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NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
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NOVEMBER 1989 NUMBER 543 - Part I

Solar-Geophysical Data prompt reports

Data for October, September 1989, and Late Data

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NATIONAL GEOPHYSICAL DATA CENTER
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Boulder, Colorado

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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 543

(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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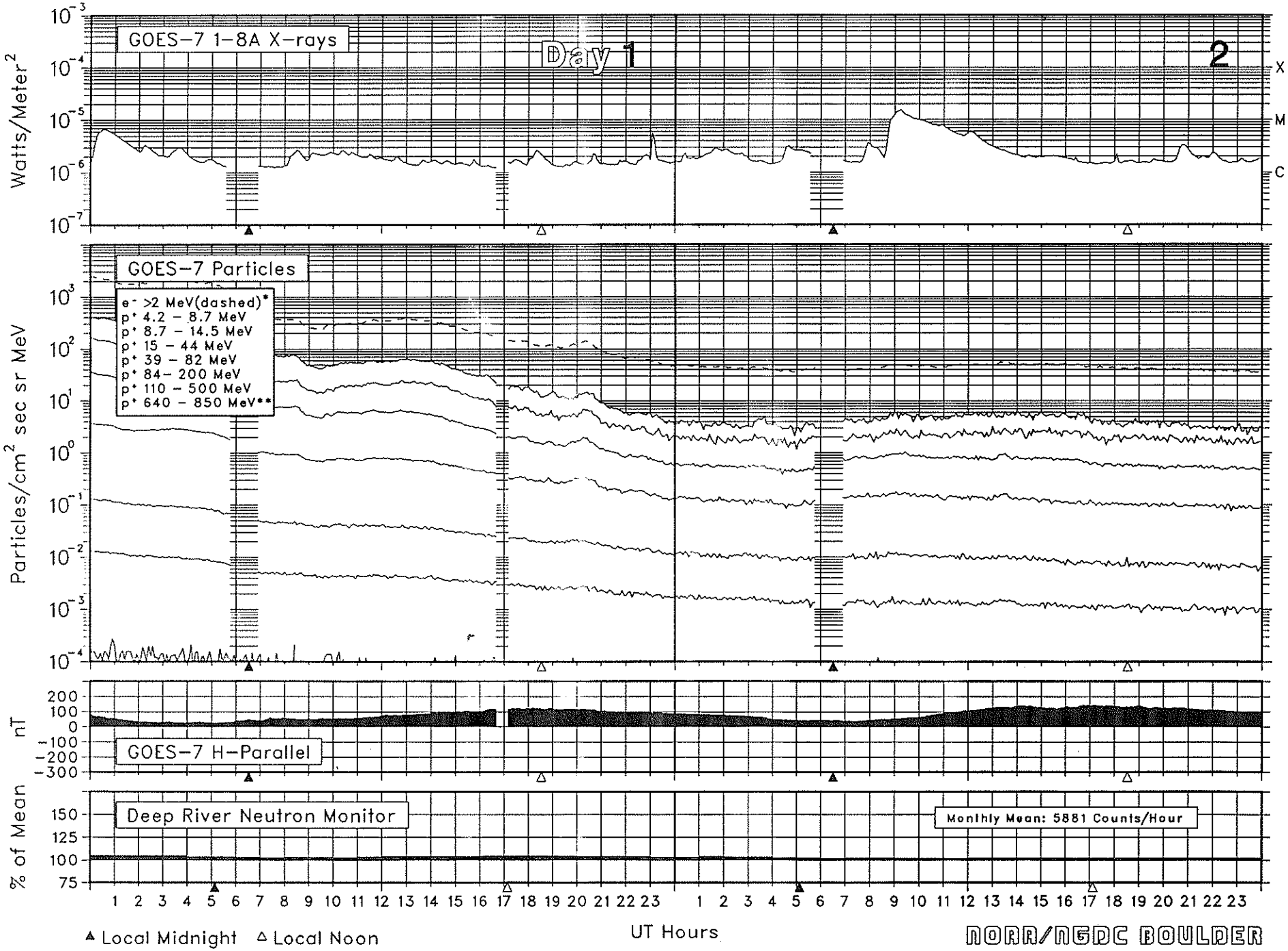
C O N T E N T S

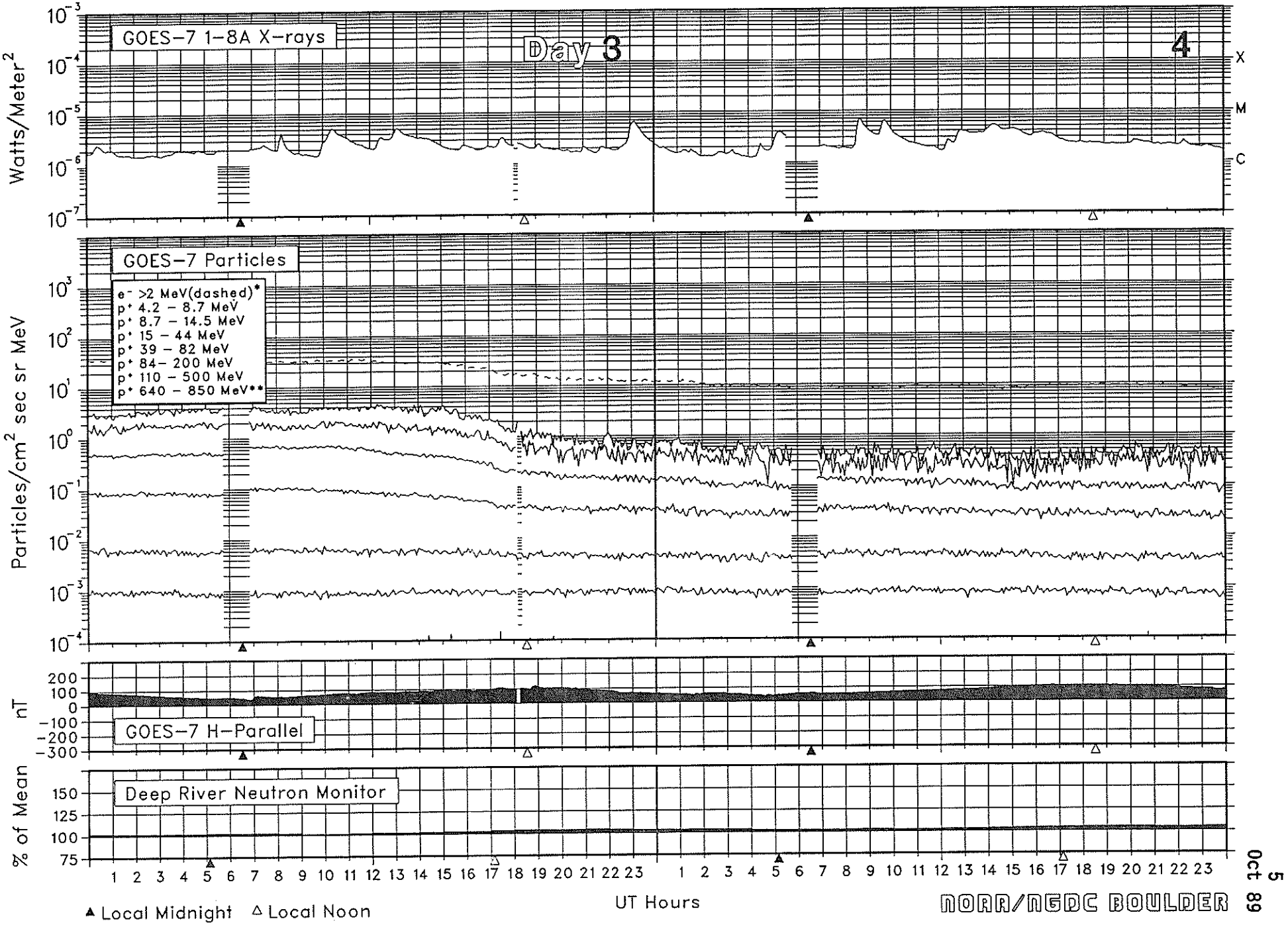
Prompt Reports DATA FOR **OCTOBER 1989** Number 543 Part I

SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

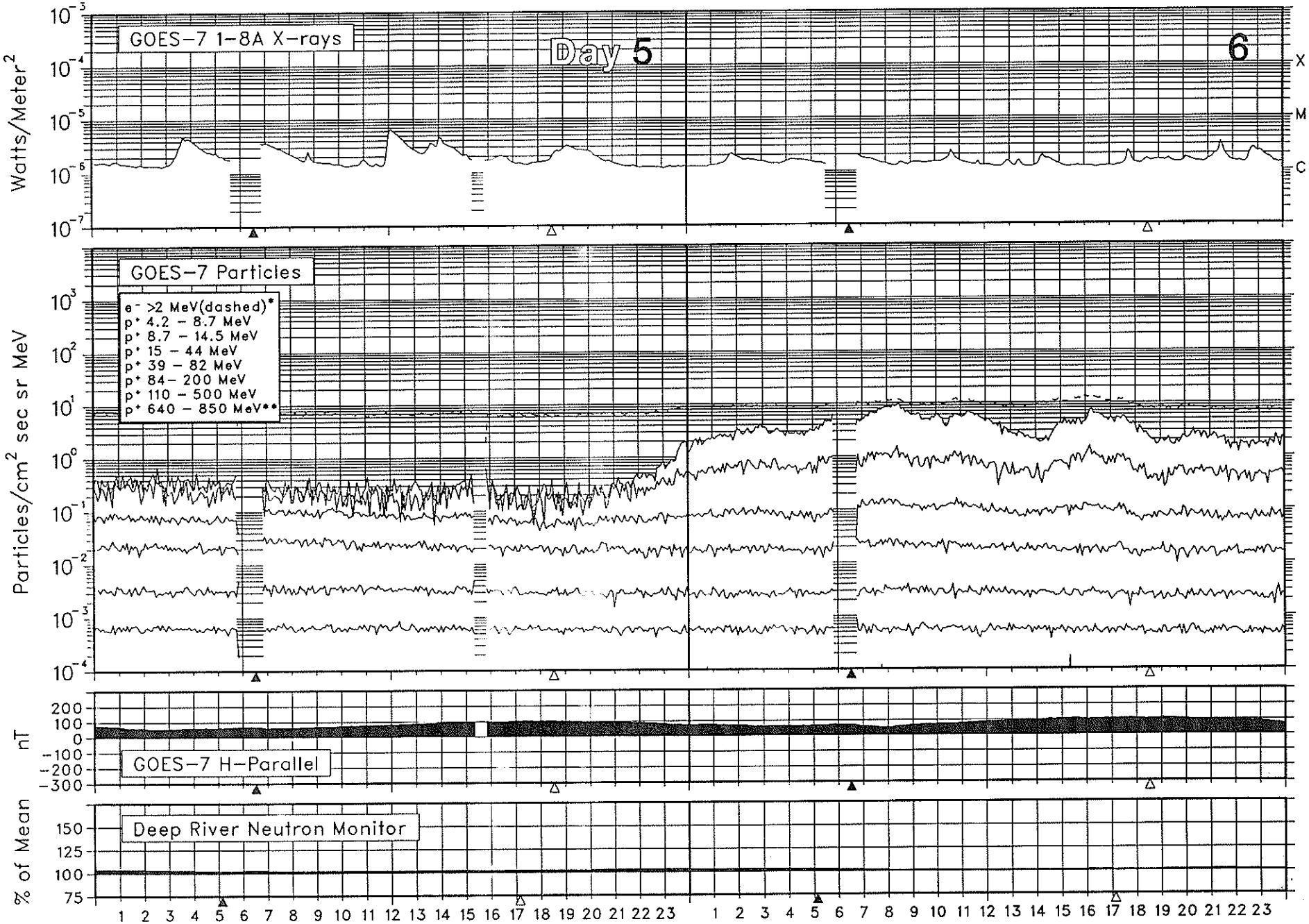
4 Oct 89



SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

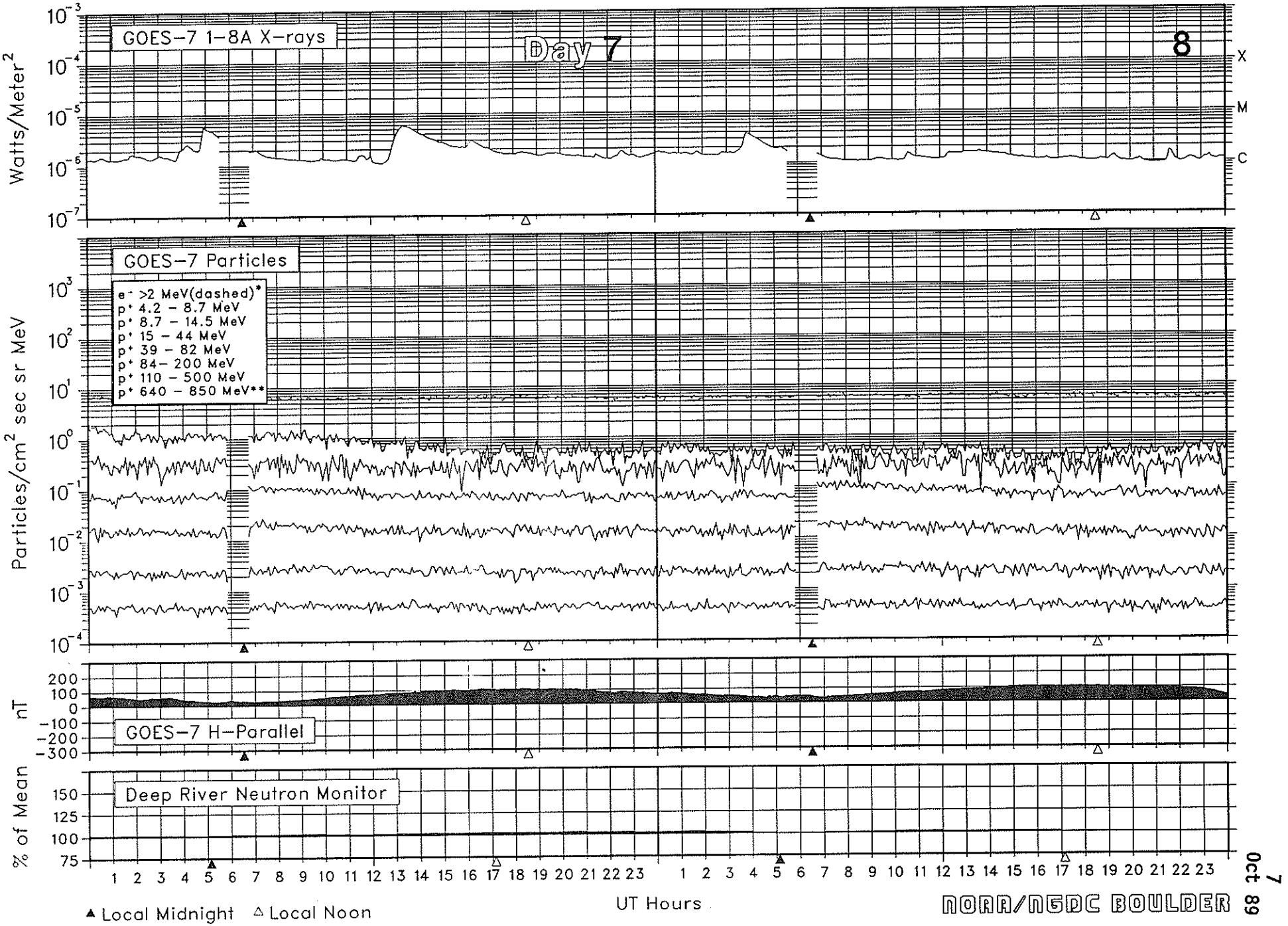


SOLAR-TERRESTRIAL ENVIRONMENT
October 1989



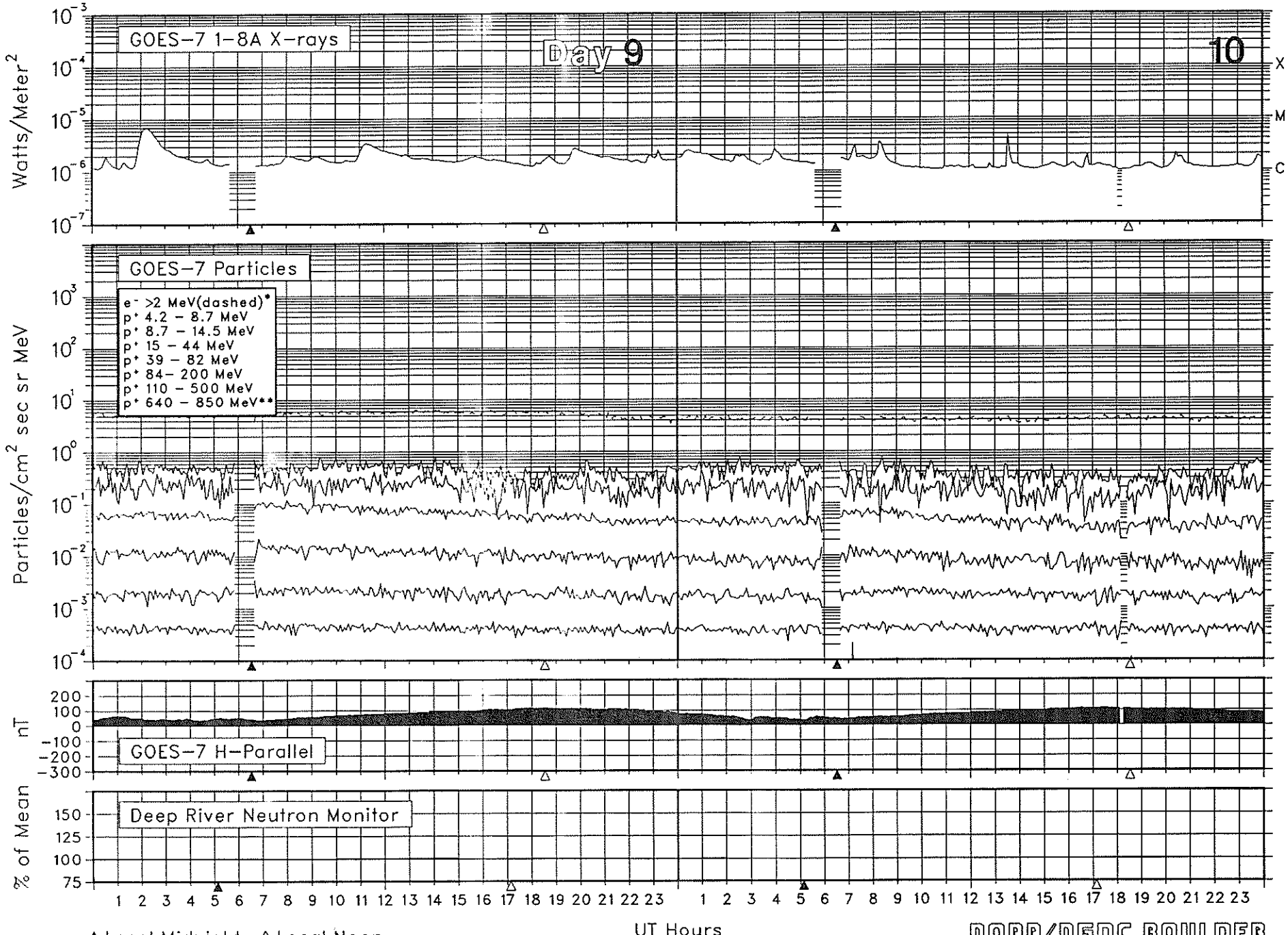
NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
October 1989



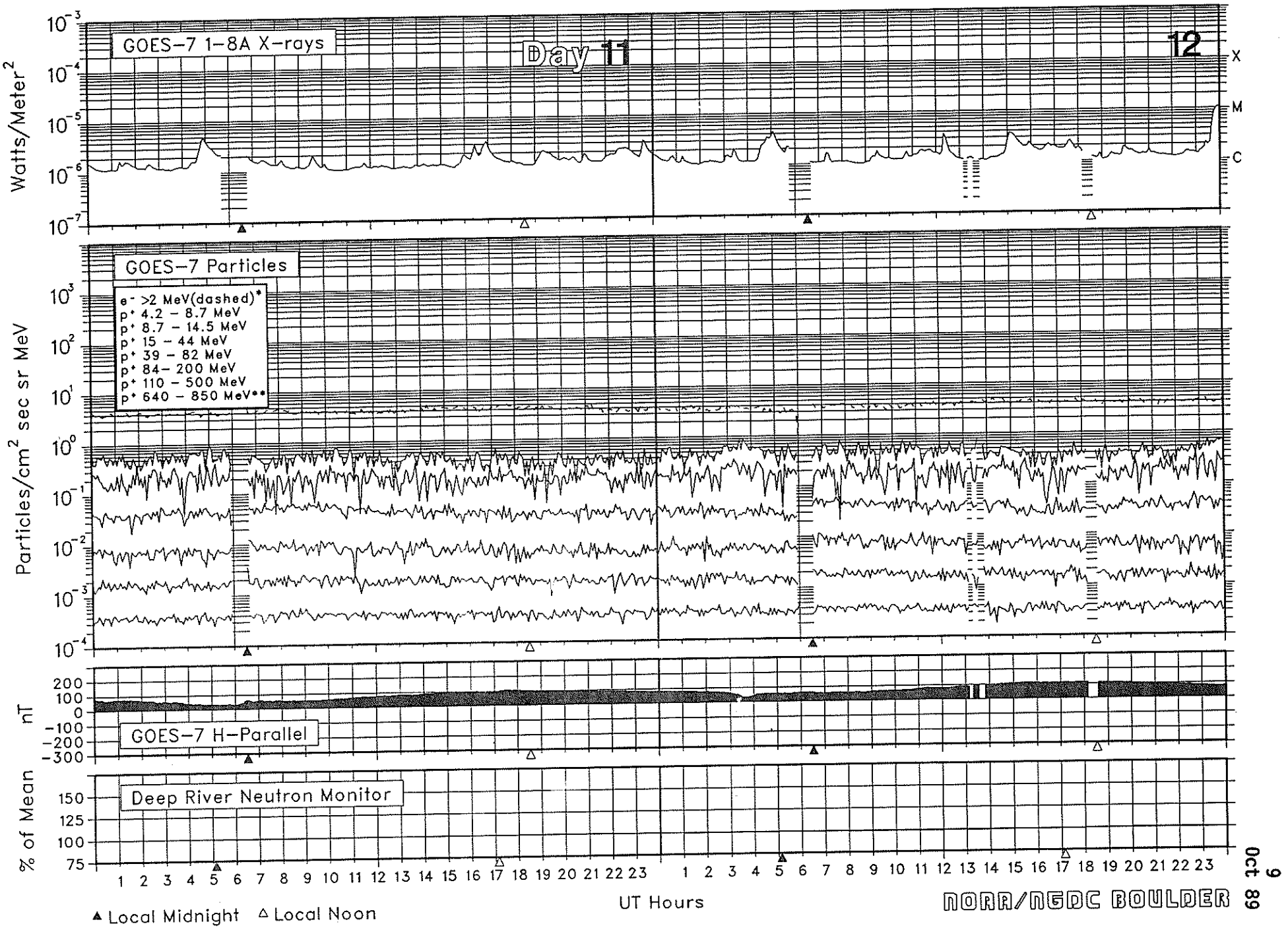
SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

8 Oct 89



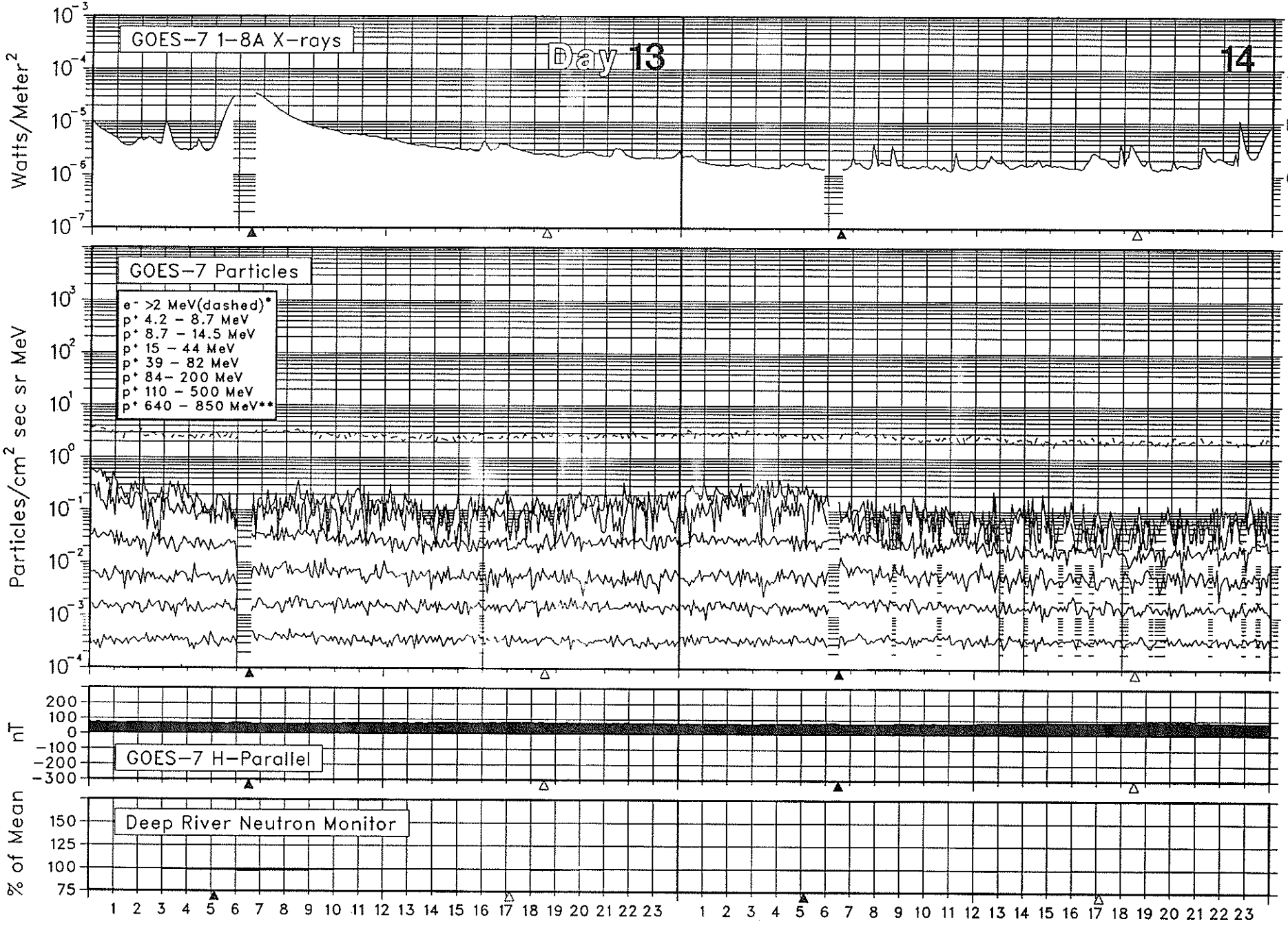
NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

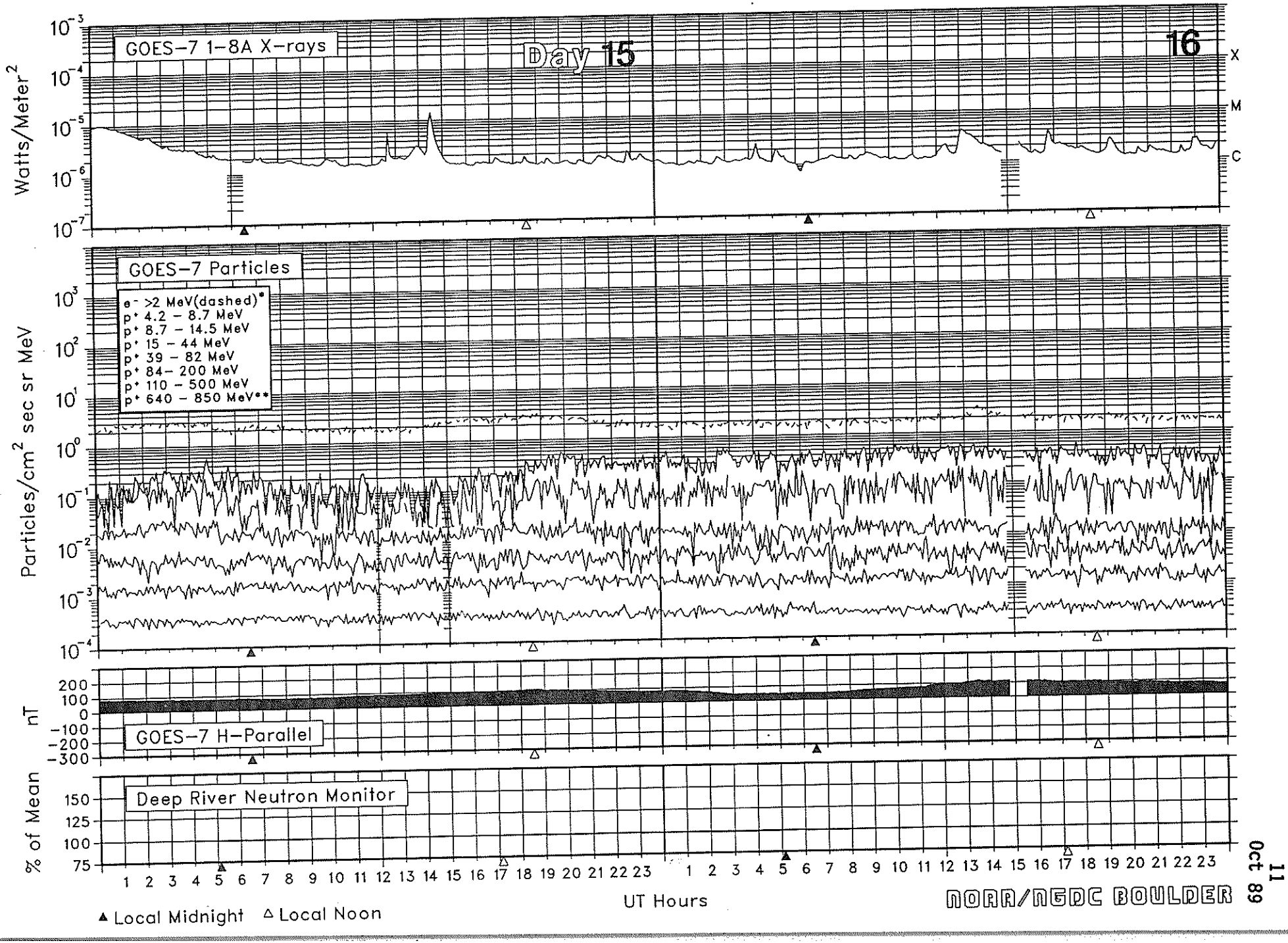


SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

10 Oct 89



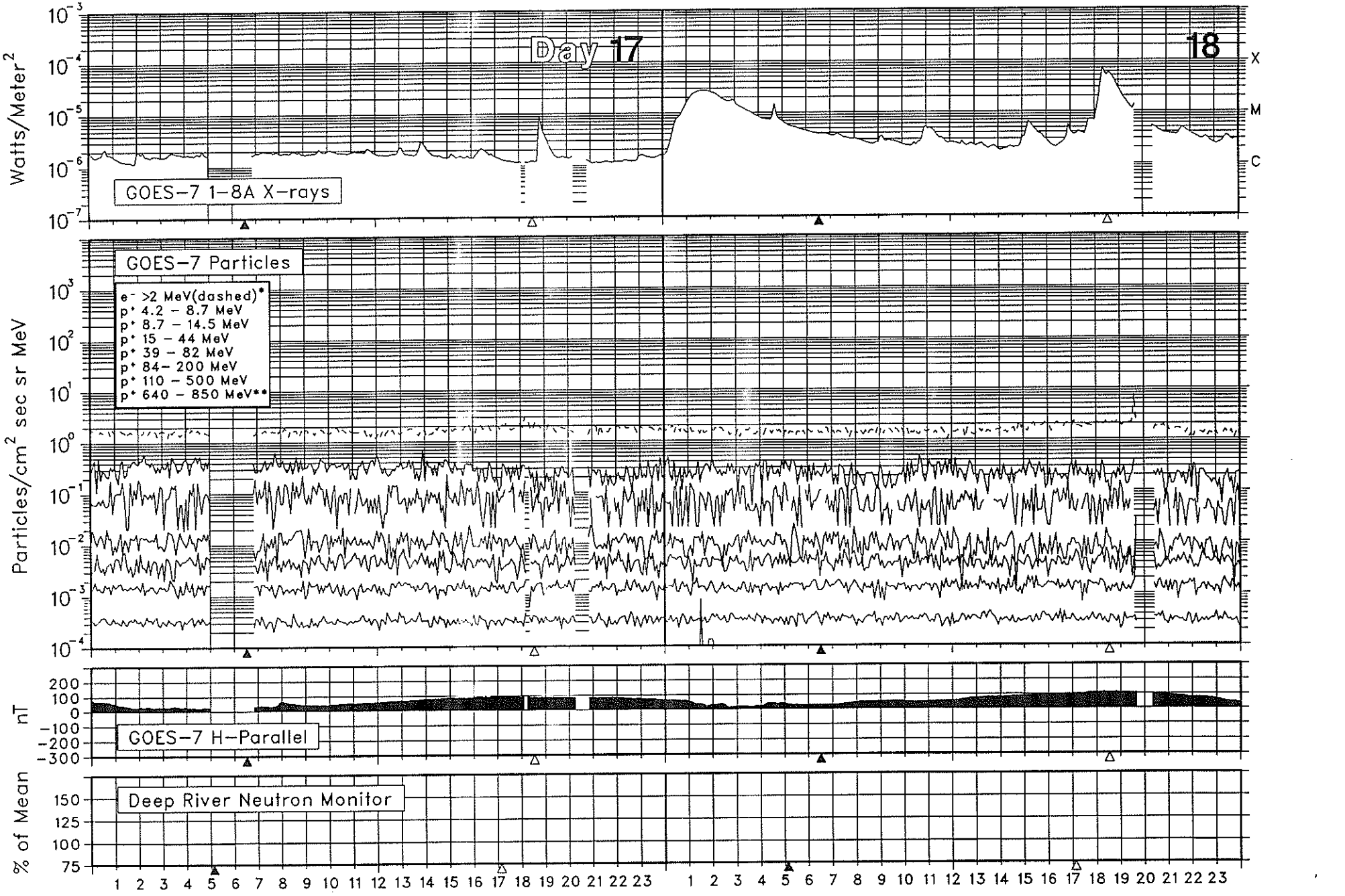
SOLAR-TERRESTRIAL ENVIRONMENT
October 1989



SOLAR-TERRESTRIAL ENVIRONMENT

October 1989

12 Oct 89

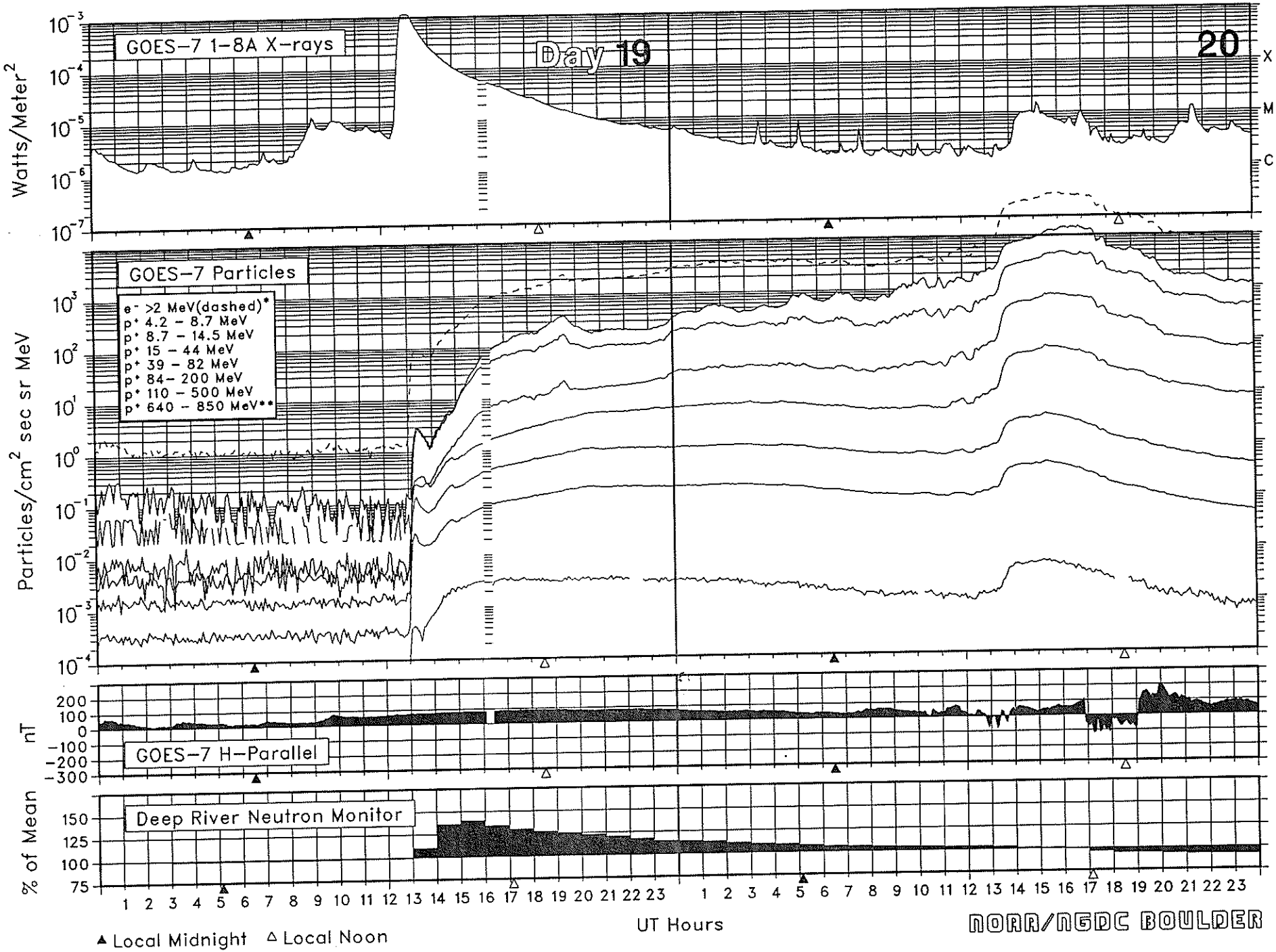


▲ Local Midnight △ Local Noon

NOAA/NEDC BOULDER

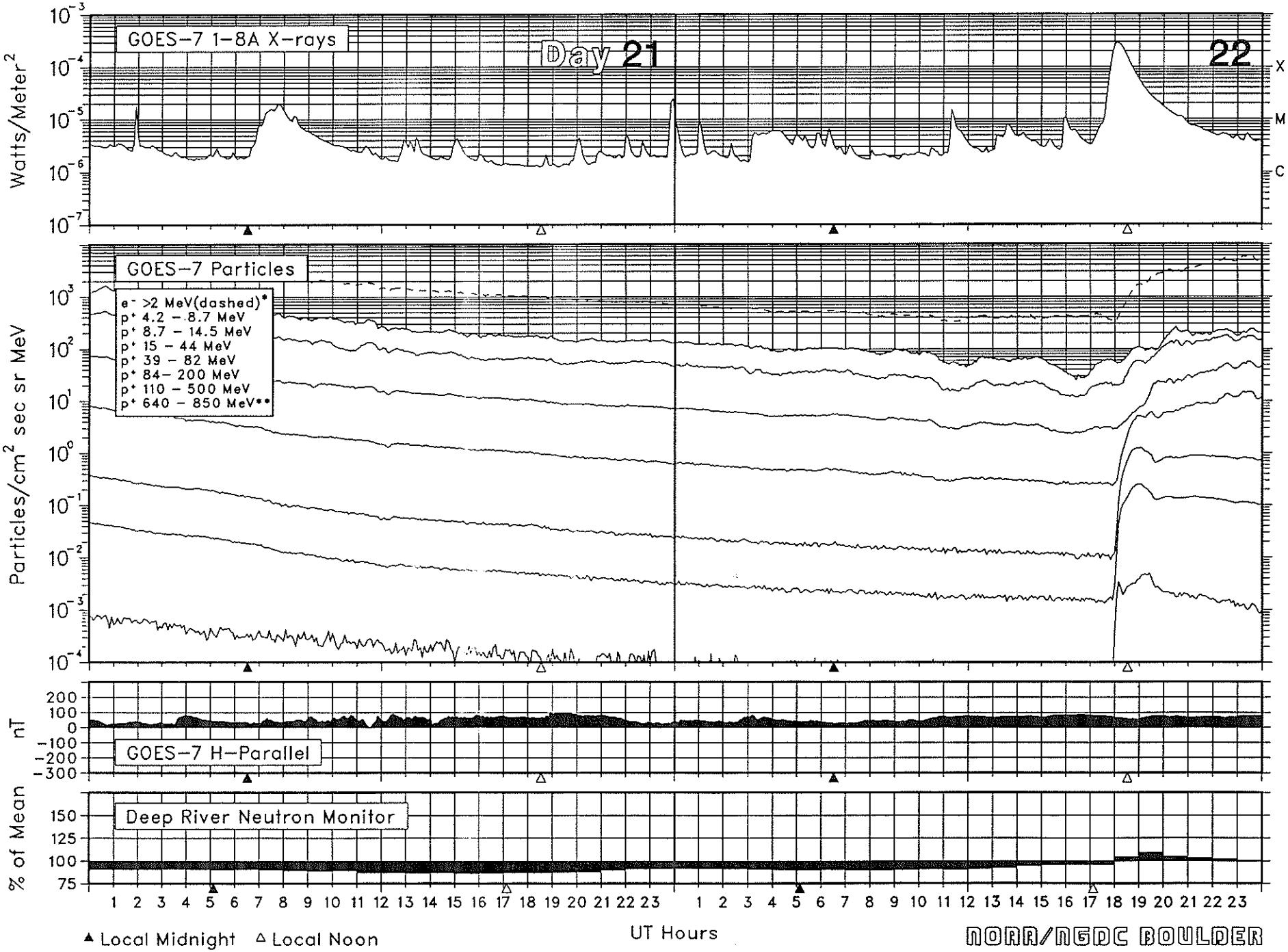
SOLAR-TERRESTRIAL ENVIRONMENT

October 1989

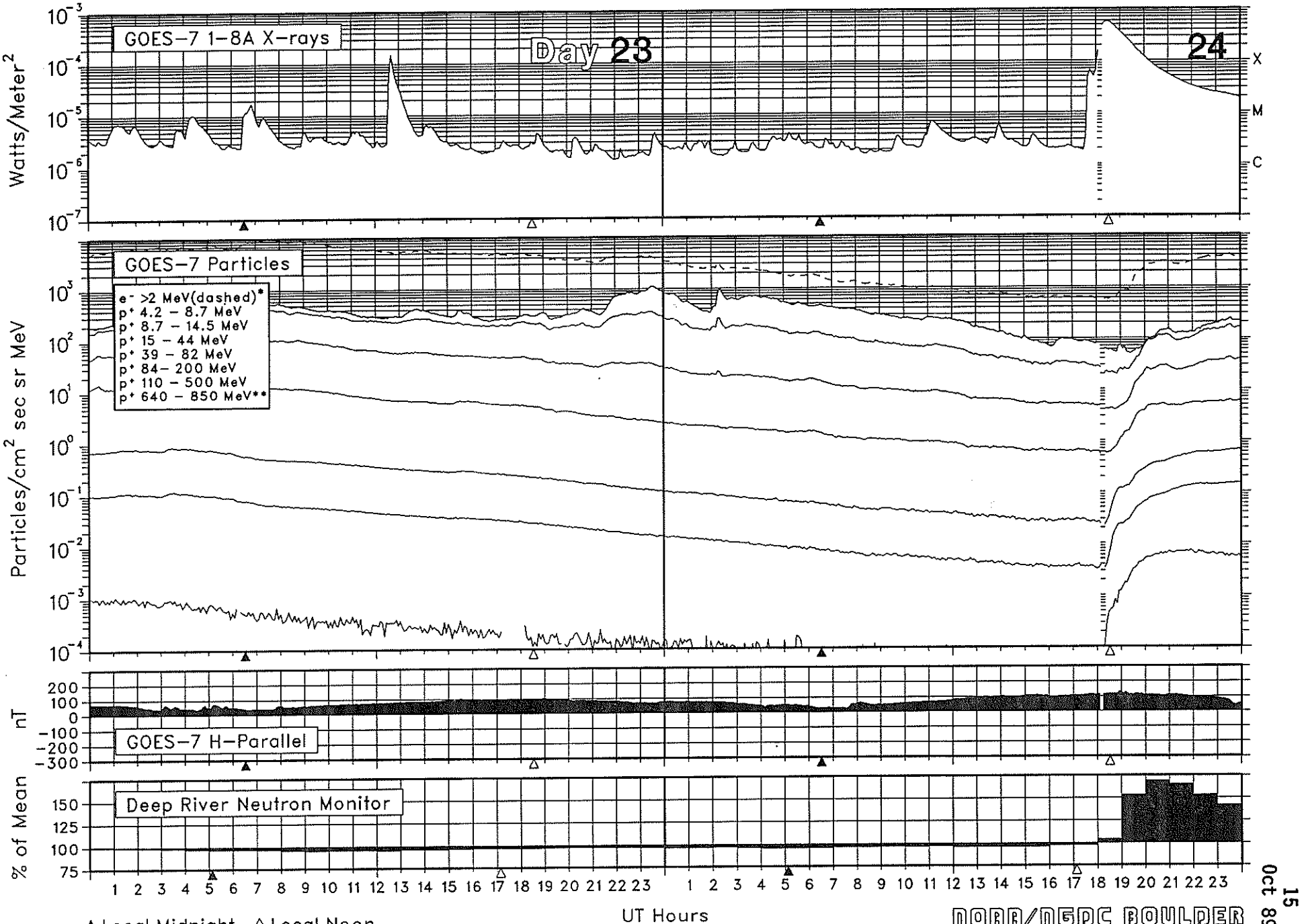


SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

14 Oct 89

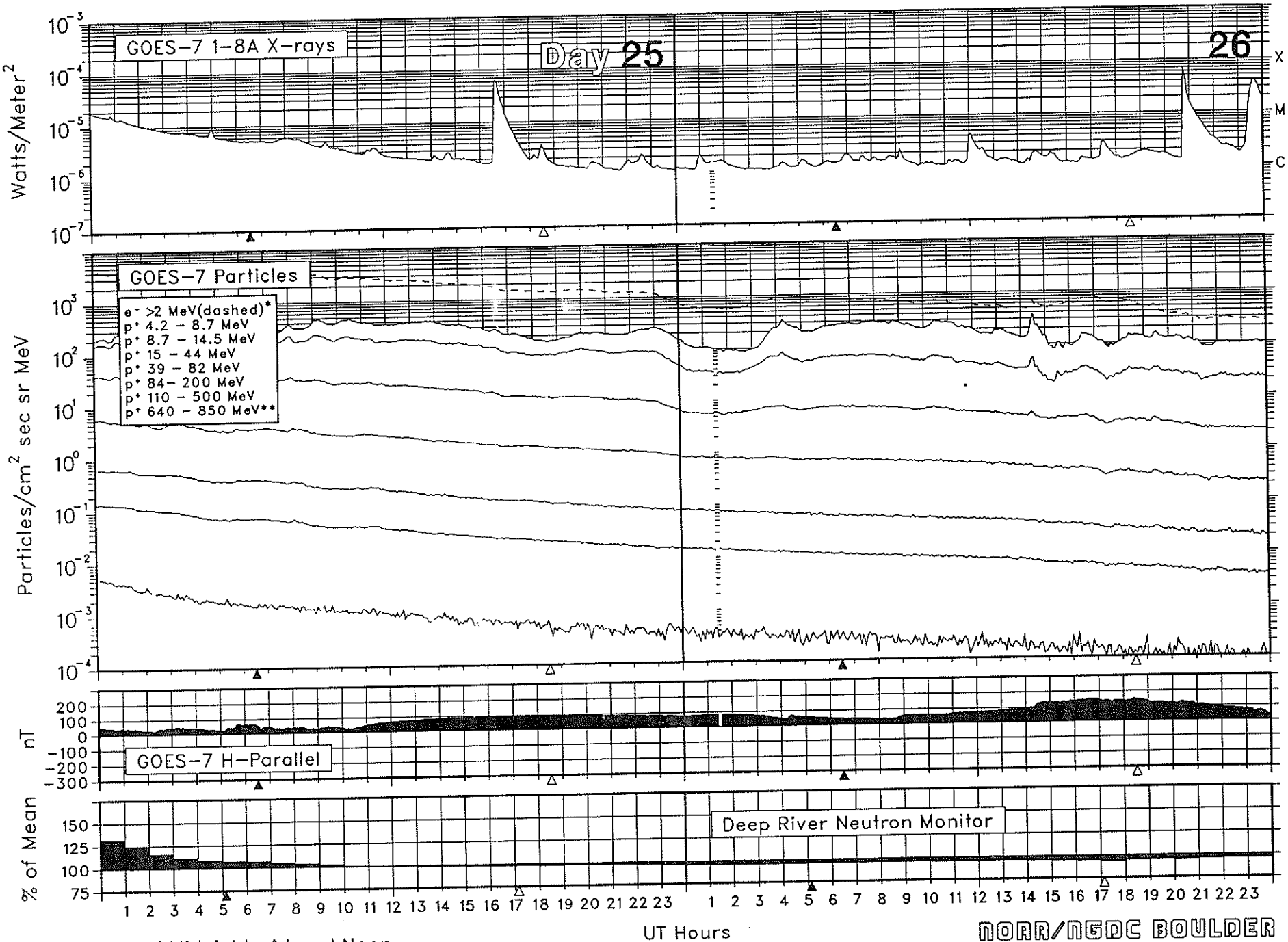


SOLAR-TERRESTRIAL ENVIRONMENT
October 1989



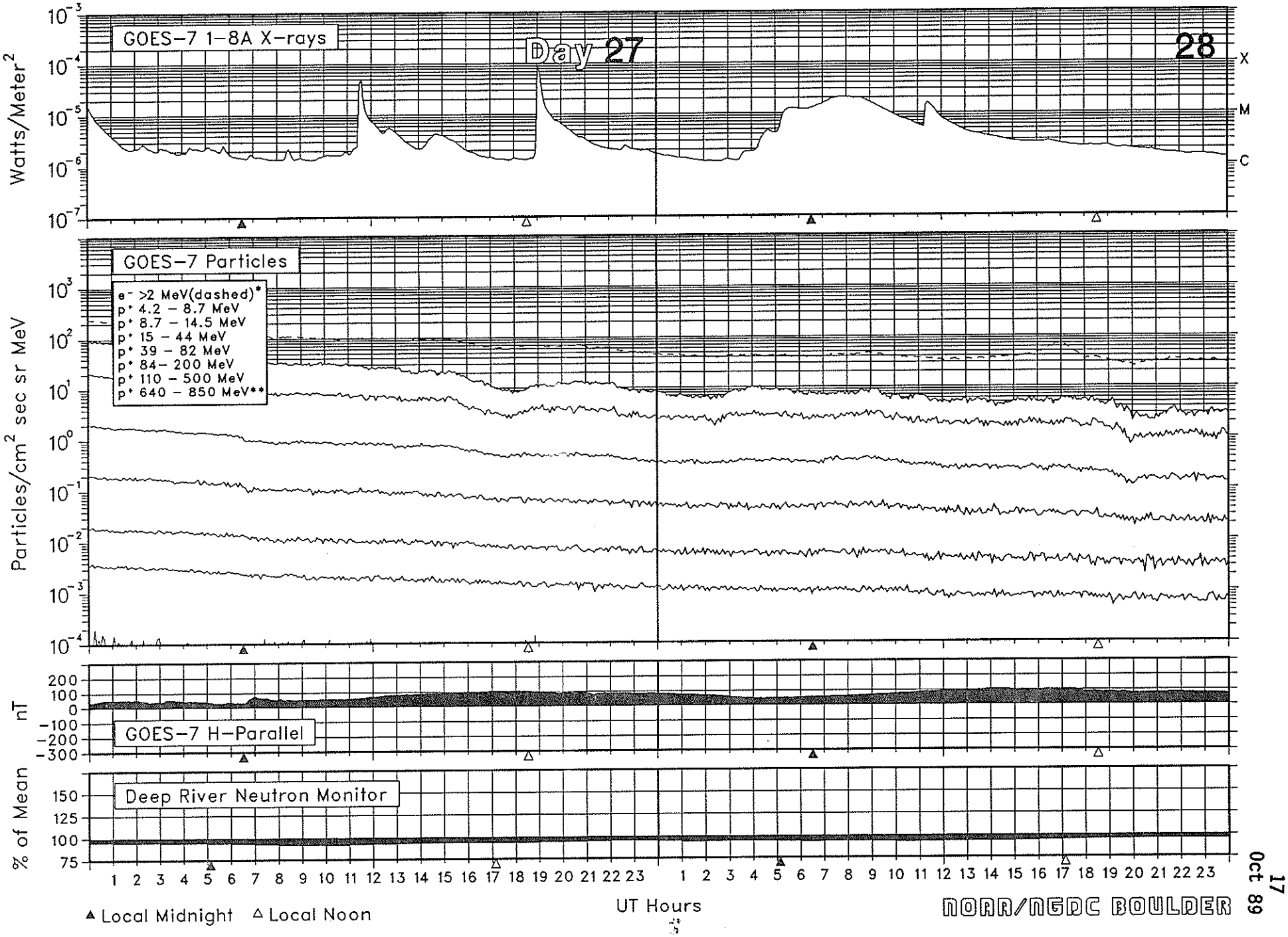
SOLAR-TERRESTRIAL ENVIRONMENT
October 1989

16 Oct 89

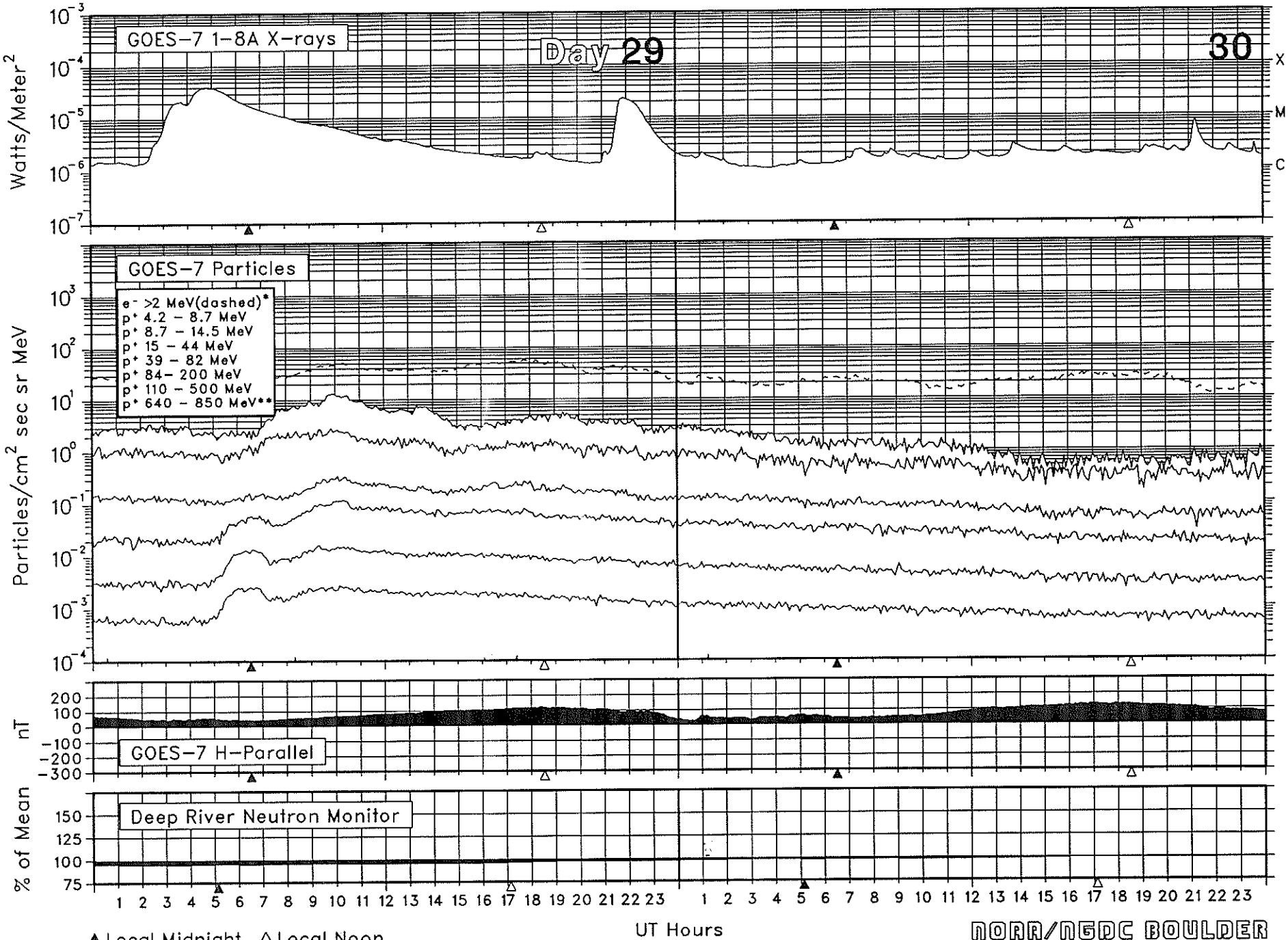


SOLAR-TERRESTRIAL ENVIRONMENT

October 1989

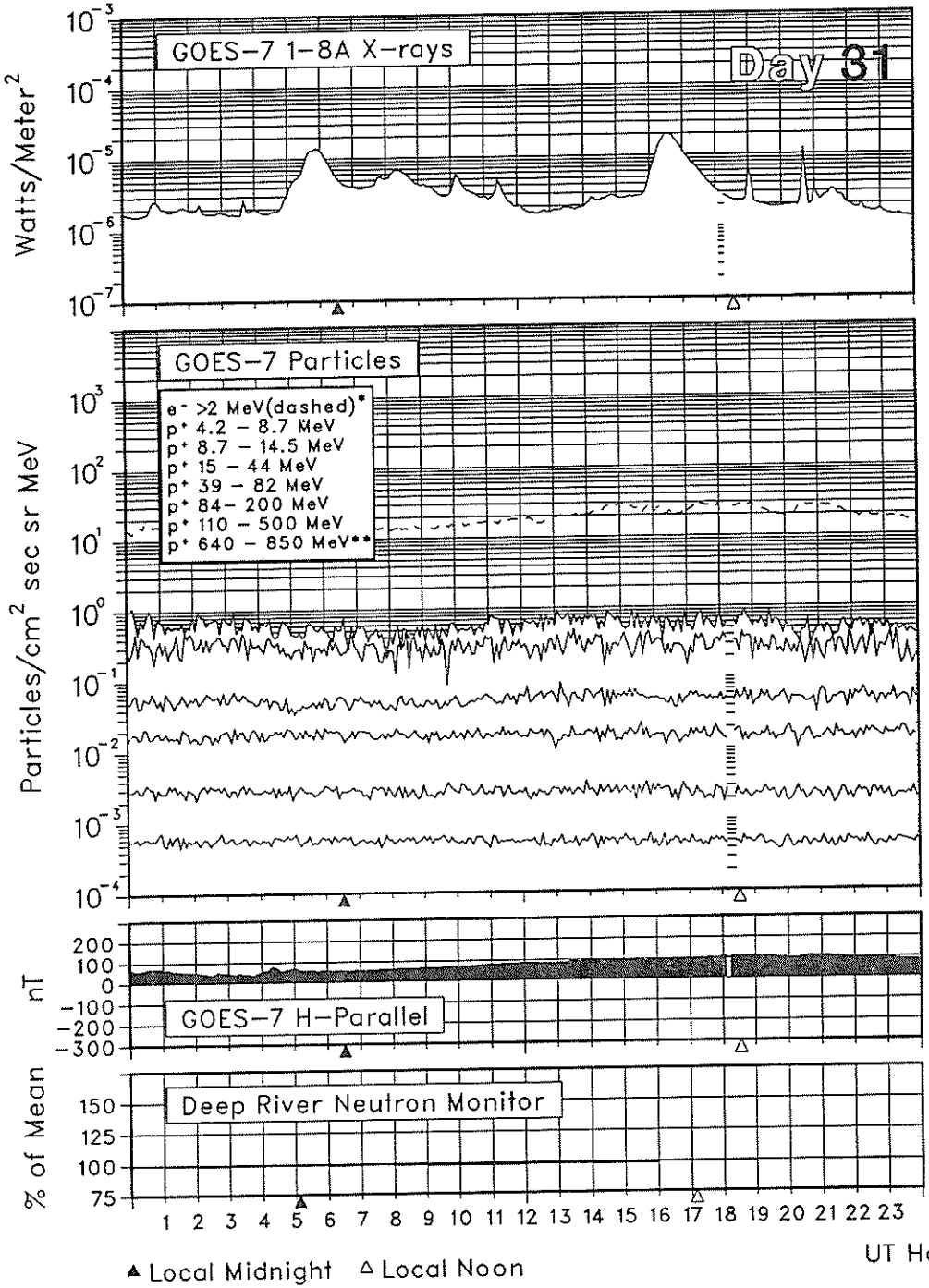


SOLAR-TERRESTRIAL ENVIRONMENT
October 1989



NOAA/NGDC BOULDER

SOLAR-TERRESTRIAL ENVIRONMENT
October 1989



* The y-axis units for the electron flux are **Particles/cm² sec sr.** Also, the plotted electron values have been divided by 10.

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

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **OCTOBER 1989**

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
274	01	30	165	201	009	S22 W83	0	0	0	01	S22 W83	Q	Solalert 01/XX,
						S11 W14	0	0	0		S11 W14	Q	Magalert Minor 02
						N32 E31	1	0	0		N32 E31	Q	Flare.
						S18 E28	2	1	0		S18 E28	A	
						N27 E57	0	0	0		N27 E57	Q	
						S25 E17	1	0	0		S25 E17	Q	
						N14 E53	2	0	0		N14 E53	Q	
						N19 E40	1	0	0		N19 E40	Q	
275	02	01	199	198	016	S12 W25	0	0	0	02	S12 W25	Q	Solnil,
						N34 E20	0	0	0		N34 E20	Q	Magalert 02 Flare.
						S18 E15	6	0	0		S18 E15	A	
						N29 E39	0	0	0		N29 E39	Q	
						S25 E03	1	0	0		S25 E03	Q	
						N14 E39	1	0	0		N14 E39	Q	
						N18 E26	0	0	0		N18 E26	Q	
						N25 E50	0	0	0		N25 E50	Q	
						S09 E01	0	0	0		S09 E01	Q	
						N29 E81	0	0	0		N29 E81	E	
276	03	02	192	207	008	S12 W37	0	0	0	03	S12 W37	Q	Solquiet, Magnil.
						S18 E02	2	1	0		S18 E02	A	
						N29 E29	0	0	0		N29 E29	Q	
						S25 W12	0	0	0		S25 W12	Q	
						N14 E26	2	0	0		N14 E26	Q	
						N19 E12	0	0	0		N19 E12	Q	
						N23 E36	1	0	0		N23 E36	Q	
						N27 E73	1	0	0		N27 E73	E	
						S14 E61	0	0	0		S14 E61	Q	
						N19 E78	1	0	0		N19 E78	Q	
277	04	03	225	221	014	S11 W50	2	0	0	04	S11 W50	E	Solquiet, Magquiet.
						S17 W10	1	0	0		S17 W10	E	
						N29 E16	3	0	0		N29 E16	E	
						S25 W24	2	0	0		S25 W24	E	
						N14 E13	3	0	0		N14 E13	E	
						N24 E22	1	0	0		N24 E22	E	
						N28 E64	8	0	0		N28 E64	E	
						S15 E52	0	0	0		S15 E52	Q	
						N18 E65	0	0	0		N18 E65	Q	
						S10 E12	1	0	0		S10 E12	Q	
						N34 E76	0	0	0		N34 E76	Q	
						S13 E71	1	0	0		S13 E71	Q	
278	05	04	251	236	007	S10 W65	1	0	0	05	S10 W65	Q	Solquiet, Magquiet.
						S18 W21	2	0	0		S18 W21	E	
						N29 E04	5	0	0		N29 E04	E	
						S24 W42	0	0	0		S24 W42	E	
						N15 W00	1	0	0		N15 W00	E	
						N24 E06	1	0	0		N24 E06	E	
						N28 E52	7	0	0		N28 E52	A	
						S17 E41	0	0	0		S17 E41	Q	
						N19 E53	0	0	0		N19 E53	Q	
						S10 W02	2	0	0		S10 W02	Q	
						N34 E69	0	0	0		N34 E69	Q	
						S13 E60	1	0	0		S13 E60	Q	
						N14 E24	0	0	0		N14 E24	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

Summary of the Geoalert Messages **OCTOBER 1989**

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
279	06	05	248	219	004	S12 W75	0	0	0	06	S12 W75	Q	Solquiet, Magquiet.
						S17 W34	3	0	0		S17 W34	E	
						N29 W09	2	0	0		N29 W09	Q	
						S26 W54	2	0	0		S26 W54	Q	
						N14 W15	1	0	0		N14 W15	Q	
						N23 W08	0	0	0		N23 W08	Q	
						N28 E39	9	0	0		N28 E39	A	
						S17 E28	0	0	0		S17 E28	Q	
						N18 E40	0	0	0		N18 E40	Q	
						S11 W17	2	0	0		S11 W17	Q	
						N34 E59	0	0	0		N34 E59	Q	
						S13 E46	0	0	0		S13 E46	E	
						N14 E09	0	0	0		N14 E09	Q	
						N17 E69	1	0	0		N17 E69	Q	
						S28 E55	1	0	0		S28 E55	Q	
280	07	06	267	219	012	S17 W46	1	0	0	07	S17 W46	E	Solquiet, Magquiet.
						N28 W25	0	0	0		N28 W25	Q	
						N14 W28	0	0	0		N14 W28	Q	
						N23 W21	0	0	0		N23 W21	Q	
						N27 E27	6	0	0		N27 E27	E	
						S17 E14	0	0	0		S17 E14	Q	
						N19 E27	0	0	0		N19 E27	Q	
						S11 W30	0	0	0		S11 W30	Q	
						N33 E46	0	0	0		N33 E46	Q	
						S13 E33	6	0	0		S13 E33	E	
						N13 W04	0	0	0		N13 W04	Q	
						N17 E56	0	0	0		N17 E56	Q	
						S28 E40	0	0	0		S28 E40	Q	
						N25 W80	0	0	0		N25 W80	Q	
						N18 W71	0	0	0		N18 W71	Q	
						N24 W03	0	0	0		N24 W03	Q	
				Presto:[2]		Boulder Proton event began 06/0050 UT maximum of 15 particles/cm²-s-ster at greater than 10 MeV 06/0550 UT.							
281	08	07	269	225	013	S20 W55	1	0	0	08	S20 W55	Q	Solquiet, Magquiet.
						N28 W37	0	0	0		N28 W37	Q	
						N13 W41	0	0	0		N13 W41	Q	
						N23 W34	1	0	0		N23 W34	Q	
						N27 E14	7	0	0		N27 E14	A	
						S18 E02	0	0	0		S18 E02	Q	
						N18 E13	0	0	0		N18 E13	Q	
						N33 E32	0	0	0		N33 E32	Q	
						S13 E20	1	0	0		S13 E20	E	
						N13 W19	0	0	0		N13 W19	Q	
						N16 E43	0	0	0		N16 E43	Q	
						S28 E29	0	0	0		S28 E29	Q	
						N23 W14	0	0	0		N23 W14	Q	
						N21 E75	0	0	0		N21 E75	Q	

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282	09	08	235	209	007	S19 W67	0	0	0	09	S19 W67	Q	Solquiet, Magquiet.
						N29 W50	0	0	0		N29 W50	Q	
						N23 W47	0	0	0		N23 W47	Q	
						N27 E02	1	0	0		N27 E02	E	
						S18 W12	1	0	0		S18 W12	Q	
						N19 W00	1	0	0		N19 W00	Q	
						N33 E20	1	0	0		N33 E20	Q	
						S13 E06	0	0	0		S13 E06	Q	
						N14 W30	0	0	0		N14 W30	Q	
						N16 E30	2	0	0		N16 E30	Q	
						S27 E16	1	0	0		S27 E16	Q	
						N21 E64	0	0	0		N21 E64	Q	
						S31 E50	0	0	0		S31 E50	Q	
		Presto:[2]	Sydney		Culgoora	Intensity 3 Type II began 08/0146UT.							
283	10	09	260	201	009	S20 W80	0	0	0	10	S20 W80	Q	Solquiet, Magquiet.
						N28 W63	1	0	0		N28 W63	Q	
						N22 W61	1	0	0		N22 W61	Q	
						N26 W11	0	0	0		N26 W11	E	
						S19 W24	0	0	0		S19 W24	Q	
						N19 W14	0	0	0		N19 W14	Q	
						N33 E09	2	0	0		N33 E09	Q	
						S12 W08	2	0	0		S12 W08	Q	
						N17 E16	3	0	0		N17 E16	E	
						S28 E02	0	0	0		S28 E02	Q	
						N22 E52	0	0	0		N22 E52	Q	
						S32 E37	1	0	0		S32 E37	Q	
						N28 E66	5	0	0		N28 E66	Q	
						N15 E74	2	0	0		N15 E74	Q	
284	11	10	263	195	010	S18 W92	0	0	0	11	S18 W92	Q	Solquiet, Magquiet.
						N29 W76	0	0	0		N29 W76	Q	
						N23 W74	0	0	0		N23 W74	Q	
						N26 W24	0	0	0		N26 W24	Q	
						S19 W38	0	0	0		S19 W38	Q	
						N19 W26	1	0	0		N19 W26	E	
						N34 W05	3	0	0		N34 W05	Q	
						S13 W22	1	0	0		S13 W22	Q	
						N17 E04	0	0	0		N17 E04	Q	
						S28 W12	0	0	0		S28 W12	Q	
						N21 E39	0	0	0		N21 E39	Q	
						S33 E23	0	0	0		S33 E23	Q	
						N28 E58	1	0	0		N28 E58	Q	
						N15 E60	0	0	0		N15 E60	Q	
						S12 W03	0	0	0		S12 W03	Q	
						N12 E34	0	0	0		N12 E34	Q	
						S20 E40	0	0	0		S20 E40	Q	

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285	12	11	271	191	007	N28 W89	1	0	0	12	N28 W89	Q	Solquiet, Magquiet.
						N23 W87	1	0	0		N23 W87	Q	
						N27 W34	5	0	0		N27 W34	Q	
						S19 W51	0	0	0		S19 W51	Q	
						N18 W39	0	0	0		N18 W39	Q	
						N34 W19	4	0	0		N34 W19	Q	
						S12 W38	0	0	0		S12 W38	Q	
						N16 W09	0	0	0		N16 W09	Q	
						S28 W25	0	0	0		S28 W25	Q	
						N22 E26	0	0	0		N22 E26	Q	
						N26 E48	1	0	0		N26 E48	Q	
						N15 E48	3	0	0		N15 E48	Q	
						S13 W18	0	0	0		S13 W18	Q	
						N12 E21	1	0	0		N12 E21	Q	
						S19 E27	0	0	0		S19 E27	Q	
						S17 E66	1	0	0		S17 E66	E	
						S18 W02	0	0	0		S18 W02	Q	
						N21 E46	0	0	0		N21 E46	Q	
286	13	12	238	202	006	N27 W49	4	0	0	13	N27 W49	E	Solquiet, Magquiet.
						N19 W52	2	0	0		N19 W52	Q	
						N36 W26	0	0	0		N36 W26	Q	
						S12 W53	3	0	0		S12 W53	Q	
						N17 W22	0	0	0		N17 W22	Q	
						N21 E14	0	0	0		N21 E14	Q	
						N27 E34	1	0	0		N27 E34	Q	
						N15 E34	1	0	0		N15 E34	Q	
						S12 W32	0	0	0		S12 W32	Q	
						N12 E08	1	0	0		N12 E08	E	
						S18 E13	0	0	0		S18 E13	Q	
						S17 E51	4	0	0		S17 E51	E	
						S17 W17	0	0	0		S17 W17	Q	
						N21 E33	0	0	0		N21 E33	Q	
						N26 W64	2	0	0		N26 W64	Q	
						S23 E74	0	0	0		S23 E74	Q	
287	14	13	216	223	002	N25 W67	1	0	0	14	N25 W67	Q	Solalert 14/16, Magquiet.
						N20 W67	1	0	0		N20 W67	Q	
						N37 W38	0	0	0		N37 W38	Q	
						N17 W36	0	0	0		N17 W36	Q	
						N20 W00	0	0	0		N20 W00	Q	
						N14 E20	2	0	0		N14 E20	Q	
						S12 W46	0	0	0		S12 W46	Q	
						N12 W07	3	0	0		N12 W07	E	
						S16 E38	2	0	0		S16 E38	Q	
						N22 E22	1	0	0		N22 E22	Q	
						N27 W77	1	0	0		N27 W77	Q	
						S23 E62	2	1	0		S23 E62	A	
288	15	14	238	225	000	N18 W78	11	0	0	15	N18 W78	E	Solalert 15/XX, Magquiet.
						N16 W48	4	0	0		N16 W48	Q	
						N20 W15	0	0	0		N20 W15	Q	
						N27 E07	0	0	0		N27 E07	Q	
						N15 E07	1	0	0		N15 E07	Q	
						N12 W19	0	0	0		N12 W19	Q	
						S16 E25	6	0	0		S16 E25	E	
						N23 E08	0	0	0		N23 E08	Q	
						S23 E50	3	0	0		S23 E50	Q	
						N05 W12	0	0	0		N05 W12	Q	
						S26 E66	4	2	0		S26 E66	A	
						S17 E68	1	0	0		S17 E68	Q	

Presto:[2] Toyokawa Tenflare 100 flux units 14/2240 duration 5 minutes.

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289	16	15	263	225	000	N19 W91	2	0	0	16	N19 W91	E	Solalert 16/XX, Magquiet.
						N17 W62	6	0	0		N17 W62	Q	
						N27 W08	0	0	0		N27 W08	Q	
						N14 W07	0	0	0		N14 W07	Q	
						N12 W33	0	0	0		N12 W33	Q	
						S19 W33	2	0	0		S19 W33	Q	
						S17 E12	4	1	0		S17 E12	E	
						N26 W06	0	0	0		N26 W06	Q	
						S23 E36	2	0	0		S23 E36	Q	
						S27 E54	7	0	0		S27 E54	A	
						S17 E56	3	0	0		S17 E56	Q	
						S13 W15	1	0	0		S13 W15	Q	
						N13 E24	0	0	0		N13 E24	Q	
290	17	16	282	236	008	N15 W76	4	0	0	17	N15 W76	Q	Solalert 17/XX, Magquiet.
						N27 W21	0	0	0		N27 W21	Q	
						N14 W22	2	0	0		N14 W22	Q	
						N12 W46	0	0	0		N12 W46	Q	
						S19 W46	2	0	0		S19 W46	Q	
						S16 W02	1	0	0		S16 W02	Q	
						S23 E22	1	0	0		S23 E22	Q	
						S27 E40	10	0	0		S27 E40	A	
						S14 E44	7	0	0		S14 E44	Q	
						S13 W29	0	0	0		S13 W29	Q	
						N13 E12	0	0	0		N13 E12	Q	
						N19 E37	0	0	0		N19 E37	Q	
						S09 E61	0	0	0		S09 E61	Q	
						S21 E70	0	0	0		S21 E70	Q	
291	18	17	251	224	012	N17 W87	4	0	0	17	N17 W87	Q	Solalert 18/XX, Magquiet.
						N27 W34	0	0	0		N27 W34	Q	
						N14 W34	0	0	0		N14 W34	Q	
						N12 W58	0	0	0		N12 W58	Q	
						S18 W58	1	0	0		S18 W58	Q	
						S17 W15	1	0	0		S17 W15	Q	
						S23 E12	0	0	0		S23 E12	Q	
						S26 E29	6	1	0		S26 E29	A	
						S14 E31	1	0	0		S14 E31	Q	
						S13 W41	1	0	0		S13 W41	Q	
						N13 W03	0	0	0		N13 W03	Q	
						N19 E23	0	0	0		N19 E23	Q	
						S22 E56	0	0	0		S22 E56	Q	
		Presto:[2] Boulder Tenflare 310 flux units 17/1850 UT duration 6 minutes.											
292	19	18	236	226	015	N26 W48	0	0	0	19	N26 W48	Q	Solalert 19/XX, Magquiet.
						N14 W49	0	0	0		N14 W49	Q	
						N13 W71	0	0	0		N13 W71	Q	
						S17 W70	3	0	0		S17 W70	Q	
						S17 W28	2	0	0		S17 W28	Q	
						S23 W03	3	0	0		S23 W03	Q	
						S27 E16	7	3	0		S27 E16	A	
						S15 E17	0	0	0		S15 E17	Q	
						S13 W51	0	0	0		S13 W51	Q	
						N14 W18	0	0	0		N14 W18	Q	
						N19 E13	0	0	0		N19 E13	Q	
						S24 E45	3	0	0		S24 E45	Q	
		Presto:[2] Toyokawa Tenflare 180 flux units 18/0100 UT in progress.											
		Boulder Tenflare 310 flux units 18/1806 UT duration 1 minute.											

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293	20	19	218	227	019	N26 W63	0	0	0	20	N26 W63	Q	Proton Flare Alert
						N13 W63	0	0	0		N13 W63	Q	20/XX,
						N12 W84	1	0	0		N12 W84	Q	Magalert 20/22 Flare.
						S17 W84	2	0	0		S17 W84	Q	
						S17 W37	2	0	0		S17 W37	Q	
						S22 W17	1	0	0		S22 W17	Q	
						S26 E01	5	1	1		S26 E01	P	
						S15 E03	0	0	0		S15 E03	Q	
						N13 W33	0	0	0		N13 W33	Q	
						S22 E30	1	0	0		S22 E30	Q	
		Presto:[2]	Meudon	Y-shaped major flare 2B (estimated) observed at 19/0905 UT in progress.									
			Boulder	X-ray event X13/4B S27 E11 19/1232 UT duration 213 minutes.									
			Moscow	Radio burst 1000 flux units at 15000 MHz began 19/1238 UT.									
			Boulder	Tenflare 4700 flux units 19/1243 UT duration 180 minutes.									
			Boulder	Proton event began 19/1305 UT maximum of 3200 particles/cm²-s-ster at greater than 10 MeV 19/2400 UT.									
294	21	20	208	205	074	N13 W76	0	0	0	21	N13 W76	Q	Proton Flare Alert
						N13 W92	0	0	0		N13 W92	Q	21/XX 31226,
						S16 W92	0	0	0		S16 W92	Q	Magalert 21/22 Flare.
						S18 W49	0	0	0		S18 W49	Q	
						S23 W29	1	0	0		S23 W29	Q	
						S26 W12	13	2	0		S26 W12	P	
						S15 W10	0	0	0		S15 W10	Q	
						S22 E19	1	0	0		S22 E19	Q	
						S20 E68	7	0	0		S20 E68	E	
						S16 W24	5	0	0		S16 W24	Q	
						N11 E73	0	0	0		N11 E73	Q	
		Presto:[2]	Boulder	Strong magstorm in progress 20/1800 UT.									
295	22	21	240	206	077	N13 W90	0	0	0	22	N13 W90	Q	Proton flare Alert
						S19 W62	0	0	0		S19 W62	Q	22/XX 32427,
						S24 W42	1	0	0		S24 W42	Q	Magalert 22 Flare.
						S27 W24	14	3	0		S27 W24	A	
						S15 W23	0	0	0		S15 W23	Q	
						S22 E06	2	0	0		S22 E06	Q	
						S19 E57	10	0	0		S19 E57	E	
						S16 W38	0	0	0		S16 W38	Q	
						N11 E59	0	0	0		N11 E59	Q	
						N25 E25	0	0	0		N25 E25	Q	
						S12 E67	4	0	0		S12 E67	Q	
		Presto:[2]	Toyokawa	Tenflare 150 flux units 21/0153 duration 4 minutes.									
296	23	22	191	225	033	S23 W57	0	0	0	23	S23 W57	Q	Proton Flare Alert
						S26 W36	13	2	1		S26 W36	A	23/XX 33626,
						S15 W38	3	0	0		S15 W38	Q	Magalert Major 24/25
						N12 W76	6	0	0		N12 W76	Q	Flare.
						S22 W07	0	0	0		S22 W07	Q	
						S20 E45	8	0	0		S20 E45	E	
						S15 W50	0	0	0		S15 W50	Q	
						N11 E45	0	0	0		N11 E45	Q	
						N24 E10	0	0	0		N24 E10	Q	
						S14 E56	0	0	0		S14 E56	Q	
						S13 E07	0	0	0		S13 E07	Q	
		Presto:[2]	Boulder	Tenflare 22000 flux units 22/1733 UT duration 151 minutes.									
			Boulder	X-ray event X2/2B S27 W31 22/1738 UT duration 197 minutes.									

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						°Lat	°Long	Total	M	X		°Lat	°Long		
297	24	231	193	211	020	S25	W70	1	0	0	24	S25	W70	Q	Proton Flare Alert
						S27	W49	12	2	1		S27	W49	P	24/XX 34927,
						S16	W51	6	0	0		S16	W51	E	Magalert Major 24/25
						N13	W89	7	0	0		N13	W89	Q	Flare.
						S22	W17	0	0	0		S22	W17	Q	
						S21	E32	4	0	0		S21	E32	E	
						S16	W66	0	0	0		S16	W66	Q	
						N24	W01	0	0	0		N24	W01	Q	
						S13	E42	2	0	0		S13	E42	Q	
						N11	E12	0	0	0		N11	E12	Q	
		Presto:[2]	Boulder	X-ray event X1/2B S28 W41 23/1234 UT duration 52 minutes.											
298	25	24	180	213	017	S27	W61	8	0	1	25	S27	W61	P	Proton Flare Alert
						S17	W64	5	0	0		S17	W64	E	25/XX 36127,
						S22	W32	0	0	0		S22	W32	Q	Magalert Major 25/27
						S21	E20	3	0	0		S21	E20	E	Flare.
						S16	W76	0	0	0		S16	W76	Q	
						N25	W13	0	0	0		N25	W13	Q	
						S13	E29	0	0	0		S13	E29	Q	
						N11	W02	0	0	0		N11	W02	Q	
						S12	E56	0	0	0		S12	E56	Q	
		Presto:[2]	Boulder	X-ray event X5/3B S30 W55 24/1736 UT duration 528 minutes.											
			Boulder	Tenflare 9800 flux units 24/1738 UT duration 166 minutes											
299	26	25	136	188	022	S27	W74	7	2	0	26	S27	W74	P	Proton Flare Alert
						S18	W77	1	0	0		S18	W77	E	26/XX 37427,
						S22	W46	0	0	0		S22	W46	Q	Magalert 26/27 Flare.
						S21	E06	3	0	0		S21	E06	E	
						N25	W26	0	0	0		N25	W26	Q	
						S13	E15	0	0	0		S13	E15	Q	
						N10	W17	0	0	0		N10	W17	Q	
300	27	26	128	173	020	S30	W86	5	2	0	27	S30	W86	P	Proton Flare Alert
						S18	W84	0	0	0		S18	W84	Q	27/28 38630,
						S21	W07	1	0	0		S21	W07	E	Magalert 27.
						S13	E01	0	0	0		S13	E01	Q	
						N10	W31	1	0	0		N10	W31	Q	
						N31	E10	0	0	0		N31	E10	Q	
						N22	E33	0	0	0		N22	E33	Q	
						N25	E82	0	0	0		N25	E82	Q	
		Presto:[2]	Boulder	Tenflare 940 flux units 26/2044 UT duration 25 minutes.											
301	28	27	129	177	015	S21	W21	0	0	0	28	S21	W21	Q	Proton Flare Alert
						S13	W11	0	0	0		S13	W11	Q	28 39930, Magnil.
						N10	W44	0	0	0		N10	W44	Q	
						N31	W04	0	0	0		N31	W04	Q	
						N21	E23	1	0	0		N21	E23	Q	
						N25	E68	0	0	0		N25	E68	Q	
						S25	E11	0	0	0		S25	E11	Q	
						S29	E45	0	0	0		S29	E45	Q	
						S30	W99	2	1	1		S30	W99	P	
		Presto:[2]	Boulder	Tenflare 1000 flux units 27/1130 UT duration 16 minutes.											
			Boulder	X-ray event X1/1N S32 W90 27/1857 UT duration 40 minutes.											
			Boulder	Tenflare 1100 flux units 27/1859 UT duration 11 minutes.											

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302	29	28	160	174	006	S20 W33	0	0	0	29	S20 W33	E	Solnil, Magquiet.
						S14 W22	0	0	0		S14 W22	Q	
						N10 W58	0	0	0		N10 W58	E	
						N32 W18	0	0	0		N32 W18	Q	
						N21 E11	1	0	0		N21 E11	E	
						N25 E56	0	0	0		N25 E56	E	
						S22 W03	0	0	0		S22 W03	Q	
						S29 E32	0	0	0		S29 E32	Q	
						N27 W49	0	0	0		N27 W49	Q	
						S11 W07	0	0	0		S11 W07	Q	
						N24 E82	0	0	0		N24 E82	Q	
		Presto:[2] Toyokawa Tenflare 340 flux units 28/0512 duration 13 minutes.											
303	30	29	199	170	009	S21 W48	0	0	0	30	S21 W48	Q	Solquiet, Magquiet.
						S13 W35	1	0	0		S13 W35	Q	
						N10 W72	0	0	0		N10 W72	Q	
						S11 W07	0	0	0		S11 W07	Q	
						N21 W02	1	0	0		N21 W02	E	
						N25 E42	0	0	0		N25 E42	Q	
						S23 W19	0	0	0		S23 W19	Q	
						S29 E16	0	0	0		S29 E16	Q	
						N28 W62	0	0	0		N28 W62	Q	
						S11 W21	0	0	0		S11 W21	Q	
						N23 E70	3	1	0		N23 E70	E	
						N19 E59	1	0	0		N19 E59	Q	
						S17 E69	0	0	0		S17 E69	Q	
		Presto:[2] Sydney Culgoora Moderate intensity Type II began 29/0302 UT.											
		Boulder Tenflare 1000 flux units 29/0401 UT duration 41 minutes.											
		Boulder Tenflare 210 flux units 29/2135 UT in progress.											
304	31	30	208	188	018	S21 W62	0	0	0	31	S21 W62	Q	Solquiet, Magquiet.
						N11 W85	0	0	0		N11 W85	Q	
						N20 W15	1	0	0		N20 W15	E	
						N24 E29	0	0	0		N24 E29	Q	
						S23 W30	1	0	0		S23 W30	Q	
						N28 W75	0	0	0		N28 W75	Q	
						S13 W34	0	0	0		S13 W34	Q	
						N23 E56	5	0	0		N23 E56	E	
						N18 E45	0	0	0		N18 E45	Q	
						S16 E55	0	0	0		S16 E55	Q	
						S17 E69	0	0	0		S17 E69	Q	
						N15 E68	1	0	0		N15 E68	Q	
						N17 E70	0	0	0		N17 E70	Q	
305	01	31	184	206	008	S21 W72	0	0	0	01	S21 W72	Q	Solquiet, Magquiet.
						S15 W58	0	0	0		S15 W58	Q	
						N20 W30	1	0	0		N20 W30	Q	
						S12 W50	0	0	0		S12 W50	Q	
						N24 E42	7	1	0		N24 E42	A	
						N18 E30	0	0	0		N18 E30	Q	
						S17 E43	0	0	0		S17 E43	Q	
						S18 E58	1	0	0		S18 E58	Q	
						N15 E58	0	0	0		N15 E58	Q	
						N18 E56	0	0	0		N18 E56	Q	
						S13 W09	1	0	0		S13 W09	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 88	Dec	Jan 89	Feb	Mar	Apr	May	Jun	Jul†	Aug†	Sep†	Oct†
01	126	128	148	141	127	104	93	136	128	158	147	129
02	114	114	173	144	107	122	94	148	149	187	171	143
03	121	139	146	164	103	140	85	158	129	193	180	159
04	104	122	120	133	98	115	97	157	120	210	204	186
05	129	149	155	127	90	106	85	171	101	227	212	209
06	124	149	142	127	103	139	105	145	120	220	230	189
07	114	144	165	132	98	170	134	130	149	206	277	168
08	95	111	155	161	109	185	149	143	141	210	261	166
09	110	122	165	172	133	153	137	168	116	218	296	187
10	131	133	190	192	163	122	123	192	104	200	270	178
11	155	152	211	190	155	106	120	203	136	202	264	191
12	159	175	229	216	140	96	115	218	111	188	264	154
13	147	187	206	219	162	92	129	253	116	198	248	148
14	139	213	189	208	181	103	123	251	116	189	215	159
15	156	225	177	191	165	120	148	264	92	196	207	189
16	181	226	164	195	187	130	154	265	91	169	180	209
17	196	232	155	209	168	144	161	233	99	192	159	206
18	175	222	160	163	164	137	177	216	113	189	155	184
19	147	223	140	164	148	160	191	235	138	202	152	159
20	112	218	126	169	158	165	195	232	149	209	137	140
21	145	210	114	149	155	175	168	187	162	203	111	152
22	131	255	165	142	155	167	156	174	197	160	109	158
23	117	235	171	134	145	128	180	196	195	133	110	145
24	116	199	142	153	155	135	196	215	168	129	85	131
25	89	183	144	189	131	132	173	227	132	100	80	121
26	73	174	152	163	117	125	157	237	111	95	93	109
27	69	175	157	147	102	118	163	206	105	57	101	97
28	86	196	172	128	89	109	130	187	75	50	111	116
29	86	194	169		95	107	121	182	112	70	134	131
30	107	178	157		78	114	122	156	125	94	142	156
31		172	140		91		111		132	116		144
Mean	125.1	179.2	161.3	165.1	131.4	130.6	138.5	196.2	126.8	166.8	176.8	158.5

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

OTTAWA 2800 MHz (10.7 cm) SOLAR FLUX

Algonquin Radio Observatory — Adjusted to 1 AU

Day	Nov 88	Dec	Jan 89	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
01	157.2*	150.5	179.5*	184.8	168.8*	173.8*	180.5	191.6*	204.0	198.5	223.8	198.4
02	156.5*	149.4	193.7	171.2	173.7	183.5	184.5*	208.2*	193.4	201.7	233.3	208.5
03	164.0	147.3	189.2	185.8*	169.0	196.5*	190.6	203.3*	192.5*	220.2	243.0*	222.4
04	159.7	142.7	195.7*	183.4	163.6	188.9	198.2	221.3*	189.8	225.7	245.0	234.1
05	163.8	154.6*	201.6	195.1	183.5	191.1	193.7	213.2*	183.4*	241.5	273.3	223.2
06	161.2	157.7	198.7	205.3*	201.1J	196.5	195.9*	212.2*	192.3	240.3	288.4	220.5
07	151.6	152.9*	239.5	210.5	190.3*	199.8	200.6	205.3	193.5	240.6	303.4	225.7
08	143.5	164.1	260.2	243.9	202.6	207.1	212.4	222.9	188.9	233.6	302.1	210.1
09	152.4	165.2	251.3	259.3	204.2*	194.0	205.1*	241.9	188.1	233.9*	311.5	201.9
10	147.7	161.2*	250.0	269.8	212.4*	182.3	208.7	250.9*	184.1	232.6	303.3	195.5
11	153.8	176.4	254.7*	257.0	232.4*	180.7	198.9	270.3	193.2	243.6	299.3	191.5
12	150.6*	173.9	263.2	257.3	237.6*	181.3	197.2	285.8*	190.7	256.1*	292.2	203.2
13	157.8*	181.1	291.7*	258.4	253.0	185.3*	197.5	319.2	184.0*	263.9	249.3	224.2
14	173.2*	204.4*	274.9	260.7	263.8J	198.1	193.1*	327.2	183.9	271.3	244.9	225.9
15	161.1*	212.0	280.1	241.3	255.8J	199.5	195.8	334.7*	185.7	281.7	226.0	225.4
16	186.1*	232.1	292.1	241.1	261.6J	203.9	188.6	320.9*	183.9	259.8	233.7	237.0
17	175.6	241.7	266.7*	233.9*	240.7	210.6*	187.0	303.7*	184.1	262.9	216.2	225.3
18	161.8	243.5	271.2	213.8	234.2	204.1	184.9	271.5	189.2	265.0	208.6	221.3*
19	151.2	240.2	241.6	214.0	221.1	209.7	188.6	270.6	193.7	249.1	197.0*	214.7J
20	146.6	238.8	222.0*	202.2*	218.2*	192.5	203.1	249.3*	192.4	236.4	173.1	205.4
21	152.9	245.2	198.2*	217.8	213.5*	196.1	211.9*	242.8	195.0	225.7	161.8	206.2
22	153.1	246.6	203.6	213.9	222.5	193.6*	203.9	233.1	200.9	205.4	159.3	217.8
23	135.7	234.8	205.6	214.7*	216.1*	183.1*	212.2	238.7	196.5	191.3	157.5	210.4
24	138.0	221.6	211.0	213.4	193.2*	189.0	210.0	227.6	191.1	182.0	157.0	214.2
25	137.5	210.5	227.3	203.8*	186.2*	179.7	194.6*	221.6	180.4	159.7	166.8	183.3*
26	137.4	193.0	206.3	190.3*	171.6*	176.9	188.0	233.0	169.8	161.0	182.2*	171.7
27	140.9	201.9	211.1	168.6*	162.6	176.9	176.6	227.5	172.8	159.6	199.4	176.9
28	138.8	201.6	207.1	163.5	157.3	183.2	173.5	227.4	170.7	174.1	194.3	173.0
29	137.6	196.7	200.5		155.8	189.5	173.6	223.0	180.9	180.3*	204.7*	172.0
30	135.8	179.5	187.3		159.8	180.6	183.0	217.4	185.1	192.0*	202.0	186.3
31		177.6	187.5		167.5		194.2		188.2	208.9*		202.0*
Mean	152.8	193.5	227.8	217.0	203.0	190.9	194.4	247.2	187.8	222.5	228.4	207.4

* = corrected for burst in progress; J = no calibration due to burst; the yearly mean flux equaled 141.1 in 1988.

DAILY SOLAR INDICES

October 1989

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	274	16	129	144	198.0	601	277	221	198.4	187	134	80	40	15
02	275	17	143	146	208.2	---	---	---	208.5	---	---	--	--	--
03	276	18	159	161	222.2	617	---	---	222.4	---	---	84	42	26
04	277	19	186	186	234.0	651	314	272	234.1	232	162	92	44	20
05	278	20	209	190	223.3	641	302	255	223.2	220	161	88	43	20
06	279	21	189	193	220.7	620	287	239	220.5	213	157	88	42	19
07	280	22	168	201	226.1	626	291	246	225.7	215	157	86	42	22
08	281	23	166	177	210.6	631	277	231	210.1	202	153	87	43	17
09	282	24	187	190	202.5	659	284	230	201.9	195	148	86	43	21
10	283	25	178	196	196.1	644	280	220	195.5	187	139	83	40	14
11	284	26	191	191	192.2	635	295	224	191.5	195	141	80	46	22
12	285	27	154	161	204.1	626	287	234	203.2	186	138	84	45	26
13	286	1	148	157	225.3	628	301	251	224.2	207	141	76	43	25
14	287	2	159	177	227.1	623	302	257	225.9	204	138	78	45	45
15	288	3	189	188	226.8	621	309	261	225.4	214	143	80	45	27
16	289	4	209	209	238.5	637	327	270	237.0	218	143	74	41	21
17	290	5	206	195	227.0	563	260	234	225.3	207	140	77	43	25
18	291	6	184	180	223.1*	616	305	251	221.3*	213	142	80	57	--
19	292	7	159	160	216.6J	664	323	271	214.7J	227	150	112	89	--
20	293	8	140	142	207.3	631	297	242	205.4	199	---	66	36	--
21	294	9	152	167	208.2	693	298	252	206.2	199	128	71	37	16
22	295	10	158	149	220.0	700	317	275	217.8	221	137	74	41	18
23	296	11	145	141	212.6	581	311	271	210.4	204	124	69	36	16
24	297	12	131	133	216.5	---	304	257	214.2	202	126	72	39	19
25	298	13	121	104	185.4*	525	282	229	183.3*	176	114	67	38	18
26	299	14	109	98	173.8	514	270	209	171.7	163	110	68	37	21
27	300	15	97	102	179.2	512	269	205	176.9	161	114	69	36	19
28	301	16	116	123	175.3	514	272	205	173.0	161	114	70	38	23
29	302	17	131	138	174.4	511	266	206	172.0	167	116	71	40	23
30	303	18	156	152	189.0	572	272	223	186.3	166	123	73	40	31
31	304	19	144	141	205.0*	552	280	240	202.0*	194	129	73	39	29
Mean			158.5	161.0	208.7	607	292	241	207.4	198	136	79	43	22

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
J = no calibration due to burst

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

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

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	120	117	115	109	101	96	95	95
1983	93	90	86	82	77	70	66	66	68	68	67	64
1984	60	56	53	50	48	46	44	40	34	29	25	22
1985	20	20	19	18	18	18	17	17	17	17	17	15
1986	14	13	13	14	14	14	14	13	12*	13	15	16
1987	18	20	22	24	26	28	31	35	39	44	47	51
1988	58	65	71	78	84	94	104	114	121	125	130	138
1989	142	145	150	153	159 (4)	165 (9)	168 (15)	171 (19)	178 (22)	183 (24)	186 (26)	188 (27)
1990	189 (29)	189 (31)	187 (33)	182 (34)	176 (33)	172 (30)	169 (29)	167 (31)	160 (32)	151 (32)	144 (30)	140 (28)
1991	138 (29)	134 (29)	129 (30)	129 (35)	130 (36)	127 (33)	123 (30)	118 (27)	113 (23)	112 (21)	113 (22)	114 (25)

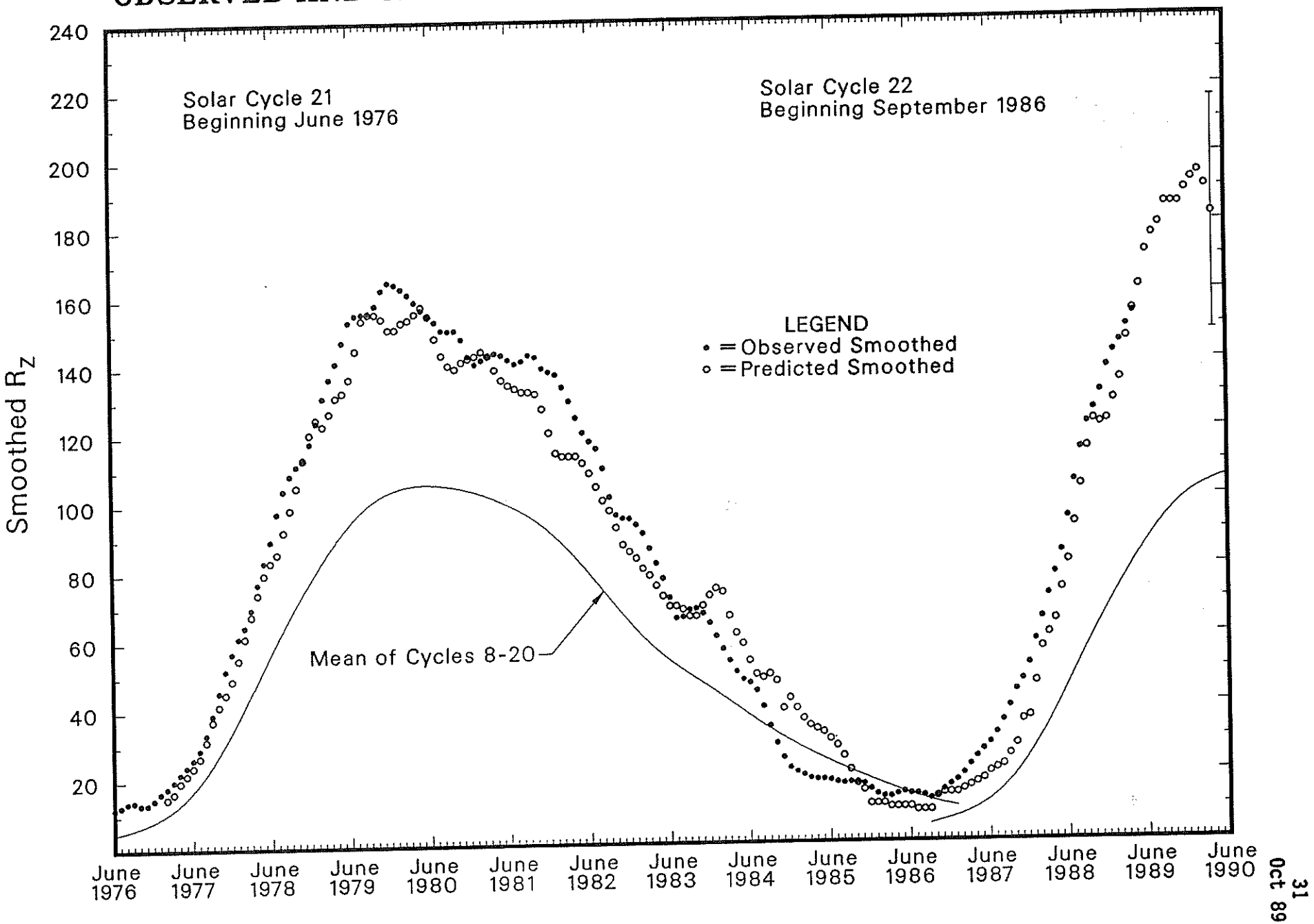
*September 1986 marks the onset of Sunspot Cycle 22.

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 1989 and on provisional numbers thereafter.

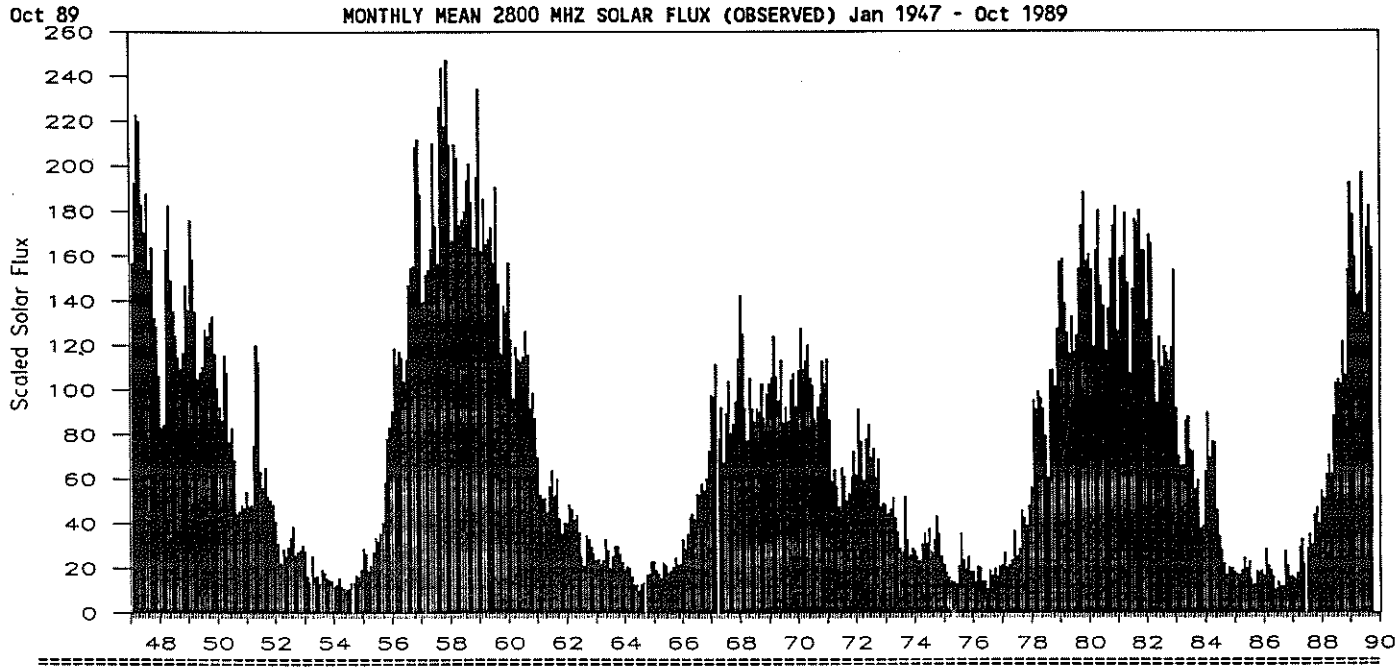
Table entries, with numbers in parentheses below them, denote predictions by the McNish-Lincoln method. (See page 9 in the July 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval; subtracting the number from the predicted value generates the lower limit. Consider, for example, the April 1990 prediction. There exists a 90% chance that in April 1990 the actual smoothed sunspot number will fall somewhere between 148 and 216.

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 2800 MHZ SOLAR FLUX (OBSERVED) Jan 1947 - Oct 1989



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1947		202.7	235.7	264.1	261.2	226.6	215.2	231.2	199.7	209.0	179.8	176.4	218.3
1948	155.7	134.3	135.5	208.1	226.5	195.5	182.8	172.8	163.7	159.1	165.4	193.3	174.4
1949	183.5	220.2	203.9	182.5	154.9	157.5	159.9	175.2	172.5	178.2	180.4	165.2	177.8
1950	150.7	143.3	137.8	164.3	157.1	128.7	134.1	120.9	98.6	99.9	101.9	101.1	128.2
1951	107.9	101.9	102.5	127.1	168.6	161.7	116.3	109.8	117.8	106.0	104.4	102.4	118.9
1952	95.4	86.2	78.5	84.0	80.9	84.8	88.8	93.3	81.5	82.8	83.4	85.7	85.4
1953	83.2	72.8	70.4	81.0	72.5	73.0	69.8	75.5	74.3	71.9	71.4	70.8	73.9
1954	68.7	69.2	71.9	68.7	68.0	67.3	67.7	69.9	70.1	73.2	72.6	75.5	70.2
1955	84.3	82.0	74.8	77.3	82.8	88.8	87.3	90.7	91.1	111.8	130.0	134.6	95.0
1956	141.2	167.2	160.6	165.9	163.4	154.0	162.8	193.8	200.9	201.6	250.4	253.7	184.6
1957	231.2	186.7	197.8	200.0	208.5	252.1	218.0	202.3	267.1	283.1	259.2	286.5	232.7
1958	251.5	212.2	251.5	245.9	218.6	220.5	224.1	237.0	243.5	228.0	209.2	238.2	231.7
1959	274.5	207.9	229.2	210.6	212.7	217.5	203.0	234.2	194.3	165.1	184.8	182.2	209.7
1960	202.6	170.9	146.8	167.6	162.7	161.9	163.9	174.4	164.5	142.3	148.9	138.1	162.0
1961	122.0	106.4	104.8	105.0	99.3	109.9	116.5	106.2	112.7	96.7	90.3	94.8	105.4
1962	94.9	102.2	100.3	96.2	97.9	91.0	80.7	77.3	89.5	87.8	84.9	82.0	90.4
1963	79.5	79.7	77.8	79.5	87.8	83.5	75.9	80.9	85.1	85.1	81.7	78.4	81.2
1964	75.4	76.8	75.9	72.6	69.5	69.0	67.0	69.3	70.2	73.4	73.7	78.8	72.6
1965	78.6	75.2	74.1	72.0	78.2	77.0	74.3	74.8	76.6	80.2	77.7	77.8	76.4
1966	87.9	84.2	90.3	97.2	98.5	96.3	106.7	106.6	110.9	108.6	113.3	124.6	102.1
1967	147.7	147.0	160.6	129.9	143.0	120.2	140.3	153.7	132.1	136.1	145.3	163.0	143.2
1968	189.1	173.2	142.6	129.5	154.9	142.3	137.2	142.2	141.0	152.5	138.5	148.4	149.3
1969	152.7	155.2	172.3	155.5	145.4	162.2	136.6	143.0	137.3	154.0	156.7	143.6	151.2
1970	158.3	175.4	158.4	162.0	168.4	154.9	152.0	138.2	143.2	148.3	162.0	152.8	156.2
1971	162.6	137.8	111.9	116.7	109.9	101.7	117.4	114.1	104.0	107.2	114.0	124.5	118.5
1972	114.8	141.8	128.5	112.9	129.6	135.4	122.0	125.7	113.6	121.1	101.6	102.9	120.8
1973	102.2	98.7	100.4	105.0	97.0	91.2	84.5	82.9	105.6	87.7	81.5	84.2	93.4
1974	83.1	80.9	79.2	86.1	90.6	86.3	92.5	83.0	87.8	97.6	90.3	81.1	86.5
1975	77.5	74.2	72.4	70.7	70.1	69.7	77.2	90.4	79.6	75.7	80.8	74.6	76.1
1976	74.7	70.5	76.7	76.3	70.6	70.6	67.5	74.8	73.1	75.9	72.9	76.7	73.4
1977	77.4	82.3	76.6	77.6	79.6	91.5	81.1	84.3	99.9	96.9	93.7	102.1	86.9
1978	109.6	145.4	141.8	149.4	146.5	142.2	131.1	114.0	157.9	158.2	151.5	175.5	143.6
1979	203.0	204.1	185.8	173.8	165.2	180.3	165.9	172.7	200.2	217.9	231.7	203.5	192.0
1980	206.2	200.0	168.1	207.9	224.0	193.2	184.8	166.2	183.9	204.2	218.1	225.8	198.5
1981	174.6	204.5	205.3	223.2	194.6	156.9	191.9	220.6	219.5	224.3	207.8	207.8	202.6
1982	179.0	214.2	210.5	161.8	144.7	171.9	159.6	167.9	165.3	161.9	167.4	199.4	175.3
1983	142.3	122.6	118.6	118.9	137.1	138.6	125.0	124.4	109.0	112.4	92.5	93.4	119.6
1984	116.1	140.6	122.0	128.7	128.3	100.3	89.3	83.7	78.1	73.5	76.3	75.9	101.1
1985	74.5	73.7	73.3	75.1	80.2	76.1	78.7	71.5	69.5	74.7	74.2	74.8	74.7
1986	73.2	83.6	77.0	75.1	72.6	67.6	70.2	68.4	68.7	83.0	77.1	72.6	74.1
1987	72.5	71.5	74.0	84.9	87.8	77.9	84.2	90.0	86.1	98.1	101.2	94.4	85.3
1988	108.0	105.0	114.9	122.7	115.2	139.4	152.7	154.2	152.5	169.8	156.2	199.8	141.0
1989	235.4	222.4	205.1	189.6	190.1	239.6	181.9	217.1	225.9	208.7			211.6*

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

Hα SOLAR FLARES

OCTOBER 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0007	0036	0123						76		C 6.8						
LEAR		0212	0214	0222	S17	E16	5712	10	2.3	10	SN	C 3.4	3	E		30		
GOES		0318	0343	0357						39		C 3.1						
SVTO		0812	0816	0841	S17	E23	5712	10	3.1	29	SF	C 2.8	2	E		29		F
RAMY		1127	1133	1155	S16	E19	5712	10	2.9	28	SF		3	E		57		F
RAMY		1337	1345	1355	N15	E43	5716	10	4.8	18	SF		4	E		31		H
RAMY		1700	1727	1810	S25	E11	5715	10	2.6	70	SF		3	E		25		F
HOLL		1700	1728U	1756	S25	E06	5715	10	2.2	56	SF		3	E		17		F
PALE		1709	1709	1715	S24	E06	5715	10	2.2	6	SF		3	E		21		
HOLL		1716	1716	1720	S19	E15	5712	10	2.9	4	SF		3	E		20		F
HOLL		1800	1803	1822	S17	E17	5712	10	3.0	22	SF		3	E		35		F
RAMY		1801	1801	1828	N29	E47	5712	10	5.4	27	SF		3	E		19		F
RAMY		1803	1818	1846	S16	E01	5708	10	1.8	43	SF		3	E		29		F
HOLL		1803	1820	1848	S19	E05	5708	10	2.1	45	SF	C 2.7	3	E		87		F
PALE		1817	1817	1832	S16	W01	5708	10	1.7	15	SF		3	E		13		
HOLL		1955	1958	2013	S19	E12	5712	10	2.7	18	SF		3	E		41		F
RAMY		1956	1957	2018	S19	E14	5712	10	2.9	22	SF		3	E		21		
GOES		2041	2045	2048						7		C 2.7						
HOLL		2216	2216	2223	S16	E05	5712	10	2.3	7	SF		3	E		18		
GOES		2305	2308	2312						7		C 7.7						
GOES	02	0021	0026	0029						8		C 2.9						
PALE		0208	0208	0220	N14	E37	5716	10	4.9	12	SF		3	E		19		
GOES		0426	0439	0455						29		C 3.9						
SVTO		0751E	0754	0844D	S18	W05	5708	10	1.9	53D	SF		2	E		52		UF
LEAR		0755	0757	0803	S16	W06	5708	10	1.9	8	SF	C 3.8	3	E		19		F
LEAR		0841	0855	0939	S16	E05	5712	10	2.7	58	1F	M 1.5	3	E		188		UF
SVTO		0844E	0848	1017	S17	E06	5712	10	2.8	93D	1N		2	E		163		UF
LEAR		0848	0850	0914	S23	W07	5708	10	1.8	26	SF		3	E		24		F
SVTO		0848	0850	0948	S21	W07	5708	10	1.8	60	SN		2	E		31		F
SVTO		1201	1206	1220	N29	E79	5721	10	8.7	19	SF		3	E		67		
RAMY		1202	1203	1223	N26	E79	5721	10	8.6	21	SF		3	E		28		F
SVTO		1205	1207	1212	N21	E87		10	9.2	7	SF		3	E		24		
SVTO		1427	1430	1434	S29	E86		10	9.3	7	SF		3	E		60		
HOLL		1521	1524	1531	N23	E44	5719	10	6.0	10	SF		3	E		21		F
GOES		1803	1807	1809						6		C 2.8						
GOES		2033	2049	2056						23		C 3.4						
HOLL		2304	2309	2332	S16	W08	5712	10	2.3	28	SF		3	E		25		
HOLL	03	0018	0021	0026D	S24	W11	5715	10	2.2	8D	SF		3	E		40		FS
LEAR		0020	0024	0039	S26	W11	5715	10	2.1	19	SF	C 2.6	3	E		12		F
SVTO		0811	0815	0831	N30	E79	5721	10	9.5	20	1N	C 5.6	3	E		105		FH
LEAR		0812	0815	0825	N27	E76	5721	10	9.3	13	SN		3	E		76		H
SVTO		1002	1019	1156	S15	W40	5709	09	30.4	114	1F		3	E		229		F
SVTO		1010	1027	1038	N30	E80	5721	10	9.7	28	SF	C 5.1	3	E		42		
SVTO		1048	1053	1103	S25	W19	5715	10	2.0	15	SF		3	E		19		F
RAMY		1051E	1057U	1059	S12	W38	5709	09	30.6	8D	SF		2	E		28		F
RAMY		1105	1126	1130	S13	W38	5709	09	30.6	25	SF		3	E		14		F
RAMY		1119	1120	1127	S11	E17	5724	10	4.7	8	SF		3	E		28		F
SVTO		1136E	1137U	1142	S12	E79		10	9.4	6D	SF		2	E		16		
SVTO		1138	1142	1148	N31	E79	5721	10	9.7	10	SF		3	E		20		
RAMY		1138	1142	1204	N28	E64	5721	10	8.5	26	SF		3	E		40		
SVTO		1218	1221	1230	N31	E83	5721	10	10.1	12	SF	C 3.5	3	E		23		F
RAMY		1248	1305	1357	N29	E23	5714	10	5.3	69	1N	C 5.2	3	E		102		
SVTO		1252	1253	1257	N18	E20	5716	10	5.0	5	SF		3	E		17		
RAMY		1259	1305U	1353	N23	E24	5719	10	5.4	54	SF		3	E		20		
RAMY		1427	1428	1436	N17	E19	5716	10	5.0	9	SF		3	E		27		
HOLL		1728	1730	1755	S16	W16	5712	10	2.5	27	SF	C 3.3	3	E		26		F
RAMY		1728	1730	1758	S17	W16	5712	10	2.5	30	SF	C 3.3	3	E		43		
HOLL		1734	1735	1739	N27	E65	5721	10	8.8	5	SF		3	E		24		
RAMY		1814	1816	1856D	N28	E26	5714	10	5.8	42D	SF		3	E		17		
HOLL		1815	1816	1840	N30	E28	5714	10	6.0	25	SF		3	E		19		
HOLL		2019	2021	2028	N28	E66	5721	10	9.0	9	SF		3	E		25		F
HOLL		2100	2103	2119	N28	E76	5721	10	9.8	19	SF		3	E		21		F
LEAR		2258	2307	2340	N28	E25	5714	10	5.9	42	SF	C 6.6	3	E		42		F
HOLL		2301E	2309U	2404D	N29	E25	5714	10	5.9	63D	1N		2	E		171		F
HOLL		2301E	2332	2404D	N29	E25	5714			63D	SF			E		54		K
LEAR	04	0316	0317	0334	S17	W16	5712	10	2.9	18	SF		3	E		25		F

Hα S O L A R F L A R E S

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	04	0427	0432	0440						13		C 2.3						
LEAR		0506	0508	0518	S17	W53	5709	09	30.2	12	SF	C 4.0	3	E		32		F
LEAR		0539	0548	0628	N14	E11	5716	10	5.1	49	SF		3	E		35		
LEAR		0834	0838	0908	N28	E63	5721	10	9.3	34	SN		3	E		81		F
SVTO		0834	0838	0915D	N30	E61	5721	10	9.1	41D	1B	C 7.1	3	E		108		F
LEAR		0935	0939	1008D	N25	E10	5714	10	5.2	33D	SF	C 6.6	3	E		47		
LEAR		0937	0938	0959	N21	E13	5719	10	5.4	22	SF		3	E		28		
LEAR		0947	0947	0950	N08	E75		10	10.0	3	4F		3	E				
SVTO		0947E	0947U	1004D	N22	E16	5719	10	5.6	17D	1F		1	E		213		F
RAMY		1115	1141	1203	N29	E60	5721	10	9.2	48	SF		3	E		27		
RAMY		1118	1134	1142	S15	W11	5712	10	3.6	24	SF		3	E		18		
RAMY		1227	1227	1234	N29	E67	5721	10	9.8	7	SF	C 2.8	3	E		25		
RAMY		1235	1236	1245	N30	E18	5714	10	5.9	10	SF		3	E		19		
RAMY		1238	1250	1319	N28	E67	5721	10	9.8	41	SF	C 4.1	3	E		34		
RAMY		1326	1332	1356	N29	E16	5714	10	5.8	30	SF		3	E		33		F
SVTO		1328E	1355U	1414	N15	E30		10	6.8	46D	SF		2	E		33		F
SVTO		1328E	1424U	1509D	N30	E16	5714	10	5.8	101D	1F		2	E		103		
HOLL		1357E	1400	1415	S10	E03	5724	10	4.8	18D	SF		3	E		36		
RAMY		1359	1401	1413	S10	E04	5724	10	4.9	14	SF		3	E		32		
RAMY		1417	1420	1430	N27	E52	5721			13	SF			E		15		K
RAMY		1417	1426	1430	N27	E52	5721	10	8.6	13	SF	C 5.3	3	E		8		
HOLL		1423	1423	1435	N33	E19	5714	10	6.1	12	SF		3	E		17		
HOLL		1437	1437	1452	N33	E18	5714	10	6.0	15	SF		3	E		29		
SVTO		1448	1454	1502	N29	E56	5721	10	9.0	14	SF		3	E		16		F
RAMY		1452	1454	1459	N29	E57	5721	10	9.1	7	SF		3	E		21		
HOLL		1452	1505	1508D	N27	E64	5721	10	9.6	16D	SF		3	E		20		H
RAMY		1551	1612	1623	S11	E04	5724	10	5.0	32	SF		3	E		40		
RAMY		1752	1753	1757	S14	E64	5726	10	9.6	5	SF		3	E		11		
GOES		2217	2221	2225						8		C 2.6						
LEAR		2322	2324	2334	N33	E72	5725	10	10.7	12	SF		3	E		35		
LEAR	05	0331	0332	0343	N29	E54	5721	10	9.4	12	SF		3	E		30		F
LEAR		0338	0342	0358	S11	W04	5724	10	4.8	20	SF		3	E		47		F
LEAR		0516	0517	0525	N26	E49	5721	10	9.0	9	SF		3	E		24		F
LEAR		0540	0556	0614	N29	E50	5721	10	9.1	34	SF		3	E		27		
LEAR		0608	0609	0624	S18	W38	5712	10	2.4	16	SF	C 4.5	3	E		65		
SVTO		0609	0609	0628D	S19	W37	5712	10	2.4	19D	SF		2	E		41		
SVTO		0647E	0647U	0733D	N15	E59		10	9.7	46D	SF	C 3.7	2	E		97		F
LEAR		0652	0654	0658	S17	W39	5712	10	2.3	6	SF		3	E		27		
SVTO		0846E	0846U	0853	N29	E54	5721	10	9.6	7D	SF	C 2.9	2	E		33		
GOES		1056	1100	1105						9		C 1.8						
RAMY		1132	1134	1138	N28	E52	5721	10	9.5	6	SF		3	E		37		F
RAMY		1154	1159	1205	N27	E54	5721	10	9.7	11	SF		3	E		53		FH
SVTO		1158E	1200	1246D	N30	E54	5721	10	9.7	48D	SN		2	E		91		FE
SVTO		1158E	1207	1245D	S27	W45	5715	10	2.0	47D	SF	C 6.7	2	E		84		FH
SVTO		1210	1211	1216	S25	E59		10	10.1	6	SF		3	E		31		
RAMY		1211	1211U	1213D	N30	E43	5721	10	8.9	2D	1F		3	E		225		FH
RAMY		1323	1331	1444	N28	E53	5721			81	SF			E		46		K
RAMY		1323	1400	1444	N28	E53	5721	10	9.7	81	SF		3	E		34		F
RAMY		1333	1340	1547D	N10	W08	5716	10	5.0	134D	SN	C 3.7	3	E		84		UF
SVTO		1338E	1338U	1451D	N14	W08	5716	10	5.0	73D	SN		2	E		46		F
RAMY		1359	1401	1412	S19	W38	5715	10	2.7	13	SF		3	E		72		UF
SVTO		1400E	1405U	1420D	S19	W39	5712	10	2.6	20D	SF		2	E		79		F
RAMY		1401	1404	1412	N28	W02	5714	10	5.4	11	SF	C 5.1	3	E		10		F
RAMY		1628	1630	1632	S31	E00	5714	10	5.7	4	SF		3	E		50		F
RAMY		1906	1913	1918	N30	E39	5721	10	8.9	12	SF	C 3.2	3	E		12		
LEAR	06	0607	0614	0642	N27	E34	5721	10	8.9	35	SF		3	E		47		F
RAMY		1245	1254	1331	N28	E32	5721	10	9.0	46	SF		4	E		38		F
SVTO		1253	1254	1318D	N28	E30	5721	10	8.9	25D	SF		2	E		17		F
HOLL		1403	1421	1508	N27	E29	5721	10	8.8	65	1F		3	E		153		
SVTO		1414	1419	1450D	N30	E24	5721	10	8.5	36D	SF		3	E		52		UF
RAMY		1414	1420	1502	N28	E29	5721	10	8.8	48	SF		3	E		59		F
HOLL		1459	1500	1509	S17	W46	5712	10	3.1	10	SF		3	E		13		
RAMY		1500	1500	1507	S17	W38	5712	10	3.7	7	SF		3	E		15		F
HOLL		1542	1545	1609	S13	E39	5726	10	9.6	27	SF		3	E		19		
HOLL		1658	1703	1714	S13	E37	5726	10	9.5	16	SF		3	E		12		
RAMY		1742	1747	1822	N28	E27	5721	10	8.8	40	SF	C 2.5	3	E		95		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	06	2003	2007	2018	S13	E35	5726	10	9.5	15	SF		3	E		33		
RAMY		2116	2118	2123	S12	E35	5726	10	9.5	7	SF		3	E		14		F
GOES		2129	2133	2137						8		C 3.4						
HOLL		2150E	2150U	2230	S13	E35	5726	10	9.5	40D	SF		2	E		53		
HOLL		2240	2241	2334	S13	E34	5726	10	9.5	54	SF		3	E		35		F
HOLL		2243	2245	2302	N28	E25	5721	10	8.9	19	SF		3	E		24		F
LEAR	07	0352	0457	0517	N27	E23	5721	10	8.9	85	SF	C 5.9	3	E		74		F
PALE		0353	0359	0413D	N29	E23	5721	10	9.0	20D	SF		3	E		45		F
SVTO		0710	0713	0717	S11	E30	5726	10	9.5	7	SF		3	E		21		
SVTO		0955	0957	1014	N23	W25	5719	10	5.5	19	SF		3	E		62		
RAMY		1128	1133	1146	N27	E18	5721	10	8.9	18	SF		2	E		55		F
SVTO		1131	1132	1140	N30	E16	5721	10	8.7	9	SF		3	E		16		F
GOES		1158	1202	1204						6		C 1.8						
GOES		1248	1323	1445						117		C 6.0						
HOLL		1550	1557	1558	N28	E19	5721	10	9.1	8	SF		3	E		11		
HOLL		1601	1602	1605	N28	E18	5721	10	9.1	4	SF		3	E		16		F
HOLL		1606	1618	1638	N27	E16	5721	10	8.9	32	SF		3	E		61		F
RAMY		1606	1618	1639	N28	E19	5721	10	9.1	33	SF		3	E		51		
HOLL		1948	1951	1958	N26	E18	5721	10	9.2	10	SF		3	E		26		
RAMY		1949	1950	1956	N29	E15	5721	10	9.0	7	SF		3	E		13		
HOLL		2132	2132	2139	N25	E24	5721	10	9.7	7	SF		3	E		17		F
HOLL		2302	2303	2318	S19	W58	5712	10	3.5	16	SF		3	E		29		
HOLL		2302	2310	2332	S17	W77	5708	10	2.1	30	SF		3	E		53		
LEAR	08	0141	0141	0145	S17	E01	5722	10	8.1	4	SF		3	E		13		
LEAR		0344	0349	0408	N20	E30		10	10.4	24	SF	C 3.9	3	E		50		F
LEAR		0516	0518	0528	N28	E10	5721	10	9.0	12	SF		3	E		12		F
RAMY		1220	1222	1233	N32	E28	5725	10	10.7	13	SF		2	E		24		F
HOLL		1627	1629	1644	N18	E38	5728	10	11.6	17	SF		3	E		19		
RAMY		1628	1629	1645	N18	E37	5728	10	11.5	17	SF		3	E		14		
LEAR	09	0117	0120	0124	N30	E22	5725	10	10.8	7	SF		3	E		24		
LEAR		0152	0156	0246	N18	E27	5728	10	11.1	54	SF	C 6.9	3	E		97		F
PALE		0155	0157	0231	N19	E25	5728	10	11.0	36	SF		3	E		71		F
LEAR		0200	0206	0226	N18	E15		10	10.2	26	SF		3	E		23		
RAMY		1100	1110	1128	N20	E13	5728	10	10.4	28	SF		3	E		29		F
RAMY		1225	1229	1236	N29	E76		10	15.5	11	SF		3	E		11		
RAMY		1249	1257	1304	N29	E77		10	15.6	15	SF		3	E		17		
RAMY		1321	1325	1328	N28	E76		10	15.5	7	SF		3	E		14		
RAMY		1449	1453	1504	N16	E81		10	15.8	15	SF		3	E		31		
RAMY		1753	1901	1916	N18	E85	5736	10	16.2	83	SF		3	E		57		
RAMY		1831	1842	1907	S13	W04	5726	10	9.5	36	SF		3	E		58		UF
HOLL		1833E	1834U	1912	S14	W03	5726	10	9.5	39D	SF		2	E		38		F
HOLL		1907	1913	1934	N15	E77	5736	10	15.6	27	SF		3	E		37		
HOLL		1938	1945	2022	N25	W59	5719	10	5.2	44	SF		3	E		52		
RAMY		1940	1951	2010	N22	W53	5719	10	5.7	30	SF	C 2.5	3	E		34		F
RAMY		2027	2034	2055	S30	E41	5734	10	13.1	28	SF		3	E		22		F
HOLL		2031	2034	2059	S30	E39	5734	10	12.9	28	SF		3	E		24		
RAMY		2056	2057	2121	N15	W65	5716	10	4.9	25	SF		3	E		27		FH
HOLL		2056	2108U	2136	N14	W62	5716	10	5.2	40	SF		3	E		36		
HOLL		2241	2257	2336	S15	W06	5726	10	9.5	55	1F		3	E		112		
HOLL		2311	2315	2328	N34	E10	5725	10	10.8	17	SN	C 2.6	3	E		80		
HOLL		2331	2332	2342	N30	W65	5714	10	4.9	11	SF		3	E		37		
LEAR	10	0228		0248	S15	W07	5726	10	9.6	20	SF		3	E		11		F
LEAR		0358	0401	0412	N32	E05	5725	10	10.6	14	SF	C 2.7	3	E		93		F
GOES		0712	0721	0725						13		C 3.6						
GOES		0819	0824	0830						11		C 3.9						
GOES		1333	1338	1340						7		C 6.8						
HOLL		1358	1401U	1406	N15	W25	5723	10	8.7	8	SF		3	E		12		
HOLL		1609	1611	1617	N28	E62	5735	10	15.5	8	SF		3	E		20		
RAMY		1616	1616	1620	N37	E02	5725	10	10.8	4	SF		3	E		13		
HOLL		1616	1616	1623	N33	W03	5725	10	10.4	7	SF		3	E		23		F
GOES		1646	1650	1653						7		C 2.9						
RAMY		1755E	1800	1809	N35	W11	5725	10	9.9	14D	SF		3	E		23		H
HOLL		2019	2027	2056D	N13	W15		10	9.7	37D	SF		3	E		24		UF
HOLL		2020	2020	2030	N17	W21	5723	10	9.2	10	SF		3	E		11		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	10	2028	2032	2035						7		C 2.4						
HOLL		2036	2044	2053	N24	W72	5719	10	5.3	17	SF		3	E		69		
GOES	11	0118	0122	0124						6		C 2.0						
LEAR		0233	0234	0248	N36	W03	5725	10	10.9	15	SF		3	E		20		
GOES		0438	0453	0550						72		C 5.0						
LEAR		0442	0444	0526	N27	W22	5721	10	9.5	44	SF		3	E		44		F
GOES		0932	0937	0943						11		C 2.1						
HOLL		1407	1414	1439	N28	W26	5721	10	9.5	32	SF		3	E		21		
HOLL		1445	1454	1459	N13	E48	5736	10	15.2	14	SF		3	E		11		
HOLL		1539	1559	1633	N27	W25	5721	10	9.7	54	SF		3	E		99		F
RAMY		1540	1601	1625	N27	W29	5721	10	9.4	45	SF		3	E		89		
HOLL		1541	1546	1557	N13	E47	5736	10	15.2	16	SF		3	E		48		H
HOLL		1622	1625	1649	N27	E49	5735	10	15.5	27	SF	C 3.1	3	E		83		FE
HOLL		1642	1645	1723	N27	W29	5721	10	9.4	41	SF	C 3.7	3	E		35		F
HOLL		1715	1721	1736	N13	E47	5736	10	15.3	21	SF		3	E		64		
RAMY		1907	1920	1940	N23	W77	5719	10	5.9	33	SF		3	E		28		F
HOLL		1920	1921	1924	N29	W85	5719	10	5.1	4	SF		3	E		18		
RAMY		1935	1940	1942	N29	W85	5714	10	5.1	7	SF		3	E		35		H
HOLL		2013	2014	2035	N11	E24	5738	10	13.6	22	SF		3	E		21		
HOLL		2031	2041	2105	N29	W38	5721	10	8.9	34	SF		3	E		58		
HOLL		2046	2048	2101	S17	E68	5740	10	17.0	15	SF		3	E		13		
GOES		2332	2338	2347						15		C 3.3						
GOES	12	0115	0118	0120						5		C 1.7						
GOES		0324	0329	0332						8		C 2.1						
LEAR		0451E	0504U	0521	N27	W35	5721	10	9.5	30D	SF		2	E		54		
LEAR		0540	0540	0552	S15	E63	5740	10	17.0	12	SF	C 2.3	3	E		12		
SVTO		0547E	0547U	0604	S12	E65	5740	10	17.1	17D	SF		2	E		69		
LEAR		0721	0721	0734	S12	W44	5726	10	9.0	13	SF	C 1.8	3	E		21		
SVTO		0721	0723	0736	S13	W45	5726	10	8.9	15	SF		3	E		24		
LEAR		0916	0919	0927	N28	W32	5721	10	9.9	11	SF		3	E		21		
LEAR		0931	0931	0937	N13	E39	5736	10	15.3	6	SF		3	E		15		
SVTO		1043	1044	1058	S12	W46	5726	10	9.0	15	SF	C 1.7	3	E		40		
RAMY		1137	1151	1226	S14	E61	5740	10	17.1	49	SF		3	E		39		
SVTO		1202	1203	1251	N30	E38	5735			49	SF			E		95		K
SVTO		1202	1222	1251	N30	E38	5735	10	15.5	49	1N	C 3.8	3	E		108		F
RAMY		1206	1210	1311	N29	W46	5721	10	8.9	65	SF		3	E		56		
RAMY		1352	1353	1355	N22	W47	5723	10	9.0	3	SF		3	E		10		H
HOLL		1506	1508	1515	S12	W46	5726	10	9.2	9	SF	C 3.7	3	E		15		
HOLL		1601E	1603U	1612	N24	W60		10	8.0	11D	SF		3	E		44		
HOLL		1701	1705	1722	N25	W63		10	7.8	21	SF		3	E		33		
RAMY		1702	1705	1725	N25	W63		10	7.8	23	SF		3	E		46		
RAMY		1854	1855	1858	S14	E62	5740	10	17.5	4	SF	C 1.8	3	E		27		
HOLL		1912	1912	1915	N22	W48		10	9.1	3	SF		3	E		12		
HOLL		1927E	1927U	1933	S17	E57	5740	10	17.1	6D	SF		3	E		19		
LEAR		2338	2344	2454	N21	W36		10	10.2	76	1F		3	E		133		F
HOLL		2342E	2347	2422D	N17	W36		10	10.2	40D	2N	M 1.1	3	E		479		FE
PALE		2345E	2349	2426	N18	W36		10	10.2	41D	1F		3	E		126		F
LEAR	13	0050	0058	0112	N20	W44	5723	10	9.7	22	SF		3	E		28		
LEAR		0215	0227	0237	S14	W50	5726	10	9.3	22	SF		3	E		27		
GOES		0255	0305	0319						24		M 1.0						
GOES		0418	0423	0428						10		C 4.9						
GOES		0500	0612	0830						210		M 4.1						
SVTO		0752	0754	0808	N24	W68	5743	10	8.1	16	SF		3	E		38		
LEAR		0753	0753	0756	N26	W69	5743	10	8.0	3	SF		3	E		12		
SVTO		0801	0802	0815	N16	E30	5736	10	15.6	14	SF		3	E		15		
SVTO		1227	1229	1232	N16	E24	5736	10	15.3	5	SF		3	E		22		
SVTO		1326	1330	1333	N23	E27	5742	10	15.6	7	SF		3	E		15		
RAMY		1328	1329	1334	N22	E28	5742	10	15.7	6	SF		3	E		15		F
SVTO		1332	1338	1341	N11	W01	5738	10	13.5	9	SF		3	E		14		
RAMY		1451	1453	1503	N14	E27	5736	10	15.6	12	SF		3	E		35		F
HOLL		1454E	1454U	1504	N13	E20	5736	10	15.1	10D	SF		3	E		52		
HOLL		1519	1521	1537	S15	E43	5740	10	16.9	18	SF		3	E		11		
RAMY		1551	1553	1619D	S25	E82	5744	10	20.0	28D	1F		3	E		138		H
HOLL		1558	1559	1612	S25	E85	5744	10	20.2	14	1F		3	E		145		
HOLL		1636	1640	1645	S20	E70	5744	10	19.0	9	SF		3	E		48		

Hα S O L A R F L A R E S

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	13	1639	1641U	1654D	S24	E73	5744	10	19.3	15D	SF		3	E		24		
HOLL		1751	1751	1758	N11	W04	5738	10	13.4	7	SF		3	E		26		
RAMY		1751	1752	1757	N11	W03	5738	10	13.5	6	SF		3	E		21		
HOLL		1826	1828	1833	N12	W02	5738	10	13.6	7	SF		3	E		15		
RAMY		1834E	1834U	1911D	S16	E87		10	20.4	37D	SF		3	E		14		
HOLL		1840	1843	1857	S16	E44	5740	10	17.1	17	SF		3	E		16		
RAMY		1928	1931U	2025D	N31	W49	5721	10	9.9	57D	SF		3	E		20		
HOLL		1931	1939	2031	N27	W55	5721	10	9.5	60	SF		3	E		87		F
PALE		1936	1936	2009	N25	W56	5721	10	9.5	33	SF		3	E		27		
GOES		2344E		2351						7D		C 4.4						
HOLL		2346	2352	2404	S16	E43	5740	10	17.2	18	SF		3	E		54		FH
LEAR	14	0659	0700	0706	N16	W65	5723	10	9.4	7	SF	C 2.6	3	E		41		F
LEAR		0750	0751	0758	N16	W69	5723	10	9.1	8	SF	C 4.8	3	E		64		
LEAR		0836	0837	0844	S16	E39	5740	10	17.3	8	SF	C 4.9	3	E		27		
GOES		1108	1113	1115						7		C 3.6						
RAMY		1314	1316	1327D	S23	E73	5744	10	20.2	13D	SF		3	E		25		H
HOLL		1432	1433	1441	S16	E36	5740	10	17.3	9	SF	C 2.6	4	E		49		F
HOLL		1513	1513	1519	N15	W71	5723	10	9.2	6	SF		4	E		18		
HOLL		1518	1521	1526	S26	E62	5744	10	19.4	8	SF		4	E		30		F
RAMY		1520E	1523U	1530D	S25	E65	5744	10	19.7	10D	SF		2	E		20		
RAMY		1628	1630	1633	S24	E69	5744	10	20.0	5	SF		2	E		15		
HOLL		1630E	1631U	1634	S25	E70		10	20.1	4D	SF		4	E		22		
RAMY		1635	1636	1639	N17	W73	5723	10	9.1	4	SF		2	E		15		
HOLL		1639	1648	1704	S16	E31	5740	10	17.0	25	SF		4	E		41		F
RAMY		1644	1647	1700	S15	E32	5740	10	17.1	16	SF		3	E		32		F
RAMY		1652	1652	1659	N28	W69	5721	10	9.3	7	SF		3	E		32		
RAMY		1705	1715	1732	N17	W72	5723	10	9.2	27	SF		3	E		24		
HOLL		1707	1709	1712	N16	W73	5723	10	9.2	5	SF		4	E		35		
HOLL		1750	1753	1805	N16	W76	5723	10	9.0	15	1N	C 4.8	4	E		181		E
HOLL		1804	1808	1843	S15	E30	5740	10	17.0	39	SF	C 4.3	4	E		24		F
HOLL		1820	1825	1838	N17	W75	5723	10	9.1	18	SF		4	E		80		F
HOLL		1845	1847	1855	S16	E74	5748	10	20.4	10	SF		3	E		14		
HOLL		1852	1852	1856	N14	W46	5728	10	11.3	4	SF		3	E		17		
GOES		1857	1900	1902						5		C 2.7						
HOLL		1928	1930	1940	N16	W75	5723	10	9.1	12	SF		3	E		45		F
GOES		1959	2004	2006						7		C 2.4						
HOLL		2014	2015	2018	N15	W47	5728	10	11.3	4	SF		3	E		24		
HOLL		2037	2039	2043	N15	W47	5728	10	11.3	6	SF		3	E		18		F
HOLL		2052	2054	2059	N17	W77	5723	10	9.0	7	SF		3	E		54		
HOLL		2106	2113	2135	S15	E32	5740	10	17.3	29	1B	C 5.0	3	E		217		FH
HOLL		2136	2142	2156	S15	E29	5740	10	17.1	20	SF		3	E		18		F
HOLL		2145	2149	2154	N16	W78	5723	10	9.0	9	1F		3	E		102		
HOLL		2229	2232	2239	N16	W77	5723	10	9.1	10	SF	C 3.4	3	E		45		
HOLL		2232	2234	2241	N15	W48	5728	10	11.3	9	SF		3	E		37		
HOLL		2237	2240	2312	S24	E67	5747	10	20.1	35	1N	M 1.3	3	E		180		FE
LEAR		2240	2240	2251	S24	E66	5747	10	20.0	11	SF		2	E		11		
HOLL		2259	2301	2310	S13	W75	5726	10	9.3	11	SF		3	E		32		
HOLL		2333	2334	2351	S30	E68	5747	10	20.3	18	SF	M 1.0	3	E		18		F
HOLL		2355	2355	2358	S31	E67	5747	10	20.3	3	SF		3	E		16		F
LEAR	15	0230	0232	0241	N15	W51	5728	10	11.2	11	SF		4	E		39		
LEAR		0309	0311	0321	S27	E65	5747	10	20.2	12	SF		3	E		25		
LEAR		0309	0311	0321	S22	E48	5744	10	18.8	12	SF		3	E		26		
LEAR		0315	0316	0320	N17	W82	5723	10	8.9	5	SF		3	E		32		
LEAR		0335	0336	0342	N15	W53	5728	10	11.1	7	SF		3	E		26		
LEAR		0347	0352	0357	N15	W52	5728	10	11.2	10	SF		3	E		17		F
LEAR		0447	0449	0457	N15	W53	5728	10	11.2	10	SF		3	E		22		
RAMY		1222	1225	1321	S23	E59	5747	10	20.1	59	SF		4	E		31		
SVTO		1222	1225U	1322D	S24	E58	5747	10	20.0	60D	SF		2	E		34		F
RAMY		1240	1243	1250	N19	W82	5723	10	9.3	10	SF	C 7.7	4	E		26		
RAMY		1340	1406	1433	S16	E67	5748	10	20.6	53	SF		4	E		59		
SVTO		1341E	1404U	1413D	S14	E60	5748	10	20.1	32D	SF		2	E		42		
RAMY		1420	1434	1513	S14	E21	5740	10	17.2	53	1N	M 1.6	4	E		158		FH
SVTO		1422E	1433U	1505D	S14	E20	5740	10	17.1	43D	1B		2	E		187		FH
RAMY		1616	1629	1640	S14	E62	5748	10	20.4	24	SF		3	E		24		
RAMY		1716	1718	1722	S24	E51	5747	10	19.6	6	SF		3	E		37		F
HOLL		1726	1727	1731	S20	W29	5739	10	13.5	5	SF		2	E		11		

Hα SOLAR FLARES

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	15	1749	1752	1754	N15	W59	5728	10	11.3	5	SF		2	E		11		
HOLL		1920	1921	1939	S19	W30	5739	10	13.5	19	SF		3	E		24		
HOLL		1920	1927	1939	S19	W30	5739			19	SB			E		38		K
HOLL		1925	1928	1937	S15	E19	5740	10	17.2	12	1F		3	E		105		F
HOLL		2003	2005	2027	S16	E19	5740	10	17.3	24	SF		3	E		25		F
HOLL		2034	2034	2104	S15	E16	5740	10	17.1	30	SF		3	E		27		F
HOLL		2034	2056	2104	S15	E16	5740			30	SF			E		26		K
HOLL		2048	2051	2055	S22	E39	5744	10	18.9	7	SF		3	E		24		F
HOLL		2055	2056	2104	S29	E58	5747			9	SF			E		32		K
HOLL		2055	2100	2104	S29	E58	5747	10	20.4	9	SF		3	E		19		
HOLL		2153	2159	2212	S30	E57	5747	10	20.4	19	SN		3	E		56		E
HOLL		2229	2230	2242	N14	W61	5728	10	11.3	13	SF		3	E		14		
HOLL		2249	2253	2302	S25	E53	5747	10	20.0	13	SF	C 2.3	3	E		18		
HOLL		2322	2327	2339	S13	W15	5749	10	14.8	17	SF		3	E		25		F
HOLL		2323	2323	2335	S25	E52	5747	10	20.0	12	SF		3	E		12		F
HOLL		2323	2325	2329	S16	E58	5748	10	20.4	6	SF		3	E		13		
HOLL	16	0004	0006	0014	S30	E57	5747	10	20.5	10	SF		2	E		21		
LEAR		0415	0417	0423	N13	W07	5736	10	15.6	8	SF	C 3.1	3	E		55		F
LEAR		0508	0508	0522	S16	E08	5740	10	16.8	14	SF	C 2.0	3	E		26		F
LEAR		0729	0737	0747	S16	E53	5748	10	20.3	18	SF		3	E		16		
RAMY		1208	1225	1247	S16	E52	5748	10	20.4	39	SF		3	E		75		F
SVTO		1212E	1212U	1240	S13	E51	5748	10	20.3	28D	SF		3	E		16		
RAMY		1214	1215	1221	S22	E48	5747	10	20.2	7	SF		3	E		16		F
RAMY		1223	1223	1242	S22	E48	5747	10	20.2	19	SF		3	E		44		F
RAMY		1300	1300	1303	S26	E50	5747	10	20.4	3	SF	C 4.3	3	E		12		
HOLL		1328E	1333U	1407	S15	E49	5748	10	20.3	39D	SF		2	E		21		
RAMY		1343	1344	1349	S27	E47	5747	10	20.2	6	SF		3	E		14		
SVTO		1508E	1518U	1536D	S25	E46	5747	10	20.2	28D	SN		2	E		47		F
GOES	17	0036E	0041	0050D						14D		C 2.9						
GOES		0201E	0203	0225D						24D		C 2.4						
LEAR		0521	0521	0528	S30	E41	5747	10	20.4	7	SF	C 3.9	3	E		19		
SVTO		0619	0620	0634	S17	W05	5740	10	16.9	15	SF		3	E		30		
LEAR		0641	0643	0649	S19	W50	5739	10	13.5	8	SF		3	E		26		
RAMY		1140	1142	1153	N13	W85	5728	10	11.1	13	SF		3	E		16		
RAMY		1319	1319	1327	S14	W34	5749	10	15.0	8	SF		3	E		12		F
RAMY		1352	1358	1401	N12	W86	5728	10	11.1	9	SF	C 3.0	3	E		21		
HOLL		1619	1622	1627	S32	E35	5747	10	20.4	8	SF		2	E		28		F
HOLL		1642	1649	1659	S29	E34	5747	10	20.4	17	SF		3	E		25		
HOLL		1648	1649	1704	S19	E30	5748	10	20.0	16	SF		3	E		31		F
RAMY		1649	1649	1658	S19	E32	5748	10	20.1	9	SF		3	E		20		
RAMY		1850	1851	1902	S28	E35	5747	10	20.5	12	SN	M 1.0	3	E		84		FE
HOLL		2301	2306	2311	S27	E29	5747	10	20.2	10	SF		3	E		15		
LEAR	18	0022	0027	0425	S28	E29	5747			243	SF			E		77		KT
LEAR		0022	0108	0425	S28	E29	5747	10	20.3	243	1F		3	E		99		FT
PALE		0203E	0218	0307D	S28	E32	5747	10	20.6	64D	1F	M 2.7	3	E		103		UF
LEAR		0247	0300	0310	S24	E55	5753	10	22.4	23	SF		3	E		32		
PALE		0254	0255	0307D	S21	E57	5753	10	22.5	13D	SF		3	E		25		F
LEAR		0437	0440	0457	S30	E28	5747	10	20.4	20	1F	M 1.6	3	E		201		
SVTO		0759	0804	0811D	S11	W16	5740	10	17.1	12D	SF		3	E		24		
RAMY		1122	1142	1252	S23	E51	5753	10	22.4	90	SF	C 5.4	3	E		13		F
HOLL		1457E	1518	1554	S29	E23	5747	10	20.4	57D	SF	C 6.6	2	E		92		FH
RAMY		1500	1505	1550	S29	E24	5747			50	SF			E		59		K
RAMY		1500	1514	1550	S29	E24	5747	10	20.5	50	SF		3	E		51		F
HOLL		1643	1643	1649	S27	E21	5747	10	20.3	6	SF		3	E		11		
HOLL		1650	1654	1721	S26	E18	5747	10	20.1	31	SN	C 5.9	3	E		93		FE
RAMY		1651	1657	2012D	S23	E07	5744			201D	SF			E		19		K
RAMY		1651	1809	2012D	S23	E07	5744	10	19.2	201D	SF		3	E		18		F
HOLL		1654	1655	1734	S22	E06	5744	10	19.2	40	SF		3	E		24		F
RAMY		1806	1822U	2012D	S25	E19	5747	10	20.2	126D	2B		3	E		276		UF
HOLL		1806	1825	2050	S25	E15	5747	10	19.9	164	2B	M 7.4	3	E		477		F
HOLL		1806	1840	2050	S25	E15	5747			164	2N			E		454		K
HOLL		1808	1809	1833	S23	E06	5744	10	19.2	25	SF		3	E		16		F
HOLL		1849	1900	1912	S23	E07	5744	10	19.3	23	SF		3	E		23		
HOLL		2011	2013	2016	S19	W70	5739	10	13.5	5	SF		3	E		20		
HOLL		2044	2047	2100	S19	W71	5739	10	13.4	16	SF		3	E		51		

Hα S O L A R F L A R E S

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	18	2101	2101	2107	S19	W71	5739	10	13.4	6	SF		3	E		20		
HOLL		2233	2249	2313	S19	W27	5740	10	16.9	40	SF		3	E		39		
HOLL		2308	2312	2315	S29	E15	5747	10	20.1	7	SF		3	E		15		
LEAR		2328	2337	2347	S26	E44	5753	10	22.4	19	SF		3	E		26		
LEAR	19	0411	0420	0426	S23	E41	5753	10	22.3	15	SF		3	E		33		
SVTO		0638	0640	0643	S19	W77	5739	10	13.4	5	SF		3	E		14		
SVTO		0645	0649	0720	S26	E14	5747	10	20.4	35	SF		3	E		28		F
GOES		0650E	0712	0719D						29D		C 3.4						
LEAR		0732	0735	0740	S17	W34	5740	10	16.7	8	SF		3	E		12		
SVTO		0732	0735	0741	S17	W33	5740	10	16.8	9	SF		3	E		21		F
SVTO		0810	0820	0826	S32	E03	5747	10	19.6	16	SF		3	E		17		H
SVTO		0815	0815	0834	S19	W73	5739	10	13.8	19	SF		3	E		15		H
LEAR		0815	0818	0822	S28	E06	5747	10	19.8	7	SF		3	E		21		
SVTO		0845	0914	0934	S25	E12	5747	10	20.3	49	1N	M 1.6	3	E		174		F
LEAR		0903E	0914	0926	S26	E08	5747	10	20.0	23D	1F		2	E		149		
LEAR		0956	0957	1003	S18	W34	5740	10	16.8	7	SF		2	E		26		F
RAMY		1048E	1050U	1226	S28	E13	5747	10	20.5	98D	SF		3	E		79		
RAMY		1229	1239	2013D	S27	E10	5747			464D	SF			E		119		KU
RAMY		1229	1255	2013D	S27	E10	5747	10	20.3	464D	4B	X13.0	3	E				ZU
SVTO		1240	1304U	1459D	S25	E09	5747	10	20.2	139D	3B		2	E		799		UY
SVTO		1242	1259U	1459D	S21	W05	5744	10	19.1	137D	2B		2	E		310		UF
HOLL		1330E	1331U	2149	S27	E11	5747	10	20.4	499D	4B		3	E				ZU
HOLL		1330E	1439	2149	S27	E11	5747			499D	1B			E		432		KU
HOLL		1330E	1824	2149	S27	E11	5747			499D	SN			E		183		KU
LEAR	20	0242	0242	0248	S28	E03	5747	10	20.3	6	SF		3	E		11		
LEAR		0339	0340	0355	S28	E02	5747	10	20.3	16	SN	M 1.1	4	E		67		FE
LEAR		0410	0412	0418	S20	E79		10	26.2	8	SF		3	E		64		
LEAR		0519	0520	0534	S27	W02	5747	10	20.1	15	SF	C 9.8	3	E		56		
LEAR		0707	0709	0713	S27	W03	5747	10	20.1	6	SF	C 3.7	3	E		46		
SVTO		0742	0745	0803	S27	E01	5747			21	SF			E		37		K
SVTO		0742	0752	0803	S27	E01	5747	10	20.4	21	SN	C 9.1	3	E		40		
LEAR		0743	0752	0807	S27	E00	5747	10	20.3	24	SF		3	E		46		
SVTO		0905E	0905U	0911D	S27	E00	5747	10	20.4	6D	SF		2	E		32		
SVTO		0913E	0914U	0924	S27	W03	5747	10	20.1	11D	SF		2	E		22		
GOES		0941	0944	0948						7		C 2.3						
GOES		1115		1137D						22D		C 2.6						
RAMY		1117	1118	1151	S27	E00	5747			34	SF			E		36		K
RAMY		1117	1130	1151	S27	E00	5747	10	20.5	34	SF		3	E		33		F
RAMY		1120	1130	1142	S19	E77		10	26.3	22	SF		3	E		18		FH
RAMY		1144	1153	1156	S20	E25	5753	10	22.4	12	SF		3	E		15		
GOES		1208	1211	1215						7		C 2.4						
RAMY		1303	1304	1349	S18	E78		10	26.5	46	SF		3	E		13		
GOES		1346	1349	1353						7		C 2.3						
RAMY		1415	1510	1558	S26	W03	5747	10	20.4	103	1B	M 1.6	3	E		187		FH
RAMY		1415	1528	1558	S26	W03	5747			103	SF			E		80		K
HOLL		1421	1423	1426	S29	W02	5747	10	20.4	5	SF		3	E		19		UF
RAMY		1428	1430	1501	S16	W18		10	19.2	33	SF		3	E		34		
HOLL		1433	1433	1444	S15	W19		10	19.2	11	SF		3	E		30		F
HOLL		1445	1447	1454	S16	W19		10	19.2	9	SF		3	E		12		
RAMY		1516	1525	1532	S18	E78		10	26.6	16	SF		3	E		20		
HOLL		1524E	1525U	1554D	S06	E03	5747	10	20.9	30D	SF		2	E		28		UF
HOLL		1621	1632	1655	S16	W19		10	19.2	34	SF		3	E		47		F
RAMY		1621	1634	1655	S15	W19		10	19.2	34	SF		3	E		32		
RAMY		1623	1631	1639	S18	E76		10	26.5	16	SF		3	E		28		
GOES		1721	1724	1726						5		C 7.9						
RAMY		1730	1730	1745	S26	W04	5747	10	20.4	15	SF	C 5.0	3	E		16		
RAMY		1755	1803	1851	S15	W20		10	19.2	56	SF	C 3.7	3	E		28		
HOLL		1806	1812	1819D	S15	W20		10	19.2	13D	SF		3	E		23		F
RAMY		1816	1819	1822	S26	W05	5747	10	20.4	6	SF	C 4.2	3	E		14		F
HOLL		1831	1834	1845	S16	W21		10	19.2	14	SF		3	E		18		
HOLL		1849	1849	1902	S19	E77	5754	10	26.7	13	SF		3	E		13		
RAMY		1849	1849	1933	S19	E77	5754	10	26.7	44	SF		3	E		16		
RAMY		1909	1915	1935	S15	W22		10	19.1	26	SF		3	E		13		
RAMY		1939	1944	2035	S19	E75	5754	10	26.5	56	SF	C 4.8	3	E		19		
GOES		2130E	2134	2203D						33D		M 1.4						
LEAR		2310	2314	2327	S19	E71	5754	10	26.4	17	SF		3	E		32		

Hα SOLAR FLARES

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	21	0153	0155	0206	S28	W07	5747	10	20.5	13	1N		3	E		155		
LEAR		0153	0155	0206	S28	W09	5747	10	20.4	13	1N	M 2.4	3	E		156		H
LEAR		0247	0247	0250	S21	E16	5753	10	22.3	3	SF		3	E		22		
LEAR		0512	0513	0522	S26	E16	5753	10	22.4	10	SF	C 3.2	3	E		34		
LEAR		0555	0556	0604	S19	E66	5754	10	26.3	9	SF	C 2.8	3	E		36		
GOES		0640E	0643	0649D						9D		M 1.9						
LEAR		0643	0644	0648	S23	W14	5747	10	20.2	5	SF		3	E		35		
LEAR		0649	0651	0810	S19	E65	5754			81	SF			E		68		K
LEAR		0649	0726	0810	S19	E65	5754	10	26.2	81	1F		3	E		74		
LEAR		0818	0829	0901	S27	W13	5747	10	20.3	43	1F		3	E		106		
RAMY		1120	1127	1139	S30	W17	5747	10	20.1	19	SF		3	E		27		F
RAMY		1248	1256	1326	S28	W13	5747			38	SF			E		40		K
RAMY		1248	1316	1326	S28	W13	5747	10	20.5	38	SF	C 4.5	3	E		37		F
GOES		1310	1314	1317						7		C 4.3						
RAMY		1321	1326	1340	S14	E78		10	27.4	19	SF		3	E		16		
RAMY		1326	1327	1351	S19	E65	5754	10	26.5	25	SN		3	E		45		
RAMY		1341	1343	1349	S14	E77		10	27.4	8	SF		3	E		12		
RAMY		1443	1448	1456	S19	E64	5754	10	26.5	13	SF		3	E		21		
RAMY		1453	1456	1530	S25	W17	5747			37	SF			E		32		K
RAMY		1453	1505	1530	S25	W17	5747	10	20.3	37	SF		3	E		30		FH
RAMY		1457	1502	1515	S20	E60	5754	10	26.2	18	SF		3	E		27		
RAMY		1516	1516	1527	S20	E60	5754	10	26.2	11	SF		3	E		20		
HOLL		1601	1606	1611	S18	E63	5754	10	26.5	10	SF		3	E		15		
PALE		1802	1802	1807	S30	W15	5747	10	20.6	5	SF		3	E		10		
RAMY		1818	1839	1929	S28	W16	5747	10	20.5	71	SF		3	E		67		F
RAMY		1829	1846	1859	S19	E61	5754	10	26.4	30	SF	C 2.6	3	E		45		
PALE		1843	1845	1856	S17	E63	5754	10	26.6	13	SF		3	E		25		
HOLL		1845	1845	1853	S19	E61	5754	10	26.4	8	SF		3	E		25		F
RAMY		1926	1929	1932	S24	W34	5744	10	19.2	6	SF		3	E		19		F
HOLL		1927	1927	1935D	S25	W34	5744	10	19.2	8D	SF		3	E		11		
RAMY		1930	1930	1933	S14	E73	5758	10	27.3	3	SF		3	E		18		
RAMY		1955	2003	2055	S28	W17	5747	10	20.5	60	SN	C 5.0	3	E		73		F
PALE		2000	2004	2015	S29	W17	5747	10	20.5	15	SF	C 5.0	3	E		43		F
HOLL		2002	2006	2013	S27	W19	5747	10	20.3	11	SF	C 5.0	2	E		56		F
HOLL		2048	2057U	2129	S19	E58	5754	10	26.3	41	SF	C 2.5	3	E		38		F
PALE		2050	2054	2157	S17	E62	5754	10	26.6	67	SF		3	E		22		F
PALE		2144	2145	2155	S11	E72	5758	10	27.3	11	SF		3	E		17		F
PALE		2155	2156	2212	S28	W21	5747	10	20.3	17	SF		3	E		21		F
PALE		2201	2202	2214	S19	E57	5754	10	26.3	13	SF	C 6.4	3	E		21		F
HOLL		2206E	2207U	2217	S19	E61	5754	10	26.6	11D	SF	C 6.4	2	E		23		F
LEAR		2239	2240	2254	S28	W19	5747	10	20.4	15	SF		3	E		26		
PALE		2251E	2251U	2302D	S30	W17	5747	10	20.6	11D	SF		3	E		17		F
LEAR		2347	2353	2423	S27	W22	5747	10	20.3	36	SF		3	E		74		
PALE		2353	2353	2406D	S29	W22	5747	10	20.3	13D	SN	M 3.1	3	E		98		FE
LEAR	22	0100	0102	0115	S20	E60	5754	10	26.6	15	1F		3	E		100		
PALE		0102E	0102U	0120D	S17	E62	5754	10	26.7	18D	1N		3	E		162		E
LEAR		0219	0220	0230	S27	W23	5747	10	20.3	11	SF	C 4.1	3	E		46		
LEAR		0309	0317	0441	S29	W22	5747	10	20.4	92	1F	C 6.1	3	E		112		
GOES		0520	0523	0526						6		C 5.4						
GOES		0548	0554	0602						14		C 5.9						
LEAR		0616	0624	0628	S30	W25	5747	10	20.3	12	SF	C 7.2	3	E		20		
LEAR		0711	0712	0717	S20	E55	5754	10	26.5	6	SF		3	E		24		
LEAR		0806	0807	0826	S27	W26	5747	10	20.3	20	SF		3	E		23		
GOES		1030	1034	1038						8		C 3.5						
GOES		1115E	1121	1230D						75D		M 1.5						
RAMY		1121	1133	1328	N12	W67	5750	10	17.4	127	SF		3	E		43		H
RAMY		1204	1211	1226	S25	E56	5754	10	26.8	22	SF		3	E		37		
RAMY		1244	1246	1249	S22	W30	5747	10	20.2	5	SF		3	E		20		
RAMY		1306	1313	1347	S22	E54	5754			41	SF			E		37		K
RAMY		1306	1324	1347	S22	E54	5754	10	26.7	41	1F	C 8.9	3	E		101		
RAMY		1310	1314	1324	S27	W27	5747	10	20.4	14	SF		3	E		32		F
RAMY		1329	1339	1408	S27	W27	5747			39	SF			E		35		K
RAMY		1329	1348	1408	S27	W27	5747	10	20.4	39	SF		3	E		31		F
RAMY		1332	1332	1336	N12	W67	5750	10	17.5	4	SF		3	E		13		
HOLL		1333E	1336U	1351	S28	W27	5747	10	20.4	18D	SF		2	E		73		F
RAMY		1410	1411	1413	S27	W27	5747	10	20.5	3	SF		3	E		15		F
RAMY		1411	1411	1415	S20	E51	5754	10	26.5	4	SF		3	E		16		F

Hα S O L A R F L A R E S

OCTOBER 1989

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
HOLL	22	1411	1433	1439	S20	E49	5754	10	26.3	28	SF		2	E		32		
RAMY		1416	1435	1437	S20	E49	5754	10	26.3	21	SF		3	E		19		
HOLL		1512	1521	1537	S14	W31	5748	10	20.3	25	SF		3	E		25		
RAMY		1513	1521	1529	S14	W30	5748	10	20.4	16	SF		3	E		15		
RAMY		1554	1558	1615	S27	W28	5747	10	20.5	21	SN	M 1.3	3	E		58		F
HOLL		1555	1610	1633	N13	W70	5750	10	17.4	38	SF		3	E		50		
RAMY		1605	1616	1635	N13	W71	5750	10	17.3	30	SF		3	E		45		H
RAMY		1621	1624	1637	S24	W32	5747	10	20.2	16	SF		3	E		23		F
HOLL		1708	1719	2108	S27	W31	5747			240	SF			E		92		KT
HOLL		1708	1757	2108	S27	W31	5747	10	20.3	240	2B	X 2.9	3	E		480		YFT
HOLL		1708	2009	2108	S27	W31	5747			240	SF			E		99		KT
PALE		1721	1725	1728	S19	E51	5754	10	26.6	7	SF		3	E		19		
HOLL		1724	1727	1739	S20	E53	5754	10	26.8	15	SF		3	E		42		
PALE		1732	1734	2111	S27	W33	5747			219	1F			E		202		KT
PALE		1732	1755	2111	S27	W33	5747	10	20.1	219	2B		3	E		286		T
HOLL		1749	1749	1801	S20	E47	5754	10	26.3	12	SF		3	E		24		F
RAMY		1753	1754	1800	N12	W71	5750	10	17.4	7	SF		3	E		17		
PALE		1901	1904	1912	S14	W35	5748	10	20.1	11	SF		3	E		15		
PALE		1927	1943	2005	S16	W33	5748	10	20.3	38	SF		3	E		19		F
HOLL		1932	1940	1956	S15	W31	5748	10	20.5	24	SF		3	E		31		F
RAMY		1939	1940	2011	S14	W36	5748	10	20.1	32	SF		3	E		26		F
HOLL		2203	2206	2212	N12	W74	5750	10	17.3	9	SF		4	E		23		
HOLL		2301	2316	2333	N13	W73	5750	10	17.4	32	SF		3	E		20		
HOLL		2319	2322	2339	S26	W34	5747	10	20.3	20	SF		3	E		18		
HOLL		2344	2355	2412	N12	W74	5750	10	17.4	28	SF		2	E		19		
PALE	23	0001	0008	0034	S29	W33	5747	10	20.4	33	SF		3	E		12		
LEAR		0056	0106	0144	N12	W76	5750	10	17.3	48	SF		3	E		48		
PALE		0059	0104	0137	N10	W77	5750	10	17.2	38	SF		3	E		43		
PALE		0150	0155	0221	S29	W34	5747	10	20.4	31	SF		3	E		35		F
LEAR		0152	0158	0219	S27	W36	5747	10	20.3	27	SF		3	E		42		
LEAR		0342	0345	0357	S27	W37	5747	10	20.3	15	SF	C 7.3	3	E		54		
LEAR		0411	0422	0519	S26	W39	5747	10	20.1	68	SF	M 1.0	3	E		84		
LEAR		0422	0431	0437	S20	E43	5754	10	26.5	15	SF		3	E		30		
LEAR		0625	0651	0720	S17	W44	5748	10	19.9	55	SF		3	E		76		
LEAR		0632	0634	0811	S28	W39	5747			99	SF			E		76		K
LEAR		0632	0641	0811	S28	W39	5747	10	20.2	99	SF	M 1.7	3	E		60		F
LEAR		0804	0812	0842	S17	W45	5748	10	19.9	38	SF		3	E		38		
SVTO		0857E	0902U	0921D	N11	W81	5750	10	17.3	24D	SF	C 5.5	3	E		65		
LEAR		0900	0905	0911	N12	W85	5750	10	17.0	11	SF		3	E		23		
SVTO		0929E	0947U	1027D	S18	E39	5754	10	26.4	58D	SF		2	E		53		
RAMY		1053	1105	1153	S27	W42	5747			60	SF			E		95		K
RAMY		1053	1119	1153	S27	W42	5747	10	20.2	60	SF		3	E		73		F
SVTO		1201	1206	1220D	S13	E50	5758	10	27.3	19D	SF		3	E		62		
RAMY		1235	1243	1347	S27	W42	5747	10	20.2	72	2B	X 1.5	3	E		321		ZF
SVTO		1236	1246	1332	S27	W40	5747	10	20.4	56	2B		3	E		258		ZF
HOLL		1323	1523	1530	S22	W65	5744	10	18.6	127	SF		3	E		12		
HOLL		1334E	1336U	1348	S30	W43	5747	10	20.2	14D	SN		2	E		71		F
RAMY		1402	1408	1451	S27	W43	5747	10	20.2	49	SF		3	E		65		F
HOLL		1404	1408	1447	S27	W42	5747	10	20.3	43	SF		3	E		54		FE
RAMY		1410	1420	1430	N12	W84	5750	10	17.3	20	SF		3	E		27		F
HOLL		1416	1420	1427	N12	W90	5750	10	16.8	11	SF		3	E		25		
HOLL		1432	1439	1445	S19	E36	5754	10	26.3	13	SF		3	E		32		
RAMY		1452	1501	1509	S30	W40	5747	10	20.5	17	SF		3	E		27		
HOLL		1516	1524	1533	S13	E48	5758	10	27.2	17	SF		3	E		15		
RAMY		1521	1523	1528	S13	E47	5758	10	27.2	7	SF		3	E		15		F
HOLL		1656	1700	1705	N13	W81	5750	10	17.6	9	SF		3	E		23		
RAMY		1658	1700	1721	N12	W84	5750	10	17.4	23	SF		3	E		21		
RAMY		1716	1720	1733	S18	W46	5748	10	20.2	17	SF		3	E		15		
HOLL		1718	1720	1731	S18	W45	5748	10	20.3	13	SF		3	E		13		
HOLL		1756	1759	1802	N13	W82	5750	10	17.6	6	SF		3	E		12		
RAMY		1842	1851	1915	S27	W50	5747	10	19.9	33	1N	C 4.9	3	E		164		F
HOLL		1844	1846	1921	S26	W49	5747	10	20.0	37	SN		3	E		72		FE
HOLL		1844	1914	1921	S26	W49	5747			37	SB			E		36		K
HOLL		2058	2101	2108	S20	E37	5754	10	26.7	10	SF		3	E		33		
PALE		2100	2101	2106	S19	E37	5754	10	26.7	6	SF		3	E		18		
HOLL		2117	2131	2153	S14	W49	5748	10	20.2	36	SF		3	E		26		
HOLL		2215	2217	2223	S25	W46	5747	10	20.4	8	SF	C 2.5	3	E		14		

Hα SOLAR FLARES

OCTOBER 1989

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	23	2216	2217	2220	S27	W47	5747	10	20.3	4	SF		3	E		10		
PALE		2257	2257	2307	S18	W54	5748	10	19.8	10	SF		3	E		17		
LEAR		2331	2343	2420	S29	W47	5747	10	20.3	49	SF	C 4.7	3	E		19		F
GOES	24	0055	0058	0101						6		C 3.3						
PALE		0117	0119	0134	S32	W45	5747	10	20.5	17	SF		3	E		25		F
PALE		0153	0154	0156	S24	W52	5747	10	20.1	3	SF	C 4.0	3	E		24		
PALE		0256	0257	0303	S18	W68	5744	10	18.9	7	SF		3	E		15		
PALE		0259	0301	0308	S17	W50	5748	10	20.3	9	SF		3	E		16		F
LEAR		0259	0301	0331	S27	W51	5747	10	20.1	32	SF	C 3.5	3	E		15		
LEAR		0306	0312	0332	S22	W71	5744	10	18.7	26	SF		3	E		51		
LEAR		0421	0428	0527	S19	W54	5748			66	SF			E		81		K
LEAR		0421	0516	0527	S19	W54	5748	10	20.1	66	SF	C 3.6	3	E		56		F
GOES		0540	0543	0545						5		C 4.7						
LEAR		0644	0646	0657	S27	W59	5747	10	19.7	13	SN	C 3.8	3	E		95		
RAMY		1118	1119	1142	S26	W56	5747	10	20.1	24	SF		3	E		20		F
GOES		1355	1402	1409						14		C 6.7						
HOLL		1358E	1358	1414	S27	W54	5747	10	20.4	16D	SF		3	E		38		F
RAMY		1419	1424	1430	S19	E26	5754	10	26.6	11	SF		3	E		18		F
HOLL		1420	1427	1440	S20	E26	5754	10	26.6	20	SF		3	E		52		
HOLL		1427E	1427U	1429	S27	W58	5747	10	20.1	2D	SF		3	E		15		
HOLL		1630	1630	1637	S20	E24	5754	10	26.5	7	SF		3	E		14		
HOLL		1647E	1704U	1715	S16	W62	5748	10	20.0	28D	SF		3	E		44		
HOLL		1738	1750	2323	S27	W55	5747			345	1F			E		308		KU
HOLL		1738	1812	2323	S27	W55	5747	10	20.4	345	3B		3	E		673		ZU
RAMY		1739	1748	2118D	S30	W55	5747			219D	1F			E		207		KU
PALE		1739	1748	2359D	S30	W57	5747			380D	SF			E		178		KT
PALE		1739	1811	2359D	S30	W57	5747	10	20.2	380D	3B		3	E		722		YFT
RAMY		1739	1813	2118D	S30	W55	5747	10	20.4	219D	3B	X 5.7	3	E		773		UH
HOLL		1741	1748	1807	S18	W52	5748	10	20.8	26	SF		3	E		23		
HOLL		1830	1838	1848	S17	W61	5748	10	20.1	18	SF		3	E		29		
LEAR		2214E		2440	S28	W67	5747	10	19.7	146D	2N		2	E				YF
HOLL		2257	2304	2325	S20	E20	5754	10	26.5	28	SF		3	E		54		
LEAR	25	0051	0052	0059	S26	W69	5747	10	19.7	8	1N		3	E		131		
LEAR		0114	0114	0124	S20	E19	5754	10	26.5	10	SF		3	E		13		
LEAR		0338	0339	0352	S20	E17	5754	10	26.4	14	SF		3	E		13		
LEAR		0458	0500	0510	S27	W73	5747	10	19.5	12	1F	M 1.1	3	E		198		
RAMY		1147	1147	1152	S27	W70	5747	10	20.0	5	SF		3	E		18		
RAMY		1404	1407	1422	S26	W67	5747	10	20.4	18	SF		3	E		71		
RAMY		1437	1440	1505D	S27	W72	5747	10	20.0	28D	1F	C 3.5	3	E		199		
HOLL		1440E	1440U	1459	S25	W70	5747	10	20.2	19D	SF		2	E		79		
RAMY		1633	1639	1806	S30	W69	5747	10	20.3	93	1N		3	E		232		FH
RAMY		1633	1654	1806	S30	W69	5748			93	1N			E		225		K
HOLL		1637E	1641	1741	S28	W65	5747	10	20.6	64D	2N	M 8.7	2	E		257		UE
RAMY		1806	1810	1818	S19	W74	5748	10	20.1	12	SF		3	E		13		
RAMY		1807	1807	1824	S20	E11	5754	10	26.6	17	SF		3	E		13		
RAMY		1810	1810	1818	S19	W74	5748	10	20.1	8	SF		3	E		13		
HOLL		2235	2235	2242	S27	W77	5747	10	19.9	7	SF		3	E		30		F
PALE	26	0152E	0152U	0204	S21	E09	5754	10	26.8	12D	SF		3	E		14		
GOES		0909	0912	0916						7		C 2.4						
GOES		1115E	1118	1121D						6D		C 1.6						
RAMY		1204	1204	1218	S30	W80	5747	10	20.2	14	SF	C 4.9	3	E		41		
RAMY		1229	1232	1237	S30	W80	5747	10	20.2	8	SF		3	E		40		H
RAMY		1530	1531	1538	S28	W87	5747	10	19.8	8	SF		3	E		51		
GOES		1724	1730	1740						16		C 3.2						
HOLL		1959	2001	2005	N11	W28	5760	10	24.7	6	SF		3	E		14		
PALE		2046	2049	2059	S30	W79	5747	10	20.6	13	SF	M 8.1	3	E		38		
GOES		2319	2341	2453						94		M 4.1						
RAMY	27	1131	1141	1143	S35	W87	5747	10	20.5	12	SF	M 6.2	3	E		26		H
HOLL		1901	1901	1913	S32	W90	5747	10	20.7	12	1N	X 1.0	3	E		125		E
PALE		1901	1904	1913	S35	W81	5747	10	21.3	12	SF		3	E		50		
RAMY		1904	1904U	1905D	S27	W82	5747	10	21.4	1D	1F		2	E		157		
PALE		1951	1954	2004	N21	E27	5763	10	29.9	13	SF		3	E		19		
GOES	28	0510	0755	0950						280		M 2.1						T

Hα SOLAR FLARES

OCTOBER 1989

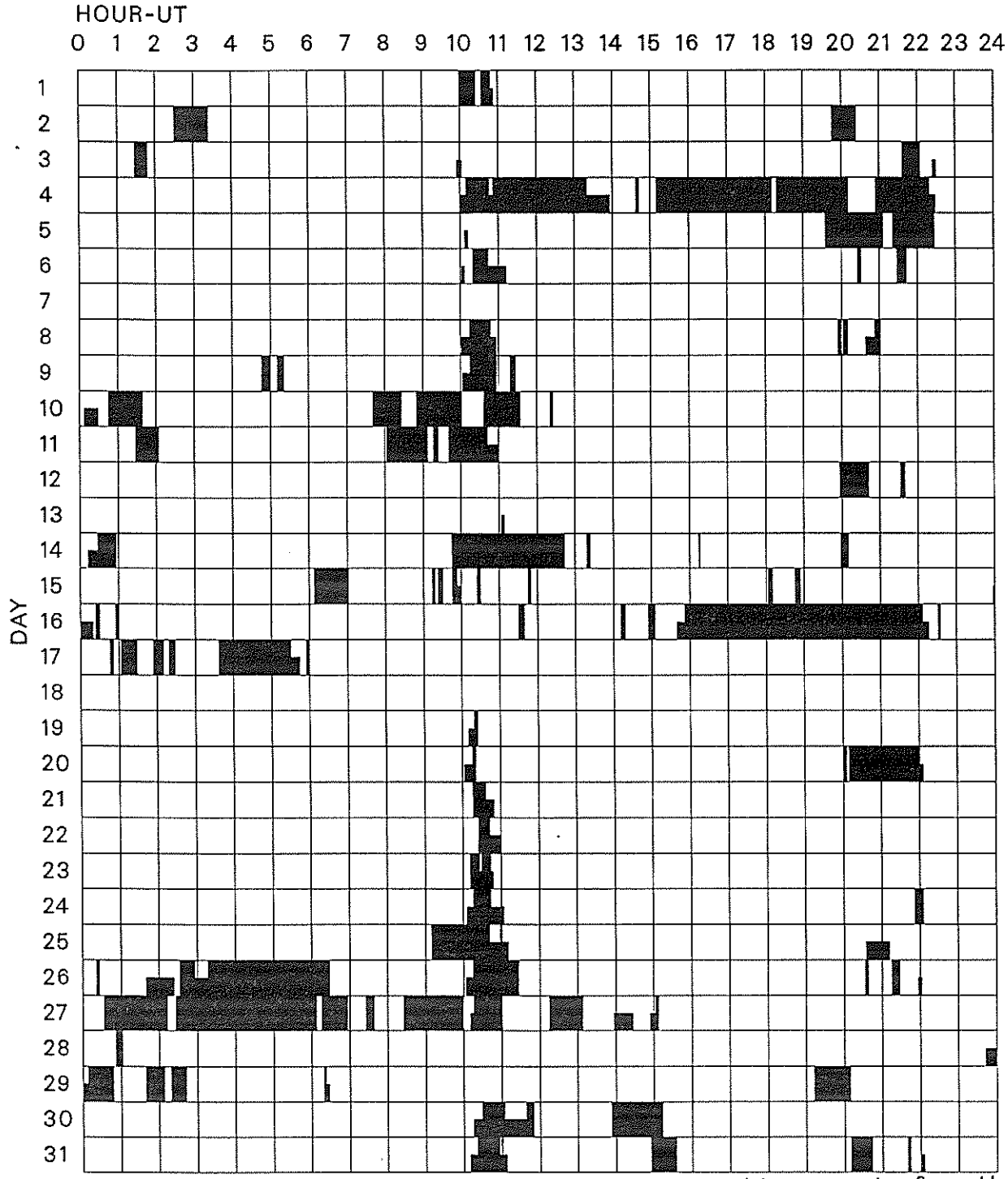
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	28	1120	1125	1252						92		M 1.6						
RAMY		1146	1159	1224D	N21	E20	5763	10	30.0	38D	SF		2	E		14		
GOES	29	0221	0451	0617						236		M 4.0						T
LEAR		0540	0557	0603	N17	E68	5769	11	3.4	23	SF		3	E		17		
SVTO		1232	1238	1304	S15	W32	5758	10	27.1	32	SF		3	E		13		F
HOLL		1722	1732	1743	N21	E02	5763	10	29.9	21	SF		3	E		16		
HOLL		1849E	1849U	1907	N23	E76	5769	11	4.6	18D	SF		1	E		23		
HOLL		2129	2150	2307D	N27	E78	5769	11	5.0	98D	2N	M 2.3	1	E		266		FE
LEAR		2230	2243	2302	N25	E72	5769	11	4.5	32	SF		3	E		20		
LEAR	30	0221	0221	0231	N22	E72	5769	11	4.6	10	SF		3	E		17		
LEAR		0739	0741	0808	N22	E65	5769	11	4.3	29	SF		3	E		46		
GOES		1347	1352	1411						24		C 3.0						
HOLL		1916	1916	1922	N14	E76	5773	11	5.5	6	SF		3	E		11		F
HOLL		2020	2029	2044	N25	E61	5769	11	4.6	24	SF		3	E		16		F
HOLL		2110	2117	2142	N25	E59	5769	11	4.4	32	SN	C 8.6	3	E		75		FE
PALE		2117	2118	2155	N29	E60	5769	11	4.6	38	SF		3	E		39		
HOLL		2133	2133	2141	S15	W41	5758	10	27.8	8	SF		3	E		11		F
GOES		2339	2342	2344						5		C 4.1						
PALE		2340	2341	2350	N23	E56	5769	11	4.3	10	SF		3	E		38		
LEAR		2341	2342	2346	S23	W30	5765	10	28.7	5	SF		3	E		12		
PALE	31	0058	0102	0110	N28	E58	5769	11	4.6	12	SF		3	E		18		F
LEAR		0133	0148	0158	N23	E55	5769	11	4.3	25	SF		3	E		17		
PALE		0219	0220	0226	N24	E53	5769	11	4.2	7	SF		3	E		17		
LEAR		0219	0221	0228	N22	E53	5769	11	4.2	9	SF	C 3.1	3	E		27		
LEAR		0255	0259	0310	S13	E04		10	31.4	15	SF		3	E		27		
GOES		0339	0342	0344						5		C 8.8						
LEAR		0511	0538	0627	N26	E55	5769	11	4.5	76	SF	M 1.4	3	E		83		F
LEAR		0553	0554	0603	N24	E30	5764	11	2.6	10	SF		4	E		49		
LEAR		0724	0724	0728	N23	E30	5764	11	2.6	4	SF		3	E		16		
SVTO		1117E	1135U	1215D	S07	W03		10	31.2	58D	SF		2	E		32		F
RAMY		1123	1127	1213D	N26	E49	5769	11	4.3	50D	SF	C 5.7	2	E		59		F
RAMY		1300E	1420U	1435D	N25	E47	5769	11	4.2	95D	SF		2	E		21		F
SVTO		1410E	1418U	1427D	S18	E69	5772	11	5.8	17D	SF		2	E		61		
RAMY		1420E	1425U	1434D	S17	E66	5772	11	5.6	14D	SF		2	E		22		
GOES		1613	1637	1719						66		M 1.1						
RAMY		1855	1902	1916	N23	E42	5769	11	4.0	21	SF	C 7.7	3	E		38		
PALE		1856	1900	1911	N24	E44	5769	11	4.2	15	SF		3	E		21		
GOES		2037	2045	2047						10		M 1.9						
HOLL		2050E	2051U	2055D	N21	W27	5763	10	29.8	5D	SF		2	E		50		
GOES		2058	2105	2107						9		C 3.5						

"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 1989



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

Holloman Learmonth Palehua Ramey San Vito

EAST-WEST SOLAR SCANS

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

Data unavailable at time of publication.

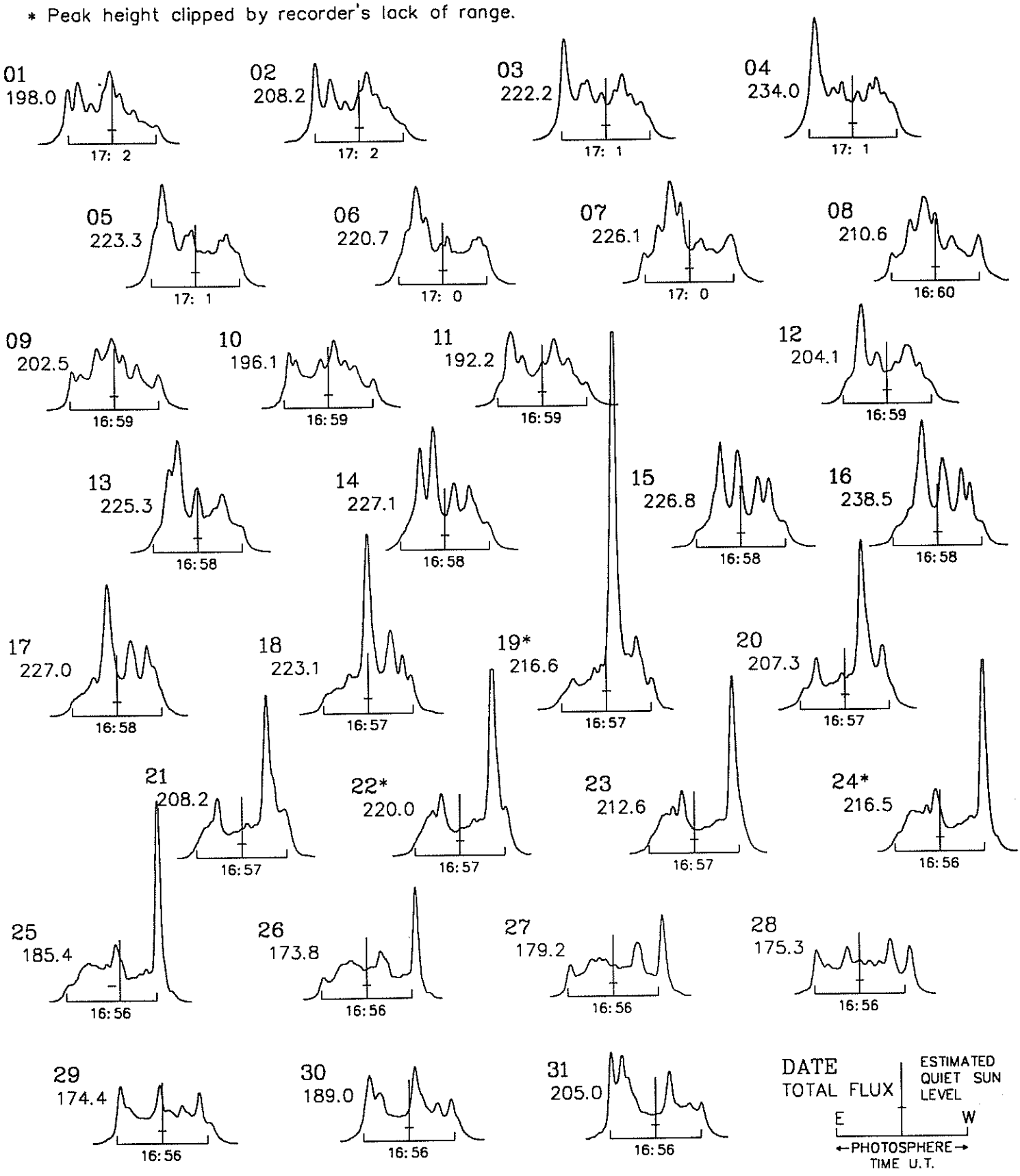
Note: All scans taken with 3 dB attenuation. This means all scans are one-half normal height.

EAST – WEST SOLAR SCANS
OCTOBER 1989

ALGONQUIN RADIO OBSERVATORY
CANADA

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

* Peak height clipped by recorder's lack of range.

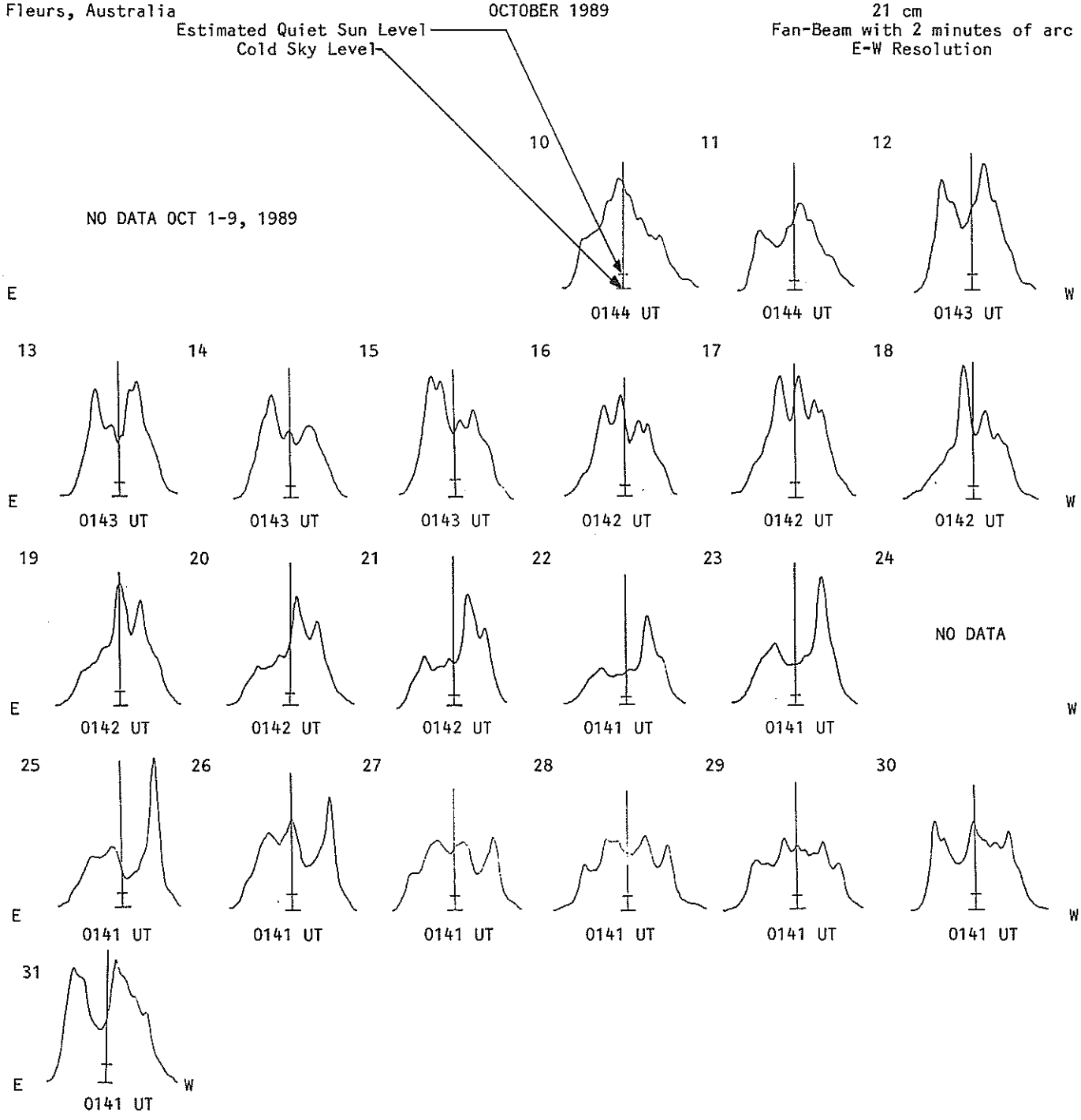


E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

OCTOBER 1989

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

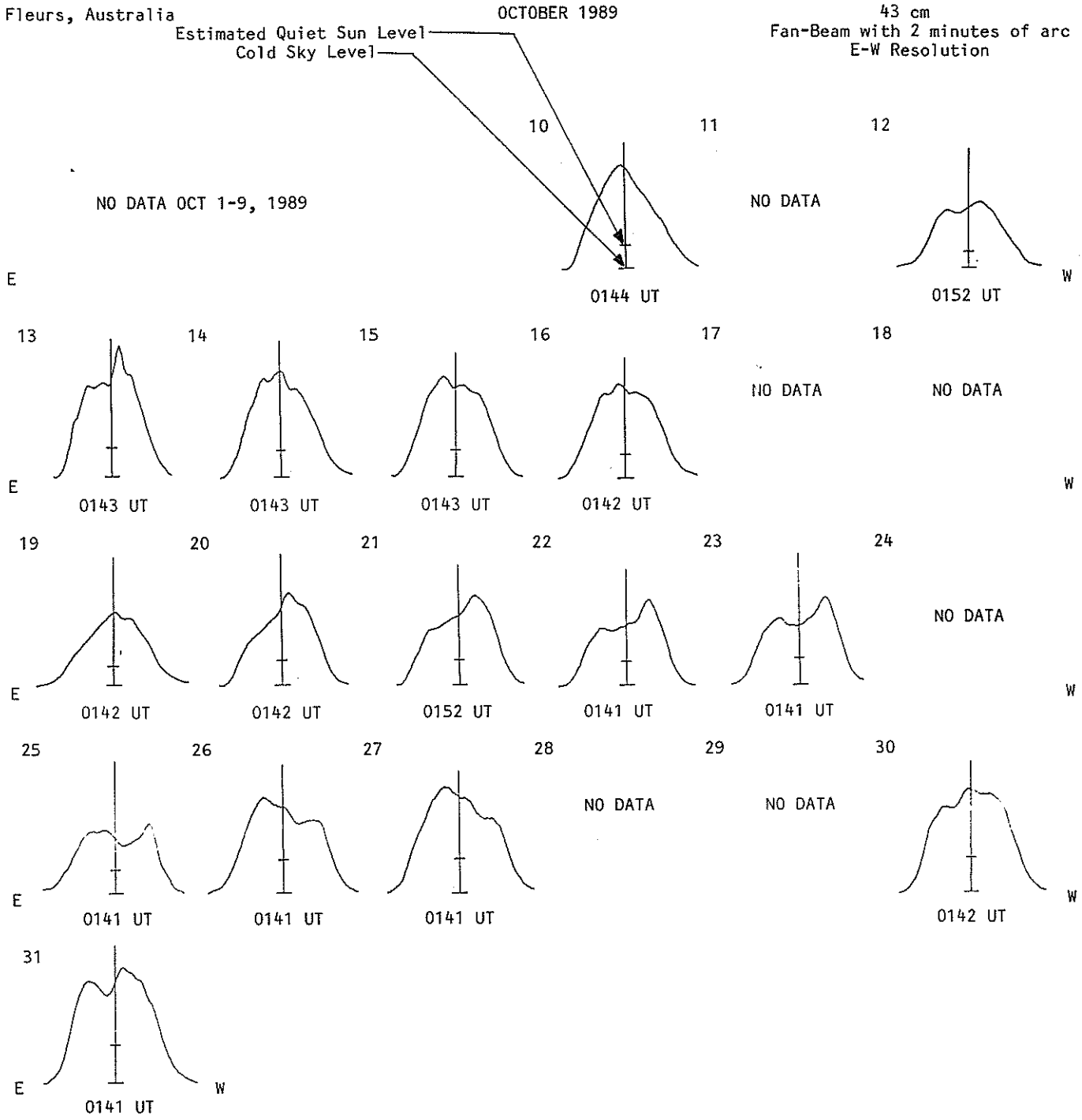


E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

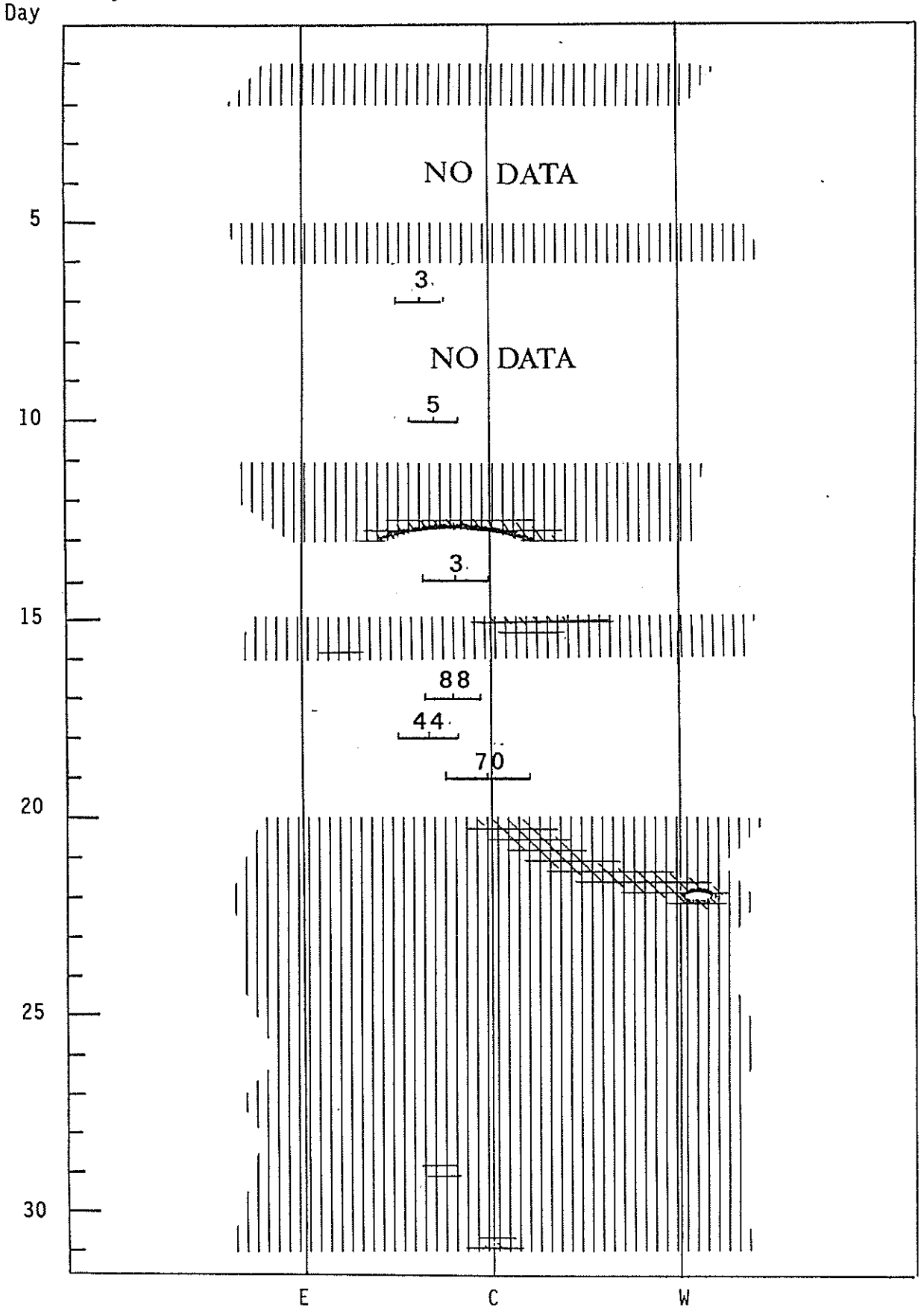
OCTOBER 1989

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



SOLAR INTERFEROMETRIC OBSERVATIONS

Nancay — OCTOBER 1989 — 164 MHz



SOLAR RADIO EMISSION
Selected Fixed Frequency Events

OCTOBER 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2800	OTTA	4	S/F	1930.0	2002.0	90.0	46.9	14.0		
02	2695	SVTO	4	S/F	0844.0E	0847.0	9.0D	82.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0845.0E	0847.0	73.0D	79.0			QL=1 ST=2 TYP=3
04	8800	LEAR	4	S/F	0833.0E	0836.0	9.0D	59.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0835.0E	0838.0	5.0D	42.0			QL=1 ST=2 TYP=5
	8800	SVTO	8	S	0835.0E	0836.0	2.0D	39.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0836.0E	0836.0	1.0D	31.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0936.0E	0945.0	15.0D	130.0			QL=1 ST=2 TYP=5
	2695	SVTO	4	S/F	0936.0E	0945.0	15.0D	140.0			QL=1 ST=2 TYP=5
05	8800	SGMR	8	S	1403.0E	1403.0	1.0D	64.0			QL=1 ST=3 TYP=3
	2800	OTTA	20	GRF	1730.0	1930.0	230.0	13.4	6.0		
06	2800	OTTA	20	GRF	1400.0	1420.0	55.0	4.5	2.0		
	2800	OTTA	20	GRF	1743.0	1747.0	20.0	9.9	4.0		
	2695	PENT	4	S/F	2204.0	2206.0	6.0	22.6	7.0		
07	2695	LEAR	4	S/F	0450.0E	0451.0	5.0D	53.0			QL=1 ST=2 TYP=3
09	2800	OTTA	3	S	1932.9	1933.5	4.0	22.2	6.0		
10	2800	OTTA	3	S	1334.7	1335.6	9.0	115.5	23.0		
	8800	SGMR	8	S	1335.0E	1335.0	1.0D	48.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1335.0E	1335.0	2.0D	120.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1335.0E	1335.0	2.0D	120.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1335.0E	1335.0	1.0D	35.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1647.2	1648.7	8.0	79.4	16.0		
	2695	SGMR	8	S	2029.0E	2030.0	1.0D	51.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	2029.3	2030.1	3.0	52.8	11.0		
11	2695	LEAR	4	S/F	2229.0E	2230.0	3.0D	53.0			QL=1 ST=2 TYP=3
	2695	PENT	3	S	2229.5	2230.3	7.0	46.1	9.0		
13	2695	LEAR	4	S/F	0456.0E	0529.0	52.0D	150.0			QL=1 ST=2 TYP=5
	8800	LEAR	20	GRF	0522.0E	0529.0	28.0D	42.0			QL=1 ST=2 TYP=2
14	2695	LEAR	8	S	0749.0E	0750.0	1.0D	52.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0834.0E	0837.0	8.0D	180.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0834.0E	0835.0	4.0D	94.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0834.0E	0835.0	926.0D	74.0			QL=1 ST=1 TYP=3
	2695	SVTO	4	S/F	0835.0E	0837.0	5.0D	150.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0835.0E	0837.0	4.0D	73.0			QL=1 ST=2 TYP=5
	8800	SVTO	8	S	1108.0E	1109.0	1.0D	67.0			QL=1 ST=3 TYP=3
	2695	SVTO	8	S	1109.0E	1109.0	U	32.0			QL=1 ST=3 TYP=3
	2800	OTTA	3	S	1432.3	1433.0	3.0	20.5	4.0		
	2800	OTTA	3	S	1450.3	1450.7	2.0	13.5	3.0		
	2800	OTTA	3	S	1750.0	1750.7	4.0	89.7	18.0		
	8800	SGMR	8	S	1750.0E	1750.0	1.0D	66.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1750.0E	1750.0	1.0D	62.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1813.7	1814.3	2.3	12.1	3.0		
	2800	OTTA	3	S	2014.0	2017.2	9.0	13.5	3.0		
	8800	LEAR	8	S	2239.0E	2240.0	1.0D	110.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	2239.0E	2240.0	1.0D	54.0			QL=1 ST=2 TYP=3
	2695	PENT	3	S	2239.6	2240.2	2.5	58.2	12.0		
15	2800	OTTA	3	S	1419.4	1420.5	3.0	11.2	2.0		
	2800	OTTA	3	S	1425.5	1427.3	6.0	43.7	9.0		
	2800	OTTA	3	S	1713.0	1715.0	17.0	9.7	3.0		
16	2695	LEAR	8	S	0845.0E	0846.0	1.0D	150.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0846.0E	0846.0	U	37.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	0846.0E	0846.0	1.0D	56.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0846.0E	0846.0	U	160.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	1247.0E	1247.0	U	2300.0			QL=1 ST=2 TYP=6
	8800	SGMR	8	S	1502.0E	1502.0	1.0D	120.0			QL=1 ST=2 TYP=3
17	8800	SGMR	4	S/F	1849.0E	1850.0	7.0D	220.0			QL=1 ST=2 TYP=3

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

OCTOBER 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
17	2800	OTTA	3	S	1850.0	1850.7	30.0	321.4	64.0		
	2695	SGMR	4	S/F	1850.0E	1850.0	6.0D	310.0			QL=1 ST=2 TYP=3
18	2695	LEAR	4	S/F	0018.0E	0022.0	15.0D	140.0			QL=1 ST=2 TYP=5
	8800	LEAR	4	S/F	0018.0E	0022.0	14.0D	110.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0037.0E	0041.0	11.0D	85.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0038.0E	0041.0	7.0D	90.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0438.0E	0439.0	5.0D	52.0			QL=1 ST=2 TYP=3
	2800	OTTA	20	GRF	1512.0	1523.0	43.0	11.0	5.0		
	8800	SGMR	8	S	1653.0E	1653.0	1.0D	50.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1653.0E	1654.0	1.0D	88.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1653.4	1653.8	2.0	98.2	19.0		
	2800	OTTA	29	PBI	1655.4	1655.4	70.0D	12.9	6.0		
	2800	OTTA	3	S	1805.8	1806.5	2.2	387.0	75.0		
	2695	SGMR	8	S	1806.0E	1806.0	1.0D	310.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1806.0E	1810.0	4.0D	350.0			QL=1 ST=2 TYP=5
	2800	OTTA	29	PBI	1808.0	1808.0	195.0	32.1	16.0		
	2695	SGMR	20	GRF	1809.0E	1812.0	41.0D	110.0			QL=1 ST=2 TYP=2
	8800	SGMR	20	GRF	1809.0E	1812.0	43.0D	410.0			QL=1 ST=2 TYP=2
	2800	OTTA	4	S/F	1809.3	1812.1	11.8	108.3	32.0		
	2800	OTTA	22	GRF	1827.6	1829.2	33.0	73.9	22.0		
19	8800	SVTO	49	GB	1238.0E	1257.0	163.0D	30000.0			QL=1 ST=2 TYP=7
	2695	SVTO	49	GB	1240.0E	1251.0	180.0D	4500.0			QL=1 ST=2 TYP=7
	8800	SGMR	49	GB	1243.0E	1257.0	183.0D	44000.0			QL=1 ST=2 TYP=7
	2695	SGMR	49	GB	1243.0E	1259.0	183.0D	8500.0			QL=1 ST=2 TYP=7
	2800	OTTA	47	GB	1259.5E	1259.5	26.0D	7246.0			
	2800	OTTA	29	PBI	1318.0	1318.0	550.0	165.0	82.0		
	2800	OTTA	45	C	1319.0	1344.0	300.0	202.0			
	2695	SGMR	4	S/F	1621.0E	1623.0	10.0D	190.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1622.0E	1623.0	1.0D	63.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1638.0E	1642.0	8.0D	78.0			QL=1 ST=2 TYP=3
	2695	SGMR	4	S/F	1656.0E	1711.0	21.0D	85.0			QL=1 ST=2 TYP=3
20	8800	LEAR	8	S	0957.0E	0957.0	1.0D	38.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0957.0E	0957.0	U	28.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1412.8	1415.0	5.5	21.4	6.0		
	8800	SGMR	8	S	1509.0E	1509.0	1.0D	120.0			QL=1 ST=3 TYP=3
	8800	SVTO	8	S	1509.0E	1509.0	1.0D	120.0			QL=1 ST=2 TYP=3
21	8800	LEAR	4	S/F	0152.0E	0154.0	10.0D	320.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0153.0E	0154.0	6.0D	160.0			QL=1 ST=2 TYP=3
	2695	PALE	8	S	0153.0E	0154.0	2.0D	160.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0513.0E	0513.0	1.0D	45.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0640.0E	0641.0	3.0D	110.0			QL=1 ST=2 TYP=3
	8800	LEAR	8	S	0641.0E	0641.0	2.0D	68.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0641.0E	0641.0	1.0D	110.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0648.0E	0649.0	3.0D	37.0			QL=1 ST=2 TYP=3
	2695	LEAR	4	S/F	0648.0E	0649.0	3.0D	65.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0648.0E	0649.0	2.0D	76.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0825.0E	0826.0	1.0D	65.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0825.0E	0826.0	5.0D	480.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	0825.0E	0826.0	5.0D	390.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	0825.0E	0826.0	2.0D	77.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1449.6	1449.7	1.5	8.6	2.0		
	8800	SGMR	20	GRF	1454.0E	1455.0	5.0D	160.0			QL=1 ST=2 TYP=2
	8800	SVTO	8	S	1454.0E	1455.0	2.0D	130.0			QL=1 ST=2 TYP=3
	2800	OTTA	20	GRF	1454.3	1455.0	60.0	10.3	4.0		
	8800	PALE	8	S	2154.0E	2155.0	2.0D	130.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	2238.0E	2239.0	3.0D	150.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	2348.0E	2350.0	4.0D	59.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	2348.0E	2354.0	16.0D	110.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	2352.0E	2354.0	9.0D	110.0			QL=1 ST=2 TYP=3
22	2695	LEAR	8	S	0329.0E	0331.0	2.0D	25.0			QL=1 ST=2 TYP=3
	2695	SVTO	8	S	1118.0E	1118.0	1.0D	80.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1118.0E	1118.0	1.0D	93.0			QL=1 ST=2 TYP=3
	2800	OTTA	4	S/F	1308.0	1309.5	9.0	30.8	9.0		
	2800	OTTA	3	S	1553.0	1553.6	8.0	44.6	9.0		

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

OCTOBER 1989

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
22	2800	OTTA	4	S/F	1620.0	1621.1	3.0	14.2	3.0		
	2800	OTTA	28	PRE	1704.0	1733.0	29.0	30.4	12.0		
	8800	SGMR	49	GB	1730.0E	1802.0	146.0D	39000.0			QL=1 ST=2 TYP=7
	2695	PALE	49	GB	1731.0E	1818.0	168.0D	18000.0			QL=1 ST=2 TYP=7
	8800	PALE	49	GB	1732.0E	1801.0	144.0D	22000.0			QL=1 ST=2 TYP=7
	2800	OTTA	47	GB	1733.0	1818.8	170.0	13070.0	2600.0		
	2695	SGMR	49	GB	1733.0E	1818.0	151.0D	22000.0			QL=1 ST=2 TYP=7
	2800	OTTA	29	PBI	2023.0	2023.0	120.0	30.5	15.0		
	8800	PALE	49	GB	2132.0E	2132.0	1.0D	610.0			QL=1 ST=2 TYP=6
23	8800	LEAR	8	S	0411.0E	0412.0	2.0D	40.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0412.0E	0412.0	1.0D	35.0			QL=1 ST=2 TYP=3
	8800	LEAR	4	S/F	0646.0E	0647.0	6.0D	67.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	1236.0E	1237.0	28.0D	1300.0			QL=1 ST=2 TYP=6
	8800	SVTO	49	GB	1236.0E	1237.0	24.0D	1100.0			QL=1 ST=2 TYP=6
	2695	SVTO	4	S/F	1237.0E	1237.0	683.0D	37.0			QL=1 ST=1 TYP=3
	8800	LEAR	4	S/F	2335.0E	2336.0	3.0D	68.0			QL=1 ST=2 TYP=3
	8800	PALE	4	S/F	2335.0E	2336.0	3.0D	64.0			QL=1 ST=2 TYP=3
24	8800	LEAR	8	S	0153.0E	0153.0	U	61.0			QL=1 ST=2 TYP=3
	8800	PALE	8	S	0153.0E	0153.0	U	63.0			QL=1 ST=2 TYP=3
	8800	SVTO	8	S	1151.0E	1152.0	1.0D	180.0			QL=1 ST=2 TYP=3
	8800	SGMR	49	GB	1734.0E	1811.0	170.0D	48000.0			QL=1 ST=2 TYP=7
	2800	OTTA	47	GB	1736.5	1813.5	105.0	9690.0	1940.0		
	8800	PALE	49	GB	1737.0E	1810.0	169.0D	49000.0			QL=1 ST=3 TYP=7
	2695	PALE	49	GB	1738.0E	1813.0	166.0D	11000.0			QL=1 ST=2 TYP=7
	2695	SGMR	49	GB	1738.0E	1813.0	166.0D	9800.0			QL=1 ST=2 TYP=7
	2800	OTTA	3	S	1858.5	1900.2	7.0	88.0	18.0		
	2800	OTTA	47	GB	1915.1	1921.5	28.7	542.0	108.0		
	2800	OTTA	29	PBI	1922.0E	1922.0U	340.0D	134.0	67.0		
	2800	OTTA	3	S	1957.7	2006.0	24.5	247.0	49.0		
	8800	LEAR	8	S	2232.0E	2232.0	1.0D	26.0			QL=1 ST=2 TYP=3
25	8800	SGMR	49	GB	1635.0E	1636.0	6.0D	2100.0			QL=1 ST=2 TYP=6
	2800	OTTA	3	S	1635.5	1636.5	4.0	105.0	21.0		
	2695	SGMR	8	S	1636.0E	1636.0	2.0D	83.0			QL=1 ST=2 TYP=3
	2800	OTTA	29	PBI	1639.5	1639.5	80.0	30.7	15.0		
26	8800	LEAR	4	S/F	0053.0E	0053.0	3.0D	37.0			QL=1 ST=2 TYP=3
	8800	SGMR	8	S	1159.0E	1200.0	2.0D	170.0			QL=1 ST=2 TYP=3
	8800	SVTO	4	S/F	1159.0E	1201.0	3.0D	110.0			QL=1 ST=2 TYP=3
	2695	SGMR	8	S	1200.0E	1200.0	U	67.0			QL=1 ST=2 TYP=3
	2800	OTTA	3	S	1529.8	1530.1	7.5	17.8	3.0		
	8800	PALE	49	GB	2044.0E	2046.0	16.0D	8200.0			QL=1 ST=2 TYP=6
	8800	SGMR	49	GB	2044.0E	2046.0	16.0D	8900.0			QL=1 ST=2 TYP=6
	2695	PALE	49	GB	2044.0E	2046.0	25.0D	940.0			QL=1 ST=2 TYP=6
	2800	OTTA	3	S	2044.5	2046.3	19.0	904.0	180.0		
	2800	OTTA	29	PBI	2103.5	2103.5	120.0	34.2	11.0		
27	8800	LEAR	8	S	0220.0E	0220.0	1.0D	43.0			QL=1 ST=2 TYP=3
	8800	SVTO	49	GB	1130.0E	1131.0	9.0D	3100.0			QL=1 ST=2 TYP=6
	2695	SVTO	49	GB	1130.0E	1131.0	16.0D	1000.0			QL=1 ST=2 TYP=6
	8800	PALE	49	GB	1859.0E	1900.0	9.0D	3200.0			QL=1 ST=2 TYP=6
	8800	SGMR	49	GB	1859.0E	1900.0	9.0D	3900.0			QL=1 ST=2 TYP=6
	2695	PALE	49	GB	1859.0E	1900.0	20.0D	1100.0			QL=1 ST=2 TYP=6
	2695	SGMR	49	GB	1859.0E	1901.0	301.0D	1100.0			QL=1 ST=1 TYP=6
	2800	OTTA	3	S	1859.4	1901.2	19.0	1064.0	213.0		
	2800	OTTA	29	PBI	1918.5	1918.5	118.0	30.1	9.0		
28	8800	LEAR	8	S	0503.0E	0503.0	U	18.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0503.0E	0503.0	1.0D	21.0			QL=1 ST=2 TYP=3
	2695	SVTO	49	GB	1119.0E	1124.0	12.0D	800.0			QL=1 ST=2 TYP=6
	8800	SVTO	49	GB	1120.0E	1121.0	6.0D	620.0			QL=1 ST=2 TYP=6
29	2695	PALE	20	GRF	0304.0E	0306.0	5.0D	78.0			QL=1 ST=2 TYP=2
	8800	LEAR	49	GB	0357.0E	0406.0	45.0D	1100.0			QL=1 ST=2 TYP=7
	2695	LEAR	49	GB	0401.0E	0408.0	41.0D	1000.0			QL=1 ST=2 TYP=7
	8800	LEAR	4	S/F	0452.0E	0453.0	6.0D	34.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0453.0E	0453.0	1.0D	23.0			QL=1 ST=2 TYP=3

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

OCTOBER 1989

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
29	2695	SVTO	4 S/F	0548.0E	0550.0	6.0D	63.0			QL=1 ST=2 TYP=3
	2695	PENT	4 S/F	2114.0	2137.6	150.0D	162.0	32.0		
	8800	PALE	4 S/F	2137.0E	2139.0	4.0D	61.0			QL=1 ST=2 TYP=3
31	8800	LEAR	4 S/F	0339.0E	0340.0	4.0D	49.0			QL=1 ST=2 TYP=3
	2695	LEAR	4 S/F	0340.0E	0341.0	6.0D	59.0			QL=1 ST=2 TYP=3
	2695	SVTO	4 S/F	0543.0E	0545.0	4.0D	53.0			QL=1 ST=2 TYP=3
	8800	SVTO	8 S	1216.0E	1216.0	U	110.0			QL=1 ST=2 TYP=3
	2800	OTTA	4 S/F	1541.0	1615.5	170.0	80.7	16.0		
	2695	SGMR	4 S/F	1612.0E	1615.0	7.0D	63.0			QL=1 ST=2 TYP=3
	2800	OTTA	3 S	1854.2	1855.5	2.5	14.3	3.0		
	2695	PENT	4 S/F	2038.7	2039.6	4.5	56.1	11.0		
	2695	PALE	8 S	2039.0E	2039.0	1.0D	56.0			QL=1 ST=2 TYP=3
	2695	SGMR	8 S	2039.0E	2039.0	1.0D	62.0			QL=1 ST=2 TYP=3
	8800	SGMR	4 S/F	2039.0E	2039.0	201.0D	90.0			QL=1 ST=1 TYP=3
	8800	PALE	8 S	2042.0E	2043.0	2.0D	73.0			QL=1 ST=2 TYP=3
	2695	PALE	8 S	2042.0E	2042.0	2.0D	63.0			QL=1 ST=2 TYP=3
	2695	SGMR	8 S	2042.0E	2042.0	2.0D	51.0			QL=1 ST=2 TYP=3
	2695	PENT	4 S/F	2042.4	2042.8	2.7	65.3	13.0		
	8800	SGMR	8 S	2043.0E	2043.0	U	70.0			QL=1 ST=2 TYP=3
	2695	PENT	31 ABS	2045.1	2058.0	30.0	-7.2	-3.0		

Reports are received routinely from the following observatories:

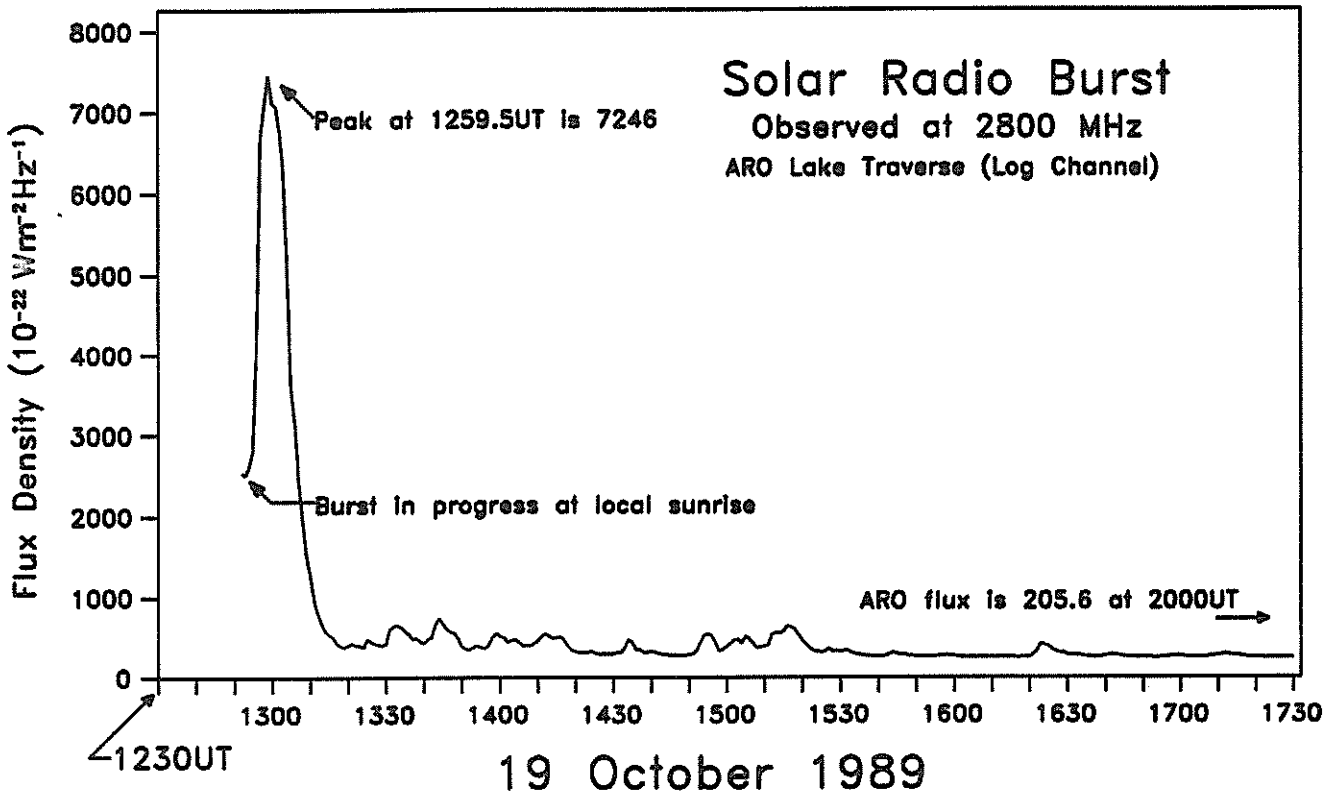
BERN = Berne LEAR = Learmonth PALE = Palehua SGMR = Sagamore Hill
OTTA = Ottawa PENT = Penticton SVTO = San Vito

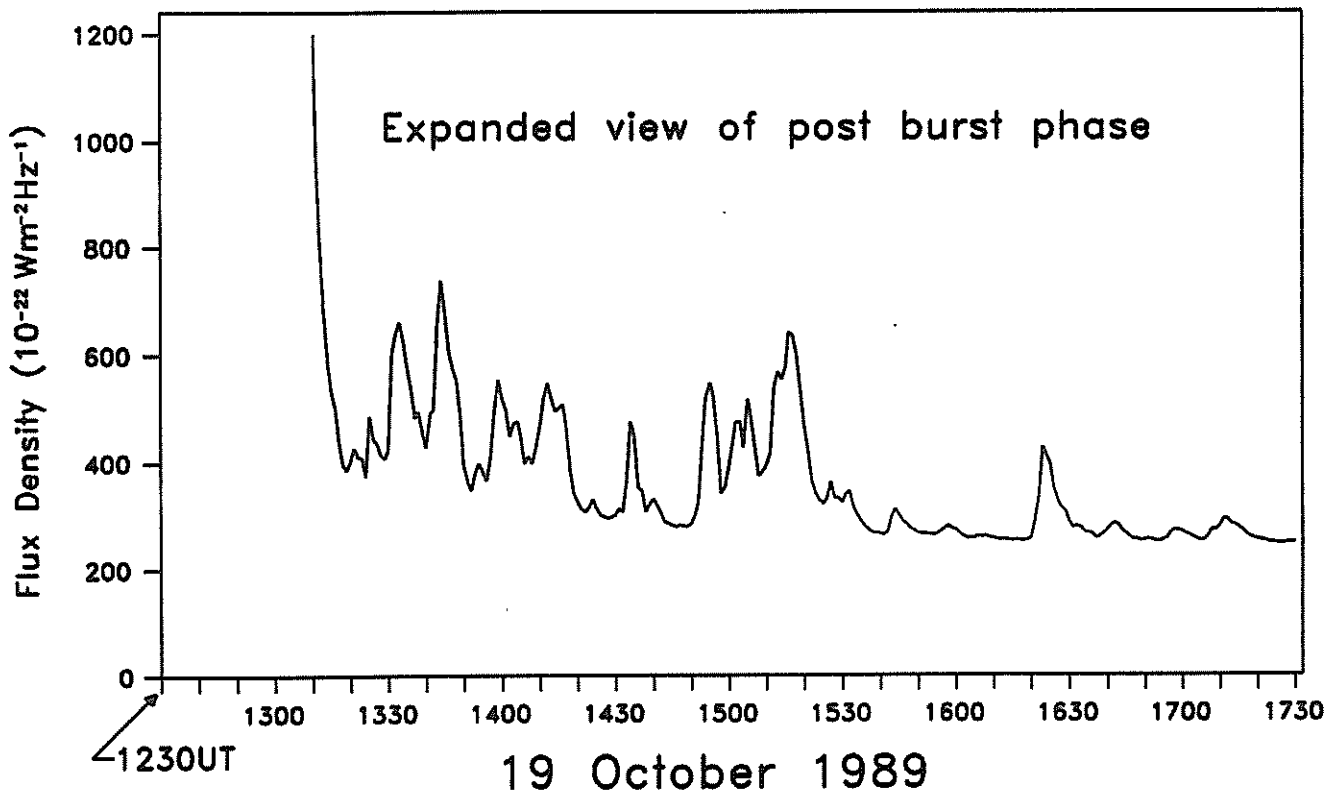
Explanation of Type Code:

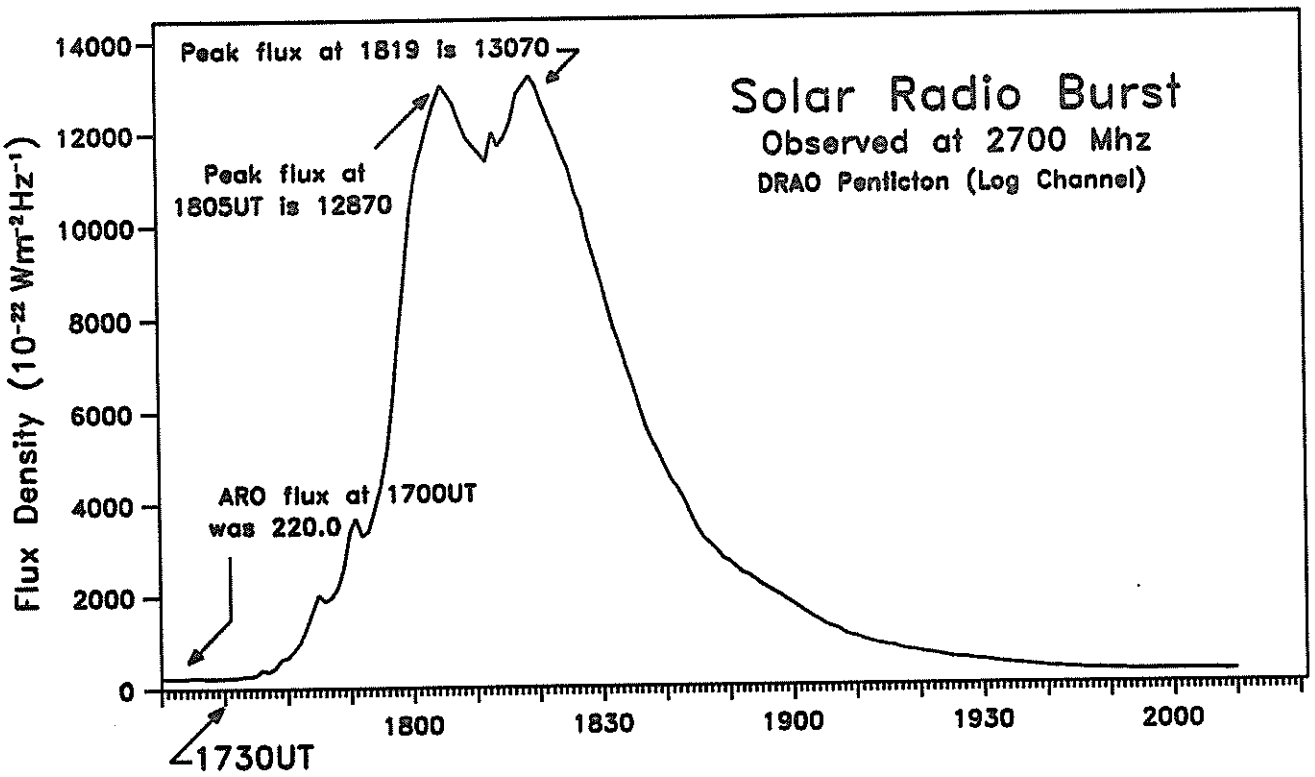
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset of Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	33 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple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

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

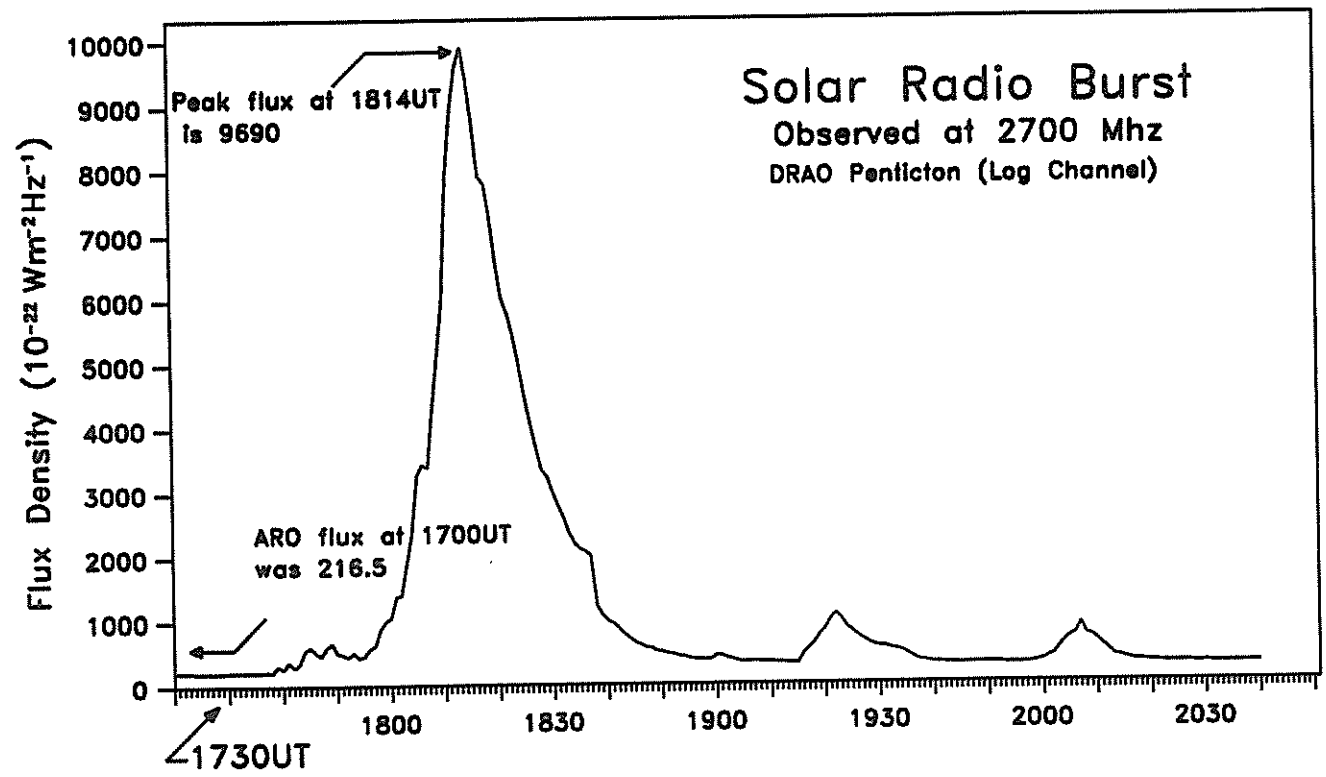
RSTN Site Information: Beginning in April 1986, the RSTN sites LEAR, PALE, SGMR, and SVTO fixed frequency solar radio data are periodically adjusted to several world standard stations. These world standard stations include: Kislovodsk, USSR 15,500 MHz; Ottawa, Canada 2800 MHz; Hiraiso, Japan 500 and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


Solar Radio Burst
Observed at 2800 MHz
ARO Lake Traverse (Log Channel)
Peak at 1259.5UT is 7246
Burst in progress at local sunrise
ARO flux is 205.6 at 2000UT
Flux Density (10⁻²² Wm⁻²Hz⁻¹)
8000
7000
6000
5000
4000
3000
2000
1000
0
1300
1330
1400
1430
1500
1530
1600
1630
1700
1730
1230UT
19 October 1989


Expanded view of post burst phase
Flux Density (10⁻²² Wm⁻²Hz⁻¹)
1200
1000
800
600
400
200
0
1300
1330
1400
1430
1500
1530
1600
1630
1700
1730
1230UT
19 October 1989

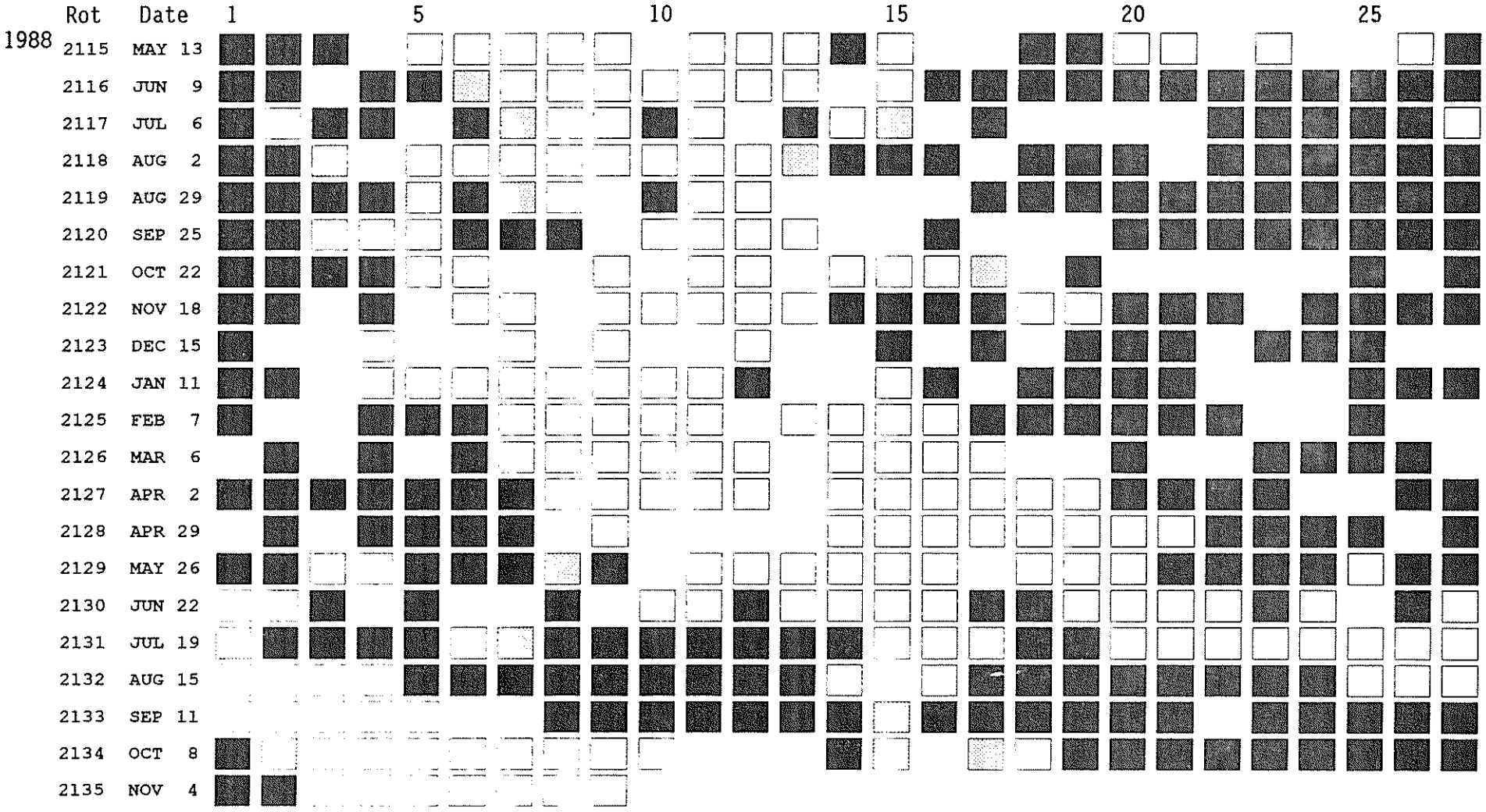


22 October 1989



24 October 1989

STANFORD MEAN SOLAR MAGNETIC FIELD



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

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

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

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

Day	1988 Nov	Dec	1989 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	23	-3	.	.	.	.	.	-5	4	-145	-58	-43
2	24	-5	-19	.	.	-97	-47	-1	51	80	-46	.
3	.	-4	-22	.	-66	-114	-31	-22	-19	121	-37	-87
4	40	-12	-41	-65	.	-86	-22	.	3	14	-37	-84
5	19	2	.	-46	.	-76	-22	2	71	-51	-46	-35
6	3	4	-65	-4	.	-62	.	56	69	-65	-30	-22
7	0	-24	-85	-13	-10	-28	65	74	25	9	-5	-13
8	.	-27	-101	.	.	-15	.	120	-90	145	22	-5
9	-9	-33	.	.	-58	25	.	145	-79	86	25	0
10	.	.	.	-16	.	71	.	142	106	82	12	2
11	.	-62	-16	-6	-16	101	.	.	115	59	23	10
12	.	-47	-23	-18	37	78	73	37	84	43	23	38
13	.	-53	.	23	39	54	87	34	73	43	43	33
14	.	-38	10	34	61	.	75	24	-55	55	44	26
15	-35	-30	24	55	63	44	76	-58	22	57	25	31
16	.	.	23	73	40	11	73	-26	.	66	.	17
17	-46	.	16	66	32	15	59	-91	-49	33	.	5
18	-43	34	74	.	.	19	53	-6	6	2	-13	.
19	-46	.	101	116	64	29	22	4	0	-10	-22	.
20	.	.	120	131	73	27	-37	-67	-138	-20	-20	.
21	-19	56	119	94	14	-21	-44	-18	-126	-35	-21	-88
22	.	.	-29	40	12	-68	-48	35	-57	-41	-26	0
23	29	61	.	-13	.	-6	-54	15	-25	-29	-31	.
24	31	.	.	-7	.	-110	.	-15	10	-15	-21	1
25	.	.	22	-35	-50	.	-44	.	-2	-13	-1	5
26	30	65	-37	-64	.	.	-14	-24	-15	-15	-8	-19
27	31	.	.	-108	.	-80	-13	.	-52	-7	-19	-56
28	24	.	-50	-93	-110	-77	1	.	-27	4	-16	-70
29	26	-5	-64		-105	.	7	-30	-12	.	-24	-100
30	18	.	-91		-106	-64	-12	.	-44	3	-26	-110
31		-24	-101		-100		-5		-144	-29		-104

Dot symbol indicates no data available for the day.

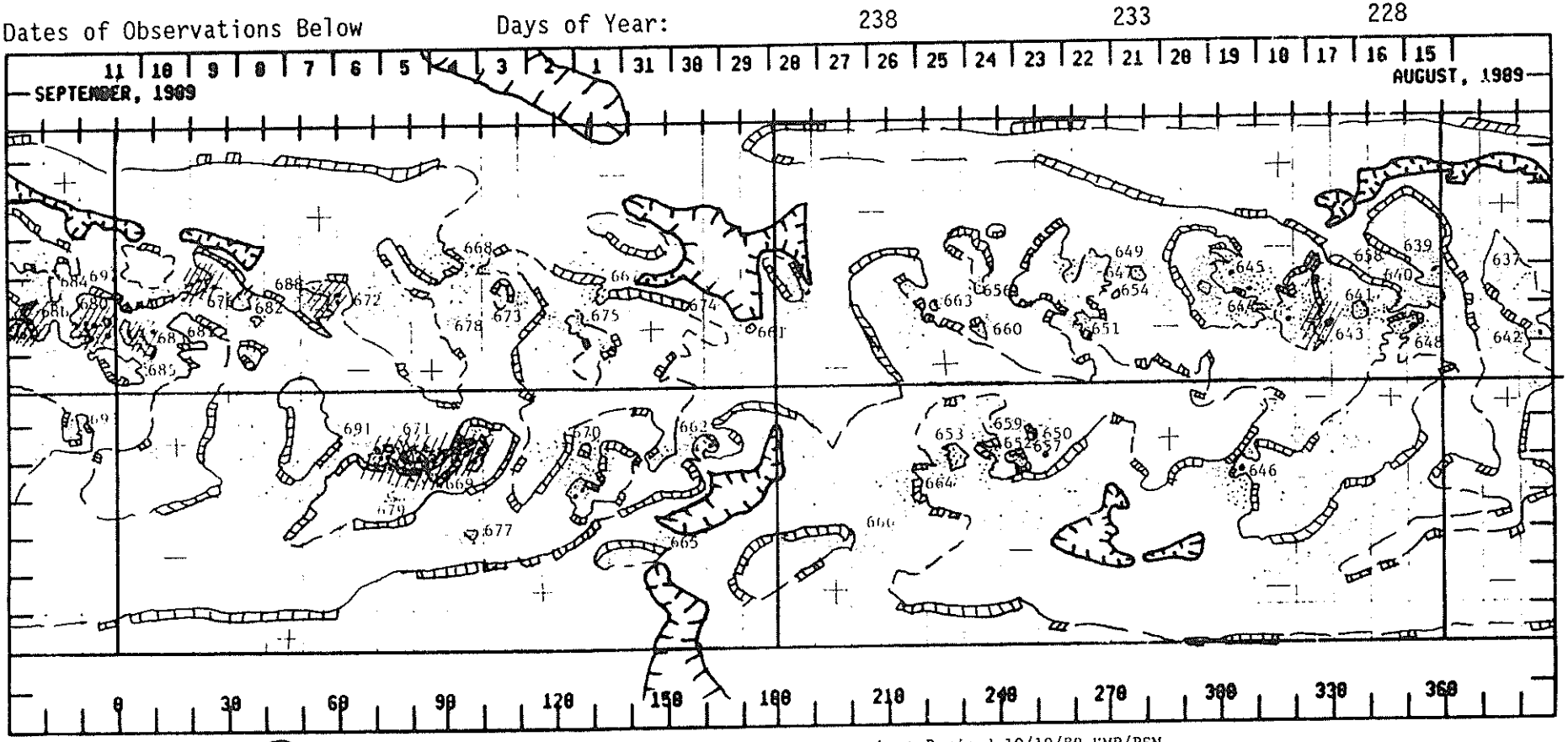
CONTENTS

Prompt Reports DATA FOR **SEPTEMBER 1989** Number 543 Part I

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

PRELIMINARY H-ALPHA SOLAR SYNOPTIC CHART

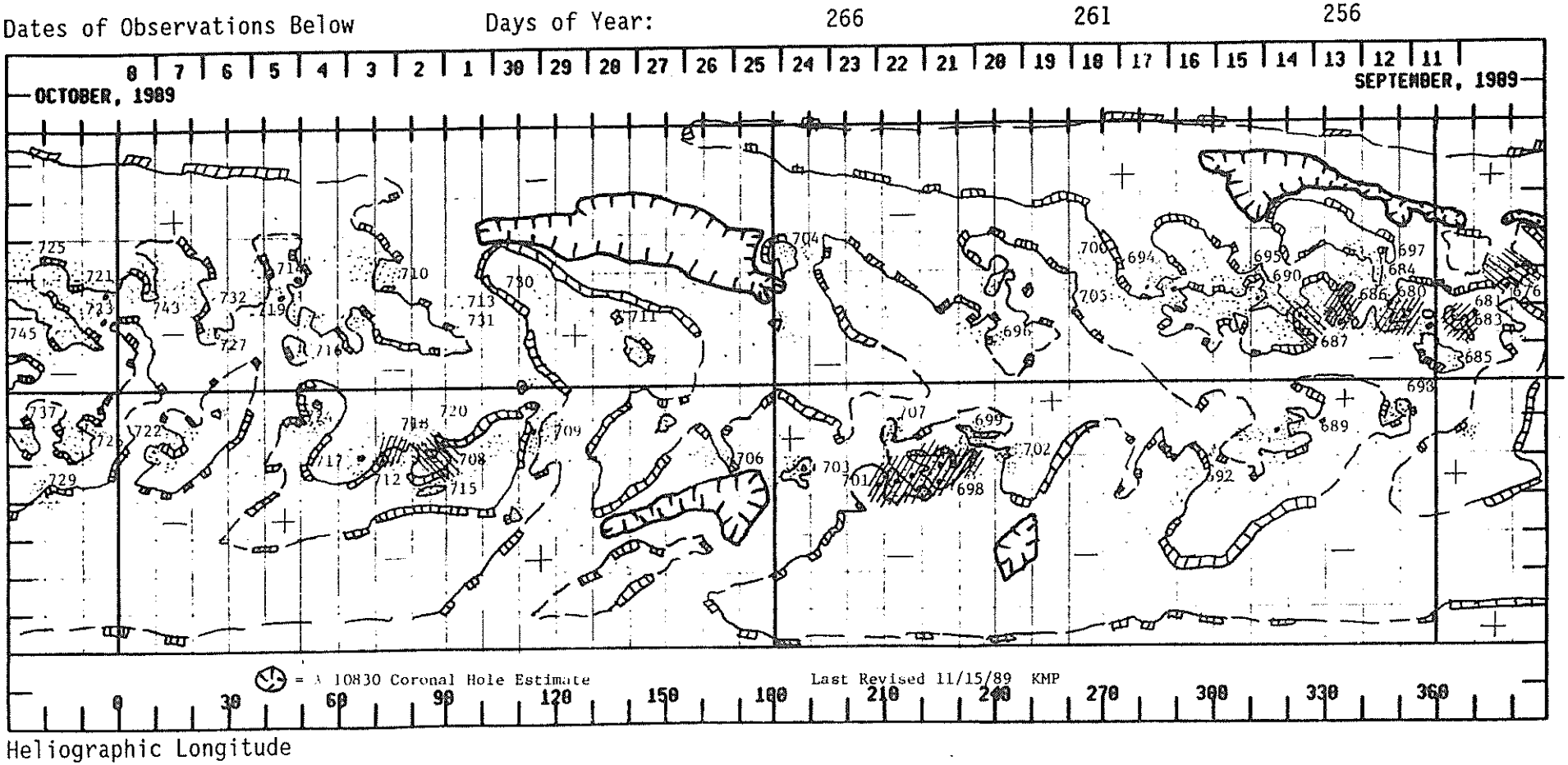
CARRINGTON ROTATION NUMBER 1819
(15 August to 11 September 1989)



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

CARRINGTON ROTATION NUMBER 1820

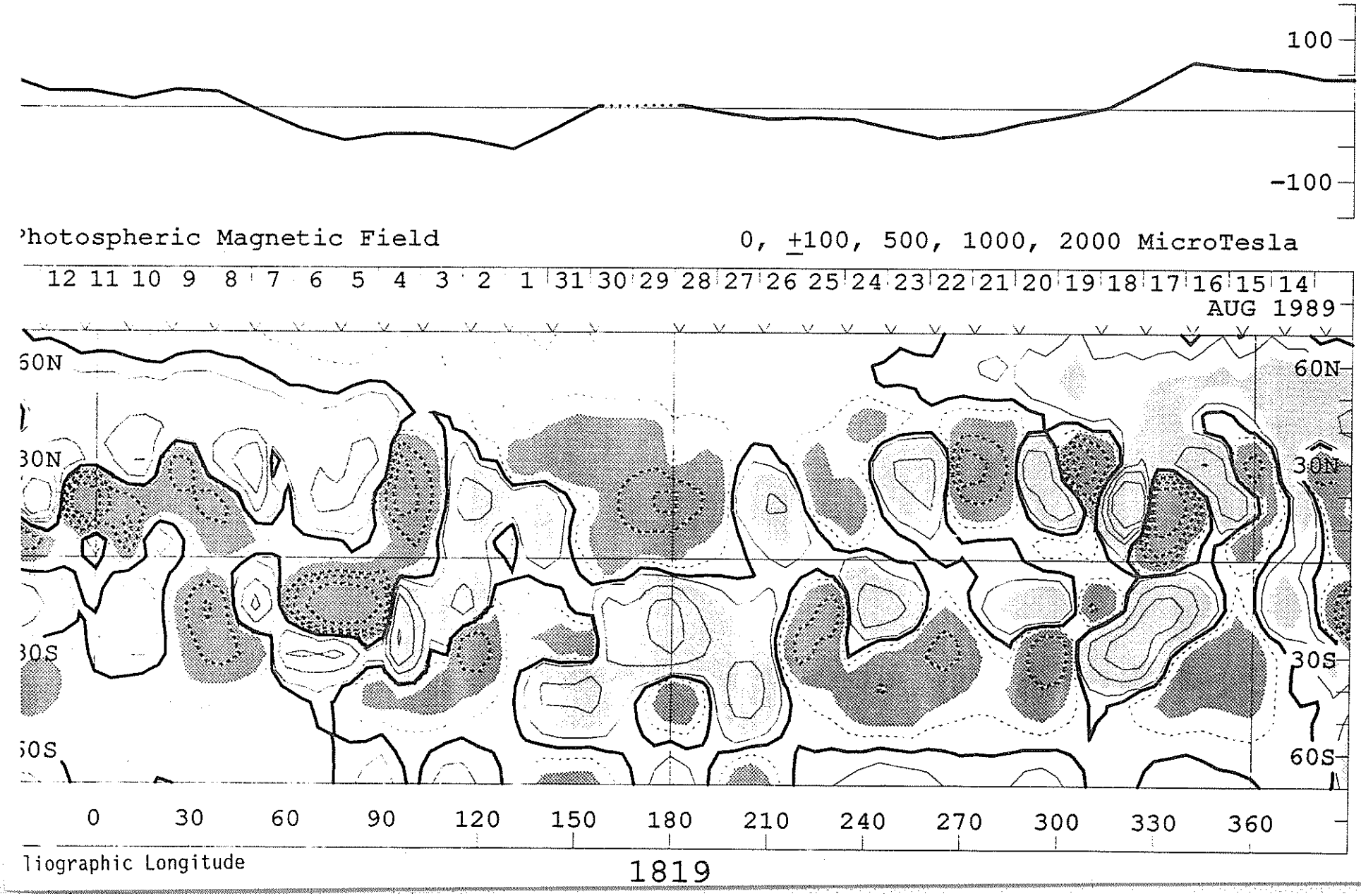
(11 September to 8 October 1989)



SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1819
(15 August to 11 September 1989)

WILCOX SOLAR OBSERVATORY



SOLAR MAGNETIC FIELD SYNOPTIC CHART

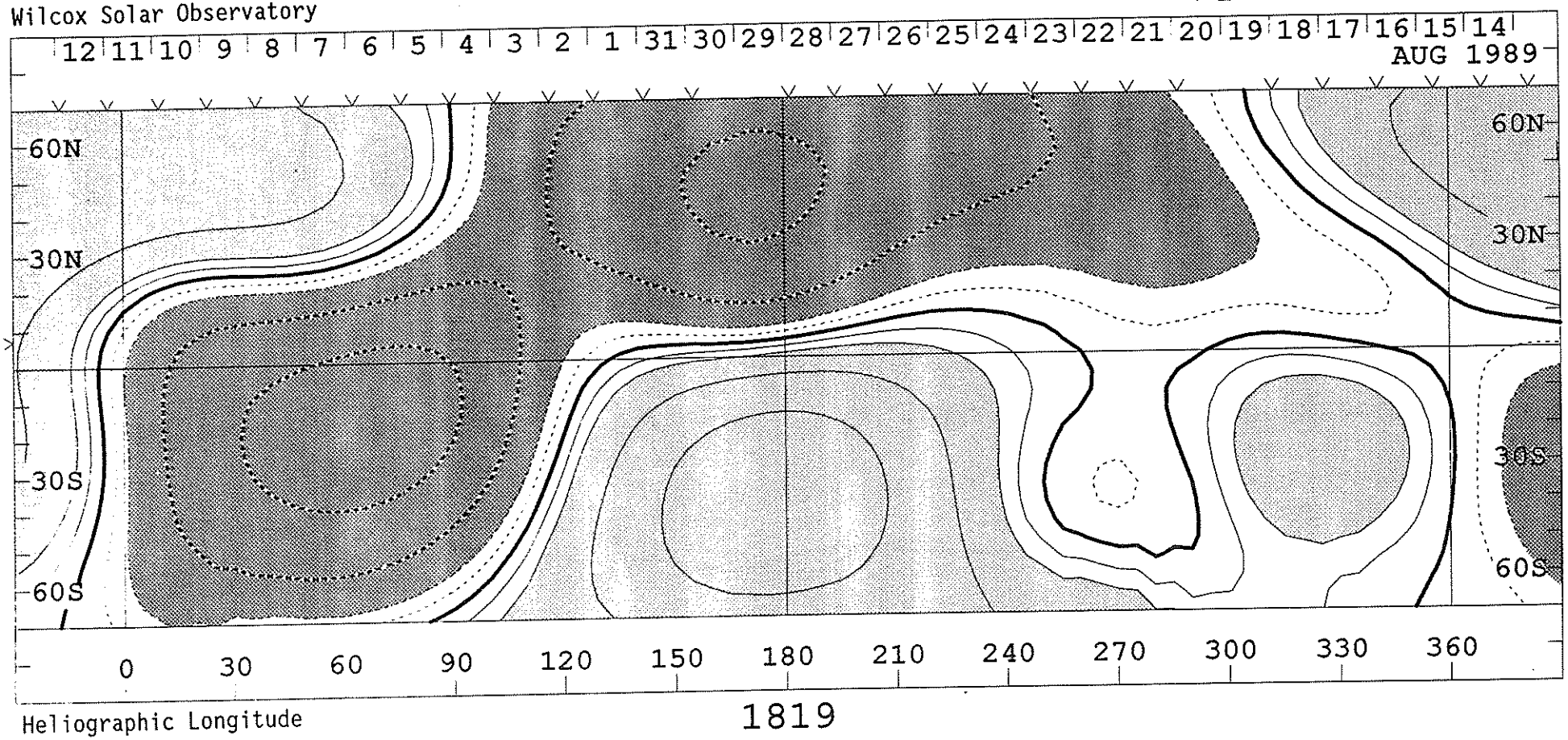
SOURCE SURFACE FIELD

CARRINGTON ROTATION NUMBER 1819

(15 August to 11 September 1989)

0, ±1, 2, 5, 10, 20 microTesla

Wilcox Solar Observatory

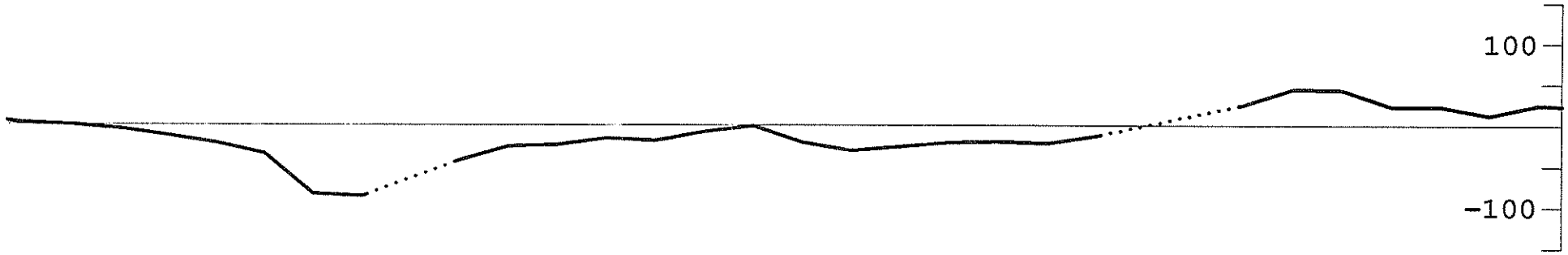


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1820
(11 September to 8 October 1989)

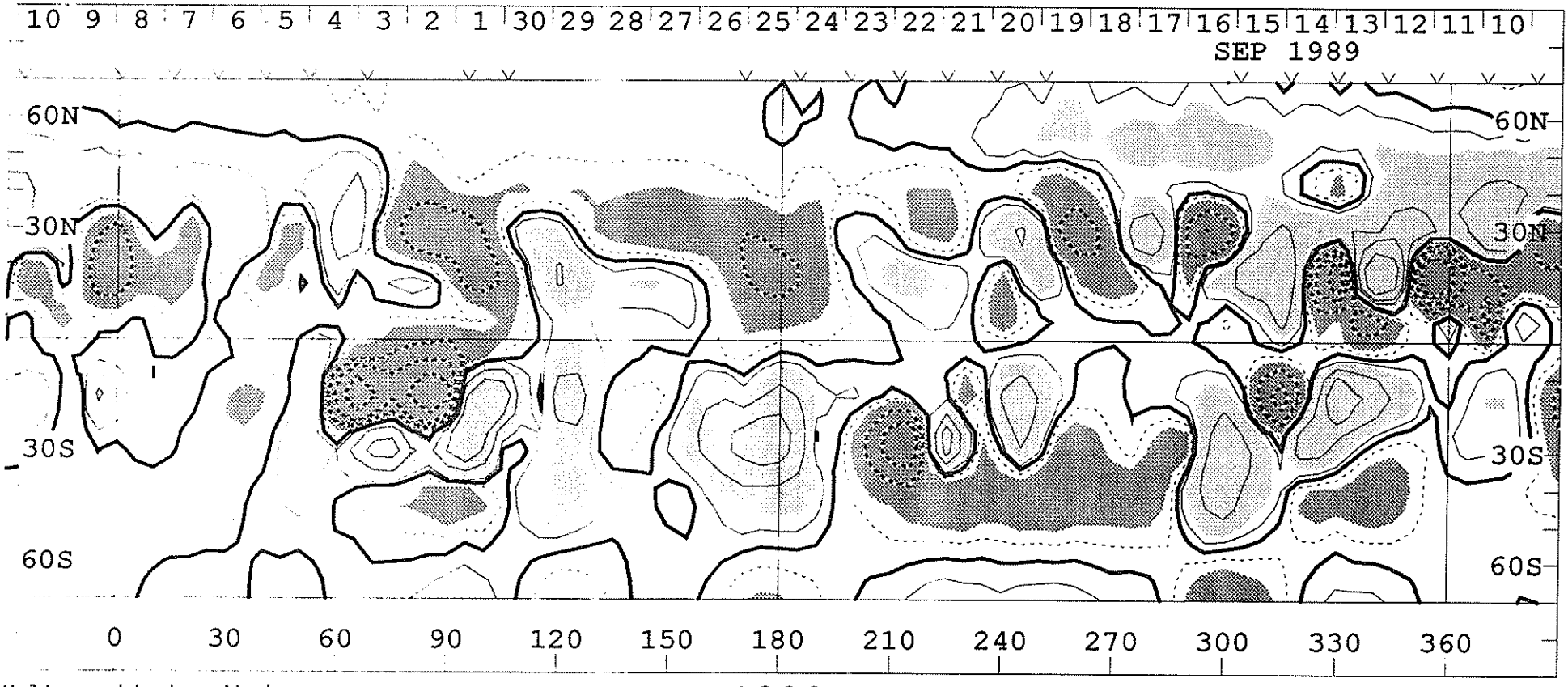
WILCOX SOLAR OBSERVATORY

Mean Field



Photospheric Magnetic Field

0, ±100, 500, 1000, 2000 MicroTesla



SOLAR MAGNETIC FIELD SYNOPTIC CHART

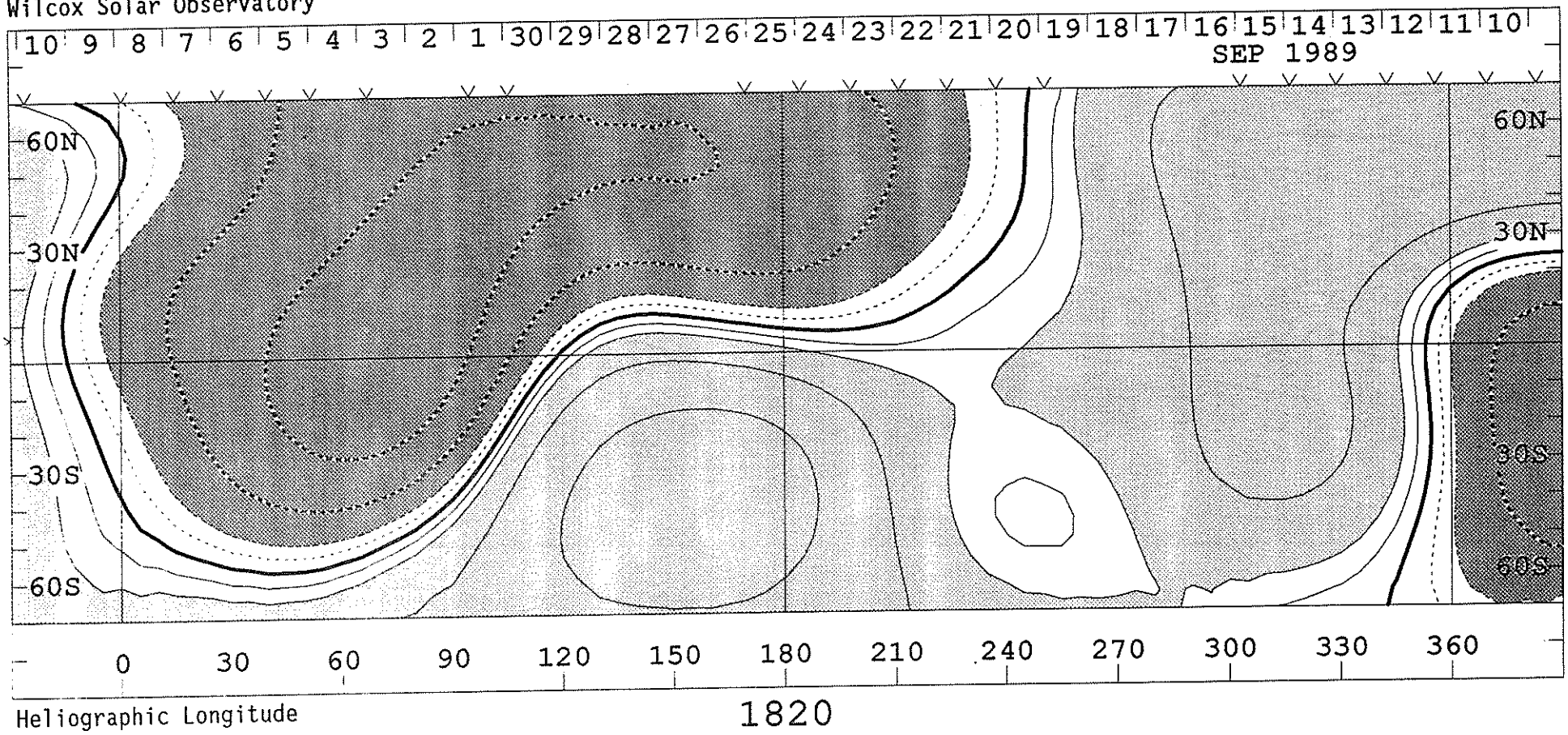
SOURCE SURFACE FIELD

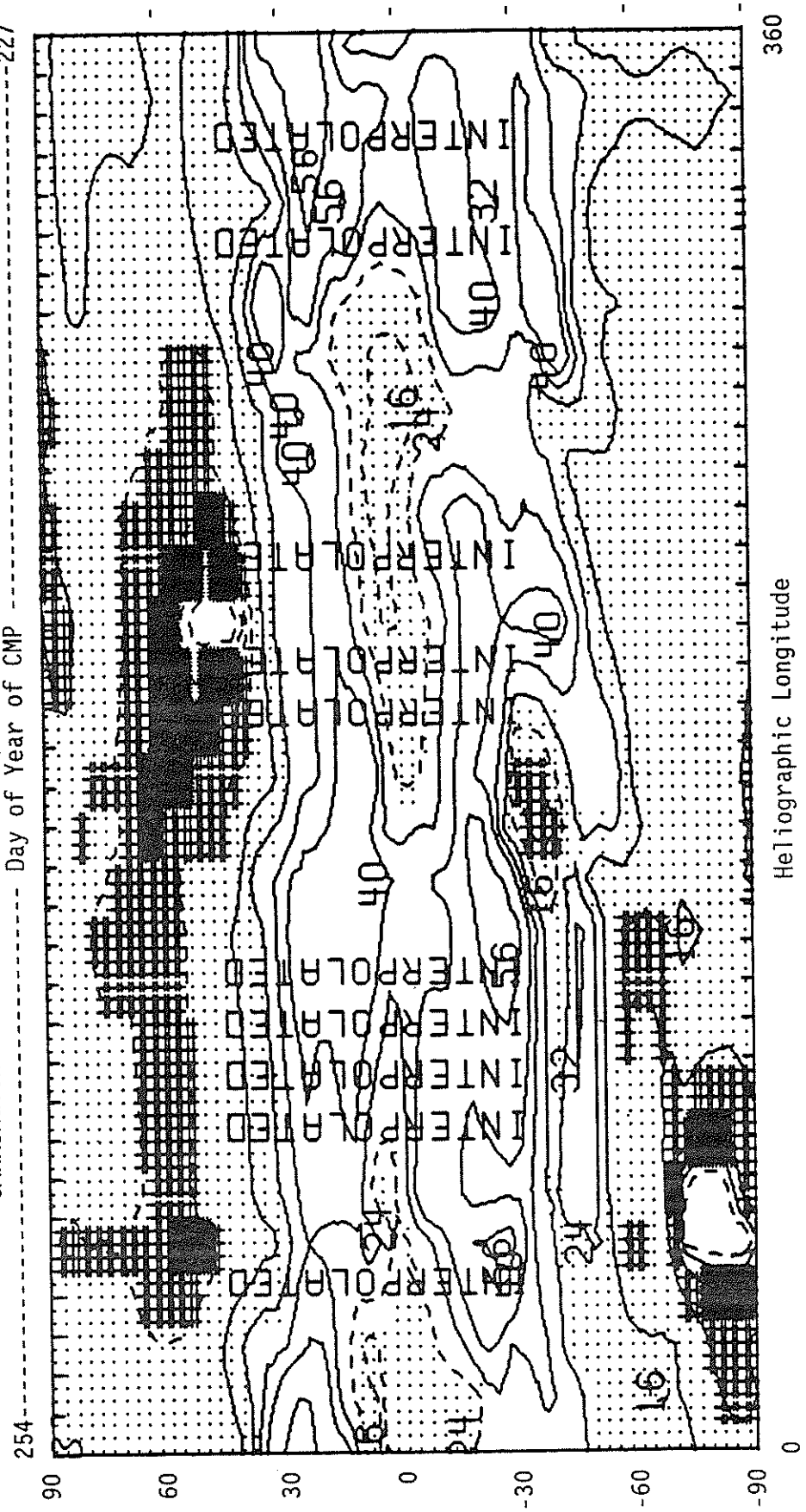
CARRINGTON ROTATION NUMBER 1820

(11 September to 8 October 1989)

Wilcox Solar Observatory

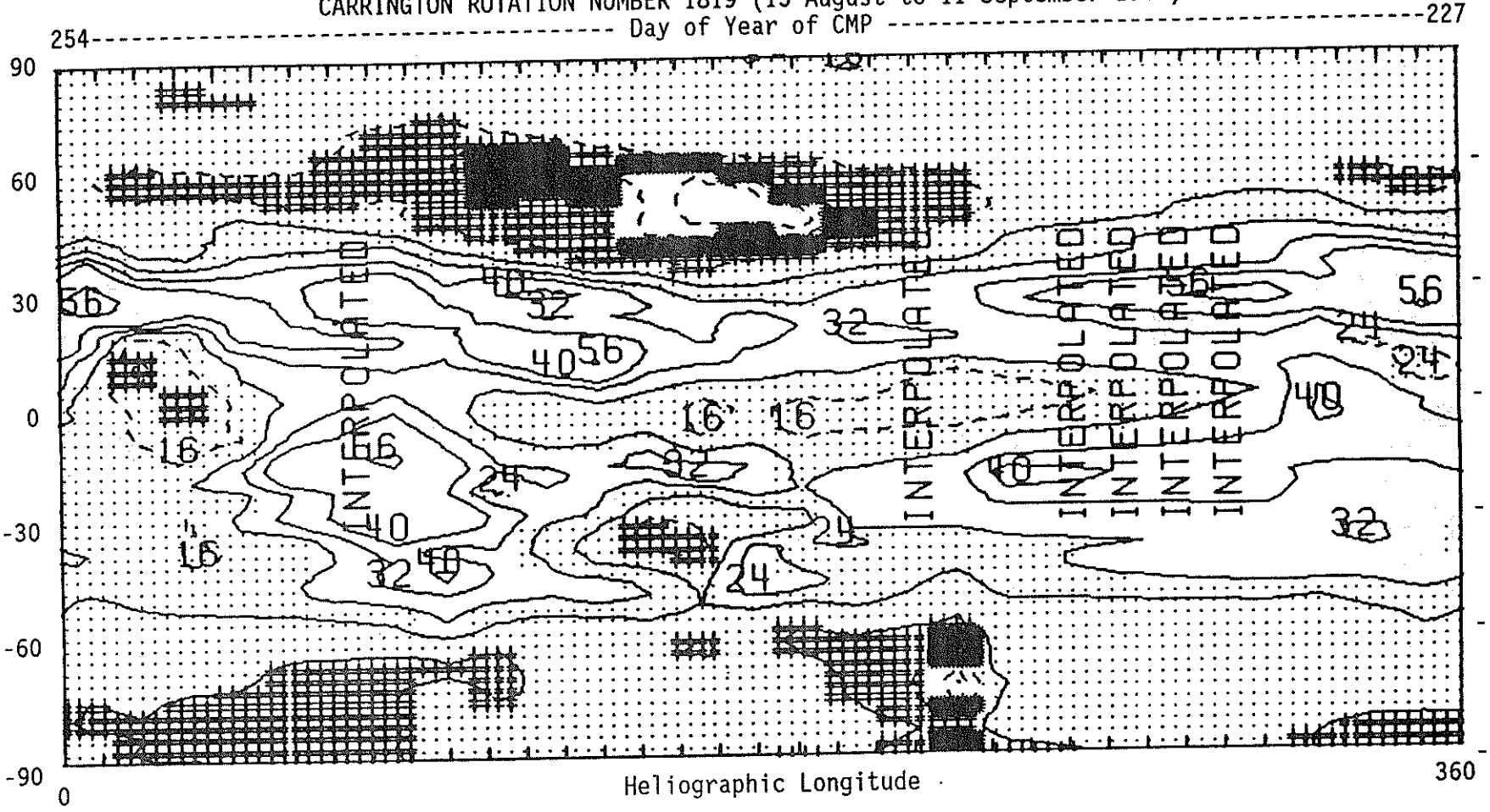
0, ±1, 2, 5, 10, 20 microTesla




SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1819 (15 August to 11 September 1989)
254---------- Day of Year of CMP ----------227
90
60
30
0
-30
-60
-90
0
360
Heliographic Longitude
INTERPOLATED

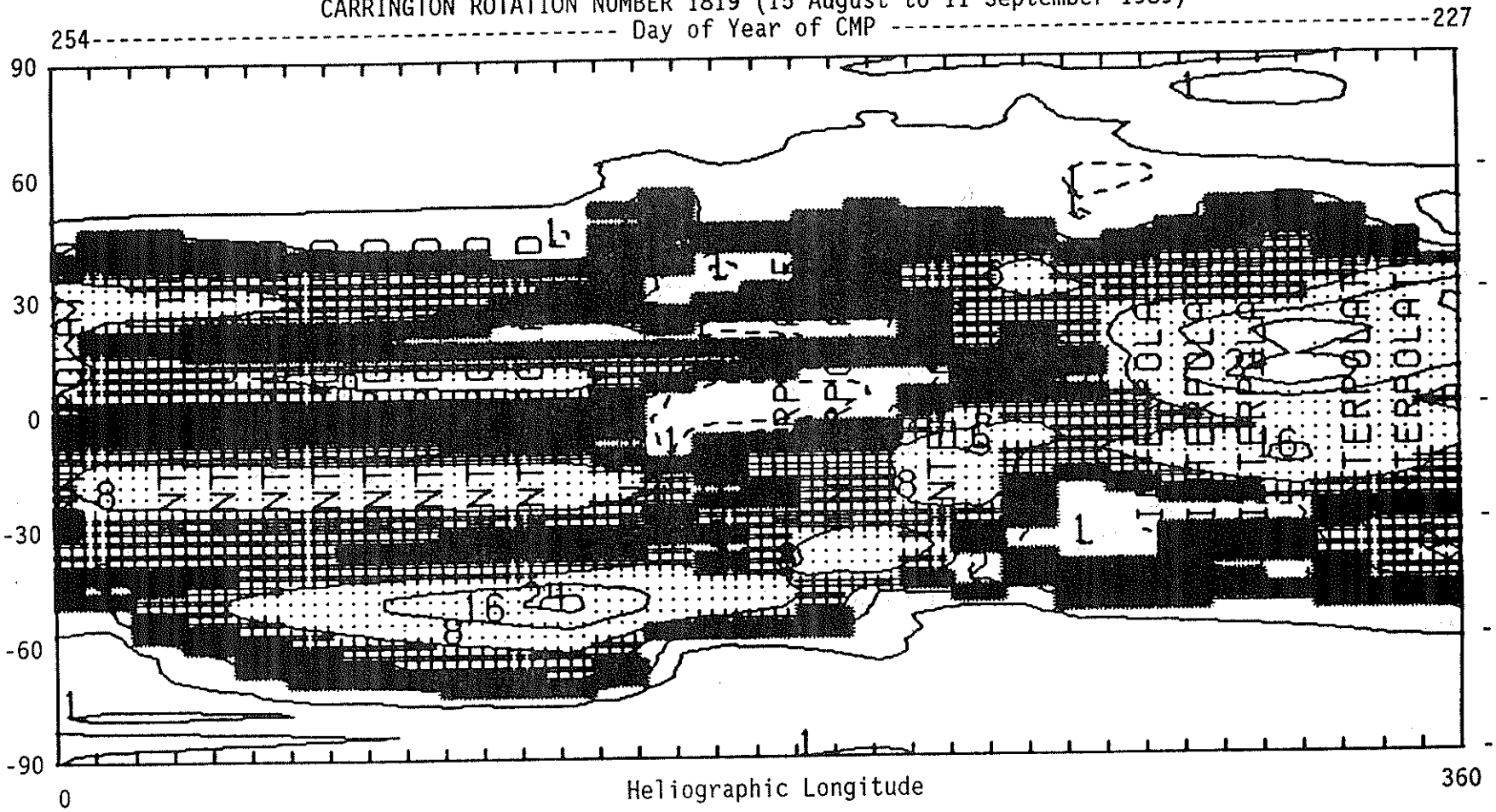
SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--WEST LIMB

CARRINGTON ROTATION NUMBER 1819 (15 August to 11 September 1989)



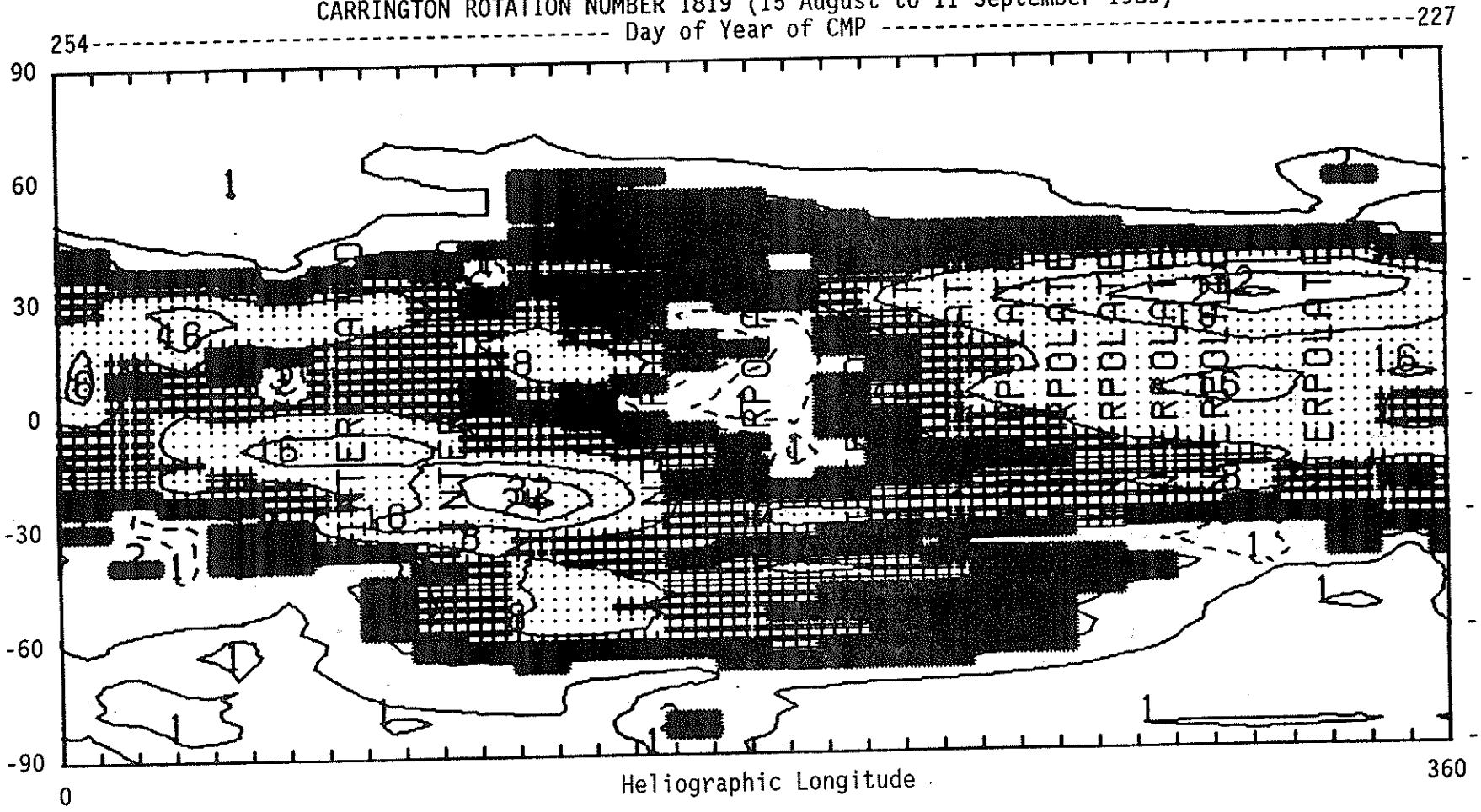
SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--EAST LIMB

CARRINGTON ROTATION NUMBER 1819 (15 August to 11 September 1989)

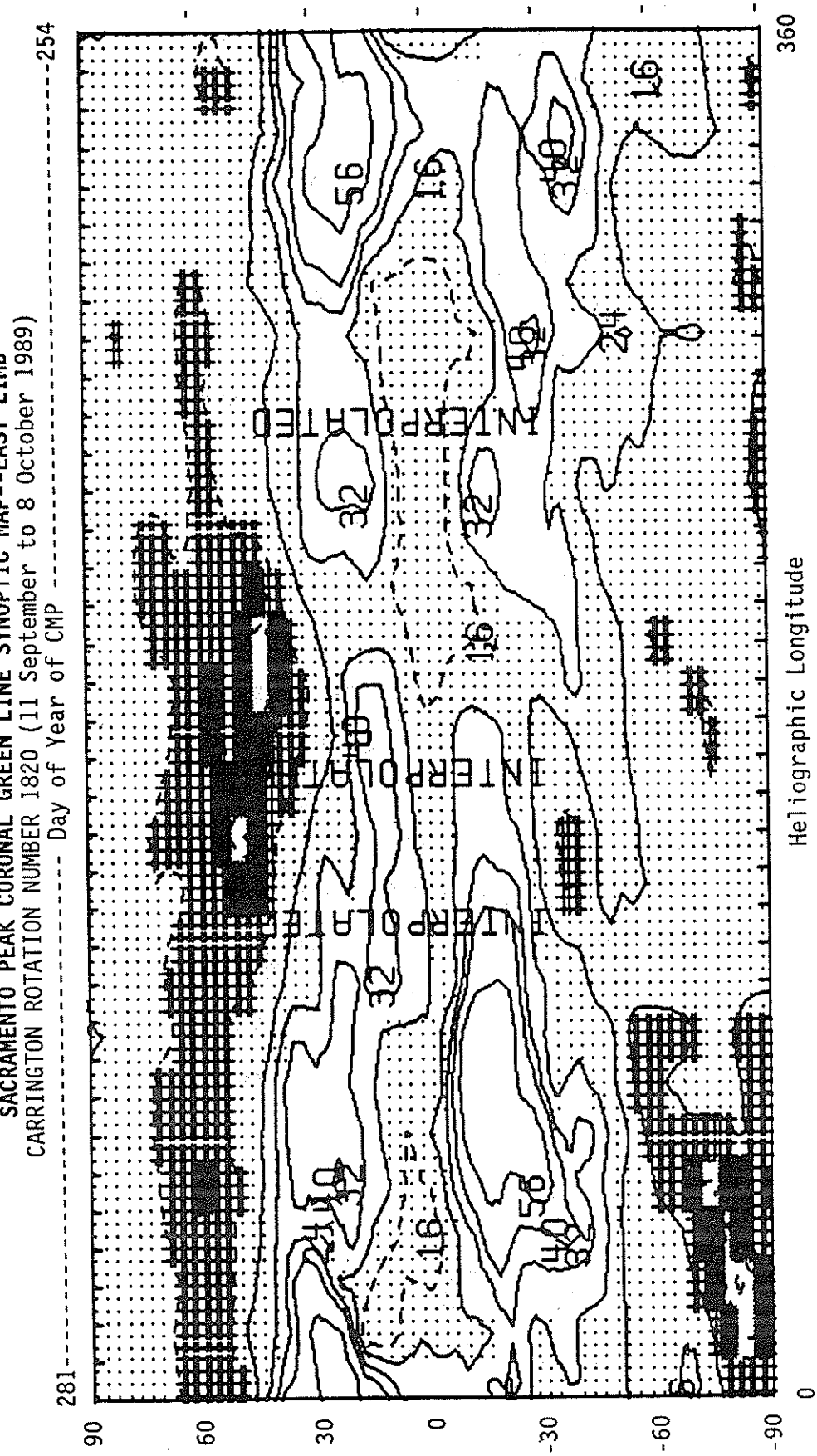


SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--WEST LIMB

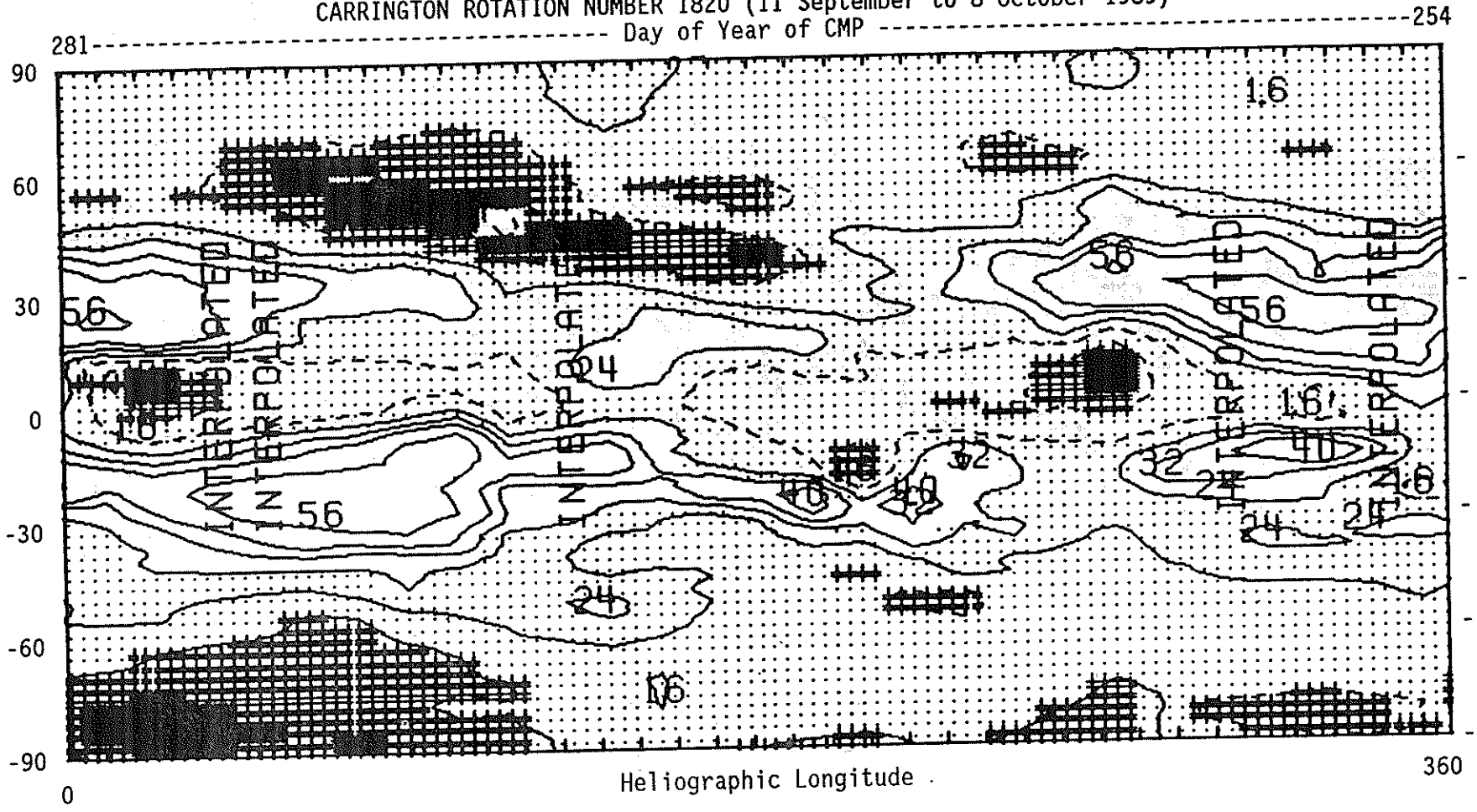
CARRINGTON ROTATION NUMBER 1819 (15 August to 11 September 1989)

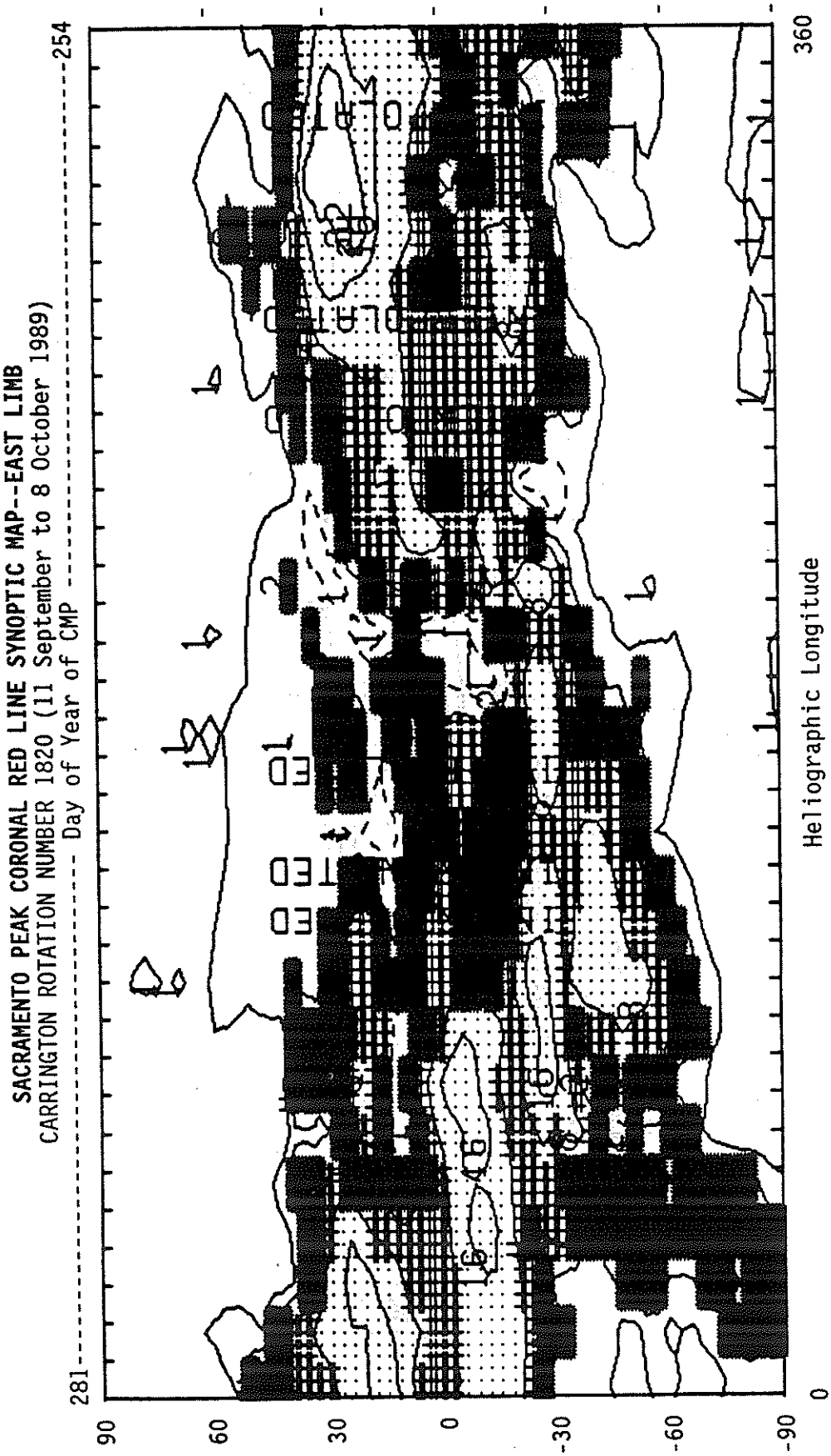


Sep 89
69

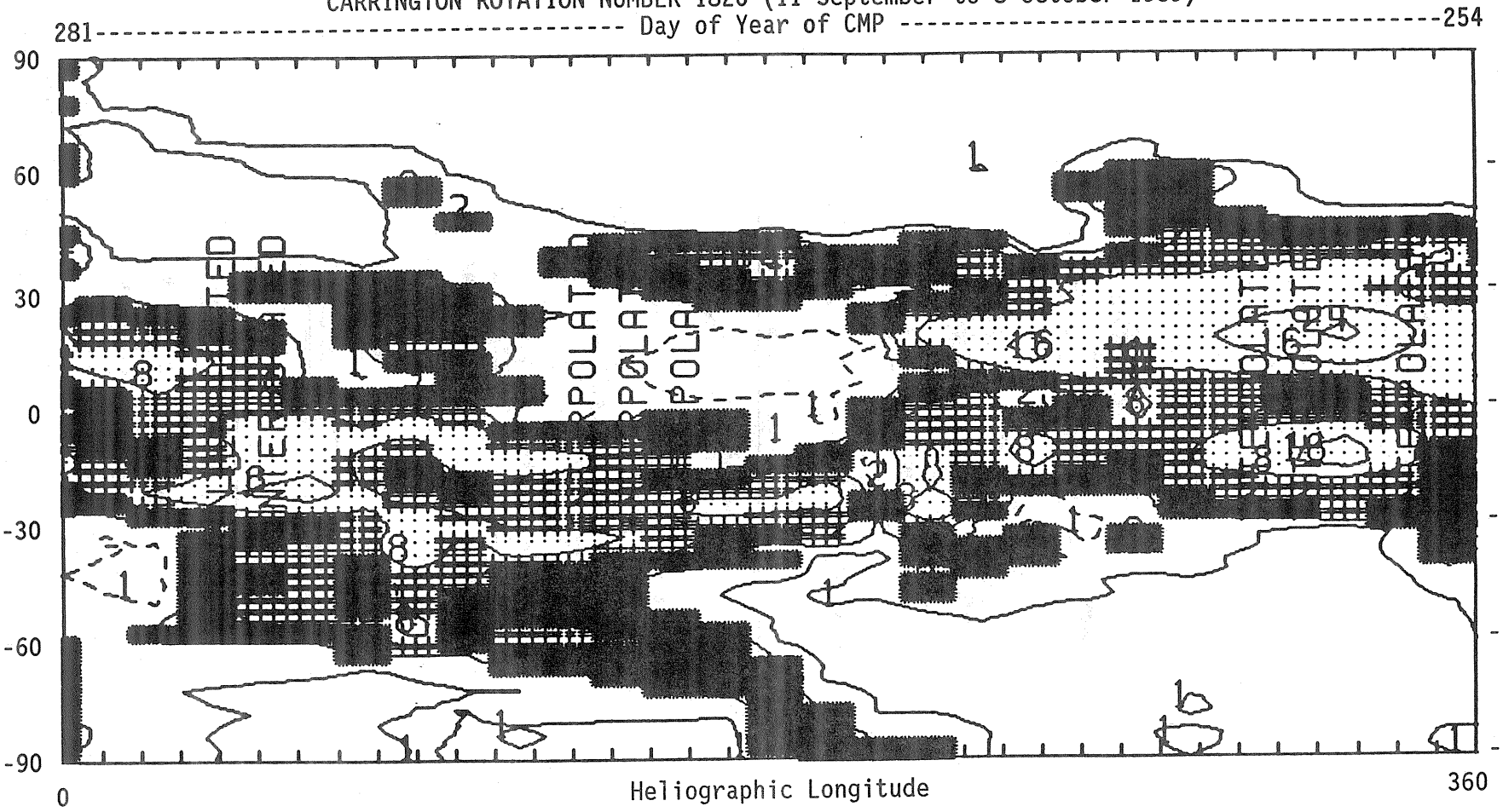

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1820 (11 September to 8 October 1989)
281 ---------- Day of Year of CMP ---------- 254
90
60
30
0
-30
-60
-90
0
360
Heliographic Longitude
INTERPOLATED
INTERPOLATED
INTERPOLATED
16
32
48
56
40
24

SACRAMENTO PEAK CORONAL GREEN LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1820 (11 September to 8 October 1989)




SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--EAST LIMB
CARRINGTON ROTATION NUMBER 1820 (11 September to 8 October 1989)
281---------- Day of Year of CMP ----------254
90
60
30
0
-30
-60
-90
0
360
Heliographic Longitude

SACRAMENTO PEAK CORONAL RED LINE SYNOPTIC MAP--WEST LIMB
CARRINGTON ROTATION NUMBER 1820 (11 September to 8 October 1989)

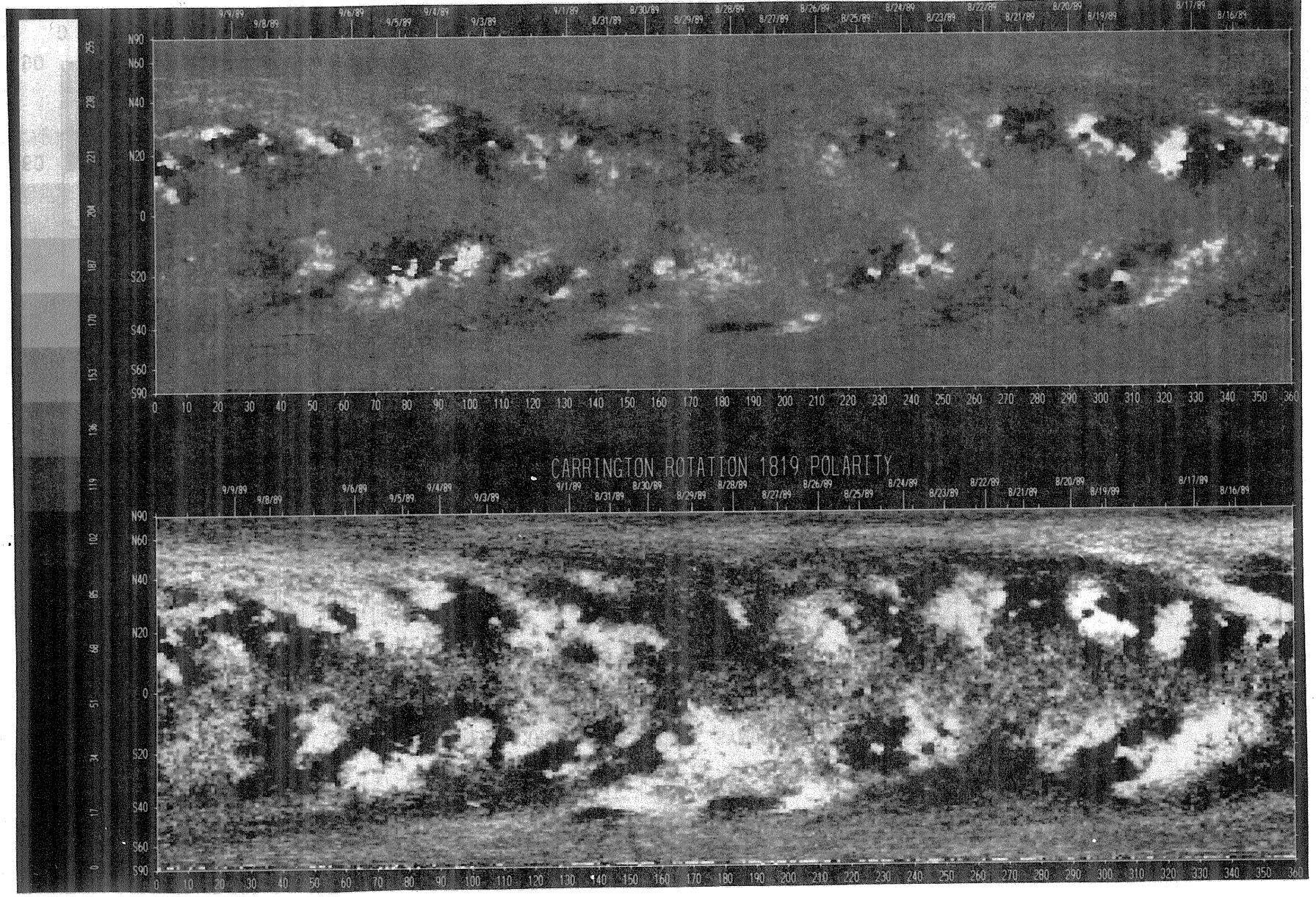


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1819
(15 August to 11 September 1989)

Kitt Peak National Observatory

Dates of Observation



Heliographic Longitude

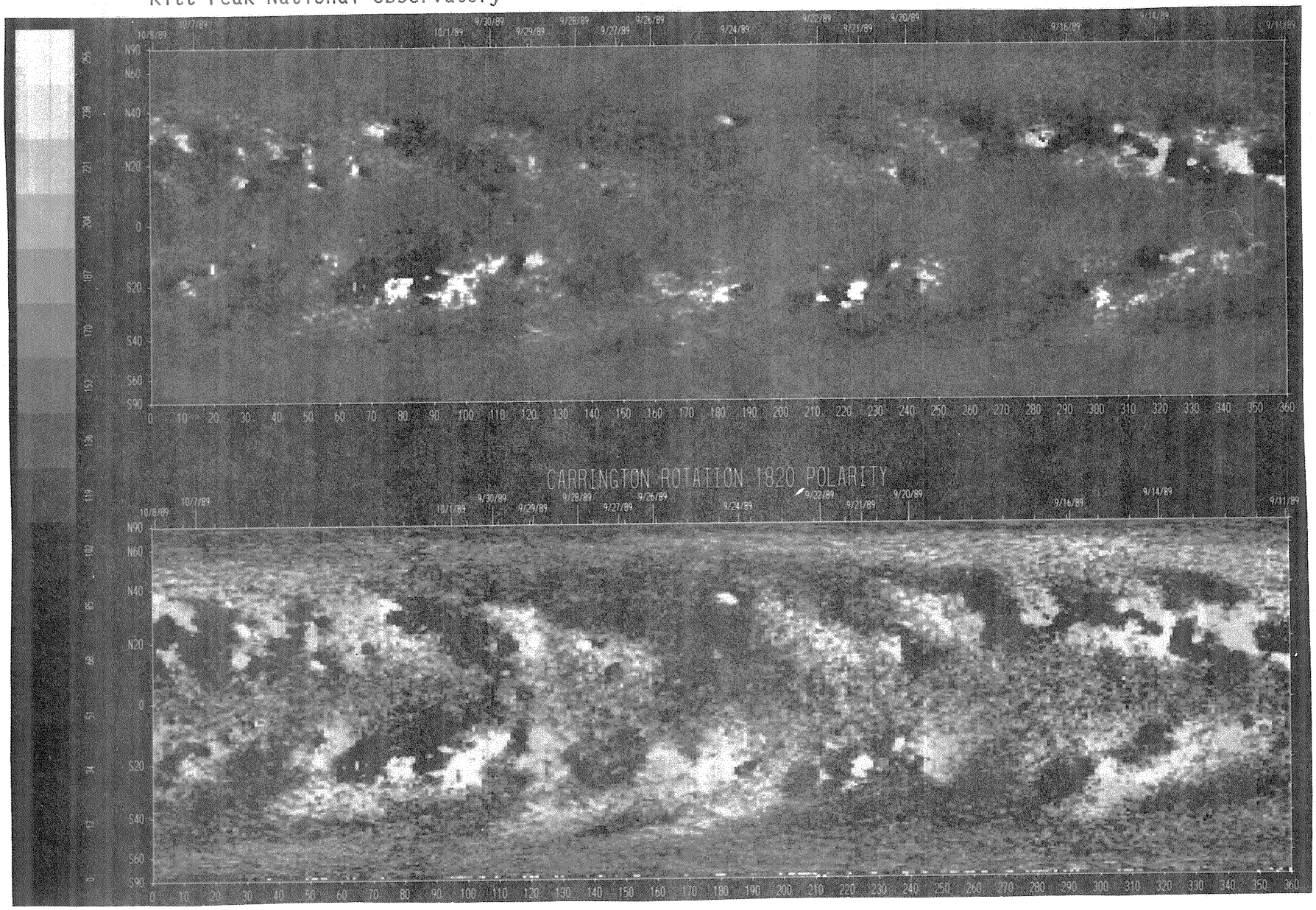
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1820

(11 September to 8 October 1989)

Kitt Peak National Observatory

Dates of Observation

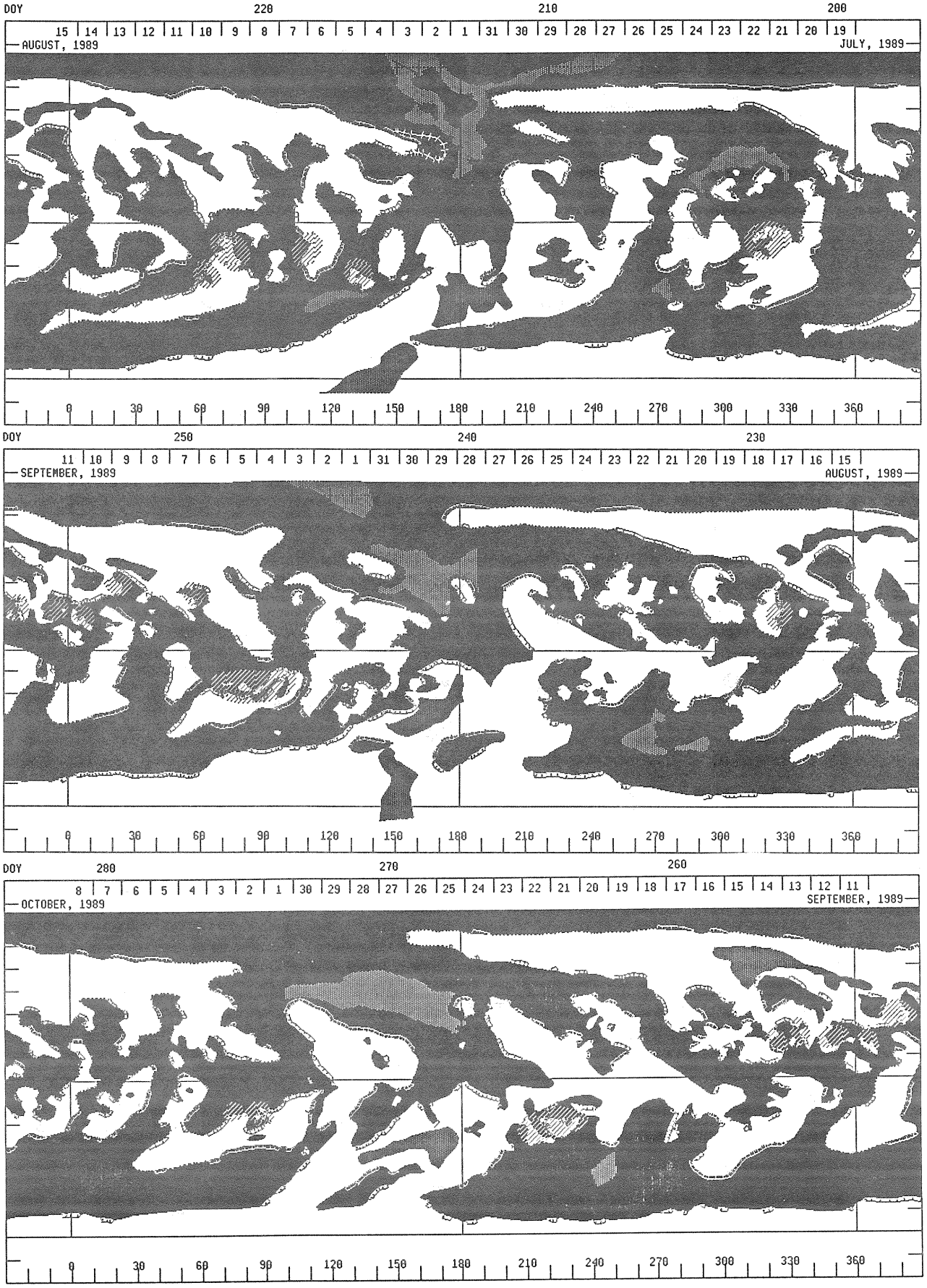


Heliographic Longitude

75 Sep 89

SHADED H-ALPHA SOLAR SYNOPTIC CHARTS

Carrington Rot. 1818-1820 — 19 July to 8 October 1989

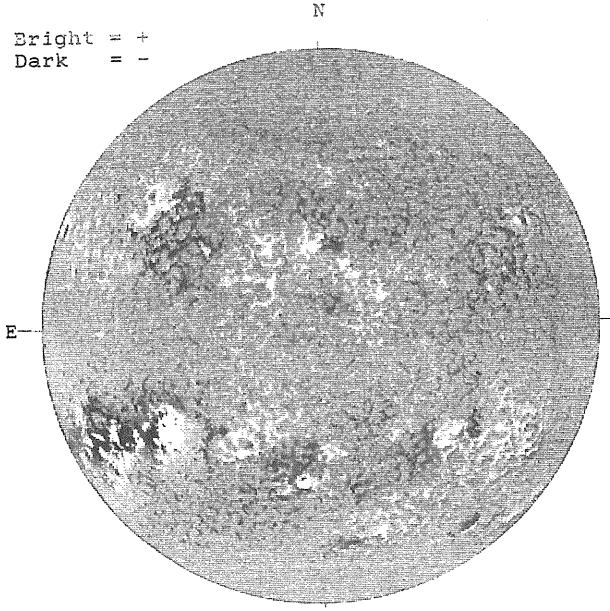


□ = Positive Polarity ■ = Negative Polarity ■ = 10830 Coronal Hole Estimate ▨ = X-Ray Flares > M1

Heliographic Longitude

SEPTEMBER 1, 1989 (P= 21.08, B_o = 7.18, L_o = 138.90)

KITT PEAK MAGNETOGRAM

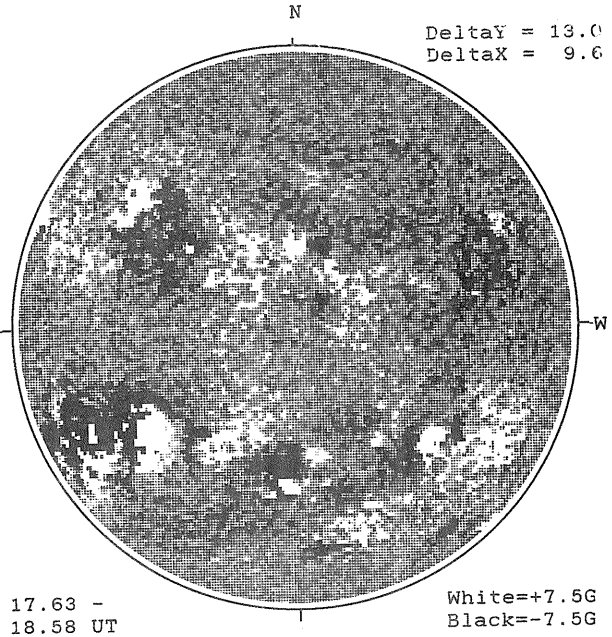


1408 UT

STANFORD MAGNETOGRAM

2129 UT

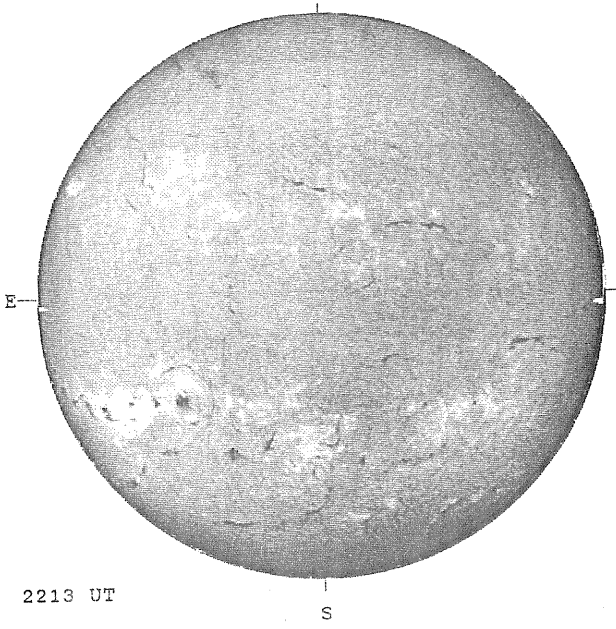
MT. WILSON MAGNETOGRAM



17.63 -
18.58 UT

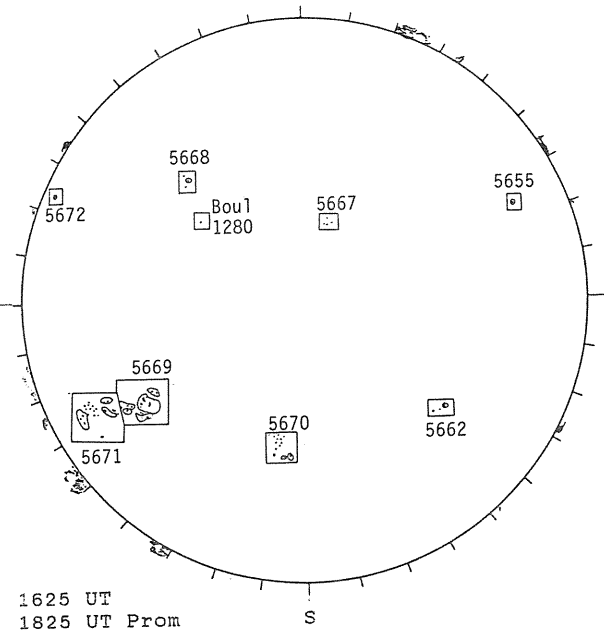
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



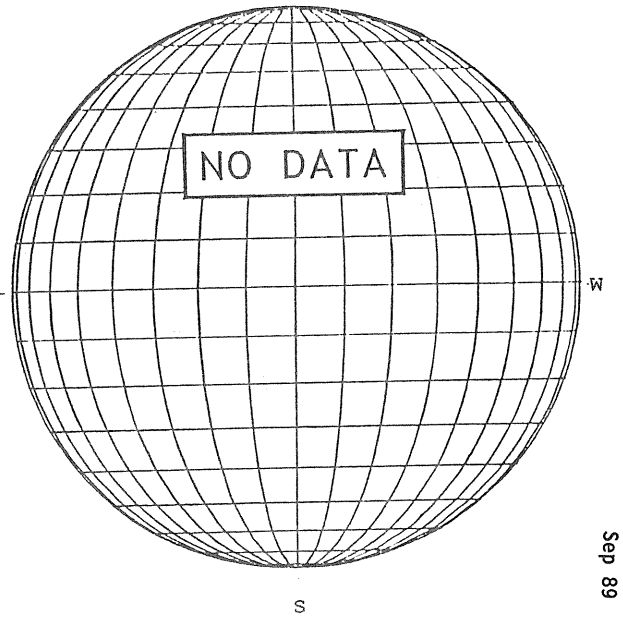
2213 UT

BOULDER SUNSPOT



1625 UT
1825 UT Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



77
Sep 89

SEPTEMBER 2, 1989 (P= 21.33, B_o = 7.19, L_o = 125.69)

78
Sep 89

KITT PEAK MAGNETOGRAM

N

Bright = +
Dark = -

NO DATA

E

STANFORD MAGNETOGRAM

N

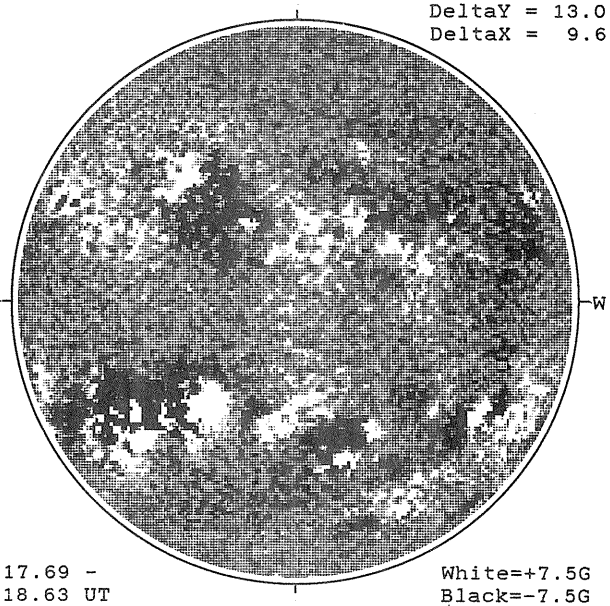
Solid = +
Dashed = -

1920 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.0
DeltaX = 9.6

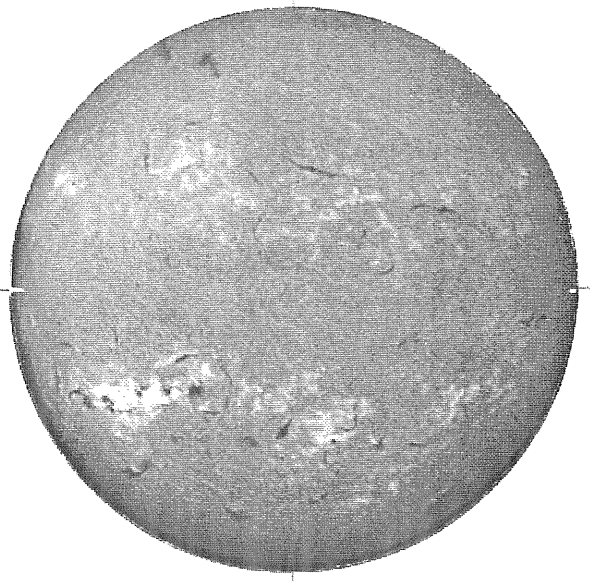


W

17.69 -
18.63 UT

White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA

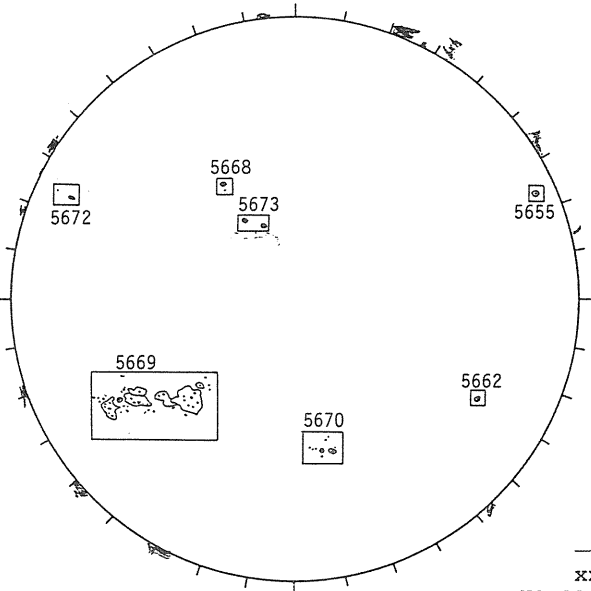


E

1453 UT

S

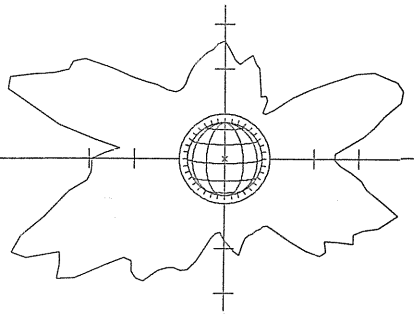
BOULDER SUNSPOT



1415 UT
1400 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)



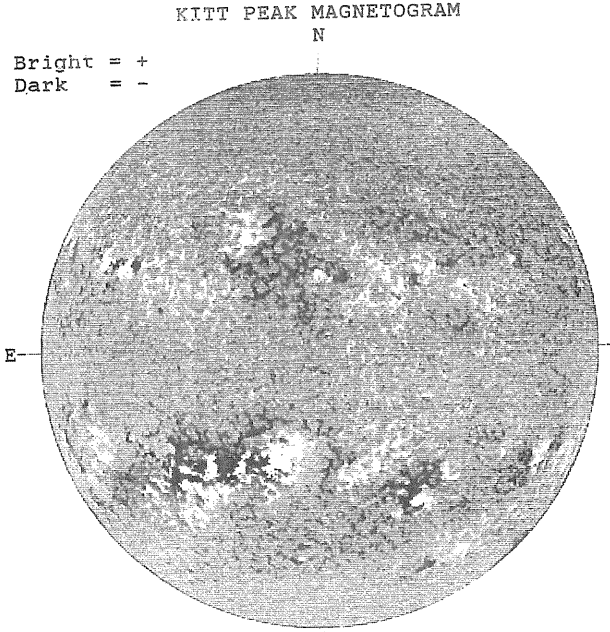
W

—— FeXIV, 1438 UT
xxxx Ca XV, 2240 UT
NO CA XV ACTIVITY TODAY

S

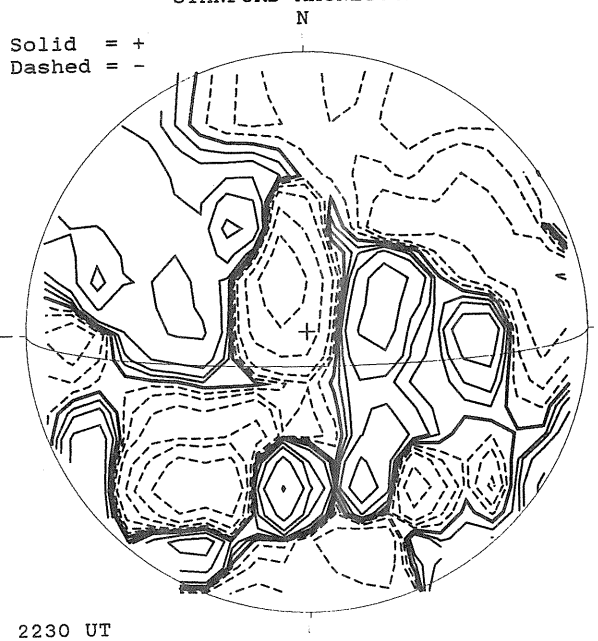
SEPTEMBER 3, 1989 (P= 21.57, B_o = 7.21, L_o = 112.48)

KITT PEAK MAGNETOGRAM



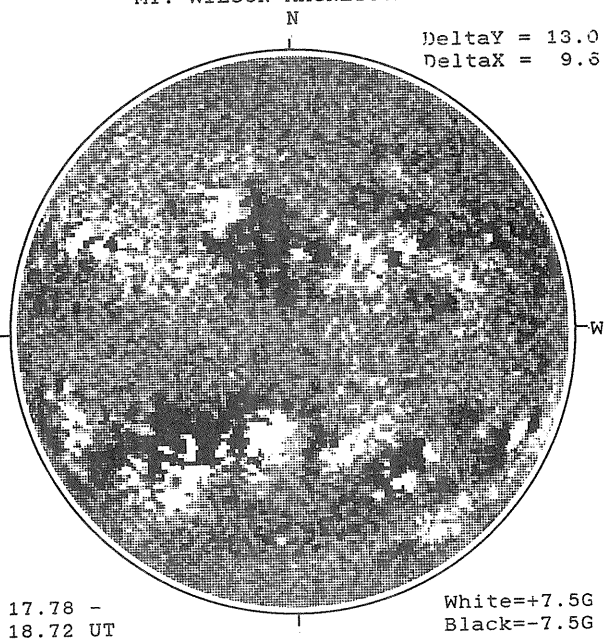
1404 UT

STANFORD MAGNETOGRAM



2230 UT

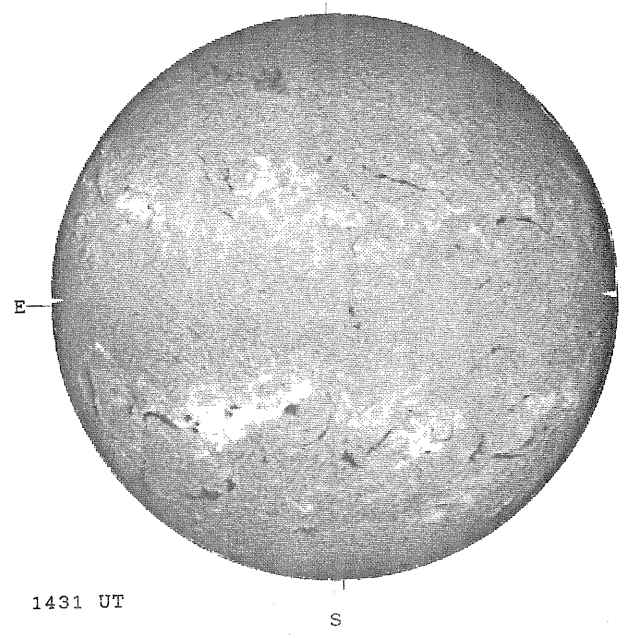
MT. WILSON MAGNETOGRAM



17.78 -
18.72 UT

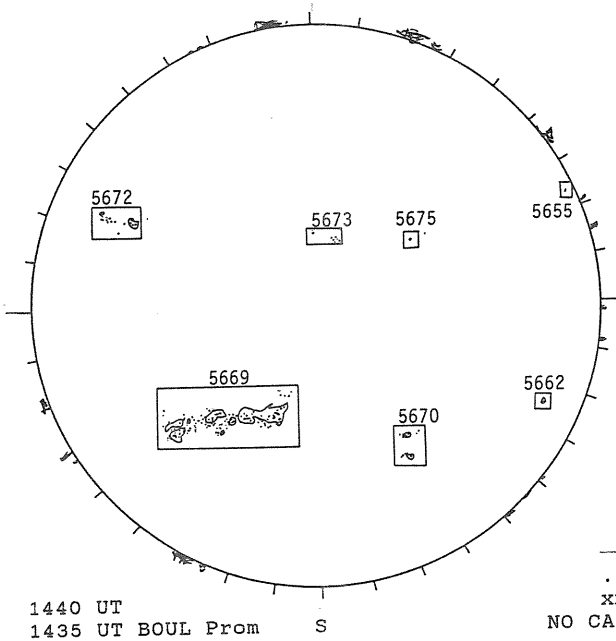
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



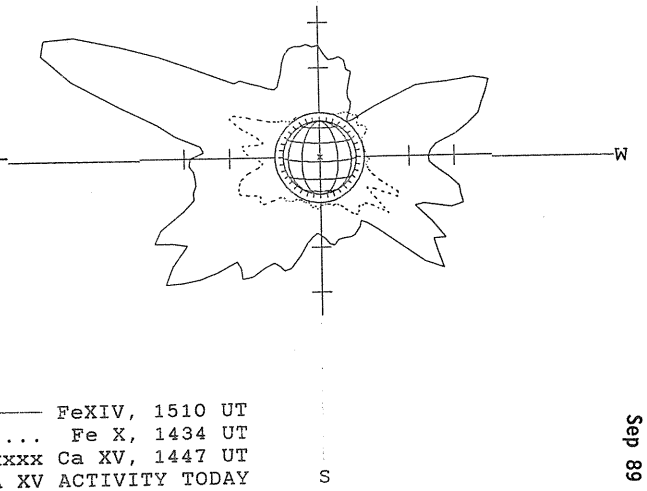
1431 UT

BOULDER SUNSPOT



1440 UT
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



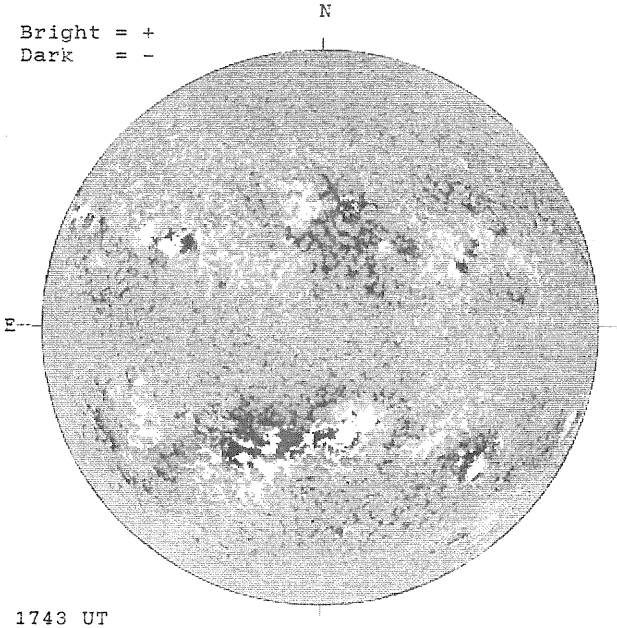
—— FeXIV, 1510 UT
.... Fe X, 1434 UT
xxxx Ca XV, 1447 UT
NO CA XV ACTIVITY TODAY

79
Sep 89

SEPTEMBER 4, 1989 (P= 21.81, B_o = 7.22, L_o = 99.27)

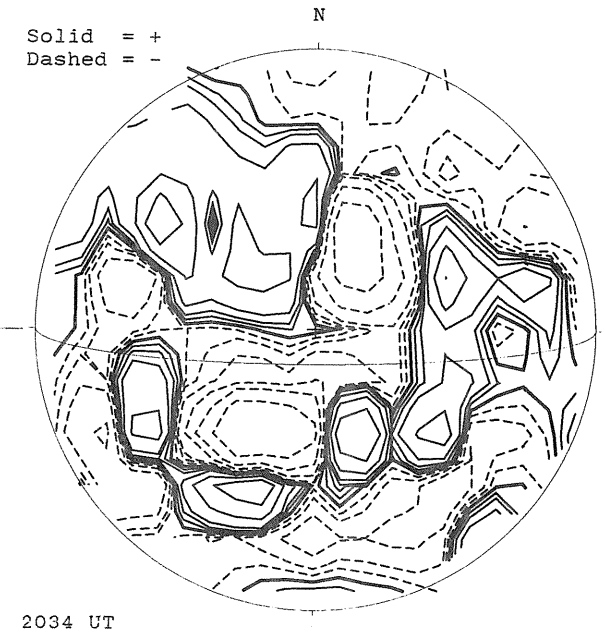
Sep 89

KITT PEAK MAGNETOGRAM



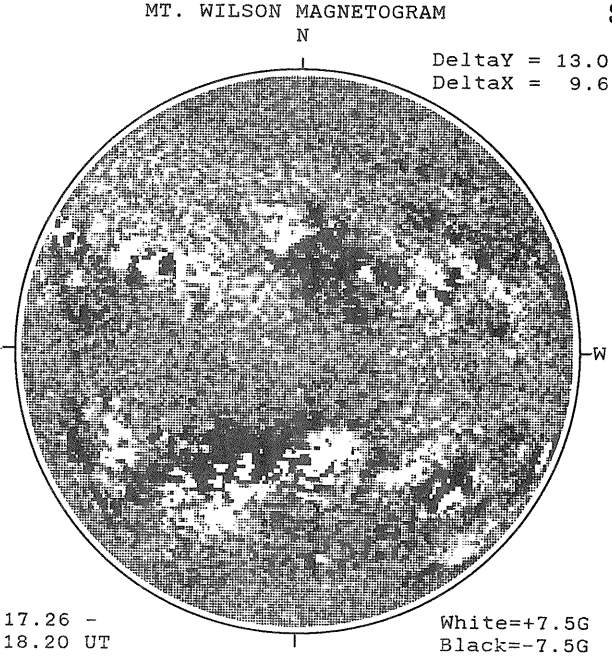
1743 UT

STANFORD MAGNETOGRAM



2034 UT

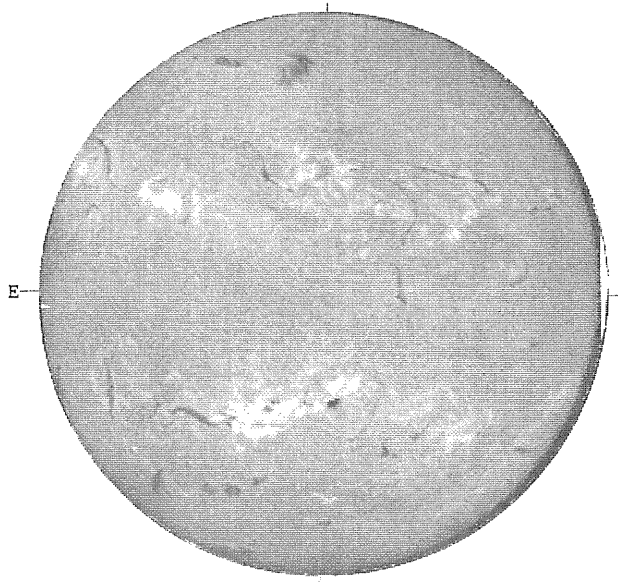
MT. WILSON MAGNETOGRAM



17.26 -
18.20 UT

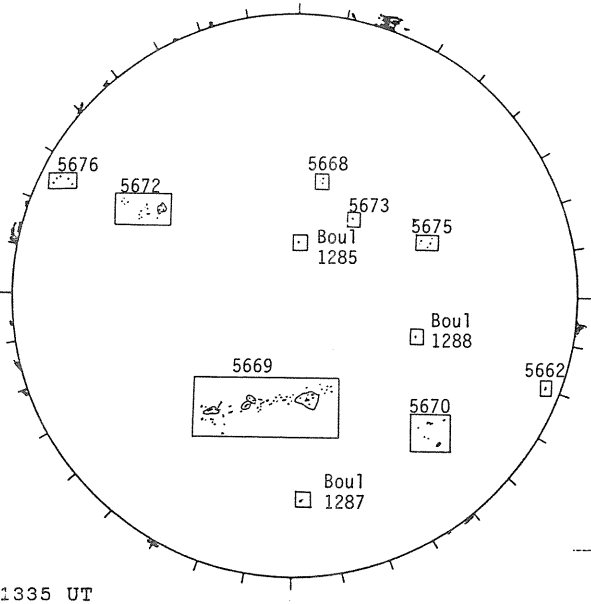
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



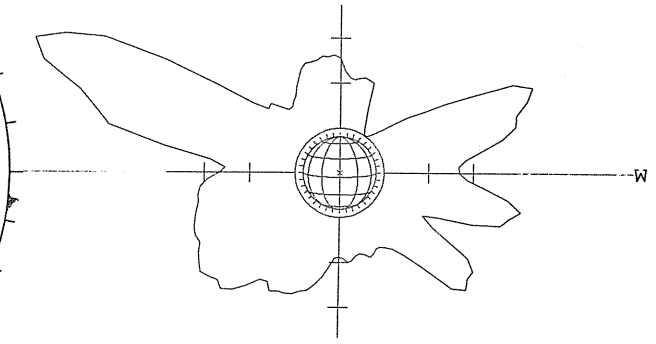
1943 UT

BOULDER SUNSPOT



1335 UT
1547 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

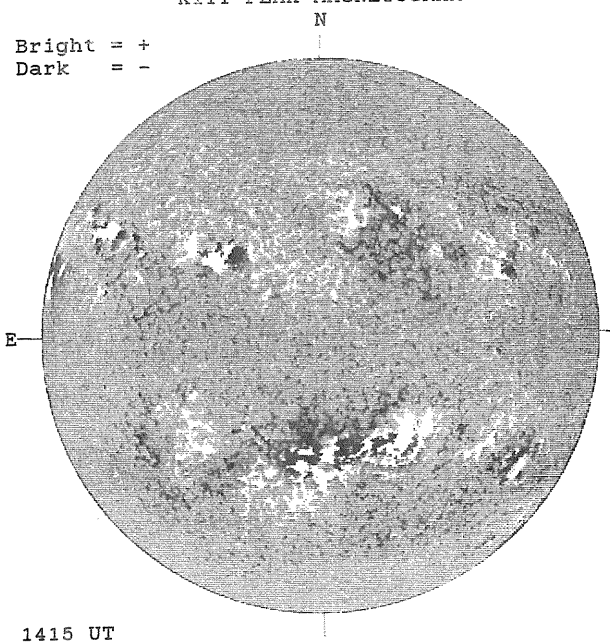


—— Fe XIV, 1520 UT

S

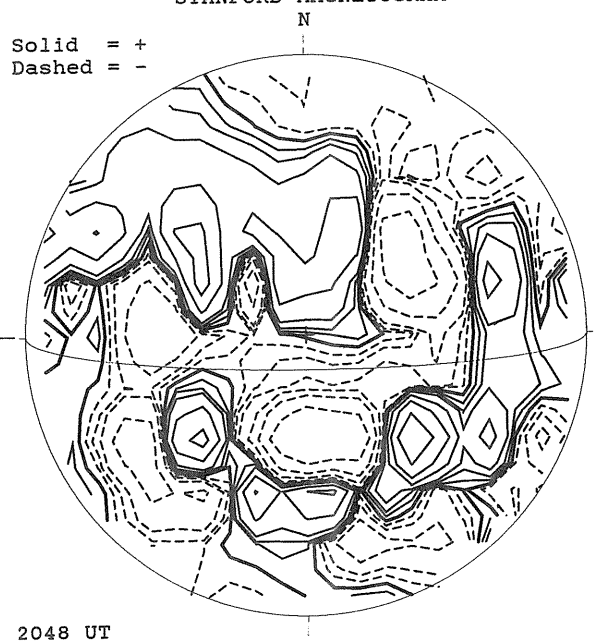
SEPTEMBER 5, 1989 (P= 22.05, B_o = 7.22, L_o = 86.07)

KITT PEAK MAGNETOGRAM



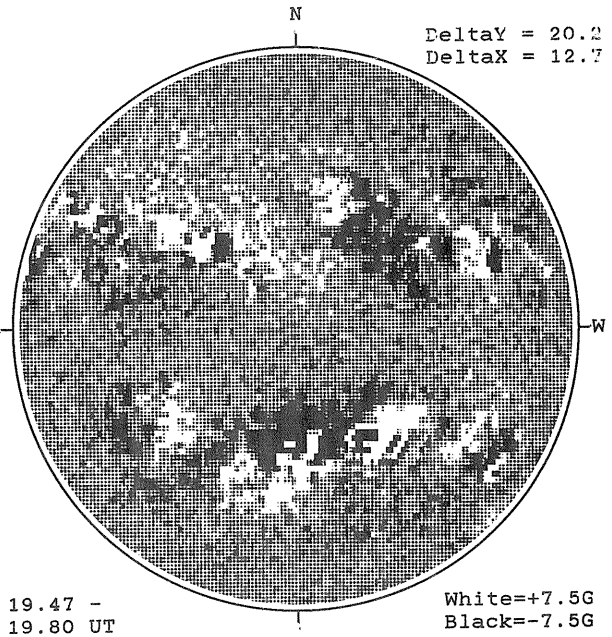
1415 UT

STANFORD MAGNETOGRAM



2048 UT

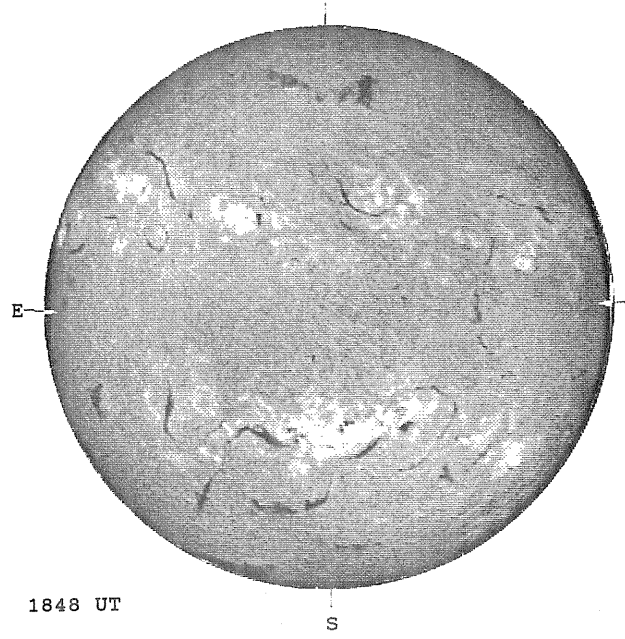
MT. WILSON MAGNETOGRAM



19.47 -
19.80 UT

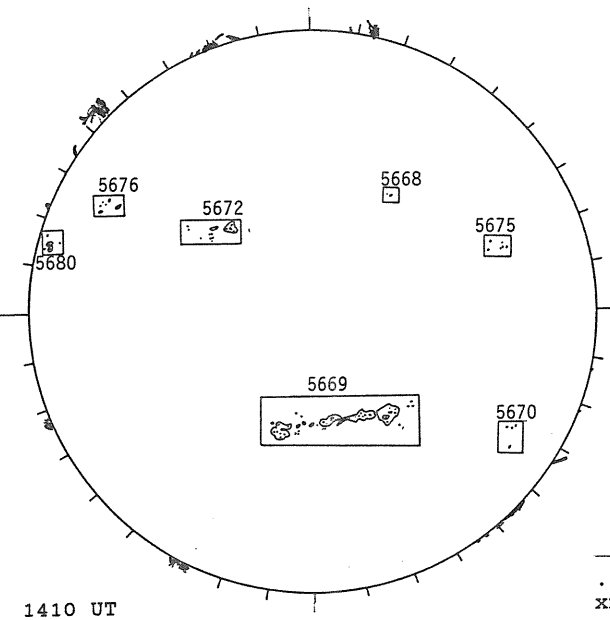
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



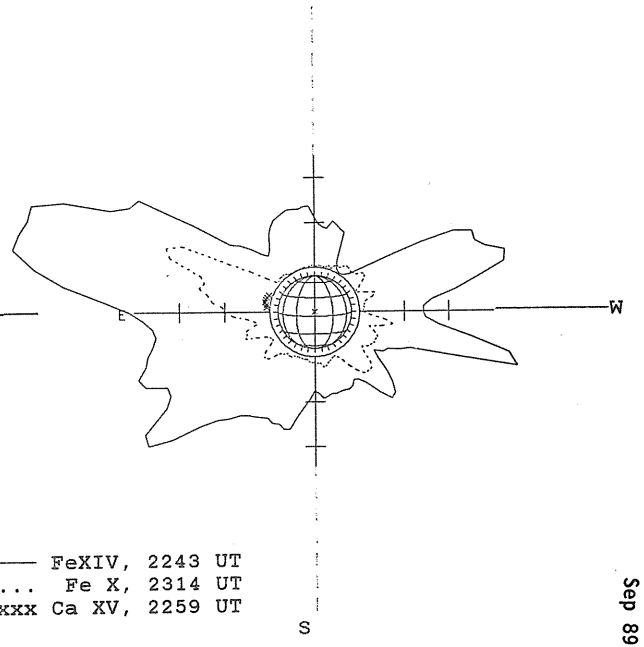
1848 UT

BOULDER SUNSPOT



1410 UT
1537 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

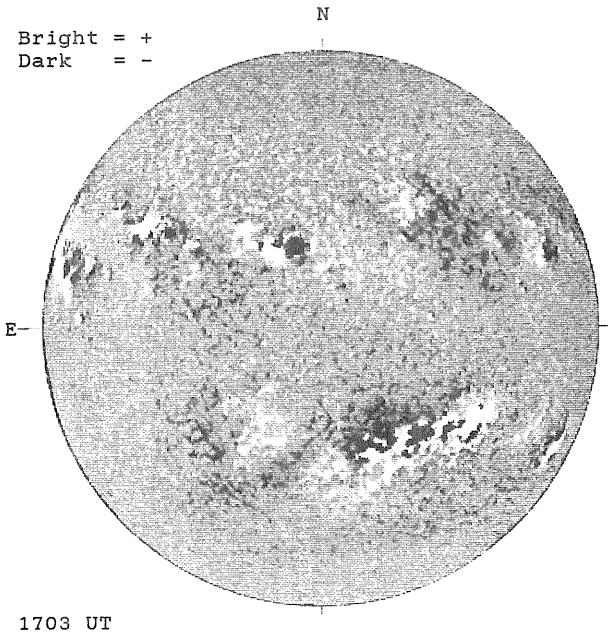


—— FeXIV, 2243 UT
.... Fe X, 2314 UT
xxxx Ca XV, 2259 UT

SEPTEMBER 6, 1989 (P= 22.28, B_o = 7.23, L_o = 72.86)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

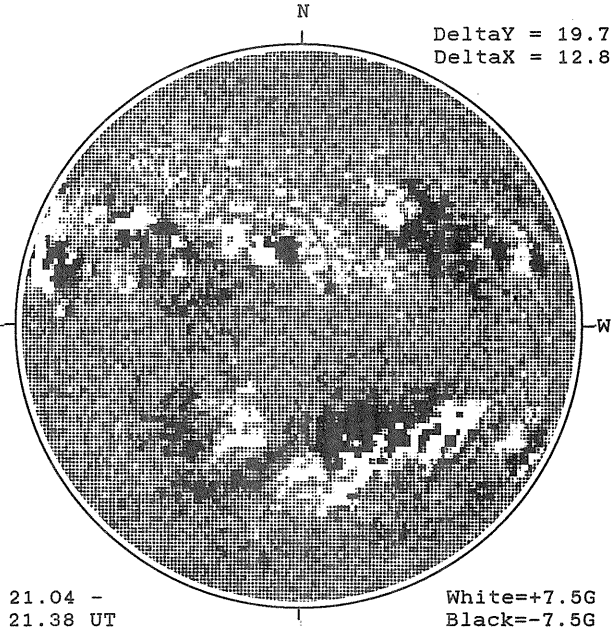


STANFORD MAGNETOGRAM

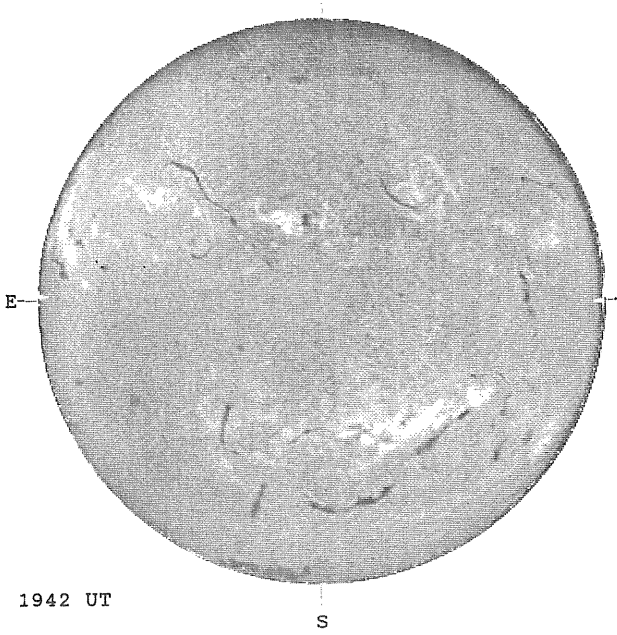
Solid = +
Dashed = -

MT. WILSON MAGNETOGRAM

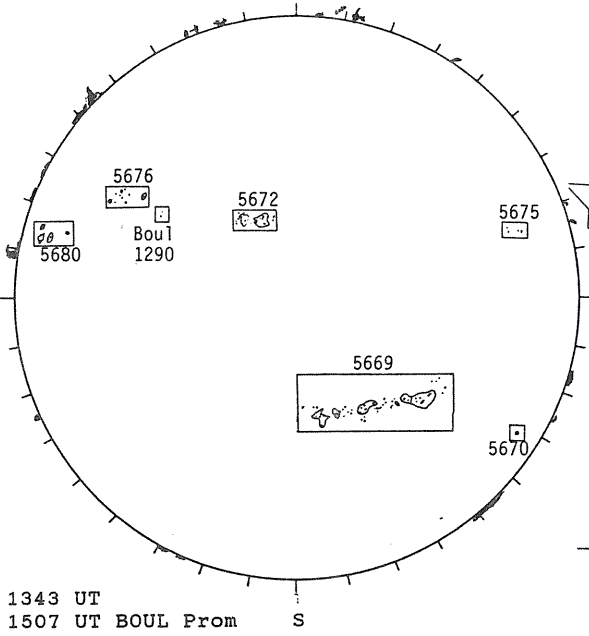
DeltaY = 19.7
DeltaX = 12.8



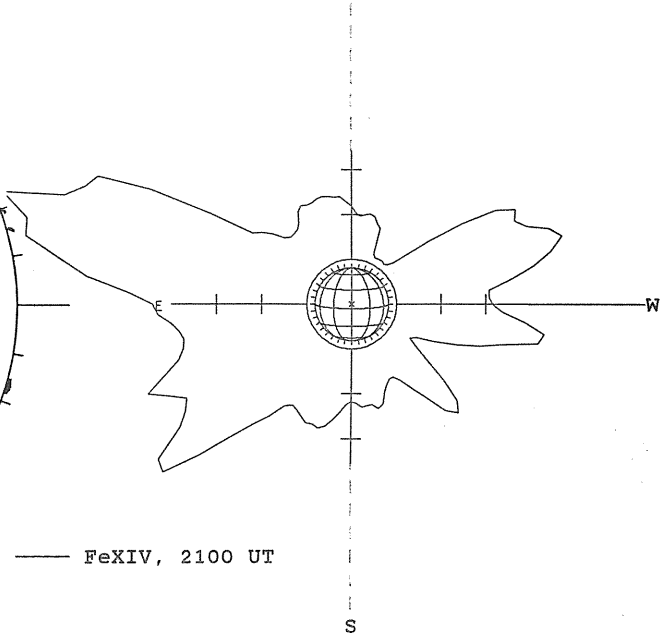
HOLLOMAN H-ALPHA



BOULDER SUNSPOT

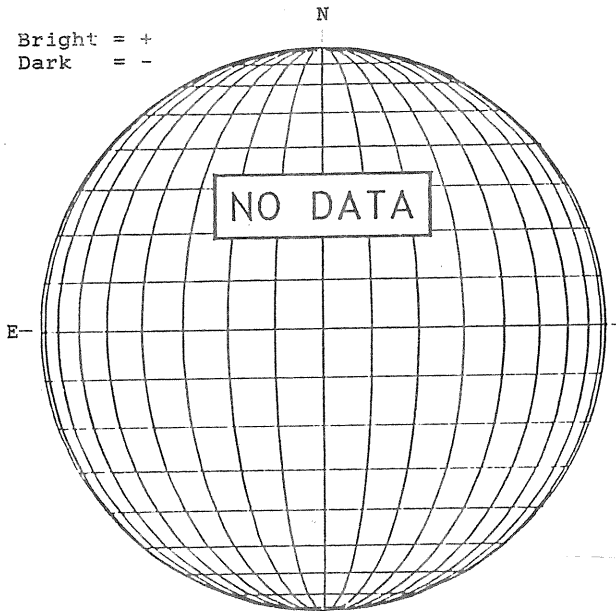


SACRAMENTO PEAK CORONA (1.15 Radii)

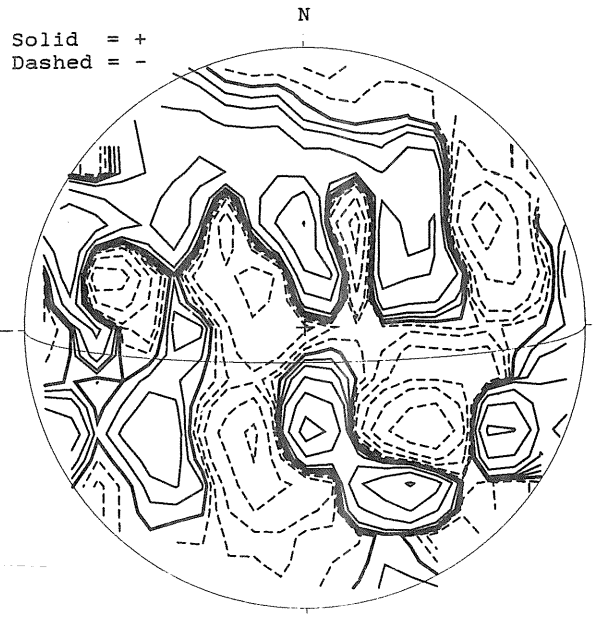


SEPTEMBER 7, 1989 (P= 22.50, B_o = 7.23, L_o = 59.65)

KITT PEAK MAGNETOGRAM

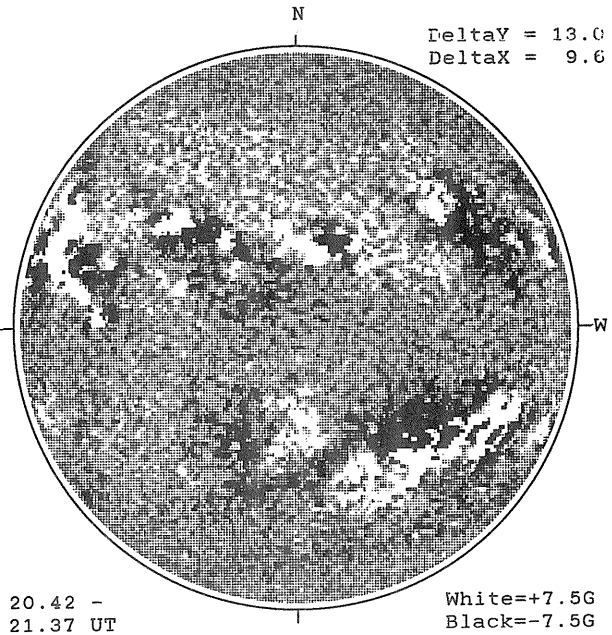


STANFORD MAGNETOGRAM



2136 UT

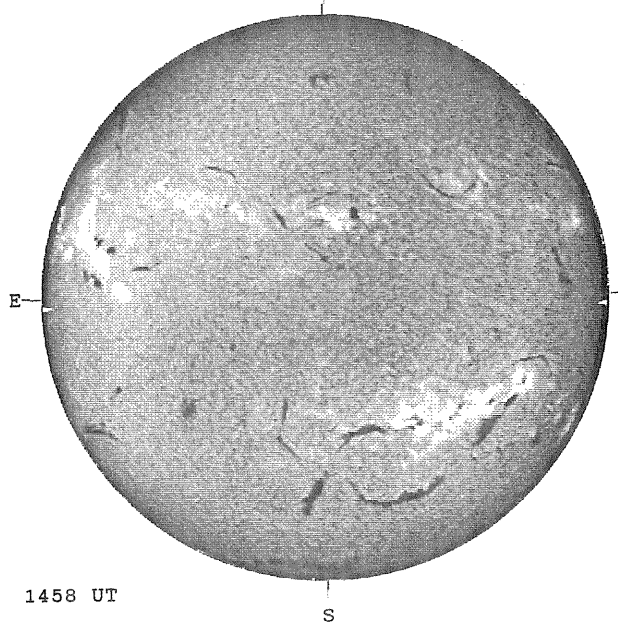
MT. WILSON MAGNETOGRAM



20.42 -
21.37 UT

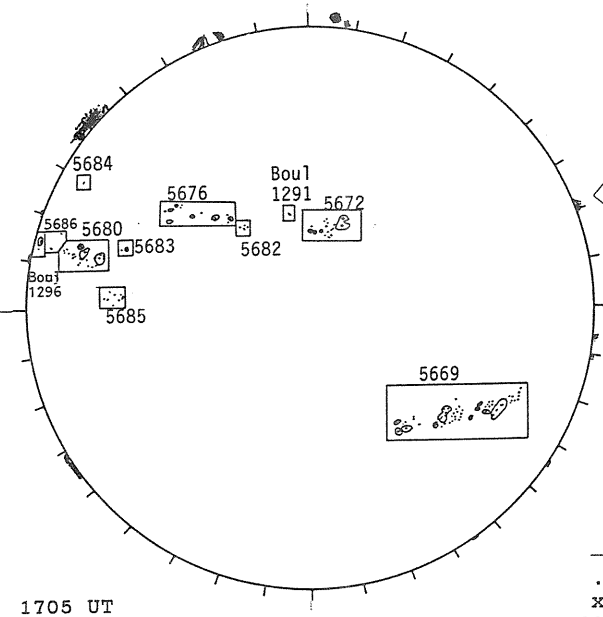
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



1458 UT

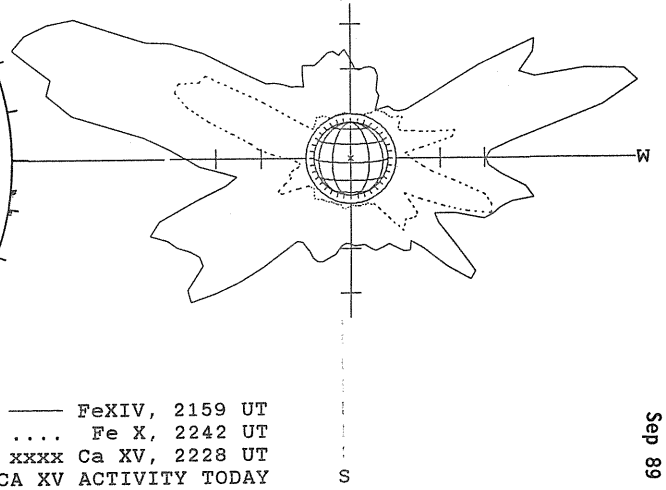
BOULDER SUNSPOT



1705 UT
1700 UT BOUL Prom

S

SACRAMENTO PEAK CORONA (1.15 Radii)



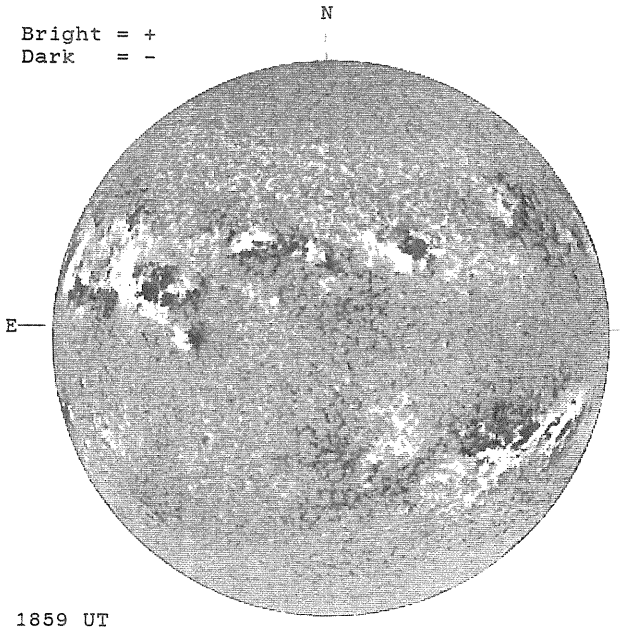
—— FeXIV, 2159 UT
.... Fe X, 2242 UT
xxxx Ca XV, 2228 UT
NO CA XV ACTIVITY TODAY

83
Sep 89

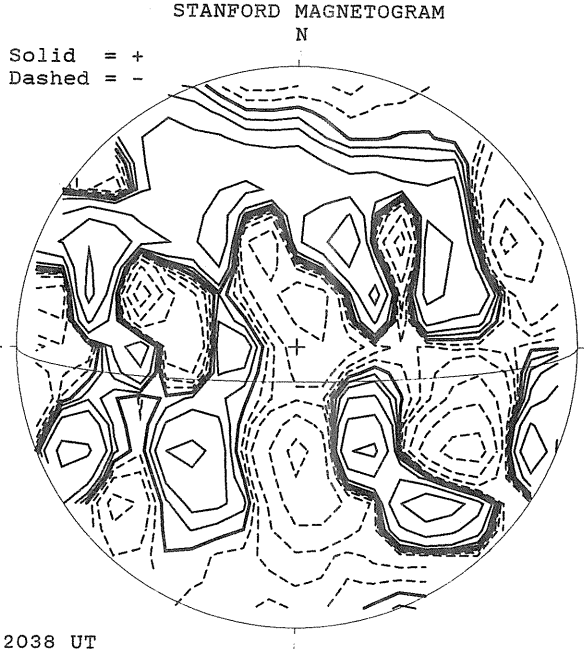
SEPTEMBER 8, 1989 (P= 22.72, B_o = 7.24, L_o = 46.45)

Sep 89
84

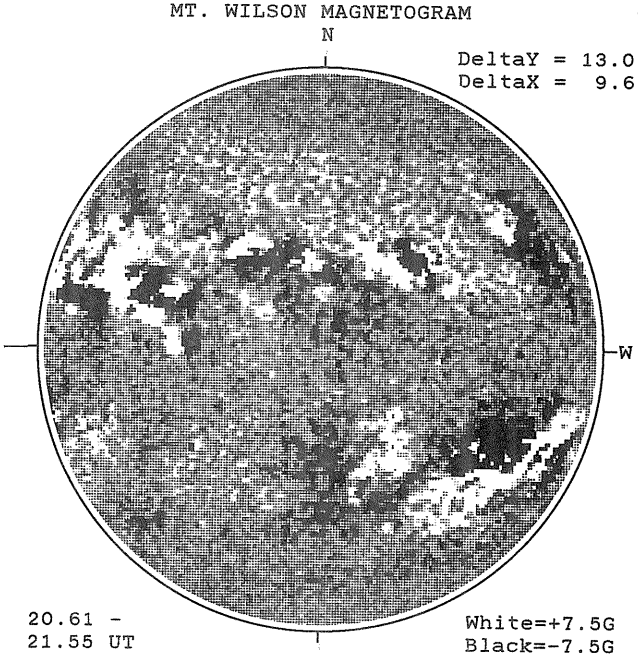
KITT PEAK MAGNETOGRAM



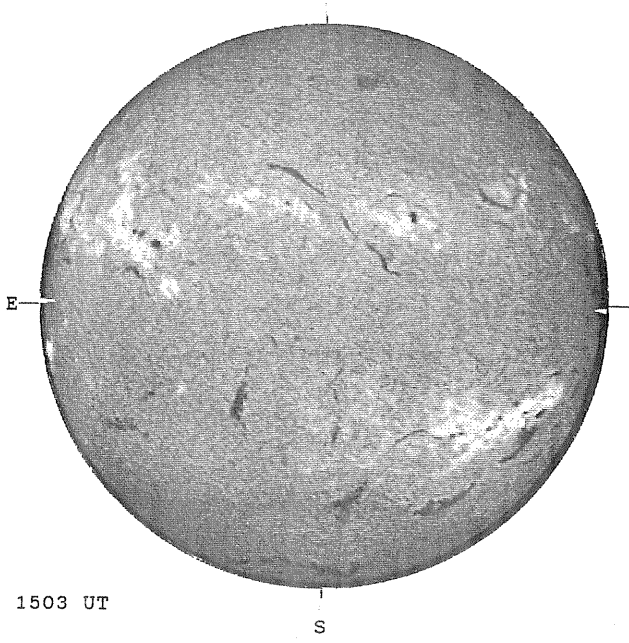
STANFORD MAGNETOGRAM



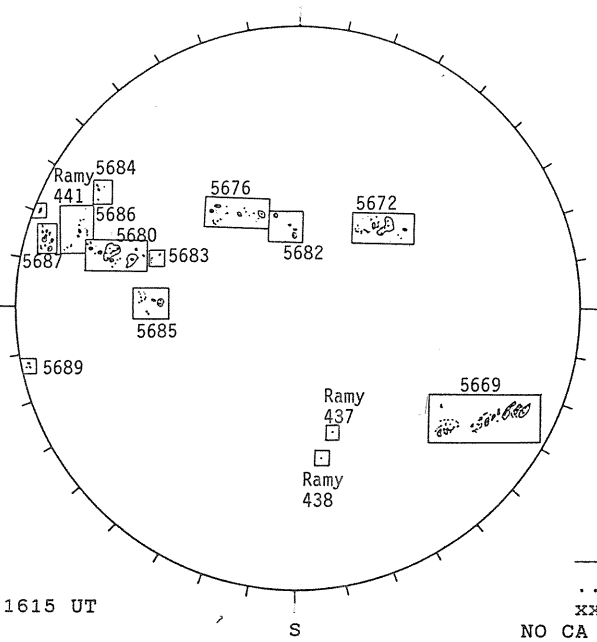
MT. WILSON MAGNETOGRAM



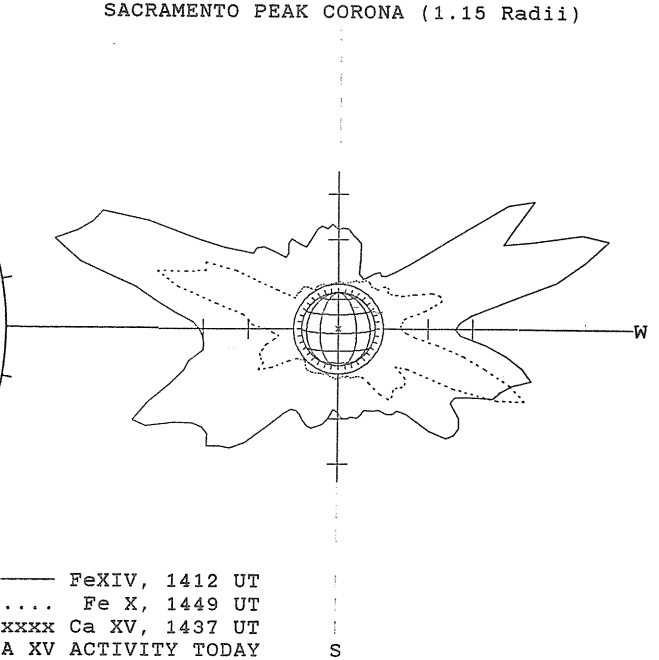
HOLLOMAN H-ALPHA



RAMEY SUNSPOT



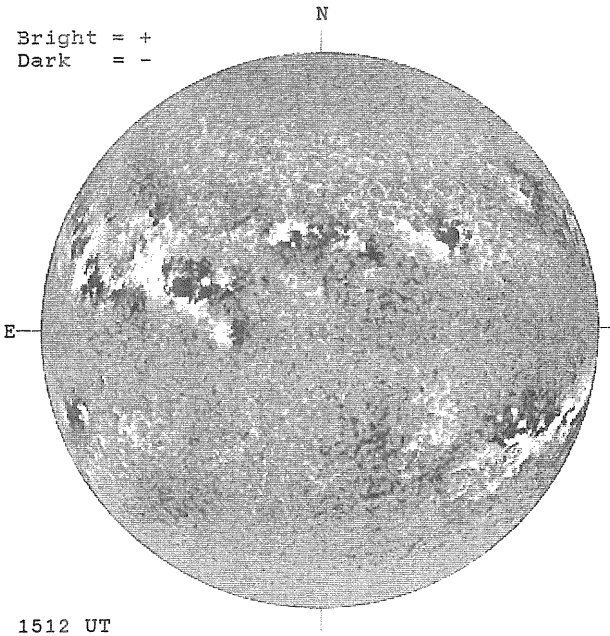
SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1412 UT
.... Fe X, 1449 UT
xxxx Ca XV, 1437 UT
NO CA XV ACTIVITY TODAY

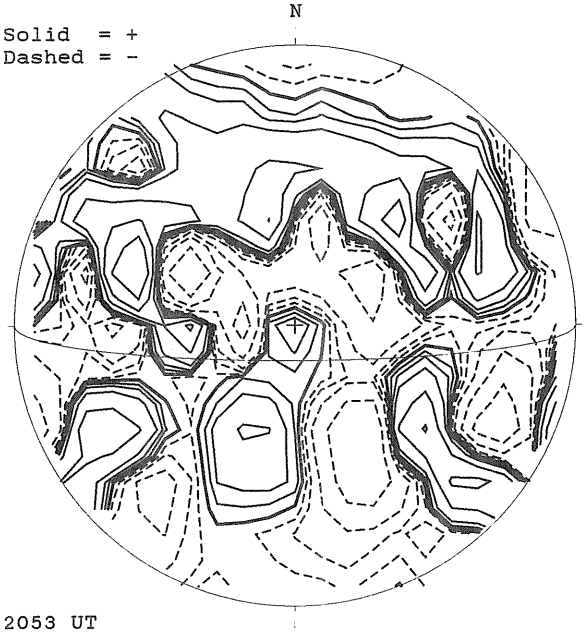
SEPTEMBER 9, 1989 (P= 22.93, B_o = 7.23, L_o = 33.24)

KITT PEAK MAGNETOGRAM



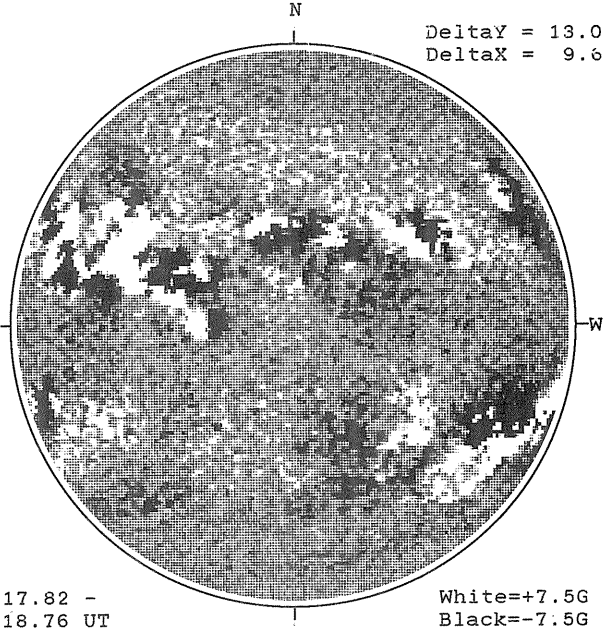
1512 UT

STANFORD MAGNETOGRAM



2053 UT

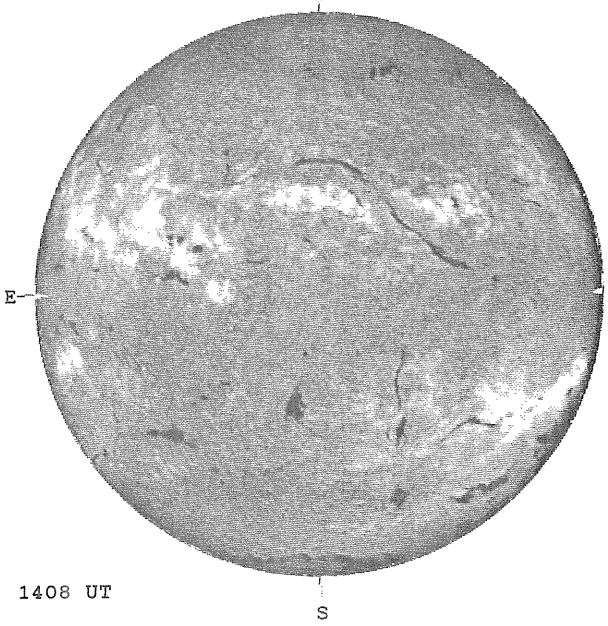
MT. WILSON MAGNETOGRAM



17.82 - 18.76 UT

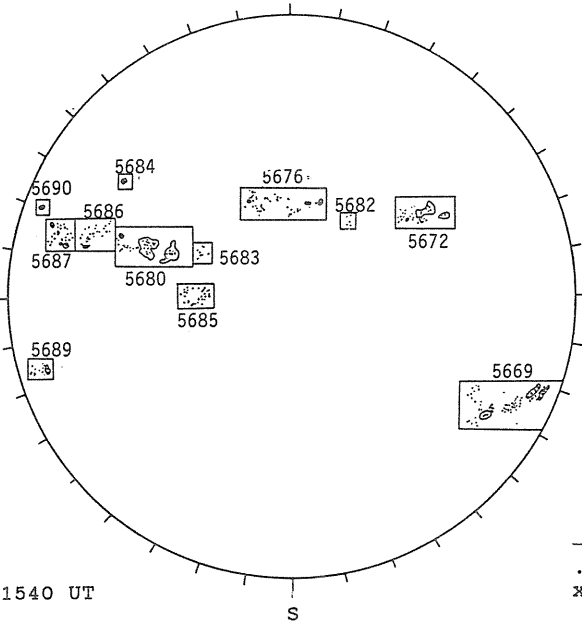
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



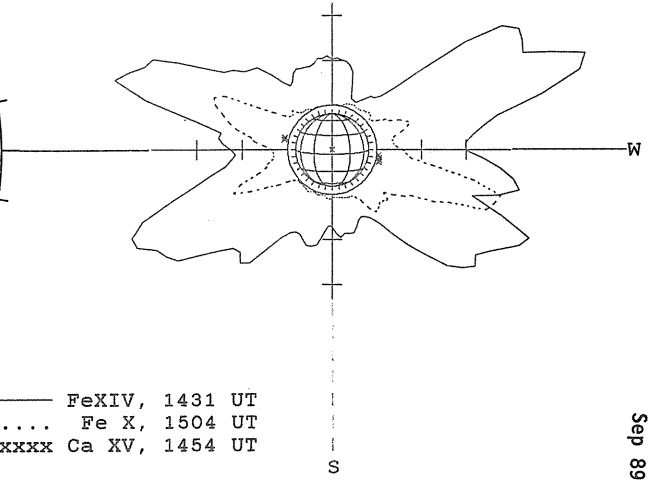
1408 UT

RAMEY SUNSPOT



1540 UT

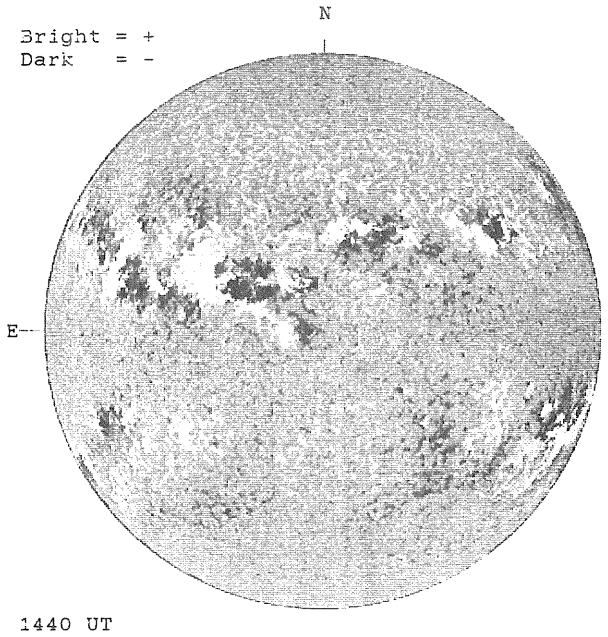
SACRAMENTO PEAK CORONA (1.15 Radii)



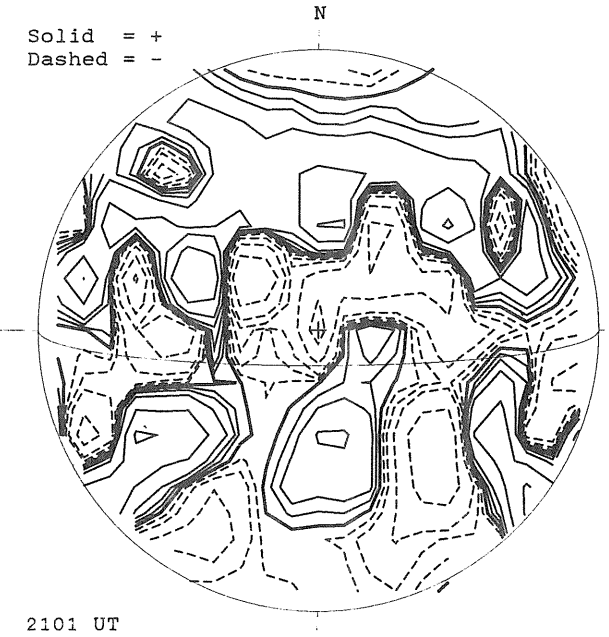
—— FeXIV, 1431 UT
.... Fe X, 1504 UT
xxxx Ca XV, 1454 UT

SEPTEMBER 10, 1989 (P= 23.13, B_o = 7.23, L_o = 20.04)

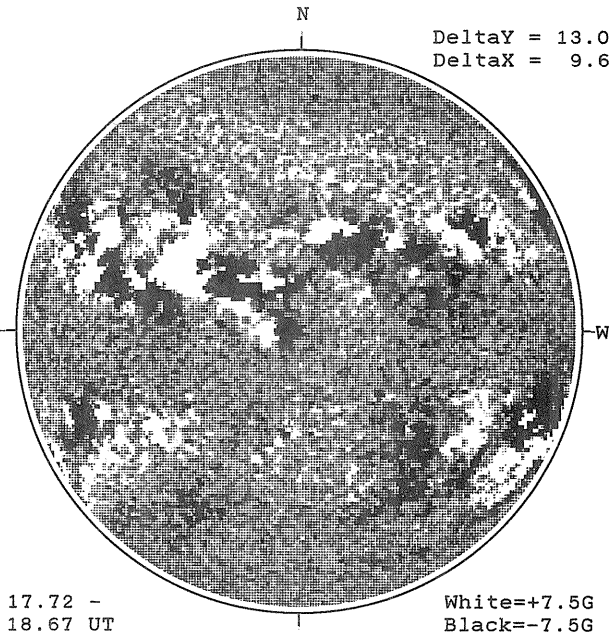
KITT PEAK MAGNETOGRAM



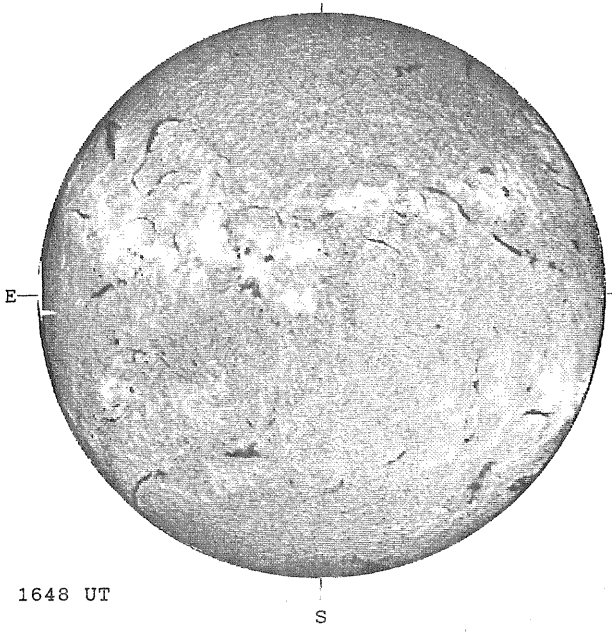
STANFORD MAGNETOGRAM



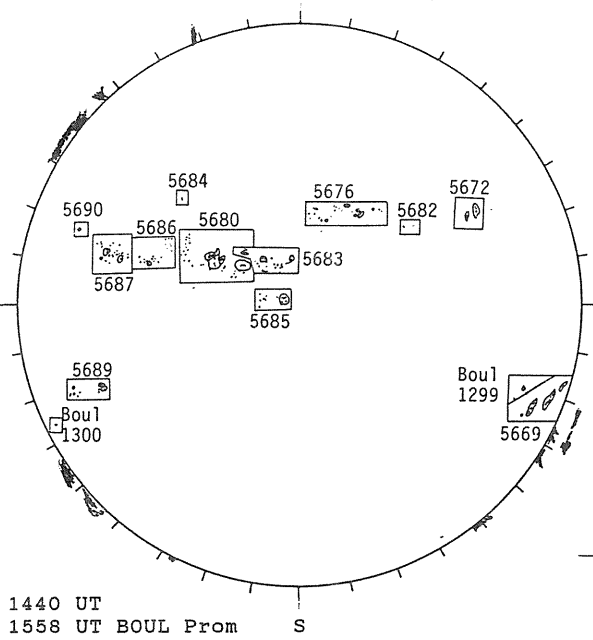
MT. WILSON MAGNETOGRAM



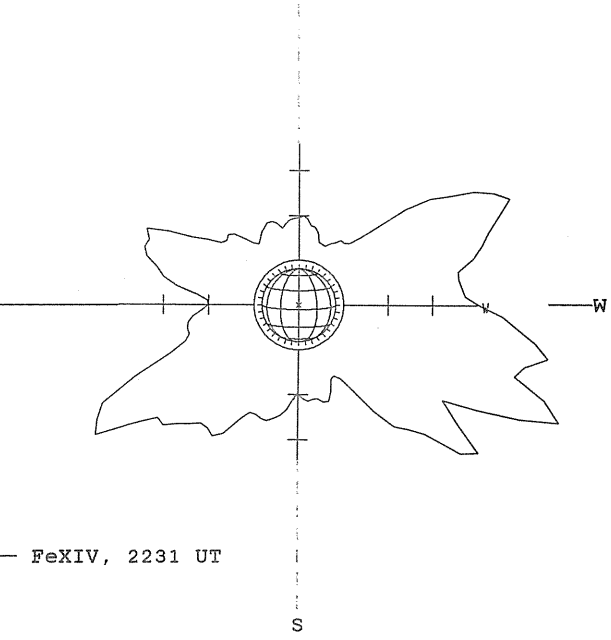
HOLLOMAN H-ALPHA



BOULDER SUNSPOT

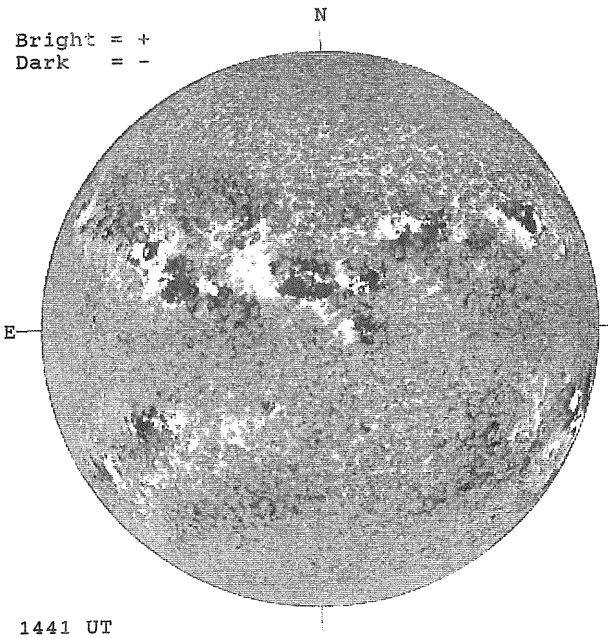


SACRAMENTO PEAK CORONA (1.15 Radii)



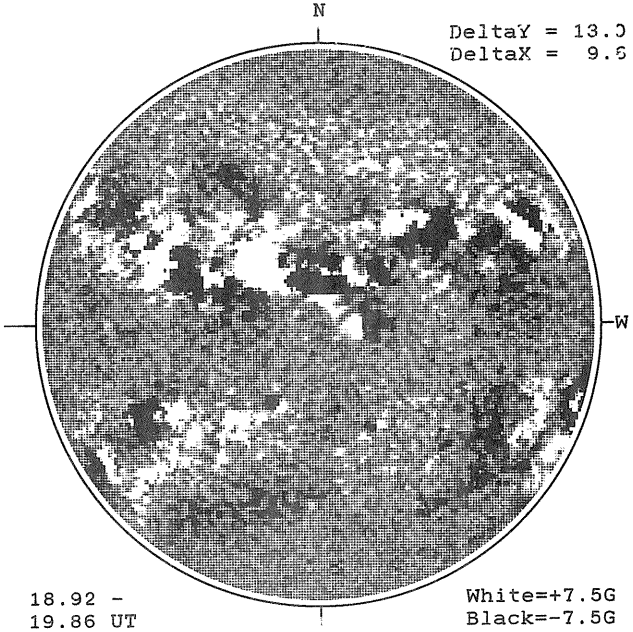
SEPTEMBER 11, 1989 (P= 23.33, B_o = 7.23, L_o = 6.83)

KITT PEAK MAGNETOGRAM

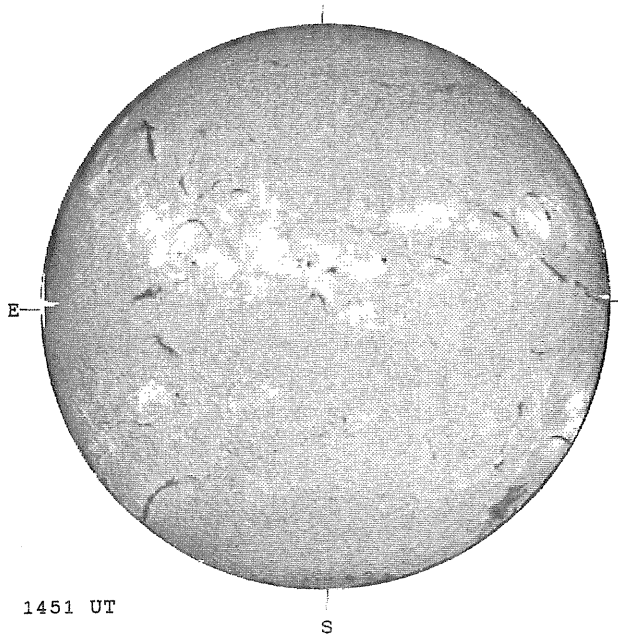


STANFORD MAGNETOGRAM

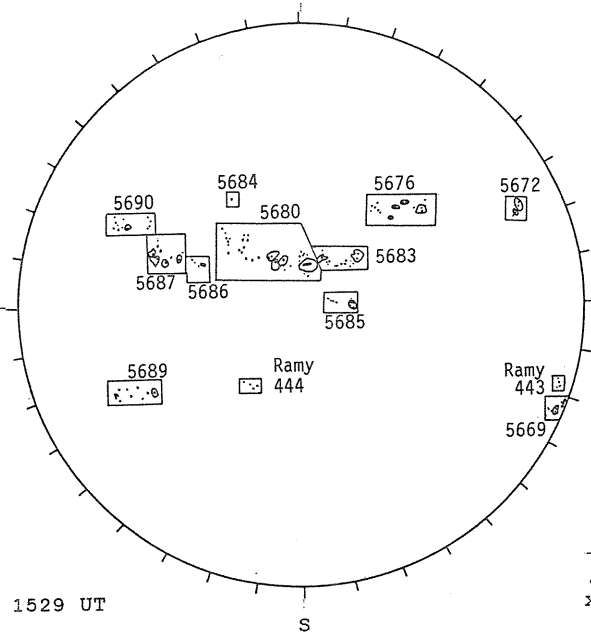
MT. WILSON MAGNETOGRAM



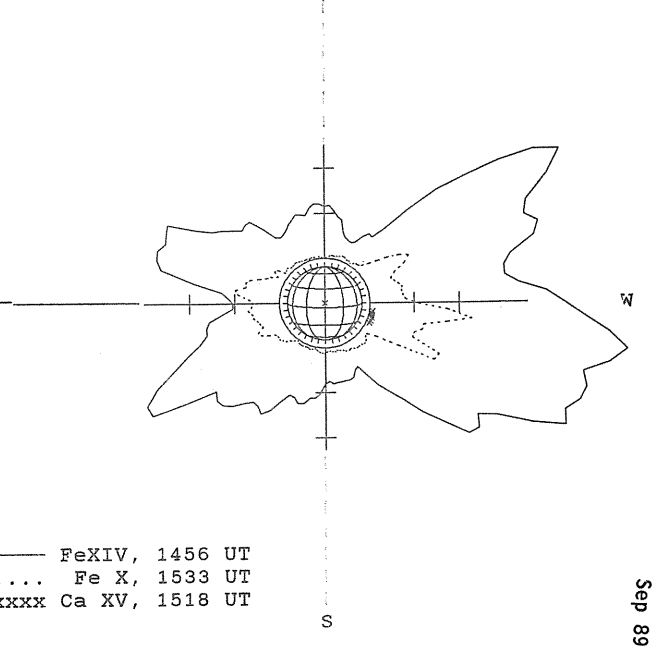
HOLLOMAN H-ALPHA



RAMEY SUNSPOT



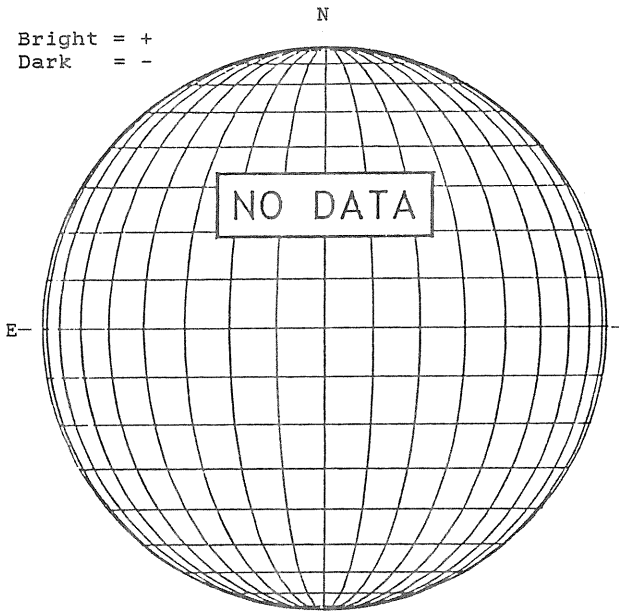
SACRAMENTO PEAK CORONA (1.15 Radii)



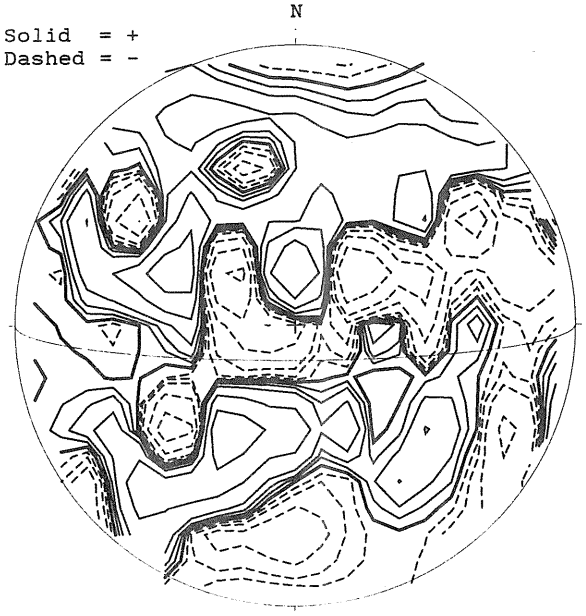
87 Sep 89

SEPTEMBER 12, 1989 (P= 23.53, B_o = 7.22, L_o = 353.63)

KITT PEAK MAGNETOGRAM

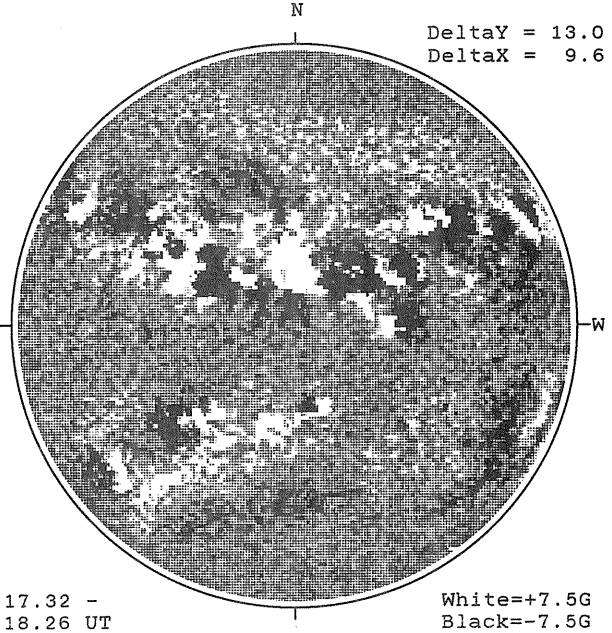


STANFORD MAGNETOGRAM



2203 UT

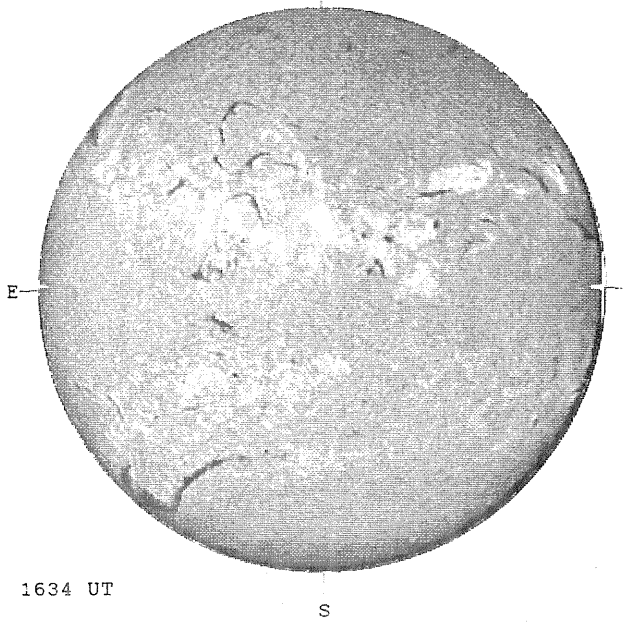
MT. WILSON MAGNETOGRAM



17.32 - 18.26 UT

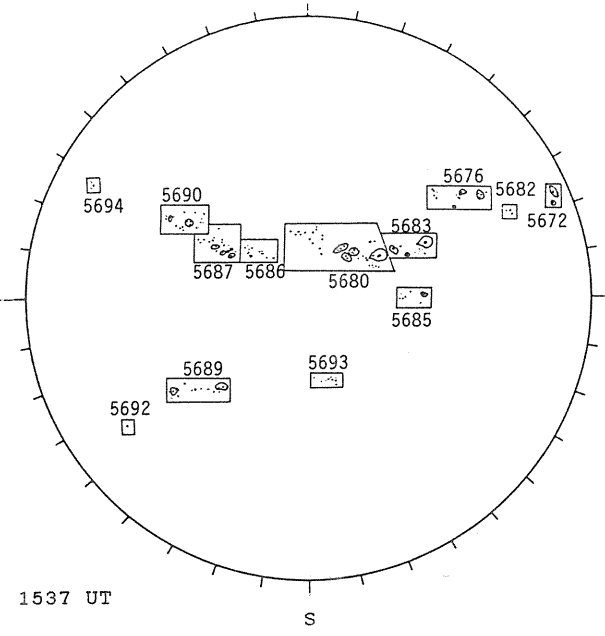
White=+7.5G
Black=-7.5G

HOLLOMAN H-ALPHA



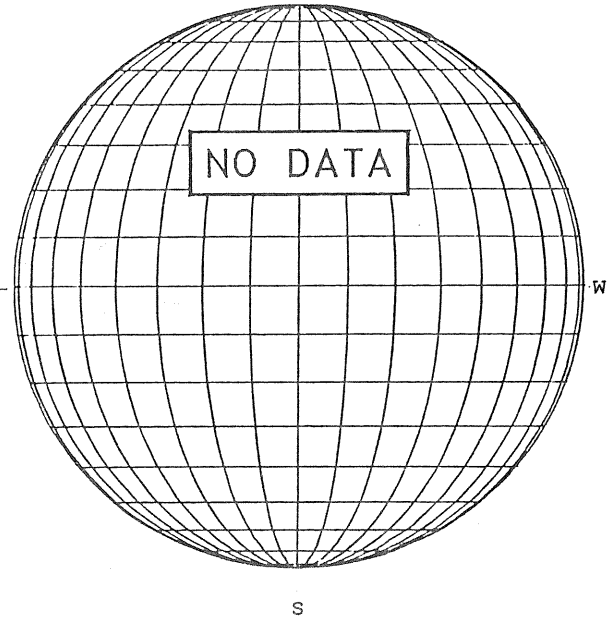
1634 UT

RAMEY SUNSPOT



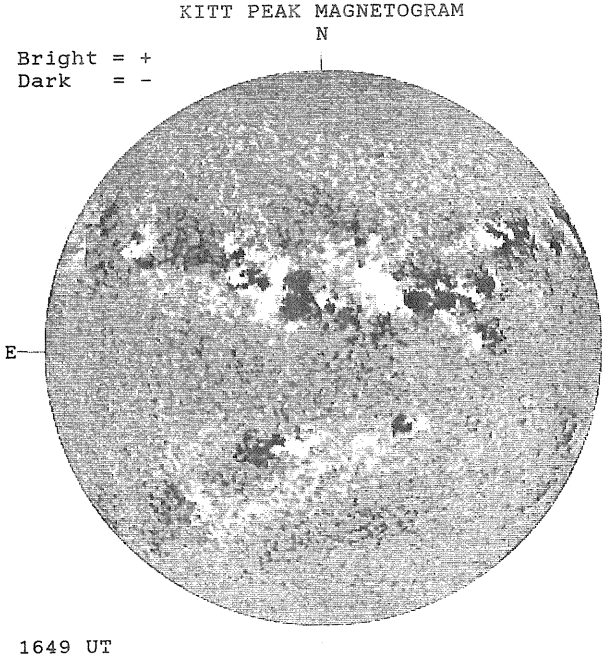
1537 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



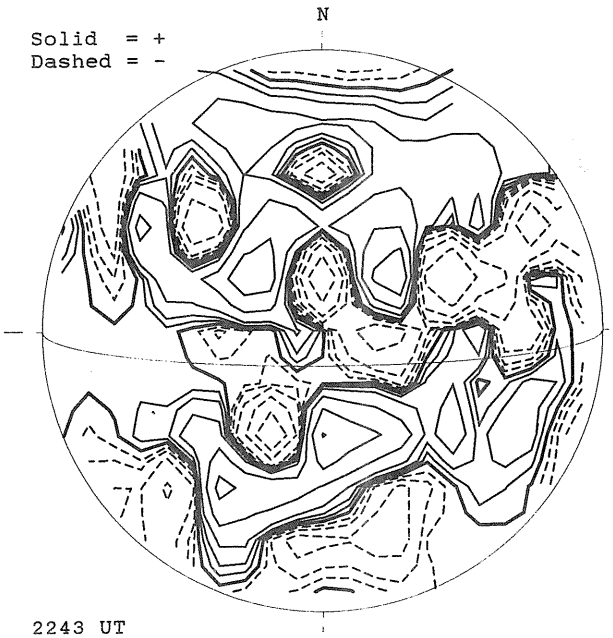
SEPTEMBER 13, 1989 (P= 23.71, B_o = 7.21, L_o = 340.42)

KITT PEAK MAGNETOGRAM



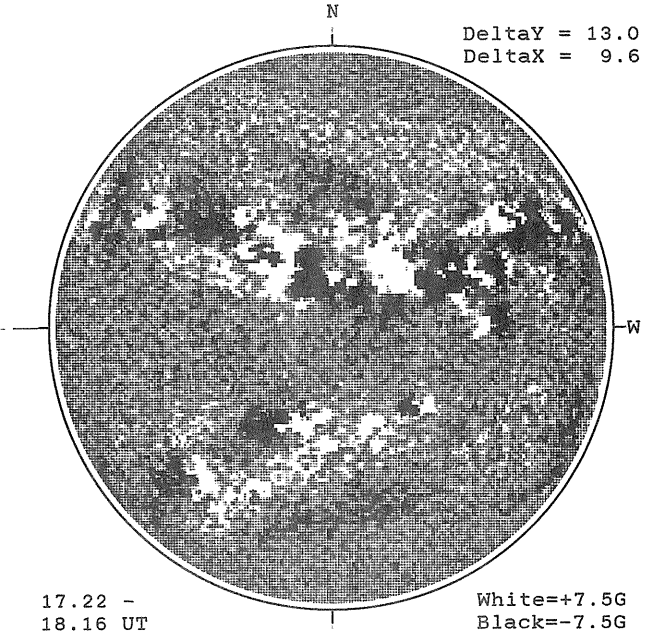
1649 UT

STANFORD MAGNETOGRAM



2243 UT

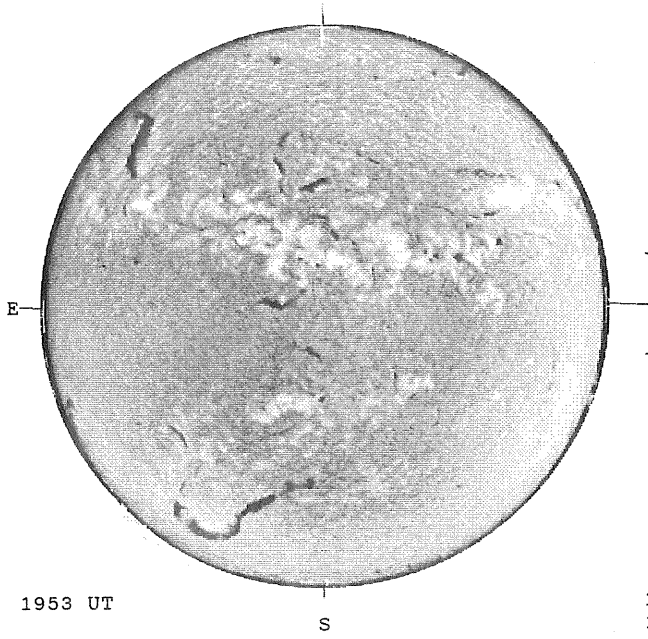
MT. WILSON MAGNETOGRAM



17.22 -
18.16 UT

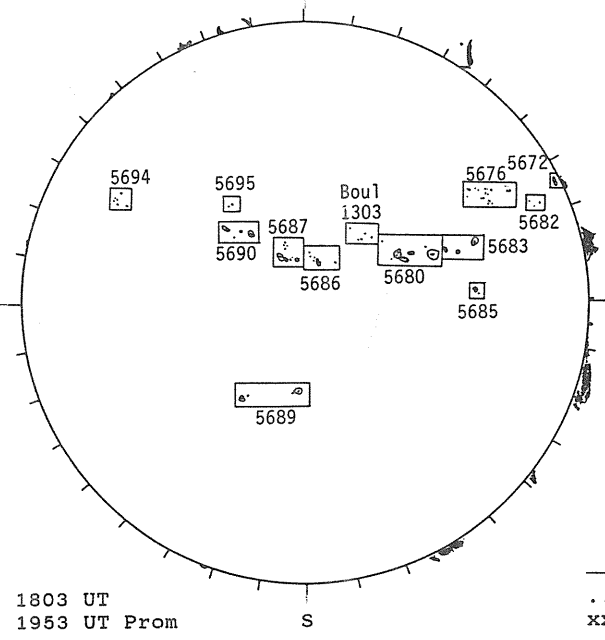
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



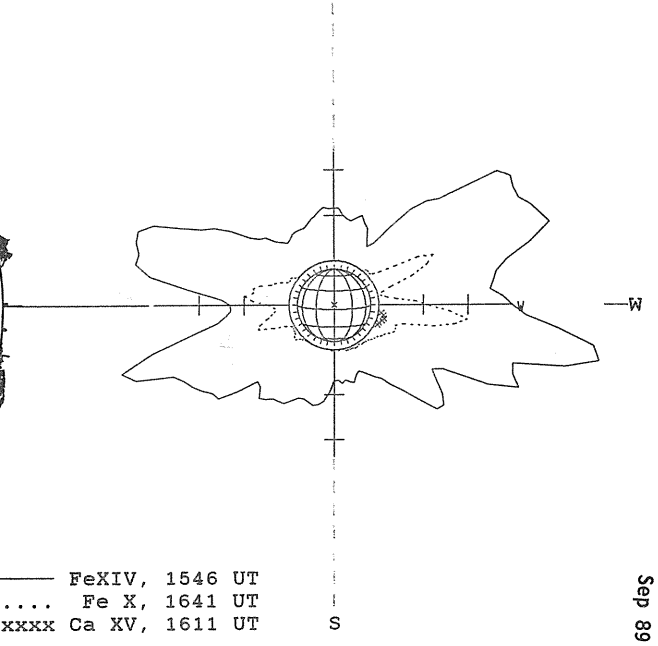
1953 UT

BOULDER SUNSPOT



1803 UT
1953 UT Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

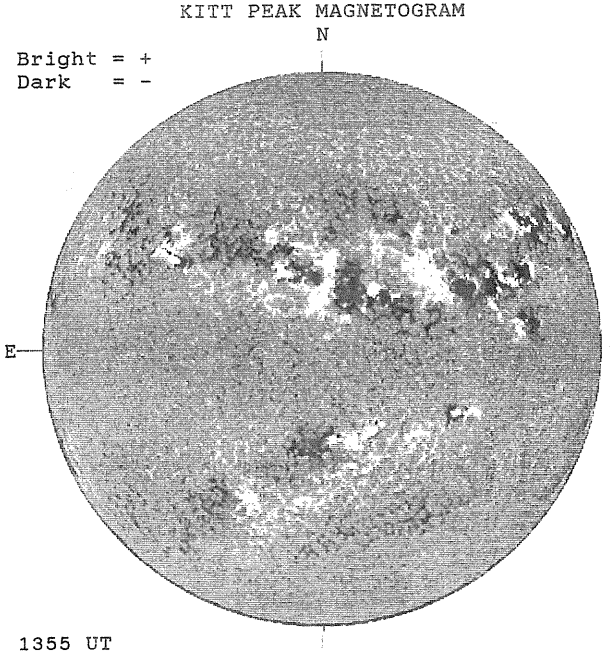


—— FeXIV, 1546 UT
.... Fe X, 1641 UT
xxxx Ca XV, 1611 UT

Sep 89

SEPTEMBER 14, 1989 (P= 23.89, B_o = 7.20, L_o = 327.22)

KITT PEAK MAGNETOGRAM

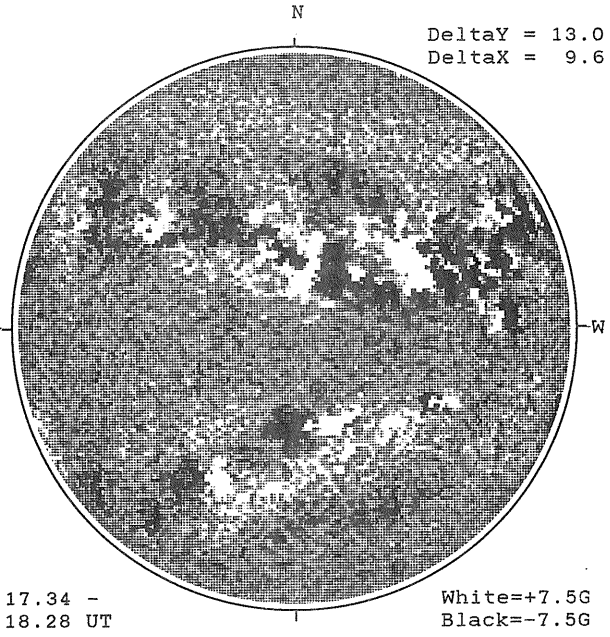


1355 UT

STANFORD MAGNETOGRAM

2125 UT

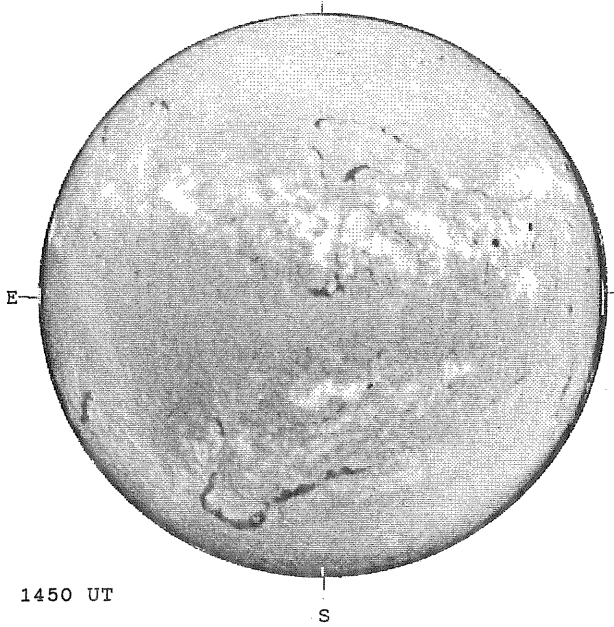
MT. WILSON MAGNETOGRAM



17.34 -
18.28 UT

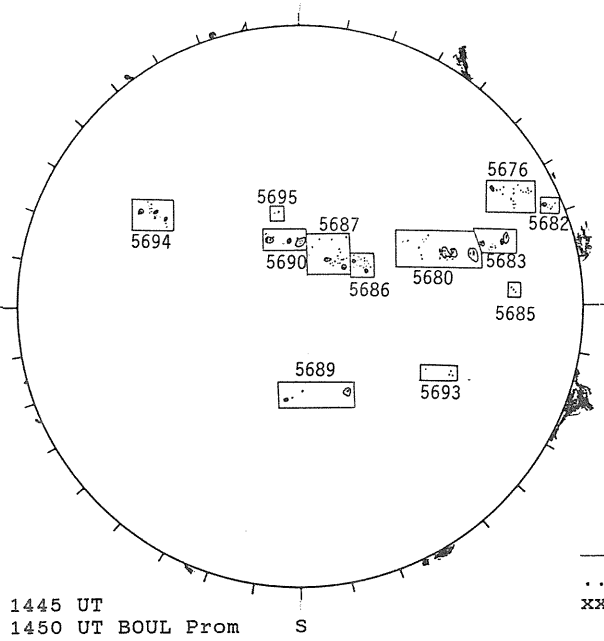
White=+7.5G
Black=-7.5G

BOULDER H-ALHPA



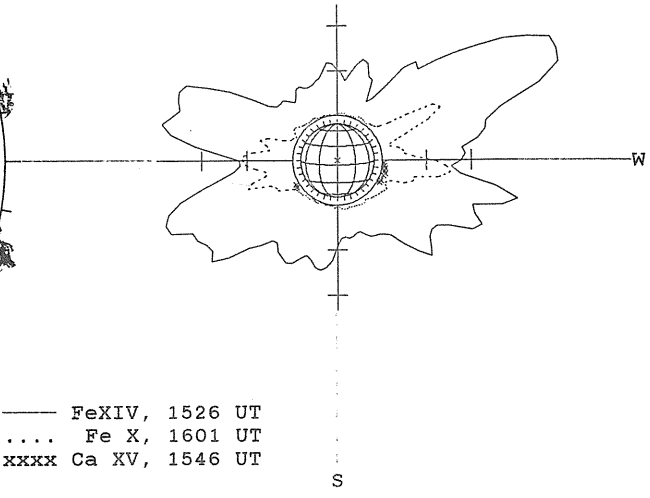
1450 UT

BOULDER SUNSPOT



1445 UT
1450 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

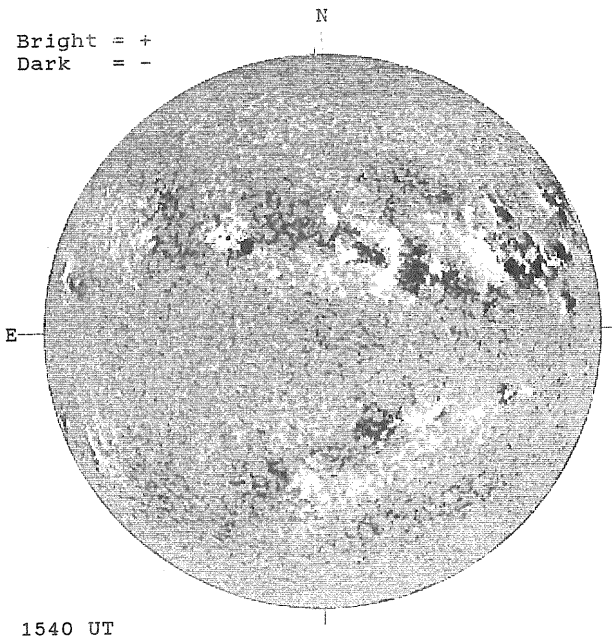


—— FeXIV, 1526 UT
.... Fe X, 1601 UT
xxxx Ca XV, 1546 UT

SEPTEMBER 15, 1989 (P= 24.07, B_o = 7.19, L_o = 314.02)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1540 UT

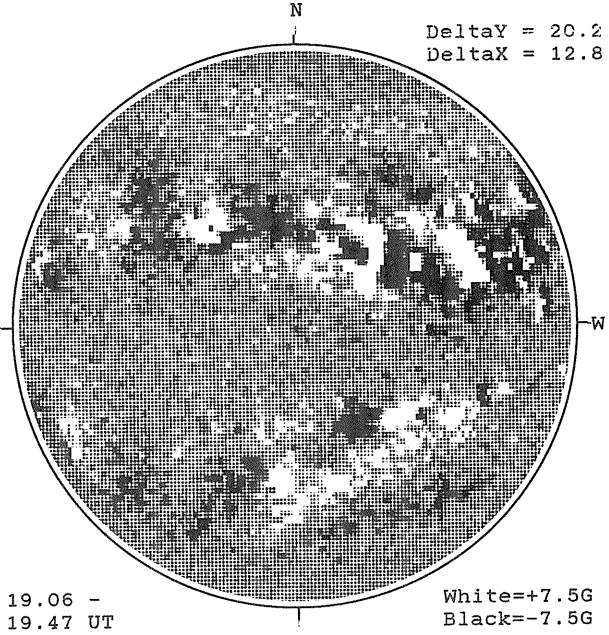
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2156 UT

MT. WILSON MAGNETOGRAM

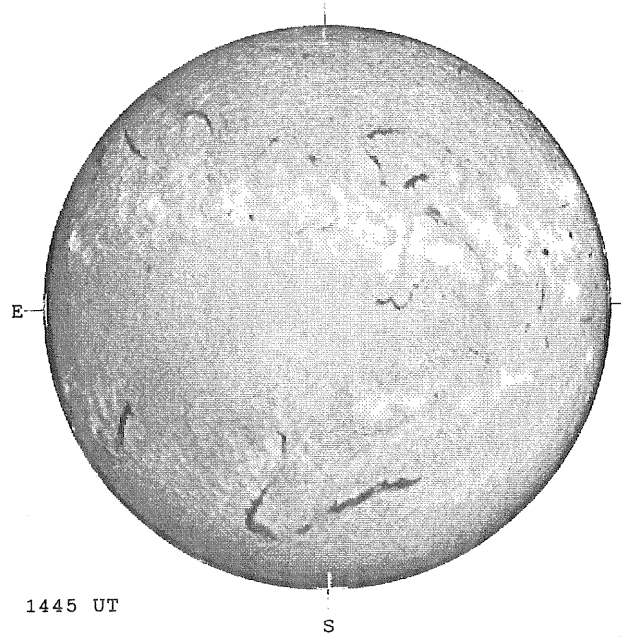
DeltaY = 20.2
DeltaX = 12.8



19.06 -
19.47 UT

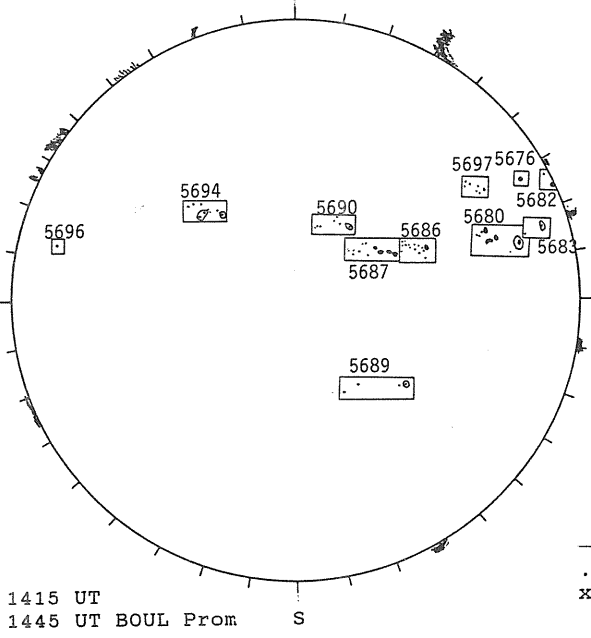
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



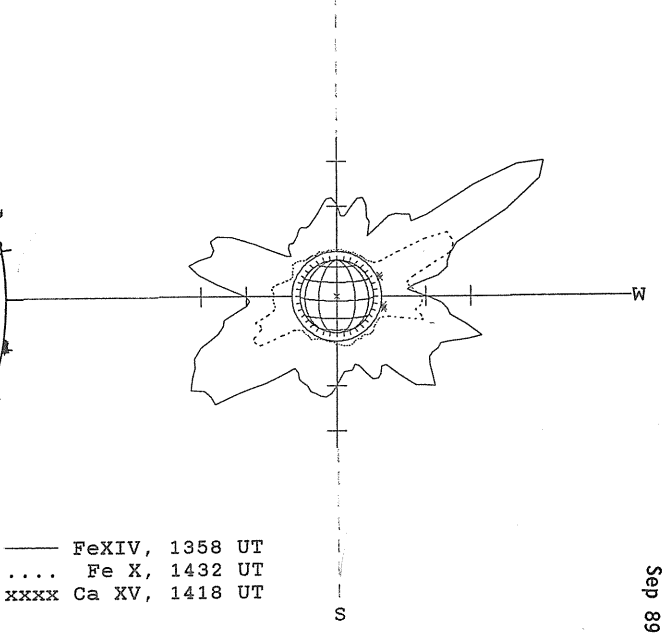
1445 UT

BOULDER SUNSPOT



1415 UT
1445 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1358 UT
.... Fe X, 1432 UT
xxxx Ca XV, 1418 UT

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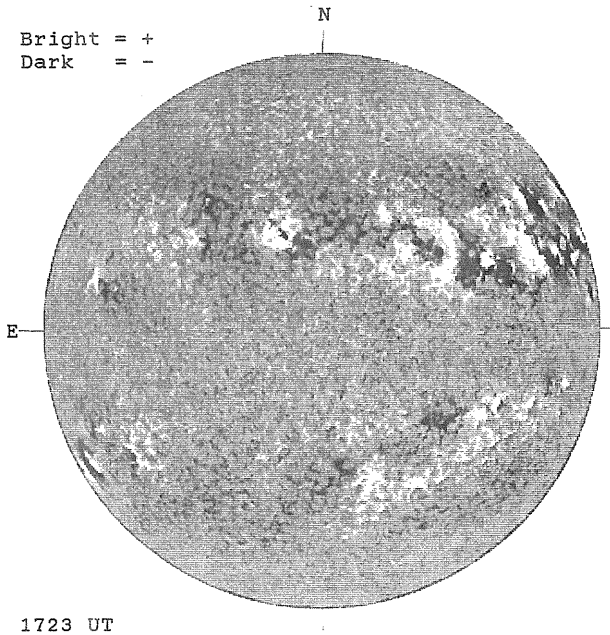
SEPTEMBER 16, 1989 (P= 24.24, B_o = 7.17, L_o = 300.81)

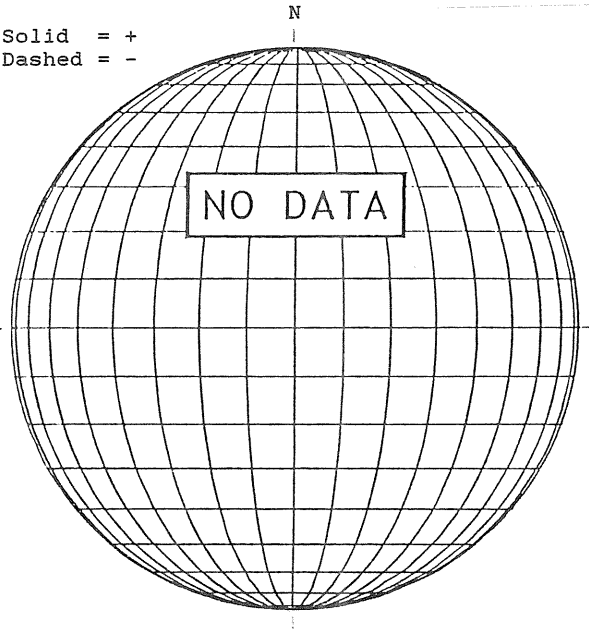
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



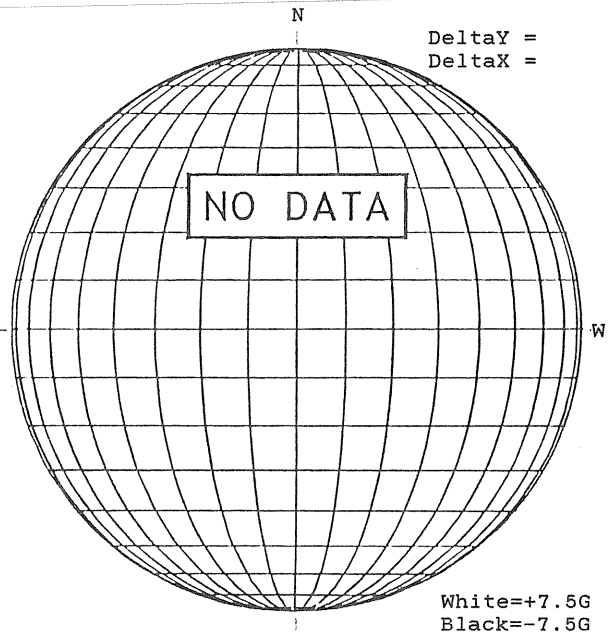
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



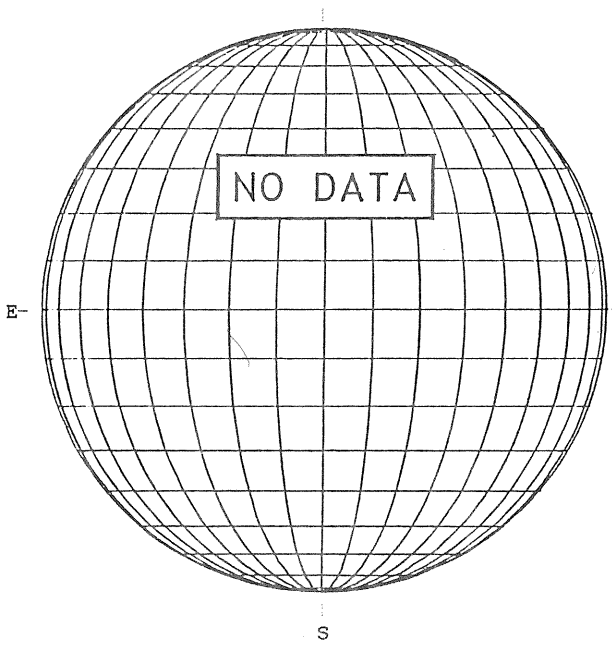
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =

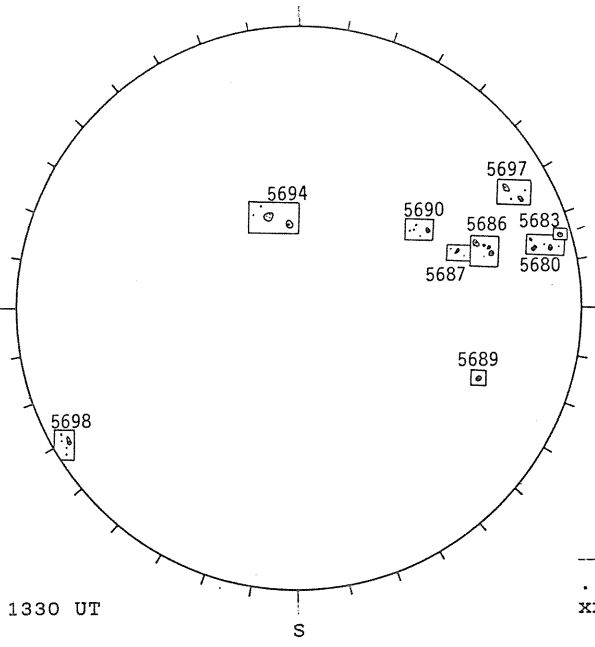


White=+7.5G
Black=-7.5G

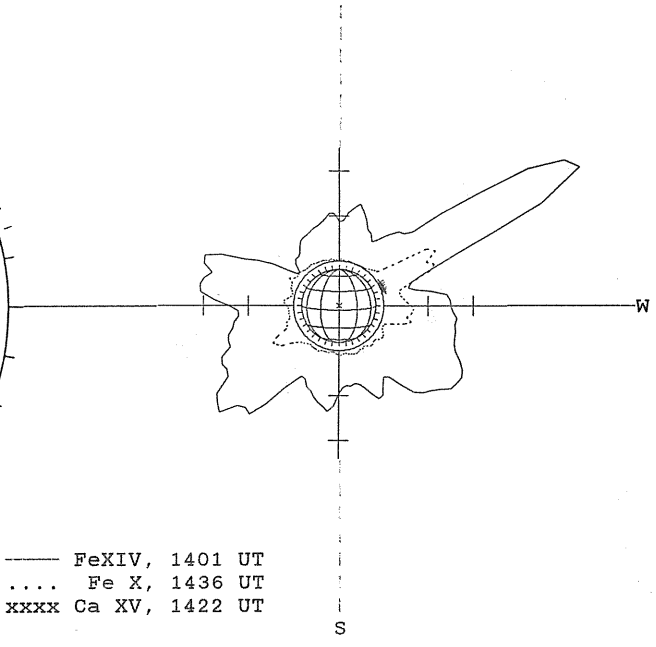
HOLLOMAN H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

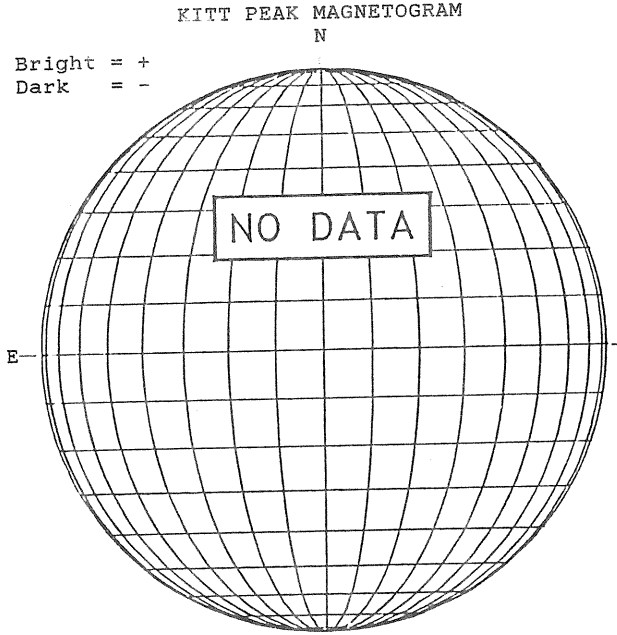


—— FeXIV, 1401 UT
.... Fe X, 1436 UT
xxxx Ca XV, 1422 UT

SEPTEMBER 17, 1989 (P= 24.40, B_o = 7.16, L_o = 287.61)

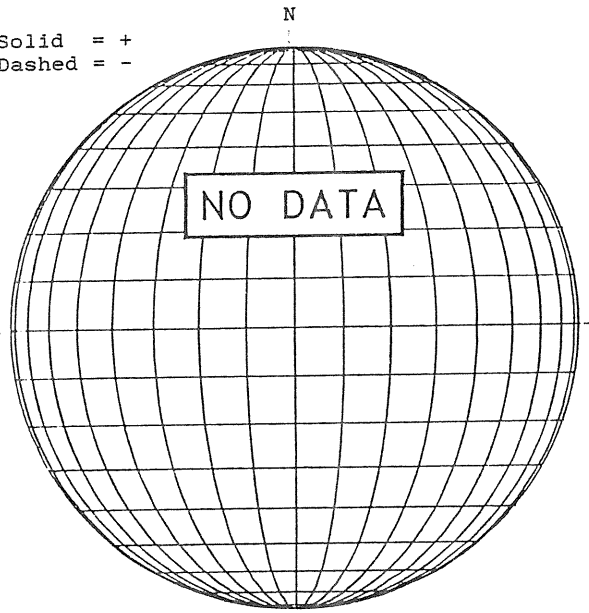
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



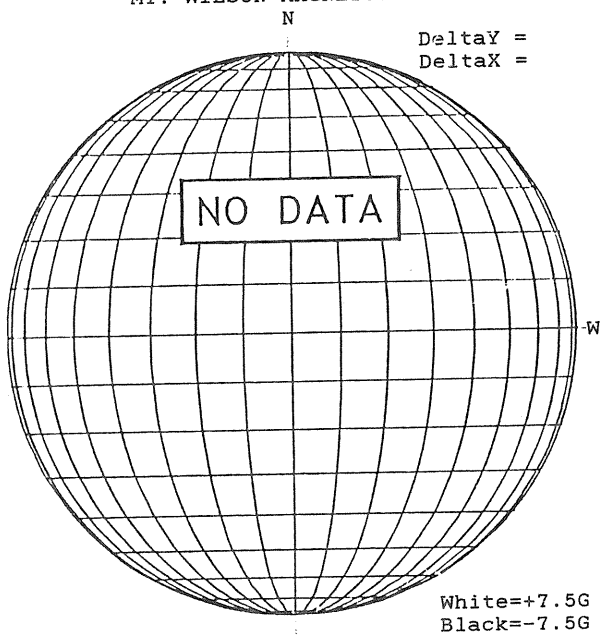
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



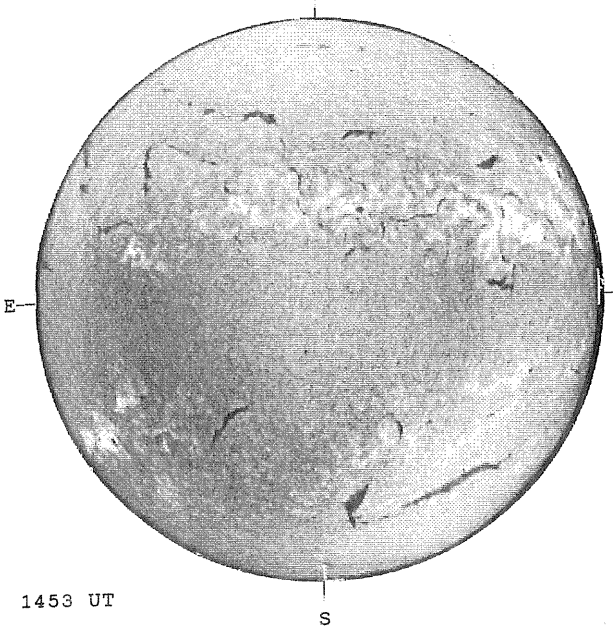
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



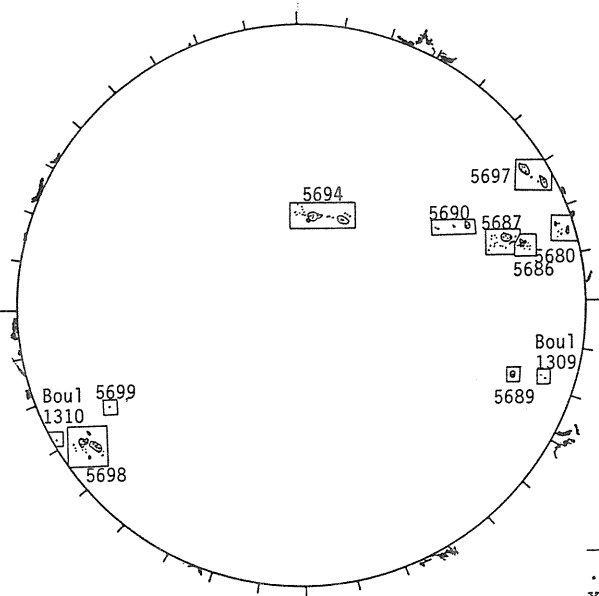
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



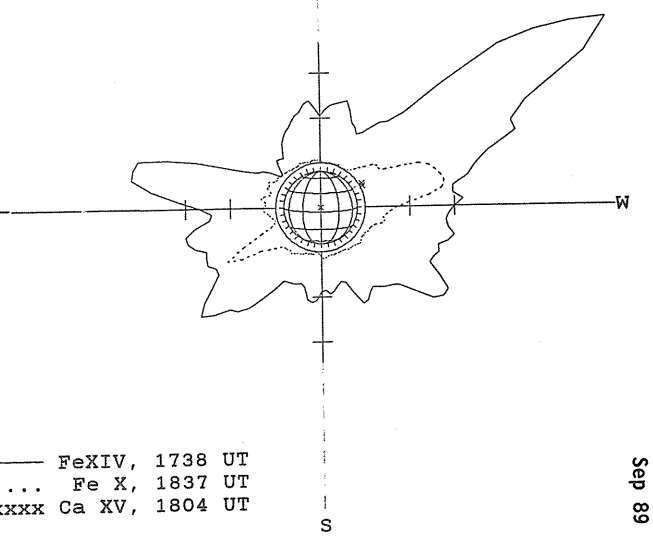
1453 UT

BOULDER SUNSPOT



1445 UT
1453 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1738 UT
.... Fe X, 1837 UT
xxxx Ca XV, 1804 UT

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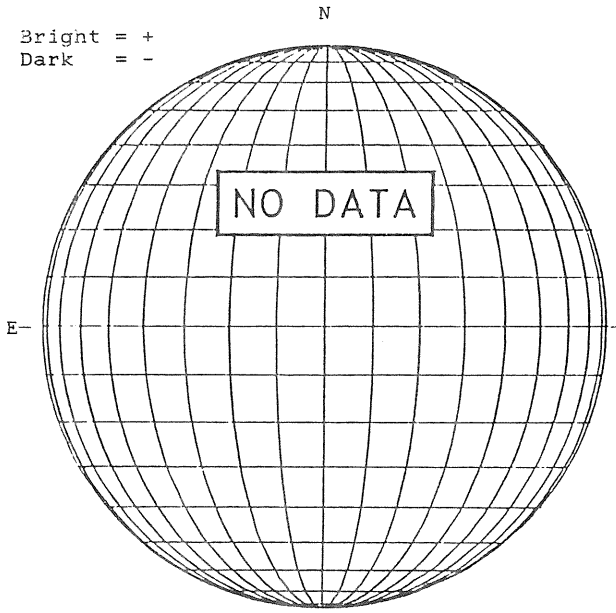
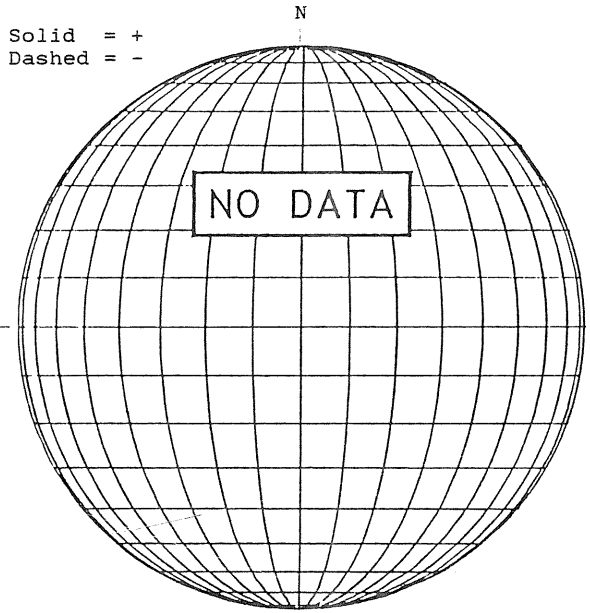
Sep 89

SEPTEMBER 18, 1989 (P= 24.55, B_o = 7.14, L_o = 274.41)

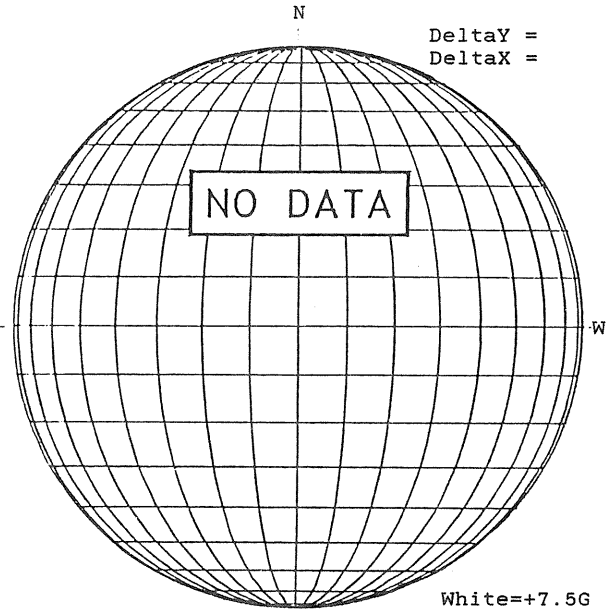
KITT PEAK MAGNETOGRAM



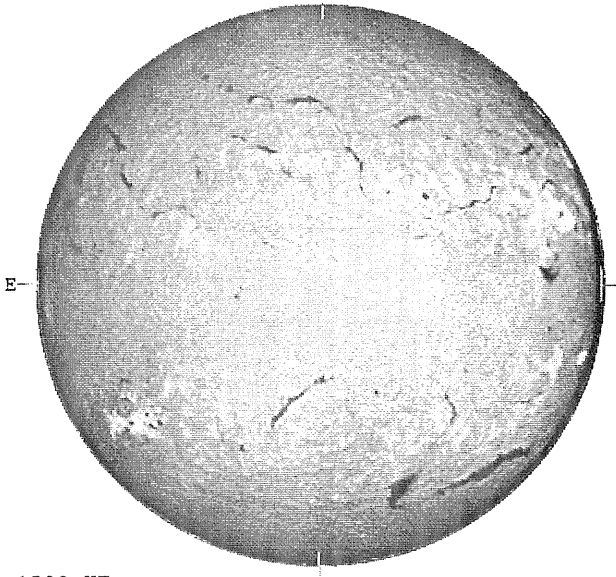
STANFORD MAGNETOGRAM



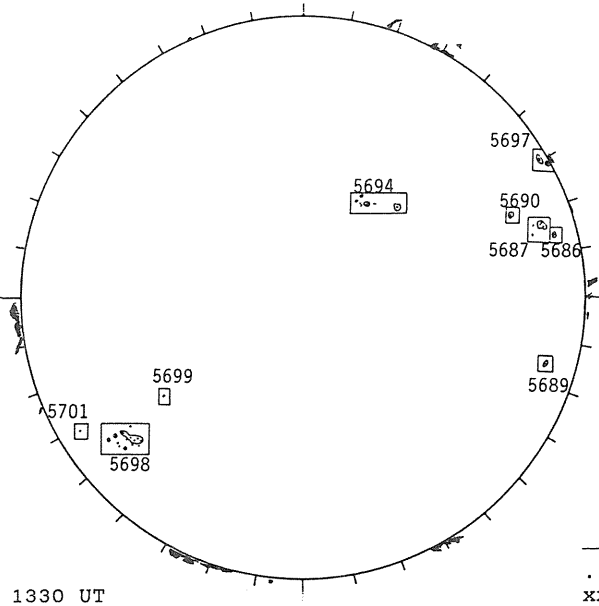
MT. WILSON MAGNETOGRAM



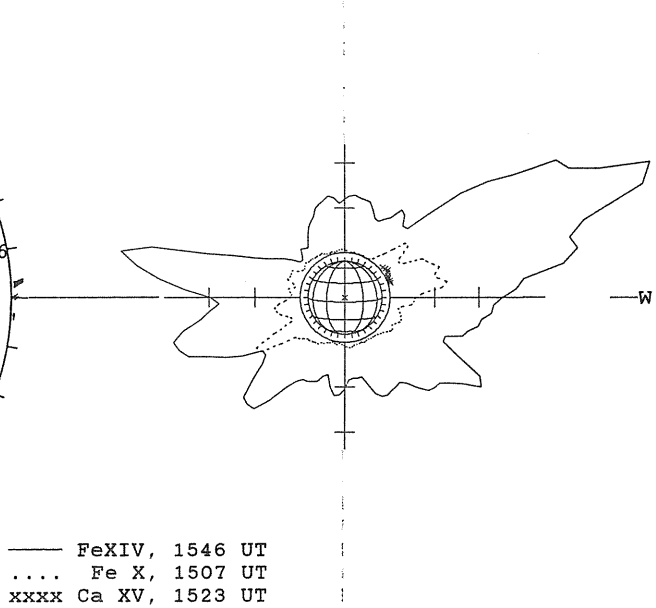
BOULDER H-ALPHA



BOULDER SUNSPOT

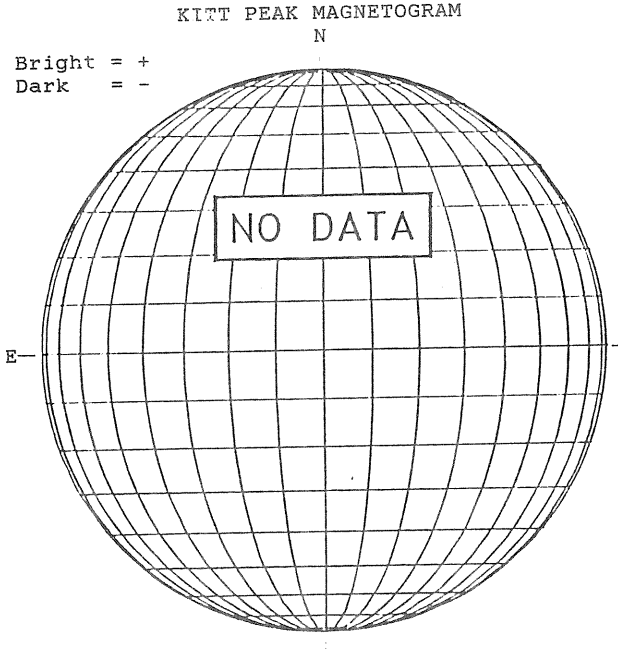


SACRAMENTO PEAK CORONA (1.15 Radii)



SEPTEMBER 19, 1989 (P= 24.70, B_o = 7.12, L_o = 261.21)

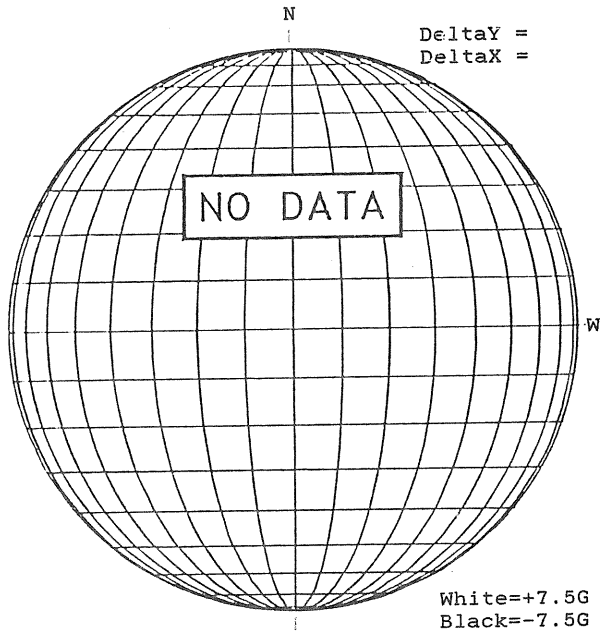
KITT PEAK MAGNETOGRAM



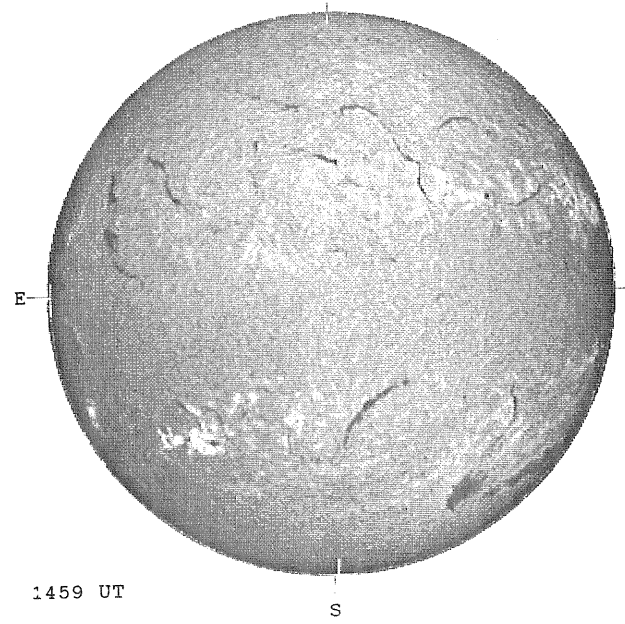
STANFORD MAGNETOGRAM

2133 UT

MT. WILSON MAGNETOGRAM

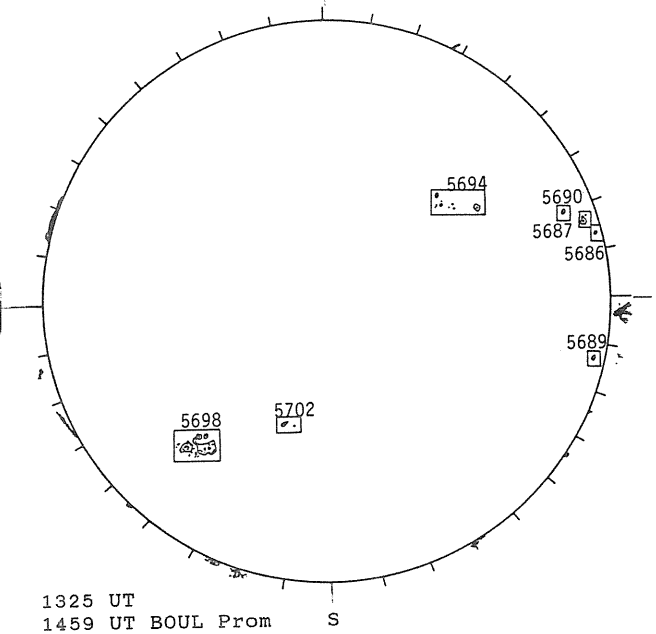


BOULDER H-ALPHA



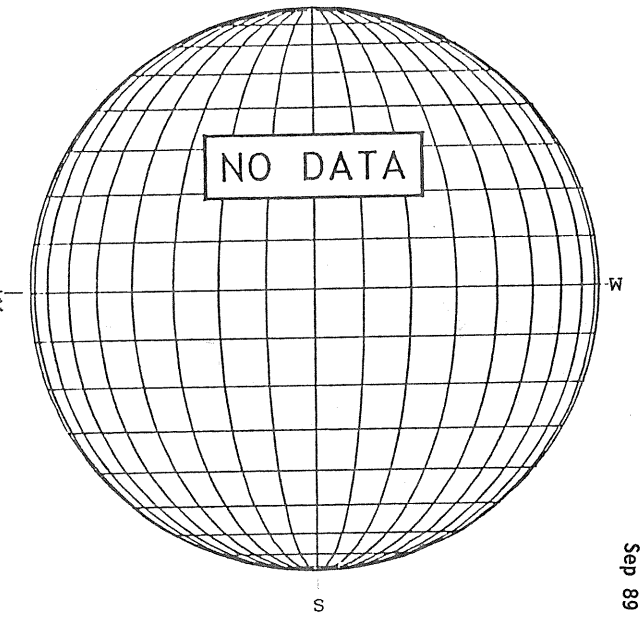
1459 UT

BOULDER SUNSPOT



1325 UT
1459 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)



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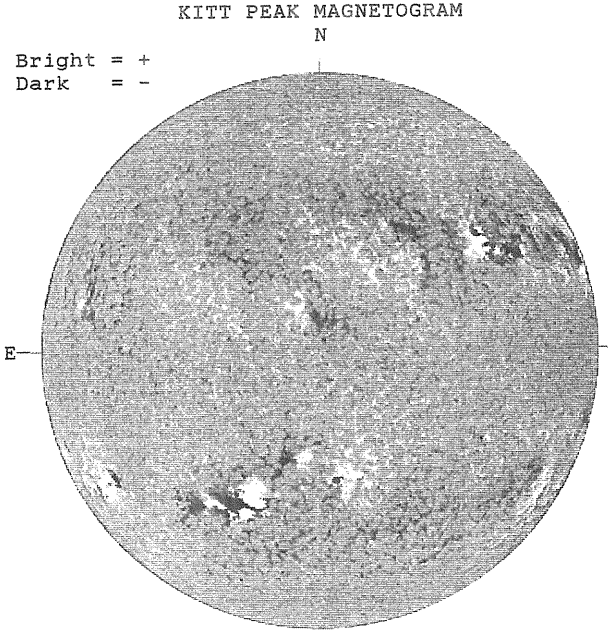
Sep 89

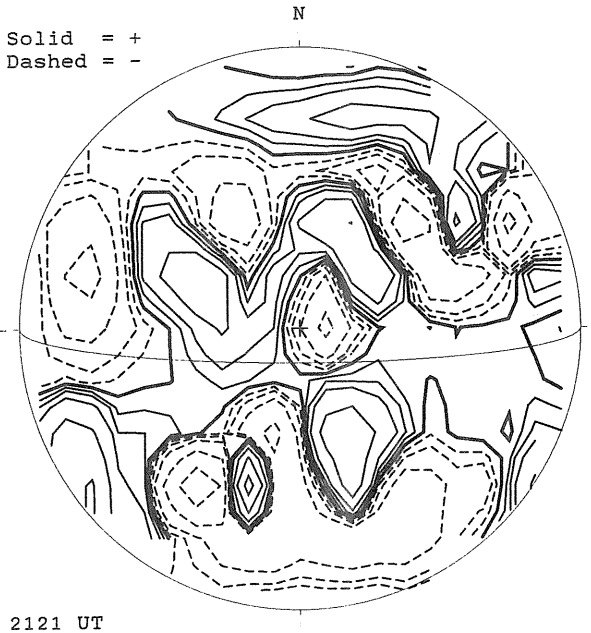
SEPTEMBER 20, 1989 (P= 24.85, B_o = 7.09, L_o = 248.01)

KITT PEAK MAGNETOGRAM



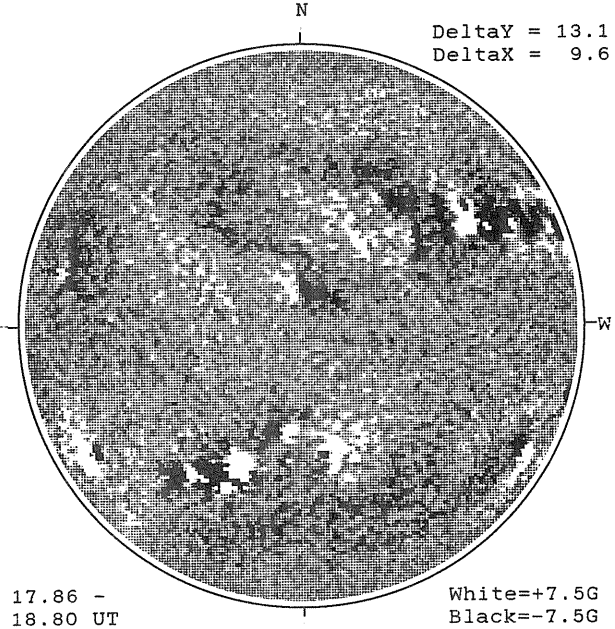
1414 UT

STANFORD MAGNETOGRAM



2121 UT

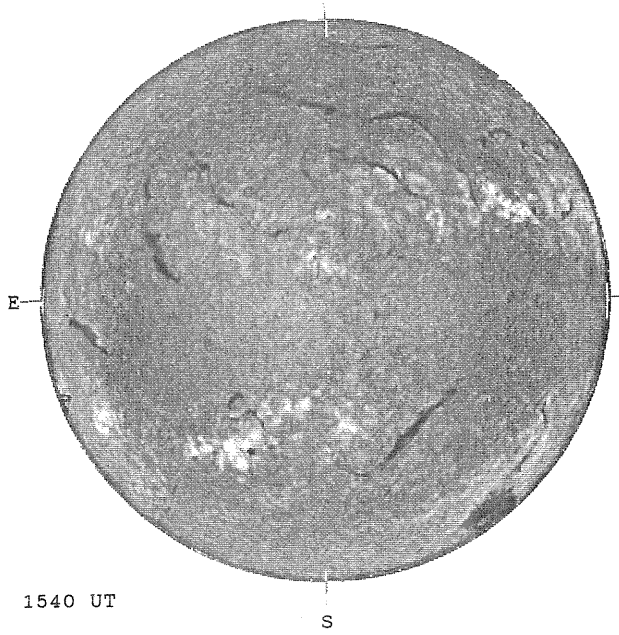
MT. WILSON MAGNETOGRAM



17.86 -
18.80 UT

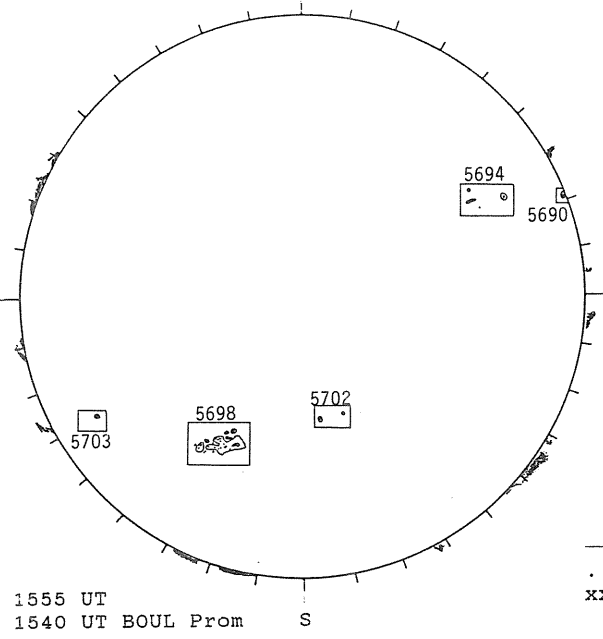
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



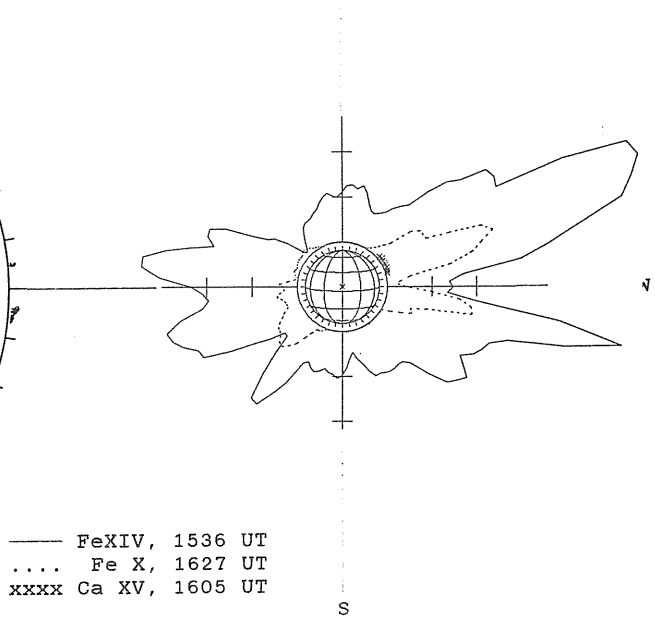
1540 UT

BOULDER SUNSPOT



1555 UT
1540 UT BOUL Prom

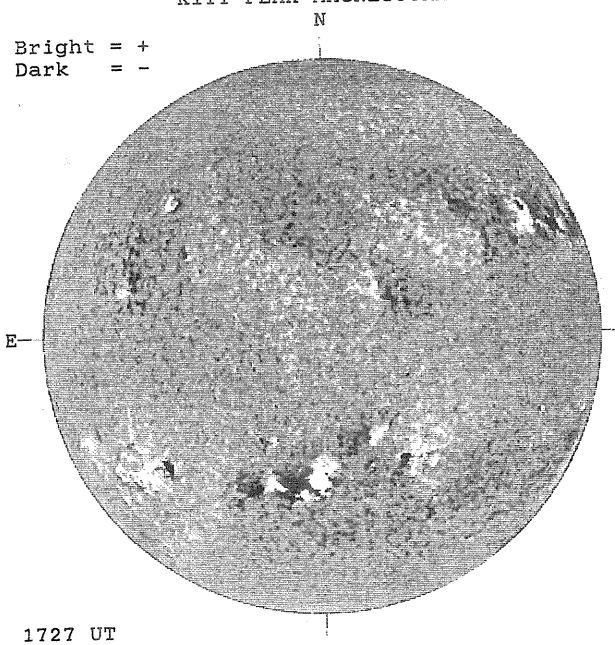
SACRAMENTO PEAK CORONA (1.15 Radii)



—— FeXIV, 1536 UT
.... Fe X, 1627 UT
xxxx Ca XV, 1605 UT

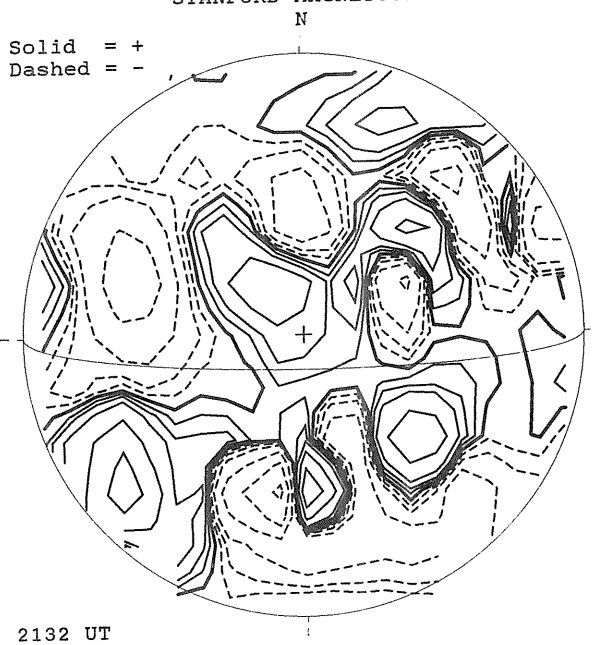
SEPTEMBER 21, 1989 (P= 24.98, B_o = 7.07, L_o = 234.81)

KITT PEAK MAGNETOGRAM



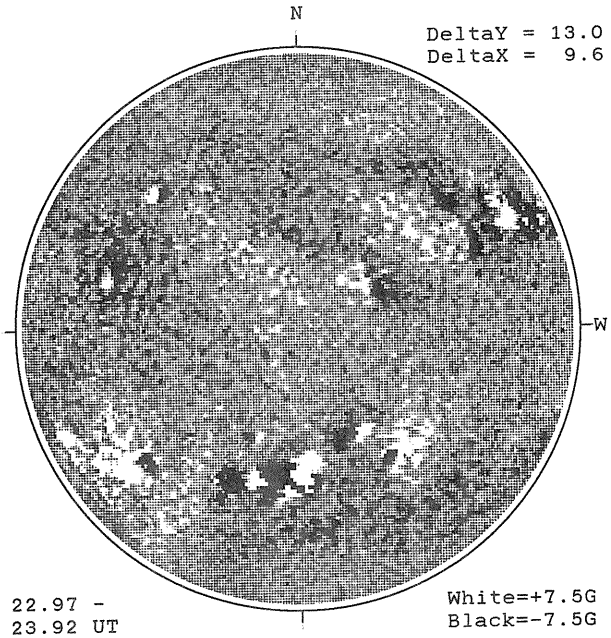
1727 UT

STANFORD MAGNETOGRAM



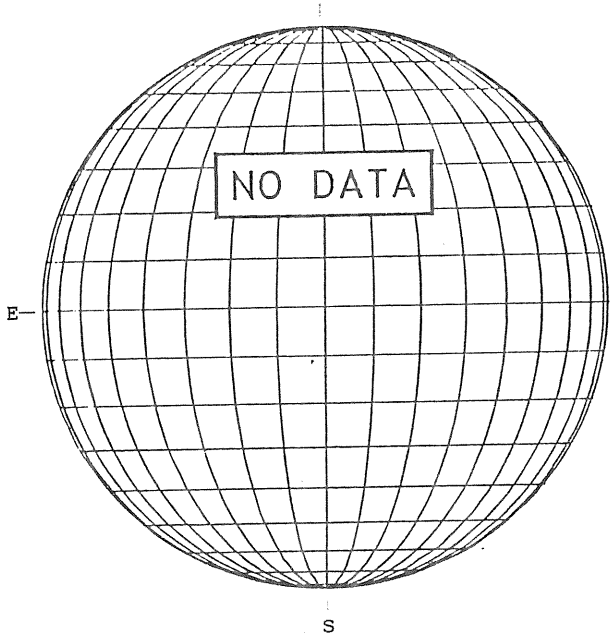
2132 UT

MT. WILSON MAGNETOGRAM

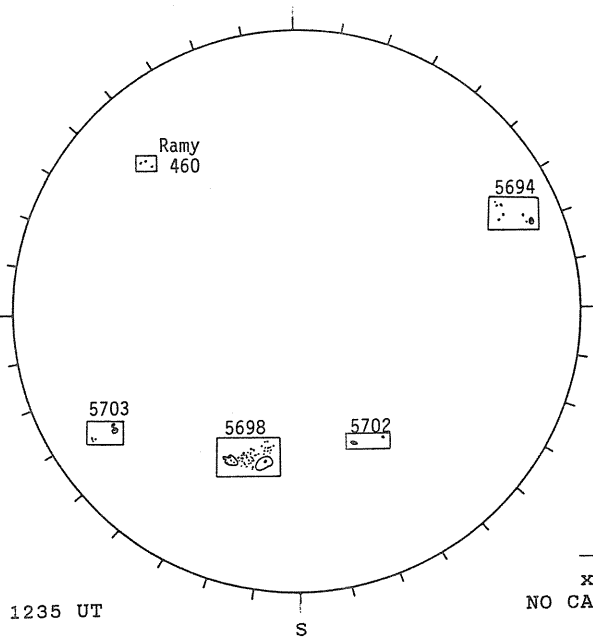


22.97 -
23.92 UT

BOULDER H-ALPHA

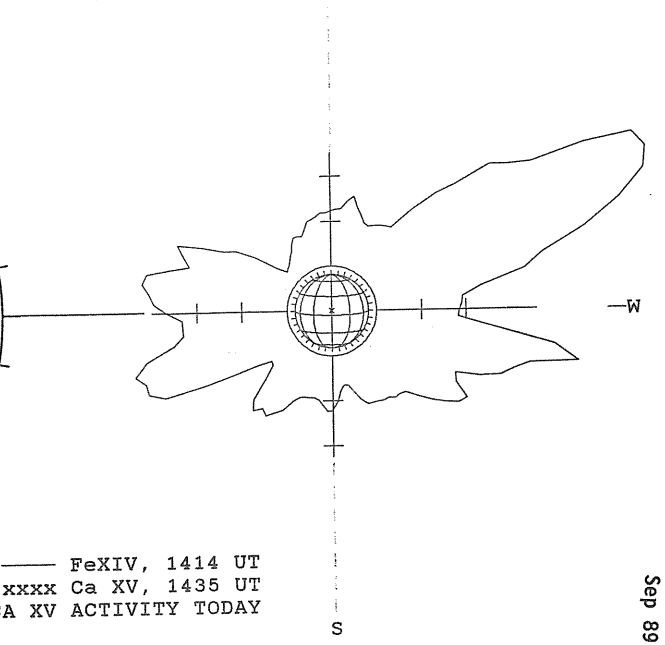


RAMEY SUNSPOT



1235 UT

SACRAMENTO PEAK CORONA (1.15 Radii)



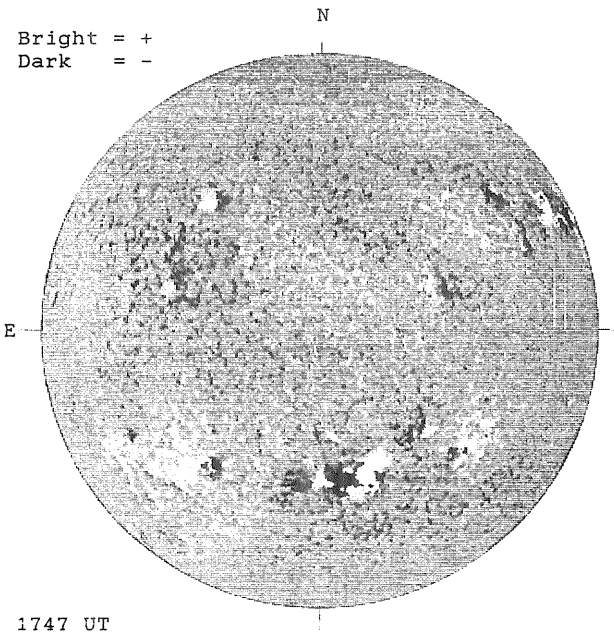
—— FeXIV, 1414 UT
xxxx Ca XV, 1435 UT
NO CA XV ACTIVITY TODAY

97 Sep 89

SEPTEMBER 22, 1989 (P= 25.11, B_o = 7.04, L_o = 221.61)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



1747 UT

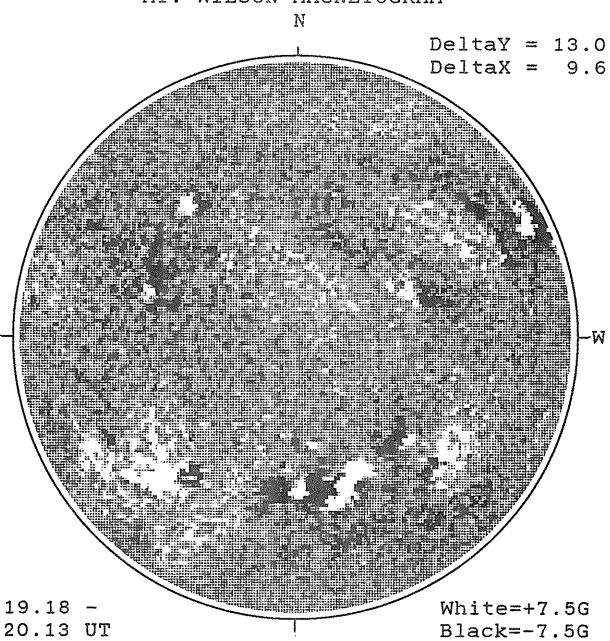
STANFORD MAGNETOGRAM

Solid = +
Dashed = -

2123 UT

MT. WILSON MAGNETOGRAM

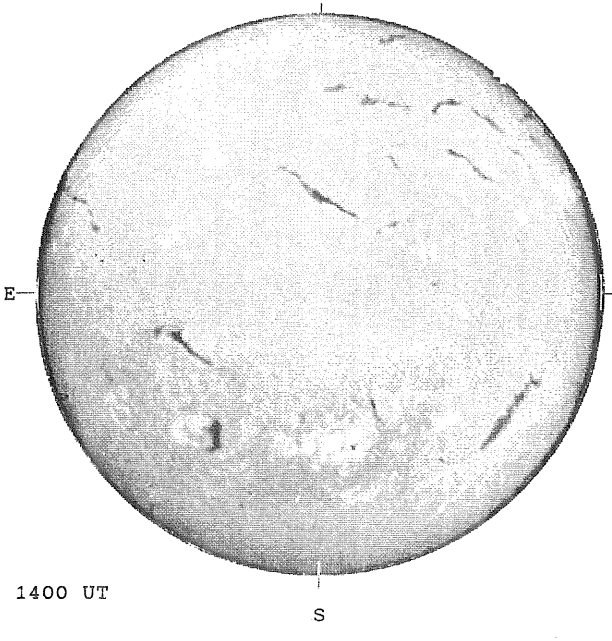
DeltaY = 13.0
DeltaX = 9.6



19.18 -
20.13 UT

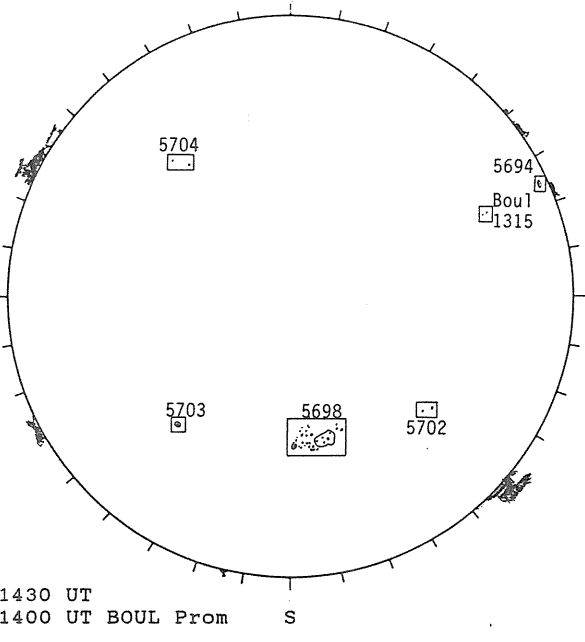
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



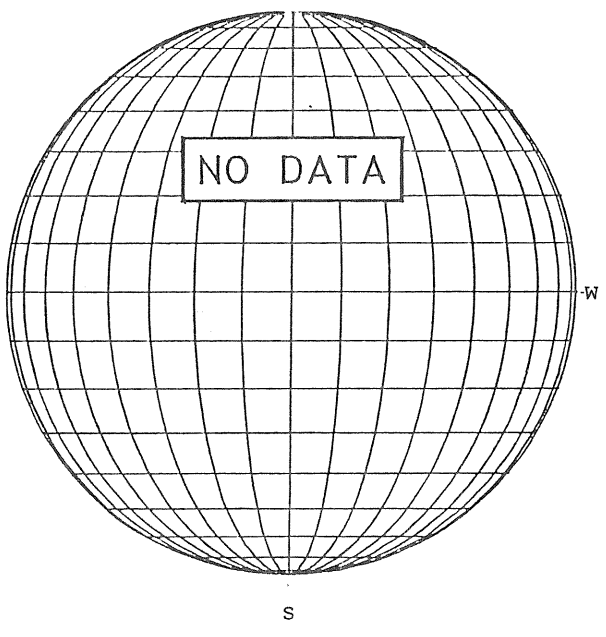
1400 UT

BOULDER SUNSPOT



1430 UT
1400 UT BOUL Prom

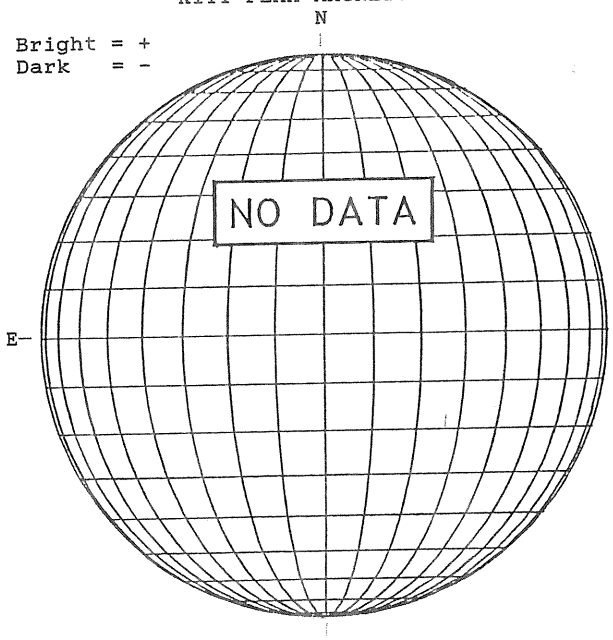
SACRAMENTO PEAK CORONA (1.15 Radii)



SEPTEMBER 23, 1989 (P= 25.24, B_o = 7.01, L_o = 208.41)

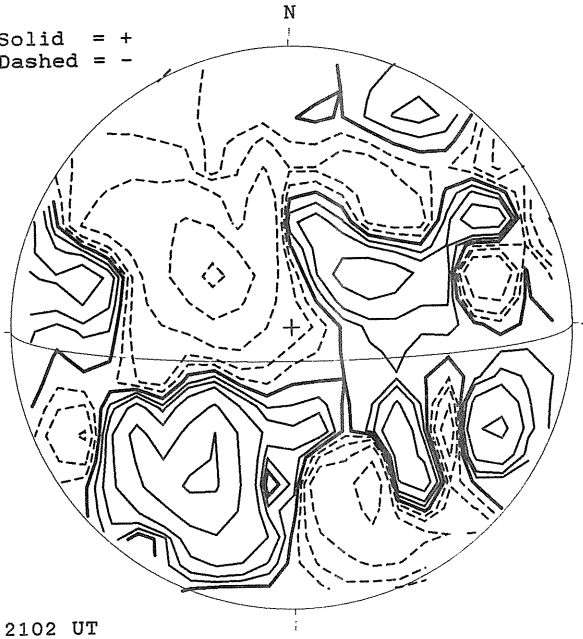
KITT PEAK MAGNETOGRAM

Bright = +
Dark = -



STANFORD MAGNETOGRAM

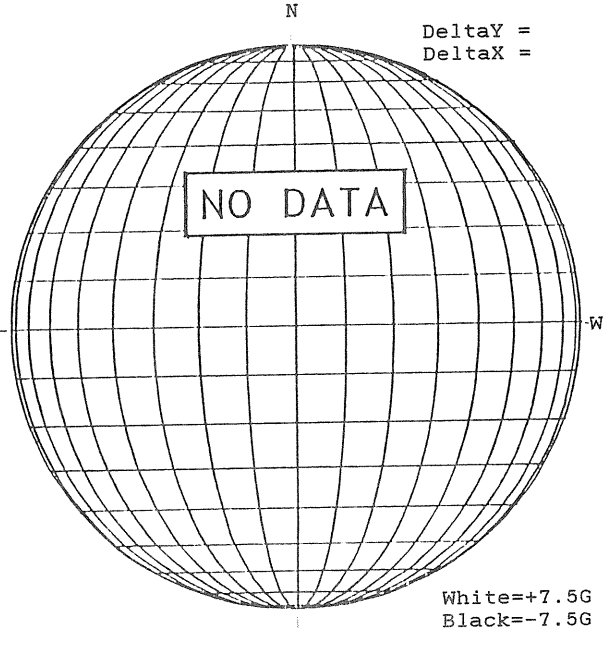
Solid = +
Dashed = -



2102 UT

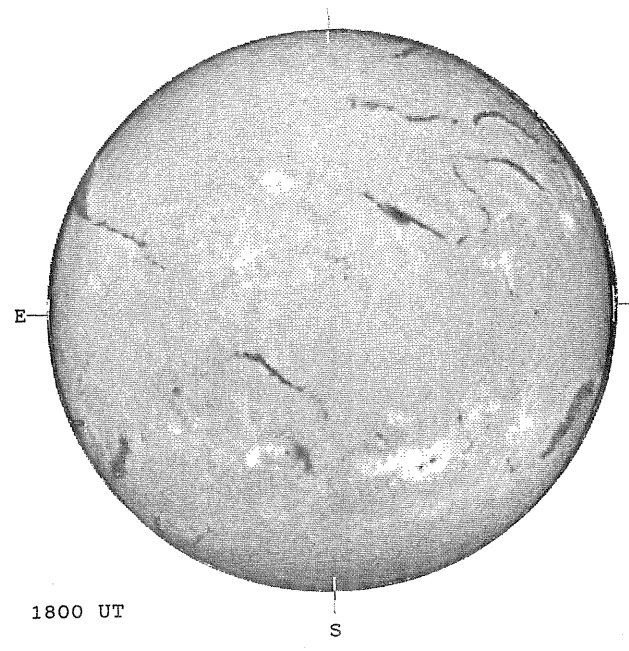
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



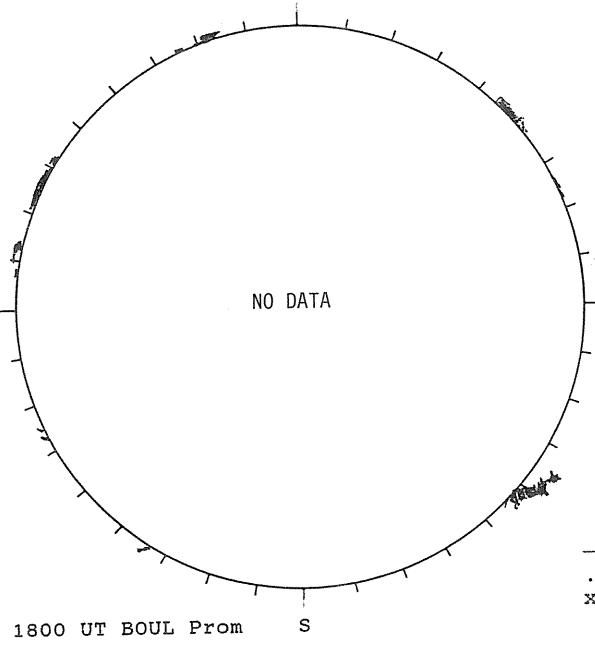
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



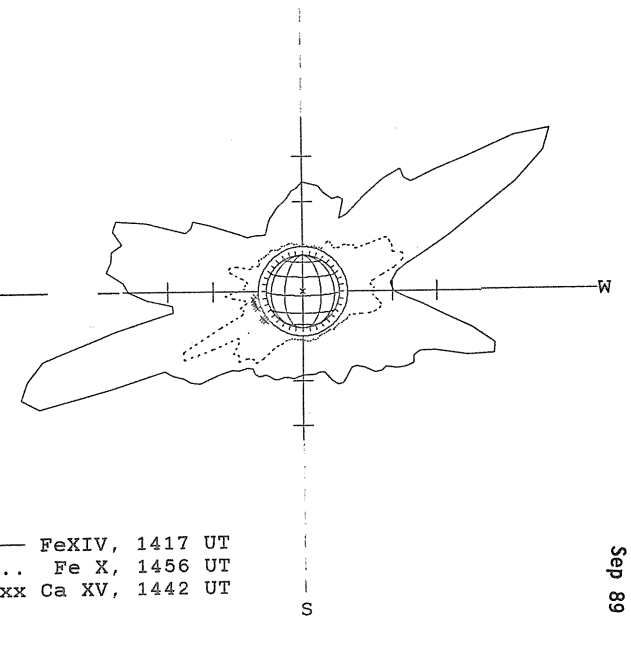
1800 UT

BOULDER SUNSPOT



1800 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

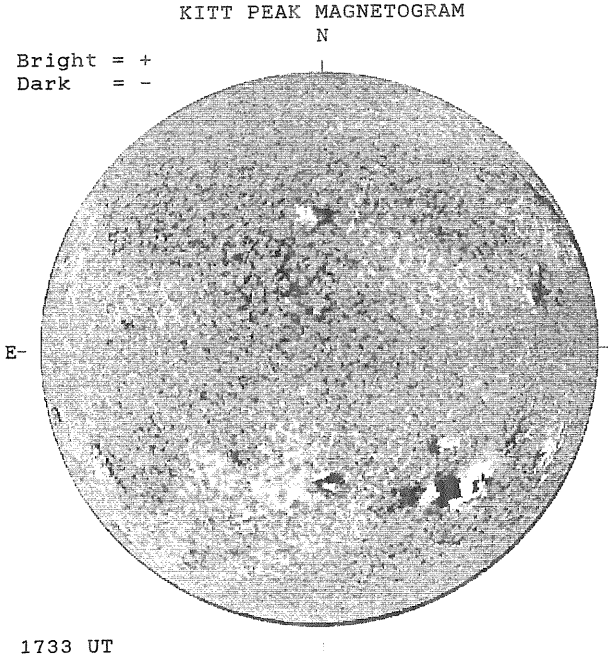


—— FeXIV, 1417 UT
.... Fe X, 1456 UT
xxxx Ca XV, 1442 UT

99
Sep 89

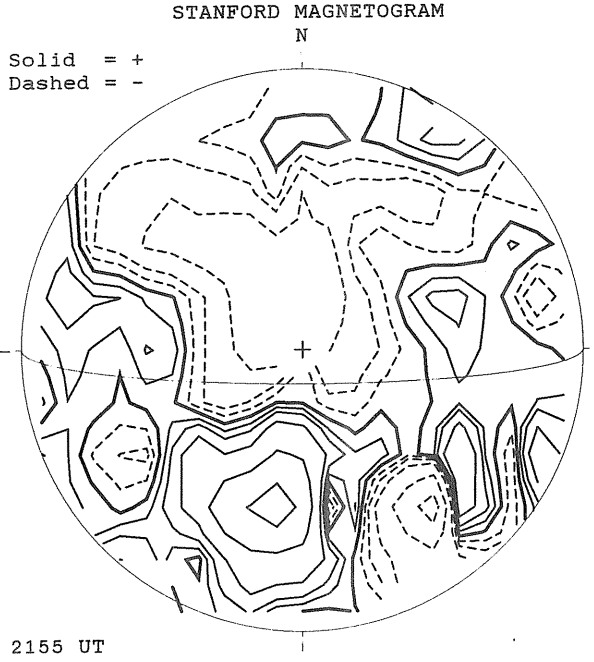
SEPTEMBER 24, 1989 (P= 25.36, B_o = 6.98, L_o = 195.21)

KITT PEAK MAGNETOGRAM



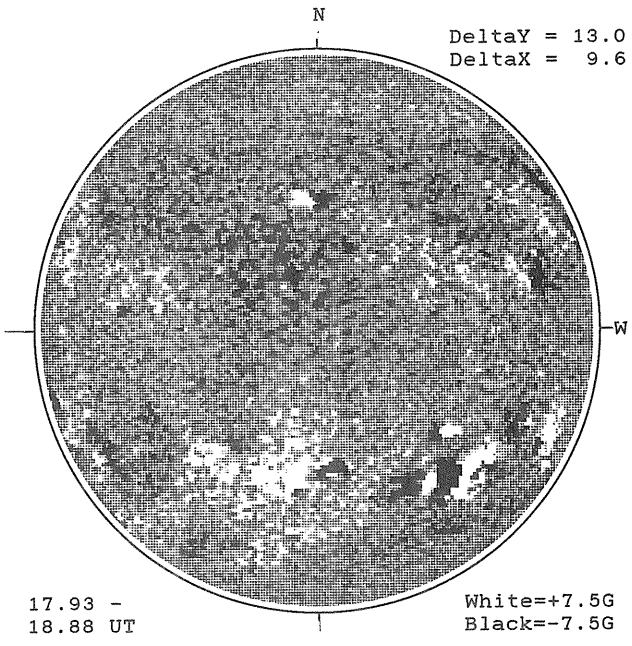
1733 UT

STANFORD MAGNETOGRAM



2155 UT

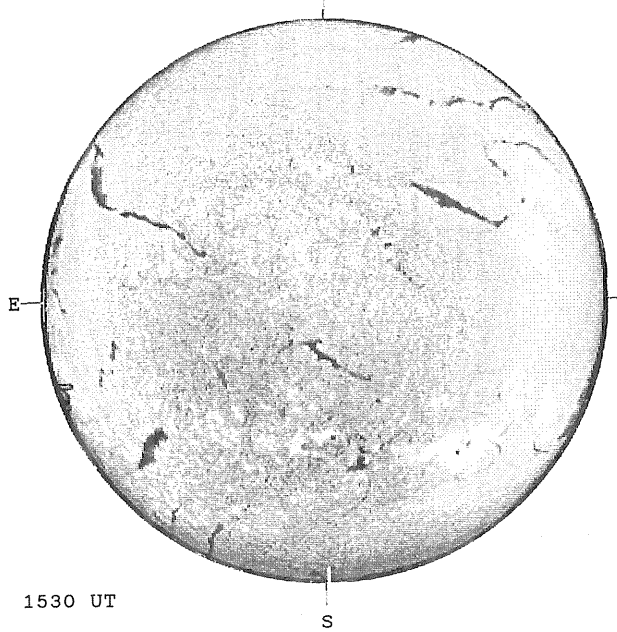
MT. WILSON MAGNETOGRAM



17.93 -
18.88 UT

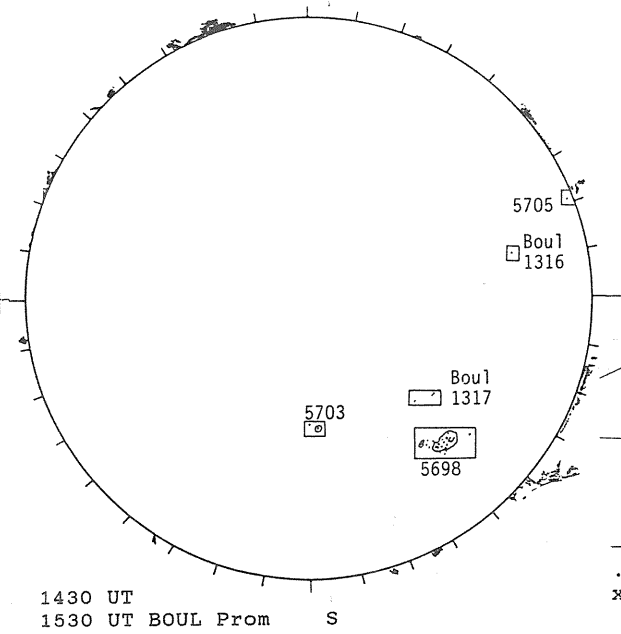
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



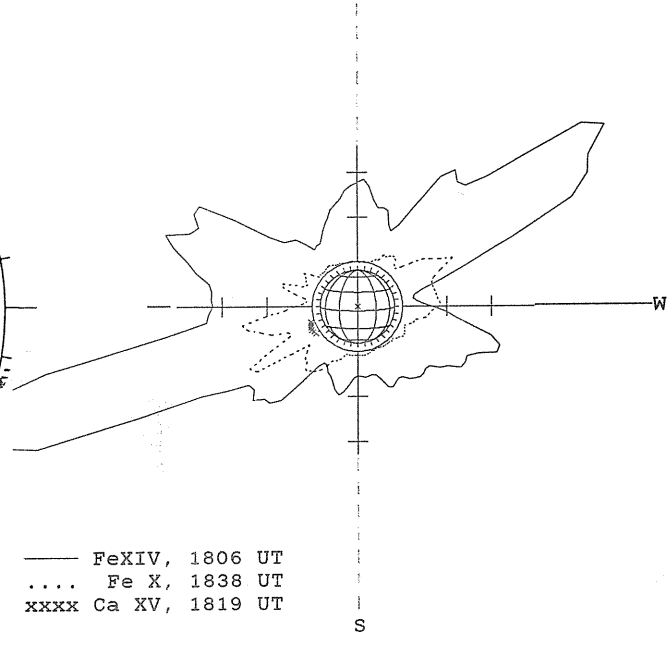
1530 UT

BOULDER SUNSPOT



1430 UT
1530 UT BOUL Prom

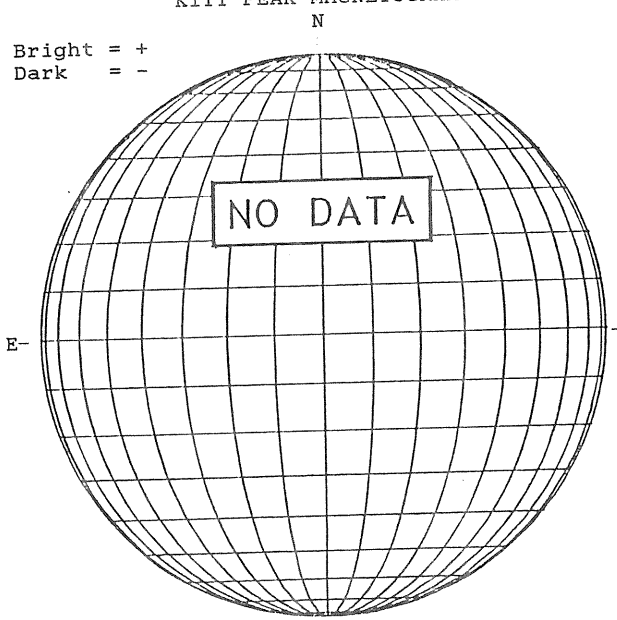
SACRAMENTO PEAK CORONA (1.15 Radii)



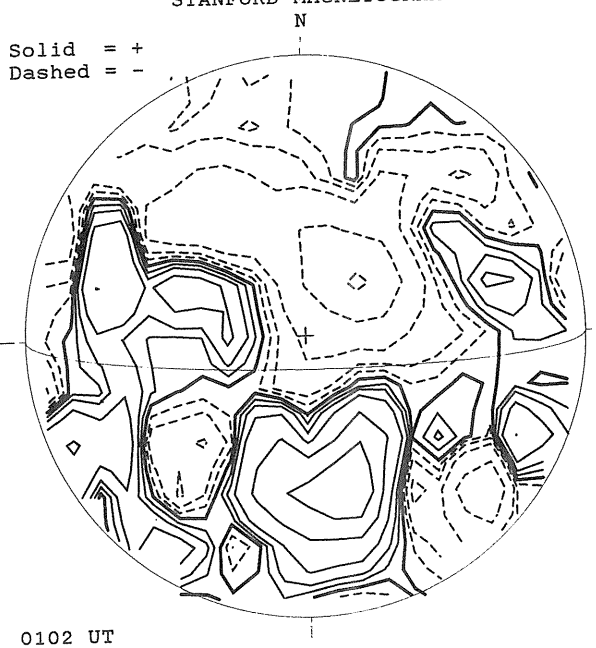
—— FeXIV, 1806 UT
.... Fe X, 1838 UT
xxxx Ca XV, 1819 UT

SEPTEMBER 25, 1989 (P= 25.47, B_o = 6.94, L_o = 182.01)

KITT PEAK MAGNETOGRAM

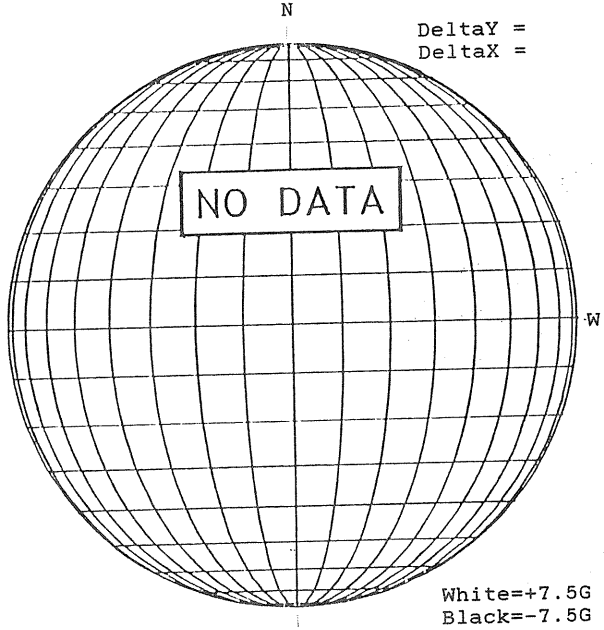


STANFORD MAGNETOGRAM

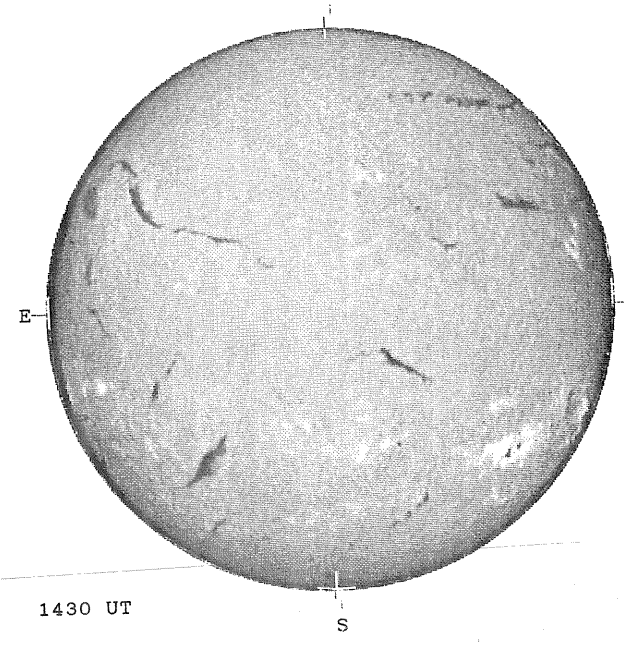


0102 UT
Sep 26

MT. WILSON MAGNETOGRAM

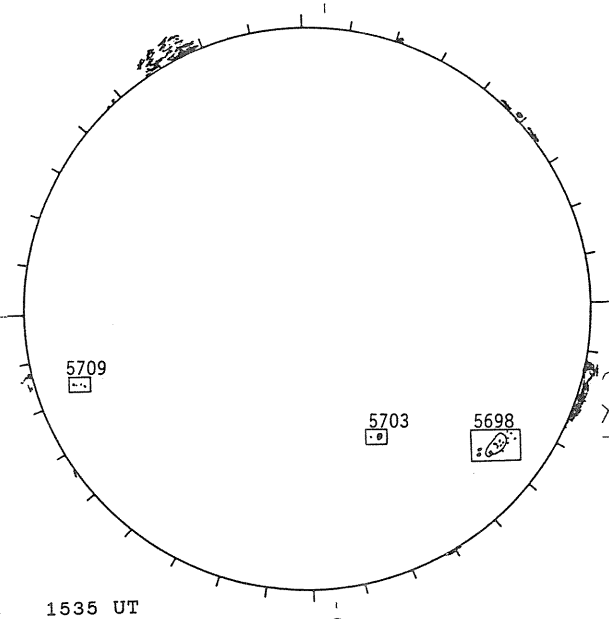


BOULDER H-ALPHA



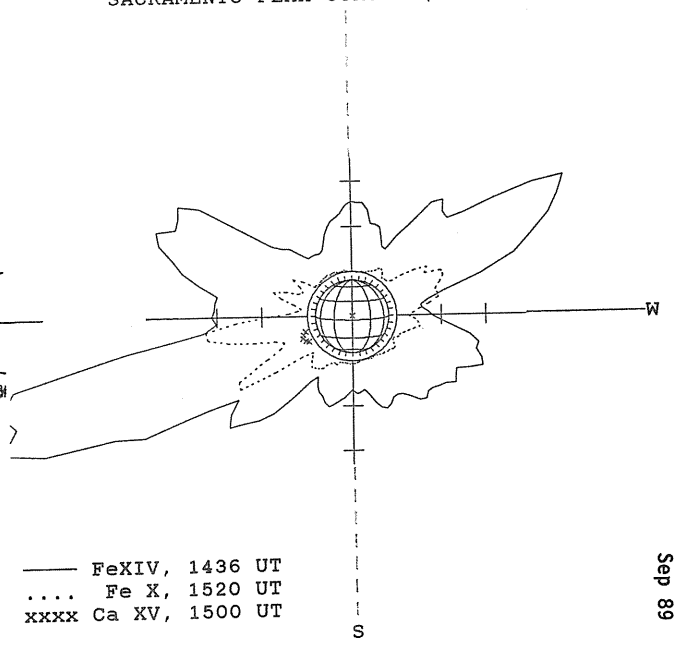
1430 UT

BOULDER SUNSPOT



1535 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (1.15 Radii)

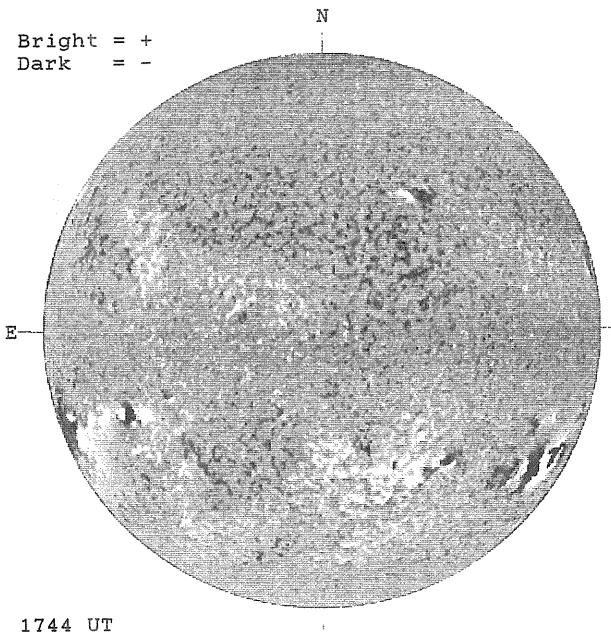


—— FeXIV, 1436 UT
.... Fe X, 1520 UT
xxxx Ca XV, 1500 UT

101
Sep 89

SEPTEMBER 26, 1989 (P= 25.57, B_o = 6.91, L_o = 168.82)

KITT PEAK MAGNETOGRAM

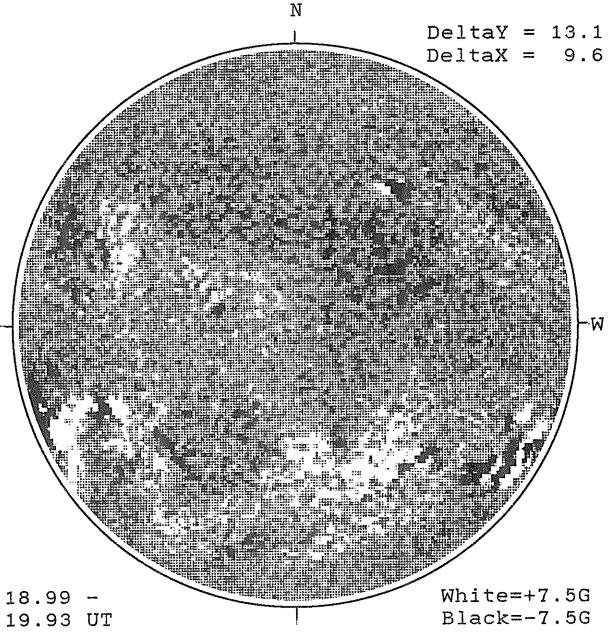


1744 UT

STANFORD MAGNETOGRAM

2141 UT

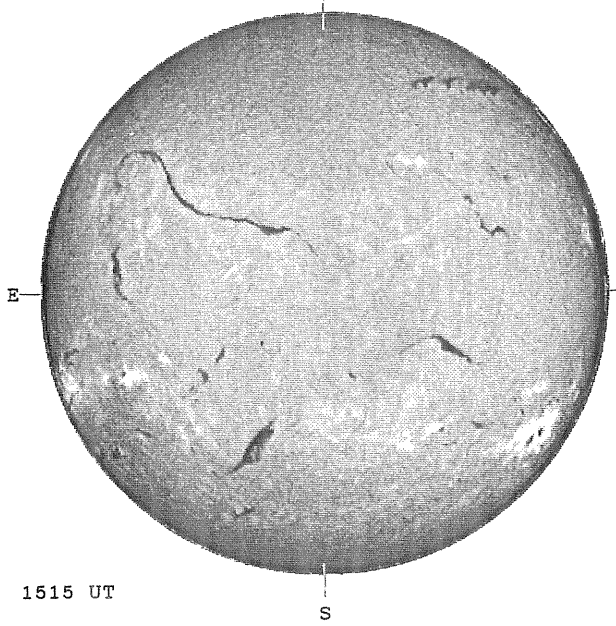
MT. WILSON MAGNETOGRAM



18.99 -
19.93 UT

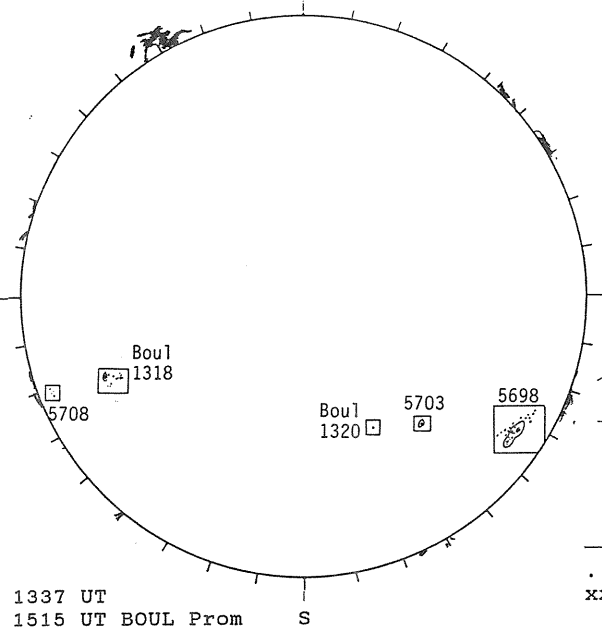
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



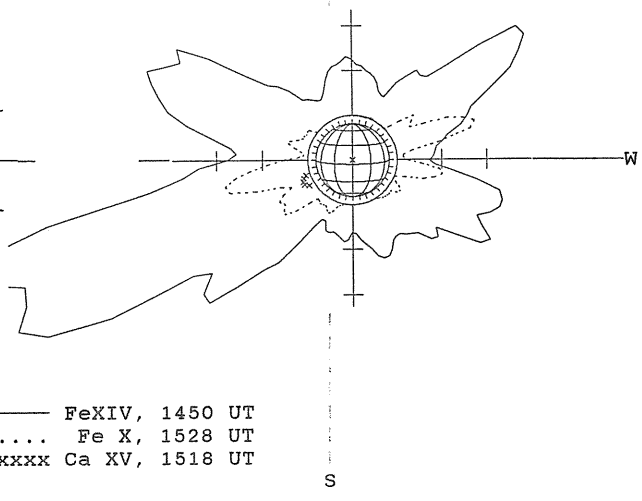
1515 UT

BOULDER SUNSPOT



1337 UT
1515 UT BOUL Prom

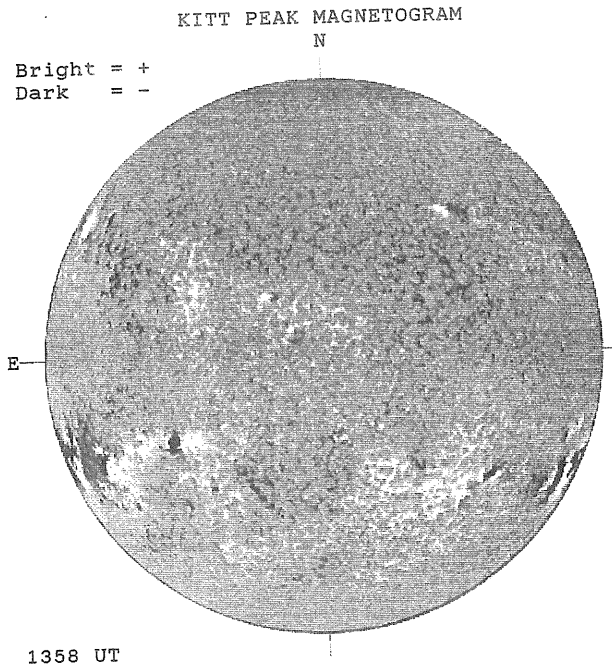
SACRAMENTO PEAK CORONA (1.15 Radii)



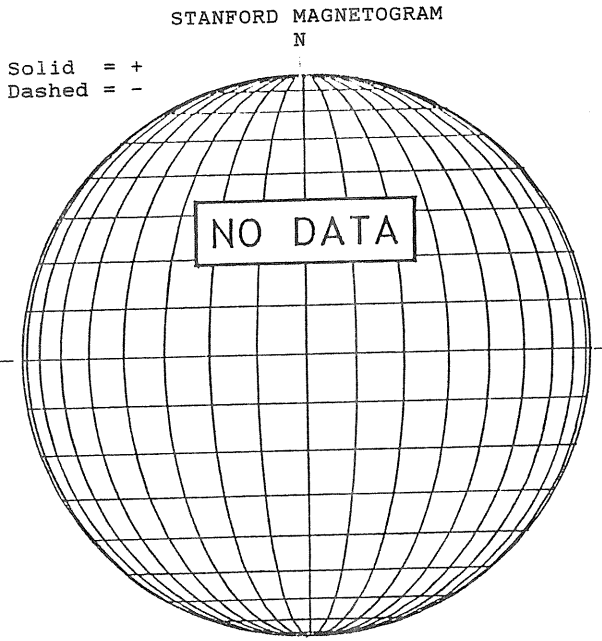
—— FeXIV, 1450 UT
.... Fe X, 1528 UT
xxxx Ca XV, 1518 UT

SEPTEMBER 27, 1989 (P= 25.67, B_o = 6.87, L_o = 155.62)

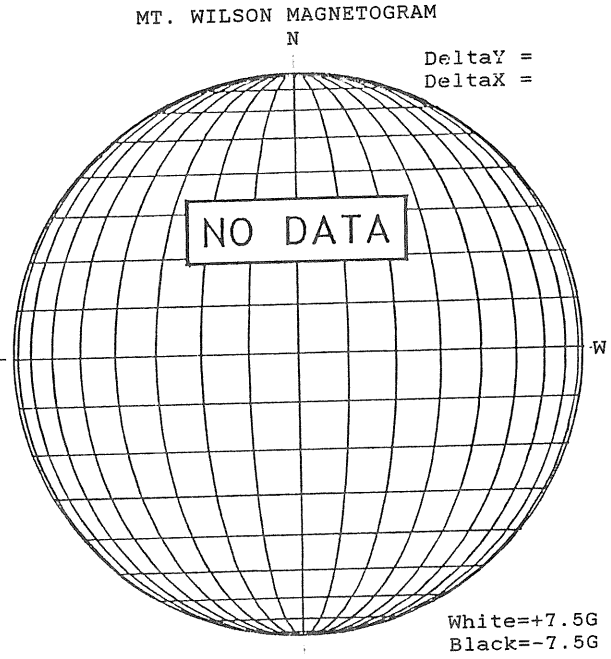
KITT PEAK MAGNETOGRAM



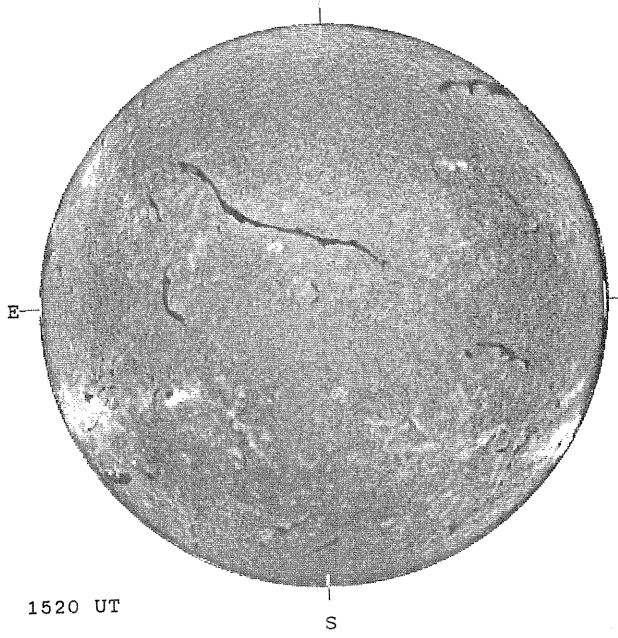
STANFORD MAGNETOGRAM



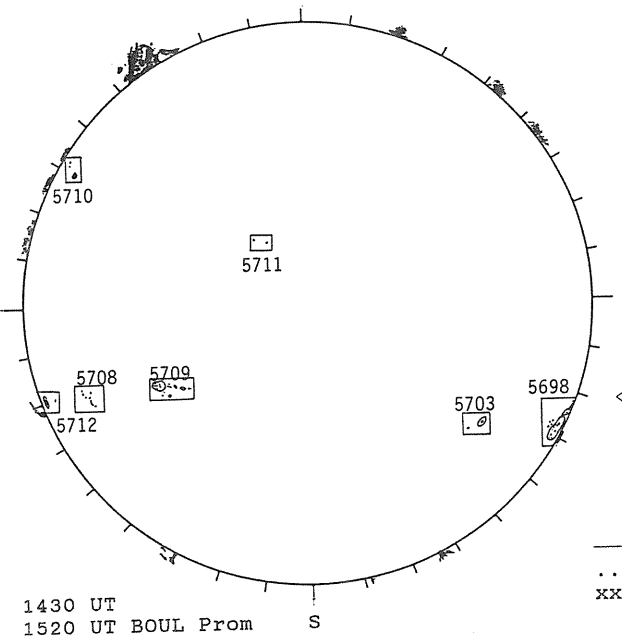
MT. WILSON MAGNETOGRAM



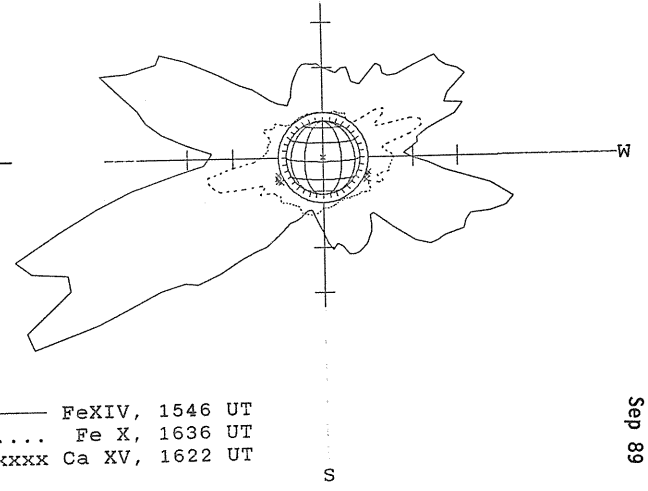
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)

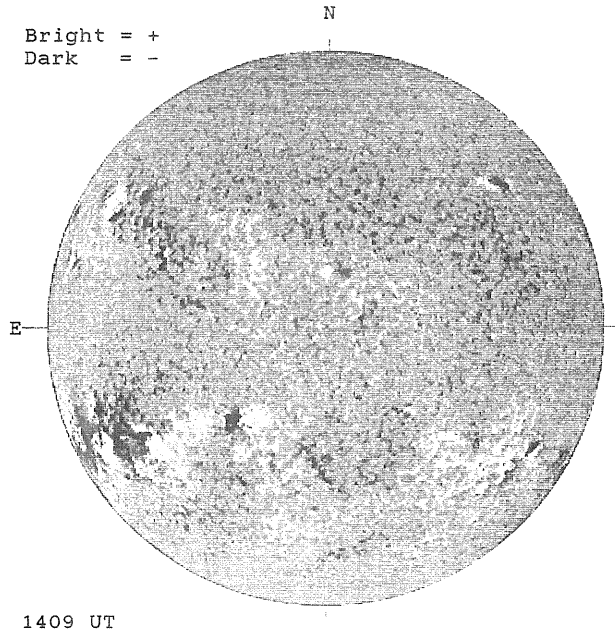


—— FeXIV, 1546 UT
.... Fe X, 1636 UT
xxxx Ca XV, 1622 UT

SEPTEMBER 28, 1989 (P= 25.76, B_o = 6.83, L_o = 142.42)

KITT PEAK MAGNETOGRAM

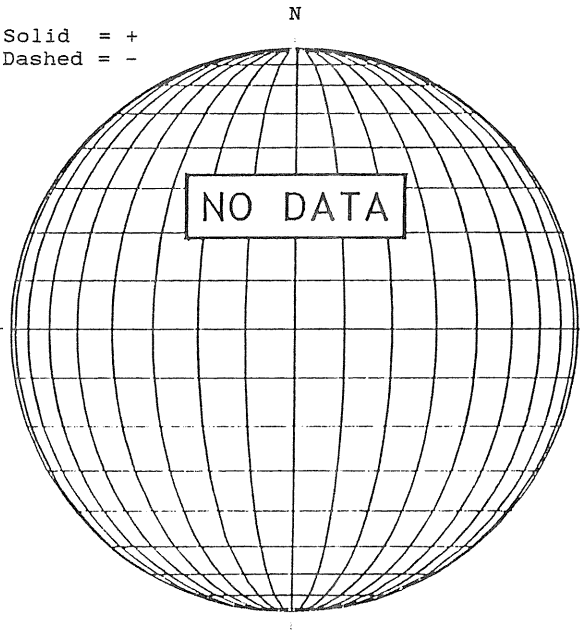
Bright = +
Dark = -



1409 UT

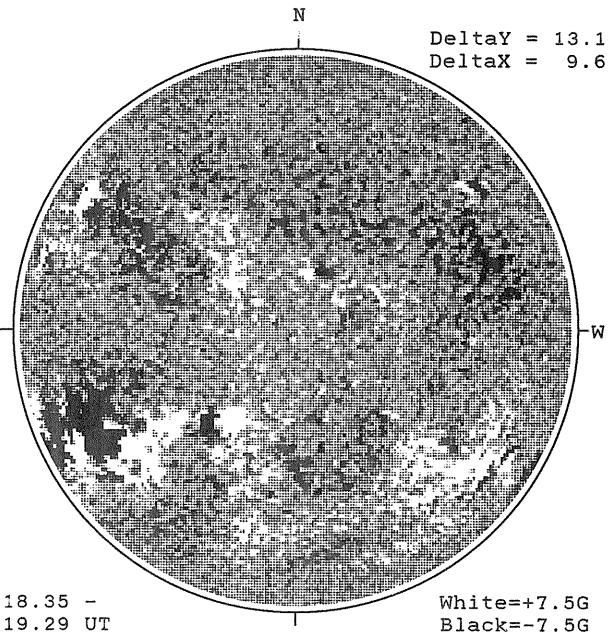
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

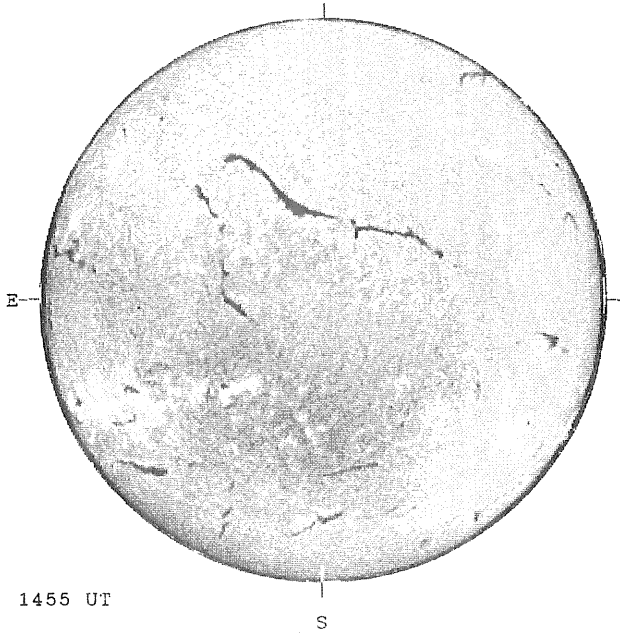
DeltaY = 13.1
DeltaX = 9.6



18.35 -
19.29 UT

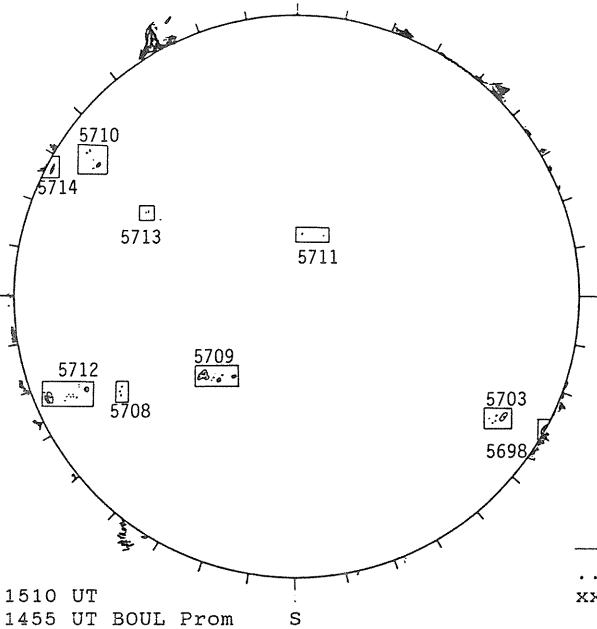
White=+7.5G
Black=-7.5G

BOULDER H-ALPHA



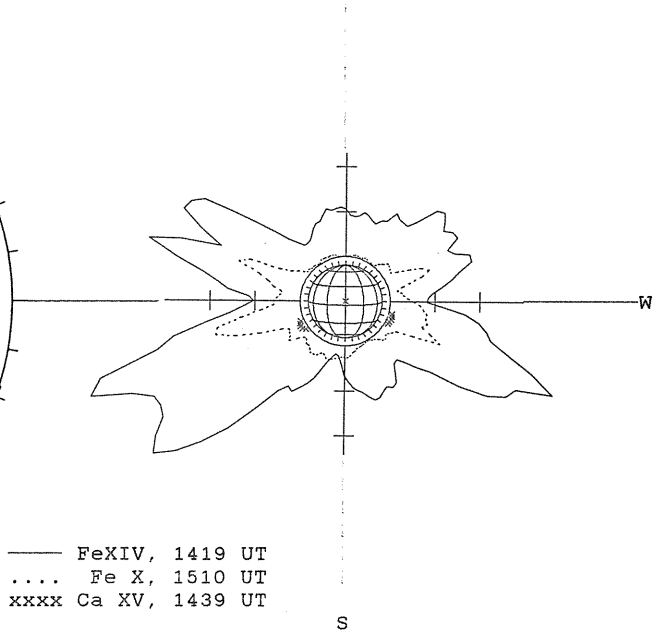
1455 UT

BOULDER SUNSPOT



1510 UT
1455 UT BOUL Prom

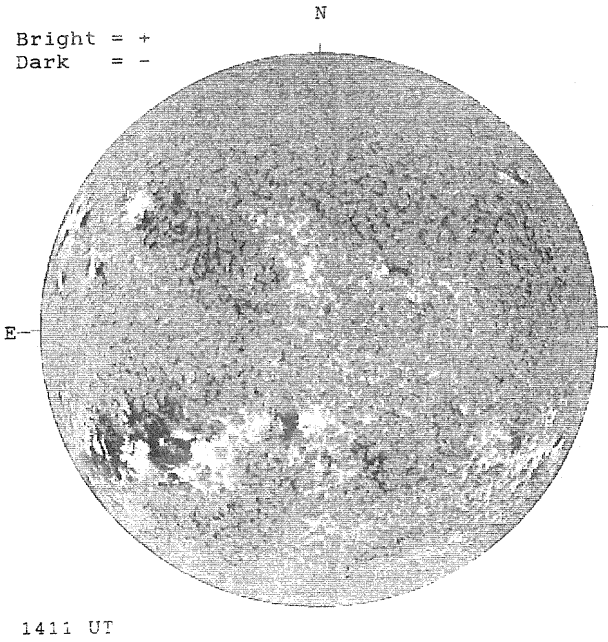
SACRAMENTO PEAK CORONA (1.15 Radii)



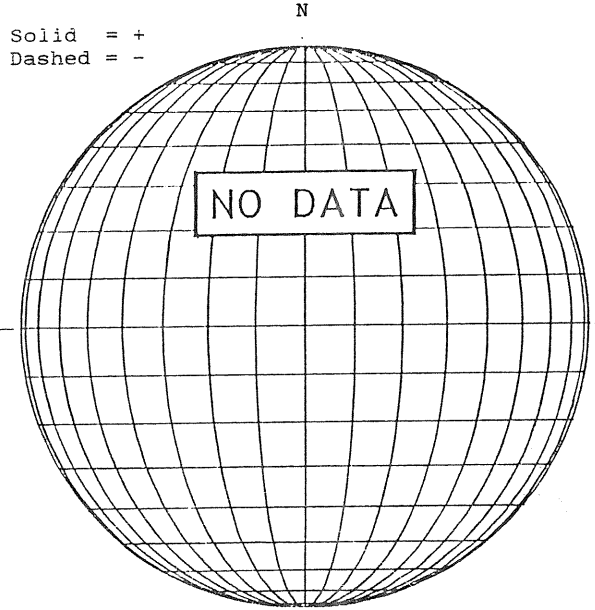
—— FeXIV, 1419 UT
.... Fe X, 1510 UT
xxxx Ca XV, 1439 UT

SEPTEMBER 29, 1989 (P= 25.84, B_o = 6.79, L_o = 129.23)

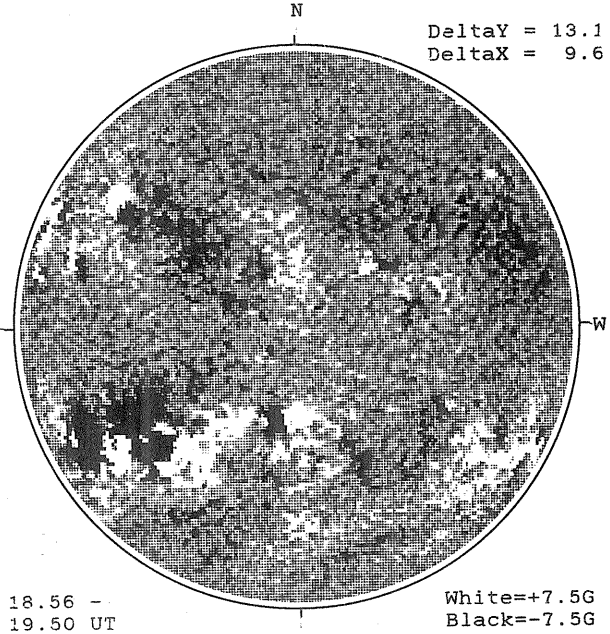
KITT PEAK MAGNETOGRAM



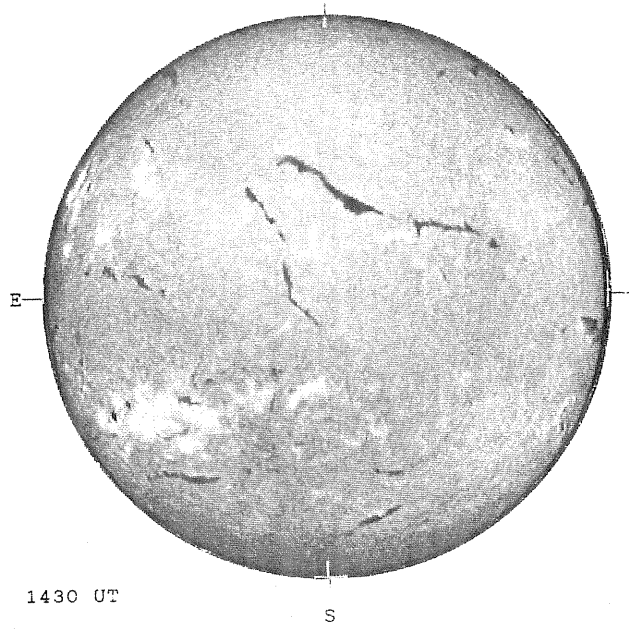
STANFORD MAGNETOGRAM



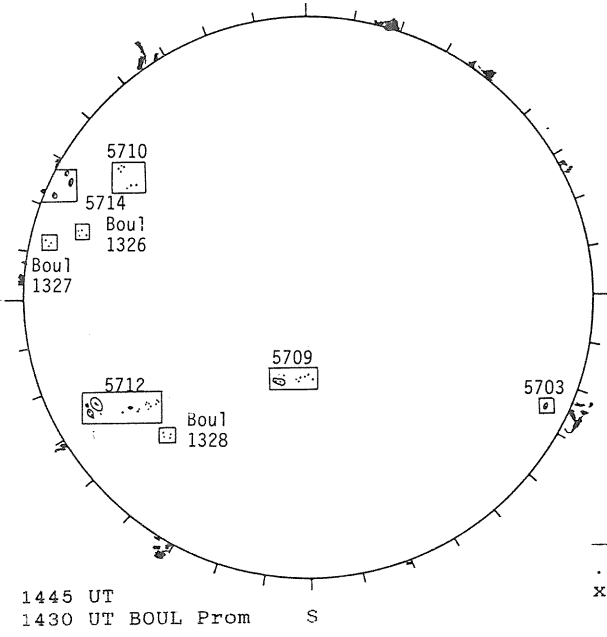
MT. WILSON MAGNETOGRAM



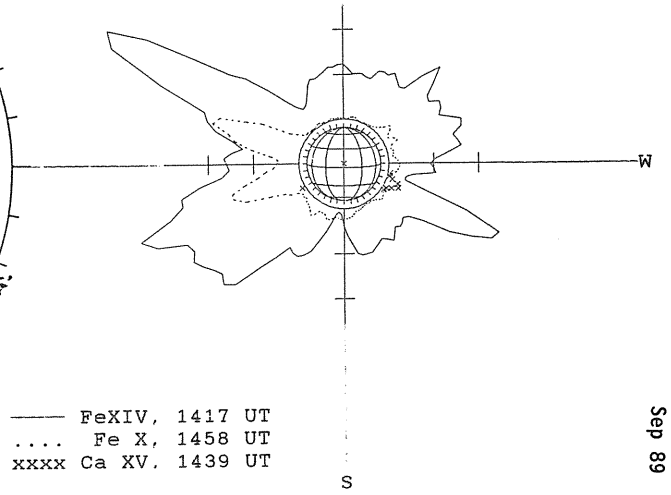
BOULDER H-ALPHA



BOULDER SUNSPOT

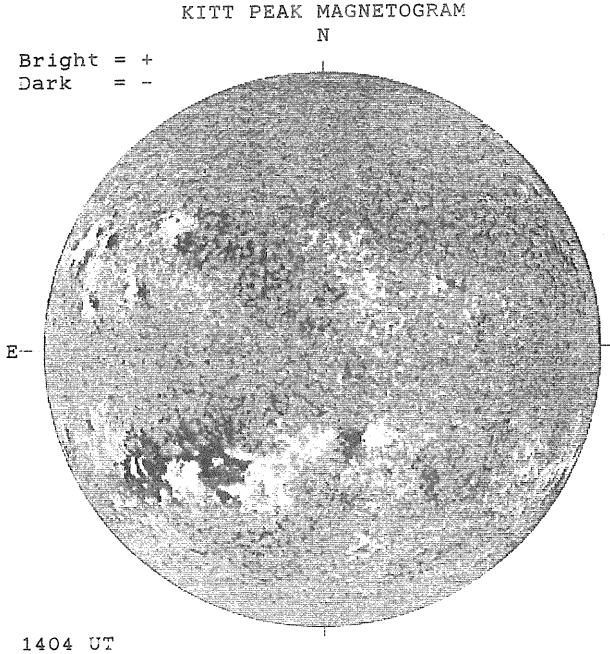


SACRAMENTO PEAK CORONA (1.15 Radii)

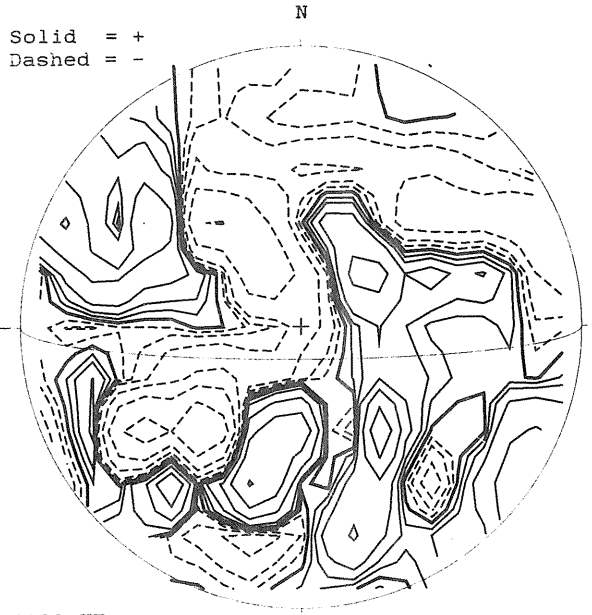


SEPTEMBER 30, 1989 (P= 25.92, B_o = 6.75, L_o = 116.03)

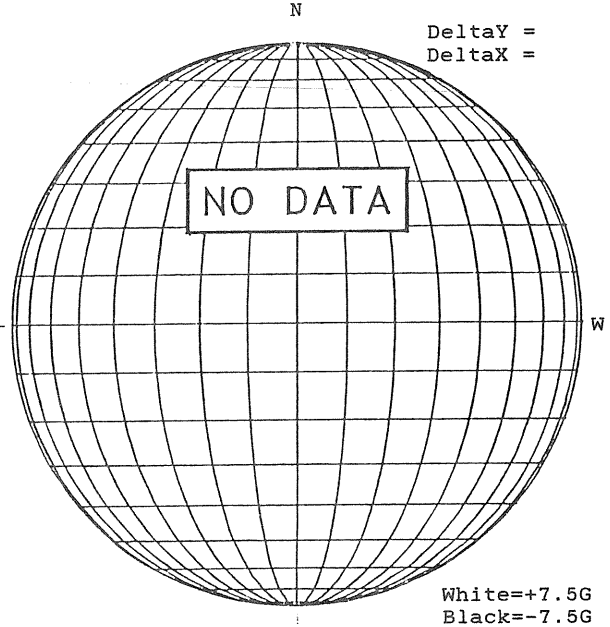
KITT PEAK MAGNETOGRAM



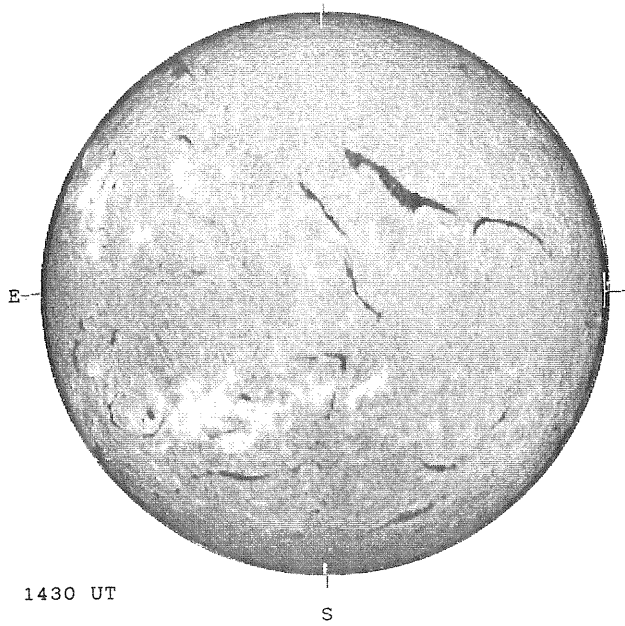
STANFORD MAGNETOGRAM



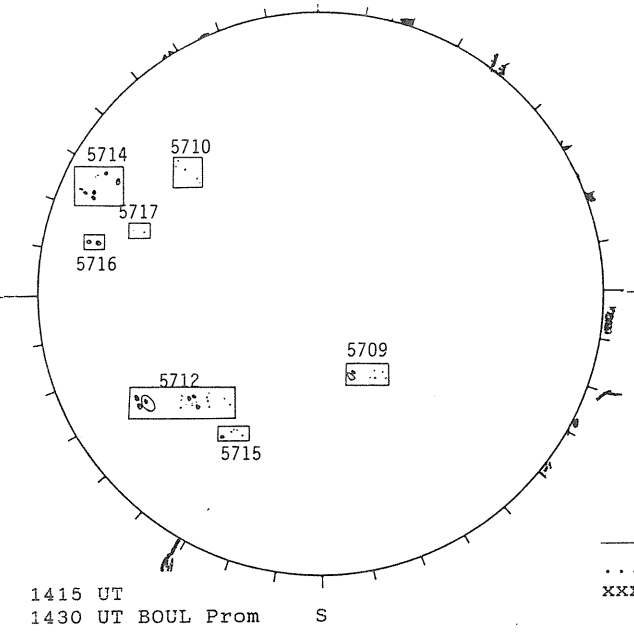
MT. WILSON MAGNETOGRAM



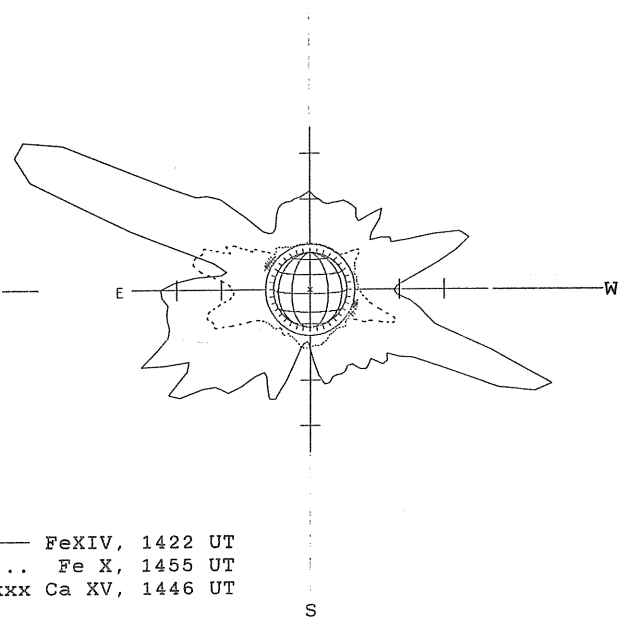
BOULDER H-ALPHA



BOULDER SUNSPOT



SACRAMENTO PEAK CORONA (1.15 Radii)



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

SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5667A	25508	MWIL	08	29	1500	N16	E32	09	1.0	4	(AF)					
5667A	25512	MWIL	08	31	1500	N17	E06	09	1.1	4	(BF)					
5667		LEAR	08	27	0010	N23	E70	09	1.4		A	AX	30	1	1	4
5667	25504	MWIL	08	27	1500	N23	E64	09	1.5	4	(AP)					
5667		PALE	08	27	1815	N23	E63	09	1.6		B	BXO	10	3	3	3
5667		LEAR	08	28	0020	N22	E57	09	1.4		A	AX	10	1	1	4
5667		RAMY	08	28	1205	N23	E51	09	1.4		A	AX	10	1	1	3
5667		BOUL	08	28	1321	N23	E58	09	2.0		A	AX	10	1		2
5667	25504	MWIL	08	28	1515	N23	E49	09	1.4	4	(BF)					
5667		PALE	08	28	1725	N23	E49	09	1.5		A	AX		1		3
5667		HOLL	08	28	2208	N22	E45	09	1.4		A	AX		2	2	4
5667		LEAR	08	29	0015	N22	E44	09	1.4		A	AX	10	1	1	3
5667		CULG	08	29	0330	N24	E44	09	1.5		B	BXO		2	3	2
5667		RAMY	08	29	1247	N24	E38	09	1.5		B	DRO	50	7	5	3
5667		BOUL	08	29	1323	N23	E36	09	1.3		B	BXO	10	4	5	2
5667	25504	MWIL	08	29	1500	N23	E37	09	1.5	5	(BP)					
5667		HOLL	08	29	1735	N24	E36	09	1.5		B	BXO	10	4	4	2
5667		PALE	08	29	1745	N24	E37	09	1.6		B	BXO	10	4	6	3
5667		LEAR	08	30	0105	N25	E31	09	1.4		B	BXO	20	6	6	3
5667		CULG	08	30	0310	N25	E32	09	1.6		B	BXO		6	6	3
5667		HOLL	08	30	1400	N23	E25	09	1.5		B	BXO	30	9	5	2
5667		BOUL	08	30	1440	N23	E25	09	1.5		B	BXO	10	4	5	2
5667	25504	MWIL	08	30	1515	N23	E25	09	1.6	5	(BF)					
5667		PALE	08	30	1730	N24	E23	09	1.5		B	CRO	10	6	6	4
5667		LEAR	08	31	0012	N23	E20	09	1.5		B	CSI	50	13	6	4
5667		CULG	08	31	0310	N24	E18	09	1.5		B	DAO	30	8	6	3
5667		RAMY	08	31	1340	N23	E10	09	1.3		B	BXO	10	7	3	2
5667		BOUL	08	31	1420	N24	E08	09	1.2		B	BXO		5	2	2
5667	25504	MWIL	08	31	1500	N24	E09	09	1.3	5	(BP)					
5667		HOLL	08	31	1755	N23	E08	09	1.4		B	BXO	20	5	3	2
5667		PALE	08	31	2204	N23	E05	09	1.3		B	CAO	20	5	3	3
5667		LEAR	09	01	0055	N23	E03	09	1.3		B	BXO	10	5	3	3
5667		CULG	09	01	0252	N24	E01	09	1.2		B	BXO	10	2	3	2
5667		RAMY	09	01	1236	N23	W04	09	1.2		B	BXO	10	5	3	3
5667		BOUL	09	01	1625	N24	W05	09	1.3		B	BXO	10	4	3	2
5667		HOLL	09	01	1750	N24	W07	09	1.2		A	AX	10	3	2	2
5667		PALE	09	01	1927	N22	W06	09	1.3		B	BXO	10	6	5	3
5667		RAMY	09	02	1405	N23	W16	09	1.3		A	AX	10	2	1	4
5667		HOLL	09	02	1435	N23	W18	09	1.2		A	AX		1		4
5674A		HOLL	09	03	1530	N07	W33	09	1.2		B	BXO	10	4	4	3
5670		CATA	08	30	0712	S27	E36	09	2.1			R	1	1		2
5670		HOLL	08	30	1400	S27	E34	09	2.2		B	BXO	60	9	5	2
5670		BOUL	08	30	1440	S26	E33	09	2.2		B	CAO	70	7	3	2
5670	25510	MWIL	08	30	1515	S27	E33	09	2.2	5	(BG)					
5670		PALE	08	30	1730	S26	E32	09	2.2		B	CAO	60	13	4	4
5670		LEAR	08	31	0012	S27	E29	09	2.3		B	DHI	120	20	5	4
5670		CULG	08	31	0310	S28	E28	09	2.3		B	DAI	80	12	3	3
5670		RAMY	08	31	1340	S25	E20	09	2.1		B	CAO	90	19	7	2
5670		BOUL	08	31	1420	S25	E17	09	1.9		B	CAO	70	12	5	2
5670	25510	MWIL	08	31	1500	S27	E18	09	2.0	5	(BP)					
5670		HOLL	08	31	1755	S27	E18	09	2.1		B	CKI	160	24	7	2
5670		PALE	08	31	2204	S26	E16	09	2.2		B	DAO	110	14	5	3
5670		LEAR	09	01	0055	S26	E14	09	2.1		B	DAO	130	18	7	3
5670		CULG	09	01	0252	S27	E13	09	2.1		B	DAO	130	13	5	2
5670		RAMY	09	01	1236	S25	E07	09	2.1		B	DAO	140	25	8	3
5670		BOUL	09	01	1625	S25	E05	09	2.1		B	DAO	100	13	6	2
5670		HOLL	09	01	1750	S25	E04	09	2.0		B	DAO	1200	22	10	2
5670		PALE	09	01	1927	S27	E05	09	2.2		B	CKI	220	22	6	3
5670		LEAR	09	02	0013	S25	E01	09	2.1		B	DKO	230	15	6	3
5670		RAMY	09	02	1405	S25	W06	09	2.1		B	DAO	240	20	6	4
5670		BOUL	09	02	1415	S25	W06	09	2.1		B	DAO	80	10	7	3
5670		HOLL	09	02	1435	S25	W07	09	2.1		B	DSO	150	17	6	4
5670		PALE	09	02	2231	S26	W11	09	2.1		B	DAO	130	13	6	3
5670		LEAR	09	03	0005	S25	W12	09	2.1		B	CSO	180	20	6	4
5670		CULG	09	03	0325	S26	W16	09	1.9		B	DSO	100	8	6	3
5670		RAMY	09	03	1215	S25	W19	09	2.0		B	DAO	110	20	7	4

S U N S P O T G R O U P S
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SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5670		BOUL	09	03	1440	S23	W20	09	2.1		B	DAO	90	16	6	3
5670		HOLL	09	03	1530	S24	W23	09	1.9		B	DAO	170	23	5	3
5670		PALE	09	03	1740	S26	W22	09	2.0		B	CAO	140	9	7	2
5670		LEAR	09	04	0030	S25	W28	09	1.8		B	DAO	90	16	8	3
5670		CULG	09	04	0318	S26	W29	09	1.9		B	DSO	80	9	7	2
5670		BOUL	09	04	1335	S22	W31	09	2.2		B	CSI	90	14	7	2
5670		RAMY	09	04	1350	S25	W35	09	1.9		B	CAO	80	13	8	3
5670		HOLL	09	04	1500	S25	W35	09	1.9		B	CAO	150	19	7	3
5670		PALE	09	04	1800	S25	W36	09	2.0		B	CAO	100	14	8	3
5670		LEAR	09	05	0045	S23	W40	09	1.9		B	CAO	80	10	8	3
5670		CULG	09	05	0320	S25	W42	09	1.9		B	DAO	100	7	6	2
5670		RAMY	09	05	1410	S23	W45	09	2.1		B	CAO	120	8	6	3
5670		BOUL	09	05	1410	S23	W47	09	2.0		B	CAO	70	4	3	2
5670		PALE	09	05	1740	S25	W49	09	1.9		B	CAO	80	8	6	3
5670		HOLL	09	05	1845	S25	W50	09	1.9		B	CSO	90	7	8	3
5670		LEAR	09	06	0010	S24	W50	09	2.1		B	CSO	70	9	8	4
5670		CULG	09	06	0320	S28	W58	09	1.6		B	CAO	60	3	4	2
5670		BOUL	09	06	1343	S25	W60	09	1.9		A	HS	50	1	1	2
5670		RAMY	09	06	1700	S26	W62	09	1.9		B	CAO	60	4	6	3
5670		HOLL	09	06	1905	S25	W62	09	2.0		B	BXO	20	2	5	3
5670		PALE	09	06	1916	S27	W63	09	1.9		B	BXO	30	4	5	3
5670		LEAR	09	07	0027	S25	W65	09	2.0		B	DHO	900	3	7	3
5670		CULG	09	07	0320	S27	W74	09	1.4		B	CAO	20	3	9	2
5670		HOLL	09	07	1500	S25	W73	09	2.0		A	HR	20	1	1	3
5670		PALE	09	07	1928	S25	W88	09	1.0		A	AX		1		3
5675		RAMY	09	02	1405	N20	W06	09	2.1		B	BXO	20	4	3	4
5675		HOLL	09	02	1435	N20	W07	09	2.1		B	BXO		4	3	4
5675		PALE	09	02	2231	N19	W10	09	2.2		A	AX		2	1	3
5675		LEAR	09	03	0005	N19	W12	09	2.1		B	BXO	30	5	3	4
5675		CULG	09	03	0325	N21	W16	09	1.9		B	BXO	10	2	3	3
5675		RAMY	09	03	1215	N20	W19	09	2.0		B	CRO	10	2	3	4
5675		BOUL	09	03	1440	N20	W21	09	2.0		A	AX		1		3
5675		HOLL	09	03	1530	N21	W18	09	2.3		B	BXO	20	7	5	3
5675		PALE	09	03	1740	N20	W23	09	2.0		A	AX		1		2
5675		LEAR	09	04	0030	N18	W22	09	2.3		B	BXO	10	3	2	3
5675		CULG	09	04	0318	N18	W26	09	2.1		B	BXO	10	4	4	2
5675		BOUL	09	04	1335	N17	W29	09	2.4		B	BXO	10	5	3	2
5675		RAMY	09	04	1350	N18	W31	09	2.2		B	BXO	10	7	7	3
5675		HOLL	09	04	1500	N18	W30	09	2.3		B	BXO	30	9	5	3
5675		PALE	09	04	1800	N18	W32	09	2.3		B	BXO	10	8	5	3
5675		LEAR	09	05	0045	N18	W37	09	2.2		B	BXO	20	6	5	3
5675		CULG	09	05	0320	N18	W38	09	2.2		B	BXO	10	7	4	2
5675		RAMY	09	05	1410	N17	W42	09	2.4		B	CAO	10	11	6	3
5675		BOUL	09	05	1410	N18	W42	09	2.4		B	BXO	30	6	5	2
5675		PALE	09	05	1740	N17	W46	09	2.2		B	BXO	40	12	5	3
5675		HOLL	09	05	1845	N17	W45	09	2.4		B	BXO	30	8	6	3
5675		LEAR	09	06	0010	N18	W47	09	2.4		B	CSO	70	10	7	4
5675		CULG	09	06	0320	N18	W53	09	2.1		B	DAO	40	6	5	2
5675		BOUL	09	06	1343	N18	W54	09	2.4		B	BXO	20	4	5	2
5675		RAMY	09	06	1700	N17	W60	09	2.1		B	CRO	50	11	6	3
5675		HOLL	09	06	1905	N18	W60	09	2.2		B	BXO	40	7	6	3
5675		PALE	09	06	1916	N18	W58	09	2.4		B	BXO	10	8	6	3
5675		LEAR	09	07	0027	N18	W59	09	2.5		B	BXO	40	7	8	3
5675		CULG	09	07	0320	N18	W67	09	2.0		B	BXO	10	5	8	2
5675A		BOUL	09	04	1335	S02	W26	09	2.6		A	AX	10	1		2
5675B	25513	MWIL	08	31	1500	S19	E27	09	2.7	4	(AP)					
5673		BOUL	09	01	1625	N23	E23	09	3.4		A	AX		1	1	2
5673		HOLL	09	01	1750	N23	E22	09	3.4		A	AX	20	4	3	2
5673		PALE	09	01	1927	N23	E22	09	3.5		B	BXO		2	3	3
5673		LEAR	09	02	0013	N23	E19	09	3.5		B	BXO	40	7	3	3
5673		RAMY	09	02	1405	N23	E12	09	3.5		B	BXO	30	12	5	4
5673		BOUL	09	02	1415	N23	E09	09	3.3		B	DSO	40	2	5	3
5673		HOLL	09	02	1435	N23	E11	09	3.4		B	CRO	20	10	5	4
5673		PALE	09	02	2231	N22	E07	09	3.5		B	CSO	30	5	6	3
5673		LEAR	09	03	0005	N23	E06	09	3.5		B	CAO	50	8	6	4

S U N S P O T G R O U P S
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SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5673		CULG	09 03	0325	N23 E04	09 3.4		B	CAO	10	6	6	3
5673		RAMY	09 03	1215	N22 W02	09 3.3		B	DRO	30	7	6	4
5673		BOUL	09 03	1440	N22 W02	09 3.4		B	BXO	10	8	5	3
5673		HOLL	09 03	1530	N23 W02	09 3.5		B	BXO	20	5	6	3
5673		PALE	09 03	1740	N22 W04	09 3.4		B	BXO	10	4	6	2
5673		LEAR	09 04	0030	N22 W08	09 3.4		B	BXO	10	4	6	3
5673		CULG	09 04	0318	N22 W11	09 3.3		B	BXO	10	4	8	2
5673		BOUL	09 04	1335	N23 W13	09 3.6		A	AX	10	1		2
5673		RAMY	09 04	1350	N21 W18	09 3.2			BXO	10	5	7	3
5673		HOLL	09 04	1500	N22 W15	09 3.5		B	BXO	10	7	6	3
5673		CULG	09 07	0320	N22 W51	09 3.2		A	AX		1		2
5668		RAMY	08 28	1205	N32 E85	09 4.2		A	HA	40	1	2	3
5668		BOUL	08 28	1321	N33 E84	09 4.2		A	HS	30	1	1	2
5668	25505	MWIL	08 28	1515	N32 E85	09 4.4	3	B					
5668		PALE	08 28	1725	N32 E85	09 4.4		B	CKO	70	3	10	3
5668		HOLL	08 28	2208	N32 E80	09 4.2		B	DAO	90	3	9	4
5668		LEAR	08 29	0015	N31 E78	09 4.2		B	DSO	140	2	4	3
5668		CULG	08 29	0330	N33 E80	09 4.5		B	DSO	50	2	10	2
5668		RAMY	08 29	1247	N34 E75	09 4.5		B	DAO	240	4	7	3
5668		BOUL	08 29	1323	N32 E71	09 4.2		B	CSO	70	5	5	2
5668	25505	MWIL	08 29	1500	N33 E72	09 4.3	5	(BP)					
5668		HOLL	08 29	1735	N32 E75	09 4.7		B	DAO	140	3	9	2
5668		PALE	08 29	1745	N32 E72	09 4.4		B	DAO	100	2	9	3
5668		LEAR	08 30	0105	N33 E66	09 4.3		B	DSO	140	2	7	3
5668		CULG	08 30	0310	N33 E68	09 4.5		B	DSO	150	3	7	3
5668		HOLL	08 30	1400	N32 E60	09 4.3		B	DSO	160	3	7	2
5668	25505	MWIL	08 30	1515	N32 E59	09 4.3	5	(BP)					
5668		PALE	08 30	1730	N33 E60	09 4.5		B	DAO	100	5	7	4
5668		LEAR	08 31	0012	N32 E55	09 4.4		B	DSO	900	5	8	4
5668		CULG	08 31	0310	N33 E55	09 4.5		B	DAO	90	4	8	3
5668		RAMY	08 31	1340	N32 E48	09 4.4		B	DAO	50	3	7	2
5668		BOUL	08 31	1420	N32 E45	09 4.1		B	CAO	30	3	7	2
5668	25505	MWIL	08 31	1500	N32 E48	09 4.4	5	(BP)					
5668		HOLL	08 31	1755	N32 E47	09 4.5		B	CSO	70	5	8	2
5668		PALE	08 31	2204	N31 E45	09 4.5		B	CAO	50	5	8	3
5668		LEAR	09 01	0055	N31 E41	09 4.3		B	CAO	40	4	7	3
5668		CULG	09 01	0252	N33 E41	09 4.4		B	DAO	30	3	8	2
5668		RAMY	09 01	1236	N32 E35	09 4.3		B	CSO	30	3	7	3
5668		BOUL	09 01	1625	N32 E30	09 4.0		B	CSO	30	3	2	2
5668		HOLL	09 01	1750	N32 E30	09 4.1		A	HS	20	3	2	2
5668		PALE	09 01	1927	N32 E30	09 4.2		A	HS	20	1	1	3
5668		LEAR	09 02	0013	N32 E27	09 4.1		B	BXO	20	3	3	3
5668		RAMY	09 02	1405	N30 E18	09 4.0		B	BXO	20	7	4	4
5668		BOUL	09 02	1415	N32 E17	09 3.9		B	CSO	20	2	2	3
5668		HOLL	09 02	1435	N30 E20	09 4.2		B	BXO	10	3	4	4
5668		PALE	09 02	2231	N32 E16	09 4.2		B	BXO		4	4	3
5668		LEAR	09 03	0005	N30 E13	09 4.0		B	BXO	30	4	4	4
5668		CULG	09 03	0325	N32 E12	09 4.1		B	CRO	10	4	3	3
5668		RAMY	09 03	1215	N31 E09	09 4.2		B	BXO	10	6	4	4
5668		HOLL	09 03	1530	N33 E07	09 4.2		B	BXO	10	5	3	3
5668		PALE	09 03	1740	N33 E03	09 4.0		A	AX		1		2
5668		LEAR	09 04	0030	N32 E00	09 4.0		A	AX	10	1	1	3
5668		CULG	09 04	0318	N33 W01	09 4.0		A	AX	10	1	1	2
5668		BOUL	09 04	1335	N31 W06	09 4.1		A	AX	10	3	1	2
5668		RAMY	09 04	1350	N31 W07	09 4.0		A	AX	20	7	2	3
5668		HOLL	09 04	1500	N32 W06	09 4.2		B	BXO	20	5	3	3
5668		PALE	09 04	1800	N31 W08	09 4.1		A	AX		1	1	3
5668		LEAR	09 05	0045	N32 W12	09 4.1		A	AX	10	2	1	3
5668		CULG	09 05	0320	N32 W14	09 4.0		A	HA	10	3	1	2
5668		BOUL	09 05	1410	N31 W18	09 4.2		A	HS	10	2	1	2
5668		RAMY	09 05	1410	N31 W19	09 4.1		B	CRO	20	5	3	3
5668		PALE	09 05	1740	N31 W21	09 4.1		A	AX		3	2	3
5668		HOLL	09 05	1845	N31 W21	09 4.1		A	AX	10	3	2	3
5668		LEAR	09 06	0010	N30 W23	09 4.2		A	AXO	10	4	2	4
5668		CULG	09 06	0320	N31 W27	09 4.0		A	AX		1		2
5668		RAMY	09 06	1700	N30 W32	09 4.2		B	BXO	10	7	3	3
5668A		BOUL	09 04	1335	S39 W03	09 4.3		A	AX	10	1	1	2

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5668A		RAMY	09	04	1350	S41	W03	09	4.3		A	AX	10	3	2	3
5668A		HOLL	09	04	1500	S41	W03	09	4.4		A	AX		1		3
5668A		PALE	09	04	1800	S41	W04	09	4.4		A	AX		1		3
5668B		BOUL	09	04	1335	N08	W01	09	4.5		A	HS	20	1	1	2
5678		RAMY	09	04	1350	N19	E01	09	4.6		A	AX	10	2	1	3
5678		HOLL	09	04	1500	N19	E01	09	4.7		B	BXO	20	4	3	3
5678		PALE	09	04	1800	N19	W02	09	4.6		A	AX		2	1	3
5678		LEAR	09	05	0045	N19	W06	09	4.6		A	AX	10	1	1	3
5678		RAMY	09	05	1410	N18	W12	09	4.7		B	BXO	10	3	2	3
5678A		CULG	09	04	0318	N31	E10	09	4.9		A	AX	10	1	1	2
5669		HOLL	08	28	2208	S15	E88	09	4.6		A	HK	180	3	8	4
5669		LEAR	08	29	0015	S18	E80	09	4.1		B	DKC	990	3	6	3
5669		CULG	08	29	0330	S16	E85	09	4.6		A	HK	800	3	5	2
5669		RAMY	08	29	1247	S14	E75	09	4.2		B	FKC	9000	12	18	3
5669		BOUL	08	29	1323	S16	E73	09	4.1		B	DKC	870	9	9	2
5669	25509	MWIL	08	29	1500	S16	E75	09	4.3	5	BG)					
5669		HOLL	08	29	1735	S15	E75	09	4.4		BD	DKC	1190	8	10	2
5669		PALE	08	29	1745	S15	E80	09	4.8		BD	DKC	1260	10	18	3
5669		LEAR	08	30	0105	S15	E70	09	4.3		B	DKC	1600	16	10	3
5669		CULG	08	30	0310	S17	E74	09	4.7		B	EKC	1000	14	12	3
5669		HOLL	08	30	1400	S16	E67	09	4.7		BGD	FKI	2100	22	22	2
5669		BOUL	08	30	1440	S17	E67	09	4.7		B	FKC	2140	29	24	2
5669	25509	MWIL	08	30	1515	S16	E64	09	4.5	6	(D)					
5669		PALE	08	30	1730	S16	E68	09	4.9		BGD	FKC	2700	33	31	4
5669		LEAR	08	31	0012	S17	E68	09	5.2		BD	FKC	2470	48	26	4
5669		CULG	08	31	0310	S16	E64	09	5.0		BGD	FKC	2050	23	20	3
5669		RAMY	08	31	1340	S17	E60	09	5.1		BGD	FKC	3090	36	31	2
5669		BOUL	08	31	1420	S16	E50	09	4.4		B	EKI	1310	27	12	2
5669	25509	MWIL	08	31	1500	S16	E53	09	4.6	6	(D)					
5669		HOLL	08	31	1755	S16	E51	09	4.6		B	EKI	1900	43	12	2
5669		PALE	08	31	2204	S17	E54	09	5.0		BGD	FKC	1860	44	20	3
5669		LEAR	09	01	0055	S15	E46	09	4.5		BGD	FKC	1430	32	11	3
5669		CULG	09	01	0252	S16	E44	09	4.4		BGD	EKC	1570	31	14	2
5669		RAMY	09	01	1236	S15	E39	09	4.5		BD	EKC	1680	22	12	3
5669		BOUL	09	01	1625	S16	E35	09	4.3		B	EKI	240	16	12	2
5669		HOLL	09	01	1750	S16	E36	09	4.5		BGD	EKC	1600	55	12	2
5669		PALE	09	01	1927	S16	E38	09	4.7		BGD	EKC	1850	31	11	3
5669		LEAR	09	02	0013	S16	E33	09	4.5		BGD	EKC	1690	46	12	3
5669		RAMY	09	02	1405	S17	E37	09	5.4		BGD	FKC	3900	98	30	4
5669		BOUL	09	02	1415	S18	E33	09	5.1		B	FKI	2350	51	30	3
5669		HOLL	09	02	1435	S18	E32	09	5.0		BGD	FKC	3010	0	30	4
5669		PALE	09	02	2231	S16	E31	09	5.3		BGD	FKC	2780	0	30	3
5669		LEAR	09	03	0005	S18	E28	09	5.1		BGD	FKC	2950	0	28	4
5669		CULG	09	03	0325	S17	E24	09	5.0		BGD	FKC	2730	88	32	3
5669		RAMY	09	03	1215	S16	E20	09	5.0		BGD	FKC	4100	0	30	4
5669		BOUL	09	03	1440	S16	E19	09	5.0		B	FKI	2170	0	30	3
5669		HOLL	09	03	1530	S19	E16	09	4.9		BGD	FKC	2870	0	30	3
5669		PALE	09	03	1740	S15	E18	09	5.1		BGD	FKC	3470	0	30	2
5669		LEAR	09	04	0030	S17	E13	09	5.0		BGD	FKC	2700	0	30	3
5669		CULG	09	04	0318	S17	E12	09	5.0		BGD	FKC	2350	89	32	2
5669		BOUL	09	04	1335	S15	E05	09	4.9		B	FKI	1730	0	29	2
5669		RAMY	09	04	1350	S17	E08	09	5.2		BGD	FKC	3630	0	33	3
5669		HOLL	09	04	1500	S17	E06	09	5.1		BGD	FKC	2860	0	33	3
5669		PALE	09	04	1800	S17	E05	09	5.1		BGD	FKC	2610	0	33	3
5669		LEAR	09	05	0045	S17	E02	09	5.2		BGD	FKC	2150	96	30	3
5669		CULG	09	05	0320	S18	E01	09	5.2		BGD	FKC	2340	0	32	2
5669		BOUL	09	05	1410	S15	W04	09	5.3		B	FKI	1760	80	30	2
5669		RAMY	09	05	1410	S19	W07	09	5.0		BGD	FKC	2750	16	31	3
5669		PALE	09	05	1740	S17	W07	09	5.2		BGD	FKC	2240	0	32	3
5669		HOLL	09	05	1845	S18	W08	09	5.2		BGD	FKC	2500	0	32	3
5669		LEAR	09	06	0010	S17	W10	09	5.2		BGD	FKC	3500	0	33	4
5669		CULG	09	06	0320	S18	W13	09	5.1		BGD	FKI	2190	89	31	2
5669		BOUL	09	06	1343	S15	W18	09	5.2		B	FKI	1380	60	30	2
5669		RAMY	09	06	1700	S16	W20	09	5.2		BGD	FKC	2630	0	34	3
5669		HOLL	09	06	1905	S17	W20	09	5.3		BGD	FKC	2260	0	32	3

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5669		PALE	09 06 1916	S18 W20	09 5.3		BGD	FKC	2160	0	32	3
5669		LEAR	09 07 0027	S18 W24	09 5.2		BGD	FKC	3850	0	33	3
5669		CULG	09 07 0320	S17 W27	09 5.1		BGD	FKI	1740	0	34	2
5669		HOLL	09 07 1500	S18 W33	09 5.1		BGD	FKC	2050	0	36	3
5669		BOUL	09 07 1705	S16 W31	09 5.4		B	FKI	1130	68	30	1
5669		PALE	09 07 1928	S18 W36	09 5.1		BGD	FKC	2330	0	34	3
5669		LEAR	09 08 0020	S17 W35	09 5.3		BGD	FKC	1690	87	31	2
5669		CULG	09 08 0320	S18 W43	09 4.9		BGD	FKI	1430	94	33	3
5669		HOLL	09 08 1602	S18 W46	09 5.2		BGD	FKI	1700	92	32	3
5669		RAMY	09 08 1615	S20 W46	09 5.1		BGD	FKC	1770	54	30	3
5669		LEAR	09 09 0040	S18 W49	09 5.3		BGD	FKI	1660	67	31	3
5669		CULG	09 09 0320	S17 W56	09 4.9		BG	FKI	1060	42	27	3
5669		HOLL	09 09 1500	S18 W55	09 5.4		BGD	FKI	1100	78	30	3
5669		RAMY	09 09 1540	S19 W55	09 5.4		BGD	FKI	1040	64	31	4
5669		PALE	09 09 1750	S18 W55	09 5.5		BGD	FKI	1120	42	35	3
5669		LEAR	09 10 0030	S18 W58	09 5.6		BGD	FKI	910	47	31	3
5669		CULG	09 10 0255	S16 W67	09 5.0		BG	FKI	940	33	32	3
5669		RAMY	09 10 1245	S19 W63	09 5.7		BGD	FKI	760	37	30	3
5669		BOUL	09 10 1440	S17 W65	09 5.7		B	FKI	580	15	25	2
5669		PALE	09 10 1750	S19 W70	09 5.4		BGD	FKI	810	32	35	3
5669		HOLL	09 10 1900	S17 W68	09 5.6		BGD	FKI	590	19	32	3
5669		LEAR	09 11 0027	S18 W70	09 5.7		BGD	FKI	600	9	18	3
5669		CULG	09 11 0240	S19 W79	09 5.1		BGD	FKI	630	12	23	3
5669		HOLL	09 11 1450	S18 W78	09 5.7		B	FAI	220	7	20	4
5669		RAMY	09 11 1529	S19 W75	09 5.9		BG	EKO	330	11	12	3
5669		PALE	09 11 1745	S21 W80	09 5.6		B	FKI	230	8	19	4
5669		CULG	09 12 0245	S19 W80	09 6.0		B	DAI	60	3	5	2
5671		BOUL	08 31 1420	S19 E64	09 5.5		B	EKI	860	19	15	2
5671		HOLL	08 31 1755	S18 E75	09 6.4		B	EKI	1090	27	13	2
5671		PALE	08 31 2204	S20 E67	09 6.0		BG	CKI	620	10	5	3
5671		LEAR	09 01 0055	S18 E60	09 5.6		BGD	FKC	950	28	14	3
5671		CULG	09 01 0252	S19 E60	09 5.7		BGD	FKI	900	24	17	2
5671		RAMY	09 01 1236	S17 E51	09 5.4		BGD	EKC	1350	49	14	3
5671		BOUL	09 01 1625	S18 E51	09 5.6		B	EKI	880	25	15	2
5671		HOLL	09 01 1750	S19 E51	09 5.6		BGD	EKC	1700	47	15	2
5671		PALE	09 01 1927	S20 E51	09 5.7		BGD	EKC	1200	47	14	3
5671		LEAR	09 02 0013	S18 E46	09 5.5		BGD	FKC	1530	52	16	3
5669A		RAMY	09 04 1350	S26 E15	09 5.7		A	AX	10	2	1	3
5669A		HOLL	09 04 1500	S25 E15	09 5.8		A	AX		1		3
5669B		RAMY	09 04 1350	N21 E16	09 5.8		A	AX	10	1	1	3
5669C		HOLL	09 01 1750	N17 E61	09 6.4		A	AX	10	2	2	2
5669C		HOLL	09 04 1500	N15 E23	09 6.4		A	AX		2	1	3
5671D		RAMY	09 11 1529	N13 W67	09 6.6		B	BXO	10	5	2	3
5691		BOUL	09 10 1440	S14 W52	09 6.7		B	CAO	20	4	5	2
5691		PALE	09 10 1750	S16 W56	09 6.5		B	CAO	40	5	5	3
5691		HOLL	09 10 1900	S14 W56	09 6.5		B	BXO	20	4	6	3
5691		LEAR	09 11 0027	S14 W59	09 6.5		B	CSO	60	3	4	3
5691		CULG	09 11 0240	S14 W63	09 6.3		B	CAO	70	9	6	3
5691		HOLL	09 11 1450	S12 W69	09 6.4		B	CRO	50	4	3	4
5691		PALE	09 11 1745	S16 W70	09 6.4		B	CAO	70	5	3	4
5691		LEAR	09 12 0035	S18 W75	09 6.3		B	DHO	60	3	6	3
5691		CULG	09 12 0245	S14 W79	09 6.1		B	DSO	30	3	2	2
5672		LEAR	09 01 0055	N24 E79	09 7.1		A	HS	30	1	2	3
5672		CULG	09 01 0252	N23 E85	09 7.7		A	HS	30	1	3	2
5672		RAMY	09 01 1236	N24 E76	09 7.4		B	CRO	60	6	6	3
5672		BOUL	09 01 1625	N24 E75	09 7.5		A	HS	60	1	2	2
5672		HOLL	09 01 1750	N24 E73	09 7.4		B	CSO	110	2	5	2
5672		PALE	09 01 1927	N23 E77	09 7.7		A	HA	60	1	1	3
5672		LEAR	09 02 0013	N24 E67	09 7.2		A	HS	100	1	2	3
5672		RAMY	09 02 1405	N25 E65	09 7.6		B	DAO	150	11	10	4
5672		BOUL	09 02 1415	N24 E65	09 7.6		B	CSO	60	2	9	3
5672		HOLL	09 02 1435	N24 E65	09 7.6		B	CAO	110	11	10	4

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5672		PALE	09 02 2231	N24 E61	09 7.6		B	CKO	110	4	12	3
5672		LEAR	09 03 0005	N24 E58	09 7.5		B	DAO	220	12	10	4
5672		CULG	09 03 0325	N24 E57	09 7.5		B	DAO	130	6	12	3
5672		RAMY	09 03 1215	N25 E51	09 7.5		B	EAO	220	28	12	4
5672		BOUL	09 03 1440	N25 E48	09 7.3		B	CAO	140	24	13	3
5672		HOLL	09 03 1530	N25 E50	09 7.5		B	CKI	240	26	12	3
5672		PALE	09 03 1740	N25 E50	09 7.6		B	EKO	270	8	15	2
5672		LEAR	09 04 0030	N23 E45	09 7.5		B	EAO	190	17	15	3
5672		CULG	09 04 0318	N25 E44	09 7.5		B	EAO	220	18	15	2
5672		BOUL	09 04 1335	N24 E36	09 7.3		B	CAI	240	28	13	2
5672		RAMY	09 04 1350	N24 E36	09 7.3		B	EKO	190	39	12	3
5672		HOLL	09 04 1500	N25 E39	09 7.6		B	EKI	330	45	15	3
5672		PALE	09 04 1800	N25 E37	09 7.6		B	EAI	280	28	14	3
5672		LEAR	09 05 0045	N22 E34	09 7.6		B	EAI	200	37	12	3
5672		CULG	09 05 0320	N25 E31	09 7.5		B	EKO	310	23	14	2
5672		BOUL	09 05 1410	N24 E24	09 7.4		B	EKI	250	18	13	2
5672		RAMY	09 05 1410	N25 E27	09 7.7		B	FKI	540	33	17	3
5672		PALE	09 05 1740	N25 E24	09 7.6		B	EHI	440	38	14	3
5672		HOLL	09 05 1845	N24 E21	09 7.4		BG	FHI	500	39	16	3
5672		LEAR	09 06 0010	N24 E17	09 7.3		B	EKI	310	38	14	4
5672		CULG	09 06 0320	N25 E18	09 7.5		B	CKO	560	34	13	2
5672		BOUL	09 06 1343	N23 E09	09 7.3		B	DKI	490	28	8	2
5672		RAMY	09 06 1700	N24 E08	09 7.3		B	EKI	710	39	12	3
5672		HOLL	09 06 1905	N23 E06	09 7.2		BD	EKI	480	40	12	3
5672		PALE	09 06 1916	N23 E07	09 7.3		B	DKI	520	46	10	3
5672		LEAR	09 07 0027	N24 E05	09 7.4		BD	EKC	600	30	12	3
5672		CULG	09 07 0320	N25 E02	09 7.3		B	DKI	560	28	10	2
5672		HOLL	09 07 1500	N24 W03	09 7.4		BD	EKI	480	53	11	3
5672		BOUL	09 07 1705	N24 W05	09 7.3		B	EKI	270	20	11	1
5672		PALE	09 07 1928	N23 W09	09 7.1		BD	EKI	630	47	14	3
5672		LEAR	09 08 0020	N24 W08	09 7.4		BD	DKI	450	32	10	2
5672		CULG	09 08 0320	N25 W10	09 7.4		B	EKI	460	25	11	3
5672		HOLL	09 08 1602	N25 W18	09 7.3		BG	EKI	410	24	12	3
5672		RAMY	09 08 1615	N23 W19	09 7.2		BD	EKI	450	21	11	3
5672		LEAR	09 09 0040	N24 W23	09 7.2		BG	EKI	460	30	13	3
5672		CULG	09 09 0320	N26 W24	09 7.3		BG	EKI	420	14	14	3
5672		HOLL	09 09 1500	N24 W29	09 7.4		BG	EKI	410	32	12	3
5672		RAMY	09 09 1540	N23 W30	09 7.3		BD	EKI	440	29	13	4
5672		PALE	09 09 1750	N24 W30	09 7.4		BG	EKI	540	24	12	3
5672		LEAR	09 10 0030	N25 W34	09 7.4		B	DKI	390	9	9	3
5672		CULG	09 10 0255	N26 W37	09 7.2		B	DAI	320	17	9	3
5672		RAMY	09 10 1245	N22 W41	09 7.4		BG	DKI	410	26	10	3
5672		BOUL	09 10 1440	N25 W40	09 7.5		B	DKI	280	12	8	2
5672		PALE	09 10 1750	N23 W45	09 7.3		B	DKI	360	19	8	3
5672		HOLL	09 10 1900	N25 W45	09 7.3		B	CKO	360	17	8	3
5672		LEAR	09 11 0027	N25 W49	09 7.2		B	DKO	220	5	8	3
5672		CULG	09 11 0240	N25 W51	09 7.2		B	CKO	390	8	8	3
5672		HOLL	09 11 1450	N25 W54	09 7.4		B	DHO	310	8	10	4
5672		RAMY	09 11 1529	N23 W56	09 7.3		B	DAO	300	4	6	3
5672		PALE	09 11 1745	N23 W57	09 7.3		B	DKO	340	7	8	4
5672		LEAR	09 12 0035	N26 W60	09 7.4		B	DKI	290	2	5	3
5672		CULG	09 12 0245	N26 W66	09 7.0		B	DAO	200	5	6	2
5672		HOLL	09 12 1515	N24 W70	09 7.2		B	CKO	260	3	4	2
5672		RAMY	09 12 1537	N25 W72	09 7.1		B	CAO	250	4	8	3
5672		PALE	09 12 1830	N24 W70	09 7.4		B	CKO	290	3	7	3
5672		LEAR	09 13 0012	N25 W73	09 7.3		B	CKO	310	2	5	4
5672		CULG	09 13 0120	N26 W78	09 7.0		B	CSO	200	2	5	2
5672		RAMY	09 13 1430	N25 W79	09 7.5		A	HK	150	1	3	3
5672		HOLL	09 13 1515	N25 W85	09 7.0		A	HK	120	1	3	2
5672		BOUL	09 13 1803	N26 W80	09 7.5		A	HS	120	1	3	1
5672		PALE	09 13 2316	N25 W89	09 7.1		A	AX		1	1	3
5672		LEAR	09 14 0010	N26 W83	09 7.5		A	HH	120	1	5	3
5688		HOLL	09 07 1500	N28 E05	09 8.0		B	BXO	10	11	3	3
5688		BOUL	09 07 1705	N26 E04	09 8.0		A	AX		1		1
5688		PALE	09 07 1928	N28 E03	09 8.0		A	AX		4	1	3
5688		LEAR	09 08 0020	N27 W01	09 7.9		A	AX	10	3	1	2
5688		CULG	09 08 0320	N29 W02	09 8.0		A	HA	20	4	1	3
5688		LEAR	09 11 0027	N24 W33	09 8.5		A	AX	10	1	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5688		LEAR	09	12	0035	N23	W42	09	8.8		B	BXO	10	2	7	3
5688		LEAR	09	13	0012	N23	W55	09	8.8		B	BXO	30	4	3	4
5672A		PALE	09	04	1800	S17	E38	09	7.6		A	AX		2	1	3
5672A		HOLL	09	07	1500	S17	E05	09	8.0		B	BXO	10	7	6	3
5672A		HOLL	09	08	1602	S19	W08	09	8.0		A	AX	10	1	1	3
5672A		RAMY	09	08	1615	S20	W08	09	8.1		A	AX	10	1	1	3
5688A		HOLL	09	08	1602	S26	W07	09	8.1		A	AX	10	1	1	3
5688A		RAMY	09	08	1615	S25	W06	09	8.2		A	AX	10	1	1	3
5688A		CULG	09	09	0320	S26	W12	09	8.2		A	AX		1		3
5688A		RAMY	09	13	1430	S14	W08	09	13.0		A	AX	10	3	1	3
5688B		PALE	09	02	2231	S05	E70	09	8.2		A	AX		1		3
5688C		HOLL	09	07	1500	N13	E15	09	8.7		B	BXO	10	6	3	3
5682		HOLL	09	05	1845	N22	E40	09	8.8		A	AX	10	2	2	3
5682		LEAR	09	06	0010	N23	E37	09	8.8		B	BXO	20	4	5	4
5682		CULG	09	06	0320	N25	E39	09	9.2		B	BXO	10	2	1	2
5682		BOUL	09	06	1343	N23	E31	09	9.0		A	AX	10	2		2
5682		RAMY	09	06	1700	N25	E31	09	9.1		A	AX	10	3	2	3
5682		HOLL	09	06	1905	N23	E29	09	9.0		A	AX	20	4	3	3
5682		LEAR	09	07	0027	N25	E27	09	9.1		B	BXO	20	8	5	3
5682		CULG	09	07	0320	N25	E24	09	9.0		B	CRO	10	5	4	2
5682		HOLL	09	07	1500	N22	E16	09	8.8		B	CAO	40	15	9	3
5682		BOUL	09	07	1705	N24	E14	09	8.8		B	BXO		4	2	1
5682		PALE	09	07	1928	N25	E16	09	9.0		B	DAO	70	13	6	3
5682		LEAR	09	08	0020	N25	E13	09	9.0		B	DAO	70	14	6	2
5682		CULG	09	08	0320	N23	E09	09	8.8		B	CAO	20	11	5	3
5682		HOLL	09	08	1602	N25	E03	09	8.9		B	CRO	70	9	6	3
5682		RAMY	09	08	1615	N25	E03	09	8.9		B	DAO	70	4	8	3
5682		LEAR	09	09	0040	N24	W03	09	8.8		B	CAO	70	10	3	3
5682		CULG	09	09	0320	N25	W04	09	8.8		B	CRO	10	5	3	3
5682		HOLL	09	09	1500	N22	W11	09	8.8		B	BXO	10	5	3	3
5682		RAMY	09	09	1540	N22	W12	09	8.7		B	CRO	20	5	3	4
5682		PALE	09	09	1750	N23	W14	09	8.7		A	AX	10	2	2	3
5682		LEAR	09	10	0030	N25	W15	09	8.8		B	CSO	20	2	8	3
5682		CULG	09	10	0255	N24	W21	09	8.5		A	AX		2		3
5682		RAMY	09	10	1245	N21	W24	09	8.7		B	CRO	20	4	3	3
5682		BOUL	09	10	1440	N22	W25	09	8.7		B	BXO		2	3	2
5682		PALE	09	10	1750	N22	W29	09	8.5		B	BXO	10	3	3	3
5682		HOLL	09	10	1900	N23	W29	09	8.5		B	BXO	10	3	3	3
5682		LEAR	09	11	0027	N27	W30	09	8.7		B	DKO	150	10	9	3
5682		CULG	09	11	0240	N23	W35	09	8.4		A	AX		2	1	3
5682		LEAR	09	12	0035	N26	W41	09	8.8		B	DAO	100	11	7	3
5682		CULG	09	12	0245	N24	W45	09	8.6		A	HR	10	2	1	2
5682		RAMY	09	12	1537	N22	W49	09	8.9		B	BXO	10	3	2	3
5682		PALE	09	12	1830	N23	W52	09	8.8		A	AX	10	2	1	3
5682		CULG	09	13	0120	N23	W57	09	8.7		B	BXO		2	4	2
5682		RAMY	09	13	1430	N22	W62	09	8.8		B	BXO	20	5	5	3
5682		HOLL	09	13	1515	N23	W65	09	8.6		B	BXO	30	6	6	2
5682		BOUL	09	13	1803	N23	W64	09	8.8		B	BXO	10	4	6	1
5682		PALE	09	13	2316	N22	W67	09	8.8		B	BXO	10	4	6	3
5682		LEAR	09	14	0010	N23	W66	09	8.9		B	BXO	40	5	6	3
5682		CULG	09	14	0255	N24	W72	09	8.5		B	CRO	30	4	7	2
5682		RAMY	09	14	1344	N21	W75	09	8.8		B	DAO	150	5	7	4
5682		LEAR	09	15	0035	N24	W79	09	8.9		A	HS	60	1	2	4
5682		CULG	09	15	0415	N27	W84	09	8.6		B	ESO	80	2	11	3
5682		RAMY	09	15	1155	N21	W85	09	9.0		A	HA	50	1	2	4
5682		BOUL	09	15	1415	N25	W82	09	9.2		B	DAO	60	2	4	3
5681		RAMY	09	05	1410	N16	E52	09	9.5		B	BXO	10	2	4	3
5681		PALE	09	05	1740	N17	E51	09	9.6		B	BXO		3	3	3
5681		HOLL	09	05	1845	N14	E50	09	9.5		A	AX	10	2	3	3
5676		RAMY	09	03	1215	N28	E80	09	9.8		B	CAO	50	2	6	4
5676		HOLL	09	03	1530	N26	E85	09	10.2		B	BXO	70	5	10	3
5676		PALE	09	03	1740	N27	E78	09	9.8		A	AX	10	1	1	2

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5676		LEAR	09 04 0030	N26 E75	09 9.8		B	BXO	20	6	9	3
5676		CULG	09 04 0318	N27 E81	09 10.4		B	BXO	10	3	13	2
5676		BOUL	09 04 1335	N27 E67	09 9.8		B	CSO	50	5	9	2
5676		RAMY	09 04 1350	N27 E67	09 9.8		BG	CX	30	7	11	3
5676		HOLL	09 04 1500	N26 E71	09 10.1		B	BXO	70	11	8	3
5676		PALE	09 04 1800	N27 E68	09 10.0		B	BXO	30	6	9	3
5676		LEAR	09 05 0045	N26 E65	09 10.1		B	CRO	20	8	8	3
5676		CULG	09 05 0320	N27 E64	09 10.1		B	DAO	60	9	9	2
5676		BOUL	09 05 1410	N27 E54	09 9.8		B	DAO	150	7	8	2
5676		PALE	09 05 1740	N28 E54	09 9.9		B	DAO	180	13	10	3
5676		HOLL	09 05 1845	N27 E55	09 10.1		B	ESO	250	14	11	3
5676		LEAR	09 06 0010	N27 E51	09 10.0		B	ESI	80	13	12	4
5676		CULG	09 06 0320	N28 E50	09 10.0		B	DAO	170	12	10	2
5676		BOUL	09 06 1343	N27 E42	09 9.8		B	DSI	50	12	10	2
5676		RAMY	09 06 1700	N27 E42	09 10.0		B	ESO	90	24	10	3
5676		HOLL	09 06 1905	N27 E40	09 9.9		B	ESO	170	29	12	3
5676		PALE	09 06 1916	N26 E41	09 10.0		B	EAI	190	22	14	3
5676		LEAR	09 07 0027	N27 E40	09 10.1		B	ESO	110	18	15	3
5676		CULG	09 07 0320	N27 E37	09 10.0		B	EAO	190	15	13	2
5676		HOLL	09 07 1500	N27 E29	09 9.9		B	ESO	170	34	13	3
5676		BOUL	09 07 1705	N26 E26	09 9.7		B	EAI	160	14	15	1
5676		PALE	09 07 1928	N26 E28	09 10.0		B	EAI	200	20	15	3
5676		LEAR	09 08 0020	N27 E24	09 9.9		B	EAI	140	25	14	2
5676		CULG	09 08 0320	N27 E20	09 9.7		B	FAO	200	24	16	3
5676		HOLL	09 08 1602	N28 E15	09 9.8		B	ESI	180	21	15	3
5676		RAMY	09 08 1615	N26 E13	09 9.7		B	EAO	210	19	13	3
5676		LEAR	09 09 0040	N27 E11	09 9.9		B	EAO	200	28	15	3
5676		CULG	09 09 0320	N27 E08	09 9.8		B	FAO	230	26	15	3
5676		HOLL	09 09 1500	N27 E02	09 9.8		BG	FAI	200	44	18	3
5676		RAMY	09 09 1540	N28 E02	09 9.8		B	FAO	180	51	17	4
5676		PALE	09 09 1750	N27 E00	09 9.7		BG	FAI	140	31	17	3
5676		LEAR	09 10 0030	N27 W02	09 9.9		B	ESO	230	31	14	3
5676		CULG	09 10 0255	N28 W05	09 9.7		B	FAI	250	30	16	3
5676		RAMY	09 10 1245	N27 W08	09 9.9		BG	FAO	280	58	18	3
5676		BOUL	09 10 1440	N26 W10	09 9.8		B	FAI	140	30	17	2
5676		PALE	09 10 1750	N27 W13	09 9.7		BG	FAI	190	48	17	3
5676		HOLL	09 10 1900	N28 W13	09 9.8		BG	FAI	210	43	18	3
5676		LEAR	09 11 0027	N28 W11	09 10.1		B	DAI	100	17	9	3
5676		CULG	09 11 0240	N27 W18	09 9.7		B	FAI	300	28	17	3
5676		HOLL	09 11 1450	N28 W21	09 10.0		BG	EAO	190	28	15	4
5676		RAMY	09 11 1529	N26 W23	09 9.8		BG	FAO	300	22	15	3
5676		PALE	09 11 1745	N27 W24	09 9.9		BG	EAI	220	37	15	4
5676		LEAR	09 12 0035	N26 W24	09 10.1		BG	DHO	210	15	9	3
5676		CULG	09 12 0245	N27 W30	09 9.8		B	DAI	160	6	13	2
5676		HOLL	09 12 1515	N26 W35	09 9.9		BG	ESO	170	28	15	2
5676		RAMY	09 12 1537	N28 W33	09 10.1		BG	EAO	210	26	14	3
5676		PALE	09 12 1830	N26 W37	09 9.9		BG	EAI	100	23	15	3
5676		LEAR	09 13 0012	N27 W41	09 9.8		B	EAO	210	29	14	4
5676		CULG	09 13 0120	N27 W41	09 9.9		B	CAO	110	17	15	2
5676		RAMY	09 13 1430	N26 W46	09 10.0		BG	EAO	270	30	15	3
5676		HOLL	09 13 1515	N28 W48	09 9.9		BG	BXO	80	39	15	2
5676		BOUL	09 13 1803	N27 W47	09 10.1		B	EAI	120	16	14	1
5676		PALE	09 13 2316	N26 W52	09 9.9		B	BXI	60	30	16	3
5676		LEAR	09 14 0010	N27 W50	09 10.1		B	BXI	40	25	15	3
5676		CULG	09 14 0255	N27 W55	09 9.8		B	EAO	130	15	15	2
5676		RAMY	09 14 1344	N26 W58	09 10.1		B	EAO	180	15	14	4
5676		LEAR	09 15 0035	N27 W65	09 9.9		B	FSO	90	8	16	4
5676		CULG	09 15 0415	N28 W66	09 10.0		B	CSO	50	6	9	3
5676		RAMY	09 15 1155	N25 W70	09 10.1		B	BXO	30	13	14	4
5676		BOUL	09 15 1415	N27 W64	09 10.6		A	HR	20	1	2	3
5676		PALE	09 15 1720	N27 W73	09 10.0		B	CAO	70	2	14	3
5676		LEAR	09 16 0035	N28 W70	09 10.5		A	AX	50	2	2	3
5676		RAMY	09 16 1220	N27 W79	09 10.3		B	CRO	50	5	3	4
5676		PALE	09 16 1815	N27 W81	09 10.4		B	BXO	10	2	3	3
5676A		HOLL	09 10 1900	S13 E02	09 10.9		A	AX		1		3
5683		RAMY	09 06 1700	N18 E58	09 11.1		A	HA	40	1	2	3
5683		HOLL	09 06 1905	N17 E56	09 11.0		A	HX	40	2	1	3

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5683		CULG	09 07 0320	N17 E53	09 11.2		A	HA	30	2	1	2
5683		HOLL	09 07 1500	N17 E45	09 11.0		A	HS	20	3	1	3
5683		BOUL	09 07 1705	N18 E43	09 11.0		B	CSO	10	2	2	1
5683		LEAR	09 08 0020	N17 E38	09 10.9		A	HA	20	1	1	2
5683		CULG	09 08 0320	N17 E38	09 11.0		A	HA	10	2	1	3
5683		HOLL	09 08 1602	N17 E34	09 11.2		B	BXO	40	7	4	3
5683		RAMY	09 08 1615	N16 E31	09 11.0		B	CRO	20	4	3	3
5683		LEAR	09 09 0040	N16 E27	09 11.1		B	BXO	50	10	3	3
5683		CULG	09 09 0320	N16 E27	09 11.2		B	BXO	10	2	2	3
5683		HOLL	09 09 1500	N17 E20	09 11.1		B	BXO	10	10	5	3
5683		RAMY	09 09 1540	N17 E19	09 11.1		B	CRO	30	8	3	4
5683		PALE	09 09 1750	N17 E18	09 11.1		B	BXO	10	5	4	3
5683		LEAR	09 10 0030	N16 E15	09 11.1		B	CAO	40	20	8	3
5683		CULG	09 10 0255	N16 E09	09 10.8		B	BXI	10	10	8	3
5683		RAMY	09 10 1245	N17 E07	09 11.1		B	DAO	130	43	9	3
5683		BOUL	09 10 1440	N16 E07	09 11.1		B	EAI	120	23	11	2
5683		PALE	09 10 1750	N17 E04	09 11.0		B	DAI	110	22	9	3
5683		HOLL	09 10 1900	N17 E03	09 11.0		B	DAO	150	15	9	3
5683		LEAR	09 11 0027	N17 W01	09 10.9		B	DKO	190	12	9	3
5683		CULG	09 11 0240	N17 W02	09 10.9		B	DAI	250	17	9	3
5683		HOLL	09 11 1450	N18 W08	09 11.0		BGD	DAI	290	24	10	4
5683		RAMY	09 11 1529	N17 W08	09 11.0		B	DAO	270	21	10	3
5683		PALE	09 11 1745	N17 W11	09 10.9		B	DKI	220	21	8	4
5683		LEAR	09 12 0035	N17 W12	09 11.1		B	DKI	220	27	10	3
5683		CULG	09 12 0245	N17 W15	09 11.0		B	DKI	300	13	10	2
5683		HOLL	09 12 1515	N17 W22	09 11.0		BGD	DKI	390	25	10	2
5683		RAMY	09 12 1537	N18 W22	09 11.0		B	EAO	460	21	11	3
5683		PALE	09 12 1830	N17 W25	09 10.9		B	DKI	260	13	7	3
5683		LEAR	09 13 0012	N17 W26	09 11.0		BG	DKI	410	19	10	4
5683		CULG	09 13 0120	N18 W29	09 10.8		B	DKI	330	21	10	2
5683		RAMY	09 13 1430	N16 W35	09 10.9		B	EAO	480	12	11	3
5683		HOLL	09 13 1515	N17 W34	09 11.0		B	EKI	340	21	11	2
5683		BOUL	09 13 1803	N17 W35	09 11.1		B	DAI	210	10	9	1
5683		PALE	09 13 2316	N17 W40	09 10.9		B	DKO	220	7	10	3
5683		LEAR	09 14 0010	N16 W40	09 11.0		B	EKI	280	15	12	3
5683		CULG	09 14 0255	N18 W42	09 10.9		B	EAI	300	11	11	2
5683		RAMY	09 14 1344	N16 W48	09 10.9		B	DKO	280	11	10	4
5683		LEAR	09 15 0035	N17 W53	09 11.0		B	EAO	170	14	11	4
5683		CULG	09 15 0415	N20 W60	09 10.6		A	HS	170	1	2	3
5683		RAMY	09 15 1155	N16 W60	09 10.9		B	EAO	160	14	11	4
5683		BOUL	09 15 1415	N16 W62	09 10.9		B	CAO	130	2	9	3
5683		PALE	09 15 1720	N16 W66	09 10.7		A	HK	220	1	3	3
5683		LEAR	09 16 0035	N17 W66	09 11.0		B	CAO	160	3	10	3
5683		CULG	09 16 0530	N19 W73	09 10.6		A	HS	180	1	2	3
5683		RAMY	09 16 1220	N16 W79	09 10.5		A	HA	90	1	2	4
5683		BOUL	09 16 1330	N16 W73	09 11.0		A	HS	60	1	2	3
5683		PALE	09 16 1815	N17 W76	09 11.0		B	CAO	120	3	10	3
5683		LEAR	09 17 0205	N18 W80	09 11.0		A	HA	90	1	3	2
5683		CULG	09 17 0415	N19 W86	09 10.6		A	HS	120	1	2	2
5685		RAMY	09 06 1700	N08 E59	09 11.1		A	AX	10	3	1	3
5685		HOLL	09 06 1905	N07 E57	09 11.1		A	AX	20	2	2	3
5685		PALE	09 06 1916	N06 E59	09 11.2		A	AX		2	2	3
5685		LEAR	09 07 0027	N08 E54	09 11.1		B	BXO	20	4	5	3
5685		CULG	09 07 0320	N06 E53	09 11.1		B	CAO	30	4	3	2
5685		HOLL	09 07 1500	N08 E46	09 11.1		B	CAO	50	20	5	3
5685		BOUL	09 07 1705	N08 E44	09 11.0		B	BXO	10	9	5	1
5685		PALE	09 07 1928	N07 E45	09 11.2		B	CAO	50	13	6	3
5685		LEAR	09 08 0020	N07 E40	09 11.0		B	DAO	70	12	6	2
5685		CULG	09 08 0320	N07 E39	09 11.1		B	DAO	60	7	5	3
5685		HOLL	09 08 1602	N07 E32	09 11.1		B	CSI	80	15	7	3
5685		RAMY	09 08 1615	N07 E32	09 11.1		B	DAO	100	18	6	3
5685		LEAR	09 09 0040	N08 E27	09 11.0		B	CAO	120	22	6	3
5685		CULG	09 09 0320	N07 E26	09 11.1		B	CAI	40	15	6	3
5685		HOLL	09 09 1500	N08 E20	09 11.1		B	CAO	70	25	6	3
5685		RAMY	09 09 1540	N07 E20	09 11.1		B	CRO	70	36	5	4
5685		PALE	09 09 1750	N07 E18	09 11.1		B	CAO	100	17	7	3
5685		LEAR	09 10 0030	N06 E14	09 11.1		B	CAO	70	12	6	3
5685		CULG	09 10 0255	N07 E12	09 11.0		B	CAO	50	14	7	3

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation 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
5685		BOUL	09	10	1440	N08	E05	09	11.0		B	CAO	60	14	6	2
5685		PALE	09	10	1750	N07	E05	09	11.1		B	CAO	80	18	6	3
5685		HOLL	09	10	1900	N08	E04	09	11.1		B	CAO	50	15	7	3
5685		LEAR	09	11	0027	N07	W02	09	10.9		B	CSO	70	5	2	3
5685		CULG	09	11	0240	N08	W02	09	11.0		B	DAO	60	7	5	3
5685		HOLL	09	11	1450	N08	W08	09	11.0		B	CAO	50	9	5	4
5685		RAMY	09	11	1529	N08	W09	09	11.0		B	CAO	70	9	7	3
5685		PALE	09	11	1745	N07	W08	09	11.1		B	CAO	50	8	6	4
5685		LEAR	09	12	0035	N08	W12	09	11.1		B	DAO	90	15	7	3
5685		HOLL	09	12	1515	N07	W22	09	11.0		B	CSO	60	12	7	2
5685		RAMY	09	12	1537	N08	W21	09	11.1		B	DAO	60	10	6	3
5685		PALE	09	12	1830	N07	W23	09	11.0		B	CAO	50	7	6	3
5685		LEAR	09	13	0012	N08	W26	09	11.0		B	CAO	70	8	6	4
5685		RAMY	09	13	1430	N06	W34	09	11.0		B	CAO	60	7	6	3
5685		HOLL	09	13	1515	N07	W35	09	11.0		B	DSO	50	9	7	2
5685		BOUL	09	13	1803	N07	W38	09	10.9		A	HA	30	2	2	1
5685		PALE	09	13	2316	N08	W42	09	10.8		A	AX		2	2	3
5685		LEAR	09	14	0010	N07	W40	09	11.0		B	BXO	40	5	2	3
5685		CULG	09	14	0255	N08	W44	09	10.8		A	HR	10	2	2	2
5685		RAMY	09	14	1344	N06	W50	09	10.8		A	AX		3		4
5685		RAMY	09	15	1155	N05	W59	09	11.1		A	AX	20	2	1	4
5685		PALE	09	15	1720	N06	W62	09	11.1		A	AX	10	1	1	3
5680		LEAR	09	05	0045	N14	E88	09	11.7		A	HA	30	1	1	3
5680		CULG	09	05	0320	N16	E87	09	11.7		A	HS	150	1	2	2
5680		RAMY	09	05	1410	N16	E80	09	11.6		B	FKO	510	7	17	3
5680		BOUL	09	05	1410	N17	E75	09	11.3		B	EKI	270	4	11	2
5680		PALE	09	05	1740	N18	E78	09	11.7		B	FKI	540	8	16	3
5680		HOLL	09	05	1845	N16	E79	09	11.8		B	EKI	500	8	15	3
5680		LEAR	09	06	0010	N16	E75	09	11.7		B	EHI	260	10	13	4
5680		CULG	09	06	0320	N16	E73	09	11.7		B	FKI	600	6	17	2
5680		BOUL	09	06	1343	N17	E74	09	12.2		B	EKI	550	7	13	2
5680		RAMY	09	06	1700	N17	E72	09	12.2		B	FKO	820	17	17	3
5680		HOLL	09	06	1905	N15	E66	09	11.8		B	EHO	370	20	10	3
5680		PALE	09	06	1916	N16	E66	09	11.8		B	EKI	600	12	15	3
5680		LEAR	09	07	0027	N17	E62	09	11.7		B	EKO	560	18	14	3
5680		CULG	09	07	0320	N15	E64	09	12.0		B	EKI	360	12	12	2
5680		HOLL	09	07	1500	N15	E56	09	11.9		B	EKI	960	38	15	3
5680		BOUL	09	07	1705	N16	E56	09	11.9		B	EAI	430	21	14	1
5680		PALE	09	07	1928	N16	E55	09	12.0		B	FKI	840	22	20	3
5680		LEAR	09	08	0020	N16	E52	09	11.9		B	EKI	660	24	14	2
5680		CULG	09	08	0320	N15	E51	09	12.0		B	EKI	820	19	15	3
5680		HOLL	09	08	1602	N18	E44	09	12.0		B	EKI	870	35	15	3
5680		RAMY	09	08	1615	N16	E44	09	12.0		B	FKO	680	33	16	3
5680		LEAR	09	09	0040	N16	E39	09	12.0		BG	EKI	1100	44	15	3
5680		CULG	09	09	0320	N17	E38	09	12.0		BG	FKI	680	19	16	3
5680		HOLL	09	09	1500	N16	E32	09	12.0		BD	FKI	1000	65	16	3
5680		RAMY	09	09	1540	N17	E31	09	12.0		B	FKO	940	76	18	4
5680		PALE	09	09	1750	N16	E28	09	11.9		BD	FKI	980	33	18	3
5680		LEAR	09	10	0030	N15	E25	09	11.9		BG	EKI	720	29	15	3
5680		CULG	09	10	0255	N15	E26	09	12.1		B	FAI	630	45	20	3
5680		RAMY	09	10	1245	N17	E20	09	12.0		BG	FKI	970	0	20	3
5680		BOUL	09	10	1440	N17	E18	09	12.0		B	FKI	610	45	16	2
5680		PALE	09	10	1750	N18	E19	09	12.2		BG	FKI	860	70	21	3
5680		HOLL	09	10	1900	N17	E19	09	12.2		BG	FKI	810	65	20	3
5680		LEAR	09	11	0027	N17	E10	09	11.8		BD	EKI	700	25	12	3
5680		CULG	09	11	0240	N16	E14	09	12.2		B	FKI	690	39	20	3
5680		HOLL	09	11	1450	N18	E07	09	12.1		BGD	FKI	840	59	30	4
5680		RAMY	09	11	1529	N16	E06	09	12.1		BG	FKI	710	42	20	3
5680		PALE	09	11	1745	N18	E05	09	12.1		BGD	FKI	930	54	25	4
5680		LEAR	09	12	0035	N15	W02	09	11.9		BG	EKI	700	29	12	3
5680		CULG	09	12	0245	N17	W01	09	12.0		B	FKI	780	23	17	2
5680		HOLL	09	12	1515	N16	W06	09	12.2		BGD	FKI	830	82	21	2
5680		RAMY	09	12	1537	N16	W09	09	12.0		BG	FKI	910	44	22	3
5680		PALE	09	12	1830	N17	W08	09	12.2		BGD	FKI	790	41	22	3
5680		LEAR	09	13	0012	N17	W15	09	11.9		BG	EKI	470	41	13	4
5680		CULG	09	13	0120	N16	W15	09	11.9		B	FAI	700	22	16	2
5680		RAMY	09	13	1430	N17	W19	09	12.2		BG	EAO	640	41	20	3
5680		HOLL	09	13	1515	N17	W18	09	12.3		BG	FKI	740	61	23	2

SUNSPOT GROUPS
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5680		BOUL	09 13 1803	N17 W24	09 11.9		B	EKI	360	15	11	1
5680		PALE	09 13 2316	N17 W25	09 12.1		BG	FKO	600	22	21	3
5680		LEAR	09 14 0010	N17 W26	09 12.0		BG	EKI	430	11	13	3
5680		CULG	09 14 0255	N17 W30	09 11.8		B	EKI	540	11	11	2
5680		RAMY	09 14 1344	N17 W31	09 12.2		BG	FKO	590	33	10	4
5680		LEAR	09 15 0035	N16 W40	09 12.0		B	EAI	530	20	13	4
5680		CULG	09 15 0415	N18 W46	09 11.7		B	FAO	390	18	16	3
5680		RAMY	09 15 1155	N15 W45	09 12.1		BG	EKO	500	26	13	4
5680		BOUL	09 15 1415	N18 W48	09 11.9		B	EAO	400	11	15	3
5680		PALE	09 15 1720	N17 W45	09 12.3		BG	FKI	530	19	19	3
5680		LEAR	09 16 0035	N17 W54	09 11.9		B	EHO	430	20	13	3
5680		CULG	09 16 0530	N18 W57	09 11.9		B	ESO	400	13	13	3
5680		RAMY	09 16 1220	N15 W60	09 12.0		B	EKO	430	22	13	4
5680		BOUL	09 16 1330	N16 W62	09 11.9		B	CAO	320	6	13	3
5680		PALE	09 16 1815	N16 W60	09 12.2		BG	EAI	330	13	15	3
5680		LEAR	09 17 0205	N16 W67	09 12.0		B	DSO	290	7	7	2
5680		CULG	09 17 0415	N18 W72	09 11.7		B	ESI	210	6	10	2
5680		BOUL	09 17 1445	N15 W73	09 12.1		B	DAO	180	9	10	3
5680		PALE	09 17 1740	N16 W79	09 11.7		B	EKO	270	9	13	3
5680		LEAR	09 18 0030	N17 W78	09 12.1		B	DAO	180	2	7	2
5680		CULG	09 18 0250	N17 W86	09 11.6		B	DSO	80	3	8	2
5697		LEAR	09 15 0035	N29 W39	09 12.0		B	BXO	10	5	4	4
5697		CULG	09 15 0415	N31 W41	09 11.9		B	BXO	10	3	4	3
5697		RAMY	09 15 1155	N27 W46	09 11.9		B	CRO	40	10	5	4
5697		BOUL	09 15 1415	N28 W45	09 12.1		B	BXO	10	7	7	3
5697		PALE	09 15 1720	N27 W48	09 12.0		B	CAO	110	9	5	3
5697		LEAR	09 16 0035	N27 W51	09 12.0		B	DAO	160	9	7	3
5697		CULG	09 16 0530	N30 W54	09 12.0		B	DAO	150	6	6	3
5697		RAMY	09 16 1220	N27 W58	09 12.0		B	DAO	390	19	7	4
5697		BOUL	09 16 1330	N28 W60	09 11.9		B	CAO	100	4	8	3
5697		PALE	09 16 1815	N27 W61	09 12.0		B	DKI	500	12	9	3
5697		LEAR	09 17 0205	N28 W63	09 12.2		B	EKO	460	10	11	2
5697		CULG	09 17 0415	N30 W67	09 11.9		B	DKO	500	10	8	2
5697		BOUL	09 17 1445	N29 W69	09 12.2		B	EKO	600	13	11	3
5697		PALE	09 17 1740	N28 W75	09 11.9		B	EKO	690	10	12	3
5697		LEAR	09 18 0030	N28 W74	09 12.2		B	DKO	440	6	10	2
5697		CULG	09 18 0150	N31 W86	09 11.3		B	DSO	380	2	1	3
5697		BOUL	09 18 1330	N30 W80	09 12.3		B	DAO	270	2	9	1
5697		PALE	09 18 1950	N30 W80	09 12.5		B	DAO	180	5	4	3
5697		LEAR	09 19 0040	N31 W80	09 12.7		B	DHO	240	2	4	3
5693		HOLL	09 11 1450	S10 E11	09 12.4		B	BXO	10	5	3	4
5693		RAMY	09 11 1529	S09 E11	09 12.5		B	BXO	10	5	3	3
5693		PALE	09 11 1745	S10 E09	09 12.4		B	BXO	10	4	3	4
5693		LEAR	09 12 0035	S10 E06	09 12.5		B	DAO	30	5	4	3
5693		CULG	09 12 0245	S10 E03	09 12.3		B	DAO	20	6	4	2
5693		HOLL	09 12 1515	S10 W03	09 12.4		B	BXO	30	12	5	2
5693		RAMY	09 12 1537	S09 W05	09 12.3		B	BXO	10	9	6	3
5693		PALE	09 12 1830	S10 W05	09 12.4		B	BXO	10	14	6	3
5693		LEAR	09 13 0012	S10 W08	09 12.4		B	BXO	40	10	5	4
5693		CULG	09 13 0120	S10 W09	09 12.4		B	DAO	30	8	6	2
5693		RAMY	09 13 1430	S10 W16	09 12.4		B	BXO	20	9	6	3
5693		HOLL	09 13 1515	S10 W16	09 12.4		B	BXO	20	12	6	2
5693		PALE	09 13 2316	S10 W25	09 12.1		A	AX		4	1	3
5693		LEAR	09 14 0010	S08 W23	09 12.3		B	BXO	10	5	7	3
5693		CULG	09 14 0255	S09 W27	09 12.1		A	HR	10	3	1	2
5693		RAMY	09 14 1344	S10 W30	09 12.3		B	BXO	10	4	5	4
5693		LEAR	09 15 0035	S09 W36	09 12.3		B	BXO	10	3	8	4
5693		PALE	09 15 1720	S10 W44	09 12.4		B	BXO	60	2	7	3
5693		LEAR	09 16 0035	S10 W51	09 12.2		A	AX	20	1	1	3
5693		PALE	09 16 1815	S11 W61	09 12.2		A	AX		2	1	3
5684		RAMY	09 06 1700	N29 E80	09 13.0		A	HS	60	1	1	3
5684		HOLL	09 06 1905	N28 E80	09 13.0		A	AX	30	1	1	3
5684		PALE	09 06 1916	N29 E82	09 13.2		A	AX		1		3
5684		LEAR	09 07 0027	N30 E75	09 12.9		A	HS	30	1	2	3
5684		CULG	09 07 0320	N29 E78	09 13.2		A	HR	10	1		2
5684		HOLL	09 07 1500	N28 E68	09 12.9		A	HR	30	3	2	3

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5684		BOUL	09 07	1705	N30 E66	09 12.9		A	HS	20	1	1	1
5684		PALE	09 07	1928	N28 E67	09 13.0		A	AX		1		3
5684		LEAR	09 08	0020	N28 E60	09 12.7		B	CAO	40	2	4	2
5684		CULG	09 08	0320	N28 E62	09 13.0		B	CSO	20	2	4	3
5684		HOLL	09 08	1602	N28 E52	09 12.7		B	CRO	50	3	5	3
5684		RAMY	09 08	1615	N28 E52	09 12.7		B	CAO	60	3	5	3
5684		LEAR	09 09	0040	N27 E48	09 12.8		B	BXO	40	2	3	3
5684		CULG	09 09	0320	N28 E51	09 13.1		A	HR	10	1	1	3
5684		HOLL	09 09	1500	N29 E43	09 13.0		A	AX	10	1	1	3
5684		RAMY	09 09	1540	N30 E42	09 12.9		A	HA	30	1	1	4
5684		PALE	09 09	1750	N29 E42	09 13.0		A	AX	10	1	1	3
5684		LEAR	09 10	0030	N29 E37	09 12.9		A	AX	10	1	1	3
5684		CULG	09 10	0255	N29 E37	09 13.0		A	HR	10	2		3
5684		RAMY	09 10	1245	N30 E29	09 12.8		B	CRO	10	3	5	3
5684		BOUL	09 10	1440	N28 E28	09 12.8		A	HS	10	1	1	2
5684		PALE	09 10	1750	N30 E29	09 13.0		A	AX	10	2	1	3
5684		HOLL	09 10	1900	N29 E28	09 13.0		A	AX	10	2	1	3
5684		LEAR	09 11	0027	N29 E24	09 12.9		A	AX	10	1	1	3
5684		CULG	09 11	0240	N30 E23	09 12.9		A	HR	10	2	1	3
5684		HOLL	09 11	1450	N29 E18	09 13.0		A	AX		1		4
5684		RAMY	09 11	1529	N29 E16	09 12.9		A	AX	10	1	2	3
5684		PALE	09 11	1745	N29 E15	09 12.9		A	AX		1		4
5671B		BOUL	09 13	1803	N21 W13	09 12.7		B	BXO	10	5	5	1
5671B		PALE	09 13	2316	N14 W11	09 13.1		A	AX		1		3
5671C		BOUL	09 17	1445	S12 W58	09 13.2		A	AX		1	1	3
5686		PALE	09 06	1916	N19 E80	09 12.9		A	AX		4	1	3
5686		LEAR	09 07	0027	N19 E75	09 12.7		B	BXO	60	4	5	3
5686		CULG	09 07	0320	N19 E78	09 13.1		A	AX		2		2
5686		BOUL	09 07	1705	N17 E70	09 13.0		B	BXO		2	4	1
5686		PALE	09 07	1928	N17 E72	09 13.3		B	FAO	190	18	17	3
5686		LEAR	09 08	0020	N17 E65	09 12.9		B	CRO	30	4	5	2
5686		CULG	09 08	0320	N19 E63	09 12.9		B	CRO	10	2	6	3
5686		RAMY	09 08	1615	N19 E56	09 12.9		B	CAO	60	8	9	3
5686		LEAR	09 09	0040	N18 E51	09 12.9		B	BXO	40	4	4	3
5686		CULG	09 09	0320	N19 E53	09 13.2		A	AX		2	1	3
5686		HOLL	09 09	1500	N17 E45	09 13.0		B	CSO	50	15	10	3
5686		RAMY	09 09	1540	N18 E46	09 13.1		B	CAO	60	13	8	4
5686		PALE	09 09	1750	N15 E47	09 13.3		B	DAO	130	4	5	3
5686		LEAR	09 10	0030	N20 E38	09 12.9		B	BXO	10	4	3	3
5686		CULG	09 10	0255	N19 E37	09 12.9		B	BXO		2	1	3
5686		RAMY	09 10	1245	N16 E36	09 13.3		B	DAO	50	16	4	3
5686		BOUL	09 10	1440	N17 E33	09 13.1		B	DAO	50	16	8	2
5686		PALE	09 10	1750	N16 E34	09 13.3		B	CAO	30	13	4	3
5686		HOLL	09 10	1900	N15 E33	09 13.3		B	CAI	40	13	5	3
5686		LEAR	09 11	0027	N19 E22	09 12.7		B	BXO	20	12	7	3
5686		HOLL	09 11	1450	N14 E22	09 13.3		B	BXO	20	11	3	4
5686		RAMY	09 11	1529	N15 E22	09 13.3		B	CAO	60	8	6	3
5686		PALE	09 11	1745	N16 E21	09 13.3		B	CRO	10	5	3	4
5686		LEAR	09 12	0035	N20 E10	09 12.8		B	BXO	30	11	7	3
5686		CULG	09 12	0245	N21 E07	09 12.6		B	CAO	10	6	5	2
5686		HOLL	09 12	1515	N15 E09	09 13.3		B	CSO	40	9	5	2
5686		RAMY	09 12	1537	N11 E11	09 13.5		B	DAO	300	14	8	3
5686		PALE	09 12	1830	N16 E09	09 13.4		B	DAI	40	21	9	3
5686		LEAR	09 13	0012	N20 W03	09 12.8		B	BXO	40	8	4	4
5686		CULG	09 13	0120	N20 W04	09 12.7		B	BXO	10	5	4	2
5686		RAMY	09 13	1430	N15 W01	09 13.5		B	DAO	90	21	7	3
5686		HOLL	09 13	1515	N15 W06	09 13.2		B	BXO	30	13	8	2
5686		BOUL	09 13	1803	N17 W04	09 13.4		B	CAI	60	11	6	1
5686		PALE	09 13	2316	N17 W03	09 13.7		B	DAI	220	23	8	3
5686		LEAR	09 14	0010	N15 W05	09 13.6		B	EAI	80	22	12	3
5686		RAMY	09 14	1344	N16 W13	09 13.6		B	DAO	170	16	5	4
5686		LEAR	09 15	0035	N16 W18	09 13.6		B	DSI	90	22	6	4
5686		RAMY	09 15	1155	N16 W25	09 13.6		B	DAO	150	29	6	4
5686		BOUL	09 15	1415	N17 W26	09 13.6		B	CAI	30	15	8	3
5686		PALE	09 15	1720	N16 W28	09 13.6		B	CAI	80	34	7	3
5686		LEAR	09 16	0035	N17 W33	09 13.5		B	DKO	290	17	7	3

S U N S P O T G R O U P S
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SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5686		RAMY	09	16	1220	N16	W39	09	13.5		B	DAI	200	26	7	4
5686		PALE	09	16	1815	N16	W43	09	13.5		B	DAI	330	25	8	3
5686		LEAR	09	17	0205	N17	W47	09	13.5		B	DKO	240	11	9	2
5686		CULG	09	17	0415	N18	W50	09	13.4		B	DAI	240	13	6	2
5686		BOUL	09	17	1445	N15	W54	09	13.5		B	CAO	90	12	4	3
5686		PALE	09	17	1740	N16	W57	09	13.4		B	DKI	460	28	9	3
5686		LEAR	09	18	0030	N17	W57	09	13.7		B	DKI	270	13	9	2
5686		CULG	09	18	0250	N18	W63	09	13.3		B	DKI	500	14	10	2
5686		BOUL	09	18	1330	N15	W67	09	13.5		A	HA	90	1	2	1
5686		PALE	09	18	1950	N15	W68	09	13.7		B	DKI	260	13	8	3
5686		LEAR	09	19	0040	N17	W70	09	13.7		B	DAI	310	15	9	3
5686		BOUL	09	19	1325	N15	W79	09	13.6		A	HA	60	1	1	1
5686		PALE	09	19	2040	N16	W81	09	13.7		B	CKI	190	11	11	3
5686		LEAR	09	20	0110	N18	W88	09	13.3		A	HS	120	1	2	3
5686		CULG	09	20	0335	N19	W89	09	13.3		A	HA	200	2	2	3
5687		HOLL	09	06	1905	N20	E80	09	12.9		A	AX	30	2	1	3
5687		HOLL	09	07	1500	N17	E73	09	13.2		B	CAI	320	14	11	3
5687		BOUL	09	07	1705	N14	E80	09	13.7		B	DSI	210	4	5	1
5687		LEAR	09	08	0020	N16	E75	09	13.7		B	DAI	270	10	7	2
5687		CULG	09	08	0320	N15	E79	09	14.1		B	DAI	240	8	10	3
5687		RAMY	09	08	1615	N15	E69	09	13.9		B	DAO	400	16	10	3
5687		LEAR	09	09	0040	N17	E65	09	14.0		B	DAI	420	21	9	3
5687		CULG	09	09	0320	N16	E66	09	14.1		B	DAI	250	20	8	3
5687		HOLL	09	09	1500	N15	E55	09	13.8		BG	FAI	350	34	17	3
5687		RAMY	09	09	1540	N17	E59	09	14.1		B	DAO	390	22	10	4
5687		PALE	09	09	1750	N16	E54	09	13.8		B	DKI	380	15	10	3
5687		LEAR	09	10	0030	N16	E48	09	13.7		B	EKO	380	17	15	3
5687		CULG	09	10	0255	N16	E48	09	13.8		B	FAI	220	35	18	3
5687		RAMY	09	10	1245	N17	E46	09	14.0		B	EAI	340	38	11	3
5687		BOUL	09	10	1440	N16	E44	09	13.9		B	DAI	220	27	10	2
5687		PALE	09	10	1750	N17	E43	09	14.0		B	EKI	260	49	12	3
5687		HOLL	09	10	1900	N16	E42	09	14.0		B	EAI	340	39	12	3
5687		LEAR	09	11	0027	N17	E38	09	13.9		B	FKI	220	27	18	3
5687		CULG	09	11	0240	N17	E37	09	13.9		B	FAI	320	44	18	3
5687		HOLL	09	11	1450	N16	E31	09	14.0		BD	EAI	290	39	12	4
5687		RAMY	09	11	1529	N16	E30	09	13.9		B	DAI	460	23	8	3
5687		PALE	09	11	1745	N18	E31	09	14.1		B	EAI	230	35	11	4
5687		LEAR	09	12	0035	N16	E27	09	14.1		B	ESI	170	40	15	3
5687		CULG	09	12	0245	N16	E22	09	13.8		B	EAI	300	28	14	2
5687		HOLL	09	12	1515	N18	E18	09	14.0		BD	EAI	250	73	14	2
5687		RAMY	09	12	1537	N17	E18	09	14.0		B	DAI	210	25	10	3
5687		PALE	09	12	1830	N18	E18	09	14.1		B	DAI	200	43	7	3
5687		LEAR	09	13	0012	N16	E12	09	13.9		B	FAI	340	47	17	4
5687		CULG	09	13	0120	N18	E11	09	13.9		B	FAI	180	24	17	2
5687		RAMY	09	13	1430	N18	E08	09	14.2		B	DAI	240	52	10	3
5687		HOLL	09	13	1515	N16	E05	09	14.0		B	EAI	310	74	15	2
5687		BOUL	09	13	1803	N17	E03	09	14.0		B	DAI	130	13	5	1
5687		PALE	09	13	2316	N16	E06	09	14.4		B	CSO	50	4	5	3
5687		LEAR	09	14	0010	N17	E02	09	14.1		B	DAI	180	19	9	3
5687		CULG	09	14	0255	N17	W05	09	13.7		B	EAI	210	18	15	2
5687		RAMY	09	14	1344	N18	W05	09	14.2		B	DAI	200	30	10	4
5687		LEAR	09	15	0035	N16	W12	09	14.1		B	DSI	120	12	6	4
5687		CULG	09	15	0415	N17	W18	09	13.8		BG	EAI	140	29	11	3
5687		RAMY	09	15	1155	N16	W17	09	14.2		B	EAO	120	35	11	4
5687		BOUL	09	15	1415	N16	W15	09	14.4		B	EAI	80	13	12	3
5687		PALE	09	15	1720	N16	W19	09	14.3		B	EAI	150	14	11	3
5687		LEAR	09	16	0035	N16	W25	09	14.1		B	DAI	110	11	5	3
5687		CULG	09	16	0530	N19	W32	09	13.8		BG	FAI	240	21	16	3
5687		RAMY	09	16	1220	N20	W31	09	14.1		B	CAO	60	24	11	4
5687		BOUL	09	16	1330	N16	W35	09	13.9		B	CAO	30	4	4	3
5687		PALE	09	16	1815	N17	W34	09	14.2		B	DAO	70	12	8	3
5687		LEAR	09	17	0205	N16	W39	09	14.1		B	DSO	90	7	5	2
5687		CULG	09	17	0415	N17	W42	09	14.0		B	DRO	20	5	4	2
5687		BOUL	09	17	1445	N17	W47	09	14.0		B	CAO	180	28	10	3
5687		PALE	09	17	1740	N16	W48	09	14.1		B	CRO	20	6	4	3
5687		LEAR	09	18	0030	N16	W50	09	14.2		B	DSO	50	4	5	2
5687		CULG	09	18	0250	N17	W53	09	14.1		B	CRO	10	3	5	2
5687		BOUL	09	18	1330	N17	W61	09	13.9		B	CAO	210	5	7	1

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5687		PALE	09	18	1950	N16	W61	09	14.2		B	BXO		3	3	3
5687		BOUL	09	19	1325	N17	W73	09	14.0		B	CAO	200	2	6	1
5687		RAMY	09	19	2005	N17	W73	09	14.3		B	EAO	220	3	11	1
5689		HOLL	09	08	1602	S11	E77	09	14.5		B	CAO	150	4	5	3
5689		RAMY	09	08	1615	S10	E79	09	14.6		B	CAO	120	4	5	3
5689		LEAR	09	09	0040	S12	E70	09	14.3		B	CSO	210	9	10	3
5689		CULG	09	09	0320	S12	E75	09	14.8		B	CAO	120	10	12	3
5689		HOLL	09	09	1500	S12	E65	09	14.5		B	DSO	150	16	10	3
5689		RAMY	09	09	1540	S11	E64	09	14.5		B	DAO	130	13	10	4
5689		PALE	09	09	1750	S12	E63	09	14.5		B	DAO	180	13	10	3
5689		LEAR	09	10	0030	S12	E58	09	14.4		B	DAO	160	9	10	3
5689		CULG	09	10	0255	S14	E60	09	14.6		B	CAO	100	14	10	3
5689		RAMY	09	10	1245	S11	E52	09	14.4		B	EAO	290	18	11	3
5689		BOUL	09	10	1440	S13	E50	09	14.4		B	EAO	130	12	12	2
5689		PALE	09	10	1750	S12	E50	09	14.5		B	DSO	130	16	10	3
5689		HOLL	09	10	1900	S12	E50	09	14.5		B	ESO	120	19	12	3
5689		LEAR	09	11	0027	S13	E45	09	14.4		B	EAO	160	7	12	3
5689		CULG	09	11	0240	S13	E45	09	14.5		B	EAO	180	10	12	3
5689		HOLL	09	11	1450	S12	E37	09	14.4		B	EAO	160	19	12	4
5689		RAMY	09	11	1529	S14	E38	09	14.5		B	EAO	210	16	13	3
5689		PALE	09	11	1745	S12	E37	09	14.5		B	EAO	280	16	15	4
5689		LEAR	09	12	0035	S13	E33	09	14.5		B	EHO	170	15	15	3
5689		CULG	09	12	0245	S14	E31	09	14.4		B	EAO	160	12	12	2
5689		HOLL	09	12	1515	S13	E24	09	14.4		B	EAO	210	28	14	2
5689		RAMY	09	12	1537	S12	E22	09	14.3		B	EAO	210	22	12	3
5689		PALE	09	12	1830	S12	E24	09	14.6		B	EAO	180	19	13	3
5689		LEAR	09	13	0012	S13	E20	09	14.5		B	FAO	270	23	16	4
5689		CULG	09	13	0120	S12	E17	09	14.3		B	EAO	140	17	13	2
5689		RAMY	09	13	1430	S13	E12	09	14.5		B	FAO	210	26	16	3
5689		HOLL	09	13	1515	S13	E10	09	14.4		B	EAO	180	23	13	2
5689		BOUL	09	13	1803	S13	E07	09	14.3		B	EAO	130	5	13	1
5689		PALE	09	13	2316	S13	E05	09	14.3		B	EAO	130	14	14	3
5689		LEAR	09	14	0010	S12	E05	09	14.4		B	ESO	200	11	15	3
5689		CULG	09	14	0255	S12	E02	09	14.3		B	EAO	140	11	13	2
5689		RAMY	09	14	1344	S12	W03	09	14.3		B	ESO	140	14	14	4
5689		LEAR	09	15	0035	S12	W09	09	14.3		B	ESO	90	8	14	4
5689		CULG	09	15	0415	S12	W13	09	14.2		B	EAO	130	8	14	3
5689		RAMY	09	15	1155	S12	W14	09	14.4		B	FAO	120	15	16	4
5689		BOUL	09	15	1415	S12	W17	09	14.3		B	CSO	70	4	14	3
5689		PALE	09	15	1720	S12	W18	09	14.4		B	CSO	120	5	16	3
5689		LEAR	09	16	0035	S12	W23	09	14.3		B	CSO	120	6	15	3
5689		RAMY	09	16	1220	S13	W27	09	14.5		B	CAO	80	5	16	4
5689		BOUL	09	16	1330	S08	W38	09	13.7		A	HS	30	1	2	3
5689		PALE	09	16	1815	S12	W39	09	13.8		A	HS	80	2	3	3
5689		LEAR	09	17	0205	S12	W43	09	13.8		A	HS	80	1	2	2
5689		CULG	09	17	0415	S11	W46	09	13.7		A	HS	90	1	2	2
5689		BOUL	09	17	1445	S11	W47	09	14.1		A	HS	80	1	2	3
5689		PALE	09	17	1740	S12	W52	09	13.8		A	HS	100	1	2	3
5689		LEAR	09	18	0030	S11	W53	09	14.0		A	HS	50	1	2	2
5689		BOUL	09	18	1330	S11	W61	09	14.0		A	HS	80	1	2	1
5689		PALE	09	18	1950	S11	W65	09	13.9		A	HS	50	1	2	3
5689		LEAR	09	19	0040	S11	W67	09	14.0		A	HA	50	1	2	3
5689		BOUL	09	19	1325	S11	W71	09	14.2		A	HS	60	1	3	1
5689		LEAR	09	20	0110	S10	W85	09	13.7		A	HS	60	1	1	3
5690		HOLL	09	08	1602	N22	E84	09	15.1		A	AX	10	2	1	3
5690		RAMY	09	08	1615	N21	E82	09	15.0		B	CAO	50	2	7	3
5690		LEAR	09	09	0040	N21	E77	09	14.9		A	HS	60	1	2	3
5690		CULG	09	09	0320	N18	E85	09	15.6		A	AX		1		3
5690		HOLL	09	09	1500	N20	E71	09	15.0		A	HR	40	2	1	3
5690		RAMY	09	09	1540	N21	E70	09	15.0		A	HA	50	2	1	4
5690		PALE	09	09	1750	N22	E70	09	15.1		A	AX		1		3
5690		LEAR	09	10	0030	N21	E64	09	14.9		A	HS	20	1	1	3
5690		CULG	09	10	0255	N20	E66	09	15.2		A	AX	10	2	1	3
5690		RAMY	09	10	1245	N22	E58	09	15.0		A	HA	30	3	1	3
5690		BOUL	09	10	1440	N20	E57	09	15.0		A	HS	10	1	1	2
5690		PALE	09	10	1750	N22	E56	09	15.0		A	AX	20	4	2	3
5690		HOLL	09	10	1900	N20	E56	09	15.1		A	HA	20	3	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
5690		LEAR	09 11 0027	N23 E50	09 14.9		B	CSO	60	5	6	3
5690		CULG	09 11 0240	N23 E49	09 14.9		B	CAO	30	16	8	3
5690		HOLL	09 11 1450	N21 E45	09 15.1		B	CAI	70	23	8	4
5690		RAMY	09 11 1529	N22 E42	09 14.9		B	DAO	120	20	7	3
5690		PALE	09 11 1745	N22 E42	09 15.0		B	DAI	150	20	7	4
5690		LEAR	09 12 0035	N21 E39	09 15.0		B	DHI	100	14	7	3
5690		CULG	09 12 0245	N22 E38	09 15.0		B	DAI	190	14	6	2
5690		HOLL	09 12 1515	N25 E35	09 15.3		B	CAO	180	27	13	2
5690		RAMY	09 12 1537	N22 E29	09 14.9		B	DAO	170	25	10	3
5690		PALE	09 12 1830	N21 E29	09 15.0		B	DSO	130	14	8	3
5690		LEAR	09 13 0012	N23 E26	09 15.0		B	DAO	190	16	9	4
5690		CULG	09 13 0120	N22 E26	09 15.0		B	DAO	150	9	7	2
5690		RAMY	09 13 1430	N22 E19	09 15.1		B	DAO	240	16	9	3
5690		HOLL	09 13 1515	N18 E16	09 14.8		B	DAI	230	26	10	2
5690		PALE	09 13 2316	N21 E13	09 15.0		B	DAO	180	6	7	3
5690		LEAR	09 14 0010	N22 E12	09 14.9		B	EKI	180	13	8	3
5690		CULG	09 14 0255	N21 E10	09 14.9		B	DAO	180	11	10	2
5690		RAMY	09 14 1344	N21 E05	09 14.9		B	DSO	210	12	9	4
5690		LEAR	09 15 0035	N21 W01	09 14.9		B	DAO	180	11	10	4
5690		CULG	09 15 0415	N22 W04	09 14.9		B	EAO	180	9	11	3
5690		RAMY	09 15 1155	N21 W08	09 14.9		B	DAO	160	22	10	4
5690		BOUL	09 15 1415	N22 W08	09 15.0		B	DAO	50	7	9	3
5690		PALE	09 15 1720	N21 W11	09 14.9		B	EAO	160	6	11	3
5690		LEAR	09 16 0035	N21 W15	09 14.9		B	EAO	110	9	9	3
5690		CULG	09 16 0530	N22 W16	09 15.0		B	DAO	110	6	8	3
5690		RAMY	09 16 1220	N21 W22	09 14.8		B	DAO	140	9	10	4
5690		BOUL	09 16 1330	N22 W28	09 14.4		B	CAO	50	5	5	3
5690		PALE	09 16 1815	N21 W25	09 14.8		B	CSO	110	5	10	3
5690		LEAR	09 17 0205	N21 W28	09 14.9		B	CAO	80	6	9	2
5690		CULG	09 17 0415	N21 W31	09 14.8		B	CSO	70	4	8	2
5690		BOUL	09 17 1445	N22 W35	09 14.9		B	CAO	70	6	8	3
5690		PALE	09 17 1740	N21 W38	09 14.8		B	CSO	80	4	10	3
5690		LEAR	09 18 0030	N20 W45	09 14.6		A	HS	80	1	2	2
5690		CULG	09 18 0250	N22 W48	09 14.4		A	HA	60	2	2	2
5690		BOUL	09 18 1330	N22 W52	09 14.6		A	HS	60	1	2	1
5690		PALE	09 18 1950	N20 W50	09 15.0		B	CSO	50	3	11	3
5690		LEAR	09 19 0040	N21 W54	09 14.9		B	CSO	90	3	10	3
5690		BOUL	09 19 1325	N22 W64	09 14.6		A	HS	60	1	2	1
5690		PALE	09 19 2040	N21 W69	09 14.6		A	HS	70	1	1	3
5690		LEAR	09 20 0110	N20 W70	09 14.7		A	HS	60	1	2	3
5690		CULG	09 20 0335	N21 W78	09 14.2		A	HS	60	1	3	3
5690		BOUL	09 20 1555	N22 W81	09 14.4		A	HS	60	1	2	2
5690		PALE	09 20 1820	N20 W88	09 14.0		A	HS	60	1	2	4
5690		LEAR	09 21 0023	N20 W82	09 14.7		A	HS	30	1	2	3
5695		CULG	09 13 0120	N29 E30	09 15.4		B	BXO	10	3	3	2
5695		RAMY	09 13 1430	N28 E22	09 15.3		B	BXO	20	7	5	3
5695		HOLL	09 13 1515	N28 E22	09 15.3		B	BXO	20	7	5	2
5695		BOUL	09 13 1803	N27 E17	09 15.1		B	BXO	10	2	2	1
5695		PALE	09 13 2316	N29 E17	09 15.3		B	BXO	10	5	4	3
5695		LEAR	09 14 0010	N28 E17	09 15.3		B	BXO	20	5	7	3
5695		CULG	09 14 0255	N29 E14	09 15.2		B	CRO	10	4	5	2
5695		RAMY	09 14 1344	N27 E07	09 15.1		B	BXO	20	4	6	4
5695		LEAR	09 15 0035	N27 E00	09 15.0		A	AX	10	2	1	4
5695		RAMY	09 15 1155	N26 W07	09 14.9		A	AX	10	2	1	4
5671A		PALE	09 12 1830	N30 E33	09 15.4		B	BXO	10	2	3	3
5692		RAMY	09 10 1245	S21 E69	09 15.8		B	DRO	30	3	4	3
5692		BOUL	09 10 1440	S22 E69	09 15.9		A	AX		1		2
5692		PALE	09 10 1750	S21 E69	09 16.0		B	BXO	20	2	4	3
5692		HOLL	09 10 1900	S22 E69	09 16.1		B	BXO	10	3	5	3
5692		LEAR	09 11 0027	S22 E61	09 15.7		A	AX	20	1	1	3
5692		CULG	09 11 0240	S23 E66	09 16.2		A	AX		1		3
5692		HOLL	09 11 1450	S22 E57	09 16.0		A	AX		1		4
5692		PALE	09 11 1745	S21 E56	09 16.0		A	AX		1		4
5692		LEAR	09 12 0035	S23 E50	09 15.9		A	AX	20	1	1	3
5692		CULG	09 12 0245	S25 E51	09 16.1		A	AX	20	1	1	2
5692		HOLL	09 12 1515	S23 E43	09 15.9		A	AX	10	1		2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected -Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5692		RAMY	09	12	1537	S22	E43	09	15.9		A	AX	10	1	1	3
5692		PALE	09	12	1830	S22	E42	09	16.0		A	AX		1	1	3
5692		LEAR	09	13	0012	S23	E38	09	15.9		A	AX	10	1	1	4
5692		CULG	09	13	0120	S22	E38	09	16.0		A	AX		1		2
5692		PALE	09	13	2316	S29	E27	09	16.1		A	AX	10	4	2	3
5692		RAMY	09	15	1155	S24	E08	09	16.1		A	AX	10	2	1	4
5694		PALE	09	11	1745	N28	E72	09	17.4		A	AX		1		4
5694		CULG	09	12	0245	N26	E70	09	17.5		A	AX		1		2
5694		HOLL	09	12	1515	N27	E60	09	17.3		A	AX	10	2	1	2
5694		PALE	09	12	1830	N27	E59	09	17.4		A	AX	10	2	1	3
5694		LEAR	09	13	0012	N27	E53	09	17.1		A	AX	30	2	2	4
5694		CULG	09	13	0120	N26	E56	09	17.4		A	AX		2		2
5694		RAMY	09	13	1430	N28	E49	09	17.4		B	BXO	20	9	6	3
5694		HOLL	09	13	1515	N26	E51	09	17.6		B	BXO	30	8	7	2
5694		BOUL	09	13	1803	N27	E46	09	17.3		B	BXO	10	6	5	1
5694		PALE	09	13	2316	N29	E46	09	17.6		B	BXO	10	8	7	3
5694		LEAR	09	14	0010	N27	E47	09	17.7		B	BXO	20	15	12	3
5694		CULG	09	14	0255	N27	E43	09	17.5		B	CRO	30	6	7	2
5694		RAMY	09	14	1344	N27	E35	09	17.3		B	DAO	80	18	8	4
5694		LEAR	09	15	0035	N26	E30	09	17.3		B	DAI	230	24	10	4
5694		CULG	09	15	0415	N25	E27	09	17.3		B	DAI	260	12	9	3
5694		RAMY	09	15	1155	N26	E21	09	17.1		B	DKO	310	31	10	4
5694		BOUL	09	15	1415	N25	E20	09	17.1		B	DAO	120	10	10	3
5694		PALE	09	15	1720	N25	E20	09	17.3		B	DKO	390	8	10	3
5694		LEAR	09	16	0035	N25	E16	09	17.3		B	EKO	320	18	11	3
5694		CULG	09	16	0530	N24	E14	09	17.3		BG	DSI	290	15	9	3
5694		RAMY	09	16	1220	N26	E09	09	17.2		BG	EAO	330	19	12	4
5694		BOUL	09	16	1330	N25	E05	09	16.9		B	CSO	220	6	10	3
5694		PALE	09	16	1815	N25	E06	09	17.2		B	DAI	300	23	12	3
5694		LEAR	09	17	0205	N26	E02	09	17.2		B	DKO	290	15	10	2
5694		CULG	09	17	0415	N26	E01	09	17.2		B	DAO	250	13	8	2
5694		BOUL	09	17	1445	N26	W05	09	17.2		B	EAO	250	29	13	3
5694		PALE	09	17	1740	N26	W07	09	17.2		B	DKO	320	15	13	3
5694		LEAR	09	18	0030	N25	W10	09	17.2		B	EKO	190	14	12	2
5694		CULG	09	18	0250	N27	W12	09	17.2		B	EAO	290	16	12	2
5694		BOUL	09	18	1330	N26	W16	09	17.3		B	DAO	180	8	10	1
5694		PALE	09	18	1950	N27	W20	09	17.3		B	ESO	220	14	12	3
5694		LEAR	09	19	0040	N27	W24	09	17.1		B	EAO	250	26	12	3
5694		BOUL	09	19	1325	N26	W30	09	17.2		B	DAO	210	8	10	1
5694		RAMY	09	19	2005	N24	W36	09	17.0		B	EAO	160	5	12	1
5694		PALE	09	19	2040	N27	W35	09	17.1		B	EHO	270	16	14	3
5694		LEAR	09	20	0110	N24	W36	09	17.3		B	ESO	170	9	13	3
5694		CULG	09	20	0335	N28	W40	09	17.0		B	EAO	230	12	15	3
5694		BOUL	09	20	1555	N26	W47	09	17.0		B	EAO	170	5	13	2
5694		PALE	09	20	1820	N26	W49	09	16.9		B	EAO	350	10	13	4
5694		LEAR	09	21	0023	N27	W48	09	17.3		B	ESO	180	10	15	3
5694		CULG	09	21	0410	N27	W55	09	16.9		B	EAO	150	7	13	2
5694		RAMY	09	21	1235	N22	W57	09	17.1		B	EAO	130	8	13	1
5694		PALE	09	21	1820	N26	W61	09	17.0		B	CAO	190	8	14	4
5694		LEAR	09	22	0025	N26	W63	09	17.1		B	CAO	120	5	14	3
5694		CULG	09	22	0340	N26	W69	09	16.8		B	CSO	100	4	15	3
5694		RAMY	09	22	1245	N23	W71	09	17.1		B	CAO	50	4	11	3
5694		BOUL	09	22	1430	N25	W75	09	16.8		A	HS	60	1	2	3
5694		PALE	09	22	1750	N23	W82	09	16.4		A	HA	90	2	3	3
5694		LEAR	09	23	0055	N25	W79	09	16.9		B	CSO	90	2	6	3
5694		CULG	09	23	0312	N26	W85	09	16.5		B	CSO	80	3	14	3
5694		PALE	09	23	1740	N26	W90	09	16.7		A	HA	30	1	2	4
5694A		RAMY	09	16	1220	N34	E29	09	18.8		A	AX	10	2	2	4
5694A		PALE	09	16	1815	N34	E27	09	18.9		A	AX		2	2	3
5705		LEAR	09	19	0040	N23	W02	09	18.9		B	BXO	10	2	3	3
5705		RAMY	09	22	1245	N20	W49	09	18.8		A	AX	10	2	1	3
5705		BOUL	09	22	1430	N22	W47	09	19.0		B	BXO	10	2	2	3
5705		PALE	09	22	1750	N20	W54	09	18.6		B	BXO	20	3	3	3
5705		LEAR	09	23	0055	N21	W56	09	18.7		B	BXO	30	3	4	3
5705		CULG	09	23	0312	N23	W59	09	18.6		B	BXO	20	3	5	3
5705		PALE	09	23	1740	N20	W67	09	18.6		B	BXO	10	3	5	4

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5705		LEAR	09 24	0036	N21 W68	09 18.8		B	CSO	40	4	5	3
5705		CULG	09 24	0300	N22 W73	09 18.5		B	BXO	10	2	8	2
5705		RAMY	09 24	1203	N19 W81	09 18.3		B	BXO	10	2	2	3
5705		BOUL	09 24	1430	N21 W79	09 18.5		A	AX		1		2
5698A		CULG	09 16	0530	N31 E36	09 19.1		B	BXO		2	2	3
5702		PALE	09 15	1720	S21 E59	09 20.2		A	AX		1		3
5702		LEAR	09 19	0040	S22 E16	09 20.2		B	BXO	10	3	3	3
5702		BOUL	09 19	1325	S19 E08	09 20.2		B	CAO	40	3	3	1
5702		RAMY	09 19	2005	S20 E08	09 20.4		B	DAO	70	2	5	1
5702		PALE	09 19	2040	S21 E05	09 20.2		B	BXO	30	8	4	3
5702		LEAR	09 20	0110	S19 E03	09 20.3		B	CSO	30	3	4	3
5702		CULG	09 20	0335	S20 E00	09 20.1		B	DAO	60	7	4	3
5702		BOUL	09 20	1555	S18 W06	09 20.2		B	DSO	60	3	5	2
5702		PALE	09 20	1820	S19 W07	09 20.2		B	CAO	50	3	5	4
5702		LEAR	09 21	0023	S20 W10	09 20.2		B	CRO	30	4	6	3
5702		CULG	09 21	0410	S20 W14	09 20.1		B	CSO	30	2	6	2
5702		RAMY	09 21	1235	S21 W15	09 20.4		B	DAO	60	4	8	1
5702		PALE	09 21	1820	S20 W20	09 20.2		B	BXO	10	3	9	4
5702		LEAR	09 22	0025	S19 W23	09 20.3		B	BXO	20	3	7	3
5702		CULG	09 22	0340	S20 W24	09 20.3		A	AX	10	2	1	3
5702		RAMY	09 22	1245	S20 W30	09 20.2		B	DSO	30	4	3	3
5702		BOUL	09 22	1430	S18 W31	09 20.2		B	BXO	10	2	3	3
5702		PALE	09 22	1750	S20 W35	09 20.1		B	BXO	10	3	3	3
5702		LEAR	09 23	0055	S20 W38	09 20.1		B	BXO	10	4	4	3
5702		CULG	09 23	0312	S18 W42	09 19.9		B	BXO	10	4	4	3
5702		PALE	09 23	1740	S21 W48	09 20.0		B	BXO	10	2	5	4
5702		LEAR	09 24	0036	S20 W51	09 20.1		B	BXO	10	2	5	3
5702		CULG	09 24	0300	S20 W51	09 20.2		B	BXO	10	2	2	2
5702		RAMY	09 24	1203	S22 W53	09 20.4		A	AX	10	1	1	3
5702		RAMY	09 25	1600	S20 W70	09 20.3		B	E	40	2	3	2
5702		PALE	09 25	1843	S19 W77	09 19.9		A	AX		1		3
5696		RAMY	09 14	1344	N16 E75	09 20.3		A	AX	10	1	1	4
5696		LEAR	09 15	0035	N14 E70	09 20.3		A	AX	10	1	1	4
5696		RAMY	09 15	1155	N15 E63	09 20.3		B	CRO	20	4	4	4
5696		BOUL	09 15	1415	N15 E60	09 20.1		A	AX		1	1	3
5696		PALE	09 19	2040	N14 E13	09 20.8		B	BXO	10	5	6	3
5696		LEAR	09 20	0110	N14 E08	09 20.6		B	BXO	20	4	5	3
5696		CULG	09 20	0335	N15 E08	09 20.7		B	BXO	10	4	4	3
5696		PALE	09 20	1820	N16 E01	09 20.8		B	BXO		2	4	4
5696		LEAR	09 21	0023	N14 W07	09 20.5		B	BXO	20	6	6	3
5696		LEAR	09 22	0025	N13 W18	09 20.6		B	BXO	10	2	2	3
5696		RAMY	09 24	1203	N11 W49	09 20.8		B	BXO	10	2	2	3
5696		BOUL	09 24	1430	N14 W47	09 21.0		A	AX		1		2
5696		PALE	09 24	2310	N13 W56	09 20.7		A	AX		1		2
5696		LEAR	09 25	0030	N14 W55	09 20.9		B	BXO	30	2	3	3
5696		RAMY	09 25	1600	N12 W62	09 21.0		B	BXO	20	4	7	2
5696		PALE	09 25	1843	N14 W69	09 20.6		A	AX		1		3
5696		LEAR	09 26	0020	N13 W66	09 21.0		A	AX	10	1	1	4
5699		PALE	09 15	1720	S15 E70	09 21.0		A	AX		1		3
5699		LEAR	09 16	0035	S15 E65	09 20.9		A	AX	20	1	1	3
5699		RAMY	09 16	1220	S13 E60	09 21.0		A	AX	20	3	2	4
5699		LEAR	09 17	0205	S16 E52	09 21.0		A	AX	10	1	1	2
5699		BOUL	09 17	1445	S15 E45	09 21.0		A	AX	10	1	1	3
5699		PALE	09 17	1740	S15 E44	09 21.1		A	AX		1		3
5699		LEAR	09 18	0030	S15 E41	09 21.1		B	BXO	30	3	4	2
5699		CULG	09 18	0250	S16 E39	09 21.1		B	CRO	10	3	3	2
5699		BOUL	09 18	1330	S14 E31	09 20.9		A	AX	10	1	1	1
5699		PALE	09 18	1950	S16 E32	09 21.2		B	BXO		3	6	3
5699		LEAR	09 19	0040	S15 E27	09 21.1		B	CRO	20	3	5	3
5699		PALE	09 19	2040	S17 E15	09 21.0		B	BXO	10	10	5	3
5699		CULG	09 20	0335	S17 E13	09 21.1		A	HR	10	1	1	3
5698		LEAR	09 16	0035	S24 E73	09 21.7		A	HK	120	2	3	3
5698		CULG	09 16	0530	S29 E78	09 22.3			DAO	180	6	9	3
5698		RAMY	09 16	1220	S22 E70	09 21.9		B	DKI	420	13	9	4

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5698		BOUL	09	16	1330	S26	E63	09	21.4		B	CAO	140	6	8	3
5698		PALE	09	16	1815	S25	E71	09	22.3		B	EKI	500	13	13	3
5698		LEAR	09	17	0205	S26	E62	09	21.9		B	DKI	390	18	9	2
5698		CULG	09	17	0415	S29	E65	09	22.3		B	DAO	350	10	9	2
5698		BOUL	09	17	1445	S25	E56	09	21.9		B	EAI	440	21	11	3
5698		PALE	09	17	1740	S25	E57	09	22.1		B	EKI	590	23	11	3
5698		LEAR	09	18	0030	S26	E52	09	22.1		B	EKI	810	23	13	2
5698		CULG	09	18	0250	S26	E53	09	22.2		B	EKI	610	19	13	2
5698		BOUL	09	18	1330	S25	E44	09	22.0		B	EKO	700	15	12	1
5698		PALE	09	18	1950	S26	E45	09	22.3		B	EKI	890	25	14	3
5698		LEAR	09	19	0040	S25	E42	09	22.3		B	EKI	750	31	15	3
5698		BOUL	09	19	1325	S25	E31	09	22.0		B	EKC	810	31	11	1
5698		RAMY	09	19	2005	S23	E32	09	22.3		B	EKO	1090	17	12	1
5698		PALE	09	19	2040	S27	E30	09	22.2		BG	EKI	1070	49	11	3
5698		LEAR	09	20	0110	S25	E28	09	22.2		BG	EKI	910	18	12	3
5698		CULG	09	20	0335	S26	E25	09	22.1		B	EKI	850	34	12	3
5698		BOUL	09	20	1555	S25	E18	09	22.0		B	EKC	1210	28	13	2
5698		PALE	09	20	1820	S26	E17	09	22.1		B	EKC	1200	51	14	4
5698		LEAR	09	21	0023	S25	E15	09	22.2		BGD	EKC	1140	49	12	3
5698		CULG	09	21	0410	S27	E11	09	22.0		BG	EKC	1000	40	13	2
5698		RAMY	09	21	1235	S25	E10	09	22.3		BG	EKC	1020	67	11	1
5698		PALE	09	21	1820	S24	E05	09	22.1		BG	EKC	1320	56	13	4
5698		LEAR	09	22	0025	S24	E02	09	22.2		BGD	EKC	1040	55	13	3
5698		CULG	09	22	0340	S25	W01	09	22.1		BGD	EKC	1170	44	12	3
5698		RAMY	09	22	1245	S25	W04	09	22.2		BGD	EKC	1260	73	12	3
5698		BOUL	09	22	1430	S25	W05	09	22.2		B	EKC	1360	31	12	3
5698		PALE	09	22	1750	S25	W07	09	22.2		BGD	EKC	1260	63	14	3
5698		LEAR	09	23	0055	S24	W11	09	22.2		BGD	EKC	980	55	12	3
5698		CULG	09	23	0312	S25	W14	09	22.0		BGD	EKC	1080	46	13	3
5698		PALE	09	23	1740	S26	W19	09	22.3		BGD	EKC	1140	56	15	4
5698		LEAR	09	24	0036	S26	W23	09	22.2		BGD	EKC	1010	46	14	3
5698		CULG	09	24	0300	S25	W27	09	22.0		BGD	EKC	1160	38	13	2
5698		RAMY	09	24	1203	S27	W29	09	22.2		BGD	EKI	1020	33	13	3
5698		BOUL	09	24	1430	S26	W32	09	22.1		B	EKC	870	40	13	2
5698		PALE	09	24	2310	S26	W37	09	22.1		BGD	EKC	1010	30	12	2
5698		LEAR	09	25	0030	S26	W37	09	22.1		BGD	EKC	780	27	13	3
5698		CULG	09	25	0425	S25	W42	09	21.9		BGD	EKC	940	21	11	2
5698		BOUL	09	25	1535	S25	W44	09	22.2		B	EKC	1040	20	11	1
5698		RAMY	09	25	1600	S29	W45	09	22.1		BGD	EKI	1090	32	11	2
5698		PALE	09	25	1843	S26	W47	09	22.1		BGD	EKC	760	23	14	3
5698		LEAR	09	26	0020	S26	W50	09	22.1		BG	FKC	900	36	16	4
5698		BOUL	09	26	1337	S25	W55	09	22.3		B	EKC	1050	26	12	2
5698		PALE	09	26	1715	S27	W58	09	22.2		BGD	EKI	1060	22	14	3
5698		LEAR	09	27	0020	S25	W63	09	22.1		BGD	FKC	1140	25	21	3
5698		CULG	09	27	0355	S23	W72	09	21.6		BGD	FKC	1140	15	16	2
5698		RAMY	09	27	1315	S28	W69	09	22.1		BGD	EKI	1200	12	12	4
5698		BOUL	09	27	1430	S23	W73	09	22.0		B	EKC	1260	24	14	3
5698		PALE	09	27	1730	S27	W70	09	22.3		BGD	EKI	1500	14	12	3
5698		CULG	09	28	0345	S23	W80	09	22.0		A	HK	800	3	6	2
5698		LEAR	09	28	0701	S25	W82	09	21.9		B	CKO	540	4	12	2
5698		RAMY	09	28	1235	S30	W87	09	21.7		A	HK	150	1	3	4
5698		BOUL	09	28	1510	S25	W89	09	21.7		A	HA	200	1	2	3
5707		CULG	09	24	0300	S15	W20	09	22.6		B	BXO	10	4	4	2
5707		RAMY	09	24	1203	S16	W22	09	22.8		B	DAO	40	9	5	3
5707		BOUL	09	24	1430	S15	W24	09	22.8		B	BXO		3	5	2
5707		PALE	09	24	2310	S16	W30	09	22.7		B	BXO	10	4	5	2
5707		LEAR	09	25	0030	S15	W31	09	22.7		B	BXO	20	5	5	3
5707		CULG	09	25	0425	S14	W36	09	22.5		B	BXO		2	4	2
5707		PALE	09	25	1843	S17	W44	09	22.4		A	AX	10	5	2	3
5701B		PALE	09	18	1950	S16	E59	09	23.3		A	AX		1		3
5701B		LEAR	09	24	0036	S15	W17	09	22.7		B	BXO	20	4	4	3
5701B		PALE	09	24	2310	S16	W30	09	22.7		B	BXO	10	4	5	2
5701		BOUL	09	17	1445	S25	E74	09	23.3		A	AX		1	1	3
5701		PALE	09	17	1740	S25	E71	09	23.2		A	AX		1		3
5701		LEAR	09	18	0030	S25	E69	09	23.4		A	AX	30	1	1	2
5701		CULG	09	18	0250	S27	E68	09	23.4		A	AX		1		2

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5701		BOUL	09 18	1330	S25 E60	09 23.2		A	AX	10	1	1	1
5701		LEAR	09 19	0040	S25 E55	09 23.3		A	AX	20	1	1	3
5701		PALE	09 19	2040	S26 E44	09 23.3		A	AX		1		3
5701		LEAR	09 20	0110	S23 E42	09 23.3		A	AX	20	1	1	3
5701		CULG	09 20	0335	S26 E41	09 23.3		A	AX		1		3
5701		PALE	09 20	1820	S24 E33	09 23.3		A	AX		1		4
5701A		PALE	09 21	1820	N23 E32	09 24.2		A	AX		1		4
5703		LEAR	09 19	0040	S20 E70	09 24.4		A	AX	10	1	1	3
5703		PALE	09 19	2040	S23 E76	09 25.7		B	BXO	10	4	8	3
5703		LEAR	09 20	0110	S21 E63	09 24.9		B	BXO	10	4	6	3
5703		CULG	09 20	0335	S24 E62	09 24.9		B	CRO	20	6	9	3
5703		BOUL	09 20	1555	S21 E54	09 24.8		B	CSO	70	5	8	2
5703		PALE	09 20	1820	S23 E56	09 25.1		B	CRO	50	9	10	4
5703		LEAR	09 21	0023	S22 E51	09 24.9		B	CRO	70	12	9	3
5703		CULG	09 21	0410	S24 E47	09 24.8		B	CRO	30	6	9	2
5703		RAMY	09 21	1235	S21 E46	09 25.0		B	CAO	130	9	10	1
5703		PALE	09 21	1820	S23 E42	09 25.0		B	CSO	50	9	9	4
5703		LEAR	09 22	0025	S23 E38	09 24.9		B	CAO	50	5	10	3
5703		CULG	09 22	0340	S22 E31	09 24.5		A	HS	30	3	1	3
5703		RAMY	09 22	1245	S21 E28	09 24.7		B	CAO	50	8	3	3
5703		BOUL	09 22	1430	S21 E25	09 24.5		A	HS	30	1	2	3
5703		PALE	09 22	1750	S21 E25	09 24.6		B	CSO	60	5	3	3
5703		LEAR	09 23	0055	S21 E21	09 24.6		B	CAO	80	7	4	3
5703		CULG	09 23	0312	S22 E19	09 24.6		B	CAO	70	5	4	3
5703		PALE	09 23	1740	S21 E13	09 24.7		B	CSO	80	5	4	4
5703		LEAR	09 24	0036	S22 E08	09 24.6		B	CSO	90	5	4	3
5703		CULG	09 24	0300	S22 E06	09 24.6		B	CSO	70	3	4	2
5703		RAMY	09 24	1203	S22 E02	09 24.6		B	CAO	90	5	3	3
5703		BOUL	09 24	1430	S21 W01	09 24.5		B	CAO	70	6	2	2
5703		PALE	09 24	2310	S21 W05	09 24.6		B	DSO	80	2	4	2
5703		LEAR	09 25	0030	S22 W06	09 24.5		B	DAO	90	5	4	3
5703		CULG	09 25	0425	S22 W10	09 24.4		B	CAO	140	3	3	2
5703		BOUL	09 25	1535	S21 W13	09 24.6		B	CAO	70	2	3	1
5703		RAMY	09 25	1600	S22 W12	09 24.7		B	CSO	120	5	4	2
5703		PALE	09 25	1843	S22 W15	09 24.6		B	CAO	90	3	4	3
5703		LEAR	09 26	0020	S22 W18	09 24.6		B	CSO	110	3	4	4
5703		BOUL	09 26	1337	S21 W26	09 24.6		A	HA	70	2	2	2
5703		PALE	09 26	1715	S23 W27	09 24.6		A	HA	100	1	2	3
5703		LEAR	09 27	0020	S22 W32	09 24.5		A	HS	100	1	2	3
5703		CULG	09 27	0355	S21 W37	09 24.3		A	HS	80	1	2	2
5703		RAMY	09 27	1315	S23 W36	09 24.8		B	CSO	130	4	4	4
5703		BOUL	09 27	1430	S21 W38	09 24.7		B	CAO	130	2	5	3
5703		PALE	09 27	1730	S23 W38	09 24.8		B	CSO	90	2	4	3
5703		CULG	09 28	0345	S20 W47	09 24.6		B	CSO	80	3	3	2
5703		LEAR	09 28	0701	S22 W47	09 24.7		B	CSO	140	5	3	2
5703		RAMY	09 28	1235	S24 W49	09 24.7		B	CAO	110	6	4	4
5703		BOUL	09 28	1510	S21 W49	09 24.9		B	CSO	110	5	5	3
5703		PALE	09 28	1810	S23 W53	09 24.7		A	HA	110	1	2	3
5703		LEAR	09 29	0020	S22 W57	09 24.6		B	CSO	20	3	2	3
5703		CULG	09 29	0315	S21 W61	09 24.4		A	HS	40	1	2	2
5703		RAMY	09 29	1227	S24 W62	09 24.7		A	HA	170	2	3	3
5703		BOUL	09 29	1445	S21 W62	09 24.9		A	HA	100	1	2	3
5703		PALE	09 29	1730	S24 W67	09 24.5		A	HA	110	2	2	4
5703		LEAR	09 30	0015	S21 W68	09 24.8		A	HK	120	1	3	3
5703		CULG	09 30	0304	S23 W73	09 24.5		A	HS	70	1	2	3
5703		RAMY	09 30	1212	S23 W76	09 24.6		A	HA	120	1	4	3
5704		RAMY	09 21	1235	N37 E40	09 24.7		B	BXO	20	5	4	1
5704		PALE	09 21	1820	N36 E38	09 24.8		B	BXO	10	2	3	4
5704		LEAR	09 22	0025	N34 E35	09 24.8		B	BXO	10	3	5	3
5704		CULG	09 22	0340	N35 E34	09 24.9		B	BXO	10	4	6	3
5704		RAMY	09 22	1245	N35 E28	09 24.8		B	BXO	20	8	7	3
5704		BOUL	09 22	1430	N35 E28	09 24.8		B	BXO	10	2	5	3
5704		PALE	09 22	1750	N35 E26	09 24.8		B	BXO	10	5	6	3
5704		LEAR	09 23	0055	N34 E21	09 24.7		B	BXO	30	7	6	3
5704		CULG	09 23	0312	N35 E21	09 24.8		B	CRO	10	6	7	3
5704		PALE	09 23	1740	N34 E12	09 24.7		B	BXO	10	6	6	4

SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo Day	Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5704		LEAR	09 24	0036	N33 E07	09 24.6		B	BXO	10	3	4	3
5704		PALE	09 24	2310	N34 W01	09 24.9		A	AX		1		2
5704		LEAR	09 25	0030	N34 W01	09 24.9		A	AX	10	2	1	3
5704A		BOUL	09 26	1337	S21 W15	09 25.4		A	AX		1		2
5706		RAMY	09 22	1245	S17 E51	09 26.4		A	AX	10	1	1	3
5706		PALE	09 22	1750	S18 E50	09 26.5		A	AX		1		3
5706		LEAR	09 23	0055	S18 E47	09 26.6		A	AX	10	1	1	3
5706		PALE	09 23	1740	S17 E31	09 26.1		A	AX		2	1	4
5706		RAMY	09 27	1315	S23 W13	09 26.5		A	AX	10	1	1	4
5706		RAMY	09 28	1235	S24 W28	09 26.4		A	AX	10	3	2	4
5706A		PALE	09 28	1810	N13 W17	09 27.5		A	AX		1		3
5711		RAMY	09 27	1315	N19 E11	09 28.4		B	CRO	10	7	3	4
5711		BOUL	09 27	1430	N20 E11	09 28.4		B	BXO	10	3	3	3
5711		PALE	09 27	1730	N19 E09	09 28.4		B	CSO	20	3	4	3
5711		CULG	09 28	0345	N19 E03	09 28.4		B	BXO	10	2	5	2
5711		LEAR	09 28	0701	N19 E02	09 28.4		B	CAO	30	4	4	2
5711		RAMY	09 28	1235	N19 W03	09 28.3		B	BXO	10	4	5	4
5711		BOUL	09 28	1510	N20 W04	09 28.3		B	BXO		3	5	3
5711		PALE	09 28	1810	N19 W05	09 28.4		B	BXO	10	3	5	3
5711		LEAR	09 29	0020	N19 W06	09 28.5		A	HS	10	1	1	3
5711		CULG	09 29	0315	N20 W09	09 28.4		A	AX	10	1	1	2
5711		RAMY	09 29	1227	N19 W13	09 28.5		A	AX	10	2	1	3
5711		PALE	09 29	1730	N19 W16	09 28.5		A	AX		2		4
5709		PALE	09 24	2310	S11 E68	09 30.1		A	AX	10	2	1	2
5709		LEAR	09 25	0030	S11 E67	09 30.1		A	AX	20	1	1	3
5709		CULG	09 25	0425	S14 E63	09 29.9		B	BXO	10	2	4	2
5709		BOUL	09 25	1535	S11 E55	09 29.8		B	BXO	50	3	5	1
5709		RAMY	09 25	1600	S09 E57	09 29.9		B	DAO	90	5	6	2
5709		PALE	09 25	1843	S11 E57	09 30.1		B	CAO	60	4	5	3
5709		LEAR	09 26	0020	S12 E52	09 29.9		B	DAO	130	8	6	4
5709		BOUL	09 26	1337	S11 E44	09 29.9		B	DAI	170	19	7	2
5709		PALE	09 26	1715	S11 E43	09 29.9		B	DAO	280	6	7	3
5709		LEAR	09 27	0020	S12 E39	09 29.9		B	DKO	250	15	7	3
5709		CULG	09 27	0355	S14 E37	09 29.9		B	DAO	250	7	7	2
5709		RAMY	09 27	1315	S10 E33	09 30.0		B	DAO	250	32	8	4
5709		BOUL	09 27	1430	S11 E30	09 29.9		B	DAO	300	26	9	3
5709		PALE	09 27	1730	S11 E30	09 30.0		B	DKO	190	18	9	3
5709		CULG	09 28	0345	S13 E23	09 29.9		B	DAI	190	16	9	2
5709		LEAR	09 28	0701	S12 E22	09 29.9		B	DAO	150	22	9	2
5709		RAMY	09 28	1235	S11 E19	09 29.9		B	DAO	340	24	8	4
5709		BOUL	09 28	1510	S10 E17	09 29.9		B	DAI	150	20	8	3
5709		PALE	09 28	1810	S11 E17	09 30.0		B	DAI	190	19	8	3
5709		LEAR	09 29	0020	S12 E12	09 29.9		B	DKO	30	14	9	3
5709		CULG	09 29	0315	S12 E09	09 29.8		B	DAI	120	9	9	2
5709		RAMY	09 29	1227	S11 E07	09 30.0		B	CAO	130	19	9	3
5709		BOUL	09 29	1445	S10 E04	09 29.9		B	DAO	110	9	9	3
5709		PALE	09 29	1730	S11 E04	09 30.0		B	CAI	80	27	9	4
5709		LEAR	09 30	0015	S11 W01	09 29.9		B	DKI	90	11	9	3
5709		CULG	09 30	0304	S12 W02	09 30.0		B	CAI	80	16	10	3
5709		RAMY	09 30	1212	S12 W08	09 29.9		B	CAO	120	10	8	3
5709		BOUL	09 30	1415	S10 W09	09 29.9		B	CAO	90	8	8	3
5709		PALE	09 30	2045	S12 W13	09 29.9		B	CAO	70	13	9	1
5709		LEAR	10 01	0015	S12 W13	09 30.0		B	CSO	40	5	6	3
5709		RAMY	10 01	1247	S12 W18	09 30.2		B	CAO	80	4	7	4
5709		BOUL	10 01	1425	S11 W19	09 30.2		B	DAO	30	5	2	2
5709		HOLL	10 01	1515	S12 W20	09 30.1		B	DAO	30	4	3	2
5709		PALE	10 01	1922	S12 W25	09 30.0		B	CAO	60	14	9	2
5709		CULG	10 02	0340	S11 W27	09 30.1		A	HA	80	3	2	2
5709		LEAR	10 02	0415	S12 W27	09 30.1		B	CSO	70	5	4	1
5709		RAMY	10 02	1330	S13 W31	09 30.2		B	CAO	80	7	4	4
5709		BOUL	10 02	1341	S12 W32	09 30.1		B	CAO	50	2	3	1
5709		HOLL	10 02	1415	S13 W32	09 30.2		B	CAO	50	9	5	3
5709		PALE	10 02	1912	S12 W35	09 30.2		B	CAO	80	7	4	3
5709		LEAR	10 03	0055	S12 W37	09 30.2		B	CAO	70	4	4	3

S U N S P O T G R O U P S
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SEPTEMBER 1989

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
5709		CULG	10	03	0410	S09	W41	09	30.1		B	CSO	50	3	3	2
5709		RAMY	10	03	1225	S11	W43	09	30.3		B	CAO	50	3	3	4
5709		HOLL	10	03	1730	S12	W46	09	30.3		B	CSO	30	4	3	4
5709		LEAR	10	04	0015	S12	W50	09	30.2		A	HS	60	1	2	2
5709		CULG	10	04	0207	S10	W54	09	30.0		A	HS	20	1	1	2
5709		RAMY	10	04	1220	S11	W57	09	30.2		A	HA	40	1	1	4
5709		HOLL	10	04	1435	S14	W61	09	30.0		A	HR	20	1	1	3
5709		BOUL	10	04	1558	S10	W59	09	30.2		A	HS	40	1	1	1
5709		LEAR	10	05	0012	S12	W63	09	30.3		A	HS	40	1	2	2
5709		PALE	10	05	0015	S14	W62	09	30.3		A	HS	50	1	1	1
5709		CULG	10	05	0320	S10	W66	09	30.2		A	HS	40	1	2	2
5709		RAMY	10	05	1249	S13	W68	09	30.4		A	HA	60	1	2	3
5709B		RAMY	10	01	1247	S30	W12	09	30.6		A	AX		1		4
5709C		RAMY	10	05	1249	N22	W60	09	30.9		A	AX	10	1	1	3
5709C		HOLL	10	05	2213	N22	W65	09	30.9		A	AX	20	1		2

Stations reporting:

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

SUDDEN IONOSPHERIC DISTURBANCES

SEPTEMBER 1989

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	0046	0105	0230	1-	3			1	1		No flare		
01	0409	0654	0814D	3	5		1	1	1		0405	M4.6	
01	0814E	0821	1036	3	5	2	1	1	2	4	0810	X2.3	
01	1120	1122	1142	1-	1					1	1126		5671
01	1148	1153	1217	1-	3				1	2	1147E		5671
01	1332	1334	1400	1+	1					1	No flare		
01	1459	1509	1538D	1-	5	1	2	1	1	6	1446	M2.0	5669
01	1538E	1552	1622	1-	5	1	1	1	1	5	1539	M1.6	5671
01	1715	1718	1746	1+	3					2	1713		5671
01	2047	2055	2117	1-	1			1			2044		5669
01	2122	2128	2202	1-	3			1		1	2121	M1.0	
01	2349	0003	0141D	3	5	2		1	1	1	2350	M5.8	5671
02	0153E	0158	0227D	1+	3			1	1		0154	M1.1	5671
02	0227E	0234	0323	1-	3			1	1		0231		5671
02	0435	0443	0457	1-	3			1	1		0432		5671
02	0620	0628	0753	3	5	3	4	1	2	4	0621	M2.5	5671
02	0843	0900	0926	1	5		1	1	1	2	0848	C4.9	5671
02	1001	1008	1025	1-	5				1	1	1001	C5.5	
02	1051	1056	1110	1-	3				1	1	1050	C4.4	
02	1059	1105	1139D	1-	1			1			No flare		
02	1139E	1149	1251	1+	5	2	5	1	1	6	1130	M2.3	5671
02	1319	1327	1350	1-	5		1		1	3	1315	C3.8	5671
02	1503	1507	1538	2-	3					2	No flare		
02	1718	1723	1758	2-	3					5	1702	C5.5	5669
02	1818	1823	1849	1+	3					3	1818	C4.7	5669
02	1930	1948	2032	1-	5			1		4	1933	C7.3	5669
02	2044	2116	2212	1-	5	1		1		5	2041	M1.7	5669
02	2229	2241	0003	2+	5	1		1		5	2225	M4.6	5669
03	0019E	0024	0041D	1-	1			1			No flare		
03	0041E	0045	0111	1-	3			1	1		0051		5669
03	0158	0219	0341	2-	3			1	1		0206	C7.0	5669
03	0438	0445	0511D	1-	1			1	1		0430		5669
03	0511E	0515	0602	1-	5			1		1	No flare		
03	0628	0643U	0741	1	1		1				No flare		
03	0717	0721	0734D	1-	1			1			No flare		
03	0734	0739	0808	1-	1			1			0731	C3.5	5669
03	0936	0938	0954	1	1		1				*		
03	1042	1048	1209	2+	5	2	5	1	1	7	1037	M5.0	
03	1428	1442	1615	3-	5	3	5	1	1	9	1428	X1.2	5669
03	1705	1709	1730	1	3					2	1705		5669
03	1842	1846	1918	2-	3					5	1839	C5.4	5669
03	2336	2345	0025D	3-	5	1		1	1	2	2336	M1.8	5669
04	0029E	0038	0125	1	3			1	1		No flare		
04	0303	0312	0355	2	3	1		1	1		0303	C9.9	5669
04	0501	0512	0523D	1-	3	1		1	1		0500	C5.5	5669
04	0523E	0527	0619	1	5			1	1	1	0519	C7.7	5669
04	0627	0641	0809	2	5	1	2	1	2	3	0625	M1.3	5669
04	0859	0905	1008	2-	5	4	5	1	2	4	0857	X1.1	5669
04	0949	1005	1030	1-	3	1	2		1	4	0946	M1.0	
04	1120	1125	1125D	1-	3	1			1	1	1136E	C5.8	5669
04	1135	1140	1155	1-	3	1			1	1	1136E	C5.8	5669
04	1204	1216	1300D	1	5	2	5	1	1	7	1202	M1.4	5669
04	1300E	1307	1400	1	5	2		1	1	5	1305E	M2.0	5672
04	1525	1530	1621	1-	5	1	3	1	1	7	1518	C9.7	5669
04	1910	1913	1949	2-	3					5	1908	C8.0	5669
04	1936	1938	2016	2	1					1	No flare		
04	2108	2114	2228	1-	5	1		1		2	2046	C8.9	5672
04	2242	2314	0025	1-	1			1			2302		5669
05	0152	0201	0349	2-	3			1	1		0153	C8.7	5676
05	0455	0502	0546D	2-	3			1	1		0458	M1.7	5669
05	0546E	0552	0633D	1-	3			1	1		0546	C4.0	5669
05	0633E	0641	0717	1-	5		3	1			0619	C5.7	5672
05	0732	0811	0921	1+	3		2				No flare		
05	0935	0946	1005	1-	1				1		No flare		

* = No flare patrol.

SEPTEMBER 1989

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
05	0951	1016	1100	1+	3		2				*		
05	1105	1111	1125	1-	3		2		1	1	1105	C6.4	
05	1230	1237	1332	2	1		1				No flare		
05	1238	1315	1332	1	1		1				No flare		
05	1338	1347	1502	2	5	3	6	1	1	8	1313	M3.2	5669
05	1422	1425	1446	1+	3					2	1420	C3.8	
05	1507	1512	1520	1-	1					1	1506	C3.1	
05	1528	1530	1545	1-	1					1	*		
05	1559	1618	1653	1-	5		2	1	1	7	1602	C9.3	5669
05	1730	1736	1820	2+	1					1	1729E	C3.5	
05	1950	1958	2020	1+	1					1	1950	C4.7	5669
05	2143	2148	2222D	2+	5	1		1		3	2146E	M4.7	5669
05	2221E	2226	2309D	3-	5	2		1		4	2206	M5.7	5669
05	2310E	2349	0047D	1	1			1			2336	M1.3	5672
06	0044E	0052	0247D	2	5	2		1	1		0044	M1.3	5669
06	0225	0229	0235	1-	1				1		*		
06	0247E	0256	0328	1-	3			1	1		0244E	C5.2	
06	0405	0411	0452	1-	3			1	1		No flare		
06	0456	0511	0536	1-	1			1			No flare		
06	0551	0604	0726	2+	5	3	1	1	2		0554	C8.7	5669
06	0743	0835	0955	2+	3		2				No flare		
06	1118	1120	1150	1+	1					1	1124		5669
06	1127	1137	1151	1	3		2				1124		5669
06	1443	1446	1500	1	1		1				No flare		
06	1515	1524	1545	1+	1					1	1516	C3.8	5669
06	1657	1659	1720	1	3					7	1656	C6.6	5669
06	1746	1756	1825	2-	3					6	1740	C9.3	5669
06	2309E	2349	0044D	2-	1			1			No flare		
07	0139	0143	0242	1-	3			1	1		0135E	C5.5	
07	0521	0636	0713	1	3	1		1	1		0529	M1.1	5669
07	0802	0813	0813D	1-	5		1		2	1	0801		5669
07	0826	0839	0918	2-	5	2	4	1	2	2	0823E	M1.6	5669
07	0902	0929	0959	1	3		2				No flare		
07	1104	1115	1147	1	3		2				No flare		
07	1424	1444	1527	1	3		2				No flare		
07	1536	1545	1648	1-	5	1	1	1	1	8	1533	M1.1	5669
07	1614	1622	1644	1	3		2				*		
07	1851	1901	1921	1+	3					2	1852	C4.2	5669
07	2106	2117	2209	1+	5	1		1		7	2054	M1.4	5669
08	0147	0159	0217	1-	1			1			No flare		
08	0231	0236	0246D	1-	1			1			0232	C5.2	5669
08	0246E	0259	0329D	1-	3			1	1		0247		5686
08	0328E	0342	0408D	1	3			1	1		0326	M1.1	5676
08	0406E	0411	0513	1	3	1		1	1		0408	M1.1	5669
08	0618	0624	0645D	1-	3			1	1		No flare		
08	0645E	0647	0712	1-	1			1			0646	C5.3	5669
08	0725	0734	0757	1-	3		2	1	1		0726	C6.0	5669
08	0812	0823	0840	1	3		3				0824	C7.7	5669
08	0832	0851	0951	1	5		2	1	2	1	0824	C7.7	5669
08	1112	1126	1156	1+	3		2				No flare		
08	1337	1336U	1336	1	3	1	1		1	3	1325	C4.1	
08	1504	1510	1543	1+	5					3	1456	C4.8	
08	1612	1622U	1645	1	1		1				1620		5669
08	1700	1705	1717	1-	1					1	1702		5682
08	1740	1746	1824	2	1					1	1750	M1.0	5680
08	1750	1805	1840	2	3					4	1750	M1.0	5680
08	1852	1856	1920	1+	1					1	1856	C5.0	5669
08	2028	2041	2057	1-	5			1		2	2031	C7.3	5669
08	2104	2143	2304	1+	5	1		1		3	2103	M1.6	5669
08	2331	2343	2357	1-	5			1		1	2334	C4.9	5676
09	0010E	0014	0053	1-	3			1	1		0011		5669
09	0106	0117	0150D	1-	3			1	1		0117		5676
09	0149	0209	0319	1-	3			1	1		0146		5689
09	0246	0252	0308	1-	1				1		0250		5682

* = No flare patrol.

SEPTEMBER 1989

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
09	0421	0445	0527D	2	5	1		1	1	1	0437	M1.1	5669
09	0527E	0540	0655	2-	5	1		1	1	1	0529	M1.4	5680
09	0910	0919	1003	2	5	3	6	1	2	5	0910	X1.4	5680
09	0955	0959	1018	1-	3					2	0953	C9.9	
09	1109	1115	1130	1-	3				1	2	1109	C4.8	
09	1400	1401	1420	1	1					1	1400		5669
09	1535	1543	1619	1-	5		1	1	1	5	1532	C8.7	5680
09	1852	1902	1917	1-	5			1		5	1851	M1.2	5680
09	1920	1923	2015	2	3					2	1928	X1.3	5669
09	1928	1939	2036	3-	5	1		1		6	1928	X1.3	5669
09	2254	2301	2347D	1-	1			1			2255		5687
09	2347E	2357	0106D	1-	5	1		1	1		2344	C8.8	5676
10	0031	0035	0046	1-	3	1			1		0029		5680
10	0110	0118	0139D	1-	3			1	1		0113	C8.2	5687
10	0133E	0142	0222D	1+	3			1	1		0135	M1.3	5687
10	0224E	0233	0346	1	3			1	1		0223	C8.3	5680
10	0415	0419	0508D	1-	3	1		1	1		0405	C9.4	5683
10	0508E	0518	0536D	1-	1			1			0515		5676
10	0536E	0545	0628D	1+	5	1		1	1	1	0536	M1.3	5669
10	0628E	0635	0654D	1-	5	1	2	1	1	1	0627	M1.0	5676
10	0653E	0659	0740	1-	5			1		1	0650	C8.1	5680
10	0748	0803	0941	2	5	3	6	1	2	4	0748	M2.8	5669
10	0755	0842U	0842	3	3	1	1			1	0750		5669
10	0923	0933	1005	1-	3		3		1	3	0856	C8.9	5683
10	1133	1133	1141	1-	1					1	1120		5676
10	1259	1308	1330D	1-	5	1	2	1	1	10	1255	C9.4	5680
10	1330E	1341	1400	1-	5	1	1	1	1	7	1334	C8.6	5669
10	1410	1414	1423	1-	1					1	1402		5687
10	1456	1459	1503	1	5	1	2		1	4	1455	C6.7	
10	1510	1514	1525		5		1		1	1	1514	C7.8	5676
10	1657	1659	1708	1-	3					3	No flare		
10	1658	1728U	1750	1	1		1				No flare		
10	2151	2203	2233	1-	5	1		1			2154		5683
10	2325	2335	0037	1-	3			1	1		2328	C8.5	5680
11	0041	0051	0134	1-	1			1			0015		5690
11	0257	0313	0411	1-	3			1	1		0252		5669
11	0600	0613	0645	1-	3			1	1		No flare		
11	1326	1401	1439	1	3		1			1	1330	C4.0	5683
11	1654	1656	1715	1	1					1	1641		5683
11	1937	1947	2039	2	5	1		1		7	1938	M6.2	5680
11	2059E	2113	2206	1-	5	1		1		3	2051E	C9.0	5683
11	2239	2252	2305D	1-	1			1			No flare		
11	2305E	2308	2342D	1-	1			1			2304E		5683
11	2341E	2350	0138	2+	5	1		1	1	1	2344	M2.2	5669
12	0339	0355	0445D	1-	3			1	1		No flare		
12	0438	0442	0448	1-	1				1		0435	M5.3	
12	0445E	0518	0608D	2+	5	1		1	1	2	0458E	M3.2	
12	0608E	0637	0843	2	5			1	1	2	No flare		
12	0810	0818	0834	1	1		1				No flare		
12	1008	1015	1032	1-	5			1	1	3	1003E	M7.3	5686
12	1154	1157	1212	1+	3		2				*		
12	1350	1352	1357	1-	1		1				No flare		
12	1451	1456	1531	2	5					2	No flare		
12	1459	1511	1536	1-	5		3	1	1		1513		5676
12	2154	2208	2247	1-	1			1			No flare		
12	2352	0006	0104D	2-	5	1		1	1		2353E	M1.1	
13	0104E	0117	0130D	1-	3			1	1		0101		5676
13	0130E	0144	0255	1-	3			1	1		No flare		
13	0331	0344	0531	3-	3	1		1	1		0329	M3.6	5686
13	0636	0645	0702	1-	3			1	1		0630		5680
13	0828	0842	0941	2-	5	3	1	1	2	4	0813	M1.1	5676
13	1229	1245	1325	1	5	1	3	1	1	7	No flare		
13	1445	1450	1458	1-	3					3	1438		5686
13	2218	2242	2339	1-	1			1			2234E	C4.1	5676

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

SEPTEMBER 1989

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
14	0039	0103	0142D	1-	3			1	1		0051		5683
14	0142E	0152	0224	1-	1			1			0141		5694
14	0224E	0237	0256	1-	3			1	1		No flare		
14	0335	0347	0418	1-	1			1			0332		5680
14	0435	0441	0459	1-	3			1	1		0433	C2.4	
14	0539	0546	0635	1-	3			1	1		No flare		
14	0659	0709	0929	2+	5	3	4	1	2	3	0659	M2.4	5683
14	0903	0908	0930	1-	3		1		1	2	0900	C6.7	5682
14	0935	0944	0958	2	1		1				No flare		
14	1736	1738	1757	1	3					5	1738	C3.9	
14	1826	1830	1906	2-	3					6	1825	C6.7	
14	2057	2100	2115	1-	1			1			*		
14	2139	2152	2239D	1-	1			1			2141	C4.2	
14	2239E	2246	2342	1-	1			1			No flare		
14	2346	2348	0012	1	3					2	No flare		
15	0007	0012	0023	1-	1			1			0002		5685
15	0040	0059	0150	1-	3			1	1		0043	C4.3	5694
15	0353	0357	0423	1-	3			1	1		0352		5694
15	0627	0630	0707	2	1					1	0627	C6.4	
15	0636	0711	0803	1-	3			1	1		0627	C6.4	
15	1237	1242	1310	1-	5		2		1	5	1237	C4.2	
15	1342	1343	1403	1-	3					3	1342	C3.8	
15	1633	1638	1705	1+	3					3	*		
15	1755	1756	1813	1-	1					1	1755	C2.8	
15	1908	1909	1918	1-	1					1	1908	C2.9	
15	2015	2021	2039	1	3					2	2017	C3.9	
15	2056	2103	2125	1-	5			1		3	2101	C3.6	
15	2224	2324	0055D	2	5	1		1			2256	M2.3	5687
16	0055E	0102	0342	1+	3			1	1		0054		5686
16	0750	0756	0805	1-	3	1			1		0751	C3.4	5686
16	1420	1421	1429	1-	3					3	No flare		
16	1627	1638	1704	1-	5			1		7	1622	M1.2	5681
16	1848	1850	1906	1-	3					3	1848	C3.3	5686
17	0111	0126	0202	1-	3			1	1		0108	C4.1	
17	0321	0338	0355D	1-	3			1	1		*		
17	0356E	0407	0439	1-	3			1	1		*		
17	0647	0653	0711	1-	1			1			0647	C2.8	
17	1002	1005	1056	1	1		1				No flare		
17	1449	1519	1629	1	1		1				No flare		
17	1642	1647U	1749	1	1		1				*		
17	1831	1842	1931	2	3					8	1831	M1.2	5686
17	2137	2142	2218	1-	3			1	1		2136	C3.1	
18	0031	0044	0112	1-	1			1			0031	C2.7	
18	0111	0132	0227	1-	3			1	1		No flare		
18	0338	0354	0412D	1-	3			1	1		No flare		
18	0412E	0439	0533D	1	3			1	1		0426	C9.6	5698
18	0533E	0539	0556	1-	5		2	1	1		0523	C3.1	5698
18	0950	1006	1035	1+	3		2				No flare		
18	1044	1100	1125	1+	3		2				1042		5687
18	1159	1211	1310	1-	3		3		1	1	1202	C2.6	
18	1546	1547	1605	1	3					2	1547	C2.7	
18	1609	1614	1655	2	1					1	No flare		
18	1854	1857	1942	2	3					6	1849	M1.1	5686
18	2031	2032	2055	1	3					2	No flare		
18	2043	2045	2115	1+	1					1	No flare		
18	2058	2126	2247	1-	5	1		1			2054	C8.0	
18	2157	2159	2218	1	3					2	*		
18	2338	2342	2349	1-	1			1			No flare		
19	0048	0058	0118	1-	1			1			No flare		
19	0133	0141	0240	1-	1			1			0122		5694
19	0409	0413	0436	1-	3			1	1		No flare		
19	0527	0534	0639	1-	3	1		1	1		0529E	C5.6	5698
19	0703	0715U	0754	2	1		1				No flare		

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

SEPTEMBER 1989

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
19	0815	0820	0830	1-	1				1		0814	C3.1	
19	0951	0959	1034	2+	3		1			1	*		
19	0958	1005	1049	1-	5	2	2	1	1	5	1000E	M1.2	5698
19	1039	1049	1100	1-	3	1			1	1	1038	C5.5	
19	1224	1244	1301	1-	5		1	1	1	1	1221	C4.4	
19	1600	1604	1648	2	5					3	1605	M4.1	
19	1609	1618	1710	2-	5	2	5	1	1	6	1605	M4.1	
19	1941	1943	2017	2-	3					2	1939	C4.1	
19	2045	2101	2143	1-	5	1		1			2041	C6.3	
20	0057	0113	0144	1-	1			1			0057		5694
20	0236	0238	0255	1-	1			1			0235	C2.4	5698
20	0302	0309	0356	1-	3			1	1		0259		5698
20	0358	0400	0418	1	1					1	No flare		
20	0444	0453	0523	1-	1				1		No flare		
20	0530E	0530U	0558	1	1		1				No flare		
20	0545	0554	0647	1-	5			1		1	0543	C4.1	
20	0610	0623	0650	1-	1				1		No flare		
20	0647	0650	0730	2	1					1	No flare		
20	0701	0706	0738	2	1					1	No flare		
20	0711	0725	0756	1	5	1	1	1	1	2	0710	C4.6	
20	0842	0915	0941	1-	3		3		1	1	0922	C2.0	5694
20	1031	1048	1108	2	3		2				No flare		
20	1123	1133	1259	1	1		1				No flare		
20	1225	1230	1255	1-	5				1	1	1222E	C2.8	5698
20	1801	1804	1843	2-	3					8	1801	C6.4	5698
20	2205	2212	2235	1-	1			1			2157	C1.8	
20	2325	2329	2350	1-	5			1		2	2323E	C2.0	
21	0011	0016	0042	1-	1			1			0011	C2.0	5698
21	0128	0135	0219	1-	3			1	1		0128E	C3.5	5698
21	0257	0307	0501	3	3	1		1	1		0259E	M2.9	5698
21	0655	0724	0818	2+	3		2				No flare		
21	1119	1132	1151	1	1		1				No flare		
21	1214	1228	1240	2	1		1				No flare		
21	1244	1249	1256	1-	1		1				1233	C1.9	5698
21	1300	1310	1400	2-	5	3	6	1	1	7	1308E	M1.5	5698
21	1342	1343	1402	1	3					3	No flare		
21	1551	1557	1624	1+	5		1		1	7	1556	C7.8	5698
21	1730	1733	1816	2	3					2	No flare		
21	1926	1935	2004	2-	3	1				1	1906E	M1.9	5698
21	2151	2210	2300	1-	1			1			2159	C2.8	
22	0102	0107	0209	2-	5	2		1	1		0103	C6.9	5698
22	0334	0339	0402	1-	3			1	1		0334	C3.3	5698
22	0540	0542	0621	1-	3			1	1		0538	C7.7	5698
22	0628	0635	0721	1-	5			1	1	1	0625	C4.9	5698
22	0851	0854	0905	1-	3		1		1	1	0850	C2.4	
22	1203	1312	1328	1	3		2				1237		5698
22	1437	1503	1546	1+	3		2				*		
22	1654	1701	1717	1	5		1			1	*		
22	1706	1711	1740	1+	3					5	1703	C4.3	
23	0321	0325	0410	1-	3	1		1			0319	C5.8	
23	0858	0903	0915	1-	3	1	1		1	1	0856	C4.4	
23	0916	0933	0952	2	1		1				No flare		
23	1009	1026U	1108	1	1		1				No flare		
23	1325	1325	1342	1-	1					1	1329	C3.2	
23	2233	2245	0019	1-	5			1		1	2230	C4.0	
24	0113	0126	0225	1-	3			1	1		No flare		
24	0316	0323	0336	1-	1				1		0311		5698
24	0342	0350	0410	1-	1				1		No flare		
24	0446	0452	0520	1-	3			1	1		0444	C1.6	
24	0808	0822	0950	2	5	3	4	1	2	4	0814	M1.4	5698
24	0947	0954	1010	1-	1				1		No flare		
24	1101	1101	1130	1+	1					1	1058	C2.3	
24	1155	1213U	1230	1	1		1				No flare		

* = No flare patrol.

SEPTEMBER 1989

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Flare (UT)	X-ray Class	NOAA Region
24	1228	1230	1300	1+	1					1	No flare		
24	1248	1257	1310	1-	3	1			1		1247	C2.8	
24	1310	1319	1410	2+	1					1	1310	C2.9	
24	1401	1409U	1434	1	1		1				No flare		
24	1445	1505	1615	1	1			1			1454	C2.0	5698
24	1539	1542	1555	1+	1					1	1530	C1.9	
24	1705	1708	1725	1	1					1	1708	C1.2	
24	1751	1759	1835	2-	3					4	1750	C5.6	
24	2040	2050	2152	1+	5	1		1		5	2023E	M1.6	
25	0138	0150	0300	1-	3			1	1		0148	C3.8	5698
25	0307	0340	0458	1+	3			1	1		0303	C9.8	
25	0816	0827	0922	1-	1			1			No flare		
25	1025	1027	1035	1-	1		1				0940	C2.5	5698
25	1307	1310	1405	2+	1					1	1312	M1.2	5698
25	1313	1329	1448	2-	5	3	5	1	1	3	1312	M1.2	5698
25	1708	1713	1733	1	1					1	1708	C2.5	
25	1924	1930	2000	2	1					1	No flare		
25	2120	2133	2217	1-	5			1		2	2117	C5.7	
25	2145	2147	2210	1	1					1	*		
25	2302	2310	2341D	1-	1			1			2300	C3.0	
25	2341E	2350	0127	2+	5	1		1		1	2344	M3.3	5708
26	0156	0202	0214	1-	3			1	1		No flare		
26	0404	0409	0512	1-	1				1		No flare		
26	0446	0454	0532	1-	1			1			0443	C2.9	
26	0623	0630	0708	1-	3			1	1		0621	C4.6	
26	0725	0730	0803	1-	3			1	1		0724	C5.0	
26	0857	0900	0900D	1-	3	1	1		1		0855E	C4.6	5698
26	0924	0930	0945	1-	3	1	1		1		0921	C4.2	
26	1005	1015	1027	1	1		1				1015E	C3.8	5698
26	1048	1054	1110	1-	3	1	1		1	2	1049	C5.9	
26	1239	1255	1355	1	5	1	4	1	1	4	1226	C8.2	
26	1427	1431	1453	1	5		1			1	1436	C8.3	5698
26	1438	1447	1603	1-	5	1	4	1	1	1	1436	C8.3	5698
26	1631	1650	1830	3	1					1	1640E	C5.6	5708
26	1854	1859	1925	1+	3					2	1852	C5.8	
26	2141	2148	2210	1+	1					1	2154	C4.1	
26	2159	2205	2238	1-	1			1			2154	C4.1	
27	0000	0013	0101D	1-	3			1	1		0007	C4.4	
27	0101E	0110	0216D	1-	3			1	1		0102		5708
27	0216E	0226	0244	1-	1			1			No flare		
27	0306	0311	0330	1-	3			1	1		No flare		
27	0345	0356	0417	1-	3			1	1		No flare		
27	0502	0513	0603D	1	5		1	1	1		*		
27	0603E	0612	0654	1-	3			1	1		*		
27	0700	0713	0736	1-	5			1		1	No flare		
27	0955	1015	1034	1-	3		2		1		1018	C4.5	5703
27	1047	1107	1145	1-	1			1			*		
27	1146	1158	1226	1+	1		1				No flare		
27	1330	1336	1400	1-	5	1	1		1	2	1329	C3.8	
27	1417	1418	1428	1-	3					2	1418	C3.8	
27	1657	1707	1732	1-	5			1		1	1700	M1.6	5698
27	2350	0002	0112	1+	5	1		1	1	7	2355	M1.6	
28	0202	0215	0236	1-	3			1	1		*		
28	0238	0252	0330	1-	3			1	1		*		
28	0334	0340	0401	1-	3			1	1		0332E	C4.6	
28	0419	0428	0458	1-	3			1	1		*		
28	0518	0524	0558	1-	3			1	1		No flare		
28	0608	0618	0632	1-	1			1			*		
28	0823	0835	0907	1-	5			1	1		No flare		
28	0923	0931	1038	2+	5	2	5	1	1	4	0919	M2.9	
28	0948	0952	1015	1-	5	1	2		1	1	0946	C7.0	
28	1348	1357	1451	2	5	3	5	1	1	12	1347E	M3.5	5712
28	1515	1516	1540	1	1					1	No flare		
28	1741	1752	1839	1-	1			1			No flare		

* = No flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES
SEPTEMBER 1989

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
28	2319	2327	2356	1-	1			1			2322E	C3.8	
29	0015	0040	0129D	2	5	1		1	1		0025	C9.2	
29	0130E	0133	0227	1-	1			1			No flare		
29	0305	0314	0337D	1	3			1	1		0304	C5.3	
29	0342E	0352	0441D	1-	3			1	1		0344		5714
29	0441E	0453	0525	1-	1			1			No flare		
29	0800	0807	0841D	1-	1			1			No flare		
29	0841E	0843	0907	1-	1			1			No flare		
29	1047	1132	1300	3	5	2	3	1	1	11	1047	X9.8	
29	1504	1516	1622	2+	1					1	No flare		
29	1825	1828	1855	2	1					1	No flare		
29	1852	1855	1915	1	1					1	No flare		
29	2050	2055	2138	1-	5	1		1		1	2048	C8.2	
30	0149	0155	0225	1-	3			1	1		No flare		
30	0236	0300	0540	3	3	1		1	1		0239	M2.9	5712
30	0555	0612	0803	2-	3			1	1		0555		5716
30	0930	1045U	1216	2	1		1				*		
30	2256	2302	2326U	2	1					1	2256E		5712

OBSERVATORIES REPORTING FOR SEPTEMBER 1989

Edenvale, Rep of S. Africa	SES	Locust Grove, Georgia, USA	SES
Farsta, Sweden	SES	Maui, Hawaii, USA	SWF
Gainesville, Florida, USA	SES	Nerja, Spain	SES
Hiraiso, Japan	SWF	Panska Ves, Czechoslovakia	SES, SEA, SWF
Houston, Texas, USA	SES	Paterson, New Jersey, USA	SES
Hudson, Ohio, USA	SES, SEA	Sofia, Bulgaria	SES
Inubo, Japan	SPA	Somersworth, New Hampshire, USA	SES
Juliusruh, German Dem Rep	SWF	Tucson, Arizona, USA	SES
Kandilli, Turkey	SEA	Uccle, Belgium	SEA
Kuhlungsborn, German Dem Rep	SEA, SPA	Upice, Czechoslovakia	SEA
Latrobe, Pennsylvania	SES	Valley Cottage, New York, USA	SES
Lintong, People's Rep of China	SPA	Vlasim, Czechoslovakia	SEA

Observations are not necessarily continuous.

SEPTEMBER 1989 SIDs BY NOAA/SESC REGIONS

Reg.	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
5669	2	5	8	11	7	7	6	10	5	4	2																			
5671	5	7																												
5672				2	2																									
5676					1			2	2	4		1	3																	
5680								2	4	5	1		1	1																
5681																1														
5682								1	1					1																
5683										3	4			2																
5685															1															
5686								1				1	2			3	1	1												
5687									1	3					1			1												
5689									1																					
5690											1																			
5694														1	2				1	2										
5698																		2	2	4	7	5		3	4	4	1			
5703																											1			
5708																									1	1	1			
5712																												1		2
5714																													1	
5716																														1
Number of events with X-Ray flares	6	12	6	13	14	6	6	15	10	14	4	4	3	6	10	3	4	7	9	8	8	6	4	10	9	14	6	5	4	1
Number of events with no flare reported	2	2	4	2	4	5	3	3		2	2	6	2	5		1	2	7	3	8	5		2	6	2	2	5	4	7	1
Number of events with no flare patrol			1		2	1	1					1		1	1		3	1	1			2			1		3	4		1
Total SID events	12	16	14	16	20	14	11	21	16	22	10	12	8	15	13	5	9	16	14	18	13	9	6	17	12	16	15	13	12	5

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1989

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		SVTO				0433.0	1700.0	1				CONT
		WEIS				0551.0	1347.0	1				IN,DC,Cont,dm
0518	1741	WEIS				0603.0	1739.0	2				IIIS,DP,RS
		WEIS				0704.2	0704.6	2				IIIG,RS
		WEIS				0704.3	0705.6	2				DCIM
		SVTO				0809.0	0821.0	2				S
		WEIS				0809.2	0809.6	2				IIIG
		LEAR				0815.0	0819.0	3				III
		WEIS				0817.1	0817.2	2				IIIB
		SVTO				0839.0	0915.0	2				S
		LEAR				0906.0	0907.0	3				III
		WEIS				0906.7	0908.2	3				IIIG,RS
		WEIS				0909.9	0910.2	2				IIIG
		WEIS				0917.4	0928.8	3				DCIM
		SGMR				1053.0	1058.0	2				III
		WEIS				1056.9	1057.4	3				IIIG
		SGMR				1103.0	2256.0	1				CONT
		SGMR				1127.0	1128.0	3				III
		SVTO				1127.0	1128.0	3				V
		WEIS				1127.2	1129.2	3				IIIGG
		WEIS				1224.9	1225.2	3				IIIG,blob
		WEIS				1249.1	1249.3	3				IIIG
		WEIS				1251.7	1252.2	2				IIIG
		WEIS	1402.4	1402.5	3							IIIB
		WEIS	1412.3	1412.5	3							IIIG
		SVTO				1442.0	1443.0	2				V
		SGMR				1458.0	1501.0	3				V
		WEIS				1458.7	1500.4	3				IIIGG,Cont,dm
		SVTO				1459.0	1500.0	3				V
		WEIS	1513.3	1513.7	2							Spikes
		WEIS				1700.1	1700.3	2				IIIG
		WEIS	1702.7	1702.9	1							DCIM
		WEIS	1704.6	1704.9	1							Spikes
		PALE				1809.0	0141.0	2				CONT
		PALE				1849.0	1850.0	2				III
		SGMR				1849.0	1850.0	2				V
		SGMR				1932.0	1933.0	2				III
		SGMR				2034.0	2035.0	2				III
		SGMR				2117.0	2119.0	2				III
		PALE				2118.0	2120.0	3				V
		PALE				2233.0	2234.0	3				V
		SGMR				2233.0	2233.0	2				III
		LEAR				2346.0	0956.0	1				CONT
02		LEAR				0014.0	0014.0	2				III
		LEAR				0047.0	0049.0	2				III
		LEAR				0241.0	0242.0	2				III
		PALE				0241.0	0242.0	2				III
		LEAR				0334.0	0334.0	2				III
		LEAR				0438.0	0439.0	2				III
0520	1739	WEIS	0620.7	0623.4	2							IIIGG
		LEAR				0711.0	0711.0	2				III
		SVTO				0711.0	0711.0	2				III
		WEIS				0711.4	0711.7	2				IIIB
		SVTO				0749.0	1659.0	2				CONT
		WEIS				0841.3	0845.2	2				DCIM
		LEAR				0842.0	0842.0	2				III
		WEIS				0854.0	1720.0	3				IIIN,DP,RS
		WEIS				1057.4	1057.6	3				blobs
		SGMR				1058.0	1105.0	2				III
		SGMR				1132.0	2255.0	1				CONT
		SVTO				1142.0	1142.0	2				III
		SGMR				1143.0	1143.0	2				III
		SGMR				1223.0	1224.0	3				III
		SVTO				1223.0	1224.0	3				III
		WEIS				1223.3	1224.8	3				IIIG,RS
		SGMR				1313.0	1314.0	2				III
		WEIS				1313.8	1314.2	3				IIIG
		SVTO				1314.0	1314.0	2				III

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

SEPTEMBER 1989

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
02		SGMR				1329.0	1333.0	2				III
		SVTO				1329.0	1332.0	2				III
		WEIS	1332.2	1332.3	2							DCIM
		SVTO				1353.0	1358.0	2				II
		SGMR				1356.0	1357.0	1				II
		SGMR				1359.0	1415.0	2				S
		SVTO				1359.0	1414.0	2				S
		SGMR				1434.0	1435.0	2				III
		SVTO				1434.0	1434.0	2				III
		WEIS				1542.6	1544.0	3				IIIG,U
		SGMR				1543.0	1554.0	2				S
		WEIS	1547.7	1547.8	1							DCIM
		WEIS				1551.3	1551.4	2				IIIG,DCIM
		SGMR				1718.0	1722.0	2				V
		PALE				1719.0	1722.0	2				III
		WEIS				1719.8	1722.4	2				Spikes,DCIM
		WEIS				1722.0	1722.3	3				IIIB
		PALE				1850.0	1850.0	2				III
		PALE				1912.0	1928.0	2				S
		SGMR				1912.0	1928.0	2				S
		PALE				2011.0	2016.0	2				III
		PALE				2056.0	2057.0	2				V
		PALE				2107.0	2112.0	3				V
		SGMR				2107.0	2112.0	3				III
		PALE				2120.0	2120.0	1				III
		PALE				2135.0	2135.0	2				III
		LEAR				2258.0	0957.0	2				CONT
03		PALE				0014.0	0431.0	1				CONT
		SVTO				0450.0	1657.0	2				CONT
	0521	0858 WEIS				0847.4	0847.5	2				IIIG
		SGMR				1022.0	1200.0	1				CONT
	1020	1737 WEIS				1037.9	1043.8	3				DCIM,Spikes
		WEIS				1038.0	1637.0	3				IIIS,P
		WEIS				1046.2	1047.5	3				I
		WEIS				1104.0	1737.0	3				Cont,P
		SGMR				1200.0	2109.0	2				CONT
		PALE				1641.0	0430.0	3				CONT
		SGMR				2109.0	2253.0	3				CONT
		LEAR				2248.0	0957.0	3				CONT
		PALE				2336.0	2337.0	3				V
04		SVTO				0431.0	0532.0	1				CONT
		SVTO				0532.0	0825.0	2				CONT
	0523	1735 WEIS				0536.4	0536.7	2				IIIGG
		WEIS				0633.0	0946.0	2				Cont
		WEIS				0633.0	1642.0	2				IIIN
		LEAR				0857.0	0901.0	3				III
		WEIS				0857.7	0900.8	3				IIIGG,DCIM,RS,U
		WEIS				0916.6	0917.8	3				IIIG,Spikes,DCIM
		LEAR				0917.0	0918.0	3				III
		LEAR				0923.0	0936.0	1				II
		WEIS				0923.3	0924.8	1				II H
		WEIS				0933.3	0935.5	1				II H
		SGMR				1030.0	1233.0	1				CONT
		WEIS				1117.1	1121.9	3				IIIGG
		SGMR				1118.0	1122.0	2				V
		SGMR				1133.0	1134.0	3				III
		WEIS				1133.2	1133.7	3				IIIGG
		SGMR				1150.0	1150.0	2				III
		WEIS				1205.1	1206.2	3				IIIG,RS
		SGMR				1233.0	1335.0	2				CONT
		SGMR				1335.0	2100.0	1				CONT
		SGMR				1342.0	1342.0	2				III
		WEIS	1356.6	1358.7	3							DCIM
		SGMR				1407.0	1408.0	2				III
		WEIS				1549.3	1554.2	2				DCIM
		SGMR				1550.0	1552.0	2				III
		WEIS				1640.4	1640.8	2				DCIM,RS

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1989

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
04		WEIS	1706.3	1706.4	2							DCIM
		PALE				1749.0	1757.0	2				III
		SGMR				1756.0	1757.0	2				V
		PALE				2110.0	2111.0	1				III
		SGMR				2110.0	2111.0	2				III
		PALE				2240.0	2240.0	1				III
05		LEAR				0017.0	0110.0	1				CONT
		LEAR				0224.0	0224.0	2				III
		PALE				0224.0	0224.0	1				III
		LEAR				0335.0	0352.0	2				S
		PALE				0336.0	0338.0	1				III
		LEAR				0442.0	0442.0	1				III
		LEAR				0502.0	0505.0	2				V
	0523	0551 WEIS										
		LEAR				0617.0	0618.0	2				III
		LEAR				0636.0	0637.0	1				III
		LEAR				0832.0	0832.0	2				III
	0639	1732 WEIS				0832.5	0832.6	2				IIIB
		SGMR				1147.0	1148.0	1				III
		WEIS				1147.5	1148.1	1				IIIG
		SGMR				1336.0	1341.0	3				III
		WEIS				1336.6	1338.1	3				IIIG
		SVTO				1337.0	1342.0	3				III
		WEIS				1340.7	1340.9	2				IIIG
		SGMR				1349.0	1350.0	1				III
		SGMR				1446.0	1446.0	1				III
		SGMR				1520.0	1520.0	1				III
		WEIS				1602.4	1602.9	2				IIIG
		SGMR				1921.0	1922.0	1				III
		PALE				2054.0	2055.0	1				III
		SGMR				2054.0	2054.0	2				V
		SGMR				2106.0	2111.0	1				III
		PALE				2110.0	2121.0	1				S
		PALE				2137.0	2149.0	1				S
		PALE				2236.0	2237.0	1				III
		LEAR				2307.0	2308.0	1				III
		LEAR				2313.0	2322.0	2				III
06		LEAR				0013.0	0027.0	3				S
		PALE				0016.0	0026.0	3				S
		LEAR				0059.0	0100.0	3				III
		PALE				0100.0	0100.0	3				V
		LEAR				0129.0	0138.0	2				III
		PALE				0129.0	0130.0	1				III
		PALE				0134.0	0136.0	1				III
		LEAR				0200.0	0204.0	1				III
		LEAR				0219.0	0224.0	2				III
		PALE				0224.0	0224.0	1				III
		LEAR				0245.0	0251.0	3				V
		PALE				0248.0	0251.0	2				V
		LEAR				0317.0	0335.0	2				S
	0525	1731 WEIS				0549.7	0552.3	3				IIIGG
		LEAR				0550.0	0553.0	3				III
		SVTO				0550.0	0556.0	3				III
		WEIS				0554.5	0556.7	2				IIIG,Spikes,RS
		LEAR				0555.0	0556.0	2				III
		LEAR				0609.0	0610.0	2				III
		SVTO				0609.0	0609.0	1				III
		WEIS				0609.7	0609.8	1				IIIB
		REIS				0706.4	0706.5	1				IIIB
		LEAR				0754.0	0755.0	3				III
		SVTO				0754.0	0756.0	2				III
		WEIS				0754.2	0756.0	3				IIIG
		WEIS				1249.7	1253.6	3				IIIGG
		SGMR				1250.0	1254.0	3				V
		SVTO				1250.0	1254.0	3				V
		WEIS				1257.3	1257.4	2				IIIB
		WEIS				1300.2	1304.8	2				DCIM

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06		SGMR				1301.0	1301.0	1				III
		WEIS				1301.0	1301.3	2				IIIB
		SGMR				1349.0	1349.0	1				III
		WEIS				1412.7	1412.9	1				RS
		SGMR				1453.0	1454.0	1				V
		WEIS				1453.6	1454.2	2				IIIG
		SGMR				1511.0	1512.0	2				V
		WEIS				1511.9	1512.7	2				IIIG
		SGMR				1518.0	1545.0	1				S
		WEIS				1535.7	1536.3	1				IIIG
		WEIS				1557.4	1558.5	2				IIIG
		SGMR				1558.0	1558.0	1				V
		WEIS				1637.7	1637.8	1				IIIB
		SGMR				1640.0	1640.0	1				III
		WEIS				1655.3	1657.2	3				DCIM,RS
		WEIS	1713.7	1713.9	2							IIIG
		SGMR				1730.0	1731.0	1				III
		PALE				1819.0	1824.0	1				V
		SGMR				1819.0	1824.0	1				V
		PALE				2307.0	2308.0	1				V
		PALE				2320.0	2322.0	2				S
		LEAR				2330.0	2331.0	1				III
		PALE				2330.0	2331.0	1				V
07		PALE				0138.0	0140.0	2				V
		LEAR				0139.0	0141.0	2				III
		LEAR				0427.0	0428.0	2				III
0526	1728	WEIS				0536.2	0536.3	1				IIIB
		WEIS				0551.8	0552.1	2				IIIG,RS
		WEIS				0555.2	0555.7	2				IIIG,U,RS
		WEIS	0602.6	0602.7	1							Spikes
		WEIS				0606.8	0609.3	3				DCIM,RS
		WEIS				0658.3	0659.3	1				IIIG
		WEIS				0822.0	0828.0	3				I
		LEAR				0823.0	0830.0	2				V
		SVTO				0823.0	0830.0	2				V
		WEIS				0942.0	1636.0	3				III/V
		SVTO				0952.0	0952.0	2				III
		SGMR				1105.0	1106.0	2				III
		SVTO				1105.0	1106.0	2				V
		SGMR				1233.0	1234.0	2				III
		SVTO				1233.0	1249.0	2				S
		SGMR				1238.0	1252.0	2				S
		SVTO				1349.0	1352.0	2				III
		WEIS				1404.9	1405.6	2				DCIM
		WEIS				1416.9	1417.3	2				IIIG
		WEIS				1421.0	1421.3	2				IIIG
		SGMR				1426.0	1434.0	2				V
		SVTO				1426.0	1432.0	2				III
		SGMR				1444.0	1444.0	1				III
		SGMR				1504.0	1504.0	1				III
		SGMR				1515.0	1518.0	2				V
		SVTO				1517.0	1517.0	2				III
		WEIS				1517.4	1517.5	2				DCIM
		WEIS	1532.7	1537.2	2							I
		SGMR				1534.0	1540.0	1				III
		WEIS				1537.8	1538.0	1				IIIG
		WEIS				1548.6	1552.3	1				Spikes
		SGMR				1626.0	1630.0	2				V
		WEIS				1626.2	1629.7	3				IIIGG,U
		SVTO				1628.0	1628.0	2				III
		WEIS				1635.2	1636.2	2				IIIG
		SGMR				1636.0	1636.0	1				III
		SGMR				1723.0	1723.0	1				III
		SGMR				1735.0	1736.0	1				III
		PALE				1755.0	1802.0	1				III
		SGMR				1755.0	1856.0	3				S
		PALE				1823.0	1826.0	2				III
		PALE				1941.0	1941.0	1				III

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07		SGMR				1941.0	1941.0	2				III
		PALE				1955.0	2004.0	2				V
		SGMR				1955.0	2005.0	2				V
		PALE				2042.0	2042.0	1				III
		SGMR				2042.0	2042.0	1				III
		PALE				2100.0	2115.0	2				S
		PALE				2124.0	2142.0	2				S
08		LEAR				0254.0	0256.0	1				III
		LEAR				0407.0	0410.0	3				III
		PALE				0407.0	0410.0	2				III
		LEAR				0614.0	0615.0	2				III
		SVTO				0614.0	0615.0	2				III
	0614 1601	WEIS				0614.0	1601.0	3				IIIN
		WEIS	0614.3	0614.9	2							IIIG
		LEAR				0646.0	0646.0	3				III
		SVTO				0646.0	0646.0	3				III
		LEAR				0823.0	0852.0	2				S
		SVTO				0823.0	0841.0	2				S
		SVTO				0823.0	0842.0	2				S
		WEIS				0839.4	0842.6	3				IIIGG
		SVTO				0851.0	0852.0	2				V
		WEIS				0851.4	0853.2	3				IIIG
		WEIS				1019.6	1019.8	2				IIIG
		SGMR				1221.0	1230.0	1				V
		SVTO				1221.0	1223.0	2				III
		WEIS				1240.8	1241.3	3				IIIG
		WEIS				1246.6	1246.7	2				DCIM
		SVTO				1251.0	1253.0	2				III
		WEIS				1252.2	1252.4	2				DCIM
		SGMR				1302.0	1305.0	1				V
		SVTO				1303.0	1304.0	1				V
		SVTO				1313.0	1313.0	1				III
		SGMR				1341.0	1342.0	1				V
		SGMR				1359.0	1359.0	1				V
		SGMR				1520.0	1602.0	2				S
		SVTO				1520.0	1523.0	2				III
		SVTO				1534.0	1534.0	2				III
		SGMR				1715.0	2130.0	1				CONT
		SGMR				1750.0	1801.0	3				V
		PALE				1751.0	1756.0	2				V
		PALE				1820.0	1820.0	1				III
		PALE				1904.0	1906.0	2				III
		SGMR				1904.0	1904.0	2				III
		PALE				2001.0	2001.0	1				III
		PALE				2030.0	2030.0	1				III
		PALE				2146.0	2152.0	2				III
		PALE				2303.0	2306.0	1				III
		LEAR				2306.0	2306.0	1				III
09		LEAR				0138.0	0149.0	2				S
		PALE				0143.0	0145.0	1				III
		LEAR				0528.0	0532.0	3				V
		SVTO				0528.0	0532.0	3				V
		WEIS				0528.3	0542.3	1				IIIG
	0528 1724	WEIS				0528.8	0532.2	3				IIIGG,U
		SVTO				0538.0	0544.0	2				III
		LEAR				0539.0	0543.0	2				III
		WEIS				0546.9	0550.6	2				II H
		LEAR				0547.0	0559.0	2				II
		SVTO				0547.0	0554.0	2				II
		WEIS				0648.9	0649.1	1				IIIB
		LEAR				0649.0	0649.0	2				III
		SVTO				0649.0	0649.0	2				III
		LEAR				0724.0	0724.0	1				III
		WEIS				0739.3	0739.4	2				IIIG
		WEIS	0741.7	0743.7	1							I
		WEIS				0908.3		3				IIIGG,RS/V
		LEAR				0909.0	0931.0	3				IV

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09		SVTO				0909.0	0933.0	3				IV
		WEIS				0910.0	0916.6	2				IV dm
		SVTO				0911.0	0914.0	3				II
		WEIS				0911.2	0916.3	3				Spikes
		WEIS				0911.8	0938.2	3				II H,HB
		SVTO				0917.0	0929.0	3				II
		WEIS	0921.7	0925.2	3							Spikes
		WEIS				0940.7	0941.1	3				DCIM
		WEIS				0947.3	1004.9	2				IIIGG
		WEIS				0949.3	0956.3	3				Spikes,DCIM
		SVTO				0950.0	0955.0	2				V
		SVTO				1039.0	1042.0	2				III
		WEIS	1052.4	1052.5	3							DCIM
		WEIS				1109.2	1111.2	2				Spikes
		SGMR				1144.0	1144.0	1				III
		SVTO				1144.0	1144.0	2				III
		WEIS				1144.3	1144.7	2				IIIG
		WEIS	1210.3	1212.5	3							IIIG
		WEIS	1241.9	1248.3	3							Spikes
		SGMR				1245.0	1248.0	2				III
		SVTO				1245.0	1249.0	2				III
		WEIS				1245.5	1248.9	3				IIIG,U
		SGMR				1248.0	0000.0	1				CONT
		WEIS				1306.7	1309.1	1				IIIG
		WEIS				1311.7	1311.8	2				IIIB
		WEIS				1404.3	1409.9	3				IIIG
		SGMR				1406.0	1410.0	2				V
		WEIS	1508.0	1509.2	3							Spikes
		SGMR				1531.0	1540.0	3				V
		SVTO				1531.0	1531.0	2				III
		WEIS				1531.6	1540.5	3				IIIGG,U
		SVTO				1533.0	1538.0	3				V
		WEIS	1533.6	1533.7	3							Spikes
		PALE				1652.0	1652.0	1				III
		WEIS				1657.8	1658.0	1				IIIB
		PALE				1851.0	1855.0	3				V
		SGMR				1851.0	1856.0	3				V
		PALE				1859.0	1901.0	1				V
		SGMR				1928.0	1932.0	3				V
		PALE				1929.0	1932.0	3				V
		PALE				1957.0	2003.0	3				V
		SGMR				2001.0	2003.0	2				V
		PALE				2200.0	2200.0	1				III
		PALE				2225.0	2226.0	1				III
		PALE				2304.0	2304.0	1				III
10		LEAR				0010.0	0011.0	1				III
		PALE				0010.0	0021.0	1				S
		LEAR				0105.0	0105.0	2				III
		PALE				0105.0	0105.0	1				III
		LEAR				0158.0	0211.0	2				S
		PALE				0159.0	0209.0	2				S
		LEAR				0219.0	0233.0	2				S
		PALE				0222.0	0226.0	2				V
		LEAR				0243.0	0247.0	2				III
		PALE				0244.0	0246.0	1				III
		LEAR				0258.0	0310.0	2				S
		PALE				0258.0	0310.0	1				S
		LEAR				0316.0	0321.0	1				III
		LEAR				0332.0	0337.0	2				III
		LEAR				0348.0	0349.0	1				III
		LEAR				0354.0	0357.0	2				III
		LEAR				0411.0	0417.0	3				III
		PALE				0413.0	0430.0	2				S
		LEAR				0419.0	0431.0	3				III
		LEAR				0435.0	0438.0	1				III
		LEAR				0509.0	0525.0	2				S
		SVTO				0518.0	0519.0	1				III
		WEIS				0540.2	0540.6	1				IIIG

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10		LEAR				0544.0	0545.0	1				III
		SVTO				0544.0	0544.0	1				III
		WEIS				0559.0	1718.0	3				IIIN
		LEAR				0630.0	0707.0	2				S
		SVTO				0633.0	0648.0	2				S
		WEIS				0646.2	0657.9	3				Spikes
		SVTO				0650.0	0659.0	2				S
		WEIS				0650.9	0651.9	3				IIIG
		SVTO				0703.0	0706.0	2				III
		SVTO				0744.0	0744.0	1				III
		WEIS				0751.0	1640.0	2				IN
		LEAR				0753.0	0758.0	1				III
		SVTO				0753.0	0759.0	1				V
		LEAR				0804.0	0805.0	2				III
		SVTO				0804.0	0805.0	2				V
		LEAR				0816.0	0817.0	1				III
		SVTO				0816.0	0817.0	1				III
		SVTO				0840.0	0840.0	1				III
		LEAR				0915.0	0930.0	3				S
		SVTO				0915.0	0932.0	2				S
		WEIS				0931.1	0931.8	3				IIIG
		SGMR				1010.0	1016.0	1				III
		SVTO				1010.0	1031.0	3				S
		WEIS				1010.4	1013.2	3				IIIG
		WEIS	1025.0	1035.0	1							DCIM,Spikes
		SGMR				1030.0	1030.0	1				III
		WEIS				1030.1	1031.1	3				IIIG
		SGMR				1039.0	1039.0	2				III
		WEIS				1039.7	1039.8	3				IIIG
		SVTO				1048.0	1054.0	2				III
		SGMR				1130.0	0000.0	1				CONT
		SVTO				1148.0	1154.0	2				III
		WEIS				1201.5	1201.6	2				IIIB
		SGMR				1209.0	1210.0	2				III
		SVTO				1209.0	1210.0	2				III
		SVTO				1227.0	1235.0	2				V
		WEIS				1227.9	1227.9	1				IIIG
		SVTO				1241.0	1254.0	2				S
		WEIS				1253.2	1312.9	3				IIIGG
		SGMR				1254.0	1313.0	3				IV
		WEIS				1254.0	1305.0	3				Spikes
		SGMR				1302.0	1305.0	2				II
		SVTO				1303.0	1304.0	2				II
		WEIS				1303.0	1304.4	2				II H
		SGMR				1319.0	1324.0	2				V
		WEIS				1319.9	1324.4	3				IIIGG
		SVTO				1358.0	1414.0	2				S
		SGMR				1402.0	1408.0	2				V
		SVTO				1403.0	1404.0	2				II
		SGMR				1442.0	1448.0	2				V
		SVTO				1444.0	1448.0	2				III
		SGMR				1506.0	1545.0	2				S
		SVTO				1506.0	1605.0	2				S
		WEIS				1512.2	1513.2	3				IIIG
		WEIS				1525.6	1527.2	3				IIIGG,Spikes,DCIM
		WEIS				1542.5	1544.1	3				IIIG
		SGMR				1602.0	1606.0	2				V
		WEIS				1605.4	1605.9	3				IIIG
		SGMR				1630.0	1650.0	3				V
		SVTO				1630.0	1631.0	2				III
		WEIS				1630.4	1631.9	3				IIIGG
		PALE				1648.0	1649.0	2				III
		PALE				1649.0	1650.0	2				III
		SGMR				1649.0	1650.0	3				III
		PALE				1748.0	1749.0	2				III
		SGMR				1748.0	1749.0	2				III
		PALE				1828.0	1828.0	2				III
		SGMR				1828.0	1829.0	2				III
		PALE				1901.0	1904.0	1				III

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10		PALE				1916.0	1934.0	2				S
		SGMR				1916.0	1916.0	2				III
		SGMR				1932.0	1933.0	2				III
		PALE				2028.0	2112.0	2				S
		SGMR				2051.0	2053.0	2				III
		PALE				2128.0	2134.0	3				V
		SGMR				2128.0	2134.0	2				III
		PALE				2143.0	2143.0	2				III
		PALE				2218.0	2222.0	3				V
		PALE				2226.0	2227.0	2				V
		PALE				2239.0	2239.0	1				III
		PALE				2300.0	2309.0	3				V
		LEAR				2301.0	2308.0	2				III
		LEAR				2318.0	2344.0	3				S
		LEAR				2330.0	0144.0	1				CONT
		PALE				2339.0	2339.0	1				III
11		PALE				0005.0	0006.0	1				III
		LEAR				0015.0	0024.0	2				III
		PALE				0015.0	0025.0	2				V
		LEAR				0038.0	0043.0	2				III
		LEAR				0219.0	0224.0	1				III
		LEAR				0242.0	0243.0	1				III
		LEAR				0255.0	0343.0	2				S
		PALE				0301.0	0303.0	1				III
		PALE				0314.0	0314.0	2				III
		LEAR				0434.0	0435.0	3				III
	0531	WEIS				0541.0	1658.0	3				IIIN
	0849 1720	WEIS				0619.0	1637.0	2				IN
		LEAR				0830.0	0831.0	3				III
		SVTO				0830.0	0834.0	2				III
		SVTO	0830.0	0834.0	2							III
		WEIS				0830.1	0831.7	3				IIIGG
		SVTO				0906.0	0906.0	2				V
		SVTO				0922.0	0923.0	2				III
		SVTO				0935.0	0935.0	2				III
		SVTO				1016.0	1021.0	2				V
		SGMR				1020.0	1020.0	1				III
		WEIS				1020.2	1021.3	2				IIIG
		WEIS	1020.7	1026.2	1							Spikes
		SVTO				1054.0	1058.0	1				V
		SGMR				1055.0	0000.0	1				CONT
		SVTO				1109.0	1109.0	1				III
		WEIS				1145.2	1146.8	2				IIIG,Spikes
		SGMR				1147.0	1149.0	2				III
		SGMR				1231.0	1232.0	2				V
		SVTO				1231.0	1232.0	2				III
		SGMR				1307.0	1314.0	2				V
		WEIS				1308.1	1309.9	2				IIIG
		SGMR				1325.0	1331.0	2				V
		SGMR				1338.0	1343.0	2				V
		WEIS				1339.7	1341.7	3				IIIGG
		SGMR				1355.0	1356.0	2				V
		SVTO				1355.0	1356.0	3				III
		SGMR				1430.0	1432.0	2				V
		SVTO				1430.0	1430.0	2				III
		SGMR				1448.0	1448.0	2				V
		SVTO				1448.0	1448.0	1				III
		SVTO				1539.0	1551.0	2				S
		SGMR				1656.0	1659.0	2				V
		SGMR				1804.0	1804.0	2				III
		PALE				1832.0	1833.0	3				V
		SGMR				1832.0	1834.0	3				V
		PALE				1853.0	1855.0	1				III
		PALE				1915.0	1938.0	1				S
		PALE				1938.0	0000.0	3				IV
		SGMR				1938.0	1954.0	3				IV
		SGMR				1951.0	2003.0	2				II
		PALE				2016.0	2017.0	2				V

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11		SGMR				2016.0	2017.0	2				III
		PALE				2034.0	2048.0	1				S
		PALE				2115.0	0155.0	1				CONT
		PALE				2119.0	2122.0	2				V
		SGMR				2121.0	2121.0	2				III
		PALE				2141.0	2239.0	2				S
		SGMR				2152.0	2152.0	2				III
		PALE				2249.0	2301.0	2				S
		LEAR				2300.0	2300.0	1				III
		PALE				2320.0	2344.0	3				S
		LEAR				2335.0	2337.0	2				III
		LEAR				2338.0	1000.0	1				CONT
12		LEAR				0030.0	0034.0	3				III
		PALE				0030.0	0034.0	3				V
		LEAR				0125.0	0135.0	2				V
		PALE				0125.0	0135.0	2				III
		LEAR				0211.0	0217.0	2				III
		PALE				0211.0	0217.0	1				III
		PALE				0244.0	0244.0	1				III
		LEAR				0301.0	0302.0	2				III
		PALE				0302.0	0302.0	2				III
		LEAR				0417.0	0419.0	2				III
		LEAR				0453.0	0454.0	2				III
		LEAR				0609.0	0613.0	2				III
		LEAR				0628.0	0631.0	2				III
		SVTO				0628.0	0630.0	2				III
	0534 1719	WEIS				0628.0	1624.0	2				IIIN
		LEAR				0641.0	0647.0	2			II	
		SVTO				0642.0	0646.0	2			II	
		WEIS				0643.0	0646.3	2			II	HB
		WEIS				0659.0	0727.0	2				I
		LEAR				0739.0	0740.0	2				III
		SVTO				0739.0	0800.0	2				S
		LEAR				0752.0	0753.0	2				III
		SVTO				0829.0	0850.0	1				CONT
		SVTO				1009.0	1009.0	1				V
		SGMR				1120.0	2237.0	1				CONT
		WEIS				1500.0	1603.0	2				I
		PALE				1812.0	1812.0	2				III
		PALE				1936.0	1936.0	1				III
		PALE				2002.0	2003.0	1				III
		PALE				2330.0	2334.0	3				V
		PALE				2336.0	2337.0	2				III
13		LEAR				0008.0	0111.0	1				CONT
		LEAR				0323.0	0329.0	2				III
		LEAR				0514.0	0929.0	1				CONT
		LEAR				0738.0	0738.0	2				III
		SVTO				0738.0	0738.0	1				III
	0534 1715	WEIS				0738.0	1623.0	2				IIIN
		SVTO				0756.0	0757.0	1				III
		SVTO				0857.0	0857.0	2				III
		WEIS				0857.3	0857.6	3				IIIG
		LEAR				0907.0	0909.0	2				III
		SVTO				0907.0	0908.0	2				V
		SVTO				0951.0	0954.0	2				III
		SGMR				1231.0	2202.0	1				CONT
		SGMR				1259.0	1259.0	2				III
		WEIS				1307.0	1332.0	2				I
		WEIS				1342.9	1344.8	3				IIIGG
		SGMR				1343.0	1345.0	3				V
		SGMR				1454.0	1455.0	2				V
		PALE				2000.0	0000.0	2				CONT
		SGMR				2011.0	2012.0	2				III
		SGMR				2036.0	2037.0	2				III
		LEAR				2258.0	1000.0	2				CONT
		PALE				2310.0	2311.0	2				III
		LEAR				2333.0	2341.0	2				III

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14		SVTO				0500.0	1649.0	1				CONT
0537	0955	WEIS				0545.0	1706.0	2				IN
1015	1715	WEIS				0558.0	1655.0	3				IIIN
		WEIS				0740.2	0740.3	1				Spikes
		WEIS	0920.7	0936.3	3							IV dm
		SGMR				1040.0	2234.0	1				CONT
		SGMR				1307.0	1310.0	2				V
		WEIS				1437.3	1437.5	2				IIIG
		WEIS				1652.7	1653.1	2				IIIG
		PALE				1653.0	1653.0	1				III
		PALE				1858.0	1901.0	1				III
		PALE				1954.0	1959.0	2				V
		SGMR				1954.0	1959.0	2				V
		PALE				2153.0	2153.0	1				III
		LEAR				2312.0	2322.0	1				III
		PALE				2313.0	2322.0	1				S
15		LEAR				0044.0	0053.0	1				III
		PALE				0053.0	0053.0	1				III
		LEAR				0124.0	0125.0	1				III
		LEAR				0147.0	0148.0	2				III
		PALE				0147.0	0148.0	2				III
		LEAR				0232.0	0238.0	2				III
		PALE				0232.0	0234.0	1				III
		LEAR				0308.0	0308.0	2				III
		LEAR				0325.0	0325.0	1				III
		LEAR				0350.0	0351.0	1				III
		LEAR				0402.0	0403.0	2				III
		LEAR				0448.0	0449.0	1				III
		LEAR				0505.0	0509.0	1				III
		LEAR				0530.0	0532.0	1				III
		SVTO				0538.0	0538.0	2				III
		LEAR				0555.0	0555.0	1				III
0536	1711	WEIS				0611.4	0611.6	1				IIIG
		LEAR				0635.0	0636.0	2				III
		SVTO				0635.0	0635.0	2				III
		WEIS				0635.7	0635.9	2				IIIB
		LEAR				0643.0	0830.0	1				CONT
		SVTO				0645.0	0748.0	1				CONT
		WEIS				0651.2	0651.4	1				IIIB
		LEAR				0658.0	0658.0	2				III
		WEIS				0658.2	0658.4	2				IIIG
		WEIS				0748.3	0748.5	2				IIIB
		WEIS				0755.6	0755.9	3				IIIG
		WEIS				0820.3	0820.4	1				IIIB
		WEIS				0842.9	0843.1	1				IIIB
		WEIS				1022.4	1023.3	2				IIIG
		WEIS				1029.2	1029.3	1				IIIB
		SGMR				1116.0	1116.0	1				III
		WEIS				1116.2	1116.4	1				IIIB
		WEIS				1120.8	1123.0	1				IIIG
		SGMR				1217.0	1218.0	1				III
		SGMR				1239.0	2232.0	1				CONT
		WEIS				1243.1	1243.6	1				IIIG
		WEIS				1250.6	1251.0	1				IIIG
		WEIS				1253.7	1254.4	1				IIIG
		WEIS				1513.1	1513.2	1				IIIB
		WEIS				1621.2	1621.4	1				IIIG
		PALE				1833.0	1833.0	2				III
		SGMR				1833.0	1834.0	2				V
		PALE				1945.0	1950.0	2				V
		PALE				2009.0	2021.0	2				S
		SGMR				2009.0	2009.0	2				III
		PALE				2051.0	2051.0	2				V
		PALE				2102.0	2103.0	2				V
		PALE				2129.0	2143.0	2				S
		PALE				2209.0	2211.0	1				III
		PALE				2228.0	2308.0	1				CONT
		LEAR				2245.0	0800.0	2				CONT

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15			PALE				2324.0	2324.0	2				V
			PALE				2337.0	0251.0	1				CONT
16			LEAR				0330.0	0331.0	3				III
			PALE				0330.0	0331.0	2				V
			LEAR				0458.0	0459.0	2				III
			SVTO				0458.0	0458.0	2				III
	0539	1711	WEIS				0941.6	0941.7	1				IIIB
			WEIS				1010.2	1010.3	1				IIIB
			WEIS				1015.4	1015.5	1				IIIB
			SGMR				1108.0	1108.0	1				III
			SVTO				1108.0	1108.0	2				III
			WEIS				1108.3	1108.7	3				IIIB
			SVTO				1131.0	1131.0	2				III
			WEIS				1131.1	1131.3	2				IIIB
			WEIS				1151.7	1152.3	2				IIIG
			WEIS				1157.4	1157.5	1				IIIB
			SGMR				1206.0	1206.0	1				III
			SVTO				1206.0	1206.0	2				III
			WEIS				1206.2	1206.4	2				IIIB
			WEIS				1421.3	1421.4	3				IIIG
			SGMR				1433.0	1433.0	1				III
			SGMR				1458.0	2100.0	1				CONT
			WEIS				1458.4	1458.6	1				IIIB
			WEIS				1513.9	1514.1	1				IIIB
			SGMR				1622.0	1626.0	3				V
			WEIS				1622.7	1625.7	3				IIIG
			SVTO				1623.0	1624.0	2				III
			SGMR				1749.0	1750.0	2				V
			PALE				1908.0	1908.0	1				III
17			LEAR				0028.0	0030.0	2				V
			PALE				0028.0	0031.0	2				V
			LEAR				0046.0	0047.0	1				III
			LEAR				0242.0	0242.0	1				III
			LEAR				0302.0	0304.0	2				III
			PALE				0302.0	0302.0	1				III
			LEAR				0407.0	0410.0	3				III
			PALE				0408.0	0408.0	2				III
			LEAR				0515.0	0519.0	2				III
			LEAR				0528.0	0528.0	2				III
	0539	1147	WEIS										
	1225	1707	WEIS				1405.3	1406.8	2				IIIG
			SGMR				1406.0	1410.0	2				III
			WEIS				1408.7	1409.7	3				IIIG
			SGMR				1648.0	1648.0	1				V
			SGMR				1802.0	0000.0	1				CONT
			PALE				1805.0	1807.0	1				III
			PALE				1830.0	1843.0	2				S
			SGMR				1830.0	1837.0	2				V
			PALE				2228.0	2229.0	2				V
			SGMR				2228.0	2228.0	1				III
			PALE				2242.0	2242.0	1				III
18			LEAR				0548.0	0548.0	2				III
	0542	1707	WEIS				0843.6	0846.3	1				IIIG
			LEAR				0844.0	0845.0	2				III
			SVTO				0844.0	0846.0	2				III
			SGMR				1314.0	1314.0	1				III
			SGMR				1345.0	1345.0	1				III
			WEIS				1345.5	1345.7	1				IIIB
			SGMR				1555.0	1556.0	2				III
			WEIS				1555.8	1556.2	2				IIIG
			SGMR				1708.0	1708.0	2				III
			PALE				1709.0	1709.0	1				III
			PALE				1809.0	1810.0	1				III
			PALE				1839.0	1840.0	2				III
			SGMR				1839.0	1840.0	2				III
			PALE				2054.0	2056.0	2				V

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18		SGMR				2054.0	2055.0	3				III
		PALE				2122.0	2122.0	1				III
19		SVTO				0044.0	0844.0	1				III
		LEAR				0137.0	0137.0	1				III
		PALE				0137.0	0137.0	1				III
		LEAR				0158.0	0158.0	1				III
		LEAR				0221.0	0223.0	2				III
		LEAR				0247.0	0248.0	2				III
		LEAR				0308.0	0311.0	2				III
		LEAR				0448.0	0449.0	2				III
		LEAR				0526.0	0526.0	1				III
		LEAR				0548.0	0549.0	1				III
	0542	WEIS				0757.5	0758.5	2				IIIG
		LEAR				0758.0	0800.0	3				III
		SVTO				0758.0	0758.0	2				III
		SVTO				0800.0	0800.0	3				III
		LEAR				0844.0	0844.0	2				III
		SVTO				0844.0	0844.0	1				III
		WEIS				0844.2	0844.4	2				IIIB
		SVTO				0902.0	1631.0	1				CONT
		WEIS				0913.8	0913.9	2				IIIG
		SVTO				0938.0	0942.0	3				V
		LEAR				0939.0	0942.0	2				V
	0945	WEIS				1036.8	1038.9	3				IIIG,Spikes
		SGMR				1120.0	1126.0	2				III
		SVTO				1120.0	1128.0	2				III
		WEIS				1120.4	1129.1	3				IIIGG
		SVTO				1217.0	1226.0	3				V
		SGMR				1218.0	1234.0	2				S
		SGMR				1222.0	1233.0	3				V
		WEIS				1222.6	1222.7	2				IIIB
		SVTO				1233.0	1234.0	2				III
		WEIS				1421.2	1421.4	3				IIIG
		SGMR				1431.0	1436.0	1				III
		WEIS				1436.6	1436.8	1				IIIG
		WEIS				1528.7	1529.1	2				IIIG
		SGMR				1609.0	1614.0	2				III
		WEIS				1609.2	1609.6	1				IIIG
		WEIS				1613.9	1614.3	2				IIIG
20		LEAR				0335.0	0335.0	2				III
	0545	1702	WEIS				0623.7	0627.3	3				IIIGG
		LEAR				0624.0	0626.0	2				III
		SVTO				0624.0	0625.0	2				III
		WEIS				0632.7	0634.1	1				II
		SVTO				0634.0	0635.0	1				III
		LEAR				0658.0	0704.0	1				II
		SVTO				0659.0	0702.0	2				II
		LEAR				0802.0	0802.0	1				III
		SVTO				0802.0	0802.0	1				III
		WEIS				0802.3	0802.5	1				IIIB
		SVTO				0909.0	0910.0	1				III
		LEAR				0910.0	0911.0	1				III
		WEIS				0911.1	0911.3	1				IIIG
		WEIS				1104.9	1105.2	2				IIIG
		SGMR				1108.0	1108.0	1				III
		WEIS				1108.1	1108.3	2				IIIG,RS
		LEAR				2325.0	2325.0	1				III
21		LEAR				0127.0	0129.0	3				III
		PALE				0127.0	0128.0	2				III
		SGMR				1345.0	1346.0	2				III
		SVTO				1345.0	1346.0	1				III
	0544	1758	WEIS				1345.7	1346.2	2				IIIG
		SGMR				1357.0	1357.0	2				III
		WEIS				1357.4	1357.7	2				IIIG
		SGMR				1425.0	1426.0	1				III
		SGMR				1545.0	1546.0	3				V

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21		SVTO				1545.0	1545.0	2				III
		WEIS				1545.1	1546.3	3				IIIG,Spikes
		PALE				1924.0	1929.0	2				V
		SGMR				1924.0	1929.0	2				V
		PALE				1934.0	1940.0	3				V
		SGMR				1934.0	1940.0	3				V
		SGMR				1945.0	2221.0	1				CONT
		SGMR				1958.0	1959.0	2				III
		PALE				2151.0	2153.0	2				V
		SGMR				2151.0	2203.0	2				S
		PALE				2201.0	2202.0	2				V
22		LEAR				0206.0	0207.0	2				III
		PALE				0208.0	0208.0	2				III
		LEAR				0235.0	0239.0	1				III
		LEAR				0245.0	0305.0	3				S
		PALE				0245.0	0305.0	2				S
		LEAR				0331.0	0341.0	3				III
		PALE				0331.0	0334.0	2				III
		LEAR				0434.0	0435.0	2				III
		LEAR				0452.0	0453.0	2				III
		SVTO				0452.0	0452.0	1				III
		LEAR				0504.0	0504.0	1				III
		SVTO				0535.0	0540.0	3				III
		LEAR				0536.0	0541.0	3				III
0548	1206	WEIS				0626.2	0627.0	3				IIIG
		LEAR				0651.0	0651.0	1				III
		SVTO				0651.0	0710.0	3				S
		WEIS				0651.7	0651.8	1				IIIB
		LEAR				0704.0	0710.0	3				III
		WEIS				0704.2	0710.3	3				IIIGG,RS
		WEIS				1119.9	1120.2	1				IIIB
1212	1658	WEIS				1449.7	1450.7	1				I
		SGMR				1455.0	1457.0	1				III
		WEIS				1456.7	1456.9	1				IIIG
23		LEAR				0320.0	0321.0	2				III
		LEAR				0749.0	0750.0	2				III
0547	1655	WEIS				0749.8	0750.3	2				IIIG
		SVTO				0750.0	0750.0	1				III
		WEIS				0857.9	0858.2	1				IIIB
		LEAR				0858.0	0908.0	2				II
		WEIS	0858.5	0858.6	2							Spikes
		SVTO				0900.0	0905.0	2				II
		WEIS				0900.0	0910.9	3				II H,HB
		SVTO				0949.0	0949.0	1				III
		WEIS				1328.9	1333.8	2				IIIGG
		SGMR				1330.0	1334.0	2				V
		SGMR				1336.0	1352.0	2				II
		WEIS				1337.4	1346.7	3				II H,HB
		SVTO				1341.0	1352.0	2				V
		WEIS				1606.1	1617.1	1				I
		WEIS				1639.4	1639.9	2				IIIG,U
		PALE				1822.0	1826.0	1				V
		SGMR				1822.0	1826.0	2				V
24		LEAR				0226.0	0227.0	2				III
		LEAR				0351.0	0351.0	2				III
		LEAR				0432.0	0433.0	1				III
		LEAR				0450.0	0451.0	1				III
0550	1654	WEIS				0818.9	0819.1	2				IIIB
		WEIS				0823.7	0823.9	1				DCIM,RS
		WEIS				0840.3	0844.7	3				IIIG,U
		LEAR				0843.0	0844.0	1				III
		SVTO				0843.0	0843.0	1				III
		WEIS				1101.8	1103.1	2				IIIG
		SGMR				1300.0	1948.0	1				CONT
		WEIS				1451.7	1451.9	1				IIIG
		WEIS	1452.9	1453.1	1							Spikes

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

SEPTEMBER 1989

Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
24		WEIS				1506.0	1509.0	1				I
		WEIS				1512.4	1513.3	1				IIIG,Spikes,RS
		WEIS				1529.8	1532.9	2				IIIG,Spikes
		SGMR				1530.0	1531.0	2				V
		SVTO				1530.0	1531.0	3				III
25		LEAR				0033.0	0034.0	1				III
	0550	WEIS				0954.8	0955.2	1				IIIG
		SGMR				1242.0	1244.0	1				III
	1514 1651	WEIS				1242.4	1544.3	2				IIIG
		SVTO				1244.0	1244.0	2				III
		WEIS	1541.1	1542.7	1							I
26		LEAR				0114.0	0115.0	1				III
		LEAR				0126.0	0126.0	2				III
		PALE				0126.0	0126.0	1				III
		LEAR				0209.0	0210.0	1				III
		LEAR				0311.0	0312.0	1				III
		LEAR				0450.0	0450.0	1				III
		LEAR				0520.0	0520.0	1				III
		LEAR				0820.0	0820.0	1				III
	0553 1650	WEIS				0820.2	0820.3	2				IIIG
		WEIS				0833.4	0833.5	1				IIIB
		LEAR				0838.0	0845.0	2				III
		SVTO				0845.0	0845.0	1				III
		WEIS				0845.4	0845.6	2				IIIG
		WEIS				0854.1	0854.7	3				IIIG,RS
		WEIS				0857.5	0857.8	3				IIIB,DCIM
		SVTO				1015.0	1018.0	2				III
		WEIS				1015.2	1016.0	3				IIIGG,U
		WEIS				1017.4	1020.3	3				IIIG,U
		WEIS				1045.2	1045.7	2				IIIG
		WEIS				1049.2	1051.1	2				IIIG,Spikes,DCIM
		SGMR				1055.0	1055.0	1				III
		SVTO				1055.0	1055.0	2				III
		WEIS				1055.1	1055.5	3				IIIG,U
		SVTO				1134.0	1134.0	2				III
		WEIS				1147.2	1147.4	2				IIIG,Spikes
		WEIS				1151.6	1157.2	3				IIIGG,Spikes,U
		SGMR				1153.0	1154.0	2				III
		SVTO				1153.0	1157.0	2				V
		SGMR				1217.0	1218.0	1				III
		SVTO				1217.0	1217.0	2				III
		WEIS				1217.6	1218.0	2				IIIG
		SGMR				1238.0	1240.0	1				V
		SVTO				1238.0	1244.0	2				S
		WEIS				1238.4	1241.2	2				IIIGG,Spikes,RS
		SGMR				1240.0	2212.0	1				CONT
		WEIS				1240.6	1242.4	2				II
		SVTO				1258.0	1258.0	1				III
		WEIS				1258.2	1258.4	1				IIIG
		SVTO				1319.0	1320.0	2				III
		WEIS				1319.6	1320.5	2				IIIG,U
		SGMR				1357.0	1400.0	2				V
		SVTO				1357.0	1359.0	2				V
		WEIS				1357.7	1358.9	3				IIIG
		SVTO				1358.0	1358.0	1				III
		WEIS				1418.0	1418.3	3				DCIM
		SVTO				1419.0	1420.0	2				III
		SGMR				1437.0	1451.0	3				S
		WEIS				1437.4	1439.6	3				IIIG,RS
		SVTO				1438.0	1442.0	2				S
		WEIS				1442.2	1447.3	3				IIIGG,Spikes
		WEIS				1450.7	1450.9	3				IIIB
		SVTO				1457.0	1459.0	2				V
		SGMR				1630.0	1635.0	2				V
		WEIS				1630.4	1632.7	3				IIIGG,U,DCIM
		SGMR				1738.0	1742.0	2				V
		SGMR				2050.0	2051.0	2				III

SOLAR RADIO EMISSION
Spectral Observations

SEPTEMBER 1989

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
26			PALE				2051.0	2051.0	2				V
			PALE				2130.0	2130.0	1				III
			LEAR				2326.0	2327.0	1				III
			PALE				2326.0	2327.0	1				III
			LEAR				2345.0	2346.0	2				III
			PALE				2346.0	2346.0	2				III
27			LEAR				0001.0	0004.0	1				III
			PALE				0002.0	0010.0	2				III
			LEAR				0006.0	0013.0	3				III
			LEAR				0026.0	0026.0	2				III
			PALE				0026.0	0026.0	1				III
			LEAR				0045.0	0045.0	1				III
			PALE				0045.0	0045.0	1				III
			LEAR				0059.0	0100.0	2				III
			PALE				0059.0	0100.0	2				III
			LEAR				0207.0	0208.0	2				III
			PALE				0207.0	0207.0	1				III
			LEAR				0304.0	0311.0	1				III
			LEAR				0322.0	0322.0	1				III
			LEAR				0439.0	0442.0	2				III
			LEAR				0502.0	0505.0	1				III
			LEAR				0548.0	0548.0	2				III
	0553	1647	WEIS										
			LEAR				0601.0	0602.0	1				III
			LEAR				0630.0	0650.0	2				S
			LEAR				0820.0	0820.0	1				III
			SGMR				1437.0	1437.0	1				V
			SGMR				1622.0	1622.0	1				III
			SGMR				1701.0	1705.0	2				V
			SGMR				1711.0	1808.0	2				S
			SGMR				1837.0	1837.0	1				V
			PALE				1958.0	1958.0	1				III
			SGMR				1958.0	1958.0	1				III
			PALE				2116.0	2223.0	1				CONT
			PALE				2326.0	2327.0	1				III
			PALE				2346.0	2346.0	2				III
28			LEAR				0236.0	0236.0	1				III
			LEAR				0810.0	0810.0	1				III
			SVTO				0810.0	0819.0	1				III
	0555	1646	WEIS				0810.0	0810.7	1				IIIG
			LEAR				0816.0	0825.0	2				III
			WEIS				0816.2	0816.3	1				IIIB
			WEIS				0819.4	0819.6	1				IIIB
			SVTO				0823.0	0824.0	2				III
			WEIS				0823.7	0824.9	2				IIIG
			LEAR				0918.0	0919.0	1				III
			WEIS				0918.6	0918.9	1				IIIG
			WEIS				1121.7	1121.8	2				IIIB
			WEIS				1128.3	1128.4	2				IIIB
			SGMR				1340.0	1346.0	2				V
			SVTO				1340.0	1345.0	2				III
			WEIS				1340.1	1340.6	2				IIIG,U
			WEIS				1344.7	1345.7	2				IIIG,U
			SGMR				1419.0	1420.0	1				V
			WEIS				1419.6	1420.6	1				IIIG
			WEIS				1527.1	1527.2	1				IIIB
29			LEAR				0105.0	0106.0	2				III
			PALE				0106.0	0106.0	1				III
	0556	0732	WEIS	0726.2	0726.6	1							DCIM
	0742	1642	WEIS	0747.6	0747.7	1							DCIM
			LEAR				0906.0	0907.0	2				III
			WEIS				0906.7	0908.0	2				IIIG
			WEIS				1000.2	1000.3	1				DCIM
			WEIS				1122.8	1141.0	2				IV
			WEIS				1124.3	1128.0	3				IIIGG,U
			SGMR				1125.0	1217.0	2				IV

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

SEPTEMBER 1989

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
29		WEIS				1125.7	1156.5	3				II H,HB
		SVTO				1135.0	1217.0	2				IV
		WEIS				1155.0	1245.0	2				IV dm
		WEIS				1159.8	1159.9	2				IIIB
		SGMR				1217.0	1217.0	1				III
		WEIS				1217.1	1217.2	2				IIIG
30		LEAR				0147.0	0149.0	1				III
		LEAR				0554.0	0556.0	1				III
	0558 1640	WEIS										
		LEAR				2320.0	2321.0	1				III

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

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

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

Stations Reporting:

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

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

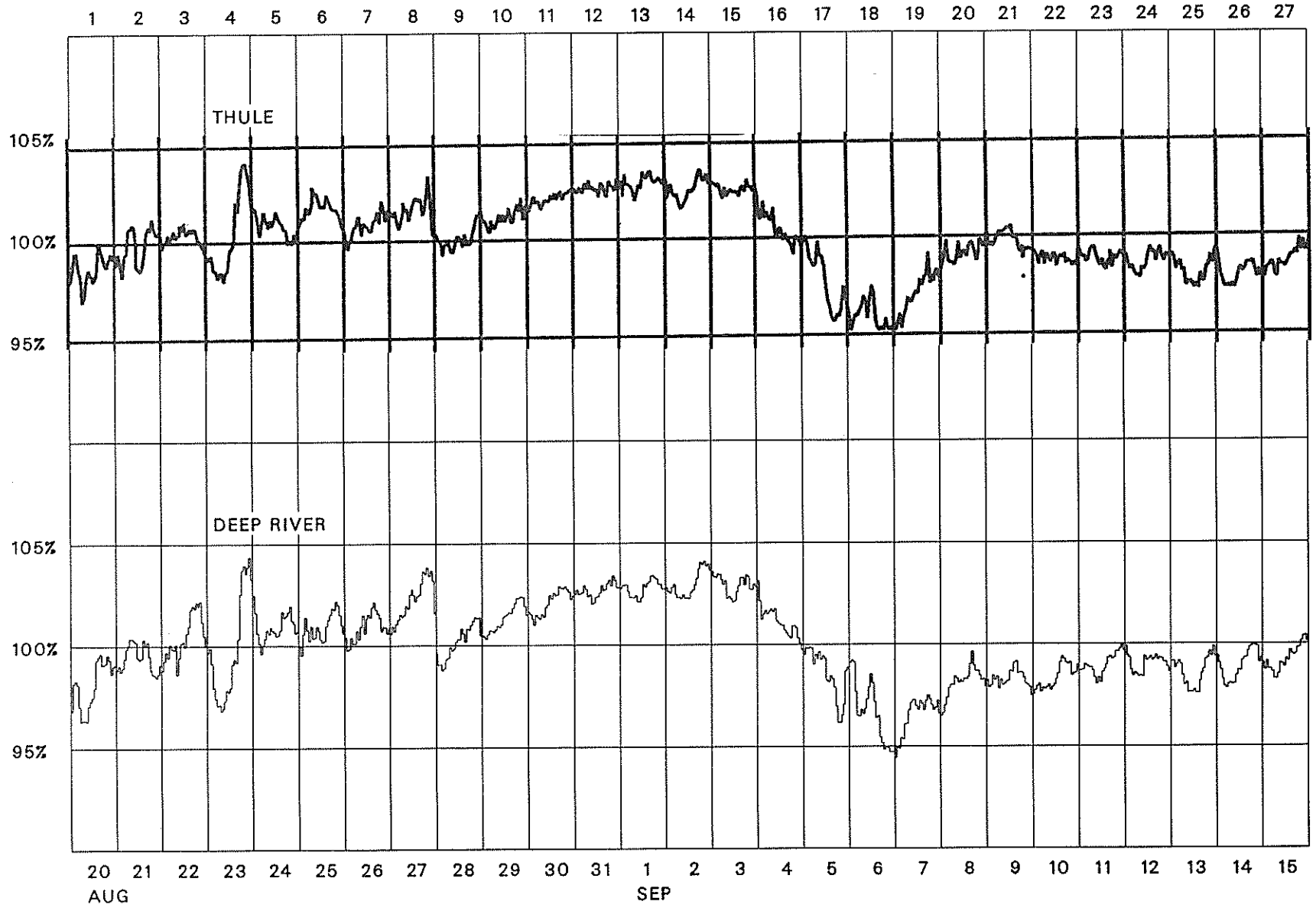
SEPTEMBER 1989

Day	THULE Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/256	HUANCAYO Average (cts/h)/100
1	3887	6080.9	5484.9	3516.8	3454.4	
2	3875	6091.8	5477.1	3508.5	3443.0	
3	3874	6090.3	5487.4	3501.3	3441.8	
4	3794	5981.9	5393.8	3431.6	3409.2	
5	3690	5831.7	5269.6	3351.4	3382.2	
6	3621	5718.9	5126.9	3258.9	3348.7	
7	3669	5711.8	5134.8	3234.4	3337.3	
8	3747	5806.1	5255.1	3310.5	3375.0	
9	3766	5814.5	5272.1	3317.1	3380.2	
10	3731	5818.7	5268.3	3326.3	3372.9	
11	3732	5856.1	5272.5	3345.0	3373.3	
12	3726	5858.7	5288.7	3346.1	3373.1	
13	3705	5834.5	5262.5	3326.8	3347.5	
14	3700	5853.4	5240.2	3338.2	3354.3	
15	3728	5872.7	5268.5	3344.0	3368.8	
16	3774	5924.1	5313.6	3388.9	3404.0	
17	3741	5910.7	5302.7	3401.0	3387.3	
18	3721	5809.2	5245.7	3326.7	3359.5	
19	3602	5675.3	5057.8	3239.4	3325.5	
20	3655	5715.7	5149.5	3269.2	3337.1	
21	3708	5799.2	5223.7	3299.8(36)	3372.1	
22	3815	5939.0	5354.9	3422.3(6)	3413.2	
23	3838	5986.9	5369.9	3430.7	3424.5	
24	3876	6051.7	5412.3	3448.1	3433.7	
25	3902	6103.0	5498.9	3492.8	3454.5	
26	3897	6107.6	5498.0	3516.4	3468.6	
27	3903	6114.4	5491.9	3508.7	3439.8	
28	3908	6109.7	5496.1	3515.2	3448.9	
29	6239	8717.0	6884.7	4532.8	3481.1	
30	4028	6319.5	5547.7	3550.0	3450.5	
Mean	3862	6016.8	5378.3	3425.2	3398.7	

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.

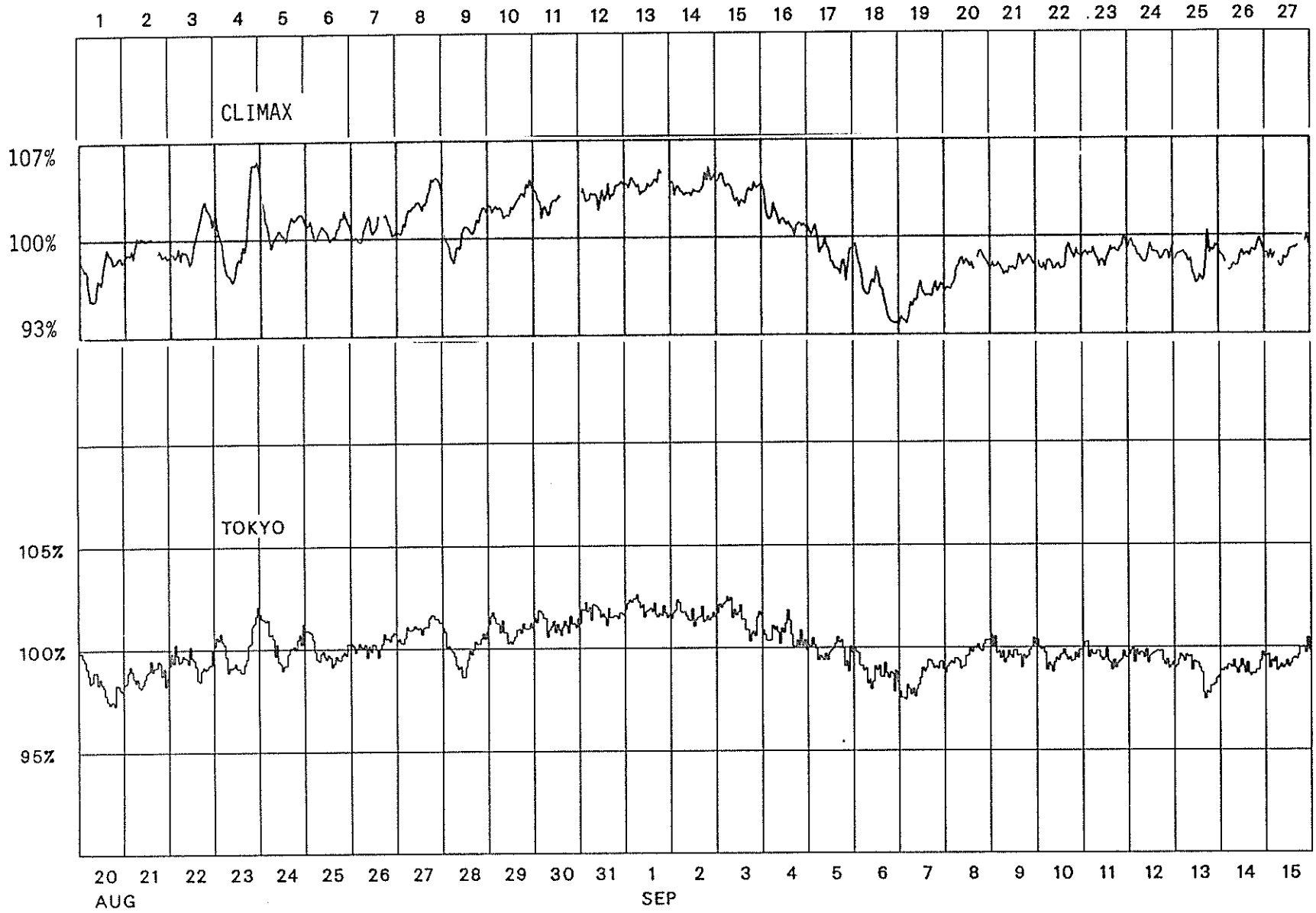
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2132 (August 1989-September 1989)

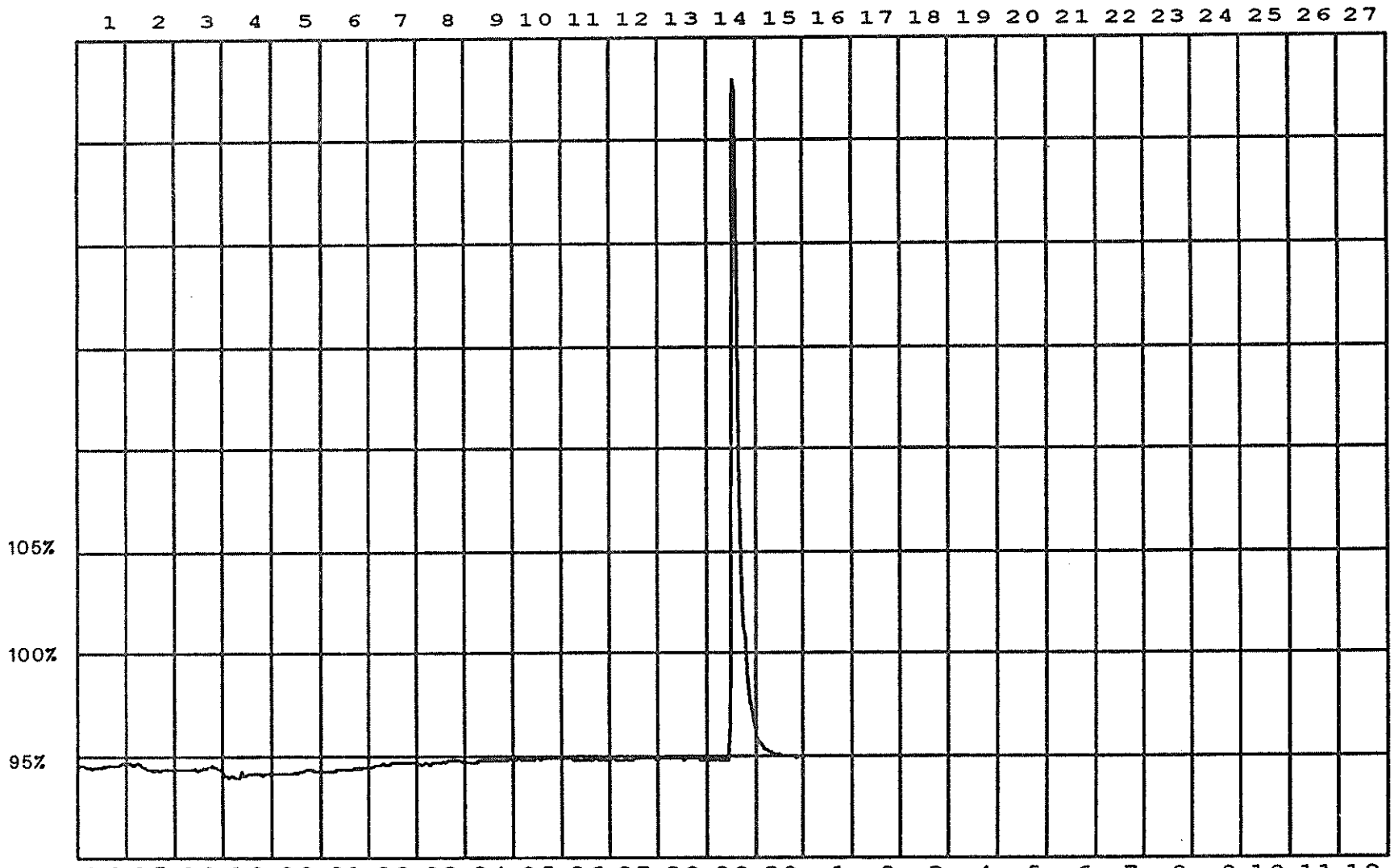


COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2132 (August 1989-September 1989)



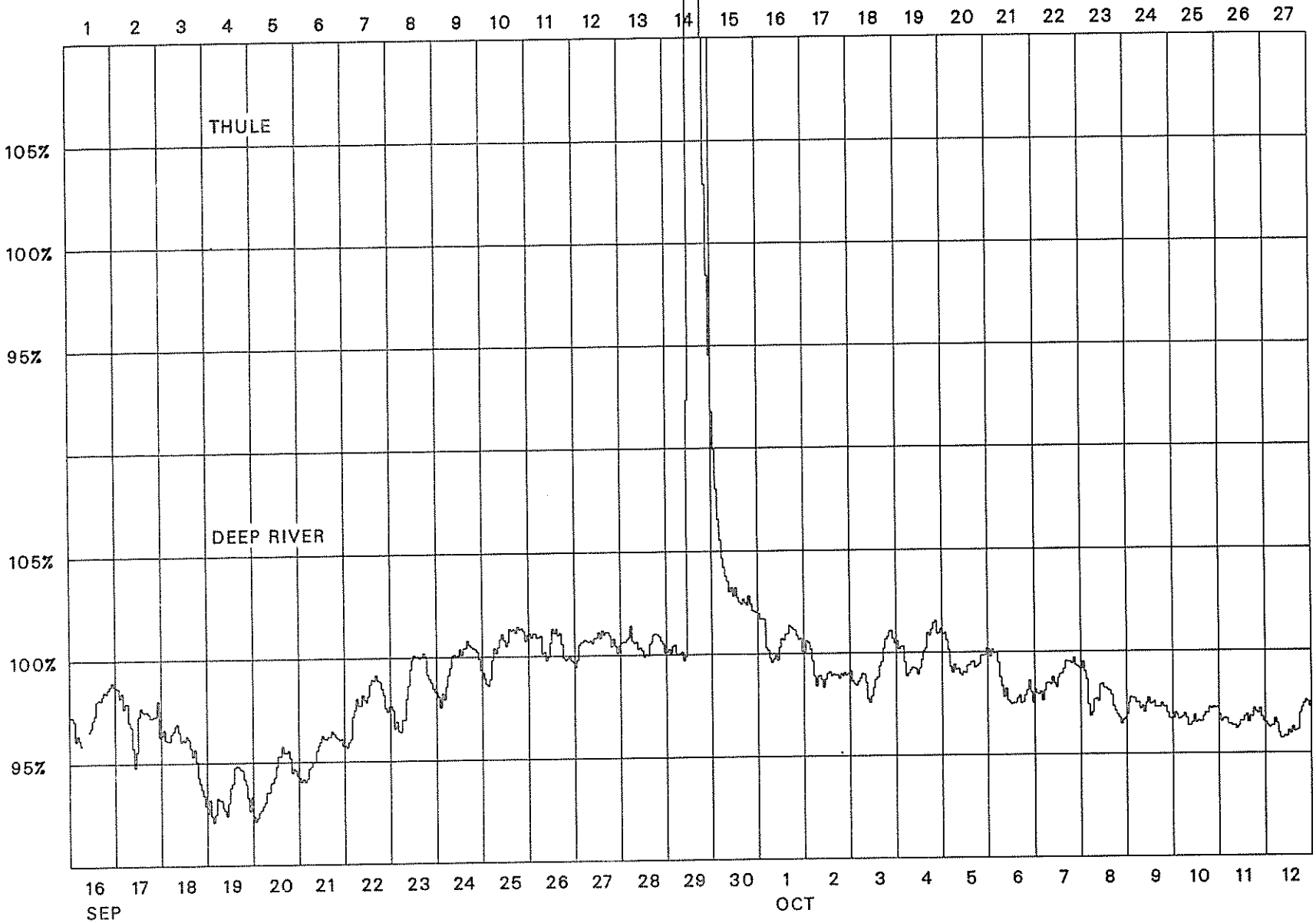
THULE NEUTRON MONITOR



BARTELS ROTATION 2133

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2133 (September 1989-October 1989)



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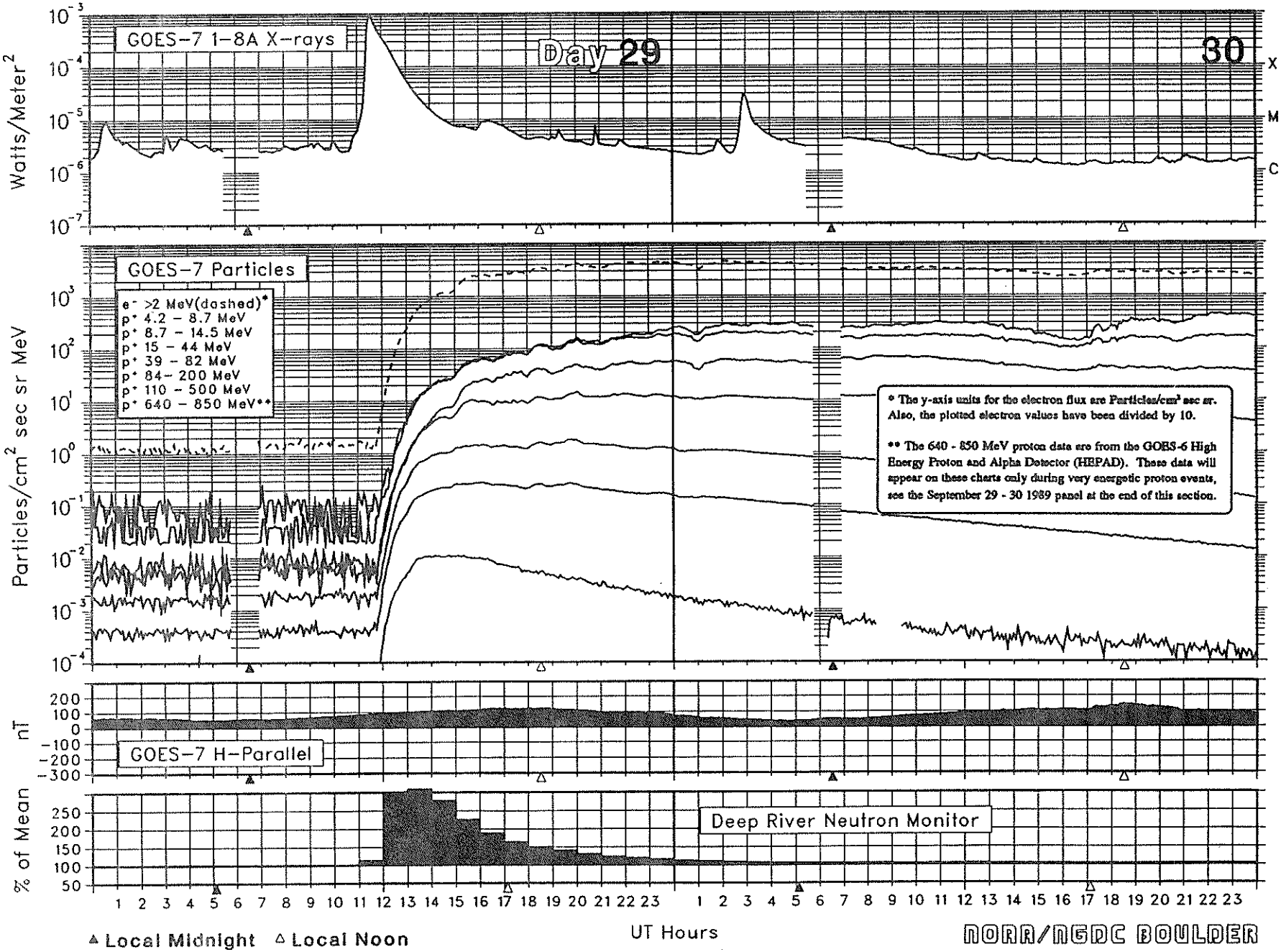
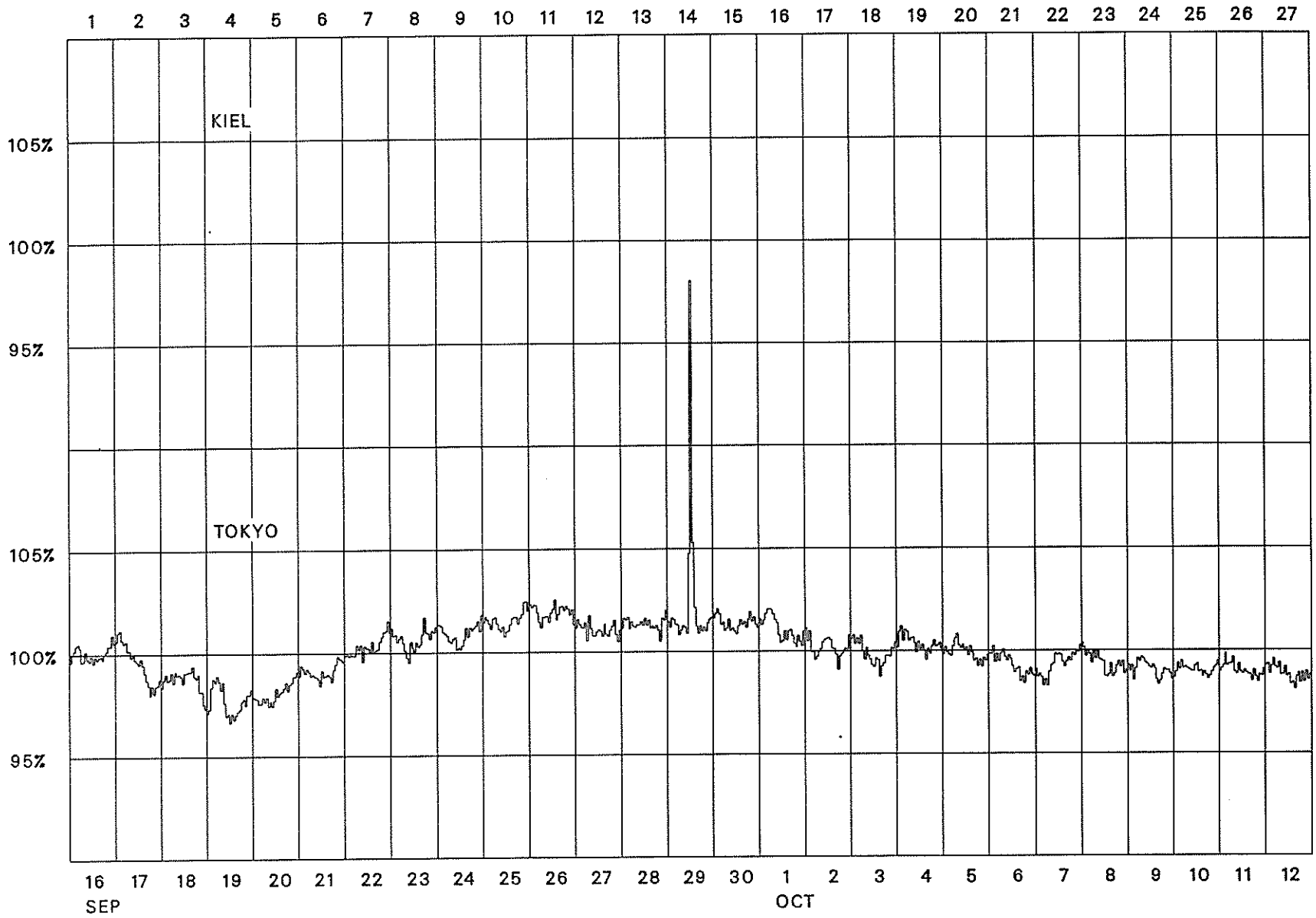
Sep 89

SOLAR-TERRESTRIAL ENVIRONMENT
September 1989



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2133 (September 1989-October 1989)



GEOMAGNETIC ACTIVITY INDICES

September 1989

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	Am	aa Provisional N	S	M	
1		2+	2	3-	2+	3-	2+	1-	0+	15+	8	0.4									19	11	18	12	
2		2-	2	1+	2-	3-	3+	1+	1+	15+	8	0.4									15	17	13	19	
3	Q8A	1	3	3-	1	1+	2-	1	3-	14+	8	0.4									12	10	11	10	C
4	D5	5	6	5-	4+	3+	1+	1	3	29-	30	1.3									47	33	63	17	
5		5-	4	5+	3+	2	2-	2	2+	25+	21	1.1									34	33	51	16	
6		2	3-	2+	3-	3+	3+	3	2	21+	12	0.7									22	22	22	22	
7		2+	2	2-	4-	4	6-	4	3	26+	22	1.1									47	22	17	53	
8		4-	4	4	3-	3	3-	1+	2+	24-	16	0.9									37	31	47	21	
9		2+	2	1-	3-	3-	3-	3+	3-	19	11	0.6									22	15	12	25	
10		3-	3+	2	1+	2+	3	2+	2-	19-	10	0.6									24	20	19	24	
11	Q1	1	0+	0+	1-	0+	0+	1-	2+	6	3	0.1									5	5	4	6	C
12		3	3+	3+	3-	3	2+	1-	2	20+	12	0.7									30	21	31	19	
13		2-	2	2	1+	2	3	3-	3	18-	9	0.5									23	14	11	26	
14	Q4	1+	2-	2+	3-	1+	0+	0+	0+	10+	5	0.2									13	10	17	6	K
15	D4	3-	5-	3	3	5-	5-	6	6+	35	42	1.5									66	47	33	80	
16		5+	6-	4	2+	2+	2+	2	2+	26+	24	1.2									30	25	35	21	
17	Q6A	2-	1-	2	1	1+	1	2+	3	13	7	0.3									16	7	10	13	C
18	D2	4+	3-	4-	4	3	5	6	8-	36+	52	1.6									79	67	47	100	
19	D1	7-	8	7	5	4	3	3-	1+	38-	70	1.7									85	61	114	32	
20	Q5	1	2	1	1	2-	1+	2	2+	12+	6	0.3									14	9	8	15	C
21		3-	3-	2+	2	2	1+	0+	3-	16	8	0.4									18	16	19	14	
22		2	3	4-	5-	4+	4+	4-	3-	28+	23	1.1									50	39	47	43	
23	Q2	2-	1+	1+	1-	1-	1	1-	2-	9	4	0.2									12	6	9	9	C
24	Q7A	2-	1-	1+	1	2+	2-	2+	3-	14-	7	0.3									16	13	10	19	C
25	Q3	1+	1	1	2-	1+	1+	1+	1-	10-	5	0.2									12	7	9	10	C
26	D3	0+	2-	4+	5-	5+	6+	7	6-	35+	54	1.6									65	86	39	112	
27	Q10A	4	3	2	1	1+	1-	0+	1	13+	8	0.5									20	8	20	8	
28	Q9A	3-	2+	1-	1	1+	2	3-	2+	15	8	0.4									19	13	14	18	
29		2+	1+	1+	3+	2	2+	2	2-	16+	8	0.4									22	11	18	15	
30		3	2+	1+	1	2-	3	4	3+	20-	12	0.7									26	20	15	31	
Mean											17	0.71										30.0	23.4	26.7	

Day	Kn Three-Hourly Indices 1	2	3	4	5	6	7	8	An	Ks Three-Hourly Indices 1	2	3	4	5	6	7	8	As	Sa	Prov Ri	Ra	Rs	IMF
1																			223.8	147	149	180	
2																			233.3	171	168	190	
3																			243.0*	180	198	200	
4																			245.0	204	220	203	
5																			273.3	212	223	233	
6																			288.4	230	243	249	
7																			303.4	277	275	266	
8																			302.1	261	260	264	
9																			311.5	296	284	274	
10																			303.3	270	284	266	
11																			299.3	264	254	261	
12																			292.2	264	272	254	
13																			249.3	248	252	207	
14																			244.9	215	213	202	
15																			226.0	207	205	182	
16																			233.7	180	192	190	
17																			216.2	159	155	171	
18																			208.6	155	144	163	
19																			197.0*	152	147	151	
20																			173.1	137	120	125	
21																			161.8	111	102	113	
22																			159.3	109	106	110	
23																			157.5	110	110	108	
24																			157.0	85	85	108	
25																			166.8	80	83	118	
26																			182.2*	93	86	135	
27																			199.4	101	104	153	
28																			194.3	111	113	148	
29																			204.7*	134	131	159	
30																			202.0	142	149	156	
Mean																			228.4	176.8	177.6	184.7	

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

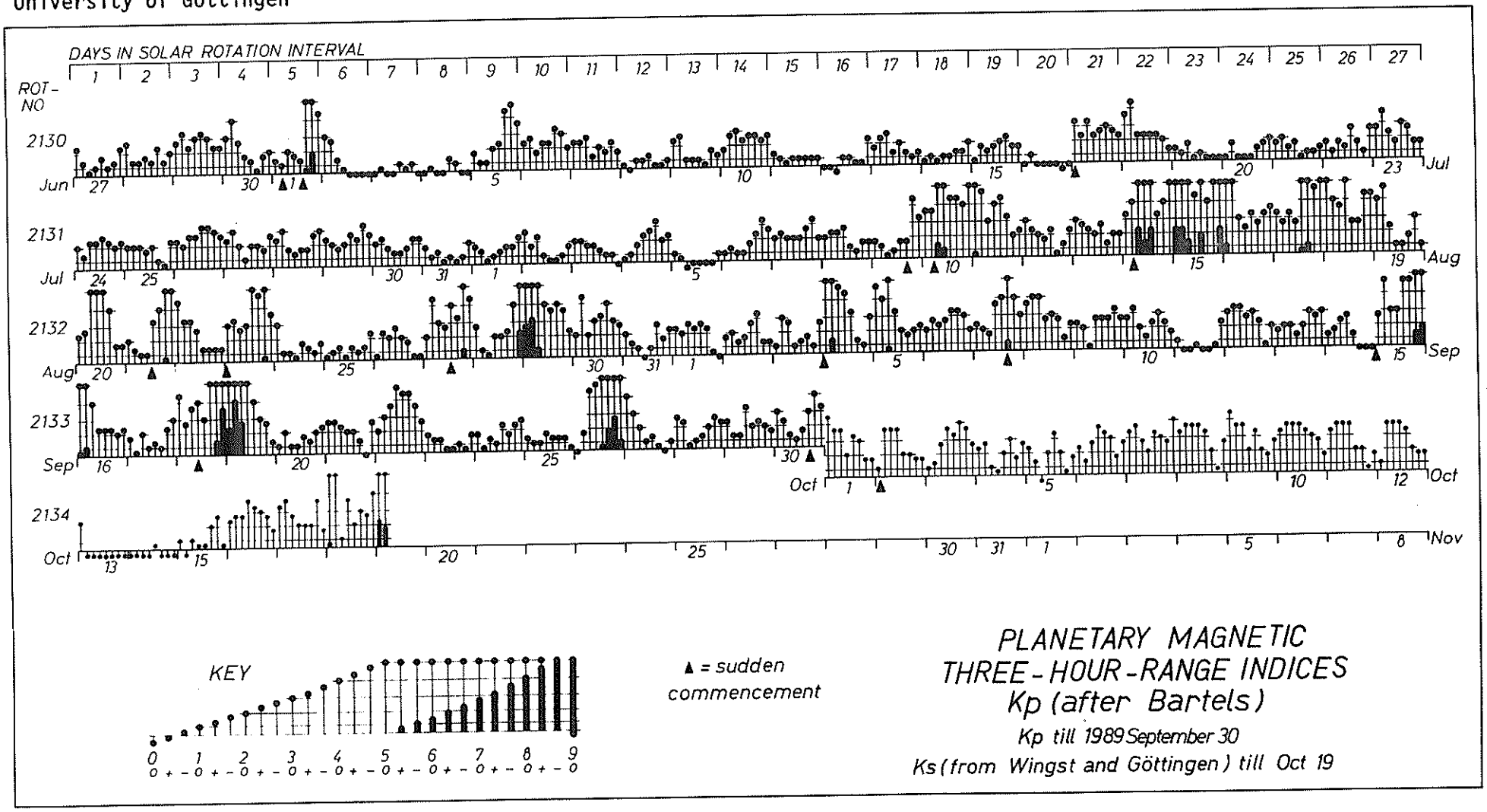
October 1988 to September 1989

DAY	1988 OCT	NOV	DEC	1989 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	7	5	15	29	12	42	10	11	26	6	8
2	5	30	15	6	21	25	26	18	19	5	6	8
3	3	26	18	4	44	37	21	12	14	3	5	8
4	9	8	10	9	24	13	46	20	14	3	8	30
5	18	10	4	33	22	30	42	44	7	15	2	21
6	38	13	3	10	23	24	14	14	11	11	8	12
7	6	17	3	10	25	18	27	46	34	8	9	22
8	7	18	5	17	14	24	20	5	23	4	7	16
9	17	12	4	16	19	31	15	5	34	6	10	11
10	85	14	8	12	12	19	8	4	78	11	41	10
11	13	10	17	37	10	17	14	6	22	4	25	3
12	6	18	14	20	14	23	6	11	12	3	8	12
13	6	8	20	11	21	246	17	9	16	7	9	9
14	6	11	13	14	14	158	24	10	50	4	55	5
15	6	13	10	38	14	49	27	13	37	6	77	42
16	10	18	25	43	17	50	20	7	9	2	26	24
17	15	11	35	28	5	34	10	7	5	13	34	7
18	30	8	25	15	9	15	10	6	5	13	29	52
19	12	4	20	7	9	55	6	6	8	4	14	70
20	18	2	7	45	21	14	10	15	28	4	26	6
21	7	6	11	28	11	22	7	8	4	5	21	8
22	3	4	13	30	13	39	7	12	5	7	12	23
23	6	2	4	22	5	36	12	47	5	11	28	4
24	6	4	4	10	9	16	8	68	10	8	6	7
25	4	7	22	12	7	10	34	24	7	6	5	5
26	7	20	25	10	4	14	76	17	8	13	6	54
27	8	12	20	12	6	44	49	16	6	8	26	8
28	9	9	14	13	13	39	39	14	7	9	22	8
29	3	8	20	10		71	28	14	13	10	58	8
30	5	37	11	12		47	17	9	10	7	17	12
31	10		12	32		52		13		4	6	
MEAN	13	12	13	19	15	41	23	16	17	8	20	17

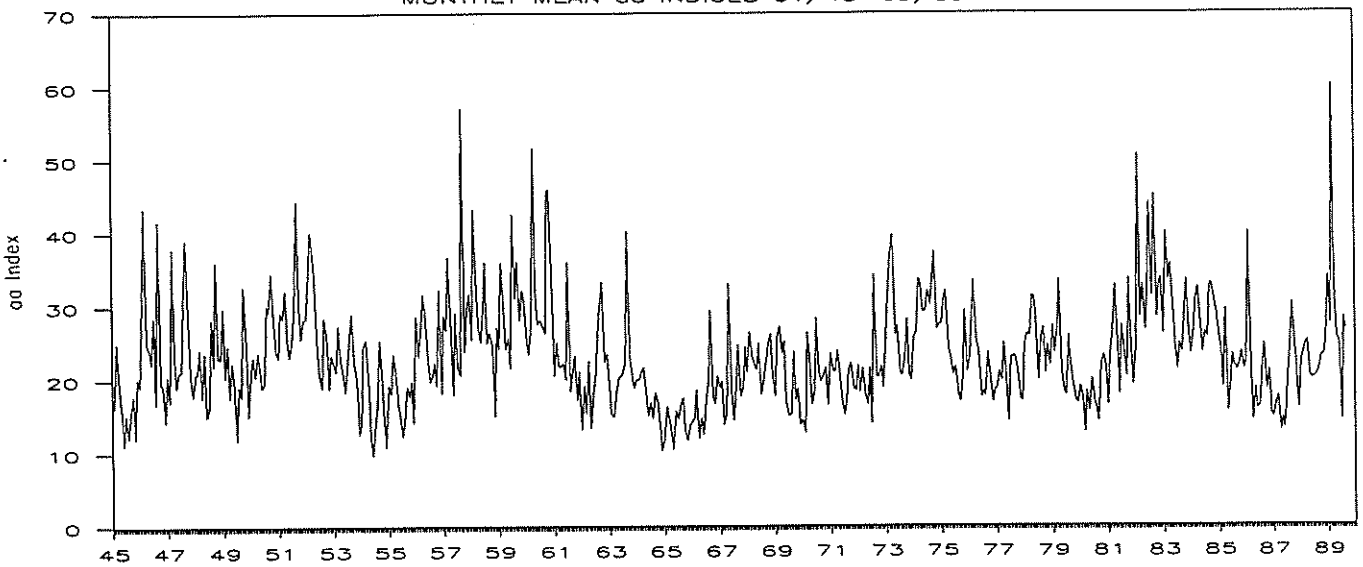
PLANETARY 3-HOUR-RANGE INDICES (Kp) BY 27-DAY SOLAR ROTATION INTERVAL

University of Göttingen

Kp through September 30, 1989



MONTHLY MEAN aa INDICES 01/45—09/89



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1945	16.1	16.4	25.0	19.1	15.4	11.1	15.3	12.1	15.6	17.9	12.0	20.2	16.3
1946	19.2	30.2	43.5	25.0	24.1	22.3	28.6	16.7	41.7	19.6	19.3	14.3	25.4
1947	20.6	17.1	37.9	23.3	19.1	21.1	21.4	32.9	39.1	31.3	20.7	17.9	25.2
1948	20.8	21.0	24.2	17.7	23.7	15.0	16.2	28.3	22.0	36.1	23.1	23.0	22.6
1949	29.8	20.4	24.7	17.6	22.4	17.9	11.8	19.2	17.8	32.7	24.6	15.1	21.2
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7				30.5

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

SEPTEMBER 1989

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges K	D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
COL	64.6N	04	0026	SC*	22	- 85	27	04(3)	6	116	1065	595	04	14
SIT	60.0N	04	0027	SC*	5	- 27 *	- 7	04(3)	8	--	710	550	04	13
FRD	49.6N	04	0026	SC*	- 4.2	43	- 6	04(1)	5	12	107	27	04	13
HYB	07.6N	04	0027	SC	- .6	18	- 1	04(1,2,3)	4	8	97	39	04	19
GUA	04.0N	04	0025	..	..	..	..	04(1)	6	10	190	40	04	15
ETT	00.6S	04	0026	SC	- .8	8	15		-	8	221	72	04	15
HER	33.7S	04	0026	SC	3	35	28	04(1)	5	18	96	46	04	14
HYB	07.6N	05	0100	..	..	..	..	05(3)	5	10	120	42	06	23
GUA	04.0N	05	05--	..	..	..	..	05(3)	5	--	90	20	05	15
ETT	00.6S	05	0130	..	..	..	..		-	10	243	76	06	22
HYB	07.6N	07	1649	SC	- .4	41	- 2	07(6) 08(2)	5	10	108	58	08	19
GUA	04.0N	07	1649	..	..	..	..	08(1)	5	10	100	30	08	12
ETT	00.6S	07	1649	SC	- 1.0	26	27		-	9	250	79	08	18
HER	33.7S	07	1651	SC	2	24	17	07(6)	5	23	66	55	08	12
HYB	07.6N	11	2100	..	..	..	..	11(8) 12(1,2,3,6) 13(6,8)	3	9	113	56	13	22
ETT	00.6S	11	2100	..	..	..	..		-	9	249	60	13	22
COL	64.6N	15	0046	SC	- 7	90	--	16(2,3)	6	214	1320	565	16	19
SIT	60.0N	15	0052	SC*	- 4 *	41 *	7 *	16(2)	7	--	540	530	16	10
FRD	49.6N	15	0046	SC	- 1.8	28	- 3	15(5,8) 16(1,2)	5	24	135	78	16	09
HYB	07.6N	15	0045	SC	- .2	9	- 1	15(5,8)	5	11	187	41	16	10
GUA	04.0N	15	20--	..	..	..	..	16(1)	6	10	90	50	16	12
GUA	04.0N	15	0047	SC	.1	39	- 12	15(2)	5	10	160	50	15	16
ETT	00.6S	15	0045	SC	- .7	20	15		-	12	278	67	16	21
HER	33.7S	15	0045	SC	2	16	13	15(7,8)	6	34	124	97	16	10
GNA	43.2S	15	0045	SC*	- 6.6*	10	- 16 *	15(8)	6	23	140	120	16	11
KGL	56.5S	15	0044	SC	- 3	15	4	15(7)	8	103	662	384	16	21
HYB	07.6N	17	0743	SC	- .3*	14	- 2		-	--	--	--	--	--
GUA	04.0N	17	2324	..	..	..	..	18(1)	5	10	90	40	18	10
ETT	00.6S	17	0743	SC*	.8	32	21		-	13	443	144	19	21
GNA	43.2S	17	0742	SC*	2.2*	17 *	12 *	18(8)	6	21	280	180	19	19
COL	64.6N	18	17--	..	..	..	..	19(3,4)	6	162	980	530	19	14
SIT	60.0N	18	17--	..	..	..	..	19(3)	7	--	--	--	19	13
FRD	49.6N	18	1027	SC	1.6	15	- 3	19(2,3)	7	39	329	360	19	19
UJJ	13.5N	18	1024	SC	- .6	51	- 11		-	9	197	53	20	18
ABG	09.5N	18	1024	SC	- 1.1	44	- 12	18(7,8) 19(3)	6	10	304	81	20	18
HYB	07.6N	18	1028	SC	- .6	46	- 4	19(2,3)	7	8	330	39	19	21
GUA	04.0N	18	1027	SC	.4	37	- 13	19(2)	7	10	320	60	19	16
ANN	01.5N	18	1024	SC	- 2.5	82	38		-	12	349	131	20	18
ETT	00.6S	18	1027	SC	- 1.3	58	43		-	--	--	--	19	21
HER	33.7S	18	1028	SC	2	41	28	18(7,8) 19(2)	6	35	230	159	19	15
CNB	43.9S	18	05--	..	..	..	..	18(8)	6	22	240	104	19	13
KGL	56.5S	18	1027	SC	9	75	- 16	18(7,8) 19(1,2,3)	8	142	1097	815	19	21
HYB	07.6N	21	2300	..	..	..	..	22(4,5,6)	5	6	120	40	23	02
ETT	00.6S	21	2300	..	..	..	..		-	7	214	57	23	18
UJJ	13.5N	22	0739	SC	..	..	..		-	--	--	--	23	01
ABG	09.5N	22	0739	SC	- .6	24	- 6	22(6)	5	6	107	45	23	01
GUA	04.0N	22	0741	..	..	..	..	22(4)	5	--	70	20	22	21
ANN	01.5N	22	0739	SC	- .5	51	8		-	6	196	84	23	01
HER	33.7S	22	0742	SC*	- 4 *	16	3	22(4)	5	26	124	40	22	23
KGL	56.5S	22	0930	SC	- 20	- 32	- 4	22(6)	5	23	144	112	22	23
KGL	56.5S	22	0743	SC	6	40	8	22(6)	5	23	144	112	22	23
GNA	43.2S	25	05--	..	..	..	..	26(6,7)	6	29	150	210	27	09
COL	64.6N	26	05--	..	..	..	..	26(6)	7	282	1615	990	26	22
SIT	60.0N	26	07--	..	..	..	..	26(5)	7	--	--	--	27	01
FRD	49.6N	26	0546	SC	.2	10	- 1	26(4,6,8)	5	24	175	132	27	09
UJJ	13.5N	26	0500	..	..	..	..		-	8	234	54	27	14
ABG	09.5N	26	0500	..	..	..	..	26(6,7)	6	--	--	--	27	14
HYB	07.6N	26	0546	SC	- .1	9	- 1	26(4,5,6,7)	7	8	324	39	27	14

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

SEPTEMBER 1989

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)	Ranges K	D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
GUA	04.0N	26	0545	..	..	..	..	26(5)	6	10	210	40	27	10
ANN	01.5N	26	0500	..	..	..	..		-	--	--	--	27	14
ETT	00.6S	26	0546	SC	- .7	16	13			11	418	90	27	15
HER	33.7S	26	05--	..	..	..	..	26(6,7,8)	6	33	257	183	27	03
CNB	43.9S	26	04--	..	..	..	..	26(6,7)	6	26	170	77	27	01
KGL	56.5S	26	0545	SC	- 1	2	2	26(6,7,8)	7	126	605	257	27	15
COL	64.6N	30	1717	SC	7	81	5	01(3,4,5,6)	5	108	720	510	01	17
HYB	07.6N	30	1717	SC	- .2	21	- 1	30(7) 01(5,6)	4	6	117	42	01	17
GUA	04.0N	30	1716	..	..	..	..	30(8)	5	10	110	50	01	06
ETT	00.6S	30	1716	SC	- .4	25	18		-	--	--	--	--	--
KGL	56.5S	30	1716	SC	3	32	12	30(7)	5	15	188	96	01	21

Stations:

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

C O N T E N T S

Prompt Reports **LATE DATA** Number 543 Part I

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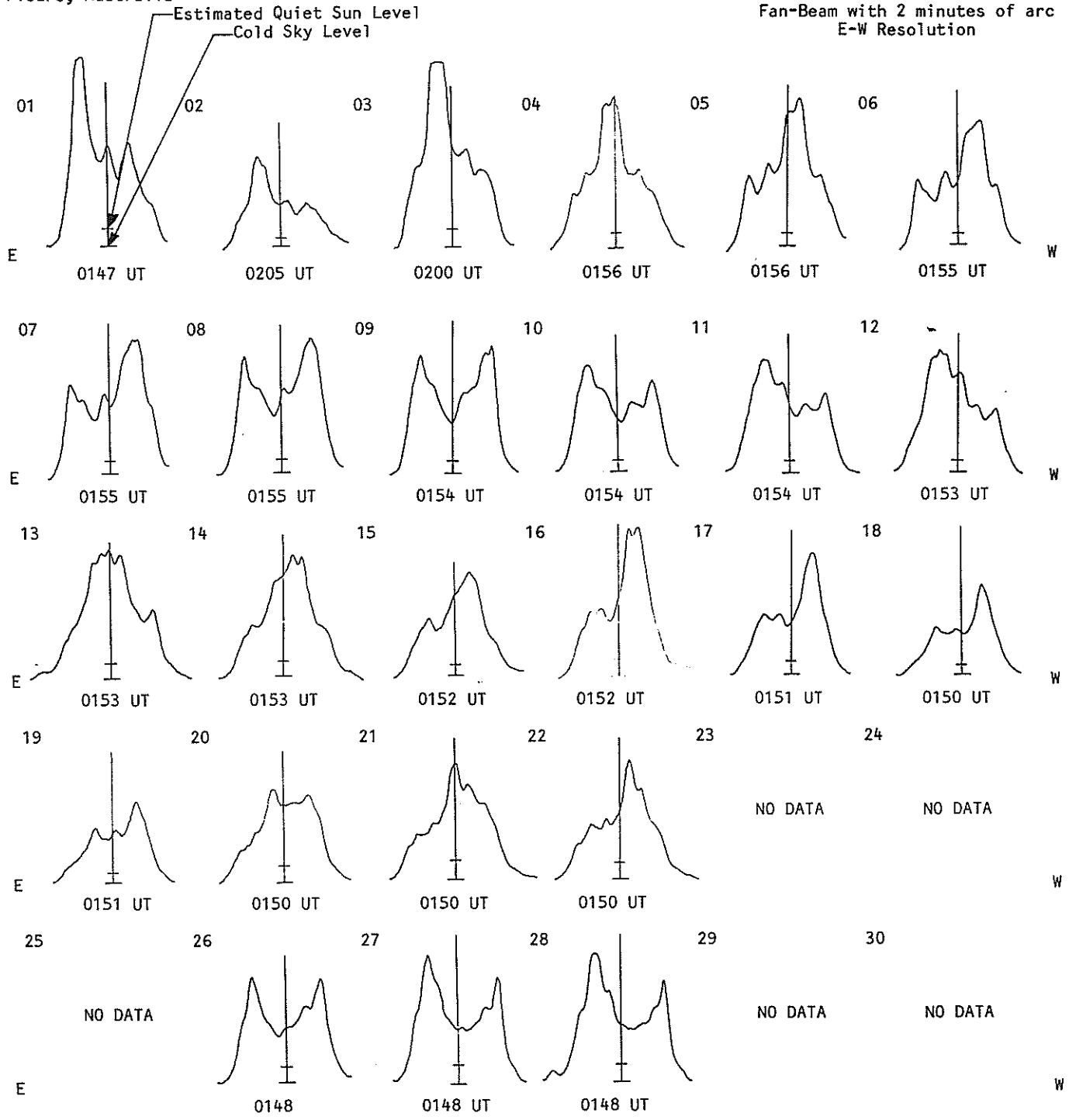
Late
Sep 89

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

Fleurs, Australia

SEPTEMBER 1989

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

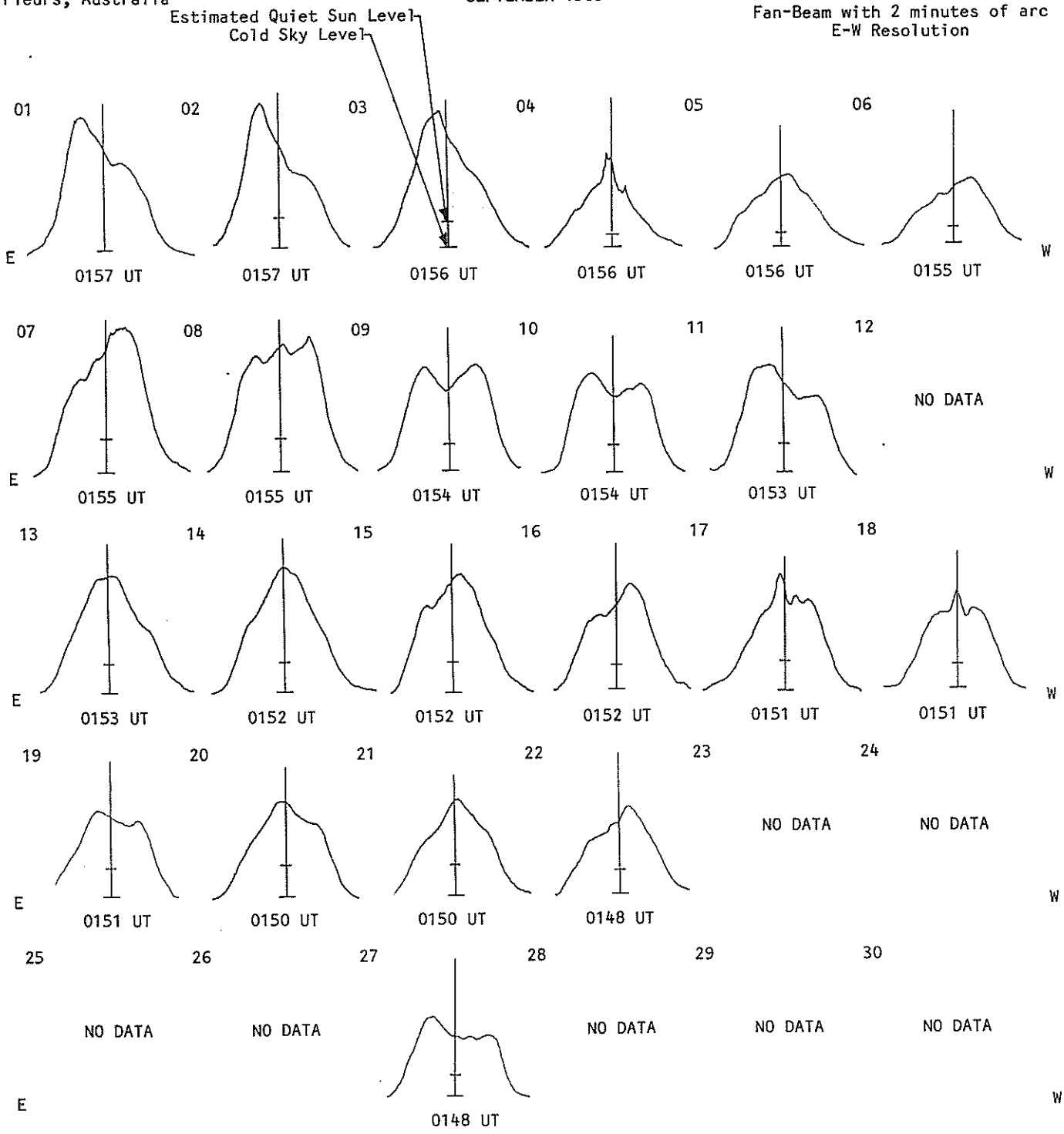


E A S T - W E S T S O L A R S C A N S

Fleurs, Australia

SEPTEMBER 1989

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



GEOMAGNETIC ACTIVITY INDICES

August 1989

Day		Kp Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	Ap	Cp	Km Three-Hourly Indices 1	2	3	4	5	6	7	8	aa Provisional Am	N	S	M	
1	Q4	2-	1+	1-	1	1+	2-	2-	2+	12-	6	0.2	2-	1+	1+	1-	1+	2-	2-	2	10	10	8	7	11 CC
2	Q6	3-	2-	2+	1	1-	1-	1	2-	12-	6	0.3	3	2	3-	1+	1	1-	1-	1+	12	12	9	15	6 CC
3	Q3	2	2	2-	2-	1+	1	1	0+	11	5	0.2	2	2-	2-	1+	1+	1	1+	1-	10	12	7	10	9 CC
4		1-	1	2-	2+	3-	3+	2	2+	16	8	0.5	1-	1+	2-	3-	2+	3-	2	2	15	18	16	13	21 K
5	Q1	1	1-	0	0+	0+	0+	0+	1	4	2	0.0	1+	1-	0+	0+	0+	0+	1-	1	4	4	2	3	4 CK
6	Q10A	1	1+	1	1	2-	2+	3+	3-	14+	8	0.4	1+	1+	1+	1+	2-	2-	3-	3-	13	16	9	8	18 KK
7		2	2+	2	2	2	3-	3+	2	18+	9	0.5	2	2+	2+	2	2	2	3-	2	17	24	13	17	20
8	Q9A	2	2+	2+	3-	1+	1	2-	2-	15	7	0.4	2+	2+	2+	3-	1+	1	1+	2-	15	16	12	18	10
9		2-	1+	1-	1	2-	2-	4+	3+	16-	10	0.6	1+	1	1	1+	2-	2-	4-	3+	17	21	13	9	25
10	D4	4-	4-	6	6-	4+	4+	4	5	37-	41	1.5	4-	3+	5+	5	4-	4-	4-	4	59	47	58	60	46
11		5+	5-	3	4	4+	3+	2	2+	29	25	1.2	5-	4	3	4	4-	3	2	2	40	38	43	54	27
12		3	2+	2	2-	2+	1-	1+	2+	16-	8	0.4	3	2+	2+	2+	2+	1+	1+	2+	17	17	14	18	13
13		3	3-	2+	2	3-	1+	2	2	18	9	0.5	3	2+	2+	2	3-	1+	1+	2	17	19	16	18	17
14	D2	3+	4	7-	6	7-	3+	4	5	39	55	1.6	3+	4-	6+	6-	5+	3-	3+	4	76	73	58	82	49
15	D1	7-	7-	6	4+	6+	4	5	7-	46-	77	1.8	5+	6	5+	4	6-	3	4	6-	95	93	72	83	84
16		6-	5	3	2+	3+	3-	3+	4-	29	26	1.2	5+	5	3+	2+	3-	2+	3-	3+	46	32	31	39	25
17	D5	3+	3-	3+	3-	5+	6-	5-	5	33-	34	1.3	3	2+	3+	3	4	5-	4	4	46	52	44	30	66
18		5	4	4-	5	3-	3-	4+	4+	32-	29	1.3	4+	4-	4-	4	3-	3-	3+	4-	43	50	32	51	32
19		4	5-	2+	1	1	2-	3	1	19-	14	0.8	3+	4	2	1+	1	2-	2+	1	20	22	10	20	12
20		2+	3-	5	5	5	4	2-	2-	27+	26	1.2	2	3	5-	5-	4+	3+	1+	2-	41	40	38	44	35
21		2	1+	1	1	3+	4	5+	5	23	21	1.1	2-	2-	1+	1+	3-	4-	4	4+	30	33	33	10	57
22		4+	3+	3+	3-	1+	1+	1+	1+	19	12	0.7	4	3	3	3-	1+	1+	1	1+	21	23	15	29	9
23		3	3+	3-	3	5	5-	5+	4-	31-	28	1.2	3-	3	3-	3+	4	4	5-	3+	42	52	41	31	63
24	Q5K	3	1	1	1-	2-	1+	1	2-	11+	6	0.3	3-	1+	1+	1+	1+	1	1+	2-	11	15	8	11	11 C
25	Q2	1-	1	1+	1-	1+	1	1+	2+	10-	5	0.2	1	1+	1+	1	2-	2-	1+	2+	10	11	8	7	12 CC
26	Q8	1-	2+	2	3-	2	2-	1-	1-	13-	6	0.3	1-	2	2+	3-	2-	1+	1-	1	12	15	9	16	8 K
27		2	4+	3	3-	4	3+	6-	4+	29+	26	1.2	2-	4	4-	3-	4-	3	5-	4+	45	48	38	28	58
28		3-	1	1-	2	2	2+	4	7-	21+	22	1.1	2+	1+	1-	2	2	2+	4-	6-	32	40	30	11	59
29	D3	7	7+	6-	4	4-	4	4-	2+	38-	58	1.7	6	6+	6-	3+	3	3+	3+	2	79	68	63	91	39
30		2	4+	2	3	3+	4	3	3-	24+	17	0.9	2	4-	2	3	3	3	3	3-	28	34	24	25	33
31	Q7	2	1+	1	0+	1	3-	2-	2+	12+	6	0.3	2	1+	1	1-	1+	2+	2-	2+	12	16	8	7	16 C
Mean											20	0.80									30.2	31.4	25.4		28.4

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	2-	1+	1+	0+	2	2+	2	2+	12	2-	1	1+	1-	1	1	1+	2	9	198.5	158	161	152	
2	3	2	3-	2-	1+	1	1	2-	14	3-	2	2+	1	1	0+	0+	1	11	201.7	187	184	156	
3	2	2	2	2-	2	1+	1+	1-	12	2	2-	2-	1	1	1-	1+	0+	9	220.2	193	205	176	
4	1-	1+	2	3	3-	3-	2	2+	17	1-	1	1+	2+	2	2+	2	2	12	225.7	210	219	182	
5	1+	1-	0	1-	1-	1-	1-	1+	5	1	0+	0+	0	0+	0+	0+	0+	3	241.7	227	243	199	
6	2-	2-	1+	1+	2+	2	3	3-	16	1	1+	1+	1-	1-	1	2+	2+	10	240.3	220	244	198	
7	2+	3-	2+	2+	2+	2+	3-	2+	20	2-	2	2	2-	2	2-	2	2-	14	240.6	206	226	198	
8	3-	2+	2+	3	2-	1+	2	2	17	2	2+	3-	3-	1	0+	1	1+	13	233.6	210	222	190	
9	1+	1	1+	2-	2+	2	4	3+	21	2-	1-	1-	1+	1+	1+	3+	3	14	233.9*	218	241	191	
10	4-	3+	6-	6-	4	4-	4-	4-	65	4-	3+	5	5-	3+	3+	4	4	54	232.6	200	205	189	
11	4+	4	3	4	4-	3+	2+	3-	41	5	4	3-	4	3+	2+	1+	1+	39	243.6	202	218	201	
12	3-	3-	2+	2+	2+	1+	2-	2	18	3	2	3-	2+	2	1	1	2+	16	256.1*	188	204	215	
13	3-	2+	3-	2	3-	2-	2-	2+	18	3	3-	2+	2	2+	1+	1	2-	16	263.9	198	204	223	
14	3+	4-	7-	6	6-	3	4-	4-	90	3	3	6	5	5-	2+	3	4	62	271.3	189	175	231	
15	5+	6	5+	4	6	4-	4+	5	101	5	6-	5+	4-	6-	3-	4-	6-	90	281.7	196	187	242	
16	5+	5	3+	3-	3+	2+	3-	3	47	6-	5-	3+	2	2	2+	3-	3+	44	259.8	169	172	219	
17	3-	3-	3+	3+	4+	5	4	4+	51	3	2+	3+	3	4	4	4-	4-	41	262.9	192	189	222	
18	4+	4-	4-	5-	3	3	4-	4	48	4+	4-	4-	4-	2+	2	3+	4-	39	265.0	189	197	224	
19	3+	4	2+	2-	1	2-	3-	1+	21	4-	4	2	1	1	1+	2	0+	19	249.1	202	210	207	
20	2+	3	5	5-	5-	4-	2-	2	45	2	3	5-	5-	4	3	1	1+	36	236.4	209	216	193	
21	2	2-	1+	2-	3	4-	4-	4	28	2-	2-	1+	1	2+	4	4	5-	31	225.7	203	189	182	
22	4-	3	3	3	2-	1+	1+	1+	22	4+	3	3	3-	1	1	1-	1	21	205.4	160	156	160	
23	3	3	3-	3	4+	4-	5-	3	43	3-	3-	3-	3+	4-	4+	5-	3+	41	191.3	133	138	145	
24	3-	2-	1+	1+	2-	1+	1+	2	13	3-	1+	1+	1-	1	1	1	1+	10	182.0	129	147	135	
25	1	1+	1+	1	2	2	2	3-	12	1	1	1	1	1+	1	1-	2-	7	159.7	100	102	110	
26	1	2	2+	3-	2+	2	1	1+	14	1-	2	2+	3	1+	1-	0+	0+	11	161.0	95	82	112	
27	2-	4	3+	3	4+	3+	5	5-	50	2-	4	4	2	3	2	5-	4-	39	159.6	57	78	110	
28	2+	1	1	2+	2+	2+	3+	6-	32	2	1+	1-	1+	2-	3-	4	6-	31	174.1	50	68	126	
29	6	6+	5+	4-	3	4-	4-	2	79	6	6+	6-	3	3	3+	3+	2-	78	180.3*	70	74	133	
30	2+	4	2	3	3	3	3	3-	28	2	4-	2	3	3	3	3	3	27	192.0*	94	97	145	
31	1+	1+	1	0+	1+	3-	2-	3-	12	2+	2-	1	1-	1+	2	2-	2	11	208.9*	116	125	164	
Mean									32.6									27.7	222.5	166.8	173.5	178.3	

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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

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