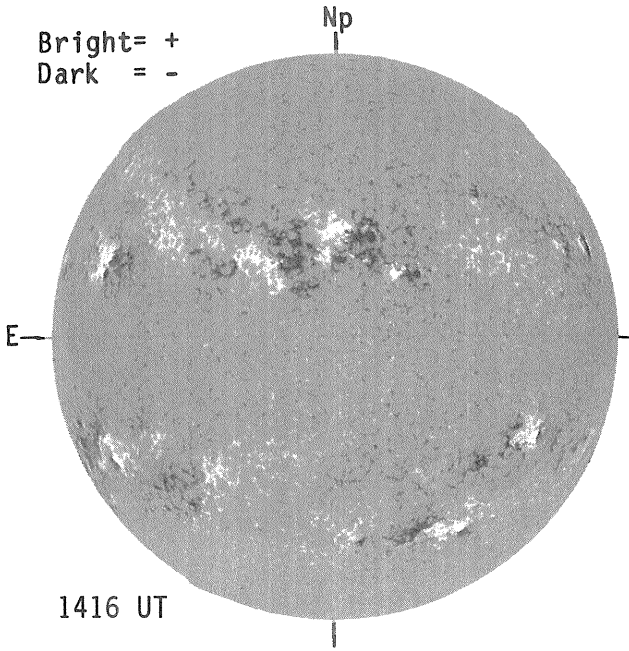


—— 5303A, 1359 UT
···· 6374A, 1435 UT
xxxx 5694A, 1425 UT

SEPTEMBER 25, 1988 (P= 25.49, B_o= 6.94, L_o= 319.57)

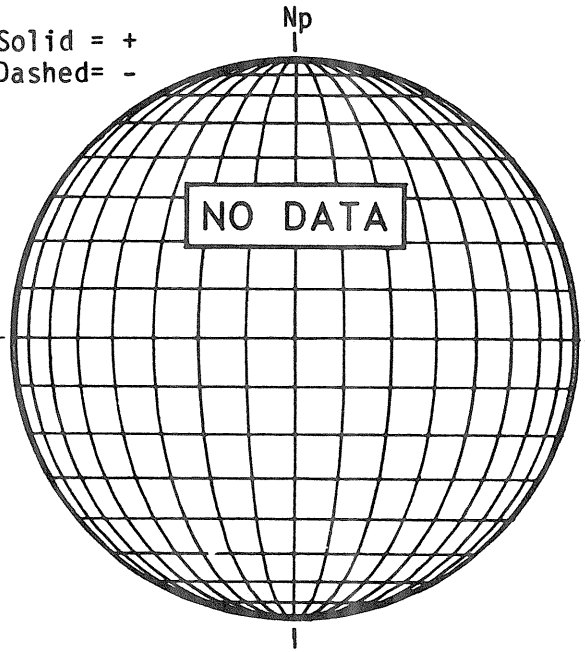
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



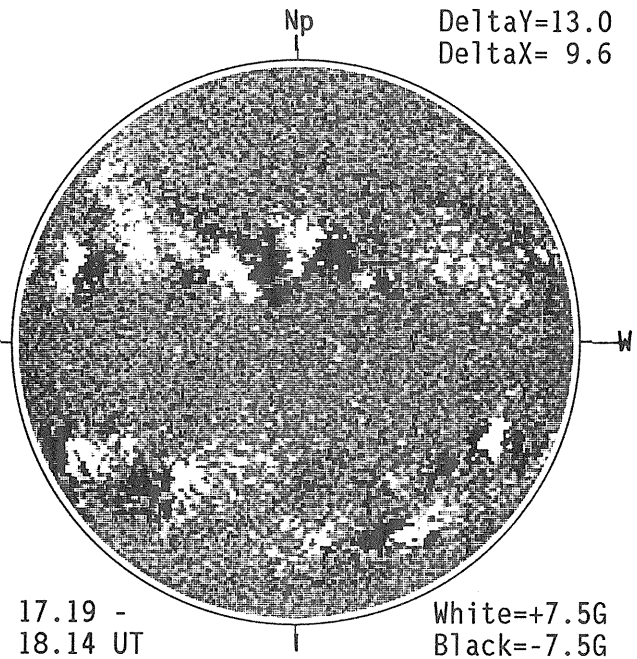
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

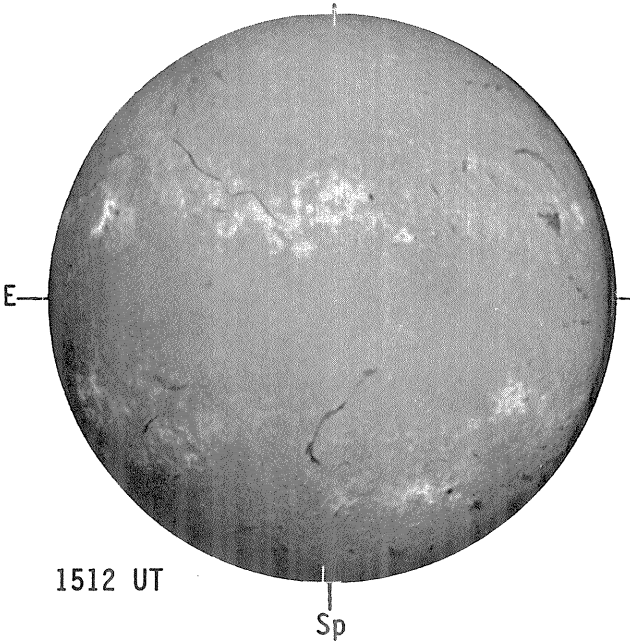


MT. WILSON MAGNETOGRAM

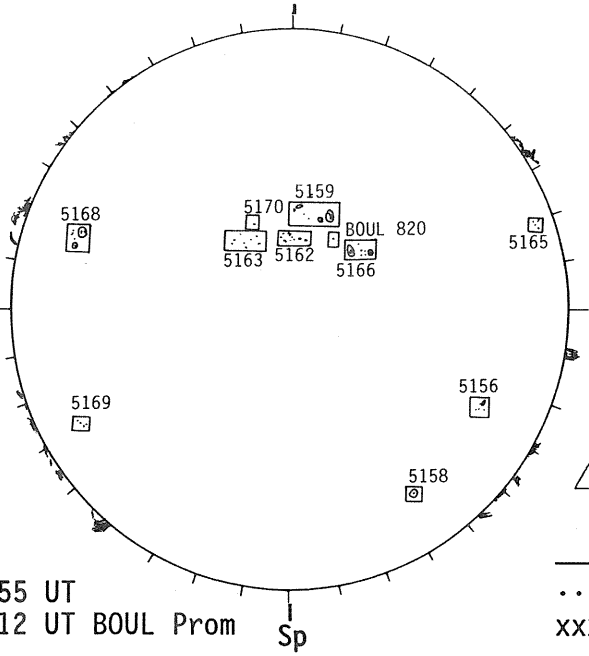
DeltaY=13.0
DeltaX= 9.6



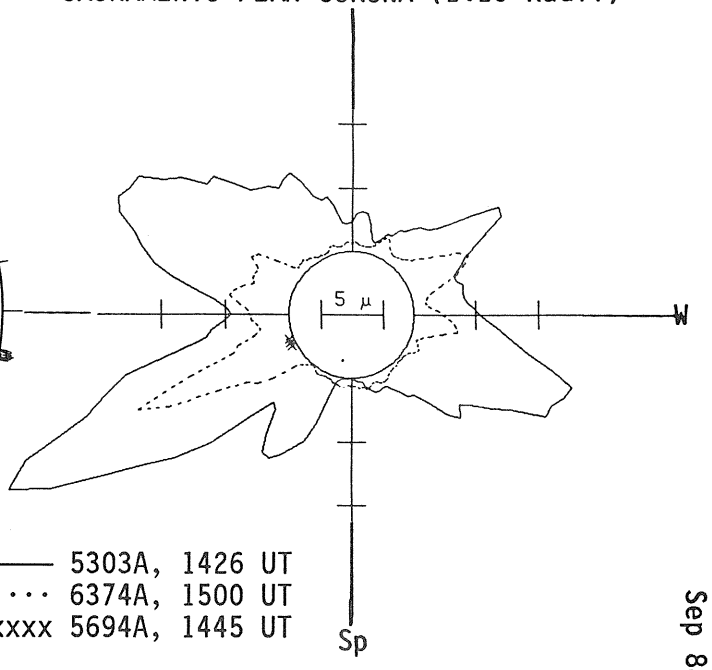
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A, 1426 UT
···· 6374A, 1500 UT
xxxx 5694A, 1445 UT

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Sep 88

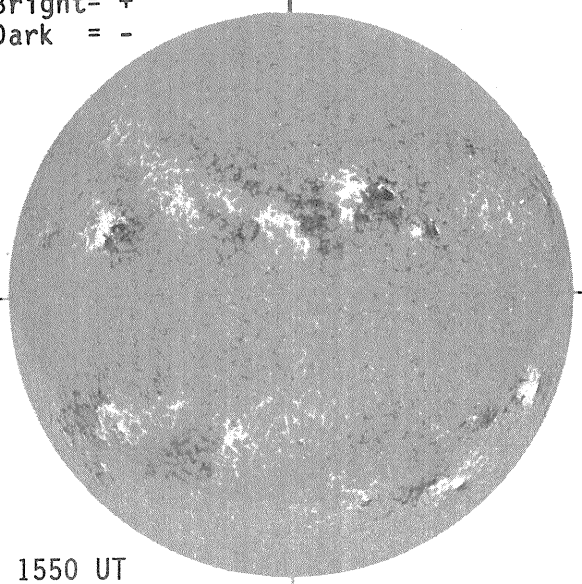
SEPTEMBER 26, 1988 (P= 25.60, B_o= 6.90, L_o= 306.38)

Sep 88

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



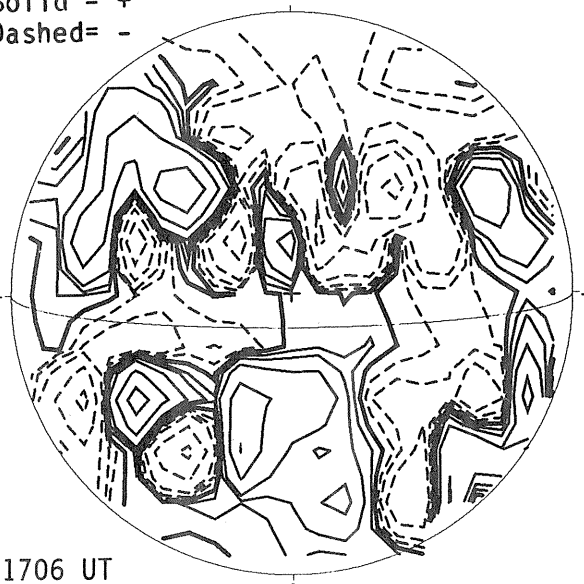
E

1550 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

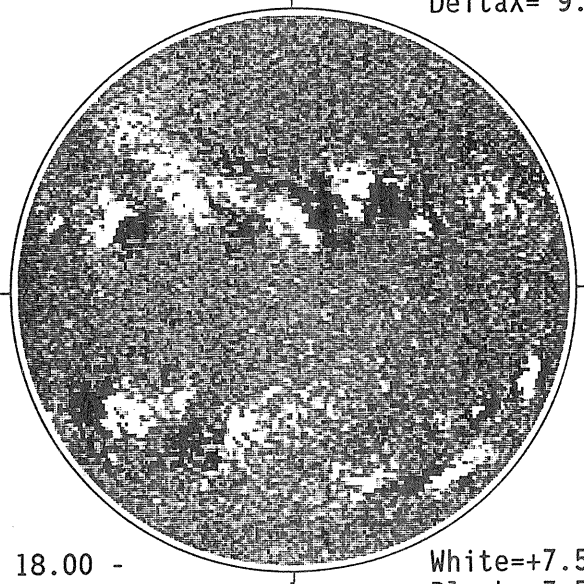


1706 UT

MT. WILSON MAGNETOGRAM

Np

DeltaY=13.0
DeltaX= 9.6

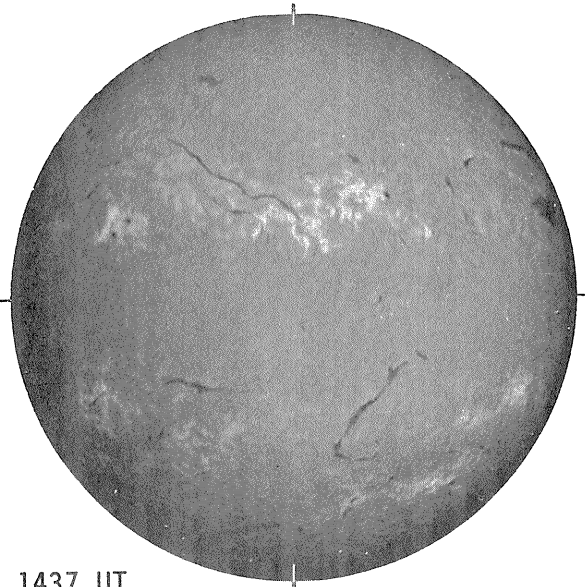


W

18.00 -
18.94 UT

White=+7.5G
Black=-7.5G

BOULDER H-ALPHA

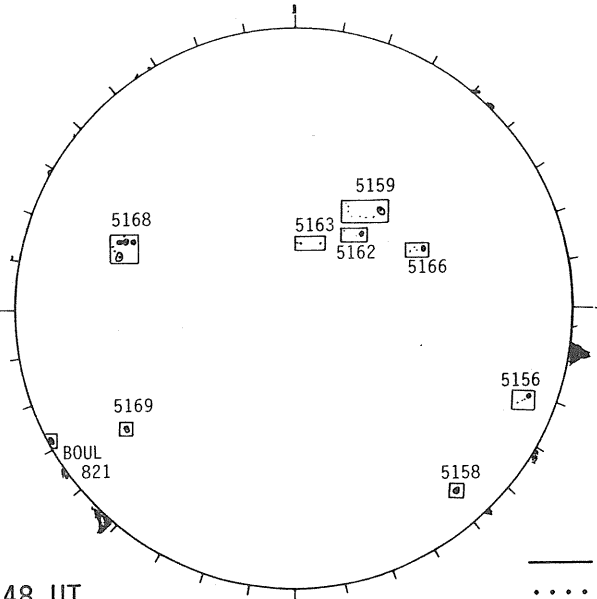


E

1437 UT

Sp

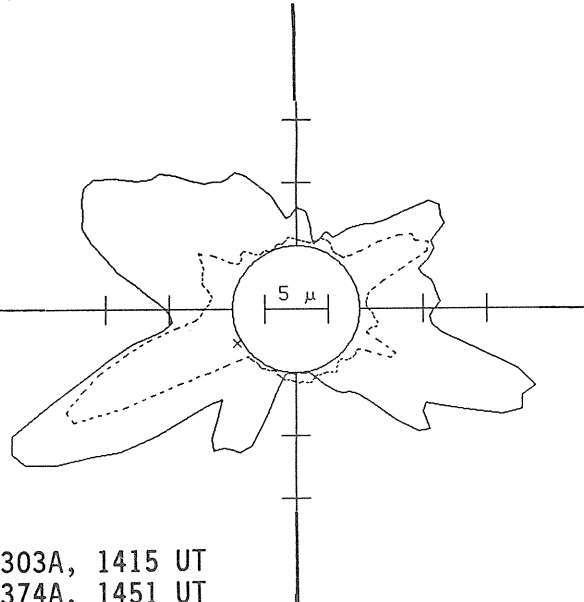
BOULDER SUNSPOTS



1348 UT
1437 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (1.15 Radii)



W

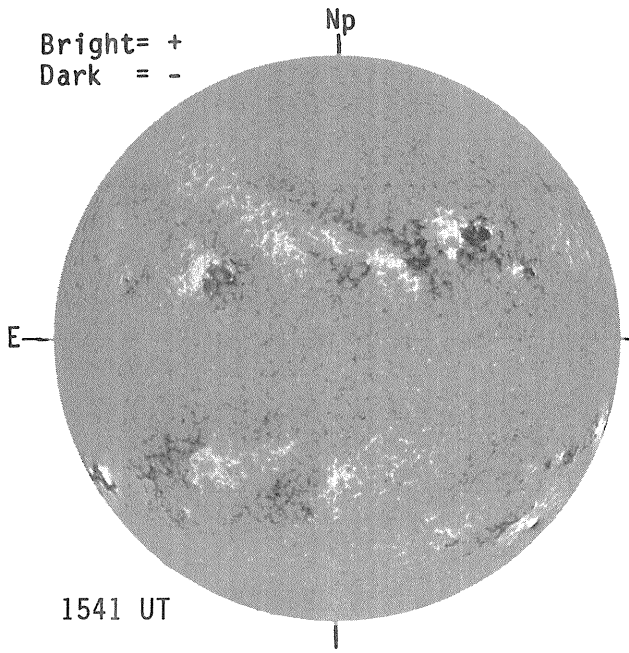
—— 5303A, 1415 UT
···· 6374A, 1451 UT
xxxx 5694A, 1435 UT

Sp

SEPTEMBER 27, 1988 (P= 25.69, B_o= 6.86, L_o= 293.18)

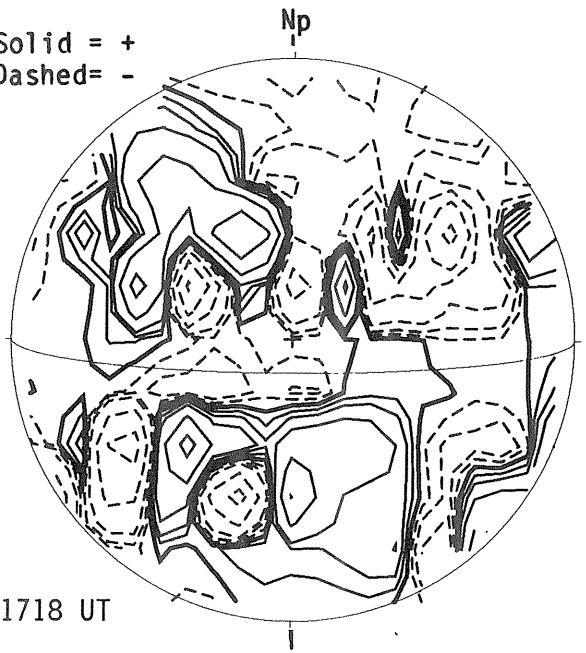
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



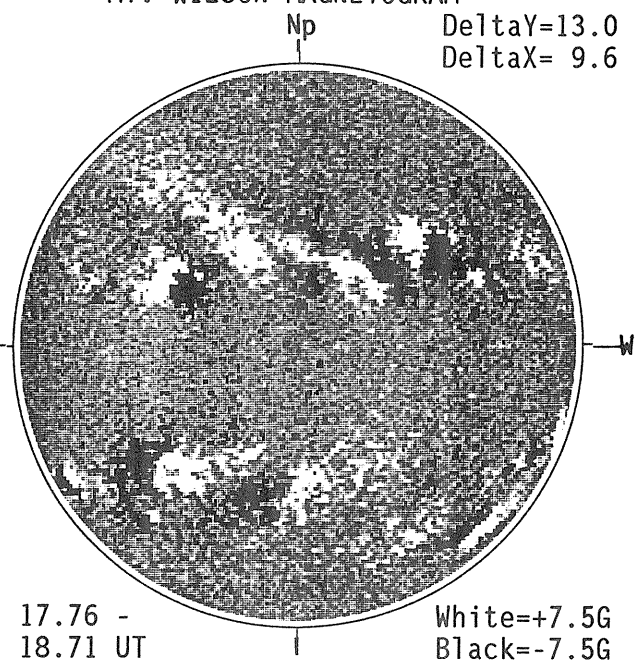
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

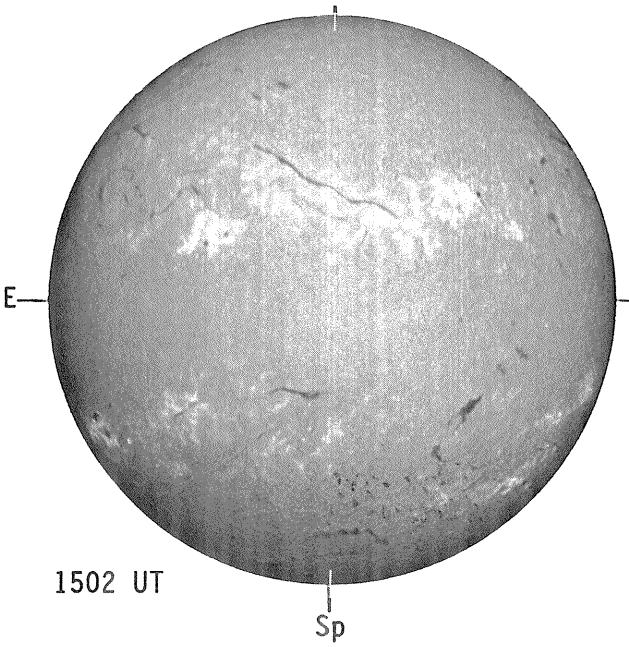


MT. WILSON MAGNETOGRAM

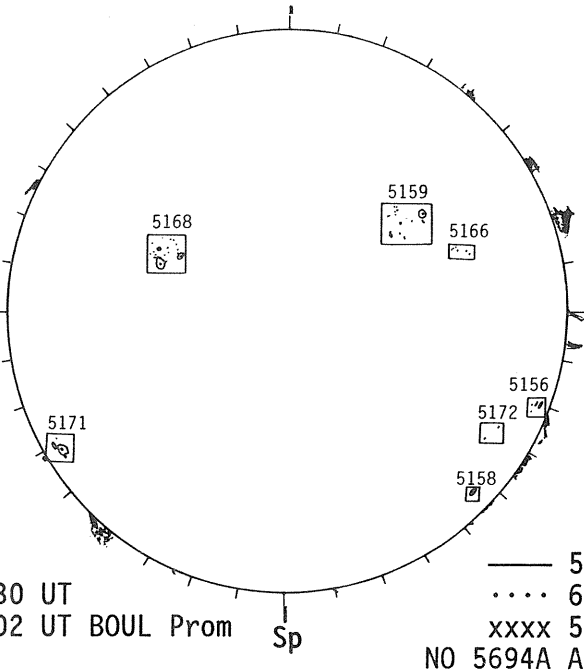
DeltaY=13.0
DeltaX= 9.6



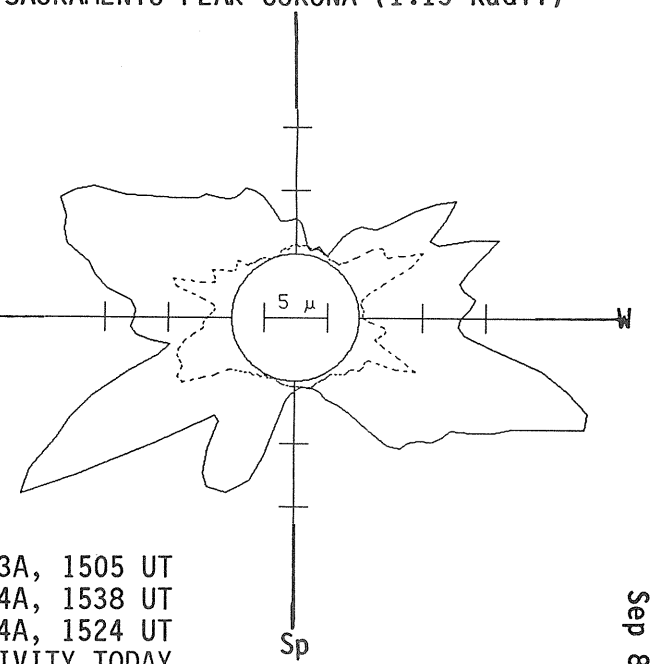
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



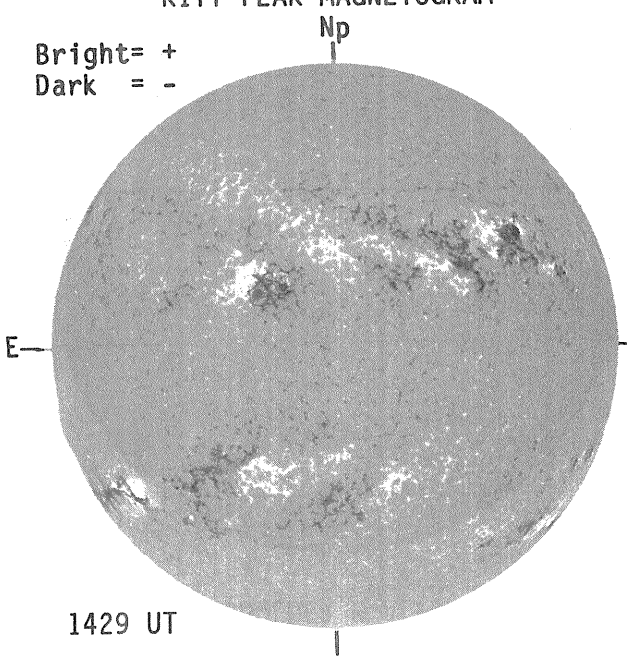
—— 5303A, 1505 UT
···· 6374A, 1538 UT
xxxx 5694A, 1524 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 28, 1988 (P= 25.78, B_o= 6.82, L_o= 279.98)

Sep 88 82

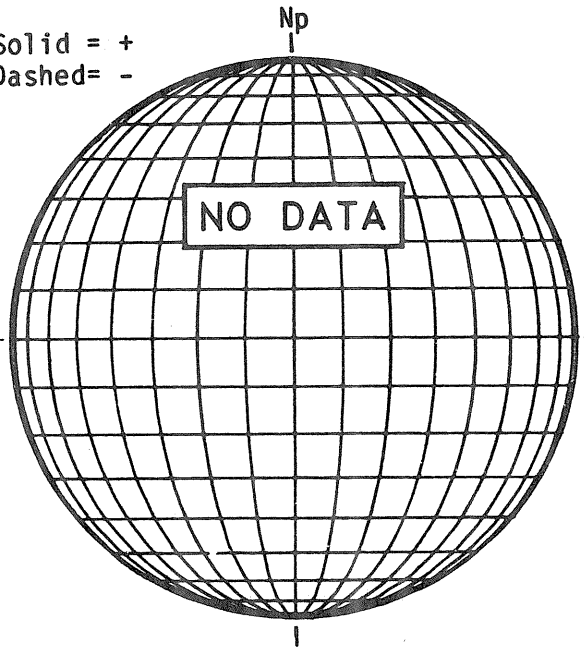
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

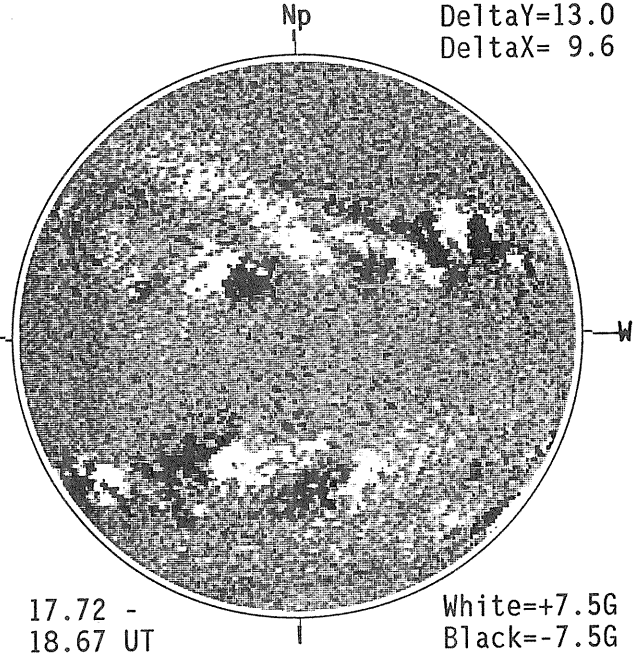


STANFORD MAGNETOGRAM

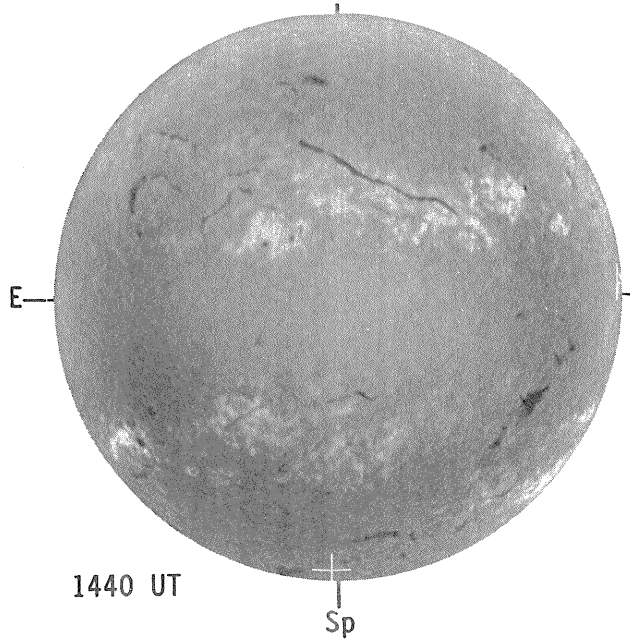
Solid = +
Dashed= -



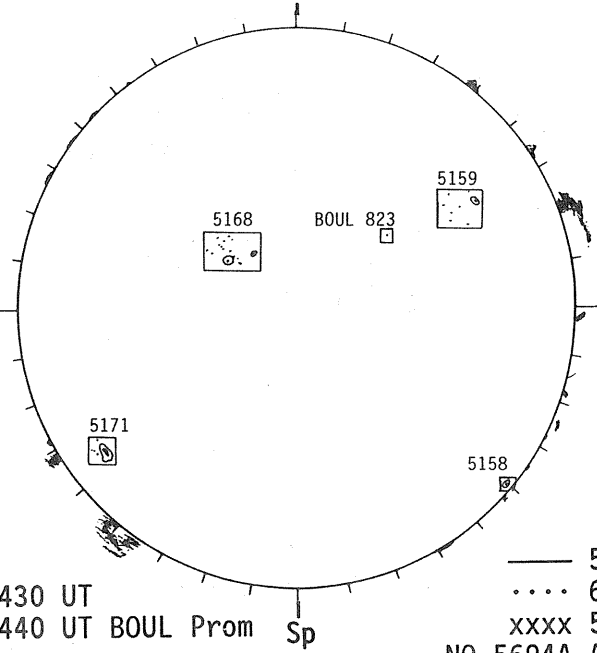
MT. WILSON MAGNETOGRAM



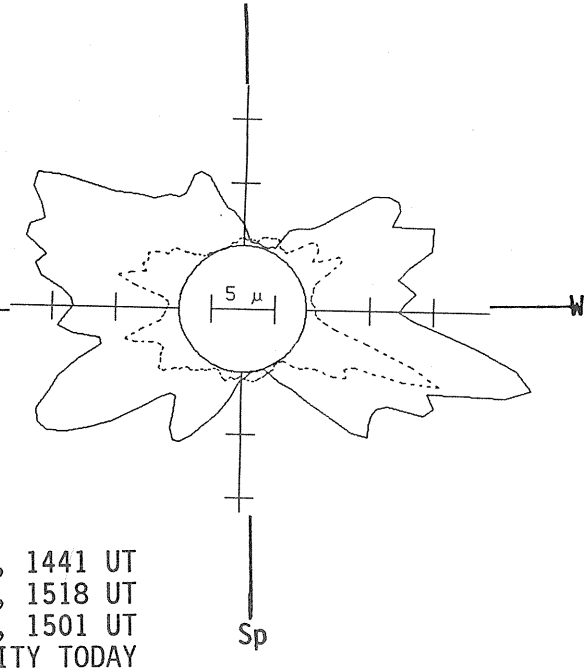
BOULDER H-ALHPA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)

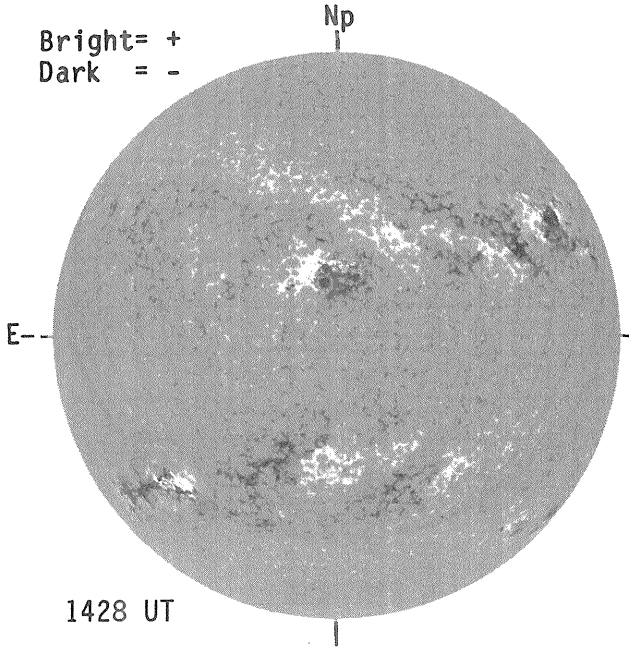


—— 5303A, 1441 UT
···· 6374A, 1518 UT
xxxx 5694A, 1501 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 29, 1988 (P= 25.86, B_o= 6.78, L_o= 266.78)

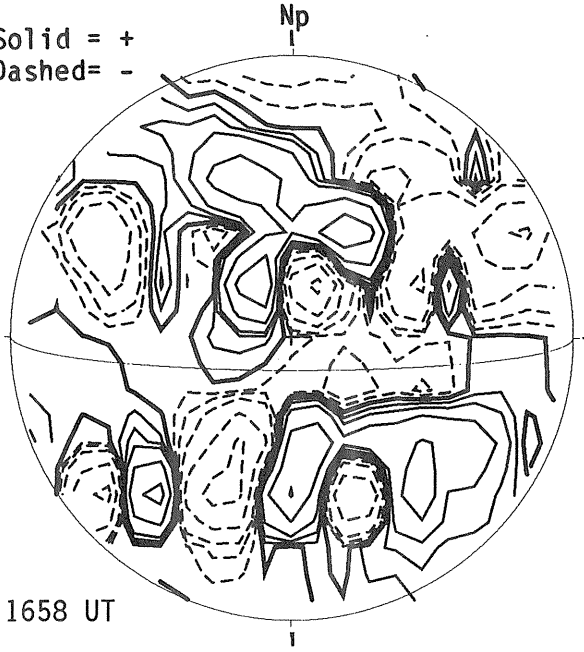
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



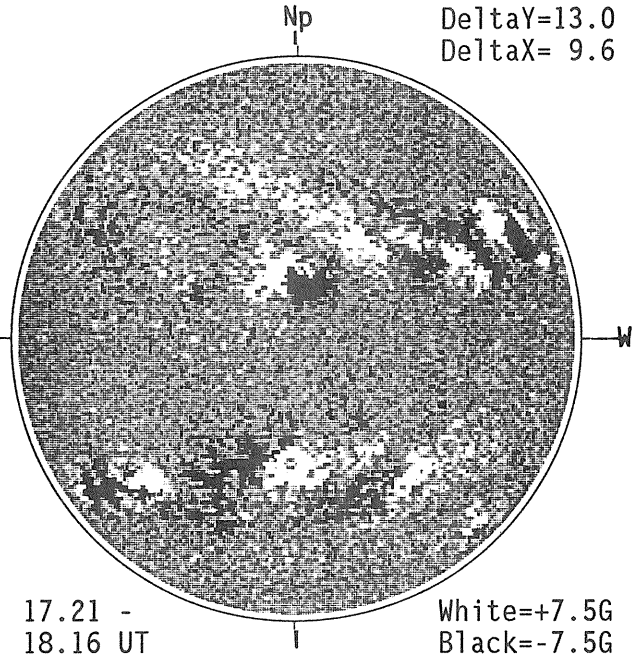
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

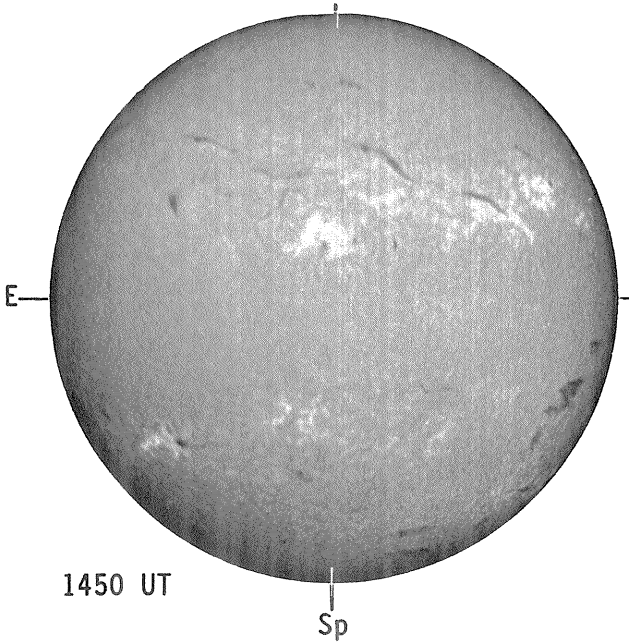


MT. WILSON MAGNETOGRAM

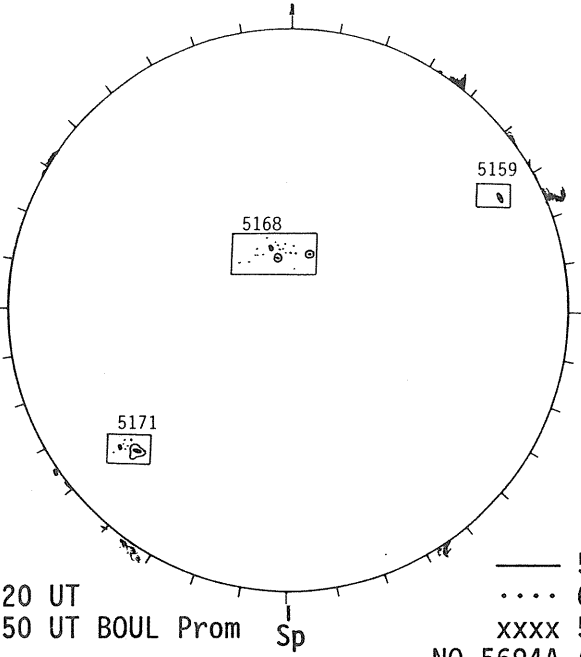
DeltaY=13.0
DeltaX= 9.6



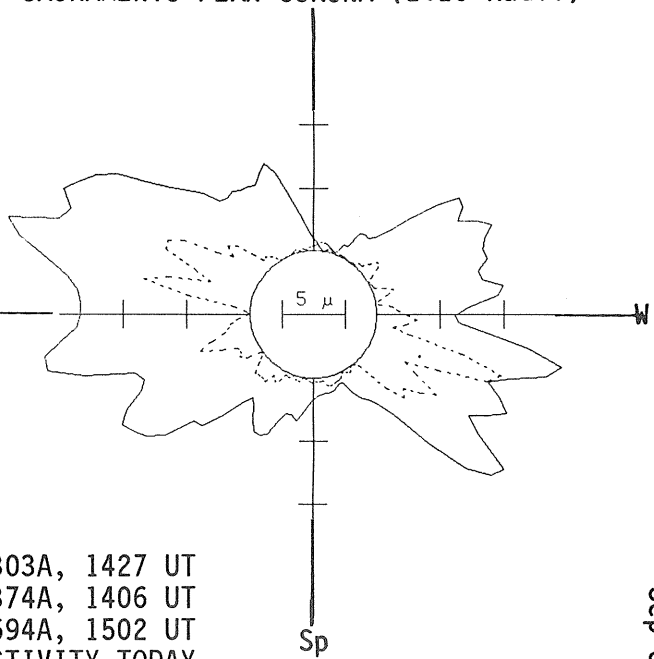
BOULDER H-ALPHA



BOULDER SUNSPOTS



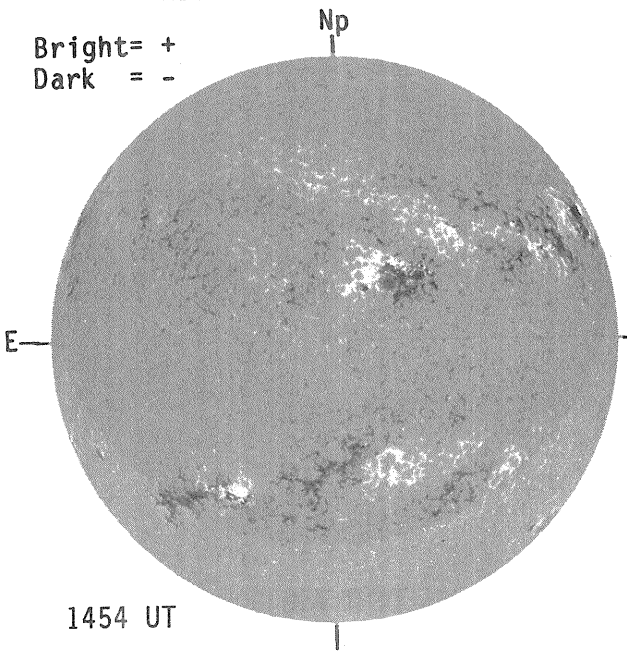
SACRAMENTO PEAK CORONA (1.15 Radii)



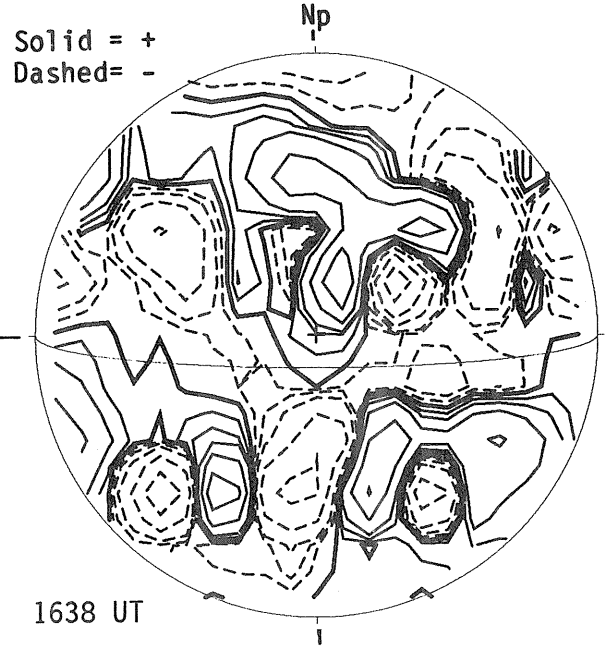
—— 5303A, 1427 UT
···· 6374A, 1406 UT
xxxx 5694A, 1502 UT
NO 5694A ACTIVITY TODAY

SEPTEMBER 30, 1988 (P= 25.94, B_o= 6.73, L_o= 253.59)

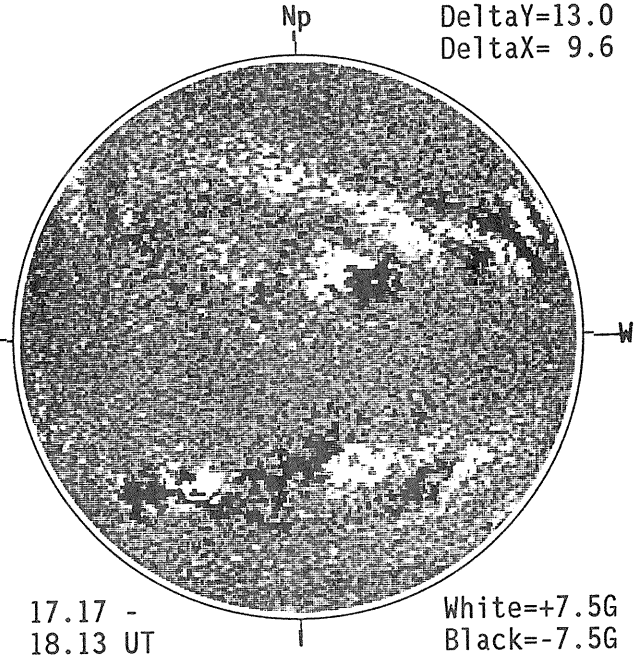
KITT PEAK MAGNETOGRAM



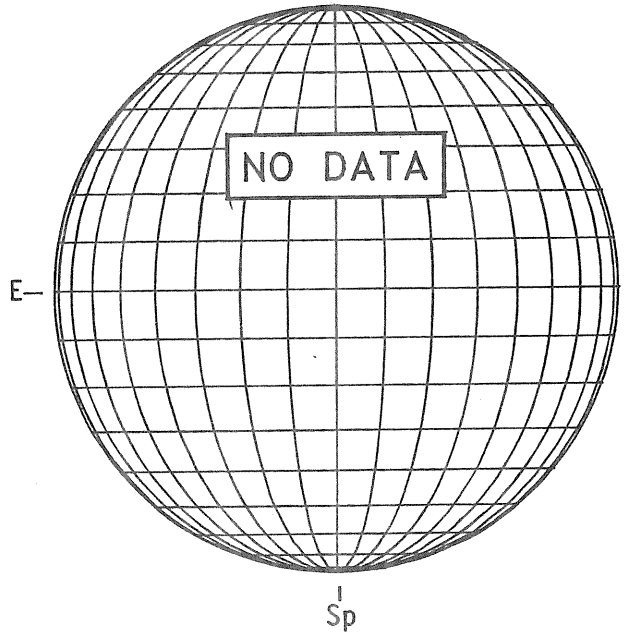
STANFORD MAGNETOGRAM



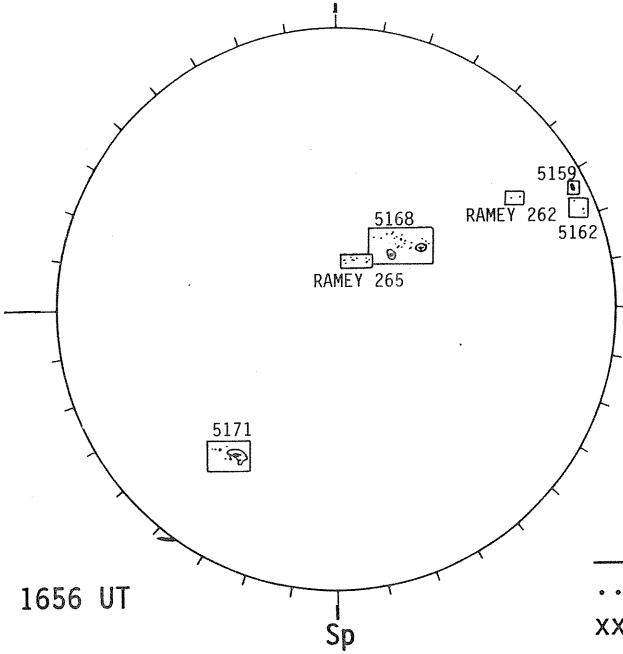
MT. WILSON MAGNETOGRAM



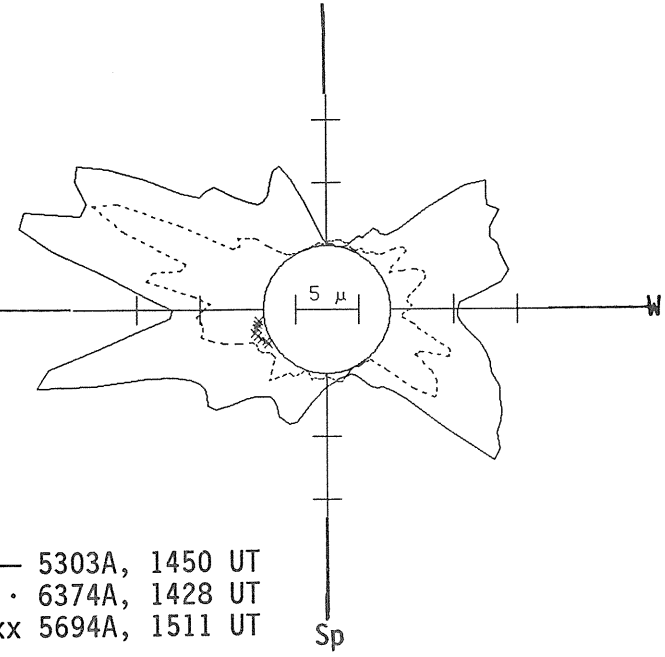
BOULDER H-ALPHA



RAMEY SUNSPOTS



SACRAMENTO PEAK CORONA (1.15 Radii)



—— 5303A, 1450 UT
···· 6374A, 1428 UT
xxxx 5694A, 1511 UT

SUNSPOT GROUPS
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

SEPTEMBER 1988

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
5128A		RAMY	08	29	1345	N34	E33	09	1.2		B	BXO	10	4	6	4
5128B	24747	MWIL	08	31	1515	S24	E09	09	1.3	4	(AP)					
5128B		HOLL	08	31	1530	S24	E09	09	1.3		A	AX		1		3
5128B		BOUL	08	31	1545	S22	E10	09	1.4		A	AX	10	1	1	3
5128C		BOUL	09	03	1435	S27	W27	09	1.5		A	AX		1		3
5129	24736	MWIL	08	26	1430	S14	E79	09	1.6	4	AP					
5129		RAMY	08	26	1524	S15	E76	09	1.4		A	HA	60	1	2	3
5129		HOLL	08	26	1635	S14	E80	09	1.7		B	DAO	60	3	7	3
5129		PALE	08	26	1830	S13	E84	09	2.1		B	DAO	60	2	5	4
5129		LEAR	08	27	0100	S14	E73	09	1.5		B	DAO	90	2	4	3
5129		CULG	08	27	0312	S12	E71	09	1.5		B	DSO	30	2	4	3
5129		SVTO	08	27	0732	S14	E73	09	1.8		B	DAO	160	3	4	3
5129		BOUL	08	27	1410	S14	E67	09	1.6		A	HA	70	3	4	3
5129	24736	MWIL	08	27	1515	S14	E66	09	1.6	4	(AP)					
5129		HOLL	08	27	1539	S14	E67	09	1.7		B	DAO	160	3	4	3
5129		RAMY	08	27	1740	S14	E65	09	1.6		B	DAO	90	4	4	3
5129		PALE	08	27	1900	S12	E68	09	1.9		B	DSO	50	5	5	3
5129		LEAR	08	28	0025	S13	E61	09	1.6		B	DAO	80	3	4	3
5129		CULG	08	28	0340	S12	E59	09	1.6		B	DSO	40	3	3	2
5129		SVTO	08	28	0544	S13	E59	09	1.7		B	DAO	90	5	4	3
5129		RAMY	08	28	1350	S14	E55	09	1.7		A	HS	150	8	5	4
5129		BOUL	08	28	1411	S13	E53	09	1.6		B	DAO	80	5	4	2
5129	24736	MWIL	08	28	1445	S14	E56	09	1.8	4	(AP)					
5129		PALE	08	28	2030	S13	E52	09	1.8		B	DSO	90	3	4	3
5129		LEAR	08	29	0244	S13	E48	09	1.7		B	DSO	110	3	3	2
5129		CULG	08	29	0350	S12	E47	09	1.7		B	DSO	80	2	3	2
5129		SVTO	08	29	1012	S13	E45	09	1.8		B	DAO	90	4	6	3
5129		BOUL	08	29	1343	S13	E40	09	1.6		B	DAO	80	3	4	2
5129		RAMY	08	29	1345	S13	E43	09	1.8		A	HS	120	6	5	4
5129	24736	MWIL	08	29	1530	S14	E42	09	1.8	5	(AP)					
5129		PALE	08	29	1945	S13	E40	09	1.8		B	DSO	90	5	5	3
5129		LEAR	08	30	0013	S13	E37	09	1.8		B	DAO	100	4	4	3
5129		CULG	08	30	0310	S12	E33	09	1.6		B	DSO	80	3	5	3
5129		SVTO	08	30	0745	S13	E33	09	1.8		B	DSO	50	2	4	2
5129		BOUL	08	30	1337	S13	E27	09	1.6		B	DSO	60	3	4	2
5129		RAMY	08	30	1530	S13	E27	09	1.7		A	HS	80	6	4	4
5129	24736	MWIL	08	30	1550	S14	E27	09	1.7	5	(AP)					
5129		PALE	08	30	1915	S13	E25	09	1.7		B	DSO	60	2	4	3
5129		HOLL	08	30	2200	S13	E25	09	1.8		B	DAO	70	9	4	3
5129		CULG	08	31	0440	S13	E21	09	1.8		B	CRO	20	3	3	2
5129		RAMY	08	31	1406	S15	E15	09	1.7		B	DSO	60	7	4	3
5129	24736	MWIL	08	31	1515	S14	E15	09	1.8	5	(B)					
5129		HOLL	08	31	1530	S14	E14	09	1.7		B	DAO	60	7	4	3
5129		BOUL	08	31	1545	S13	E15	09	1.8		B	DAO	90	6	4	3
5129		PALE	08	31	1735	S13	E14	09	1.8		B	DSO	70	4	4	3
5129		LEAR	09	01	0020	S13	E09	09	1.7		B	DSO	80	5	5	4
5129		SVTO	09	01	0800	S14	E05	09	1.7		B	DSO	30	3	4	2
5129		RAMY	09	01	1524	S14	E02	09	1.8		B	DAO	30	5	4	4
5129	24736	MWIL	09	01	1530	S14	E02	09	1.8	5	(AP)					
5129		BOUL	09	01	1615	S12	E01	09	1.7		B	CAO	70	6	4	3
5129		HOLL	09	01	1645	S14	E01	09	1.8		A	HS	40	9	4	4
5129		PALE	09	01	1915	S15	W01	09	1.7		B	DSO	40	6	4	2
5129		LEAR	09	02	0015	S14	W04	09	1.7		B	DRO	40	6	4	4
5129		CULG	09	02	0250	S13	W06	09	1.7		A	HS	20	3	3	2
5129		SVTO	09	02	0627	S14	W08	09	1.7		B	CSO	20	3	4	2
5129		RAMY	09	02	1415	S13	W12	09	1.7		B	CAO	20	2	3	4
5129	24736	MWIL	09	02	1515	S14	W13	09	1.6	5	(AP)					
5129		BOUL	09	02	1520	S12	W13	09	1.6		B	CAO	10	3	3	2
5129		PALE	09	02	1745	S14	W14	09	1.7		B	CSO	20	2	3	3
5129		HOLL	09	02	2245	S13	W16	09	1.7		B	CRO	10	4	4	2
5129		LEAR	09	03	0035	S13	W18	09	1.7		B	CRO	20	3	3	4
5129		CULG	09	03	0205	S14	W20	09	1.6		A	AX	10	1	1	3
5129		SVTO	09	03	0615	S15	W20	09	1.7		B	CRO	20	5	4	4
5129		RAMY	09	03	1345	S12	W25	09	1.7		A	HA	30	2	3	4
5129	24736	MWIL	09	03	1530	S14	W27	09	1.6	5	(AP)					
5129		HOLL	09	03	1657	S15	W27	09	1.7		A	AX	10	1	1	2

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5129		PALE	09 03 1730	S15 W28	09 1.6		B	CSO	50	3	3	3
5129		LEAR	09 04 0008	S13 W31	09 1.7		B	CSO	50	2	3	4
5129		CULG	09 04 0410	S15 W32	09 1.7		A	AX	10	4	3	3
5129		SVTO	09 04 0620	S15 W35	09 1.6		A	AX	10	1	1	3
5129		RAMY	09 04 1352	S13 W39	09 1.6		A	AX	10	2	2	3
5129		BOUL	09 04 1400	S14 W38	09 1.7		A	AX	10	6	3	3
5129	24736	MWIL	09 04 1515	S14 W39	09 1.7	5	(AP)					
5129		HOLL	09 04 1553	S15 W39	09 1.7		A	HR	30	2	2	2
5129		PALE	09 04 1736	S16 W42	09 1.5		A	AX	20	2	2	3
5129		LEAR	09 05 0115	S13 W44	09 1.7		B	CSO	50	2	3	4
5129		SVTO	09 05 0619	S15 W49	09 1.5		B	CSO	20	2	3	2
5129		BOUL	09 05 1348	S14 W49	09 1.9		A	AX	10	2	1	2
5129		RAMY	09 05 1400	S13 W52	09 1.6		A	AX		1		3
5129	24736	MWIL	09 05 1530	S14 W53	09 1.6	4	(AP)					
5129		HOLL	09 05 1630	S14 W54	09 1.6		A	AX	10	1	1	3
5129		PALE	09 05 1740	S16 W54	09 1.6		A	AX	10	1	1	2
5129		LEAR	09 06 0011	S15 W58	09 1.6		A	AX	20	1	1	3
5129		SVTO	09 06 0755	S15 W66	09 1.3		A	AX		1		2
5129		RAMY	09 06 1405	S14 W66	09 1.6		A	AX		1	1	4
5129		HOLL	09 06 1435	S14 W66	09 1.6		A	AX	10	1		3
5129	24736	MWIL	09 06 1555	S14 W66	09 1.7	4	(AP)					
5129		PALE	09 06 1745	S16 W68	09 1.6		A	AX		1	1	3
5129		LEAR	09 07 0017	S13 W73	09 1.5		A	AX	10	1	1	3
5129	24736	MWIL	09 07 1500	S14 W80	09 1.6	2	AP					
5131		LEAR	08 27 0100	S20 E88	09 2.8		A	HA	90	1	1	3
5131		CULG	08 27 0312	S17 E85	09 2.6		A	HS	100	1	4	3
5131		SVTO	08 27 0732	S19 E82	09 2.6		B	DAO	280	2	5	3
5131		BOUL	08 27 1410	S19 E75	09 2.3		A	HA	440	6	12	3
5131	24738	MWIL	08 27 1515	S19 E75	09 2.3	4	(AP)					
5131		HOLL	08 27 1539	S19 E76	09 2.4		B	DAO	400	11	11	3
5131		RAMY	08 27 1740	S18 E75	09 2.4		B	EAI	440	10	13	3
5131		PALE	08 27 1900	S17 E76	09 2.6		B	EAI	390	16	13	3
5131		LEAR	08 28 0025	S20 E72	09 2.5		B	EKI	390	10	13	3
5131		CULG	08 28 0340	S16 E70	09 2.5		B	EAO	460	8	10	2
5131		SVTO	08 28 0544	S19 E72	09 2.7		B	EAI	570	14	11	3
5131		RAMY	08 28 1350	S19 E65	09 2.5		B	EHC	790	30	15	4
5131		BOUL	08 28 1411	S19 E62	09 2.3		B	EAI	440	19	13	2
5131	24738	MWIL	08 28 1445	S19 E66	09 2.6	5	(B)					
5131		PALE	08 28 2030	S18 E65	09 2.8		B	EKI	540	15	14	3
5131		LEAR	08 29 0244	S19 E59	09 2.6		BG	EKC	780	29	12	2
5131		CULG	08 29 0350	S18 E57	09 2.5		B	EAI	720	17	12	2
5131		SVTO	08 29 1012	S18 E57	09 2.8		B	EKI	920	34	13	3
5131		BOUL	08 29 1343	S19 E50	09 2.4		B	EKI	720	24	13	2
5131		RAMY	08 29 1345	S19 E53	09 2.6		B	EKI	1090	38	14	4
5131	24738	MWIL	08 29 1530	S19 E52	09 2.6	5	(D)					
5131		PALE	08 29 1945	S19 E52	09 2.8		BG	EKI	1180	34	14	3
5131		LEAR	08 30 0013	S18 E47	09 2.6		BG	EKC	1190	46	13	3
5131		CULG	08 30 0310	S19 E45	09 2.6		B	EKC	1470	18	13	3
5131		SVTO	08 30 0745	S20 E43	09 2.6		BGD	EKC	1490	34	14	2
5131		BOUL	08 30 1337	S20 E38	09 2.5		B	EKI	780	33	13	2
5131		RAMY	08 30 1530	S18 E38	09 2.5		B	EKC	1260	43	13	4
5131	24738	MWIL	08 30 1550	S19 E38	09 2.5	5	(BG)					
5131		PALE	08 30 1915	S19 E37	09 2.6		B	EKI	1050	33	14	3
5131		HOLL	08 30 2200	S19 E35	09 2.6		B	EKI	1000	53	14	3
5131		LEAR	08 31 0030	S21 E31	09 2.4		BGD	EKI	1570	36	13	3
5131		CULG	08 31 0440	S19 E31	09 2.6			EKC	900	25	14	2
5131		RAMY	08 31 1406	S19 E28	09 2.7		B	EKC	1600	36	14	3
5131	24738	MWIL	08 31 1515	S19 E25	09 2.5	6	(BG)					
5131		HOLL	08 31 1530	S20 E26	09 2.6		B	EKI	1240	67	14	3
5131		BOUL	08 31 1545	S18 E27	09 2.7		B	EKC	1790	45	14	3
5131		PALE	08 31 1735	S20 E26	09 2.7		B	EKI	1140	30	13	3
5131		LEAR	09 01 0020	S20 E19	09 2.5		BGD	EKI	1280	40	13	4
5131		SVTO	09 01 0800	S20 E18	09 2.7		B	EKI	1300	39	15	2
5131		RAMY	09 01 1524	S20 E14	09 2.7		B	EKC	1440	42	14	4
5131	24738	MWIL	09 01 1530	S19 E12	09 2.6	6	(BG)					
5131		BOUL	09 01 1615	S20 E13	09 2.7		B	EKC	1310	41	14	3
5131		HOLL	09 01 1645	S20 E13	09 2.7		BGD	EKI	1220	60	15	4
5131		PALE	09 01 1915	S21 E14	09 2.9		B	EKI	1280	40	14	2

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5131		LEAR	09	02	0015	S20	E07	09	2.5		BG	EKI	910	54	14	4
5131		CULG	09	02	0250	S19	E06	09	2.6			EKI	900	19	13	2
5131		SVTO	09	02	0627	S20	E06	09	2.7		B	EKI	1380	44	13	2
5131		RAMY	09	02	1415	S20	E01	09	2.7			EKI	1500	42	14	4
5131	24738	MWIL	09	02	1515	S20	W01	09	2.5	5	(D)					
5131		BOUL	09	02	1520	S19	W01	09	2.6		B	EKI	830	53	14	2
5131		PALE	09	02	1745	S20	W02	09	2.6		B	EKI	1220	54	14	3
5131		HOLL	09	02	2245	S19	W04	09	2.6		BGD	EKI	1030	54	14	2
5131		LEAR	09	03	0035	S20	W06	09	2.6		BG	EKI	920	68	14	4
5131		CULG	09	03	0205	S20	W06	09	2.6			EKI	600	36	14	3
5131		SVTO	09	03	0615	S20	W08	09	2.6		BG	EKI	1070	32	15	4
5131		RAMY	09	03	1345	S20	W12	09	2.6		B	EKC	1170	59	15	4
5131		BOUL	09	03	1435	S22	W13	09	2.6		B	EKC	950	32	14	3
5131	24738	MWIL	09	03	1530	S20	W15	09	2.5	6	(D)					
5131		HOLL	09	03	1657	S23	W14	09	2.6		B	FHI	1130	32	17	2
5131		PALE	09	03	1730	S20	W13	09	2.7		B	EKC	600	37	14	3
5131		LEAR	09	04	0008	S19	W18	09	2.6		BG	FKC	970	72	17	4
5131		CULG	09	04	0410	S21	W19	09	2.7		B	EKI	570	25	13	3
5131		SVTO	09	04	0620	S20	W21	09	2.6		B	EKI	970	55	15	3
5131		RAMY	09	04	1352	S20	W25	09	2.7		BG	EKI	1080	56	15	3
5131		BOUL	09	04	1400	S19	W24	09	2.7		B	EKC	700	64	14	3
5131	24738	MWIL	09	04	1515	S20	W27	09	2.6	6	(D)					
5131		HOLL	09	04	1553	S21	W25	09	2.7		B	FKI	1270	30	16	2
5131		PALE	09	04	1736	S21	W27	09	2.7		B	EKI	770	39	15	3
5131		LEAR	09	05	0115	S19	W32	09	2.6		B	EKI	780	40	13	4
5131		SVTO	09	05	0619	S21	W35	09	2.6		B	EKI	810	22	15	2
5131		BOUL	09	05	1348	S19	W36	09	2.8		B	EKI	640	34	14	2
5131		RAMY	09	05	1400	S19	W39	09	2.6		B	EKI	810	50	15	3
5131	24738	MWIL	09	05	1530	S20	W40	09	2.6	6	(BG)					
5131		HOLL	09	05	1630	S22	W42	09	2.4		B	EKI	1020	31	14	3
5131		PALE	09	05	1740	S22	W38	09	2.8		B	EKI	680	26	14	2
5131		LEAR	09	06	0011	S20	W45	09	2.6		G	EAO	510	19	15	3
5131		SVTO	09	06	0755	S21	W51	09	2.4		B	FKI	650	21	16	2
5131		RAMY	09	06	1405	S23	W52	09	2.6		B	EKO	570	26	15	4
5131		BOUL	09	06	1407	S19	W50	09	2.8		B	EAI	260	17	14	2
5131		HOLL	09	06	1435	S23	W53	09	2.5		B	EKO	600	37	15	3
5131	24738	MWIL	09	06	1555	S20	W54	09	2.5	6	(D)					
5131		PALE	09	06	1745	S22	W51	09	2.8		B	EKO	540	19	14	3
5131		LEAR	09	07	0017	S20	W56	09	2.7		BG	EAO	500	27	15	3
5131		CULG	09	07	0415	S20	W57	09	2.8		B	EKI	300	10	13	1
5131		SVTO	09	07	0735	S21	W61	09	2.6		B	EKI	460	13	15	2
5131		BOUL	09	07	1420	S19	W63	09	2.8		B	EAI	400	9	14	2
5131		RAMY	09	07	1440	S21	W65	09	2.6		B	EKI	550	17	15	4
5131	24738	MWIL	09	07	1500	S20	W68	09	2.4	5	(BG)					
5131		HOLL	09	07	1530	S21	W65	09	2.7		B	EAO	420	19	15	3
5131		PALE	09	07	1746	S22	W69	09	2.4		B	FAO	440	13	18	3
5131		LEAR	09	08	0030	S23	W72	09	2.5		B	EAO	660	19	15	3
5131		CULG	09	08	0400	S21	W67	09	3.0		B	EKO	220	5	15	2
5131		SVTO	09	08	0756	S23	W68	09	3.1		A	HA	200	3	9	2
5131		BOUL	09	08	1416	S23	W76	09	2.7		A	HA	120	3	4	2
5131	24738	MWIL	09	08	1430	S20	W77	09	2.7	5	(BG)					
5131		HOLL	09	08	1520	S23	W80	09	2.5		B	CAO	120	4	10	3
5131		PALE	09	08	1752	S23	W76	09	2.9		B	CAO	150	5	8	3
5131		LEAR	09	09	0112	S22	W77	09	3.1		A	HA	120	1	4	2
5131		CULG	09	09	0315	S21	W75	09	3.4		A	HS	250	1	3	2
5131		SVTO	09	09	0740	S20	W79	09	3.3		A	HS	110	1	2	2
5136		SVTO	09	04	0620	N16	W16	09	3.0		A	AX		1		3
5136		RAMY	09	04	1352	N17	W22	09	2.9		B	BXO	10	6	3	3
5136		BOUL	09	04	1400	N16	W21	09	3.0		B	BXO		6	3	3
5136	24756	MWIL	09	04	1515	N16	W22	09	3.0	5	(B)					
5136		HOLL	09	04	1553	N15	W22	09	3.0		B	BXO	30	4	4	2
5136		PALE	09	04	1736	N15	W24	09	2.9		B	BXO	20	4	4	3
5136		LEAR	09	05	0115	N18	W27	09	3.0		B	CSO	40	3	4	4
5136		SVTO	09	05	0619	N16	W33	09	2.8		B	CSO	20	2	5	2
5136		BOUL	09	05	1348	N17	W34	09	3.0		B	BXO	10	4	4	2
5136		RAMY	09	05	1400	N17	W35	09	2.9		B	CRO	10	3	6	3
5136	24756	MWIL	09	05	1530	N16	W36	09	2.9	5	(B)					
5136		HOLL	09	05	1630	N16	W41	09	2.6		A	AXO	10	2	1	3

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5136		PALE	09 05 1740	N16 W40	09 2.7		B	BXO	10	3	3	2
5136	24756	MWIL	09 06 1555	N17 W50	09 2.9	3	(AP)					
5136		PALE	09 06 1745	N15 W53	09 2.7		A	AX	10	1	1	3
5136		LEAR	09 07 0017	N17 W56	09 2.7		B	DSO	50	3	4	3
5136		CULG	09 07 0415	N16 W56	09 2.9		B	DRO	20	2	6	1
5136		SVTO	09 07 0735	N15 W59	09 2.8		B	DRO	50	2	3	2
5136		BOUL	09 07 1420	N16 W63	09 2.8		B	DSO	40	2	4	2
5136		RAMY	09 07 1440	N17 W65	09 2.7		B	CAO	40	4	7	4
5136	24756	MWIL	09 07 1500	N17 W64	09 2.8	5	(B)					
5136		HOLL	09 07 1530	N15 W64	09 2.8		B	DAO	60	4	5	3
5136		PALE	09 07 1746	N16 W66	09 2.7		B	CSO	90	3	6	3
5136		LEAR	09 08 0030	N15 W68	09 2.9		B	DSO	70	7	5	3
5136		CULG	09 08 0400	N15 W67	09 3.1		B	DSO	20	2	5	2
5136		SVTO	09 08 0756	N16 W75	09 2.6		B	CRO	60	2	10	2
5136		BOUL	09 08 1416	N16 W76	09 2.8		A	AX	10	1		2
5136	24756	MWIL	09 08 1430	N17 W76	09 2.8	4	(BF)					
5136		HOLL	09 08 1520	N17 W75	09 2.9		B	BXO	60	4	8	3
5136		PALE	09 08 1752	N14 W78	09 2.8		B	BXO	30	3	2	3
5135		SVTO	09 03 0615	N20 E17	09 4.6		A	AX		1		4
5135		RAMY	09 03 1345	N19 E13	09 4.6		B	BXO	10	4	3	4
5135		BOUL	09 03 1435	N18 E12	09 4.5		B	BXO	10	4	3	3
5135	24754	MWIL	09 03 1530	N19 E11	09 4.5	3	(BP)					
5135		HOLL	09 03 1657	N18 E09	09 4.4		B	BXO	10	7	3	2
5135		PALE	09 03 1730	N19 E11	09 4.6		B	BXO	10	3	3	3
5135		LEAR	09 04 0008	N19 E06	09 4.5		B	BXO	10	9	3	4
5135		CULG	09 04 0410	N18 E02	09 4.3		B	BXO	10	5	3	3
5135		SVTO	09 04 0620	N19 E03	09 4.5		B	DRO	30	8	4	3
5135		RAMY	09 04 1352	N19 W02	09 4.4		B	CRO	20	8	5	3
5135		BOUL	09 04 1400	N19 W03	09 4.3		B	BXO		10	5	3
5135	24754	MWIL	09 04 1515	N19 W03	09 4.4	5	(B)					
5135		HOLL	09 04 1553	N18 W04	09 4.3		B	BXO	30	5	5	2
5135		PALE	09 04 1736	N18 W06	09 4.3		B	BXO	10	6	5	3
5135		LEAR	09 05 0115	N19 W09	09 4.4		B	DSO	60	8	6	4
5135		SVTO	09 05 0619	N18 W12	09 4.3		B	DSO	40	7	6	2
5135		BOUL	09 05 1348	N19 W15	09 4.4		B	BXO	20	7	5	2
5135		RAMY	09 05 1400	N18 W16	09 4.4		B	DRO	30	9	7	3
5135	24754	MWIL	09 05 1530	N19 W16	09 4.4	5	(B)					
5135		HOLL	09 05 1630	N18 W18	09 4.3		B	CRO	50	4	6	3
5135		PALE	09 05 1740	N18 W18	09 4.4		B	BXO	20	4	6	2
5135		LEAR	09 06 0011	N18 W21	09 4.4		B	CSO	40	3	6	3
5135		SVTO	09 06 0755	N18 W25	09 4.4		B	DSO	30	7	7	2
5135		RAMY	09 06 1405	N19 W29	09 4.4		B	DRO	20	3	6	4
5135		BOUL	09 06 1407	N18 W27	09 4.5		B	BXO	10	5	6	2
5135		HOLL	09 06 1435	N18 W29	09 4.4		B	BXO	20	4	6	3
5135	24754	MWIL	09 06 1555	N18 W29	09 4.4	5	(B)					
5135		PALE	09 06 1745	N18 W31	09 4.4		B	DRO	40	3	5	3
5135		LEAR	09 07 0017	N18 W35	09 4.3		B	CSO	30	5	6	3
5135		CULG	09 07 0415	N18 W36	09 4.4		B	DRO	20	3	6	1
5135		SVTO	09 07 0735	N18 W38	09 4.4		B	DRO	30	2	5	2
5135		BOUL	09 07 1420	N19 W41	09 4.5		B	BXO		2	6	2
5135		RAMY	09 07 1440	N19 W43	09 4.3		B	BXO	20	2	7	4
5135	24754	MWIL	09 07 1500	N18 W43	09 4.3	5	(B)					
5135		HOLL	09 07 1530	N19 W43	09 4.4		B	BXO	10	2	6	3
5135		PALE	09 07 1746	N18 W47	09 4.2		A	AX	10	1	1	3
5135		LEAR	09 08 0030	N16 W50	09 4.2		A	HS	10	1	1	3
5135		CULG	09 08 0400	N16 W51	09 4.3		A	HR	10	1		2
5135		SVTO	09 08 0756	N18 W56	09 4.1		A	AX	10	1		2
5135	24754	MWIL	09 08 1430	N18 W58	09 4.2	4	(AP)					
5132		SVTO	08 29 1012	N36 E83	09 5.1		A	AX	20	1	1	3
5132		RAMY	08 29 1345	N34 E76	09 4.6		A	AX	10	1	1	4
5132		PALE	08 29 1945	N35 E74	09 4.7		A	AX	10	1	1	3
5132		LEAR	08 30 0013	N34 E70	09 4.6		A	AX	10	1	1	3
5132		SVTO	08 30 0745	N35 E68	09 4.8		B	BXO	10	2	2	2
5132		RAMY	08 30 1530	N34 E61	09 4.5		B	BXO	10	2	3	4
5132	24745	MWIL	08 30 1550	N34 E63	09 4.7	3	(AP)					
5132		PALE	08 30 1915	N36 E60	09 4.6		A	AX		1	1	3
5132		HOLL	08 30 2200	N36 E59	09 4.6		B	BXO	10	3	4	3

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5132		LEAR	08 31 0030	N36 E60	09 4.8		B	BXO	10	3	3	3
5132		RAMY	08 31 1406	N36 E52	09 4.8		B	BXO	20	2	3	3
5132	24745	MWIL	08 31 1515	N36 E52	09 4.8	4	(B)					
5132		HOLL	08 31 1530	N36 E51	09 4.7		B	BXO	10	3	3	3
5132		BOUL	08 31 1545	N39 E49	09 4.6		A	AX	10	1	1	3
5140		RAMY	09 06 1405	S27 W16	09 5.3		A	AX	10	2	1	4
5140		BOUL	09 06 1407	S26 W16	09 5.3		A	AX		2	1	2
5140		HOLL	09 06 1435	S27 W16	09 5.4		A	AX	10	2	1	3
5140	24760	MWIL	09 06 1555	S27 W16	09 5.4	4	(B)					
5140		PALE	09 06 1745	S27 W17	09 5.4		A	AX	10	2	1	3
5140		LEAR	09 07 0017	S26 W22	09 5.3		A	AX	10	1	1	3
5140		CULG	09 07 0415	S27 W23	09 5.4		A	AX		1		1
5140		SVTO	09 07 0735	S26 W25	09 5.4		A	AX		1		2
5140		RAMY	09 07 1440	S26 W29	09 5.3		A	AX		1	1	4
5140	24760	MWIL	09 07 1500	S26 W29	09 5.4	4	(B)					
5140		HOLL	09 07 1530	S27 W29	09 5.4		A	AX		1		3
5140		SVTO	09 08 0756	S24 W36	09 5.5		A	AX	10	1		2
5140		HOLL	09 09 1455	S26 W47	09 6.0		A	AX	10	1	1	3
5140		PALE	09 09 1830	S27 W49	09 5.9		A	AX	10	1	1	3
5140		HOLL	09 10 1525	S28 W67	09 5.4		A	AX	10	1	1	3
5146		SVTO	09 10 0817	N29 W58	09 5.8		B	BXO		2	2	2
5146		RAMY	09 10 1515	N32 W62	09 5.7		A	AX		1		2
5146		LEAR	09 11 0010	N30 W68	09 5.6		B	BXO	20	2	3	3
5146		LEAR	09 12 0622	N31 W78	09 6.1		A	AX	10	1	1	4
5141		RAMY	09 06 1405	N19 W07	09 6.0		A	AX		2	1	4
5141		HOLL	09 06 1435	N18 W08	09 6.0		A	AX		2	1	3
5141	24761	MWIL	09 06 1555	N18 W07	09 6.1	4	(AP)					
5141		PALE	09 06 1745	N19 W09	09 6.0		A	AX		3	2	3
5141		LEAR	09 07 0017	N18 W12	09 6.1		B	CSO	30	7	4	3
5141		CULG	09 07 0415	N19 W14	09 6.1		B	CAO	40	5	3	1
5141		SVTO	09 07 0735	N18 W17	09 6.0		B	CAO	30	4	3	2
5141		BOUL	09 07 1420	N19 W20	09 6.1		B	BXO		6	3	2
5141		RAMY	09 07 1440	N19 W20	09 6.1		B	CRO	20	5	4	4
5141	24761	MWIL	09 07 1500	N18 W21	09 6.0	5	(B)					
5141		HOLL	09 07 1530	N19 W21	09 6.0		B	BXO	20	7	4	3
5141		PALE	09 07 1746	N19 W23	09 6.0		B	BXO	20	6	5	3
5141		LEAR	09 08 0030	N17 W26	09 6.0		B	CSO	30	6	5	3
5141		CULG	09 08 0400	N18 W27	09 6.1		B	CRO	10	2	5	2
5141		SVTO	09 08 0756	N19 W30	09 6.0		B	CSO	20	2	5	2
5141		BOUL	09 08 1416	N20 W32	09 6.1		B	BXO	20	2	5	2
5141	24761	MWIL	09 08 1430	N20 W34	09 6.0	5	(B)					
5141		HOLL	09 08 1520	N20 W34	09 6.0		B	CSO	50	2	5	3
5141		PALE	09 08 1752	N19 W36	09 6.0		B	CSO	30	2	7	3
5141		LEAR	09 09 0112	N20 W42	09 5.8		A	HS	10	1	1	2
5141		CULG	09 09 0315	N19 W42	09 5.9		A	HS	10	1	1	2
5141		SVTO	09 09 0740	N20 W47	09 5.7		A	HR	10	1	1	2
5141		BOUL	09 09 1414	N20 W48	09 5.9		A	AX		2	1	3
5141		HOLL	09 09 1455	N20 W51	09 5.7		A	AX	10	1	1	3
5141		PALE	09 09 1830	N18 W54	09 5.6		A	HS	10	1	1	3
5141	24761	MWIL	09 09 1945	N20 W54	09 5.7	5	(AP)					
5141		LEAR	09 10 0030	N20 W56	09 5.7		A	HS	10	1	1	3
5141		CULG	09 10 0235	N19 W56	09 5.8		A	AX	10	1	2	2
5141		SVTO	09 10 0817	N18 W61	09 5.7		A	HR	20	1	1	2
5141		RAMY	09 10 1515	N19 W61	09 6.0		B	BXO	10	3	6	2
5141	24761	MWIL	09 10 1515	N20 W61	09 6.0	5	(B)					
5141		HOLL	09 10 1525	N18 W61	09 6.0		B	CAO	40	3	7	3
5141		BOUL	09 10 1718	N17 W66	09 5.7		A	AX		1		2
5141		PALE	09 10 1750	N18 W67	09 5.6		B	BXO	30	2	6	3
5141		LEAR	09 11 0010	N19 W68	09 5.8		B	CRO	50	2	6	3
5141		SVTO	09 11 0606	N18 W68	09 6.1		B	BXO	10	3	5	3
5141A	24753	MWIL	09 01 1530	N19 E64	09 6.5	3	(AP)					
5141A		BOUL	09 01 1615	N23 E56	09 6.0		A	AX	10	1		3
5141A		LEAR	09 02 0015	N22 E57	09 6.4		B	BXO	10	3	8	4
5141B		BOUL	09 09 1414	S26 W46	09 6.0		A	AX		1		3

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5141B	24767	MWIL	09 09 1945	S27 W51	09 5.8	4	(B)					
5141B	24767	MWIL	09 10 1515	S26 W66	09 5.5	4	(B)					
5141C		RAMY	08 31 1406	N25 E78	09 6.6		A	AX	10	2	2	3
5141C		HOLL	08 31 1530	N23 E78	09 6.6		A	AX	10	1	1	3
5141C		BOUL	08 31 1545	N26 E72	09 6.2		A	AX	10	1	1	3
5141C		PALE	08 31 1735	N25 E75	09 6.5		B	BXO	10	2	3	3
5141D		HOLL	08 30 2200	N29 E86	09 6.6		A	HR	20	1	1	3
5141D		HOLL	08 31 1530	N28 E76	09 6.6		A	AX	30	2	1	3
5141D		BOUL	08 31 1545	N32 E72	09 6.3		A	AX	10	1	1	3
5133	24748	MWIL	08 31 1515	N23 E78	09 6.6	4	AP					
5133	24748	MWIL	08 31 1515	N27 E78	09 6.7	4	AP					
5133		LEAR	09 01 0020	N26 E72	09 6.6		B	BXO	10	3	4	4
5133		SVTO	09 01 0800	N25 E67	09 6.5		A	AX	10	2	1	2
5133		RAMY	09 01 1524	N25 E63	09 6.5		B	BXO	20	3	2	4
5133	24748	MWIL	09 01 1530	N23 E64	09 6.6	4	(AP)					
5133	24748	MWIL	09 01 1530	N27 E64	09 6.6	4	(AP)					
5133		BOUL	09 01 1615	N27 E64	09 6.7		A	AX	10	1		3
5133		HOLL	09 01 1645	N25 E62	09 6.5		B	BXO	20	3	4	4
5133		PALE	09 01 1915	N28 E53	09 5.9		B	BXO	20	2	3	2
5133		CULG	09 02 0250	N26 E57	09 6.5		A	AX	10	1	1	2
5133		SVTO	09 02 0627	N25 E55	09 6.5		A	AX	10	2	1	2
5133	24748	MWIL	09 02 1515	N23 E51	09 6.6	3	(AP)					
5133	24748	MWIL	09 02 1515	N27 E51	09 6.6	5	(AP)					
5133		BOUL	09 02 1520	N27 E49	09 6.4		A	AX		1		2
5133		PALE	09 02 1745	N27 E49	09 6.5		B	BXO	10	2	2	3
5133		HOLL	09 02 2245	N26 E45	09 6.4		B	BXO	10	2	5	2
5133		LEAR	09 03 0035	N25 E46	09 6.6		B	BXO	10	2	4	4
5133		CULG	09 03 0205	N28 E45	09 6.6		B	BXO	10	2	1	3
5133		SVTO	09 03 0615	N25 E40	09 6.3		B	BXO	10	2	1	4
5133		RAMY	09 03 1345	N26 E38	09 6.5		A	AX	10	2	4	4
5133		BOUL	09 03 1435	N25 E36	09 6.4		B	BXO	10	2	1	3
5133	24748	MWIL	09 03 1530	N24 E37	09 6.5	3	(AP)					
5133	24748	MWIL	09 03 1530	N27 E37	09 6.5	4	(AP)					
5133		HOLL	09 03 1657	N24 E37	09 6.6		B	BXO	20	2	5	2
5133		PALE	09 03 1730	N28 E38	09 6.7		A	AX		1		3
5133		RAMY	09 04 1352	N24 E26	09 6.6		A	AX		1		3
5133		SVTO	09 05 0619	N29 E19	09 6.7		A	AX	10	3	2	2
5133		RAMY	09 05 1400	N29 E15	09 6.7		A	AX		2	2	3
5133		RAMY	09 06 1405	N27 E03	09 6.8		B	BXO	10	3	3	4
5133		HOLL	09 06 1435	N28 E04	09 6.9		B	BXO	10	2	6	3
5133	24748	MWIL	09 07 1500	N25 W12	09 6.7	4	(AP)					
5133A	24763	MWIL	09 07 1500	N29 W02	09 7.5	3	(AF)					
5133B	24764	MWIL	09 07 1500	N30 E07	09 8.2	3	(AP)					
5147	24772	MWIL	09 10 1515	S25 W28	09 8.5	3	(AF)					
5147		HOLL	09 10 1525	S26 W28	09 8.5		A	AX	10	2	1	3
5147		PALE	09 10 1750	S26 W30	09 8.4		A	AX	10	3	3	3
5147		LEAR	09 11 0010	S24 W33	09 8.4		B	BXO	10	2	3	3
5147		SVTO	09 11 0606	S24 W37	09 8.4		B	BXO	10	3	4	3
5147		BOUL	09 11 1430	S24 W42	09 8.3		B	BXO		2	5	3
5147	24772	MWIL	09 11 1445	S24 W44	09 8.2	5	(B)					
5147		HOLL	09 11 1615	S26 W43	09 8.3		B	CRO	30	2	6	3
5147		PALE	09 11 1905	S27 W43	09 8.4		B	CRO	20	2	5	3
5147		LEAR	09 12 0622	S22 W50	09 8.4		B	CSO	10	2	6	4
5147		SVTO	09 12 0704	S25 W55	09 8.0		B	BXO	10	2	8	3
5147		RAMY	09 12 1414	S24 W53	09 8.5		B	BXO	20	2	7	3
5147	24772	MWIL	09 12 1500	S24 W56	09 8.3	4	(B)					
5147		HOLL	09 12 1615	S26 W54	09 8.5		A	AX		1		3
5147		PALE	09 12 1815	S28 W54	09 8.5		A	AX		1	1	3
5138		LEAR	09 04 0008	N12 E69	09 9.2		A	AX	10	1	1	4
5138		SVTO	09 04 0620	N13 E66	09 9.2		A	AX		1		3
5138		RAMY	09 04 1352	N13 E63	09 9.3		A	AX		1		3
5138		BOUL	09 04 1400	N14 E61	09 9.2		A	AX		1		3

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5138	24757	MWIL	09	04	1515	N14	E62	09	9.3	4	(AP)					
5138		HOLL	09	04	1553	N15	E61	09	9.3		A	AX	20	1	1	2
5138		LEAR	09	05	0115	N13	E55	09	9.2		A	AX	10	1	1	4
5138		RAMY	09	06	1405	N13	E35	09	9.2		A	AX		1		4
5138		HOLL	09	06	1435	N13	E35	09	9.2		A	AX		1		3
5138		PALE	09	06	1745	N12	E36	09	9.4		A	AX		1		3
5138	24757	MWIL	09	10	1515	N12	W18	09	9.3	4	(AP)					
5138		RAMY	09	10	1515	N14	W13	09	9.6		B	BXO	10	3	8	2
5138		PALE	09	10	1750	N17	W19	09	9.3		A	AX	10	2	2	3
5138		RAMY	09	12	1414	N17	W37	09	9.8		A	AX	10	3	2	3
5138	24757	MWIL	09	12	1500	N16	W37	09	9.8	4	(BP)					
5138		HOLL	09	12	1615	N17	W37	09	9.9		B	BXO	10	4	3	3
5138		PALE	09	12	1815	N16	W39	09	9.8		B	BXO	10	4	4	3
5138		LEAR	09	13	0011	N17	W43	09	9.7		B	BXO	10	3	5	2
5138		CULG	09	13	0145	N17	W43	09	9.8		B	BXO	10	3	5	2
5138		SVTO	09	13	0738	N15	W48	09	9.7		B	DRO	10	4	4	2
5138		RAMY	09	13	1335	N15	W50	09	9.8		B	DRO	30	5	4	3
5138	24757	MWIL	09	13	1515	N16	W52	09	9.7	5	(B)					
5138		HOLL	09	13	1535	N16	W53	09	9.6		B	BXO	20	6	6	3
5138		PALE	09	13	1745	N17	W54	09	9.6		B	BXO	20	4	5	3
5138		LEAR	09	14	0011	N17	W58	09	9.6		B	CRO	70	7	8	4
5138		CULG	09	14	0455	N17	W58	09	9.8		B	DRO	20	2	5	3
5138		SVTO	09	14	1035	N16	W63	09	9.7		B	DSO	80	9	7	2
5138		RAMY	09	14	1324	N17	W65	09	9.6		B	DAO	100	5	7	2
5138	24757	MWIL	09	14	1515	N16	W65	09	9.7	4	(B)					
5138		HOLL	09	14	1615	N16	W66	09	9.7		B	CSO	90	5	8	3
5138		PALE	09	14	1740	N16	W68	09	9.6		B	DAO	100	7	8	3
5138		LEAR	09	15	0050	N17	W70	09	9.7		B	CSO	80	7	7	3
5138		SVTO	09	15	0710	N16	W74	09	9.7		B	DAO	90	4	10	2
5138		RAMY	09	15	1332	N16	W77	09	9.7		B	DAO	180	6	8	4
5138		BOUL	09	15	1410	N17	W78	09	9.7		A	HK	300	1	3	2
5138		HOLL	09	15	1450	N15	W79	09	9.6		B	CAO	100	3	9	3
5138	24757	MWIL	09	15	1515	N16	W76	09	9.9	5	(B)					
5138		LEAR	09	16	0005	N16	W79	09	10.0		B	CAO	90	2	6	3
5138		SVTO	09	16	0620	N15	W86	09	9.7		A	HS	30	1	2	4
5134		SVTO	09	03	0615	N33	E84	09	9.9		A	AX	10	1	1	4
5134		RAMY	09	03	1345	N33	E83	09	10.2		A	HS	50	1	2	4
5134		BOUL	09	03	1435	N32	E79	09	9.9		A	AX		1		3
5134	24755	MWIL	09	03	1530	N33	E81	09	10.1	3	AP					
5134		HOLL	09	03	1657	N32	E80	09	10.0		A	AX	30	1	1	2
5134		PALE	09	03	1730	N33	E80	09	10.1		A	AX		1		3
5134		LEAR	09	04	0008	N33	E79	09	10.3		B	CRO	90	2	8	4
5134		CULG	09	04	0410	N33	E77	09	10.3		A	HS	30	2	1	3
5134		SVTO	09	04	0620	N33	E75	09	10.2		B	CSO	30	2	9	3
5134		RAMY	09	04	1352	N33	E71	09	10.2		A	HS	30	1	2	3
5134		BOUL	09	04	1400	N34	E70	09	10.2		B	CAO	50	5	8	3
5134	24755	MWIL	09	04	1515	N33	E70	09	10.2	5	(AP)					
5134		HOLL	09	04	1553	N33	E68	09	10.1		A	HR	20	1	3	2
5134		PALE	09	04	1736	N34	E68	09	10.1		A	HR	20	1	2	3
5134		LEAR	09	05	0115	N33	E67	09	10.4		B	CSO	70	3	7	4
5134		SVTO	09	05	0619	N34	E64	09	10.4		B	CRO	50	3	6	2
5134		BOUL	09	05	1348	N33	E58	09	10.2		B	CAO	30	5	8	2
5134		RAMY	09	05	1400	N33	E59	09	10.3		B	CRO	40	5	7	3
5134	24755	MWIL	09	05	1530	N33	E57	09	10.2	5	(AP)					
5134		HOLL	09	05	1630	N35	E58	09	10.3		B	CAO	60	4	3	3
5134		PALE	09	05	1740	N35	E60	09	10.5		B	CSO	20	3	8	2
5134		LEAR	09	06	0011	N32	E50	09	10.0		A	AX	60	2	1	3
5134		SVTO	09	06	0755	N33	E48	09	10.1		A	HS	30	1	1	2
5134		RAMY	09	06	1405	N33	E47	09	10.3		B	CRO	20	3	8	4
5134		BOUL	09	06	1407	N32	E42	09	9.9		A	AX		2		2
5134		HOLL	09	06	1435	N34	E46	09	10.3		B	BXO	20	3	8	3
5134	24755	MWIL	09	06	1555	N33	E44	09	10.1	4	(AP)					
5134		PALE	09	06	1745	N33	E42	09	10.1		A	AX	10	2	1	3
5134		LEAR	09	07	0017	N31	E37	09	9.9		A	AX	10	1	1	3
5134		CULG	09	07	0415	N31	E36	09	10.0		A	AX		1		1
5134		SVTO	09	07	0735	N32	E33	09	9.9		A	AX		1		2
5134		BOUL	09	07	1420	N32	E30	09	10.0		A	AX		1		2
5134		RAMY	09	07	1440	N31	E31	09	10.0		A	AX		1	1	4

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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
5134	24755	MWIL	09 07 1500	N33 E31	09 10.1	4	(AP)					
5134		HOLL	09 07 1530	N32 E30	09 10.0		A	AX		1		3
5134		PALE	09 07 1746	N32 E30	09 10.1		A	AX		1		3
5134		LEAR	09 08 0030	N31 E24	09 9.9		A	AX	10	1	1	3
5134	24755	MWIL	09 08 1430	N32 E19	09 10.1	4	(AP)					
5134		PALE	09 08 1752	N32 E17	09 10.1		A	AX		1		3
5134	24755	MWIL	09 10 1515	N35 W07	09 10.1	4	(AP)					
5134		HOLL	09 10 1525	N33 W02	09 10.5		B	BXO	10	2	4	3
5134		RAMY	09 12 1414	N28 W32	09 10.1		A	AX		1		3
5139		HOLL	09 04 1553	N36 E74	09 10.6		B	BXO	60	2	5	2
5139		PALE	09 04 1736	N36 E73	09 10.6		B	BXO	30	2	5	3
5137		RAMY	09 04 1352	S20 E80	09 10.7		B	CSO	60	3	3	3
5137	24758	MWIL	09 04 1515	S22 E81	09 10.9	3	AP					
5137		HOLL	09 04 1553	S19 E80	09 10.8		A	HS	60	2	2	2
5137		LEAR	09 05 0115	S21 E74	09 10.7		B	CSO	180	2	4	4
5137		SVTO	09 05 0619	S19 E73	09 10.8		B	CSO	80	3	3	2
5137		BOUL	09 05 1348	S20 E68	09 10.8		A	HR	80	2	2	2
5137		RAMY	09 05 1400	S21 E67	09 10.7		B	DSO	80	2	3	3
5137	24758	MWIL	09 05 1530	S21 E68	09 10.8	5	(AP)					
5137		HOLL	09 05 1630	S19 E67	09 10.8		A	HA	200	2	2	3
5137		PALE	09 05 1740	S18 E68	09 10.9		A	HR	60	2	2	2
5137		LEAR	09 06 0011	S21 E63	09 10.8		B	DSO	100	2	2	3
5137		SVTO	09 06 0755	S20 E60	09 10.9		B	DSO	90	2	2	2
5137		RAMY	09 06 1405	S20 E55	09 10.8		A	HA	80	2	2	4
5137		BOUL	09 06 1407	S20 E56	09 10.9		A	HR	80	2	1	2
5137		HOLL	09 06 1435	S20 E56	09 10.9		A	HA	80	2	2	3
5137	24758	MWIL	09 06 1555	S21 E55	09 10.9	5	(AP)					
5137		PALE	09 06 1745	S19 E55	09 10.9		A	HA	80	2	2	3
5137		LEAR	09 07 0017	S22 E49	09 10.8		B	DSO	70	3	3	3
5137		CULG	09 07 0415	S20 E46	09 10.7		A	HA	70	2	2	1
5137		SVTO	09 07 0735	S19 E47	09 10.9		A	HA	50	2	2	2
5137		BOUL	09 07 1420	S20 E41	09 10.7		A	HA	60	2	2	2
5137		RAMY	09 07 1440	S21 E42	09 10.8		A	HA	90	2	3	4
5137	24758	MWIL	09 07 1500	S21 E43	09 10.9	5	(AP)					
5137		HOLL	09 07 1530	S20 E42	09 10.8		A	HA	110	4	3	3
5137		PALE	09 07 1746	S21 E42	09 11.0		A	HS	60	2	2	3
5137		LEAR	09 08 0030	S21 E36	09 10.8		B	DSO	80	5	5	3
5137		CULG	09 08 0400	S19 E36	09 10.9		A	HA	50	2	1	2
5137		SVTO	09 08 0756	S21 E33	09 10.9		A	HA	90	2	2	2
5137		BOUL	09 08 1416	S20 E29	09 10.8		A	HA	70	2	1	2
5137	24758	MWIL	09 08 1430	S21 E30	09 10.9	5	(AP)					
5137		HOLL	09 08 1520	S20 E29	09 10.8		A	HS	80	2	3	3
5137		PALE	09 08 1752	S21 E30	09 11.0		A	HS	80	2	2	3
5137		LEAR	09 09 0112	S20 E24	09 10.9		B	DSO	60	2	2	2
5137		CULG	09 09 0315	S19 E23	09 10.9		A	HA	70	2	2	2
5137		SVTO	09 09 0740	S21 E21	09 10.9		B	CRO	70	3	3	2
5137		BOUL	09 09 1414	S20 E17	09 10.9		B	CAO	70	4	5	3
5137		HOLL	09 09 1455	S20 E17	09 10.9		B	CSO	90	6	6	3
5137		PALE	09 09 1830	S20 E16	09 11.0		A	HS	60	2	2	3
5137	24758	MWIL	09 09 1945	S21 E14	09 10.9	4	(AP)					
5137		LEAR	09 10 0030	S20 E12	09 10.9		B	DAO	100	2	2	3
5137		CULG	09 10 0235	S20 E12	09 11.0		A	HS	20	2	2	2
5137		SVTO	09 10 0817	S20 E07	09 10.9		B	DRO	60	2	2	2
5137		RAMY	09 10 1515	S20 E04	09 10.9		A	HS	80	2	2	2
5137	24758	MWIL	09 10 1515	S21 E04	09 10.9	6	(AP)					
5137		HOLL	09 10 1525	S21 E05	09 11.0		A	HA	60	3	3	3
5137		BOUL	09 10 1718	S17 E02	09 10.9		A	HA	70	2	2	2
5137		PALE	09 10 1750	S21 E04	09 11.0		A	HS	60	3	3	3
5137		LEAR	09 11 0010	S20 E00	09 11.0		B	DSO	60	3	2	3
5137		SVTO	09 11 0606	S19 W04	09 10.9		B	DSO	70	2	2	3
5137		BOUL	09 11 1430	S19 W08	09 11.0		A	HA	40	2	1	3
5137	24758	MWIL	09 11 1445	S20 W08	09 11.0	5	(BF)					
5137		HOLL	09 11 1615	S20 W08	09 11.1		A	HA	60	2	3	3
5137		PALE	09 11 1905	S20 W09	09 11.1		A	HA	50	2	2	3
5137		CULG	09 12 0215	S20 W15	09 10.9		A	HS	20	2	1	3
5137		LEAR	09 12 0622	S19 W16	09 11.0		A	HS	30	2	1	4
5137		SVTO	09 12 0704	S21 W17	09 11.0		B	DSO	40	2	2	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5137		RAMY	09 12 1414	S20 W19	09 11.1		B	CAO	50	3	2	3
5137	24758	MWIL	09 12 1500	S20 W21	09 11.0	5	(AP)					
5137		HOLL	09 12 1615	S20 W22	09 11.0		A	HS	30	2	2	3
5137		PALE	09 12 1815	S21 W22	09 11.1		A	HS	30	2	2	3
5137		LEAR	09 13 0011	S19 W25	09 11.1		A	HS	50	3	2	2
5137		CULG	09 13 0145	S19 W27	09 11.0		A	HS	20	2	1	2
5137		SVTO	09 13 0738	S20 W30	09 11.0		B	DSO	40	2	2	2
5137		RAMY	09 13 1335	S20 W32	09 11.1		A	HS	40	3	2	3
5137	24758	MWIL	09 13 1515	S20 W34	09 11.0	5	(BP)					
5137		HOLL	09 13 1535	S20 W34	09 11.0		A	HS	30	2	1	3
5137		PALE	09 13 1745	S21 W36	09 11.0		A	HS	20	2	2	3
5137		LEAR	09 14 0011	S18 W40	09 11.0		A	HS	30	2	1	4
5137		CULG	09 14 0455	S18 W41	09 11.1		A	HS	20	2	1	3
5137		SVTO	09 14 1035	S20 W45	09 11.0		A	HS	20	2	1	2
5137		RAMY	09 14 1324	S19 W46	09 11.0		A	HS	20	2	2	2
5137	24758	MWIL	09 14 1515	S19 W47	09 11.0	5	(AP)					
5137		HOLL	09 14 1615	S20 W47	09 11.1		A	HS	30	3	2	3
5137		PALE	09 14 1740	S21 W49	09 11.0		A	HS	30	2	2	3
5137		LEAR	09 15 0050	S19 W52	09 11.1		A	HS	30	3	3	3
5137		SVTO	09 15 0710	S20 W56	09 11.0		A	AX	20	3	3	2
5137		RAMY	09 15 1332	S19 W58	09 11.1		A	HR	30	4	2	4
5137		BOUL	09 15 1410	S17 W63	09 10.8		B	BXO	20	3	3	2
5137		HOLL	09 15 1450	S20 W60	09 11.0		B	BXO	30	2	3	3
5137	24758	MWIL	09 15 1515	S19 W60	09 11.0	5	(BP)					
5137		LEAR	09 16 0005	S18 W63	09 11.2		B	BXO	20	3	6	3
5137		CULG	09 16 0325	S17 W67	09 11.0		A	AX	10	1	1	2
5137		SVTO	09 16 0620	S19 W68	09 11.1		A	AX	20	2	3	4
5137		RAMY	09 16 1400	S17 W76	09 10.8		A	AX	10	1	1	4
5137		BOUL	09 16 1410	S18 W69	09 11.3		B	BXO		2	3	3
5137		HOLL	09 16 1415	S18 W71	09 11.2		B	BXO	20	3	3	3
5137	24758	MWIL	09 16 1500	S18 W72	09 11.1	4	(AP)					
5137		PALE	09 16 1810	S20 W75	09 11.0		A	AX	10	2	2	2
5137A	24759	MWIL	09 05 1530	S16 E71	09 11.0	2	X					
5143		RAMY	09 07 1440	S18 E54	09 11.7		A	AX	20	2	2	4
5143	24765	MWIL	09 07 1500	S17 E54	09 11.7	3	(AF)					
5143		HOLL	09 07 1530	S17 E54	09 11.7		A	AX		1		3
5143		PALE	09 07 1746	S17 E54	09 11.8		A	AX		1		3
5143		LEAR	09 08 0030	S14 E46	09 11.5		B	BXO	10	5	5	3
5143		CULG	09 08 0400	S12 E41	09 11.2		A	AX		1		2
5143		SVTO	09 08 0756	S13 E40	09 11.3		B	BXO	10	3	4	2
5143		BOUL	09 08 1416	S14 E37	09 11.4		B	BXO	30	4	3	2
5143	24765	MWIL	09 08 1430	S14 E38	09 11.5	4	(B)					
5143		HOLL	09 08 1520	S13 E36	09 11.3		B	BXO	30	3	3	3
5143		PALE	09 08 1752	S15 E36	09 11.5		B	BXO	10	5	5	3
5143		LEAR	09 09 0112	S14 E30	09 11.3		B	CRO	40	6	7	2
5143		CULG	09 09 0315	S14 E28	09 11.2		B	BXO	20	5	7	2
5143		SVTO	09 09 0740	S14 E24	09 11.1		B	CRI	20	19	9	2
5143		BOUL	09 09 1414	S14 E21	09 11.2		B	BXI	10	14	8	3
5143		HOLL	09 09 1455	S13 E23	09 11.3		B	BXO	40	18	9	3
5143		PALE	09 09 1830	S13 E21	09 11.3		B	BXO	20	14	9	3
5143	24765	MWIL	09 09 1945	S14 E19	09 11.2	4	(B)					
5143		LEAR	09 10 0030	S14 E17	09 11.3		B	CRO	20	7	6	3
5143		CULG	09 10 0235	S13 E17	09 11.4		B	BXI	10	6	7	2
5143		SVTO	09 10 0817	S14 E11	09 11.2		B	BXI	20	7	9	2
5143		RAMY	09 10 1515	S13 E06	09 11.1		B	BXO	10	5	7	2
5143	24765	MWIL	09 10 1515	S14 E06	09 11.1	4	(BP)					
5143		HOLL	09 10 1525	S13 E07	09 11.2		B	BXO	30	7	6	3
5143		PALE	09 10 1750	S14 E06	09 11.2		B	BXO	10	8	7	3
5143		LEAR	09 11 0010	S13 E02	09 11.1		B	CRO	20	6	7	3
5143		SVTO	09 11 0606	S14 E01	09 11.3		B	BXO	10	4	3	3
5143		BOUL	09 11 1430	S14 W04	09 11.3		B	BXO		5	3	3
5143	24765	MWIL	09 11 1445	S15 W04	09 11.3	4	(BP)					
5143		HOLL	09 11 1615	S15 W04	09 11.4		B	CRO	20	2	4	3
5143		PALE	09 11 1905	S13 W07	09 11.3		A	AX	10	2	2	3
5145		BOUL	09 09 1414	N16 E25	09 11.5		B	BXO		4	2	3
5145		HOLL	09 09 1455	N17 E25	09 11.5		B	BXO	10	3	3	3

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5145		PALE	09 09 1830	N18 E23	09 11.5		B	BXO	10	5	3	3
5145	24768	MWIL	09 09 1945	N17 E23	09 11.6	4	(B)					
5145		LEAR	09 10 0030	N17 E20	09 11.5		B	CRO	10	4	3	3
5145		CULG	09 10 0235	N17 E18	09 11.5		B	DSI	30	4	3	2
5145		SVTO	09 10 0817	N16 E15	09 11.5		B	DAO	50	8	4	2
5145		RAMY	09 10 1515	N17 E12	09 11.5		B	BXO	20	8	4	2
5145	24768	MWIL	09 10 1515	N17 E12	09 11.5	4	(B)					
5145		HOLL	09 10 1525	N17 E12	09 11.5		B	BXO	30	5	4	3
5145		BOUL	09 10 1718	N17 E07	09 11.2		B	BXO		3	2	2
5145		PALE	09 10 1750	N18 E10	09 11.5		B	BXO	10	6	5	3
5145		LEAR	09 11 0010	N18 E06	09 11.5		B	BXO	20	6	5	3
5145		SVTO	09 11 0606	N18 E04	09 11.5		B	BXO	10	6	4	3
5145		BOUL	09 11 1430	N15 W02	09 11.4		A	AX		1		3
5145	24768	MWIL	09 11 1445	N16 W02	09 11.5	4	(BP)					
5145		HOLL	09 11 1615	N17 W04	09 11.4		B	BXO	10	3	3	3
5145		PALE	09 11 1905	N17 W05	09 11.4		B	BXO	10	2	3	3
5145		LEAR	09 12 0622	N17 W12	09 11.3		B	BXO	10	2	3	4
5145		RAMY	09 12 1414	N16 W16	09 11.4		A	AX	10	1	1	3
5145	24768	MWIL	09 12 1500	N16 W16	09 11.4	4	(AP)					
5145		HOLL	09 12 1615	N16 W17	09 11.4		A	AX	10	3	2	3
5145		PALE	09 12 1815	N15 W19	09 11.3		A	AX	10	1	1	3
5145		LEAR	09 13 0011	N16 W20	09 11.5		B	CRO	20	3	3	2
5145		CULG	09 13 0145	N17 W21	09 11.5		A	AX	10	1	1	2
5145		SVTO	09 13 0738	N16 W24	09 11.5		B	CRO	10	2	4	2
5145		RAMY	09 13 1335	N16 W29	09 11.4		B	BXO	10	3	2	3
5145	24768	MWIL	09 13 1515	N16 W30	09 11.4	5	(AP)					
5145		HOLL	09 13 1535	N16 W30	09 11.4		A	AX	10	3	1	3
5145		PALE	09 13 1745	N16 W32	09 11.3		A	AX	10	5	2	3
5145		LEAR	09 14 0011	N16 W35	09 11.3		A	AX	10	3	2	4
5145		CULG	09 14 0455	N17 W31	09 11.8		A	AX		1		3
5145		SVTO	09 14 1035	N16 W41	09 11.3		B	BXO		2	4	2
5145		RAMY	09 14 1324	N17 W43	09 11.3		B	BXO	10	3	2	2
5145	24768	MWIL	09 14 1515	N16 W42	09 11.4	4	(B)					
5145		HOLL	09 14 1615	N15 W43	09 11.4		A	AX	10	2	2	3
5145		PALE	09 14 1740	N16 W45	09 11.3		B	BXO	10	3	3	3
5145		LEAR	09 15 0050	N17 W46	09 11.5		A	AX	10	1	1	3
5149		LEAR	09 12 0622	S19 W01	09 12.2		B	CRO	10	3	4	4
5149		SVTO	09 12 0704	S22 W02	09 12.1		B	BXO	10	4	4	3
5149		RAMY	09 12 1414	S20 W04	09 12.3		B	BXO	20	4	5	3
5149	24776	MWIL	09 12 1500	S20 W06	09 12.2	4	(B)					
5149		HOLL	09 12 1615	S20 W06	09 12.2		B	BXO	10	5	5	3
5149		PALE	09 12 1815	S22 W08	09 12.1		B	BXO	10	2	3	3
5149		LEAR	09 13 0011	S19 W11	09 12.2		B	DRO	20	4	5	2
5149		CULG	09 13 0145	S21 W12	09 12.1		B	BXO	10	3	4	2
5149		SVTO	09 13 0738	S21 W15	09 12.2		B	DSO	30	5	7	2
5149		RAMY	09 13 1335	S20 W18	09 12.2		B	CRO	30	9	7	3
5149	24776	MWIL	09 13 1515	S20 W19	09 12.2	5	(B)					
5149		HOLL	09 13 1535	S20 W19	09 12.2		B	BXO	10	9	7	3
5149		PALE	09 13 1745	S20 W20	09 12.2		B	BXO	20	10	7	3
5149		LEAR	09 14 0011	S19 W25	09 12.1		B	BXO	20	7	9	4
5149		CULG	09 14 0455	S19 W27	09 12.1		B	BXO	10	5	8	3
5149		SVTO	09 14 1035	S20 W30	09 12.1		B	BXI	30	9	8	2
5149		RAMY	09 14 1324	S19 W32	09 12.1		B	BXO	20	7	8	2
5149	24776	MWIL	09 14 1515	S20 W34	09 12.0	4	(B)					
5149		HOLL	09 14 1615	S20 W33	09 12.1		B	BXO	20	6	9	3
5149		PALE	09 14 1740	S20 W34	09 12.1		B	BXO	20	8	8	3
5149		LEAR	09 15 0050	S19 W38	09 12.1		B	CRO	20	7	7	3
5149		SVTO	09 15 0710	S20 W42	09 12.1		B	CRO	20	4	7	2
5149		RAMY	09 15 1332	S20 W45	09 12.1		B	BXO	20	7	7	4
5149		BOUL	09 15 1410	S17 W45	09 12.2		B	BXO	20	3	2	2
5149		HOLL	09 15 1450	S20 W44	09 12.2		A	AX	10	3	2	3
5149	24776	MWIL	09 15 1515	S19 W47	09 12.0	5	(B)					
5149		LEAR	09 16 0005	S19 W49	09 12.3		B	BXO	20	2	3	3
5149		SVTO	09 16 0620	S20 W52	09 12.3		A	AX		2	2	4
5149		RAMY	09 16 1400	S18 W59	09 12.1		B	BXO	10	2	4	4
5149		BOUL	09 16 1410	S19 W56	09 12.3		B	BXO		2	3	3
5149		HOLL	09 16 1415	S19 W59	09 12.1		B	BXO	10	3	4	3
5149	24776	MWIL	09 16 1500	S19 W59	09 12.1	4	(B)					

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5149		PALE	09 16 1810	S22 W60	09 12.1		B	BXO	10	2	4	2
5149		LEAR	09 17 0017	S20 W60	09 12.4		B	CSO	30	2	1	3
5149		CULG	09 17 0425	S19 W65	09 12.2		B	BXO	20	2	5	1
5149		SVTO	09 17 0635	S19 W65	09 12.3		B	DRO	160	3	7	2
5149		BOUL	09 17 1350	S18 W70	09 12.2		B	BXO	10	2	6	2
5149		RAMY	09 17 1350	S19 W71	09 12.1		B	BXO	40	6	7	4
5149	24776	MWIL	09 17 1430	S19 W70	09 12.3	4	(B)					
5149		HOLL	09 17 1510	S19 W70	09 12.3		B	BXO	20	4	9	3
5149		PALE	09 17 1725	S21 W74	09 12.0		B	BXO	50	3	7	3
5149A		LEAR	09 14 0011	N24 W21	09 12.4		B	BXO	10	2	3	4
5160	24787	MWIL	09 18 1515	S28 W63	09 13.7	3	(AP)					
5160		LEAR	09 19 0015	S28 W65	09 13.9		B	BXO	20	3	4	3
5160		SVTO	09 19 0710	S28 W70	09 13.8		A	HR	30	1	1	2
5160		RAMY	09 19 1440	S29 W76	09 13.6		A	AX	10	1	1	3
5160		HOLL	09 19 1448	S29 W73	09 13.9		B	BXO	10	4	3	3
5160	24787	MWIL	09 19 1530	S28 W75	09 13.8	3	X					
5160		PALE	09 19 1925	S30 W75	09 13.9		A	AX		1	2	3
5142		RAMY	09 07 1440	N32 E83	09 14.2		A	HR	30	2	2	4
5142	24766	MWIL	09 07 1500	N33 E82	09 14.1	3	AP					
5142		HOLL	09 07 1530	N32 E85	09 14.4		B	BXO	30	7	9	3
5142		PALE	09 07 1746	N33 E84	09 14.4		A	AX	10	2	2	3
5142		LEAR	09 08 0030	N32 E75	09 13.9		A	AX	10	3	2	3
5142		CULG	09 08 0400	N32 E73	09 13.9		B	BXO	20	3	3	2
5142		SVTO	09 08 0756	N31 E70	09 13.8		A	HA	40	2	1	2
5142		BOUL	09 08 1416	N31 E68	09 13.9		A	AX	10	2	1	2
5142	24766	MWIL	09 08 1430	N30 E72	09 14.3	4	(B)					
5142		HOLL	09 08 1520	N32 E68	09 14.0		A	AX	20	2	2	3
5142		PALE	09 08 1752	N32 E68	09 14.1		A	AX	10	4	2	3
5142		LEAR	09 09 0112	N32 E62	09 13.9		B	CAO	80	4	2	2
5142		CULG	09 09 0315	N32 E61	09 14.0		A	HS	40	2	2	2
5142		SVTO	09 09 0740	N32 E64	09 14.4		B	CSO	60	7	12	2
5142		BOUL	09 09 1414	N31 E56	09 14.0		B	CAO	50	6	5	3
5142		HOLL	09 09 1455	N33 E60	09 14.4		B	CAO	100	9	7	3
5142		PALE	09 09 1830	N33 E59	09 14.4		B	CAO	70	7	10	3
5142	24766	MWIL	09 09 1945	N32 E53	09 14.0	4	(AP)					
5142		LEAR	09 10 0030	N32 E51	09 14.0		B	CAO	80	3	3	3
5142		CULG	09 10 0235	N32 E49	09 14.0		A	HS	30	1	2	2
5142		SVTO	09 10 0817	N32 E47	09 14.1		B	CSO	80	3	2	2
5142	24766	MWIL	09 10 1515	N31 E45	09 14.2	5	(BP)					
5142		RAMY	09 10 1515	N31 E47	09 14.3		B	CSO	100	5	9	2
5142		HOLL	09 10 1525	N32 E43	09 14.0		B	CAO	90	4	4	3
5142		BOUL	09 10 1718	N33 E43	09 14.1		B	CAO	60	2	2	2
5142		PALE	09 10 1750	N33 E42	09 14.1		B	CSO	120	4	4	3
5142		LEAR	09 11 0010	N31 E41	09 14.2		B	CSO	100	6	11	3
5142		SVTO	09 11 0606	N29 E40	09 14.4		B	CHO	70	3	12	3
5142		BOUL	09 11 1430	N29 E33	09 14.2		B	CAO	70	5	10	3
5142	24766	MWIL	09 11 1445	N31 E31	09 14.1	5	(B)					
5142		HOLL	09 11 1615	N32 E33	09 14.3		B	CSO	110	4	11	3
5142		PALE	09 11 1905	N32 E27	09 13.9		A	HH	120	3	3	3
5142		LEAR	09 12 0622	N32 E21	09 13.9		B	CAO	70	7	3	4
5142		SVTO	09 12 0704	N33 E22	09 14.0		B	CKO	80	8	4	3
5142		RAMY	09 12 1414	N32 E20	09 14.2		B	CAO	100	7	4	3
5142	24766	MWIL	09 12 1500	N32 E17	09 14.0	5	(BP)					
5142		HOLL	09 12 1615	N32 E17	09 14.0		B	CAO	90	9	4	3
5142		PALE	09 12 1815	N32 E15	09 13.9		B	CAO	130	9	4	3
5142		LEAR	09 13 0011	N30 E12	09 13.9		B	CAO	170	4	3	2
5142		CULG	09 13 0145	N31 E11	09 13.9		A	HA	60	2	2	2
5142		SVTO	09 13 0738	N31 E08	09 13.9		B	CSO	130	6	5	2
5142		RAMY	09 13 1335	N32 E05	09 14.0		B	CSO	150	7	4	3
5142	24766	MWIL	09 13 1515	N32 E04	09 13.9	6	(BP)					
5142		HOLL	09 13 1535	N32 E04	09 14.0		B	CSO	110	8	5	3
5142		PALE	09 13 1745	N32 E02	09 13.9		B	CSO	160	6	4	3
5142		LEAR	09 14 0011	N30 W01	09 13.9		B	CSO	160	4	3	4
5142		CULG	09 14 0455	N31 W03	09 14.0		A	HA	70	2	2	3
5142		SVTO	09 14 1035	N32 W07	09 13.9		B	CAO	140	3	4	2
5142		RAMY	09 14 1324	N31 W08	09 13.9		B	CSO	220	7	4	2

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5142	24766	MWIL	09 14 1515	N32 W07	09 14.1	5	(BP)					
5142		HOLL	09 14 1615	N32 W09	09 14.0		B	CAO	140	4	3	3
5142		PALE	09 14 1740	N32 W11	09 13.9		B	CAO	120	8	5	3
5142		LEAR	09 15 0050	N32 W15	09 13.8		A	HA	170	6	3	3
5142		SVTO	09 15 0710	N31 W18	09 13.9		A	HA	140	8	5	2
5142		RAMY	09 15 1332	N31 W22	09 13.8		B	DAO	180	7	4	4
5142		BOUL	09 15 1410	N31 W22	09 13.8		B	CHO	170	2	3	2
5142		HOLL	09 15 1450	N32 W22	09 13.9		B	CHI	180	13	3	3
5142	24766	MWIL	09 15 1515	N32 W22	09 13.9	5	(BP)					
5142		LEAR	09 16 0005	N32 W27	09 13.9		A	HA	120	8	3	3
5142		CULG	09 16 0325	N32 W26	09 14.1		A	HA	80	5	4	2
5142		SVTO	09 16 0620	N31 W30	09 13.9		B	DAI	130	17	5	4
5142		RAMY	09 16 1400	N33 W34	09 13.9		B	DAI	150	23	7	4
5142		BOUL	09 16 1410	N31 W34	09 13.9		B	CAO	70	15	6	3
5142		HOLL	09 16 1415	N32 W34	09 13.9		B	DAI	120	14	6	3
5142	24766	MWIL	09 16 1500	N32 W35	09 13.8	5	(BG)					
5142		PALE	09 16 1810	N30 W37	09 13.8		B	DAI	200	12	6	2
5142		LEAR	09 17 0017	N31 W38	09 14.0		B	CSO	60	9	6	3
5142		CULG	09 17 0425	N31 W40	09 14.0		A	HA	60	4	4	1
5142		SVTO	09 17 0635	N30 W44	09 13.8		B	DAO	90	4	5	2
5142		RAMY	09 17 1350	N31 W48	09 13.8		A	HA	90	11	4	4
5142		BOUL	09 17 1350	N32 W46	09 13.9		B	CAO	120	5	4	2
5142	24766	MWIL	09 17 1430	N31 W48	09 13.8	4	(BF)					
5142		HOLL	09 17 1510	N31 W49	09 13.8		B	DAO	100	10	5	3
5142		PALE	09 17 1725	N31 W51	09 13.7		B	CAO	110	12	6	3
5142		LEAR	09 18 0050	N32 W50	09 14.1		B	EAO	110	12	12	2
5142		CULG	09 18 0145	N32 W49	09 14.2		B	EAI	50	10	12	2
5142		SVTO	09 18 0745	N31 W53	09 14.1		B	EAO	110	14	13	3
5142		RAMY	09 18 1400	N31 W58	09 14.0		B	EAI	100	17	14	3
5142		BOUL	09 18 1444	N31 W55	09 14.3		B	ESO	30	8	13	3
5142	24766	MWIL	09 18 1515	N32 W58	09 14.0	5	(BG)					
5142		HOLL	09 18 1550	N30 W57	09 14.2		B	EAI	60	11	14	3
5142		PALE	09 18 1910	N30 W61	09 14.0		BG	EAO	80	16	14	3
5142		LEAR	09 19 0015	N31 W60	09 14.3		B	EAI	80	11	14	3
5142		CULG	09 19 0410	N32 W60	09 14.4		B	BXO	20	5	9	4
5142		SVTO	09 19 0710	N31 W65	09 14.2		B	EAO	90	9	13	2
5142		RAMY	09 19 1440	N31 W70	09 14.1		B	EAI	100	7	15	3
5142		BOUL	09 19 1446	N31 W67	09 14.3		B	BXO	50	5	13	2
5142		HOLL	09 19 1448	N31 W69	09 14.2		B	ESO	70	10	14	3
5142	24766	MWIL	09 19 1530	N32 W68	09 14.3	5	(BG)					
5142		PALE	09 19 1925	N31 W74	09 14.0		B	ESO	50	7	13	3
5142		LEAR	09 20 0020	N32 W76	09 14.0		B	EAI	120	6	15	4
5142		CULG	09 20 0410	N33 W76	09 14.1		B	BXO	20	5	9	3
5142		SVTO	09 20 0825	N33 W78	09 14.1		B	CRO	60	4	7	2
5142		BOUL	09 20 1400	N32 W76	09 14.6		B	BXO	60	6	6	2
5142		RAMY	09 20 1514	N31 W79	09 14.4		B	DAO	90	3	5	2
5142		PALE	09 20 1750	N29 W80	09 14.5		B	DAO	50	3	6	3
5142		LEAR	09 21 0100	N30 W82	09 14.6		B	BXO	30	4	1	3
5142		CULG	09 21 0245	N32 W82	09 14.6		B	BXO	10	2	1	3
5144		HOLL	09 08 1520	N15 E89	09 15.4		A	AX	10	2	2	3
5144		PALE	09 08 1752	N15 E85	09 15.2		A	AX	10	2	1	3
5144		LEAR	09 09 0112	N14 E77	09 14.9		B	BXO	20	3	4	2
5144		SVTO	09 09 0740	N14 E75	09 15.0		B	BXO	10	4	7	2
5144		BOUL	09 09 1414	N14 E69	09 14.8		B	BXO		2	4	3
5144		HOLL	09 09 1455	N15 E69	09 14.8		B	BXO	20	3	3	3
5144		PALE	09 09 1830	N16 E69	09 15.0		B	CSO	30	2	9	3
5144	24769	MWIL	09 09 1945	N14 E66	09 14.8	4	(B)					
5144		LEAR	09 10 0030	N14 E66	09 15.0		B	CSO	20	2	7	3
5144		CULG	09 10 0235	N15 E63	09 14.9		B	BXI	20	2	6	2
5144		SVTO	09 10 0817	N14 E61	09 14.9		B	CRO	10	3	7	2
5144		RAMY	09 10 1515	N13 E57	09 14.9		B	CSO	40	2	7	2
5144	24769	MWIL	09 10 1515	N13 E58	09 15.0	5	(B)					
5144	24769	MWIL	09 10 1515	N13 E61	09 15.2	4	(AP)					
5144		HOLL	09 10 1525	N14 E57	09 14.9		B	CSO	40	2	7	3
5144		BOUL	09 10 1718	N16 E57	09 15.0		B	BXO		2	6	2
5144		PALE	09 10 1750	N16 E56	09 15.0		B	CSO	30	4	7	3
5144		LEAR	09 11 0010	N14 E51	09 14.9		B	CSO	50	5	8	3
5144		SVTO	09 11 0606	N14 E47	09 14.8		B	CRO	40	6	6	3

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5144		BOUL	09 11 1430	N13 E43	09 14.8		B	CSO	10	5	8	3
5144	24769	MWIL	09 11 1445	N14 E42	09 14.8	4	(BP)					
5144		HOLL	09 11 1615	N15 E40	09 14.7		B	CSO	30	3	3	3
5144		PALE	09 11 1905	N15 E40	09 14.8		B	CSO	20	3	3	3
5144		LEAR	09 12 0622	N13 E32	09 14.7		B	CAO	10	2	3	4
5144		SVTO	09 12 0704	N14 E33	09 14.8		B	BXO	10	2	3	3
5144		RAMY	09 12 1414	N14 E29	09 14.8		B	BXO	10	2	2	3
5144	24769	MWIL	09 12 1500	N14 E27	09 14.7	4	(BP)					
5144		HOLL	09 12 1615	N14 E27	09 14.7		B	BXO	10	2	3	3
5144		PALE	09 12 1815	N12 E25	09 14.6		A	AX	10	1	1	3
5144		LEAR	09 13 0011	N12 E21	09 14.6		A	AX	10	1	1	2
5144		CULG	09 13 0145	N12 E20	09 14.6		A	AX	10	1		2
5144		SVTO	09 13 0738	N13 E17	09 14.6		A	AX	10	1	1	2
5144		RAMY	09 13 1335	N13 E14	09 14.6		A	AX	10	1	1	3
5144	24769	MWIL	09 13 1515	N13 E13	09 14.6	5	(AF)					
5144		HOLL	09 13 1535	N13 E12	09 14.5		A	AX		1		3
5144		PALE	09 13 1745	N13 E14	09 14.8		B	BXO	10	2	6	3
5144		LEAR	09 14 0011	N14 E08	09 14.6		A	AX	10	1	1	4
5144		CULG	09 14 0455	N12 E05	09 14.6		A	AX		1		3
5144		SVTO	09 14 1035	N13 E01	09 14.5		A	AX	10	1	1	2
5144		RAMY	09 14 1324	N13 W01	09 14.5		A	AX		1	1	2
5144	24769	MWIL	09 14 1515	N13 W01	09 14.6	5	(AF)					
5144		HOLL	09 14 1615	N13 W02	09 14.5		A	AX		1		3
5144		PALE	09 14 1740	N13 W03	09 14.5		A	AX		1		3
5144		LEAR	09 15 0050	N13 W07	09 14.5		A	AX	10	1	1	3
5144		SVTO	09 18 0745	N13 W48	09 14.7		A	AX	10	1		3
5144		RAMY	09 18 1400	N14 W52	09 14.6		A	AX	10	1	1	3
5150		RAMY	09 13 1335	N22 E14	09 14.6		A	AX		1		3
5150	24777	MWIL	09 13 1515	N23 E13	09 14.6	3	(AP)					
5150		HOLL	09 13 1535	N23 E12	09 14.6		A	AX		1		3
5150		PALE	09 13 1745	N23 E12	09 14.7		A	AX		1		3
5150		LEAR	09 15 0050	N21 W05	09 14.6		B	BXO	10	2	4	3
5150A		RAMY	09 12 1414	S19 E34	09 15.2		A	AX	10	1	1	3
5150A		HOLL	09 12 1615	S19 E34	09 15.3		A	AX		1		3
5150B		PALE	09 16 1810	N16 W04	09 16.4		A	AX		2	2	2
5155		RAMY	09 16 1400	S17 E06	09 17.0		B	BXO	10	5	6	4
5155		BOUL	09 16 1410	S18 E06	09 17.0		B	BXO		2	2	3
5155		HOLL	09 16 1415	S18 E06	09 17.0		B	BXO	10	3	3	3
5155	24781	MWIL	09 16 1500	S18 E05	09 17.0	4	(BP)					
5155		PALE	09 16 1810	S16 E05	09 17.1		B	BXO	10	3	5	2
5155		LEAR	09 17 0017	S19 W01	09 16.9		A	AX	10	1	1	3
5155		CULG	09 17 0425	S20 W03	09 16.9		A	AX		1		1
5155		RAMY	09 17 1350	S18 W08	09 17.0		B	BXO	10	3	4	4
5155	24781	MWIL	09 17 1430	S18 W10	09 16.8	4	(AP)					
5155		HOLL	09 17 1510	S19 W10	09 16.9		B	BXO		2	3	3
5155		PALE	09 17 1725	S22 W14	09 16.6		B	CSO	170	13	8	3
5155		RAMY	09 18 1400	S17 W21	09 17.0		A	AX	10	2	1	3
5155	24781	MWIL	09 18 1515	S18 W22	09 17.0	3	(B)					
5155		HOLL	09 18 1550	S18 W23	09 16.9		B	BXO	10	3	4	3
5155		PALE	09 18 1910	S19 W23	09 17.0		A	AX	10	3	3	3
5155		RAMY	09 19 1440	S18 W37	09 16.8		B	CRO	30	3	2	3
5155		BOUL	09 19 1446	S17 W35	09 16.9		B	BXO	30	4	2	2
5155		HOLL	09 19 1448	S18 W36	09 16.9		B	BXO	10	6	3	3
5155	24781	MWIL	09 19 1530	S17 W36	09 16.9	5	(B)					
5155		PALE	09 19 1925	S18 W40	09 16.8		B	BXO	10	4	3	3
5155		LEAR	09 20 0020	S17 W41	09 16.9		B	CRO	50	5	5	4
5155		CULG	09 20 0410	S18 W43	09 16.9		B	BXO	10	3	3	3
5155		SVTO	09 20 0825	S18 W46	09 16.8		B	CRO	30	3	5	2
5155		BOUL	09 20 1400	S17 W48	09 16.9		B	BXO	20	4	3	2
5155		RAMY	09 20 1514	S18 W49	09 16.9		B	CRO	10	6	4	2
5155		PALE	09 20 1750	S19 W51	09 16.8		B	CRO	10	3	4	3
5155		LEAR	09 21 0100	S17 W55	09 16.9		B	BXO	20	4	6	3
5155		CULG	09 21 0245	S16 W57	09 16.8		B	BXO	10	4	6	3
5155		RAMY	09 21 1317	S17 W62	09 16.8		B	BXO	10	4	5	4
5155		BOUL	09 21 1545	S16 W64	09 16.8		A	AX	10	1	1	1

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5155		HOLL	09 21 1611	S17 W63	09 16.9		A	AX	10	1	1	3
5155		PALE	09 21 1922	S17 W68	09 16.6		B	BXO	10	2	3	3
5155A		RAMY	09 16 1400	N22 E12	09 17.5		B	BXO		2	2	4
5155A	24782	MWIL	09 16 1500	N22 E12	09 17.5	3	(B)					
5155A	24782	MWIL	09 17 1430	N20 W03	09 17.4	3	(AP)					
5148		LEAR	09 11 0010	S10 E82	09 17.2		B	BXO	10	3	2	3
5148		SVTO	09 11 0606	S11 E75	09 16.9		A	HS	70	2	3	3
5148		BOUL	09 11 1430	S12 E77	09 17.4		B	DSO	160	4	7	3
5148	24774	MWIL	09 11 1445	S12 E76	09 17.3	4	(B)					
5148		HOLL	09 11 1615	S09 E74	09 17.2		B	DSO	200	3	9	3
5148		PALE	09 11 1905	S09 E75	09 17.4		B	DSO	270	6	9	3
5148		LEAR	09 12 0622	S11 E65	09 17.1		B	DAO	260	7	7	4
5148		SVTO	09 12 0704	S11 E68	09 17.4		B	DKO	330	8	8	3
5148		RAMY	09 12 1414	S12 E65	09 17.5		B	DSO	350	7	8	3
5148	24774	MWIL	09 12 1500	S12 E62	09 17.3	5	(D)					
5148		HOLL	09 12 1615	S11 E62	09 17.3		B	DAO	260	8	9	3
5148		PALE	09 12 1815	S10 E61	09 17.3		B	DAO	300	8	8	3
5148		LEAR	09 13 0011	S11 E56	09 17.2		B	DAO	380	7	7	2
5148		CULG	09 13 0145	S12 E56	09 17.3		B	DSO	200	2	7	2
5148		SVTO	09 13 0738	S12 E54	09 17.4		BG	DKO	390	8	8	2
5148		RAMY	09 13 1335	S12 E52	09 17.5		B	DKO	350	9	8	3
5148	24774	MWIL	09 13 1515	S12 E49	09 17.3	5	(D)					
5148		HOLL	09 13 1535	S11 E49	09 17.3		B	DSO	290	9	7	3
5148		PALE	09 13 1745	S12 E47	09 17.3		B	DAO	330	10	8	3
5148		LEAR	09 14 0011	S11 E45	09 17.4		BG	DAO	280	6	9	4
5148		CULG	09 14 0455	S12 E41	09 17.3		B	DAO	200	4	7	3
5148		SVTO	09 14 1035	S10 E40	09 17.4		BG	DAO	240	9	7	2
5148		RAMY	09 14 1324	S11 E37	09 17.3		B	DHO	390	8	7	2
5148	24774	MWIL	09 14 1515	S12 E36	09 17.3	5	(BG)					
5148		HOLL	09 14 1615	S11 E36	09 17.4		B	DSO	300	12	7	3
5148		PALE	09 14 1740	S12 E35	09 17.4		B	DSO	300	15	8	3
5148		LEAR	09 15 0050	S11 E31	09 17.4		B	DAO	250	13	7	3
5148		SVTO	09 15 0710	S11 E28	09 17.4		BG	DAI	190	13	7	2
5148		RAMY	09 15 1332	S10 E25	09 17.4		B	DKI	320	15	8	4
5148		BOUL	09 15 1410	S11 E22	09 17.2		B	DHI	280	9	7	2
5148		HOLL	09 15 1450	S11 E24	09 17.4		B	DHC	280	14	8	3
5148	24774	MWIL	09 15 1515	S12 E23	09 17.4	6	(B)					
5148		LEAR	09 16 0005	S11 E18	09 17.3		B	DSO	250	12	7	3
5148		CULG	09 16 0325	S11 E14	09 17.2		B	DSO	220	5	7	2
5148		SVTO	09 16 0620	S11 E15	09 17.4		B	DKO	240	9	8	4
5148		RAMY	09 16 1400	S12 E12	09 17.5		B	DSO	230	9	8	4
5148		BOUL	09 16 1410	S11 E10	09 17.3		B	CSO	150	7	7	3
5148		HOLL	09 16 1415	S11 E11	09 17.4		B	DSO	210	13	8	3
5148	24774	MWIL	09 16 1500	S12 E09	09 17.3	6	(B)					
5148		PALE	09 16 1810	S10 E10	09 17.5		B	DSO	190	11	8	2
5148		LEAR	09 17 0017	S12 E05	09 17.4		B	DSO	170	8	8	3
5148		CULG	09 17 0425	S11 E03	09 17.4		B	CSI	170	6	6	1
5148		SVTO	09 17 0635	S11 E03	09 17.5		B	DSO	210	6	7	2
5148		BOUL	09 17 1350	S09 W01	09 17.5		B	CSO	180	6	6	2
5148		RAMY	09 17 1350	S11 W03	09 17.3		B	CSO	200	15	8	4
5148	24774	MWIL	09 17 1430	S10 W04	09 17.3	5	(B)					
5148		HOLL	09 17 1510	S12 W03	09 17.4		B	CSO	190	13	7	3
5148		LEAR	09 18 0050	S10 W08	09 17.4		B	DSO	180	8	6	2
5148		CULG	09 18 0145	S09 W10	09 17.3		B	DSI	200	8	7	2
5148		SVTO	09 18 0745	S11 W12	09 17.4		B	CSO	230	13	7	3
5148		RAMY	09 18 1400	S10 W16	09 17.4		B	CSO	200	11	7	3
5148		BOUL	09 18 1444	S10 W18	09 17.3		B	CSO	180	8	6	3
5148	24774	MWIL	09 18 1515	S10 W17	09 17.3	6	(B)					
5148		HOLL	09 18 1550	S12 W16	09 17.4		B	CSO	170	14	7	3
5148		PALE	09 18 1910	S12 W17	09 17.5		B	CSO	170	9	7	3
5148		LEAR	09 19 0015	S10 W24	09 17.2		A	HS	170	2	2	3
5148		CULG	09 19 0410	S11 W23	09 17.4		B	CSI	150	9	7	4
5148		SVTO	09 19 0710	S12 W25	09 17.4		B	CSO	230	6	6	2
5148		RAMY	09 19 1440	S12 W29	09 17.4		B	CSO	180	5	6	3
5148		BOUL	09 19 1446	S10 W31	09 17.3		B	CSO	170	2	3	2
5148		HOLL	09 19 1448	S11 W32	09 17.2		B	CSO	180	5	6	3
5148	24774	MWIL	09 19 1530	S10 W31	09 17.3	6	(B)					

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5148		PALE	09 19 1925	S12 W33	09 17.3		B	CSO	200	3	7	3
5148		LEAR	09 20 0020	S10 W35	09 17.4		A	HS	140	2	5	4
5148		CULG	09 20 0410	S11 W35	09 17.5		A	HS	100	3	3	3
5148		SVTO	09 20 0825	S10 W43	09 17.1		A	HA	280	1	3	2
5148		BOUL	09 20 1400	S10 W44	09 17.3		A	HS	240	1	3	2
5148		RAMY	09 20 1514	S11 W46	09 17.2		A	HH	250	1	3	2
5148		PALE	09 20 1750	S12 W47	09 17.2		A	HH	150	1	3	3
5148		LEAR	09 21 0100	S10 W52	09 17.1		A	HS	160	1	3	3
5148		CULG	09 21 0245	S09 W52	09 17.2		A	HS	130	1	2	3
5148		RAMY	09 21 1317	S10 W58	09 17.2		A	HS	150	1	2	4
5148		BOUL	09 21 1545	S10 W58	09 17.3		A	HS	150	1	2	1
5148		HOLL	09 21 1611	S11 W59	09 17.2		A	HS	160	1	2	3
5148		PALE	09 21 1922	S10 W62	09 17.1		A	HS	90	1	2	3
5148		LEAR	09 22 0215	S10 W65	09 17.2		A	HS	140	2	1	3
5148		CULG	09 22 0240	S08 W66	09 17.2		A	HS	10	1	2	3
5148		SVTO	09 22 0940	S11 W69	09 17.2		A	HS	180	1	2	1
5148		BOUL	09 22 1349	S11 W70	09 17.3		A	HS	180	1	2	2
5148		RAMY	09 22 1400	S11 W72	09 17.2		A	HS	180	1	2	3
5148	24774	MWIL	09 22 1445	S10 W72	09 17.2	4	(AP)					
5148		HOLL	09 22 1543	S11 W71	09 17.3		A	HS	110	1	2	3
5148		PALE	09 22 2240	S08 W79	09 17.0		A	HS	80	1	4	2
5148		LEAR	09 23 0012	S10 W77	09 17.2		A	HS	240	3	4	4
5148		CULG	09 23 0220	S08 W79	09 17.2		A	HS	100	1	1	2
5148		SVTO	09 23 0820	S12 W75	09 17.7		A	HS	120	1	2	3
5148	24774	MWIL	09 23 1430	S10 W88	09 17.0	3	AP					
5148A	24784	MWIL	09 17 1430	S28 E00	09 17.6	3	(AF)					
5153		RAMY	09 15 1332	N24 E34	09 18.2		B	BXO	10	3	3	4
5153		BOUL	09 15 1410	N21 E30	09 17.9		B	BXO	10	2	1	2
5153		HOLL	09 15 1450	N24 E33	09 18.2		B	BXO	20	3	4	3
5153	24778	MWIL	09 15 1515	N23 E32	09 18.1	4	(B)					
5153		LEAR	09 16 0005	N23 E27	09 18.1		A	AX	10	1	1	3
5153		CULG	09 16 0325	N22 E24	09 18.0		A	AX		1		2
5153		SVTO	09 16 0620	N24 E22	09 18.0		A	AX		1		4
5153		RAMY	09 16 1400	N23 E18	09 18.0		A	AX		1	1	4
5153		BOUL	09 16 1410	N23 E18	09 18.0		A	AX		1		3
5153		HOLL	09 16 1415	N24 E18	09 18.0		A	AX		1		3
5153	24778	MWIL	09 16 1500	N23 E18	09 18.0	4	(AP)					
5153		PALE	09 16 1810	N24 E16	09 18.0		A	AX		1	1	2
5152		SVTO	09 15 0710	N35 E46	09 19.0		A	AX		1		2
5152		RAMY	09 15 1332	N34 E42	09 18.9		B	BXO	10	5	4	4
5152		BOUL	09 15 1410	N31 E38	09 18.6		B	BXO	10	2	2	2
5152		HOLL	09 15 1450	N34 E40	09 18.8		A	AX	10	2	2	3
5152	24779	MWIL	09 15 1515	N33 E41	09 18.9	4	(B)					
5152		LEAR	09 16 0005	N33 E36	09 18.9		B	BXO	10	5	4	3
5152		CULG	09 16 0325	N31 E36	09 19.0		B	BXO	10	2	3	2
5152		SVTO	09 16 0620	N33 E32	09 18.8		B	BXO	10	6	4	4
5152		RAMY	09 16 1400	N33 E28	09 18.8		B	BXO	20	7	4	4
5152		BOUL	09 16 1410	N33 E26	09 18.6		B	BXO		4	3	3
5152		HOLL	09 16 1415	N33 E28	09 18.8		B	BXO	10	6	5	3
5152	24779	MWIL	09 16 1500	N33 E28	09 18.8	4	(B)					
5152		PALE	09 16 1810	N33 E25	09 18.7		B	BXO	30	4	3	2
5152		CULG	09 17 0425	N31 E19	09 18.7		A	AX		1		1
5152		BOUL	09 17 1350	N32 E12	09 18.5		A	AX		1		2
5152		RAMY	09 17 1350	N33 E13	09 18.6		A	AX		1	1	4
5152	24779	MWIL	09 17 1430	N32 E13	09 18.6	4	(AP)					
5152		HOLL	09 17 1510	N33 E12	09 18.6		A	AX		1		3
5152		PALE	09 17 1725	N33 E11	09 18.6		A	AX		1		3
5152		RAMY	09 18 1400	N32 E02	09 18.7		A	AX		2	1	3
5152		HOLL	09 18 1550	N32 E01	09 18.7		A	AX		1		3
5152		SVTO	09 23 0820	N27 W55	09 19.1		A	AX	10	1	1	3
5152	24779	MWIL	09 23 1430	N30 W59	09 19.0	4	(B)					
5152		LEAR	09 24 0043	N31 W67	09 18.7		B	BXO	10	2	1	4
5152		CULG	09 24 0300	N31 W66	09 18.9		A	AX	10	1	1	3
5152		SVTO	09 24 0610	N28 W74	09 18.5		B	BXO	20	3	3	3
5152	24779	MWIL	09 24 1430	N30 W75	09 18.7	3	(AP)					

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5154		RAMY	09 15 1332	N20 E55	09 19.8		B	BXO	10	4	3	4
5154	24780	MWIL	09 15 1515	N18 E53	09 19.7	4	(BP)					
5154		LEAR	09 16 0005	N19 E47	09 19.6		B	BXO	10	3	3	3
5154		SVTO	09 16 0620	N19 E43	09 19.5		A	AX	10	3	2	4
5154		RAMY	09 16 1400	N19 E40	09 19.6		B	BXO	10	4	4	4
5154		HOLL	09 16 1415	N19 E41	09 19.7		B	BXO	10	5	8	3
5154		LEAR	09 17 0017	N18 E36	09 19.7		A	AX	10	1	1	3
5154		CULG	09 17 0425	N18 E34	09 19.8		B	BXO	10	2	1	1
5154		SVTO	09 17 0635	N19 E31	09 19.6		B	BXO	20	3	3	2
5154		BOUL	09 17 1350	N19 E25	09 19.5		B	BXO	10	4	3	2
5154		RAMY	09 17 1350	N19 E27	09 19.6		B	BXO	20	7	4	4
5154	24780	MWIL	09 17 1430	N20 E27	09 19.7	4	(B)					
5154		HOLL	09 17 1510	N20 E26	09 19.6		B	BXO	10	9	5	3
5154		PALE	09 17 1725	N20 E25	09 19.6		B	BXO	10	5	5	3
5154		LEAR	09 18 0050	N20 E20	09 19.6		B	DRO	40	6	5	2
5154		CULG	09 18 0145	N20 E20	09 19.6		B	CAO	20	5	5	2
5154		SVTO	09 18 0745	N20 E16	09 19.5		B	BXI	20	12	5	3
5154		RAMY	09 18 1400	N20 E13	09 19.6		B	CRO	40	15	6	3
5154		BOUL	09 18 1444	N19 E13	09 19.6		B	BXO		10	5	3
5154	24780	MWIL	09 18 1515	N19 E13	09 19.6	4	(BG)					
5154		HOLL	09 18 1550	N19 E13	09 19.6		B	BXO	10	10	6	3
5154		PALE	09 18 1910	N20 E11	09 19.6		B	BXO	20	14	6	3
5154		LEAR	09 19 0015	N20 E07	09 19.5		B	DRI	40	9	6	3
5154		CULG	09 19 0410	N19 E07	09 19.7		B	BXO	10	4	6	4
5154		SVTO	09 19 0710	N19 E05	09 19.7		B	DSO	40	8	6	2
5154		RAMY	09 19 1440	N20 W01	09 19.5		B	BXO	20	8	5	3
5154		BOUL	09 19 1446	N20 W03	09 19.4		B	BXO	20	3	2	2
5154		HOLL	09 19 1448	N20 W02	09 19.5		B	BXO	10	6	4	3
5154	24780	MWIL	09 19 1530	N19 W02	09 19.5	4	(B)					
5154		PALE	09 19 1925	N21 W06	09 19.3		B	BXO		3	3	3
5154		LEAR	09 20 0020	N20 W08	09 19.4		B	DRI	30	10	6	4
5154		CULG	09 20 0410	N20 W08	09 19.6		B	BXO	10	2	3	3
5154		SVTO	09 20 0825	N20 W12	09 19.4		B	CAO	30	6	7	2
5154		BOUL	09 20 1400	N19 W16	09 19.4		A	AX		1		2
5154		RAMY	09 20 1514	N20 W18	09 19.2		A	HR	10	2	1	2
5154		PALE	09 20 1750	N19 W19	09 19.3		A	HR	10	1	1	3
5154		LEAR	09 21 0100	N20 W23	09 19.3		A	AX	10	1	1	3
5154		CULG	09 21 0245	N20 W23	09 19.3		A	AX	10	1	1	3
5154		RAMY	09 21 1317	N21 W27	09 19.5		A	AX		1	1	4
5154		BOUL	09 21 1545	N19 W34	09 19.1		A	AX	10	1	1	1
5154A		BOUL	09 21 1545	N13 W19	09 20.2		A	AX	10	1	1	1
5164		BOUL	09 20 1400	N19 W03	09 20.3		B	BXO	10	3	3	2
5164		RAMY	09 20 1514	N19 W05	09 20.2		B	BXO	10	3	3	2
5164		PALE	09 20 1750	N19 W06	09 20.3		B	BXO	10	3	3	3
5164		LEAR	09 21 0100	N20 W10	09 20.3		B	BXO	10	3	3	3
5164		CULG	09 21 0245	N19 W11	09 20.3		B	BXO	10	2	2	3
5164		RAMY	09 21 1317	N19 W17	09 20.2		B	CRO	10	5	4	4
5164		BOUL	09 21 1545	N19 W18	09 20.3		B	BXO	10	3	4	1
5164		HOLL	09 21 1611	N19 W18	09 20.3		B	BXO	20	5	4	3
5164		PALE	09 21 1922	N19 W20	09 20.3		B	BXO	20	6	5	3
5164		LEAR	09 22 0215	N19 W23	09 20.3		B	BXO	10	5	5	3
5164		CULG	09 22 0240	N20 W23	09 20.3		B	CSO	20	6	5	3
5164		RAMY	09 22 1400	N21 W28	09 20.4		B	BXO	20	7	3	3
5164	24792	MWIL	09 22 1445	N20 W28	09 20.5	4	(AF)					
5164		LEAR	09 23 0012	N20 W35	09 20.3		B	BXO	10	4	4	4
5164		CULG	09 23 0220	N21 W34	09 20.5		A	AX	10	1	1	2
5164		SVTO	09 23 0820	N19 W38	09 20.4		B	BXO	10	2	2	3
5164		BOUL	09 23 1423	N20 W40	09 20.5		A	AX		1		3
5164	24792	MWIL	09 23 1430	N20 W42	09 20.4	4	(AF)					
5164		SVTO	09 24 0610	N21 W54	09 20.1		A	AX	10	1	1	3
5164	24792	MWIL	09 24 1430	N21 W55	09 20.4	3	(AF)					
5164		SVTO	09 25 0746	N21 W68	09 20.1		B	BXO	10	4	3	4
5164	24792	MWIL	09 25 1430	N22 W70	09 20.2	4	(B)					
5164		BOUL	09 25 1455	N21 W68	09 20.4		B	BXO		4	4	2
5164		RAMY	09 25 1520	N21 W69	09 20.3		B	BXO	50	7	4	4
5164		HOLL	09 25 1555	N19 W72	09 20.2		B	BXO	30	5	5	3
5164		PALE	09 25 1935	N23 W77	09 19.9		B	BXO	30	4	4	3

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5164		SVTO	09 26 0735	N19 W80	09 20.2		A	AX	10	1		3
5164		RAMY	09 26 1215	N19 W82	09 20.2		A	AX	10	2	1	3
5157		LEAR	09 16 0005	S20 E56	09 20.3		A	AX	10	1	1	3
5157		HOLL	09 16 1415	S21 E50	09 20.4		B	BXO	10	3	3	3
5157		LEAR	09 22 0215	S17 W18	09 20.7		B	BXO	10	2	1	3
5157		CULG	09 22 0240	S16 W20	09 20.6		B	BXO	10	2	2	3
5157		HOLL	09 22 1543	S18 W32	09 20.2		A	AX		2	2	3
5157		LEAR	09 23 0012	S17 W35	09 20.3		B	BXO	20	5	4	4
5157		CULG	09 23 0220	S17 W39	09 20.1		B	DSO	20	3	3	2
5157		SVTO	09 23 0820	S17 W41	09 20.2		B	CRO	70	4	6	3
5157		BOUL	09 23 1423	S18 W43	09 20.3		B	BXO		7	5	3
5157	24797	MWIL	09 23 1430	S18 W44	09 20.2	4	(B)					
5157		HOLL	09 23 1621	S18 W46	09 20.2		B	BXO	30	3	5	2
5157		PALE	09 23 2245	S17 W48	09 20.3		B	BXO	10	2	5	2
5157		LEAR	09 24 0043	S17 W49	09 20.3		B	BXO	10	2	5	4
5157		CULG	09 24 0300	S17 W52	09 20.2		B	BXO	10	2	5	3
5157		SVTO	09 24 0610	S18 W56	09 20.0		B	BXO	10	2	7	3
5157	24797	MWIL	09 24 1430	S16 W61	09 20.0	3	(AF)					
5157A		BOUL	09 20 1400	N17 E03	09 20.8		A	AX		1		2
5165		RAMY	09 19 1440	N21 E22	09 21.3		B	BXO	10	3	2	3
5165		HOLL	09 19 1448	N22 E21	09 21.2		B	BXO	10	3	3	3
5165	24788	MWIL	09 19 1530	N22 E19	09 21.1	4	(B)					
5165		LEAR	09 20 0020	N24 E11	09 20.9		A	AX	10	1	1	4
5165		BOUL	09 20 1400	N21 E07	09 21.1		A	AX		1		2
5165		RAMY	09 20 1514	N21 E06	09 21.1		A	AX	30	1	1	2
5165		LEAR	09 21 0100	N20 E01	09 21.1		B	BXO	10	2	2	3
5165		CULG	09 21 0245	N20 E01	09 21.2		A	AX	10	2	1	3
5165		RAMY	09 21 1317	N20 W05	09 21.2		B	BXO	10	9	4	4
5165		BOUL	09 21 1545	N19 W07	09 21.1		B	BXO	30	7	4	1
5165		HOLL	09 21 1611	N20 W08	09 21.1		B	BXO	20	9	4	3
5165		PALE	09 21 1922	N20 W09	09 21.1		B	CRO	40	6	4	3
5165		LEAR	09 22 0215	N19 W12	09 21.2		B	BXO	30	7	4	3
5165		CULG	09 22 0240	N19 W13	09 21.1		B	DSO	40	9	4	3
5165		SVTO	09 22 0940	N21 W17	09 21.1		B	DSO	70	9	5	1
5165		BOUL	09 22 1349	N20 W21	09 21.0		B	DAO	60	5	10	2
5165		RAMY	09 22 1400	N22 W21	09 21.0		B	DAI	50	15	5	3
5165	24788	MWIL	09 22 1445	N20 W20	09 21.1	4	(B)					
5165		PALE	09 22 2240	N20 W26	09 20.9		B	DAO	60	9	5	2
5165		LEAR	09 23 0012	N21 W26	09 21.0		B	DSO	60	7	7	4
5165		CULG	09 23 0220	N21 W27	09 21.0		B	DRO	20	5	6	2
5165		SVTO	09 23 0820	N21 W28	09 21.2		B	CRO	40	7	5	3
5165		BOUL	09 23 1423	N20 W32	09 21.1		B	BXO		10	4	3
5165	24788	MWIL	09 23 1430	N20 W32	09 21.1	4	(BG)					
5165		HOLL	09 23 1621	N21 W34	09 21.1		B	CRO	40	7	6	2
5165		PALE	09 23 2245	N21 W39	09 20.9		B	BXO	20	8	3	2
5165		LEAR	09 24 0043	N21 W39	09 21.0		B	CRO	40	7	4	4
5165		CULG	09 24 0300	N22 W40	09 21.0		B	CRO	20	4	4	3
5165		SVTO	09 24 0610	N21 W43	09 21.0		B	BXO	20	6	5	3
5165		BOUL	09 24 1350	N21 W43	09 21.3		B	BXO	10	3	4	2
5165	24788	MWIL	09 24 1430	N21 W46	09 21.1	4	(BP)					
5165		RAMY	09 24 1434	N21 W45	09 21.1		B	BXO	20	4	5	2
5165		LEAR	09 25 0118	N23 W54	09 20.9		A	AX	10	1	1	3
5165		SVTO	09 25 0746	N20 W58	09 20.9		A	AX		1		4
5165A		CULG	09 23 0220	N19 W08	09 22.5		A	AX	10	1	1	2
5165A	24798	MWIL	09 23 1430	N20 W14	09 22.5	3	(AF)					
5156		SVTO	09 16 0620	S14 E76	09 22.0		A	HS	20	1	1	4
5156		RAMY	09 16 1400	S15 E75	09 22.3		B	CAO	60	7	7	4
5156		BOUL	09 16 1410	S16 E78	09 22.5			DSI	80	2	7	3
5156		HOLL	09 16 1415	S15 E76	09 22.3		B	DAO	110	5	9	3
5156	24783	MWIL	09 16 1500	S16 E75	09 22.3	5	(B					
5156		PALE	09 16 1810	S16 E73	09 22.3		B	DSO	30	5	8	2
5156		LEAR	09 17 0017	S18 E70	09 22.3		B	DSO	150	4	4	3
5156		CULG	09 17 0425	S17 E68	09 22.3		B	DAO	30	2	4	1
5156		SVTO	09 17 0635	S13 E65	09 22.2		B	DSO	100	3	5	2

S U N S P O T G R O U P S
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time 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
5156		RAMY	09 17 1350	S15 E63	09 22.3		B	DSO	170	7	8	4
5156		BOUL	09 17 1350	S16 E60	09 22.1		B	DSO	120	2	6	2
5156	24783	MWIL	09 17 1430	S16 E64	09 22.4	4	(BP)					
5156		HOLL	09 17 1510	S15 E63	09 22.4		B	DAO	120	8	7	3
5156		PALE	09 17 1725	S14 E63	09 22.5		B	DSO	130	6	7	3
5156		LEAR	09 18 0050	S15 E56	09 22.3		B	DSO	110	5	6	2
5156		CULG	09 18 0145	S16 E55	09 22.2		B	DAO	60	3	5	2
5156		SVTO	09 18 0745	S15 E55	09 22.5		B	DAO	150	5	8	3
5156		RAMY	09 18 1400	S17 E55	09 22.8		B	EAO	170	10	12	3
5156		BOUL	09 18 1444	S15 E48	09 22.2		B	DAO	80	6	8	3
5156	24783	MWIL	09 18 1515	S18 E52	09 22.6	5	(BP)					
5156		HOLL	09 18 1550	S18 E54	09 22.8		B	CAO	130	9	13	3
5156		PALE	09 18 1910	S16 E54	09 22.9		B	EAO	150	10	13	3
5156		LEAR	09 19 0015	S17 E48	09 22.6		B	EAO	110	9	15	3
5156		CULG	09 19 0410	S16 E43	09 22.4		B	CSO	70	4	4	4
5156		SVTO	09 19 0710	S14 E41	09 22.4		B	DAO	110	9	8	2
5156		RAMY	09 19 1440	S17 E33	09 22.1		B	EAO	170	6	12	3
5156		BOUL	09 19 1446	S15 E34	09 22.2		B	DAO	100	4	4	2
5156		HOLL	09 19 1448	S17 E41	09 22.7		B	ESO	210	11	12	3
5156	24783	MWIL	09 19 1530	S18 E38	09 22.5	5	(B)					
5156		PALE	09 19 1925	S16 E36	09 22.5		B	ESO	130	9	11	3
5156		LEAR	09 20 0020	S18 E35	09 22.7		B	ESO	130	8	12	4
5156		CULG	09 20 0410	S17 E28	09 22.3		B	CSO	100	2	3	3
5156		SVTO	09 20 0825	S16 E26	09 22.3		B	DAO	160	4	6	2
5156		BOUL	09 20 1400	S15 E22	09 22.2		B	CSO	110	3	4	2
5156		RAMY	09 20 1514	S16 E24	09 22.4		B	DAO	170	6	6	2
5156		PALE	09 20 1750	S16 E23	09 22.5		B	DAO	150	6	6	3
5156		LEAR	09 21 0100	S17 E17	09 22.3		B	CSO	130	13	7	3
5156		CULG	09 21 0245	S15 E16	09 22.3		B	CAI	180	9	5	3
5156		RAMY	09 21 1317	S16 E12	09 22.5		B	DAI	230	21	6	4
5156		BOUL	09 21 1545	S16 E10	09 22.4		B	CAO	180	14	7	1
5156		HOLL	09 21 1611	S17 E12	09 22.6		B	CSO	150	15	12	3
5156		PALE	09 21 1922	S17 E10	09 22.6		B	DSO	170	19	8	3
5156		LEAR	09 22 0215	S17 E04	09 22.4		B	DKI	150	16	7	3
5156		CULG	09 22 0240	S17 E02	09 22.3		B	DAI	190	15	6	3
5156		SVTO	09 22 0940	S16 E02	09 22.5		B	DKO	250	14	7	1
5156		BOUL	09 22 1349	S16 W03	09 22.3		B	CAO	180	5	6	2
5156		RAMY	09 22 1400	S16 E01	09 22.6		B	EKI	300	38	13	3
5156	24783	MWIL	09 22 1445	S16 W02	09 22.5	5	(BG)					
5156		HOLL	09 22 1543	S17 E00	09 22.6		B	EKO	250	28	12	3
5156		PALE	09 22 2240	S18 W08	09 22.3		B	CAO	160	13	7	2
5156		LEAR	09 23 0012	S16 W08	09 22.4		B	DAO	210	21	7	4
5156		CULG	09 23 0220	S16 W09	09 22.4		B	DAI	140	18	7	2
5156		SVTO	09 23 0820	S15 W13	09 22.4		B	CSI	180	23	7	3
5156		BOUL	09 23 1423	S15 W15	09 22.5		B	CAO	120	25	7	3
5156	24783	MWIL	09 23 1430	S16 W16	09 22.4	5	(BG)					
5156		HOLL	09 23 1621	S17 W17	09 22.4		B	DAO	180	18	6	2
5156		PALE	09 23 2245	S15 W23	09 22.2		B	DAO	150	16	6	2
5156		LEAR	09 24 0043	S15 W23	09 22.3		B	DAO	170	18	7	4
5156		CULG	09 24 0300	S15 W25	09 22.2		B	CAO	120	13	5	3
5156		SVTO	09 24 0610	S16 W26	09 22.3		B	DAI	170	13	7	3
5156		BOUL	09 24 1350	S15 W30	09 22.3		B	CAO	100	5	4	2
5156	24783	MWIL	09 24 1430	S16 W31	09 22.2	5	(BG)					
5156		RAMY	09 24 1434	S16 W31	09 22.2		B	DAO	120	10	5	2
5156		HOLL	09 24 1605	S17 W32	09 22.2		B	CAO	70	12	5	3
5156		PALE	09 24 1725	S16 W33	09 22.2		B	CAO	140	6	6	3
5156		LEAR	09 25 0118	S15 W38	09 22.2		B	CSO	50	6	5	3
5156		CULG	09 25 0400	S16 W41	09 22.0		BG	CAO	30	3	2	1
5156		SVTO	09 25 0746	S17 W41	09 22.2		B	CSO	50	12	6	4
5156	24783	MWIL	09 25 1430	S16 W46	09 22.1	5	(BP)					
5156		BOUL	09 25 1455	S15 W44	09 22.3		B	CSO	40	5	4	2
5156		RAMY	09 25 1520	S16 W43	09 22.4		B	CAO	90	7	9	4
5156		HOLL	09 25 1555	S17 W47	09 22.1		B	CAO	70	8	4	3
5156		PALE	09 25 1935	S15 W48	09 22.2		B	CSO	50	7	3	3
5156		LEAR	09 26 0105	S15 W51	09 22.2		B	CSO	70	7	4	3
5156		CULG	09 26 0435	S15 W54	09 22.1		B	DAO	40	7	5	2
5156		SVTO	09 26 0735	S17 W55	09 22.1		B	DAI	60	10	8	3
5156		RAMY	09 26 1215	S15 W58	09 22.1		B	DSO	80	6	6	3
5156		BOUL	09 26 1348	S16 W58	09 22.2		B	CSO	60	4	5	2

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(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5156		HOLL	09	26	1441	S17	W58	09	22.2		B	DAO	80	6	8	3
5156	24783	MWIL	09	26	1515	S16	W60	09	22.1	5	(B)					
5156		PALE	09	26	1820	S16	W63	09	22.0		B	CSO	80	5	6	3
5156		LEAR	09	27	0050	S16	W63	09	22.2		B	CAO	70	5	7	3
5156		CULG	09	27	0240	S15	W66	09	22.1		B	CAO	50	6	6	2
5156		SVTO	09	27	0845	S16	W67	09	22.3		B	CAO	120	6	7	2
5156		BOUL	09	27	1430	S17	W68	09	22.4		B	DAO	80	4	7	3
5156	24783	MWIL	09	27	1530	S16	W73	09	22.1	4	(AP)					
5156		PALE	09	27	1915	S17	W76	09	22.0		B	CRO	60	4	6	2
5161		CULG	09	20	0410	N31	E31	09	22.6		B	BXO	10	2	3	3
5161		SVTO	09	20	0825	N34	E29	09	22.7		B	CAO	40	6	4	2
5161		BOUL	09	20	1400	N33	E25	09	22.6		B	CAO	40	8	5	2
5161		RAMY	09	20	1514	N34	E24	09	22.5		B	DRO	70	7	3	2
5161		PALE	09	20	1750	N33	E23	09	22.6		B	CSO	40	6	4	3
5161		LEAR	09	21	0100	N33	E19	09	22.5		B	BXO	20	4	4	3
5161		CULG	09	21	0245	N33	E18	09	22.5		B	DSO	20	4	5	3
5161		RAMY	09	21	1317	N33	E13	09	22.6		B	CRO	30	8	4	4
5161		BOUL	09	21	1545	N33	E12	09	22.6		B	BXO	20	2	4	1
5161		HOLL	09	21	1611	N33	E12	09	22.6		B	BXO	20	6	4	3
5161		PALE	09	21	1922	N34	E10	09	22.6		B	BXO	20	5	5	3
5161		LEAR	09	22	0215	N33	E04	09	22.4		A	AX	10	1	1	3
5161		CULG	09	22	0240	N33	E07	09	22.7		B	BXO	10	2	3	3
5161		RAMY	09	22	1400	N33	E01	09	22.7		B	BXO	10	4	2	3
5161	24793	MWIL	09	22	1445	N33	E00	09	22.6	3	(BF)					
5161		PALE	09	22	2240	N37	W06	09	22.5		B	BXO	10	3	3	2
5161		LEAR	09	23	0012	N33	W04	09	22.7		B	BXO	10	2	1	4
5161		CULG	09	23	0220	N32	W04	09	22.8		A	AX	10	2	2	2
5161	24793	MWIL	09	23	1430	N33	W12	09	22.6	4	(AF)					
5158		RAMY	09	17	1350	S35	E76	09	23.6		B	CSO	40	3	5	4
5158	24786	MWIL	09	17	1430	S37	E73	09	23.5	3	(AP)					
5158		HOLL	09	17	1510	S35	E78	09	23.9		B	CAO	40	4	7	3
5158		PALE	09	17	1725	S36	E71	09	23.4		B	CAO	30	4	4	3
5158		LEAR	09	18	0050	S36	E65	09	23.2		B	CAO	170	6	11	2
5158		CULG	09	18	0145	S36	E68	09	23.5		A	HS	40	1	1	2
5158		SVTO	09	18	0745	S35	E65	09	23.5		B	EAO	250	6	15	3
5158		RAMY	09	18	1400	S35	E63	09	23.6		B	CAO	150	8	13	3
5158		BOUL	09	18	1444	S35	E58	09	23.2		B	CAO	170	3	15	3
5158	24786	MWIL	09	18	1515	S37	E60	09	23.5	5	(B)					
5158		HOLL	09	18	1550	S36	E63	09	23.7		B	CAO	110	8	14	3
5158		PALE	09	18	1910	S35	E63	09	23.8		B	EAO	210	9	15	3
5158		LEAR	09	19	0015	S36	E57	09	23.6		B	EAO	150	9	15	3
5158		CULG	09	19	0410	S37	E55	09	23.6		A	HS	120	1	2	4
5158		SVTO	09	19	0710	S36	E55	09	23.7		B	FAO	260	7	16	2
5158		RAMY	09	19	1440	S36	E50	09	23.6		B	DAI	200	11	17	3
5158		BOUL	09	19	1446	S35	E49	09	23.5		B	CAO	200	7	15	2
5158		HOLL	09	19	1448	S37	E49	09	23.6		B	ESO	160	14	15	3
5158	24786	MWIL	09	19	1530	S37	E47	09	23.4	5	(BG)					
5158		PALE	09	19	1925	S37	E50	09	23.8		B	FSO	190	9	17	3
5158		LEAR	09	20	0020	S36	E45	09	23.6		B	EAO	210	15	15	4
5158		CULG	09	20	0410	S38	E39	09	23.3		B	FSO	150	5	17	3
5158		SVTO	09	20	0825	S37	E41	09	23.6		BG	FAO	350	17	20	2
5158		BOUL	09	20	1400	S35	E34	09	23.3		B	CAO	210	12	16	2
5158		RAMY	09	20	1514	S36	E37	09	23.6		BG	FKI	300	10	17	2
5158		PALE	09	20	1750	S38	E35	09	23.6		B	FKI	250	11	18	3
5158		LEAR	09	21	0100	S36	E30	09	23.4		BG	EHO	270	14	15	3
5158		CULG	09	21	0245	S36	E29	09	23.4		B	FSO	190	14	17	3
5158		RAMY	09	21	1317	S37	E28	09	23.8		BG	FHO	290	18	17	4
5158		BOUL	09	21	1545	S37	E24	09	23.6		B	CSO	290	9	17	1
5158		HOLL	09	21	1611	S37	E26	09	23.8		B	CSO	180	11	17	3
5158		PALE	09	21	1922	S37	E22	09	23.6		B	FSO	130	12	16	3
5158		LEAR	09	22	0215	S36	E18	09	23.5		B	CHO	140	10	16	3
5158		CULG	09	22	0240	S36	E15	09	23.3		B	FSO	180	10	15	3
5158		SVTO	09	22	0940	S36	E15	09	23.6		BG	FSO	210	9	17	1
5158		BOUL	09	22	1349	S35	E12	09	23.5		B	CSO	140	6	16	2
5158		RAMY	09	22	1400	S36	E12	09	23.5		B	FKO	270	19	16	3
5158	24786	MWIL	09	22	1445	S37	E11	09	23.5	5	(B)					
5158		HOLL	09	22	1543	S36	E12	09	23.6		B	CSO	190	21	17	3

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5158		PALE	09 22 2240	S38 E05	09 23.3		B	FAO	140	13	16	2
5158		LEAR	09 23 0012	S35 E07	09 23.6		B	FSO	190	19	17	4
5158		CULG	09 23 0220	S36 E03	09 23.3		B	FAO	170	11	17	2
5158		SVTO	09 23 0820	S37 E04	09 23.7		B	CKO	30	11	17	3
5158		BOUL	09 23 1423	S36 W02	09 23.4		B	CAO	150	12	16	3
5158	24786	MWIL	09 23 1430	S37 W03	09 23.4	5	(B)					
5158		HOLL	09 23 1621	S37 W02	09 23.5		B	CAO	190	9	16	2
5158		PALE	09 23 2245	S37 W08	09 23.3		B	CAO	160	8	15	2
5158		LEAR	09 24 0043	S36 W06	09 23.5		B	FAO	190	8	16	4
5158		CULG	09 24 0300	S36 W15	09 22.9		B	CAO	110	4	6	3
5158		SVTO	09 24 0610	S37 W14	09 23.1		B	CHO	170	5	8	3
5158		BOUL	09 24 1350	S34 W20	09 23.0		A	HA	110	1	3	2
5158	24786	MWIL	09 24 1430	S36 W22	09 22.8	5	(BP)					
5158		RAMY	09 24 1434	S36 W21	09 22.9		A	HA	130	1	2	2
5158		HOLL	09 24 1605	S37 W17	09 23.3		B	CAO	130	3	7	3
5158		PALE	09 24 1725	S36 W21	09 23.0		A	HH	210	2	3	3
5158		LEAR	09 25 0118	S34 W28	09 22.8		A	HS	100	3	2	3
5158		CULG	09 25 0400	S37 W30	09 22.7		A	AX	60	2	2	1
5158		SVTO	09 25 0746	S37 W30	09 22.9		A	HS	160	3	3	4
5158	24786	MWIL	09 25 1430	S36 W34	09 22.9	5	(AP)					
5158		BOUL	09 25 1455	S36 W33	09 23.0		A	HA	140	1	2	2
5158		RAMY	09 25 1520	S36 W29	09 23.3		B	CAO	160	3	6	4
5158		HOLL	09 25 1555	S37 W33	09 23.0		A	HA	110	2	3	3
5158		PALE	09 25 1935	S36 W37	09 22.8		A	HS	140	3	3	3
5158		LEAR	09 26 0105	S36 W38	09 23.0		A	HS	130	1	2	3
5158		CULG	09 26 0435	S36 W43	09 22.7		A	HS	110	2	2	2
5158		SVTO	09 26 0735	S37 W42	09 22.9		A	HA	100	3	2	3
5158		RAMY	09 26 1215	S37 W44	09 23.0		A	HS	190	1	2	3
5158		BOUL	09 26 1348	S36 W47	09 22.8		A	HA	80	1	2	2
5158		HOLL	09 26 1441	S37 W45	09 23.0		A	HS	160	1	2	3
5158	24786	MWIL	09 26 1515	S37 W47	09 22.8	5	(AP)					
5158		PALE	09 26 1820	S36 W49	09 22.8		A	HA	90	1	2	3
5158		LEAR	09 27 0050	S36 W50	09 23.0		A	HS	150	1	2	3
5158		CULG	09 27 0240	S35 W52	09 22.9		A	HS	40	4	2	2
5158		SVTO	09 27 0845	S37 W54	09 23.0		A	HA	100	1	2	2
5158		BOUL	09 27 1430	S36 W56	09 23.1		A	HS	70	1	3	3
5158	24786	MWIL	09 27 1530	S37 W59	09 22.9	5	(BP)					
5158		PALE	09 27 1915	S37 W61	09 22.9		A	HX	120	1	2	2
5158		CULG	09 28 0230	S34 W65	09 22.9		A	HS	80	1	2	3
5158		SVTO	09 28 0750	S37 W66	09 23.0		A	HS	80	1	2	3
5158		RAMY	09 28 1400	S35 W68	09 23.1		A	HS	120	1	2	4
5158		HOLL	09 28 1425	S36 W69	09 23.1		A	HS	80	1	2	4
5158		BOUL	09 28 1430	S37 W70	09 23.0		A	HS	120	1	2	1
5158	24786	MWIL	09 28 1530	S37 W71	09 22.9	5	(AP)					
5158		PALE	09 28 1745	S36 W70	09 23.1		A	HS	120	1	2	3
5158		LEAR	09 29 0322	S34 W79	09 22.8		A	HS	30	1	2	2
5158		CULG	09 29 0330	S33 W80	09 22.8		A	HS	40	1	1	3
5158		SVTO	09 29 0747	S36 W78	09 23.1		A	HS	60	1	6	4
5172		HOLL	09 26 1441	S21 W42	09 23.4		A	AX		1	1	3
5172	24807	MWIL	09 26 1515	S20 W42	09 23.4	4	(B)					
5172		PALE	09 26 1820	S20 W44	09 23.4		B	BXO	20	3	3	3
5172		LEAR	09 27 0050	S20 W47	09 23.4		B	BXO	20	4	4	3
5172		CULG	09 27 0240	S20 W48	09 23.4		B	BXO	10	2	3	2
5172		SVTO	09 27 0845	S21 W50	09 23.5		B	BXO	10	3	5	2
5172		BOUL	09 27 1430	S21 W53	09 23.5		B	BXO	10	2	4	3
5172		HOLL	09 27 1500	S21 W53	09 23.6		B	BXO	10	2	5	3
5172	24807	MWIL	09 27 1530	S22 W53	09 23.6	4	(B)					
5172		PALE	09 27 1915	S21 W58	09 23.3		B	BXO	10	2	5	2
5172		SVTO	09 28 0750	S20 W65	09 23.3		A	AX	10	1		3
5172	24807	MWIL	09 28 1530	S20 W68	09 23.4	3	(AP)					
5166		RAMY	09 21 1317	N19 E39	09 24.5		A	AX		1	1	4
5166		HOLL	09 21 1611	N20 E37	09 24.5		A	AX		1		3
5166		PALE	09 21 1922	N19 E35	09 24.5		A	AX		1		3
5166		LEAR	09 22 0215	N17 E31	09 24.4		A	AX	10	1	1	3
5166		CULG	09 22 0240	N18 E30	09 24.4		A	AX	10	1	1	3
5166		BOUL	09 22 1349	N19 E23	09 24.3		A	AX		2	1	2
5166		RAMY	09 22 1400	N20 E23	09 24.3		B	BXO	10	4	2	3

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5166	24794	MWIL	09 22 1445	N19 E24	09 24.4	4	(AP)					
5166		PALE	09 22 2240	N17 E20	09 24.5		B	BXO	10	6	4	2
5166		LEAR	09 23 0012	N20 E20	09 24.5		B	BXO	10	7	4	4
5166		CULG	09 23 0220	N19 E19	09 24.5		B	DRO	20	5	3	2
5166		SVTO	09 23 0820	N18 E15	09 24.5		B	CRO	40	9	4	3
5166		BOUL	09 23 1423	N19 E11	09 24.4		B	BXO		9	4	3
5166	24794	MWIL	09 23 1430	N19 E12	09 24.5	4	(B)					
5166		HOLL	09 23 1621	N19 E11	09 24.5		B	BXO	30	8	5	2
5166		PALE	09 23 2245	N19 E07	09 24.5		B	BXO	50	9	5	2
5166		LEAR	09 24 0043	N19 E05	09 24.4		B	DAO	100	8	6	4
5166		CULG	09 24 0300	N18 E04	09 24.4		B	DRO	40	5	6	3
5166		SVTO	09 24 0610	N19 E03	09 24.5		B	DSO	110	9	7	3
5166		BOUL	09 24 1350	N19 W03	09 24.3		B	DAO	60	3	5	2
5166	24794	MWIL	09 24 1430	N20 W02	09 24.4	5	(B)					
5166		RAMY	09 24 1434	N19 W04	09 24.3		B	DAO	130	5	6	2
5166		HOLL	09 24 1605	N19 W04	09 24.4		B	DSO	80	5	7	3
5166		PALE	09 24 1725	N20 W05	09 24.3		B	DSO	120	4	8	3
5166		LEAR	09 25 0118	N21 W09	09 24.4		B	DAO	80	9	7	3
5166		CULG	09 25 0400	N18 W10	09 24.4		B	DSO	60	4	7	1
5166		SVTO	09 25 0746	N19 W13	09 24.3		B	DSO	130	10	7	4
5166	24794	MWIL	09 25 1430	N19 W16	09 24.4	5	(BG)					
5166		BOUL	09 25 1455	N19 W15	09 24.5		B	DAO	100	12	6	2
5166		RAMY	09 25 1520	N19 W17	09 24.3		B	DAI	100	9	6	4
5166		HOLL	09 25 1555	N19 W17	09 24.4		B	DSO	90	9	6	3
5166		PALE	09 25 1935	N20 W17	09 24.5		B	DSO	90	6	6	3
5166		LEAR	09 26 0105	N19 W23	09 24.3		B	DSO	90	7	6	3
5166		CULG	09 26 0435	N20 W23	09 24.4		B	DSO	80	7	6	2
5166		SVTO	09 26 0735	N19 W25	09 24.4		B	DAI	80	13	6	3
5166		RAMY	09 26 1215	N19 W27	09 24.4		B	DAI	1010	12	6	3
5166		BOUL	09 26 1348	N19 W28	09 24.4		B	DAO	70	4	4	2
5166		HOLL	09 26 1441	N19 W28	09 24.5		B	DAO	70	7	5	3
5166	24794	MWIL	09 26 1515	N19 W28	09 24.5	5	(B)					
5166		PALE	09 26 1820	N20 W32	09 24.3		B	DAO	60	8	5	3
5166		LEAR	09 27 0050	N19 W35	09 24.4		B	DSO	50	8	5	3
5166		CULG	09 27 0240	N20 W35	09 24.4		B	DAO	20	6	6	2
5166		SVTO	09 27 0845	N19 W40	09 24.3		B	DSO	30	8	5	2
5166		BOUL	09 27 1430	N19 W40	09 24.5		B	BXO	10	6	5	3
5166	24794	MWIL	09 27 1530	N19 W43	09 24.4	5	(B)					
5166		PALE	09 27 1915	N19 W46	09 24.3		B	BXO	20	4	6	2
5166		CULG	09 28 0230	N20 W51	09 24.2		B	BXO	10	2	2	3
5166		SVTO	09 28 0750	N18 W55	09 24.1		A	AX	10	2	1	3
5166		RAMY	09 28 1400	N18 W58	09 24.2		A	AX	10	2	2	4
5166		HOLL	09 28 1425	N18 W58	09 24.2		B	BXO	10	2	3	4
5166	24794	MWIL	09 28 1530	N18 W58	09 24.2	4	(AP)					
5166		PALE	09 28 1745	N18 W60	09 24.2		B	BXO	10	2	3	3
5166		SVTO	09 29 0747	N18 W68	09 24.1		B	BXO	10	2	7	4
5166		PALE	09 30 1747	N22 W76	09 24.9		B	BXO	30	5	4	3
5167A	24806	MWIL	09 25 1430	N23 W09	09 24.9	4	(AP)					
5167A		BOUL	09 25 1455	N22 W09	09 24.9		A	AX		1		2
5167A		BOUL	09 26 1348	N23 W23	09 24.8		B	CSO	30	4	5	2
5159		SVTO	09 19 0710	N29 E79	09 25.5		A	AX	60	2	1	2
5159		RAMY	09 19 1440	N28 E75	09 25.5		B	BXO	10	2	1	3
5159		HOLL	09 19 1448	N29 E77	09 25.6		A	AX	10	2	1	3
5159	24790	MWIL	09 19 1530	N28 E76	09 25.6	4	AP					
5159		PALE	09 19 1925	N30 E75	09 25.7		A	AX	10	2	2	3
5159		LEAR	09 20 0020	N28 E70	09 25.5		B	CSO	80	4	8	4
5159		CULG	09 20 0410	N25 E66	09 25.3		B	BXO	20	3	3	3
5159		SVTO	09 20 0825	N29 E65	09 25.4		B	DRO	90	2	6	2
5159		BOUL	09 20 1400	N26 E58	09 25.1		B	CSO	50	7	3	2
5159		RAMY	09 20 1514	N29 E59	09 25.3		B	DRI	80	5	3	2
5159		PALE	09 20 1750	N30 E60	09 25.5		B	DRO	60	5	3	3
5159		LEAR	09 21 0100	N28 E54	09 25.3		B	CAO	50	8	4	3
5159		CULG	09 21 0245	N27 E53	09 25.2		B	CRO	50	7	4	3
5159		RAMY	09 21 1317	N28 E49	09 25.4		B	CRI	50	14	9	4
5159		BOUL	09 21 1545	N27 E45	09 25.2		B	BXO	30	5	5	1
5159		HOLL	09 21 1611	N28 E48	09 25.4		B	CSO	50	8	5	3
5159		PALE	09 21 1922	N28 E46	09 25.4		B	CRO	40	8	3	3
5159		LEAR	09 22 0215	N26 E41	09 25.3		B	DSO	90	8	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5159		CULG	09 22 0240	N27 E40	09 25.2		B	DSO	70	9	6	3
5159		SVTO	09 22 0940	N28 E37	09 25.3		B	DSO	220	10	6	1
5159		BOUL	09 22 1349	N26 E34	09 25.2		B	DAO	170	7	7	2
5159		RAMY	09 22 1400	N28 E36	09 25.4		B	DKO	210	15	9	3
5159	24790	MWIL	09 22 1445	N27 E35	09 25.3	5	(B)					
5159		HOLL	09 22 1543	N28 E35	09 25.4		B	DSO	130	18	8	3
5159		PALE	09 22 2240	N26 E30	09 25.3		B	DAO	140	8	7	2
5159		LEAR	09 23 0012	N28 E29	09 25.3		B	DAO	170	17	9	4
5159		CULG	09 23 0220	N26 E29	09 25.3		B	DAO	100	7	8	2
5159		SVTO	09 23 0820	N28 E26	09 25.4		B	DAI	180	27	8	3
5159		BOUL	09 23 1423	N26 E22	09 25.3		B	DAI	150	33	9	3
5159	24790	MWIL	09 23 1430	N28 E23	09 25.4	5	(BG)					
5159		HOLL	09 23 1621	N28 E22	09 25.4		B	DAI	210	20	9	2
5159		PALE	09 23 2245	N27 E19	09 25.4		B	EAI	210	29	11	2
5159		LEAR	09 24 0043	N28 E16	09 25.3		B	DAO	220	32	9	4
5159		CULG	09 24 0300	N27 E16	09 25.4		B	DAI	210	19	8	3
5159		SVTO	09 24 0610	N28 E14	09 25.3		B	EAI	360	38	12	3
5159		BOUL	09 24 1350	N28 E09	09 25.3		B	DAI	210	17	8	2
5159	24790	MWIL	09 24 1430	N28 E09	09 25.3	5	(B)					
5159		RAMY	09 24 1434	N28 E09	09 25.3		B	DAI	350	40	10	2
5159		HOLL	09 24 1605	N28 E08	09 25.3		B	DAI	200	25	10	3
5159		PALE	09 24 1725	N28 E08	09 25.3		B	DAI	260	24	10	3
5159		LEAR	09 25 0118	N29 E04	09 25.4		B	ESI	240	23	12	3
5159		CULG	09 25 0400	N27 E02	09 25.3		B	DAI	70	8	8	1
5159		SVTO	09 25 0746	N28 W01	09 25.2		B	EHI	270	30	11	4
5159	24790	MWIL	09 25 1430	N28 W04	09 25.3	5	(B)					
5159		BOUL	09 25 1455	N28 W05	09 25.2		B	DSO	170	12	9	2
5159		RAMY	09 25 1520	N28 W05	09 25.2		B	EAI	230	23	12	4
5159		HOLL	09 25 1555	N28 W06	09 25.2		B	DSI	190	19	10	3
5159		PALE	09 25 1935	N28 W06	09 25.3		B	DHO	250	23	10	3
5159		LEAR	09 26 0105	N28 W10	09 25.3		B	DSI	190	24	10	3
5159		CULG	09 26 0435	N28 W12	09 25.2		B	ESI	210	18	11	2
5159		SVTO	09 26 0735	N28 W12	09 25.4		B	EAI	220	30	14	3
5159		RAMY	09 26 1215	N28 W15	09 25.3		B	ESI	250	28	13	3
5159		BOUL	09 26 1348	N28 W17	09 25.2		B	DSO	160	12	9	2
5159		HOLL	09 26 1441	N28 W17	09 25.3		B	ESI	180	31	13	3
5159	24790	MWIL	09 26 1515	N28 W18	09 25.2	6	(BG)					
5159		PALE	09 26 1820	N27 W18	09 25.4		B	ESO	220	20	13	3
5159		LEAR	09 27 0050	N28 W23	09 25.2		B	CSI	140	22	11	3
5159		CULG	09 27 0240	N29 W22	09 25.4		B	EAO	190	14	12	2
5159		SVTO	09 27 0845	N27 W27	09 25.3		B	EAI	220	24	13	2
5159		BOUL	09 27 1430	N25 W28	09 25.4		B	DAI	170	20	10	3
5159	24790	MWIL	09 27 1530	N28 W31	09 25.2	6	(B)					
5159		PALE	09 27 1915	N27 W34	09 25.1		B	DSO	140	18	9	2
5159		CULG	09 28 0230	N28 W35	09 25.4		B	DAO	130	16	12	3
5159		SVTO	09 28 0750	N28 W39	09 25.3		B	CAI	130	23	12	3
5159		RAMY	09 28 1400	N28 W43	09 25.2		B	CSI	200	23	12	4
5159		HOLL	09 28 1425	N28 W44	09 25.2		B	CAO	110	22	11	4
5159		BOUL	09 28 1430	N26 W41	09 25.4		B	CAO	170	8	12	1
5159	24790	MWIL	09 28 1530	N28 W45	09 25.1	6	(B)					
5159		PALE	09 28 1745	N30 W44	09 25.3		B	CAO	120	15	11	3
5159		LEAR	09 29 0322	N28 W48	09 25.4		B	EAO	80	5	11	2
5159		CULG	09 29 0330	N31 W49	09 25.3		B	CSO	110	4	11	3
5159		SVTO	09 29 0747	N28 W54	09 25.1		B	CHO	110	2	8	4
5159		RAMY	09 29 1345	N30 W58	09 25.0		B	CSO	180	2	7	4
5159		BOUL	09 29 1420	N28 W54	09 25.4		B	CSO	100	2	7	3
5159	24790	MWIL	09 29 1530	N28 W58	09 25.1	5	(BP)					
5159		HOLL	09 29 1633	N29 W58	09 25.1		B	CSO	70	2	10	3
5159		LEAR	09 30 0017	N28 W60	09 25.3		B	CAO	60	3	7	4
5159		CULG	09 30 0410	N28 W65	09 25.1		A	HS	70	1	2	3
5159		SVTO	09 30 1057	N27 W65	09 25.4		A	HH	120	1	4	3
5159	24790	MWIL	09 30 1500	N28 W71	09 25.1	6	(B)					
5159		HOLL	09 30 1610	N26 W70	09 25.2		B	CAO	60	2	6	3
5159		PALE	09 30 1747	N27 W74	09 25.0		B	CAO	90	3	6	3
5159		LEAR	10 01 0027	N28 W77	09 25.1		A	HA	60	1	1	2
5159		CULG	10 01 0405	N29 W76	09 25.3		A	HS	60	1	1	3
5159		SVTO	10 01 1043	N28 W83	09 25.0		A	HH	120	1	3	3
5159		BOUL	10 01 1415	N26 W82	09 25.3		A	HS	60	1	1	3
5159		RAMY	10 01 1418	N28 W86	09 25.0		A	HA	60	1	2	3
5159	24790	MWIL	10 01 1530	N28 W84	09 25.2	4	(AP)					

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5159		HOLL	10 01 1615	N26 W84	09 25.2		A	HA	50	2	2	4
5159		PALE	10 01 1755	N29 W86	09 25.1		A	HA	60	1	2	3
5167		CULG	09 19 0410	S37 E76	09 25.3		A	AX	10	1	1	4
5167		RAMY	09 19 1440	S39 E69	09 25.2		A	AX		2		3
5167	24789	MWIL	09 19 1530	S39 E65	09 24.9	2	AP					
5167		LEAR	09 20 0020	S38 E60	09 24.9		B	BXO	10	3	3	4
5167		CULG	09 20 0410	S42 E63	09 25.3		A	AX	10	1	1	3
5167		RAMY	09 20 1514	S39 E57	09 25.3		B	BXO	10	2	2	2
5167		PALE	09 20 1750	S40 E59	09 25.5		A	AX	10	2	2	3
5167		LEAR	09 21 0100	S39 E52	09 25.3		A	AX	20	2	1	3
5167		CULG	09 21 0245	S39 E49	09 25.1		A	AX	10	2	1	3
5167		RAMY	09 21 1317	S39 E46	09 25.3		A	AX	10	2	2	4
5167		HOLL	09 21 1611	S39 E46	09 25.4		A	AX	10	2	1	3
5167		PALE	09 21 1922	S39 E43	09 25.3		A	AX	10	3	2	3
5167		LEAR	09 22 0215	S40 E40	09 25.3		A	AXO	20	2	1	3
5167		CULG	09 22 0240	S39 E36	09 25.0		A	AX	10	2	1	3
5167		BOUL	09 22 1349	S39 E34	09 25.3		A	AX		1		2
5167	24789	MWIL	09 22 1445	S39 E33	09 25.3	3	(AP)					
5167		HOLL	09 22 1543	S38 E33	09 25.3		A	AX	10	3	2	3
5167		LEAR	09 23 0012	S38 E28	09 25.3		B	BXO	20	2	2	4
5167		CULG	09 23 0220	S39 E25	09 25.1		A	AX	10	1	1	2
5167		SVTO	09 23 0820	S37 E25	09 25.4		A	AX	10	1		3
5167	24789	MWIL	09 23 1430	S39 E23	09 25.5	4	(AP)					
5167		LEAR	09 24 0043	S38 E15	09 25.2		B	BXO	10	2	1	4
5162		HOLL	09 19 1448	N24 E78	09 25.6		A	AX		1		3
5162	24791	MWIL	09 19 1530	N23 E76	09 25.5	3	AP					
5162		PALE	09 19 1925	N25 E73	09 25.5		A	AX	10	2	2	3
5162		LEAR	09 20 0020	N23 E67	09 25.2		B	ESO	90	11	11	4
5162		RAMY	09 20 1514	N24 E60	09 25.3		B	CRO	400	3	4	2
5162		PALE	09 20 1750	N25 E60	09 25.4		B	CRO	20	3	3	3
5162		LEAR	09 21 0100	N23 E54	09 25.2		B	BXO	20	3	4	3
5162		CULG	09 21 0245	N23 E53	09 25.2		B	BXO	10	3	4	3
5162		RAMY	09 21 1317	N23 E48	09 25.2		B	BXO	10	6	5	4
5162		BOUL	09 21 1545	N23 E43	09 25.0		B	BXO	10	2	2	1
5162		HOLL	09 21 1611	N24 E47	09 25.3		B	BXO	10	6	4	3
5162		PALE	09 21 1922	N23 E44	09 25.2		B	BXO	10	4	3	3
5162		LEAR	09 22 0215	N21 E39	09 25.1		B	BXO	10	3	2	3
5162		CULG	09 22 0240	N22 E39	09 25.1		A	HR	20	3	2	3
5162		RAMY	09 22 1400	N23 E33	09 25.1		A	AX	10	3	2	3
5162	24791	MWIL	09 22 1445	N22 E33	09 25.1	3	(AP)					
5162		HOLL	09 22 1543	N23 E32	09 25.1		A	AX		3	1	3
5162		LEAR	09 23 0012	N23 E34	09 25.6		B	BXO	20	2	2	4
5162		CULG	09 23 0220	N22 E34	09 25.7		A	AX	10	3	2	2
5162		SVTO	09 23 0820	N23 E29	09 25.6		A	AX	10	2	2	3
5162		BOUL	09 23 1423	N23 E26	09 25.6		B	BXO		6	4	3
5162	24791	MWIL	09 23 1430	N23 E28	09 25.8	4	(B)					
5162		HOLL	09 23 1621	N23 E26	09 25.7		B	BXO	20	5	4	2
5162		PALE	09 23 2245	N22 E23	09 25.7		B	BXO	20	5	3	2
5162		LEAR	09 24 0043	N22 E20	09 25.6		B	DSO	70	8	4	4
5162		CULG	09 24 0300	N22 E20	09 25.7		B	DRO	30	4	3	3
5162		SVTO	09 24 0610	N24 E17	09 25.6		B	DSO	80	10	4	3
5162		BOUL	09 24 1350	N22 E13	09 25.6		B	CAO	30	6	3	2
5162	24791	MWIL	09 24 1430	N22 E14	09 25.7	5	(BG)					
5162		RAMY	09 24 1434	N23 E14	09 25.7		B	CAO	60	16	5	2
5162		HOLL	09 24 1605	N23 E13	09 25.7		B	CSO	30	14	6	3
5162		PALE	09 24 1725	N22 E12	09 25.6		B	CSI	40	12	6	3
5162		LEAR	09 25 0118	N23 E08	09 25.7		B	CAO	60	13	6	3
5162		CULG	09 25 0400	N21 E06	09 25.6		B	CRI	20	10	3	1
5162		SVTO	09 25 0746	N23 E04	09 25.6		B	DAI	30	15	5	4
5162		BOUL	09 25 1455	N22 W01	09 25.5		B	CSI	20	15	6	2
5162		RAMY	09 25 1520	N23 E00	09 25.6		B	DAI	90	16	6	4
5162		HOLL	09 25 1555	N23 W02	09 25.5		B	DAO	40	11	6	3
5162		PALE	09 25 1935	N23 W03	09 25.6		B	DAO	50	8	4	3
5162		LEAR	09 26 0105	N23 W07	09 25.5		B	DSI	80	7	4	3
5162		CULG	09 26 0435	N23 W08	09 25.6		B	DAO	20	8	5	2
5162		SVTO	09 26 0735	N23 W10	09 25.5		B	DAO	50	14	5	3
5162		RAMY	09 26 1215	N23 W12	09 25.6		B	DRO	40	8	5	3
5162		HOLL	09 26 1441	N23 W13	09 25.6		B	DAO	70	9	6	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
5162	24791	MWIL	09 26 1515	N24 W14	09 25.5	4	(B)					
5162		PALE	09 26 1820	N23 W16	09 25.5		B	CAO	70	12	6	3
5162		LEAR	09 27 0050	N23 W20	09 25.5		B	CAO	40	8	6	3
5162		CULG	09 27 0240	N24 W19	09 25.6		B	DAO	20	4	6	2
5162		SVTO	09 27 0845	N23 W24	09 25.5		B	DSO	30	11	5	2
5162	24791	MWIL	09 27 1530	N24 W27	09 25.5	5	(B)					
5162		PALE	09 27 1915	N24 W30	09 25.5		B	BXO	30	5	5	2
5162		CULG	09 28 0230	N24 W33	09 25.5		B	DRO	20	3	5	3
5162		SVTO	09 28 0750	N24 W37	09 25.5		B	BXO	10	7	5	3
5162		RAMY	09 28 1400	N25 W41	09 25.4		B	BXO	10	5	6	4
5162		HOLL	09 28 1425	N24 W41	09 25.4		B	BXO	10	7	5	4
5162	24791	MWIL	09 28 1530	N24 W40	09 25.5	4	(B)					
5162		PALE	09 28 1745	N25 W42	09 25.5		B	BXO	10	3	6	3
5162		LEAR	09 29 0322	N24 W47	09 25.5		B	BXO	10	2	6	2
5162		CULG	09 29 0330	N26 W47	09 25.5		B	BXO	10	4	7	3
5162	24791	MWIL	09 29 1530	N24 W54	09 25.5	4	(B)					
5162		LEAR	09 30 0017	N24 W60	09 25.4		B	BXO	10	2	3	4
5162		CULG	09 30 0410	N24 W62	09 25.4		B	BXO	10	3	5	3
5162		SVTO	09 30 1057	N23 W71	09 25.0		B	BXO	10	2	5	3
5162	24791	MWIL	09 30 1500	N24 W70	09 25.2	5	(BP)					
5162		HOLL	09 30 1610	N22 W72	09 25.1		A	AX	10	3	2	3
5162		LEAR	10 01 0027	N22 W77	09 25.2		B	BXO	20	2	3	2
5162		BOUL	10 01 1415	N21 W81	09 25.5		A	AX		1		3
5162		RAMY	10 01 1418	N23 W82	09 25.4		B	BXO	30	2	2	3
5162	24791	MWIL	10 01 1530	N24 W83	09 25.3	5	(AP)					
5162		HOLL	10 01 1615	N22 W85	09 25.2		A	AX		1		4
5159A		RAMY	10 01 1418	N15 W78	09 25.8		B	DAO	280	5	9	3
5170		SVTO	09 24 0610	N26 E26	09 26.3		B	BXO		2	2	3
5170		BOUL	09 24 1350	N26 E21	09 26.2		A	AX		1		2
5170	24803	MWIL	09 24 1430	N27 E21	09 26.2	4	(AP)					
5170		RAMY	09 24 1434	N27 E21	09 26.2		A	AX		2	1	2
5170		HOLL	09 24 1605	N26 E20	09 26.2		A	AX		2	1	3
5170		PALE	09 24 1725	N25 E20	09 26.3		A	AX		2	1	3
5170		SVTO	09 25 0746	N29 E11	09 26.2		A	AX		1		4
5170		BOUL	09 25 1455	N25 E08	09 26.2		A	AX		1		2
5170		PALE	09 25 1935	N29 E06	09 26.3		A	AX		2	1	3
5162A		PALE	09 20 1750	N20 E72	09 26.2		B	BXO	10	2	4	3
5162A		LEAR	09 21 0100	N16 E66	09 26.0		B	BXO	20	2	3	3
5162A		CULG	09 21 0245	N16 E64	09 26.0		A	AX	10	1	1	3
5162A		RAMY	09 21 1317	N16 E59	09 26.0		A	AX	10	2	1	4
5162A		HOLL	09 21 1611	N17 E59	09 26.1		A	AX	10	4	2	3
5162A		PALE	09 21 1922	N17 E56	09 26.1		A	AX		1		3
5162A		LEAR	09 22 0215	N14 E59	09 26.5		A	AX	10	1	1	3
5162A	24800	MWIL	09 23 1430	N15 E33	09 26.1	3	(AP)					
5162A	24800	MWIL	09 24 1430	N17 E24	09 26.4	3	(AF)					
5163		SVTO	09 20 0825	N21 E82	09 26.6		A	HR	40	1	1	2
5163		BOUL	09 20 1400	N22 E72	09 26.1		A	AX		1		2
5163		RAMY	09 20 1514	N20 E73	09 26.2		B	CRO	40	2	5	2
5163		LEAR	09 21 0100	N22 E70	09 26.4		B	BXO	30	3	9	3
5163		CULG	09 21 0245	N22 E68	09 26.3		A	HR	20	1	2	3
5163		RAMY	09 21 1317	N22 E66	09 26.6		B	CRO	50	6	9	4
5163		BOUL	09 21 1545	N22 E59	09 26.2		A	AX	20	1	1	1
5163		HOLL	09 21 1611	N23 E66	09 26.7		B	CSO	60	7	8	3
5163		PALE	09 21 1922	N22 E64	09 26.7		B	CSO	50	4	9	3
5163		LEAR	09 22 0215	N19 E55	09 26.3		B	BXO	20	5	5	3
5163		CULG	09 22 0240	N19 E57	09 26.5		B	CSO	30	5	3	3
5163		SVTO	09 22 0940	N23 E51	09 26.3		B	CSO	20	4	4	1
5163		BOUL	09 22 1349	N21 E48	09 26.2		B	CAO	60	4	4	2
5163		RAMY	09 22 1400	N23 E53	09 26.7		B	CAI	60	16	12	3
5163	24795	MWIL	09 22 1445	N20 E49	09 26.4	4	(B)					
5163		PALE	09 22 2240	N18 E45	09 26.4		B	CSO	60	3	4	2
5163		LEAR	09 23 0012	N21 E43	09 26.3		B	DSO	100	11	7	4
5163		CULG	09 23 0220	N19 E44	09 26.4		B	DRO	60	5	5	2
5163		SVTO	09 23 0820	N22 E41	09 26.5		B	DSO	70	9	5	3
5163		BOUL	09 23 1423	N21 E36	09 26.3		B	CAO	30	14	6	3
5163	24795	MWIL	09 23 1430	N20 E36	09 26.3	5	(BG)					

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5163		HOLL	09 23 1621	N21 E36	09 26.4		B	CAO	50	4	6	2
5163		PALE	09 23 2245	N20 E34	09 26.5		B	CXO	40	5	7	2
5163		LEAR	09 24 0043	N21 E30	09 26.3		B	DSO	60	5	4	4
5163		CULG	09 24 0300	N20 E29	09 26.3		B	DRO	20	2	3	3
5163		SVTO	09 24 0610	N23 E27	09 26.3		B	BXO	30	14	6	3
5163		BOUL	09 24 1350	N21 E23	09 26.3		B	BXO	10	4	7	2
5163	24795	MWIL	09 24 1430	N22 E24	09 26.4	4	(BP)					
5163		RAMY	09 24 1434	N23 E24	09 26.4		B	BXO	20	9	5	2
5163		HOLL	09 24 1605	N21 E22	09 26.3		B	BXO	10	7	6	3
5163		PALE	09 24 1725	N21 E21	09 26.3		B	BXO	10	8	6	3
5163		LEAR	09 25 0118	N22 E20	09 26.6		B	BXO	20	9	9	3
5163		SVTO	09 25 0746	N22 E13	09 26.3		B	CRO	20	13	7	4
5163	24795	MWIL	09 25 1430	N22 E10	09 26.4	4	(BP)					
5163		BOUL	09 25 1455	N22 E10	09 26.4		B	BXO		8	6	2
5163		RAMY	09 25 1520	N23 E09	09 26.3		B	BXO	30	11	5	4
5163		HOLL	09 25 1555	N21 E09	09 26.3		B	BXO	10	8	7	3
5163		PALE	09 25 1935	N21 E08	09 26.4		B	BXO	20	8	7	3
5163		LEAR	09 26 0105	N22 E04	09 26.3		B	BXO	10	11	7	3
5163		CULG	09 26 0435	N21 E04	09 26.5		B	DAI	10	11	8	2
5163		SVTO	09 26 0735	N22 E01	09 26.4		B	CRI	10	11	8	3
5163		RAMY	09 26 1215	N22 W03	09 26.3		B	BXO	10	6	6	3
5163		BOUL	09 26 1348	N22 W03	09 26.3		B	BXO	10	3	6	2
5163		HOLL	09 26 1441	N22 W04	09 26.3		B	BXO	20	10	5	3
5163	24795	MWIL	09 26 1515	N22 W04	09 26.3	4	(B)					
5163		PALE	09 26 1820	N23 W07	09 26.2		B	BXO	20	6	6	3
5163		LEAR	09 27 0050	N22 W09	09 26.3		B	BXO	10	4	5	3
5163		SVTO	09 27 0845	N21 W13	09 26.4		B	CRO	10	3	5	2
5163		HOLL	09 27 1500	N22 W16	09 26.4		B	CSO	20	7	7	3
5163	24795	MWIL	09 27 1530	N22 W16	09 26.4	4	(B)					
5163		PALE	09 27 1915	N22 W18	09 26.4		B	BXO	30	7	8	2
5163		CULG	09 28 0230	N22 W23	09 26.3		B	CRO	10	3	3	3
5163		SVTO	09 28 0750	N22 W24	09 26.5		B	BXO	10	8	10	3
5163		RAMY	09 28 1400	N23 W32	09 26.1		B	BXO	10	5	4	4
5163		HOLL	09 28 1425	N22 W27	09 26.5		B	BXO	10	8	11	4
5163	24795	MWIL	09 28 1530	N22 W28	09 26.5	4	(BG)					
5163		PALE	09 28 1745	N24 W22	09 27.0		B	BXO	10	2	3	3
5163		LEAR	09 29 0322	N23 W27	09 27.0		B	BXO	10	2	3	2
5163		SVTO	09 29 0747	N23 W31	09 26.9		B	BXO		2	3	4
5163	24795	MWIL	09 29 1530	N23 W35	09 26.9	4	(BG)					
5163		HOLL	09 29 1633	N23 W41	09 26.5		B	BXO		3	9	3
5163		LEAR	09 30 0017	N23 W40	09 26.9		A	AX	10	2	2	4
5163		SVTO	09 30 1057	N27 W45	09 26.9		B	BXO	10	2	3	3
5163	24795	MWIL	09 30 1500	N23 W49	09 26.8	4	(BF)					
5163	24795	MWIL	09 30 1500	N28 W45	09 27.1	5	(B)					
5163		HOLL	09 30 1610	N22 W50	09 26.8		B	BXO	10	4	4	3
5163		PALE	09 30 1747	N23 W52	09 26.7		A	AX	10	3	2	3
5163		LEAR	10 01 0027	N22 W56	09 26.8		A	AX	10	1	1	2
5163		CULG	10 01 0405	N23 W58	09 26.8		A	AX		1		3
5163		SVTO	10 01 1043	N22 W61	09 26.8		B	BXO	10	2	3	3
5163		BOUL	10 01 1415	N24 W65	09 26.7		B	CSO	20	6	10	3
5163		RAMY	10 01 1418	N22 W63	09 26.8		B	BXO	40	4	5	3
5163	24795	MWIL	10 01 1530	N23 W62	09 27.0	4	(B)					
5163		HOLL	10 01 1615	N22 W63	09 26.9		B	BXO	10	4	6	4
5163		PALE	10 01 1755	N22 W63	09 27.0		B	BXO	10	3	5	3
5163		LEAR	10 02 0040	N23 W68	09 26.9		B	BXO	20	2	3	3
5163		CULG	10 02 0355	N25 W67	09 27.1		A	AX		1		2
5163		SVTO	10 02 0755	N22 W71	09 27.0			AX		1		4
5163		RAMY	10 02 1332	N22 W74	09 27.0		A	AX	10	1	1	4
5163		BOUL	10 02 1335	N22 W71	09 27.2		B	BXO		2	2	3
5163	24795	MWIL	10 02 1500	N24 W74	09 27.0	3	AF					
5163		HOLL	10 02 1637	N22 W76	09 26.9		A	AX	10	1	1	3
5163		PALE	10 02 1910	N22 W78	09 26.9		A	AX	10	1	1	2
5163A	24804	MWIL	09 24 1430	S20 E28	09 26.7	2	X					
5176		LEAR	10 01 0027	N28 W51	09 27.1		B	CRO	20	4	5	2
5176		CULG	10 01 0405	N29 W51	09 27.3		B	BXO	20	5	4	3
5176		SVTO	10 01 1043	N28 W57	09 27.1		B	CRO	20	4	4	3
5176		RAMY	10 01 1418	N28 W58	09 27.2		B	CRO	40	3	4	3
5176	24812	MWIL	10 01 1530	N28 W58	09 27.2	5	(B)					

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5176		HOLL	10 01 1615	N28 W58	09 27.2		A	AX	10	3	2	4
5176		PALE	10 01 1755	N28 W59	09 27.2		A	AX	10	5	2	3
5176		LEAR	10 02 0040	N28 W64	09 27.1		B	BXO	30	6	6	3
5176		CULG	10 02 0355	N31 W62	09 27.4		A	HR	20	2	1	2
5176		SVTO	10 02 0755	N28 W66	09 27.3		A	AX		2	1	4
5176		RAMY	10 02 1332	N27 W72	09 27.0		B	BXO	10	3	5	4
5176		BOUL	10 02 1335	N28 W70	09 27.2		B	BXO		2	5	3
5176	24812	MWIL	10 02 1500	N28 W72	09 27.1	4	(B)					
5176		HOLL	10 02 1637	N27 W72	09 27.2		B	BXO	30	3	3	3
5176		PALE	10 02 1910	N28 W72	09 27.3		A	AX	10	1	1	2
5176		BOUL	10 03 1405	N29 W80	09 27.4		B	BXO	30	2	4	3
5163B	24810	MWIL	09 27 1530	S20 W04	09 27.3	4	(AP)					
5163C		HOLL	09 26 1441	N19 E11	09 27.4		A	AX	10	2	1	3
5163C	24808	MWIL	09 26 1515	N19 E11	09 27.5	4	(AP)					
5163C		RAMY	09 28 1400	N22 W22	09 26.9		A	AX		1		4
5163C		BOUL	09 28 1430	N22 W21	09 27.0		A	AX	10	1	1	1
5163C		CULG	09 29 0330	N24 W27	09 27.0		B	DRO	10	3	3	3
5163C		PALE	09 30 1747	N23 W48	09 27.0		B	BXO	20	4	4	3
5173	24811	MWIL	09 27 1530	N28 E13	09 28.7	4	(AF)					
5173		CULG	09 28 0230	N27 E08	09 28.7		A	AX	10	1	1	3
5173		SVTO	09 28 0750	N27 E03	09 28.6		B	BXO	10	4	4	3
5173		RAMY	09 28 1400	N28 E00	09 28.6		B	BXO	10	3	3	4
5173		HOLL	09 28 1425	N28 W01	09 28.5		A	AX		4	2	4
5173	24811	MWIL	09 28 1530	N28 W01	09 28.6	4	(AP)					
5173		PALE	09 28 1745	N28 E03	09 29.0		A	AX		4	2	3
5173		LEAR	09 29 0322	N27 W07	09 28.6		A	AX	10	1	1	2
5173		CULG	09 29 0330	N28 W08	09 28.5		B	CRO	20	4	4	3
5173		SVTO	09 29 0747	N28 W11	09 28.5		B	BXO	10	7	4	4
5173		RAMY	09 29 1345	N28 W13	09 28.5		B	BXO	20	7	4	4
5173	24811	MWIL	09 29 1530	N27 W13	09 28.6	4	(AP)					
5173		HOLL	09 29 1633	N27 W15	09 28.5		B	BXO		5	3	3
5173	24811	MWIL	10 03 1515	N29 W68	09 28.4	4	(B)					
5173		HOLL	10 03 1652	N27 W69	09 28.4		B	BXO	10	3	3	3
5173A	24817	MWIL	10 03 1515	S22 W56	09 29.4	4	(BP)					
5168		SVTO	09 23 0820	N18 E87	09 30.0		B	DSO	120	3	3	3
5168		BOUL	09 23 1423	N18 E79	09 29.6		B	DAO	190	3	5	3
5168	24802	MWIL	09 23 1430	N18 E84	09 30.0	3	(AP)					
5168		HOLL	09 23 1621	N19 E79	09 29.7		B	ESO	210	5	14	2
5168		PALE	09 23 2245	N17 E77	09 29.8		B	DAO	240	2	5	2
5168		LEAR	09 24 0043	N18 E77	09 29.9		B	DSO	300	6	5	4
5168		CULG	09 24 0300	N16 E72	09 29.6		B	DSO	170	3	4	3
5168		SVTO	09 24 0610	N18 E75	09 30.0		B	DHO	240	2	4	3
5168		BOUL	09 24 1350	N19 E67	09 29.7		B	DSO	180	2	4	2
5168	24802	MWIL	09 24 1430	N18 E68	09 29.8	5	(AP)					
5168		RAMY	09 24 1434	N19 E69	09 29.9		B	DSO	180	4	4	2
5168		HOLL	09 24 1605	N19 E66	09 29.7		B	DAO	220	4	5	3
5168		PALE	09 24 1725	N18 E65	09 29.7		B	DSO	260	2	6	3
5168		LEAR	09 25 0118	N18 E62	09 29.8		B	DAO	180	9	5	3
5168		CULG	09 25 0400	N17 E59	09 29.6		B	DSO	110	3	3	1
5168		SVTO	09 25 0746	N19 E59	09 29.8		B	DKO	300	8	5	4
5168	24802	MWIL	09 25 1430	N18 E55	09 29.8	5	(BP)					
5168		BOUL	09 25 1455	N19 E54	09 29.7		B	DAO	180	9	6	2
5168		RAMY	09 25 1520	N19 E55	09 29.8		B	DAO	250	13	5	4
5168		HOLL	09 25 1555	N19 E55	09 29.9		B	DAO	290	8	5	3
5168		PALE	09 25 1935	N17 E54	09 29.9		B	DSO	260	8	5	3
5168		LEAR	09 26 0105	N19 E47	09 29.6		B	DSI	210	8	6	3
5168		CULG	09 26 0435	N17 E46	09 29.7		B	DSI	250	13	5	2
5168		SVTO	09 26 0735	N19 E46	09 29.8		B	DAI	310	27	6	3
5168		BOUL	09 26 1348	N19 E40	09 29.6		B	DAO	250	12	6	2
5168		HOLL	09 26 1441	N19 E43	09 29.9		B	DAI	290	27	8	3
5168	24802	MWIL	09 26 1515	N18 E42	09 29.8	6	(B)					
5168		PALE	09 26 1820	N19 E41	09 29.9		B	DSI	280	27	8	3
5168		LEAR	09 27 0050	N19 E35	09 29.7		B	DSO	230	19	7	3
5168		CULG	09 27 0240	N17 E34	09 29.7		B	DAO	250	11	7	2
5168		SVTO	09 27 0845	N20 E31	09 29.7		B	DAI	250	27	6	2

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5168		BOUL	09 27 1430	N19 E27	09 29.7		B	DSI	200	21	9	3
5168		HOLL	09 27 1500	N20 E28	09 29.8		B	DSI	250	27	8	3
5168	24802	MWIL	09 27 1530	N18 E27	09 29.7	6	(B)					
5168		PALE	09 27 1915	N19 E27	09 29.9		B	DSO	230	28	8	2
5168		CULG	09 28 0230	N18 E21	09 29.7		B	DSI	190	19	9	3
5168		SVTO	09 28 0750	N20 E19	09 29.8		BG	EAI	190	34	11	3
5168		RAMY	09 28 1400	N21 E15	09 29.7		B	EAI	290	47	12	4
5168		HOLL	09 28 1425	N21 E14	09 29.7		B	DSI	240	40	10	4
5168		BOUL	09 28 1430	N19 E14	09 29.7		B	ESI	230	15	12	1
5168	24802	MWIL	09 28 1530	N18 E14	09 29.7	6	(B)					
5168		PALE	09 28 1745	N20 E14	09 29.8		B	ESI	240	38	12	3
5168		LEAR	09 29 0322	N19 E07	09 29.7		B	ESI	130	16	12	2
5168		CULG	09 29 0330	N18 E07	09 29.7		B	EAI	180	19	11	3
5168		SVTO	09 29 0747	N20 E05	09 29.7		B	ESI	310	36	13	4
5168		RAMY	09 29 1345	N22 E04	09 29.9		B	CSI	320	42	14	4
5168		BOUL	09 29 1420	N19 E03	09 29.8		B	FSI	190	23	16	3
5168	24802	MWIL	09 29 1530	N18 W00	09 29.6	6	(B)					
5168		HOLL	09 29 1633	N20 E02	09 29.8		B	ESI	250	39	14	3
5168		LEAR	09 30 0017	N19 W04	09 29.7		B	ESI	170	43	13	4
5168		CULG	09 30 0410	N18 W04	09 29.9		B	FSI	140	41	17	3
5168		SVTO	09 30 1057	N20 W08	09 29.8		B	FHI	330	48	17	3
5168	24802	MWIL	09 30 1500	N18 W12	09 29.7	5	(BG)					
5168		HOLL	09 30 1610	N20 W13	09 29.7		B	ESI	160	34	14	3
5168		PALE	09 30 1747	N20 W13	09 29.7		B	ESO	290	28	14	3
5168		LEAR	10 01 0027	N20 W19	09 29.7		B	EAI	210	30	14	2
5168		CULG	10 01 0405	N20 W17	09 30.0		B	FAI	330	29	16	3
5168		SVTO	10 01 1043	N20 W23	09 29.8		B	EHI	320	39	14	3
5168		BOUL	10 01 1415	N19 W28	09 29.5		B	DSC	310	18	10	3
5168		RAMY	10 01 1418	N20 W27	09 29.6		B	EAI	330	24	11	3
5168	24802	MWIL	10 01 1530	N18 W25	09 29.8	5	(BG)					
5168		HOLL	10 01 1615	N19 W27	09 29.7		B	DSI	300	35	10	4
5168		PALE	10 01 1755	N20 W28	09 29.7		B	DSI	280	28	10	3
5168		LEAR	10 02 0040	N20 W33	09 29.6		B	DAI	360	21	10	3
5168		CULG	10 02 0355	N20 W30	09 30.0		B	FAI	320	33	16	2
5168		SVTO	10 02 0755	N21 W36	09 29.7		B	DSI	370	19	10	4
5168		RAMY	10 02 1332	N20 W40	09 29.6		B	DAO	380	16	10	4
5168		BOUL	10 02 1335	N20 W38	09 29.7		B	DAC	380	18	9	3
5168	24802	MWIL	10 02 1500	N18 W38	09 29.8	6	(BG)					
5168		HOLL	10 02 1637	N21 W40	09 29.7		B	DSI	280	16	8	3
5168		PALE	10 02 1910	N21 W43	09 29.6		B	DSI	290	18	9	2
5168		LEAR	10 03 0152	N21 W46	09 29.6		B	DAO	250	13	10	2
5168		CULG	10 03 0250	N22 W47	09 29.6		B	DAO	350	14	9	3
5168		SVTO	10 03 0736	N21 W50	09 29.6		B	DAI	300	20	10	/
5168		BOUL	10 03 1405	N20 W52	09 29.7		B	DAC	310	24	9	3
5168	24802	MWIL	10 03 1515	N18 W50	09 29.9	6	(B)					
5168		HOLL	10 03 1652	N21 W55	09 29.6		B	DSO	260	17	10	3
5168		PALE	10 03 1820	N21 W56	09 29.6		B	ESO	290	17	12	3
5168		LEAR	10 04 0018	N22 W58	09 29.6		BG	EAI	490	26	11	4
5168		CULG	10 04 0325	N22 W59	09 29.7		B	DAO	270	9	9	3
5168		SVTO	10 04 0702	N20 W63	09 29.6		B	ESI	260	14	12	2
5168	24802	MWIL	10 04 1445	N20 W65	09 29.7	5	(B)					
5168		HOLL	10 04 1500	N21 W68	09 29.5		B	ESO	280	11	11	3
5168		PALE	10 04 1730	N21 W70	09 29.5		B	ESO	330	13	12	3
5168		LEAR	10 05 0030	N22 W72	09 29.6		BG	EAO	340	14	15	3
5168		CULG	10 05 0250	N21 W71	09 29.8		B	DAO	160	6	9	2
5168		SVTO	10 05 0707	N22 W73	09 29.8		BG	ESI	310	12	12	3
5168		BOUL	10 05 1442	N20 W78	09 29.7		B	CAO	210	5	7	3
5168		HOLL	10 05 1525	N22 W80	09 29.6		B	DSO	90	6	10	4
5168	24802	MWIL	10 05 1615	N19 W78	09 29.8	5	(B)					
5168		PALE	10 05 1920	N24 W82	09 29.6		B	DAO	100	3	6	2
5168		LEAR	10 06 0009	N23 W79	09 30.0		B	CRO	90	6	5	3
5168A		SVTO	09 28 0750	S26 E20	09 29.9		A	AX	10	1		3
5169	24801	MWIL	09 23 1430	S23 E80	09 29.8	3	B					
5169		PALE	09 23 2245	S23 E78	09 29.9		B	BXO	10	4	6	2
5169		LEAR	09 24 0043	S21 E75	09 29.8		B	BXO	20	5	6	4
5169		SVTO	09 24 0610	S22 E74	09 29.9		B	BXO	50	8	8	3
5169		BOUL	09 24 1350	S22 E65	09 29.6		B	BXO	10	5	6	2

SUNSPOT GROUPS
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

SEPTEMBER 1988

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
5169	24801	MWIL	09 24 1430	S22 E67	09 29.7	4	(BP)					
5169	24801	MWIL	09 24 1430	S24 E61	09 29.3	3	(AP)					
5169		RAMY	09 24 1434	S21 E65	09 29.6		B	BXO	50	7	8	2
5169		HOLL	09 24 1605	S22 E64	09 29.6		B	BXO	20	6	8	3
5169		PALE	09 24 1725	S22 E62	09 29.5		B	BXO	20	5	7	3
5169		LEAR	09 25 0118	S22 E60	09 29.7		B	DSO	60	6	4	3
5169		CULG	09 25 0400	S22 E57	09 29.5		B	DRO	20	2	3	1
5169		SVTO	09 25 0746	S21 E58	09 29.8		B	DRO	40	6	3	4
5169	24801	MWIL	09 25 1430	S22 E54	09 29.7	4	(AP)					
5169		BOUL	09 25 1455	S20 E52	09 29.6		B	DSO	30	4	4	2
5169		RAMY	09 25 1520	S20 E53	09 29.7		B	CRO	40	5	4	4
5169		HOLL	09 25 1555	S21 E52	09 29.6		B	DRO	40	5	4	3
5169		PALE	09 25 1935	S23 E50	09 29.7		B	DAO	40	5	3	3
5169		LEAR	09 26 0105	S21 E46	09 29.6		B	BXO	20	4	2	3
5169		CULG	09 26 0435	S23 E43	09 29.5		B	DRO	20	2	2	2
5169		SVTO	09 26 0735	S21 E44	09 29.7		B	CRO	20	5	2	3
5169		RAMY	09 26 1215	S21 E42	09 29.7		BD	CR	60	3	2	3
5169		BOUL	09 26 1348	S20 E39	09 29.5		A	HS	30	1	1	2
5169		HOLL	09 26 1441	S20 E40	09 29.7		A	HS	30	4	2	3
5169	24801	MWIL	09 26 1515	S20 E41	09 29.8	4	(AP)					
5169		PALE	09 26 1820	S22 E38	09 29.7		B	CRO	20	2	2	3
5169		LEAR	09 27 0050	S21 E34	09 29.6		A	AX	10	1	1	3
5169		CULG	09 27 0240	S24 E31	09 29.5		A	AX	10	1	1	2
5169		SVTO	09 27 0845	S20 E30	09 29.6		A	AX		1		2
5169		HOLL	09 27 1500	S19 E26	09 29.6		B	BXO	10	2	3	3
5169	24801	MWIL	09 27 1530	S20 E27	09 29.7	3	(AP)					
5169		SVTO	09 28 0750	S18 E21	09 29.9		A	AX		2	1	3
5169		HOLL	09 28 1425	S22 E18	09 30.0		A	AX	10	2	1	4
5169		PALE	09 28 1745	S20 E12	09 29.6		A	AX		1	1	3
5169		SVTO	09 29 0747	S18 E07	09 29.8		B	BXO	10	6	4	4
5169		HOLL	09 29 1633	S18 E03	09 29.9		A	AX		1	1	3
5169		LEAR	09 30 0017	S17 W01	09 29.9		A	AX	10	1	1	4
5174		RAMY	09 25 1520	N18 E63	09 30.4		A	AX		1		4
5174		RAMY	09 29 1345	N17 E12	09 30.5		B	BXO	10	4	3	4
5174		HOLL	09 29 1633	N18 E09	09 30.4		B	BXO	10	5	4	3
5174		LEAR	09 30 0017	N16 E05	09 30.4		B	BXO	10	4	3	4
5174		HOLL	09 30 1610	N17 W05	09 30.3		B	BXO	10	7	6	3
5174		PALE	09 30 1747	N17 W03	09 30.5		B	BXO	10	3	3	3
5174		LEAR	10 01 0027	N17 W12	09 30.1		B	BXO	10	5	3	2
5174		BOUL	10 01 1415	N18 W19	09 30.1		B	BXO	10	6	2	3
5174		RAMY	10 01 1418	N17 W18	09 30.2		B	BXO	30	10	6	3
5174		HOLL	10 01 1615	N17 W18	09 30.3		B	BXO	10	12	6	4
5174		PALE	10 01 1755	N16 W19	09 30.3		B	BXO	10	11	7	3
5174		LEAR	10 02 0040	N17 W23	09 30.3		B	DRI	20	9	6	3
5174		SVTO	10 02 0755	N17 W27	09 30.3		B	DRI	40	16	4	4
5174		RAMY	10 02 1332	N17 W30	09 30.3		B	DRI	80	20	7	4
5174		BOUL	10 02 1335	N17 W31	09 30.2		B	BXI	10	17	8	3
5174		HOLL	10 02 1637	N17 W33	09 30.2		B	CRO	50	15	7	3
5174		PALE	10 02 1910	N17 W34	09 30.2		B	DRO	80	12	7	2
5174		LEAR	10 03 0152	N17 W37	09 30.3		B	DAO	70	11	7	2
5174		CULG	10 03 0250	N18 W38	09 30.2		B	DAI	80	11	7	3
5174		SVTO	10 03 0736	N17 W43	09 30.0		B	DSI	140	17	10	/
5174		BOUL	10 03 1405	N17 W43	09 30.3		B	CAI	80	18	10	3
5174		HOLL	10 03 1652	N17 W46	09 30.2		B	DSO	160	19	10	3
5174		PALE	10 03 1820	N16 W47	09 30.2		B	DSO	200	16	10	3
5174		LEAR	10 04 0018	N17 W50	09 30.2		B	CAO	160	17	8	4
5174		CULG	10 04 0325	N18 W51	09 30.2		B	DAO	110	7	7	3
5174		SVTO	10 04 0702	N17 W54	09 30.2		B	EAO	230	15	11	2
5174		HOLL	10 04 1500	N17 W59	09 30.1		B	EAO	180	12	11	3
5174		PALE	10 04 1730	N16 W62	09 30.0		B	EAO	210	12	11	3
5174		LEAR	10 05 0030	N16 W65	09 30.1		B	CAO	200	11	11	3
5174		CULG	10 05 0250	N16 W65	09 30.2		B	CSO	40	4	7	2
5174		SVTO	10 05 0707	N15 W66	09 30.3		B	EAO	280	7	15	3
5174		BOUL	10 05 1442	N16 W70	09 30.3		B	CSO	90	2	8	3
5174		HOLL	10 05 1525	N17 W77	09 29.9		B	ESO	110	5	11	4
5174		PALE	10 05 1920	N18 W77	09 30.0		B	DAO	100	4	8	2
5174A	24813	MWIL	09 30 1500	S21 E03	09 30.8	4	(AF)					

SEPTEMBER 1988

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
01	2051	2057	2123	1-	3			1		1	2052	C6.1	5131
02	0756	0811	0848	1-	3	2	1	1	2	1	0755	C3.6	5131
03	0409	0415	0427	1-	3			1	1		0409	C1.2	5131
03	0533	0539	0618	1-	3			1	1		0520	C2.8	5131
03	0709	0730	0821	2-	3	1	3	1	2		0708E	C5.8	5126
03	0848	0859	0941	1-	3	1		1	1		0848	C2.4	
03	1318	1326	1350	1-	3	1	2		1	3	1317	C2.7	5131
03	2001	2004	2013	1-	1					1	1959	C2.2	
04	0054	0101	0122	1-	1			1			No flare		
04	1138	1152	1220	1-	3				1	1	1142	C1.8	
05	0504	0515	0542	1-	3			1	1		0459	C2.4	
05	1415	1431	1500	1-	3	1	1		1	4	1414	C3.0	5131
05	1535	1543	1557	1	1					1	1530	C3.0	5131
05	1815	1833	1915	2	3					2	1813	C4.0	5131
06	0259	0310	0344	1-	1			1			*		
06	1518	1521	1535	1-	1					1	1520	C1.4	
07	1952	1954	2005	1	3					4	1950	C4.0	
08	0037	0053	0144	1-	3			1	1		0037	C3.0	5131
08	1234	1249	1351	2+	5	3		1	1	6	1233	M2.0	5131
08	1840	1843	1906	2	3					6	1840	M1.2	5131
08	2311	2321	2343	1-	1			1			2315	C1.3	
09	0741	0756	0846	1-	3			1	1	2	0740	C2.3	
10	0818	0827	0921	1-	3		2	1	1		0813	C1.9	
10	1533	1549	1612	2	3		2			5	1533	C3.0	
11	0102	0104	0210	1-	1				1		0058	C1.1	
12	0722	0729	0749	1-	1			1			0719	C1.7	5148
12	1054	1056	1106	1-	1		1				1054		5147
13	0755	0818	0910	1	1				1		0751	C4.1	5148
14	1133	1146	1210	1	3		2				1133	C1.3	5148
16	0451	0459	0520	1-	3			1	1		0447	C1.7	
17	1400	1402	1415	1-	3		2			4	1357	C2.1	
18	0645	0659	0742	1-	3			1	1		0641	C2.7	5154
18	1453	1500	1514	1	1					1	1454	C1.6	5154
18	2151	2206	2241	1-	1			1			2140E	C2.8	5159
19	0100	0107	0157	1-	3			1	1		0058	C2.0	
19	0221	0235	0319	1-	3	1		1	1		0221	C5.3	
19	1102	1117	1205	2	5	2	3	1	1	3	1115E	M1.6	5159
19	1715	1717	1743	1	3					2	1711	C4.7	
19	2142	2146	2245	1-	3	1		1		2	2142	C8.9	5159
20	0224	0234	0357	2-	3	1		1	1		0223	C6.7	5159
20	0517	0522	0605	1-	3			1	1		0516	C5.0	5158
20	0611	0619	0700	1-	3			1	1		0559		5159
20	2340	0010	0124	1-	1			1			No flare		
21	1347	1350	1402	1	3		3				No flare		
21	1404	1426	1523	1+	3		3			3	1352	C2.2	
21	2032	2033	2046	1-	1					1	2027	C2.5	
21	2238	2243	2257	1-	1			1			2233	C1.5	5158
21	2325	2331	0016	1-	1			1			2325	C5.1	5159

*No flare patrol

SUDDEN IONOSPHERIC DISTURBANCES

SEPTEMBER 1988

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF-SPA	SES			
22	0311	0314	0351	1-	3			1	1		0311	C5.6	5159
22	0516	0522	0640	1-	1				1		No flare		
22	0805	0815	0928	3-	5	3	3	1	2	4	0804	M2.0	5159
22	1026	1036	1110	1	3	3	4		1	5	1026	C8.1	
22	1121	1124	1140	1-	3	2			1	3	1119	C4.5	5156
22	1524	1525	1530	1-	3					2	1521	C2.7	5159
22	2003	2005	2017	1-	1					1	No flare		
22	2240	2246	2323	1-	1			1			2241E	C7.6	5156
23	0016	0029	0050	1-	1			1			0014	C2.3	5156
23	0050	0058	0146	1-	3			1	1		0048		
23	0205	0215	0242	1-	3			1	1		0200	C3.9	5159
23	0242	0251	0339	1-	3			1	1		0305	C1.9	5159
23	0527	0533	0556	1-	3			1	1		0525	C2.3	
23	0621	0624	0645	1-	1				1		0618	C1.8	
23	0855	0905	0949	1	3	1		1	1	2	0846	C5.1	5159
23	1658	1708	1745	2	3					4	1655	C4.3	
23	2355	0018	0135	1-	1			1			2356	C3.1	5159
24	0359	0404	0426	1-	3			1	1		0356	C1.8	5159
24	0450	0454	0550	1-	1				1		0449	C1.6	5156
24	1343	1348	1420	1-	3		2		1	7	1341	C5.3	5156
24	2254	2303	0001	1-	1			1			2256	C4.4	5169
25	0024	0050	0225	2+	3	2		1	1		0024	M2.3	5169
25	1047	1118	1145	1-	3				1	1	1041	C2.9	5156
25	2202	2214	2238	1-	1			1			2154	C2.3	5164
26	0237	0305	0353	1-	3	1		1	1		0224	C6.3	5158
26	0439	0443	0501	1-	3			1	1		0431		5164
26	0528	0538	0557	1-	3			1	1		0528	C2.6	
27	0201	0230	0313	1-	1			1			0244		5159
27	0314	0329	0405	1-	1			1			0317		5171
27	0640	0651	0712	1-	1			1			0634	C4.7	5163
27	0715	0725	0820	1-	1			1			0713	C5.7	5171
27	0956	1008	1100	2-	5	3	3	1	1	2	0950	M1.6	5171
27	1121	1137	1158	1	1		1				1123	C1.8	5168
27	1612	1620	1643	2-	5	2	4	1	1	8	1607	M7.9	5171
27	1807	1809	1818	1-	1					1	1804	C2.4	
27	1940	1943	1955	1-	3					3	1936	C4.7	5171
27	2159	2213	2254	1-	1			1			2159	C2.7	5171
27	2341	2347	2354	1-	1			1			2340	C1.3	5171
28	0553	0609	0706	1	1			1			No flare		
28	1216	1230	1249	1-	3			1	1	1	1212	C2.9	5171
28	1432	1434	1454	1	3					2	1431	C2.5	5171
28	2253	2317	0056	3	3	2		1			2255	M5.7	5171
29	0553	0609	0710	2+	3	1		1	1		0544	M1.1	5171
29	1306	1318	1359	1	1		1				1310	C1.2	5171
30	0100	0111	0140	1	3	1		1	1		0058	C6.0	5168
30	0141	0156	0240	1	3			1	1		0140	C3.8	5171
30	0501	0517	0625	1	3			1	1		0455	C5.7	5171
30	1329	1345	1353	1-	3		2				1327	C3.2	
30	1911	1939	2018	1	3	1				7	1857	M1.7	5171
30	1957	2015	2113	1-	1			1			1857	M1.7	5171

OBSERVATORIES REPORTING FOR SEPTEMBER 1988

Amherst, New Hampshire, USA	SES	Maui, Hawaii, USA	SWF
Darmstadt, German Federal Republic	SWF	Panska Ves, Czechoslovakia	SES, SEA, SWF
Farsta, Sweden	SES	Paterson, New Jersey, USA	SES
Hiraiso, Japan	SWF	Somersworth, New Hampshire, USA	SES
Houston, Texas, USA	SES	Tavares, Florida, USA	SES
Inubo, Japan	SPA	Tournal, Belgium	SES
Juliusruh, German Democratic Rep.	SWF	Tucson, Arizona, USA	SES
Kandilli, Turkey	SEA	Uccle, Belgium	SEA
Kuhlungsborn, German Democratic Rep.	SEA, SPA	Upice, Czechoslovakia	SEA
Lintong, People's Republic of China	SPA	Valley Cottage, New York, USA	SES
Louisville, Kentucky, USA	SES	Vlasim, Czechoslovakia	SEA

Observations are not necessarily continuous.

SUDDEN IONOSPHERIC DISTURBANCES
SEPTEMBER 1988

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
Reg. No.																														
5126			1																											
5131	1	1	3		3			3																						
5147												1																		
5148												1	1	1																
5154																		2												
5156																						2	1	2	1					
5158																				1	1									
5159																		1	2	2	1	3	4	1		1	1			
5163																											1			
5164																									1	1				
5168																											1			1
5169																								1	1					
5171																											7	3	2	4
Number of events with X-Ray flares	1	1	6	1	4	1	1	4	1	2	1	1	1	1		1	1	3	5	2	4	6	8	4	3	2	9	3	2	6
Number of events with no flare reported				1																1	1	2								
Number of events with no flare patrol						1																								
Total SID events	1	1	6	2	4	2	1	4	1	2	1	2	1	1		1	1	3	5	4	5	8	9	4	3	3	11	4	2	6

SOLAR RADIO EMISSION
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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		CULG	0201.0	2259.0	3							III
		CULG				0246.0	0338.0	1				S
		LEAR				0613.0	0613.0	2				III
	1537	1740 WEIS										
		PALE				1841.0	1915.0	2				II
		SGMR				1841.0	1915.0	2				II
		PALE				1919.0	1920.0	2				III
		PALE				2009.0	2009.0	2				III
		SGMR				2040.0	2040.0	2				III
		CULG				2041.0	2041.0	1				III
		CULG				2133.0	2133.0	1				III
		SGMR				2133.0	2133.0	1				III
		CULG	2151.0	2152.0	3							S
02		CULG				0009.0	0010.0	2				III
		LEAR				0009.0	0010.0	3				III
		PALE				0009.0	0010.0	2				III
		LEAR				0025.0	0025.0	2				III
		PALE				0025.0	0025.0	2				III
		CULG				0026.0	0026.0	1				III
		CULG				0325.0	0325.0	1				III
		CULG				0346.0	0346.0	1				III
		LEAR				0346.0	0346.0	2				III
		CULG				0408.0	0408.0	1				III
		LEAR				0408.0	0408.0	2				III
	0521	1331 WEIS										IIIB
		SGMR				1245.0	1337.0	1				S
		SGMR				1648.0	1648.0	1				III
	1340	1739 WEIS				1648.0	1648.2	1				IIIB
		PALE				2003.0	2007.0	2				V
		SGMR				2003.0	2007.0	3				V
		PALE				2221.0	2222.0	1				III
		CULG				2222.0	2222.0	1				III
03		CULG				0014.0	0016.0	1				III
		CULG				0205.0	0212.0	1				S
		LEAR				0208.0	0208.0	1				III
		LEAR				0323.0	0323.0	1				III
		CULG				0324.0	0324.0	1				III
		CULG				0346.0	0346.0	1				III
		CULG				0432.0	0445.0	1				S
		CULG				0657.0	0657.0	1				III
		CULG				0722.0	0722.0	1				III
		SVTO				0729.0	0729.0	1				III
	0521	1041 WEIS				0729.9	0730.0	1				IIIB,RS
		LEAR				0800.0	0801.0	2				III
		SVTO				0800.0	0800.0	2				III
		WEIS				0837.9	0838.5	1				IIIG
		WEIS				0905.9	0906.2	1				IIIG
		WEIS				1031.1	1031.6	2				IIIB
		SGMR				1032.0	2254.0	1				CONT
	1046	1540 WEIS				1321.2	1321.3	1				IIIB
		WEIS				1508.1	1508.7	2				IIIG
		WEIS				1511.8	1512.1	1				IIIB
	1623	1737 WEIS										
		CULG				2134.0	2134.0	1				III
		LEAR				2346.0	2347.0	2				III
		PALE				2346.0	2347.0	2				III
04		CULG				0019.0	0208.0	1				S
		CULG				0024.0	0156.0	1				S
		LEAR				0037.0	0038.0	2				III
		PALE				0037.0	0038.0	1				III
		CULG				0038.0	0038.0	1				III
		LEAR				0107.0	0111.0	2				III
		CULG				0108.0	0109.0	1				III
		PALE				0108.0	0108.0	1				III
		LEAR				0141.0	0141.0	1				III

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04			LEAR				0155.0	0155.0	2				III
			LEAR				0207.0	0207.0	1				III
			CULG				0209.0	0209.0	1				III
			CULG				0243.0	0244.0	2				III
			CULG				0244.0	0322.0	1				S
			CULG				0620.0	0628.0	1				S
			SGMR				1033.0	2252.0	1				CONT
			SGMR				1336.0	1336.0	1				III
	0524	1734	WEIS				1424.5	1424.6	1				IIIB
			CULG				2058.0	2058.0	2				III
			CULG				2144.0	2144.0	1				III
05	0423	0719	WEIS										
			LEAR				0613.0	0614.0	1				III
			CULG				0614.0	0614.0	1				III
			CULG							0627.0	0627.0	1	III
	0729	1354	WEIS										
			SGMR				1034.0	2350.0	1				CONT
	1422	1731	WEIS										
			CULG							2154.0	2154.0	1	III
			CULG							2200.0	2200.0	1	III
			CULG							2205.0	2205.0	1	III
06	0526	0901	WEIS										
	0912	1612	WEIS										
	1624	1731	WEIS										
			PALE				1853.0	1855.0	1				V
			CULG				2302.0	2309.0	2				III
			PALE				2302.0	2309.0	2				V
			LEAR				2303.0	2309.0	2				III
07			CULG				0053.0	0053.0	2				III
			LEAR				0053.0	0059.0	1				III
			CULG							0058.0	0058.0	2	III
			CULG							0127.0	0127.0	2	III
			LEAR				0200.0	0203.0	1				III
			CULG				0201.0	0201.0	2				III
			CULG				0244.0	0244.0	1				III
			SGMR				1217.0	1218.0	1				III
	0526	1233	WEIS				1217.6	1218.2	2				IIIG
			SGMR				1322.0	1322.0	1				III
			SGMR				1504.0	1504.0	1				III
			SGMR				1528.0	1529.0	1				III
	1511	1728	WEIS				1529.1	1529.2	1				IIIB
			PALE				2003.0	2004.0	1				III
			SGMR				2003.0	2003.0	1				III
			CULG				2117.0	2117.0	1				III
			CULG				2146.0	2146.0	1				III
			CULG				2226.0	2226.0	2				III
			CULG				2329.0	2329.0	1				III
08			CULG				0002.0	0002.0	1				III
	0529	1241	WEIS				1008.9	1009.4	3				IIIG
			SGMR				1402.0	1403.0	2				III
	1251	1727	WEIS				1402.6	1402.7	1				IIIB
			SGMR				1510.0	1511.0	2				V
			WEIS				1511.0	1511.2	2				IIIB
			SGMR				1540.0	1542.0	1				III
			SGMR				1635.0	1636.0	2				V
			WEIS				1635.6	1636.1	2				IIIG
			PALE				1839.0	1846.0	2				V
			SGMR				1839.0	1847.0	3				V
			SGMR				1850.0	1914.0	1				II
			PALE				1854.0	1915.0	2				II
			LEAR				2352.0	2353.0	1				III
09			LEAR				0213.0	0214.0	1				III

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09			LEAR				0510.0	0511.0	2				III
			CULG				0511.0	0511.0	2				III
			LEAR				0732.0	0741.0	2				III
	0528	1107	WEIS				0732.5	0732.8	1				IIIB,U
			WEIS				0740.7	0740.9	2				IIIB,U
			LEAR				0757.0	0757.0	2				III
			SVTO				0757.0	0757.0	2				III
			WEIS				0757.1	0757.5	2				IIIG
			LEAR				0803.0	0803.0	1				III
			WEIS				0803.3	0803.5	1				IIIB
			LEAR				0907.0	0907.0	1				III
			WEIS				0936.8	0937.2	2				IIIB
			SGMR				1520.0	1520.0	2				III
			SGMR				1537.0	1537.0	1				III
			SGMR				1605.0	1605.0	1				III
			SGMR				1624.0	1625.0	3				V
	1134	1723	WEIS				1624.9	1625.3	3				IIIG
			SGMR				1709.0	1714.0	1				S
			WEIS				1712.3	1712.6	1				IIIG
			WEIS				1715.4	1715.5	2				IIIB
			SGMR				2024.0	2243.0	1				CONT
			CULG				2109.0	2109.0	1				III
			CULG				2114.0	2114.0	1				III
			CULG				2124.0	2124.0	1				III
10			LEAR				0009.0	0016.0	2				III
			LEAR				0032.0	0032.0	1				III
			LEAR				0057.0	0104.0	2				III
			LEAR				0206.0	0206.0	2				III
			SVTO				0631.0	0638.0	3				III
	0531	0942	WEIS				0631.7	0632.7	2				IIIGG
			LEAR				0632.0	0638.0	3				III
			WEIS				0636.4	0638.4	3				IIIGG,U
			LEAR				0905.0	0905.0	2				III
			WEIS				0905.2	0905.5	3				IIIG
			SGMR				1039.0	2241.0	1				CONT
	1041	1723	WEIS				1507.6	1507.8	2				IIIG
			WEIS				1537.5	1538.3	3				IIIG
			WEIS				1540.6	1546.6	2			II	H,HB
			SGMR				1541.0	1546.0	2			II	
			SGMR				1810.0	1812.0	2				V
			PALE				1849.0	1849.0	2				III
			PALE				1918.0	1919.0	2				V
			SGMR				1919.0	1921.0	3				V
			CULG				2104.0	2217.0	2				S
			CULG				2253.0	2353.0	2				III
			LEAR				2352.0	2353.0	1				III
11			CULG							0006.0	0009.0	2	III
			CULG							0040.0	0049.0	2	III
			CULG				0054.0	0106.0	2				III
			LEAR				0055.0	0106.0	3				S
			PALE				0055.0	0106.0	2				S
			CULG				0301.0	0319.0	1				S
			LEAR				0313.0	0318.0	1				III
			CULG				0332.0	0411.0	2				S
			LEAR				0332.0	0333.0	2				III
			LEAR				0348.0	0349.0	2				III
			LEAR				0404.0	0411.0	2				III
			CULG				0533.0	0602.0	2				S
			LEAR				0533.0	0542.0	2				III
			SVTO				0541.0	0542.0	2				III
			LEAR				0548.0	0549.0	1				III
			LEAR				0602.0	0602.0	1				III
			LEAR				0659.0	0700.0	2				III
			CULG							0700.0	0700.0	1	III
			LEAR				0729.0	0730.0	2				III

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11		SVTO				0729.0	0730.0	2				III
0531	0730	WEIS				0729.6	0730.0	3				IIIG
1028	1712	WEIS				1028.8	1029.4	3				IIIG
		SGMR				1040.0	2240.0	1				CONT
		WEIS				1140.1	1140.7	3				IIIG
		SGMR				1141.0	1150.0	2				S
		WEIS				1147.7	1149.1	3				IIIG
		WEIS				1355.7	1356.9	2				IIIG
		WEIS				1515.6	1516.1	2				IIIG
		SGMR				1516.0	1540.0	2				S
		WEIS				1529.0	1529.4	2				IIIG
		WEIS				1531.3	1532.0	2				IIIG
		WEIS				1537.4	1539.5	3				IIIG,U
		SGMR				1700.0	1714.0	2				S
		WEIS				1704.3	1705.4	2				IIIB
		WEIS				1710.7	1711.2	2				IIIG
		PALE				1743.0	1744.0	1				III
		PALE				2211.0	2212.0	1				III
		LEAR				2221.0	2223.0	1				III
		CULG				2250.0	2254.0	2				III
		PALE				2251.0	2253.0	1				III
		CULG				2308.0	2310.0	2				III
		LEAR				2308.0	2308.0	1				III
		PALE				2308.0	2309.0	1				III
		PALE				2346.0	0423.0	1				CONT
		LEAR				2347.0	1000.0	2				CONT
12		CULG				0124.0	0419.0	2				S
		LEAR				0124.0	0129.0	2				III
		LEAR				0143.0	0201.0	2				S
		PALE				0149.0	0150.0	2				III
		LEAR				0240.0	0240.0	2				III
		LEAR				0259.0	0310.0	2				S
		LEAR				0325.0	0326.0	2				III
		LEAR				0419.0	0419.0	2				III
		CULG				0652.0	0655.0	2				III
		LEAR				0652.0	0656.0	3				III
		WEIS				0652.2	0656.3	3				IIIGG
		SVTO				0653.0	0656.0	3				III
0534	1719	WEIS				0708.0	1627.0	2				IIIN
		CULG				0717.0	0720.0	2				III
		LEAR				0717.0	0720.0	2				III
		SVTO				0717.0	0719.0	2				V
		WEIS				0717.1	0718.9	2				IIIGG
		SGMR				1041.0	2238.0	1				CONT
		PALE				2033.0	2033.0	1				III
		LEAR				2345.0	1000.0	1				CONT
13		PALE				0005.0	0005.0	1				III
		LEAR				0006.0	0007.0	2				III
0534	1123	WEIS				0545.0	1648.0	3				IS,DC
1131	1716	WEIS				0633.0	1617.0	2				IIIN
		WEIS				0809.3	0816.8	1				Cont
		LEAR				0811.0	0812.0	2				III
		SVTO				0811.0	0811.0	1				III
		WEIS				0811.5	0811.7	3				IIIG
		WEIS				0816.7	0817.1	2				drift
		WEIS				0838.2	0855.2	1				Cont
		SGMR				1124.0	2236.0	1				CONT
		LEAR				2314.0	1001.0	1				CONT
14		LEAR				0137.0	0137.0	2				III
		PALE				0137.0	0137.0	1				III
		LEAR				0227.0	0228.0	2				III
		PALE				0227.0	0228.0	1				III
		LEAR				0437.0	0448.0	2				S
0536	1715	WEIS				0719.0	1648.0	1				IIIN

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14		LEAR				0841.0	0842.0	2				III
		SGMR				1105.0	2234.0	1				CONT
		SGMR				1241.0	1242.0	2				III
		WEIS				1241.5	1242.1	3				IIIG
		WEIS				1244.7	1245.2	2				IIIG
		SGMR				1402.0	1403.0	2				III
		WEIS				1402.0	1538.0	1				I
		PALE				1903.0	1903.0	1				III
		SGMR				1903.0	1903.0	2				III
		CULG				2100.0	2312.0	1				I
		LEAR				2254.0	0000.0	1				CONT
		LEAR				2321.0	2328.0	3				III
		PALE				2321.0	2328.0					V
15		PALE				0016.0	0027.0	1				III
		CULG				0017.0	0027.0	1				S
		LEAR				0017.0	0027.0	2				S
		LEAR				0108.0	0125.0	2				S
		CULG				0116.0	0116.0	1				III
		PALE				0117.0	0121.0	2				MWB
		CULG				0120.0	0122.0	1				III
		LEAR				0135.0	0135.0	3				III
		PALE				0135.0	0135.0	2				III
		CULG				0136.0	0136.0	1				III
		LEAR				0201.0	0213.0	2				S
		PALE				0201.0	0202.0	2				III
		CULG				0202.0	0214.0	1				S
		PALE				0203.0	0214.0	2				S
		LEAR				0243.0	0249.0	3				III
		PALE				0244.0	0255.0	2				S
		CULG				0245.0	0250.0	2				III
		LEAR				0250.0	0305.0	2				S
		CULG				0255.0	0255.0	1				III
		CULG				0305.0	0305.0	1				III
		CULG				0416.0	0418.0	1				III
		LEAR				0534.0	0540.0	2				S
		CULG				0535.0	0636.0	1				S
	0536	0840 WEIS				0539.0	1701.0	2				III
		LEAR				0559.0	0603.0	2				III
		SVTO				0559.0	0559.0	2				III
		LEAR				0627.0	0628.0	2				III
		WEIS				0701.0	0826.0	1				I
		LEAR				0823.0	0831.0	2				III
	0859	1115 WEIS				1009.2	1009.3	2				IIIG
	1135	1206 WEIS				1021.3	1021.6	2				IIIG
		SGMR				1044.0	2233.0	1				CONT
		SGMR				1605.0	1606.0					V
	1247	1712 WEIS				1605.6	1606.1	3				IIIG
		SGMR				1627.0	1628.0	2				III
		SGMR				1659.0	1700.0	2				III
		PALE				1826.0	0202.0	1				CONT
		LEAR				2345.0	1001.0	1				CONT
16		CULG				0237.0	0238.0	1				III
		LEAR				0244.0	0245.0	2				III
		PALE				0318.0	0318.0	1				V
		CULG				0319.0	0319.0	2				III
		LEAR				0319.0	0320.0	3				V
		LEAR				0722.0	0723.0	2				III
	0539	1711 WEIS				0918.2	0919.8	3				IIIGG
		LEAR				0919.0	0920.0	2				III
		SVTO				0919.0	0921.0	3				V
		WEIS				1000.6	1001.0	1				IIIG
		SVTO				1013.0	1013.0	3				III
		WEIS				1013.5	1014.2	3				IIIG
		SGMR				1045.0	2231.0	1				CONT
		WEIS				1139.5	1139.8	1				IIIB

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16		WEIS				1141.9	1143.2	2				IIIG
		WEIS				1208.7	1209.8	2				IIIG
		WEIS				1217.5	1218.4	2				IIIG
		WEIS				1221.8	1222.3	3				IIIG
		SGMR				1726.0	1732.0	2				S
		PALE				1727.0	1730.0	2				III
		PALE				1840.0	1919.0	2				S
		PALE				1949.0	1950.0	1				III
		PALE				2019.0	2019.0	1				III
		PALE				2107.0	2109.0	1				III
		CULG				2109.0	2111.0	3				III
		CULG							2206.0	2206.0	2	III
		CULG				2224.0	2224.0	3				III
		CULG				2308.0	2309.0	2				III
		CULG							2309.0	2309.0	1	III
		LEAR				2309.0	2314.0	1				III
		CULG				2312.0	2312.0	3				III
		CULG				2359.0	2359.0	2				III
17		LEAR				0000.0	0001.0	2				III
		CULG				0057.0	0057.0	1				III
		LEAR				0059.0	0059.0	1				III
		CULG				0122.0	0122.0	2				III
		LEAR				0123.0	0134.0	2				S
		CULG				0133.0	0133.0	1				III
		CULG				0212.0	0217.0	2				III
		LEAR				0213.0	0218.0	2				III
		LEAR				0448.0	0448.0	2				III
		CULG				0525.0	0525.0	2				III
		LEAR				0526.0	0526.0	2				III
		LEAR				0713.0	0713.0	1				III
0539	1707	WEIS				1048.0	1049.3	3				IIIG
		SGMR				1146.0	2229.0	1				CONT
		WEIS				1422.8	1423.5	2				IIIG,U
		WEIS				1434.8	1434.9	1				IIIB
		SGMR				1500.0	1509.0	1				IV
		WEIS				1500.3	1508.8	1				IIIGG
		SGMR				1559.0	1601.0	3				V
		WEIS				1600.3	1603.4	3				IIIG
		WEIS				1656.7	1700.3	1				IIIG
		WEIS				1705.6	1706.0	1				IIIG
		CULG				2134.0	2134.0	2				III
		CULG				2225.0	2225.0	2				III
		CULG				2234.0	2234.0	3				III
		CULG				2240.0	2248.0	1				III
		LEAR				2315.0	2354.0	1				CONT
18		CULG				0022.0	0029.0	2				III
		LEAR				0022.0	0026.0	2				III
		CULG				0216.0	0216.0	2				III
		LEAR				0216.0	0216.0	2				III
		CULG				0249.0	0249.0	1				III
		CULG				0323.0	0323.0	1				III
		CULG				0327.0	0327.0	1				III
		CULG				0419.0	0421.0	2				III
		LEAR				0421.0	0421.0	2				III
		CULG				0440.0	0440.0	2				III
		CULG				0442.0	0506.0	1				S
		CULG				0514.0	0531.0	2				S
		LEAR				0521.0	0531.0	2				S
		CULG				0639.0	0644.0	2				III
		LEAR				0639.0	0644.0	2				III
		CULG				0704.0	0704.0	3				III
		LEAR				0704.0	0704.0	2				III
		SVTO				0704.0	0704.0	2				III
0542	1029	WEIS				0704.2	0704.6	3				IIIG
		WEIS				0814.2	0814.3	1				IIIB

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18		WEIS				0841.7	0842.2	1				IIIG
		WEIS				1002.9	1003.4	1				IIIG,U
		SGMR				1059.0	2227.0	1				CONT
	1104	WEIS				1110.0	1110.7	2				IIIG
		WEIS				1433.2	1436.8	1				IIIGG
		SGMR				1434.0	1437.0	2				V
		WEIS				1445.4	1445.6	1				IIIB
		WEIS				1457.8	1457.9	2				IIIB
		PALE				1803.0	1804.0					III
		SGMR				1803.0	1805.0	2				V
		CULG				2127.0	2142.0	1				S
		PALE				2143.0	2152.0	2				V
		SGMR				2143.0	2147.0	2				III
		CULG				2144.0	2151.0	3				III
		CULG				2156.0	2157.0	2				III
		PALE				2202.0	2208.0	2				V
		CULG				2205.0	2208.0	3				III
		CULG				2211.0	2212.0	1				II
		CULG				2323.0	2324.0	1				III
		CULG				2347.0	2349.0	1				III
19		LEAR				0222.0	0235.0	2				S
		PALE				0230.0	0234.0	2				V
		LEAR				0711.0	0714.0	2				III
	0542	WEIS				0711.8	0713.7	2				IIIG
		LEAR				0813.0	0813.0	1				III
		WEIS				0813.1	0813.3	1				IIIB
		LEAR				0916.0	0917.0	2				III
		WEIS				0916.2	0917.3	2				IIIG
		WEIS				1012.3	1012.4	1				IIIG
		SGMR				1101.0	1105.0	2				III
		SVTO				1101.0	1102.0	2				III
		WEIS				1101.7	1109.9	3				IIIGG
		SGMR							1220.0	1220.0	1	III
		SGMR				1716.0	1723.0	1				III
		CULG				2025.0	2025.0	1				III
		CULG				2026.0	2030.0	1				III
		CULG							2131.0	2131.0	2	III
		CULG				2140.0	2144.0	2				III
		SGMR				2142.0	2144.0	1				III
		CULG							2202.0	2202.0	2	III
		CULG				2254.0	2254.0	1				III
20		LEAR				0121.0	0121.0	1				III
		LEAR				0136.0	0136.0	2				III
		CULG				0137.0	0137.0	1				III
		LEAR				0219.0	0231.0	2				S
		CULG				0224.0	0231.0	2				III
		PALE				0228.0	0229.0	1				III
		CULG				0240.0	0240.0	1				III
		CULG				0241.0	0243.0	1				III
		LEAR				0241.0	0243.0	2				III
		CULG				0317.0	0320.0	2				III
		LEAR				0317.0	0319.0	2				V
		LEAR				0321.0	0321.0	1				III
		LEAR				0349.0	0356.0	2				III
		CULG				0350.0	0350.0	1				III
		CULG				0356.0	0439.0	1				S
		CULG				0419.0	0419.0	1				III
		CULG				0515.0	0518.0	1				S
		LEAR				0515.0	0518.0	1				III
		CULG				0601.0	0603.0	1				III
		LEAR				0602.0	0634.0	2				S
		SVTO				0602.0	0602.0	2				III
		CULG				0609.0	0615.0	2				III
	0545	WEIS				0611.0	1153.0	2				IIIN
		SVTO				0614.0	0614.0	2				III

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20		CULG				0618.0	0619.0	1				III
		CULG				0624.0	0632.0	1				III
		CULG				0644.0	0644.0	1				III
		LEAR				0644.0	0716.0	2				S
		CULG				0646.0	0647.0	3				V
		LEAR				0751.0	0803.0	2				S
		LEAR				0806.0	0808.0	3				III
0850	0930	WEIS				0806.0	0806.5	3				IIIG
		LEAR				0824.0	0825.0	3				III
		SVTO				0824.0	0825.0	2				III
		WEIS				0824.7	0825.2	3				IIIG
		LEAR				0847.0	0848.0	3				III
		SVTO				0847.0	0848.0	2				III
		LEAR				0851.0	0854.0	2				III
		WEIS				0949.2	0949.4	2				IIIG
		SVTO				1023.0	1024.0	2				III
0937	1702	WEIS				1023.3	1024.4	3				IIIG
		SGMR				1138.0	0000.0	1				CONT
		WEIS				1148.3	1148.4	2				IIIG
		PALE				1839.0	1839.0	1				III
		SGMR				1839.0	1839.0	2				III
		PALE				1926.0	1926.0	2				III
		SGMR				1926.0	1927.0	2				III
		PALE				1945.0	1952.0	2				III
		SGMR				1945.0	1945.0	2				III
		PALE				2028.0	2300.0	1				CONT
		LEAR				2310.0	0000.0	1				CONT
		LEAR				2310.0	0340.0	1				CONT
		LEAR				2313.0	2314.0	1				III
		LEAR				2319.0	2322.0	3				III
		PALE				2320.0	2321.0	2				V
		LEAR				2337.0	2338.0	1				III
21		LEAR				0000.0	0001.0	2				III
		PALE				0000.0	0001.0	1				III
		LEAR				0207.0	0210.0	2				III
		PALE				0207.0	0207.0	1				III
		LEAR				0544.0	0545.0	2				III
		CULG				0603.0	0649.0	2				S
0544	1659	WEIS				0613.0	1450.0	2				IN
		LEAR				0625.0	0650.0	3				S
		SVTO				0627.0	0649.0	2				S
		WEIS				0630.0	1642.0	2				IIIN
		WEIS				0648.5	0649.2	3				IIIG
		LEAR				0650.0	1003.0	2				CONT
		LEAR				0754.0	0756.0	2				V
		SGMR				1130.0	1130.0	1				III
		SGMR				1440.0	1440.0	1				III
		SGMR				1505.0	1505.0	1				III
		SGMR				1628.0	1630.0	2				V
		SGMR				1706.0	1706.0	1				III
		CULG				2141.0	2147.0	1				III
22		LEAR				0146.0	0147.0	3				III
		PALE				0146.0	0147.0	2				III
		LEAR				0151.0	0151.0	1				III
		LEAR				0204.0	0205.0	3				V
		PALE				0204.0	0204.0	1				III
		LEAR				0226.0	0228.0	2				III
		LEAR				0300.0	0301.0	2				III
		LEAR				0321.0	0332.0	3				S
		LEAR				0453.0	0455.0	2				III
0701	1658	WEIS				0623.0	1622.0	2				IN
		LEAR				0637.0	0638.0	2				III
0548	0650	WEIS				0637.0	1650.0	2				IIIN
		LEAR				0806.0	0807.0	2				III
		SVTO				0806.0	0806.0	2				III

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22		WEIS				1025.3	1030.9	3				IIIGG,U
		SVTO				1027.0	1030.0	3				V
		WEIS				1245.7	1247.9	2				IIIG
		WEIS				1248.5	1251.5	2				Cont
		SGMR							1320.0	1320.0	1	III
		SGMR				1350.0	1352.0	2				V
		WEIS				1350.1	1351.5	3				IIIG,U
		WEIS	1432.0	1433.7	1							Cont
		SGMR				1441.0	1442.0	1				III
		SGMR				1454.0	2220.0	1				CONT
		SGMR				1648.0	1650.0	2				V
		PALE				1851.0	1852.0	1				III
23		CULG				0431.0	0434.0	2				III
		LEAR				0431.0	0435.0	2				III
	0547	1616 WEIS				0653.3	0655.8	1				IIIG
		LEAR				0654.0	0656.0	2				III
	1644	1655 WEIS				1035.7	1035.8	1				IIIB
		SGMR				1053.0	2218.0	1				CONT
		WEIS				1229.0	1615.0	2				IIIN
		WEIS				1235.0	1237.4	2				IIIGG
24		LEAR				0013.0	0021.0	2				III
		PALE				0013.0	0021.0	1				III
		LEAR				0050.0	0615.0	2				CONT
		LEAR				0354.0	0354.0	2				III
		LEAR				0847.0	0853.0	2				III
	0550	1654 WEIS				0849.1	0850.2	1				IIIG
		WEIS				1059.8	1103.3	2				IIIGG
		SGMR				1125.0	1125.0	1				III
		SGMR				1131.0	2217.0	1				CONT
		WEIS				1225.0	1627.0	1				IIIN
		SGMR				1337.0	0000.0	1				IV
		SGMR				1609.0	1612.0	2				III
		LEAR				2325.0	0544.0	1				CONT
		LEAR				2347.0	2357.0	2				III
		PALE				2349.0	0234.0	1				CONT
25		CULG				0000.0	0015.0	1				S
		CULG				0031.0	0035.0	1				II
		LEAR				0031.0	0031.0	1				III
		LEAR				0034.0	0038.0	2				II
		CULG				0035.0	0100.0	3				II
		CULG				0036.0	0046.0	3				III
		LEAR				0036.0	0102.0	3				IV
		PALE				0036.0	0049.0	3				II
		PALE				0036.0	0101.0	3				IV
		CULG				0047.0	0051.0	2				II
		CULG				0049.0	0101.0	2				III
		LEAR				0108.0	0109.0	2				III
		CULG							0109.0	0109.0	2	III
		CULG				0210.0	0213.0	1				I
		CULG							0227.0	0228.0	2	III
		CULG				0230.0	0234.0	2				III
		LEAR				0231.0	0234.0	2				III
		CULG				0346.0	0420.0	1				S
		CULG				0454.0	0543.0	1				S
		CULG				0503.0	0529.0	2				S
		LEAR				0503.0	0524.0	2				III
		CULG				0513.0	0513.0	2				III
		CULG				0522.0	0523.0	2				III
	0550	1651 WEIS				0757.2	0757.3	2				IIIB
		LEAR				0911.0	0911.0	2				III
		WEIS				1044.1	1045.7	2				patchy
		WEIS				1119.6	1137.9	1				II
		SGMR				1120.0	2215.0	1				CONT
		SGMR				1546.0	1549.0	2				III

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25			WEIS				1546.1	1548.8	3				IIIGG
			PALE				1719.0	1740.0	2				S
			SGMR				1727.0	1729.0	3				III
			PALE				1748.0	1809.0	1				S
			PALE				1833.0	1920.0	1				S
			PALE				2250.0	0113.0	2				CONT
			LEAR				2312.0	0430.0	2				CONT
26	0553	1334	WEIS				1540.8	1541.3	2				IIIG
			SGMR				1541.0	1545.0	1				III
	1443	1650	WEIS				1545.0	1545.2	2				IIIB
			PALE				1813.0	1829.0	2				S
			SGMR				1829.0	1829.0	2				III
			SGMR				1857.0	1857.0	2				III
			SGMR				1903.0	2213.0	1				CONT
			PALE				1905.0	2037.0	1				CONT
			LEAR				2344.0	0138.0	1				CONT
27			LEAR				0647.0	0658.0	2				II
	0553	1000	WEIS				0650.0	1647.0	3				ISDC
			LEAR				0707.0	1004.0	2				IV
			SGMR				1057.0	2211.0	1				CONT
	1026	1647	WEIS				1503.0	1647.0	2				III
			WEIS				1614.7	1615.4	2				IIIG
			WEIS				1614.8	1621.5	3				II H
			SGMR				1616.0	1629.0	3				II
			WEIS				1625.8	1630.7	2				II HB
			WEIS				1635.6	1638.6	2				II
			PALE				1723.0	1724.0	2				III
			SGMR				1723.0	1725.0	3				V
			PALE				1840.0	0000.0	1				CONT
			LEAR				2338.0	1005.0	1				CONT
28			LEAR										III
			PALE				0042.0	0042.0	1				III
			LEAR				0043.0	0044.0	2				III
			LEAR				0203.0	0209.0	2				III
			PALE				0206.0	0207.0	1				III
			LEAR				0306.0	0329.0	2				III
			LEAR				0349.0	0354.0	2				III
			LEAR				0437.0	0459.0	2				S
			LEAR				0507.0	0513.0	2				III
			SVTO				0632.0	0633.0	2				III
			LEAR				0633.0	0633.0	2				III
	0556	1646	WEIS				0633.0	1623.0	1				IIIN
			LEAR				0658.0	0700.0	2				III
			LEAR				0711.0	0711.0	2				III
			LEAR				0811.0	0811.0	1				III
			WEIS				1030.9	1032.0	1				IIIGG
			PALE				1817.0	1819.0	2				V
			SGMR				1817.0	1819.0	2				V
			PALE				1840.0	1841.0	2				V
			SGMR				1840.0	1842.0	2				V
			PALE				1908.0	1909.0	1				V
			SGMR				1908.0	2210.0	1				CONT
			PALE				2155.0	2155.0	1				III
			PALE				2235.0	2238.0	1				III
			LEAR				2237.0	2238.0	1				III
			CULG				2309.0	2338.0	3				II
			LEAR				2309.0	0314.0	3				IV
			LEAR				2313.0	2314.0	3				II
			PALE				2313.0	2314.0	2				II
			CULG				2330.0	2351.0	2				III
29			SVTO				0526.0	0527.0	2				V
			LEAR				0559.0	0600.0	3				III
			SVTO				0559.0	0559.0	2				III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

SEPTEMBER 1988

Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
Day												
29	0556	1643	WEIS			0559.0	0559.4	2				IIIG
			LEAR			0605.0	0606.0	2				V
			WEIS			0605.7	0606.4	1				IIIG
			WEIS			0712.8	0712.9	1				IIIB
			LEAR			0713.0	0713.0	1				III
			LEAR			0745.0	0745.0	2				III
			WEIS			0745.0	0745.1	1				IIIB
			WEIS			1435.6	1436.6	2				IIIG
30			LEAR			0024.0	0024.0	1				III
			SGMR			1344.0	1345.0	1				III
	0556	1407	WEIS			1349.8	1345.3	2				IIIG
			SGMR			1416.0	1936.0	1				CONT
	1426	1642	WEIS									
			PALE			1755.0	1756.0	1				III
			SGMR			1916.0	1936.0	1				II
			PALE			1945.0	0405.0	2				CONT
			LEAR			2221.0	1006.0	2				CONT

COSMIC RAY INDICES
(Neutron Monitor)

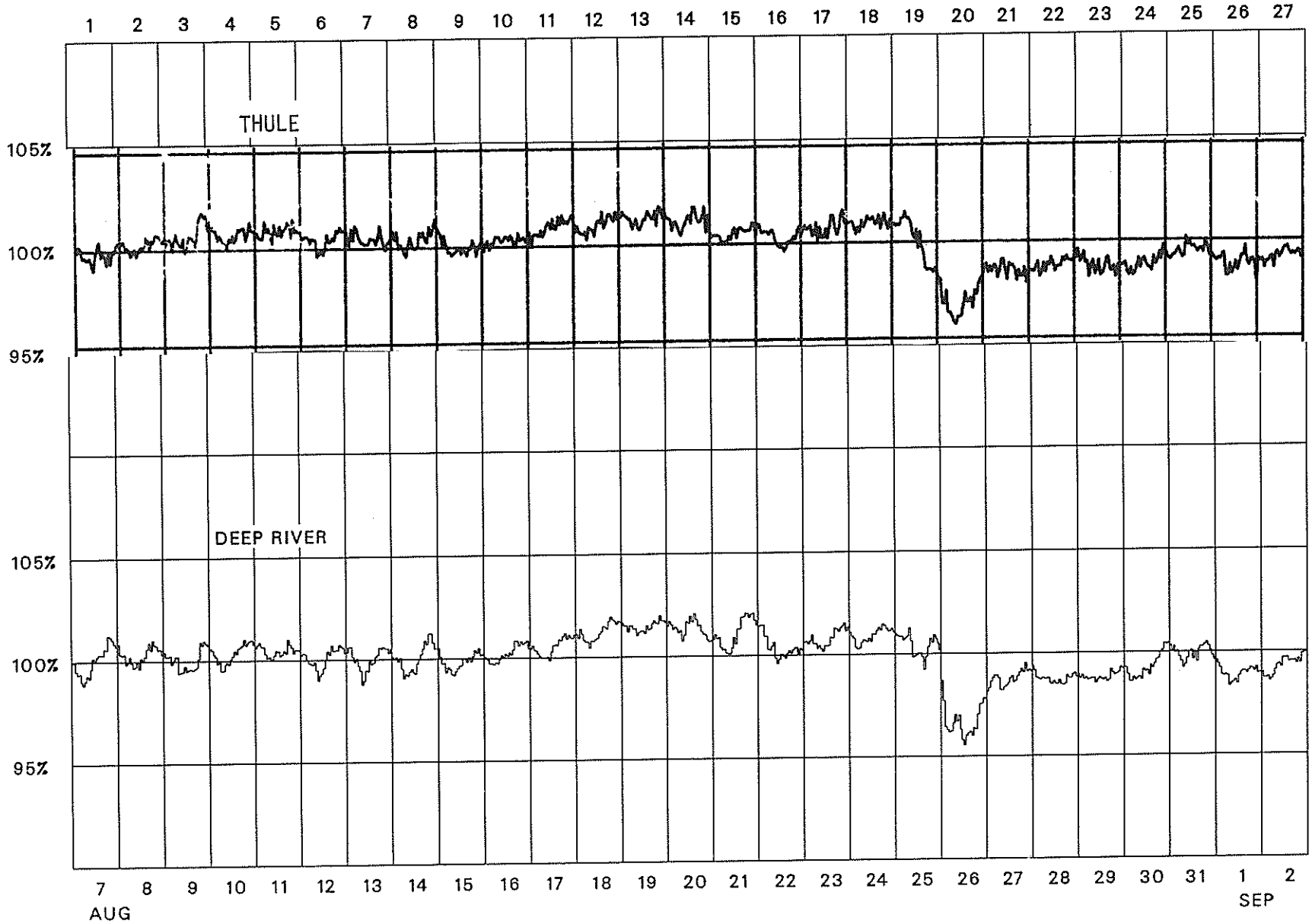
SEPTEMBER 1988

Day	THULE Average (cts/h)/100	ALERT 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	4187		6554.5	5856.5	3823.7		1701.2(26)
2	4201		6579.5	5909.5	3835.2		1708.0(16)
3	4214		6600.3	5911.9	3844.9		1709.7
4	4231		6620.3	5907.8	3863.2		1704.7
5	4247		6656.7	5925.4	3877.3		1706.9
6	4260		6692.1	5929.7	3871.8		1714.1
7	4249		6674.0	5925.5	3873.8		1723.4
8	4249		6674.6	5944.5	3884.1		1720.8
9	4265		6685.5	5960.8	3895.2		1719.2(36)
10	4272		6699.9	5959.4	3945.3		1722.2
11	4274		6703.7	5976.6	3949.9		1727.0
12	4295		6712.5	6023.6	3952.4		1726.5
13	4300		6736.9	6044.4	3955.8		1723.5
14	4303		6759.6	6027.4	3951.4		1720.3
15	4294		6760.6	6011.8	3926.9		1719.8
16	4300		6728.2	5982.3	3919.8		1713.8(38)
17	4297		6704.7	5966.9	3928.9		1719.0
18	4290		6687.5	5969.4	3915.3		1716.4
19	4268		6675.1	5930.4	3882.0		1714.9
20	4264		6649.4	5908.7	3818.7		1709.1
21	4215		6578.5	5856.3	3815.3		1697.7
22	4187		6571.3	5861.8	3829.1		1698.3
23	4183		6568.0	5886.6	3829.5		1705.9(38)
24	4198		6589.1	5886.3	3850.5		1704.9
25	4226		6637.7	5900.7	3844.1		1711.8
26	4232		6638.2	5902.5	3865.8		1708.0
27	4244		6646.1	5910.4	3879.9		1710.8
28	4241		6659.3	5923.6	3824.1		1712.8
29	4203		6600.8	5871.2	3820.6		1706.3
30	4196		6574.1	5857.4	3830.0		1703.0
Mean	4246		6654.0	5930.9	3877.2		1712.9

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

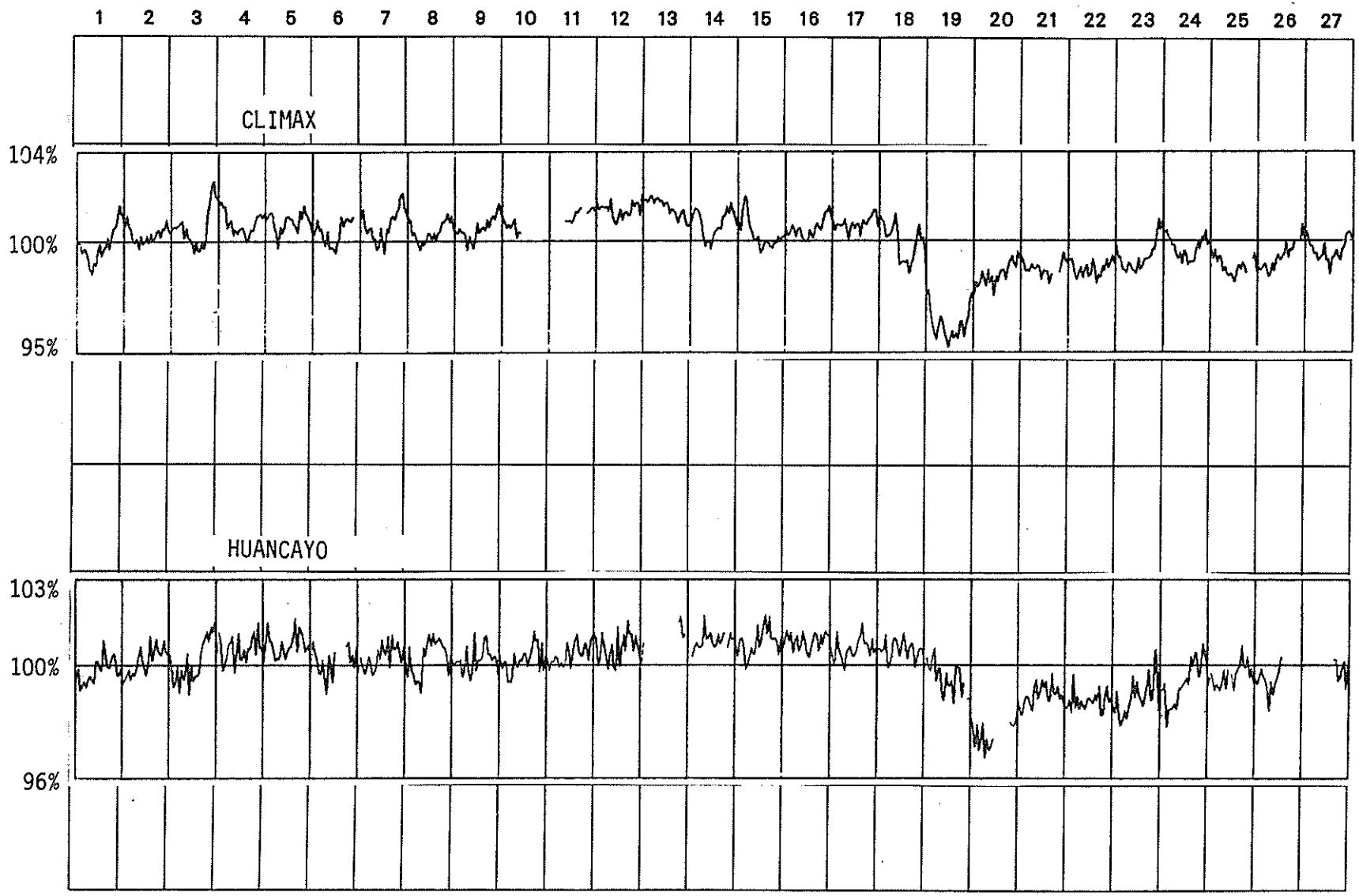
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2118 (August 1988-September 1988)



COSMIC RAY INDICES
(Neutron Monitor)

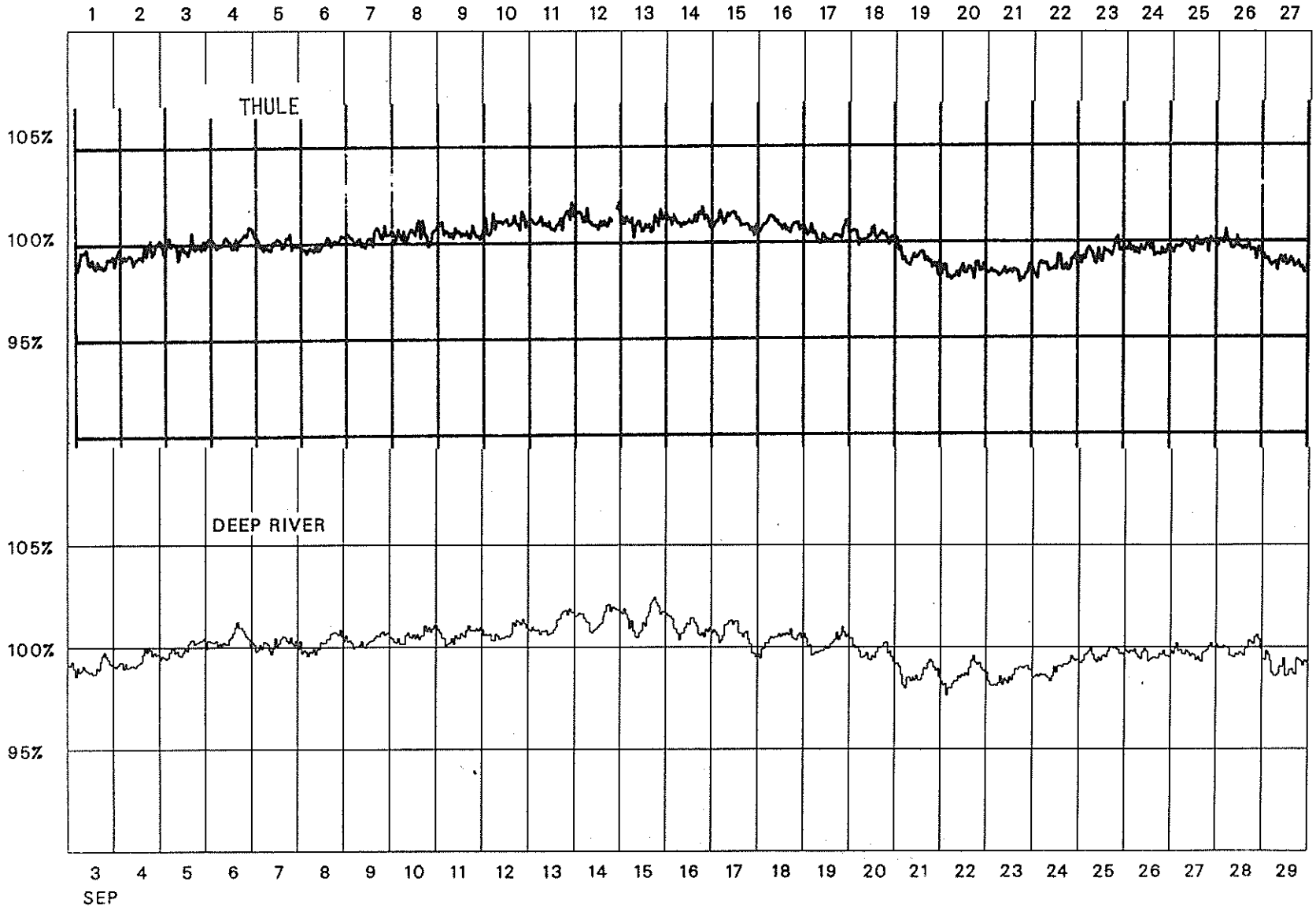
Bartels Rotation 2118 (August 1988-September 1988)



Sep 88

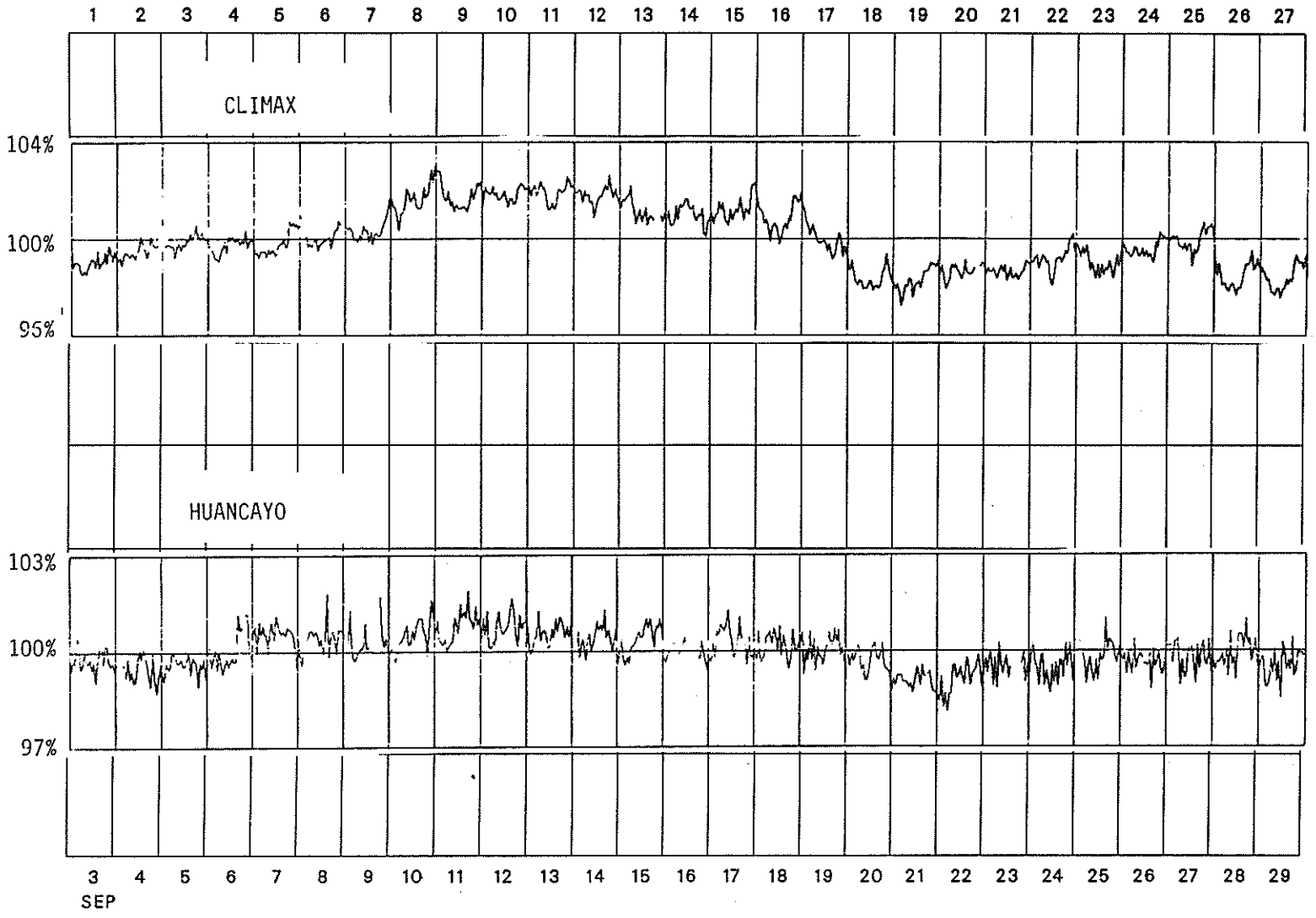
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2119 (September 1988)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2119 (September 1988)



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Sep 88

GEOMAGNETIC ACTIVITY INDICES

September 1988

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	D4	4	5-	3+	3+	4-	3	3-	3	28-	21	1.1	4	4	3	3	3+	3-	2+	3-	33	38	26	31	33	
2		3	4-	2+	2-	3-	2+	2+	3+	21+	12	0.7	3	3+	2+	2-	3-	2+	2+	3	23	26	19	19	26	
3		3	3-	2-	2-	2-	1+	3-	2-	16+	8	0.5	3-	2+	1+	1+	1+	1+	2+	2-	14	20	13	18	15	
4	Q10A	2+	2	2+	2	2	1+	1+	2-	15	7	0.3	2+	2	2+	2	2	1	1+	2	14	18	13	18	13	
5	Q3	2	1+	1-	1+	1	1-	1-	0+	8	4	0.1	2	2-	1-	1+	1	0+	1-	0	7	11	6	10	6	CC
6	Q2	0+	0	0	1-	1+	1+	2+	1-	7-	3	0.1	0+	0	0	1	1	1	2	1-	6	12	6	5	13	CC
7	Q5	1	2	2+	1+	1	0+	1-	1-	9+	5	0.2	1	2-	2+	2-	1	0+	1-	0+	8	11	9	13	7	CC
8	Q9K	0	2-	1	1	2-	2-	3	2	12	6	0.3	0+	1+	1+	1	1	2-	3-	2	11	16	8	8	16	CC
9	Q4	1-	1	0+	1-	1	1-	2+	2-	8+	4	0.1	1-	1	1-	1-	1-	0+	2+	2-	8	11	6	6	11	CC
10		2-	0+	1	2-	1	2-	3-	3+	13+	7	0.4	2-	0+	1	1+	1	2-	3-	3+	13	18	11	10	19	
11	D1	3+	3+	5	5-	6	6-	5+	6	39+	51	1.6	3	3	4	4+	5+	5	4+	5	67	64	67	51	80	
12		6-	4-	4-	1+	2+	3-	3-	3-	25-	20	1.0	5	3+	3	1+	2+	2	2+	2+	31	34	34	42	26	
13		2	3+	3-	2+	2+	2	3	2-	19+	10	0.6	2-	3	3-	2+	2	2	3-	2-	19	26	17	23	20	
14		3	2	3+	3	3-	2+	2-	2-	20-	11	0.6	2+	2-	3	3	3-	2+	2-	2-	19	24	19	21	22	
15		3	3	3-	3-	3-	3+	1+	1+	20	12	0.7	3	2+	3-	3-	3	3	1+	1+	21	29	20	24	25	
16	Q8	2-	2+	2-	1+	3-	1+	1-	0+	12	6	0.3	2-	2+	2-	1+	2+	1	0+	1-	11	15	10	13	12	C
17	D5	2+	4-	4-	3+	4	3-	4-	4+	28-	20	1.0	2+	3	3	3	3+	2+	3	4-	30	38	28	32	35	
18	D2	6	5	4-	3+	4	2-	3+	5+	32+	34	1.4	5-	5-	4-	3-	3	1+	3+	5-	48	55	40	58	38	
19	D3	5-	4	4+	3+	3	2+	3+	4	29	23	1.1	4	3+	4-	3+	3	2+	3+	3+	38	38	41	44	35	
20		3-	3	2+	2+	2	2-	3+	2+	20-	11	0.6	2+	3-	2+	2	2	1+	3-	2+	18	25	13	19	19	
21		3	2+	1+	3-	3-	1+	3+	3-	19+	11	0.6	3	2-	1	3-	2+	1+	4-	3-	20	29	15	19	25	
22		3	4-	4	4-	3+	5-	2	2	26+	20	1.0	3-	3+	4-	3+	3	4+	2	2-	32	31	34	36	29	
23		3+	3+	3	2-	3-	1+	2-	2+	19+	11	0.6	3-	3-	3-	2-	2+	1+	1+	2+	18	24	19	25	17	
24		1+	1+	2	3-	2+	1+	2	3	16	8	0.4	1+	1+	2-	2+	2	1	2-	3-	13	20	11	13	18	
25		4	2+	1+	1+	2	2+	2+	4-	19+	12	0.7	4-	2+	1+	1	2	2+	3-	3	21	23	18	15	25	
26		1	2-	2-	2+	4-	2-	1+	2	15+	8	0.4	1	1+	2-	2	3+	1+	1	2-	13	21	10	12	19	
27	Q6	2+	1+	1+	1	1+	2-	1-	1	11-	5	0.2	2	1+	1+	1-	1	1+	1	1+	8	13	7	11	9	CK
28	Q7	2	1+	1	1-	1+	2-	2-	2-	11+	5	0.2	2-	1+	1+	1	1	1+	1+	1+	9	14	9	10	13	CC
29	Q1	1+	1	1+	1	1	1+	0+	0+	8-	4	0.1	1	1	1+	1	1-	1-	0+	0+	5	9	5	9	5	CC
30		0+	1-	2+	2	3-	2+	3	2+	16-	8	0.4	0+	1	2	2-	3-	2+	3-	2+	15	22	14	13	24	
Mean											12	0.58									19.8	24.6	18.3		21.4	

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		4-	4	3	3	3+	3-	2+	3-	32	4+	4	3	3-	3	3-	2+	3-	34	191.3	137	142	145	-
2		3-	3+	2-	2-	3-	2	3-	3	22	3+	3+	3-	2-	3	2+	2+	3	25	178.9	153	142	131	-
3		3-	2+	2-	2	2-	2-	2+	2-	16	2+	3-	1+	1	1	1+	2+	2-	12	177.3	129	129	129	-
4		2	2	3-	2	2	1+	2-	2	15	2+	2	2	2	2	1-	1+	2	13	165.9	148	142	117	-
5		2-	2-	1	1+	1+	1	1-	0+	7	2+	2-	0+	2-	0+	0	0+	0	6	166.3	128	130	118	-
6		0+	0	0	1+	1+	1+	2+	1	7	0+	0+	0	1-	1-	1-	2	0+	5	152.4	93	105	103	-
7		1	2-	2+	2-	1+	1-	1	1-	9	1+	2-	2	2-	1-	0+	1-	0	8	145.4	97	100	95	-
8		0+	2-	1+	1+	2-	2	3	2+	13	0+	1+	1+	1	0+	1+	2+	2-	9	138.9	88	89	88	-
9		1-	1	1-	1-	1-	1-	2+	2-	8	0+	1+	1-	0+	0+	0+	2+	2	7	128.0	74	80	76	-
10		1+	1-	1	1+	1+	2	3-	3	14	2-	0+	1	1+	0+	1+	2+	4-	13	117.6	76	88	65	-
11		3	3	4+	4+	5+	5-	4+	5	67	3-	3-	4-	4+	5+	5	4+	5	66	121.9	87	92	70	-
12		5-	3+	3+	1+	2+	2+	2+	2+	29	6-	3+	3	1+	2+	2	2+	2+	33	127.0	83	89	75	-
13		2-	3+	2+	2+	2+	2+	3	2	21	2-	3-	3	2+	2-	2	3-	1+	17	124.8	91	91	73	-
14		2	2-	3+	3	3-	3-	2-	2-	21	2+	2	2+	3	3-	2+	1+	1+	18	130.2	94	100	79	-
15		3	3-	3-	3-	3	3+	2	2-	24	3-	2-	2+	2+	3-	3	1	1+	18	126.1	89	102	74	-
16		2-	2+	2-	1+	3-	2-	1-	1-	12	2-	2+	2	2-	2	1-	0	0+	9	128.5	97	109	77	-
17		2+	3	3	3+	4-	3-	3+	4-	32	3-	3	3	3	3+	2	3-	4-	28	135.3	79	90	84	-
18		5	4+	3+	3-	3+	2-	3+	4+	46	5-	5	4	3	3	1	3+	5-	50	139.5	97	102	89	-
19		4+	3	4-	3+	3-	2+	3+	3+	37	4	4-	4-	4-	3	2+	3+	3+	39	138.6	113	113	88	-
20		2+	3-	2	2-	2	2-	3	2+	18	3-	3-	2+	2+	2	1	3-	3-	18	151.4	153	138	102	-
21		3	2-	1	2+	3-	2-	3+	3	21	3	2-	1+	3-	2-	1-	4-	3-	20	157.8	168	170	108	-
22		3-	4-	4-	3	3	4+	2+	2+	35	3	3	3+	3+	3	4	2-	1+	30	178.6	168	169	131	-
23		3-	3	3-	2	3-	1+	1+	3-	19	3	3-	3-	1+	2+	1+	1+	2+	18	177.8*	190	176	130	-
24		1+	1+	2-	2+	2+	1+	2-	3-	14	1+	2-	1+	2	2-	1-	2	2+	12	178.6	166	163	131	-
25		3+	2	2-	1+	2	3-	3-	3	20	4	3-	1+	1-	2	2	3-	3	22	177.4	143	155	130	-
26		1	1+	2-	2	3+	2	1+	2-	15	1	1+	2-	2	3+	1	1-	1+	12	172.0	151	149	124	-
27		2	1+	1+	1	1+	2	1	1+	10	2	1	1	0+	0+	1	1-	1+	7	179.6*	157	152	132	-
28		2-	2-	1+	1	1+	2-	2-	2-	10	2	1	1+	1	1-	1-	1+	1+	8	171.0	148	141	123	-
29		1	1	1+	1	1	1+	1-	0+	7	1+	1	1+	1	0+	0+	0	0+	5	172.0	111	109	124	-
30		0+	1	2+	2-	3-	3-	3	2+	16	1-	1	2	1+	2+	2+	2+	2+	14	173.1	117	109	125	-
Mean											20.6									19.2	154.1	120.8	122.2	104.4	

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

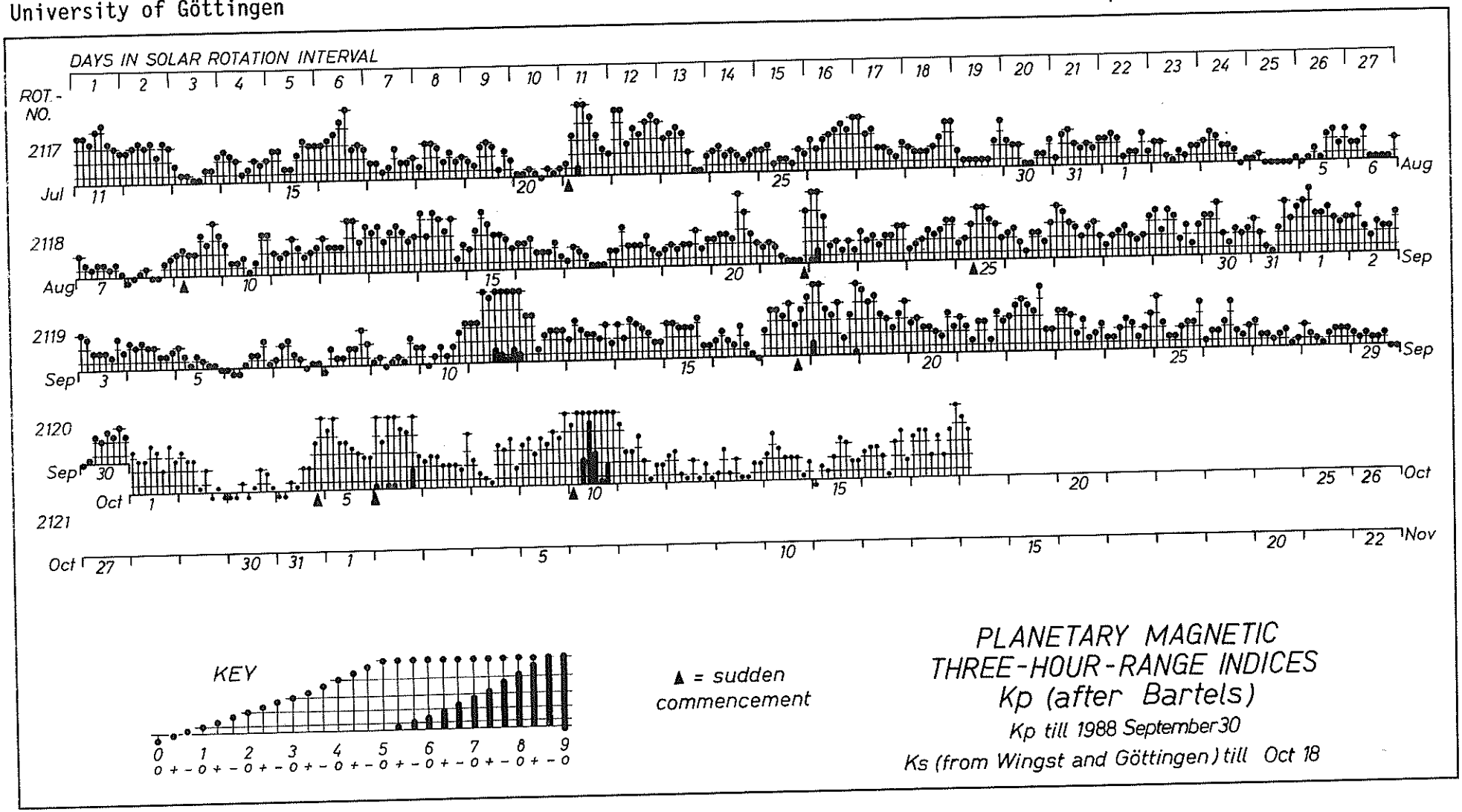
October 1987 to September 1988

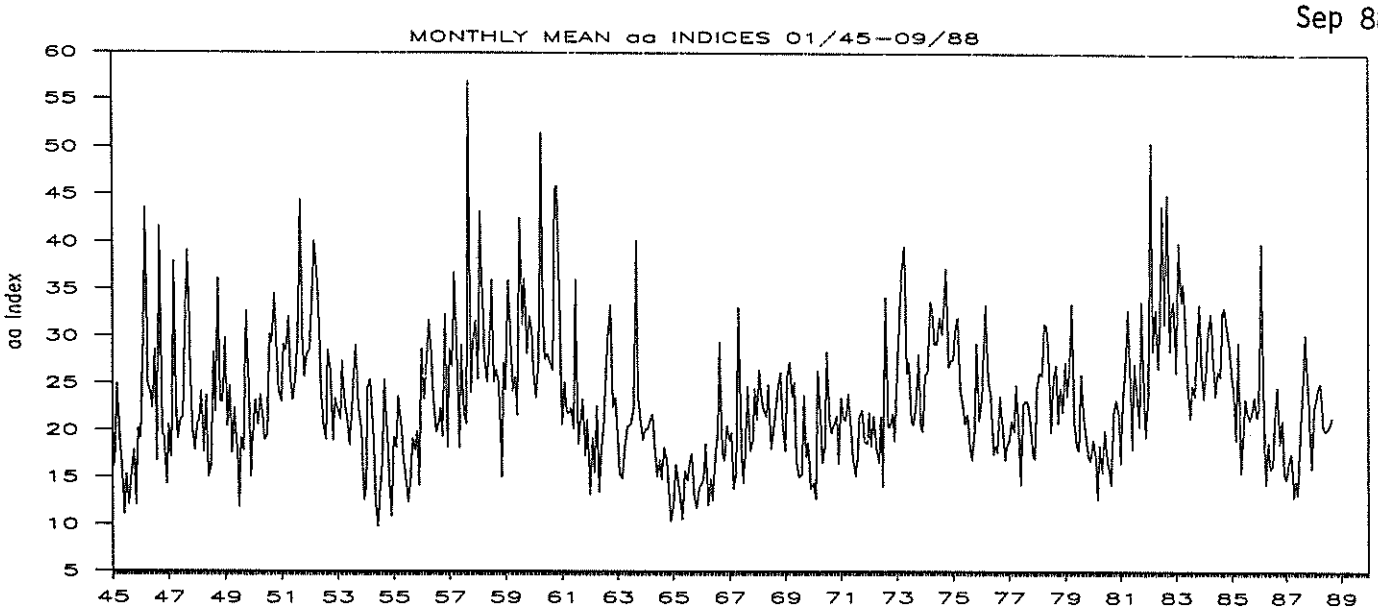
DAY	1987 OCT	NOV	DEC	1988 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	7	5	5	2	4	13	5	6	14	8	21
2	9	23	4	29	5	6	19	7	5	10	5	12
3	36	27	12	7	3	10	48	7	2	7	6	8
4	14	9	10	14	7	19	78	13	3	4	2	7
5	6	10	17	14	29	8	24	20	10	5	6	4
6	5	9	8	31	11	19	48	106	8	11	5	3
7	8	5	4	24	6	11	15	13	6	8	5	5
8	8	4	1	19	5	26	7	13	6	10	3	6
9	3	10	6	7	11	13	10	10	8	3	13	4
10	7	11	28	4	13	12	16	11	9	7	9	7
11	28	14	15	11	11	14	9	6	7	21	8	51
12	8	20	9	21	16	9	14	5	4	15	16	20
13	24	27	4	7	14	5	10	5	6	5	17	10
14	31	22	4	48	7	12	9	4	20	7	21	11
15	26	14	11	63	19	20	6	6	9	11	16	12
16	13	8	39	5	15	14	5	11	6	22	8	6
17	18	3	16	7	14	9	5	24	10	6	5	20
18	5	5	8	12	19	7	7	18	14	9	8	34
19	6	12	7	10	7	4	9	6	21	9	8	23
20	8	10	4	12	5	6	7	6	13	3	17	11
21	13	6	10	9	26	2	8	10	5	26	7	11
22	5	7	22	7	97	3	44	8	12	27	24	20
23	11	35	10	2	36	5	21	6	8	12	10	11
24	19	24	6	5	12	5	7	8	17	7	11	8
25	28	12	7	6	14	10	6	6	27	6	15	12
26	11	17	4	8	9	49	5	8	17	16	9	8
27	35	20	1	12	7	34	6	3	9	12	15	5
28	44	9	2	6	5	26	11	3	10	11	9	5
29	19	3	5	4	3	32	6	7	26	7	13	4
30	13	3	3	3		34	7	12	22	6	12	8
31	11		4	3		11		9		8	13	
MEAN	16	13	9	13	15	14	16	12	11	10	10	12

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

Kp through September 30, 1988

University of Göttingen





Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1945	16.1	16.4	25.0	19.1	15.4	11.1	15.3	12.1	15.6	17.9	12.0	20.2	16.3
1946	19.2	30.2	43.5	25.0	24.1	22.3	28.6	16.7	41.7	19.6	19.3	14.3	25.4
1947	20.6	17.1	37.9	23.3	19.1	21.1	21.4	32.9	39.1	31.3	20.7	17.9	25.2
1948	20.8	21.0	24.2	17.7	23.7	15.0	16.2	28.3	22.0	36.1	23.1	23.0	22.6
1949	29.8	20.4	24.7	17.6	22.4	17.9	11.8	19.2	17.8	32.7	24.6	15.1	21.2
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4				22.1

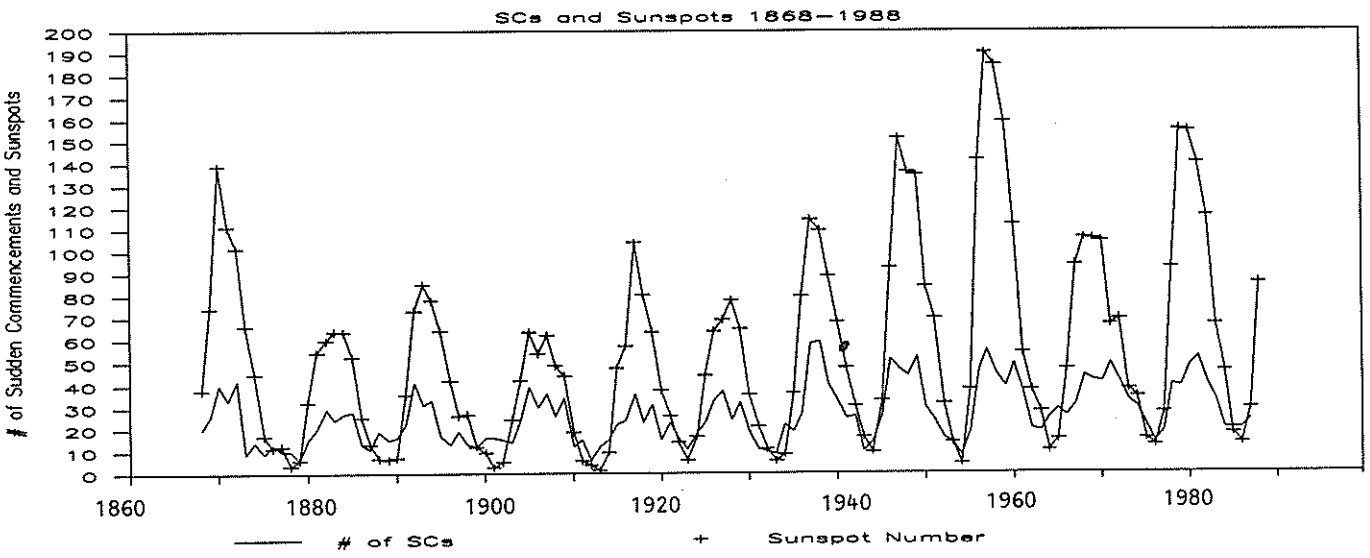
P R I N C I P A L M A G N E T I C S T O R M S

SEPTEMBER 1988

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
GUA	04.0N	01	01--	..	..	..	..	01(1)	5	10	130	50	01	19
FRD	49.6N	10	20--	..	..	..	..	11(5,7,8)	5	20	139	104	12	08
HYB	07.6N	10	1000	..	..	..	..	11(3,4,5)	6	8	207	46	12	22
ETT	00.6S	10	1700	..	..	..	..		-	8	291	104	12	21
COL	64.6N	11	06--	..	..	..	..	11(4,5,6)	6	144	1045	710	12	10
SIT	60.0N	11	06--	..	..	..	..	11(5)	7	130	--	690	12	09
BJI	28.5N	11	03--	..	..	..	..	11(5)	6	14	112	34	12	09
KRC	16.4N	11	12--	..	..	..	..	11(3)	6	3	142	65	13	--
UJJ	13.5N	11	0300	..	..	..	..		-	8	158	63	12	04
ABG	09.5N	11	0300	..	..	..	..	11(3)	6	7	192	67	12	04
GUA	04.0N	11	02--	..	..	..	..	11(5)	6	10	190	40	12	10
ANN	01.5N	11	0300	..	..	..	..		-	4	245	92	12	04
TRD	01.1S	11	0300	..	..	..	..		-	5	293	140	12	04
HER	33.7S	11	03--	..	..	..	..	11(5,6,8) 12(1)	5	30	123	107	12	04
GNA	43.2S	11	03--	..	..	..	..	11(5) 18(2)	6	27	60	180	12	09
COL	64.6N	17	1845	SC*	- 21	83	- 16	18(2,5)	5	92	740	380	18	15
FRD	49.6N	17	1845	SC*	- 1.2	19.8	- 3.2	18(1,2,8)	5	27	60	62	19	10
KRC	16.4N	17	02--	..	..	..	..	18(1,2)	5	2	75	45	21	--
UJJ	13.5N	17	0700	..	..	..	..		-	6	77	51	20	00
ABG	09.5N	17	0700	..	..	..	..	18(2)	5	7	97	66	20	00
HYB	07.6N	17	0000	..	..	..	..	18(2)	6	7	116	39	19	22
GUA	04.0N	17	1845	..	..	..	..	18(2)	5	--	160	20	18	15
ANN	01.5N	17	0700	..	..	..	..		-	--	--	--	20	00
ETT	00.6S	17	0000	..	..	..	..		-	8	244	110	19	23
TRD	01.1S	17	0700	..	..	..	..		-	5	265	221	20	00
GNA	43.2S	17	1845	SC	2.2	10	9	19(1)	5	18	60	90	19	20
GUA	04.0N	18	21--	..	..	..	..	19(1)	6	10	110	20	19	16
HER	33.7S	18	19--	..	..	..	..	18(7,8)	5	23	77	103	19	10
COL	64.6N	22	05--	..	..	..	..	22(4,6)	6	76	1175	465	22	18
GUA	04.0N	23	01--	..	..	..	..	23(1)	5	10	90	30	23	08

Stations Reporting:

ABG = ALIBAG
ANN = ANNAMALAINAGAR
BJI = BEIJING
COL = COLLEGE
ETT = ETAIYAPURAM
FRD = FREDERICKSBURG
GNA = GNANGARA
GUA = GUAM
HER = HERMANUS
HON = HONOLULU
HYB = HYDERABAD
KRC = KARACHI
SIT = SITKA
TRD = TRIVANDRUM
UJJ = UJJAIN



RADIO PROPAGATION QUALITY INDICES
SEPTEMBER 1988

Day	For Circuits from Norddeich to: Bracknell England	Rome Italy	Teheran Iran	New York USA (East)	Tokyo Japan	Canberra Australia
1.	7.1	5.5	6.2	6.5	6.4	7.7
2.	7.0	5.1	6.0	6.9	8.0	7.7
3.	6.1	5.1	6.3	7.3	7.7	7.8
4.	7.1	5.8	6.7	6.6	8.6	7.5
5.	7.4	6.2	7.0	7.3	8.8	7.4
6.	6.6	6.4	6.6	7.7	9.2	7.6
7.	6.5	6.3	6.9	7.4	8.5	7.5
8.	6.7	5.5	6.2	7.2	8.2	7.3
9.	6.0	5.5	6.6	6.9	7.8	7.2
10.	6.2	5.5	6.5	6.2	8.0	7.2
11.	4.8	4.5	5.3	3.4	5.0	6.1
12.	5.0	5.1	5.8	2.9	4.3	4.8
13.	4.3	4.9	5.8	3.0	4.3	5.5
14.	4.8	4.9	5.6	3.9	4.9	4.7
15.	5.5	5.3	5.7	5.3	4.5	5.8
16.	5.4	6.0	5.5	6.0	5.6	5.8
17.	4.7	5.2	6.0	4.3	5.1	5.1
18.	5.4	5.4	5.4	3.8	2.9	3.4
19.	5.1	5.4	5.2	4.2	4.1	4.9
20.	5.1	5.4	6.1	5.1	6.0	5.1
21.	5.6	6.1	6.2	5.6	7.6	5.9
22.	6.0	6.0	6.3	5.4	6.2	6.5
23.	7.2	6.9	6.6	6.4	7.3	6.3
24.	7.2	6.9	6.2	6.8	8.4	6.6
25.	7.4	7.0	6.6	6.7	7.9	6.6
26.	7.7	6.9	6.2	7.1	8.4	6.9
27.	7.4	6.3	6.5	7.1	8.5	6.8
28.	7.7	6.6	7.0	7.0	8.9	6.6
29.	7.9	6.8	6.6	7.1	9.0	7.7
30.	7.8	6.6	6.7	7.3	9.1	8.0
MEAN:	6.3	5.8	6.2	5.9	7.0	6.5

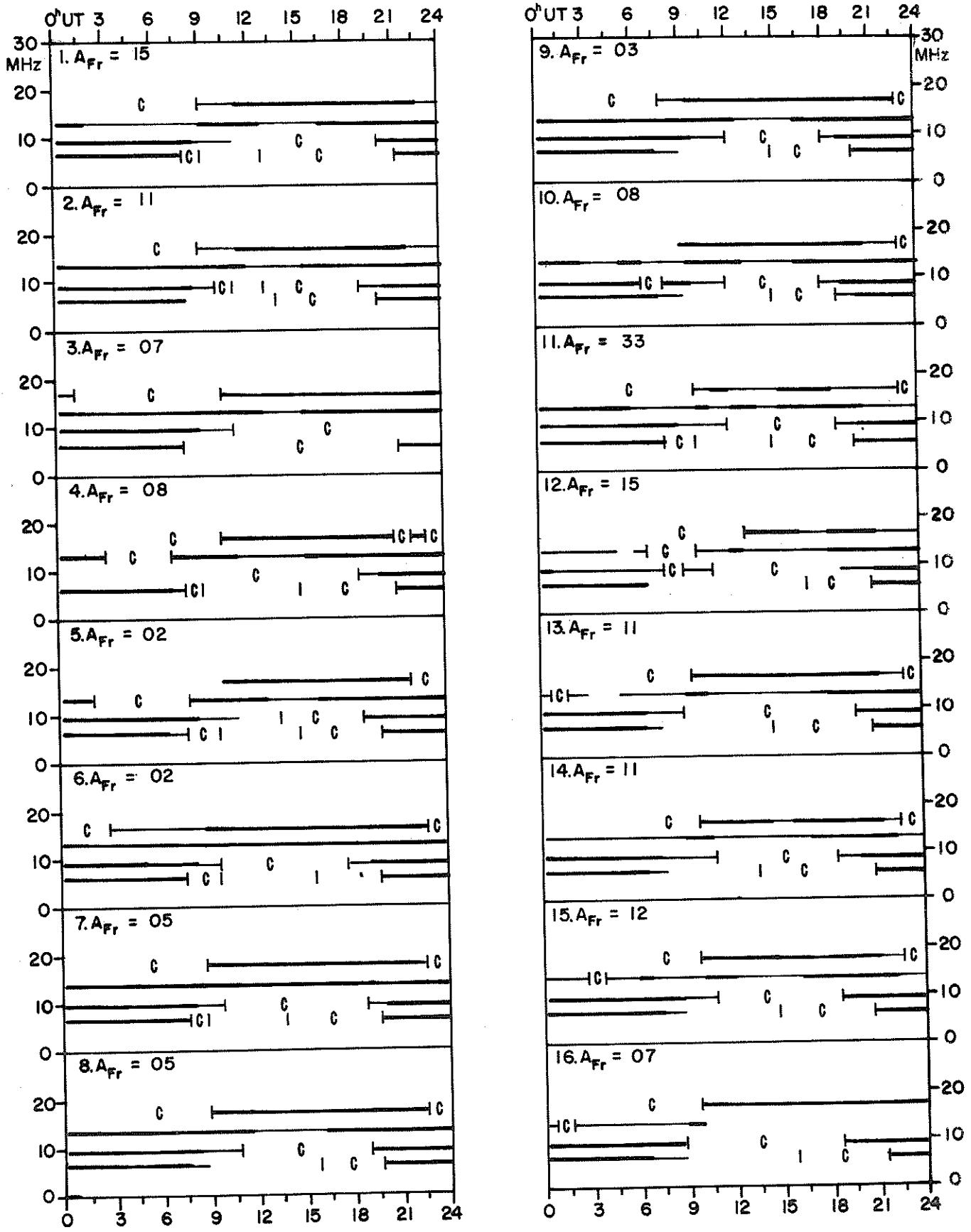
CALCULATION OF QUALITY INDICES (Q):
From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$Q = 6.0 + 20 \log (FD/FA)/3.0$

The quality indices vary from 0.1 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they respond to the average of the preceeding 27 days.

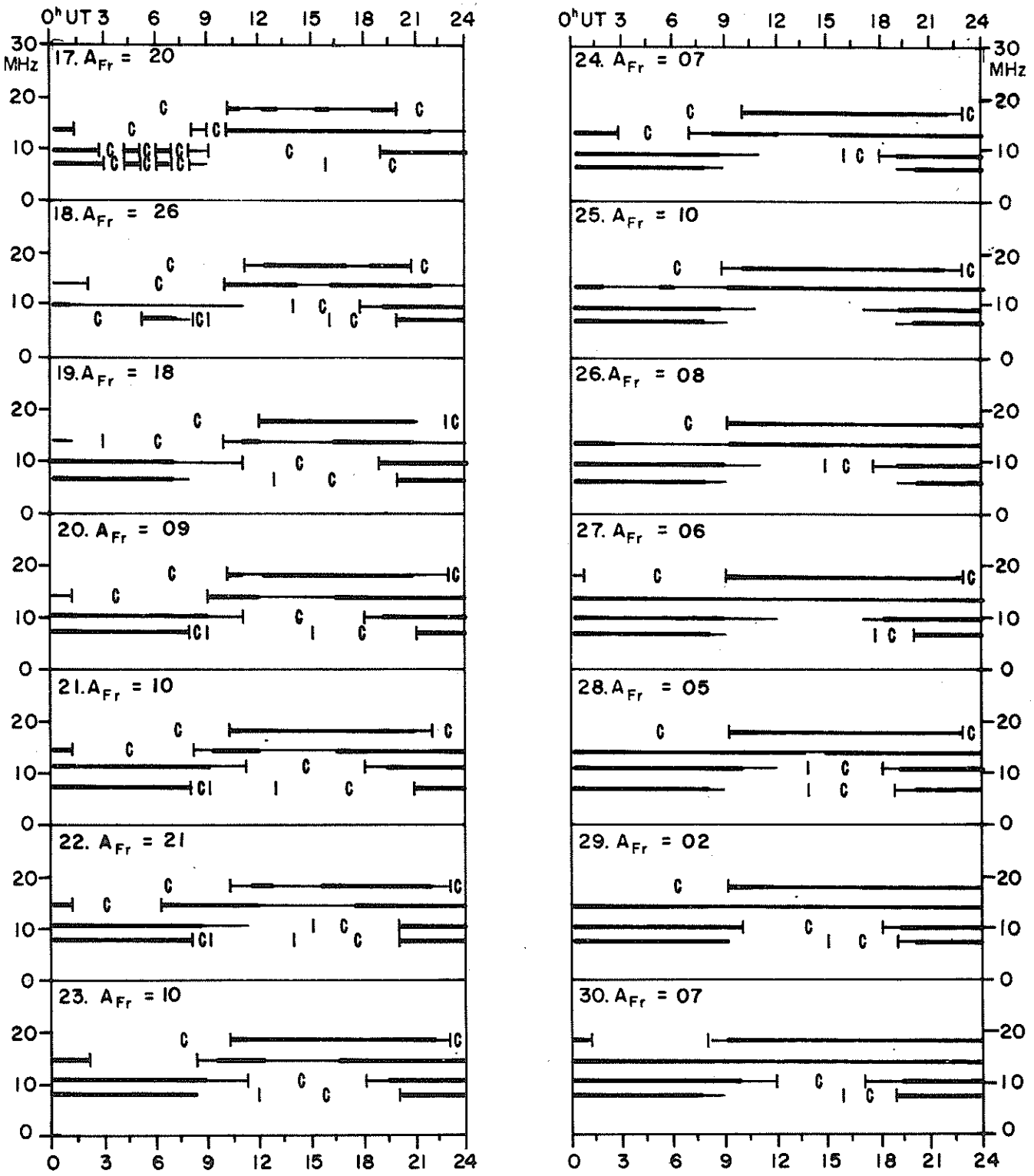
SCALE FOR QUALITY INDICES:
0.1 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 = normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH
SEPTEMBER 1988



TRANSMISSION FREQUENCY RANGES--NORTH ATLANTIC PATH

SEPTEMBER 1988



Field strengths from four frequencies, 6.4, 8.6, 13.0, and 17.0 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1 μV/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB and -40 dB above 1 μV/m are represented by the fine line.

C O N T E N T S

Prompt Reports **LATE DATA** Number 531 Part I

PIONEER VENUS ORBITER
ONE HOUR MAGNETIC FIELD AVERAGES AT APOAPSIS
VENUS SOLAR ORBITAL COORDINATES

UNIVERSAL TIME	NANOTESLAS BXvso	BYvso	BZvso	BT	REGION W=WAKE
87 335 DEC 1 13:40:00	5.69	.93	1.21	6.83	
87 336 DEC 2 13:40:00	8.56	.88	2.59	9.38	
87 337 DEC 3 13:40:00	3.82	-5.80	-2.98	9.18	
87 338 DEC 4 13:40:00	.69	-5.77	-3.40	7.63	
87 339 DEC 5 13:40:00	-3.86	6.67	.68	8.67	
87 340 DEC 6 13:40:00	-7.43	3.84	-.53	8.95	
87 341 DEC 7 13:40:00	-13.53	-1.86	-5.14	14.93	
87 342 DEC 8 13:40:00	4.81	8.28	-1.30	11.32	
87 343 DEC 9 13:40:00	-3.37	-8.30	-10.45	13.80	
87 344 DEC 10 13:40:00	-9.55	2.79	-2.17	10.30	
87 345 DEC 11 13:40:00	1.79	4.11	-4.43	11.31	
87 346 DEC 12 13:40:00	1.00	10.63	1.46	12.57	
87 347 DEC 13 13:40:00	4.52	6.56	-.72	8.52	
87 348 DEC 14 13:40:00	-.03	1.75	-7.64	9.17	
87 349 DEC 15 13:40:00	-6.94	4.28	-1.06	8.57	
87 350 DEC 16 13:40:00	-6.57	.71	.45	6.81	
87 351 DEC 17 13:40:00	-.06	-6.35	15.95	17.19	
87 352 DEC 18 13:40:00	4.93	-11.22	1.73	12.66	
87 353 DEC 19 13:40:00	6.83	-2.77	1.97	7.64	
87 354 DEC 20 13:40:00	-8.23	-20.81	37.47	43.77	
87 355 DEC 21 13:40:00					
87 356 DEC 22 13:40:00	7.33	2.15	-1.72	9.82	
87 357 DEC 23 13:40:00	11.65	-2.43	4.74	13.12	
87 358 DEC 24 13:40:00					
87 359 DEC 25 13:40:00					
87 360 DEC 26 13:40:00	6.30	1.50	-3.27	8.75	W
87 361 DEC 27 13:40:00	5.01	-1.39	-1.80	6.57	W
87 362 DEC 28 13:40:00	13.64	4.18	2.08	16.33	W
87 363 DEC 29 13:40:00	12.98	-2.45	-3.72	14.68	W
87 364 DEC 30 13:40:00	10.86	-10.22	-4.75	17.15	W
87 365 DEC 31 13:50:00	.79	-9.38	19.52	21.72	W

Source: Institute of Geophysics and Planetary Physics, UCLA

COSMIC RAY INDICES
(Neutron Monitor)

JULY 1988

Day	THULE Average (cts/h)/100	ALERT 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	4274	7003.5	6680.5	5962.1	3871.0		1729.0(34)
2	4273	7001.1	6678.4	5975.9	3864.9		1734.3
3	4281	7017.3	6696.8	5986.9	3871.6(38)		1735.9
4	4290	7052.1	6696.4	5979.6	3905.7(12)		1736.9
5	4288	7062.6	6720.4	6001.2	3904.5		1743.5
6	4311	7086.0	6690.8	5972.9	3886.1		1742.2
7	4315	7097.5	6702.4	5996.4	3894.7		1742.9
8	4303	7081.7	6703.2	6003.4	3898.6		1742.5
9	4300	7068.2	6708.9	6004.1	3890.0		1741.6
10	4306	7070.3	6704.4	5981.3	3898.4		1738.7
11	4303	7063.2(5)	6695.8	5990.7	3893.5		1735.2
12	4267	---	6674.0	5950.3	3872.1		1730.3(14)
13	4232	---	6620.5	5903.7	3830.9		1729.2
14	4258	---	6644.7	5952.8	3854.0		1729.6
15	4294	---	6688.3	5980.3	3874.0		1738.5
16	4282	---	6667.0	5979.7	3885.1		1738.4
17	4280	---	6664.6	5969.9	3871.6		1738.3
18	4274	---	6668.7	5972.6	3880.8		1741.0
19	4293	---	6692.6	5984.2	3897.3		1746.3(28)
20	4290	---	6676.5	5978.9	3878.3		1738.3
21	4240	---	6612.7	5898.7	3833.7		1722.9
22	4230	---	6573.9	5870.4	3817.0		1724.2
23	4209	---	6552.2	5838.6	3800.7		1720.3
24	4258	---	6591.6	5879.6	3806.3		1727.3
25	4276	---	6645.9	5934.7	3845.2		1734.5
26	4282	---	6657.0	5947.1	3860.4		1734.9
27	4216	---	6583.4	5892.1	3823.6		1723.3
28	4220	---	6564.2	5878.6	3802.0		1718.9
29	4228	---	6565.4	5889.7	3807.7(38)		1718.6
30	4224	---	6567.2	5876.5	3805.3		1718.9
31	4232	---	6576.0	5866.7	3802.6		1715.8
Mean	4269	7054.9	6650.5	5945.1	3858.2		1732.4

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

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

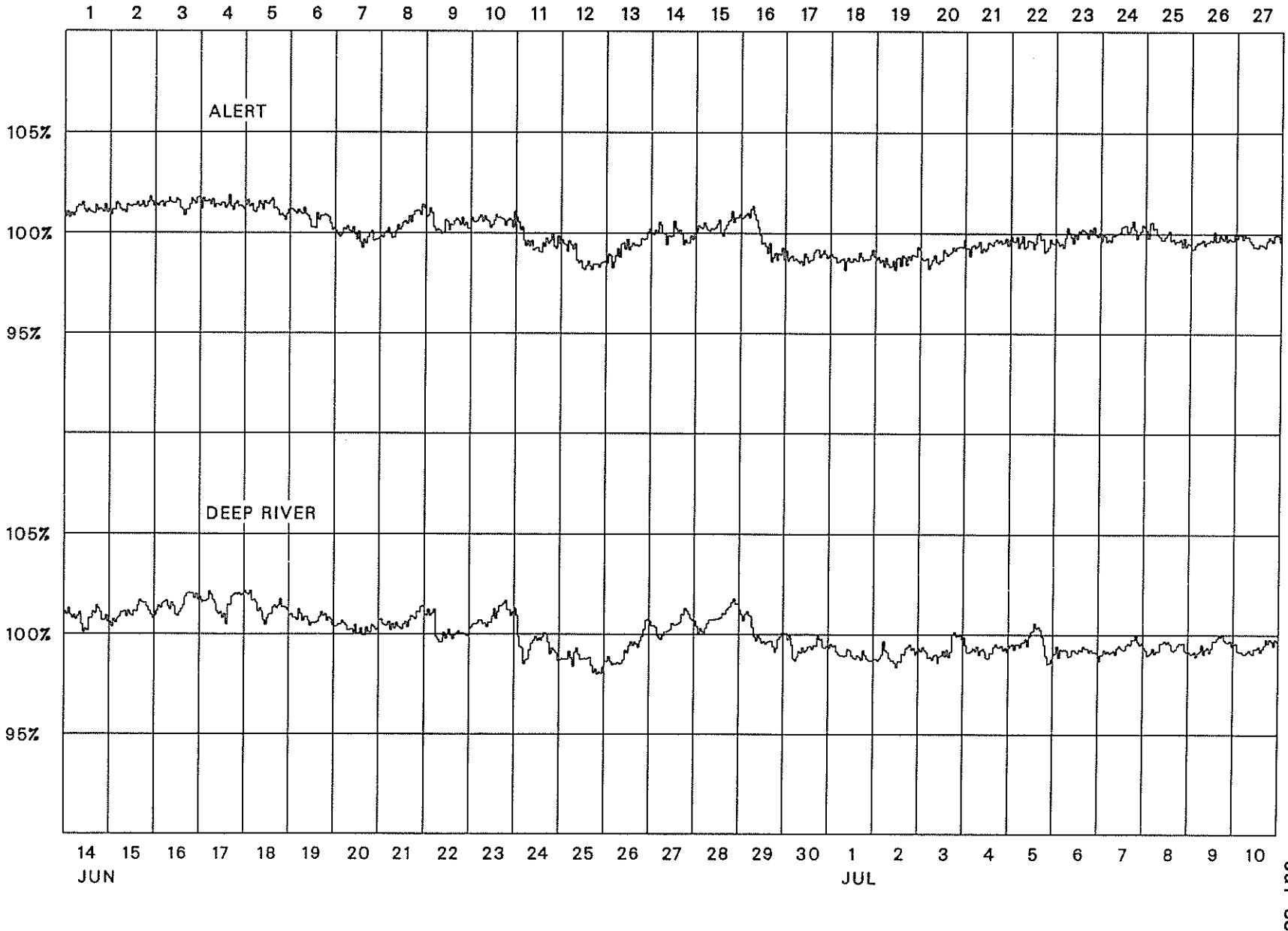
AUGUST 1988

Day	THULE Average (cts/h)/100	ALERT 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	4213		6573.7	5868.7	3809.7		1714.7(18)
2	4233		6583.5	5900.8	3830.9		1723.0(6)
3	4225		6588.0	5906.5	3828.9		1722.2
4	4231		6605.9	5915.5	3834.9		1713.7(36)
5	4267		6627.2	5938.4	3868.9		1707.0(34)
6	4231		6587.2	5882.5	3826.7		1707.0
7	4228		6627.2	5899.8	3846.8		1707.5
8	4250		6644.9	5952.0	3863.0		1713.2
9	4269		6628.7	5970.6	3875.9		1712.9
10	4269		6648.2	5949.6	3882.2		1720.6
11	4276		6655.2	5945.1	3884.0		1722.9
12	4257		6630.2	5949.4	3866.3		1712.5(38)
13	4257		6626.9	5936.7	3879.7		1715.5
14	4255		6627.9	5941.7	3867.0		1715.4
15	4237		6615.2	5931.6	3872.5		1713.7
16	4250		6640.7	5940.1	3875.4(20)		1713.8
17	4279		6660.5	5957.8	3897.5(30)		1716.9
18	4283		6706.8	5978.3	3904.1		1721.1
19	4296		6722.8	6001.1	3907.2		1727.8(12)
20	4288		6714.2	6010.6	3880.6		1725.3
21	4259		6697.8	5975.5	3862.0		1724.3
22	4251		6649.3	5941.8	3872.3		1725.0
23	4271		6677.7	5951.4	3880.2		1720.4
24	4280		6685.4	5978.8	3848.1		1719.9
25	4240		6653.5	5973.4	3707.7		1703.0
26	4107		6407.7	5708.0	3792.7		1668.8(32)
27	4175		6542.8	5822.0	3803.2		1692.5
28	4185		6541.7	5841.3	3802.5		1689.0
29	4184		6547.8	5850.8	3824.0		1691.2
30	4186		6578.8	5867.4	3838.0		1700.4
31	4214		6621.4	5897.3	3807.3		1704.3
Mean	4240		6623.2	5922.1	3848.7		1711.4

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

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2116 (June 1988-July 1988)



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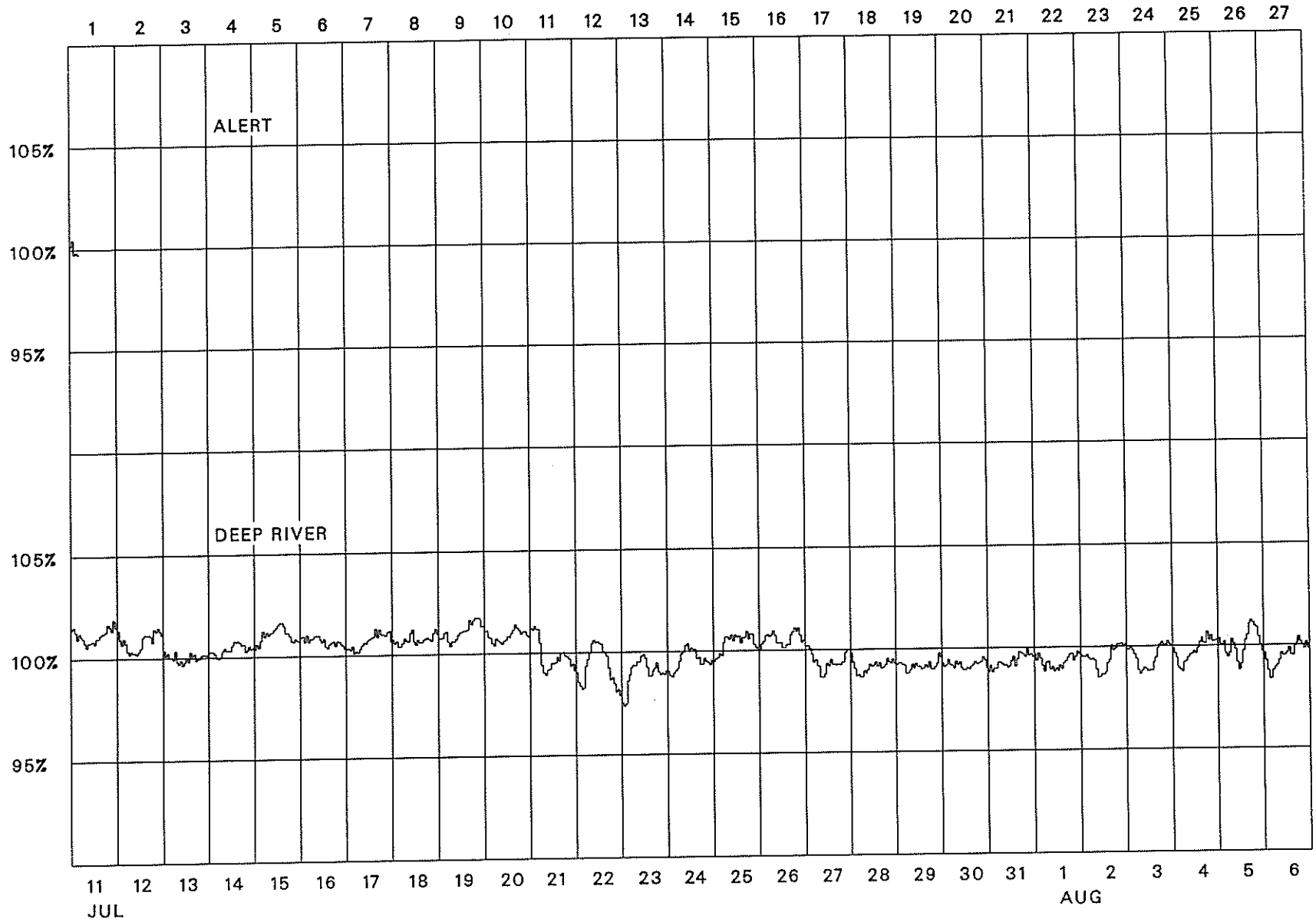
Late
Jul 88

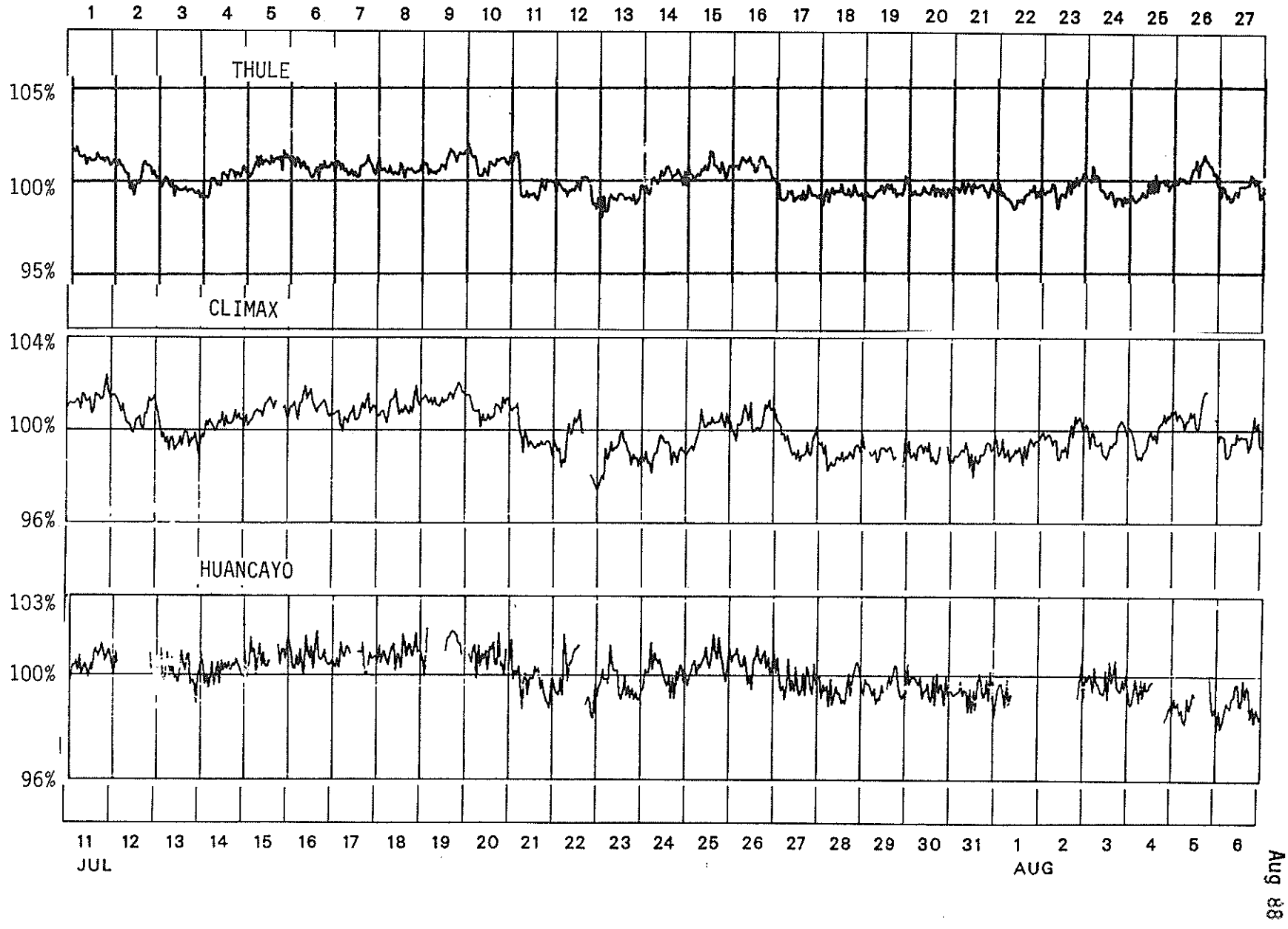
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2117 (July 1988-August 1988)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2117 (July 1988-August 1988)



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Late
Aug 88

RADIO PROPAGATION QUALITY INDICES
AUGUST 1988

Day	For Circuits from Norddeich to: Bracknell England	Rome Italy	Teheran Iran	New York USA (East)	Tokyo Japan	Canberra Australia
1.	6.9	7.1	6.4	6.4	7.6	6.9
2.	5.9	6.4	6.5	5.9	7.0	6.5
3.	5.8	6.1	6.3	5.3	6.9	6.1
4.	5.7	7.0	7.0	7.0	8.4	6.6
5.	6.3	7.5	6.6	7.0	7.5	7.2
6.	5.2	5.9	6.6	6.2	7.3	7.2
7.	6.6	6.5	6.6	6.4	8.4	7.2
8.	6.1	6.6	6.5	7.0	8.9	6.6
9.	6.0	7.0	6.2	6.1	7.1	6.8
10.	5.7	5.7	5.5	5.9	6.9	7.1
11.	6.3	6.5	6.1	6.8	6.3	7.2
12.	6.7	5.8	5.6	5.8	5.2	6.5
13.	6.2	6.7	5.7	5.1	5.3	6.8
14.	5.7	6.4	5.7	4.9	4.8	6.3
15.	5.4	6.3	5.4	4.3	4.9	6.2
16.	5.6	6.7	6.4	5.2	5.9	5.9
17.	5.7	6.3	6.8	6.2	7.2	6.3
18.	6.0	7.3	6.1	6.2	6.4	6.3
19.	5.5	6.5	6.8	7.3	6.8	6.2
20.	5.9	6.7	5.1	7.0	5.6	6.2
21.	5.1	5.8	6.1	6.3	7.0	6.8
22.	5.9	6.4	6.1	6.4	5.3	6.2
23.	5.7	6.3	6.1	6.1	7.6	6.9
24.	5.8	6.0	6.6	6.8	7.2	7.1
25.	6.3	6.5	6.3	5.5	6.0	7.2
26.	6.3	6.3	6.5	6.5	6.9	6.9
27.	6.1	6.2	6.3	5.9	6.2	7.4
28.	5.8	5.3	5.9	6.1	7.3	6.4
29.	5.8	5.2	6.2	6.4	6.7	6.4
30.	6.0	5.6	7.0	6.1	6.7	6.1
31.	7.4	6.4	6.4	6.2	7.5	8.0
MEAN:	6.0	6.4	6.2	6.1	6.7	6.7

CALCULATION OF QUALITY INDICES (Q):
From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$Q = 6.0 + 20 \log (FD/FA)/3.0$

The quality indices vary from 0.1 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they respond to the average of the preceeding 27 days.

SCALE FOR QUALITY INDICES:
0.1 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 = normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

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

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