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SOLAR-GEOPHYSICAL DATA

Number 660

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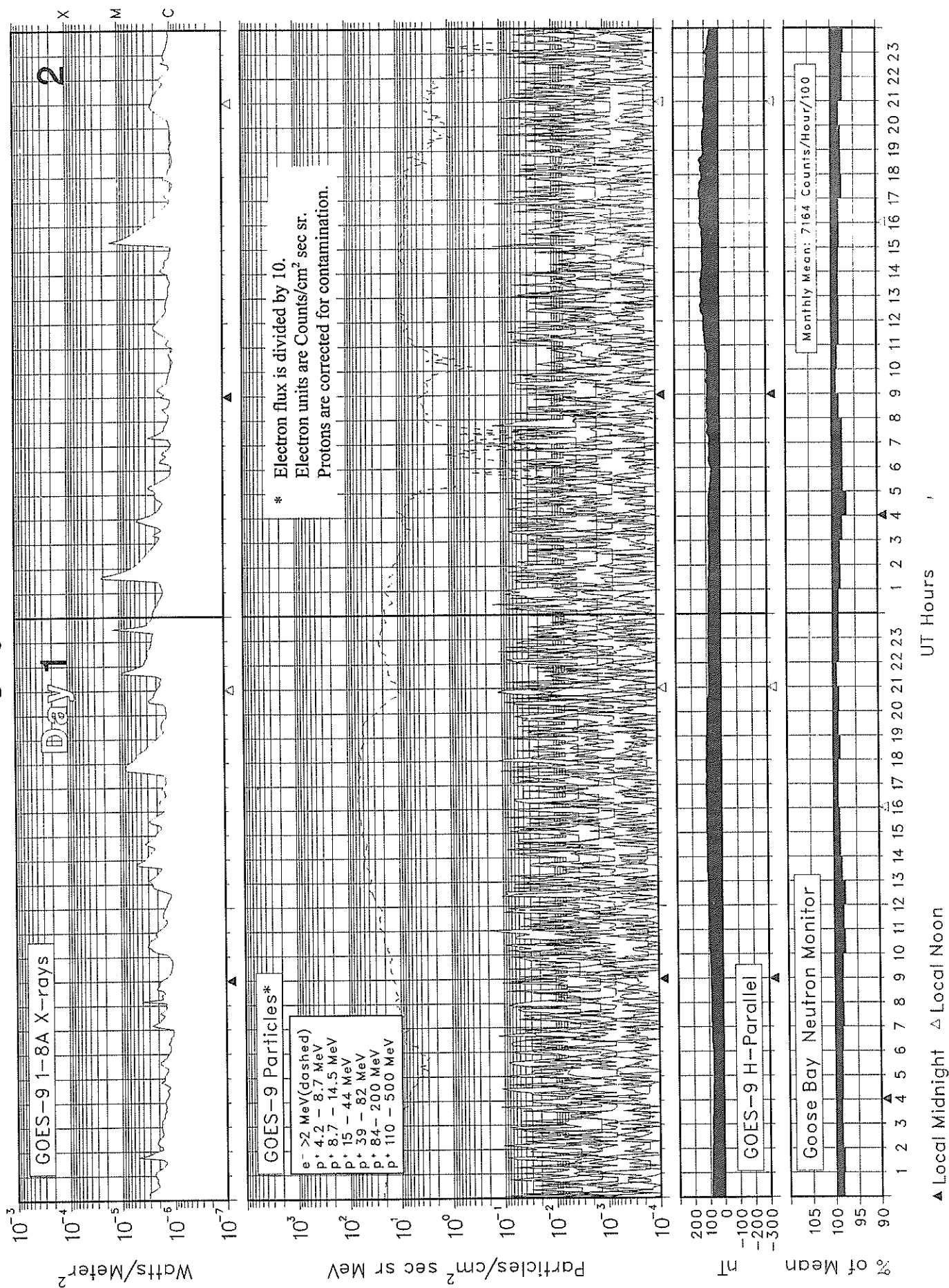
CODE	KIND OF OBSERVATION	DEC 98	JAN 99	FEB	MAR	APR	MAY	JUN	JUL
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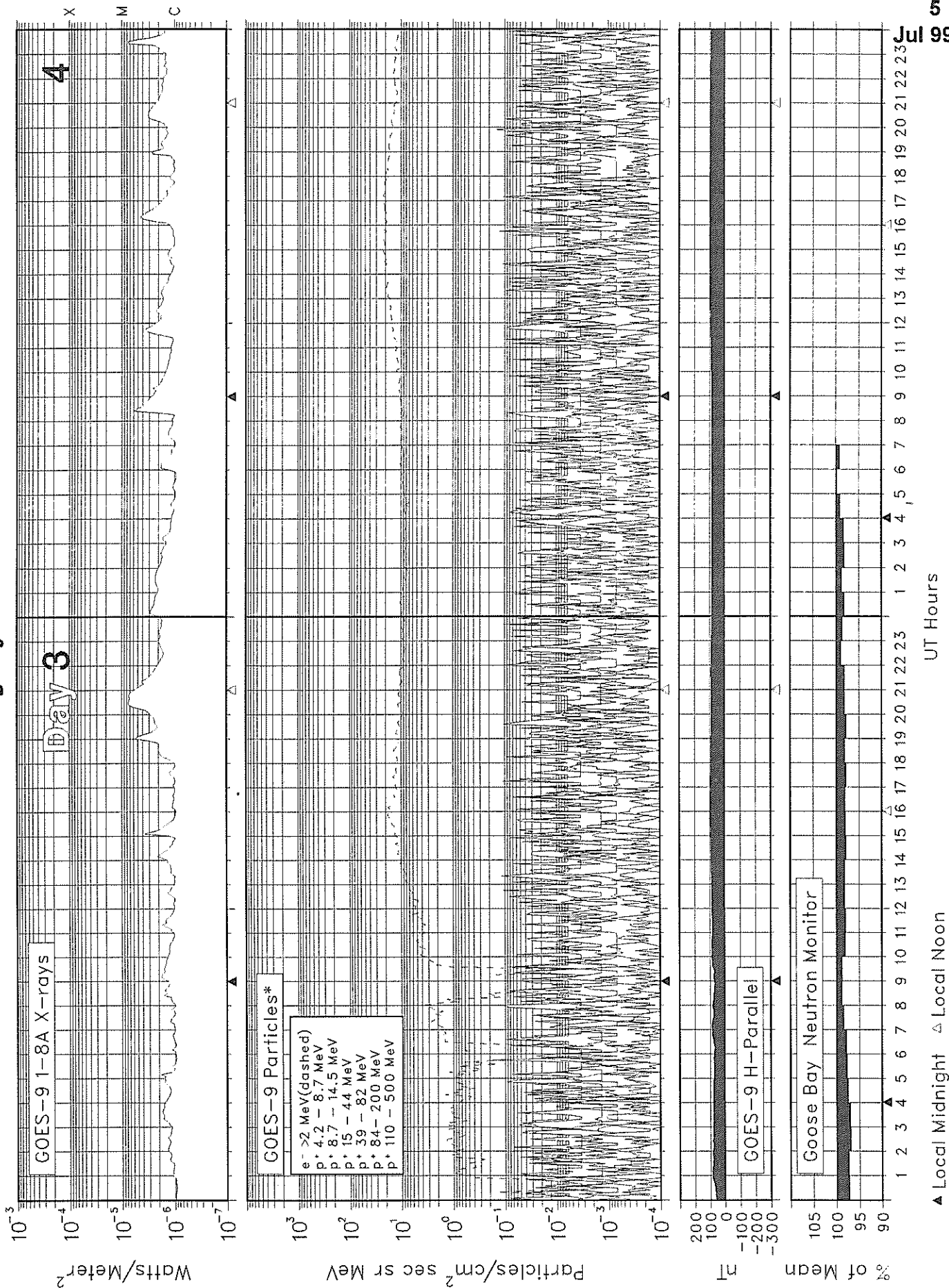
SOLAR-TERRESTRIAL ENVIRONMENT

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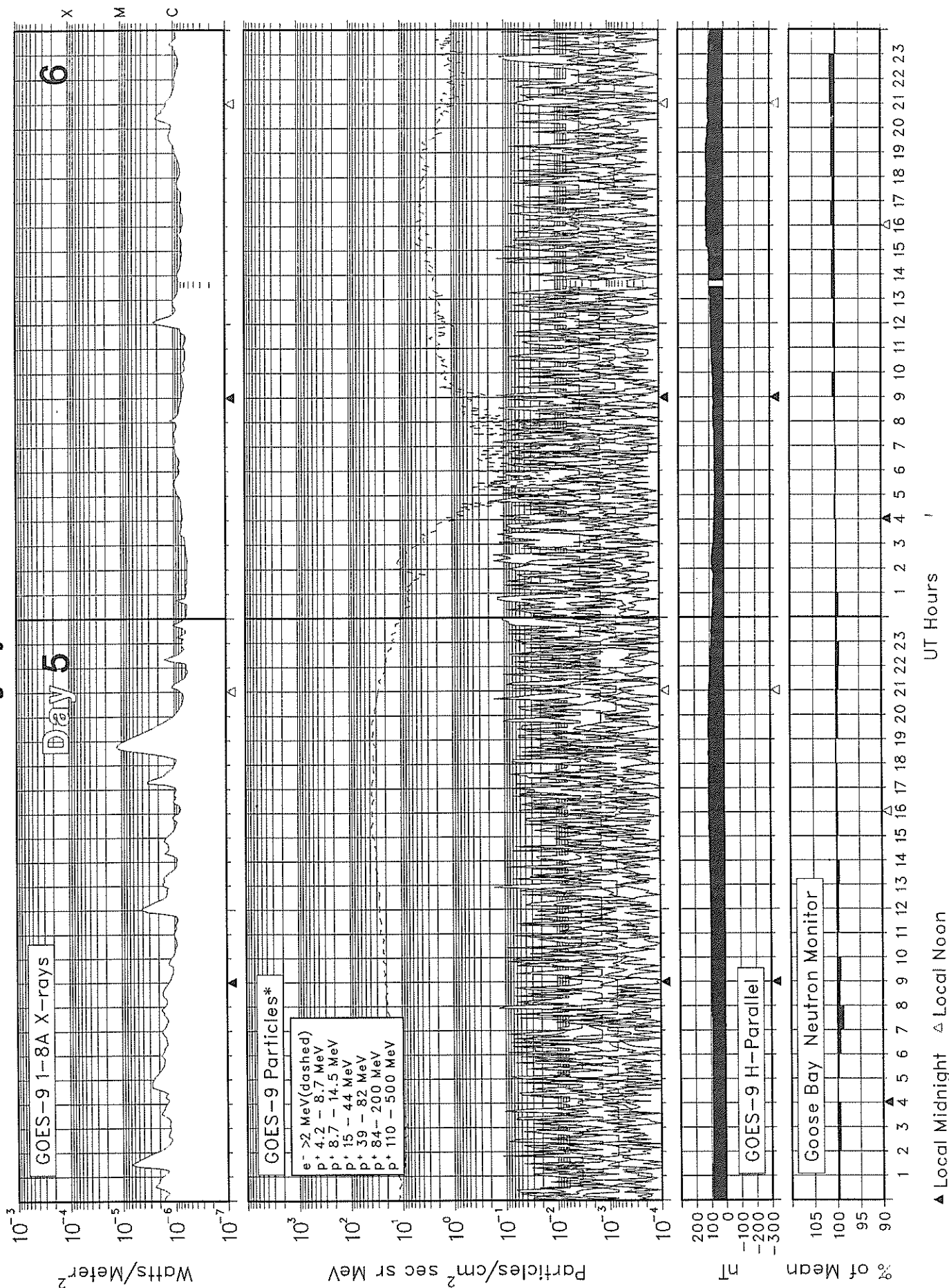
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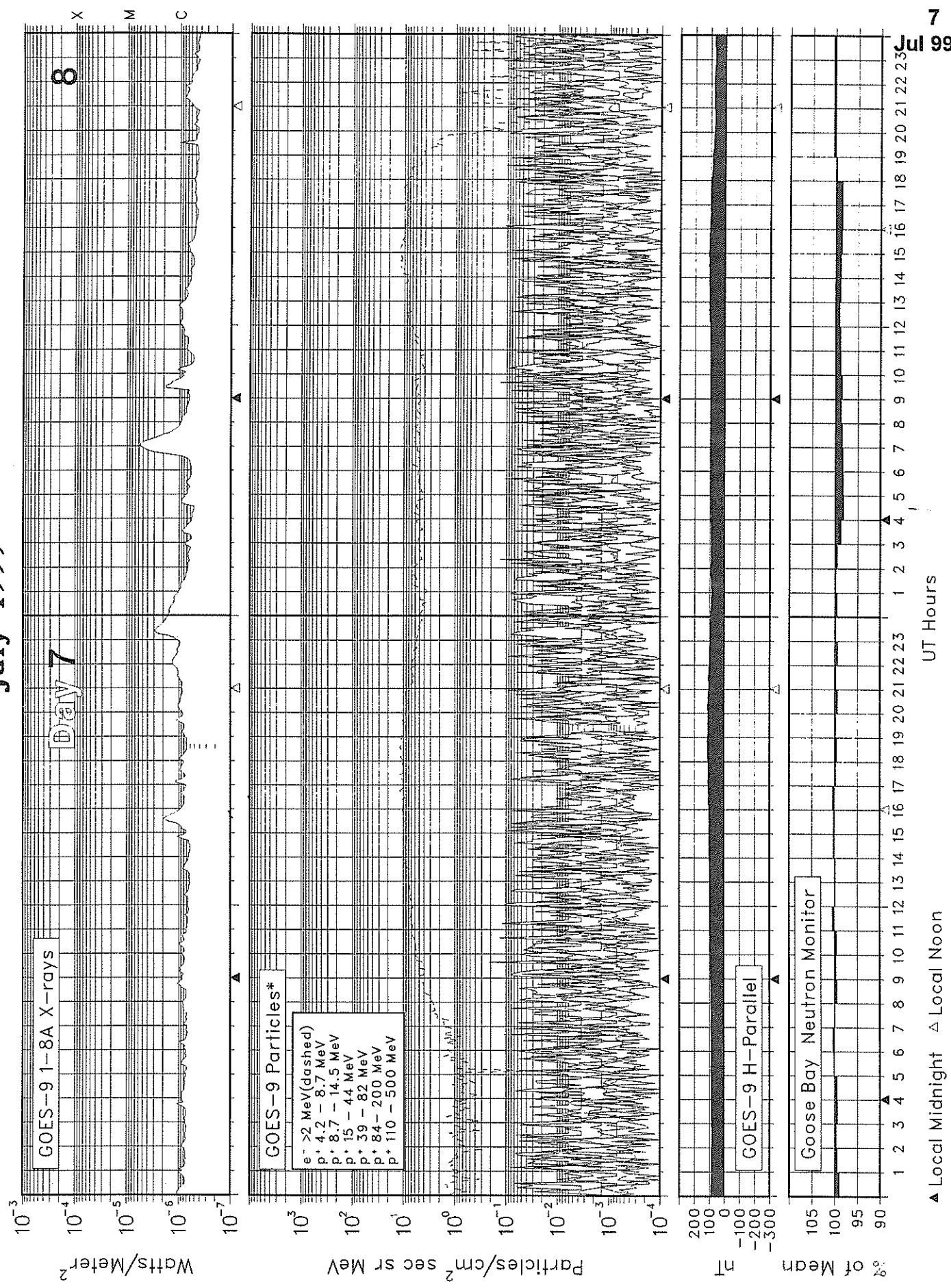
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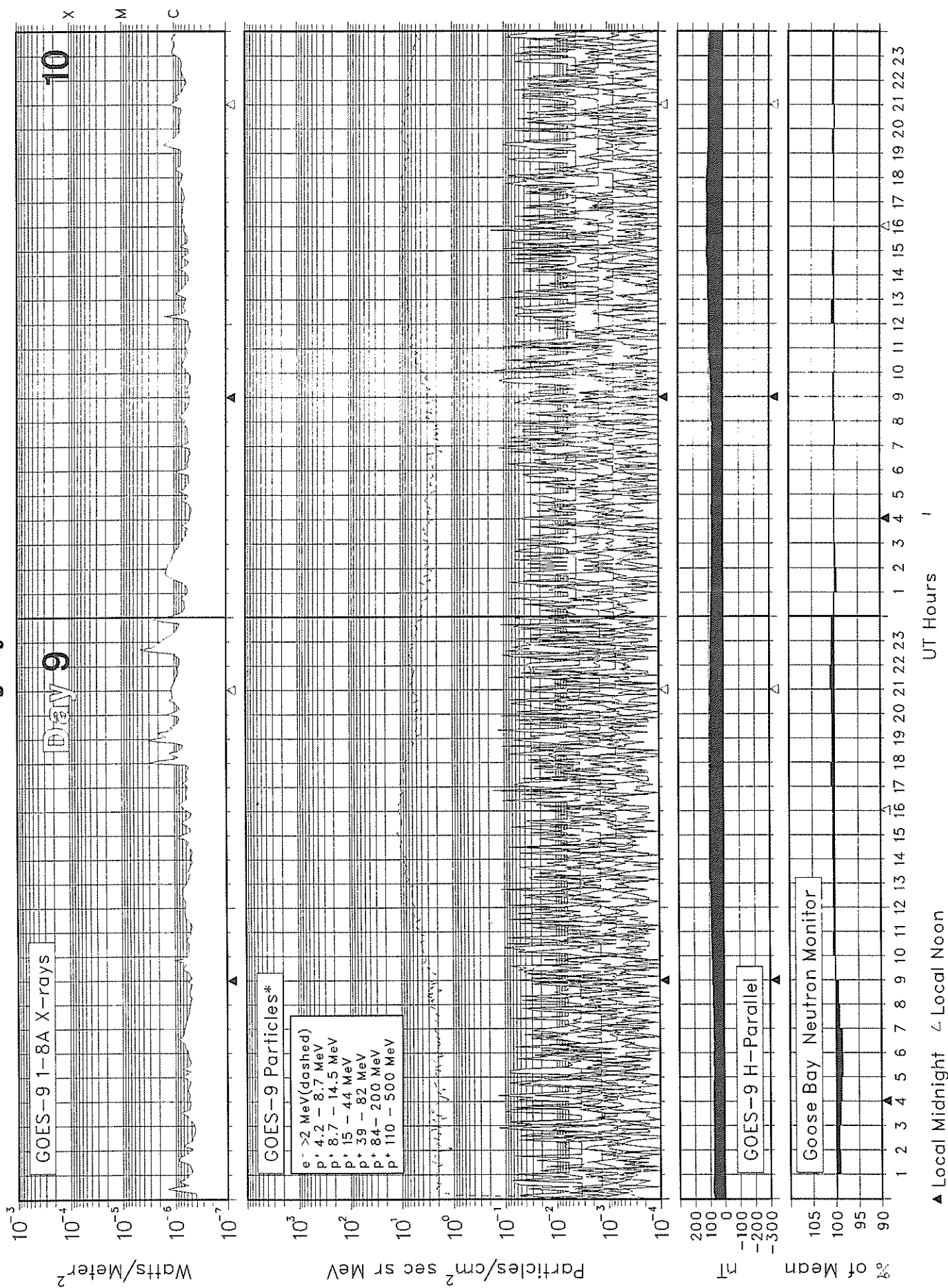
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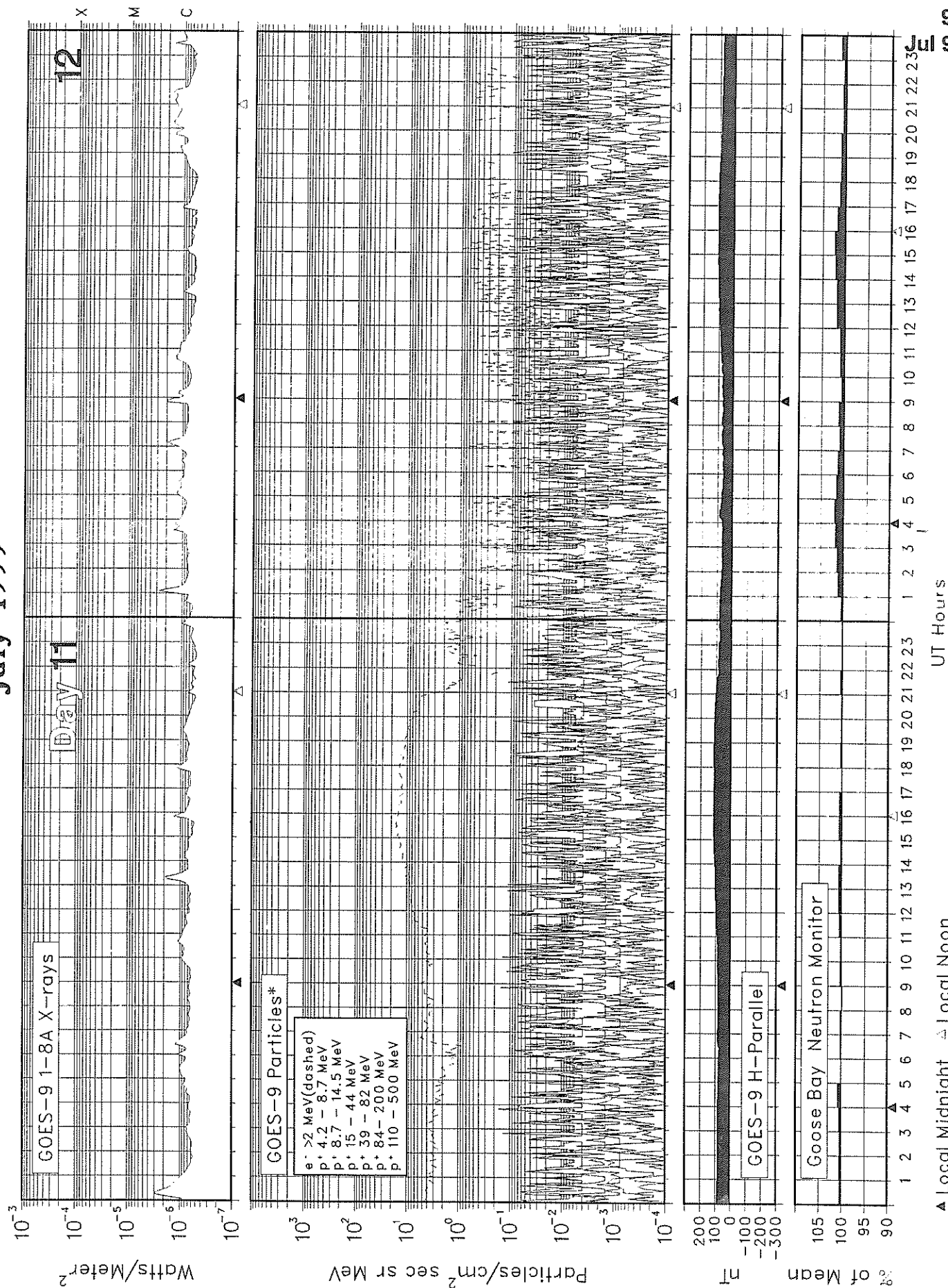
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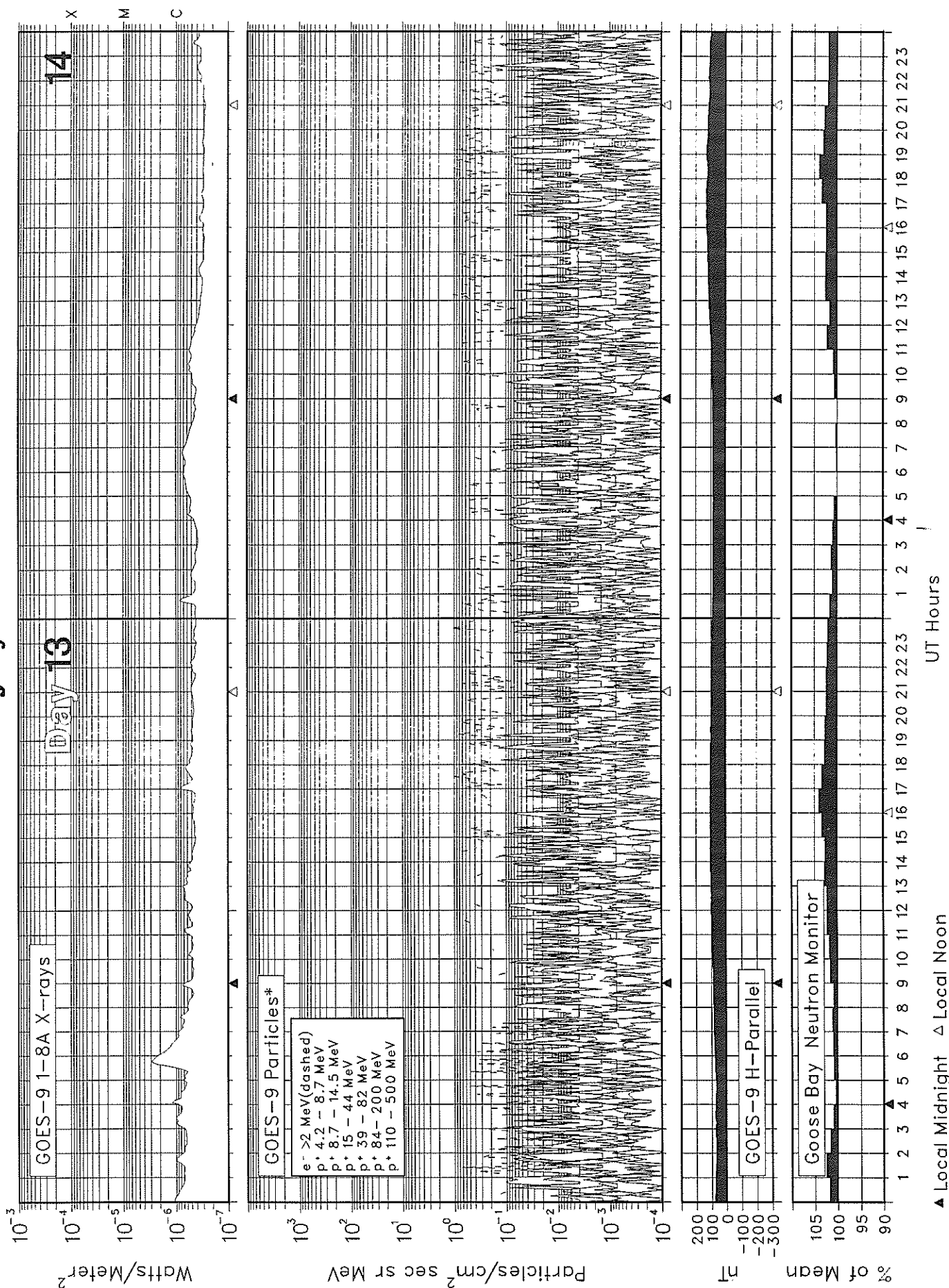
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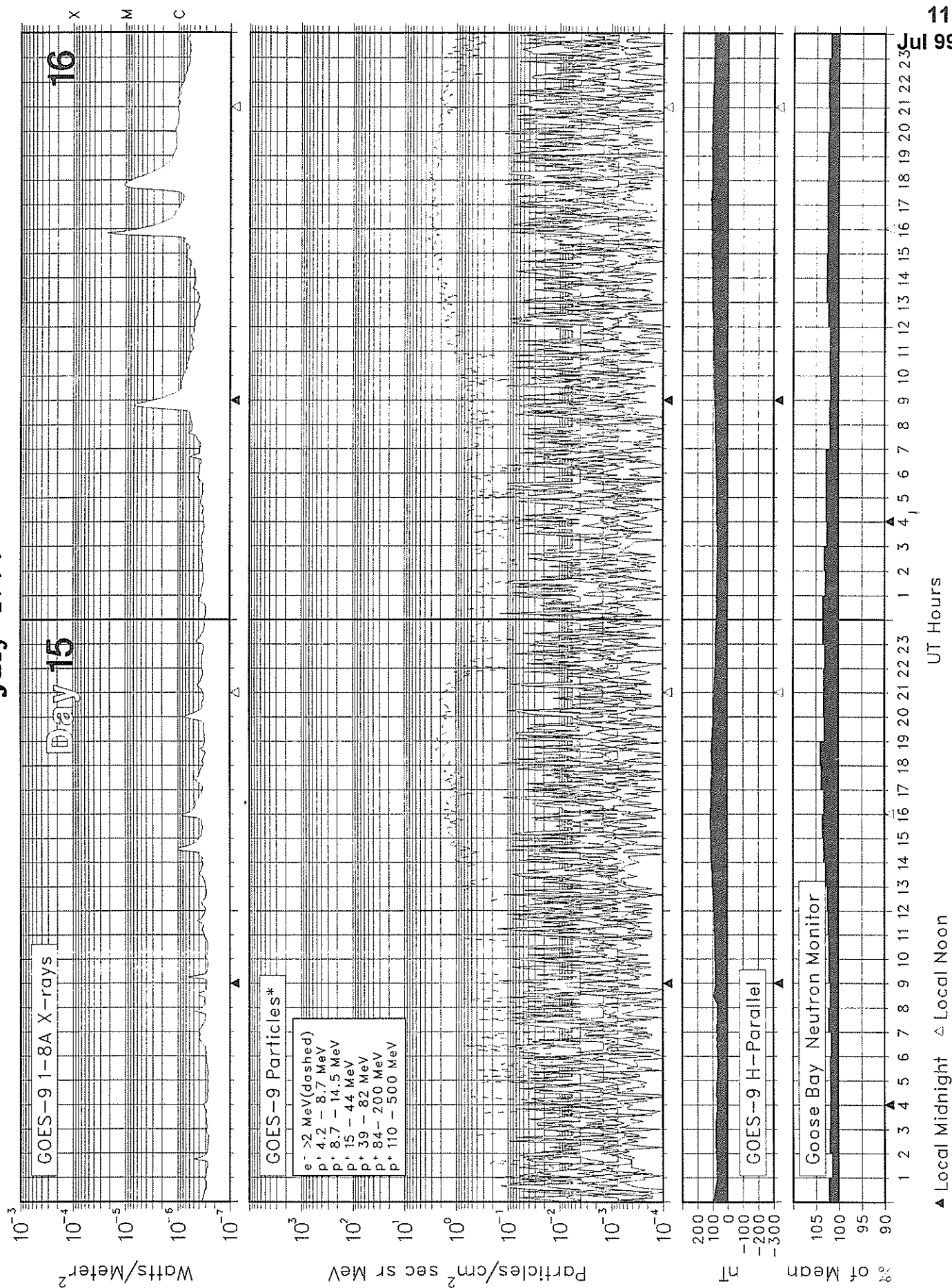
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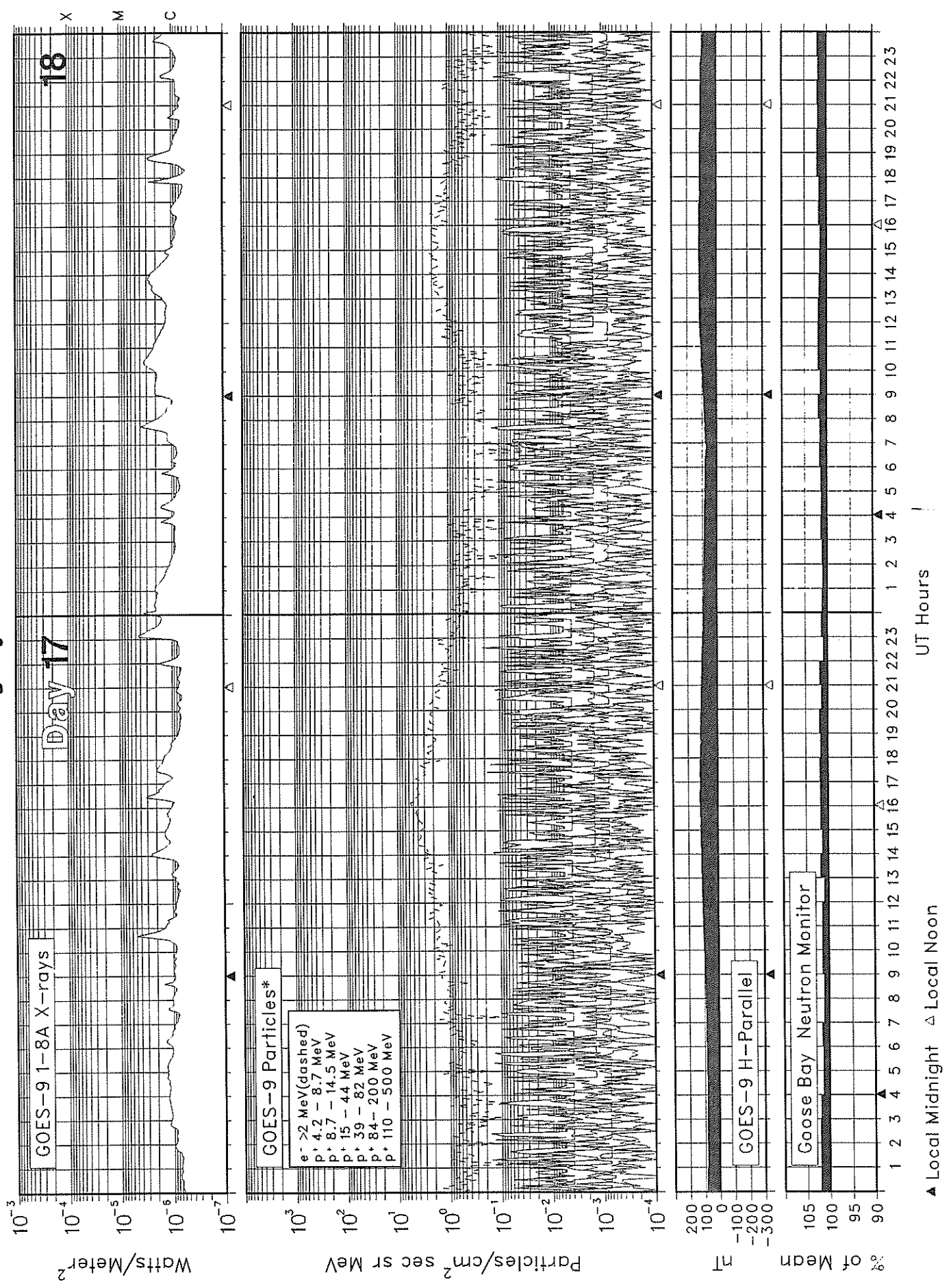
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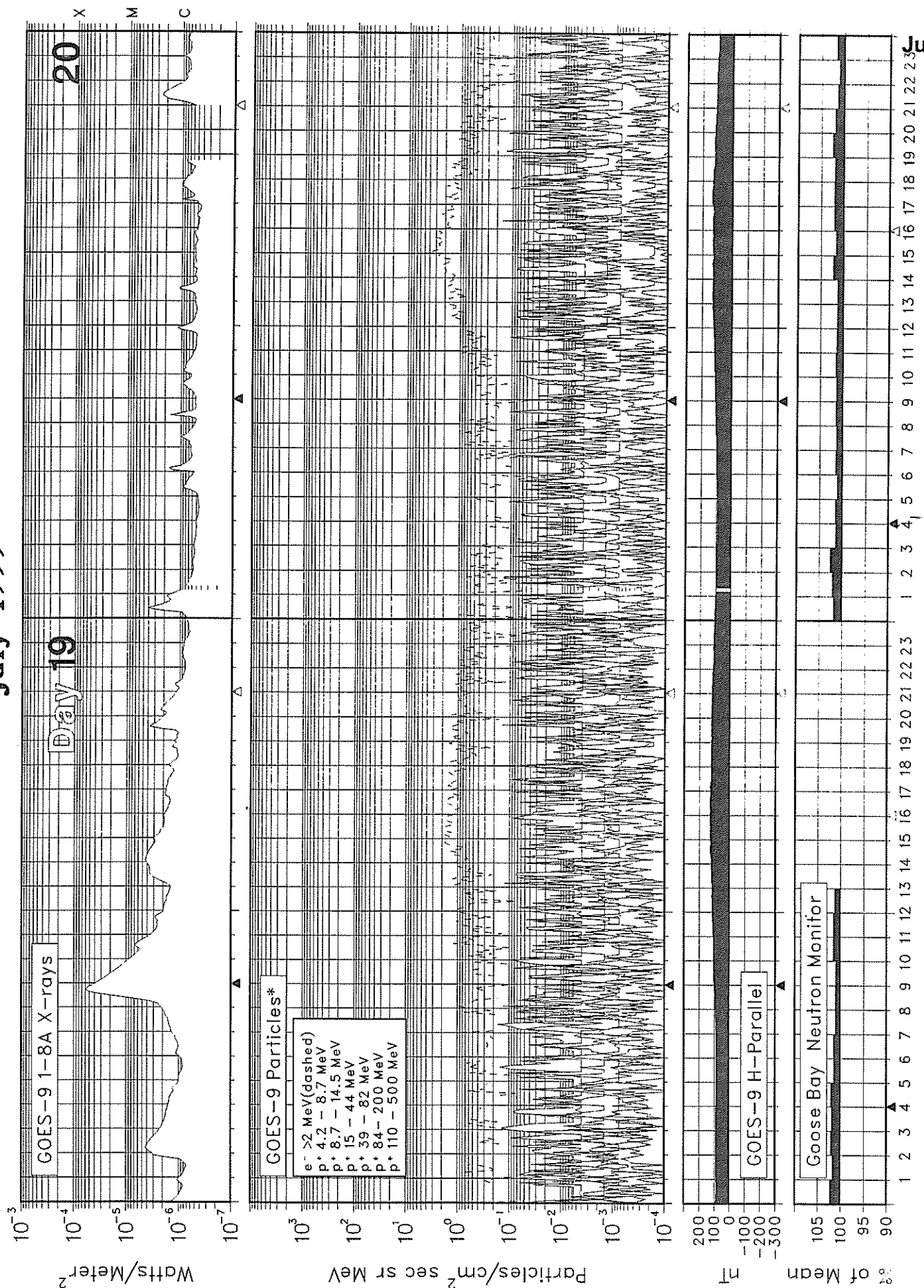
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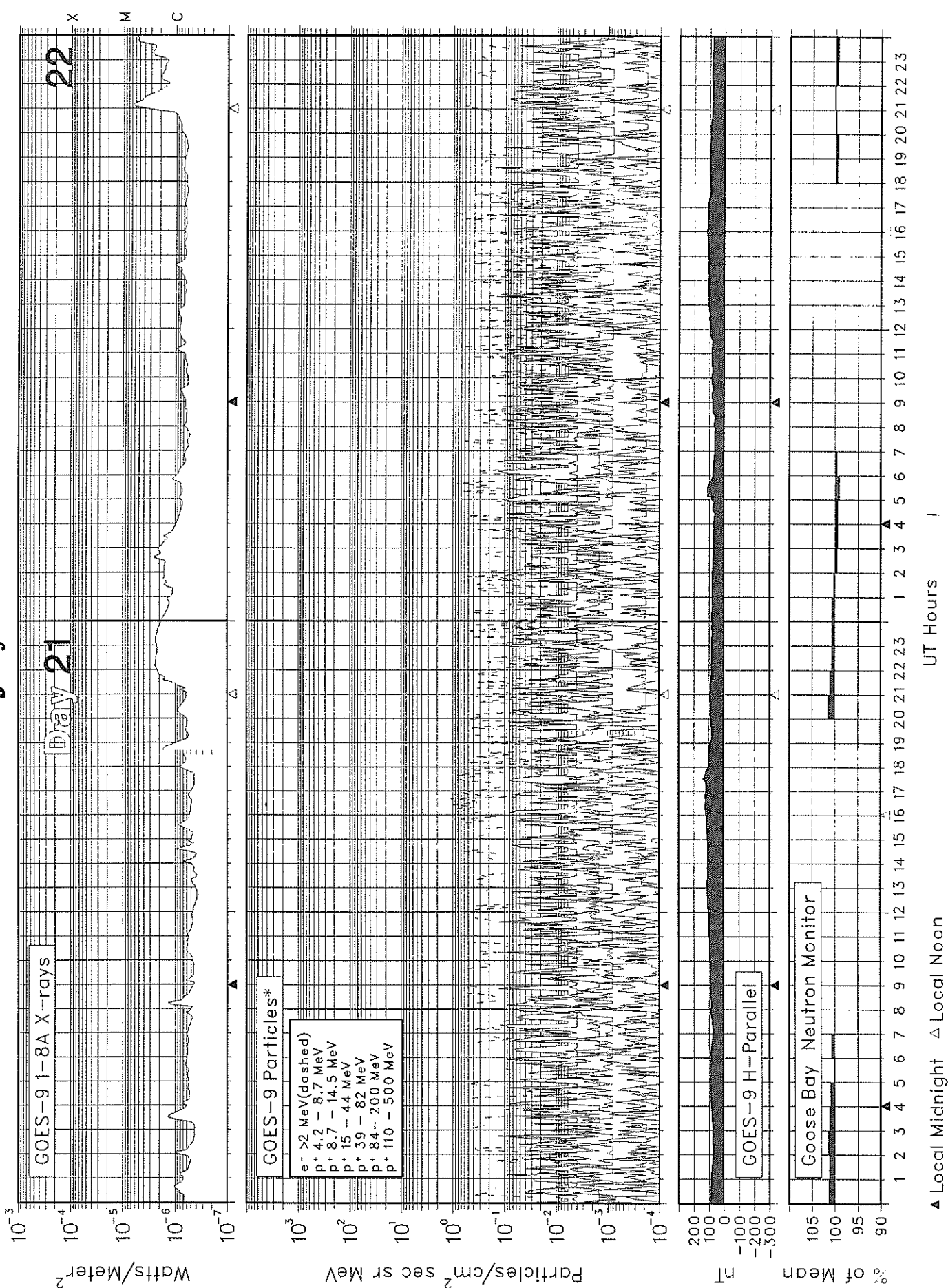
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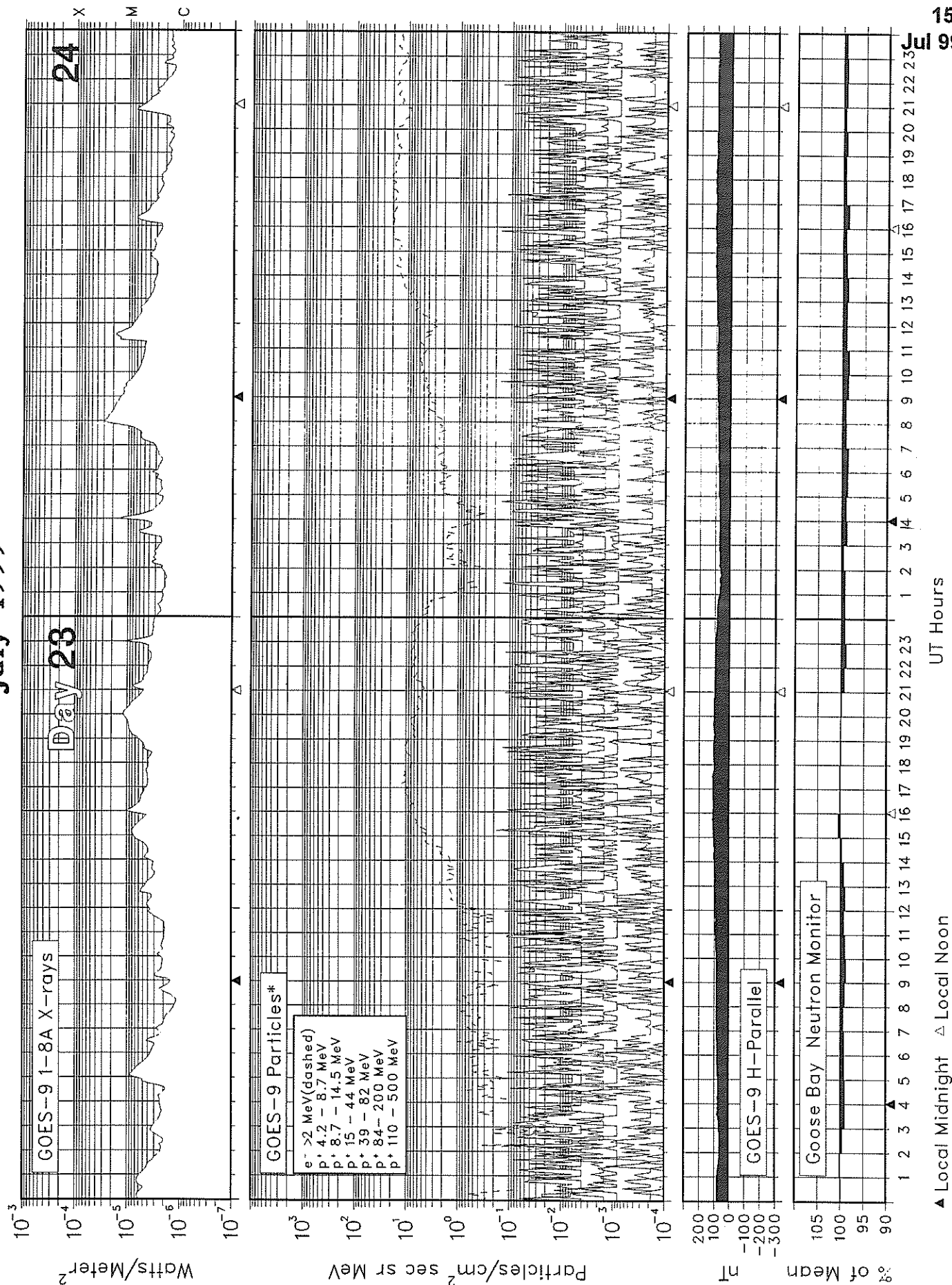
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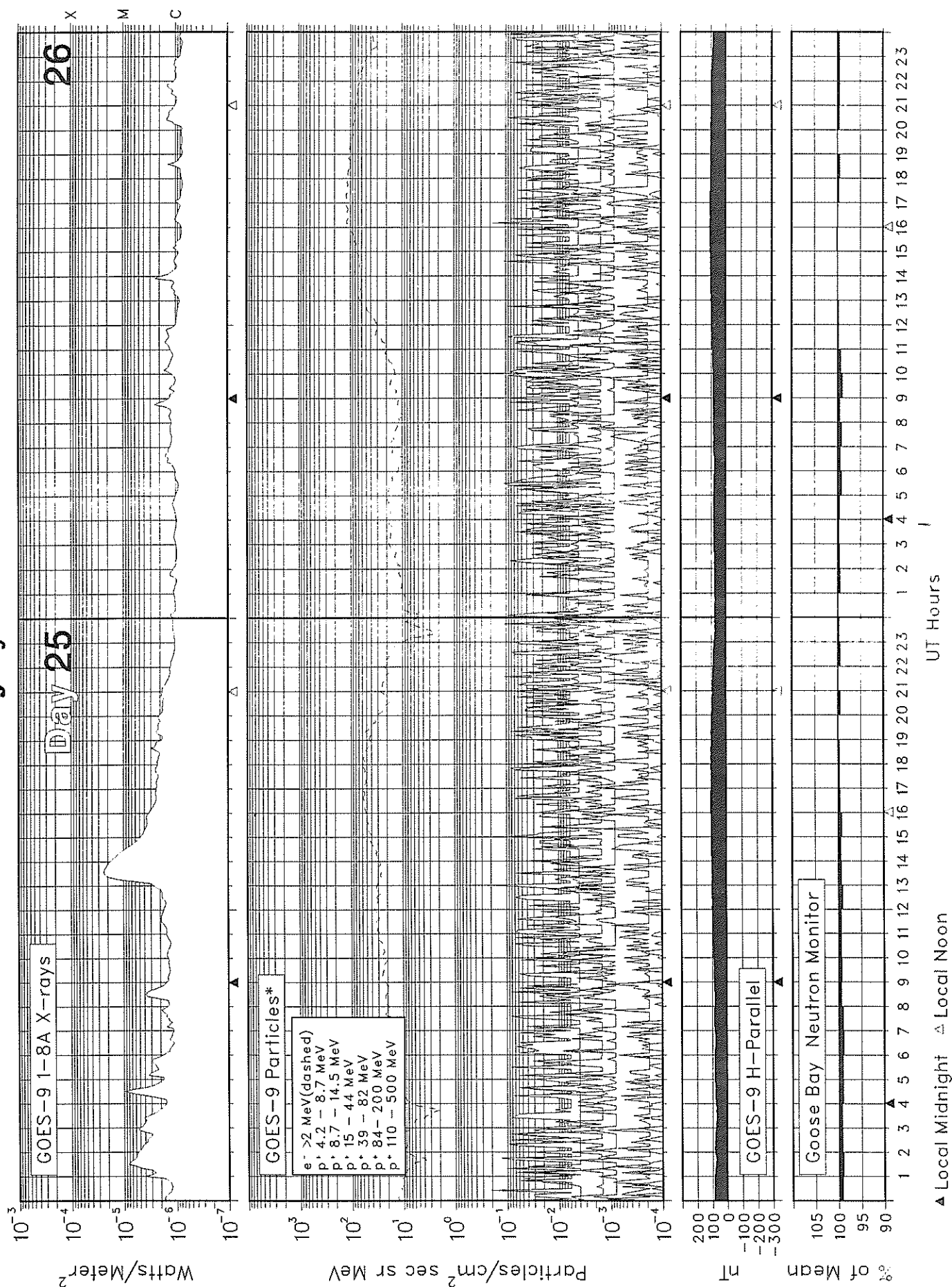
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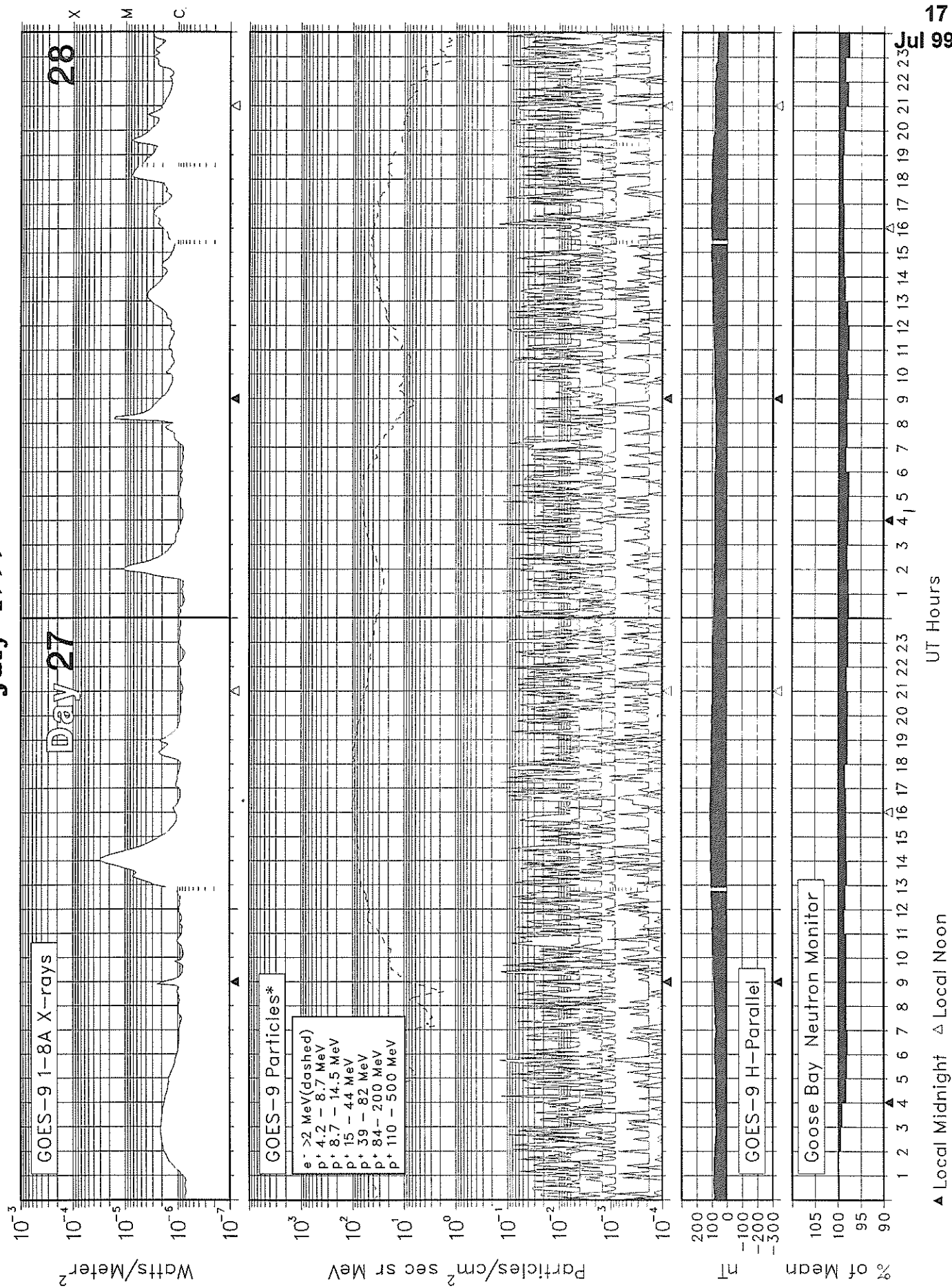
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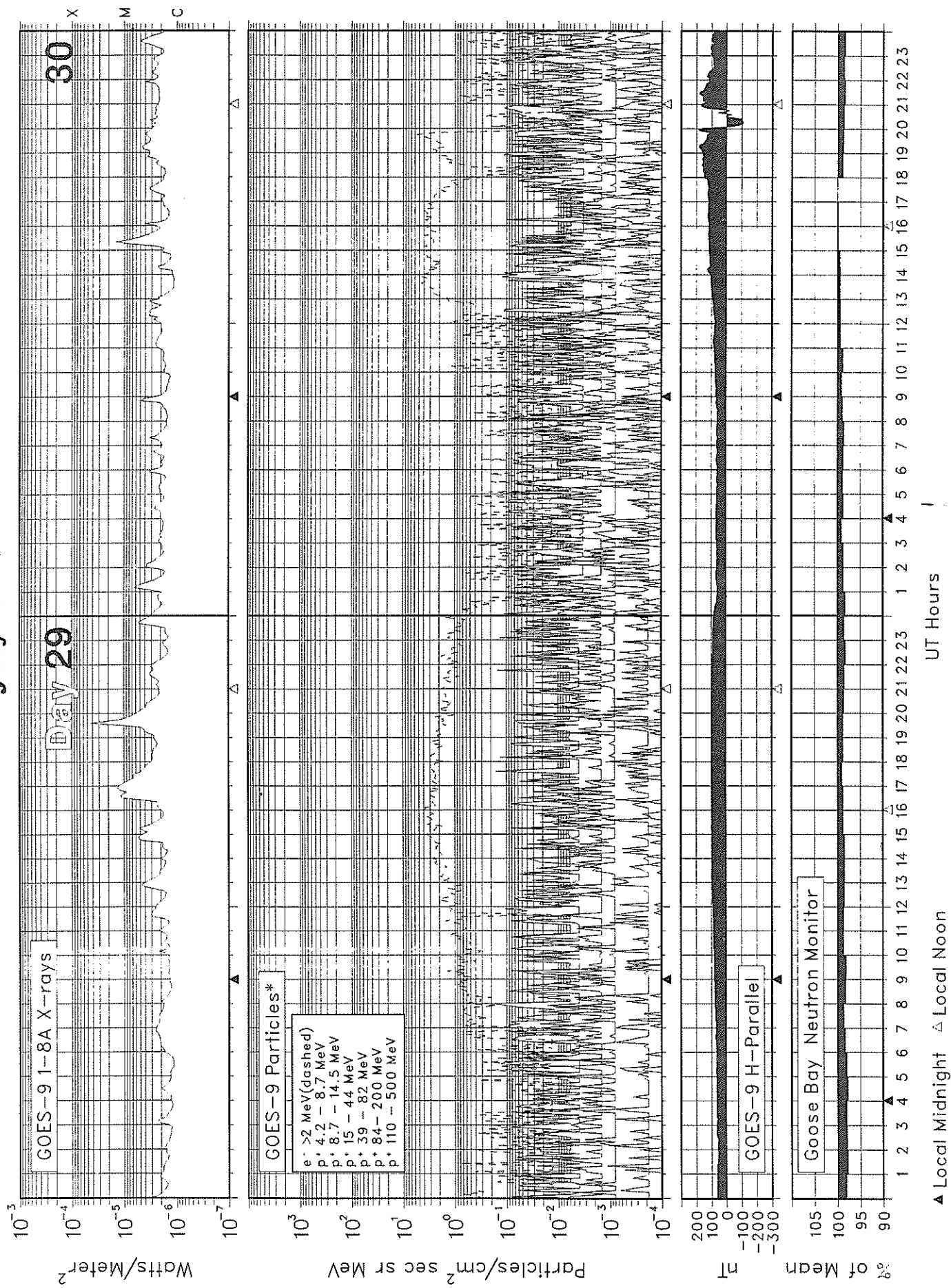
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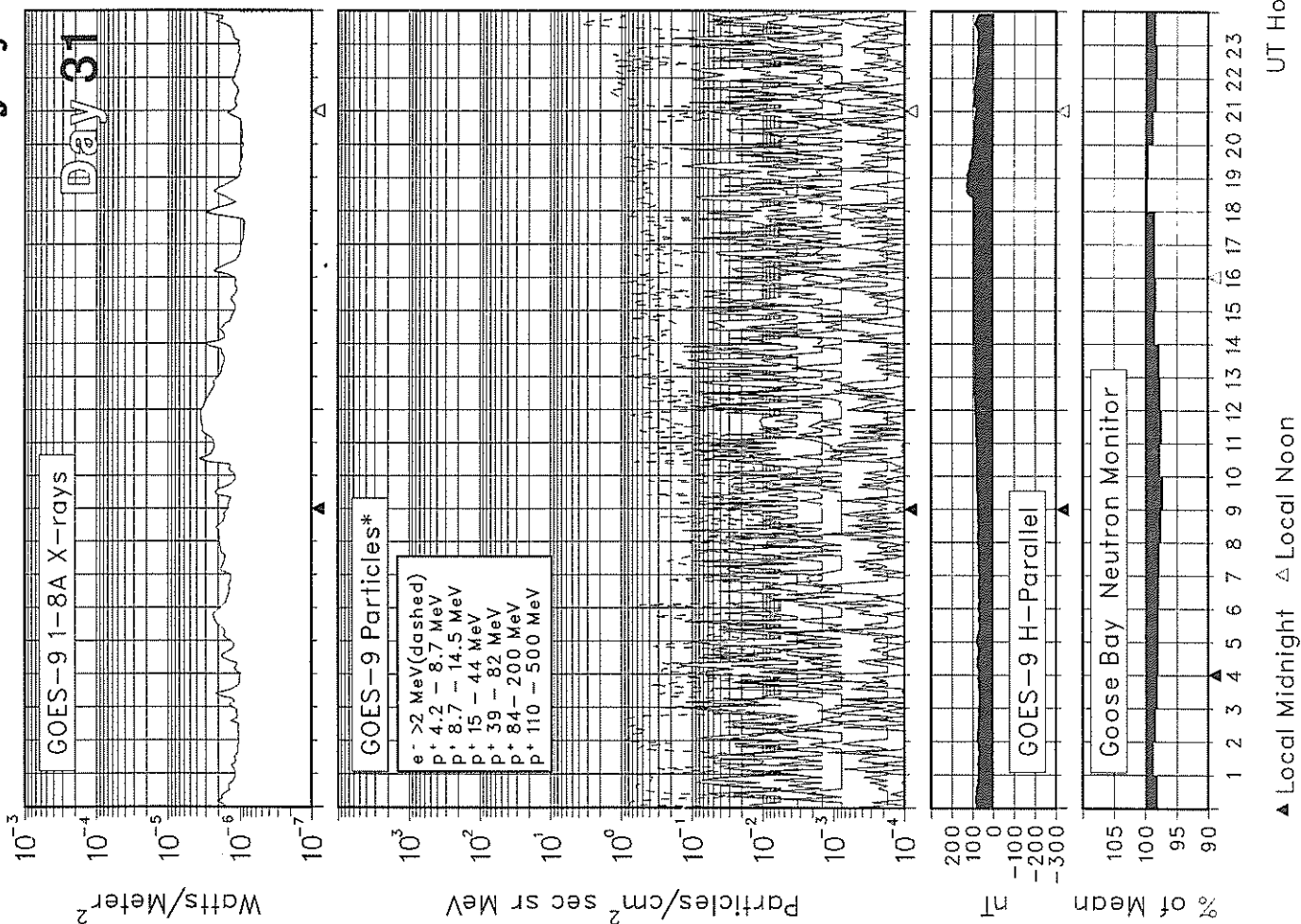
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SOLAR-TERRESTRIAL ENVIRONMENT

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* Electron flux is divided by 10.
 Electron units are Counts/cm² sec sr.
 Protons are corrected for contamination.

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Jul 99

A L E R T P E R I O D S The International Space Environment Service

JULY 1999

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
182	01	30	237	210	5	8592	N23	W74	0	0	0	01	Q	SOL: Active
						8594	N14	W51	0	0	0	01	Q	MAG: Quiet
						8598	N23	W50	2	1	0	01	Q	PRO: Quiet
						8599	S15	W43	1	1	0	01	Q	
						8602	N18	W21	3	0	0	01	E	
						8603	S14	W11	15	2	0	01	E	
						8606	N17	W46	1	1	0	01	Q	
						8610	N12	W25	0	0	0	01	Q	
						8611	S25	E21	15	1	0	01	E	
						8612	S15	W19	1	0	0	01	Q	
						8613	N18	E66	0	0	0	01	Q	
183	02	01	236	195	8	8592	N23	W86	1	0	0	02	Q	SOL: Active
						8594	N14	W64	0	0	0	02	Q	MAG: Quiet
						8598	N22	W67	2	1	0	02	Q	PRO: Quiet
						8599	S14	W55	0	0	0	02	Q	
						8602	N18	W34	3	0	0	02	E	
						8603	S14	W25	12	1	0	02	E	
						8606	N16	W60	0	0	0	02	Q	
						8610	N11	W39	2	0	0	02	Q	
						8611	S25	E07	15	0	0	02	E	
						8613	N18	E55	1	0	0	02	Q	
						8614	N19	E72	0	0	0	02	Q	
						8615	S29	E77	0	0	0	02	Q	
184	03	02	232	187	28	8594	N16	W76	0	0	0	03	Q	SOL: Active
						8598	N22	W79	0	0	0	03	E	MAG: Quiet
						8602	N18	W48	5	0	0	03	E	PRO: Quiet
						8603	S15	W38	3	0	0	03	E	
						8606	N17	W72	0	0	0	03	Q	
						8610	N12	W54	0	0	0	03	Q	
						8611	S25	W07	6	2	0	03	E	
						8613	N19	E43	3	0	0	03	Q	
						8614	N20	E63	1	0	0	03	Q	
						8615	S29	E63	0	0	0	03	Q	
						8616	N29	W73	0	0	0	03	Q	
						8617	N14	W28	0	0	0	03	Q	
185	04	03	213	197	10	8598	N22	W92	3	0	0	04	E	SOL: Active
						8602	N19	W62	5	0	0	04	E	MAG: Quiet
						8603	S15	W54	6	0	0	04	E	PRO: Quiet
						8611	S25	W20	5	0	0	04	E	
						8613	N19	E30	0	0	0	04	Q	
						8614	N19	E47	0	0	0	04	Q	
						8615	S29	E50	1	0	0	04	Q	
						8616	N31	W86	0	0	0	04	Q	
						8617	N14	W42	0	0	0	04	Q	
						8618	S17	E57	0	0	0	04	Q	
						8619	S17	E71	0	0	0	04	Q	
						8620	N22	E56	0	0	0	04	Q	
186	05	04	211	186	1	8602	N19	W75	1	0	0	05	Q	SOL: Active
						8603	S16	W68	6	0	0	05	E	MAG: Quiet
						8611	S25	W35	13	0	0	05	E	PRO: Quiet
						8613	N19	E16	0	0	0	05	Q	
						8614	N18	E29	2	0	0	05	Q	
						8615	S29	E37	0	0	0	05	Q	
						8617	N14	W57	1	0	0	05	Q	
						8618	S18	E44	2	0	0	05	Q	
						8619	S18	E57	0	0	0	05	Q	
						8620	N21	E42	0	0	0	05	Q	
187	06	05	188	174	1	8602	N17	W88	3	0	0	06	Q	SOL: Active
						8603	S16	W80	0	0	0	06	Q	MAG: Quiet
						8611	S26	W45	12	1	0	06	E	PRO: Quiet
						8613	N18	E04	0	0	0	06	Q	

A L E R T P E R I O D S

The International Space Environment Service

JULY 1999

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
						8614	N18	E14	9	1	0	06	E	
						8615	S29	E25	0	0	0	06	Q	
						8617	N12	W69	2	0	0	06	Q	
						8619	S18	E44	0	0	0	06	Q	
						8620	N20	E29	0	0	0	06	Q	
						8621	N20	E54	1	0	0	06	Q	
188	07	06	190	168	9	8611	S26	W59	2	0	0	07	E	SOL: Active
						8613	N19	W08	0	0	0	07	Q	MAG: Quiet
						8614	N18	E01	0	0	0	07	Q	PRO: Quiet
						8615	S29	E11	0	0	0	07	Q	
						8617	N13	W82	0	0	0	07	Q	
						8619	S17	E30	0	0	0	07	Q	
						8620	N20	E16	1	0	0	07	Q	
						8621	N20	E44	0	0	0	07	Q	
						8622	S31	W20	0	0	0	07	Q	
						8623	N26	W11	0	0	0	07	Q	
						8624	N24	E26	0	0	0	07	Q	
						8625	S20	E76	0	0	0	07	Q	
189	08	07	158	158	4	8611	S26	W73	10	0	0	08	E	SOL: Eruptive
						8614	N17	W12	0	0	0	08	Q	MAG: Quiet
						8615	S29	W02	3	0	0	08	Q	PRO: Quiet
						8617	N14	W94	0	0	0	08	Q	
						8619	S17	E17	0	0	0	08	Q	
						8620	N20	E02	0	0	0	08	Q	
						8621	N20	E27	1	0	0	08	Q	
						8622	S31	W33	0	0	0	08	Q	
						8625	S20	E63	0	0	0	08	Q	
						8626	S21	W16	1	0	0	08	E	
190	09	08	143	149	8	8611	S26	W84	0	0	0	09	E	SOL: Eruptive
						8614	N18	W26	0	0	0	09	Q	MAG: Quiet
						8615	S29	W16	0	0	0	09	Q	PRO: Quiet
						8619	S18	E03	0	0	0	09	Q	
						8620	N21	W10	0	0	0	09	Q	
						8621	N20	E16	1	0	0	09	Q	
						8624	N26	E00	0	0	0	09	Q	
						8625	S20	E49	0	0	0	09	Q	
						8626	S21	W30	3	0	0	09	E	
						8627	S12	E70	2	0	0	09	Q	
191	10	09	170	151	4	8611	S25	W96	0	0	0	10	Q	SOL: Eruptive
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						8615	S29	W28	4	0	0	10	Q	PRO: Quiet
						8620	N21	W22	0	0	0	10	Q	
						8624	N24	W14	0	0	0	10	Q	
						8625	S20	E36	0	0	0	10	Q	
						8626	S21	W43	3	0	0	10	Q	
						8627	S13	E61	4	0	0	10	Q	
						8628	N18	E52	1	0	0	10	Q	
						8629	N23	W70	16	0	0	10	E	
						8630	S10	W55	0	0	0	10	Q	
192	11	10	174	156	4	8614	N18	W52	0	0	0	11	Q	SOL: Eruptive
						8615	S31	W40	2	0	0	11	E	MAG: Quiet
						8620	N22	W34	0	0	0	11	Q	PRO: Quiet
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						8625	S19	E23	0	0	0	11	Q	
						8626	S20	W57	0	0	0	11	Q	
						8627	S12	E47	1	0	0	11	Q	
						8628	N19	E36	1	0	0	11	Q	
						8629	N23	W84	0	0	0	11	E	
						8630	S10	W68	0	0	0	11	Q	
193	12	11	202	153	5	8614	N18	W66	0	0	0	12	Q	SOL: Eruptive

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Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A- index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
						8615	S29	W55	2	0	0	12	E	MAG: Quiet
						8620	N22	W48	0	0	0	12	Q	PRO: Quiet
						8621	N21	W20	0	0	0	12	Q	
						8624	N24	W41	0	0	0	12	Q	
						8625	S20	E10	0	0	0	12	Q	
						8626	S20	W71	7	0	0	12	E	
						8627	S14	E33	0	0	0	12	E	
						8628	N18	E20	4	0	0	12	E	
						8630	S09	W82	0	0	0	12	Q	
						8631	N11	E77	0	0	0	12	Q	
						8632	S19	W58	0	0	0	12	Q	
194	13	12	199	154	13	8614	N17	W80	1	0	0	13	Q	SOL: Eruptive
						8615	S30	W69	0	0	0	13	Q	MAG: Quiet
						8620	N22	W61	1	0	0	13	Q	PRO: Quiet
						8624	N23	W56	0	0	0	13	Q	
						8625	S20	W02	0	0	0	13	Q	
						8626	S21	W84	4	0	0	13	E	
						8627	S14	E19	1	0	0	13	E	
						8628	N17	E04	3	0	0	13	E	
						8631	N11	E64	0	0	0	13	Q	
						8632	S19	W72	5	0	0	13	Q	
						8633	N42	E21	0	0	0	13	Q	
						8634	S18	E69	1	0	0	13	Q	
195	14	13	188	144	3	8614	N17	W93	0	0	0	14	Q	SOL: Eruptive
						8615	S29	W83	0	0	0	14	Q	MAG: Quiet
						8620	N22	W75	0	0	0	14	Q	PRO: Quiet
						8624	N22	W70	0	0	0	14	Q	
						8625	S19	W14	0	0	0	14	Q	
						8626	S20	W88	0	0	0	14	Q	
						8627	S14	E06	1	0	0	14	E	
						8628	N17	W09	3	0	0	14	E	
						8631	N11	E50	0	0	0	14	Q	
						8632	S20	W84	0	0	0	14	Q	
						8633	N41	E08	0	0	0	14	Q	
						8634	S18	E59	0	0	0	14	Q	
196	15	14	120	130	3	8615	S28	W92	0	0	0	15	Q	SOL: Eruptive
						8624	N23	W85	0	0	0	15	Q	MAG: Quiet
						8625	S19	W26	0	0	0	15	Q	PRO: Quiet
						8627	S15	W06	0	0	0	15	Q	
						8628	N18	W22	0	0	0	15	Q	
						8631	N10	E38	0	0	0	15	Q	
						8634	S19	E43	1	0	0	15	Q	
197	16	15	109	130	10	8625	S18	W40	2	0	0	16	Q	SOL: Eruptive
						8627	S14	W20	1	0	0	16	Q	MAG: Quiet
						8628	N18	W35	0	0	0	16	Q	PRO: Quiet
						8631	N11	E24	0	0	0	16	Q	
						8634	S19	E30	1	0	0	16	Q	
						8635	N42	W64	1	0	0	16	Q	
198	17	16	97	132	5	8625	S18	W54	0	0	0	17	Q	SOL: Active
						8627	S14	W34	1	1	0	17	E	MAG: Quiet
						8628	N18	W48	0	0	0	17	Q	PRO: Quiet
						8631	N11	E10	0	0	0	17	Q	
						8635	N44	W79	3	1	0	17	E	
199	18	17	97	137	4	8625	S18	W66	0	0	0	18	Q	SOL: Active
						8627	S13	W47	0	0	0	18	Q	MAG: Quiet
						8628	N19	W62	0	0	0	18	Q	PRO: Quiet
						8631	N11	W03	0	0	0	18	Q	
						8636	N20	E73	6	0	0	18	E	
200	19	18	119	138	5	8625	S17	W79	0	0	0	19	Q	SOL: Eruptive
						8627	S13	W60	0	0	0	19	Q	MAG: Quiet

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Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A- index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
						8628	N18	W76	0	0	0	19	Q	PRO: Quiet
						8631	N12	W16	0	0	0	19	Q	
						8636	N20	E61	9	0	0	19	E	
						8637	N12	W27	0	0	0	19	Q	
						8638	S10	E67	0	0	0	19	Q	
201	20	19	126	141	4	8625	S15	W90	0	0	0	20	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						8627	S13	W71	2	0	0	20	Q	
						8628	N20	W88	0	0	0	20	Q	
						8631	N12	W29	1	0	0	20	Q	
						8636	N20	E51	6	1	0	20	E	
						8637	N12	W42	0	0	0	20	Q	
						8638	S10	E51	0	0	0	20	Q	
						8639	N38	W14	0	0	0	20	Q	
202	21	20	115	140	5	8627	S12	W83	1	0	0	21	Q	SOL: Active MAG: Quiet PRO: Quiet
						8631	N12	W42	0	0	0	21	Q	
						8636	N20	E36	4	0	0	21	E	
						8637	N13	W56	0	0	0	21	Q	
						8639	N39	W26	0	0	0	21	Q	
						8640	N17	E76	0	0	0	21	Q	
						8641	N32	W57	0	0	0	21	Q	
203	22	21	124	147	11	8631	N12	W54	0	0	0	22	Q	SOL: Eruptive MAG: Quiet PRO: Quiet
						8636	N21	E25	6	0	0	22	E	
						8637	N12	W66	0	0	0	22	Q	
						8639	N38	W37	0	0	0	22	Q	
						8640	N17	E63	0	0	0	22	Q	
						8641	N30	W73	0	0	0	22	Q	
						8642	S18	E65	2	0	0	22	Q	
204	23	22	127	153	23	8631	N11	W69	0	0	0	23	Q	SOL: Active MAG: Quiet PRO: Quiet
						8636	N21	E12	10	0	0	23	E	
						8639	N38	W50	4	0	0	23	E	
						8640	N17	E49	0	0	0	23	Q	
						8642	S18	E51	2	0	0	23	Q	
						8643	N21	W62	0	0	0	23	Q	
205	24	23	158	194	10	8631	N14	W80	0	0	0	24	Q	SOL: Active MAG: Quiet PRO: Quiet
						8636	N21	E00	15	1	0	24	E	
						8639	N38	W62	2	0	0	24	E	
						8640	N17	E37	0	0	0	24	Q	
						8642	S18	E38	0	0	0	24	Q	
						8643	N20	W74	0	0	0	24	Q	
						8644	S24	E68	2	2	0	24	E	
206	25	24	173	184	10	8636	N21	W14	4	1	0	25	A	SOL: Active MAG: Quiet PRO: Quiet
						8639	N38	W74	4	0	0	25	A	
						8640	N17	E24	0	0	0	25	A	
						8642	S18	E25	0	0	0	25	A	
						8643	N21	W91	0	0	0	25	A	
						8644	S25	E54	0	0	0	25	A	
						8645	S26	E68	3	2	0	25	A	
						8646	N12	W19	0	0	0	25	A	
207	26	25	183	182	9	8636	N21	W28	4	0	0	26	A	SOL: Active MAG: Quiet PRO: Quiet
						8639	N38	W87	3	1	0	26	A	
						8640	N17	E10	0	0	0	26	A	
						8642	S18	E11	0	0	0	26	A	
						8644	S25	E42	0	0	0	26	A	
						8645	S27	E59	5	1	0	26	A	
						8646	N12	W32	0	0	0	26	A	
						8647	S18	E63	2	0	0	26	A	
						8648	N24	E84	0	0	0	26	A	
208	27	26	150	172	7	8636	N21	W42	1	0	0	27	A	SOL: Active MAG: Quiet
						8640	N17	W03	0	0	0	27	A	

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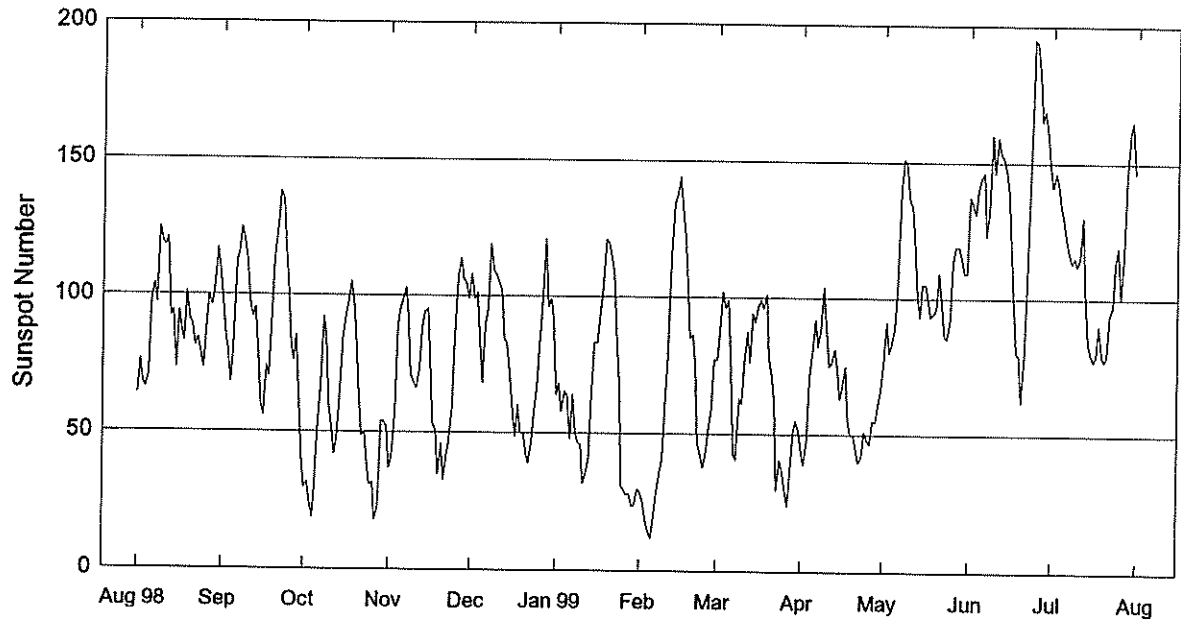
JULY 1999

Julian Day	Date of Issue	Date of Obs	Wolf No.	10-cm Solar Flux	A-index	Rgn No.	Location		Flares			Date of Fcst	Region Fcst(1)	Geoadvice(1)
							Lat	Lon	Opt	M	X			
						8644	S25	E28	0	0	0	27	A	PRO: Quiet
						8645	S27	E46	2	0	0	27	A	
						8646	N13	W44	1	0	0	27	A	
						8647	S18	E51	0	0	0	27	A	
						8648	N24	E67	0	0	0	27	A	
209	28	27	161	175	8	8636	N21	W54	1	1	0	28	A	SOL: Active MAG: Quiet PRO: Quiet
						8640	N17	W16	0	0	0	28	A	
						8644	S25	E16	0	0	0	28	A	
						8645	S27	E35	1	0	0	28	A	
						8647	S18	E37	0	0	0	28	A	
						8648	N23	E55	0	0	0	28	A	
						8649	S15	E09	0	0	0	28	A	
						8650	N17	E75	0	0	0	28	A	
						8651	N24	E73	0	0	0	28	A	
210	29	28	218	198	11	8636	N21	W68	5	0	0	29	A	SOL: Active MAG: Quiet PRO: Quiet
						8640	N17	W28	0	0	0	29	A	
						8642	S23	W27	0	0	0	29	A	
						8644	S26	E02	0	0	0	29	A	
						8645	S26	E22	7	0	0	29	A	
						8647	S18	E24	2	0	0	29	A	
						8648	N22	E42	0	0	0	29	A	
						8649	S15	W05	9	2	0	29	A	
						8650	N16	E64	0	0	0	29	A	
						8651	N24	E65	8	0	0	29	A	
						8652	N17	W37	0	0	0	29	A	
						8653	N28	W30	0	0	0	29	A	
211	30	29	226	202	10	8636	N20	W82	1	0	0	30	E	SOL: Active MAG: Quiet PRO: Quiet
						8640	N16	W42	0	0	0	30	Q	
						8644	S26	W08	0	0	0	30	Q	
						8645	S24	E10	6	1	0	30	E	
						8647	S18	E11	2	0	0	30	Q	
						8648	N22	E29	0	0	0	30	Q	
						8649	S15	W16	11	0	0	30	E	
						8650	N17	E50	0	0	0	30	Q	
						8651	N24	E49	11	1	0	30	E	
						8653	N28	W44	0	0	0	30	Q	
212	31	30	218	206	36	8636	N21	W90	0	0	0	31	Q	SOL: Active MAG: Minor PRO: Quiet
						8640	N16	W55	0	0	0	31	Q	
						8644	S25	W23	0	0	0	31	Q	
						8645	S25	W03	7	0	0	31	E	
						8647	S17	W03	0	0	0	31	Q	
						8648	N23	E16	0	0	0	31	Q	
						8649	S15	W30	4	1	0	31	E	
						8650	N16	E36	0	0	0	31	Q	
						8651	N24	E36	22	0	0	31	E	
						8653	N29	W58	0	0	0	31	Q	

STRATWARM ALERTS - NONE

International Relative Sunspot Numbers Aug 1998 - Jul 1999

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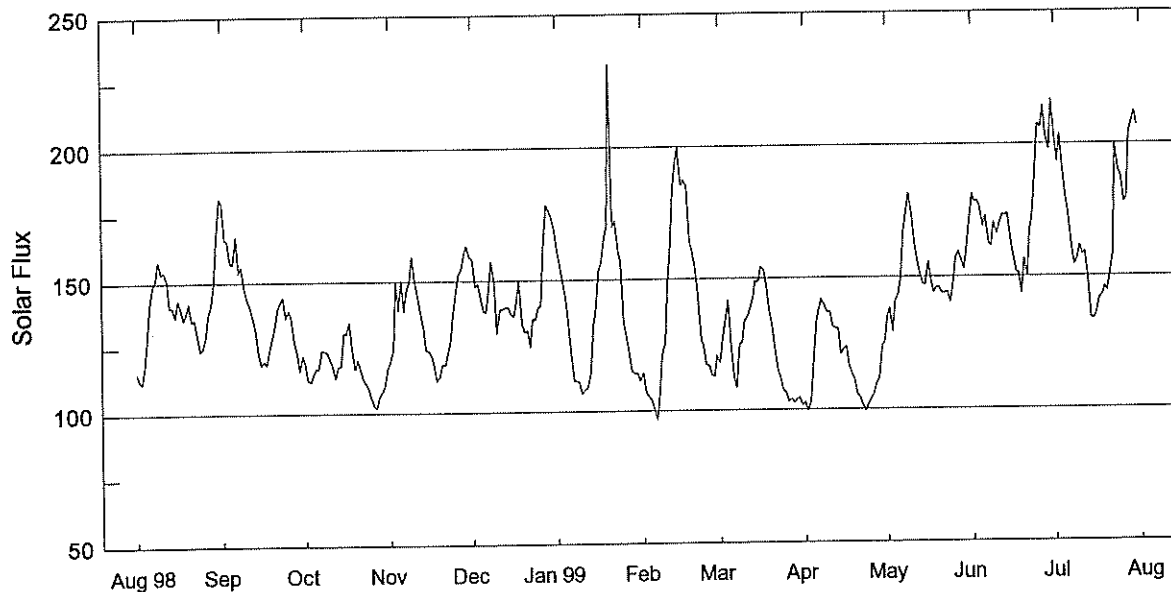


Day	Aug 98	Sep	Oct	Nov	Dec	Jan 99	Feb	Mar	Apr*	May*	Jun*	Jul*
1	64	100	30	37	108	64	29	77	44	75	137	141
2	76	85	32	41	99	68	25	88	39	91	135	146
3	68	79	25	56	101	58	19	102	48	80	131	142
4	66	68	19	88	86	65	15	96	71	83	140	134
5	70	80	30	95	68	64	12	99	81	89	144	130
6	98	112	54	98	89	48	19	79	92	105	146	122
7	104	116	66	103	95	64	28	43	82	141	123	117
8	97	125	92	92	119	51	36	41	89	151	131	113
9	125	119	84	71	109	47	41	63	104	149	160	115
10	119	112	60	68	108	46	60	61	90	136	146	112
11	118	96	51	66	105	32	78	76	75	134	159	115
12	121	92	42	73	102	35	115	87	76	122	153	130
13	92	95	48	88	84	41	134	76	81	101	152	103
14	94	78	66	94	83	65	138	94	74	93	147	84
15	73	60	84	95	72	83	144	91	63	105	139	80
16	94	56	93	76	60	83	133	97	67	105	120	77
17	87	74	98	53	49	93	122	99	75	99	97	79
18	83	70	105	51	60	102	105	96	55	93	80	90
19	101	93	96	35	50	121	85	101	50	94	79	79
20	91	114	81	46	50	120	86	78	50	96	62	77
21	89	125	63	33	43	114	74	71	45	109	79	79
22	81	138	49	41	39	108	47	61	40	97	106	94
23	84	135	50	47	47	87	42	30	42	86	144	97
24	79	117	39	59	58	68	38	41	51	85	195	113
25	73	105	31	85	66	31	44	37	48	92	194	119
26	87	82	32	106	81	30	51	31	47	114	182	100
27	100	76	18	114	100	28	59	24	55	119	165	115
28	96	85	23	106	121	28	77	37	55	119	169	144
29	102	60	54	105	96	24		51	61	115	160	161
30	117	41	54	99	99	24		55	66	109	148	165
31	109		52		92	30		51		109		146
Mean	92.2	92.9	55.5	74.0	81.9	62.0	66.3	68.8	63.9	106.3	137.4	113.5

* = Provisional.

Penticton 2800 MHz (10.7cm) Solar Flux Aug 98 - Jul 99

Adjusted to 1 AU



Day	Aug 98	Sep	Oct	Nov	Dec	Jan 99	Feb	Mar	Apr	May	Jun	Jul
1	115.4	180.2	119.1	119.5	158.2	161.6	114.5	118.0	102.9	134.9*	181.2	202.0
2	112.9	166.3	112.9	124.1	147.4	154.8	107.7	127.6	99.4	137.9	178.1	193.4
3	111.7	165.5	112.0	149.3	148.7	149.4	105.8	134.6	102.7	129.2	178.5	203.5
4	119.2	157.3	114.9	139.0	144.0	142.0	104.3	141.6	116.0	141.1	175.9	191.9
5	130.5	156.8	117.1	150.1	138.3	132.0	100.9	125.4	132.7	143.3	168.8	180.0
6	142.2	167.1	116.9	138.4	138.1	121.6	96.6	112.6	137.6	149.5	172.9	173.5
7	149.1	153.5	124.1	145.8	148.7	111.3	106.5	108.3	141.7	166.4	162.4	163.7
8	150.9	155.8	123.8	149.9	157.1	111.7	121.1	125.0	139.5	175.1	161.3	154.1
9	158.3	147.4	123.2	159.3	149.3	111.0	125.9	125.3	136.7	181.7	170.3	155.9
10	153.3	143.6	120.3	150.8	129.8	106.7	148.4	133.6	136.9	172.8	166.0	161.5
11	154.1	140.4	118.5	144.1	138.8	108.2	159.3	135.3	131.3	162.6	169.8	157.8
12	150.9	136.6	113.4	138.7	138.9	109.1	183.6	138.5	130.7	156.3	173.2	159.2
13	140.4	132.3	117.5	132.6	139.7	114.7	193.4	142.7	130.3	150.5	173.0	148.3
14	140.6	123.3	118.4	123.8	139.9	132.4	199.6	148.7	121.0	147.3	173.5	133.9
15	136.8	118.6	130.4	123.7	137.2	138.0	185.5	148.4	122.7	146.8	163.5	133.8
16	143.3	119.9	130.1	121.8	136.1	153.4	187.3	154.1	123.8	155.6	157.6	136.4
17	139.7	118.6	134.4	118.0	141.5	156.2	185.3	152.9	116.6	148.6	151.3	141.3
18	135.8	123.7	125.0	112.2	149.8	165.4	164.2	146.7	113.8	143.8	151.2	142.8
19	137.9	128.0	116.8	113.7	133.6	170.3	160.5	138.1	110.9	145.8	143.3	145.8
20	141.9	133.3	120.2	118.6	130.4	231.3	153.6	131.6	105.8	145.9	156.5	144.1
21	135.2	139.4	117.2	118.3	130.9	169.7	144.0	123.1	104.4	143.7	150.3	152.1
22	135.9	142.1	113.8	123.0	124.6	172.3	127.0	115.0	101.4	143.7	166.9	157.8
23	129.3	144.1	111.4	126.7	135.2	160.8	124.3	112.2	99.3	144.2	173.0	199.9
24	123.9	136.2	109.6	136.7	134.9	156.8	117.3	107.6	102.0	140.4	191.1	190.1
25	124.8	139.2	106.3	145.6	139.6	133.9	117.1	106.4	103.8	146.8	207.5	188.0
26	129.6	136.2	102.8	152.3	140.2	129.1	113.4	103.1	105.8	156.6	206.1	177.8
27	137.8	128.0	101.8	154.7	161.4	121.6	112.9	104.1	110.0	159.3	214.3	179.9
28	142.0	123.0	106.4	160.4	178.3	115.2	120.7	102.7	111.3	156.2	203.2	203.9
29	149.4	116.3	108.0	163.2	176.8	114.2		103.8	123.9	152.7	197.7	208.6
30	166.4	121.8	109.9	158.9	173.1	114.5		104.4	125.3	161.1	216.5	212.2
31	181.8		117.0		168.8	111.5		101.7		170.1		206.7
Mean	139.4	139.8	116.6	137.1	145.5	138.1	138.6	124.9	118.0	151.9	175.2	171.0

NOTE: * 2300UT reading - hail on antenna at 2000UT.

DAILY SOLAR INDICES
July 1999

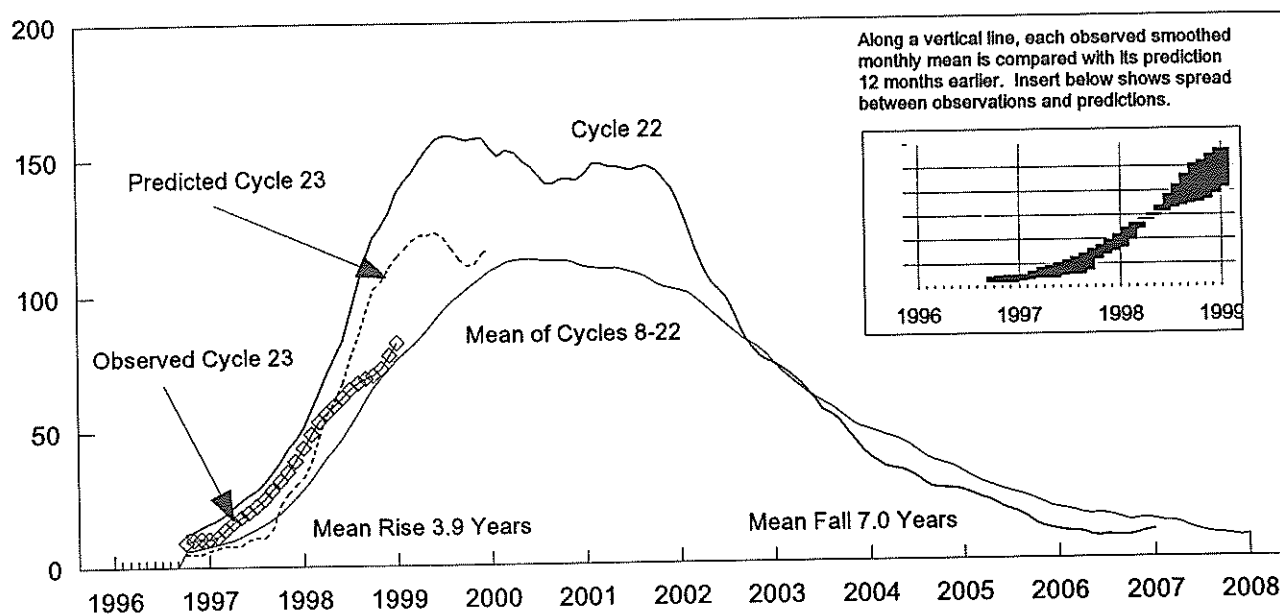
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Day	Day of Year	Bartels Cycle Day	Sunspot Numbers		Obs Flux Penticton (2800)	Solar Flux Adjusted to 1 Astronomical Unit								
			Int	Amer		SGMR (15400)	SGMR (8800)	SGMR (4995)	Pentic (2800)	SGMR (2695)	SGMR (1415)	SGMR (610)	SGMR (410)	SGMR (245)
1	182	12	141	148	195.4	320	250	162	202.0	169	137	73	60	66
2	183	13	146	158	187.1	567	333	229	193.4	192	144	71	50	26
3	184	14	142	148	196.8	568	360	216	203.5	186	146	72	55	31
4	185	15	134	155	185.6	566	326	223	191.9	184	142	62	45	22
5	186	16	130	137	174.2	560	358	220	180.0	173	137	68	56	--
6	187	17	122	131	167.9	548	339	207	173.5	164	131	67	51	26
7	188	18	117	127	158.4	549	357	201	163.7	160	128	68	60	39
8	189	19	113	115	149.1	558	340	190	154.1	151	133	77	54	43
9	190	20	115	128	150.8	540	352	191	155.9	146	126	68	48	42
10	191	21	112	117	156.3	553	375	188	161.5	151	126	64	46	21
11	192	22	115	134	152.6	557	328	189	157.8	152	121	61	--	--
12	193	23	130	137	154.1	556	--	189	159.2	149	120	63	51	--
13	194	24	103	105	143.5	503	289	185	148.3	146	115	67	55	52
14	195	25	84	94	129.6	545	277	163	133.9	131	107	61	45	26
15	196	26	80	89	129.5	539	268	163	133.8	127	105	61	45	32
16	197	27	77	85	132.0	543	284	169	136.4	136	107	62	43	21
17	198	1	79	89	136.7	526	308	180	141.3	137	109	60	42	21
18	199	2	90	95	138.2	523	--	180	142.8	137	110	62	43	22
19	200	3	79	70	141.1	531	322	194	145.8	149	116	60	43	20
20	201	4	77	86	139.5	539	304	189	144.1	139	109	57	41	19
21	202	5	79	90	147.3	549	308	182	152.1	141	110	59	42	18
22	203	6	94	96	152.8	543	304	196	157.8	149	115	62	42	16
23	204	7	97	107	193.7	570	338	220	199.9	175	123	62	43	19
24	205	8	113	118	184.2	549	380	222	190.1	187	140	65	44	15
25	206	9	119	121	182.3	558	--	216	188.0	181	139	68	46	17
26	207	10	100	114	172.4	534	291	220	177.8	173	132	68	46	20
27	208	11	115	133	174.5	535	317	207	179.9	171	132	67	45	16
28	209	12	144	156	197.8	566	334	217	203.9	177	138	69	47	18
29	210	13	161	180	202.4	577	340	233	208.6	187	145	67	44	19
30	211	14	165	180	205.9	575	295	243	212.2	199	149	78	62	24
31	212	15	146	166	200.6	544	243	226	206.7	197	146	70	48	22
MEAN			113.5	122.9	165.6	541	318	200	171.0	161	127	65	48	26

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

NOTE: Radio flux values are from Sagamore Hill, Massachusetts, USA.

Cycle 23 Smoothed Sunspot Numbers: Observed and Predicted



Smoothed Sunspot Numbers (observed and Predicted) for Parts of Solar Cycles 22 and 23													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
1992	124	115	108	103	100	97	91	84	80	76	74	73	94
1993	71	69	67	64	60	56	55	52	48	45	41	38	56
1994	37	35	34	34	33	31	29	27	27	27	26	26	31
1995	24	23	22	21	19	18	17	15	13	12	11	11	17
1996	10	10	10	9	8*	9	8	8	8	9**	10	10	8
1997	11	11	14	17	18	20	23	25	28	32	35	39	23
1998	44	49	53	57	59	63	65	68	69	71	73	78	62
1999	83	86 (3)	89 (6)	93 (9)	97 (12)	101 (13)	104 (16)	106 (21)	109 (25)	111 (28)	114 (31)	116 (33)	101 (18)
2000	117 (35)	118 (36)	119 (37)	119 (37)	119 (37)	119 (36)	119 (36)	119 (36)	119 (36)	118 (36)	117 (37)	116 (38)	118 (36)

■ Solar Cycle 22

■ Solar Cycle 23

□ Min, Max, and Predictions

* May 1996 marks Cycle 22's mathematical minimum. ** October 1996 marks the consensus minimum NGDC is now using.

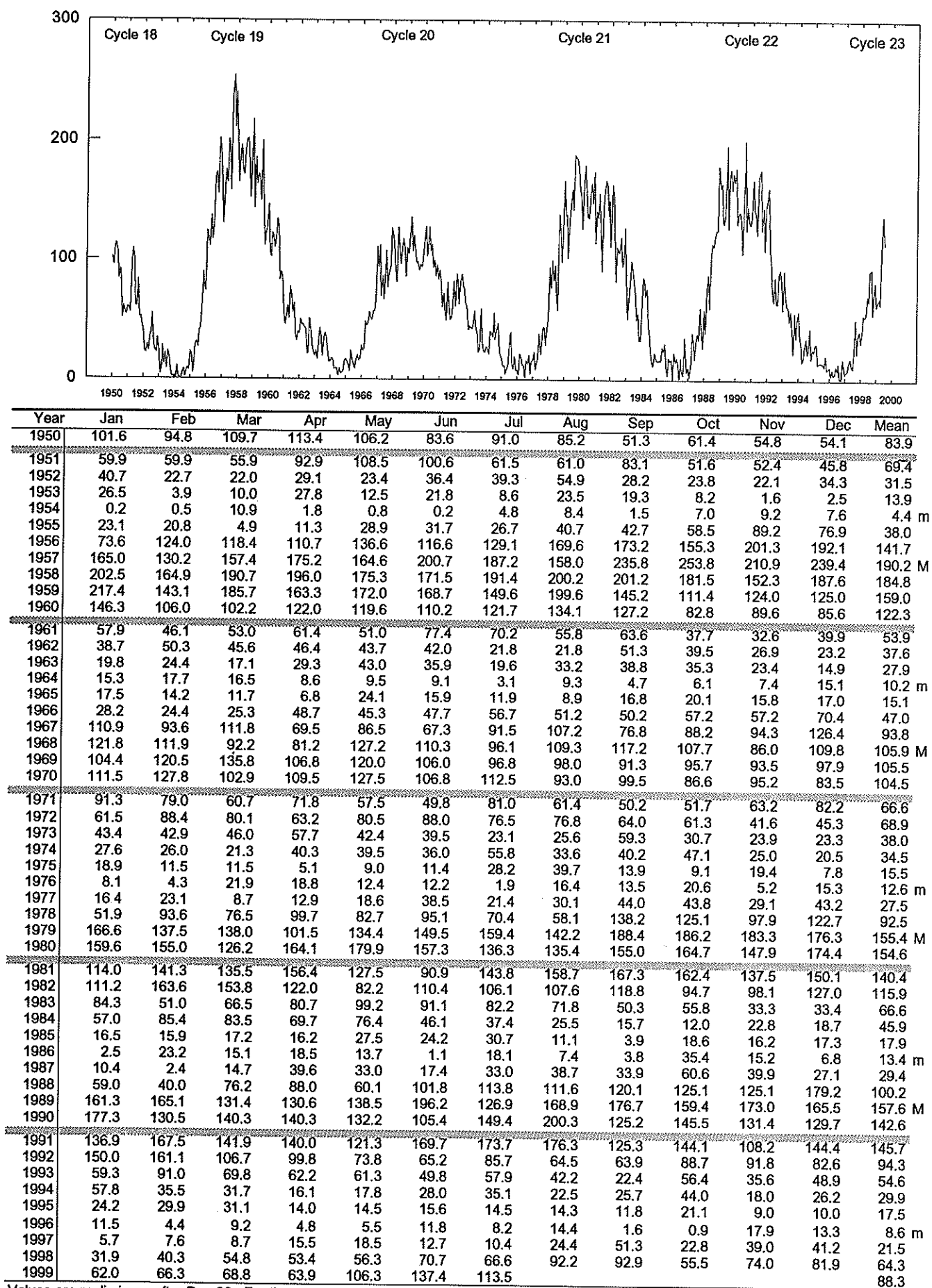
Observed and Predicted Numbers. For the end of Cycle 22, and the rise and decline of Cycle 23, the table above lists observed smoothed sunspot numbers up to the one that includes the most recent monthly mean. We based these smoothed values on final monthly means through Mar 1999 and on provisional numbers thereafter. Table entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the Jul 1987 supplement to *Solar-Geophysical Data*.) Adding the number in parentheses to the predicted value generates the upper limit of the 90% confidence interval. Subtracting the number from the predicted value generates the lower limit. Consider, for example, the January 2000 prediction. There exists a 90% chance that in January 2000, the actual smoothed number will fall somewhere between 82 and 152.

Points to Ponder. The McNish-Lincoln prediction method generates useful estimates of smoothed, monthly mean sunspot numbers for no more than 12 months ahead. Beyond 12 months, the predictions regress toward the mean of all 15 cycles of observations used in the computation. Moreover, the method remains very sensitive to the date defining the onset of the current cycle, that is, to the date of the most recent sunspot minimum. The new cycle predictions tabulated above are based on the consensus minimum value of 8.8 that occurred in October 1996.

Note: Please visit <http://www.sec.noaa.gov> for solar minimum and Cycle 23 discussions.

Mean Monthly Sunspot Numbers Jan 1950 - Jul 1999

29
Jul 9



Values are preliminary after Dec 98. For the yearly means, each 'M' marks a sunspot cycle maximum and each 'm' a minimum.

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
														Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	01	0001	0002	0008	N25	W54	8598	06	26.9	7	SF	3	E		13		
HOLL		0004	0004	0009	S16	W12	8603	06	30.1	5	SF	3	E		15		
LEAR		0014	0022	0036	S26	E19	8611	07	2.5	22	SF	3	E		24		
LEAR		0037	0110	0131	S26	E19	8611	07	2.5	54	SF	3	E		53		F
LEAR		0103	0104	0122	N19	W17	8602	06	29.8	19	SF	3	E		17		
HOLL		0104	0109	0119	N20	W20	8602	06	29.6	15	SF	3	E		18		
GOES		0141	0147	0152	S15	W16	8603			11	SF	C 5.4					2.5E-03
LEAR		0142	0146	0212	S15	W16	8603	06	29.9	30	SF	3	E		94		
LEAR		0211	0220	0255	N13	W24	8610	06	29.4	44	SF	3	E		31		F
LEAR		0300	0309	0328	S25	E19	8611	07	2.6	28	SF	3	E		23		
LEAR		0419	0421	0425	S27	E17	8611	07	2.5	6	SF	3	E		16		
GOES		0447	0450	0455						8		C 1.9					8.5E-04
LEAR		0535	0537	0551	N15	W21	8602	06	29.7	16	SF	3	E		19		F
SVTO		0640	0706	0725	S25	E15	8611	07	2.4	45	SF	3	E		29		
GOES		0704	0709	0719	N21	W62	8596			15	SN	C 2.8					2.1E-03
LEAR		0706	0709	0726	N21	W62	8596	06	26.6	20	SN	3	E		67		E
SVTO		0706	0710	0721	N20	W62	8596	06	26.6	15	SF	3	E		32		F
SVTO		0802	0807	0817	S25	E16	8611	07	2.6	15	SF	3	E		14		
GOES		0808	0812	0814	N17	E66	8613			6	SF	C 4.8					1.3E-03
LEAR		0809E	0810	0819	N17	E66	8613	07	6.3	100	SF	3	E		49		H
SVTO		0812E	0812	0818	N17	E66	8613	07	6.3	60	SF	3	E		32		H
SVTO		0823	0829	0838	S27	E17	8611	07	2.7	15	SF	3	E		26		F
LEAR		0839	0840	0844	S17	W17	8603	06	30.1	5	SF	3	E		17		
LEAR		0843	0854	0919	S27	E14	8611	07	2.4	36	SF	3	E		37		
LEAR		0849	0857	0907	S15	W21	8612	06	29.9	18	SF	3	E		17		
SVTO		0856	0900	0904	S15	W23	8612	06	29.7	8	SF	3	E		16		
GOES		1009	1027	1048	S26	E15	8611			39	SF	C 3.1					6.3E-03
SVTO		1014	1014	1021	S26	E15	8611	07	2.6	7	SF	3	E		11		
SVTO		1024	1027	1037	S27	E16	8611	07	2.7	13	SF	3	E		19		
SVTO		1057	1057	1109	S15	W22	8603	06	29.9	12	SF	3	E		27		
SVTO		1246	1251	1258	S26	E14	8611	07	2.6	12	SF	3	E		17		
HOLL		1257	1259	1303	S15	W23	8603	06	29.9	6	SF	3	E		15		
HOLL		1305	1310	1324	N20	W65	8596	06	26.7	19	SF	3	E		56		
SVTO		1309	1311	1319	N21	W67	8596	06	26.5	10	SF	3	E		26		
GOES		1343	1349	1400	S14	W16	8603			17	1N	C 5.7					4.5E-03
SVTO		1345	1346	1416	S14	W19	8603	06	30.1	31	SF	3	E		70		F
HOLL		1345	1348	1420	S14	W16	8603	06	30.4	35	1N	3	E		199		F
GOES		1435	1441	1448						13		C 3.5					2.5E-03
SVTO		1524	1526	1529	S15	W16	8603	06	30.4	5	SF	3	E		35		
SVTO		1528	1532	1610	N12	W34	8610	06	29.2	42	1F	3	E		110		U
GOES		1529	1535	1545	N12	W34	8610			16	1F	C 3.0					2.6E-03
HOLL		1539E	1539U	1609	N12	W34	8610	06	29.2	300	1F	3	E		155		U
SVTO		1549	1549	1552	S15	W23	8603	06	30.0	3	SF	3	E		18		
SVTO		1619	1621	1627	N20	W64	8592	06	26.9	8	SF	3	E		10		
SVTO		1719E	1748U	1753D	S14	W19	8603	06	30.3	340	SF	3	E		14		
HOLL		1732	1743	1815	S25	E12	8611	07	2.7	43	SF	3	E		95		F
GOES		1735	1748	1815	S25	E12	8611			40	SF	C 8.1					1.6E-02
HOLL		1818	1820	1828	S16	W21	8603	06	30.2	10	SF	3	E		31		
HOLL		1902	1907	1913	S25	E14	8611	07	2.9	11	SF	3	E		27		
HOLL		1914	1918	1920	S25	E09	8611	07	2.5	6	SF	3	E		12		
HOLL		1926	1927	1946	S15	W25	8603	06	30.0	20	SF	3	E		18		
GOES		2027	2034	2047	S25	E12	8611			20	SF	C 3.0					3.0E-03
HOLL		2028	2040	2127	S25	E12	8611	07	2.8	59	SF	3	E		52		F
HOLL		2055	2055	2100	N16	W34	8602	06	29.4	5	SF	3	E		15		
GOES		2136	2143	2151	N24	W67	8598			15	1F	M 1.1					6.7E-03
HOLL		2139	2145	2158	N24	W67	8598	06	26.8	19	1F	3	E		118		EH
GOES		2324	2331	2334	S15	W27	8603			10	1N	M 1.7					5.8E-03
HOLL		2325	2329	2356	S15	W27	8603	06	30.0	31	1N	3	E		204		E
LEAR		2333E	2334U	2336	S15	W20	8603	06	30.5	30	SF	1	E		18		
HOLL		2353	2401	2406	S24	E06	8611	07	2.4	13	SF	3	E		14		
LEAR	02	0113	0126	0139	N21	W72	8592	06	26.6	26	SF	3	E		42		
LEAR		0121	0122	0136	N19	E59	8614	07	6.5	15	SF	3	E		15		
GOES		0129	0138	0147	S27	E05	8614			18	1B	M 2.5					1.6E-02
LEAR		0132	0137	0322	S27	E05	8611	07	2.4	110	1B	3	E		239		
GOES		0318	0322	0327	N17	W37	8602			9	SF	C 2.3					1.1E-03
LEAR		0320	0322	0334	N17	W37	8602	06	29.4	14	SF	3	E		61		
GOES		0342	0357	0411	N18	E44	8613			29	SF	C 4.7					5.9E-03

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Sta	Day	Start	Max	End	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
		(UT)	(UT)	(UT)											Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	02	0344	0345	0420	N18	E44	8613	07	5.5	36	SF		3	E		50		
LEAR		0445	0512	0548	N18	W36	8602	06	29.5	63	SF		3	E		59		
SVTO		0445	0512	0548	N19	W35	8602	06	29.6	63	SF		3	E		68		F
LEAR		0452	0455	0458	N20	E57	8613	07	6.6	6	SF		3	E		18		
LEAR		0503	0504	0509	N18	E44	8613	07	5.6	6	SF		3	E		12		
GOES		0513	0521	0528			8602			15		C 2.8						2.3E-03
GOES		0616	0620	0632						16		C 1.6						1.4E-03
GOES		0717	0722	0728	S15	W24	8603			11	SN	C 3.0						1.5E-03
LEAR		0717	0722	0730	S15	W24	8603	06	30.5	13	SN		3	E		99		
SVTO		0719	0721	0730	S15	W33	8603	06	29.9	11	SF		3	E		31		
LEAR		0747	0749	0751	N17	W39	8602	06	29.5	4	SF		3	E		24		
LEAR		0752	0759	0803	N17	W39	8602	06	29.5	11	SF		3	E		34		
LEAR		0829	0830	0837	S26	E09	8611	07	3.0	8	SF		3	E		33		H
SVTO		0830	0831	0835	S26	E09	8611	07	3.0	5	SF		3	E		23		H
GOES		0858	0901	0905	S15	W25	8603			7	SF	C 1.7						6.2E-04
SVTO		0900	0900	0910	S15	W33	8603	06	30.0	10	SF		3	E		12		
LEAR		0901	0901	0908	S15	W25	8603	06	30.5	7	SF		3	E		12		
GOES		1124	1152	1213	N15	W39	8602			49	SF	C 2.1						5.1E-03
SVTO		1136	1152	1239	N15	W39	8602	06	29.6	63	SF		3	E		73		F
GOES		1512	1520	1530	S27	E01	8611			18	SF	M 1.6						1.0E-02
SVTO		1516	1521	1610	S27	E01	8611	07	2.7	54	SF		3	E		57		
GOES		1747	1759	1806	S15	W31	8603			19	SF	C 1.4						1.4E-03
HOLL		1752	1753	1816	S15	W31	8603	06	30.4	24	SF		3	E		28		
GOES		2027	2057	2134	S24	W03	8611			67	SF	C 2.3						8.0E-03
HOLL		2028	2033	2035	S24	W03	8611	07	2.6	7	SF		3	E		20		F
HOLL		2036	2037	2043	S24	W03	8611	07	2.6	7	SF		3	E		29		
HOLL		2044	2054	2108	S23	W05	8611	07	2.5	24	SF		3	E		45		F
GOES		2238	2242	2247						9		C 1.4						7.3E-04
LEAR	03	0027	0031	0034	S15	W40	8603	06	30.0	7	SF		3	E		61		
LEAR		0056	0101	0103	S15	W34	8603	06	30.5	7	SF		3	E		32		
LEAR		0129	0129	0134	S26	W05	8611	07	2.7	5	SF		3	E		25		
GOES		0319	0341	0401	N18	W46	8602			42	SF	C 1.7						4.2E-03
LEAR		0327	0342	0350	N18	W46	8602	06	29.7	23	SF		4	E		24		
SVTO		0452	0507	0515	N23	W77	8598	06	27.4	23	SF		3	E		26		
LEAR		0505	0507	0513	N22	W65	8598	06	28.3	8	SF		4	E		17		
GOES		0507	0510	0512	S28	E63	8615			5	SF	C 2.3						5.8E-04
LEAR		0509	0511	0518	S28	E63	8615	07	8.1	9	SF		4	E		47		
SVTO		0510	0511	0515	S29	E59	8615	07	7.8	5	SF		3	E		14		
SVTO		0521	0521	0526	S16	W69	8599	06	28.1	5	SF		3	E		19		
SVTO		0721	0724	0736	S27	W08	8611	07	2.7	15	SF		3	E		18		
GOES		0749	0752	0754	S15	W53	8603			5	SF	C 1.3						3.6E-04
SVTO		0751	0753	0757	S15	W38	8603	06	30.4	6	SF		3	E		28		
LEAR		0752	0753	0756	S15	W53	8603	06	29.4	4	SF		4	E		18		
LEAR		0808	0809	0817	N19	W52	8602	06	29.5	9	SF		4	E		38		F
GOES		0823	0827	0831	S15	W38	8603			8	SF	C 1.7						7.5E-04
LEAR		0823	0827	0834	S15	W38	8603	06	30.5	11	SF		4	E		73		F
SVTO		0826	0829	0834	S15	W38	8603	06	30.5	8	SF		3	E		16		
GOES		1115	1119	1125	S14	W46	8603			10	SF	C 1.9						9.8E-04
SVTO		1117	1118	1127	S14	W46	8603	06	30.0	10	SF		3	E		53		
GOES		1501	1506	1513	N23	W82	8598			12	SF	C 4.1						2.1E-03
SVTO		1505	1505	1511	N23	W82	8598	06	27.4	6	SF		3	E		43		
SVTO		1613	1614	1626	S15	W43	8603	06	30.4	13	SF		3	E		20		
GOES		1856	1903	1911	S26	W15	8611			15	SF	C 5.6						4.3E-03
HOLL		1858	1901	1939	S26	W15	8611	07	2.6	41	SF		3	E		63		
HOLL		1905	1908	1913	N19	W58	8602	06	29.5	8	SF		3	E		13		
RAMY		1910E	1910U	1928D	S20	W25	8611	07	1.9	18D	SF		3	E		32		
RAMY		1940E	1941U	1953D	N18	W55	8602	06	29.7	13D	SF		3	E		42		
HOLL		2000	2027U	2111	N16	W55	8602	06	29.8	71	1F		3	E		149		
RAMY		2000E	2032U	2057D	N15	W59	8602	06	29.5	57D	SF		3	E		92		
GOES		2015	2050	2059			8611			44	1F	C 7.5						1.8E-02
HOLL		2044	2049	2101	S25	W18	8611	07	2.5	17	SF		3	E		33		
HOLL		2101	2101	2109	S26	W17	8611	07	2.5	8	SF		3	E		16		
HOLL		2238	2239	2245	N22	W58	8598	06	29.6	7	SF		3	E		91		
LEAR	04	0006	0022	0038	S24	W23	8611	07	2.2	32	SF		3	E		34		
LEAR		0242	0245	0247	S15	W51	8603	06	30.2	5	SF		3	E		49		
GOES		0600	0617	0630	S27	W20	8611			30	SF	C 1.8						3.0E-03

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement			Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)		
SVTO	04	0601	0603	0622	S27	W20	8611	07	2.7	21	SF		3	E		36			
LEAR		0602	0604	0620	S24	W23	8611	07	2.5	18	SF		3	E		38			F
LEAR		0722	0726	0743	N15	W46	8617	06	30.8	21	SF		3	E		23			
GOES		0820	0828	0844	S24	W25	8611			24	1N C 6.4								6.3E-03
LEAR		0822	0825	0853	S24	W25	8611	07	2.4	31	1N		3	E		135			F
GOES		0920	0923	0925	S27	W22	8611			5	SF C 3.1								7.8E-04
SVTO		0923	0924	0937	S27	W22	8611	07	2.7	14	SF		3	E		25			
RAMY		1129E	1129U	1143D	S24	W23	8611	07	2.7	14D	SF		3	E		21			
GOES		1129	1148	1159			8614			30	C 3.8								4.9E-03
SVTO		1130	1132	1141	S27	W23	8611	07	2.7	11	SF		3	E		19			
RAMY		1134E	1139U	1218D	N21	E32	8614	07	6.9	44D	SF		3	E		50			F
SVTO		1135	1148	1207	N20	E35	8614	07	7.1	32	SF		3	E		36			
SVTO		1142	1148	1205	S27	W23	8611	07	2.7	23	SF		3	E		52			
SVTO		1218	1218	1222	S16	W86	8599	06	28.1	4	SF		3	E		17			
SVTO		1227	1227	1235	S15	W54	8603	06	30.4	8	SF		3	E		11			
SVTO		1227	1231	1239	S16	W86	8599	06	28.1	12	SF		3	E		42			
HOLL		1254	1259	1303	S17	W61	8603	06	30.0	9	SF		2	E		17			
HOLL		1314	1318	1336	S18	W57	8603	06	30.2	22	SF		3	E		36			F
HOLL		1436	1437	1443	S25	W28	8611	07	2.4	7	SF		3	E		13			F
RAMY		1438	1439	1444	S24	W27	8611	07	2.5	6	SF		3	E		19			
GOES		1609	1621	1636	S27	W26	8611			27	1F C 4.5								5.9E-03
SVTO		1611	1620	1731	S27	W26	8611	07	2.6	80	1F		3	E		117			
HOLL		1611	1621	1648	S25	W29	8611	07	2.4	37	SF		3	E		62			F
RAMY		1612	1616	1637	S24	W29	8611	07	2.4	25	SF		3	E		38			F
HOLL		1613	1615	1618	S15	E48	8618	07	8.3	5	SF		3	E		26			
SVTO		1625	1625	1630	S15	W56	8603	06	30.4	5	SF		3	E		12			
HOLL		1625	1627	1631	S15	E40	8618	07	7.7	6	SF		3	E		12			
RAMY		1625	1629	1632	S15	E48	8618	07	8.3	7	SF		3	E		17			
SVTO		1656	1705	1734	N20	E32	8614	07	7.1	38	SF		3	E		12			
SVTO		1723	1724	1733	N19	W70	8602	06	29.5	10	SF		3	E		19			
HOLL		1723	1725	1729	N19	W70	8602	06	29.5	6	SF		3	E		22			
RAMY		1727E	1730	1747D	N16	W71	8602	06	29.4	20D	SF		3	E		19			
HOLL		1754	1807	1829	S26	W31	8611	07	2.3	35	SF		3	E		38			
HOLL		1846	1849	1851	S26	W31	8611	07	2.4	5	SF		3	E		18			
RAMY		1847	1858U	1914D	S24	W31	8611	07	2.4	27D	1N		3	E		127			
GOES		1853	1859	1903	S24	W30				10	1F C 3.4								1.5E-03
HOLL		1854	1858	1943	S24	W30	8611	07	2.5	49	1F		3	E		179			
RAMY		1915	1931	1937	S25	W33	8611	07	2.2	22	SF		3	E		25			
HOLL		1944	2008	2029	S24	W30	8611	07	2.5	45	SF		3	E		51			F
RAMY		2016	2017	2032	S16	W62	8603	06	30.1	16	SF		3	E		15			
GOES		2017	2037	2044	S24	W30	8611			27	SF C 3.1								4.8E-03
HOLL		2019	2021	2025	N18	W62	8603	06	30.1	6	SF		3	E		11			F
HOLL		2030	2039	2045	S24	W30	8611	07	2.5	15	SF		3	E		28			
GOES		2322	2328	2335						13	C 9.5								5.2E-03
LEAR	05	0006	0011	0016	S27	W32	8611	07	2.5	10	SF		3	E		27			
LEAR		0029	0035	0110	S24	W31	8611	07	2.6	41	SF		3	E		55			
GOES		0032	0035	0044	S24	W31				12	SF C 2.6								1.7E-03
GOES		0120	0131	0146	S27	W33	8617			26	1F C 7.6								8.1E-03
LEAR		0124	0131	0204	S27	W33	8611	07	2.5	40	1F		3	E		128			F
LEAR		0141	0144	0148	N16	W58	8617	06	30.7	7	SF		3	E		37			F
LEAR		0241	0241	0251	S24	W34	8611	07	2.5	10	SF		3	E		33			
GOES		0326	0338	0349	N18	E27	8614			23	SF C 1.8								2.3E-03
LEAR		0331	0335	0353	N18	E27	8614	07	7.2	22	SF		3	E		15			
LEAR		0415	0415	0429	N19	E69	8621	07	10.4	14	SF		3	E		22			
SVTO		0420	0428U	0432	N19	E67	8621	07	10.3	12	SF		3	E		28			F
GOES		0431	0446	0528	N18	E26	8614			57	SF C 2.8								8.1E-03
SVTO		0434	0442	0519	N17	E26	8614	07	7.2	45	SF		3	E		58			UF
LEAR		0434	0459	0529	N18	E26	8614	07	7.2	55	SF		2	E		71			F
SVTO		0521	0524	0528	N18	E29	8614	07	7.4	7	SF		3	E		11			F
LEAR		0700	0702	0707	S24	W37	8611	07	2.4	7	SF		3	E		19			
LEAR		0737	0740	0758	N16	E24	8614	07	7.1	21	SF		3	E		15			F
SVTO		0944	0946	0958	N17	E22	8614	07	7.1	14	SF		3	E		29			
GOES		1149	1203	1218	S25	W41	8611			29	SF C 4.3								5.6E-03
SVTO		1154	1201	1220	S25	W41	8611	07	2.3	26	SF		3	E		29			F
SVTO		1315	1316	1320	N19	E15	8614	07	6.7	5	SF		3	E		28			F
RAMY		1316	1317	1331	N16	E23	8614	07	7.3	15	SF		3	E		14			
GOES		1416	1423	1430	N17	E20	8614			14	SF C 1.6								1.2E-03

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
SVTO	05	1419	1423	1427	N17	E21	8614	07	7.2	8	SF		3	E		19		
HOLL		1419	1423	1428	N17	E20	8614	07	7.1	9	SF		3	E		32		
RAMY		1419	1423	1429	N17	E21	8614	07	7.2	10	SF		3	E		34		
HOLL		1448	1449	1506	S25	W40	8611	07	2.5	18	SF		3	E		28		
RAMY		1449	1452	1503	N19	W79	8602	06	29.7	14	SF		3	E		58		
HOLL		1452	1454	1457	N16	W78	8602	06	29.8	5	SF		3	E		16		
RAMY		1532	1532	1536	S25	W40	8611	07	2.5	4	SF		3	E		22		
HOLL		1554	1555	1557	N20	W80	8609	06	29.6	3	SF		3	E		40		
SVTO		1554	1555	1557	N20	W87	8602	06	29.1	3	SF		3	E		42		F
RAMY		1554	1555	1558	N20	W83	8602	06	29.4	4	SF		3	E		56		
HOLL		1558	1600	1601	S25	W41	8611	07	2.5	3	SF		3	E		13		
RAMY		1612	1614	1617	N20	W80	8602	06	29.6	5	SF		3	E		12		
SVTO		1635	1713	1744	S25	W43	8611	07	2.3	69	SF		3	E		99		F
HOLL		1648	1649	1700	S25	W42	8611	07	2.4	12	SF		3	E		18		
HOLL		1649	1650	1654	N18	E19	8614	07	7.1	5	SF		3	E		36		
GOES		1711	1717	1729	S26	W43	8611			18	SF C 3.3							2.9E-03
HOLL		1713	1714	1736	S26	W43	8611	07	2.4	23	SF		3	E		77		
HOLL		1824	1839	1958	S25	W43	8611	07	2.4	94	1F		3	E		183		F
GOES		1830	1848	1906	S25	W43	8614			36	1F M 1.2							2.1E-02
HOLL		1833	1833	1839	N17	E18	8614	07	7.1	6	SF		3	E		21		
HOLL		1844	1851	1853	N18	E18	8614	07	7.1	9	SF		3	E		14		
HOLL		1902	1902	1908	N14	W68	8617	06	30.6	6	SF		3	E		16		
GOES		2059	2112	2123						24	C 1.1							1.3E-03
GOES		2213	2220	2228						15	C 1.6							1.1E-03
GOES		2314	2318	2320						6	C 1.0							3.1E-04
GOES	06	0041	0044	0047						6	C 1.3							3.4E-04
GOES		0803	0806	0810	N18	E19	8620			7	SF C 1.1							4.6E-04
SVTO		0805	0807	0816	N18	E19	8620	07	7.8	11	SF		3	E		23		
GOES		1154	1207	1217						23	C 2.4							2.6E-03
RAMY		1404	1409	1419	S24	W52	8611	07	2.6	15	SF		3	E		15		
GOES		2018	2026	2038	S28	W64	8611			20	SF C 2.1							2.3E-03
RAMY		2022	2024	2032	S28	W64	8611	07	1.8	10	SF		3	E		15		F
LEAR	07	0013	0016	0019	S31	E16	8615	07	8.3	6	SF		4	E		17		U
HOLL		0017	0017	0023	S30	E17	8615	07	8.3	6	SF		3	E		10		U
HOLL		0103	0105	0108	S29	W53	8611	07	2.9	5	SF		3	E		37		H
LEAR		0104	0104	0108	S28	W54	8611	07	2.8	4	SF		4	E		19		
GOES		0341	0345	0347	S25	W73	8611			6	SF C 1.8							3.9E-04
LEAR		0344	0345	0349	S25	W73	8611	07	1.5	5	SF		4	E		24		
GOES		0524	0528	0532	S27	W64	8611			8	SF C 1.0							4.4E-04
SVTO		0526	0528	0534	S27	W64	8611	07	2.2	8	SF		3	E		28		FH
SVTO		0554	0554	0558	S27	W64	8611	07	2.2	4	SF		3	E		16		H
GOES		0617	0620	0622	S26	W76				5	SF C 1.2							3.1E-04
SVTO		0618	0620	0629	S26	W76	8611	07	1.3	11	SF		3	E		54		H
LEAR		0624E	0627U	0651D	S27	W62	8611	07	2.4	27D	SF		4	E		58		H
SVTO		0847	0849	0855	S30	E03	8615	07	7.6	8	SF		3	E		49		H
LEAR		0848	0848	0855	S29	E05	8615	07	7.7	7	SF		4	E		31		
SVTO		0903	0903	0906	S26	W81	8611	07	1.1	3	SF		3	E		20		FH
GOES		0916	0919	0921						5	C 1.2							2.9E-04
SVTO		1026	1026	1034	N20	E40	8621	07	10.5	8	SF		3	E		16		
SVTO		1044	1046	1050	S25	W65	8611	07	2.4	6	SF		3	E		23		FH
GOES		1446	1450	1453	S22	W11	8626			7	SF C 1.2							4.4E-04
RAMY		1450	1450	1457	S22	W11	8626	07	6.8	7	SF		4	E		21		
GOES		1524	1534	1547						23	C 1.9							2.2E-03
RAMY		1640	1640	1645	S25	W69	8611	07	2.3	5	SF		3	E		15		H
GOES		1705	1709	1712						7	C 1.3							5.1E-04
RAMY		1718	1720	1730	S29	W01	8615	07	7.6	12	SF		3	E		10		H
GOES		1936	1940	1946	S26	W69	8611			10	SF C 1.1							6.5E-04
HOLL		1938	1944	1948	S26	W69	8611	07	2.4	10	SF		3	E		13		
GOES		2301	2321	2357						56	C 1.9							7.1E-03
LEAR	08	0046	0050	0057	N20	E33	8621	07	10.5	11	SF		3	E		16		
GOES		0434	0443	0502						28	B 9.4							1.4E-03
GOES		0639	0708	0721						42	C 5.7							1.1E-02
GOES		0923	0928	0936	S21	W20	8626			13	SF C 2.5							1.3E-03
SVTO		0926	0928	0936	S21	W20	8626	07	6.8	10	SF		3	E		39		
GOES		1009	1013	1017						8	C 1.2							5.0E-04

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
																Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
RAMY	08	1330	1332	1342	S21	W24	8626	07	6.7	12	SF		3	E		20		F
GOES		1927	1932	1934	N19	E70				7	SN	C 1.3						3.7E-04
HOLL		1930	1931	1934	N19	E70		07	14.1	4	SN		3	E		61		EH
HOLL		2127	2128	2133	S23	W26	8626	07	6.9	6	SF		3	E		16		F
HOLL		2148	2153	2159	S10	E70	8627	07	14.2	11	SF		3	E		48		
HOLL		2306	2307	2311	S13	E69	8627	07	14.2	5	SF		3	E		17		
GOES	09	0018	0027	0032	S29	W19	8615			14	SF	C 1.5						8.8E-04
HOLL		0020	0027	0036	S29	W19	8615	07	7.5	16	SF		3	E		30		F
LEAR		0025	0026	0032	S28	W20	8615	07	7.4	7	SF		3	E		12		
GOES		0039	0044	0048	N19	E64				9	SF	C 1.0						4.5E-04
LEAR		0040	0043	0059	N17	E64		07	13.9	19	SF		3	E		63		
HOLL		0041	0044	0057	N19	E64		07	13.9	16	SF		3	E		38		
HOLL		0057	0058	0108	N23	W59	8613	07	4.5	11	SF		3	E		20		
GOES		0130	0134	0149	N23	W57	8626			19	SF	B 9.6						9.5E-04
HOLL		0132	0134	0204D	N23	W57	8613	07	4.7	32D	SF		3	E		41		
LEAR		0142	0142	0150	S20	W38	8626	07	6.2	8	SF		3	E		16		F
GOES		0210	0213	0216	N23	W57	8613			6	SF	B 8.4						2.6E-04
LEAR		0212	0212	0220	N23	W57	8613	07	4.7	8	SF		3	E		24		
GOES		0330	0335	0337						7		B 9.4						3.3E-04
SVTO		0500	0508	0525D	N23	W59	8613	07	4.7	25D	SF		3	E		38		
GOES		0520	0523	0525	N23	W59				5	SF	C 1.1						2.3E-04
GOES		0946	0951	0954	N21	W67	8613			8	SF	C 1.1						4.4E-04
SVTO		0950	0951	0956	N21	W67	8613	07	4.3	6	SF		3	E		19		
RAMY		1309	1310	1337	N21	W65	8613	07	4.6	28	SF		3	E		25		FH
RAMY		1344	1344	1350	N21	W65	8613	07	4.6	6	SF		3	E		15		
RAMY		1356	1359	1405	N22	W66	8613	07	4.5	9	SF		3	E		12		F
GOES		1454	1458	1502	S22	W40	8626			8	SF	B 9.4						4.1E-04
RAMY		1456	1456	1502	S22	W40	8626	07	6.5	6	SF		3	E		11		
HOLL		1456	1457	1501	S22	W40	8626	07	6.5	5	SF		3	E		12		
RAMY		1456	1457	1508	S12	E59	8627	07	14.1	12	SF		3	E		38		
HOLL		1456	1500	1510	S11	E59	8627	07	14.1	14	SF		3	E		50		
GOES		1525	1535	1539	S22	W41	8626			14	SF	B 7.4						5.6E-04
RAMY		1529	1532	1614D	S22	W41	8626	07	6.5	45D	SF		3	E		16		
HOLL		1531	1533	1538	S22	W41	8626	07	6.5	7	SF		3	E		12		
HOLL		1602	1604	1613	N22	W67	8629	07	4.5	11	SF		3	E		22		
GOES		1756	1803	1807	S12	E58	8627			11	SF	C 3.7						1.5E-03
HOLL		1758	1802	1811	S12	E58	8627	07	14.1	13	SF		3	E		65		
GOES		1850	1858	1904						14		C 3.5						1.9E-03
HOLL		1905	1907	1911	S29	W30	8615	07	7.4	6	SF		3	E		19		
HOLL		1905	1910	1916	N22	W67	8629	07	4.6	11	SF		3	E		53		
GOES		1911	1915	1918	N22	W67	8629			7	SF	C 2.4						8.8E-04
HOLL		1917	1919	1928	N22	W67	8629	07	4.6	11	SF		3	E		17		
HOLL		1958	2002	2005	N22	W68	8629	07	4.6	7	SF		3	E		57		
GOES		2000	2003	2005	N22	W68	8629			5	SF	C 1.6						4.2E-04
HOLL		2024	2038	2052	N22	W68	8629	07	4.6	28	SF		3	E		72		
HOLL		2051	2053	2056	S33	W14	8615	07	8.7	5	SF		3	E		10		
HOLL		2111	2112	2114	S34	W16	8615	07	8.6	3	SF		3	E		10		
HOLL		2152	2152	2159	N22	W69	8629	07	4.6	7	SF		3	E		14		
HOLL		2217	2221	2224	S09	E55	8627	07	14.0	7	SF		3	E		14		
HOLL		2224	2229	2232	N22	W69	8629	07	4.6	8	SF		3	E		46		
GOES		2236	2239	2244	N22	W69	8629			8	SF	C 6.9						2.0E-03
HOLL		2238	2239	2249	N22	W69	8629	07	4.6	11	SF		3	E		77		
GOES		2349	2354	2359	S13	E55				10	1N	C 3.1						1.3E-03
HOLL		2351E	2353	2410	S13	E55	8627	07	14.1	19D	1N		3	E		188		H
LEAR		2356E	2401U	2412	S14	E58	8627	07	14.4	16D	SF		3	E		61		
GOES	10	0128	0155	0230						62		C 1.4						4.6E-03
GOES		0506	0510	0512						6		C 1.0						2.9E-04
GOES		0554	0559	0604	S28	W36	8615			10	SF	C 1.0						5.2E-04
SVTO		0559E	0600	0608	S28	W36	8615	07	7.4	9D	SF		3	E		15		
GOES		0700	0704	0706						6		B 9.8						2.8E-04
GOES		0755	0758	0801						6		B 7.7						2.4E-04
GOES		1215	1221	1224	S28	W36				9	SF	C 1.8						6.7E-04
SVTO		1217	1220	1229	S28	W36	8615	07	7.7	12	SF		3	E		68		
GOES		1509	1512	1517	S13	E51	8627			8	SF	B 8.4						3.5E-04
RAMY		1512	1513	1523	S13	E51	8627	07	14.5	11	SF		3	E		35		
RAMY		1823	1823	1832	N16	E33	8628	07	13.3	9	SF		3	E		12		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	Mo	CMP Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
																Apparent (10-6 Disk)	Corr (Sq Deg)	
GOES	10	1914	1922	1933						19		C 1.5						
HOLL		2339	2413	2511	N18	E32	8628	07	13.4	92	1N		3	E		149		1.5E-03
HOLL		2352	2407	2411	S22	W56	8626	07	6.7	19	SF		3	E		13		
GOES	11	0009	0019	0029			8619			20		C 3.0						
HOLL		0018	0021	0032	S19	W23	8619	07	9.2	14	SF		3	E		12		3.0E-03
LEAR		0154	0158	0204	N18	E34	8628	07	13.7	10	SF		4	E		14		
SVTO		0445	0513	0529	N18	E28	8628	07	13.3	44	SF		3	E		44		FH
SVTO		0547	0553	0559	N17	E28	8628	07	13.4	12	SF		3	E		12		H
GOES		0559	0603	0606	N17	E28	8628			7	SF	C 1.2						4.5E-04
GOES		0621	0629	0640						19		C 1.2						1.2E-03
RAMY		1245	1259	1311	S21	W68	8626	07	6.3	26	SF		3	E		34		
SVTO		1259	1312U	1319	S20	W70	8626	07	6.2	20	SF		3	E		26		
RAMY		1310	1319	1330	S20	W52		07	7.6	20	SF		3	E		29		
SVTO		1311E	1314	1318	S19	W54		07	7.4	7D	SF		3	E		14		H
RAMY		1313	1320	1326	S21	W67	8626	07	6.4	13	SF		3	E		14		H
GOES		1314	1319	1325	S20	W52	8626			11	SF	C 2.2						1.2E-03
RAMY		1316	1318	1330	S31	W53	8615	07	7.4	14	SF		3	E		37		
SVTO		1320	1324	1328	S21	W62	8626	07	6.8	8	SF		3	E		18		
SVTO		1320	1325	1329	N18	E31	8628	07	13.9	9	SF		3	E		11		
RAMY		1320	1328	1335	N18	E30	8628	07	13.8	15	SF		3	E		18		FH
SVTO		1347	1350	1400	S21	W62	8626	07	6.8	13	SF		3	E		14		
SVTO		1347	1351	1405	S19	W54		07	7.4	18	SF		3	E		14		
GOES		1547	1552	1557	S20	W70	8626			10	SF	C 1.4						7.0E-04
SVTO		1550	1553	1556	S20	W70	8626	07	6.3	6	SF		3	E		11		
GOES		1745	1752	1803	S27	W51	8615			18	SF	C 1.2						1.1E-03
RAMY		1747	1747	1810	S27	W51	8615	07	7.8	23	SF		3	E		66		FH
SVTO		1747E	1752U	1754D	S26	W51	8615	07	7.8	7D	SF		2	E		27		FH
RAMY		1820	1820	1829	N19	W57	8629	07	7.4	9	SF		3	E		30		
RAMY		1826	1827	1830	S21	W71	8626	07	6.3	4	SF		3	E		16		
HOLL		1855	1857	1905	S20	W55		07	7.6	10	SF		3	E		10		
RAMY		1855	1859	1908	S20	W56		07	7.5	13	SF		3	E		15		
RAMY		1908	1911	1927	S20	W71	8626	07	6.4	19	SF		3	E		13		
GOES		2205	2209	2212						7		B 8.6						3.2E-04
GOES	12	0036	0039	0044						8		B 9.9						
GOES		0059	0107	0113	N18	W65	8614			14	SF	C 2.8						4.1E-04
HOLL		0102	0106	0120	N18	W65	8614	07	7.1	18	SF		3	E		61		1.7E-03
LEAR		0314	0318	0321	S20	W58	8632	07	7.7	7	SF		3	E		38		
LEAR		0329	0330	0341	N17	E22	8628	07	13.8	12	SF		3	E		19		F
GOES		0333	0337	0341	N17	E22	8628			8	SF	C 1.5						6.5E-04
LEAR		0459	0503	0509	S18	W61	8632	07	7.6	10	SF		3	E		31		
LEAR		0701	0705	0711	S18	W63	8632	07	7.5	10	SF		3	E		15		
GOES		0706	0714	0717	N17	E16	8632			11	SF	C 2.1						1.2E-03
LEAR		0709	0716	0721	N17	E16	8628	07	13.5	12	SF		3	E		11		F
SVTO		0834	0840	0859	S19	W62	8632	07	7.6	25	SF		3	E		17		
GOES		0848	0854	0858			8632			10		C 2.6						1.1E-03
SVTO		0851	0852	0903	S18	E81		07	18.5	12	SF		3	E		42		
LEAR		0851	0853	0858	S20	E80		07	18.5	7	SF		3	E		50		E
SVTO		0857	0908	0912	N22	W54	8620	07	8.2	15	SF		3	E		15		
SVTO		1031	1031	1050	S14	E26	8627	07	14.4	19	SF		3	E		14		
RAMY		1104E	1104U	1125D	S24	W81	8626	07	6.2	21D	SF		3	E		78		
HOLL		1313	1316	1324	S22	W85	8626	07	6.0	11	SF		3	E		26		
RAMY		1313	1317	1324	S21	W88	8626	07	5.8	11	SF		3	E		50		
RAMY		1316	1318	1321	S20	W65	8632	07	7.6	5	SF		3	E		11		
SVTO		1317	1319	1323	S20	W65	8632	07	7.6	6	SF		3	E		14		
SVTO		1504	1505	1510	S20	W87	8626	07	6.0	6	SF		3	E		27		
GOES		1643	1648	1653	S20	E79	8634			10	SF	C 1.2						6.0E-04
RAMY		1647	1648	1652	S20	E79	8634	07	18.7	5	SF		3	E		37		
GOES		1810	2134	2142						212		C 1.9						1.5E-02T
GOES		1942	1947	1956	N19	E12	8628			14	SF	C 1.5						1.2E-03
HOLL		1943	1950	2004	N19	E12	8628	07	13.7	21	SF		3	E		30		
HOLL		2130	2135	2138	S20	W72	8626	07	7.4	8	SF		3	E		20		
GOES		2329	2332	2334						5		C 2.1						4.6E-04
GOES	13	0402	0405	0413						11		C 1.2						7.4E-04
GOES		0522	0546	0609						47		C 2.9						5.4E-03
SVTO		0557	0600	0610	N17	E06	8628	07	13.7	13	SF		3	E		19		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Measurement		Remarks
															Apparent (10-6 Disk)	Corr (Sq Deg)	
LEAR	13	0559	0600	0608	N16	E06	8628	07 13.7	9	SF		3	E		14		5.1E-04
GOES		0851	0855	0903					12		B 7.8						
HOLL		1259E	1259U	1309D	N18	E02	8628	07 13.7	10D	SF		3	E		64		
RAMY		1301	1302	1307	N18	E02	8628	07 13.7	6	SF		3	E		32		
SVTO		1301	1303	1306	N17	E02	8628	07 13.7	5	SF		3	E		20		
HOLL		1318	1320	1325	N19	E03	8628	07 13.8	7	SF		3	E		15		
HOLL		1350	1350	1356	S15	E16	8627	07 14.8	6	SF		3	E		14		
GOES		1657	1703	1712					15		B 9.0						6.7E-04
HOLL	14	0038	0047	0053	S17	E58	8634	07 18.4	15	1F		3	E		117		7.1E-04
GOES		0038	0048	0054	S17	E58	8634		16	1F B 8.8							
LEAR		0046	0046	0050	S21	E59	8634	07 18.5	4	SF		3	E		16		
LEAR	15	0058	0058	0109	N43	W51		07 10.8	11	SF		4	E		16		H
GOES		0142	0147	0151	S20	W29	8625		9	SF B 5.4							2.3E-04
LEAR		0146	0146	0152	S20	W29	8625	07 12.8	6	SF		4	E		24		
GOES		0748	0751	0756					8		B 5.2						2.1E-04
GOES		0912	0916	0919	S21	E40	8634		7	SF B 8.2							2.4E-04
SVTO		0915	0916	0922	S21	E40	8634	07 18.4	7	SF		3	E		25		F
GOES		1426	1434	1442	N43	W58			16	SF C 1.1							8.1E-04
SVTO		1431	1435	1438	N43	W58		07 10.8	7	SF		4	E		33		
HOLL		1432	1433	1439	N43	W64		07 10.3	7	SF		3	E		20		
SVTO		1548	1558	1609	S17	W34	8625	07 13.1	21	SF		3	E		36		
GOES		1551	1558	1605	S17	W34	8625		14	SF C 1.0							6.1E-04
GOES		1953	2001	2008	S11	W19	8627		15	SF B 8.1							5.9E-04
HOLL		2001	2002	2025	S11	W19	8627	07 14.4	24	SF		3	E		67		F
GOES		2305	2308	2311					6		B 5.0						1.7E-04
GOES	16	0046	0049	0051					5		B 4.9						1.3E-04
GOES		0639	0643	0645					6		B 7.5						2.2E-04
GOES		0737	0740	0742					5		B 7.5						1.9E-04
LEAR		0837	0838	0840	N44	W68	8635	07 10.7	3	SF		3	E		14		
GOES		0838	0849	0859	N44	W68	8635		21	SF C 7.6							6.3E-03
GOES		1542	1550	1554	N43	W71			12	SN M 3.1							1.1E-02
HOLL		1709	1709	1715	N43	W74	8635	07 10.6	6	SF		3	E		27		
GOES		1734	1750	1809	S31	W13			35	SF M 1.1							1.6E-02
LEAR	17	0220	0225	0231	N45	W76	8635	07 10.8	11	SF		3	E		18		
LEAR		0231	0236	0241	N44	W77	8635	07 10.7	10	SF		3	E		19		
LEAR		0246	0251	0255	N45	W78	8635	07 10.6	9	SF		3	E		40		
LEAR		0307	0346	0353	N18	E85		07 23.6	46	SF		3	E		23		
LEAR		0335	0336	0340	N45	W77	8635	07 10.7	5	SF		3	E		19		
LEAR		0635	0639	0647	N18	E85		07 23.7	12	SF		3	E		18		
LEAR		0708	0710	0715	N18	E84		07 23.7	7	SF		3	E		17		
SVTO		0709	0710	0716	N18	E78		07 23.2	7	SF		3	E		17		
GOES		0732	0741	0747					15		C 1.3						1.0E-03
LEAR		0821	0823	0827	N18	E81		07 23.5	6	SF		3	E		28		
SVTO		0821	0823	0828	N18	E77		07 23.2	7	SF		3	E		30		
GOES		0837	0840	0844					7		C 1.7						5.9E-04
SVTO		0951	0954	1006	N18	E76		07 23.2	15	SF		3	E		49		
GOES		1032	1042	1047					15		C 5.5						3.1E-03
SVTO		1245	1246	1251	N18	E75		07 23.2	6	SF		3	E		14		
SVTO		1351	1358	1401	N42	W89	8635	07 10.3	10	SF		3	E		60		
GOES		1354	1404	1415			8635		21		C 2.7						2.7E-03
GOES		1620	1625	1637	N42	W85	8635		17	SF C 3.4							2.6E-03
HOLL		1630	1631	1644D	N42	W85	8635	07 10.7	14D	SF		3	E		18		
GOES		1718	1734	1753					35		C 2.0						3.4E-03
GOES		2154	2202	2206					12		C 1.9						1.1E-03
GOES		2301	2309	2324					23		C 4.9						4.7E-03
GOES	18	0001	0005	0008					7		C 4.3						1.5E-03
GOES		0346	0352	0358					12		C 1.6						9.9E-04
GOES		0545	0549	0555					10		C 1.7						8.0E-04
GOES		0739	0746	0757					18		C 4.0						3.4E-03
GOES		0901	1028	1058					117		C 3.3						1.7E-02
GOES		1747	1752	1756	N20	E64			9	SF C 3.4							1.1E-03
GOES		1837	1851	1901					24		C 2.9						3.2E-03
GOES		2028	2032	2037					9		C 1.2						5.6E-04

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	18	2207	2216	2223						16		C 1.6						1.3E-03
GOES		2337	2343	2350						13		C 2.3						1.6E-03
GOES	19	0149	0215	0253						64		C 4.2						1.3E-02
GOES		0816	0846	0910	N18	E59				54	2N	M 5.8						1.1E-01
GOES		1927	1937	1951						24	SF	C 3.8						4.1E-03
GOES		2116	2119	2122						6		C 1.4						4.7E-04
GOES	20	0018	0026	0034	N19	E56				16	SF	C 4.5						3.0E-03
GOES		0603	0609	0614						11		C 2.1						9.6E-04
GOES		0816	0822	0826						10		C 1.7						7.4E-04
GOES		1150	1154	1200						10	SF	C 1.3						6.6E-04
GOES		1328	1334	1339						11	SF	C 1.2						6.9E-04
GOES		1707	1711	1714						7	SF	C 1.1						3.6E-04
GOES		2030	2034	2038						8		C 1.1						4.3E-04
GOES		2111	2127	2144						33		C 2.4						4.0E-03
GOES	21	0200	0204	0209						9		C 1.2						5.5E-04
GOES		0323	0333	0345						22		C 1.4						1.5E-03
GOES		0405	0408	0411						6		B 8.3						2.7E-04
GOES		0809	0814	0819	N19	E32	8636			10	SF	C 1.8						7.5E-04
SVTO		0812	0813	0823	N19	E32	8636	07	23.8	11	SF		3	E		54		
LEAR		0812	0813U	0825D	N20	E33	8636	07	23.9	13D	SF		3	E		56		
SVTO		0831	0831	0834	N18	E30	8636	07	23.6	3	SF		3	E		10		
GOES		0909	0913	0916						7		B 7.4						2.6E-04
GOES		1403	1406	1410						7		B 7.6						2.8E-04
GOES		1430	1437	1442	S18	E69	8642			12	SF	C 1.0						5.8E-04
RAMY		1432	1433	1441	S18	E69		07	26.8	9	SF		3	E		44		
HOLL		1432	1434	1440	S15	E66		07	26.6	8	SF		3	E		28		
SVTO		1434	1436	1439	S17	E68		07	26.8	5	SF		3	E		23		
RAMY		1454	1459	1504	N19	E31	8636	07	24.0	10	SF		3	E		33		
SVTO		1455	1457	1513	N18	E27	8636	07	23.7	18	SF		3	E		26		
HOLL		1455	1500	1504	N19	E30	8636	07	23.9	9	SF		3	E		35		
HOLL		1514	1536	1545	N19	E24	8636	07	23.5	31	SF		3	E		66		
GOES		1530	1537	1542	N19	E24	8636			12	SF	B 8.9						5.8E-04
HOLL		1545	1546	1550	N19	E24	8636	07	23.5	5	SF		3	E		38		
HOLL		1751	1758	1803	S18	E67	8642	07	26.8	12	SF		3	E		51		
HOLL		1841	1842	1847	N20	E27	8636	07	23.8	6	SF		3	E		51		
GOES		1841	1844	1848	N20	E27	8636			7	SF	C 2.1						7.7E-04
GOES		2107	2112	2114						7		B 8.5						3.1E-04
GOES		2131	2212	2413						162		C 2.4						2.1E-02T
LEAR	22	0053	0053	0100	S15	E58	8642	07	26.4	7	SF		3	E		11		
HOLL		0106	0114	0117	N22	E29	8636	07	24.3	11	SF		3	E		10		
GOES		0232	0239	0246	N37	W39	8639			14	SF	C 2.5						1.9E-03
LEAR		0233	0236	0249	N37	W39	8639	07	19.0	16	SF		3	E		57		
LEAR		0243	0244	0249	N22	W48		07	18.4	6	SF		3	E		13		
LEAR		0252	0257	0311	N37	W40	8639	07	18.9	19	SF		3	E		32		
LEAR		0330	0331	0341	N23	E32	8636	07	24.6	11	SF		3	E		48		
LEAR		0504	0510	0511	S16	E61	8642	07	26.8	7	SF		3	E		42		
LEAR		0527	0534	0546	N21	E20	8636	07	23.8	19	SF		4	E		25		
LEAR		0547	0553	0621	N38	W41	8639	07	18.9	34	SF		3	E		26		
LEAR		0610	0611	0621	N20	E20	8636	07	23.8	11	SF		3	E		15		
SVTO		0929	0929	0938	N21	E18	8636	07	23.8	9	SF		3	E		13		
RAMY		1110E	1112U	1121D	N21	E14	8636	07	23.5	11D	SF		3	E		30		F
RAMY		1142	1212	1243	N21	E17	8636	07	23.8	61	SF		3	E		45		F
HOLL		1435	1439	1444	N20	E12	8636	07	23.5	9	SF		3	E		19		
GOES		1436	1437	1441	N20	E12	8636			5	SF	C 1.1						3.3E-04
GOES		2055	2109	2125						30		C 7.1						8.7E-03
HOLL		2130E	2130U	2139	N21	E14	8636	07	24.0	9D	SF		2	E		91		
HOLL		2145	2147	2156	N20	E15	8636	07	24.0	11	SF		3	E		49		F
GOES		2339	2447	2514	N22	E13	8636			95	SF	C 6.6						3.2E-02
LEAR	23	0033	0040	0108	N22	E13	8636	07	24.0	35	SF		3	E		79		FE
LEAR		0122	0125	0136	N36	W51	8639	07	19.0	14	SF		4	E		26		E
LEAR		0216	0217	0219	N21	E17	8636	07	24.4	3	SF		3	E		21		E
LEAR		0416	0418	0421	N22	E05	8636	07	23.6	5	SF		3	E		21		
LEAR		0449	0449	0501	N22	E07	8636	07	23.7	12	SF		3	E		23		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	NOAA/ USAF		CMP Mo Day	Dur (Min)	Imp Opt Xray	Obs See Type	Area Measurement			Remarks
					Lat	Cmd Region					Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
GOES	23	0459	0505	0520	N21 E14	8636		21	SF C 9.3					1.0E-02
SVTO		0503	0507	0538	N21 E14	8636	07 24.3	35	SF	3 E		14		F
LEAR		0503	0524	0537	N20 E19	8636	07 24.7	34	SF	3 E		30		F
GOES		0627	0631	0633	N36 W54			6	1F C 4.9					1.5E-03
LEAR		0627	0631	0653	N36 W54	8639	07 18.9	26	1F	4 E		102		F
SVTO		0627	0631	0656	N36 W53	8639	07 19.0	29	1F	3 E		123		FH
SVTO		0657	0658	0708	N20 E13	8636	07 24.3	11	SF	3 E		28		F
LEAR		0657	0702	0758	N20 E14	8636	07 24.4	61	SF	3 E		42		F
SVTO		0715	0720	0724	N19 E13	8636	07 24.3	9	SF	3 E		15		F
SVTO		0829	0832	0839	N19 E03	8636	07 23.6	10	SF	3 E		14		F
LEAR		0829	0834	0847	N19 E09	8636	07 24.0	18	SF	3 E		19		
GOES		0906	0914	0929				23	C 3.0					3.6E-03
SVTO		1003	1005	1014	N22 E05	8636	07 23.8	11	SF	3 E		30		F
SVTO		1132	1145U	1149	N23 E05	8636	07 23.9	17	SF	3 E		38		F
GOES		1237	1243	1258				21	C 5.9					6.5E-03
HOLL		1439	1442	1444	S27 E87		07 30.4	5	SF	3 E		16		
HOLL		1439	1442	1446	N21 E07	8636	07 24.1	7	SF	3 E		13		
HOLL		1447	1449	1452	N19 E06	8636	07 24.1	5	SF	3 E		18		
HOLL		1452	1453	1459	N19 E08	8636	07 24.2	7	SF	3 E		34		
HOLL		1504	1509	1543	N21 E01	8636	07 23.7	39	SF	3 E		48		
GOES		1554	1601	1613		8645		19	M 1.0					9.7E-03
HOLL		1832	1942	2057	N20 E04	8636	07 24.1	145	2F	3 E		346		F
GOES		1832	2005	2046	N20 E04			134	2F M 1.1					6.5E-02
GOES		2104	2109	2115				11	C 8.8					5.0E-03
GOES		2255	2300	2306	S26 E87	8644		11	SF M 1.2					5.8E-03
HOLL		2300	2300	2315	S26 E87	8644	07 30.7	15	SF	3 E		95		
LEAR		2350	2405	2417	N25 W04	8636	07 23.7	27	SF	3 E		20		
HOLL		2351	2354	2356	N21 E00	8636	07 24.0	5	SF	3 E		18		
GOES	24	0209	0213	0220				11	C 3.8					2.2E-03
GOES		0318	0331	0339				21	C 6.4					6.3E-03
LEAR		0347	0347	0353	N34 W65	8639	07 19.0	6	SF	3 E		39		
GOES		0356	0404	0408	S29 E87			12	1N M 1.7					8.3E-03
LEAR		0359	0403	0418	S29 E87		07 31.0	19	1N	3 E		238		YE
GOES		0500	0503	0506	N21 W15	8636		6	SF C 3.1					1.0E-03
LEAR		0502	0504	0513	N21 W15	8636	07 23.0	11	SF	4 E		13		
GOES		0538	0541	0544	N21 W07	8636		6	SF C 3.3					1.0E-03
LEAR		0540	0541	0545	N21 W07	8636	07 23.7	5	SF	4 E		21		
GOES		0552	0556	0559				7	C 3.9					1.4E-03
LEAR		0713	0719	0754	N21 W05	8636	07 23.9	41	SF	4 E		26		
GOES		0749	0802	0825	S28 E78	8636		36	SF M 3.3					5.1E-02
LEAR		0755	0756	0810	S28 E78		07 30.4	15	SF	4 E		30		
GOES		1119	1122	1128				9	M 2.1					8.1E-03
GOES		1129	1133	1139				10	M 2.0					1.1E-02
HOLL		1325	1329	1334	N35 W71	8639	07 18.9	9	SF	3 E		15		
HOLL		1443	1445	1457	N38 W69	8639	07 19.0	14	SF	3 E		32		
HOLL		1523	1523	1534	N34 W73	8636	07 18.8	11	SF	3 E		15		
GOES		1607	1621	1636				29	C 7.3					1.0E-02
HOLL		2039	2045	2113D	N19 W15	8636	07 23.7	34D	SF	3 E		94		
GOES		2040	2048	2059	N19 W15	8639		19	SF C 7.7					7.2E-03
HOLL		2044	2045	2053	N36 W76	8639	07 18.8	9	SF	3 E		27		
GOES		2239	2243	2248	S26 E68	8645		9	SF C 2.6					1.2E-03
HOLL		2240	2245	2249	S26 E68	8645	07 30.2	9	SF	3 E		67		
GOES	25	0057	0103	0105	S29 E70	8645		8	SN C 5.2					1.7E-03
LEAR		0058	0102	0158	S29 E70	8645	07 30.5	60	SN	3 E		95		
GOES		0118	0133	0159	N18 W18			41	SF C 8.5					1.6E-02
LEAR		0131	0132	0207	N18 W18	8636	07 23.7	36	SF	3 E		54		
LEAR		0201	0205	0209	N38 W71	8639	07 19.3	8	SF	3 E		36		
LEAR		0229	0235	0238	S26 E59	8645	07 29.7	9	SF	3 E		20		
LEAR		0247	0250	0303	S26 E59	8645	07 29.7	16	SF	3 E		44		
LEAR		0323	0325	0330	S26 E59	8645	07 29.7	7	SF	3 E		41		
LEAR		0403	0429	0439	S26 E58	8645	07 29.7	36	1F	3 E		175		E
GOES		0414	0432	0438	S26 E58	8645		24	1F M 1.0					8.5E-03
GOES		0508	0513	0519	N20 W22	8636		11	SF C 3.8					2.1E-03
LEAR		0510	0512	0535	N20 W22	8636	07 23.5	25	SF	3 E		44		F
LEAR		0535	0535	0542	N36 W80	8639	07 18.8	7	SF	3 E		16		
GOES		0819	0833	0845				26	C 3.9					5.1E-03

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Day	Dur (Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Apparent (10 ⁻⁶ Disk)	Measurement Corr (Sq Deg)	Remarks
GOES	25	1308	1338	1417	N38	W81	8639			69	SF	M 2.4						7.5E-02
HOLL		1343	1343	1356	N38	W81	8639	07	19.0	13	SF		3	E		25		
HOLL		1351E	1359	1406	S18	E57		07	29.9	15D	SF		3	E		11		
HOLL		1421	1424	1432	S18	E57	8647	07	29.9	11	SF		3	E		44		
HOLL		1741	1745	1754	N20	W28	8636	07	23.6	13	SF		3	E		23		
GOES		1836	1841	1845						9		C 3.1						1.5E-03
HOLL		1850	1853	1856	N20	W27	8636	07	23.7	6	SF		3	E		15		
SVTO	26	0637	0640	0643	S26	E45	8645	07	29.8	6	SF		3	E		15		
LEAR		0639	0644	0652	S24	E54	8645	07	30.4	13	SF		4	E		12		
GOES		0841	0847	0854						13		C 2.5						1.7E-03
GOES		1352	1356	1404						12		C 2.6						1.5E-03
SVTO		1510	1512U	1513D	N19	W30	8636	07	24.3	3D	SF		3	E		42		
HOLL		1511	1512	1514	N21	W35	8636	07	23.9	3	SF		3	E		37		
GOES		1833	1836	1840	S26	E38	8645			7	SF	C 1.4						5.5E-04
HOLL		1833	1839U	1844	S26	E38	8645	07	29.7	11	SF		2	E		25		
GOES		2016	2029	2041			8646			25		C 1.5						1.9E-03
HOLL		2025	2028	2034	N13	W44	8646	07	23.5	9	SF		3	E		34		
GOES	27	0058	0254	0451						233		C 2.1						2.4E-02T
LEAR		0738	0747	0750	N13	W50	8646	07	23.5	12	SF		4	E		17		E -
SVTO		0739E	0739U	0744D	N13	W49	8646	07	23.6	5D	SF		3	E		12		F
GOES		0852	0857	0902	S26	E40	8645			10	SF	C 2.7						1.2E-03
SVTO		0854	0857U	0911	S25	E41	8645	07	30.5	17	SF		3	E		43		UF
LEAR		0854	0857	0915	S26	E40	8645	07	30.5	21	SF		4	E		45		UF
GOES		0946	0950	0952						6		C 1.4						4.0E-04
GOES		1258	1405	1420	N23	W50	8636			82	1N	M 3.0						6.5E-02
HOLL		1309	1323	1442	N23	W50	8636	07	23.7	93	1N		3	E		241		F
SVTO		1311	1321	1446	N25	W47	8636	07	23.9	95	1N		3	E		141		F
RAMY		1314	1321	1503	N24	W45	8636	07	24.1	109	1B		3	E		220		UF
SVTO		1441	1442	1448	N12	W54	8646	07	23.5	7	SF		3	E		24		
RAMY		1442	1442	1450	N12	W54	8646	07	23.5	8	SF		3	E		31		
RAMY		1500	1501	1504	N12	W54	8646	07	23.5	4	SF		3	E		31		
SVTO		1501	1501	1505	N12	W53	8646	07	23.6	4	SF		3	E		24		
LEAR	28	0023	0023	0036	N21	W53	8636	07	23.9	13	SF		2	E		15		
LEAR		0047	0051	0054	N20	W55	8636	07	23.8	7	SF		3	E		12		
LEAR		0057	0105	0109	N20	W55	8636	07	23.8	12	SF		3	E		16		
GOES		0136	0201	0215	S15	E08				39	SF	M 1.1						1.5E-02
LEAR		0152	0158	0234	S15	E08	8649	07	28.7	42	SF		3	E		54		UF
SVTO		0553	0555	0558	S15	E06	8649	07	28.7	5	SF		3	E		16		
SVTO		0744	0746	0803	S15	E04	8649	07	28.6	19	SF		3	E		38		
LEAR		0746	0746	0755	S15	E04	8649	07	28.6	9	SF		3	E		15		
GOES		0804	0814	0819	S15	E03				15	1B	M 2.3						1.0E-02
SVTO		0805	0813	0902	S15	E03	8649	07	28.6	57	1B		3	E		125		
SVTO		0853	0855	0901	N22	E69	8651	08	2.7	8	SF		3	E		11		
SVTO		0903	0904	0911	N24	E69	8651	08	2.7	8	SF		3	E		19		H
SVTO		0927	0936	0950	N24	E68	8651	08	2.6	23	SF		3	E		13		H
GOES		1002	1005	1012						10		C 1.8						9.7E-04
GOES		1243	1323	1337	N20	W72	8645			54	SF	C 2.0						1.1E-02
SVTO		1251	1321	1404	N20	W72	8636	07	23.0	73	SF		3	E		73		H
SVTO		1322	1323	1334	S25	E19	8645	07	30.0	12	SF		3	E		22		F
SVTO		1425	1430	1437	S15	E02	8649	07	28.7	12	SF		3	E		14		
RAMY		1425	1431	1444	S15	E01	8649	07	28.7	19	SF		3	E		26		
RAMY		1457	1515	1525	S22	E24	8645	07	30.5	28	SF		3	E		11		
HOLL		1544	1654	1715	N24	E67	8651	08	2.8	91	SF		3	E		76		
RAMY		1547	1555	1619	N23	E68	8651	08	2.9	32	SF		3	E		24		
HOLL		1548	1549	1552	S22	E24	8645	07	30.5	4	SF		3	E		19		
HOLL		1609	1611	1618	S18	E30	8647	07	30.9	9	SF		3	E		17		
RAMY		1609	1613	1621	S19	E29	8647	07	30.9	12	SF		3	E		15		
HOLL		1626	1632	1636	S14	E01	8649	07	28.8	10	SF		3	E		15		
HOLL		1636	1637	1639	S22	E23	8645	07	30.4	3	SF		3	E		12		
HOLL		1741	1745	1805	N23	E66	8651	08	2.8	24	SF		3	E		41		
RAMY		1742	1743	1800	N22	E67	8651	08	2.9	18	SF		3	E		21		
HOLL		1745	1746	1749	S22	E23	8645	07	30.5	4	SF		3	E		16		
RAMY		1745	1801	1951D	S21	E19	8645	07	30.2	126D	1N		3	E		218		F
HOLL		1746	1746	1750	N20	W63	8636	07	23.9	4	SF		3	E		22		
HOLL		1748	1812	1842	S18	E29	8647	07	31.0	54	SF		3	E		97		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Time (UT)	Area Apparent (10 ⁻⁶ Disk)	Measurement Corr (Sq Deg)	Remarks
GOES	28	1754	1812	1835	S19	E22	8645		41		1N	C 7.7						1.5E-02
HOLL		1757	1806	1848	S19	E22	8645	07	30.4	51	1N		3	E		214		F
HOLL		1843	1843	1847	S19	E29	8647	07	31.0	4	SF		3	E		43		
HOLL		1849	1851	1905	S14	W03	8649	07	28.5	16	SF		3	E		14		
HOLL		1849	1855	1902	N24	E65	8651	08	2.8	13	SF		3	E		17		
HOLL		1850	1854	1859	S25	E24	8645	07	30.6	9	SF		3	E		26		
HOLL		1901	1904	1906	S25	E24	8645	07	30.6	5	SF		3	E		19		
HOLL		1912	1918	1925	N23	E66	8651	08	2.9	13	SF		3	E		40		
HOLL		1918	1918	1922	S22	E23	8645	07	30.6	4	SF		3	E		36		
GOES		1925	1937	1947			8651		22		C	7.9						8.1E-03
HOLL		1926	1932	2012	S14	W04	8649	07	28.5	46	SF		3	E		38		
HOLL		1927	1932	1937	N24	E65	8651	08	2.8	10	SF		3	E		26		
HOLL		1940	1952	1957	N23	E66	8651	08	2.9	17	SF		3	E		35		
HOLL		2034	2035	2046	S14	W02	8649	07	28.7	12	SF		3	E		40		
HOLL		2210	2210	2216	S23	E19	8645	07	30.4	6	SF		3	E		24		
HOLL		2317	2318	2325	S14	W02	8649	07	28.8	8	SF		3	E		15		
GOES	29	1007	1011	1014	S16	W11	8649		7		SF	C 2.5						8.9E-04
SVTO		1010E	1012U	1029D	S16	W11	8649	07	28.6	19D	SF		2	E		47		H
SVTO		1059E	1102U	1103D	N25	E54	8651	08	2.6	4D	SF		3	E		79		F
GOES		1133	1142	1207					34		C	3.0						5.6E-03
RAMY		1213	1214	1222	N20	W75	8636	07	23.8	9	SF		3	E		59		
RAMY		1238	1252	1335	S14	W12	8649	07	28.6	57	SF		3	E		96		F
GOES		1245	1255	1304	S14	W12	8649		19		SF	C 4.9						4.6E-03
SVTO		1306E	1308U	1342	S15	W12	8649	07	28.6	36D	SF		3	E		55		F
SVTO		1312	1333U	1340	S26	E02	8645	07	29.7	28	SF		3	E		27		F
GOES		1359	1402	1404	S16	W12	8649		5		SF	C 2.4						6.3E-04
SVTO		1400	1402	1412	S16	W12	8649	07	28.7	12	SF		3	E		28		F
RAMY		1401	1402	1409	S16	W10	8649	07	28.8	8	SF		3	E		20		
SVTO		1420	1514	1615	N23	E56	8651	08	2.9	115	1N		3	E		101		F
GOES		1442	1448	1507	N23	E56	8651		25		1N	C 5.6						6.9E-03
RAMY		1445	1447	1459	N23	E55	8651	08	2.8	14	SF		3	E		36		
GOES		1511	1514	1519	N25	E53	8651		8		SN	C 6.1						2.4E-03
RAMY		1512	1514	1522	N25	E53	8651	08	2.7	10	SN		3	E		66		
RAMY		1603	1603	1620	S20	E11	8645	07	30.5	17	SF		3	E		27		
RAMY		1622	1631	1725	S23	E08	8645	07	30.3	63	2N		3	E		360		
GOES		1622	1656	1717	S23	E08	8645		55		2N	M 1.3						3.3E-02
HOLL		1632	1632	1726	S23	E09	8645	07	30.4	54	2F		3	E		415		HF
HOLL		1633	1731	2019	N23	E52	8651	08	2.7	226	1F		3	E		197		T
HOLL		1640	1646	1710	S18	E11	8647	07	30.5	30	SF		3	E		18		
RAMY		1648	1650	1712	N23	E54	8651	08	2.9	24	SF		3	E		66		
HOLL		1711	1714	1716	S18	E11	8647	07	30.5	5	SF		3	E		13		
RAMY		1725	1731	1750	N24	E52	8651	08	2.7	25	SF		3	E		34		
HOLL		1729	1733	1734	S24	E09	8645	07	30.4	5	SF		3	E		46		
HOLL		1747	1749	1751	S24	E10	8645	07	30.5	4	SF		3	E		40		
HOLL		1748	1749	1751	S14	W15	8649	07	28.6	3	SF		3	E		22		
HOLL		1752	1754	1756	S15	W12	8649	07	28.8	4	SF		3	E		17		
HOLL		1757	1802	1805	S14	W15	8649	07	28.6	8	SF		3	E		15		
HOLL		1817	1817	1819	S24	E09	8645	07	30.4	2	SF		3	E		31		
HOLL		1824	1837	1842	S15	W14	8649	07	28.7	18	SF		3	E		26		F
HOLL		1843	1844	1847	S14	W16	8649	07	28.6	4	SF		3	E		17		
HOLL		1850	1859	1905	S14	W16	8649	07	28.6	15	SF		3	E		73		
HOLL		1918	1919	1925	S14	W16	8649	07	28.6	7	SF		3	E		59		
RAMY		1925	1934	1955D	N25	E51	8651	08	2.8	30D	1N		3	E		196		H
GOES		1931	1936	1940	N25	E51	8651		9		1N	M 5.1						1.7E-02
HOLL		1934	1936	1946	S15	W14	8649	07	28.7	12	SF		3	E		36		
HOLL		2020	2109	2210	N24	E53	8651	08	2.9	110	1F		3	E		109		
RAMY		2102E	2102U	2131D	N23	E52	8651	08	2.9	29D	SF		2	E		11		
HOLL		2251	2324	2328	N24	E50	8651	08	2.8	37	SF		3	E		80		
HOLL		2333	2346	2428	N24	E50	8651	08	2.8	55	1F		3	E		230		
GOES		2335	2344	2357	N24	E50			22		1F	C 5.5						5.7E-03
HOLL	30	0052	0053	0102	N25	E47	8651	08	2.7	10	SF		3	E		14		
GOES		0104	0111	0123	N22	E52			19		SF	C 6.4						5.8E-03
LEAR		0108	0108	0134	N22	E52	8651	08	3.0	26	SF		3	E		58		
GOES		0156	0208	0218	N23	E48	8651		22		SF	C 3.9						4.4E-03
LEAR		0158	0200	0231	N23	E48	8651	08	2.8	33	SF		3	E		77		
LEAR		0259	0306	0310	S26	W06	8645	07	29.6	11	SF		3	E		32		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	See	Obs Type	Area Measurement			Remarks
															Time (UT)	Apparent (10 ⁻⁶ Disk)	Corr (Sq Deg)	
SVTO	30	0512	0512	0529	S26	W06	8645	07	29.7	17	SF		3	E		15		
LEAR		0518	0526	0531	N23	E47	8651	08	2.8	13	SF		3	E		10		
SVTO		0518	0526	0539	N25	E47	8651	08	2.9	21	SF		3	E		12		
GOES		0552	0600	0604	N23	E46	8651			12	SF	C 3.6						2.2E-03
LEAR		0553	0555	0617	N23	E46	8651	08	2.8	24	SF		3	E		44		F
SVTO		0554	0555	0612	N25	E47	8651	08	2.9	18	SF		3	E		43		
SVTO		0555	0555	0559	S26	W06	8645	07	29.8	4	SF		3	E		12		
SVTO		0639	0645	0703	N25	E46	8651	08	2.8	24	SF		3	E		34		
SVTO		0641	0645	0653	S26	W07	8645	07	29.7	12	SF		3	E		39		
LEAR		0641	0645	0657	N23	E45	8651	08	2.7	16	SF		3	E		23		
LEAR		0642	0644	0657	S20	E00	8645	07	30.3	15	SF		3	E		18		
SVTO		0706	0706	0712	S26	W07	8645	07	29.7	6	SF		3	E		21		
SVTO		0707	0709	0711	N25	E46	8651	08	2.9	4	SF		3	E		19		
GOES		0716	0720	0724	N25	E46	8651			8	SF	C 3.9						1.5E-03
LEAR		0717	0719U	0738	N23	E44	8651	08	2.7	21	SF		3	E		54		F
SVTO		0718	0719	0730	N25	E46	8651	08	2.9	12	SF		3	E		38		
SVTO		0835	0835	0840	N25	E45	8651	08	2.8	5	SF		3	E		19		
SVTO		0837	0839	0842	S16	W23	8649	07	28.6	5	SF		3	E		18		
GOES		0847	0852	0859	N25	E43	8651			12	SN	C 5.4						3.0E-03
SVTO		0848	0856	0900	N25	E43	8651	08	2.7	12	SN		3	E		96		
LEAR		0852E	0854	0903D	N23	E44	8651	08	2.7	11D	SN		3	E		98		E
RAMY		1036E	1036U	1050D	S27	E05	8645	07	30.8	14D	SF		3	E		34		
RAMY		1109E	1117	1154	S24	E01	8645	07	30.5	45D	SF		3	E		71		F
RAMY		1158	1202	1220	S15	W25	8649	07	28.6	22	SF		3	E		15		F
SVTO		1200	1210	1229	N23	E40	8651	08	2.6	29	SF		3	E		90		F
SVTO		1200	1213	1217	S15	W26	8649	07	28.5	17	SF		3	E		18		
RAMY		1204	1224	1247	N24	E41	8651	08	2.7	43	SF		3	E		14		F
GOES		1206	1211	1214	N23	E40	8651			8	SF	C 3.0						1.3E-03
GOES		1218	1224	1227	S16	W25	8649			9	SF	C 3.6						1.8E-03
SVTO		1219	1221	1223	S16	W25	8649	07	28.6	4	SF		3	E		16		
SVTO		1230	1230	1238	N25	E43	8651	08	2.8	8	SF		3	E		14		
SVTO		1238	1243	1247	N25	E43	8651	08	2.8	9	SF		3	E		69		
GOES		1251	1255	1258	N23	E41	8651			7	1F	C 3.8						1.4E-03
SVTO		1252	1254	1316	N23	E41	8651	08	2.7	24	1F		3	E		112		
RAMY		1255	1255	1300	N23	E41	8651	08	2.7	5	SF		3	E		21		
HOLL		1257E	1257U	1319	N25	E42	8651	08	2.8	22D	SF		3	E		87		
SVTO		1319	1320	1325	N25	E43	8651	08	2.9	6	SF		3	E		13		
HOLL		1335	1337	1341	N25	E42	8651	08	2.8	6	SF		3	E		12		
SVTO		1344	1351	1354	N25	E43	8651	08	2.9	10	SF		3	E		16		
SVTO		1355	1417	1427	N25	E42	8651	08	2.8	32	SF		3	E		47		
RAMY		1359	1359	1402	N24	E41	8651	08	2.7	3	SF		3	E		13		
HOLL		1403	1416	1506	N24	E41	8651	08	2.7	63	SF		3	E		37		
RAMY		1403	1423	1435	N23	E40	8651	08	2.7	32	SF		3	E		30		FH
GOES		1414	1418	1424	N25	E42	8651			10	SF	C 2.8						1.3E-03
SVTO		1455	1455	1506	S26	W11	8645	07	29.8	11	SF		3	E		15		
HOLL		1455	1456	1507	S24	W02	8645	07	30.5	12	SF		3	E		44		
RAMY		1455	1456	1508	S23	W04	8645	07	30.3	13	SF		3	E		19		
RAMY		1455	1517	1551	N24	E39	8651	08	2.6	56	SF		3	E		82		FH
HOLL		1508	1605	1628	N24	E40	8651	08	2.7	80	1N		3	E		160		
GOES		1509	1520	1526	S15	W28	8649			17	1B	M 1.7						8.6E-03
SVTO		1516	1519	1625	S15	W29	8649	07	28.4	69	1B		3	E		136		
HOLL		1516	1520	1614	S14	W27	8649	07	28.6	58	1N		3	E		143		
RAMY		1516	1520	1614	S15	W28	8649	07	28.5	58	1B		3	E		141		FH
HOLL		1554	1554	1558	S26	E00	8645	07	30.7	4	SF		3	E		18		F
GOES		1602	1605	1607	N24	E38	8651			5	1N	C 6.1						1.3E-03
RAMY		1604	1606	1621	N24	E38	8651	08	2.6	17	1N		3	E		131		
HOLL		1636	1639	1640	N24	E40	8651	08	2.8	4	SF		3	E		25		
GOES		1720	1735	1742						22		C 3.5						3.8E-03
GOES		1847	1910	1913						26		C 5.4						5.6E-03
GOES		1914	1917	1920						6		C 5.3						1.7E-03
GOES		2018	2021	2023						5		C 3.7						9.7E-04
HOLL		2137	2155	2213	N25	E38	8651	08	2.8	36	SN		3	E		57		
GOES		2152	2155	2157	N25	E38	8651			5	SN	C 5.0						1.2E-03
HOLL		2214	2214	2254	N24	E38	8651	08	2.9	40	SF		3	E		31		
GOES		2319	2335	2344	N25	E38	8651			25	SF	C 5.1						5.6E-03
HOLL		2323	2324	2326	N25	E33	8651	08	2.5	3	SF		3	E		24		
HOLL		2329	2335	2343	N25	E38	8651	08	2.9	14	SF		3	E		81		F
HOLL		2345	2348	2406	N26	E38	8651	08	2.9	21	SF		3	E		50		

H α SOLAR FLARES

JULY 1999

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	Dur Day	(Min)	Imp Opt	Xray	Obs See	Type	Area Measurement			Remarks
															Time (UT)	Apparent (10-6 Disk)	Corr (Sq Deg)	
HOLL	30	2345	2350	2355	S22	W06	8645	07	30.5	10	SF		3	E		12		
LEAR	31	0007	0010	0028	N22	E37	8651	08	2.8	21	SF		3	E		43		
HOLL		0008	0024	0058	N25	E34	8651	08	2.6	50	SF		3	E		57		
GOES		0021	0024	0026	N25	E34	8645			5	SF	C 2.3						5.8E-04
HOLL		0024	0024	0030	S19	W11	8645	07	30.2	6	SF		3	E		13		
GOES		0233	0236	0239						6		C 1.4						4.8E-04
GOES		0301	0304	0308						7		C 1.6						6.1E-04
GOES		0319	0326	0330	N21	E36	8651			11	SF	C 2.3						1.3E-03
LEAR		0323	0323	0332	N21	E36	8651	08	2.9	9	SF		3	E		14		
SVTO		0546	0546	0552	S25	E41		08	3.4	6	SF		3	E		19		
SVTO		0546	0549	0601	N25	E34	8651	08	2.9	15	SF		3	E		17		
LEAR		0707	0709	0740	N15	E33	8650	08	2.8	33	SF		4	E		19		
SVTO		0851	0926	1019	N25	E32	8651	08	2.8	88	SF		3	E		46		
GOES		0924	0929	0938	S26	W21	8645			14	SF	C 2.4						1.8E-03
SVTO		0938	0940	0944	S26	W21	8645	07	29.8	6	SF		3	E		14		
SVTO		0945	0945	0950	S26	W21	8645	07	29.8	5	SF		3	E		12		
GOES		1024	1029	1037						13		C 4.6						2.5E-03
SVTO		1156	1158	1211	N25	E31	8651	08	2.9	15	SF		3	E		24		
RAMY		1212	1212	1226	N25	E29	8651	08	2.7	14	SF		3	E		21		FH
RAMY		1212	1213	1223	S23	W16	8645	07	30.3	11	SF		3	E		37		FH
RAMY		1252	1252	1259	N25	E29	8651	08	2.8	7	SF		3	E		12		
SVTO		1252	1252	1302	N25	E30	8651	08	2.9	10	SF		3	E		17		
HOLL		1348	1352	1357	N16	E30	8650	08	2.8	9	SF		3	E		11		
HOLL		1356	1359	1409	N24	E28	8651	08	2.7	13	SF		3	E		18		
SVTO		1356	1359	1410	N25	E30	8651	08	2.9	14	SF		3	E		31		
RAMY		1356	1359	1410	N25	E29	8651	08	2.8	14	SF		3	E		32		FH
GOES		1356	1400	1402	N25	E29	8651			6	SF	C 4.1						1.2E-03
RAMY		1358	1358	1403	S20	W17	8645	07	30.3	5	SF		3	E		14		F
HOLL		1414	1418	1420	S23	W15	8645	07	30.4	6	SF		3	E		17		
RAMY		1415	1417	1423	S22	W17	8645	07	30.3	8	SF		3	E		22		
HOLL		1422	1424	1448	N25	E28	8651	08	2.8	26	SF		3	E		34		
SVTO		1423	1423	1444	N25	E29	8651	08	2.8	21	SF		3	E		15		
RAMY		1423	1424	1441	N25	E29	8651	08	2.8	18	SF		3	E		26		FH
RAMY		1605	1611	1623	N25	E27	8651	08	2.8	18	SF		3	E		92		F
SVTO		1605	1611	1634	N25	E28	8651	08	2.8	29	SF		3	E		79		
GOES		1607	1612	1620	N25	E26	8651			13	SF	C 2.4						1.6E-03
HOLL		1607	1612	1621	N25	E26	8651	08	2.7	14	SF		3	E		96		
HOLL		1612	1612	1617	S22	W12	8645	07	30.7	5	SF		3	E		17		
GOES		1749	1756	1807	N02	E00	8645			18	1F	C 3.1						2.6E-03
HOLL		1752	1754	1814	N02	E00	8645	07	31.7	22	1F		3	E		110		
HOLL		1823	1825	1828	N25	E24	8651	08	2.6	5	SF		3	E		30		
GOES		1823	1837	1845	N25	E24	8651			22	SF	C 1.7						2.6E-03
RAMY		1928	1929U	2020D	N25	E26	8651	08	2.8	52D	SF		3	E		15		
GOES		2353	2359	2404						11		C 4.1						2.1E-03

"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.

Observation Type: C=Cinematographic, E=Electronic, P=Photographic, V=Visual

NOTE: Beginning July 1997, the times of all GOES X-ray events are now included in this table.

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

Selected Fixed Frequency Events

43
Jul 99

JULY 1999

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2695	SGMR	8 S	2139.0	2139.0	1.0	37.0		QL=4 ST=2 TYP=3
02	8800	LEAR	4 S/F	0132.0	0133.0	6.0	170.0		QL=2 ST=2 TYP=3
	8800	PALE	4 S/F	0132.0	0133.0	6.0	140.0		QL=4 ST=2 TYP=3
	2695	LEAR	8 S	0133.0	0134.0	2.0	71.0		QL=4 ST=2 TYP=3
	2695	PALE	8 S	0133.0	0134.0	2.0	49.0		QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1514.0	1517.0	6.0	150.0		QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1517.0	1517.0	1.0	58.0		QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1517.0	1517.0	2.0	120.0		QL=4 ST=2 TYP=3
	2695	SVTO	8 S	1517.0	1517.0	1.0	49.0		QL=4 ST=2 TYP=3
03	8800	SGMR	8 S	1433.0	1433.0	U	72.0		QL=4 ST=2 TYP=3
	2695	PALE	8 S	2318.0	2318.0	U	37.0		QL=4 ST=2 TYP=3
04	8800	SGMR	20 GRF	2233.0	2237.0	7.0	32.0		QL=4 ST=3 TYP=2
	2695	SGMR	20 GRF	2233.0	2234.0	7.0	24.0		QL=4 ST=3 TYP=2
05	8800	SGMR	8 S	1713.0	1713.0	1.0	98.0		QL=4 ST=2 TYP=3
	2695	SGMR	8 S	1713.0	1713.0	1.0	40.0		QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1713.0	1713.0	1.0	74.0		QL=2 ST=2 TYP=3
	2695	SVTO	8 S	1713.0	1713.0	U	38.0		QL=2 ST=2 TYP=3
09	8800	PALE	4 S/F	0026.0	0026.0	5.0	28.0		QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1854.0	1855.0	2.0	15.0		QL=4 ST=2 TYP=3
11	2695	LEAR	8 S	0011.0	0011.0	2.0	69.0		QL=4 ST=2 TYP=3
12	2695	SGMR	8 S	1945.0	1946.0	1.0	13.0		QL=4 ST=2 TYP=3
16	8800	SGMR	4 S/F	1548.0	1550.0	9.0	270.0		QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	1548.0	1551.0	7.0	220.0		QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1550.0	1554.0	7.0	54.0		QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	1550.0	1554.0	5.0	67.0		QL=4 ST=2 TYP=3
22	8800	PALE	4 S/F	2056.0	2057.0	8.0	41.0		QL=4 ST=2 TYP=3
	8800	SGMR	8 S	2057.0	2057.0	2.0	45.0		QL=4 ST=2 TYP=3
23	8800	SGMR	48 C	1849.0	1855.0	15.0	52.0		QL=4 ST=2 TYP=8
	2695	SGMR	46 C	1849.0	1855.0	15.0	40.0		QL=4 ST=2 TYP=8
	2695	PALE	4 S/F	1851.0	1857.0	23.0	36.0		QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	1851.0	1855.0	23.0	21.0		QL=4 ST=2 TYP=3
	2695	SGMR	46 C	1909.0	1921.0	16.0	21.0		QL=4 ST=2 TYP=8
	8800	SGMR	4 S/F	1909.0	1910.0	17.0	28.0		QL=4 ST=2 TYP=3
	8800	SGMR	20 GRF	1937.0	2003.0	78.0	42.0		QL=4 ST=2 TYP=2
	2695	SGMR	20 GRF	1938.0	1938.0	74.0	27.0		QL=4 ST=2 TYP=2
	2695	PALE	4 S/F	2005.0	2006.0	4.0	28.0		QL=4 ST=2 TYP=3
24	2695	SGMR	8 S	1120.0	1121.0	2.0	15.0		QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1120.0	1121.0	2.0	61.0		QL=4 ST=2 TYP=3
	8800	SVTO	8 S	1121.0	1121.0	U	54.0		QL=4 ST=2 TYP=3
	8800	SGMR	20 GRF	1126.0	1237.0	152.0	45.0		QL=4 ST=3 TYP=2
25	2695	SGMR	49 GB	1308.0	1314.0	30.0	600.0		QL=4 ST=2 TYP=6
	8800	SGMR	49 GB	1310.0	1314.0	27.0	1200.0		QL=4 ST=2 TYP=6
	8800	SGMR	4 S/F	1836.0	1838.0	7.0	45.0		QL=4 ST=2 TYP=3
28	2695	LEAR	4 S/F	0151.0	0157.0	11.0	450.0		QL=4 ST=2 TYP=3
	8800	LEAR	4 S/F	0151.0	0157.0	18.0	310.0		QL=4 ST=2 TYP=3
	2695	PALE	4 S/F	0152.0	0157.0	9.0	400.0		QL=4 ST=2 TYP=3
	8800	PALE	4 S/F	0153.0	0157.0	8.0	260.0		QL=4 ST=2 TYP=3
	2695	SVTO	4 S/F	0809.0	0813.0	9.0	97.0		QL=4 ST=2 TYP=3
	2695	LEAR	48 C	0809.0	0813.0	11.0	96.0		QL=4 ST=2 TYP=8
	8800	LEAR	4 S/F	0811.0	0813.0	6.0	160.0		QL=4 ST=2 TYP=3
	8800	SVTO	4 S/F	0811.0	0813.0	6.0	180.0		QL=4 ST=2 TYP=3
	8800	SGMR	8 S	1805.0	1807.0	2.0	10.0		QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1805.0	1805.0	37.0	29.0		QL=4 ST=2 TYP=3
	2695	PALE	4 S/F	1925.0	1932.0	8.0	32.0		QL=4 ST=2 TYP=3
	2695	SGMR	4 S/F	1933.0	1935.0	16.0	40.0		QL=4 ST=2 TYP=3
	8800	SGMR	4 S/F	1935.0	1935.0	14.0	12.0		QL=4 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

JULY 1999

Day	Freq Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
						Peak (10 -22 W/m 2 Hz)	Mean		
29	8800 PALE	8 S	1934.0	1934.0	1.0	33.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1934.0	1934.0	2.0	50.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1934.0	1934.0	7.0	38.0			QL=4 ST=2 TYP=3
30	8800 SGMR	8 S	1207.0	1208.0	2.0	44.0			QL=4 ST=2 TYP=3
	8800 SGMR	8 S	1422.0	1423.0	1.0	50.0			QL=4 ST=2 TYP=3
	2695 SVTO	4 S/F	1516.0	1519.0	4.0	64.0			QL=4 ST=2 TYP=3
	8800 SVTO	4 S/F	1516.0	1519.0	4.0	47.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1517.0	1519.0	9.0	56.0			QL=4 ST=2 TYP=3
	8800 SGMR	4 S/F	1518.0	1519.0	8.0	47.0			QL=4 ST=2 TYP=3
31	8800 SGMR	8 S	1829.0	1830.0	2.0	35.0			QL=4 ST=2 TYP=3
	2695 SGMR	4 S/F	1829.0	1830.0	6.0	25.0			QL=4 ST=2 TYP=3

Reports are received routinely from the following observatories:

LEAR = Learmonth

PALE = Palehua

SGMR = Sagamore Hill

SVTO = San Vito

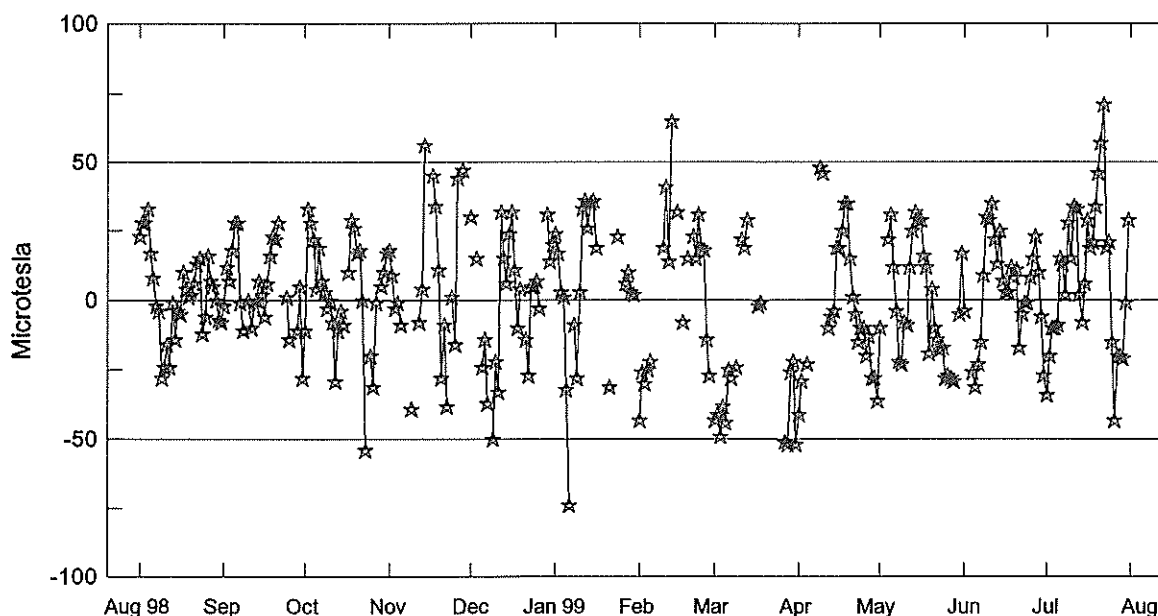
Explanation of Type Code:

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

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

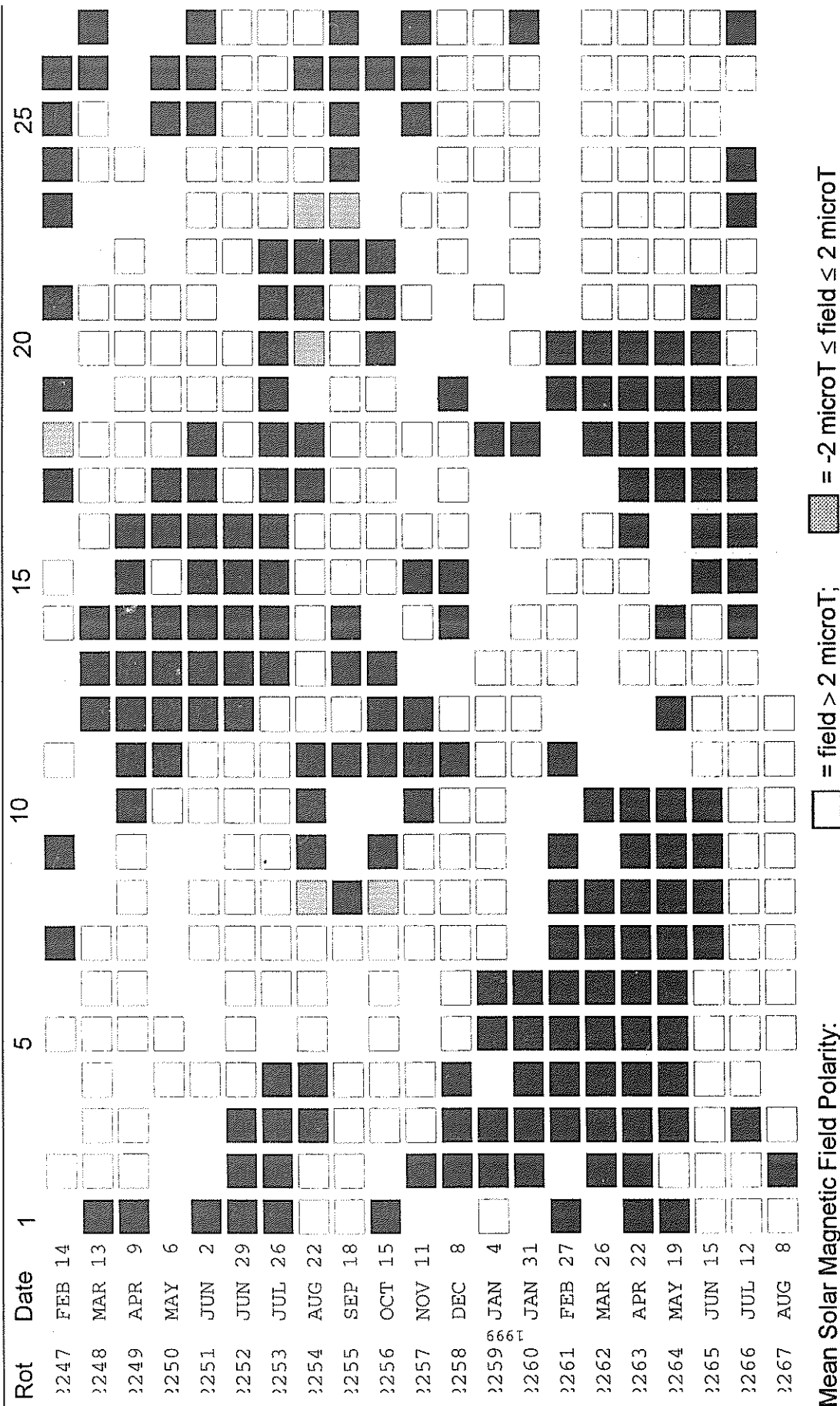
Stanford Mean Solar Magnetic Field (Microtesla) "Sun-As-A-Star"

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Jul 99



Day	Aug 98	Sep	Oct	Nov	Dec	Jan 99	Feb	Mar	Apr	May	Jun	Jul
1	23	-2	-11	18	30	24	-43	-43	-41	-10	-4	-34
2	28	12	33	9	---	17	-26	-41	-29	---	---	-20
3	28	7	28	-3	15	3	-30	-49	---	---	---	-10
4	33	18	22	-1	---	1	-25	-38	-23	22	-26	-10
5	17	28	4	-9	-24	-32	-22	-44	---	31	-31	-9
6	8	28	19	---	-14	-74	---	-25	---	12	-23	15
7	-2	-1	7	---	-37	---	---	-28	---	-4	-15	13
8	-4	-11	3	---	---	-9	---	---	---	-22	9	2
9	-28	---	-3	-39	-50	-28	---	-24	48	-23	30	28
10	-24	0	0	---	-22	3	19	---	46	-8	29	15
11	-16	-10	-8	---	-33	33	41	22	---	-9	35	34
12	-24	-2	-29	-8	32	36	14	19	-10	12	22	33
13	-1	0	-11	4	15	26	65	29	-6	25	13	2
14	-14	7	-4	56	6	35	---	---	-4	32	25	-8
15	-4	2	-9	---	24	36	32	---	19	29	7	6
16	-5	-6	---	---	32	19	---	---	19	29	3	29
17	10	6	10	45	11	---	-8	-2	25	16	3	19
18	4	16	29	34	-10	---	---	-1	35	12	12	21
19	1	23	26	11	4	---	15	---	35	-19	8	34
20	2	22	17	-28	---	---	---	---	15	4	11	46
21	6	28	18	-9	-14	-31	23	---	1	-10	-17	57
22	13	---	0	-38	-27	---	15	---	-5	-14	-5	71
23	15	---	-54	---	5	---	31	---	-15	-18	-1	19
24	-12	1	---	1	5	23	19	---	-10	-17	-1	21
25	-6	-14	-20	-16	7	---	18	---	-10	-28	8	-15
26	16	---	-31	44	-3	---	-14	---	-20	-27	15	-43
27	7	---	-1	---	---	6	-27	-51	-13	-28	23	-20
28	5	-11	---	47	---	10	---	-52	-28	-29	10	-20
29	0	5	5	---	31	3	---	-26	-28	---	-6	-21
30	-7	-28	10	---	14	2	---	-22	-36	-5	-27	-1
31	-8	---	17	---	20	---	---	-52	---	17	---	29

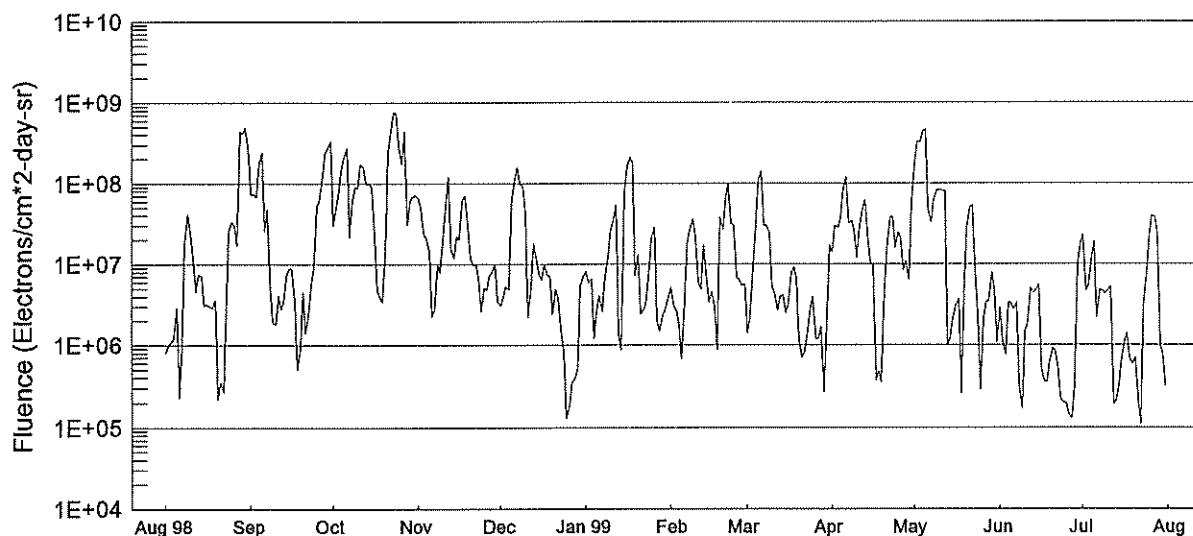
STANFORD MEAN SOLAR MAGNETIC FIELD



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

GOES Daily Electron Fluence Aug 98 - Jul 99

47
Jul 99



Day	Aug 98	Sep	Oct	Nov	Dec	Jan 99	Feb	Mar	Apr	May	Jun	Jul
1	8.1E+05	7.4E+07	3.0E+07	6.6E+07	3.1E+06	8.3E+06	5.2E+06	1.4E+06	1.4E+07	1.9E+08	2.9E+06	2.3E+07
2	1.0E+06	7.4E+07	4.8E+07	5.1E+07	3.9E+06	5.9E+06	3.2E+06	2.2E+06	3.0E+07	3.3E+08	1.1E+06	4.7E+06
3	1.1E+06	6.8E+07	7.0E+07	2.3E+07	5.4E+06	6.5E+06	2.7E+06	7.2E+06	2.9E+07	3.2E+08	7.7E+05	5.5E+06
4	1.2E+06	1.7E+08	1.5E+08	2.1E+07	4.9E+06	1.2E+06	1.8E+06	2.9E+07	3.6E+07	4.4E+08	3.3E+06	1.2E+07
5	2.9E+06	2.4E+08	2.1E+08	1.4E+07	5.8E+07	2.7E+06	6.8E+05	1.1E+08	8.3E+07	4.6E+08	3.3E+06	1.9E+07
6	2.3E+05	2.6E+07	2.7E+08	2.3E+06	1.0E+08	4.1E+06	3.4E+06	1.4E+08	1.2E+08	4.9E+07	2.8E+06	2.2E+06
7	9.5E+05	4.8E+07	2.2E+07	2.7E+06	1.6E+08	2.6E+06	1.8E+07	3.0E+07	3.2E+07	3.3E+07	3.3E+06	4.8E+06
8	1.8E+07	4.9E+06	5.8E+07	9.9E+06	1.0E+08	6.8E+06	2.7E+07	3.0E+07	3.5E+07	6.4E+07	3.2E+05	4.7E+06
9	4.2E+07	1.9E+06	9.0E+07	8.0E+06	9.1E+07	1.2E+07	3.6E+07	2.4E+07	2.5E+07	8.2E+07	1.7E+05	4.3E+06
10	2.5E+07	1.8E+06	8.9E+07	1.9E+07	4.3E+07	2.7E+07	2.2E+07	5.3E+06	1.2E+07	8.4E+07	1.5E+06	4.7E+06
11	1.1E+07	4.1E+06	1.7E+08	4.5E+07	2.2E+06	3.4E+07	5.9E+06	4.4E+06	2.8E+07	8.0E+07	1.8E+06	5.3E+06
12	4.6E+06	2.8E+06	1.6E+08	1.2E+08	5.1E+06	5.5E+07	4.9E+06	2.7E+06	4.8E+07	8.0E+07	5.1E+06	1.9E+05
13	7.5E+06	3.4E+06	1.0E+08	1.5E+07	1.8E+07	1.3E+06	1.7E+07	4.0E+06	6.3E+07	1.0E+06	4.4E+06	2.1E+05
14	7.2E+06	7.6E+06	1.0E+08	1.2E+07	1.2E+07	8.6E+05	7.8E+06	4.1E+06	1.9E+07	1.2E+06	4.8E+06	3.1E+05
15	3.1E+06	8.9E+06	9.2E+07	2.2E+07	7.5E+06	7.7E+07	3.4E+06	2.5E+06	9.8E+06	2.0E+06	5.6E+06	6.3E+05
16	3.2E+06	8.9E+06	3.1E+07	2.0E+07	6.4E+06	1.6E+08	4.6E+06	3.2E+06	1.0E+07	3.1E+06	5.0E+05	1.1E+06
17	3.0E+06	3.5E+06	4.7E+06	6.4E+07	1.0E+07	2.1E+08	2.9E+06	7.9E+06	3.8E+05	3.7E+06	3.6E+05	1.4E+06
18	2.9E+06	5.0E+05	4.0E+06	7.0E+07	7.3E+06	1.8E+08	8.7E+05	9.2E+06	4.8E+05	2.6E+05	3.6E+05	6.8E+05
19	3.6E+06	9.0E+05	3.4E+06	3.7E+07	7.2E+06	7.1E+06	3.9E+07	6.6E+06	3.5E+05	4.1E+06	6.5E+05	5.9E+05
20	2.2E+05	4.5E+06	1.5E+07	1.2E+07	2.4E+06	1.3E+07	2.7E+07	1.2E+06	4.5E+06	2.8E+07	9.2E+05	7.1E+05
21	3.5E+05	1.4E+06	2.3E+08	9.8E+06	4.9E+06	2.4E+06	6.3E+07	7.0E+05	1.6E+07	5.1E+07	8.2E+05	2.1E+05
22	2.7E+05	2.5E+06	4.2E+08	1.0E+07	3.8E+06	2.7E+06	1.0E+08	8.2E+05	3.8E+07	5.4E+07	5.3E+05	1.1E+05
23	2.5E+06	5.6E+06	7.5E+08	6.6E+06	1.4E+06	3.2E+06	3.2E+07	1.5E+06	3.9E+07	1.1E+07	2.2E+05	3.1E+06
24	2.6E+07	8.7E+06	7.4E+08	2.6E+06	8.5E+05	7.8E+06	3.1E+07	2.8E+06	1.6E+07	2.3E+06	2.0E+05	7.5E+06
25	3.4E+07	5.2E+07	3.0E+08	5.1E+06	1.3E+05	2.1E+07	6.8E+06	4.0E+06	2.5E+07	2.9E+05	2.0E+05	2.2E+07
26	3.0E+07	6.2E+07	1.7E+08	4.8E+06	1.8E+05	2.9E+07	6.4E+06	1.2E+06	2.0E+07	2.1E+06	1.4E+05	4.0E+07
27	1.7E+07	1.2E+08	4.4E+08	7.3E+06	3.5E+05	2.0E+06	5.5E+06	1.2E+06	8.5E+06	3.4E+06	1.3E+05	3.9E+07
28	4.4E+08	2.4E+08	3.1E+07	8.0E+06	3.8E+05	1.5E+06	5.6E+06	1.7E+06	1.1E+07	3.5E+06	3.0E+05	2.3E+07
29	4.2E+08	2.7E+08	6.1E+07	1.0E+07	5.0E+05	2.3E+06		2.7E+05	6.4E+06	8.0E+06	1.0E+07	9.8E+05
30	4.9E+08	3.3E+08	6.9E+07	3.5E+06	5.4E+06	2.8E+06		1.7E+06	6.0E+07	4.7E+06	1.8E+07	7.5E+05
31	2.7E+08		7.2E+07		7.1E+06	3.6E+06		1.7E+07		1.1E+06		3.1E+05

NOTE: The electron detector responds significantly to protons above 32 MeV; therefore, electron data are contaminated when a proton event is in progress. These days are indicated with '-999' in the table and are not plotted. '-' indicates data not available.

NOTE: GOES9 data began April, 1996 and ended on 26 July, 1998. GOES8 is primary satellite as of 27 July, 1998.

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SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION NUMBER 1949
(1 to 28 May 1999)

WILCOX SOLAR OBSERVATORY

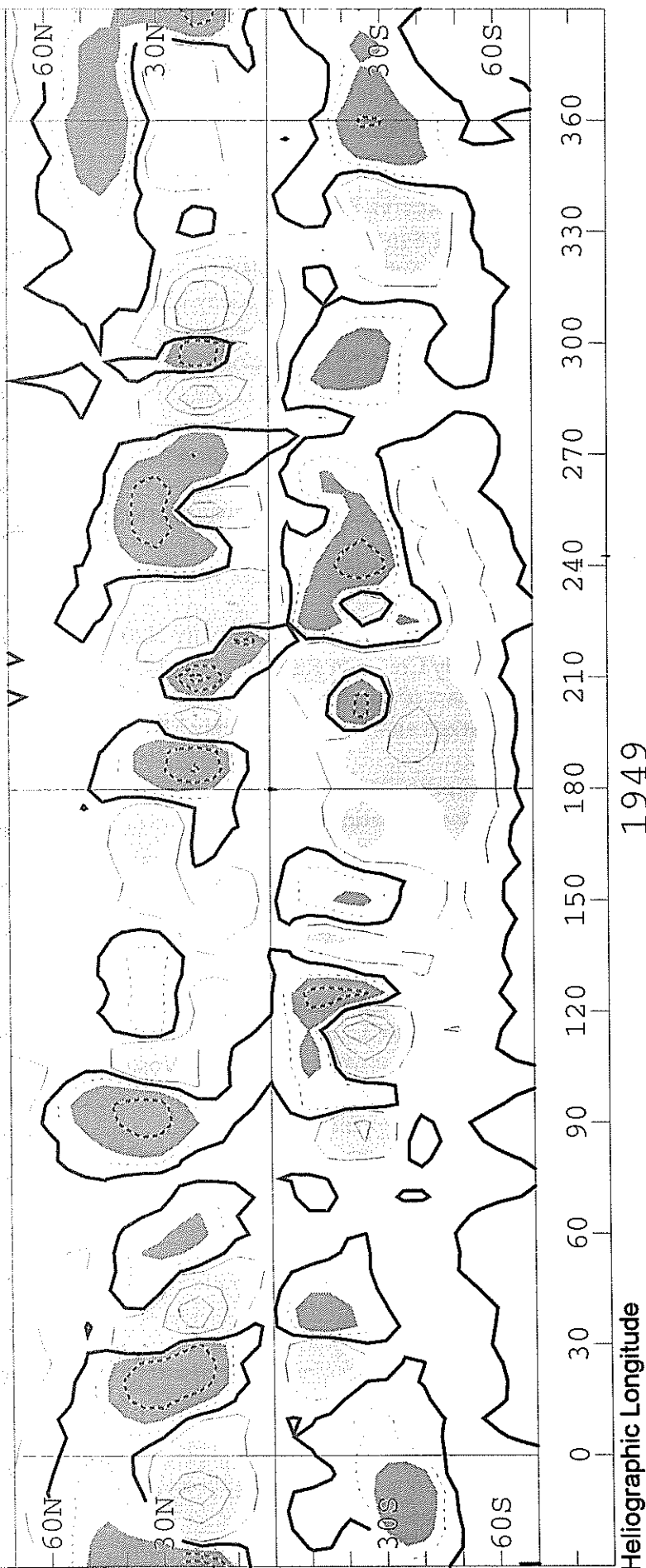
Mean Field

100—

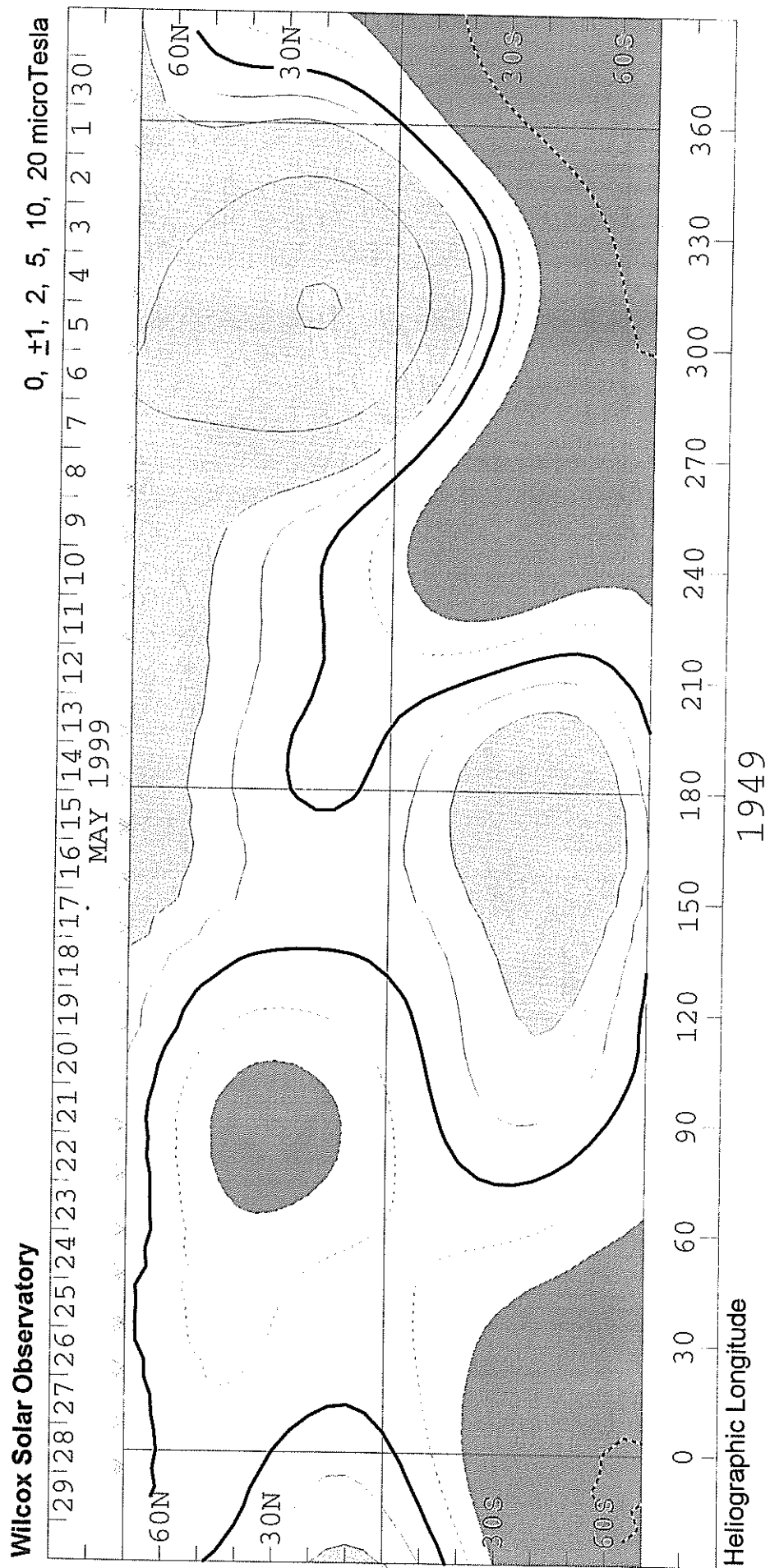
—100

Photospheric Magnetic Field 0, ± 100 , 500, 1000, 2000 MicroTesla

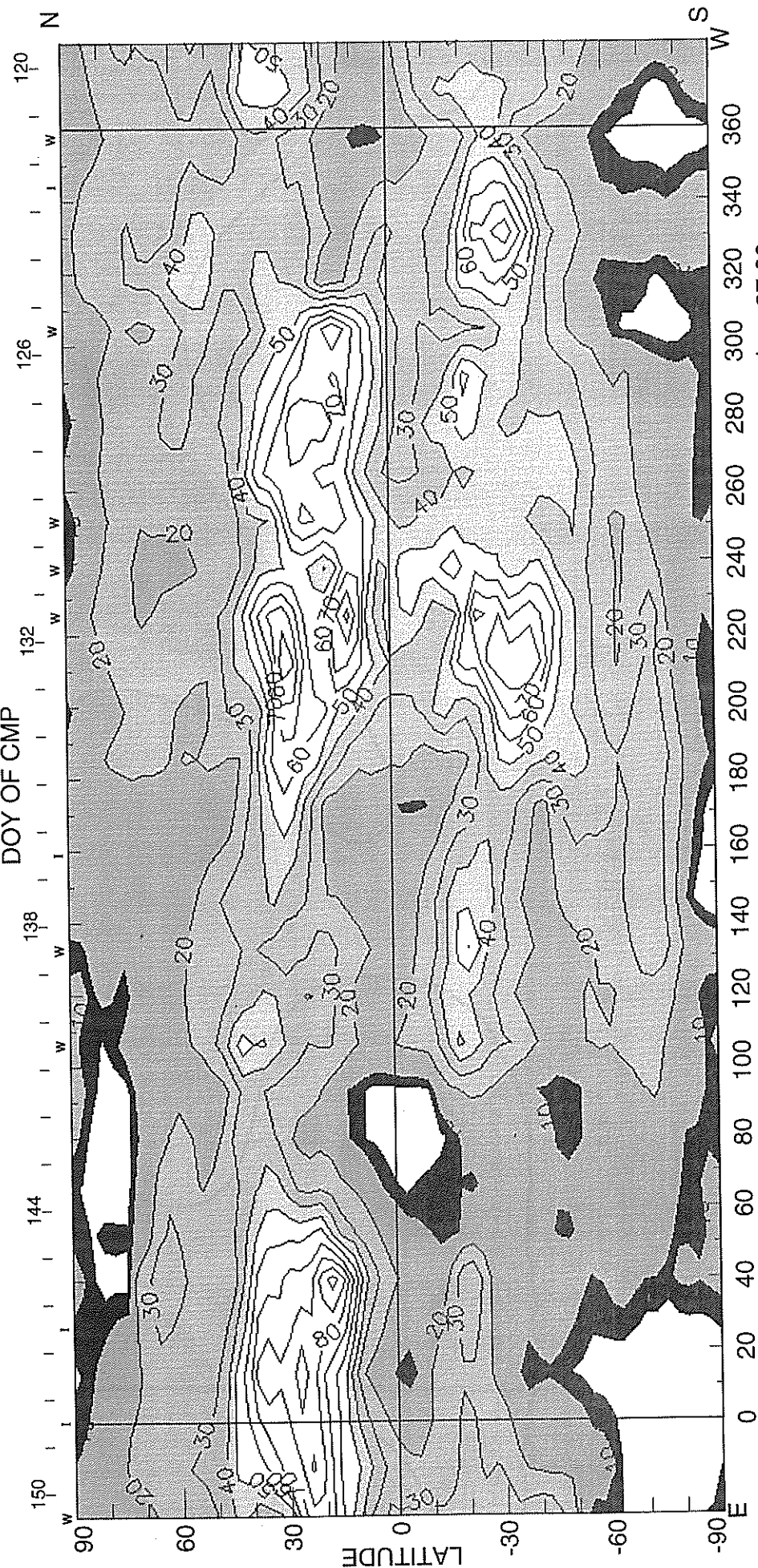
29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 30
MAY 1999



SOLAR MAGNETIC FIELD SYNOPTIC CHART
SOURCE SURFACE FIELD
CARRINGTON ROTATION NUMBER 1949
(1 to 28 May 1999)



CARRINGTON ROTATION NUMBER 1949 ; NSO/SACRAMENTO PEAK FE XIV @ $R = 1.15R_{\odot}$
DOY OF CMP



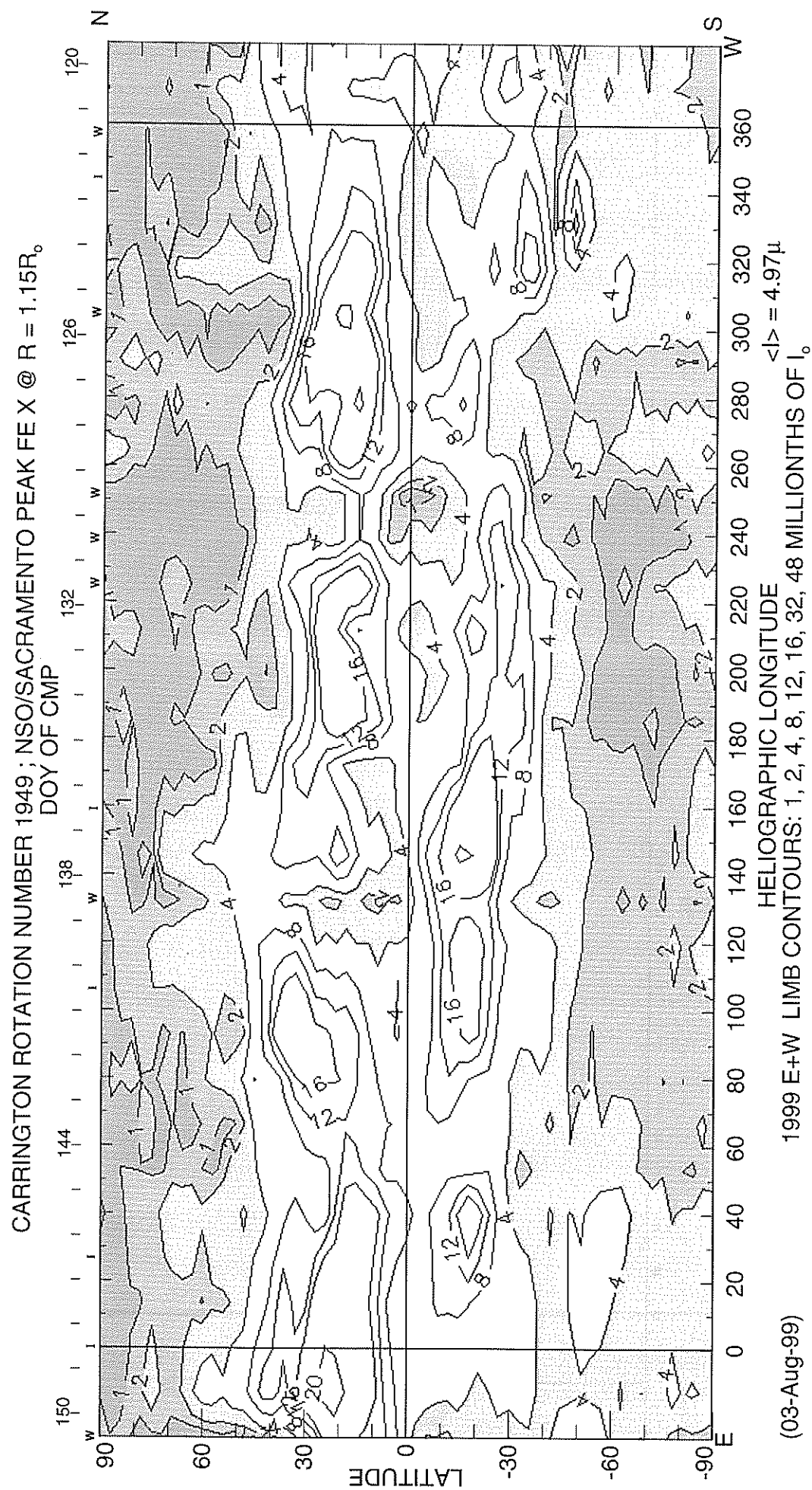
$\langle I \rangle = 27.66 \mu$

HELIOGRAPHIC LONGITUDE

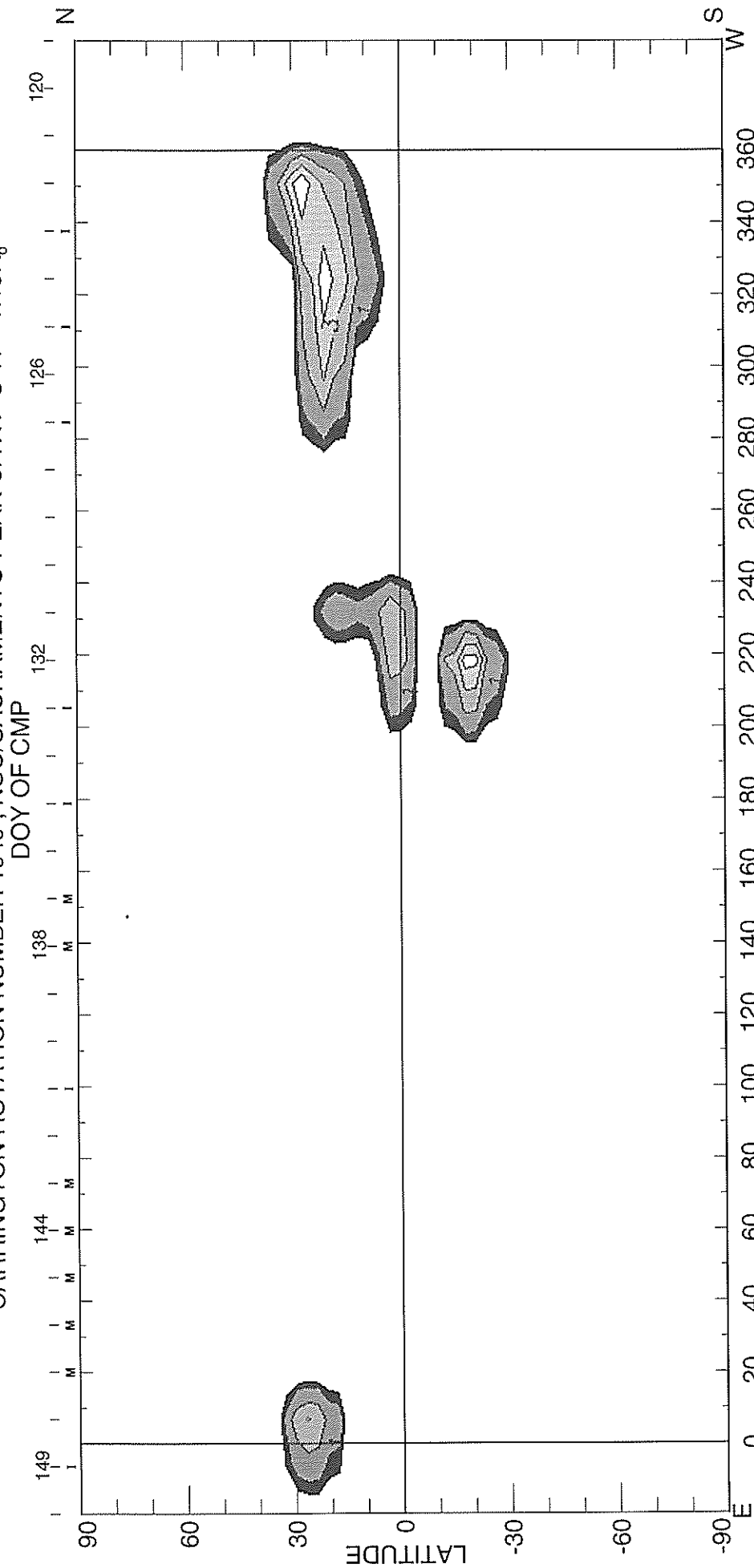
1999 E+W LIMB CONTOURS: 7, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 MILLIONTHS OF I_0

CORONAL HOLES ARE SHOWN AS WHITE BORDERED BY BLACK

(03-Aug-99)



CARRINGTON ROTATION NUMBER 1949 ; NSO/SACRAMENTO PEAK CA XV @ $R = 1.15R_{\odot}$



HELIOGRAPHIC LONGITUDE

1999 W LIMB CONTOURS: YELMIN, 1, 2, 3, 4, 6, 8 MILLIONTHS OF I_0

(03-Aug-99)

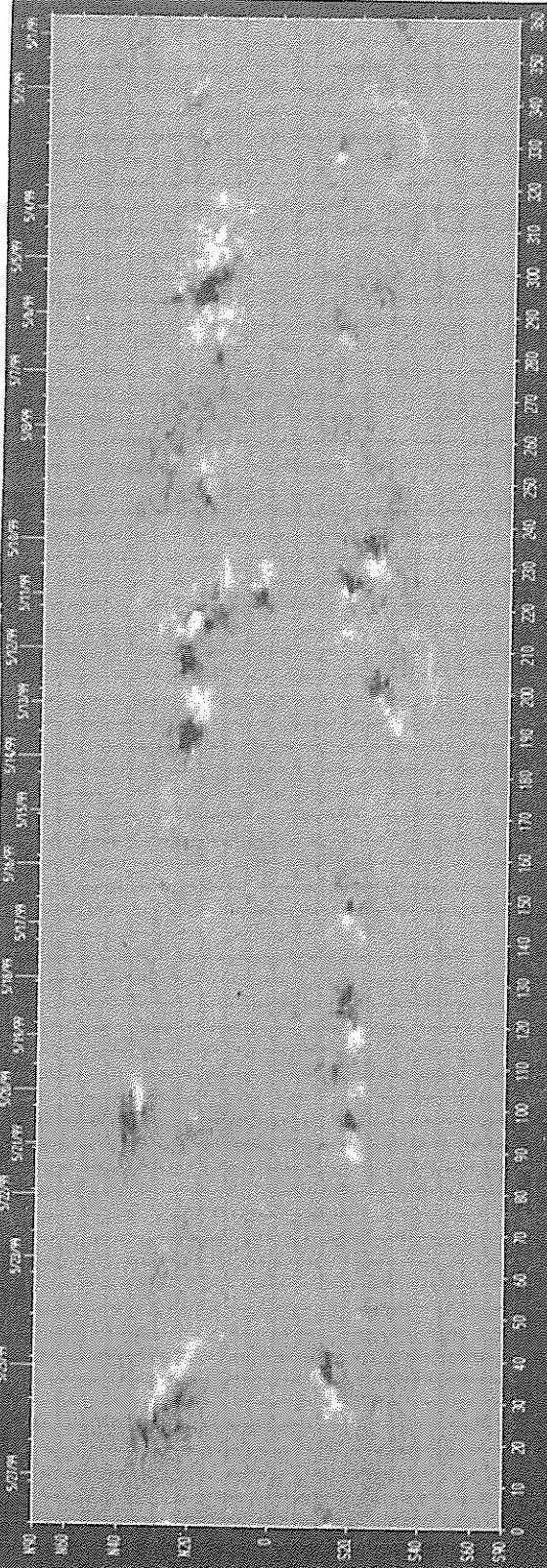
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION NUMBER 1949

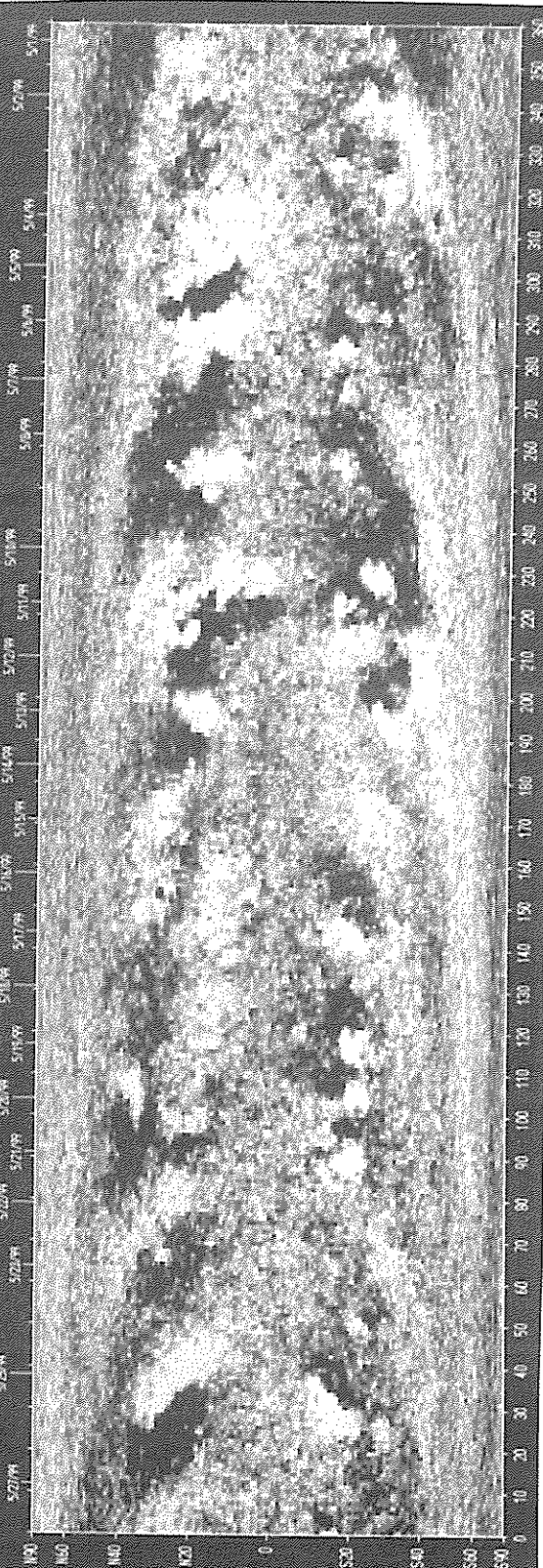
(1 to 28 May 1999)

National Solar Observatory/Kitt Peak

Dates of Observation



CARRINGTON ROTATION 1949 POLARITY



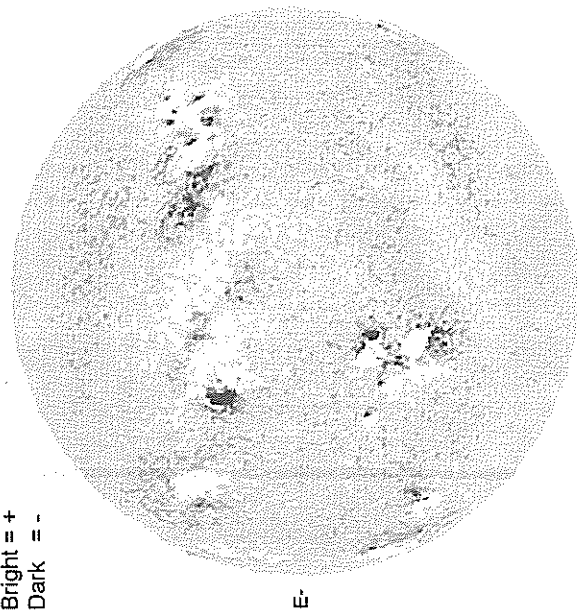
Heliographic Longitude

JUNE 1, 1999 (P = -15.61, Bo = -0.71, Lo = 313.93)

KITT PEAK MAGNETOGRAM

N **868.8 nm**

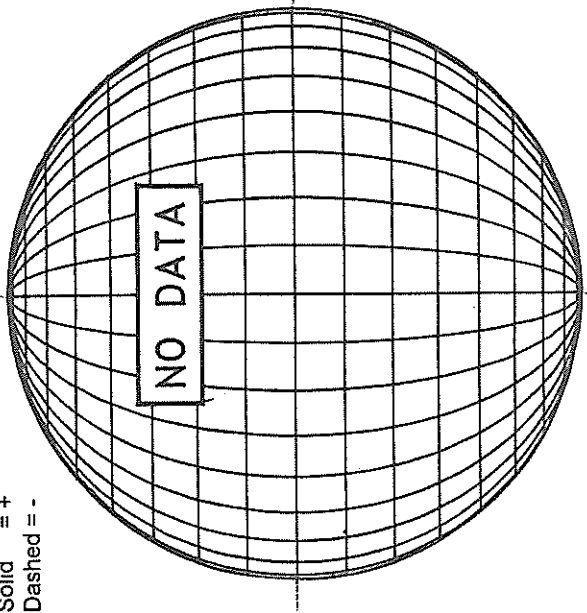
Bright = +
Dark = -



1610 UT

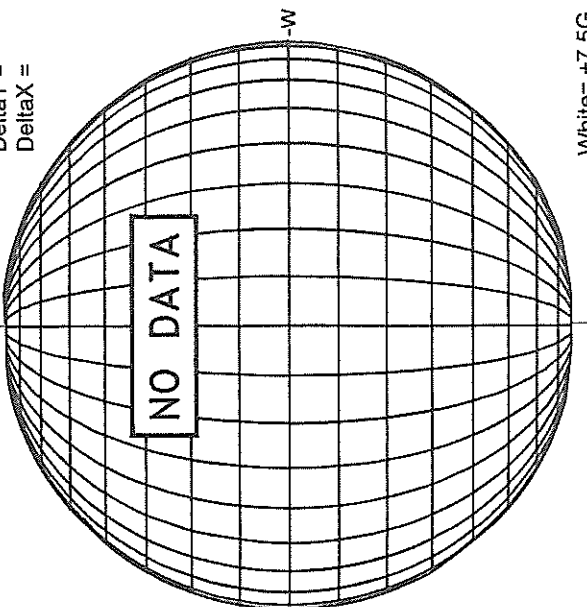
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



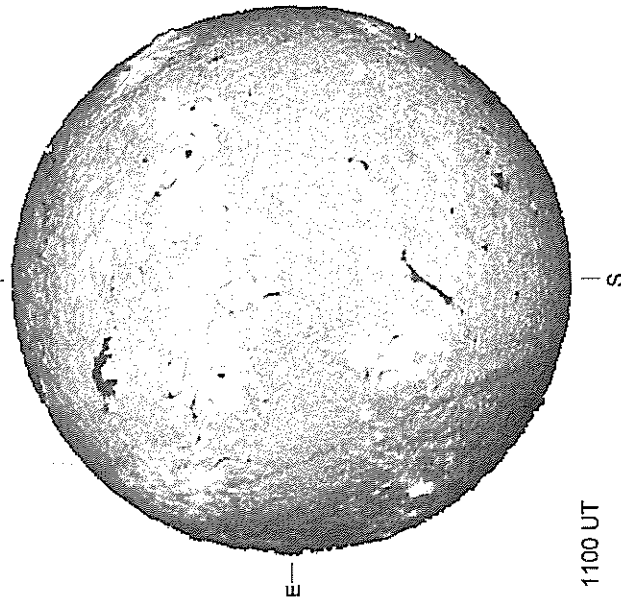
MT. WILSON MAGNETOGRAM

DeltaY =
DeltaX =



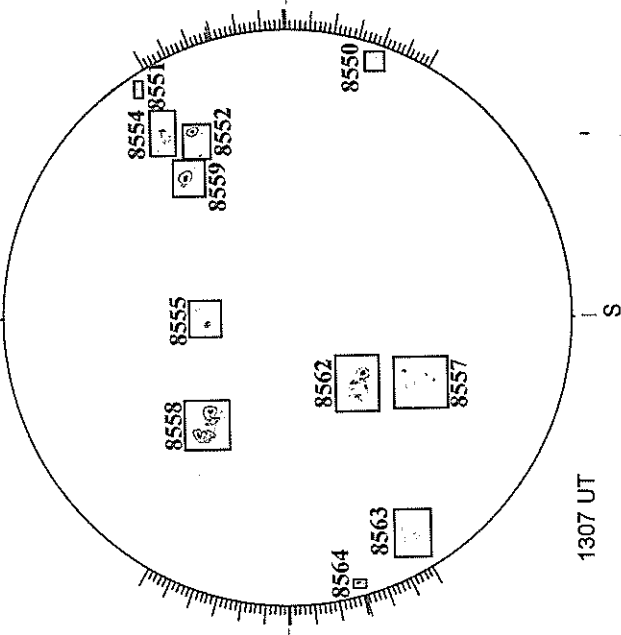
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



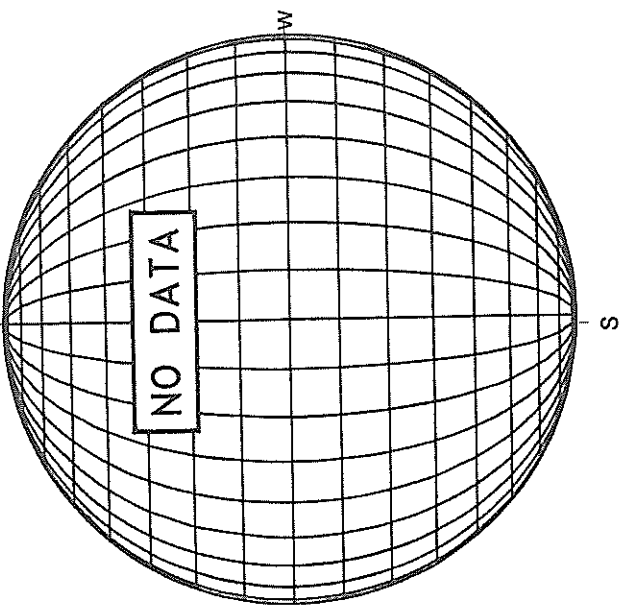
1100 UT

RAMEY SUNSPOT



1307 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

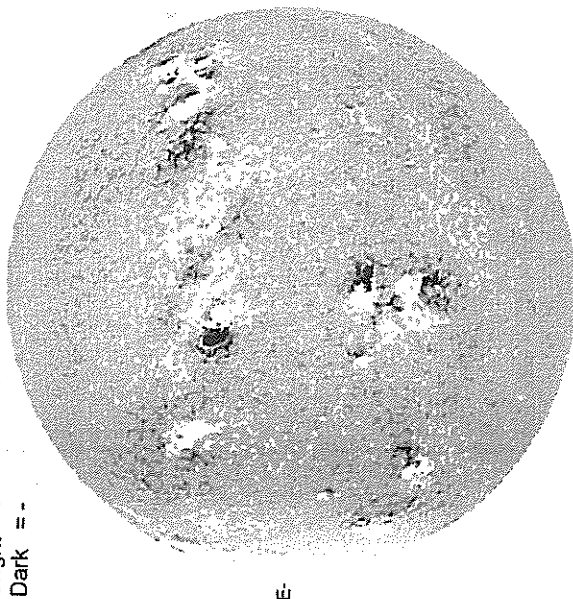


JUNE 2, 1999 (P = -15.24, Bo = -0.59, Lo = 300.69)

KITT PEAK MAGNETOGRAM

N
868.8 nm

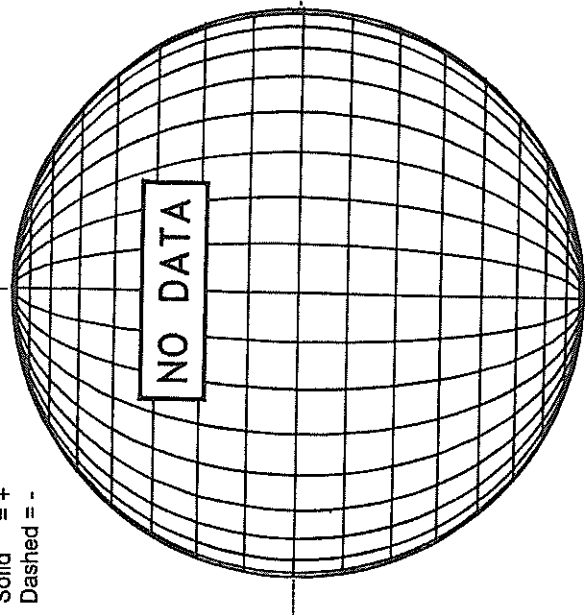
Bright = +
Dark = -



1553 UT

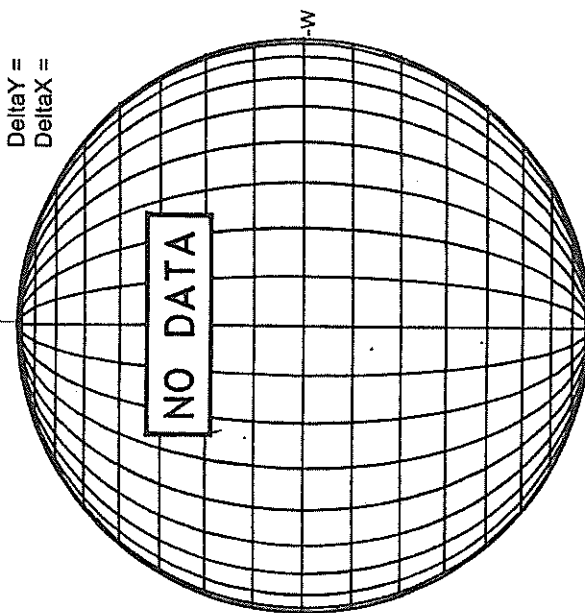
STANFORD MAGNETOGRAM

Solid = +
Dashed = -



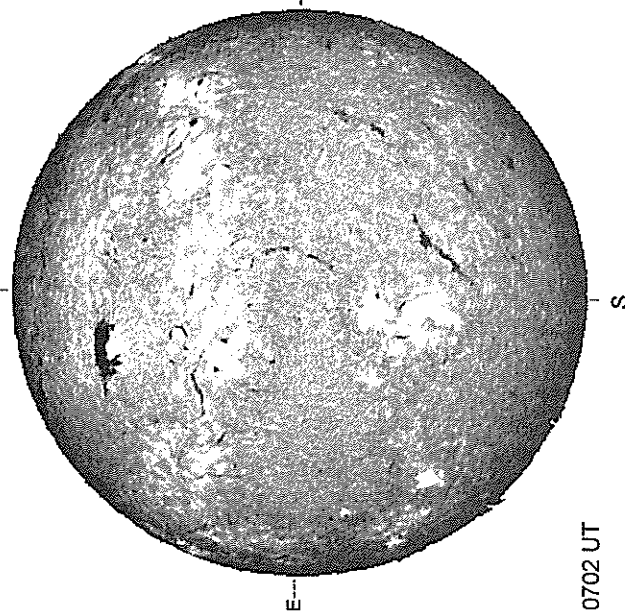
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



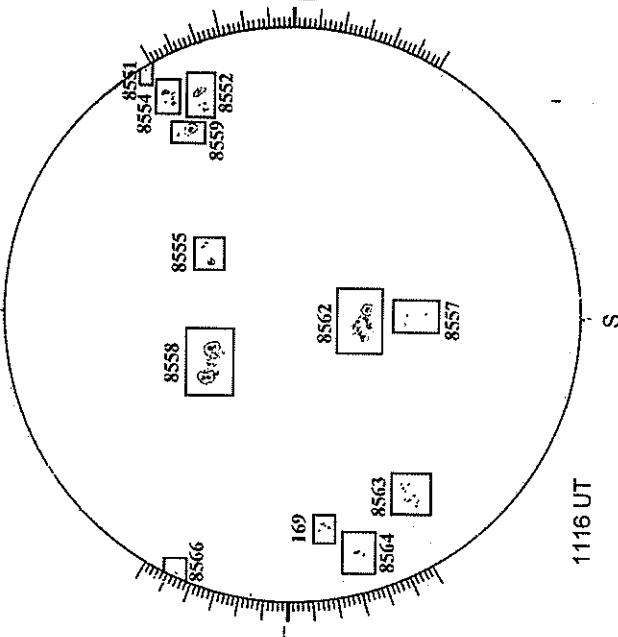
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



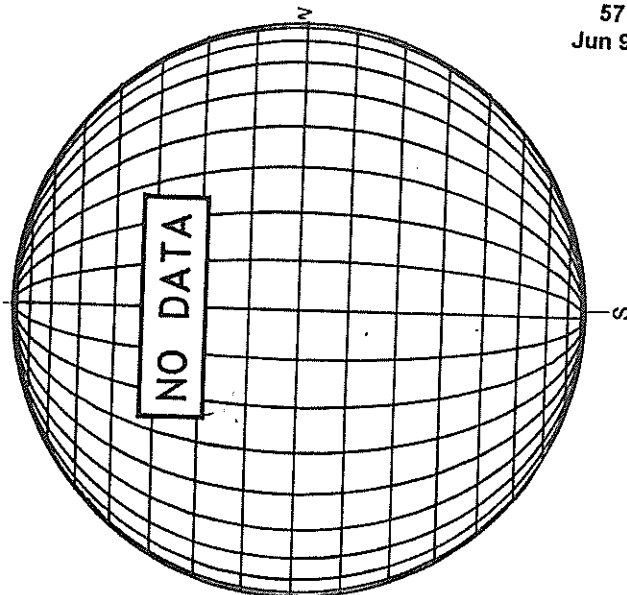
0702 UT

RAMEY SUNSPOT



1116 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



57
Jun 99

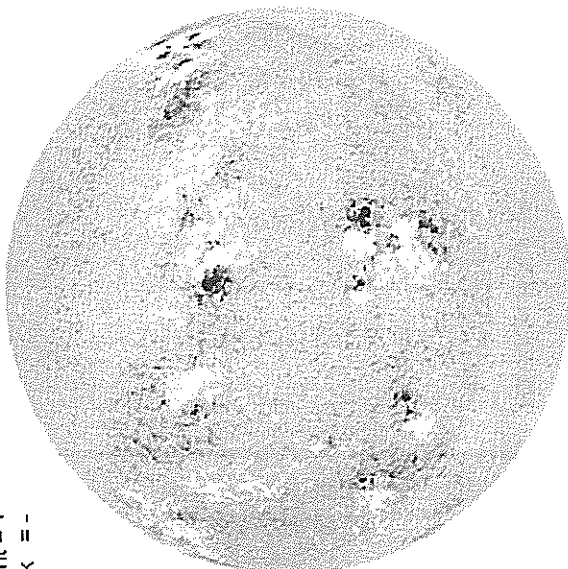
JUNE 3, 1999 (P = -14.86, Bo = -0.47, Lo = 287.46)

KITT PEAK MAGNETOGRAM

868.8 nm

N

Bright = +
Dark = -

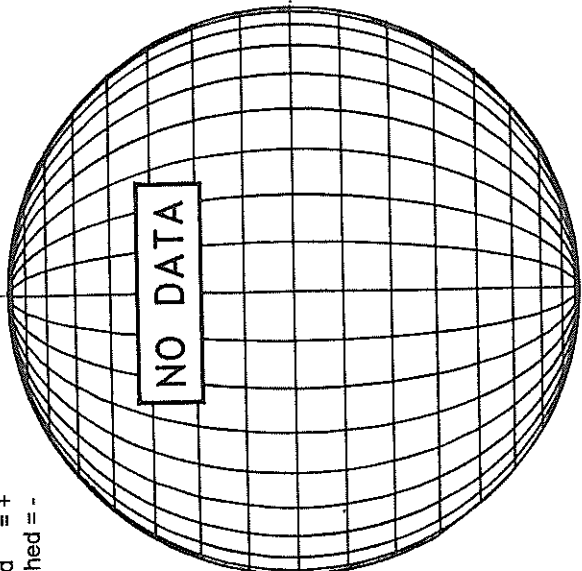


1435 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

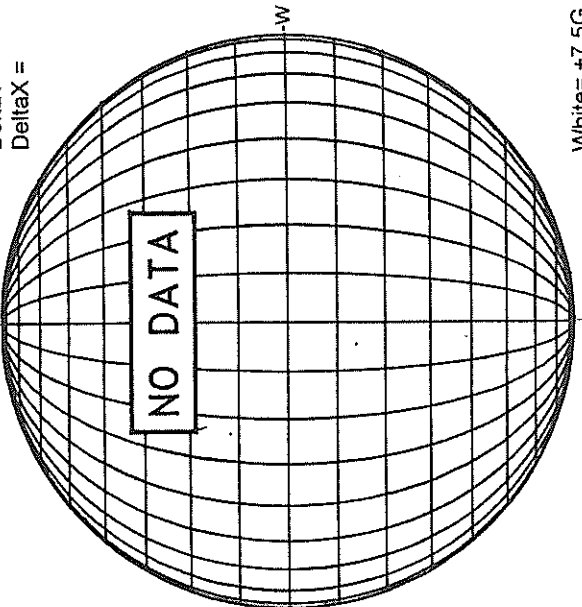
N



MT. WILSON MAGNETOGRAM

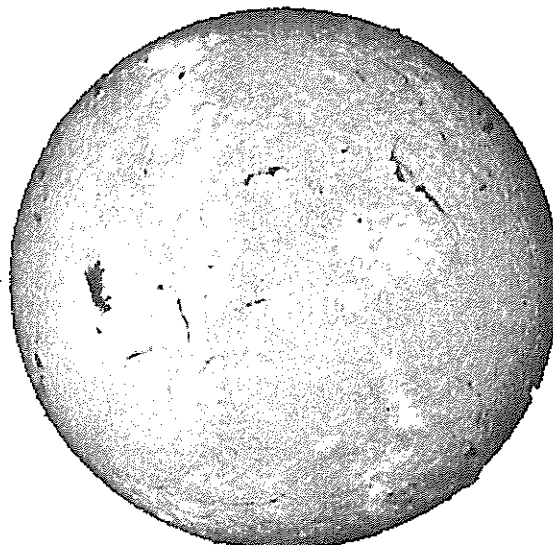
Delta Y =
Delta X =

N



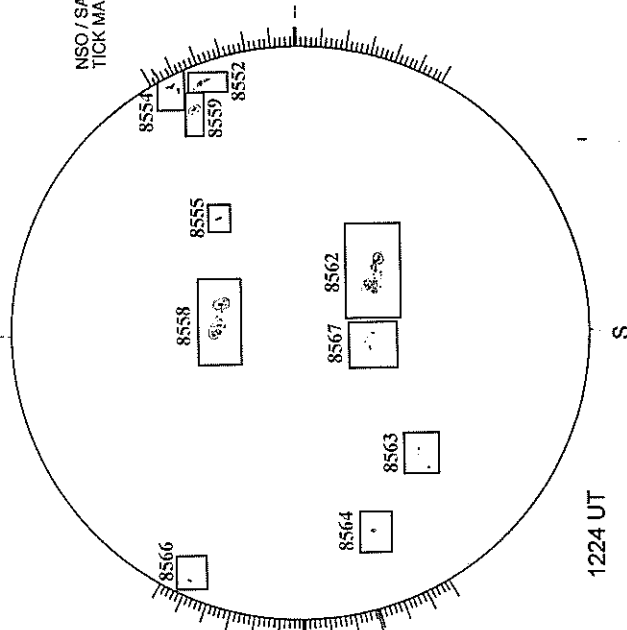
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



0709 UT

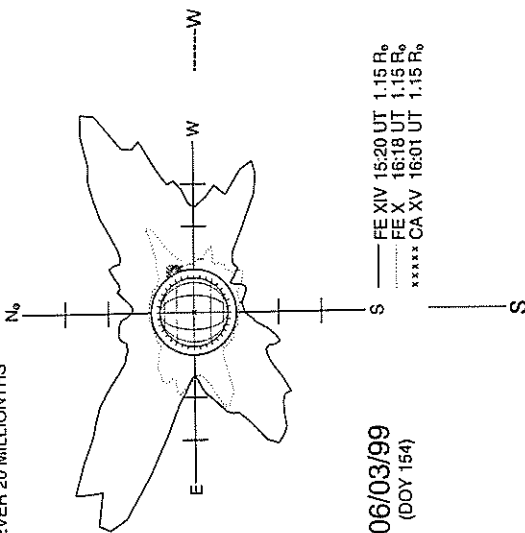
RAMEY SUNSPOT



1224 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



06/03/99
(DOY 154)

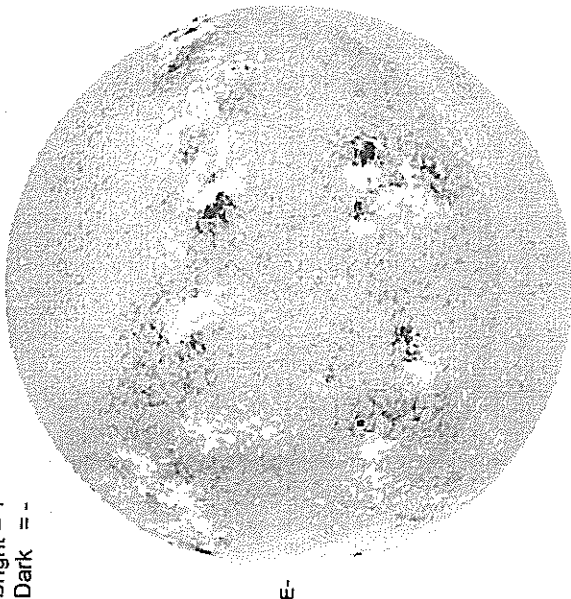
FE XIV 15:20 UT 1.15 R_o
FE X 16:18 UT 1.15 R_o
CA XV 16:01 UT 1.15 R_o

JUNE 4, 1999 (P = -14.48, Bo = -0.35, Lo = 274.22)

KITT PEAK MAGNETOGRAM

868.8 nm

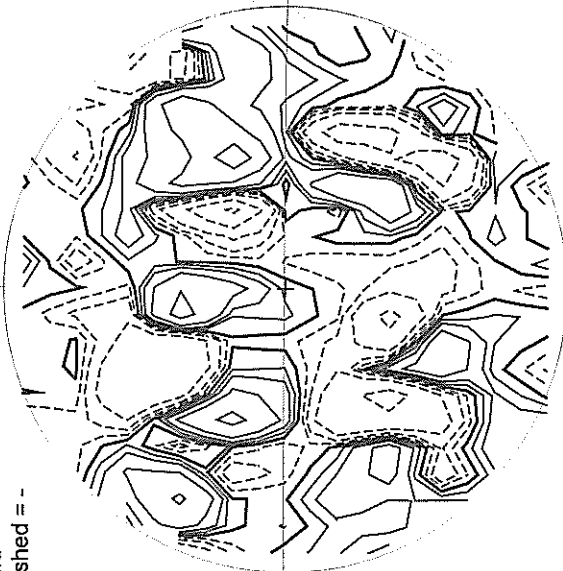
Bright = +
Dark = -



1652 UT

STANFORD MAGNETOGRAM

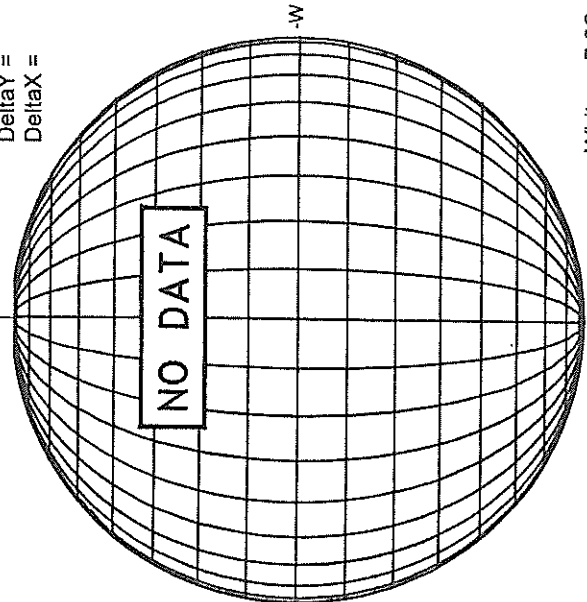
Solid = +
Dashed = -



2110 UT

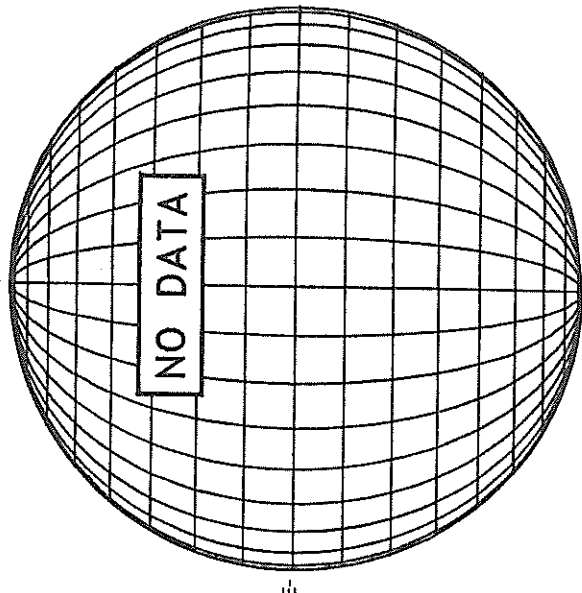
MT. WILSON MAGNETOGRAM

Delta Y =
Delta X =



White = +7.5G
Black = -7.5G

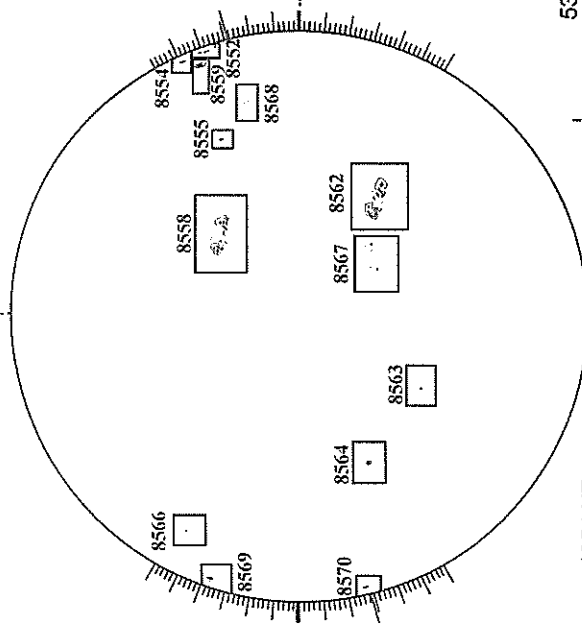
MEUDON H-ALPHA



E

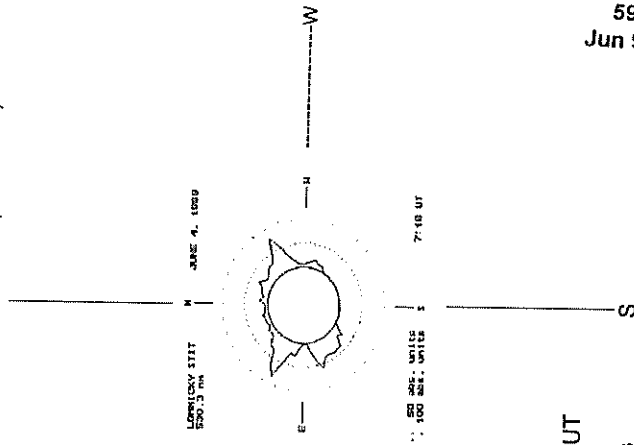
S

RAMEY SUNSPOT



1254 UT

LOMNICKY PEAK CORONA (1.04 Radii)----



530.3 nm, 0716 UT
... 50 abs. units
... 100 abs. units

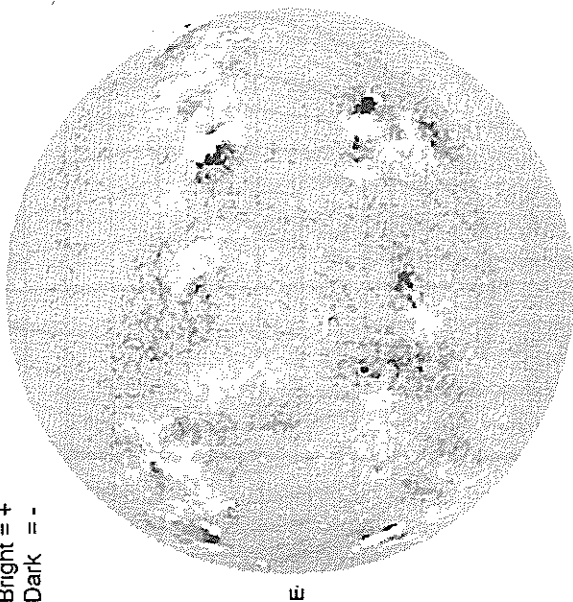
JUNE 5, 1999 (P= -14.09, Bo = -0.23, Lo = 260.99)

60
Jun 99

KITT PEAK MAGNETOGRAM

N **868.8 nm**

Bright = +
Dark = -

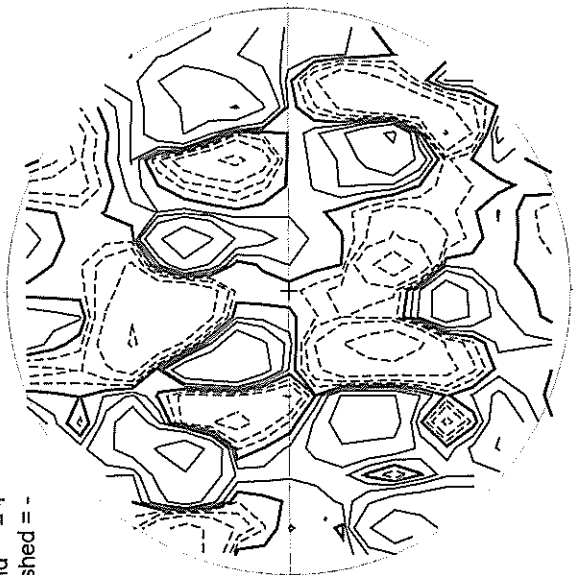


1559 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

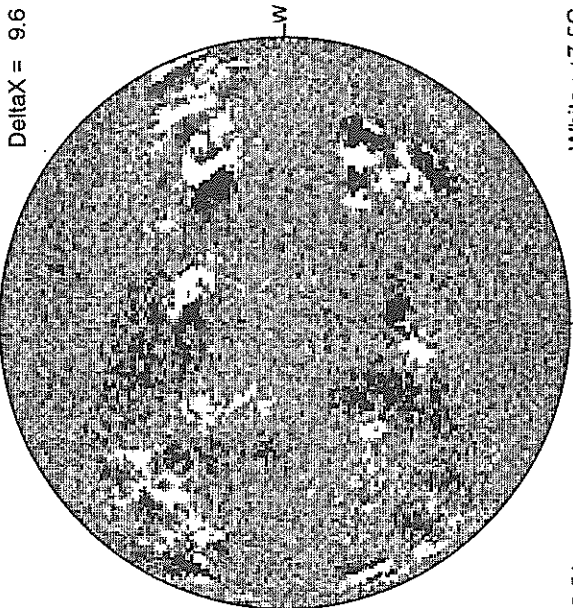


2224 UT

MT. WILSON MAGNETOGRAM

N

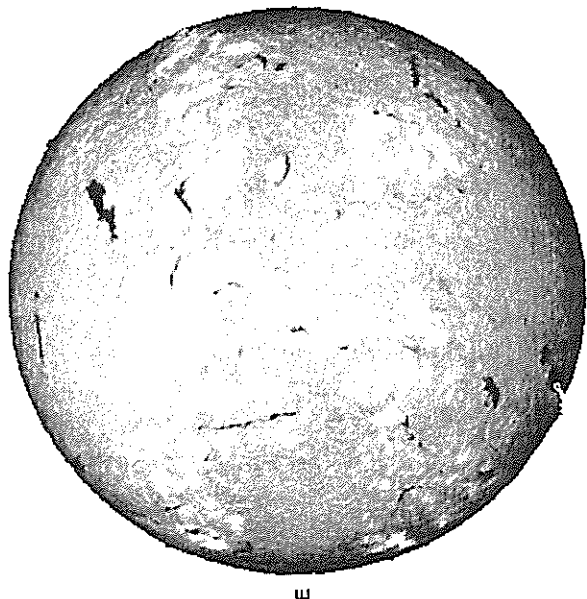
DeltaY = 13.1
DeltaX = 9.6



18.51 -
19.43 UT

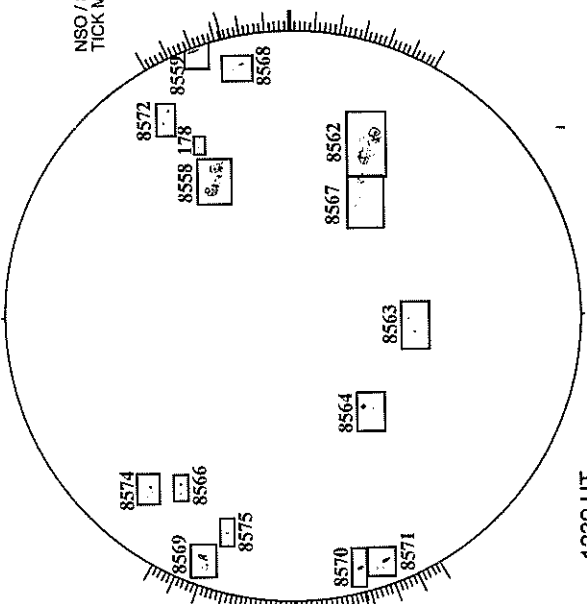
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



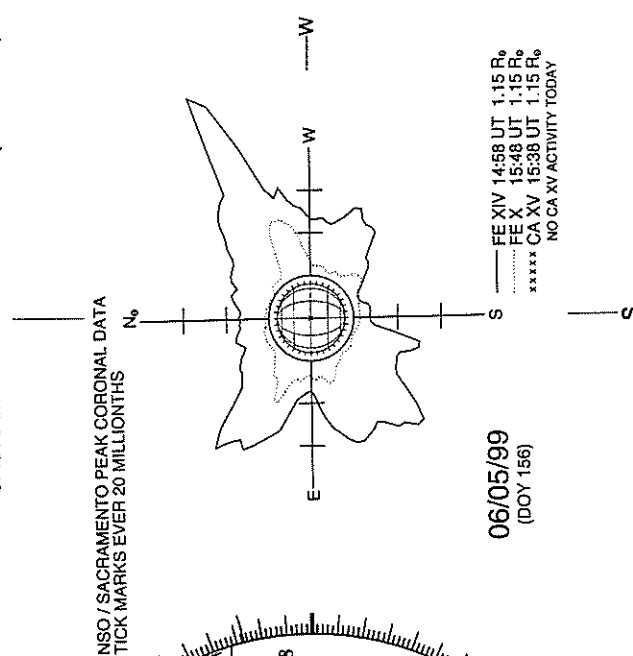
0931 UT

RAMEY SUNSPOT



1239 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



06/05/99
(DOY 156)

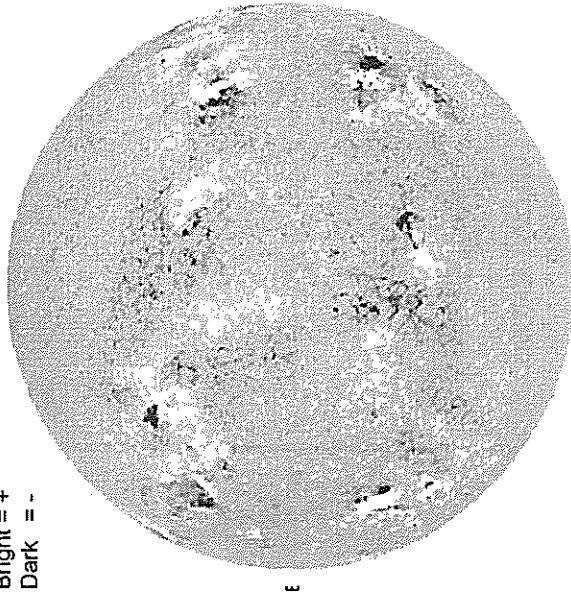
FE XIV 14:58 UT 1.15 R₀
FE X 15:48 UT 1.15 R₀
CA XV 15:38 UT 1.15 R₀
NO CA XV ACTIVITY TODAY

JUNE 6, 1999 (P= -13.70, Bo = -0.11 Lo = 247.75)

KITT PEAK MAGNETOGRAM

868.8 nm

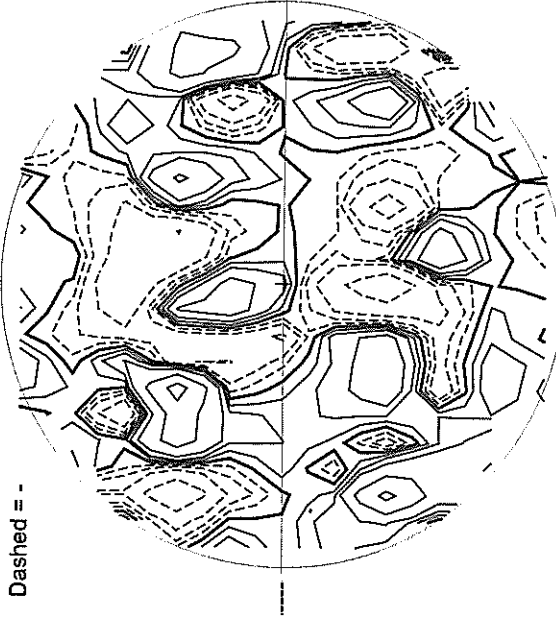
Bright = +
Dark = -



1544 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

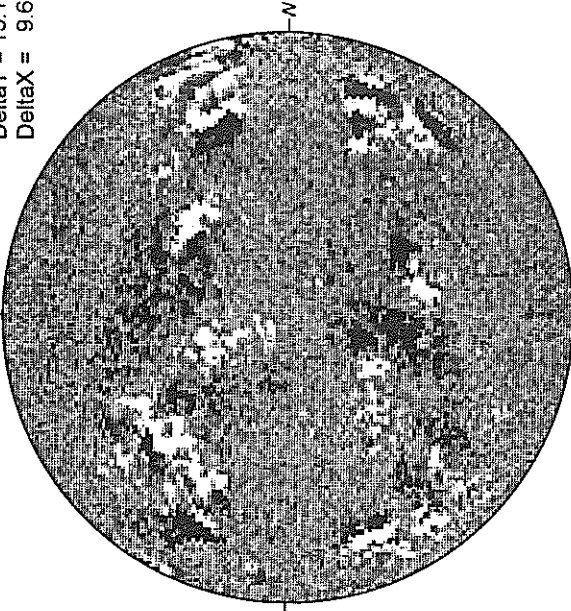


2017 UT

17.77 -
18.69 UT

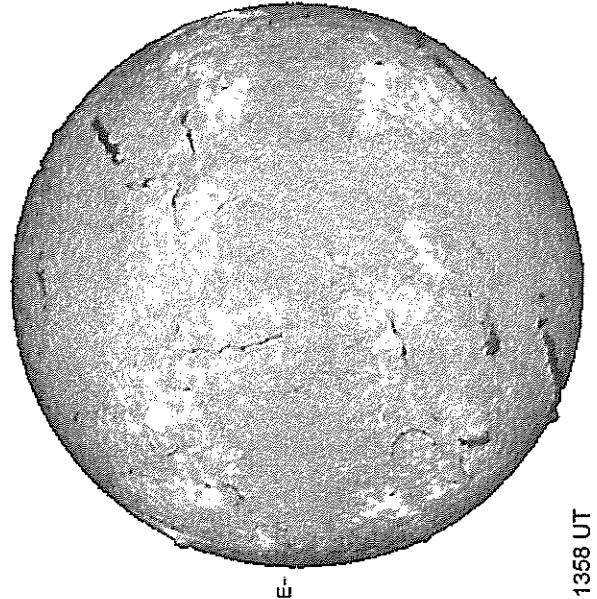
MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6



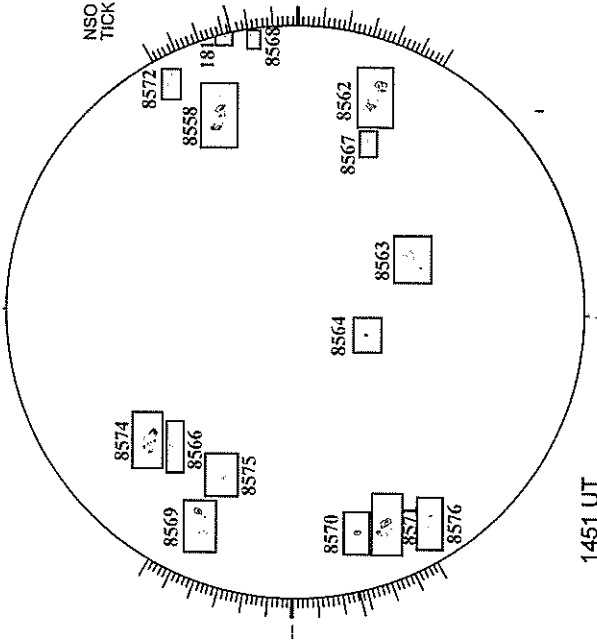
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



1358 UT

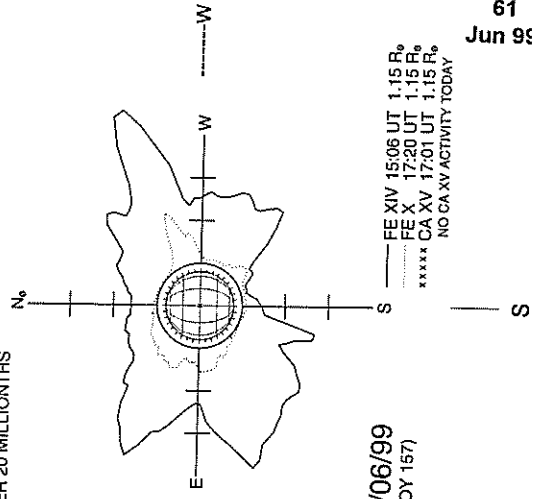
RAMEY SUNSPOT



1451 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



06/06/99
(DOY 157)

FE XIV 15:06 UT 1.15 R₀
FE X 17:20 UT 1.15 R₀
CA XV 17:01 UT 1.15 R₀
***** NO CA XV ACTIVITY TODAY

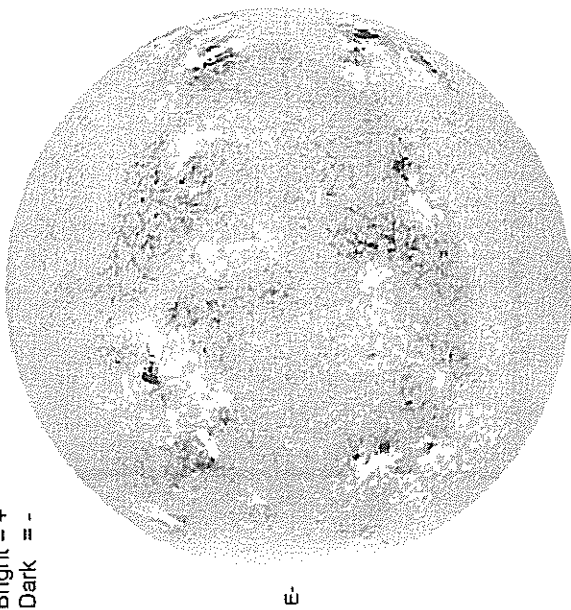
62
Jun 99

JUNE 7, 1999 (P = -13.31, Bo = 0.01 Lo = 234.52)

KITT PEAK MAGNETOGRAM

868.8 nm

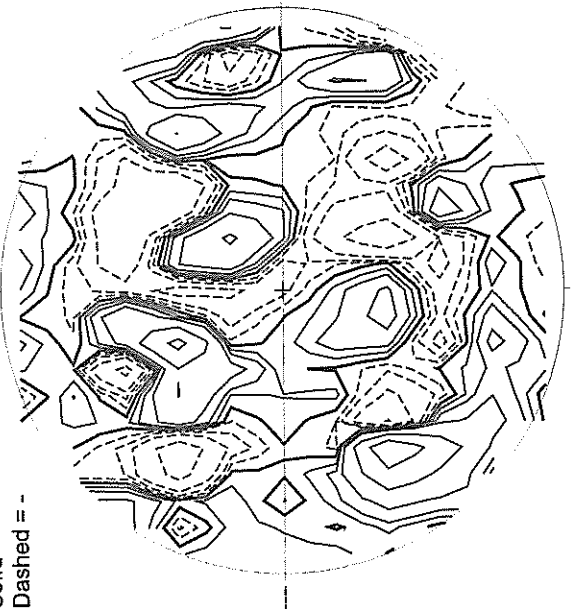
Bright = +
Dark = -



1604 UT

STANFORD MAGNETOGRAM

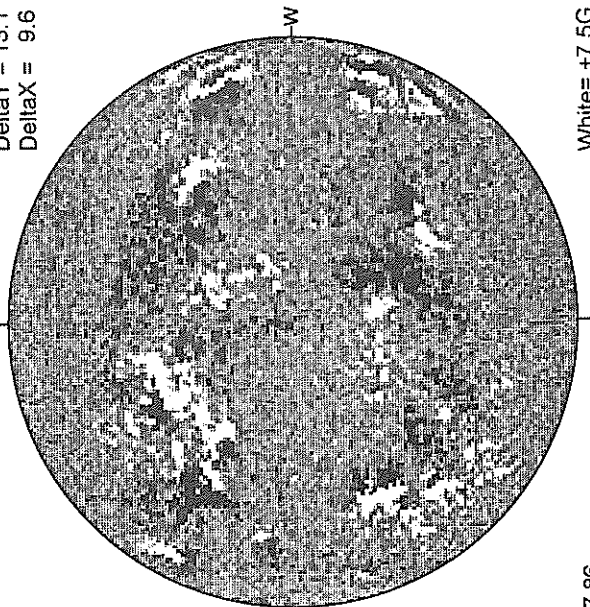
Solid = +
Dashed = -



2119 UT

MT. WILSON MAGNETOGRAM

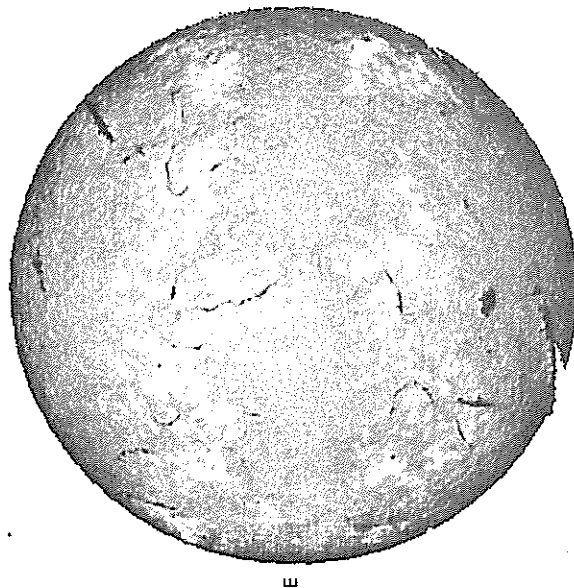
DeltaY = 13.1
DeltaX = 9.6



17.86 -
18.78 UT

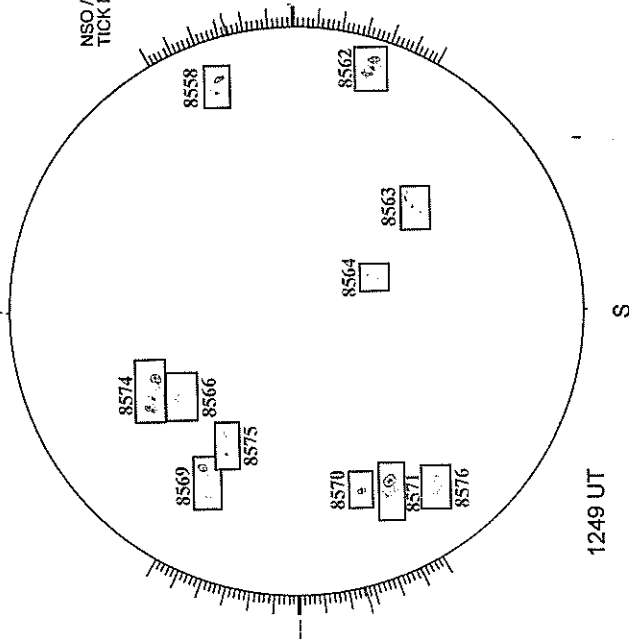
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



0828 UT

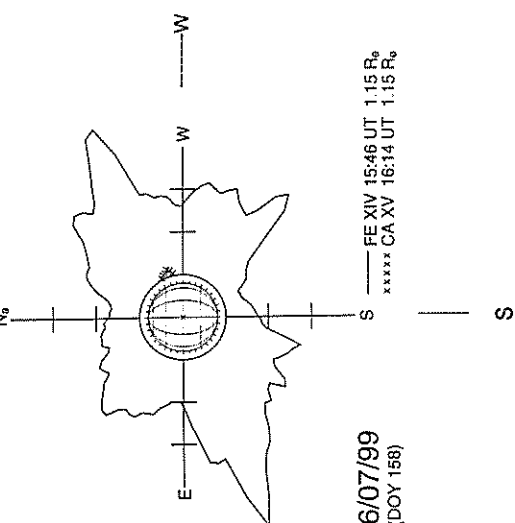
RAMEY SUNSPOT



1249 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



06/07/99
(DOY 158)

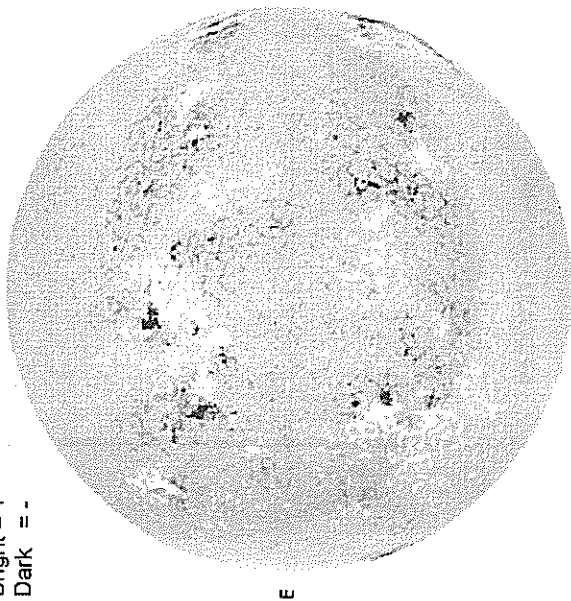
--- FE XIV 15:46 UT 1.15 R_o
***** CA XV 16:14 UT 1.15 R_o

JUNE 8, 1999 (P = -12.91, Bo = 0.13, Lo = 221.28)

KITT PEAK MAGNETOGRAM

868.8 nm

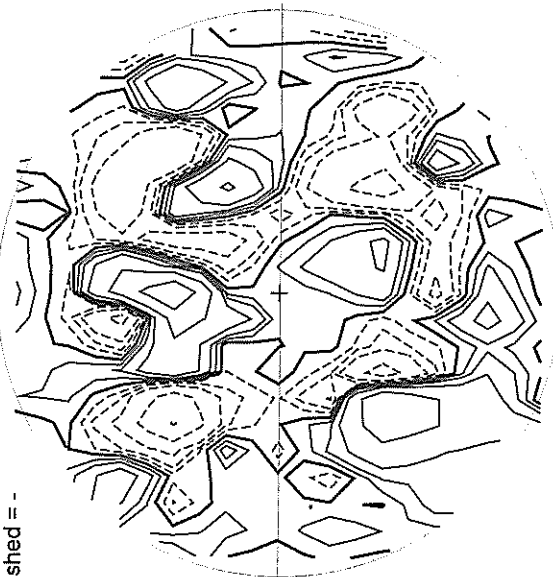
Bright = +
Dark = -



1620 UT

STANFORD MAGNETOGRAM

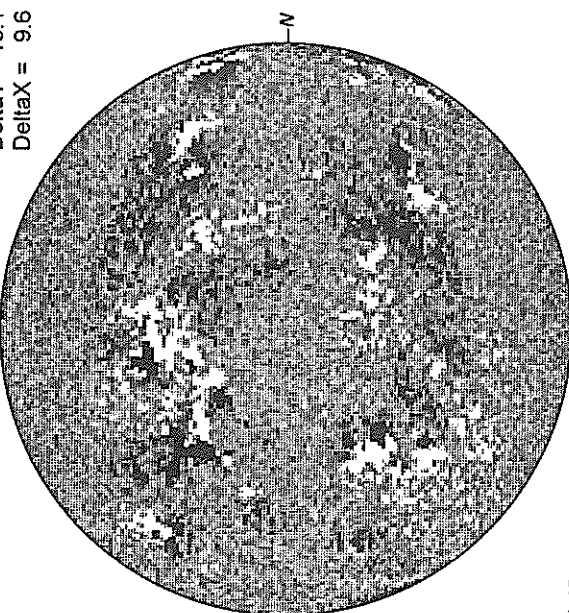
Solid = +
Dashed = -



2009 UT

MT. WILSON MAGNETOGRAM

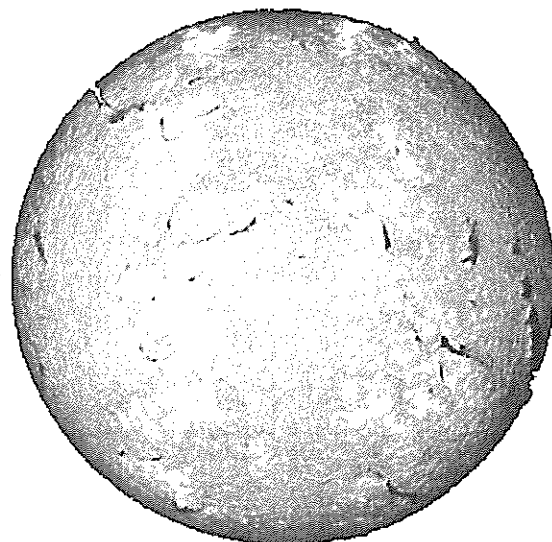
DeltaY = 13.1
DeltaX = 9.6



17.48 -
18.40 UT

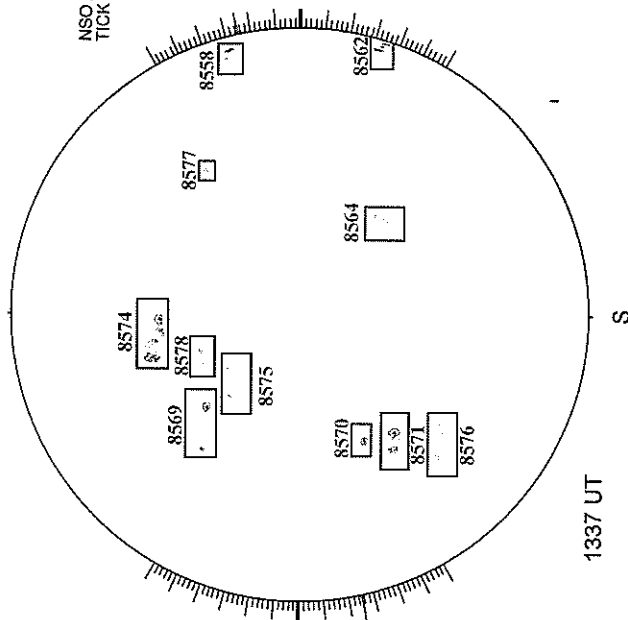
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



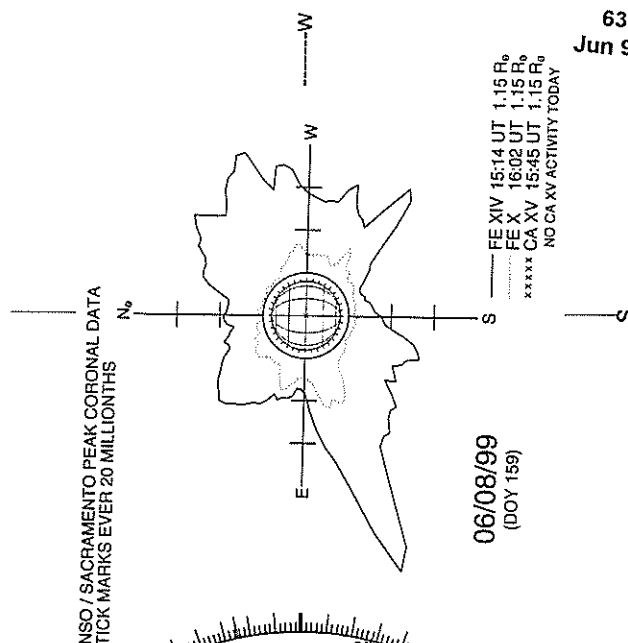
0751 UT

RAMEY SUNSPOT



1337 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---



06/08/99
(DOY 159)

FE XIV 15:14 UT 1.15 R₀
FE X 16:02 UT 1.15 R₀
CA XV 15:45 UT 1.15 R₀
NO CA XV ACTIVITY TODAY

64
Jun 99

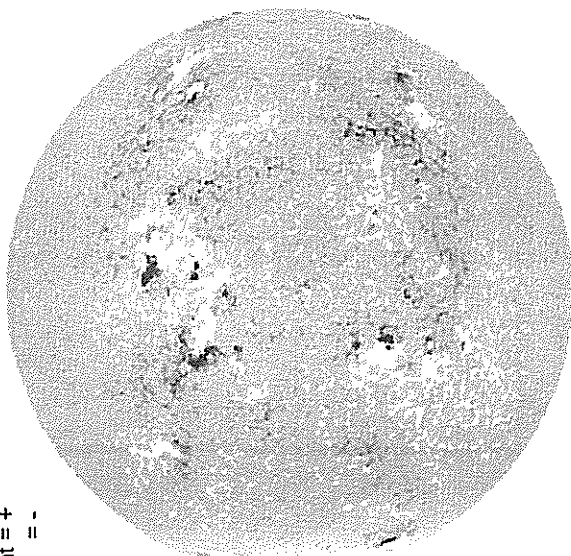
JUNE 9, 1999 (P = -12.50, Bo = 0.25, Lo = 208.05)

KITT PEAK MAGNETOGRAM

**868.8 nm

N

Bright = +
Dark = -

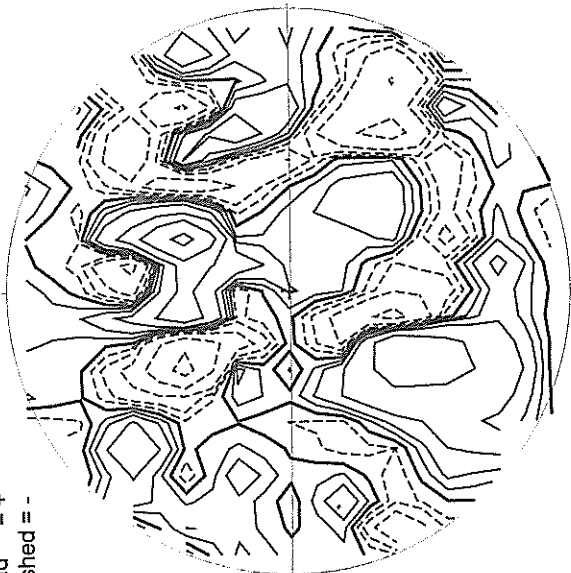


1629 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

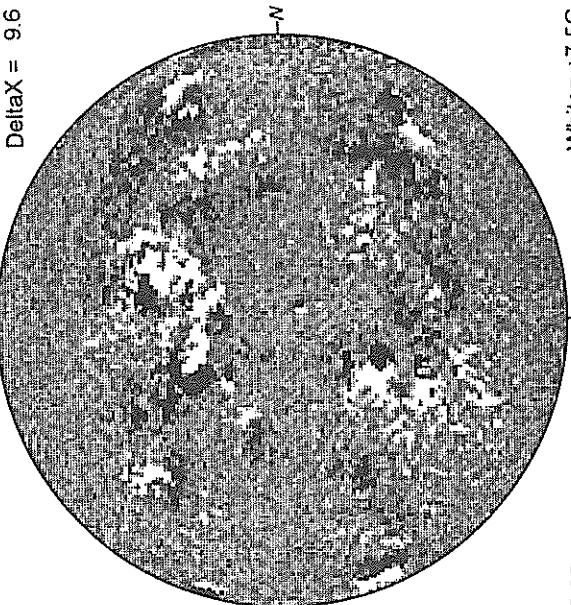


1950 UT

MT. WILSON MAGNETOGRAM

N

DeltaY = 13.1
DeltaX = 9.6

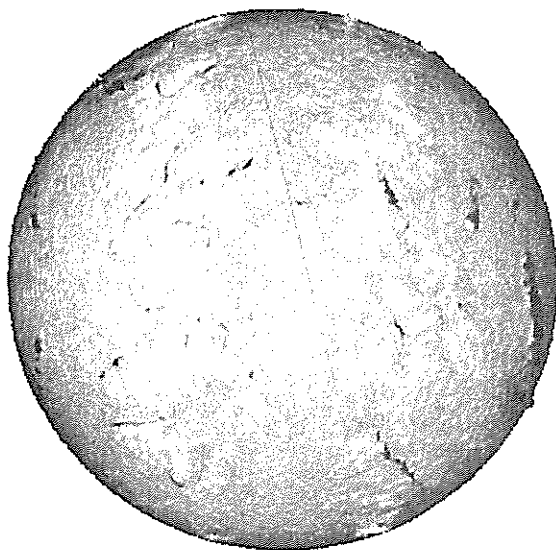


20.96 -
21.88 UT

White = +7.5G
Black = -7.5G

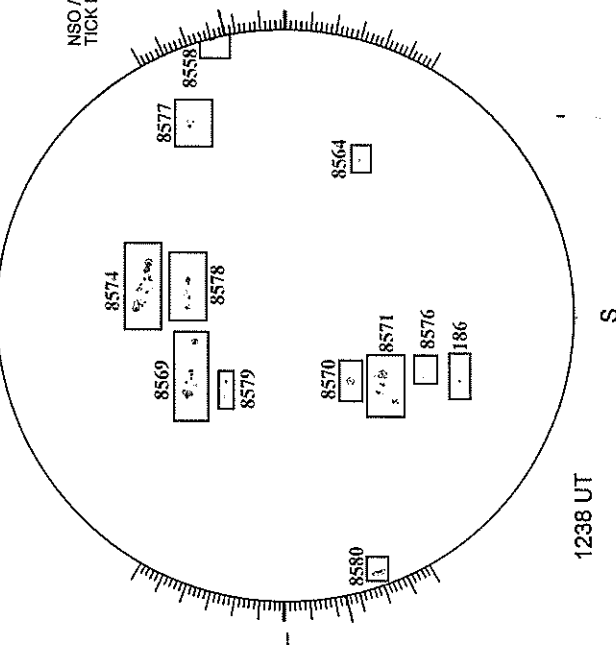
MEUDON H-ALPHA

E



0829 UT

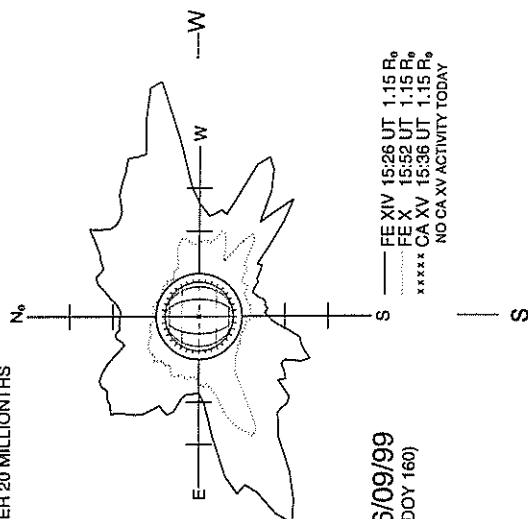
RAMEY SUNSPOT



1238 UT

SACRAMENTO PEAK CORONA (1.15 Radii)-----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



06/09/99
(DOY 160)

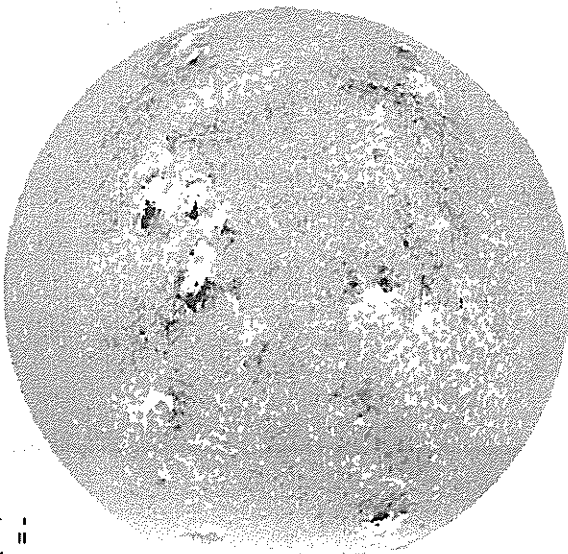
FE XIV 15:26 UT 1.15 R₀
FE X 15:52 UT 1.15 R₀
CA XV 15:36 UT 1.15 R₀
NO CA XV ACTIVITY TODAY

JUNE 10, 1999 (P= -12.09, Bo = 0.37, Lo = 194.81)

KITT PEAK MAGNETOGRAM

N
868.8 nm

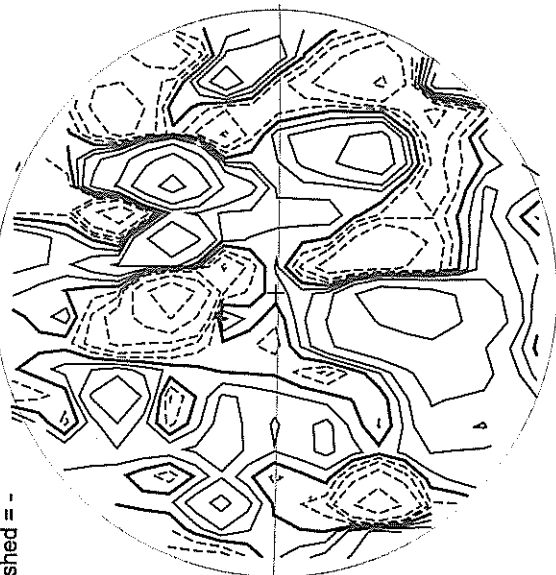
Bright = +
Dark = -



1616 UT

STANFORD MAGNETOGRAM

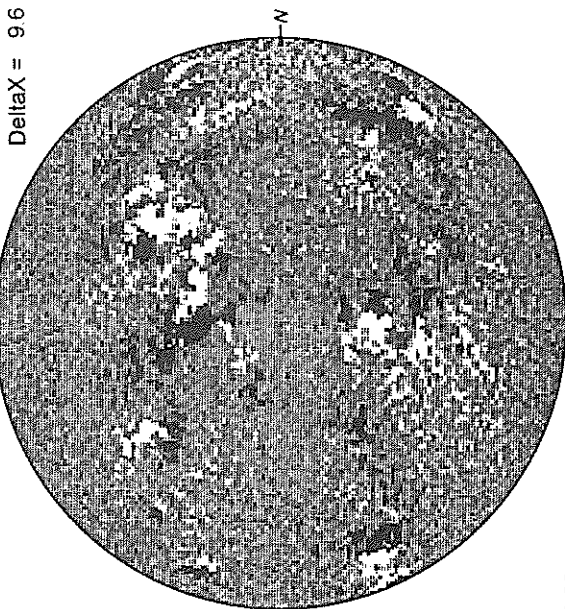
Solid = +
Dashed = -



2250 UT

MT. WILSON MAGNETOGRAM

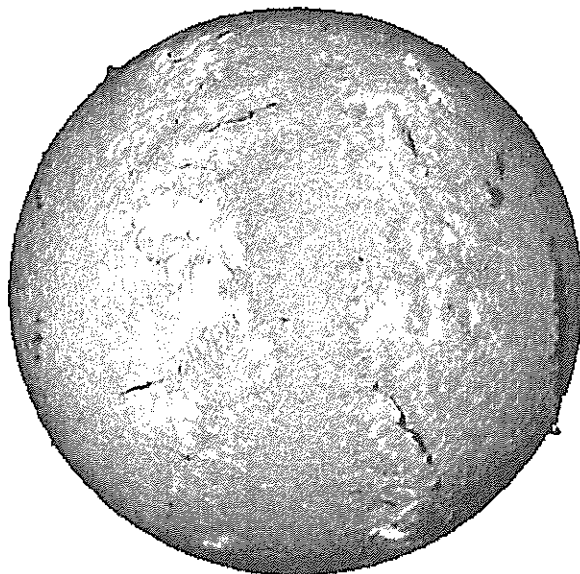
Delta Y = 13.1
Delta X = 9.6



18.66 -
19.58 UT

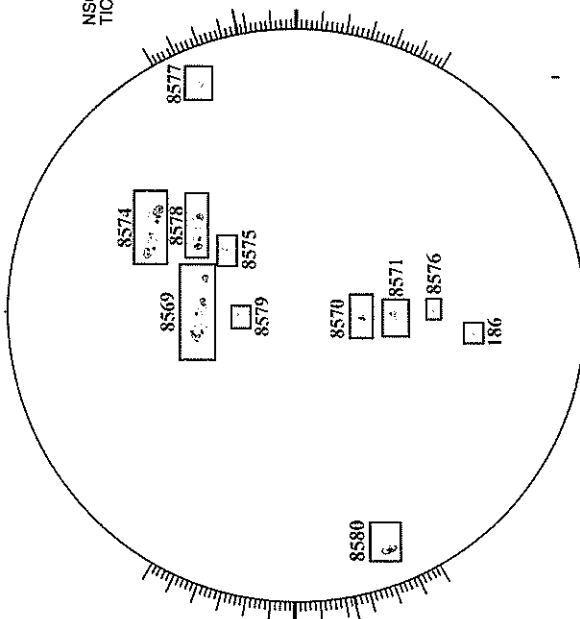
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



1054 UT

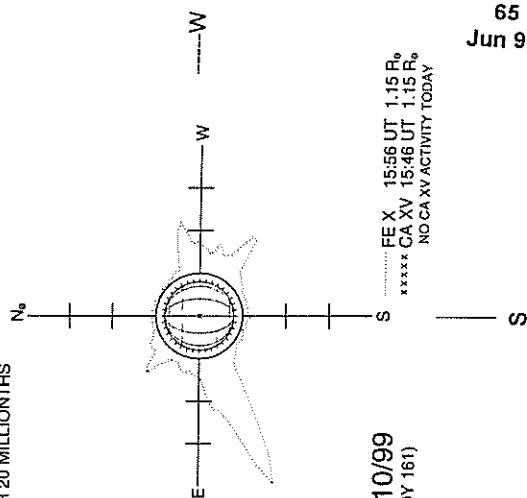
RAMEY SUNSPOT



1235 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



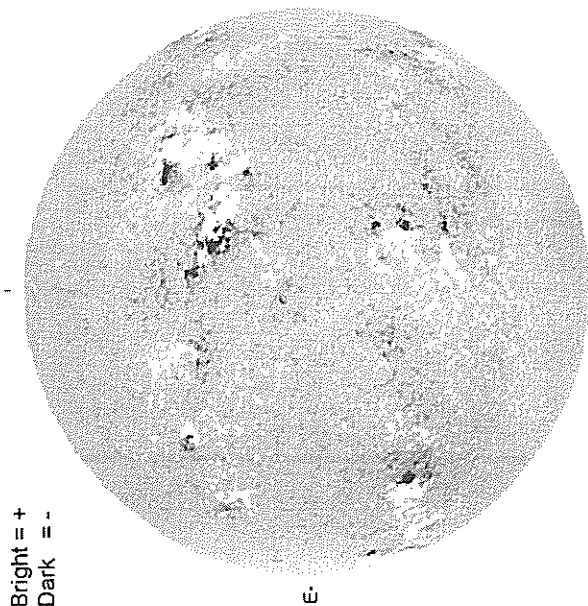
06/10/99
(DOY 161)

..... FE X 15:56 UT 1.15 R_o
***** CA XV 15:46 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

65
Jun 99

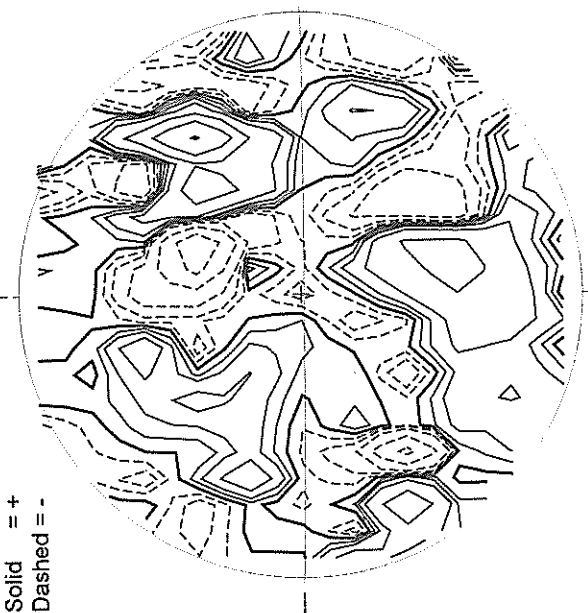
JUNE 11, 1999 (P = -11.68 Bo = 0.49, Lo = 181.58)

KITT PEAK MAGNETOGRAM
868.8 nm



1453 UT

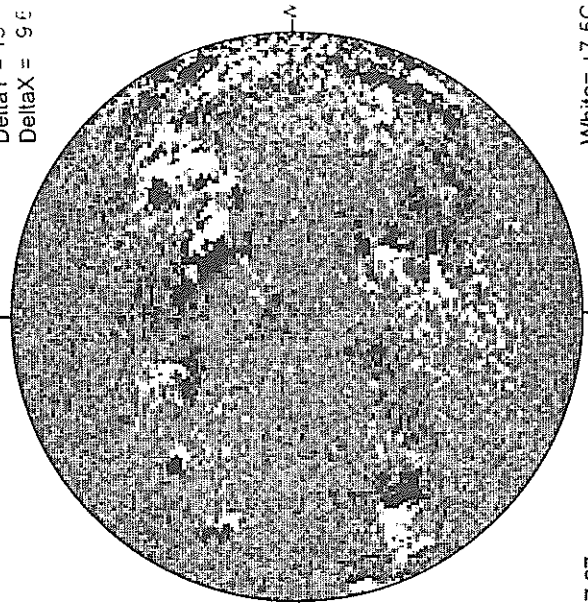
STANFORD MAGNETOGRAM



1954 UT

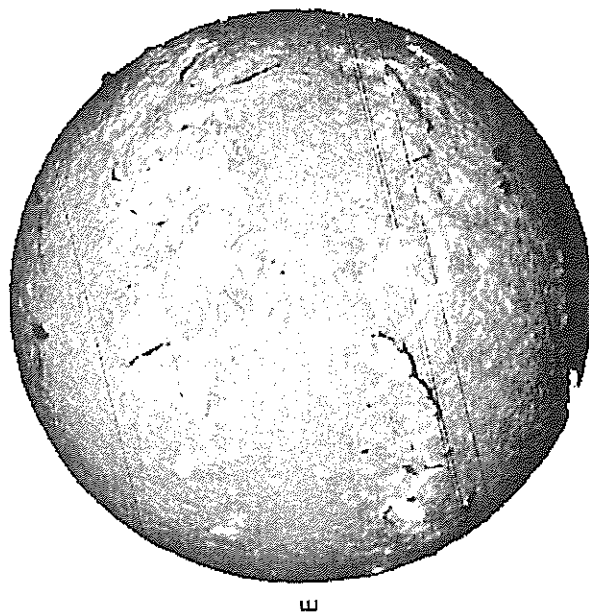
MT. WILSON MAGNETOGRAM

Delta Y = 13
Delta X = 9



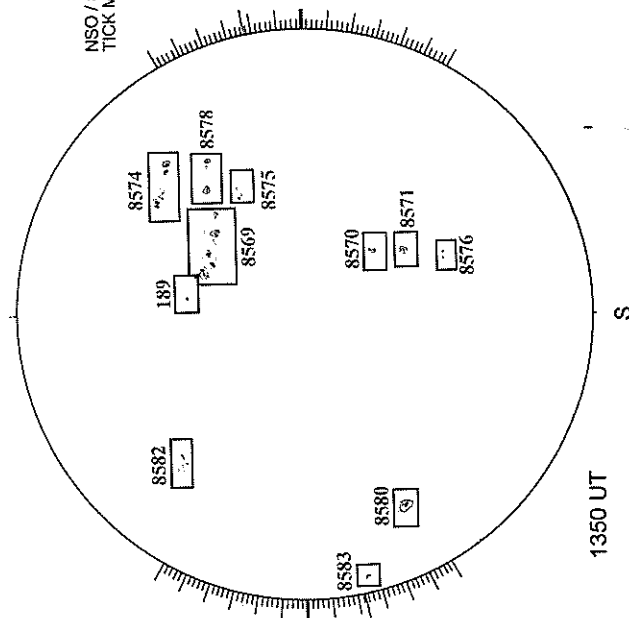
17.87 -
18.79 UT

MEUDON H-ALPHA



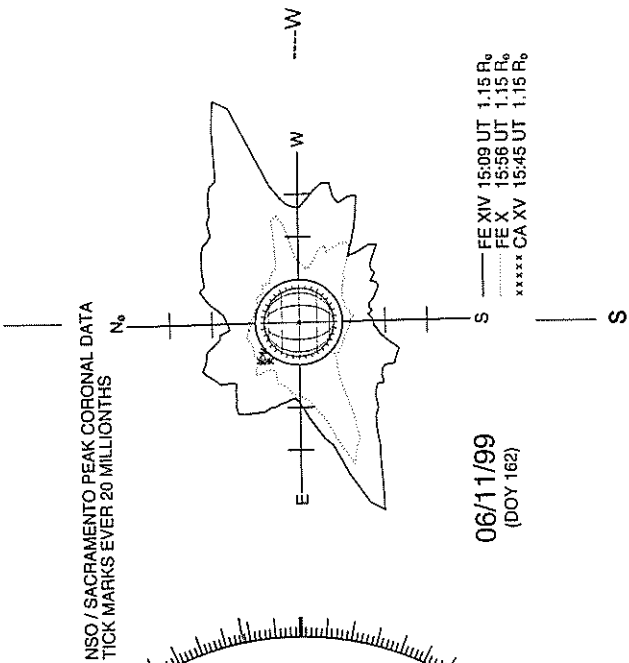
0721 UT

RAMEY SUNSPOT



1350 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



06/11/99
(DOY 162)

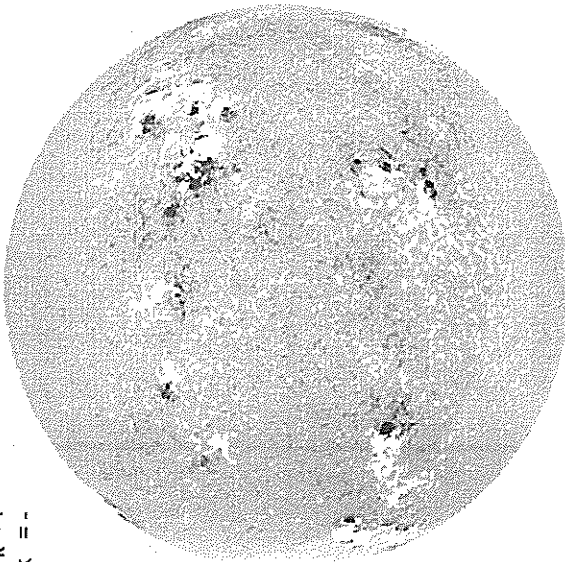
FE XIV 15:09 UT 1.15 R₀
FE X 15:56 UT 1.15 R₀
***** CA XV 15:45 UT 1.15 R₀

JUNE 12, 1999 (P= -11.27, Bo = 0.61, Lo = 168.34)

KITT PEAK MAGNETOGRAM

868.8 nm

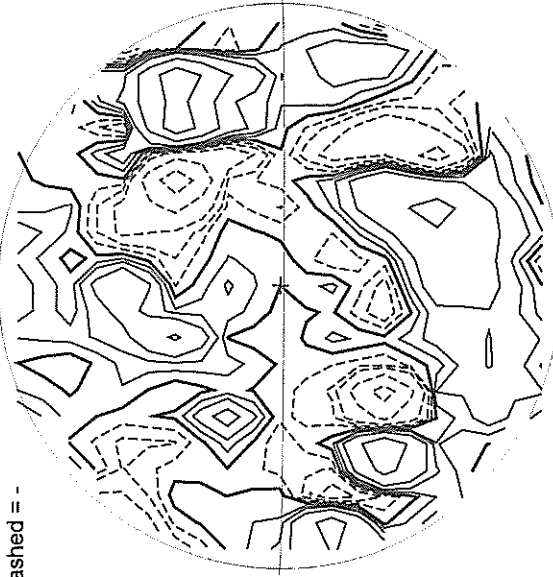
Bright = +
Dark = -



1516 UT

STANFORD MAGNETOGRAM

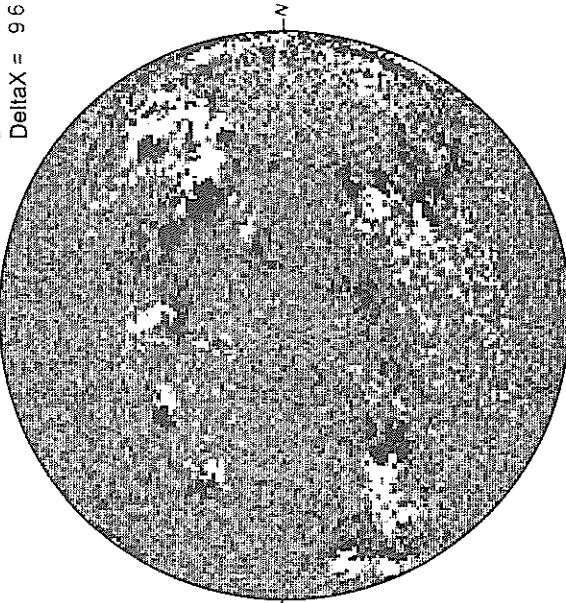
Solid = +
Dashed = -



2143 UT

MT. WILSON MAGNETOGRAM

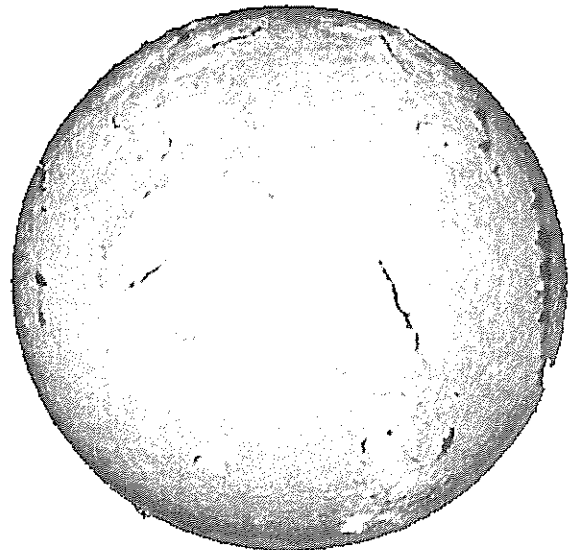
Delta Y = 13.1
Delta X = 9.6



17.27 -
18.18 UT

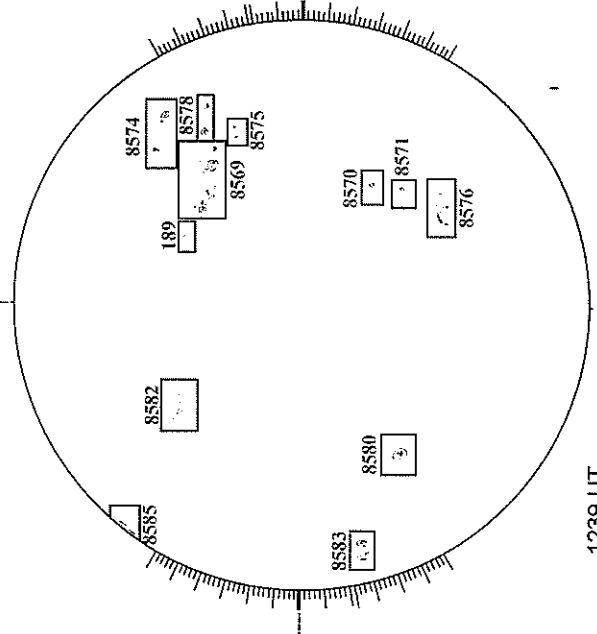
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



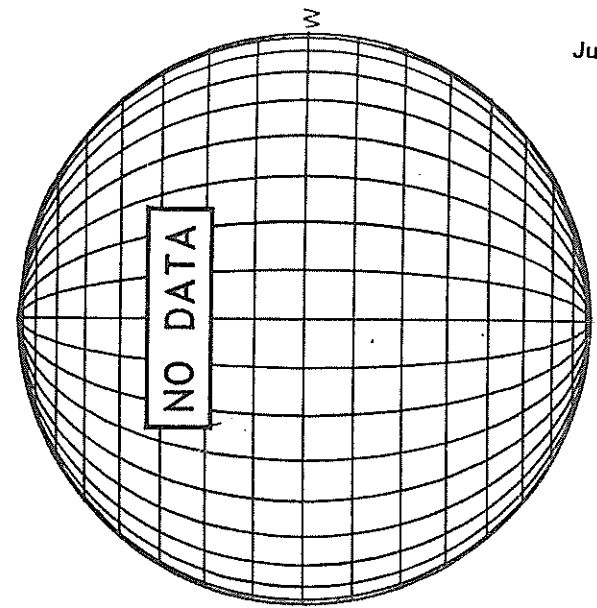
0653 UT

RAMEY SUNSPOT



1239 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



67
Jun 99

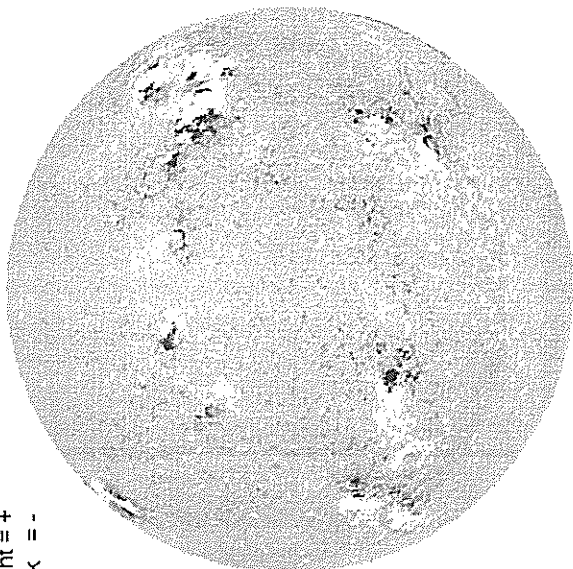
68
Jun 99

JUNE 13, 1999 (P = -10.85, Bo = 0.73, Lo = 155.11)

KITT PEAK MAGNETOGRAM

868.8 nm

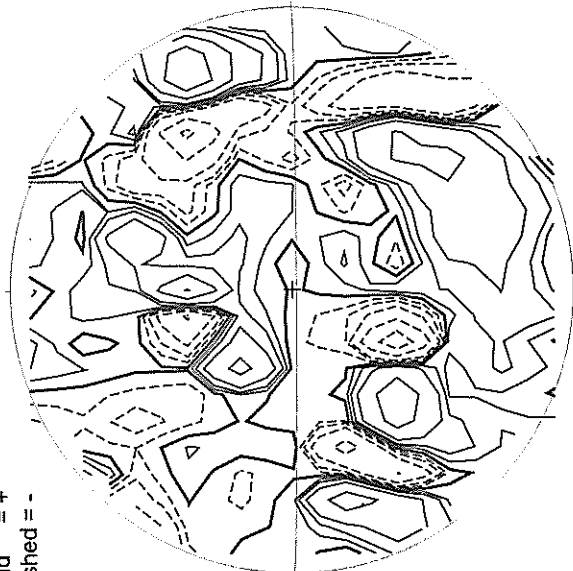
Bright = +
Dark = -



1433 UT

STANFORD MAGNETOGRAM

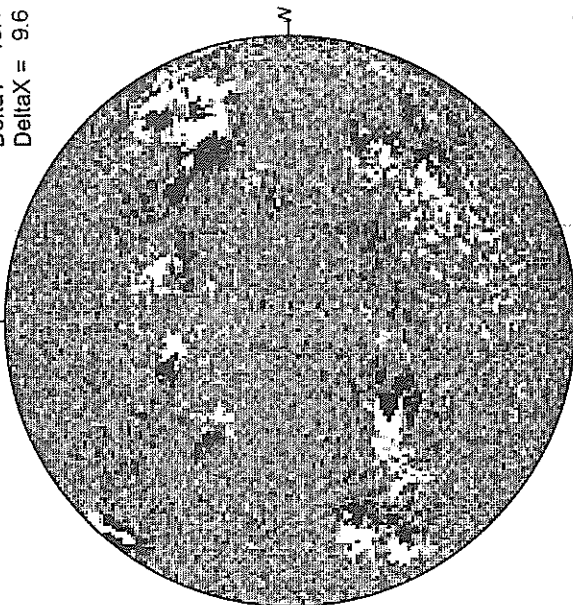
Solid = +
Dashed = -



JUN 14
0006 UT

MT. WILSON MAGNETOGRAM

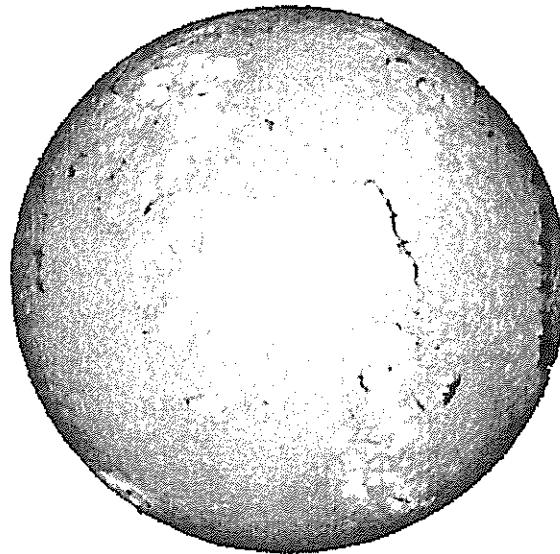
DeltaY = 13.1
DeltaX = 9.6



17.35 -
18.27 UT

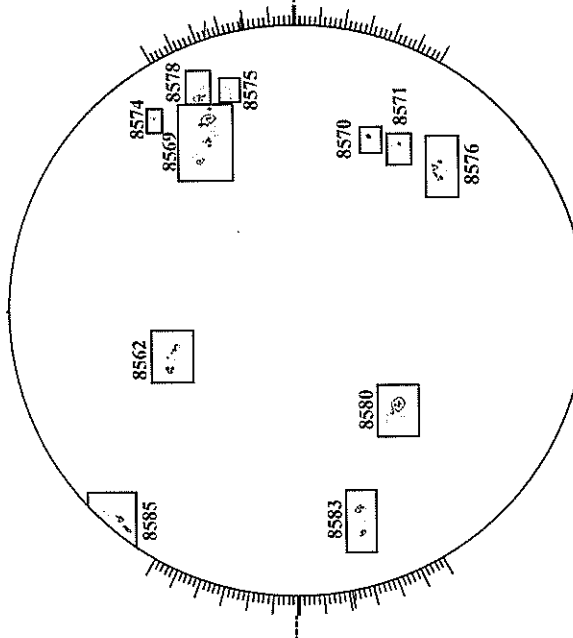
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



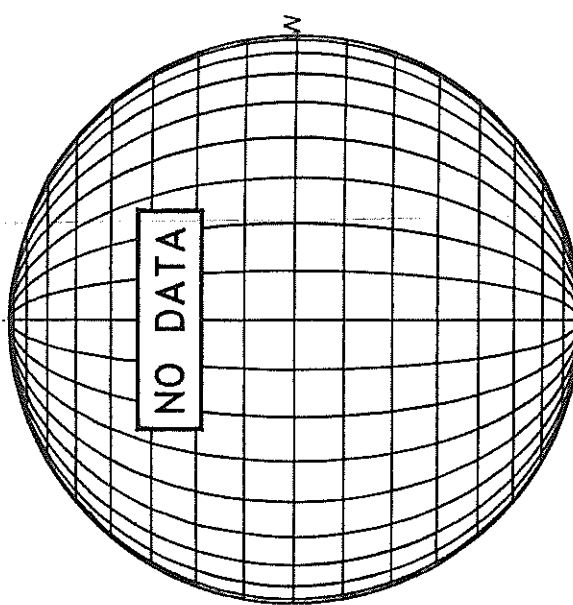
1241 UT

RAMEY SUNSPOT



1237 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---



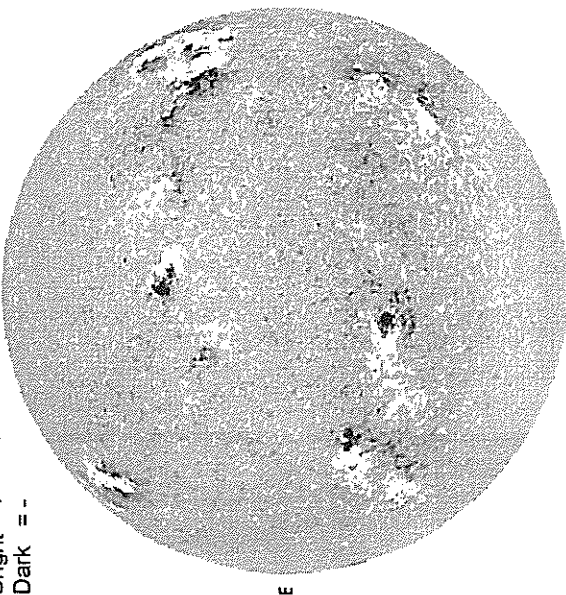
JUNE 14, 1999 (P= -10.43, Bo = 0.85, Lo = 141.87)

KITT PEAK MAGNETOGRAM

868.8 nm

N

Bright = +
Dark = -



1413 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

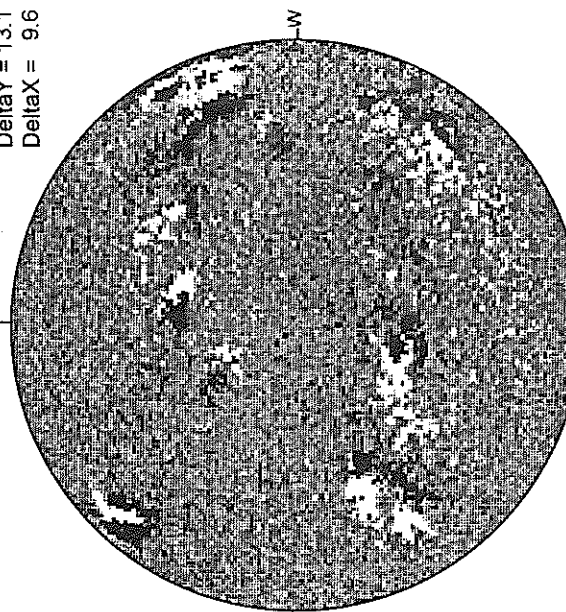


2011 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

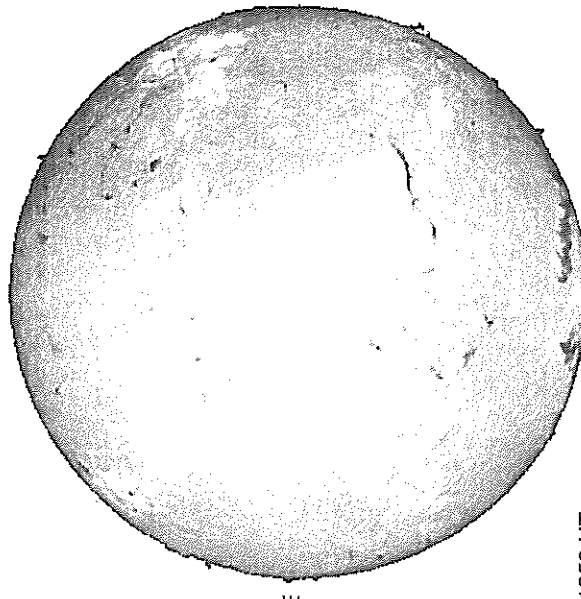
N



18.77 -
19.69 UT

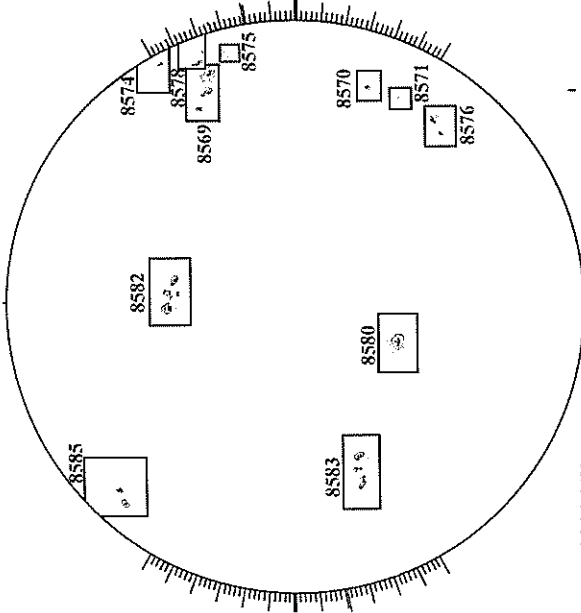
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



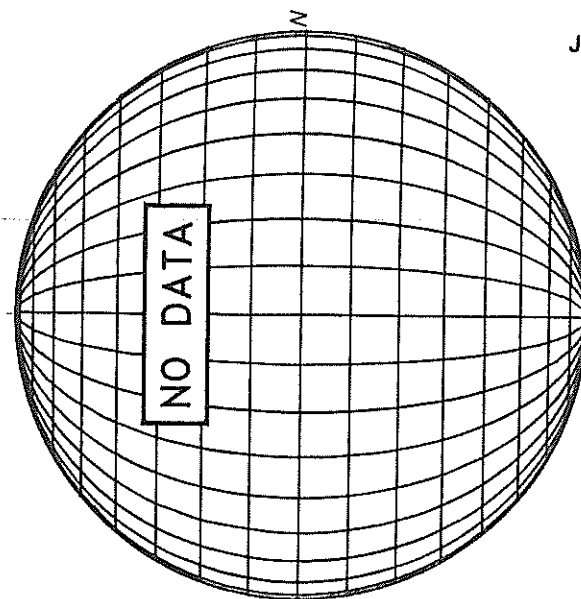
1253 UT

RAMEY SUNSPOT



1209 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



69
Jun 99

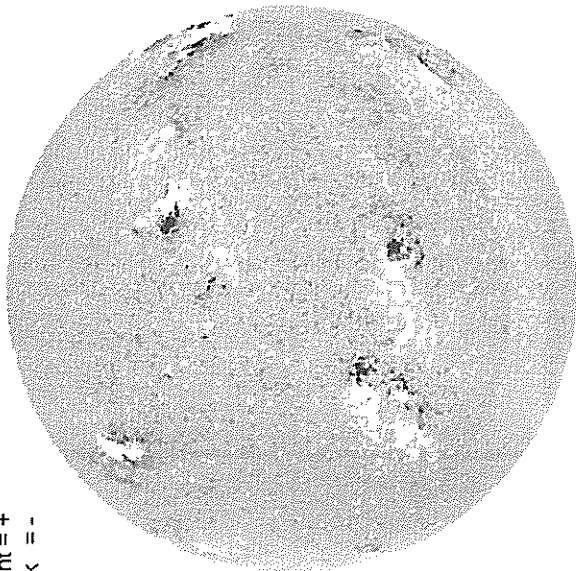
70
Jun 99

JUNE 15, 1999 (P= -10.00, Bo = 0.97, Lo = 128.63)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1742 UT

STANFORD MAGNETOGRAM

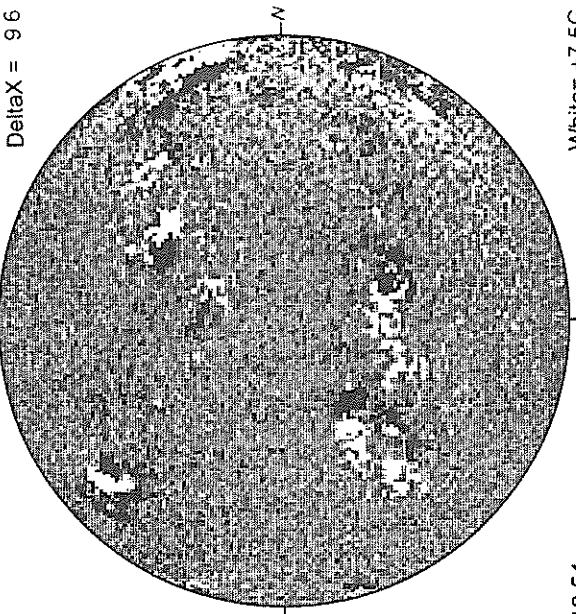
Solid = +
Dashed = -



2142 UT

MT. WILSON MAGNETOGRAM

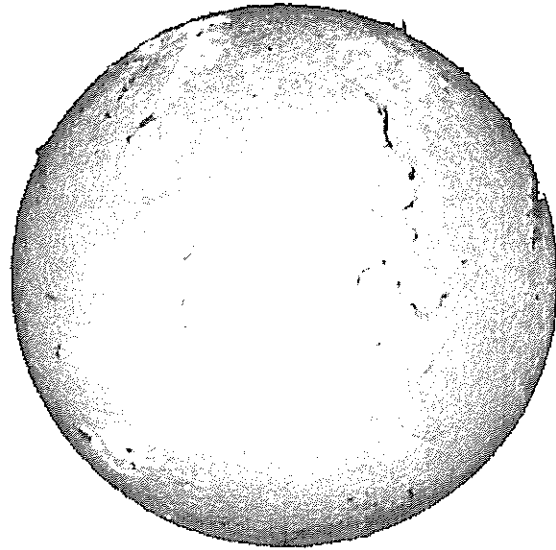
Delta Y = 13.1
Delta X = 9.6



18.54 -
19.46 UT

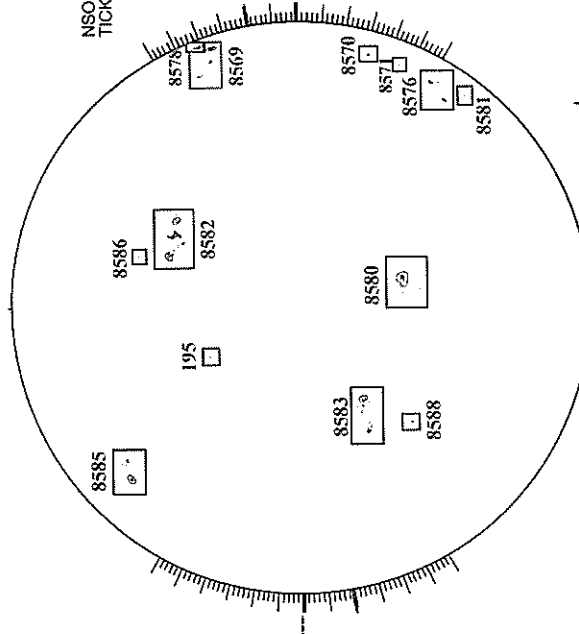
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



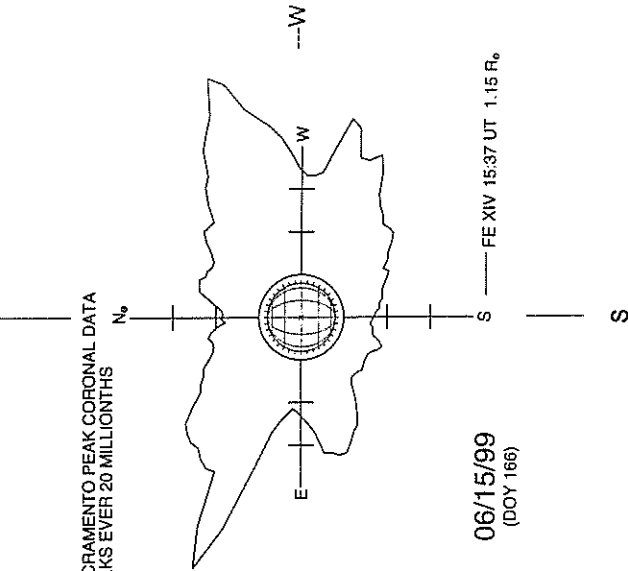
0650 UT

RAMEY SUNSPOT



1217 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



06/15/99
(DOY 166)

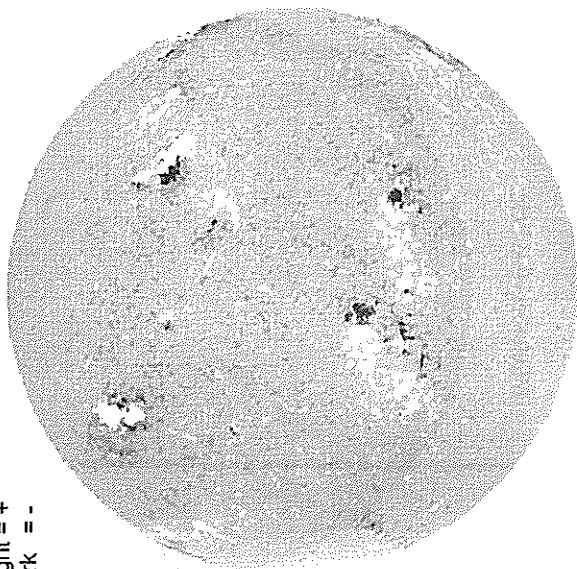
FE XIV 15:37 UT 1.15 R_o

JUNE 16, 1999 (P= -9.57, Bo = 1.09, Lo = 115.40)

KITT PEAK MAGNETOGRAM

++868.8 nm**

Bright = +
Dark = -

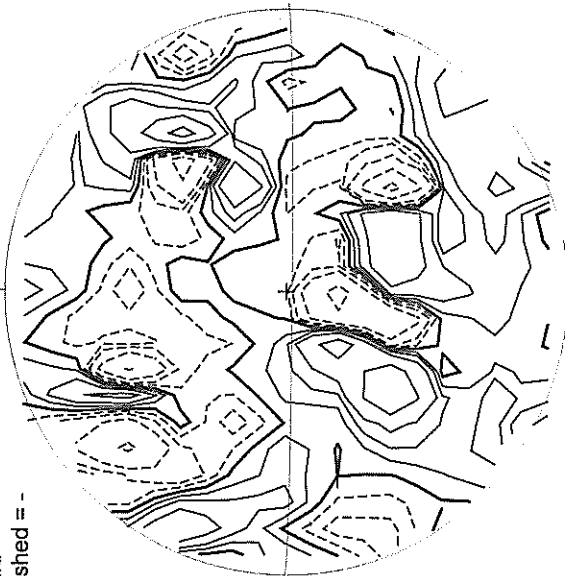


E

1626 UT

STANFORD MAGNETOGRAM

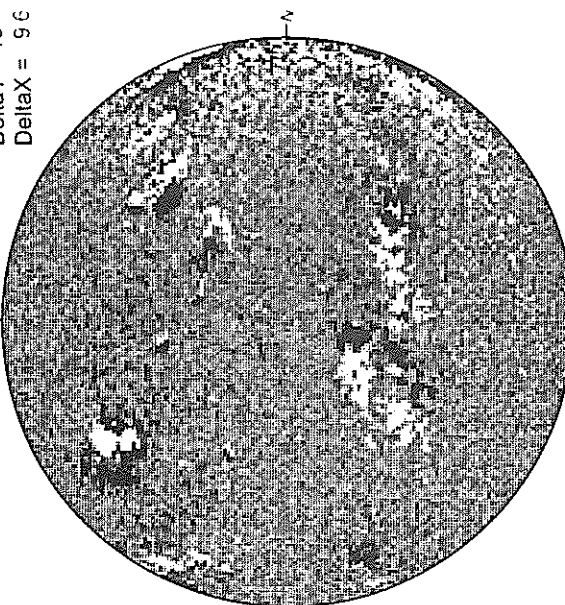
Solid = +
Dashed = -



1951 UT

MT. WILSON MAGNETOGRAM

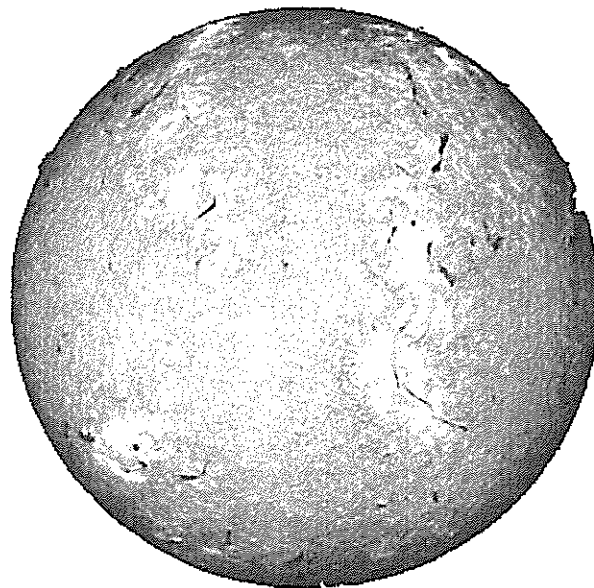
DeltaY = 13.1
DeltaX = 9.6



20.37 -
21.29 UT

White = +7.5G
Black = -7.5G

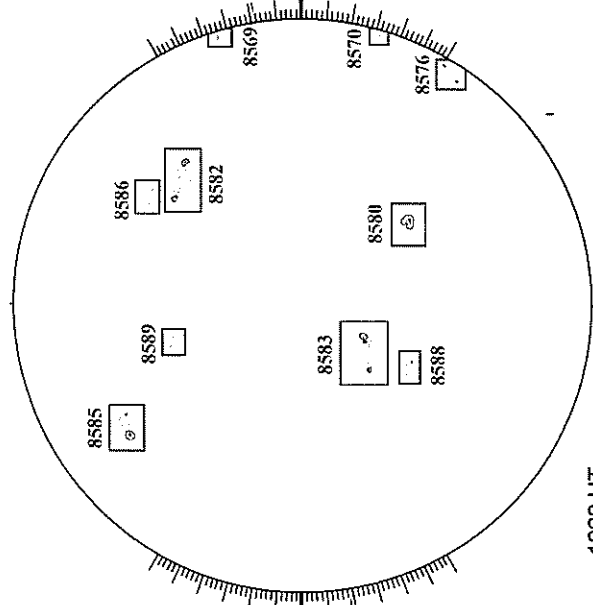
MEUDON H-ALPHA



E

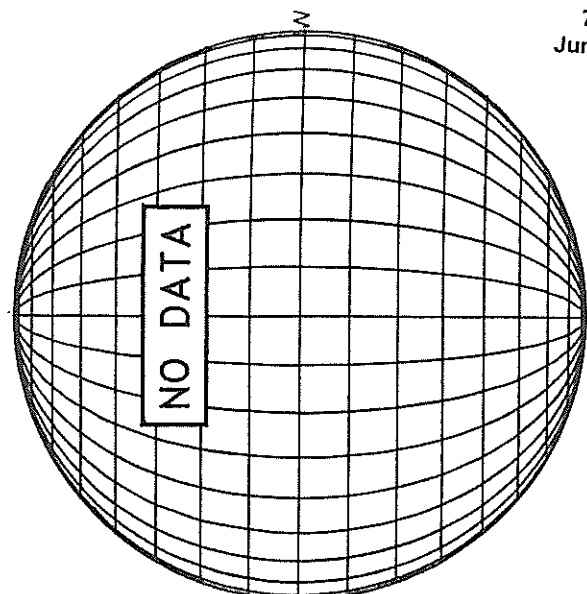
0647 UT

RAMEY SUNSPOT



1228 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



NO DATA

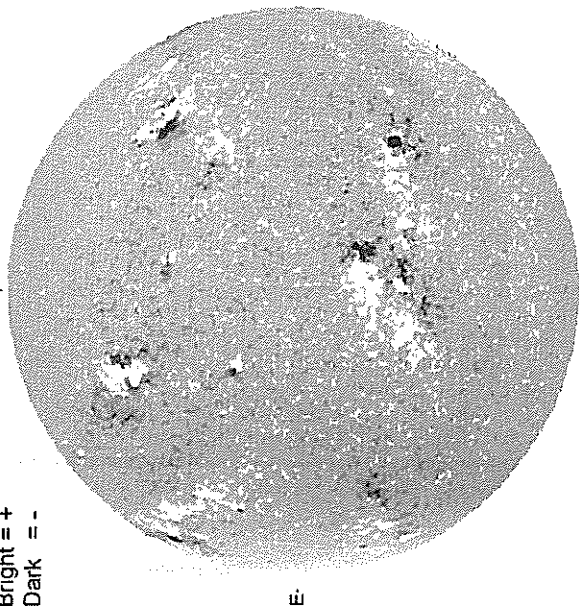
72
Jun 99

JUNE 17, 1999 (P = -9.14, Bo = 1.21, Lo = 102.16)

KITT PEAK MAGNETOGRAM

868.8 nm

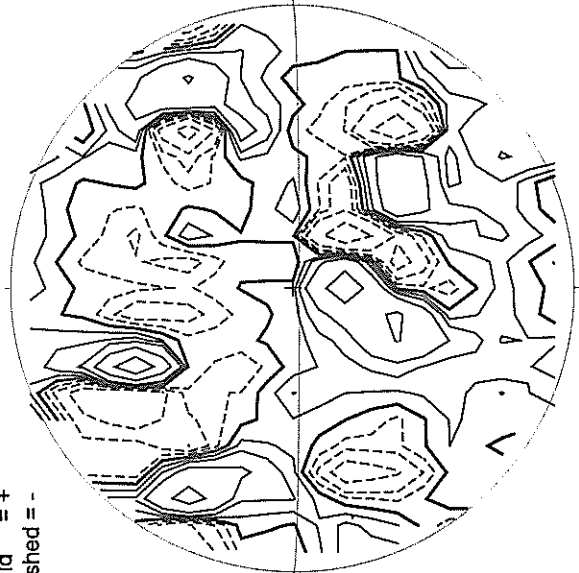
Bright = +
Dark = -



1614 UT

STANFORD MAGNETOGRAM

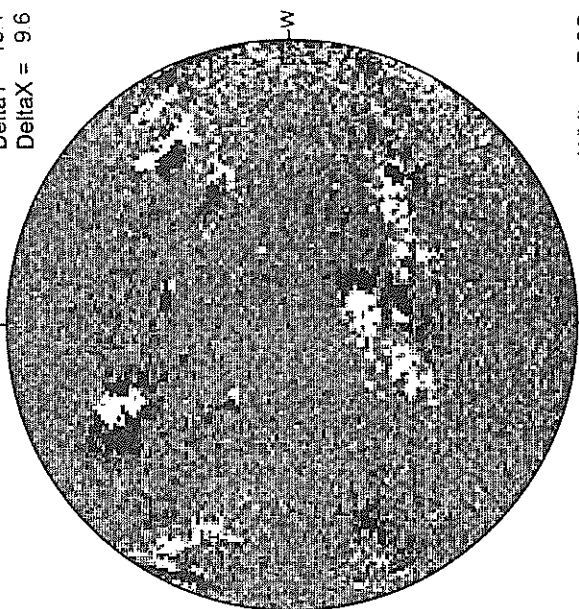
Solid = +
Dashed = -



1948 UT

MT. WILSON MAGNETOGRAM

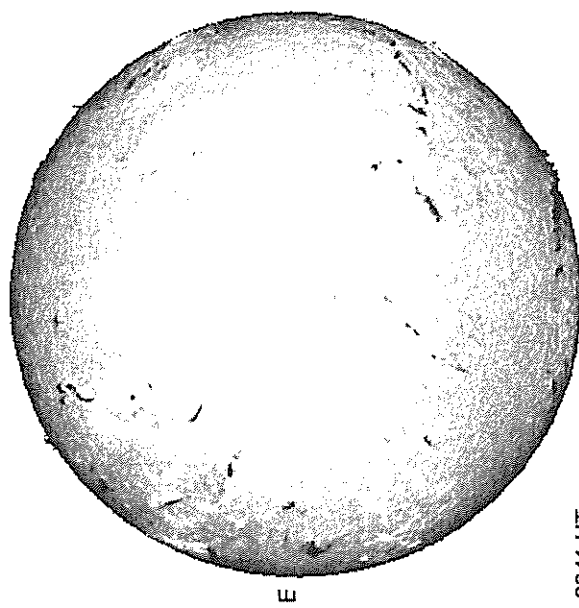
Delta Y = 13.1
Delta X = 9.6



18.53 -
19.45 UT

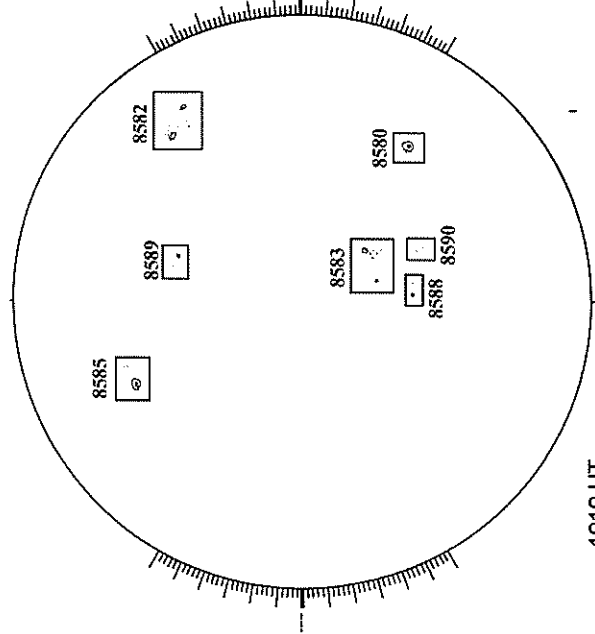
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



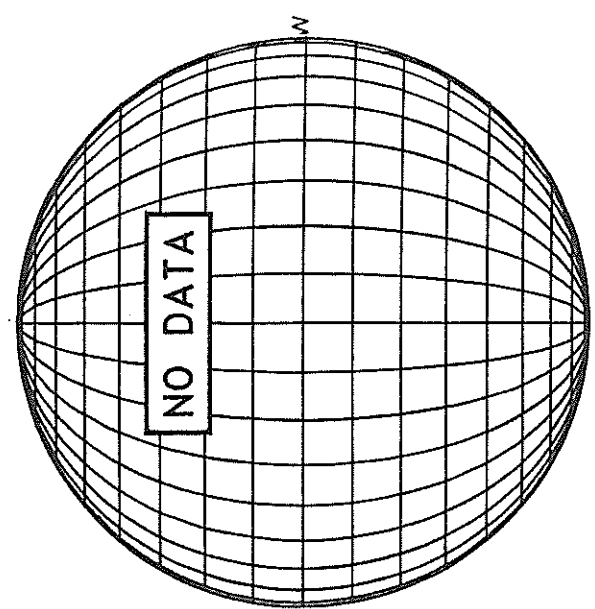
0841 UT

HOLLOMAN SUNSPOT



1919 UT

SACRAMENTO PEAK CORONA (1.15 Radii) ----

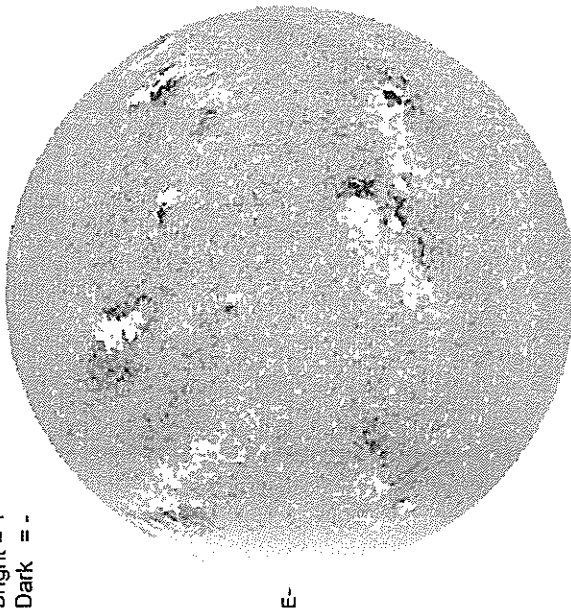


JUNE 18, 1999 (P= -8.71, Bo = 1.33, Lo = 88.92)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1552 UT

STANFORD MAGNETOGRAM

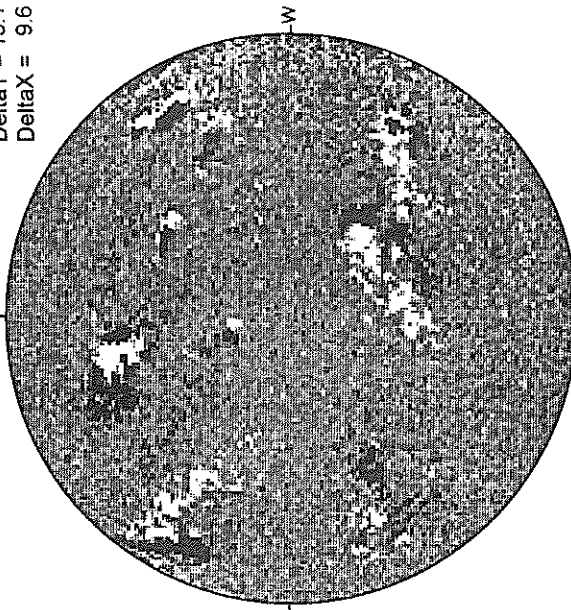
Solid = +
Dashed = -



1948 UT

MT. WILSON MAGNETOGRAM

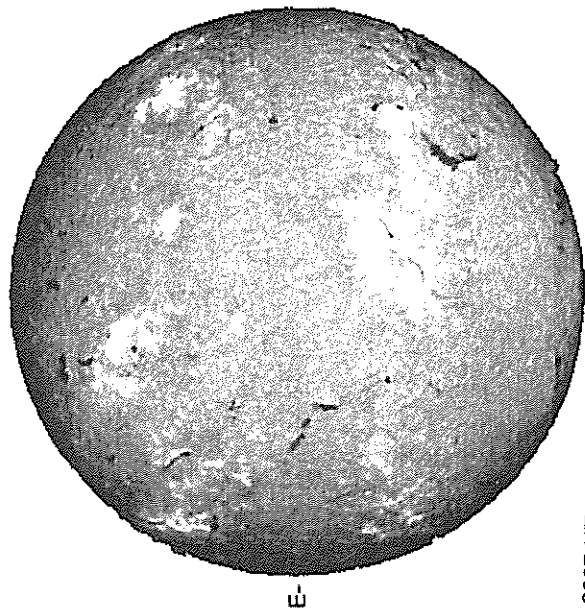
DeltaY = 13.1
DeltaX = 9.6



16.87 -
17.78 UT

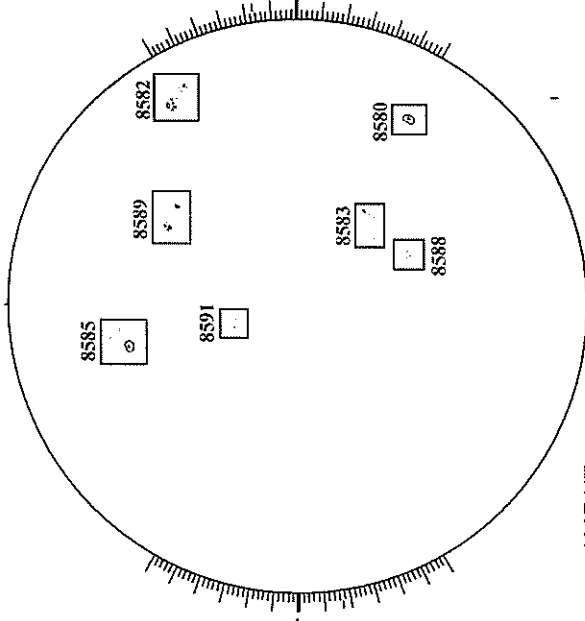
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



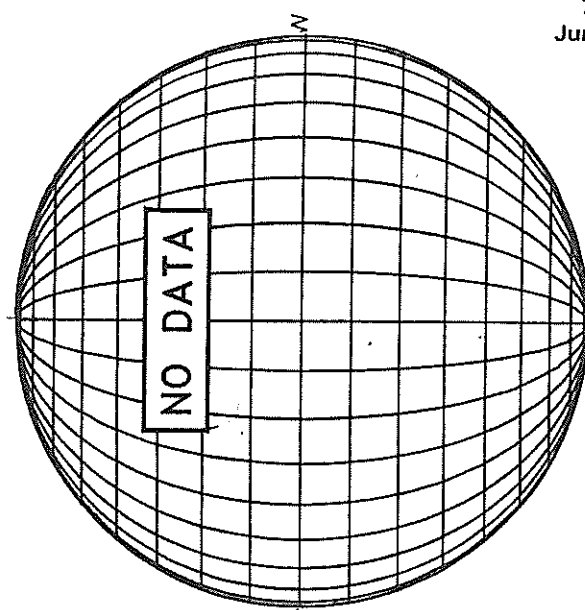
0937 UT

RAMEY SUNSPOT



1307 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



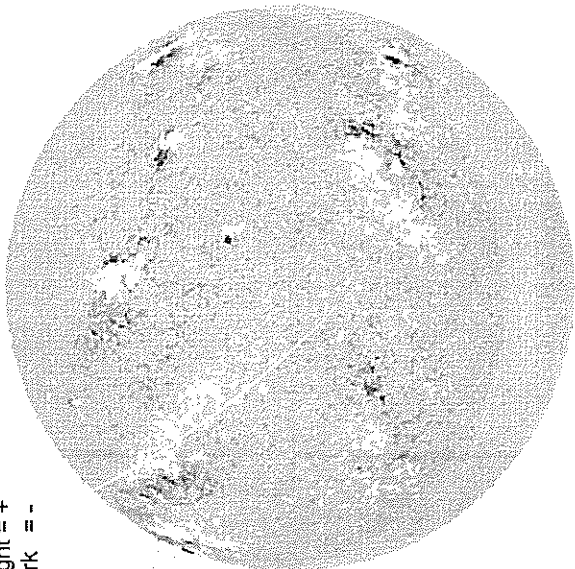
74
Jun 99

JUNE 19, 1999 (P= -8.27, Bo = 1.45, Lo = 75.69)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1608 UT

STANFORD MAGNETOGRAM

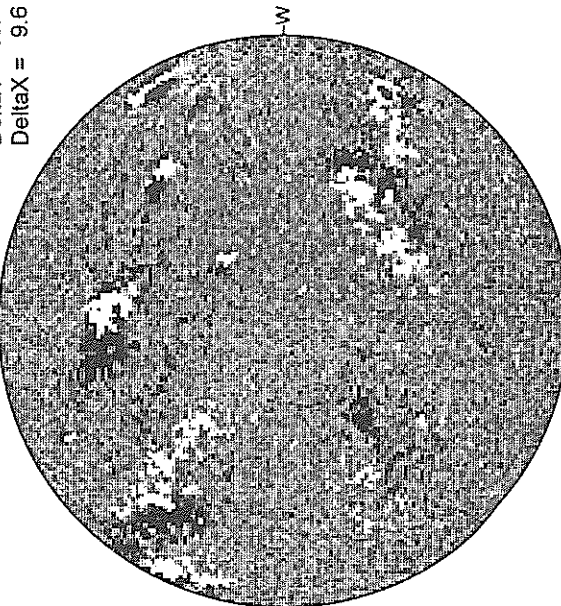
Solid = +
Dashed = -



2031 UT

MT. WILSON MAGNETOGRAM

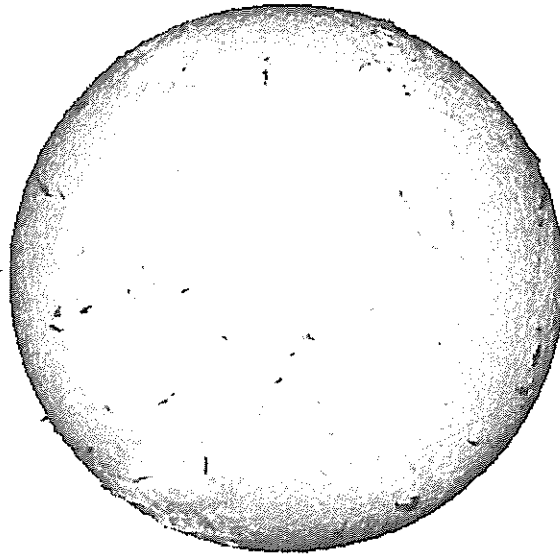
Delta Y = 13.1
Delta X = 9.6



18.07 -
18.99 UT

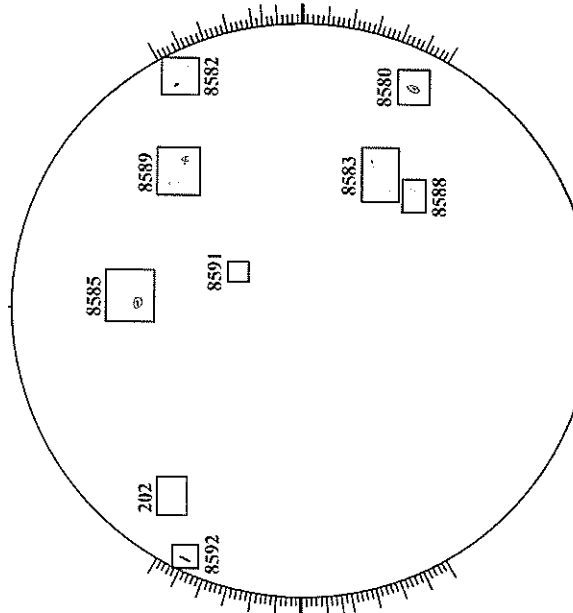
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



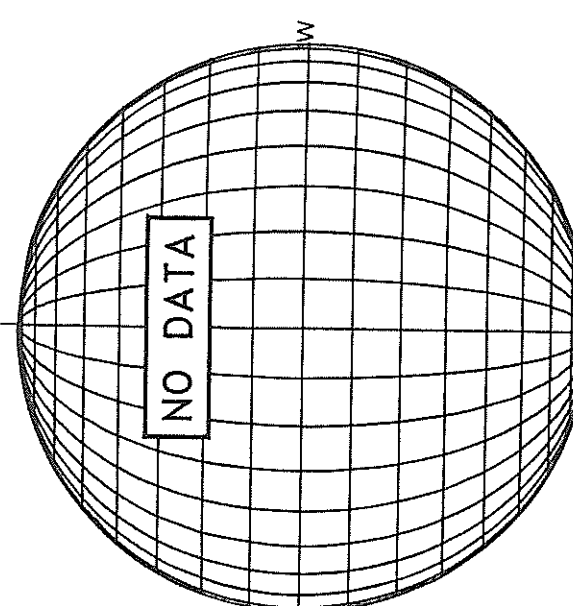
0605 UT

RAMEY SUNSPOT



1151 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---



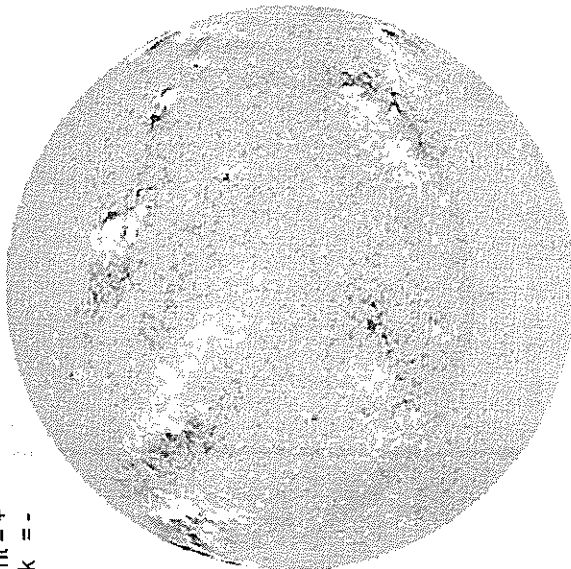
JUNE 20, 1999 (P= -7.83, Bo = 1.57, Lo = 62.45)

KITT PEAK MAGNETOGRAM

868.8 nm

N

Bright = +
Dark = -

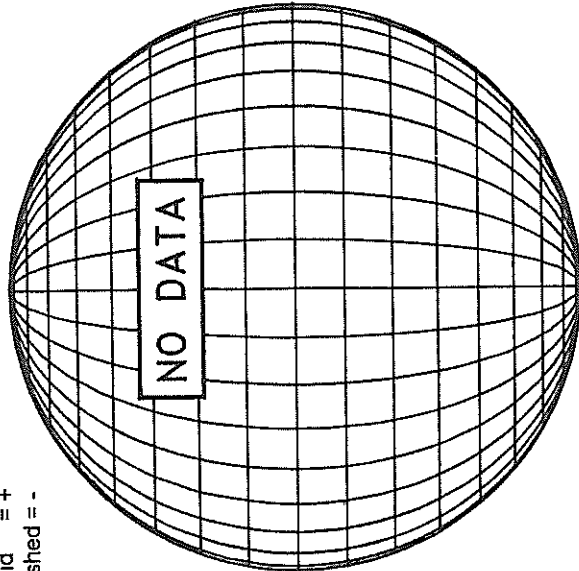


1618 UT

STANFORD MAGNETOGRAM

N

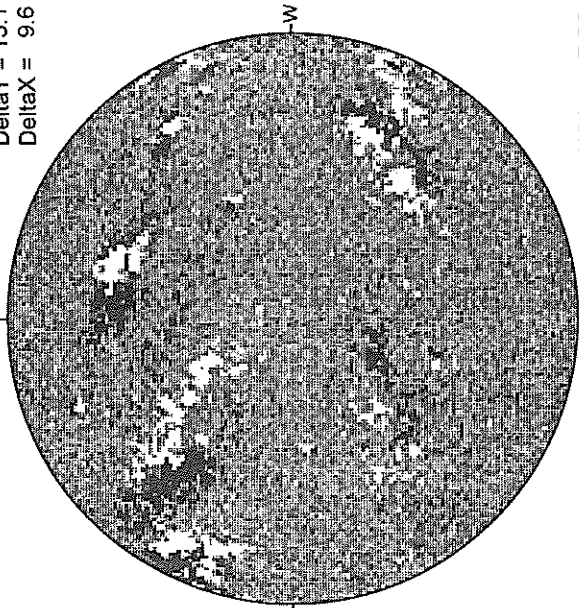
Solid = +
Dashed = -



MT. WILSON MAGNETOGRAM

N

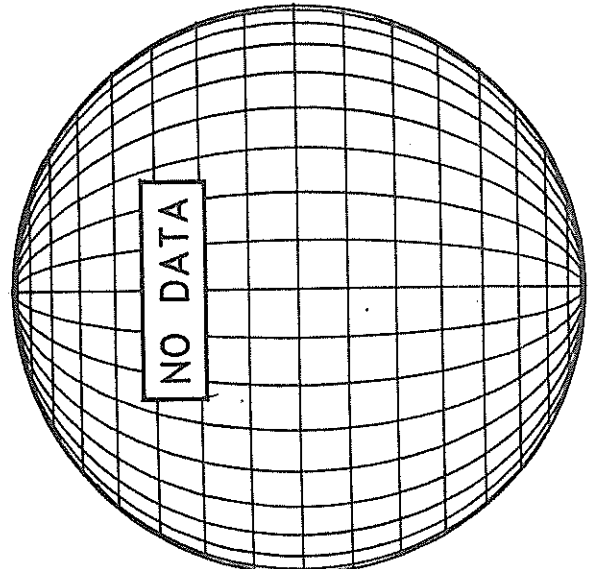
DeltaY = 13.1
DeltaX = 9.6



17.36 -
18.28 UT

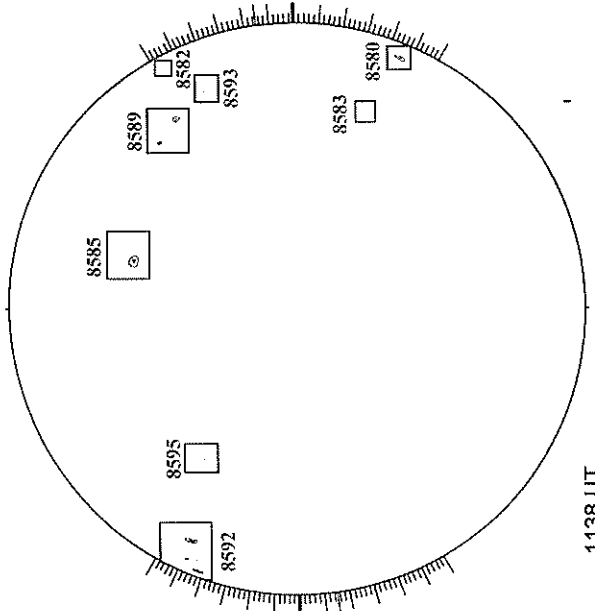
White = +7.5G
Black = -7.5G

SACRAMENTO PEAK H-ALPHA



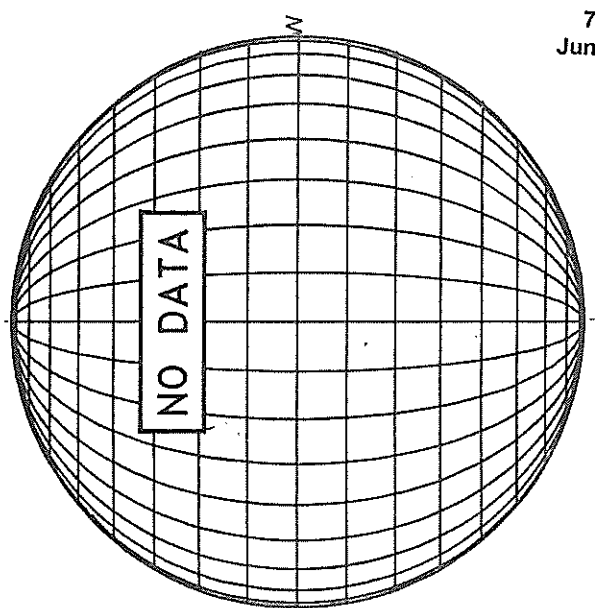
E

RAMEY SUNSPOT



1138 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---



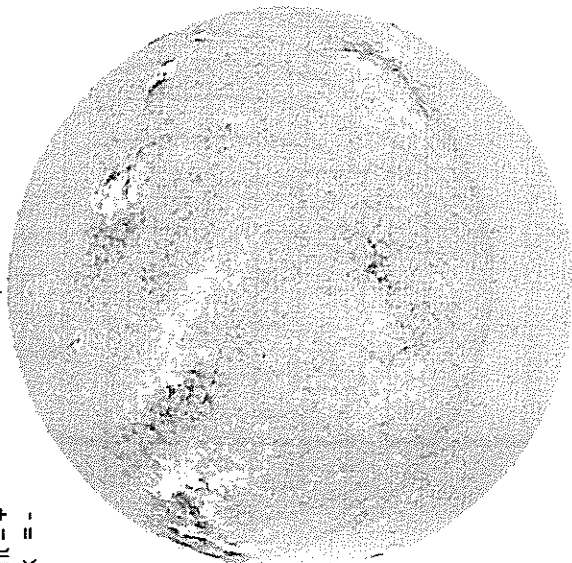
76
Jun 99

JUNE 21, 1999 (P= -7.39, Bo = 1.68, Lo = 49.21)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1445 UT

STANFORD MAGNETOGRAM

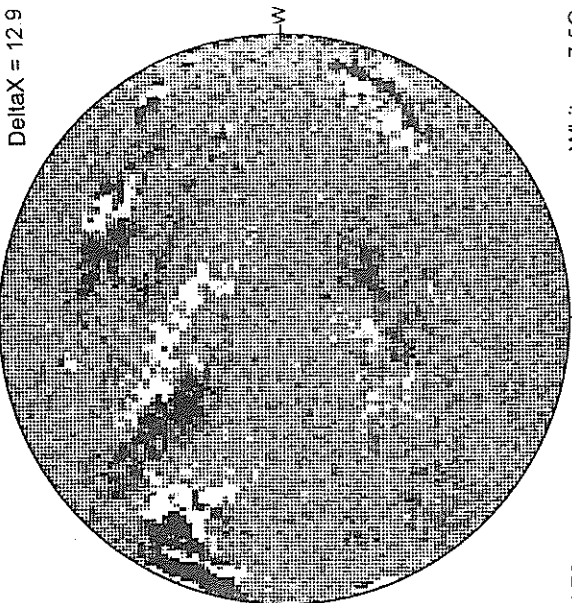
Solid = +
Dashed = -



2008 UT

MT. WILSON MAGNETOGRAM

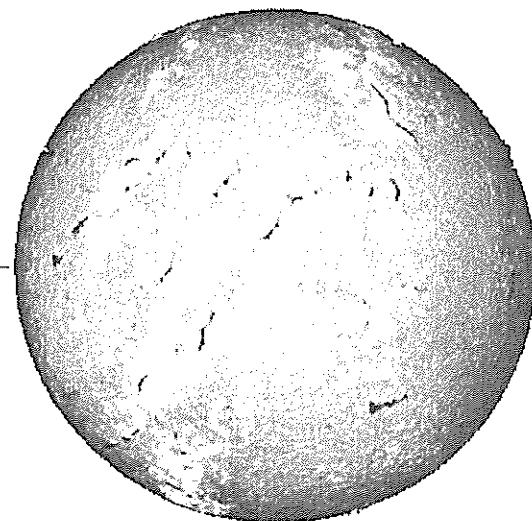
DeltaY = 20.1
DeltaX = 12.9



24.78 -
25.19 UT

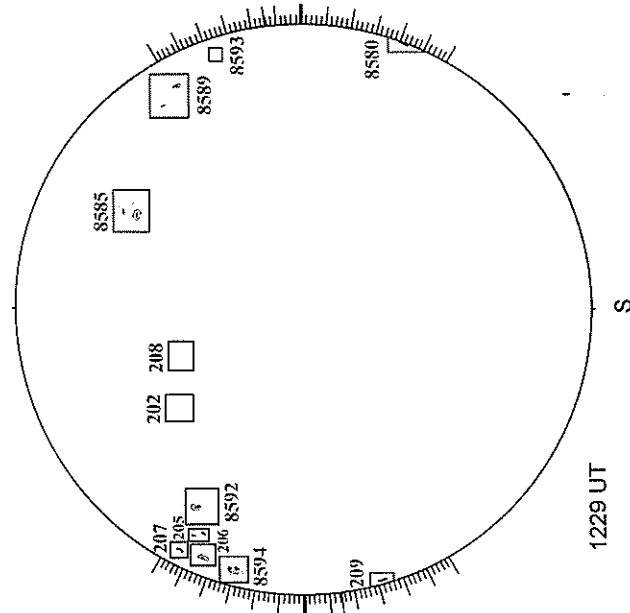
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



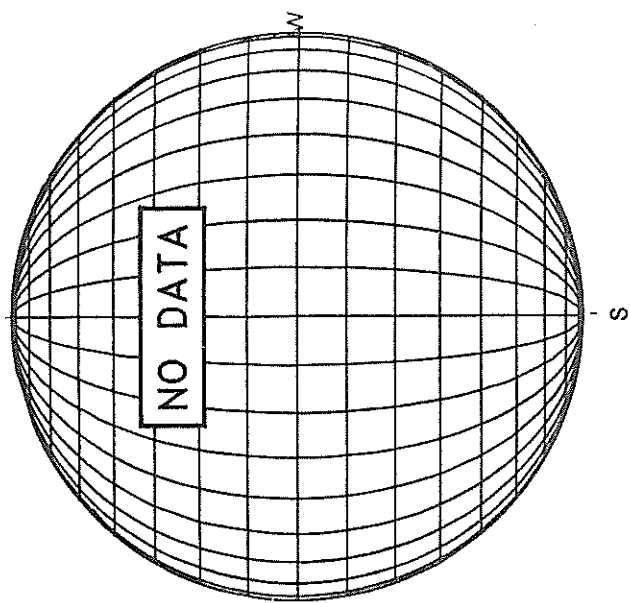
0858 UT

RAMEY SUNSPOT



1229 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



NO DATA

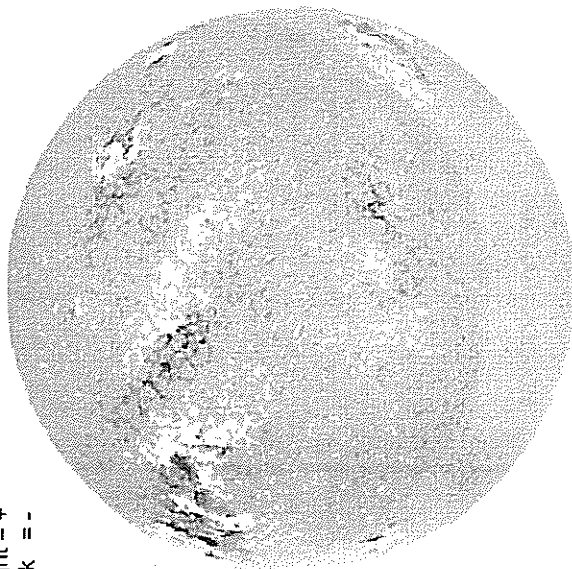
JUNE 22, 1999 (P= -6.95, Bo = 1.80, Lo = 35.98)

KITT PEAK MAGNETOGRAM

868.8 nm

N

Bright = +
Dark = -



1402 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

N

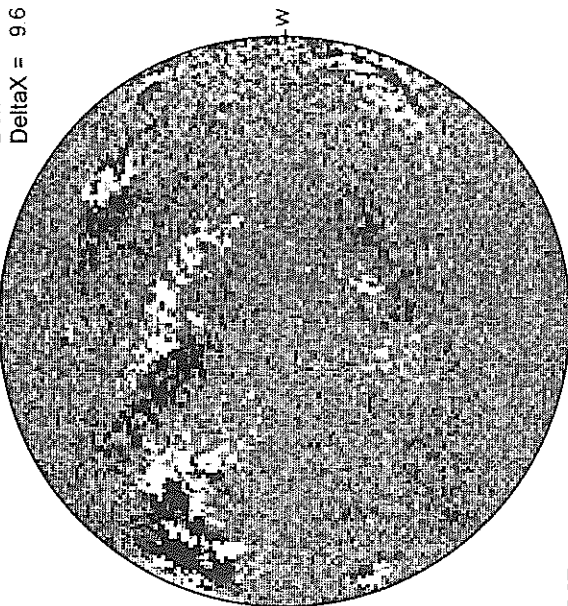


2004 UT

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

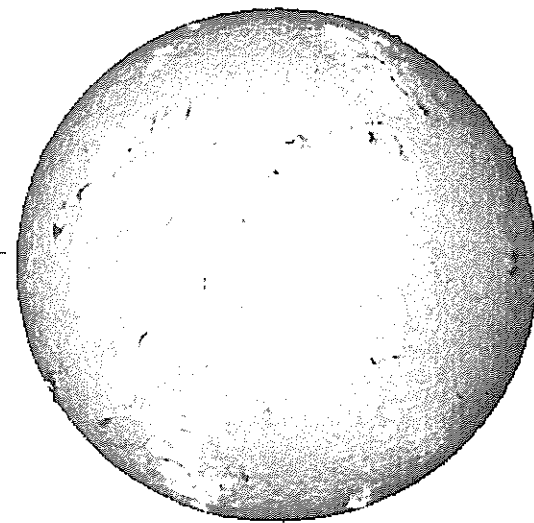
N



17.67 -
18.59 UT

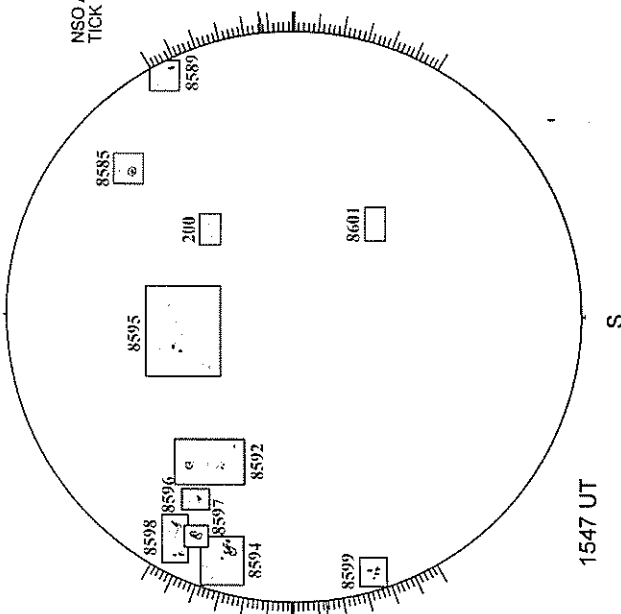
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



0643 UT

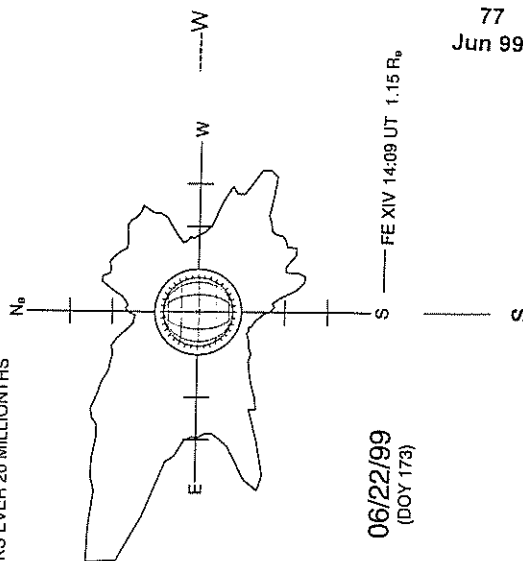
HOLLOMAN SUNSPOT



1547 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----

NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS



06/22/99
(DOY 173)

FE XIV 14.09 UT 1.15 R_o

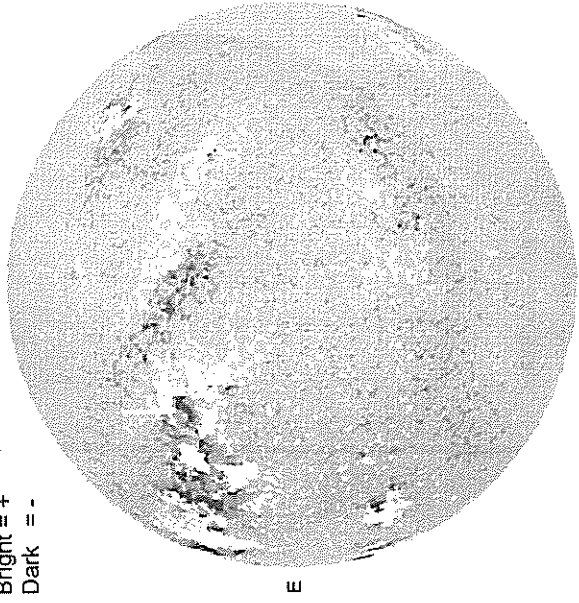
78
Jun 99

JUNE 23, 1999 (P= -6.51, Bo = 1.92, Lo = 22.74)

KITT PEAK MAGNETOGRAM

N
868.8 nm

Bright = +
Dark = -



1352 UT

STANFORD MAGNETOGRAM

N

Solid = +
Dashed = -

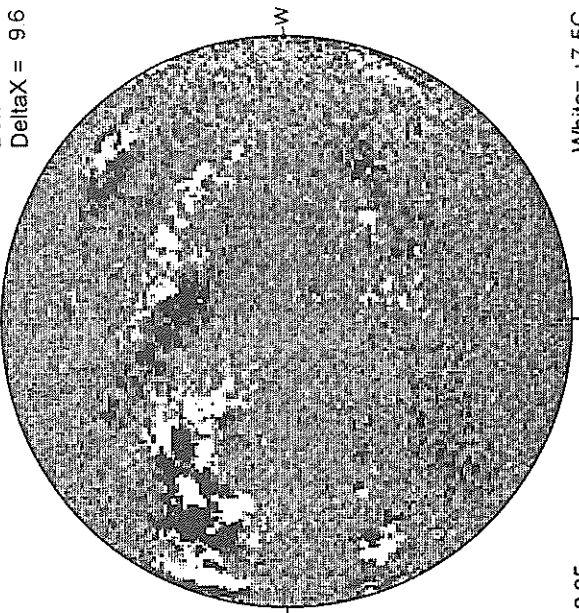


2002 UT

MT. WILSON MAGNETOGRAM

N

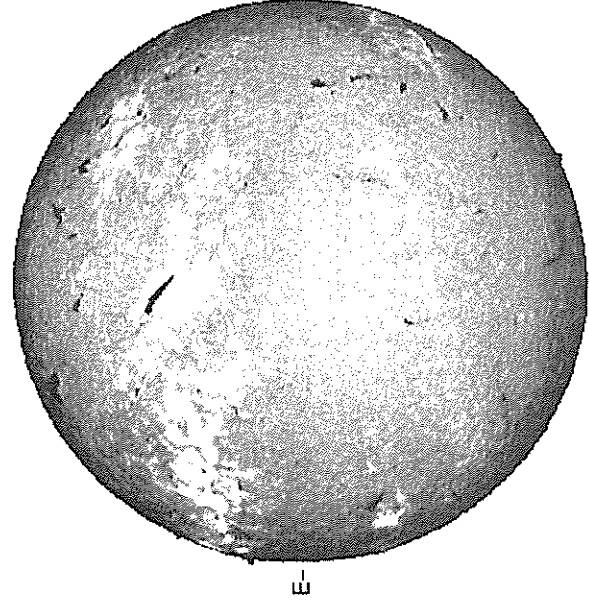
DeltaY = 13.1
DeltaX = 9.6



18.35 -
19.27 UT

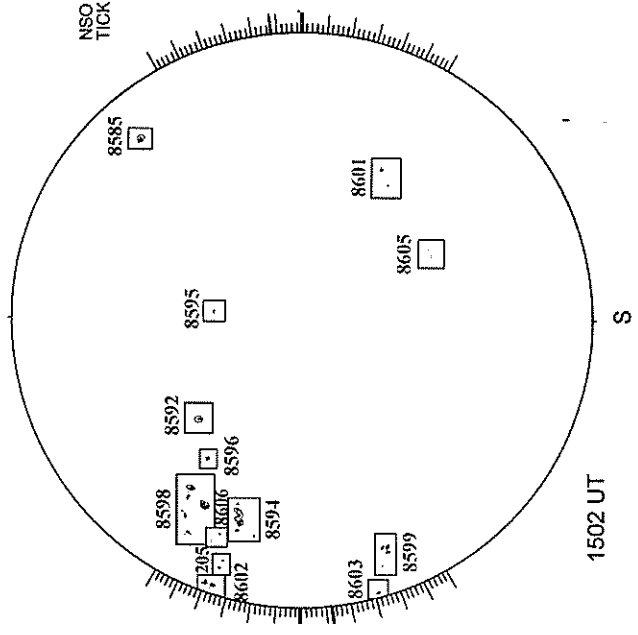
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



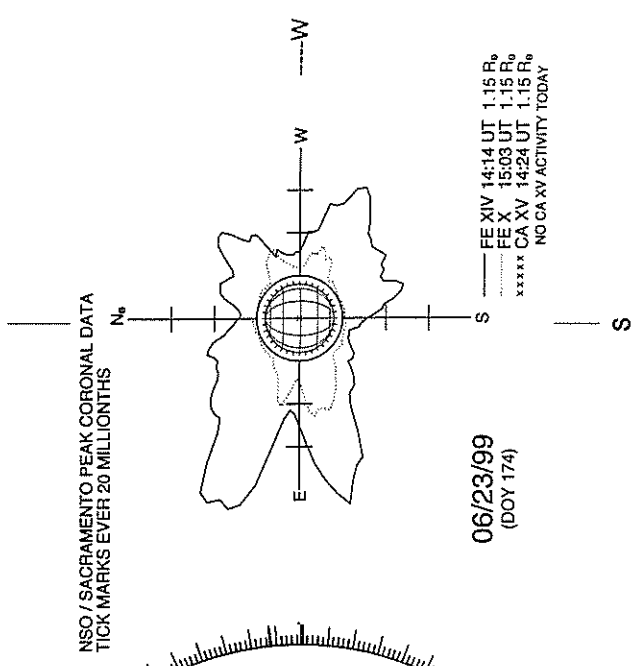
0858 UT

HOLLOMAN SUNSPOT



1502 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



06/23/99
(DOY 174)

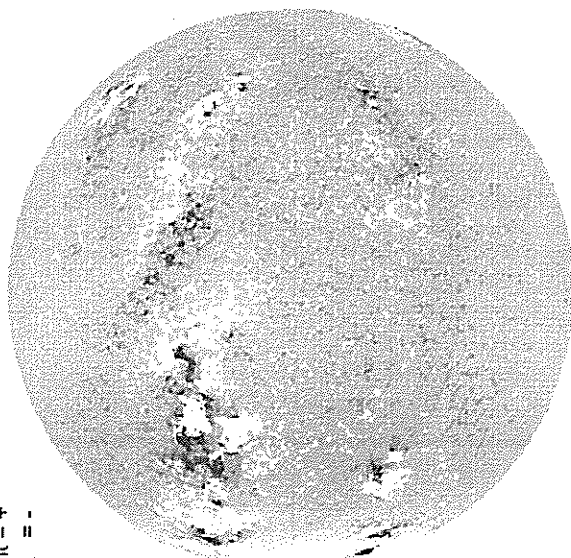
FE XIV 14:14 UT 1.15 R_o
FE X 15:03 UT 1.15 R_o
XXXX CA XV 14:24 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

JUNE 24, 1999 (P = -6.06, Bo = 2.03, Lo = 9.50)

KITT PEAK MAGNETOGRAM

868.8 nm

Bright = +
Dark = -



1400 UT

STANFORD MAGNETOGRAM

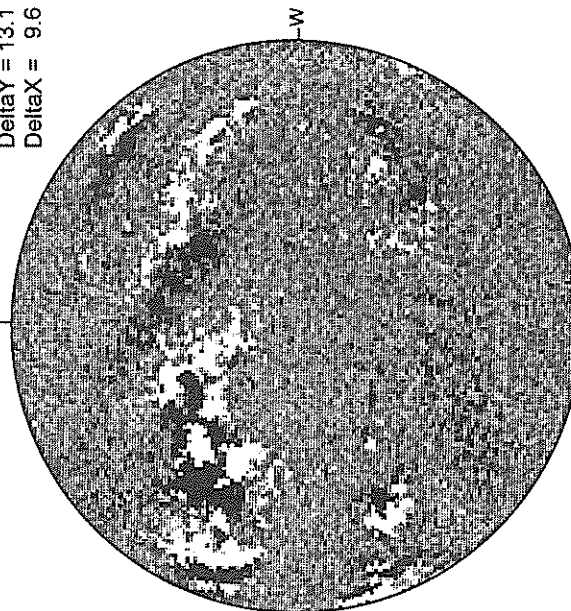
Solid = +
Dashed = -



2026 UT

MT. WILSON MAGNETOGRAM

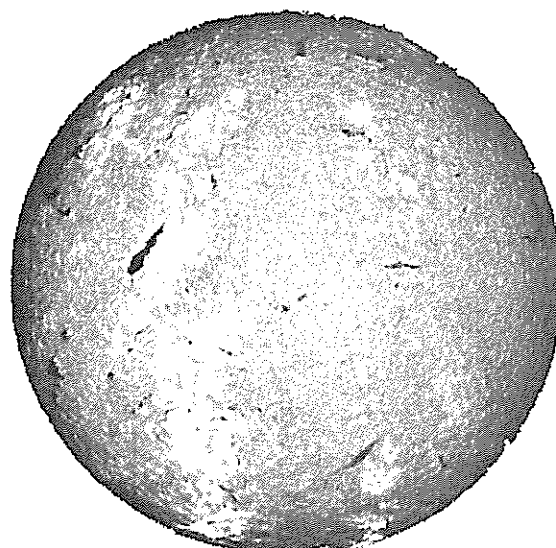
Delta Y = 13.1
Delta X = 9.6



18.34 -
19.25 UT

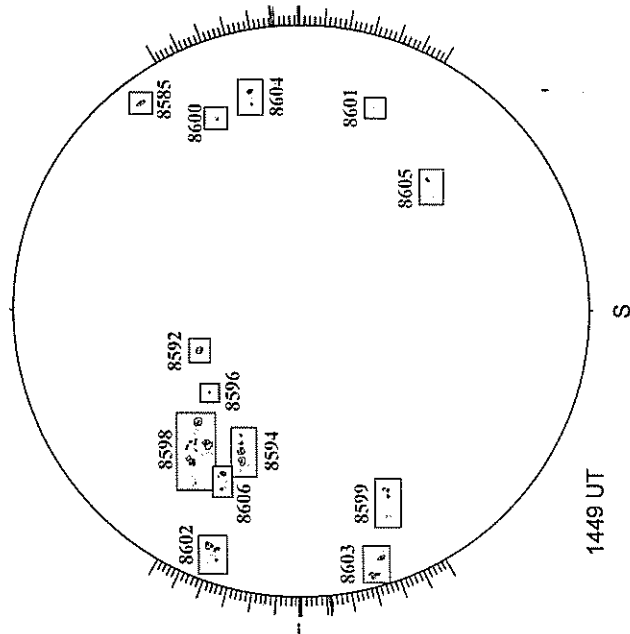
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



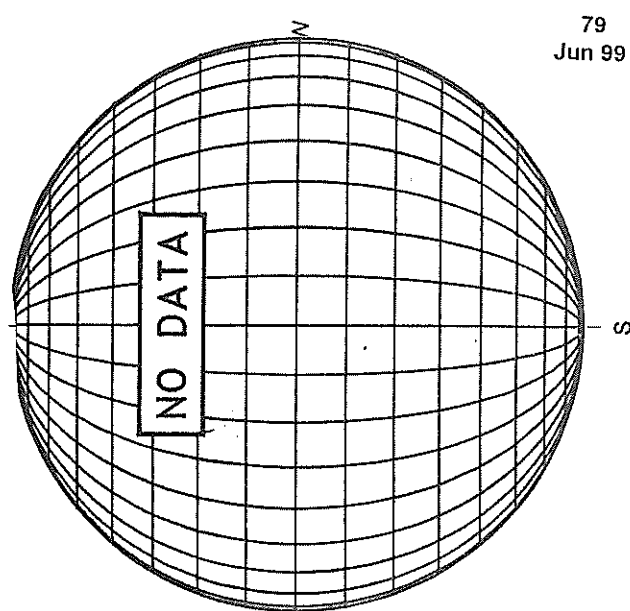
0649 UT

HOLLOMAN SUNSPOT



1449 UT

SACRAMENTO PEAK CORONA (1.15 Radii)----



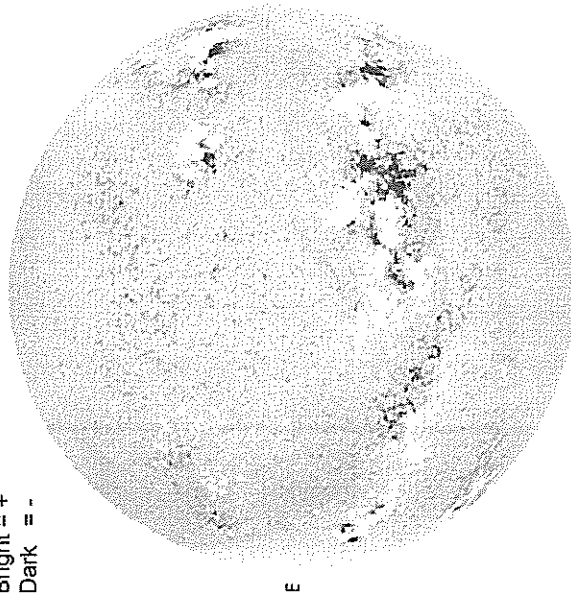
80
Jun 99

JUNE 25, 1999 (P = -5.61, Bo = 2.15, Lo = 356.27)

KITT PEAK MAGNETOGRAM

N
868.8 nm

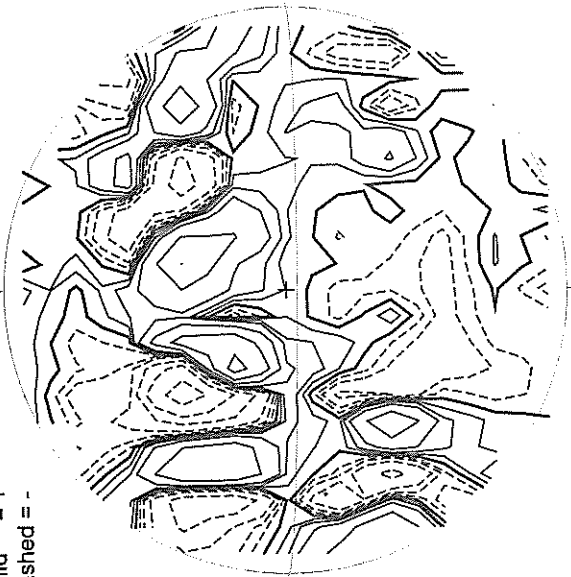
Bright = +
Dark = -



1352 UT

STANFORD MAGNETOGRAM

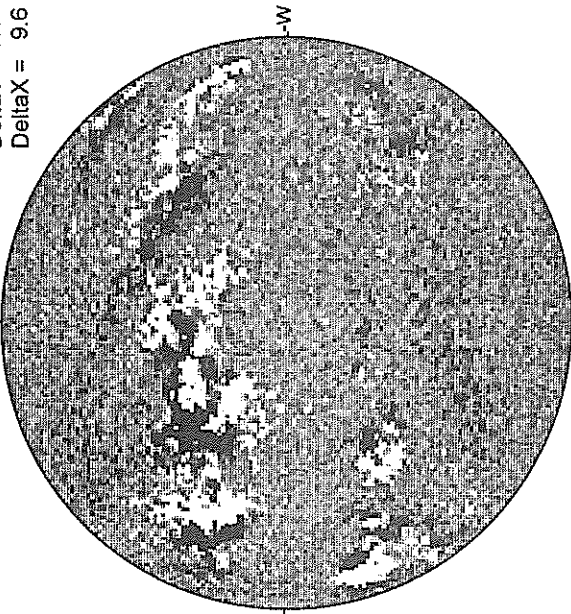
N
Solid = +
Dashed = -



2018 UT

MT. WILSON MAGNETOGRAM

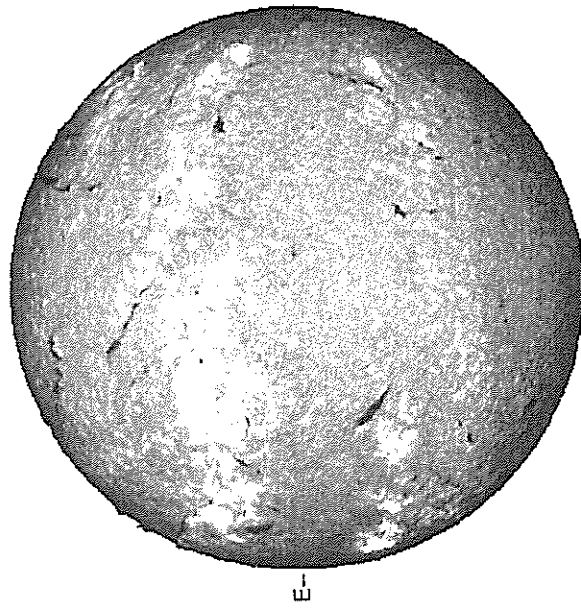
N
Delta Y = 13.1
Delta X = 9.6



18.43 -
19.35 UT

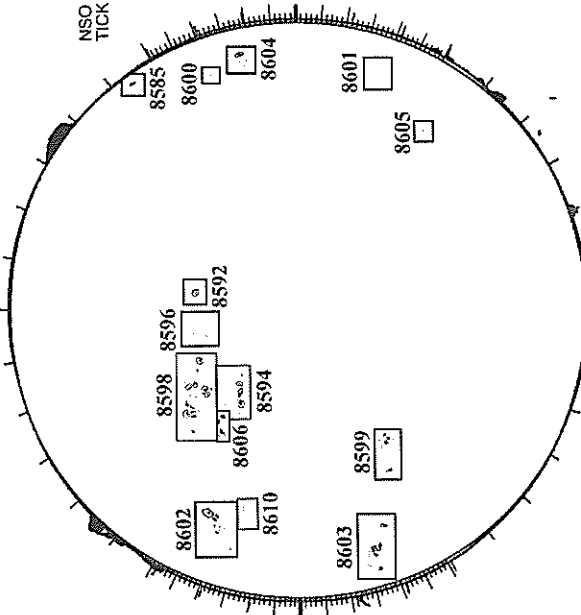
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



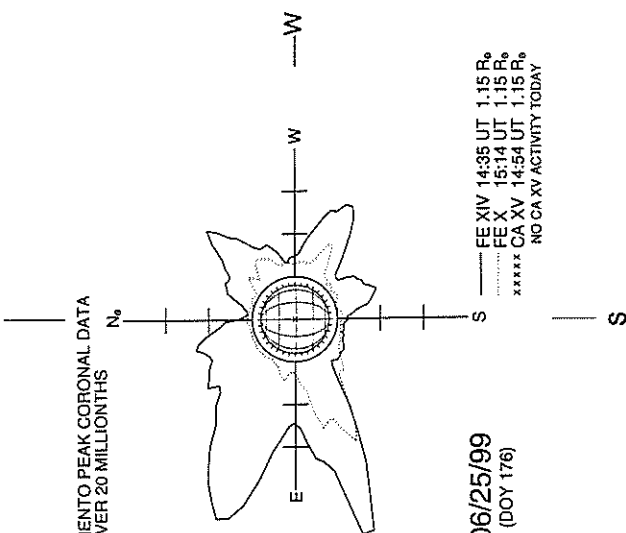
0644 UT

HOLLOMAN SUNSPOT



1459 UT
0421 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)---



NSO / SACRAMENTO PEAK CORONAL DATA
TICK MARKS EVERY 20 MILLIONTHS

06/25/99
(DOY 176)

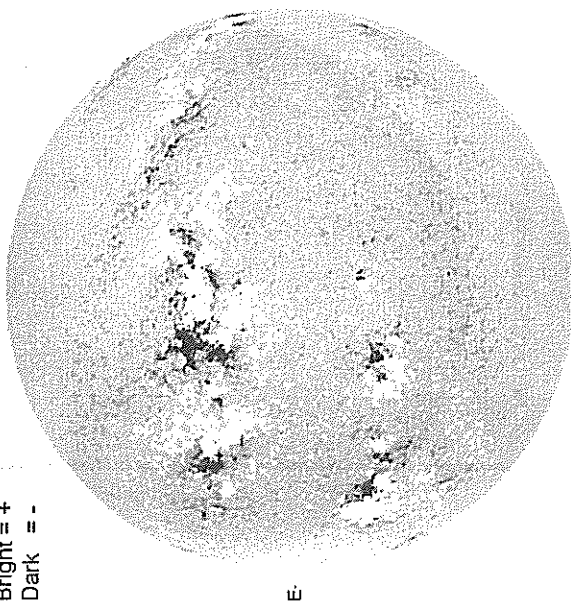
--- EE XIV 14:35 UT 1.15 R_o
..... EE X 15:14 UT 1.15 R_o
***** CA XV 14:54 UT 1.15 R_o
NO CA XV ACTIVITY TODAY

JUNE 26, 1999 (P= -5.16, Bo = 2.26, Lo = 343.03)

KITT PEAK MAGNETOGRAM

868.8 nm

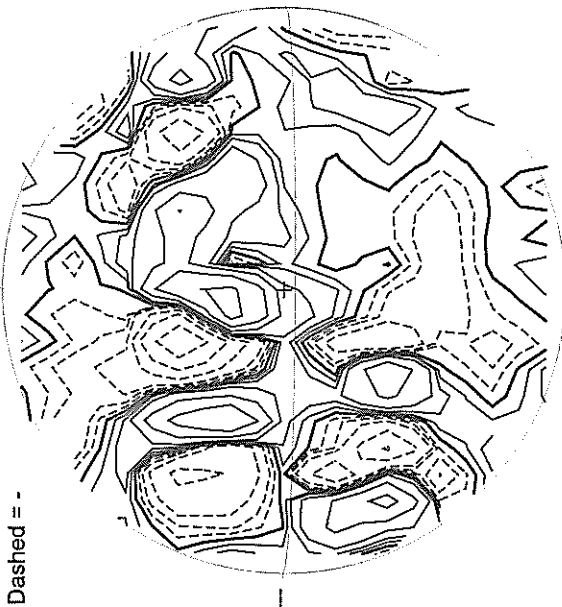
Bright = +
Dark = -



1455 UT

STANFORD MAGNETOGRAM

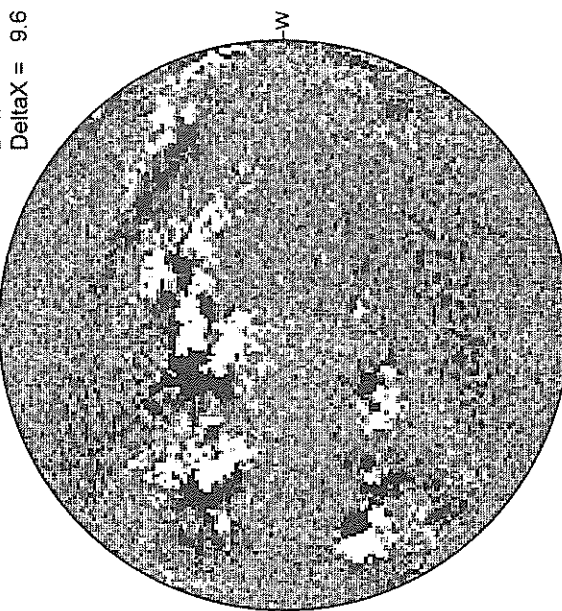
Solid = +
Dashed = -



1810 UT

MT. WILSON MAGNETOGRAM

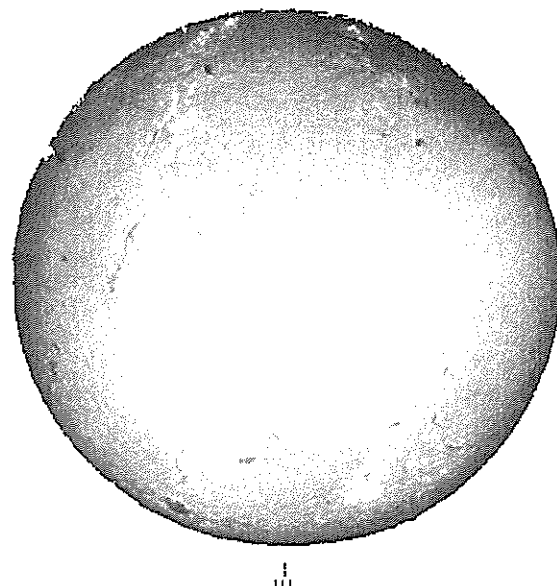
DeltaY = 13.1
DeltaX = 9.6



18.04 -
18.96 UT

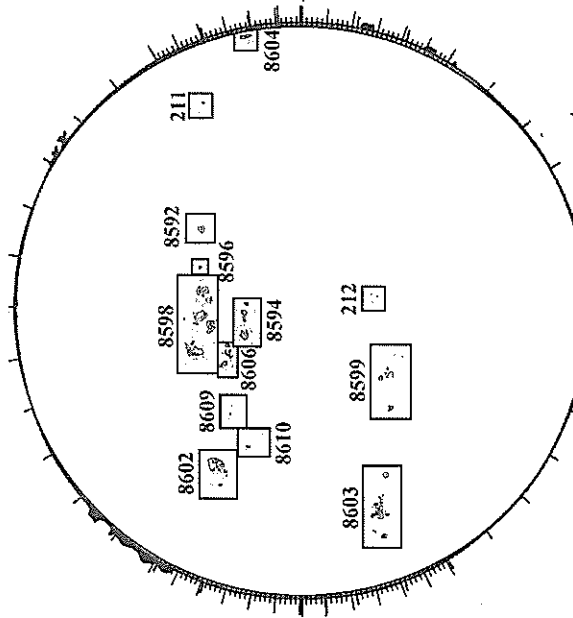
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



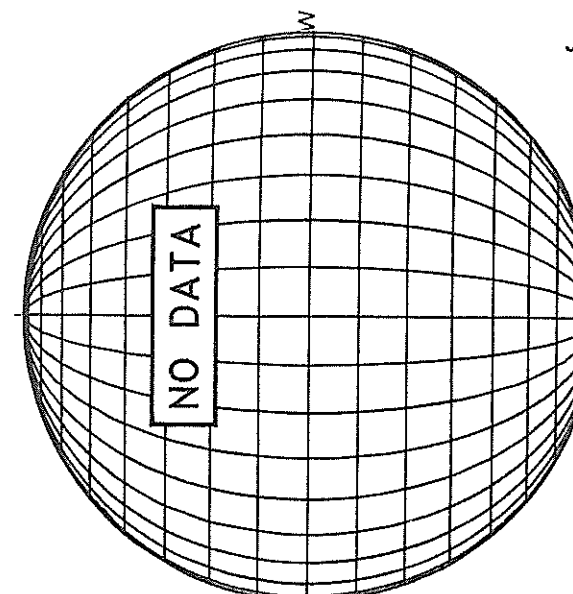
1020 UT

HOLLOMAN SUNSPOT



1718 UT
0446 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



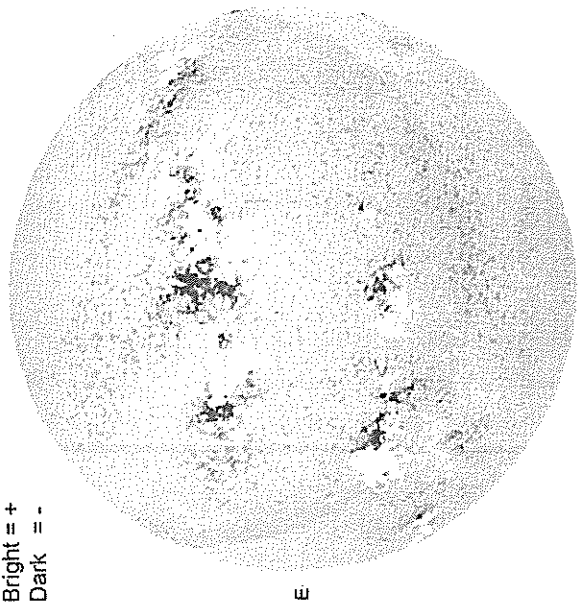
81
Jun 99

JUNE 27, 1999 (P= -4.71, Bo = 2.38, Lo = 329.79)

KITT PEAK MAGNETOGRAM

868.8 nm

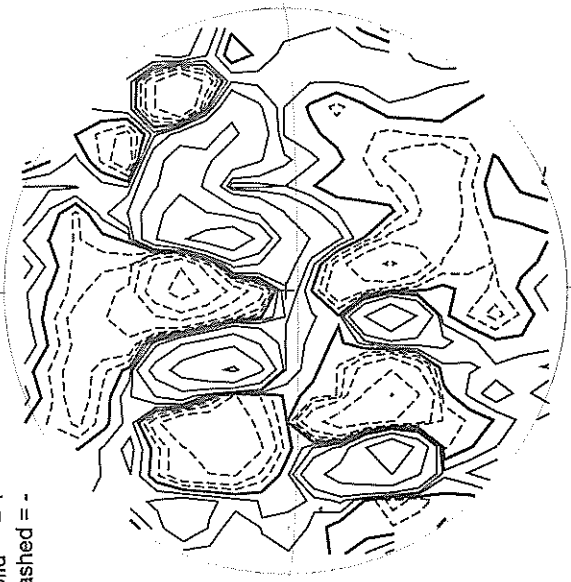
Bright = +
Dark = -



1602 UT

STANFORD MAGNETOGRAM

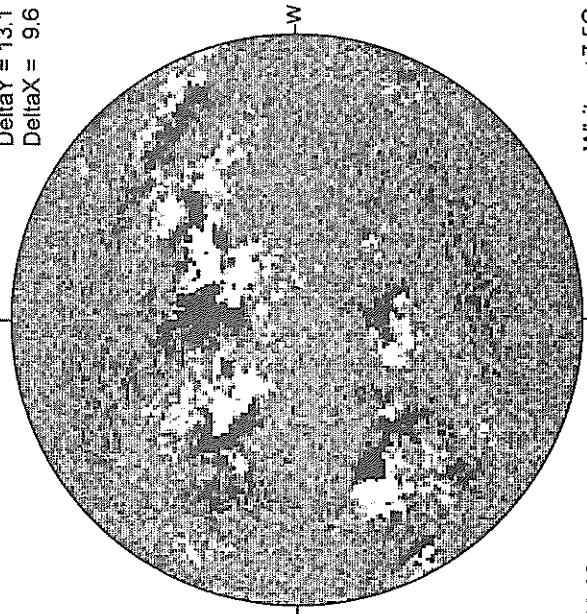
Solid = +
Dashed = -



1938 UT

MT. WILSON MAGNETOGRAM

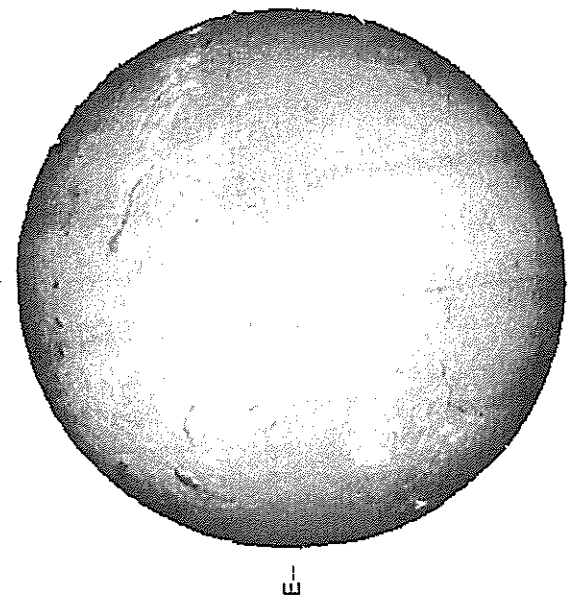
DeltaY = 13.1
DeltaX = 9.6



18.69 -
19.60 UT

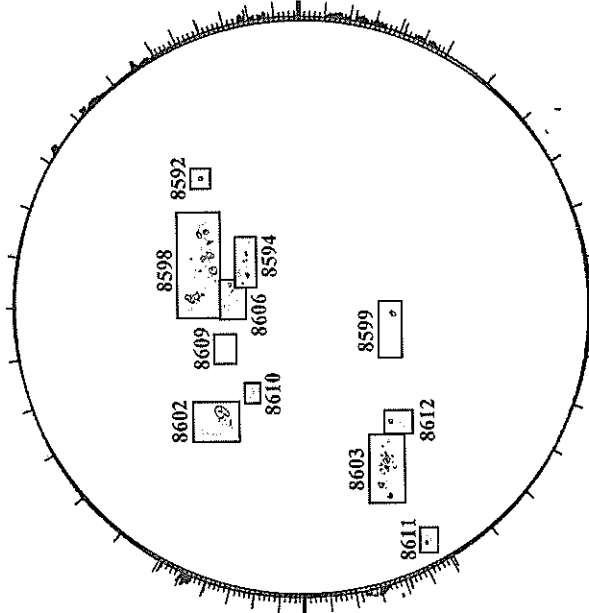
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



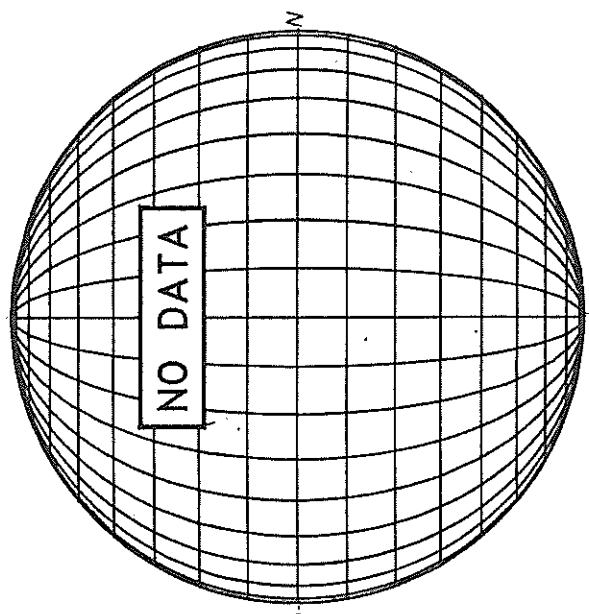
1013 UT

HOLLOMAN SUNSPOT



1500 UT
0558 UT LOMN Prom S

SACRAMENTO PEAK CORONA (1.15 Radii)----



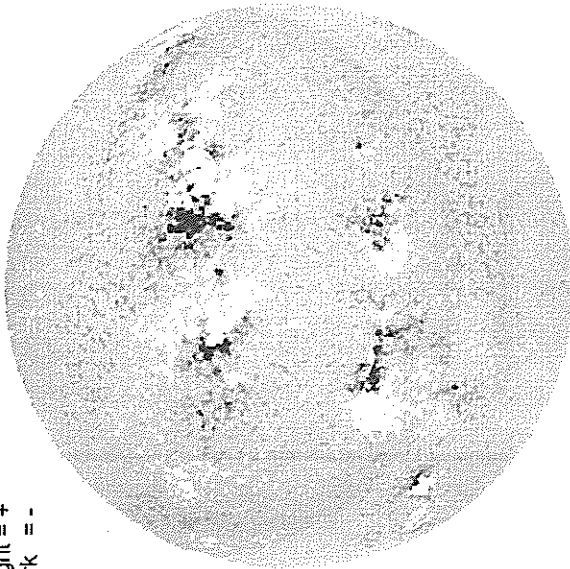
NO DATA

JUNE 28, 1999 (P = -4.26, Bo = 2.49, Lo = 316.56)

KITT PEAK MAGNETOGRAM

Bright = +
Dark = -

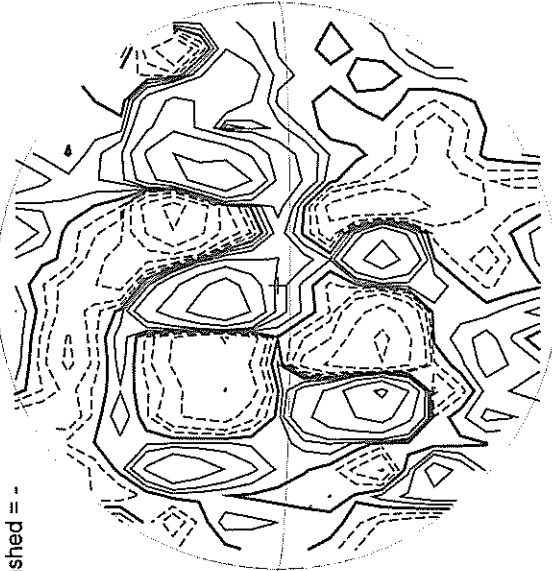
868.8 nm



1607 UT

STANFORD MAGNETOGRAM

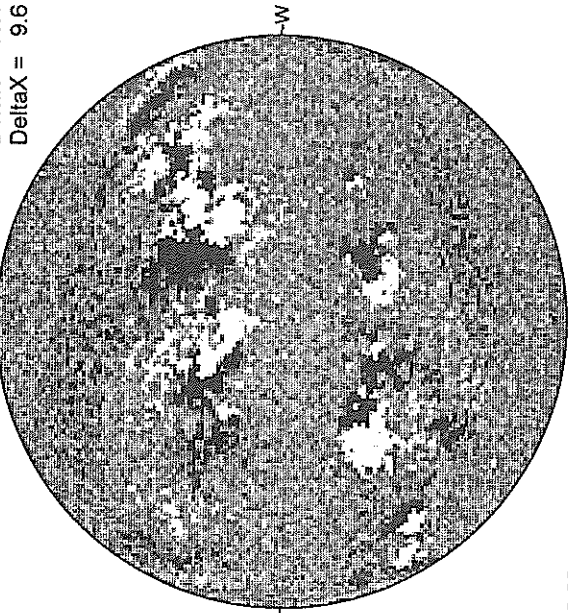
Solid = +
Dashed = -



2109 UT

MT. WILSON MAGNETOGRAM

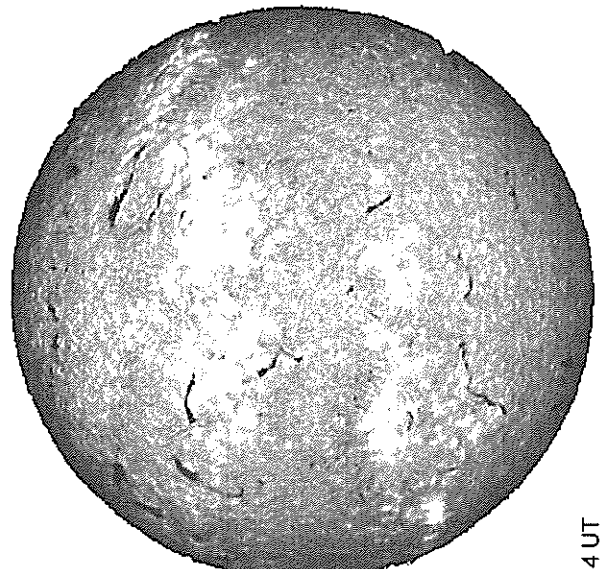
Delta Y = 13.1
Delta X = 9.6



18.88 -
19.80 UT

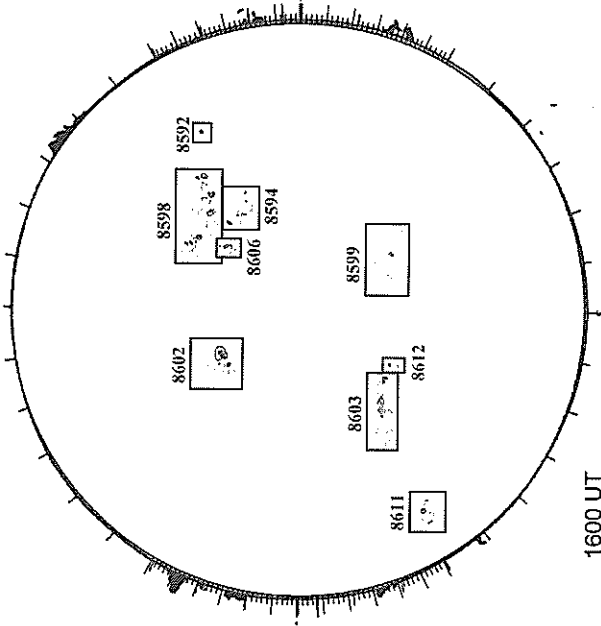
White = +7.5G
Black = -7.5G

MEUDON H-ALPHA



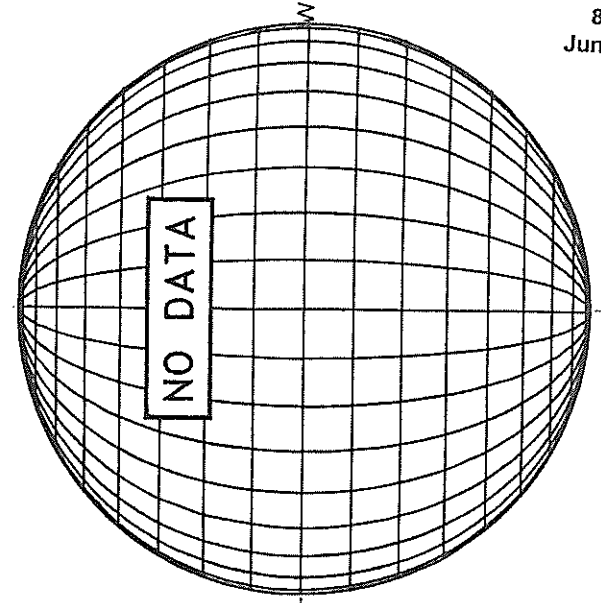
0654 UT

HOLLOMAN SUNSPOT



1600 UT
0928 UT LOMN Prom

SACRAMENTO PEAK CORONA (1.15 Radii)----



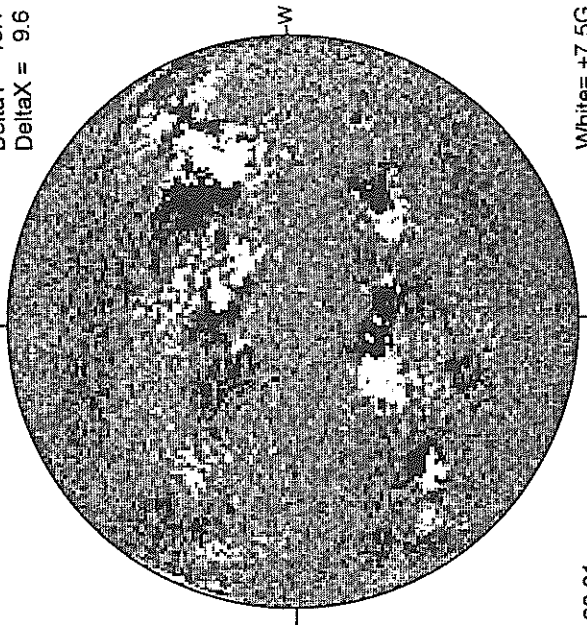
83
Jun 99

84
Jun 99

JUNE 29, 1999 (P= -3.81, Bo = 2.60, Lo = 303.32)

MT. WILSON MAGNETOGRAM

DeltaY = 13.1
DeltaX = 9.6

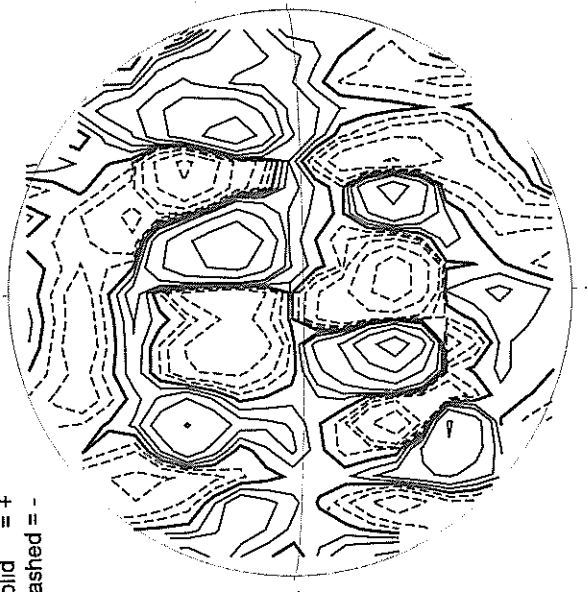


White= +7.5G
Black = -7.5G

20.61 -
21.53 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed = -

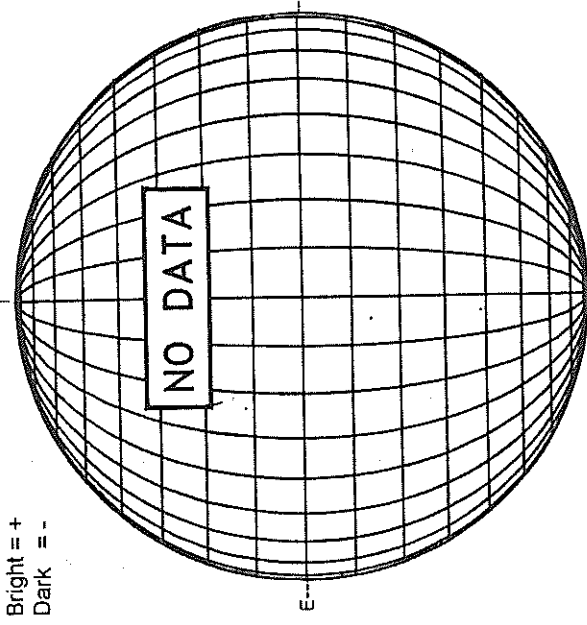


2058 UT

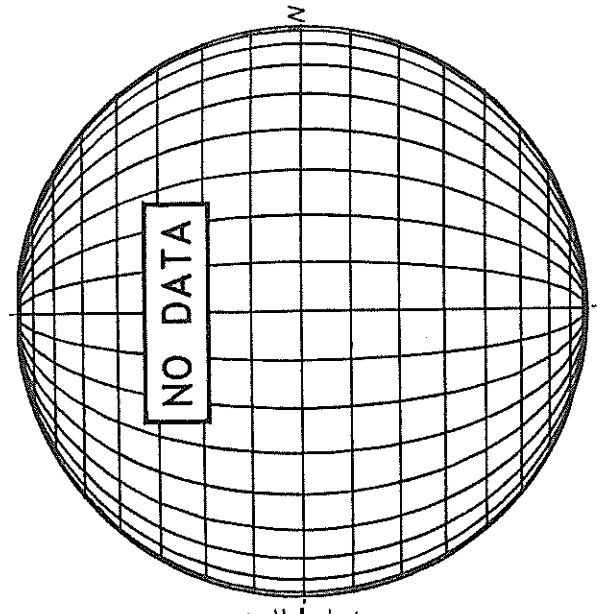
KITT PEAK MAGNETOGRAM

868.8 nm

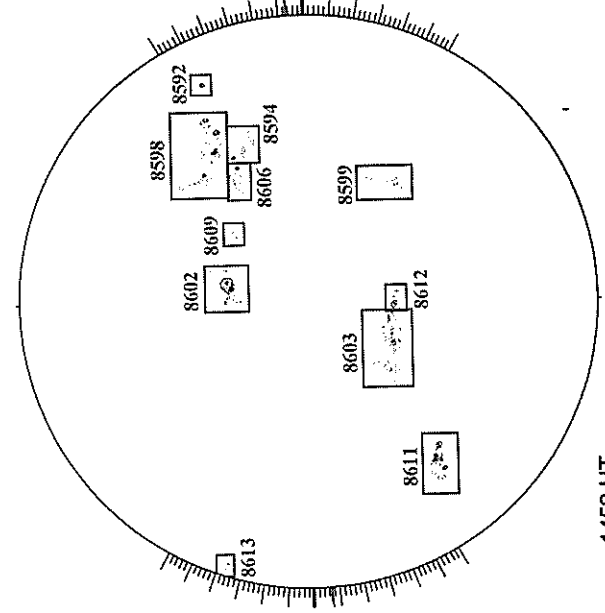
Bright = +
Dark = -



SACRAMENTO PEAK CORONA (1.15 Radii)----

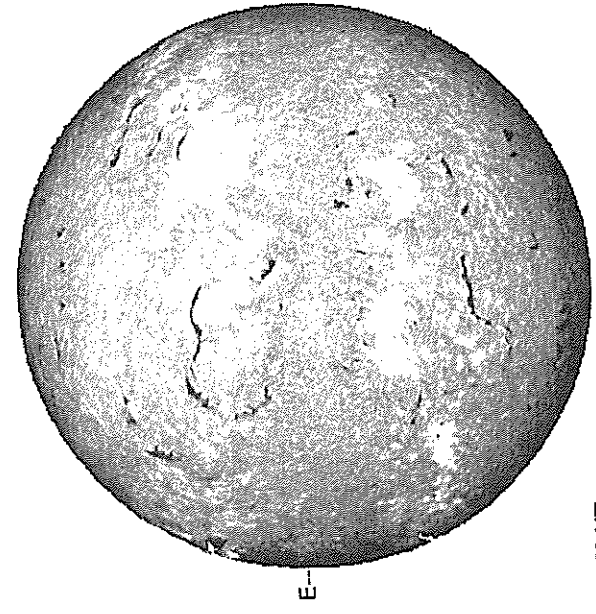


HOLLOMAN SUNSPOT



1452 UT

MEUDON H-ALPHA



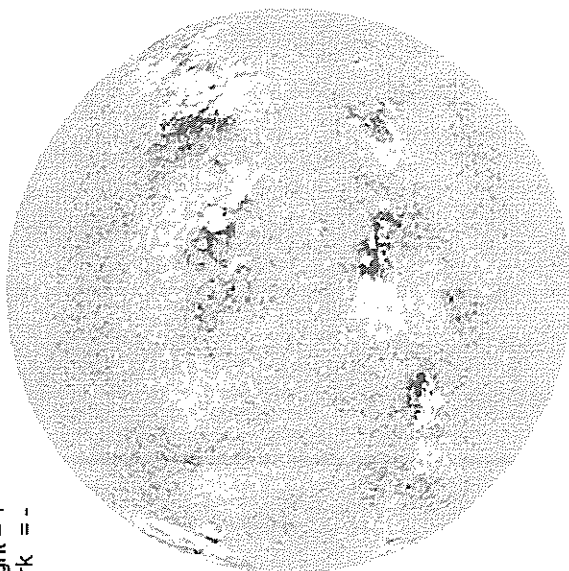
1453 UT

JUNE 30, 1999 (P= -3.36, Bo = 2.72, Lo = 290.08)

KITT PEAK MAGNETOGRAM

868.8 nm

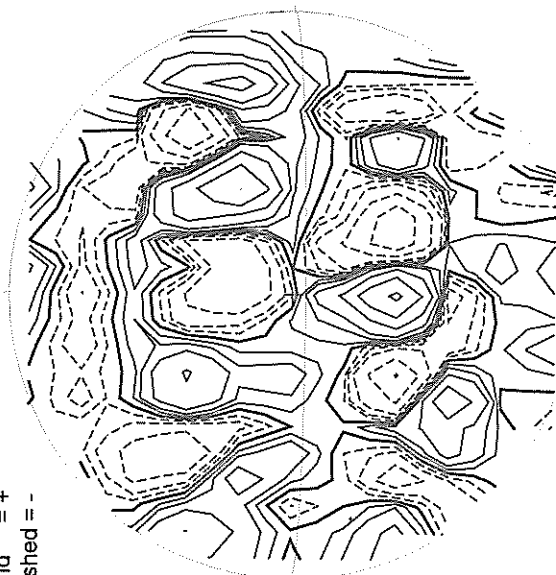
Bright = +
Dark = -



1410 UT

STANFORD MAGNETOGRAM

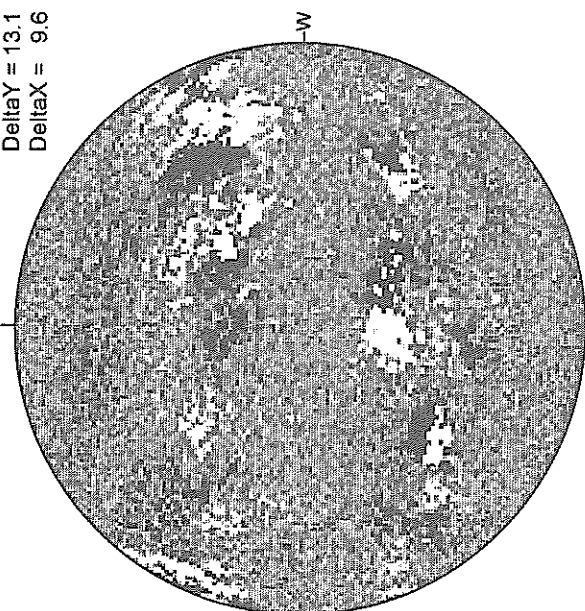
Solid = +
Dashed = -



2015 UT

MT. WILSON MAGNETOGRAM

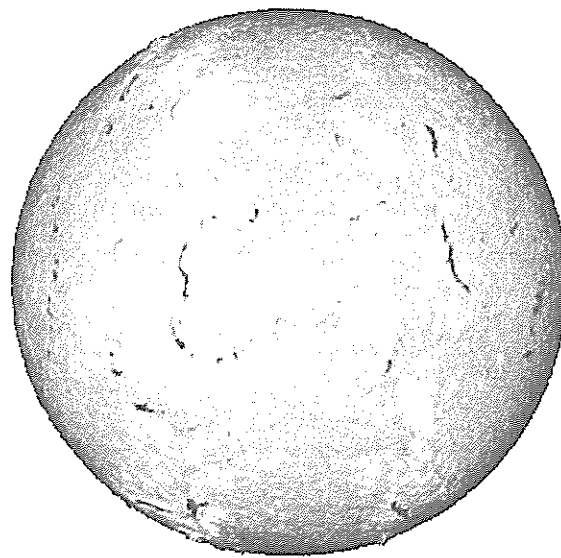
DeltaY = 13.1
DeltaX = 9.6



18.13 -
19.05 UT

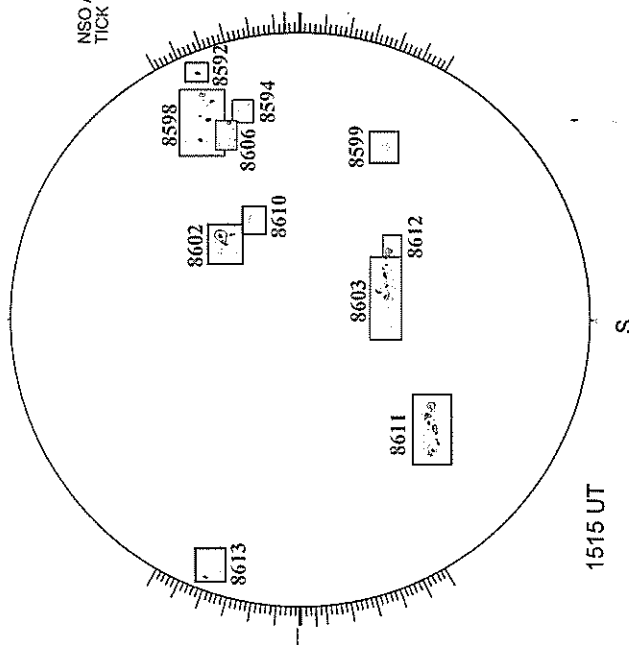
White= +7.5G
Black = -7.5G

MEUDON H-ALPHA



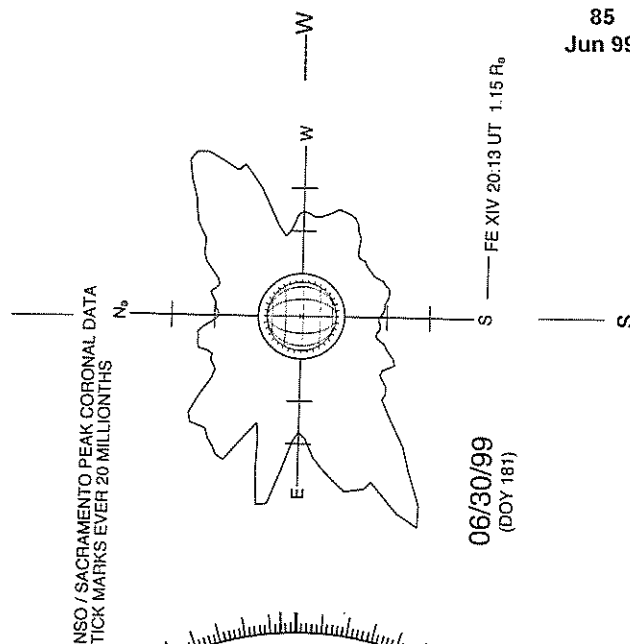
0914 UT

HOLLOMAN SUNSPOT



1515 UT

SACRAMENTO PEAK CORONA (1.15 Radii)---



06/30/99
(DOY 181)

FE XIV 20:13 UT 1.15 R₀

YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

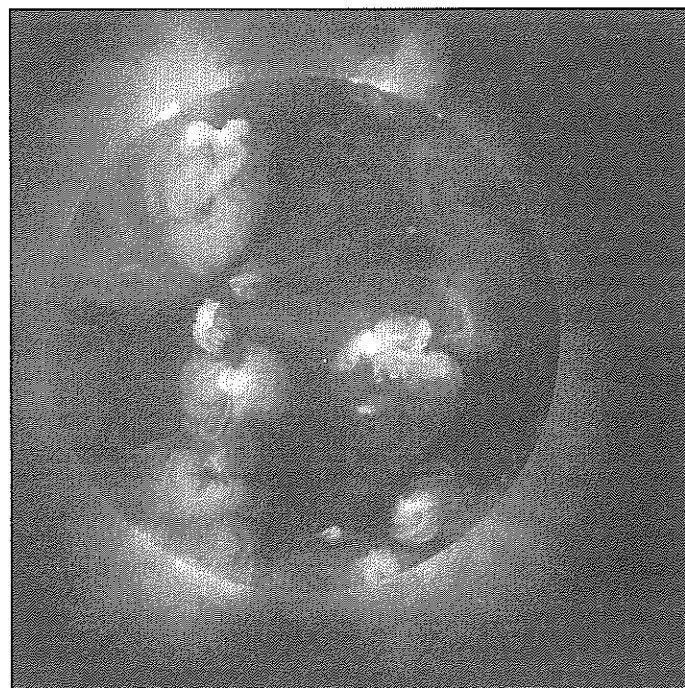
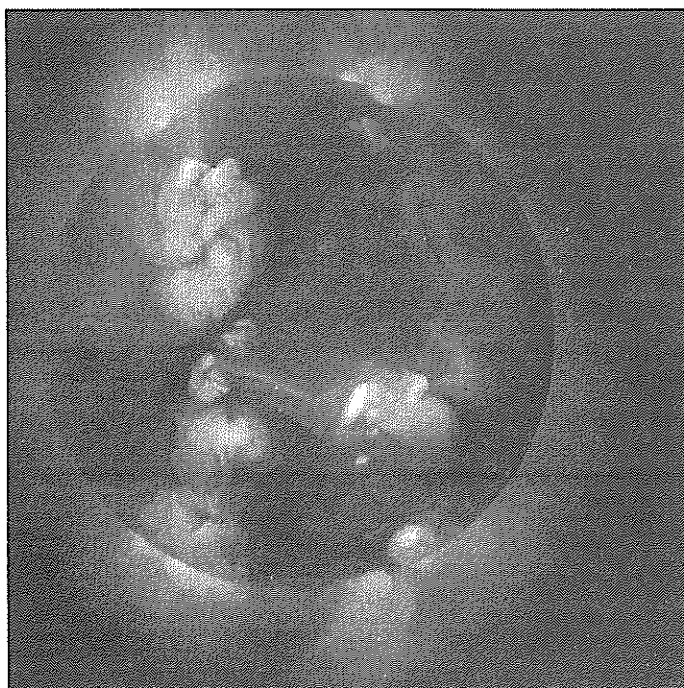
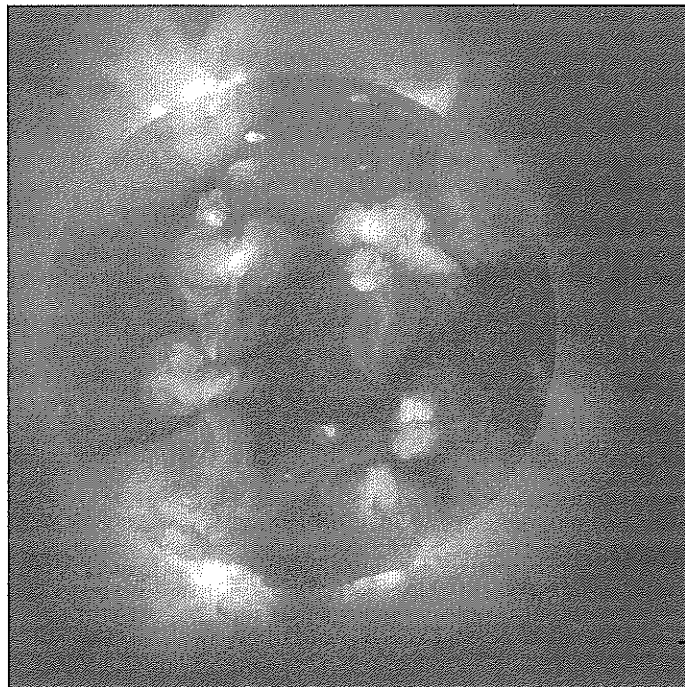
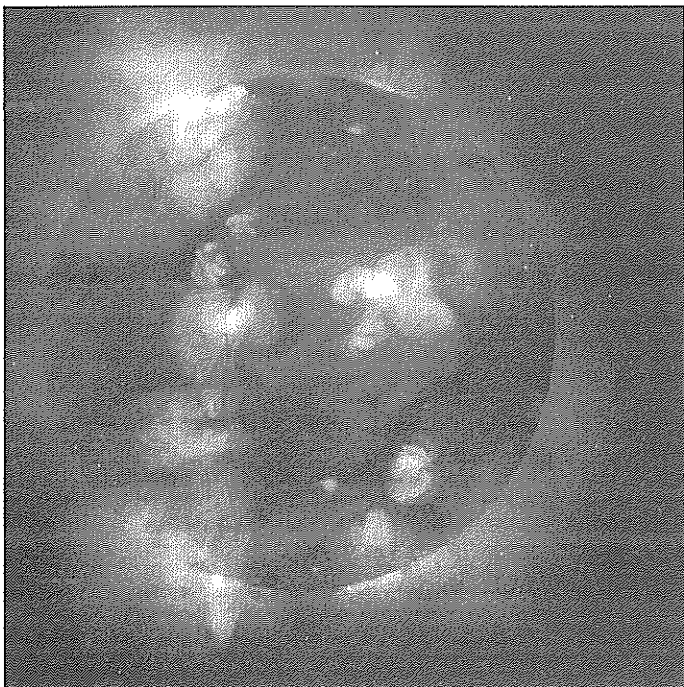
June
1999

Day 1
12:06:16 UT

Day 3
12:02:51 UT

Day 2
11:04:41 UT

Day 4
11:30:15 UT

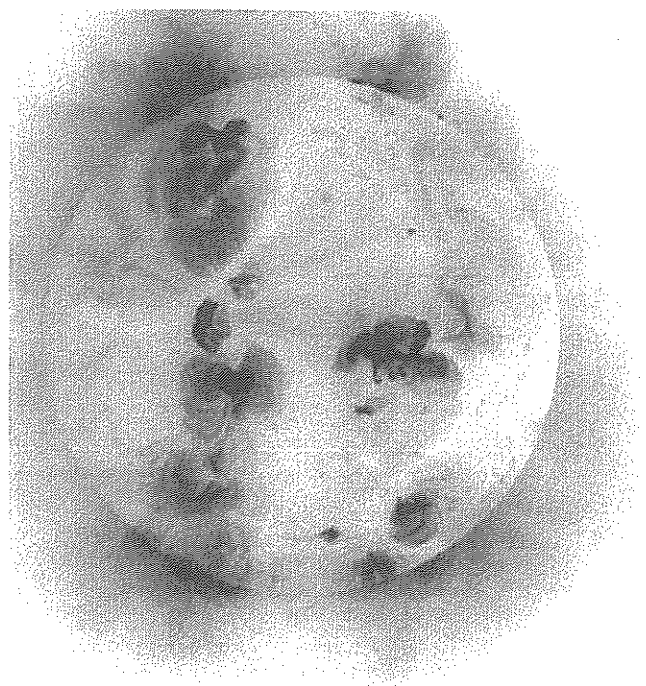
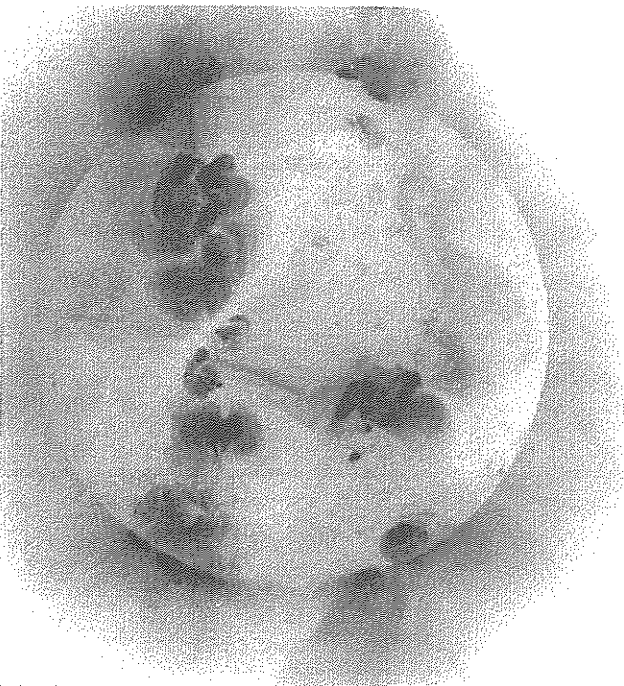


YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 1 Day 3
12:06:16 UT 12:02:51 UT

Day 2 Day 4
11:04:41 UT 11:30:15 UT



YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

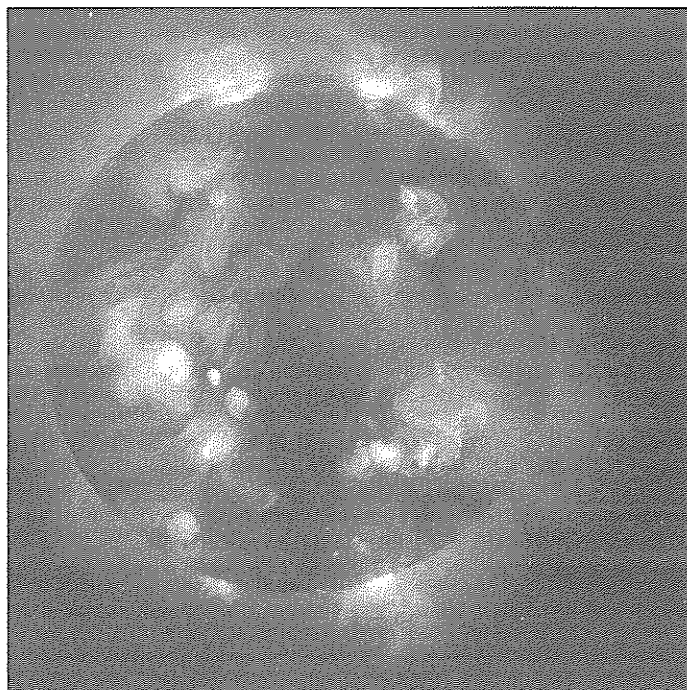
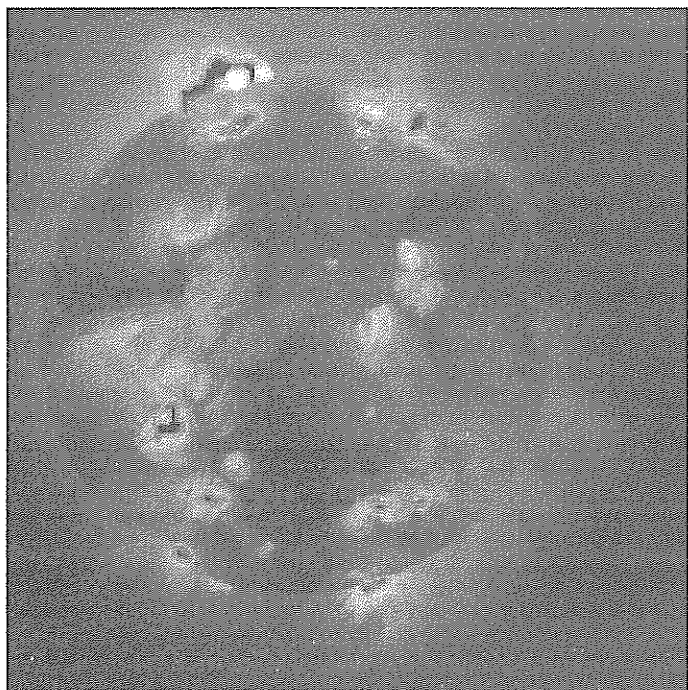
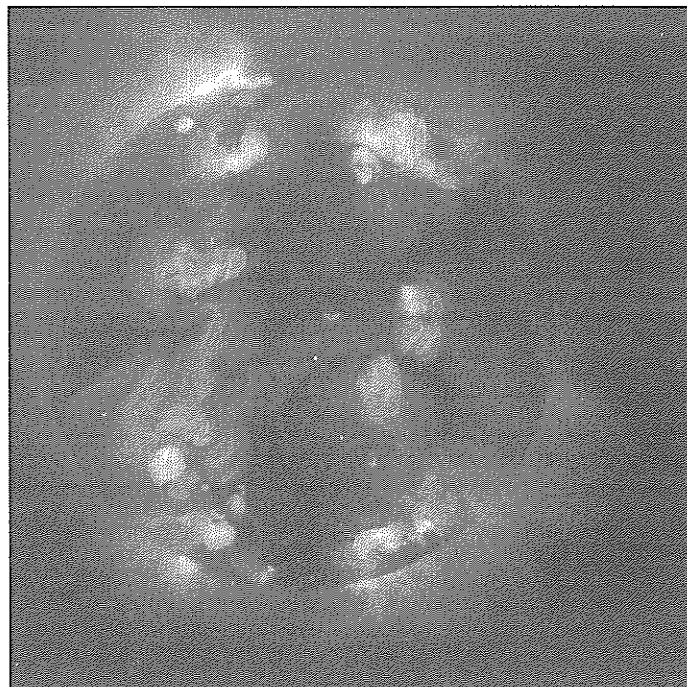
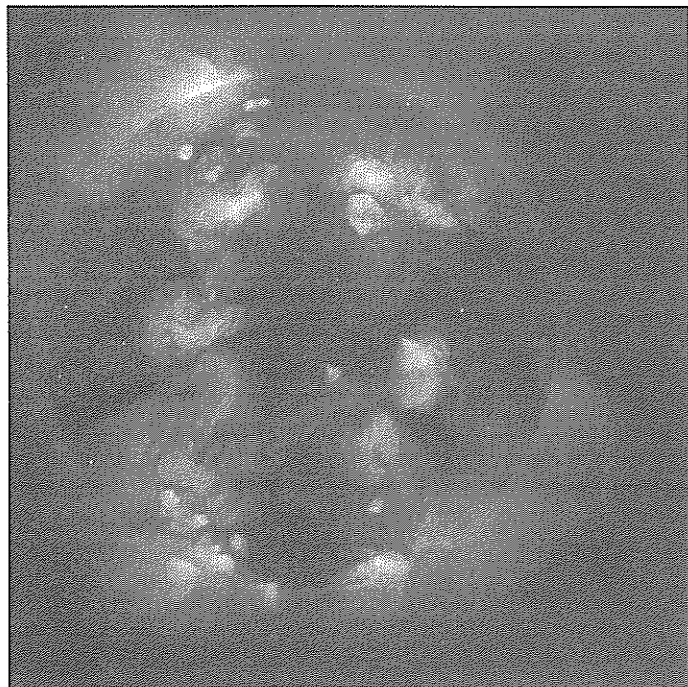
June
1999

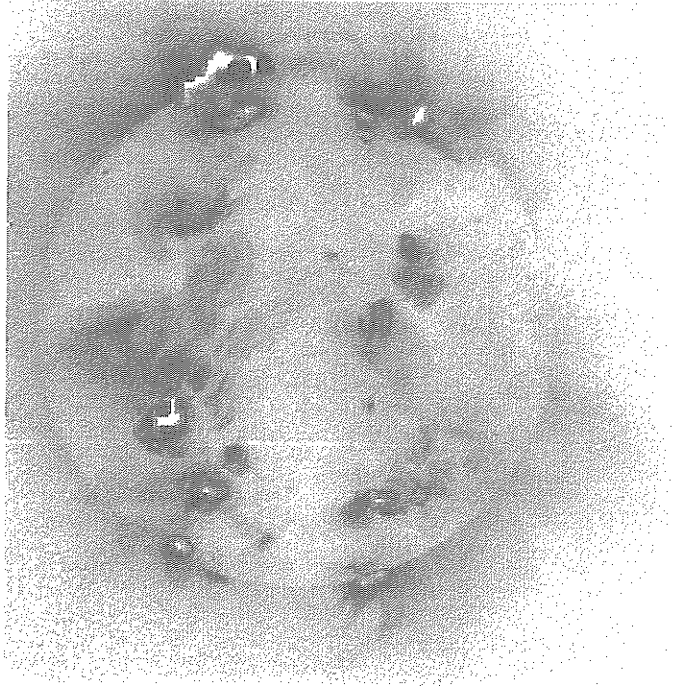
Day 5
11:41:59 UT

Day 7
10:09:08 UT

Day 6
11:40:24 UT

Day 8
12:26:34 UT

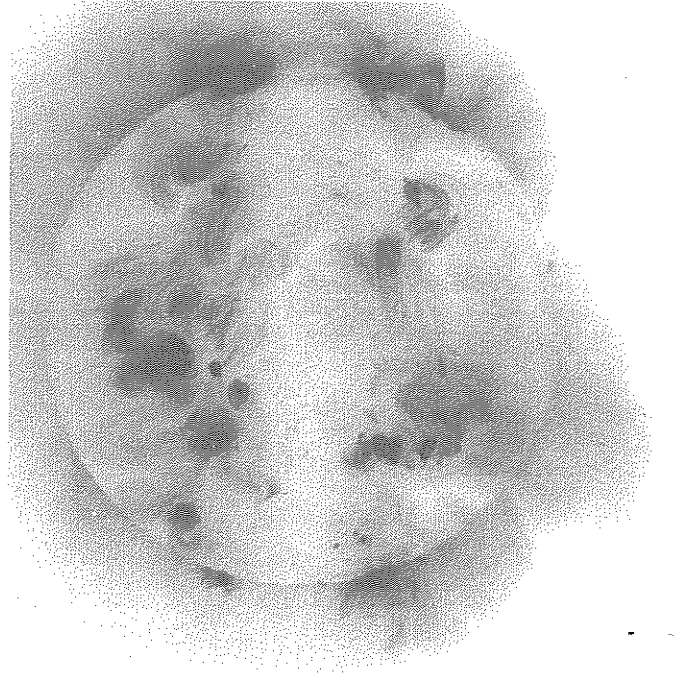




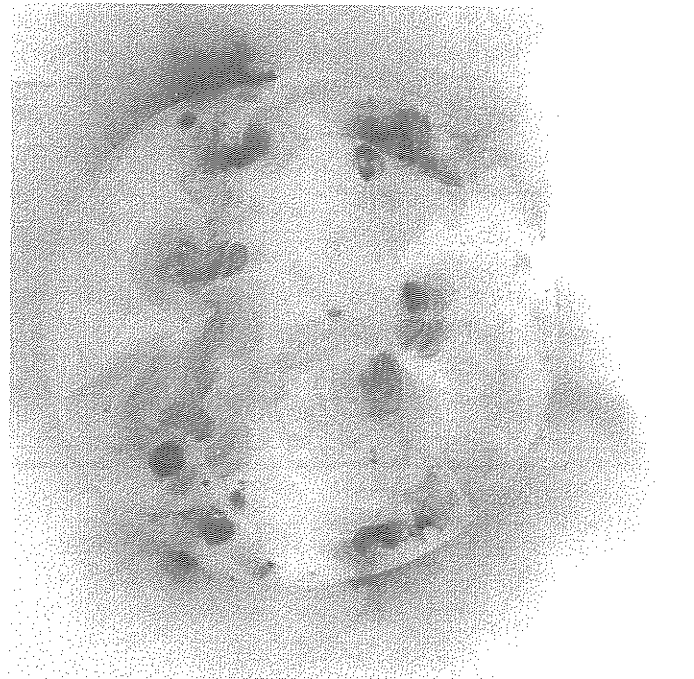
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 5 Day 7
11:41:59 UT 10:09:08 UT



Day 6 Day 8
11:40:24 UT 12:26:34 UT

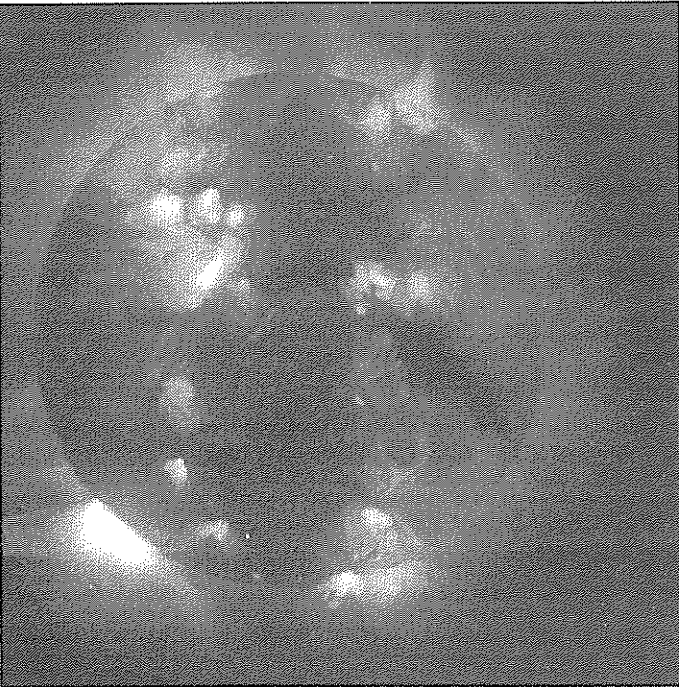
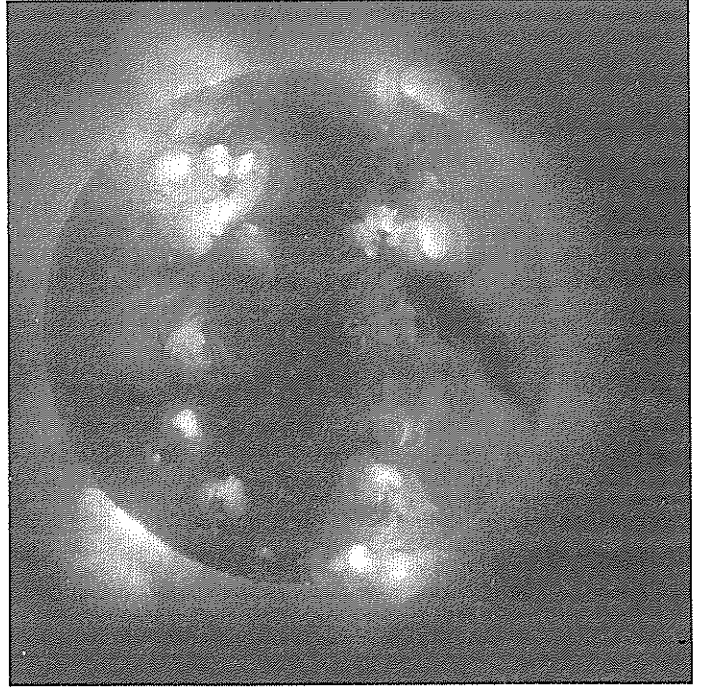
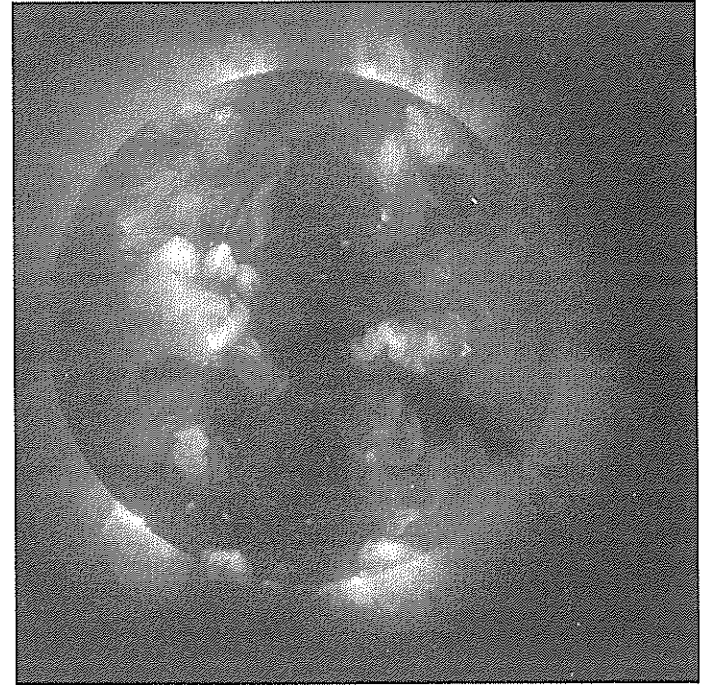
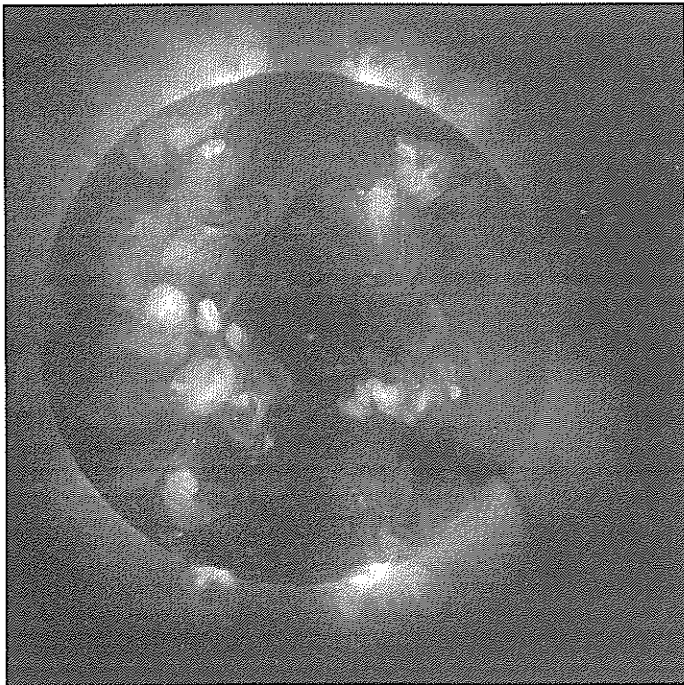


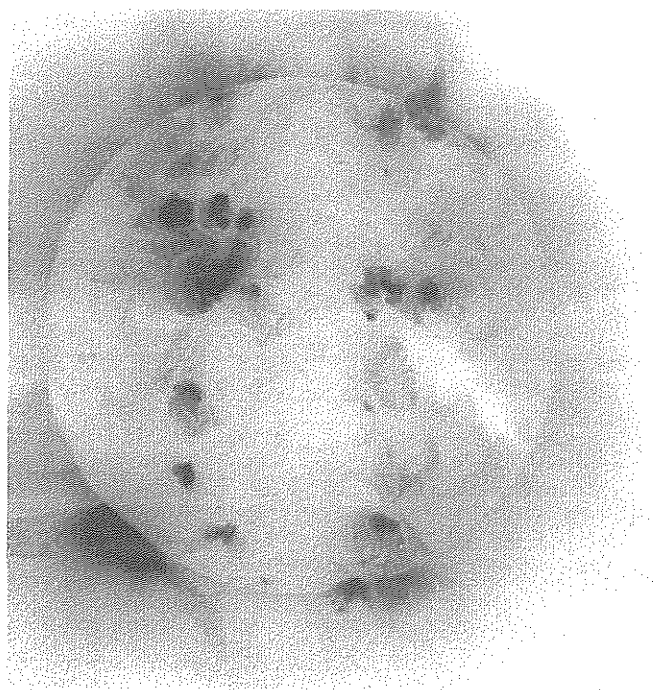
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 9 Day 11
12:25:06 UT 14:00:17 UT

Day 10 Day 12
11:04:36 UT 11:44:13 UT



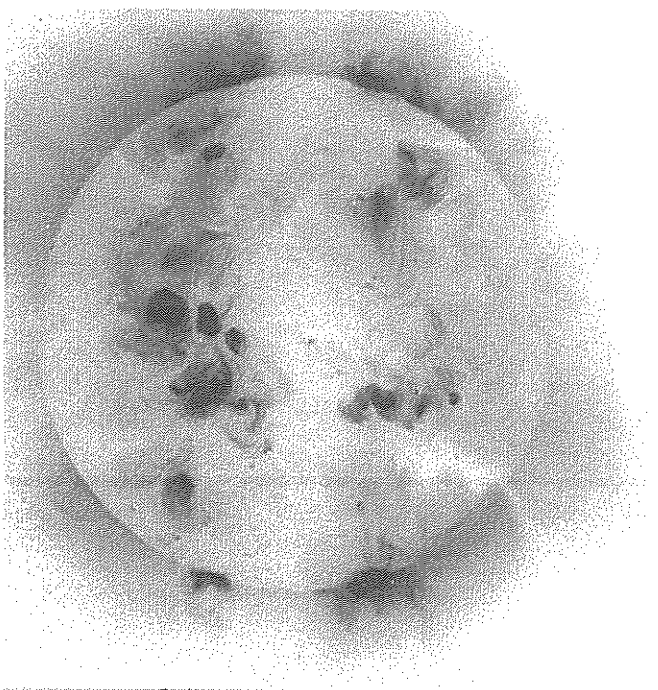


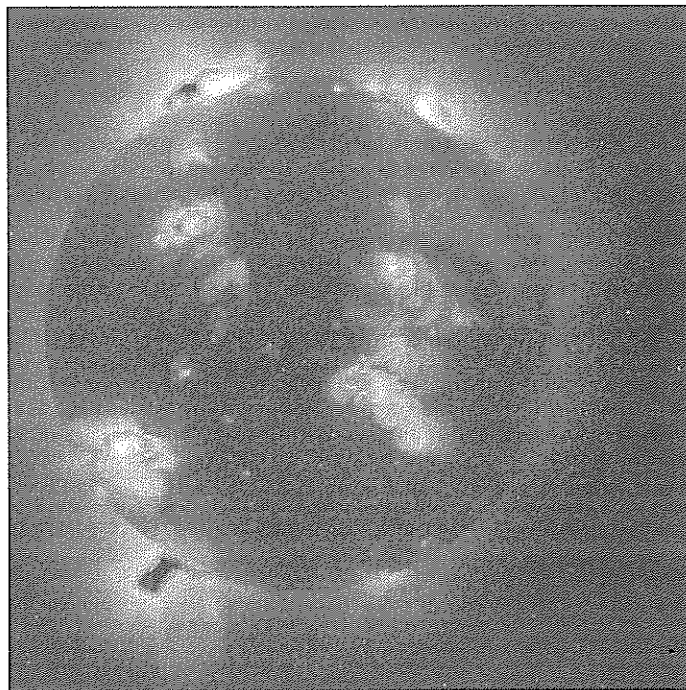
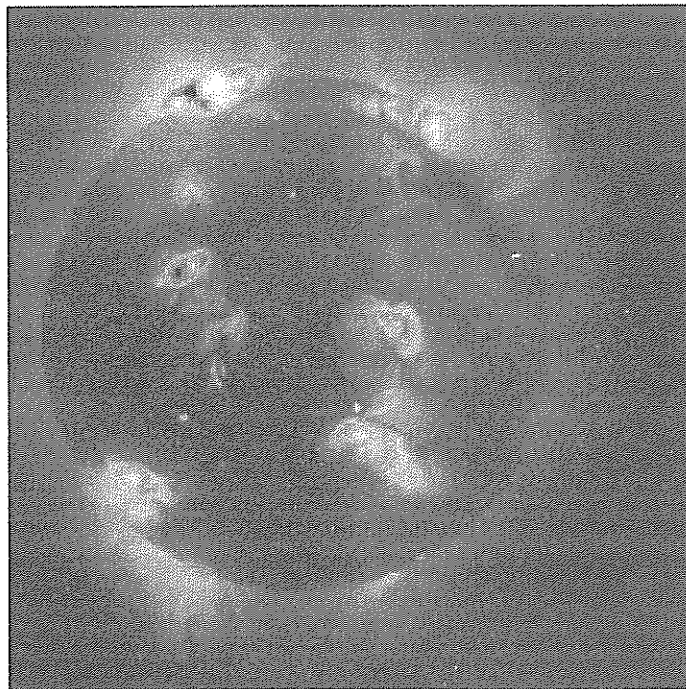
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 9 Day 11
12:25:06 UT 14:00:17 UT

Day 10 Day 12
11:04:36 UT 11:44:13 UT



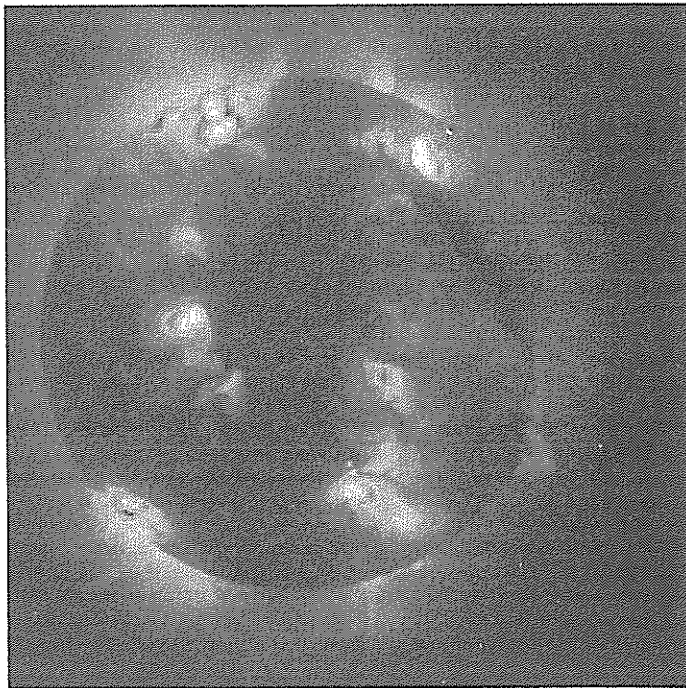
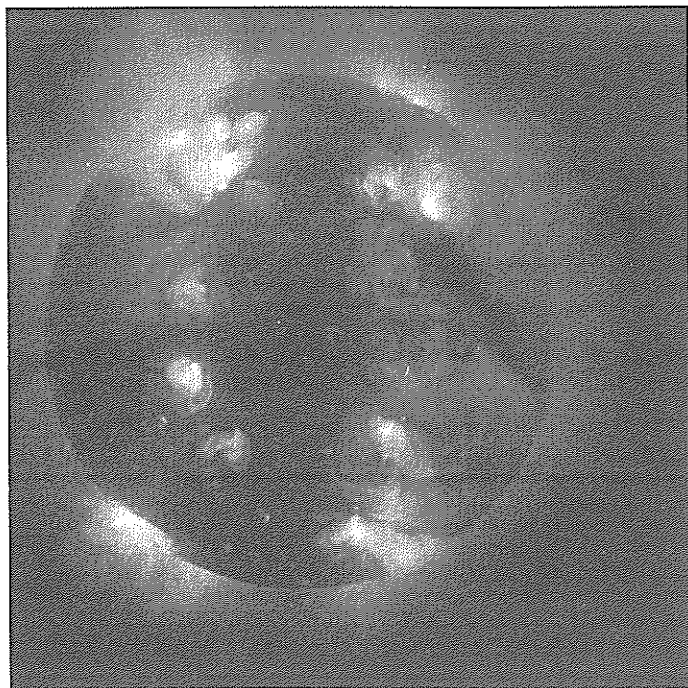


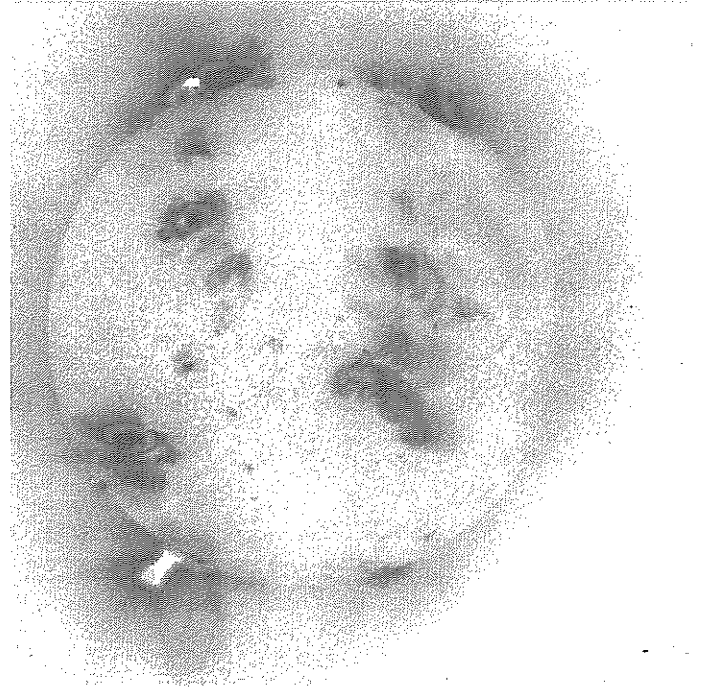
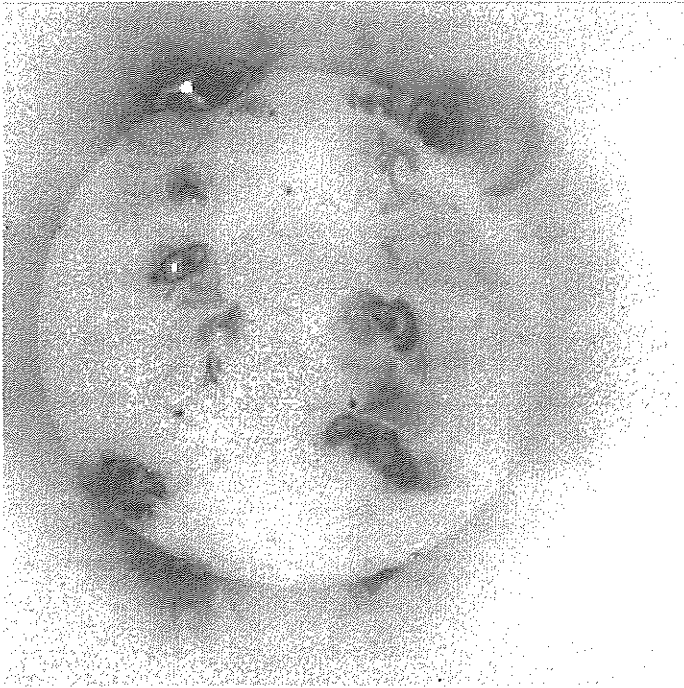
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 13 12:01:07 UT
Day 15 13:34:27 UT

Day 14 13:10:27 UT
Day 16 11:04:50 UT



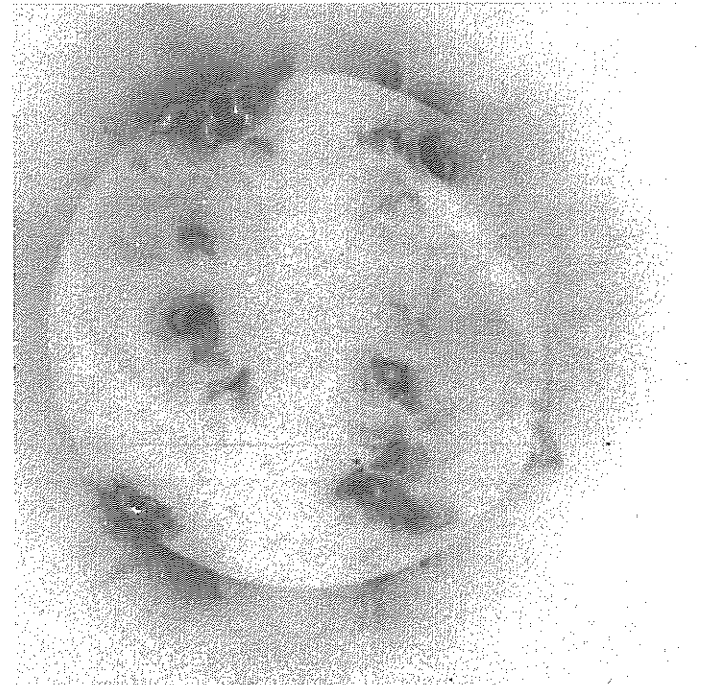
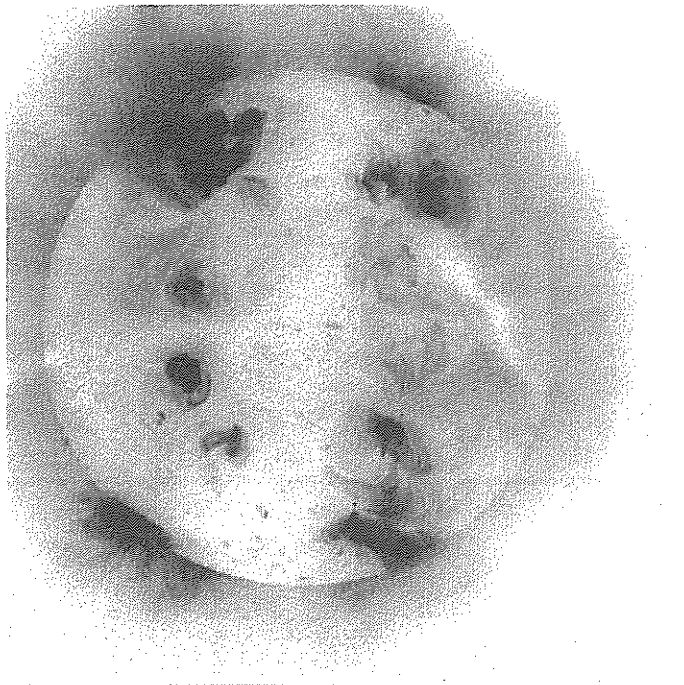


YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 13 Day 15
12:01:07 UT 13:34:27 UT

Day 14 Day 16
13:10:27 UT 11:04:50 UT

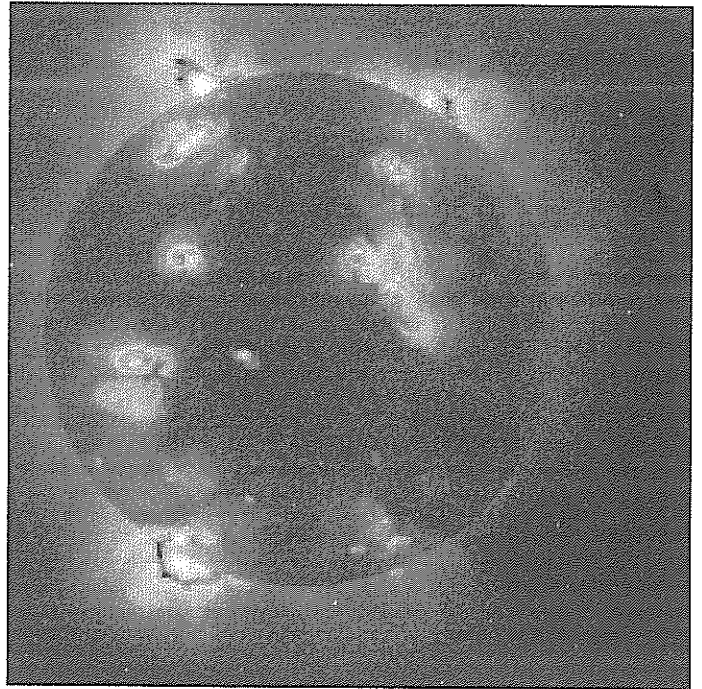
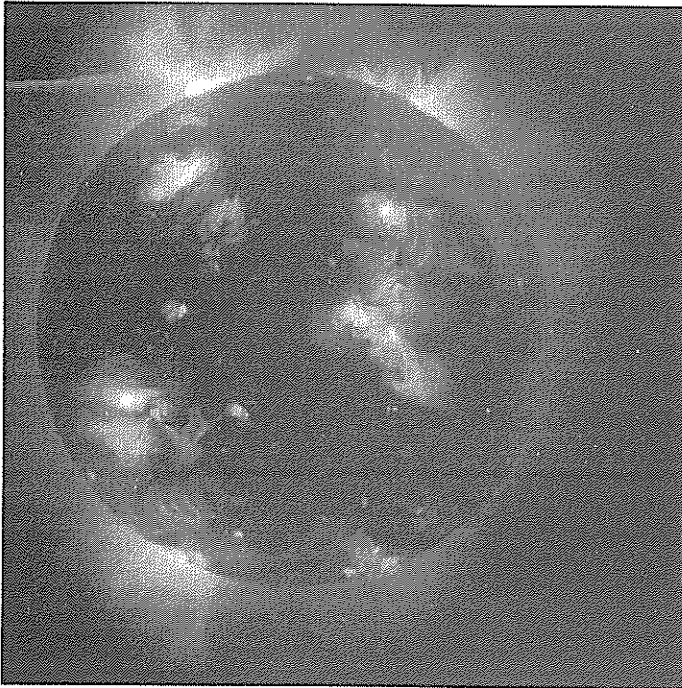
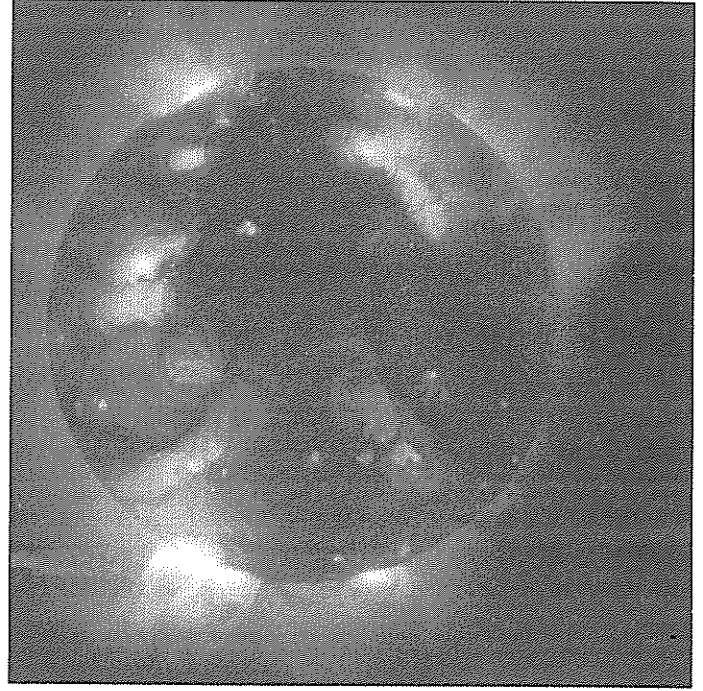
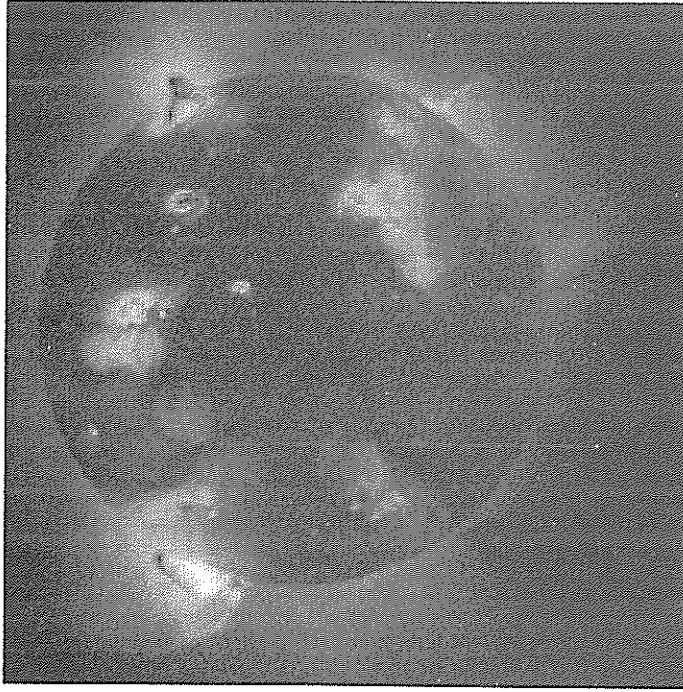


YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 17 Day 19
12:09:52 UT 12:50:10 UT

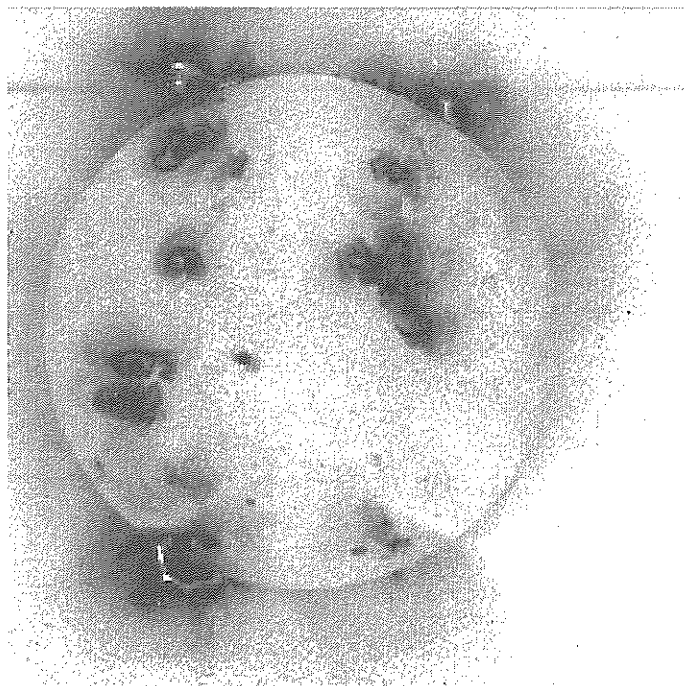
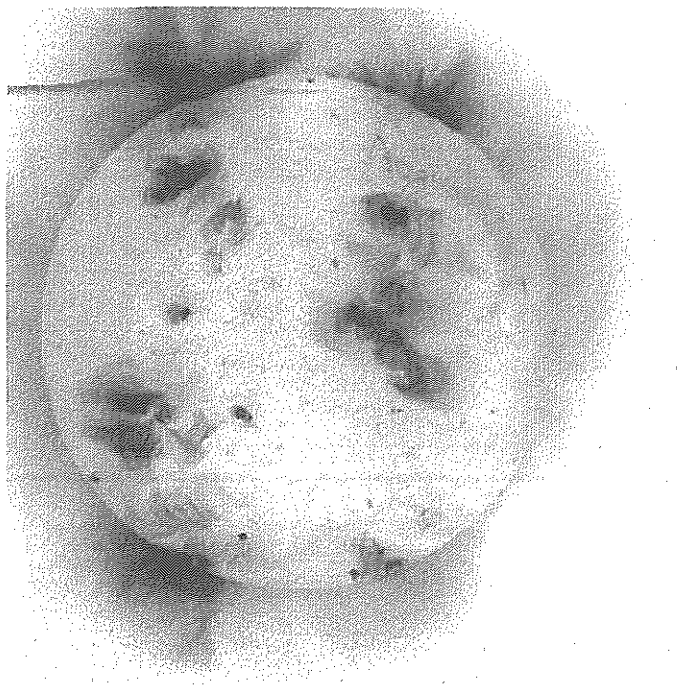
Day 18 Day 20
09:57:54 UT 12:01:33 UT



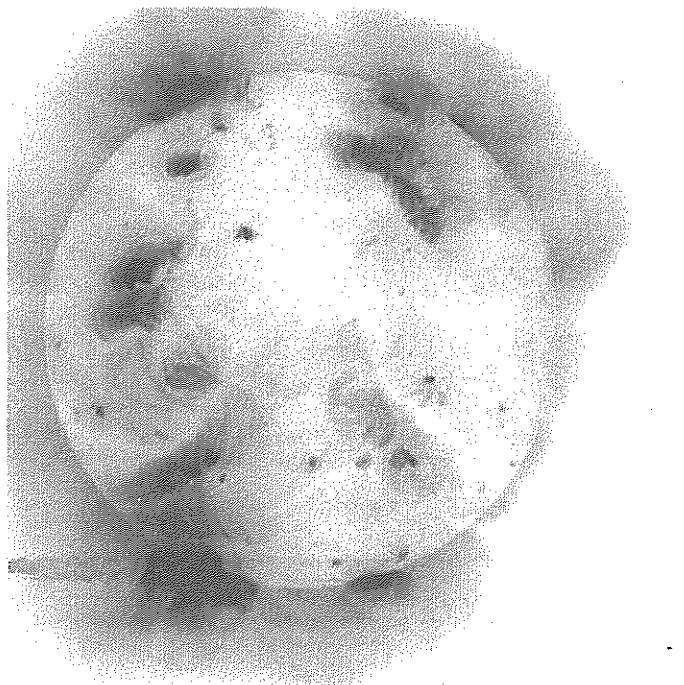
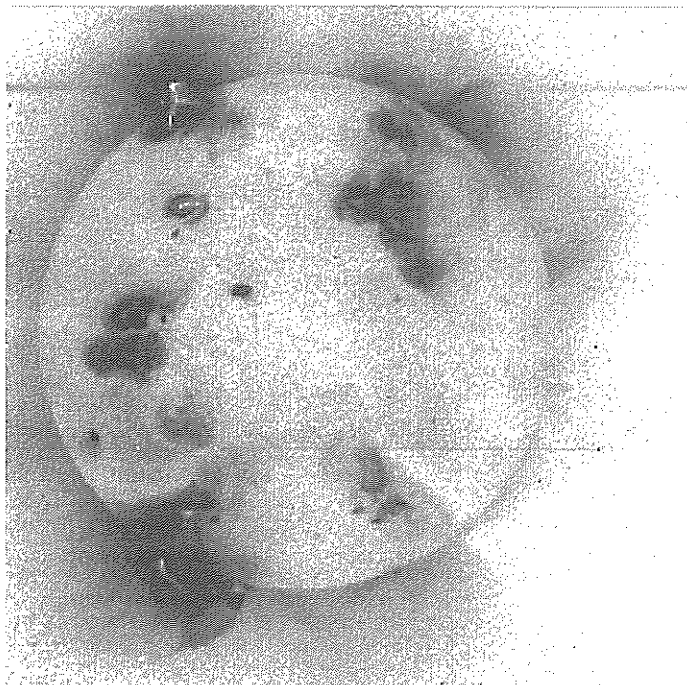
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 17 Day 19
12:09:52 UT 12:50:10 UT



Day 18 Day 20
09:57:54 UT 12:01:33 UT

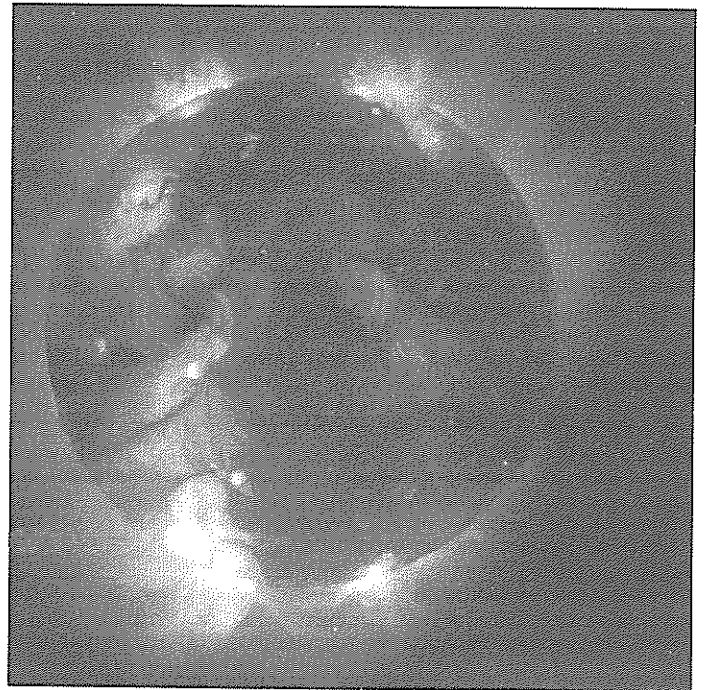
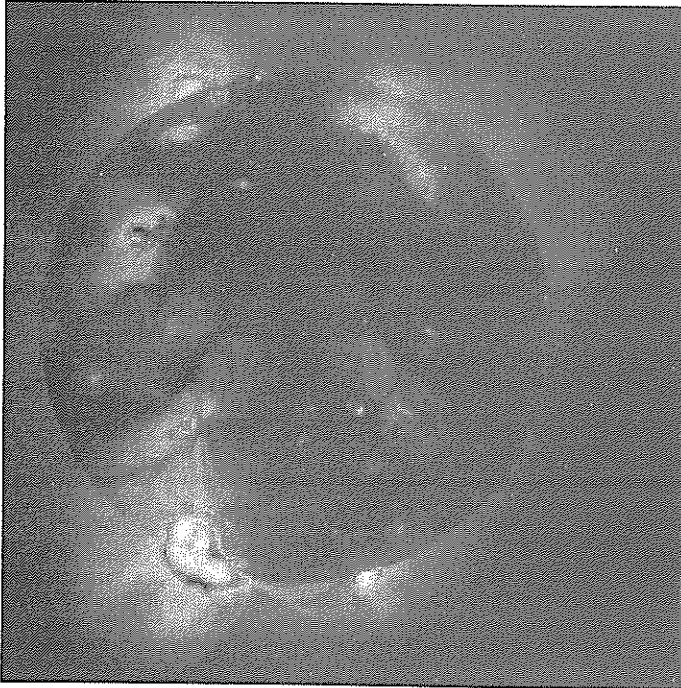
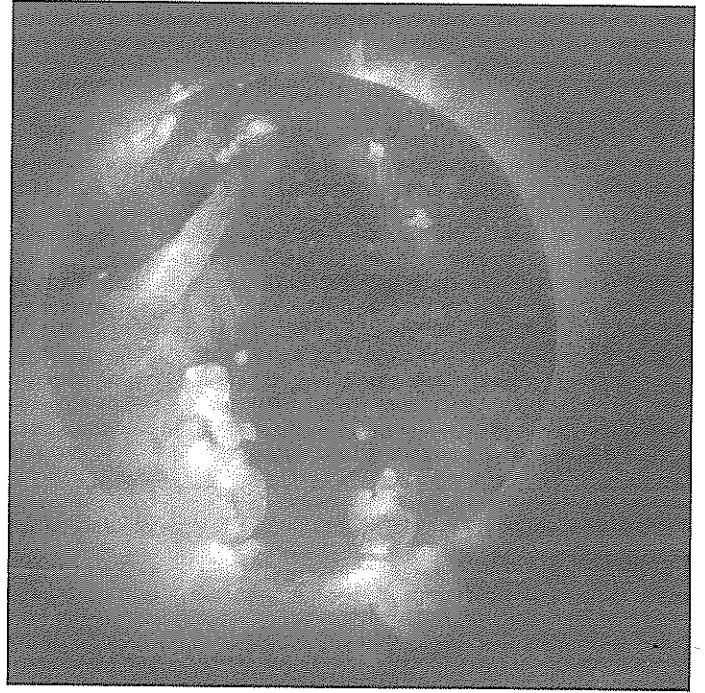
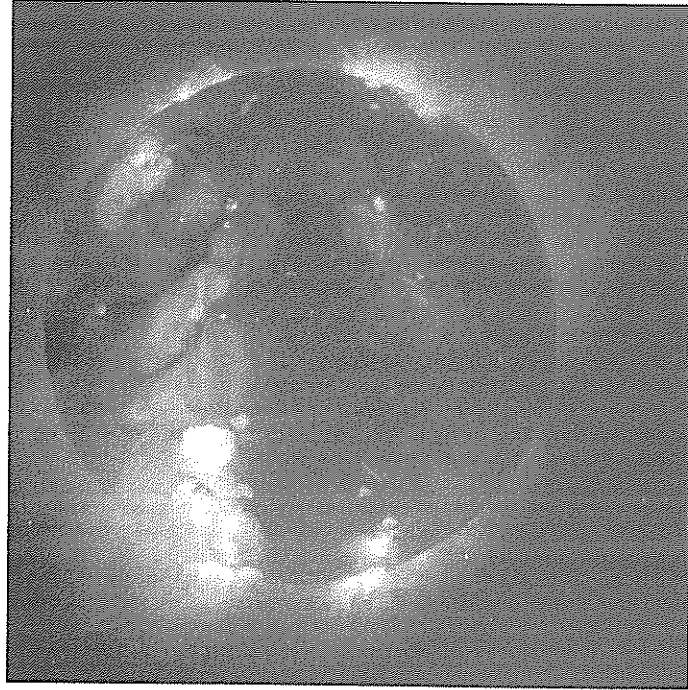


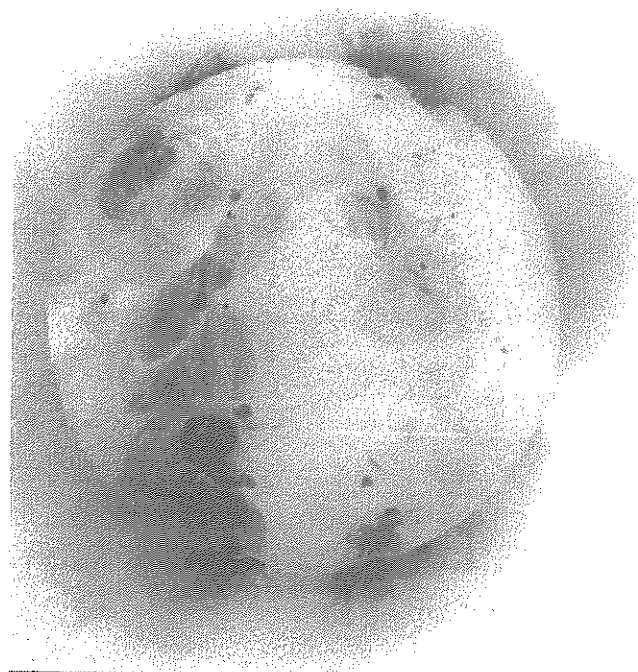
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 21 08:51:13 UT
Day 23 12:41:55 UT

Day 22 12:29:19 UT
Day 24 17:27:45 UT

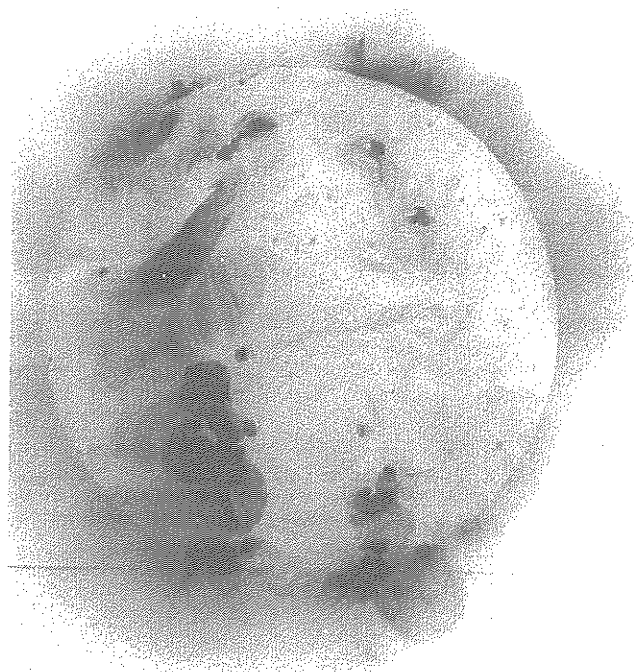
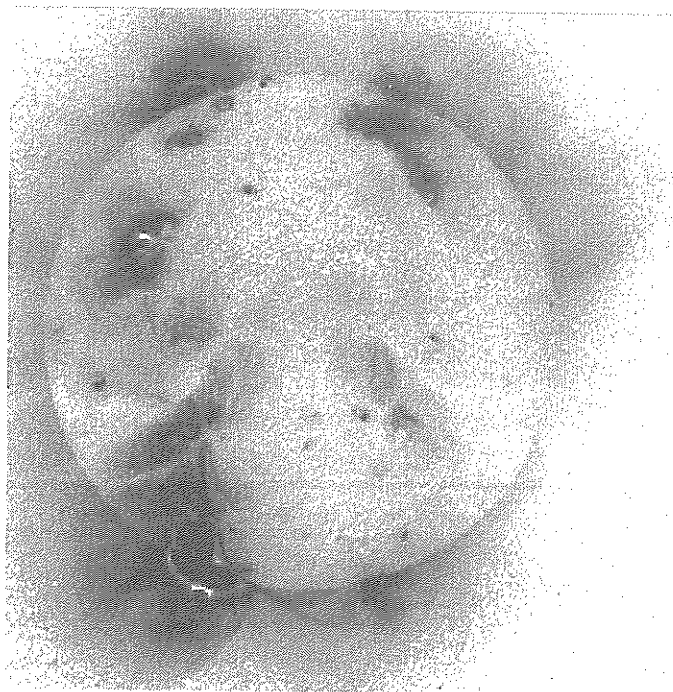




YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 21 08:51:13 UT
Day 23 12:41:55 UT



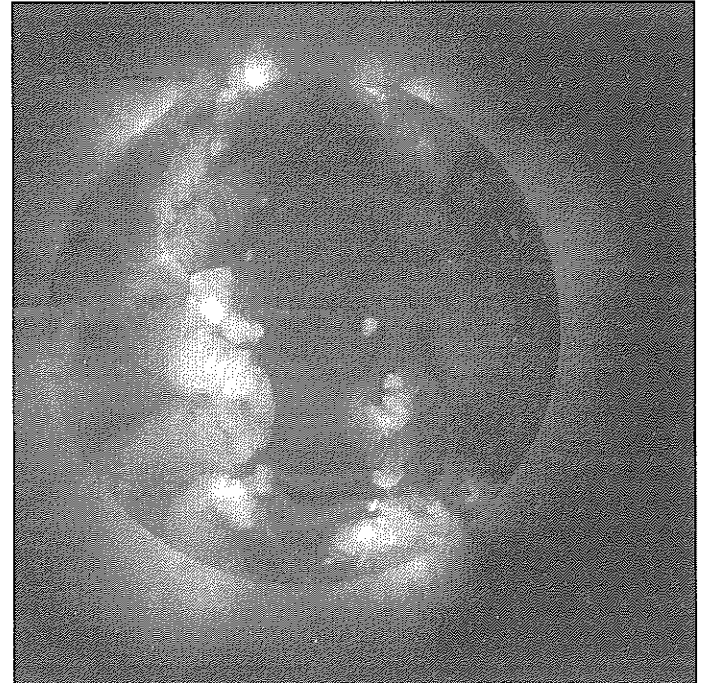
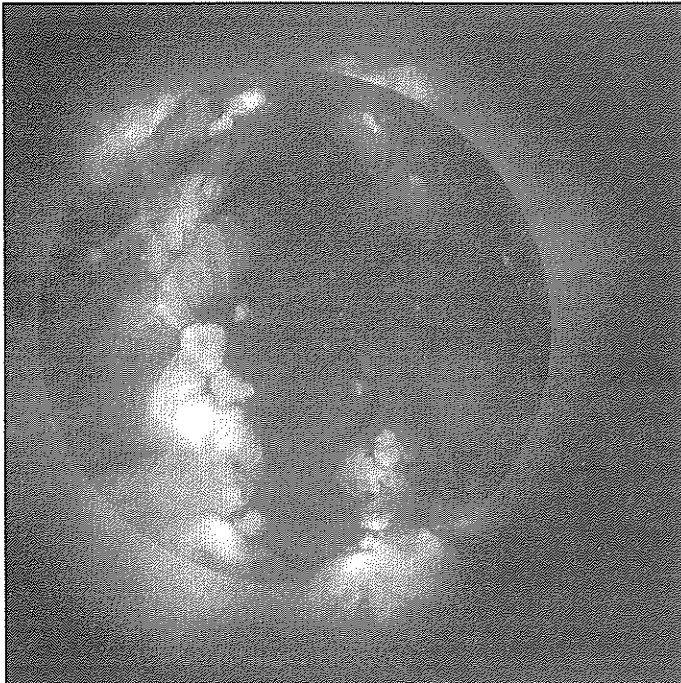
Day 22 12:29:19 UT
Day 24 17:27:45 UT



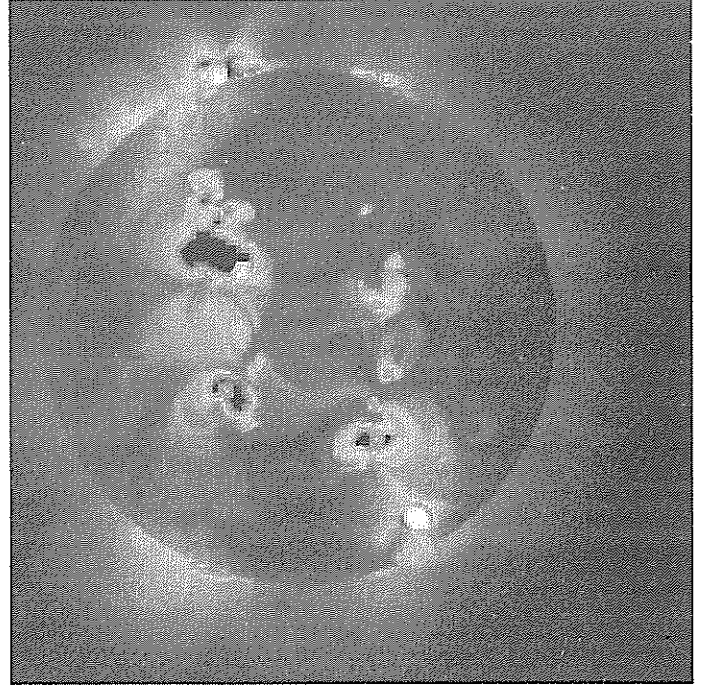
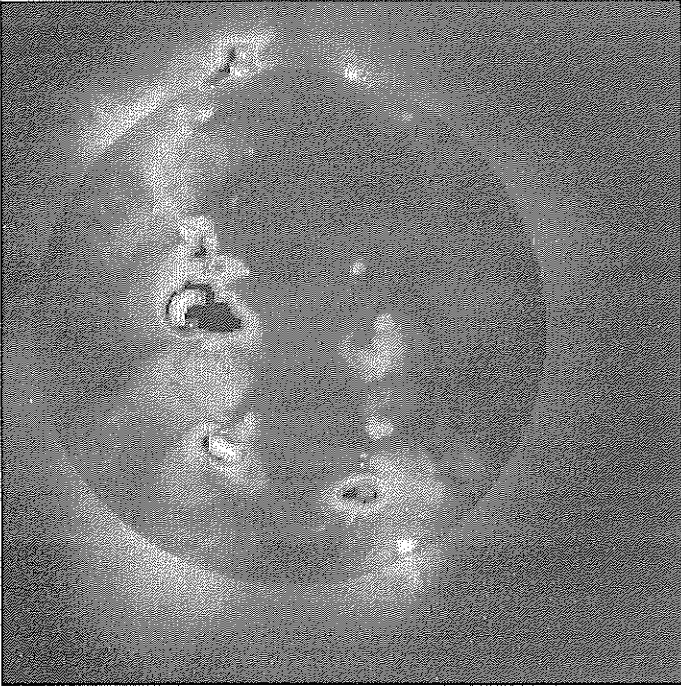
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 25 Day 27
11:41:22 UT 12:02:40 UT



Day 26 Day 28
11:48:30 UT 12:09:04 UT

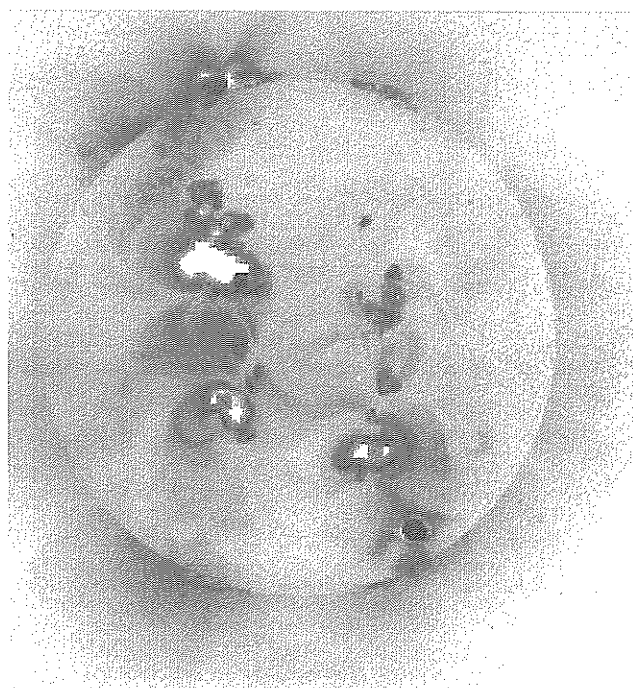
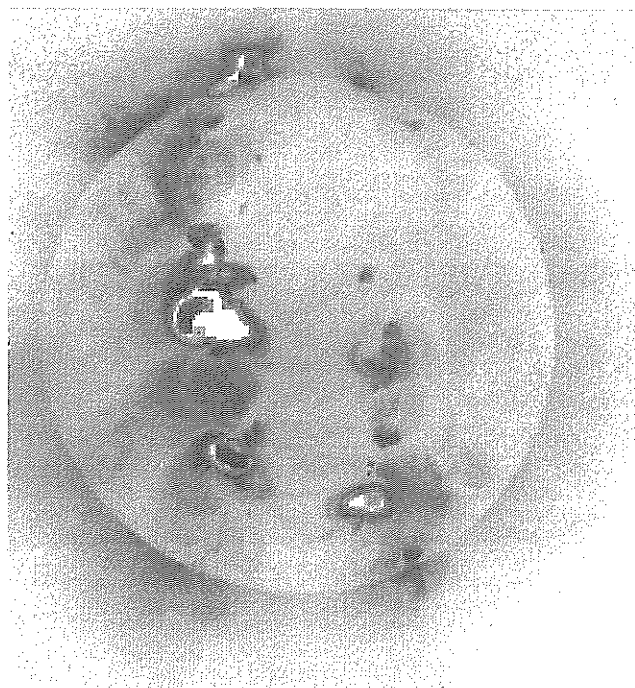


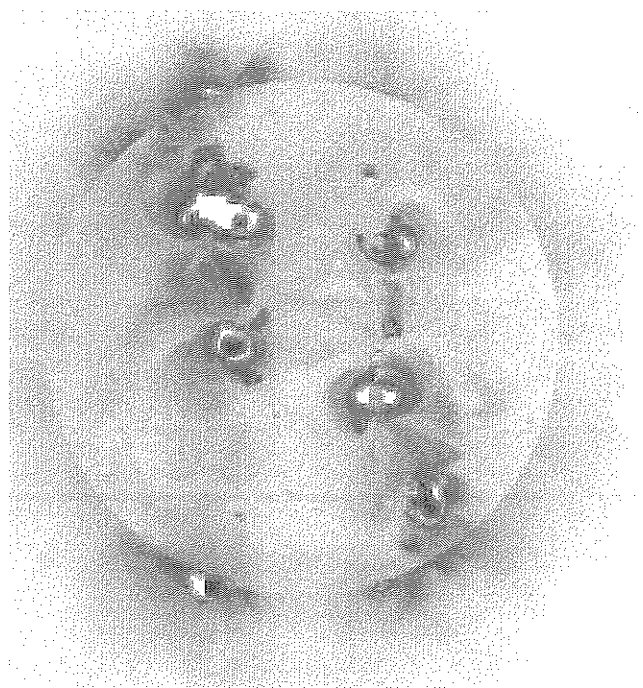
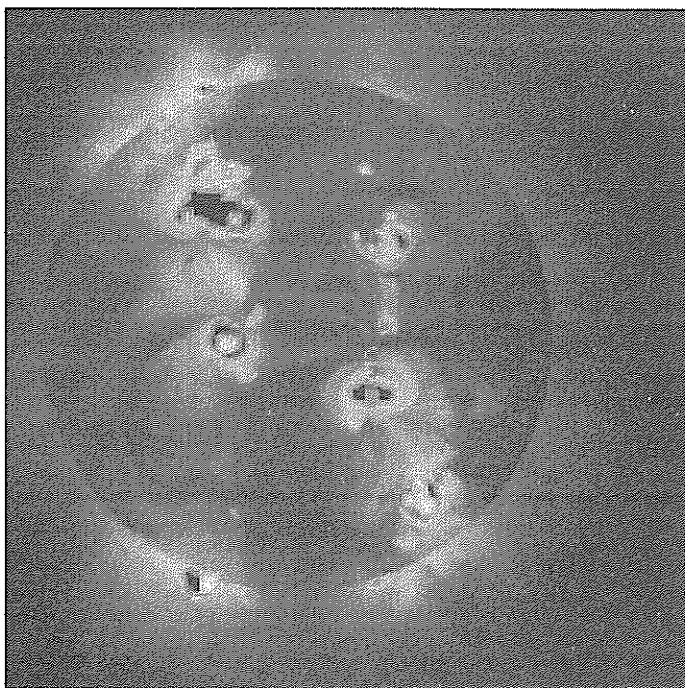
YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

June
1999

Day 25 Day 27
11:41:22 UT 12:02:40 UT

Day 26 Day 28
11:48:30 UT 12:09:04 UT



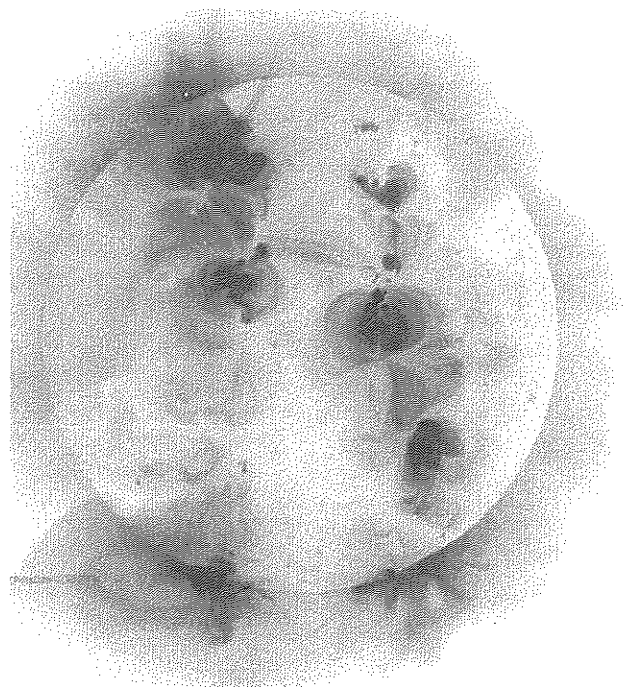
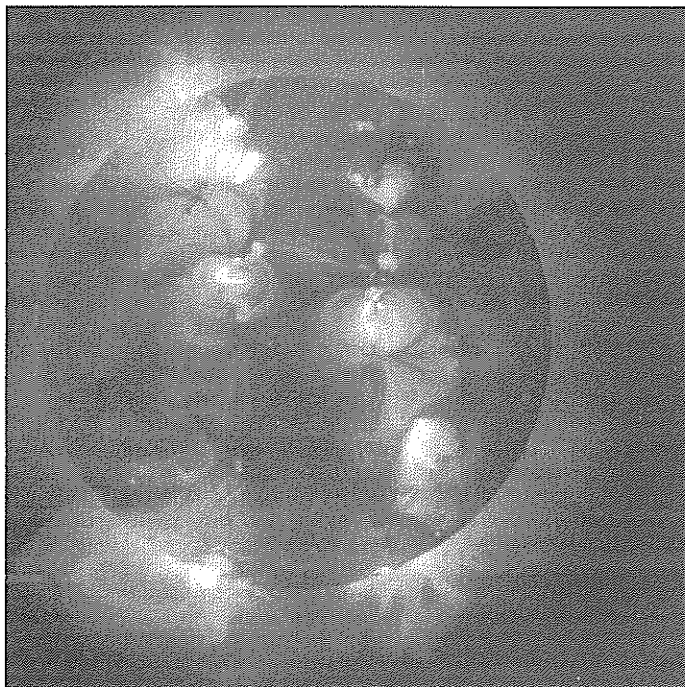


YOHKOH
SOFT X-RAY
TELESCOPE
IMAGES

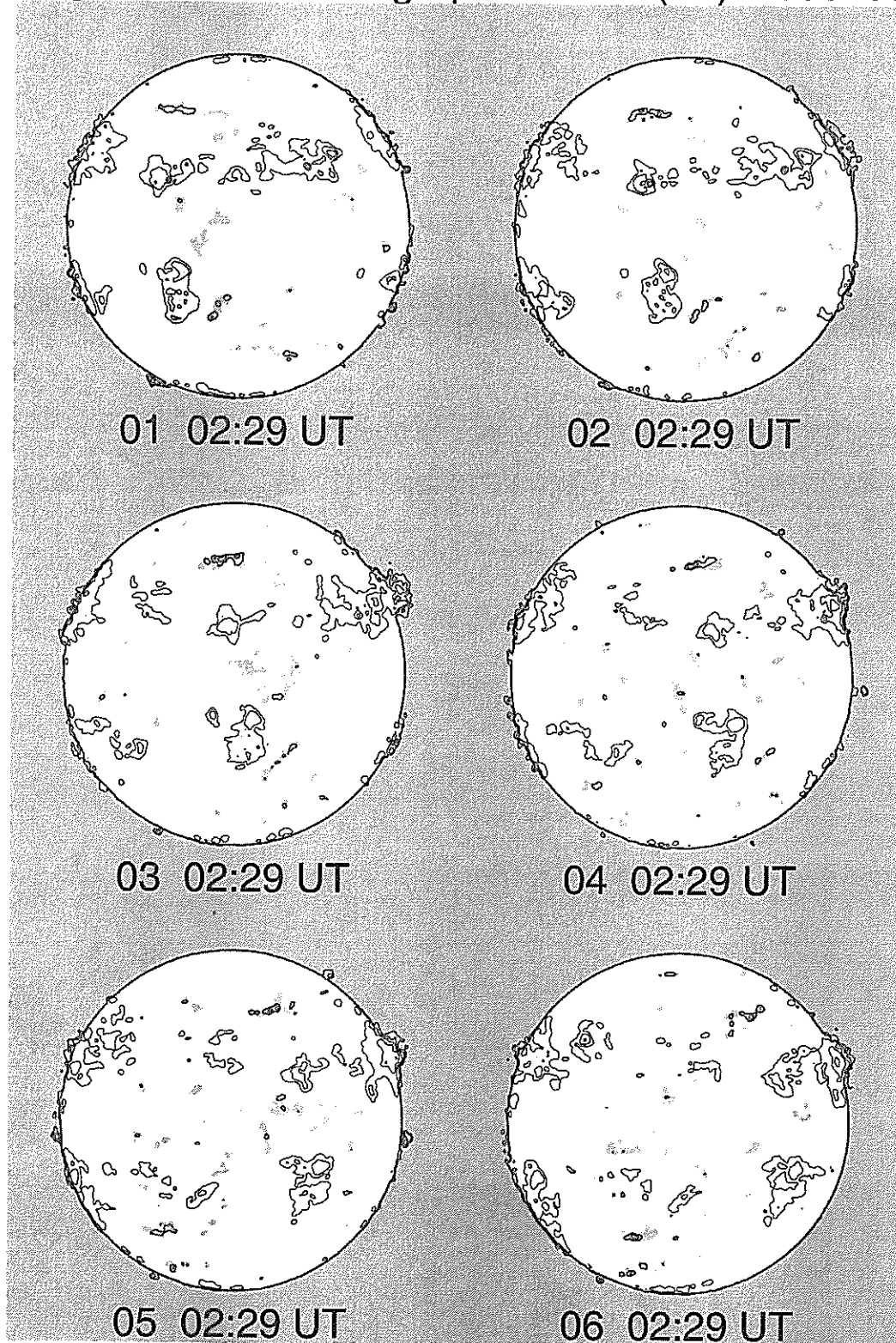
June
1999

Day 29 Day 30
11:51:28 UT 12:57:15 UT

Day 29 Day 30
11:51:28 UT 12:57:15 UT

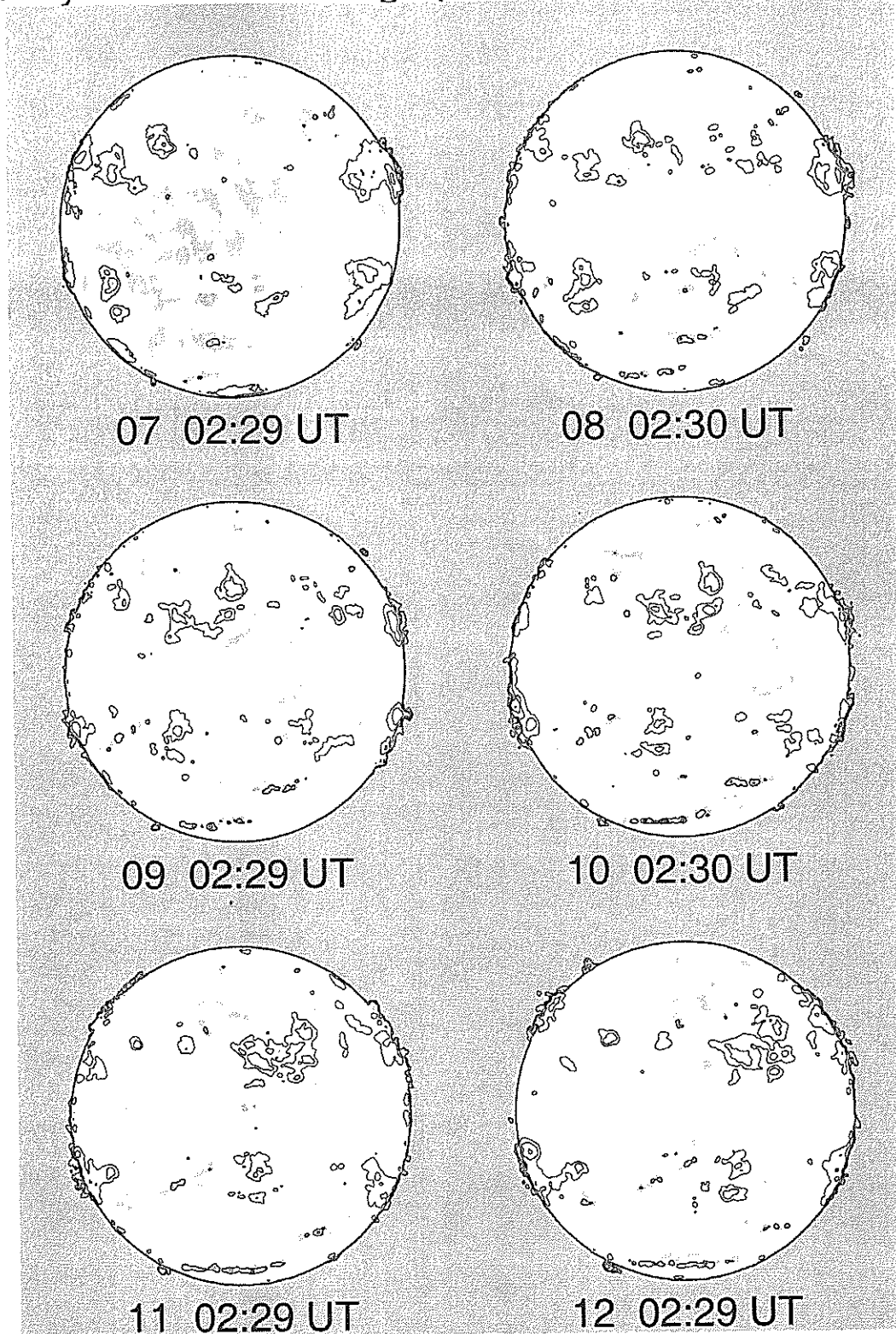


Nobeyama Radio Heliograph 17 GHz (Tb) 1999 June



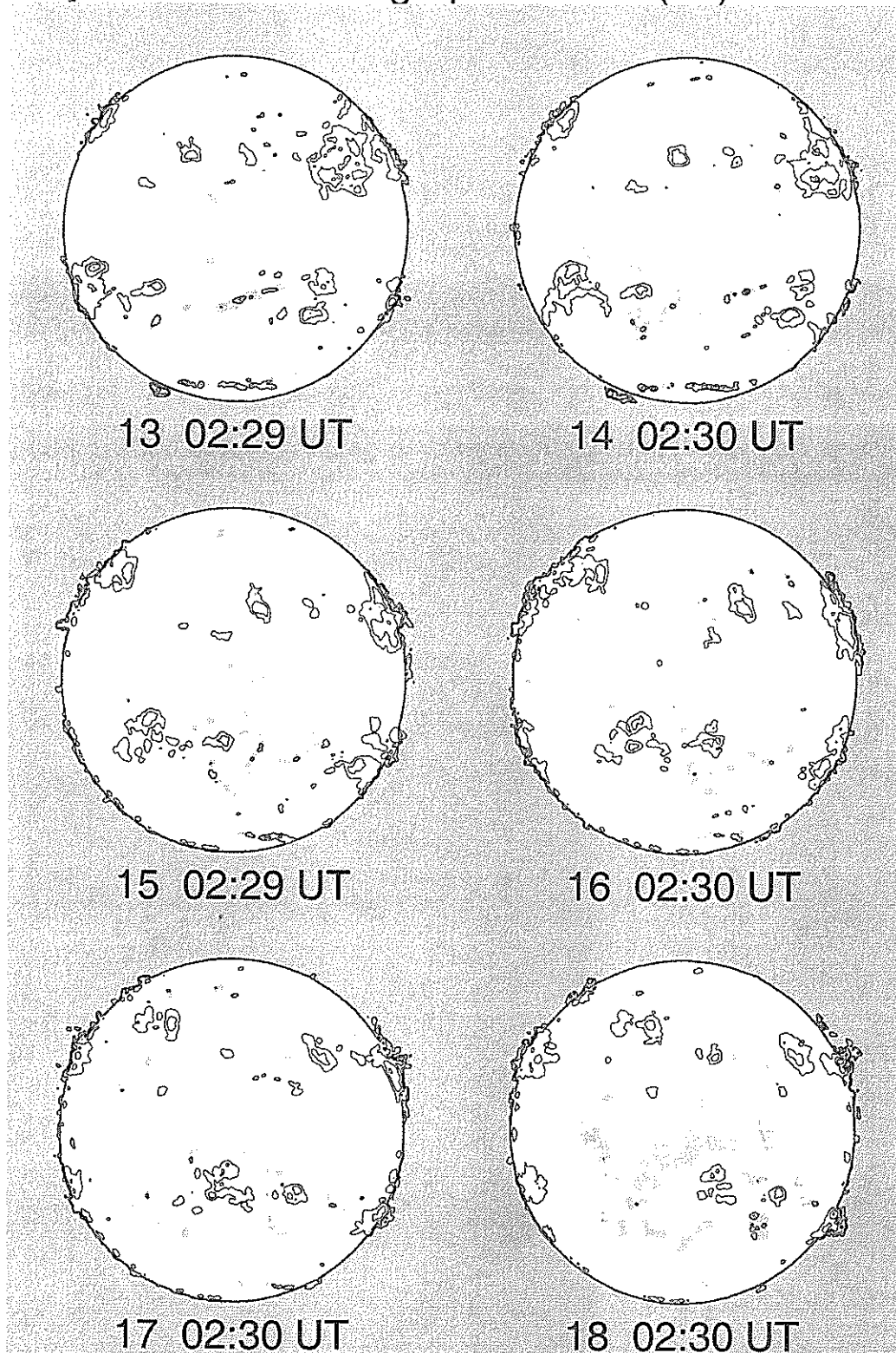
Contour Levels $T_b = [5, 8, 12, 20, 50, 100] \times 10^3 \text{ K}$
Grey level $T_b \leq 9,500 \text{ K}$

Nobeyama Radio Heliograph 17 GHz (Tb) 1999 June



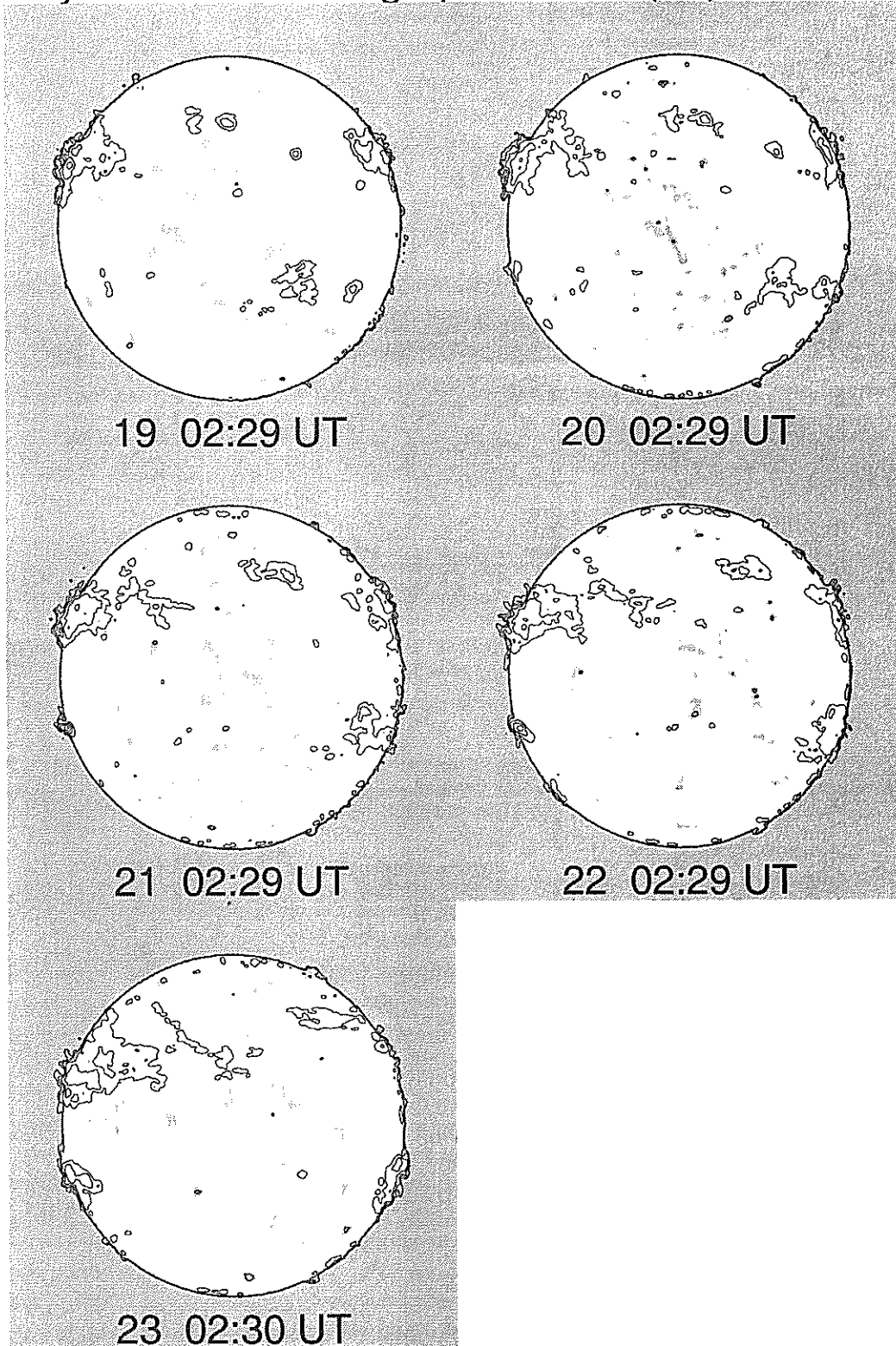
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1999 June



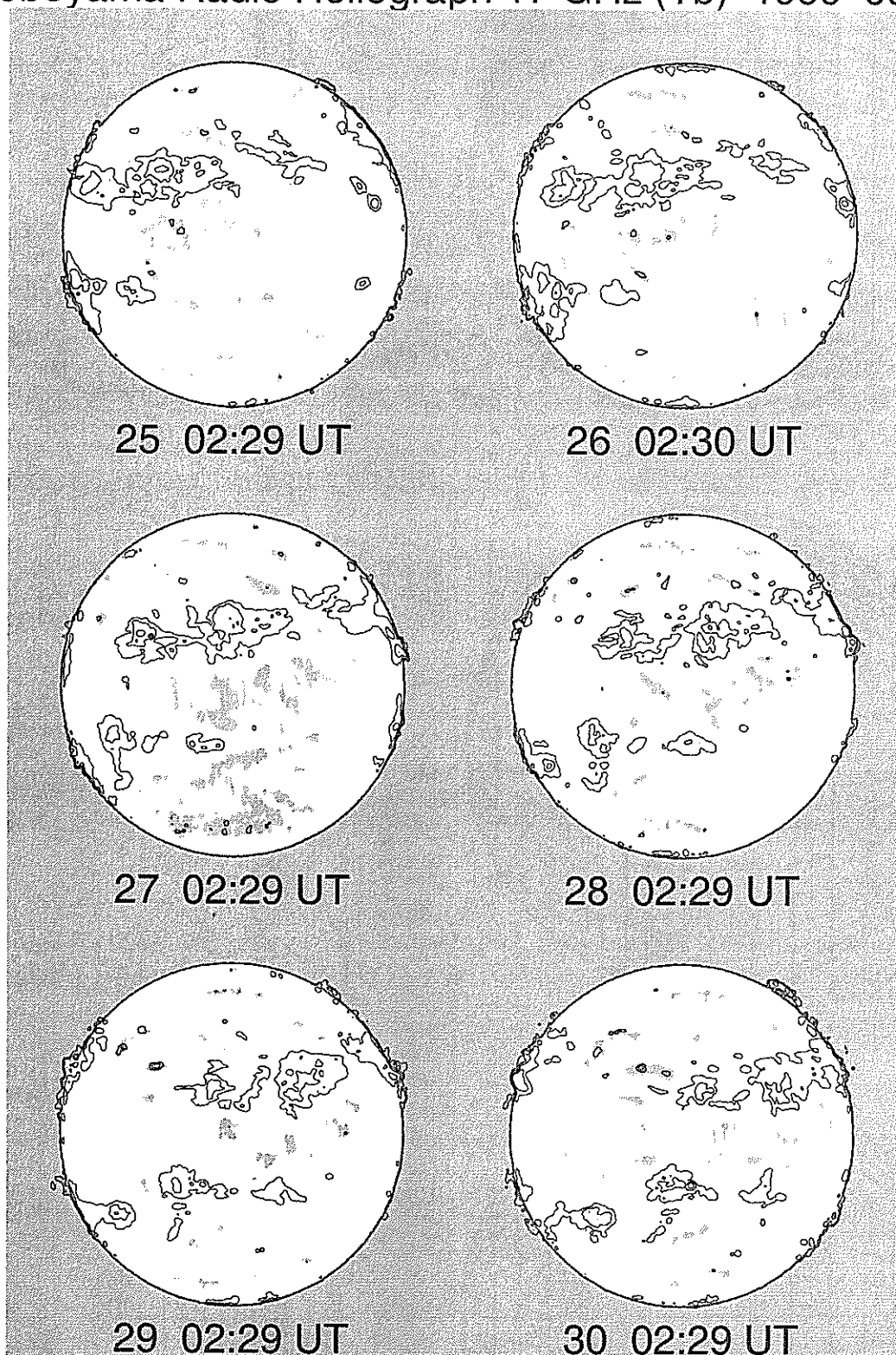
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb <= 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1999 June



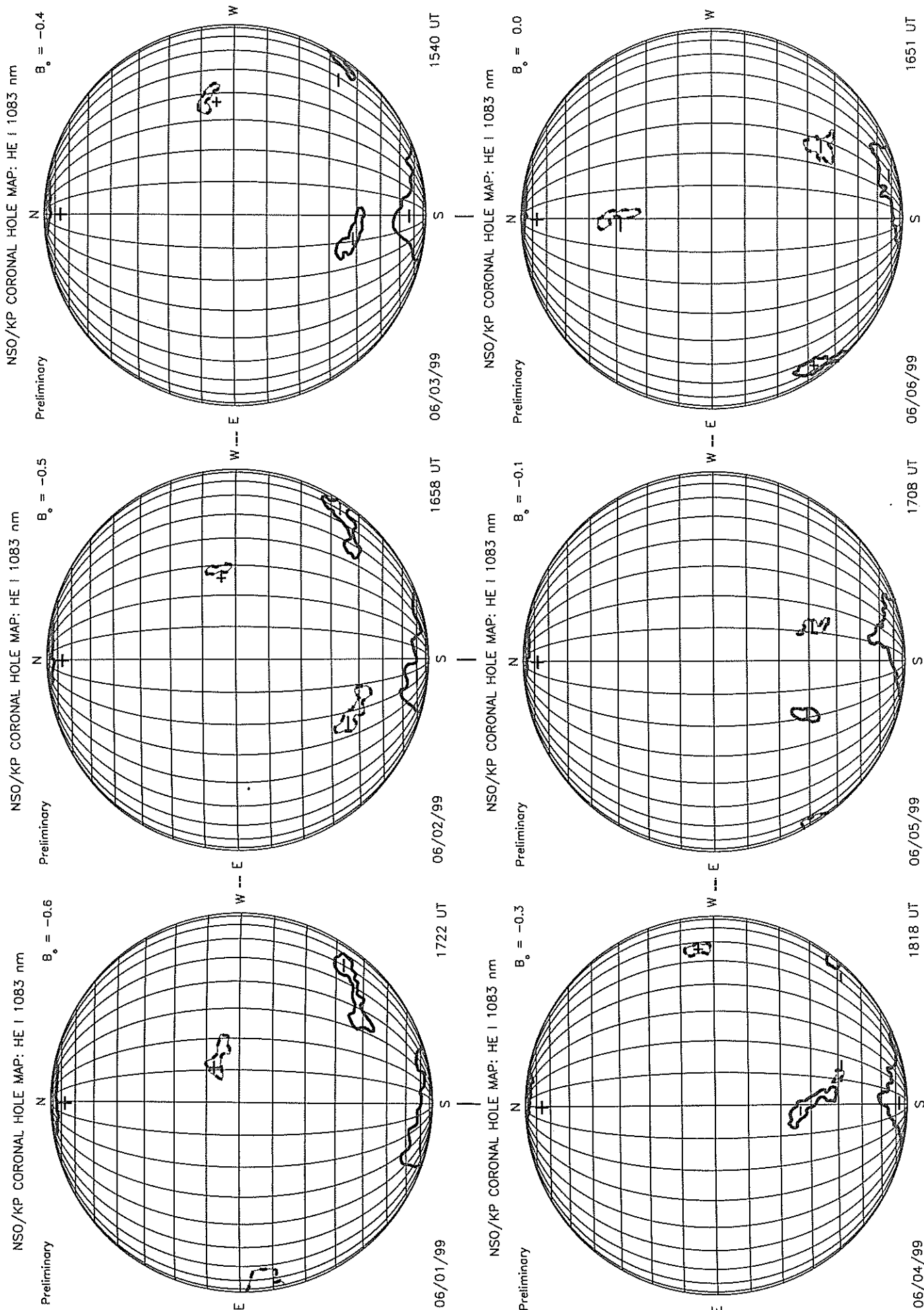
Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb ≤ 9,500 K

Nobeyama Radio Heliograph 17 GHz (Tb) 1999 June

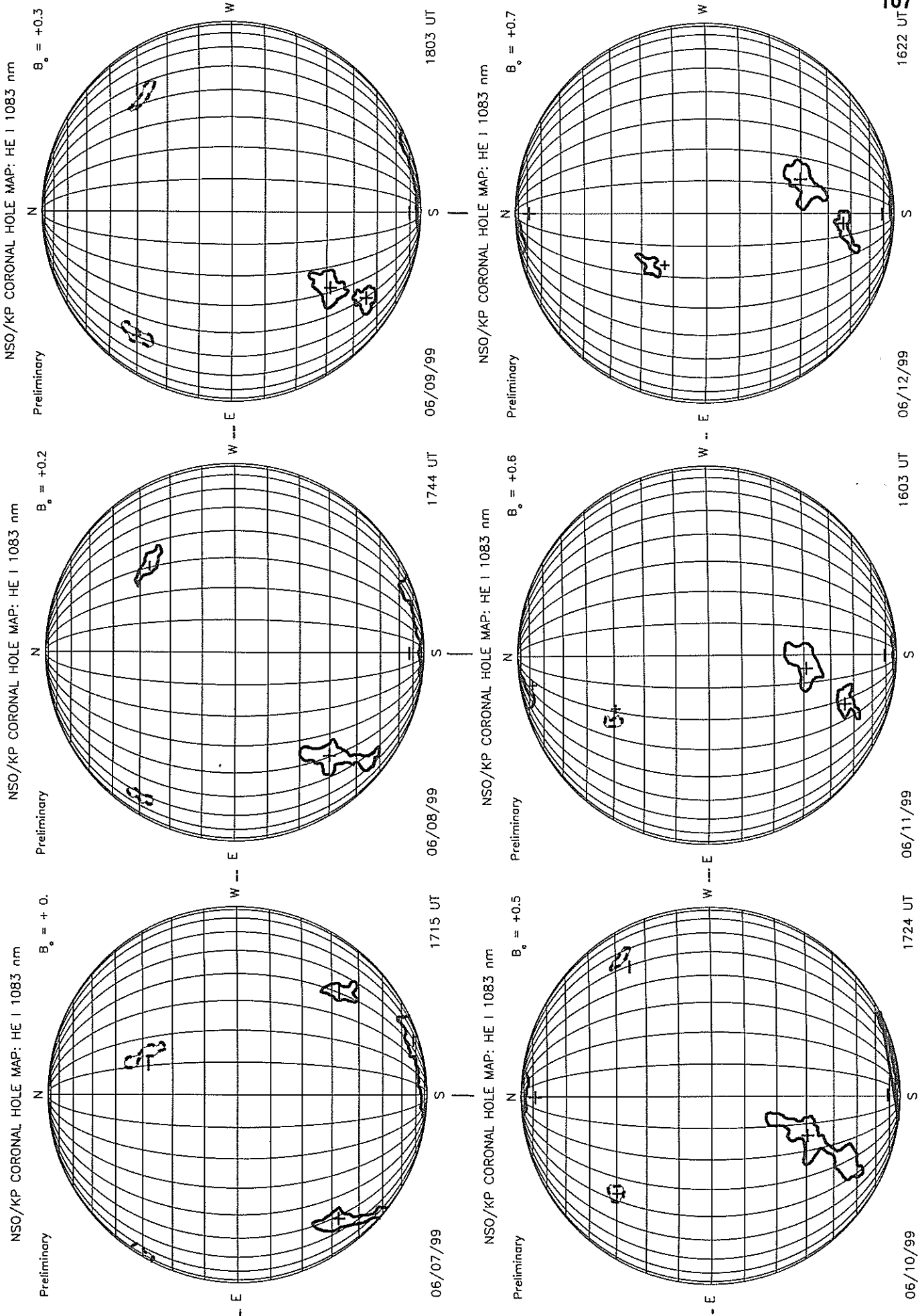


Contour Levels Tb=[5,8,12,20,50,100] x 10³ K
Grey level Tb <= 9,500 K

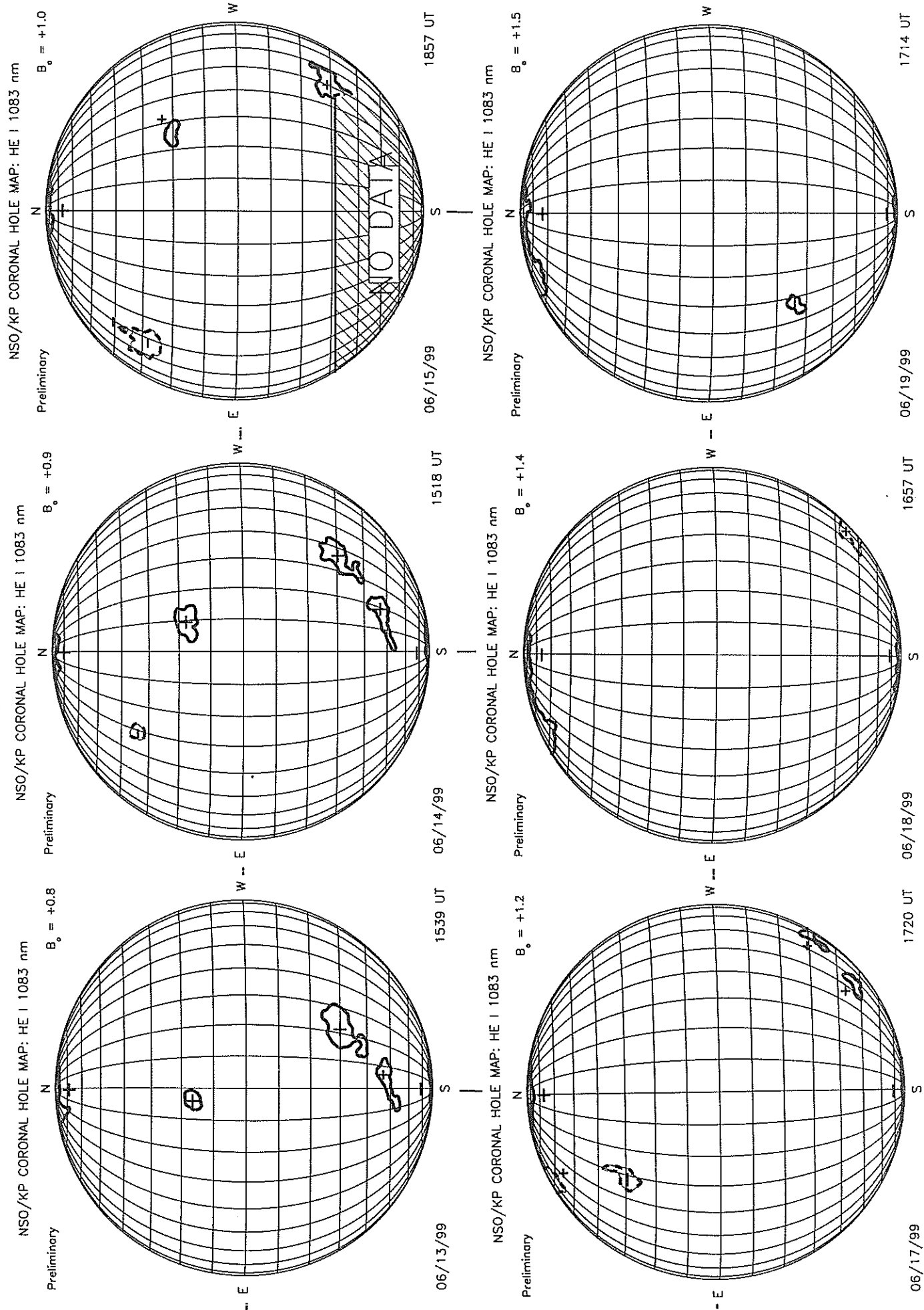
KITT PEAK CORONAL HOLE MAPS HE I 1083 nm June 1999



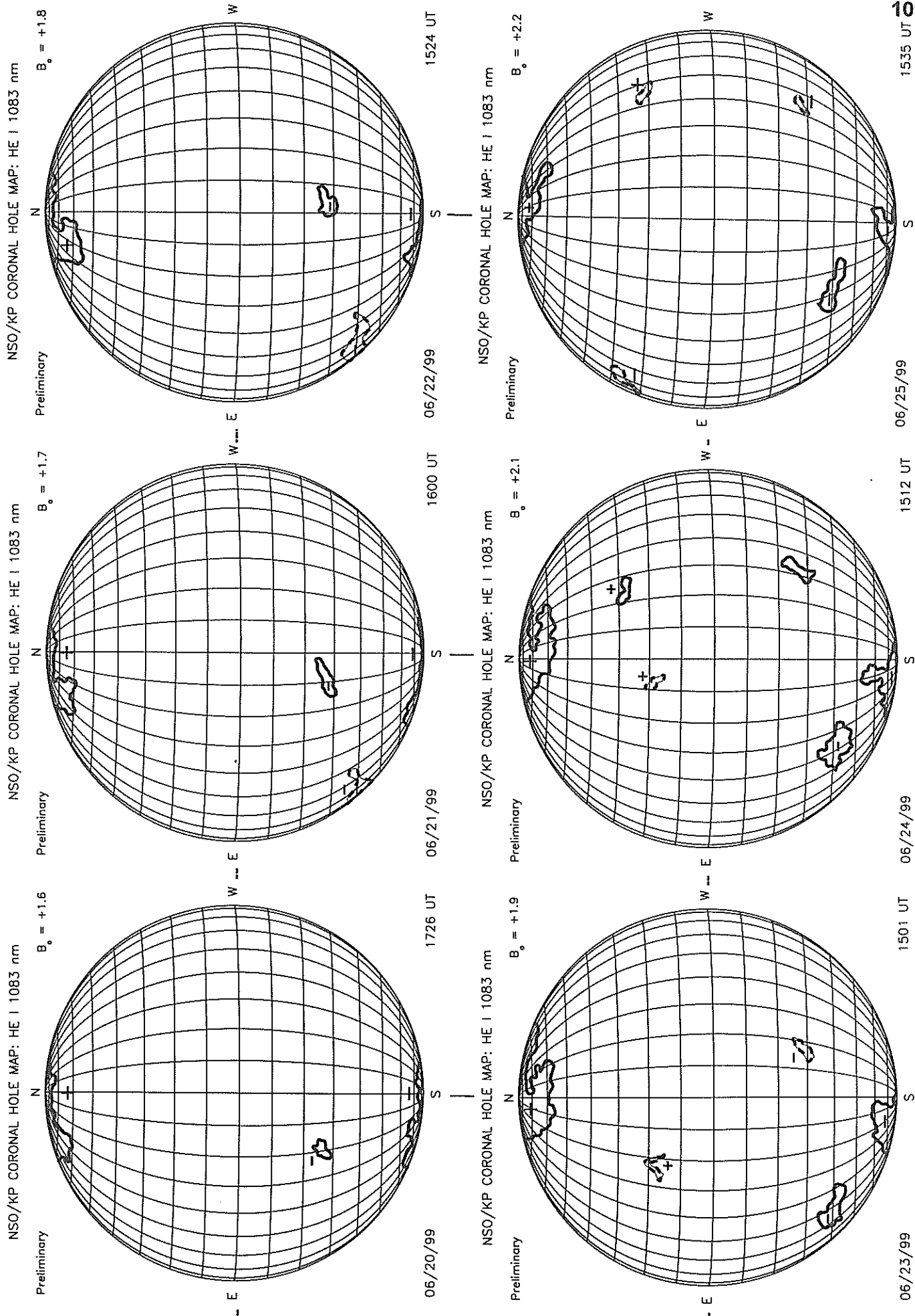
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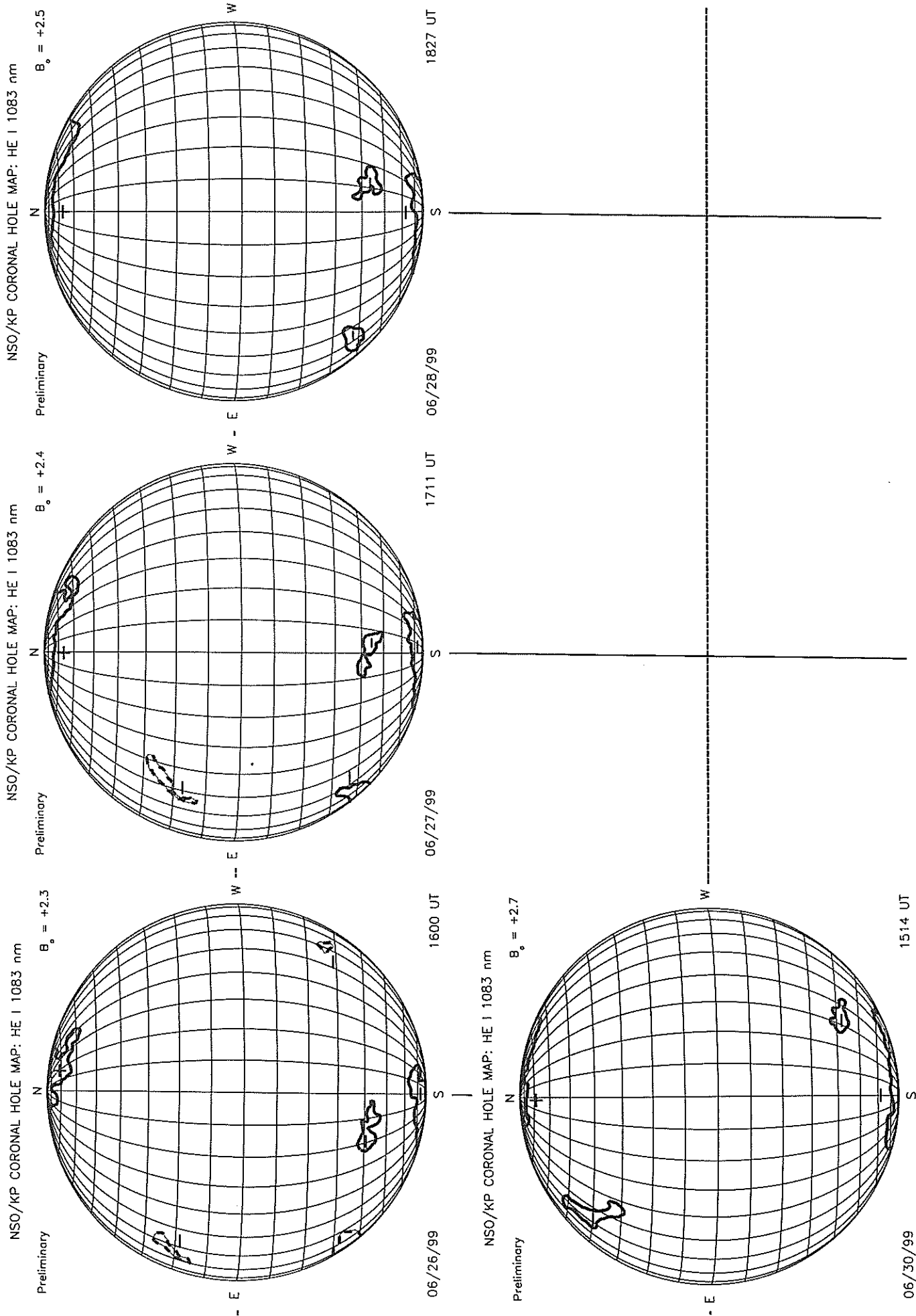
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KITT PEAK CORONAL HOLE MAPS HE I 1083 nm June 1999



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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time			Lat	CMD	CMP		Max	Mag	Spot	Corrected Area	Spot	Long. Extent	Qual
			Mo	Day	(UT)			Mo	Day	H	Class	Class	(10-6 Hemi)	Count	(Deg)	
8572	29129	SVTO	06	05	0505	N27	W48	06	1.5		A	AX		1		3
8572		RAMY	06	05	1239	N26	W52	06	1.5		B	CRO	10	2	5	4
8572		MWIL	06	05	1445	N26	W52	06	1.6	4	(B)					
8572		KAND	06	05	1450	N26	W54	06	1.4			AX		1	1	2
8572		LEAR	06	06	0047	N26	W56	06	1.7		B	CRO	30	4	2	4
8572		SVTO	06	06	0542	N28	W58	06	1.7		A	AX	10	2	1	3
8572		KAND	06	06	0945	N27	W60	06	1.7			BXO		3	6	3
8572		MWIL	06	06	1445	N26	W65	06	1.6	4	(B)					
8572	29129	RAMY	06	06	1451	N26	W66	06	1.5		B	BXO		2	4	3
8572		HOLL	06	06	1510	N25	W67	06	1.4		B	BXO	10	2	5	3
8555	29113	VORO	05	26	0230	N15	E87	06	1.7			HAX	64	1		2
8555		SVTO	05	26	0650	N15	E85	06	1.7		A	HR	90	1	3	3
8555		RAMY	05	26	1207	N16	E79	06	1.5		A	HS	20	1	1	4
8555		MWIL	05	26	1445	N16	E80	06	1.7	4	(AP)					
8555		HOLL	05	26	1546	N16	E79	06	1.6		A	HS	40	1	1	3
8555		LEAR	05	27	0101	N14	E74	06	1.6		A	HA	60	1	2	3
8555		SVTO	05	27	0631	N16	E72	06	1.7		A	HA	90	1	2	3
8555		KAND	05	27	0710	N16	E72	06	1.7			HS		1	2	4
8555	29113	RAMY	05	27	1152	N16	E65	06	1.4		B	CSO	50	3	8	5
8555		MWIL	05	27	1400	N16	E67	06	1.7	4	(AP)					
8555		HOLL	05	27	1516	N15	E66	06	1.6		A	HA	50	1	1	4
8555		VORO	05	28	0319	N15	E60	06	1.7			HAX	75	1		3
8555		SVTO	05	28	0540	N16	E59	06	1.7		A	HA	40	1	1	4
8555		KAND	05	28	0900	N16	E58	06	1.8			HA		1	2	2
8555		RAMY	05	28	1210	N18	E55	06	1.7		A	HS	60	1	2	4
8555		MWIL	05	28	1430	N16	E53	06	1.6	4	(AP)					
8555	29113	HOLL	05	28	1519	N17	E53	06	1.7		A	HS	60	1	1	3
8555		VORO	05	29	0008	N15	E49	06	1.7			HAX	111	1		2
8555		SVTO	05	29	0500	N16	E46	06	1.7		A	HS	60	1	2	3
8555		KAND	05	29	0655	N15	E44	06	1.6			HS		1	2	2
8555		RAMY	05	29	1340	N18	E40	06	1.6		A	HA	30	1	2	4
8555		HOLL	05	29	1529	N16	E39	06	1.6		A	HS	50	1	2	4
8555		VORO	05	29	2116	N15	E37	06	1.7			HAX	75	1		2
8555		MWIL	05	29	2330	N16	E35	06	1.6	4	(AP)					
8555	29113	SVTO	05	30	0515	N17	E33	06	1.7		B	CSO	80	3	4	3
8555		KAND	05	30	0820	N16	E30	06	1.6			HS		1	2	3
8555		RAMY	05	30	1148	N15	E28	06	1.6		A	HS	40	1	2	3
8555		MWIL	05	30	1430	N16	E27	06	1.6	5	(AP)					
8555		HOLL	05	30	1440	N16	E27	06	1.6		A	HS	40	1	1	4
8555		VORO	05	30	2140	N15	E24	06	1.7			HAX	95	1		2
8555		KAND	05	31	0700	N17	E18	06	1.6			HS		1	2	3
8555		KAND	05	31	0700	N18	E15	06	1.4			AX		3	2	3
8555	29113	RAMY	05	31	1228	N17	E13	06	1.5		B	CSO	40	3	4	3
8555		MWIL	05	31	1600	N16	E13	06	1.6	5	(AP)					
8555		HOLL	05	31	1600	N17	E12	06	1.6		B	CSO	30	2	3	3
8555		VORO	05	31	2140	N17	E09	06	1.6			CAO	87	2	2	2
8555		SVTO	06	01	0450	N17	E05	06	1.6		B	CSO	40	4	4	4
8555		KAND	06	01	0645	N15	E05	06	1.6			HS		1	2	3
8555		KAND	06	01	0645	N18	E02	06	1.4			AX		1		3
8555		RAMY	06	01	1307	N17	W01	06	1.5		B	CSO	40	3	4	4
8555	29113	MWIL	06	01	1430	N16	W00	06	1.6	5	(AP)					
8555		HOLL	06	01	1520	N17	W02	06	1.5		B	CSO	30	2	3	3
8555		LEAR	06	02	0102	N16	W04	06	1.7		A	HS	40	1	1	3
8555		SVTO	06	02	0520	N15	W08	06	1.6		B	CSO	60	4	3	3
8555		RAMY	06	02	1116	N16	W13	06	1.5		B	CAO	30	4	5	4
8555		HOLL	06	02	1550	N15	W13	06	1.7		A	HA	40	2	1	2
8555		VORO	06	02	2115	N15	W16	06	1.7			HAX	71	2		3
8555		LEAR	06	03	0334	N16	W19	06	1.7		A	HS	30	1	2	3
8555	29113	KAND	06	03	0630	N16	W21	06	1.7			HS		1	2	3
8555		SVTO	06	03	0655	N15	W22	06	1.6		A	HS	40	1	2	3
8555		RAMY	06	03	1224	N16	W25	06	1.6		A	HA	20	1	1	3
8555		HOLL	06	03	1642	N16	W26	06	1.7		A	HS	40	1	2	2
8555		LEAR	06	04	0121	N16	W32	06	1.6		A	HA	20	1	2	3
8555		VORO	06	04	0345	N15	W33	06	1.6			HAX	28	1		2
8555		KAND	06	04	0655	N16	W34	06	1.7			HR		1	1	3
8555		SVTO	06	04	0900	N14	W37	06	1.6		A	HA	20	1	2	3
8555	29113	RAMY	06	04	1254	N15	W38	06	1.7		A	HS	10	1	1	3
8555		HOLL	06	04	1505	N15	W39	06	1.7		A	HR	20	1	1	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8555	29113	MWIL	06 04 1600	N16 W39	06 1.7	4	(AP)					
8555		VORO	06 04 2130	N16 W42	06 1.7			HAX	25	1		2
8555		LEAR	06 05 0050	N16 W45	06 1.6		A	HS	20	1	1	4
8555		SVTO	06 05 0505	N17 W47	06 1.6		A	AX		1		3
8557		SVTO	05 27 0631	S29 E84	06 2.8		B	CRO	60	3	3	3
8557		KAND	05 27 0710	S30 E85	06 3.0			HS		1	2	4
8557		RAMY	05 27 1152	S27 E78	06 2.6		B	DSO	90	7	8	5
8557	29115	MWIL	05 27 1400	S28 E78	06 2.7	4	(B)					
8557		HOLL	05 27 1516	S28 E77	06 2.6		B	DAO	120	5	7	4
8557		VORO	05 28 0319	S28 E71	06 2.7			DAI	337	3	3	3
8557		SVTO	05 28 0540	S27 E70	06 2.7		B	DAO	150	8	6	4
8557		KAND	05 28 0900	S28 E70	06 2.8			DAO		3	9	2
8557		RAMY	05 28 1210	S25 E67	06 2.7		B	DAO	80	5	7	4
8557	29115	MWIL	05 28 1430	S27 E66	06 2.7	4	(B)					
8557		HOLL	05 28 1519	S27 E62	06 2.5		B	DSO	150	6	6	3
8557		VORO	05 29 0008	S28 E61	06 2.8			DAI	221	6	4	2
8557		SVTO	05 29 0500	S27 E57	06 2.6		B	DAO	130	10	9	3
8557		KAND	05 29 0655	S28 E58	06 2.8			DAO		10	5	2
8557		RAMY	05 29 1340	S27 E55	06 2.8		B	DAI	50	5	2	4
8557		HOLL	05 29 1529	S30 E51	06 2.6		B	CAO	130	7	3	4
8557		VORO	05 29 2116	S29 E50	06 2.8			DAI	269	8	3	2
8557	29115	MWIL	05 29 2330	S27 E48	06 2.7	4	(B)					
8557		SVTO	05 30 0515	S31 E45	06 2.8		B	DSO	140	6	4	3
8557		KAND	05 30 0820	S26 E43	06 2.7			DAO		10	5	3
8557		RAMY	05 30 1148	S30 E40	06 2.6		B	DAO	50	6	4	3
8557	29115	MWIL	05 30 1430	S28 E40	06 2.7	5	(B)					
8557		HOLL	05 30 1440	S30 E39	06 2.7		B	DAO	40	4	2	4
8557		VORO	05 30 2140	S28 E37	06 2.8			DAI	174	11	1	2
8557		KAND	05 31 0700	S27 E30	06 2.6			DAO		15	6	3
8557		RAMY	05 31 1228	S30 E27	06 2.6		B	DAO	20	5	3	3
8557	29115	MWIL	05 31 1600	S28 E26	06 2.7	4	(B)					
8557		HOLL	05 31 1600	S31 E25	06 2.6		A	HS	30	5	3	3
8557		VORO	05 31 2140	S28 E23	06 2.7			DAI	68	9	4	2
8557		SVTO	06 01 0450	S31 E17	06 2.5		B	DRO	20	5	4	4
8557		KAND	06 01 0645	S28 E17	06 2.6			DAO		5	5	3
8557		RAMY	06 01 1307	S28 E14	06 2.6		B	CAO	20	13	9	4
8557	29115	MWIL	06 01 1430	S28 E13	06 2.6	4	(B)					
8557		HOLL	06 01 1520	S28 E13	06 2.6		B	BXO	10	8	5	3
8557		LEAR	06 02 0102	S26 E06	06 2.5		B	CSO	20	7	7	3
8557		SVTO	06 02 0520	S31 E05	06 2.6		B	BXO	10	2	3	3
8557		RAMY	06 02 1116	S26 E00	06 2.5		B	BXO	10	3	6	4
8557		HOLL	06 02 1550	S24 W01	06 2.6		B	BXO	10	3	3	2
8557		VORO	06 02 2115	S24 W04	06 2.6			AXX	1	1		3
8557		KAND	06 04 0655	S30 W18	06 2.9			AX		1	1	3
8573	29130	RAMY	06 05 1239	N18 W39	06 2.5		A	AX		1		4
8573		MWIL	06 05 1445	N18 W40	06 2.6	4	(AP)					
8573		KAND	06 05 1450	N19 W39	06 2.6			AX		1		2
8573		LEAR	06 06 0047	N20 W47	06 2.4		A	AX	10	2	2	4
8562	29121	MWIL	05 30 1430	S16 E40	06 2.6	4	(AP)					
8562		HOLL	05 30 1440	S15 E41	06 2.7		A	AX	10	1	1	4
8562		VORO	05 30 2140	S16 E35	06 2.5			AXX	12	1		2
8562		KAND	05 31 0700	S16 E31	06 2.6			BXO		10	6	3
8562		RAMY	05 31 1228	S15 E28	06 2.6		B	DAO	40	13	5	3
8562		HOLL	05 31 1600	S15 E26	06 2.6		B	CSO	50	12	4	3
8562	29121	MWIL	05 31 1600	S16 E27	06 2.7	5	(B)					
8562		VORO	05 31 2140	S16 E23	06 2.6			DAI	195	11	5	2
8562		SVTO	06 01 0450	S16 E18	06 2.6		B	DAI	130	20	6	4
8562		KAND	06 01 0645	S15 E18	06 2.6			DAI		14	7	3
8562		RAMY	06 01 1307	S16 E14	06 2.6		B	DAI	230	30	7	4
8562	29121	MWIL	06 01 1430	S16 E14	06 2.7	5	(D)					
8562		HOLL	06 01 1520	S16 E13	06 2.6		B	DSO	230	27	8	3
8562		LEAR	06 02 0102	S16 E05	06 2.4		B	DSO	320	15	8	3
8562		SVTO	06 02 0520	S16 E05	06 2.6		BG	DKI	500	43	9	3
8562		RAMY	06 02 1116	S15 E02	06 2.6		BG	DAC	300	34	7	4
8562		HOLL	06 02 1550	S15 W01	06 2.6		BG	DSC	220	34	9	2
8562		VORO	06 02 2115	S16 W04	06 2.6			DAI	485	28	7	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8562		LEAR	06 03 0334	S15	W08	06 2.5		BG	DAI	340	27	9	3
8562		KAND	06 03 0630	S15	W09	06 2.6			DKO		21	9	3
8562		SVTO	06 03 0655	S16	W08	06 2.7		BG	DSI	550	29	8	3
8562		RAMY	06 03 1224	S15	W12	06 2.6		B	DKC	410	32	9	3
8562		HOLL	06 03 1642	S15	W13	06 2.7		B	DKC	350	25	8	2
8562		LEAR	06 04 0121	S15	W20	06 2.5		BG	DKI	440	27	9	3
8562		VORO	06 04 0345	S16	W20	06 2.6			DKI	689	25	8	2
8562		KAND	06 04 0655	S15	W21	06 2.7			DKI		23	10	3
8562		SVTO	06 04 0900	S16	W23	06 2.6		BG	DAI	370	16	9	3
8562		RAMY	06 04 1254	S16	W26	06 2.6		B	DKC	500	27	10	3
8562		HOLL	06 04 1505	S15	W26	06 2.7		B	DKI	350	24	10	3
8562	29121	MWIL	06 04 1600	S15	W26	06 2.7	5	(B)					
8562		VORO	06 04 2130	S16	W30	06 2.6			DAI	595	17	8	2
8562		LEAR	06 05 0050	S15	W33	06 2.5		B	DKI	400	27	10	4
8562		SVTO	06 05 0505	S15	W35	06 2.6		B	CKO	490	22	13	3
8562		KAND	06 05 1150	S15	W36	06 2.8			DAC		29	15	2
8562		RAMY	06 05 1239	S16	W38	06 2.6		B	DAI	360	28	10	4
8562	29121	MWIL	06 05 1445	S15	W39	06 2.7	5	(B)					
8562		LEAR	06 06 0047	S14	W45	06 2.6		B	EKI	350	28	13	4
8562		SVTO	06 06 0542	S14	W46	06 2.8		B	EAO	340	21	14	3
8562		VORO	06 06 0640	S15	W47	06 2.7			DAI	294	5	10	1
8562		KAND	06 06 0945	S14	W50	06 2.6			EAI		22	14	3
8562	29121	MWIL	06 06 1445	S15	W52	06 2.7	5	(BG)					
8562		RAMY	06 06 1451	S16	W52	06 2.7		B	EAO	280	19	13	3
8562		HOLL	06 06 1510	S17	W53	06 2.6		BG	EKO	200	19	12	3
8562		VORO	06 06 2215	S15	W56	06 2.7			DAI	469	12	9	2
8562		LEAR	06 07 0045	S14	W58	06 2.6		B	DKO	360	12	10	3
8562		SVTO	06 07 0455	S15	W60	06 2.7		B	EAO	320	18	11	3
8562		KAND	06 07 0835	S15	W61	06 2.7			EAC		12	15	1
8562		RAMY	06 07 1249	S16	W64	06 2.7		B	EAI	260	15	11	3
8562	29121	MWIL	06 07 1445	S15	W65	06 2.7	5	(BG)					
8562		HOLL	06 07 1504	S17	W68	06 2.5		B	EAC	180	13	11	3
8562		VORO	06 07 2220	S16	W70	06 2.6			DAI	451	8	8	2
8562		LEAR	06 08 0103	S14	W70	06 2.7		B	DAO	340	11	10	5
8562		KAND	06 08 0820	S16	W75	06 2.6			EAC		5	14	3
8562		RAMY	06 08 1337	S16	W79	06 2.6		B	ESI	150	6	15	3
8562	29121	MWIL	06 08 1445	S16	W78	06 2.7	4	(B)					
8562		HOLL	06 08 1524	S17	W80	06 2.6		B	EAO	120	4	12	3
8562		VORO	06 08 2124	S15	W81	06 2.7			DAI	150	3	3	3
8562		SVTO	06 09 0500	S14	W87	06 2.6		B	DRO	60	2	2	3
8560		RAMY	05 29 1340	S22	E56	06 2.9		B	DSO	40	3	4	4
8560		HOLL	05 29 1529	S24	E53	06 2.7		B	CAO	90	6	5	4
8560		SVTO	05 30 0515	S25	E45	06 2.7		B	DAO	90	9	4	3
8560		RAMY	05 30 1148	S24	E41	06 2.6		B	DSO	50	7	4	3
8560		HOLL	05 30 1440	S24	E40	06 2.7		B	DAO	70	6	5	4
8560		RAMY	05 31 1228	S24	E28	06 2.7		B	DSO	30	11	5	3
8560		HOLL	05 31 1600	S25	E26	06 2.7		A	HS	30	7	5	3
8560		SVTO	06 01 0450	S25	E18	06 2.6		B	DSO	30	3	4	4
8560		SVTO	06 02 0520	S26	E06	06 2.7		B	CRO	10	4	6	3
8558		VORO	05 28 0319	N12	E78	06 3.0			HAX	73	1		3
8558		SVTO	05 28 0540	N13	E79	06 3.2		A	HS	30	1	2	4
8558		KAND	05 28 0900	N14	E77	06 3.2			HS		1	3	2
8558		RAMY	05 28 1210	N15	E73	06 3.0		A	HS	20	1	1	4
8558	29116	MWIL	05 28 1430	N14	E76	06 3.3	4	(BP)					
8558		HOLL	05 28 1519	N14	E73	06 3.1		B	BXO	20	4	6	3
8558		VORO	05 29 0008	N13	E70	06 3.3			CAI	80	5	5	2
8558		SVTO	05 29 0500	N15	E66	06 3.2		B	DSO	70	9	8	3
8558		KAND	05 29 0655	N15	E65	06 3.2			CRO		8	8	2
8558		RAMY	05 29 1340	N18	E62	06 3.3		B	DRO	100	12	10	4
8558		HOLL	05 29 1529	N16	E60	06 3.2		B	DAI	170	15	9	4
8558		VORO	05 29 2116	N14	E57	06 3.2			DAI	233	9	5	2
8558	29116	MWIL	05 29 2330	N15	E56	06 3.2	4	(BP)					
8558		SVTO	05 30 0515	N17	E55	06 3.4		B	DKI	310	22	9	3
8558		KAND	05 30 0820	N16	E50	06 3.1			DAI		17	9	3
8558		RAMY	05 30 1148	N15	E48	06 3.1		B	DSI	290	36	9	3
8558	29116	MWIL	05 30 1430	N15	E49	06 3.3	5	(B)					
8558		HOLL	05 30 1440	N15	E47	06 3.2		B	DAI	300	28	8	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8558		VORO	05 30 2140	N15 E45	06 3.3			DAI	641	9	7	2
8558		KAND	05 31 0700	N15 E39	06 3.2			DAO		17	10	3
8558		RAMY	05 31 1228	N16 E35	06 3.2		B	DKI	470	21	8	3
8558		HOLL	05 31 1600	N15 E34	06 3.2		B	DSO	350	17	8	3
8558	29116	MWIL	05 31 1600	N15 E35	06 3.3	5	(B)					
8558		VORO	05 31 2140	N15 E31	06 3.2			DKI	794	22	6	2
8558		SVTO	06 01 0450	N15 E27	06 3.2		B	DAI	470	24	8	4
8558		KAND	06 01 0645	N15 E25	06 3.2			DKO		14	8	3
8558		RAMY	06 01 1307	N16 E23	06 3.3		B	DKI	680	25	8	4
8558	29116	MWIL	06 01 1430	N15 E23	06 3.3	5	(B)					
8558		HOLL	06 01 1520	N15 E22	06 3.3		B	DKO	570	12	9	3
8558		LEAR	06 02 0102	N14 E18	06 3.4		B	DHO	420	16	8	3
8558		SVTO	06 02 0520	N16 E13	06 3.2		BG	DKI	780	28	9	3
8558		RAMY	06 02 1116	N15 E11	06 3.3		B	DKI	630	24	10	4
8558		HOLL	06 02 1550	N15 E08	06 3.3		BG	DKO	520	26	10	2
8558		VORO	06 02 2115	N16 E06	06 3.3			DKI	795	27	6	3
8558		LEAR	06 03 0334	N15 E03	06 3.4		B	DHO	580	26	9	3
8558		KAND	06 03 0630	N16 E00	06 3.3			DKO		17	9	3
8558		SVTO	06 03 0655	N17 W01	06 3.2		BG	DKI	720	21	9	3
8558		RAMY	06 03 1224	N17 W03	06 3.3		B	DKI	550	21	8	3
8558		HOLL	06 03 1642	N16 W05	06 3.3		B	DKC	510	23	8	2
8558		LEAR	06 04 0121	N16 W10	06 3.3		B	DKI	560	31	9	3
8558		VORO	06 04 0345	N16 W11	06 3.3			DAI	587	21	6	2
8558		KAND	06 04 0655	N16 W14	06 3.2			DKI		28	10	3
8558		SVTO	06 04 0900	N15 W15	06 3.2		BG	DKI	270	17	8	3
8558		RAMY	06 04 1254	N16 W17	06 3.2		B	DAI	310	25	8	3
8558		HOLL	06 04 1505	N15 W18	06 3.3		B	DKO	420	23	9	3
8558	29116	MWIL	06 04 1600	N16 W18	06 3.3	5	(B)					
8558		VORO	06 04 2130	N16 W21	06 3.3			DAI	643	22	6	2
8558		LEAR	06 05 0050	N16 W23	06 3.3		B	DKI	370	32	10	4
8558		SVTO	06 05 0505	N16 W25	06 3.3		B	DSO	340	15	9	3
8558		RAMY	06 05 1239	N15 W30	06 3.2		B	DAI	280	21	8	4
8558	29116	MWIL	06 05 1445	N16 W31	06 3.3	5	(B)					
8558		KAND	06 05 1450	N16 W30	06 3.3			DAI		18	8	2
8558		LEAR	06 06 0047	N17 W36	06 3.3		B	DKI	260	24	8	4
8558		SVTO	06 06 0542	N16 W39	06 3.3		B	DSO	210	14	8	3
8558		VORO	06 06 0640	N15 W39	06 3.3			DAI	147	4	6	1
8558		KAND	06 06 0945	N16 W41	06 3.3			DAO		10	8	3
8558	29116	MWIL	06 06 1445	N16 W44	06 3.3	5	(B)					
8558		RAMY	06 06 1451	N16 W45	06 3.2		B	DSO	170	14	7	3
8558		HOLL	06 06 1510	N15 W45	06 3.2		B	DAO	190	12	7	3
8558		VORO	06 06 2215	N16 W48	06 3.3			DAI	350	12	5	2
8558		LEAR	06 07 0045	N17 W48	06 3.4		B	DAO	210	9	7	3
8558		SVTO	06 07 0455	N16 W53	06 3.2		B	DSO	240	12	8	3
8558		KAND	06 07 0835	N15 W54	06 3.3			DAO		5	8	1
8558		RAMY	06 07 1249	N15 W56	06 3.3		B	DAO	100	9	6	3
8558	29116	MWIL	06 07 1445	N15 W57	06 3.3	5	(BP)					
8558		HOLL	06 07 1504	N14 W58	06 3.2		B	DSO	150	7	7	3
8558		VORO	06 07 2220	N16 W61	06 3.3			DAI	239	4	6	2
8558		LEAR	06 08 0103	N17 W63	06 3.2		B	DAO	160	6	7	5
8558		KAND	06 08 0820	N15 W66	06 3.3			DSO		2	7	3
8558		RAMY	06 08 1337	N14 W72	06 3.1		B	DSO	60	4	8	3
8558	29116	MWIL	06 08 1445	N15 W70	06 3.3	4	(BP)					
8558		HOLL	06 08 1524	N14 W73	06 3.1		B	CAO	100	2	6	3
8558		VORO	06 08 2124	N15 W76	06 3.1			DAO	196	2	5	3
8558		SVTO	06 09 0500	N15 W80	06 3.1		B	CAO	120	2	4	3
8558		KAND	06 09 0645	N15 W80	06 3.2			CSO		2	7	3
8558		RAMY	06 09 1238	N14 W88	06 2.9		A	HS	20	1	1	2
8567		VORO	05 31 2140	S16 E39	06 3.9			BXO	12	2	1	2
8567		SVTO	06 01 0450	S15 E34	06 3.8		B	CRO	10	3	2	4
8567		KAND	06 01 0645	S15 E32	06 3.7			AX		1	1	3
8567		VORO	06 02 2115	S15 E10	06 3.6			AXX	1	1		3
8567		LEAR	06 03 0334	S14 E07	06 3.7		B	CSO	10	3	3	3
8567		KAND	06 03 0630	S14 E05	06 3.6			BXO		4	4	3
8567		SVTO	06 03 0655	S14 E06	06 3.7		B	BXO	10	4	4	3
8567		RAMY	06 03 1224	S14 E02	06 3.7		B	CSO	10	4	4	3
8567		HOLL	06 03 1642	S15 W02	06 3.5		B	CAO	30	6	4	2
8567		LEAR	06 04 0121	S14 W07	06 3.5		B	CSO	20	11	6	3

S U N S P O T G R O U P S
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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8567		VORO	06 04 0345	S16	W07	06 3.6			BXI	44	7	4	2
8567		KAND	06 04 0655	S14	W09	06 3.6			BXI		10	6	3
8567		SVTO	06 04 0900	S15	W10	06 3.6		B	BXO	10	5	5	3
8567		RAMY	06 04 1254	S14	W13	06 3.5		B	BXO	10	8	6	3
8567		HOLL	06 04 1505	S14	W14	06 3.6		B	CSO	40	6	7	3
8567	29125	MWIL	06 04 1600	S15	W13	06 3.7	4	(B)					
8567		VORO	06 04 2130	S15	W18	06 3.5			DAI	67	7	6	2
8567		LEAR	06 05 0050	S14	W19	06 3.6		B	DSO	30	10	7	4
8567		SVTO	06 05 0505	S14	W23	06 3.5		B	CRO	20	7	8	3
8567		KAND	06 05 1150	S12	W24	06 3.7			AX		2	1	2
8567		RAMY	06 05 1239	S13	W27	06 3.5		B	CRO	10	7	8	4
8567	29125	MWIL	06 05 1445	S15	W27	06 3.6	5	(B)					
8567		LEAR	06 06 0047	S14	W25	06 4.1		B	BXO	20	3	5	4
8567		VORO	06 06 0640	S14	W32	06 3.8			AXX	8	1		1
8567	29125	MWIL	06 06 1445	S14	W41	06 3.5	4	(B)					
8567		RAMY	06 06 1451	S14	W38	06 3.7		A	AX		2	1	3
8567		LEAR	06 07 0045	S13	W44	06 3.7		A	AX		1		3
8567A		LEAR	06 05 0050	S06	W16	06 3.8		A	AX	10	5	2	4
8563		RAMY	05 31 1228	S24	E69	06 5.8		B	BXO		2	5	3
8563	29122	MWIL	05 31 1600	S25	E68	06 5.9	4	(B)					
8563		HOLL	05 31 1600	S26	E67	06 5.9		B	BXO	10	3	5	3
8563		VORO	05 31 2140	S24	E61	06 5.6			AXX	17	1		2
8563		SVTO	06 01 0450	S24	E57	06 5.6		A	AX		1		4
8563		RAMY	06 01 1307	S26	E58	06 6.0		B	BXO	20	10	8	4
8563	29122	MWIL	06 01 1430	S26	E57	06 6.0	4	(B)					
8563		HOLL	06 01 1520	S27	E56	06 6.0		B	BXO	10	4	7	3
8563		LEAR	06 02 0102	S28	E49	06 5.9		B	BXO	20	5	6	3
8563		SVTO	06 02 0520	S27	E50	06 6.1		B	BXO	30	5	3	3
8563		RAMY	06 02 1116	S25	E44	06 5.9		B	BXO	20	11	9	4
8563		HOLL	06 02 1550	S25	E40	06 5.7		B	BXO	20	7	12	2
8563		VORO	06 02 2115	S26	E39	06 5.9			BXI	18	5	8	3
8563		LEAR	06 03 0334	S29	E39	06 6.2		B	BXO	10	4	2	3
8563		SVTO	06 03 0655	S23	E32	06 5.7		A	AX		2	2	3
8563		RAMY	06 03 1224	S24	E31	06 5.9		B	CRO	10	3	7	3
8563		HOLL	06 03 1642	S25	E28	06 5.9		B	BXO	20	2	7	2
8563		LEAR	06 04 0121	S20	E25	06 6.0		B	BXO	10	5	5	3
8563		KAND	06 04 0655	S24	E16	06 5.5			AX		2	1	3
8563		SVTO	06 04 0900	S25	E19	06 5.8		A	AX		1		3
8563		RAMY	06 04 1254	S24	E15	06 5.7		B	CRO	10	2	3	3
8563		HOLL	06 04 1505	S25	E14	06 5.7		B	BXO	20	2	3	3
8563	29122	MWIL	06 04 1600	S25	E15	06 5.8	4	(BG)					
8563		LEAR	06 05 0050	S25	E08	06 5.6		B	BXO	10	6	4	4
8563		SVTO	06 05 0505	S24	E04	06 5.5		A	AX		2	1	3
8563		KAND	06 05 1150	S24	E03	06 5.7			AX		1		2
8563		RAMY	06 05 1239	S24	E02	06 5.7		B	BXO		2	4	4
8563	29122	MWIL	06 05 1445	S25	E01	06 5.7	4	(B)					
8563		LEAR	06 06 0047	S25	W05	06 5.6		B	CSO	10	3	4	4
8563		SVTO	06 06 0542	S25	W07	06 5.7		B	BXO		2	4	3
8563		KAND	06 06 0945	S23	W09	06 5.7			BXO		8	4	3
8563	29122	MWIL	06 06 1445	S25	W11	06 5.8	4	(B)					
8563		RAMY	06 06 1451	S23	W12	06 5.7		B	BXO	10	9	5	3
8563		HOLL	06 06 1510	S24	W13	06 5.6		B	BXO	20	11	6	3
8563		LEAR	06 07 0045	S22	W21	06 5.4		B	BXO	10	4	3	3
8563		RAMY	06 07 1249	S24	W25	06 5.6		B	BXO	10	5	6	3
8563	29122	MWIL	06 07 1445	S23	W27	06 5.5	4	(AP)					
8563		HOLL	06 07 1504	S22	W26	06 5.6		B	BXO	10	3	3	3
8563		SVTO	06 09 0500	S25	W41	06 6.0		A	AX	10	2	2	3
8577		RAMY	06 08 1337	N19	W32	06 6.1		B	BXO		3	2	3
8577	29137	MWIL	06 08 1445	N19	W33	06 6.1	4	(BF)					
8577		HOLL	06 08 1524	N19	W33	06 6.1		A	AX	10	3	2	3
8577		VORO	06 08 2124	N20	W37	06 6.1			DAO	41	2	2	3
8577		SVTO	06 09 0500	N19	W42	06 6.0		B	DAO	80	6	4	3
8577		KAND	06 09 0645	N19	W41	06 6.1			CRO		4	3	3
8577		RAMY	06 09 1238	N19	W46	06 6.0		B	CRO	20	7	4	2
8577		HOLL	06 09 1433	N18	W46	06 6.1		B	CRO	30	3	3	2
8577	29137	MWIL	06 09 1500	N19	W46	06 6.1	4	(BF)					

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8577		LEAR	06 10 0348	N20	W53	06 6.1		B	BXO	20	3	3	3
8577		SVTO	06 10 0735	N20	W55	06 6.1		B	BXO	20	5	4	2
8577		KAND	06 10 0920	N21	W56	06 6.1			BXO		2	5	3
8577		RAMY	06 10 1235	N19	W59	06 6.0		B	BXO	10	4	3	3
8577	29137	MWIL	06 10 1430	N20	W59	06 6.1	4	(BF)					
8577		HOLL	06 10 1447	N18	W58	06 6.2		B	CAO	20	4	3	3
8577		VORO	06 10 2339	N21	W63	06 6.1			AXX	14	1		2
8577		SVTO	06 11 0500	N19	W67	06 6.1		A	AX		2	2	4
8577	29137	MWIL	06 11 1400	N20	W71	06 6.1	3	(AF)					
8564A		RAMY	06 02 1116	S07	E49	06 6.1		B	BXO	10	4	3	4
8564A		HOLL	06 02 1550	S08	E46	06 6.1		B	CRO	30	4	3	2
8564A		VORO	06 02 2115	S07	E45	06 6.2			AXX	13	1		3
8564B		KAND	06 06 0945	S20	E06	06 6.9			BXO		2	2	3
8564	29123	MWIL	05 31 1600	S15	E86	06 7.2	3	AP					
8564		SVTO	06 01 0450	S15	E78	06 7.1		A	HR	20	1	1	4
8564		KAND	06 01 0645	S15	E77	06 7.1			HR		1	2	3
8564		RAMY	06 01 1307	S14	E73	06 7.1		B	CSO	20	2	3	4
8564	29123	MWIL	06 01 1430	S15	E70	06 6.9	4	(AP)					
8564		HOLL	06 01 1520	S16	E71	06 7.0		A	HS	30	2	1	3
8564		LEAR	06 02 0102	S19	E65	06 7.0		B	CSO	50	2	2	3
8564		SVTO	06 02 0520	S15	E63	06 7.0		B	CSO	60	2	3	3
8564		RAMY	06 02 1116	S14	E59	06 6.9		B	CSO	20	2	4	4
8564		HOLL	06 02 1550	S15	E58	06 7.0		A	HA	40	3	3	2
8564		VORO	06 02 2115	S15	E54	06 7.0			HAX	53	1		3
8564		LEAR	06 03 0334	S16	E51	06 7.0		A	HS	20	2	2	3
8564		KAND	06 03 0630	S14	E50	06 7.0			HS		1	2	3
8564		SVTO	06 03 0655	S13	E49	06 7.0		B	CSO	30	3	3	3
8564		RAMY	06 03 1224	S14	E46	06 7.0		A	HS	20	1	1	3
8564		HOLL	06 03 1642	S15	E43	06 6.9		A	HS	40	1	2	2
8564		LEAR	06 04 0121	S16	E38	06 6.9		A	HS	20	1	2	3
8564		VORO	06 04 0345	S15	E37	06 6.9			HAX	88	1		2
8564		KAND	06 04 0655	S15	E36	06 7.0			HA		1	2	3
8564		SVTO	06 04 0900	S13	E36	06 7.1		A	HS	20	1	2	3
8564		RAMY	06 04 1254	S14	E32	06 6.9		A	HS	20	1	1	3
8564		HOLL	06 04 1505	S15	E31	06 7.0		A	HS	30	1	1	3
8564	29123	MWIL	06 04 1600	S14	E31	06 7.0	5	(AP)					
8564		VORO	06 04 2130	S15	E28	06 7.0			HAX	62	1		2
8564		LEAR	06 05 0050	S15	E25	06 6.9		A	HS	20	1	1	4
8564		SVTO	06 05 0505	S15	E23	06 6.9		A	HS	20	1	1	3
8564		KAND	06 05 1150	S14	E18	06 6.8			HS		1	1	2
8564		RAMY	06 05 1239	S15	E19	06 7.0		B	CSO	20	2	3	4
8564	29123	MWIL	06 05 1445	S14	E18	06 7.0	5	(AP)					
8564		LEAR	06 06 0047	S15	E12	06 6.9		A	HS	20	2	2	4
8564		SVTO	06 06 0542	S15	E10	06 7.0		A	HS	20	1	1	3
8564		VORO	06 06 0640	S13	E02	06 6.4			AXX	15	1		1
8564		KAND	06 06 0945	S14	E08	06 7.0			HA		1	1	3
8564	29123	MWIL	06 06 1445	S14	E05	06 7.0	4	(AP)					
8564		RAMY	06 06 1451	S14	E04	06 6.9		A	HR	10	1	1	3
8564		HOLL	06 06 1510	S16	E05	06 7.0		B	CSO	20	3	3	3
8564		VORO	06 06 2215	S15	E01	06 7.0			AXX	17	1		2
8564		LEAR	06 07 0045	S15	W02	06 6.9		A	HS		2	1	3
8564		SVTO	06 07 0455	S15	W03	06 7.0		A	HR	10	1	1	3
8564		KAND	06 07 0835	S14	W06	06 6.9			HR		1	1	1
8564		RAMY	06 07 1249	S15	W07	06 7.0		B	BXO		2	3	3
8564	29123	MWIL	06 07 1445	S15	W08	06 7.0	4	(AP)					
8564		HOLL	06 07 1504	S16	W08	06 7.0		B	CSO	10	3	3	3
8564		VORO	06 07 2220	S15	W13	06 6.9			AXX	10	1		2
8564		LEAR	06 08 0103	S14	W14	06 7.0		A	AX	10	1		5
8564		KAND	06 08 0820	S15	W19	06 6.9			BXO		2	2	3
8564		RAMY	06 08 1337	S16	W21	06 7.0		B	BXO		3	4	3
8564	29123	MWIL	06 08 1445	S16	W21	06 7.0	4	(AP)					
8564		HOLL	06 08 1524	S17	W22	06 7.0		B	BXO	20	4	2	3
8564		VORO	06 08 2124	S15	W25	06 7.0			BX1	19	3	0	3
8564		SVTO	06 09 0500	S13	W29	06 7.0		B	BXO	20	5	4	3
8564		KAND	06 09 0645	S14	W31	06 6.9			AX		1	1	3
8564		RAMY	06 09 1238	S14	W35	06 6.9		A	AX		1		2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8564	29123	HOLL	06 09 1433	S14 W35	06 7.0		A	AX	10	1	1	2
8564		MWIL	06 09 1500	S15 W36	06 6.9	4	(AP)					
8564		LEAR	06 10 0348	S16 W43	06 6.9		B	BXO	10	2	4	3
8564C		LEAR	06 10 0348	S17 W23	06 8.4		B	BXO	10	2	3	3
8566		RAMY	06 02 1116	N23 E80	06 8.6		A	AX		1		4
8566		HOLL	06 02 1550	N22 E80	06 8.8		A	HS	30	1	1	2
8566		VORO	06 02 2115	N22 E77	06 8.8			HAX	39	1		3
8566		LEAR	06 03 0334	N22 E72	06 8.7		A	HA	30	1	2	3
8566		KAND	06 03 0630	N22 E75	06 9.0			HA		1	2	3
8566		RAMY	06 03 1224	N23 E71	06 9.0		A	HR	10	1	1	3
8566		HOLL	06 03 1642	N23 E68	06 8.9		A	AX	10	1		2
8566		LEAR	06 04 0121	N21 E61	06 8.7		A	HA	20	2	1	3
8566		VORO	06 04 0345	N22 E61	06 8.8			HAX	41	2		2
8566		KAND	06 04 0655	N22 E60	06 8.9			HR		1	1	3
8566		RAMY	06 04 1254	N23 E56	06 8.8		A	HR	10	1		3
8566		HOLL	06 04 1505	N22 E55	06 8.8		A	AX	10	1		3
8566	29126	MWIL	06 04 1600	N23 E55	06 8.9	4	(AP)					
8566		VORO	06 04 2130	N22 E52	06 8.9			AXX	17	1		2
8566		LEAR	06 05 0050	N21 E48	06 8.7		A	AX	10	1		4
8566		SVTO	06 05 0505	N22 E48	06 8.9		A	AX		1		3
8566		RAMY	06 05 1239	N23 E42	06 8.8		B	BXO		2	3	4
8566	29126	MWIL	06 05 1445	N23 E42	06 8.8	3	(AP)					
8566		LEAR	06 06 0047	N23 E36	06 8.8		B	CRO	20	4	4	4
8566		SVTO	06 06 0542	N24 E37	06 9.1		A	AX	10	2	1	3
8566		KAND	06 06 0945	N24 E35	06 9.1			AX		3	1	3
8566	29126	MWIL	06 06 1445	N24 E32	06 9.1	4	(AP)					
8566		RAMY	06 06 1451	N25 E32	06 9.1		B	BXO		2	2	3
8566		LEAR	06 07 0045	N23 E27	06 9.1		A	AX		1		3
8566		SVTO	06 07 0455	N24 E25	06 9.1		A	AX		1		3
8566		RAMY	06 07 1249	N24 E19	06 9.0		B	BXO		4	3	3
8566	29126	MWIL	06 07 1445	N24 E17	06 8.9	3	(AP)					
8566		LEAR	06 08 0103	N19 E17	06 9.3		B	BXO	10	3	3	5
8574		SVTO	06 05 0505	N29 E50	06 9.1		B	BXO	10	2	4	3
8574		RAMY	06 05 1239	N30 E46	06 9.1		B	CRO	10	3	5	4
8574	29131	MWIL	06 05 1445	N30 E45	06 9.1	4	(B)					
8574		KAND	06 05 1450	N30 E45	06 9.1			BXO		3	2	2
8574		LEAR	06 06 0047	N29 E40	06 9.2		B	DAO	40	10	7	4
8574		SVTO	06 06 0542	N29 E37	06 9.1		B	BXO	20	7	7	3
8574		VORO	06 06 0640	N29 E39	06 9.3			DAI	286	13	7	1
8574		KAND	06 06 0945	N29 E35	06 9.1			CAO		13	7	3
8574	29131	MWIL	06 06 1445	N29 E32	06 9.1	5	(BP)					
8574		RAMY	06 06 1451	N30 E32	06 9.1		B	DAO	70	21	7	3
8574		HOLL	06 06 1510	N27 E32	06 9.1		B	DAO	80	17	8	3
8574		LEAR	06 07 0045	N28 E27	06 9.1		B	DAO	240	14	10	3
8574		SVTO	06 07 0455	N28 E24	06 9.1		B	DAO	280	13	9	3
8574		KAND	06 07 0835	N29 E21	06 9.0			DAO		8	10	1
8574		RAMY	06 07 1249	N30 E20	06 9.1		B	ESO	190	23	11	3
8574	29131	MWIL	06 07 1445	N29 E19	06 9.1	5	(B)					
8574		HOLL	06 07 1504	N28 E18	06 9.0		B	DAO	160	14	9	3
8574		VORO	06 07 2220	N29 E15	06 9.1			DAI	479	12	9	2
8574		LEAR	06 08 0103	N27 E13	06 9.0		B	EK1	280	26	11	5
8574		KAND	06 08 0820	N29 E09	06 9.0			DKC		13	10	3
8574		RAMY	06 08 1337	N29 E06	06 9.0		BG	EAI	260	30	12	3
8574	29131	MWIL	06 08 1445	N29 E06	06 9.1	5	(B)					
8574		HOLL	06 08 1524	N29 E05	06 9.0		B	EAI	220	17	11	3
8574		VORO	06 08 2124	N30 E02	06 9.0			DHI	448	23	10	3
8574		SVTO	06 09 0500	N30 W03	06 9.0		B	EKO	340	36	14	3
8574		KAND	06 09 0645	N29 W02	06 9.1			EAI		21	12	3
8574		RAMY	06 09 1238	N29 W06	06 9.0		B	EAI	290	24	12	2
8574		HOLL	06 09 1433	N29 W07	06 9.0		B	EAI	240	18	12	2
8574	29131	MWIL	06 09 1500	N29 W07	06 9.1	5	(BG)					
8574		LEAR	06 10 0348	N29 W14	06 9.1		B	EK1	270	31	12	3
8574		SVTO	06 10 0735	N30 W17	06 9.0		B	ESO	240	22	12	2
8574		KAND	06 10 0920	N30 W16	06 9.1			DAO		12	13	4
8574		RAMY	06 10 1235	N30 W19	06 9.0		B	EAI	280	19	12	3
8574	29131	MWIL	06 10 1430	N30 W20	06 9.0	5	(B)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8574		HOLL	06 10	1447	N29	W20	06 9.0		B	EAI	220	26	12	3
8574		VORO	06 10	2339	N30	W24	06 9.1			DAI	276	9	11	2
8574		SVTO	06 11	0500	N30	W28	06 9.0		B	EAO	160	22	11	4
8574		KAND	06 11	0910	N29	W30	06 9.0			EAO		22	12	3
8574		RAMY	06 11	1350	N30	W32	06 9.0		B	ESO	170	14	12	3
8574	29131	MWIL	06 11	1400	N29	W32	06 9.1	5	(BG)					
8574		HOLL	06 11	1520	N28	W32	06 9.1		B	ESO	160	16	12	3
8574		VORO	06 11	2139	N30	W36	06 9.1			DKI	355	12	12	3
8574		LEAR	06 12	0110	N31	W37	06 9.1		BG	EAO	170	17	13	4
8574		KAND	06 12	0630	N30	W40	06 9.1			EAO		4	13	3
8574		SVTO	06 12	1215	N30	W45	06 9.0		B	EKO	290	12	13	3
8574		RAMY	06 12	1239	N30	W45	06 9.0		B	EAO	140	8	13	3
8574	29131	MWIL	06 12	1400	N30	W44	06 9.1	5	(B)					
8574		HOLL	06 12	1610	N29	W47	06 9.0		B	ESO	80	7	11	3
8574		VORO	06 12	2144	N30	W48	06 9.1			DAI	203	10	10	3
8574		LEAR	06 13	0109	N31	W50	06 9.1		B	CAO	130	8	12	3
8574		SVTO	06 13	0732	N29	W55	06 9.0		B	CSO	80	4	12	3
8574		KAND	06 13	0815	N29	W54	06 9.1			CSO		6	12	3
8574	29131	MWIL	06 13	1430	N30	W57	06 9.1	5	(BP)					
8574		HOLL	06 13	2010	N28	W59	06 9.2		B	CSO	90	4	10	1
8574		VORO	06 13	2125	N30	W62	06 9.0			CAO	129	3	11	3
8574		LEAR	06 14	0035	N32	W62	06 9.1		B	CAO	60	5	12	3
8574		SVTO	06 14	0450	N30	W66	06 9.0		B	EAO	120	4	12	3
8574		KAND	06 14	0635	N30	W65	06 9.2			CSO		4	13	3
8574		RAMY	06 14	1209	N29	W69	06 9.1		B	CSO	50	4	10	4
8574	29131	MWIL	06 14	1445	N30	W70	06 9.1	4	(BP)					
8574		HOLL	06 14	1510	N28	W74	06 8.8		A	HA	40	1	2	3
8574		VORO	06 14	2300	N29	W81	06 8.6			HAX	166	1		2
8574		LEAR	06 15	0055	N30	W79	06 8.8		A	HA	50	1	2	4
8575A		VORO	06 06	0640	S10	E36	06 9.0			HAX	27	1		1
8578	29135	MWIL	06 06	1445	N18	E36	06 9.3	4	(AP)					
8578	29135	MWIL	06 07	1445	N19	E22	06 9.3	4	(AP)					
8578		RAMY	06 08	1337	N19	E08	06 9.2		B	BXO	10	6	3	3
8578	29135	MWIL	06 08	1445	N20	E09	06 9.3	4	(BP)					
8578		HOLL	06 08	1524	N19	E07	06 9.2		B	CAO	40	8	4	3
8578		VORO	06 08	2124	N20	E05	06 9.3			BXI	32	8	4	3
8578		SVTO	06 09	0500	N19	E01	06 9.3		B	CAO	90	14	6	3
8578		KAND	06 09	0645	N19	E00	06 9.3			CAO		7	6	3
8578		RAMY	06 09	1238	N19	W04	06 9.2		B	DSO	50	11	7	2
8578		HOLL	06 09	1433	N19	W04	06 9.3		B	DAO	90	8	7	2
8578	29135	MWIL	06 09	1500	N20	W05	06 9.2	5	(B)					
8578		LEAR	06 10	0348	N19	W12	06 9.2		B	DAO	140	15	8	3
8578		SVTO	06 10	0735	N19	W13	06 9.3		B	DAO	170	10	8	2
8578		KAND	06 10	0920	N20	W15	06 9.2			DAI		6	8	4
8578		RAMY	06 10	1235	N20	W18	06 9.1		B	DSO	130	14	8	3
8578	29135	MWIL	06 10	1430	N20	W19	06 9.1	4	(B)					
8578		HOLL	06 10	1447	N19	W18	06 9.2		B	DAO	170	14	8	3
8578		VORO	06 10	2339	N19	W20	06 9.4			DAI	241	5	6	2
8578		SVTO	06 11	0500	N19	W28	06 9.1		B	DAO	180	9	8	4
8578		KAND	06 11	0910	N20	W30	06 9.1			DAO		7	8	3
8578		RAMY	06 11	1350	N20	W32	06 9.1		B	DSO	120	5	9	3
8578	29135	MWIL	06 11	1400	N20	W32	06 9.1	5	(B)					
8578		HOLL	06 11	1520	N19	W33	06 9.1		B	DSO	80	8	10	3
8578		VORO	06 11	2139	N19	W32	06 9.5			DAI	303	11	13	3
8578		LEAR	06 12	0110	N21	W37	06 9.2		B	DSO	120	7	9	4
8578		KAND	06 12	0630	N20	W40	06 9.2			DAO		3	8	3
8578		SVTO	06 12	1215	N20	W43	06 9.2		B	DSO	180	10	10	3
8578		RAMY	06 12	1239	N20	W44	06 9.2		B	DSO	110	7	9	3
8578	29135	MWIL	06 12	1400	N20	W45	06 9.1	5	(BG)					
8578		HOLL	06 12	1610	N19	W46	06 9.2		B	CSO	40	10	8	3
8578		VORO	06 12	2144	N19	W45	06 9.5			DKI	302	13	13	3
8578		LEAR	06 13	0109	N21	W50	06 9.2		B	CAO	170	7	10	3
8578		SVTO	06 13	0732	N19	W53	06 9.3		B	DAO	120	9	9	3
8578		KAND	06 13	0815	N20	W54	06 9.2			CAO		7	11	3
8578	29135	MWIL	06 13	1430	N20	W57	06 9.2	5	(BF)					
8578		HOLL	06 13	2010	N19	W58	06 9.4		B	CAO	120	3	5	1
8578		VORO	06 13	2125	N20	W58	06 9.4			DKI	372	7	9	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8578		LEAR	06	14	0035	N22 W60	06	9.4		B	CAO	120	6	7	3
8578		SVTO	06	14	0450	N20 W64	06	9.3		B	CAO	220	6	7	3
8578		KAND	06	14	0635	N20 W63	06	9.4			CAO		3	7	3
8578		RAMY	06	14	1209	N21 W68	06	9.3		B	CAO	110	5	6	4
8578	29135	MWIL	06	14	1445	N20 W70	06	9.3	5	(BF)					
8578		HOLL	06	14	1510	N19 W68	06	9.4		B	CAO	50	3	6	3
8578		VORO	06	14	2300	N20 W74	06	9.3			DAO	280	2	6	2
8578		LEAR	06	15	0055	N22 W74	06	9.3		B	CAO	150	2	7	4
8578		SVTO	06	15	0520	N21 W77	06	9.3		A	HA	60	2	3	3
8578		KAND	06	15	0800	N20 W78	06	9.4			HA		2	3	4
8578		RAMY	06	15	1217	N20 W78	06	9.5		A	HA	70	1	2	4
8578		HOLL	06	15	1427	N19 W78	06	9.6		A	HA	60	1	2	4
8578	29135	MWIL	06	15	1445	N21 W80	06	9.5	4	(AF)					
8578		LEAR	06	16	0125	N22 W88	06	9.3		A	HA	40	1	2	3
8575		RAMY	06	05	1239	N14 E53	06	9.5		A	AX		1		4
8575	29132	MWIL	06	05	1445	N13 E50	06	9.4	3	(AP)					
8575		LEAR	06	06	0047	N12 E44	06	9.3		A	AX		2	1	4
8575		SVTO	06	06	0542	N13 E43	06	9.5		A	AX	10	2	1	3
8575		KAND	06	06	0945	N13 E38	06	9.3			AX		3	2	3
8575	29132	MWIL	06	06	1445	N13 E37	06	9.4	4	(AP)					
8575		RAMY	06	06	1451	N14 E37	06	9.4		A	AX		3	2	3
8575		HOLL	06	06	1510	N14 E37	06	9.4		A	AX	10	3	2	3
8575		LEAR	06	07	0045	N13 E34	06	9.6		B	BXO	10	3	6	3
8575		SVTO	06	07	0455	N14 E33	06	9.7		B	CRO	20	2	5	3
8575		KAND	06	07	0835	N14 E30	06	9.6			CAO		2	6	1
8575		RAMY	06	07	1249	N14 E29	06	9.7		B	BXO	10	3	5	3
8575	29132	MWIL	06	07	1445	N13 E27	06	9.6	5	(B)					
8575		HOLL	06	07	1504	N14 E27	06	9.7		B	CSO	30	3	6	3
8575		VORO	06	07	2220	N14 E24	06	9.7			BXI	28	3	6	2
8575		LEAR	06	08	0103	N13 E22	06	9.7		B	BXO	10	5	7	5
8575		KAND	06	08	0820	N14 E16	06	9.5			DAO		3	7	3
8575		RAMY	06	08	1337	N14 E14	06	9.6		B	BXO	10	5	6	3
8575	29132	MWIL	06	08	1445	N14 E14	06	9.7	4	(B)					
8575		HOLL	06	08	1524	N14 E13	06	9.6		B	BXO	10	2	7	3
8575		VORO	06	08	2124	N14 E10	06	9.6			BXO	10	2	6	3
8575		SVTO	06	09	0500	N13 E03	06	9.4		B	DRO	10	2	2	3
8575		KAND	06	09	0645	N13 E03	06	9.5			AX		1		3
8575		LEAR	06	10	0348	N14 W07	06	9.6		B	BXO	10	3	4	3
8575		SVTO	06	10	0735	N14 W09	06	9.6		B	BXO	10	4	4	2
8575		KAND	06	10	0920	N14 W11	06	9.5			AX		2	1	4
8575		RAMY	06	10	1235	N14 W13	06	9.5		A	AX		2	2	3
8575	29132	MWIL	06	10	1430	N15 W15	06	9.5	4	(AP)					
8575		HOLL	06	10	1447	N14 W14	06	9.5		B	CSO	20	2	2	3
8575		SVTO	06	11	0500	N13 W21	06	9.6		B	CSO	10	3	4	4
8575		KAND	06	11	0910	N12 W22	06	9.7			AX		3	2	3
8575		RAMY	06	11	1350	N14 W26	06	9.6		B	CRO	10	4	4	3
8575	29132	MWIL	06	11	1400	N14 W26	06	9.6	5	(B)					
8575		HOLL	06	11	1520	N13 W27	06	9.6		B	BXO	20	8	4	3
8575		VORO	06	11	2139	N14 W30	06	9.6			CAI	47	6	3	3
8575		KAND	06	12	0630	N14 W35	06	9.6			CAI		4	5	3
8575		SVTO	06	12	1215	N14 W38	06	9.6		B	CSO	50	5	3	3
8575		RAMY	06	12	1239	N14 W39	06	9.6		B	BXO	20	6	4	3
8575	29132	MWIL	06	12	1400	N14 W39	06	9.6	4	(B)					
8575		HOLL	06	12	1610	N13 W41	06	9.6		B	BXO	20	7	4	3
8575		VORO	06	12	2144	N14 W43	06	9.6			BXO	25	2	3	3
8575		LEAR	06	13	0109	N15 W46	06	9.6		B	CRO	10	4	4	3
8575		SVTO	06	13	0732	N14 W48	06	9.7		B	CRO	10	2	3	3
8575		KAND	06	13	0815	N14 W50	06	9.6			BXO		2	4	3
8575	29132	MWIL	06	13	1430	N14 W53	06	9.6	5	(B)					
8575		HOLL	06	13	2010	N14 W54	06	9.7		B	BXO	20	2	1	1
8575		VORO	06	13	2125	N15 W56	06	9.6			HAX	23	1		3
8575		LEAR	06	14	0035	N16 W57	06	9.7		A	HS	20	1	1	3
8575		RAMY	06	14	1209	N14 W66	06	9.5		B	BXO		2	3	4
8575	29132	MWIL	06	14	1445	N14 W67	06	9.5	4	(B)					
8575		HOLL	06	14	1510	N14 W68	06	9.5		A	AX		1		3
8575		VORO	06	14	2300	N15 W74	06	9.3			HAX	69	1		2
8575		LEAR	06	15	0055	N16 W73	06	9.5		A	HS	40	1	2	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8579A		KAND	06 10 0920	N10 W03	06 10.2			BKO		2	2	4
8581		RAMY	06 15 1217	S35 W66	06 10.2		A	AX		1		4
8569		VORO	06 04 0345	N17 E83	06 10.5			HAX	163	1		2
8569		KAND	06 04 0655	N17 E87	06 10.9			AX		1		3
8569		RAMY	06 04 1254	N18 E78	06 10.5		B	CSO	40	2	5	3
8569		HOLL	06 04 1505	N17 E77	06 10.5		B	CAO	80	2	4	3
8569	29127	MWIL	06 04 1600	N17 E78	06 10.6	5	(BP)					
8569		LEAR	06 05 0050	N17 E69	06 10.3		B	CAO	70	4	6	4
8569		SVTO	06 05 0505	N18 E69	06 10.5		B	CAO	100	4	7	3
8569		RAMY	06 05 1239	N19 E67	06 10.6		B	DAO	120	6	7	4
8569	29127	MWIL	06 05 1445	N17 E65	06 10.5	5	(BP)					
8569		KAND	06 05 1450	N18 E65	06 10.6			CAO		31	8	2
8569		LEAR	06 06 0047	N16 E57	06 10.3		B	DSO	90	10	9	4
8569		SVTO	06 06 0542	N18 E58	06 10.6		B	CAO	110	7	9	3
8569		VORO	06 06 0640	N18 E53	06 10.3			HAX	75	1		1
8569		KAND	06 06 0945	N17 E55	06 10.6			CSO		6	9	3
8569	29127	MWIL	06 06 1445	N18 E51	06 10.5	5	(BP)					
8569		RAMY	06 06 1451	N18 E52	06 10.6		B	CSO	80	8	9	3
8569		HOLL	06 06 1510	N18 E51	06 10.5		B	CAO	100	7	9	3
8569		VORO	06 06 2215	N17 E48	06 10.6			CAI	185	5	7	2
8569		LEAR	06 07 0045	N18 E47	06 10.6		B	CAO	130	8	8	3
8569		SVTO	06 07 0455	N19 E46	06 10.7		B	CAO	180	12	10	3
8569		KAND	06 07 0835	N19 E39	06 10.3			HS		2	3	1
8569		RAMY	06 07 1249	N18 E40	06 10.6		B	CAO	80	9	9	3
8569	29127	MWIL	06 07 1445	N18 E36	06 10.3	5	(BP)					
8569		HOLL	06 07 1504	N18 E37	06 10.4		B	CSO	90	6	9	3
8569		VORO	06 07 2220	N19 E30	06 10.2			HAX	129	3		2
8569		LEAR	06 08 0103	N17 E32	06 10.5		B	CSO	70	6	8	5
8569		KAND	06 08 0820	N19 E26	06 10.3			CAO		5	10	3
8569		RAMY	06 08 1337	N19 E25	06 10.5		B	EAO	80	8	12	3
8569	29127	MWIL	06 08 1445	N19 E23	06 10.4	5	(BP)					
8569		HOLL	06 08 1524	N18 E22	06 10.3		B	ESO	110	4	12	3
8569		VORO	06 08 2124	N19 E21	06 10.5			DAI	126	8	11	3
8569		SVTO	06 09 0500	N19 E16	06 10.4		B	DSO	100	16	5	3
8569		KAND	06 09 0645	N19 E16	06 10.5			EAO		10	13	3
8569		RAMY	06 09 1238	N19 E12	06 10.4		B	EAO	160	14	13	2
8569		HOLL	06 09 1433	N19 E11	06 10.4		B	EAC	150	10	12	2
8569	29127	MWIL	06 09 1500	N19 E11	06 10.5	5	(B)					
8569		LEAR	06 10 0348	N19 E04	06 10.5		B	EKI	200	25	15	3
8569		SVTO	06 10 0735	N20 E02	06 10.5		B	EAO	250	23	14	2
8569		KAND	06 10 0920	N19 E01	06 10.5			FKO		16	16	4
8569		RAMY	06 10 1235	N19 W01	06 10.4		B	EAI	210	31	14	3
8569	29127	MWIL	06 10 1430	N20 W01	06 10.5	5	(BG)					
8569		HOLL	06 10 1447	N19 W02	06 10.5		B	EAI	220	35	14	3
8569		VORO	06 10 2339	N21 W02	06 10.8			DAI	278	13	14	2
8569		SVTO	06 11 0500	N19 W09	06 10.5		BG	FAI	280	48	18	4
8569		KAND	06 11 0910	N19 W13	06 10.4			EAI		40	15	3
8569		RAMY	06 11 1350	N20 W15	06 10.4		B	EAC	260	31	15	3
8569	29127	MWIL	06 11 1400	N20 W15	06 10.4	5	(BG)					
8569		HOLL	06 11 1520	N18 W16	06 10.4		B	FSC	220	30	16	3
8569		VORO	06 11 2139	N21 W14	06 10.8			DKI	523	40	15	3
8569		LEAR	06 12 0110	N20 W20	06 10.5		BG	FAC	320	41	16	4
8569		KAND	06 12 0630	N19 W25	06 10.4			FKO		15	16	3
8569		SVTO	06 12 1215	N21 W24	06 10.7		BG	FKI	570	50	22	3
8569		RAMY	06 12 1239	N20 W27	06 10.5		BG	FSI	310	35	16	3
8569	29127	MWIL	06 12 1400	N19 W30	06 10.3	5	(D)					
8569		HOLL	06 12 1610	N18 W30	06 10.4		B	FSO	190	35	16	3
8569		VORO	06 12 2144	N20 W31	06 10.5			DKI	604	26	11	3
8569		LEAR	06 13 0109	N19 W33	06 10.5		BG	FKC	450	29	17	3
8569		SVTO	06 13 0732	N19 W36	06 10.6		BG	EKI	300	34	15	3
8569		KAND	06 13 0815	N19 W39	06 10.4			FKI		27	17	3
8569	29127	MWIL	06 13 1430	N18 W43	06 10.3	5	(BG)					
8569		HOLL	06 13 2010	N18 W45	06 10.4		B	EAI	280	16	15	1
8569		VORO	06 13 2125	N20 W45	06 10.4			DKI	724	22	12	3
8569		LEAR	06 14 0035	N20 W45	06 10.6		BG	FKC	500	19	17	3
8569		SVTO	06 14 0450	N19 W48	06 10.5		BG	FKI	500	29	16	3
8569		KAND	06 14 0635	N19 W51	06 10.4			FKC		14	16	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8569	29127	RAMY	06 14	1209	N18	W54	06 10.4		BG	EAC	290	24	15	4
8569		MWIL	06 14	1445	N18	W56	06 10.3	5	(BG)					
8569		HOLL	06 14	1510	N18	W55	06 10.4		B	EAI	230	13	15	3
8569		VORO	06 14	2300	N20	W59	06 10.4			DAI	429	4	12	2
8569		LEAR	06 15	0055	N20	W60	06 10.4		BG	EKC	320	15	15	4
8569		SVTO	06 15	0520	N19	W61	06 10.6		B	FAO	260	13	16	3
8569		KAND	06 15	0800	N19	W65	06 10.4			ESC		7	14	4
8569		RAMY	06 15	1217	N19	W66	06 10.5		B	ESI	150	11	15	4
8569	29127	HOLL	06 15	1427	N17	W66	06 10.6		B	EA0	180	9	12	4
8569		MWIL	06 15	1445	N18	W68	06 10.4	5	(B)					
8569		VORO	06 15	2137	N20	W72	06 10.4			DAI	299	4	13	2
8569		LEAR	06 16	0125	N20	W73	06 10.5		B	EAI	200	7	14	3
8569		SVTO	06 16	0510	N18	W80	06 10.1		B	CAO	70	3	9	3
8569		KAND	06 16	0655	N18	W78	06 10.3			DAO		3	10	3
8569		RAMY	06 16	1228	N16	W78	06 10.6		B	BX0	30	4	7	4
8569		MWIL	06 16	1430	N18	W80	06 10.5	2	AF					
8569		HOLL	06 16	1444	N18	W78	06 10.7		A	HS	30	1	1	4
8571	29133	LEAR	06 05	0050	S21	E71	06 10.5		B	BX0	10	4	2	4
8571		SVTO	06 05	0505	S19	E70	06 10.5		A	HR	20	3	2	3
8571		RAMY	06 05	1239	S18	E68	06 10.7		B	CSO	50	3	6	4
8571		MWIL	06 05	1445	S18	E65	06 10.6	5	(BP)					
8571		KAND	06 05	1450	S19	E68	06 10.8			CAO		4	5	2
8571		LEAR	06 06	0047	S20	E58	06 10.5		B	CAO	90	7	9	4
8571		SVTO	06 06	0542	S19	E59	06 10.7		B	CAO	200	12	7	3
8571		VORO	06 06	0640	S20	E55	06 10.5			HAX	128	1		1
8571	29133	KAND	06 06	0945	S20	E55	06 10.6			CAO		5	6	3
8571		MWIL	06 06	1445	S19	E52	06 10.6	5	(BP)					
8571		RAMY	06 06	1451	S19	E53	06 10.7		B	DAO	160	13	6	3
8571		HOLL	06 06	1510	S18	E53	06 10.7		B	CAO	180	14	6	3
8571		VORO	06 06	2215	S20	E47	06 10.5			HKX	306	7		2
8571		LEAR	06 07	0045	S20	E48	06 10.7		B	DAO	210	7	7	3
8571		SVTO	06 07	0455	S19	E45	06 10.6		B	CSO	260	7	6	3
8571		KAND	06 07	0835	S19	E42	06 10.6			DAO		6	6	1
8571	29133	RAMY	06 07	1249	S18	E42	06 10.7		B	DSO	250	13	6	3
8571		MWIL	06 07	1445	S19	E39	06 10.6	5	(B)					
8571		HOLL	06 07	1504	S18	E41	06 10.7		B	CAO	180	14	6	3
8571		VORO	06 07	2220	S19	E36	06 10.7			DAI	260	8	4	2
8571		LEAR	06 08	0103	S20	E35	06 10.7		B	DHO	260	16	7	5
8571		KAND	06 08	0820	S19	E30	06 10.6			DAO		6	6	3
8571		RAMY	06 08	1337	S19	E28	06 10.7		B	DAO	170	19	6	3
8571		MWIL	06 08	1445	S19	E27	06 10.7	4	(B)					
8571	29133	HOLL	06 08	1524	S18	E27	06 10.7		B	DAO	180	9	6	3
8571		VORO	06 08	2124	S19	E23	06 10.6			CAI	227	7	4	3
8571		SVTO	06 09	0500	S20	E19	06 10.7		B	DSO	170	13	5	3
8571		KAND	06 09	0645	S19	E18	06 10.6			CAO		9	5	3
8571		RAMY	06 09	1238	S19	E14	06 10.6		B	DSI	100	14	6	2
8571		HOLL	06 09	1433	S19	E15	06 10.7		B	CAO	90	11	6	2
8571		MWIL	06 09	1500	S19	E14	06 10.7	5	(BP)					
8571		LEAR	06 10	0348	S20	E06	06 10.6		B	CSO	50	9	5	3
8571	29133	SVTO	06 10	0735	S20	E05	06 10.7		B	CSO	70	5	5	2
8571		KAND	06 10	0920	S19	E02	06 10.5			HA		3	2	4
8571		RAMY	06 10	1235	S20	E00	06 10.5		A	HS	40	3	2	3
8571		MWIL	06 10	1430	S19	W01	06 10.5	4	(BP)					
8571		HOLL	06 10	1447	S20	E01	06 10.7		B	CAO	60	9	3	3
8571		VORO	06 10	2339	S20	W06	06 10.5			HAX	71	1		2
8571		SVTO	06 11	0500	S18	W07	06 10.7		B	CAO	50	12	7	4
8571		KAND	06 11	0911	S19	W11	06 10.5			CSO		3	4	3
8571	29133	RAMY	06 11	1350	S19	W14	06 10.5		A	HS	40	3	1	3
8571		MWIL	06 11	1400	S19	W14	06 10.5	5	(BP)					
8571		HOLL	06 11	1520	S19	W12	06 10.7		B	CSO	40	2	5	3
8571		VORO	06 11	2139	S19	W16	06 10.7			CAI	96	4	3	3
8571		LEAR	06 12	0110	S19	W18	06 10.7		B	CSO	40	5	4	4
8571		KAND	06 12	0630	S19	W21	06 10.7			CSO		3	4	3
8571		SVTO	06 12	1215	S20	W27	06 10.4		B	CSO	40	3	2	3
8571		RAMY	06 12	1239	S19	W25	06 10.6		B	CSO	20	2	3	3
8571	29133	MWIL	06 12	1400	S19	W26	06 10.6	4	(BG)					
8571		HOLL	06 12	1610	S20	W27	06 10.6		B	CSO	20	5	3	3
8571		VORO	06 12	2144	S20	W31	06 10.5			HAX	56	5		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
8571	29133	LEAR	06 13 0109	S18 W32	06 10.6		B	CSO	20	4	3	3
8571		SVTO	06 13 0732	S20 W36	06 10.6		B	CSO	20	3	3	3
8571		KAND	06 13 0815	S19 W36	06 10.6			AX		3	2	3
8571		MWIL	06 13 1430	S20 W39	06 10.6	4	(AP)					
8571		HOLL	06 13 2010	S20 W42	06 10.6		A	HS	10	1	1	1
8571		VORO	06 13 2125	S20 W44	06 10.5			HAX	41	3		3
8571		LEAR	06 14 0035	S18 W45	06 10.6		A	HS	10	1	1	3
8571		SVTO	06 14 0450	S20 W48	06 10.5		A	HR	30	2	1	3
8571		KAND	06 14 0635	S19 W49	06 10.5			AX		1		3
8571		RAMY	06 14 1209	S21 W52	06 10.5		A	AX		1		4
8571	29133	MWIL	06 14 1445	S20 W52	06 10.6	4	(AP)					
8571		HOLL	06 14 1510	S21 W52	06 10.6		A	AX		1		3
8571		VORO	06 14 2300	S20 W58	06 10.5			AXX	19	1		2
8571		LEAR	06 15 0055	S18 W58	06 10.6		A	HS	30	1	1	4
8571		SVTO	06 15 0520	S20 W61	06 10.5		A	AX	10	1	1	3
8571		KAND	06 15 0800	S20 W63	06 10.5			AX		1	1	4
8571		RAMY	06 15 1217	S21 W66	06 10.4		A	AX		1		4
8571		HOLL	06 15 1427	S21 W65	06 10.6		A	AX	10	1	1	4
8571		MWIL	06 15 1445	S20 W66	06 10.6	3	(AP)					
8571		LEAR	06 16 0125	S18 W72	06 10.6		A	AX		1		3
8576	29136	LEAR	06 06 0047	S30 E63	06 11.0		B	CRO	50	7	6	4
8576		SVTO	06 06 0542	S29 E64	06 11.2		B	BXO	10	3	5	3
8576		VORO	06 06 0640	S29 E62	06 11.1			BXI	43	6	5	1
8576		KAND	06 06 0945	S30 E59	06 11.0			BXI		6	5	3
8576		MWIL	06 06 1445	S29 E56	06 11.0	4	(B)					
8576		RAMY	06 06 1451	S29 E56	06 11.0		B	CRO	10	3	5	3
8576		HOLL	06 06 1510	S28 E57	06 11.1		B	BXO	20	4	6	3
8576		LEAR	06 07 0045	S30 E50	06 11.0		B	CAO	40	4	7	3
8576		SVTO	06 07 0455	S29 E50	06 11.1		B	CRO	20	7	5	3
8576		KAND	06 07 0835	S30 E47	06 11.0			BXO		5	7	1
8576	29136	RAMY	06 07 1249	S28 E45	06 11.0		B	BXO	10	9	6	3
8576		MWIL	06 07 1445	S29 E44	06 11.1	4	(B)					
8576		HOLL	06 07 1504	S28 E45	06 11.1		B	BXO	20	7	7	3
8576		VORO	06 07 2220	S30 E39	06 11.0			BXI	14	5	5	2
8576		LEAR	06 08 0103	S30 E38	06 11.0		B	BXO	10	8	8	5
8576		RAMY	06 08 1337	S29 E31	06 11.0		B	BXO	10	8	10	3
8576		MWIL	06 08 1445	S29 E30	06 11.0	4	(B)					
8576		HOLL	06 08 1524	S28 E29	06 10.9		B	BXO	10	6	7	3
8576		SVTO	06 09 0500	S29 E22	06 10.9		B	BXO	10	3	7	3
8576		KAND	06 09 0645	S29 E17	06 10.6			AX		1		3
8576	29136	RAMY	06 09 1238	S29 E14	06 10.6		A	AX		1		2
8576		MWIL	06 09 1500	S28 E14	06 10.7	3	(AP)					
8576		LEAR	06 10 0348	S28 E04	06 10.5		B	BXO	10	4	2	3
8576		SVTO	06 10 0735	S28 E03	06 10.5		A	HR	10	1		2
8576		KAND	06 10 0920	S28 E01	06 10.5			AX		2	1	4
8576		RAMY	06 10 1235	S29 W01	06 10.4		A	AX		1		3
8576		MWIL	06 10 1430	S27 W03	06 10.4	4	(AP)					
8576		HOLL	06 10 1447	S28 W02	06 10.4		A	HS	10	1	1	3
8576		SVTO	06 11 0500	S29 W09	06 10.5		B	BXO	10	4	4	4
8576		KAND	06 11 0910	S28 W11	06 10.5			AX		3	2	3
8576	29136	RAMY	06 11 1350	S28 W13	06 10.6		B	BXO		2	3	3
8576		MWIL	06 11 1400	S28 W14	06 10.5	4	(AP)					
8576		HOLL	06 11 1520	S29 W13	06 10.6		A	HS	10	2	2	3
8576		VORO	06 11 2139	S29 W16	06 10.6			BXI	24	4	5	3
8576		LEAR	06 12 0110	S28 W17	06 10.7		B	DRO	40	11	6	4
8576		KAND	06 12 0630	S29 W19	06 10.8			CAO		5	7	3
8576		SVTO	06 12 1215	S28 W24	06 10.6		B	DRO	80	14	9	3
8576		RAMY	06 12 1239	S29 W22	06 10.8		B	DSO	50	15	8	3
8576		MWIL	06 12 1400	S28 W23	06 10.8	4	(B)					
8576		HOLL	06 12 1610	S29 W24	06 10.8		B	CRO	60	19	8	3
8576	29136	VORO	06 12 2144	S29 W28	06 10.7			CAI	177	13	8	3
8576		LEAR	06 13 0109	S27 W28	06 10.9		B	DAI	60	19	8	3
8576		SVTO	06 13 0732	S29 W32	06 10.8		B	DAI	80	15	10	3
8576		KAND	06 13 0815	S29 W31	06 10.9			BXI		17	7	3
8576		MWIL	06 13 1430	S29 W36	06 10.8	4	(B)					
8576		HOLL	06 13 2010	S29 W36	06 11.0		B	DAO	110	13	7	1
8576		VORO	06 13 2125	S29 W40	06 10.7			DAI	188	13	5	3
8576		LEAR	06 14 0035	S27 W38	06 11.1		B	DAO	120	14	8	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
8576		SVTO	06 14 0450	S28 W44	06 10.8		B	DAI	210	18	9	3
8576		KAND	06 14 0635	S27 W44	06 10.8			CRI		14	8	3
8576		RAMY	06 14 1209	S28 W47	06 10.8		B	DAO	80	19	8	4
8576	29136	MWIL	06 14 1445	S29 W49	06 10.8	5	(B)					
8576		HOLL	06 14 1510	S29 W46	06 11.0		B	DAO	80	7	8	3
8576		VORO	06 14 2300	S28 W53	06 10.8			DAI	131	3	4	2
8576		LEAR	06 15 0055	S27 W54	06 10.8		B	DAO	150	8	9	4
8576		SVTO	06 15 0520	S28 W56	06 10.8		B	DSO	70	3	7	3
8576		KAND	06 15 0800	S29 W60	06 10.6			DAO		3	7	4
8576		RAMY	06 15 1217	S29 W61	06 10.7		B	DSO	70	5	9	4
8576		HOLL	06 15 1427	S32 W60	06 10.8		B	DSO	90	5	7	4
8576	29136	MWIL	06 15 1445	S28 W61	06 10.8	4	(B)					
8576	29146	MWIL	06 15 1445	S34 W65	06 10.4	3	(AP)					
8576		VORO	06 15 2137	S28 W65	06 10.8			DAI	86	3	5	2
8576		LEAR	06 16 0125	S27 W68	06 10.8		B	EAO	110	5	12	3
8576		SVTO	06 16 0510	S28 W71	06 10.7		B	DAO	130	4	9	3
8576		KAND	06 16 0655	S29 W70	06 10.8			DAO		2	9	3
8576		RAMY	06 16 1228	S31 W72	06 10.8		B	DSO	60	2	9	4
8576	29136	MWIL	06 16 1430	S28 W74	06 10.8	4	(B)					
8576		HOLL	06 16 1444	S29 W71	06 11.0		B	DSO	60	2	10	4
8576		VORO	06 16 2122	S28 W78	06 10.8			DAO	75	2	8	2
8576		LEAR	06 17 0105	S27 W79	06 10.9		B	CSO	60	3	3	4
8579		VORO	06 08 2124	N12 E26	06 10.8			AXX	10	1		3
8579		SVTO	06 09 0500	N11 E20	06 10.7		B	BXO	10	4	4	3
8579		KAND	06 09 0645	N12 E19	06 10.7			BXO		3	5	3
8579		RAMY	06 09 1238	N12 E15	06 10.6		B	BXO		3	4	2
8579		HOLL	06 09 1433	N12 E15	06 10.7		B	BXO	20	3	4	2
8579	29139	MWIL	06 09 1500	N12 E15	06 10.7	4	(B)					
8579		LEAR	06 10 0348	N12 E06	06 10.6		A	AX		1	1	3
8579		SVTO	06 10 0735	N11 E04	06 10.6		A	AX		1		2
8579		RAMY	06 10 1235	N12 E00	06 10.5		A	AX		1		3
8579	29139	MWIL	06 10 1430	N12 W01	06 10.5	4	(AF)					
8579		HOLL	06 10 1447	N11 W01	06 10.5		A	AX		1		3
8579		SVTO	06 11 0500	N10 W09	06 10.5		A	AX		1		4
8579	29139	MWIL	06 11 1400	N12 W11	06 10.7	3	(B)					
8570		VORO	06 04 0345	S14 E85	06 10.6			HAX	86	1		2
8570		KAND	06 04 0655	S14 E87	06 10.9			HS		1	2	3
8570		SVTO	06 04 0900	S12 E82	06 10.5		A	AX	10	1	1	3
8570		RAMY	06 04 1254	S14 E78	06 10.4		A	HS	30	1	1	3
8570		HOLL	06 04 1505	S14 E78	06 10.5		A	HS	60	1	1	3
8570	29128	MWIL	06 04 1600	S14 E78	06 10.6	4	(AP)					
8570		LEAR	06 05 0050	S15 E71	06 10.4		A	HS	60	1	1	4
8570		SVTO	06 05 0505	S15 E70	06 10.5		A	HA	50	1	1	3
8570		RAMY	06 05 1239	S13 E67	06 10.6		A	HS	40	1	2	4
8570	29128	MWIL	06 05 1445	S14 E65	06 10.5	5	(AP)					
8570		KAND	06 05 1450	S14 E67	06 10.7			HS		1	3	2
8570		LEAR	06 06 0047	S15 E59	06 10.5		A	HS	60	1	1	4
8570		SVTO	06 06 0542	S14 E58	06 10.6		A	HS	40	1	2	3
8570		VORO	06 06 0640	S14 E58	06 10.7			HAX	108	1		1
8570		KAND	06 06 0945	S14 E55	06 10.6			HS		1	2	3
8570	29128	MWIL	06 06 1445	S14 E52	06 10.5	5	(AP)					
8570		RAMY	06 06 1451	S13 E53	06 10.6		A	HS	60	2	2	3
8570		HOLL	06 06 1510	S13 E52	06 10.5		A	HS	40	1	2	3
8570		LEAR	06 07 0045	S15 E46	06 10.5		B	CAO	60	2	3	3
8570		SVTO	06 07 0455	S14 E44	06 10.5		A	HA	10	1	2	3
8570		KAND	06 07 0835	S13 E42	06 10.5			HA		1	2	1
8570		RAMY	06 07 1249	S13 E41	06 10.6		A	HS	50	1	2	3
8570	29128	MWIL	06 07 1445	S14 E39	06 10.6	5	(AP)					
8570		HOLL	06 07 1504	S13 E38	06 10.5		A	HS	40	1	2	3
8570		VORO	06 07 2220	S14 E37	06 10.7			HAX	103	1		2
8570		LEAR	06 08 0103	S14 E33	06 10.5		A	HS	50	1	2	5
8570		KAND	06 08 0820	S13 E29	06 10.5			HA		1	2	3
8570		RAMY	06 08 1337	S13 E27	06 10.6		A	HS	60	1	2	3
8570	29128	MWIL	06 08 1445	S13 E26	06 10.6	5	(AP)					
8570		HOLL	06 08 1524	S13 E25	06 10.5		A	HS	30	1	2	3
8570		VORO	06 08 2124	S13 E22	06 10.5			HAX	94	1		3
8570		SVTO	06 09 0500	S13 E18	06 10.6		A	HS	80	2	2	3

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(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8570		KAND	06 09 0645	S13 E17	06 10.6			HA		1	2	3
8570		RAMY	06 09 1238	S13 E13	06 10.5		A	HS	60	2	2	2
8570		HOLL	06 09 1433	S13 E14	06 10.7		A	HS	40	1	2	2
8570	29128	MWIL	06 09 1500	S13 E13	06 10.6	5	(AP)					
8570		LEAR	06 10 0348	S13 E06	06 10.6		A	HS	50	2	2	3
8570		SVTO	06 10 0735	S14 E04	06 10.6		A	HS	60	2	2	2
8570		KAND	06 10 0920	S13 E03	06 10.6			HA		1	2	4
8570		RAMY	06 10 1235	S13 E01	06 10.6		A	HS	40	2	1	3
8570	29128	MWIL	06 10 1430	S13 E00	06 10.6	6	(AP)					
8570		HOLL	06 10 1447	S13 E01	06 10.7		A	HS	40	2	1	3
8570		VORO	06 10 2339	S13 W05	06 10.6			HAX	84	1		2
8570		SVTO	06 11 0500	S14 W08	06 10.6		A	HS	20	2	1	4
8570		KAND	06 11 0910	S13 W10	06 10.6			HA		2	1	3
8570		RAMY	06 11 1350	S13 W13	06 10.6		A	HS	40	2	1	3
8570	29128	MWIL	06 11 1400	S13 W13	06 10.6	4	(AP)					
8570		HOLL	06 11 1520	S13 W13	06 10.6		A	HS	40	1	1	3
8570		VORO	06 11 2139	S14 W17	06 10.6			HAX	70	2		3
8570		LEAR	06 12 0110	S13 W20	06 10.5		A	HS	30	2	1	4
8570		KAND	06 12 0630	S13 W22	06 10.6			HR		2	1	3
8570		SVTO	06 12 1215	S14 W27	06 10.5		A	HR	30	2	1	3
8570	29128	MWIL	06 12 1400	S13 W27	06 10.5	5	(AP)					
8570		HOLL	06 12 1610	S13 W28	06 10.6		A	HS	20	1	1	3
8570		VORO	06 12 2144	S14 W31	06 10.6			HAX	52	1		3
8570		LEAR	06 13 0109	S14 W33	06 10.5		B	CSO	20	2	1	3
8570		SVTO	06 13 0732	S14 W37	06 10.5		A	HA	20	2	1	3
8570		KAND	06 13 0815	S14 W37	06 10.5			HA		1	1	3
8570	29128	MWIL	06 13 1430	S14 W40	06 10.6	5	(AP)					
8570		HOLL	06 13 2010	S14 W43	06 10.6		A	HS	30	1	2	1
8570		VORO	06 13 2125	S14 W45	06 10.5			HAX	81	4		3
8570		LEAR	06 14 0035	S13 W46	06 10.5		A	HA	30	1	1	3
8570		SVTO	06 14 0450	S14 W48	06 10.6		A	HS	30	2	1	3
8570		KAND	06 14 0635	S13 W49	06 10.6			HS		1	2	3
8570		RAMY	06 14 1209	S14 W53	06 10.5		A	HS	30	1	1	4
8570	29128	MWIL	06 14 1445	S14 W54	06 10.5	5	(AP)					
8570		HOLL	06 14 1510	S14 W53	06 10.6		A	HS	20	1	1	3
8570		VORO	06 14 2300	S14 W59	06 10.5			HAX	47	1		2
8570		LEAR	06 15 0055	S13 W59	06 10.6		A	HS	30	1	1	4
8570		SVTO	06 15 0520	S14 W62	06 10.5		A	HS	40	1	2	3
8570		KAND	06 15 0800	S14 W63	06 10.6			AX		1	1	4
8570		RAMY	06 15 1217	S14 W67	06 10.4		A	HR	10	1		4
8570		HOLL	06 15 1427	S15 W66	06 10.6		A	HS	20	1	1	4
8570	29128	MWIL	06 15 1445	S14 W67	06 10.5	4	(AP)					
8570		VORO	06 15 2137	S13 W72	06 10.5			AXX	18	1		2
8570		LEAR	06 16 0125	S13 W72	06 10.6		A	HS	20	1	1	3
8570		SVTO	06 16 0510	S13 W78	06 10.3		A	AX		1		3
8570		KAND	06 16 0655	S13 W74	06 10.7			HR		1	1	3
8570		RAMY	06 16 1228	S16 W79	06 10.5		A	AX	10	1	1	4
8570	29128	MWIL	06 16 1430	S14 W80	06 10.5	2	AP					
8570		HOLL	06 16 1444	S14 W79	06 10.6		A	AX		1		4
8576A		RAMY	06 09 1238	S37 E17	06 10.9		A	AX		1		2
8576A		HOLL	06 09 1433	S37 E18	06 11.0		A	AX	20	1	1	2
8576A	29140	MWIL	06 09 1500	S37 E16	06 10.9	4	(AP)					
8576A		LEAR	06 10 0348	S38 E08	06 10.8		A	AX		1	1	3
8576A		SVTO	06 10 0735	S38 E07	06 10.9		A	AX		1		2
8576A		RAMY	06 10 1235	S38 E05	06 10.9		A	AX		1		3
8576A	29140	MWIL	06 10 1430	S37 E03	06 10.8	4	(AP)					
8569A	29141	MWIL	06 10 1430	N24 E08	06 11.2	4	(AF)					
8569A		HOLL	06 10 1447	N24 E07	06 11.1		B	BXO	10	4	3	3
8569A		KAND	06 11 0910	N24 W01	06 11.3			AX		3	2	3
8569A		RAMY	06 11 1350	N25 W07	06 11.0		B	CRO	20	4	6	3
8569A	29141	MWIL	06 11 1400	N25 W04	06 11.3	4	(AF)					
8569A		HOLL	06 11 1520	N24 W05	06 11.2		B	BXO	10	4	3	3
8569A		LEAR	06 12 0110	N25 W10	06 11.3		B	CRO	20	5	3	4
8569A		KAND	06 12 0630	N24 W12	06 11.3			AX		1		3
8569A		RAMY	06 12 1239	N25 W16	06 11.3		A	AX		2	1	3
8569A	29141	MWIL	06 12 1400	N25 W15	06 11.4	4	(AF)					
8569A	29141	MWIL	06 13 1430	N25 W30	06 11.3	3	(AF)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8570A		SVTO	06	11	0500	S15 E02	06 11.3		B	BXO		2	2	4
8582		SVTO	06	11	0500	N27 E41	06 14.4		B	BXO	10	8	6	4
8582		KAND	06	11	0910	N26 E38	06 14.3			BXO		6	6	3
8582		RAMY	06	11	1350	N26 E36	06 14.4		B	BXO	10	6	6	3
8582	29142	MWIL	06	11	1400	N26 E36	06 14.4	4	(B)					
8582		HOLL	06	11	1520	N25 E35	06 14.3		B	BXO	10	7	6	3
8582		VORO	06	11	2139	N26 E33	06 14.5			CRI	60	10	5	3
8582		LEAR	06	12	0110	N25 E30	06 14.4		B	DRO	40	12	7	4
8582		KAND	06	12	0630	N27 E28	06 14.4			BXO		5	7	3
8582		SVTO	06	12	1215	N27 E24	06 14.4		B	BXO	50	12	8	3
8582		RAMY	06	12	1239	N26 E24	06 14.4		B	BXO	10	8	7	3
8582	29142	MWIL	06	12	1400	N26 E24	06 14.4	4	(BG)					
8582		HOLL	06	12	1610	N26 E22	06 14.4		B	BXO	20	9	7	3
8582		VORO	06	12	2144	N26 E19	06 14.4			BXO	44	8	7	3
8582		LEAR	06	13	0109	N27 E18	06 14.4		B	BXO	20	10	7	3
8582		SVTO	06	13	0732	N26 E14	06 14.4		B	DAI	50	13	7	3
8582		KAND	06	13	0815	N27 E14	06 14.4			DAI		12	6	3
8582	29142	MWIL	06	13	1430	N27 E10	06 14.4	4	(B)					
8582		HOLL	06	13	2010	N26 E07	06 14.4		BG	DAC	190	15	7	1
8582		VORO	06	13	2125	N27 E07	06 14.4			DAI	293	16	7	3
8582		LEAR	06	14	0035	N26 E05	06 14.4		B	DAI	180	19	8	3
8582		SVTO	06	14	0450	N27 E03	06 14.4		B	DKI	350	36	9	3
8582		KAND	06	14	0635	N26 E01	06 14.3			DAC		31	8	3
8582		RAMY	06	14	1209	N26 W02	06 14.3		B	DAC	270	23	8	4
8582	29142	MWIL	06	14	1445	N27 W04	06 14.3	4	(B)					
8582		HOLL	06	14	1510	N27 W03	06 14.4		B	DAC	120	22	8	3
8582		VORO	06	14	2300	N27 W07	06 14.4			DAI	407	15	8	2
8582		LEAR	06	15	0055	N26 W08	06 14.4		B	DAC	230	31	8	4
8582		SVTO	06	15	0520	N28 W10	06 14.4		B	DSI	180	32	10	3
8582		KAND	06	15	0800	N26 W14	06 14.2			DAC		20	10	4
8582		RAMY	06	15	1217	N26 W15	06 14.3		B	EAC	230	26	11	4
8582		HOLL	06	15	1427	N26 W16	06 14.3		B	EAI	240	22	11	4
8582	29142	MWIL	06	15	1445	N27 W16	06 14.4	5	(D)					
8582		VORO	06	15	2137	N27 W20	06 14.3			DAI	382	15	9	2
8582		LEAR	06	16	0125	N26 W22	06 14.3		B	EAI	180	26	14	3
8582		SVTO	06	16	0510	N28 W23	06 14.4		BG	EAI	190	25	12	3
8582		KAND	06	16	0655	N26 W25	06 14.3			DAC		18	10	3
8582		RAMY	06	16	1228	N26 W27	06 14.4		B	DAI	140	23	9	4
8582	29142	MWIL	06	16	1430	N26 W28	06 14.4	5	(B)					
8582		HOLL	06	16	1444	N27 W27	06 14.5		B	EAI	100	21	11	4
8582		VORO	06	16	2122	N28 W33	06 14.3			DAI	315	14	9	2
8582		LEAR	06	17	0105	N27 W33	06 14.5		B	EAI	160	25	11	4
8582		SVTO	06	17	0626	N27 W38	06 14.3		B	ESO	110	11	11	3
8582		KAND	06	17	0650	N26 W36	06 14.5			EAO		13	11	3
8582	29142	MWIL	06	17	1430	N26 W42	06 14.3	5	(B)					
8582		HOLL	06	17	1919	N27 W43	06 14.4		B	DSO	90	26	10	2
8582		VORO	06	17	2200	N27 W45	06 14.4			DAI	156	6	8	2
8582		LEAR	06	18	0453	N28 W50	06 14.3		B	EAO	140	12	11	2
8582		SVTO	06	18	0500	N27 W49	06 14.4		B	CAO	80	14	14	3
8582		KAND	06	18	0725	N27 W53	06 14.2			DAO		7	8	3
8582		RAMY	06	18	1307	N25 W54	06 14.4		B	DAO	120	13	10	3
8582	29142	MWIL	06	18	1430	N27 W55	06 14.3	4	(B)					
8582		HOLL	06	18	1638	N27 W55	06 14.4		B	BXO	30	21	10	3
8582		SVTO	06	19	0428	N28 W61	06 14.4		B	DSO	70	9	10	3
8582		KAND	06	19	0940	N27 W63	06 14.5			DAO		7	8	3
8582		RAMY	06	19	1151	N26 W65	06 14.4		B	CRO	40	12	10	5
8582	29142	MWIL	06	19	1445	N27 W68	06 14.3	4	(BF)					
8582		HOLL	06	19	2015	N27 W70	06 14.4		B	DSO	80	6	7	3
8582		LEAR	06	20	0105	N30 W74	06 14.2		B	EAO	90	3	12	3
8582		SVTO	06	20	0620	N28 W75	06 14.4		A	AX	10	1	1	3
8582		KAND	06	20	0730	N28 W69	06 14.9			AX		1	1	1
8582		RAMY	06	20	1138	N28 W74	06 14.7		A	AX		1		4
8582	29142	WIL	06	20	1445	N28 W74	06 14.8	4	(AF)					M
8586		RAMY	06	15	1217	N34 W13	06 14.5		A	AX		1		4
8586		HOLL	06	15	1427	N34 W13	06 14.6		A	AX		1		4
8586		LEAR	06	16	0125	N34 W19	06 14.5		B	BXO	10	3	3	3
8586		SVTO	06	16	0510	N34 W19	06 14.7		A	AX		1		3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8586	29149	RAMY	06 16 1228	N33 W26	06 14.4		B	BXO		2	4	4
8586		MWIL	06 16 1430	N33 W28	06 14.4	4	(AP)					
8586		HOLL	06 16 1444	N33 W28	06 14.4		B	BXO	10	2	2	4
8586		LEAR	06 17 0105	N34 W32	06 14.5		A	AX		1		4
8586		MWIL	06 17 1430	N33 W41	06 14.3	3	(AP)					
8580	29138	MWIL	06 08 1445	S19 E84	06 15.0	4	AP					
8580		HOLL	06 08 1524	S18 E86	06 15.2		A	HS	90	1	2	3
8580		VORO	06 08 2124	S20 E83	06 15.2			HKX	420	1		3
8580		SVTO	06 09 0500	S20 E77	06 15.1		B	CKO	300	2	4	3
8580		KAND	06 09 0645	S20 E78	06 15.2		HH			1	3	3
8580	29138	RAMY	06 09 1238	S19 E73	06 15.1		A	HK	260	2	3	2
8580		HOLL	06 09 1433	S18 E72	06 15.1		A	HA	120	2	2	2
8580		MWIL	06 09 1500	S19 E71	06 15.0	5	(AP)					
8580		LEAR	06 10 0348	S21 E64	06 15.1		A	HK	240	4	6	3
8580		SVTO	06 10 0735	S19 E65	06 15.3		B	CKO	350	3	4	2
8580	29138	KAND	06 10 0920	S20 E63	06 15.2			HK		1	4	4
8580		RAMY	06 10 1235	S19 E61	06 15.2		A	HH	280	3	3	3
8580		MWIL	06 10 1430	S19 E58	06 15.0	5	(AP)					
8580		HOLL	06 10 1447	S18 E59	06 15.1		A	HK	200	6	3	3
8580		VORO	06 10 2339	S20 E54	06 15.1			HKX	430	1		2
8580	29138	SVTO	06 11 0500	S20 E52	06 15.2		A	HK	320	2	4	4
8580		KAND	06 11 0910	S20 E49	06 15.1			HK		3	3	3
8580		RAMY	06 11 1350	S20 E46	06 15.1		A	HK	300	3	3	3
8580		MWIL	06 11 1400	S20 E46	06 15.1	5	(BP)					
8580		HOLL	06 11 1520	S20 E46	06 15.1		A	HS	30	1	3	3
8580	29138	VORO	06 11 2139	S20 E42	06 15.1			HKX	347	3		3
8580		LEAR	06 12 0110	S20 E39	06 15.0		A	HK	290	2	3	4
8580		KAND	06 12 0630	S19 E38	06 15.2			HH		1	3	3
8580		SVTO	06 12 1215	S20 E35	06 15.2		B	CKO	290	4	4	3
8580		RAMY	06 12 1239	S19 E34	06 15.1		B	CHO	260	3	3	3
8580	29138	MWIL	06 12 1400	S20 E33	06 15.1	5	(BP)					
8580		HOLL	06 12 1610	S19 E32	06 15.1		A	HH	150	2	3	3
8580		VORO	06 12 2144	S20 E29	06 15.1			HKX	326	5		3
8580		LEAR	06 13 0109	S19 E28	06 15.2		B	CKO	240	7	4	3
8580		SVTO	06 13 0732	S20 E23	06 15.1		B	DKO	320	5	4	3
8580	29138	KAND	06 13 0815	S20 E22	06 15.0			CAI		8	5	3
8580		MWIL	06 13 1430	S20 E19	06 15.0	5	(BG)					
8580		HOLL	06 13 2010	S20 E16	06 15.1		A	HH	220	4	3	1
8580		VORO	06 13 2125	S20 E16	06 15.1			HKX	329	9		3
8580		LEAR	06 14 0035	S19 E13	06 15.0		A	HK	300	2	3	3
8580	29138	SVTO	06 14 0450	S20 E13	06 15.2		B	CAO	220	9	6	3
8580		KAND	06 14 0635	S20 E10	06 15.0			HH		4	3	3
8580		RAMY	06 14 1209	S20 E08	06 15.1		B	CSO	240	10	4	4
8580		MWIL	06 14 1445	S20 E06	06 15.1	5	(BP)					
8580		HOLL	06 14 1510	S20 E07	06 15.2		B	CAO	200	4	3	3
8580	29138	VORO	06 14 2300	S20 E02	06 15.1			HKX	338	5		2
8580		LEAR	06 15 0055	S20 E01	06 15.1		B	CAO	220	7	3	4
8580		SVTO	06 15 0520	S19 W01	06 15.1		B	CAO	260	11	5	3
8580		KAND	06 15 0800	S20 W03	06 15.1			CAO		4	4	4
8580		RAMY	06 15 1217	S21 W05	06 15.1		B	CAO	240	11	6	4
8580	29138	HOLL	06 15 1427	S22 W05	06 15.2		B	DAO	220	10	4	4
8580		MWIL	06 15 1445	S20 W07	06 15.1	5	(BG)					
8580		VORO	06 15 2137	S20 W11	06 15.0			HKX	329	4		2
8580		LEAR	06 16 0125	S21 W13	06 15.1		B	CAO	240	7	5	3
8580		SVTO	06 16 0510	S20 W15	06 15.1		B	CKO	300	4	4	3
8580	29138	KAND	06 16 0655	S20 W15	06 15.1			CHO		5	6	3
8580		RAMY	06 16 1228	S21 W17	06 15.2		B	CAO	230	7	4	4
8580		MWIL	06 16 1430	S20 W20	06 15.1	5	(BP)					
8580		HOLL	06 16 1444	S20 W19	06 15.2		B	DSO	180	6	5	4
8580		VORO	06 16 2122	S20 W24	06 15.0			HKX	314	3		2
8580	29138	LEAR	06 17 0105	S20 W26	06 15.0		B	CAO	210	6	3	4
8580		SVTO	06 17 0626	S22 W27	06 15.2		B	CKO	420	10	8	3
8580		KAND	06 17 0650	S20 W28	06 15.1			HA		1	3	3
8580		MWIL	06 17 1430	S20 W33	06 15.1	5	(BP)					
8580		HOLL	06 17 1919	S21 W35	06 15.1		A	HA	170	2	3	2
8580	29138	VORO	06 17 2200	S20 W37	06 15.1			HKX	246	1		2
8580		LEAR	06 18 0453	S19 W42	06 15.0		A	HK	280	1	3	2
8580		SVTO	06 18 0500	S21 W42	06 15.0		A	HK	270	3	3	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8580		KAND	06 18 0725	S20 W42	06 15.1			HS		1	3	2
8580		RAMY	06 18 1307	S22 W45	06 15.1		A	HS	180	1	2	3
8580	29138	MWIL	06 18 1430	S20 W46	06 15.1	5	(AP)					
8580		HOLL	06 18 1638	S20 W47	06 15.1		A	HS	160	1	2	3
8580		SVTO	06 19 0428	S21 W53	06 15.1		A	HK	200	1	3	3
8580		KAND	06 19 0940	S20 W56	06 15.1			HS		1	3	3
8580		RAMY	06 19 1151	S22 W57	06 15.1		A	HS	180	1	2	5
8580	29138	MWIL	06 19 1445	S20 W59	06 15.1	5	(AP)					
8580		HOLL	06 19 2015	S21 W61	06 15.2		A	HS	160	1	2	3
8580		LEAR	06 20 0105	S17 W65	06 15.1		A	HK	190	1	3	3
8580		SVTO	06 20 0620	S21 W67	06 15.1		A	HS	210	1	3	3
8580		KAND	06 20 0730	S20 W65	06 15.3			HS		2	2	1
8580		RAMY	06 20 1138	S22 W70	06 15.1		A	HS	110	1	2	4
8580	29138	MWIL	06 20 1445	S20 W72	06 15.1	5	(AP)					
8580		HOLL	06 20 2007	S21 W75	06 15.1		A	HS	180	1	4	3
8580		VORO	06 20 2200	S20 W76	06 15.1			HAX	191	1		3
8580		LEAR	06 21 0140	S19 W78	06 15.1		A	HA	70	1	2	3
8580		SVTO	06 21 0621	S22 W88	06 14.5		A	AX	20	1	1	3
8580		KAND	06 21 0635	S20 W87	06 14.6			HS		1	3	5
8580		RAMY	06 21 1229	S21 W88	06 14.8		A	HS	40	1	2	3
8580	29138	MWIL	06 21 1445	S20 W85	06 15.1	3	AP					
8587		KAND	06 15 0800	N19 E11	06 16.2			AX		1		4
8587		RAMY	06 15 1217	N19 E11	06 16.3		A	AX		1		4
8587		HOLL	06 15 1427	N19 E10	06 16.4		A	AX		1		4
8587	29147	MWIL	06 15 1445	N18 E09	06 16.3	4	(AP)					
8587	29147	MWIL	06 16 1430	N18 W05	06 16.2	3	(AP)					
8587		HOLL	06 16 1444	N18 W05	06 16.2		A	AX		1		4
8593		RAMY	06 20 1138	N19 W55	06 16.3		B	BXO		2	3	4
8593	29156	MWIL	06 20 1445	N20 W56	06 16.3	4	(B)					
8593		HOLL	06 20 2007	N19 W60	06 16.2		A	AX		1		3
8593		VORO	06 20 2200	N20 W62	06 16.2			AXX	24	1		3
8593		LEAR	06 21 0140	N21 W64	06 16.2		A	AX		1		3
8593		KAND	06 21 0635	N19 W67	06 16.2			AX		2	3	5
8593		RAMY	06 21 1229	N18 W71	06 16.1		A	AX		1		3
8593	29156	MWIL	06 21 1445	N19 W72	06 16.1	3	(AP)					
8593		LEAR	06 22 0110	N21 W77	06 16.1		A	AX		1		3
8590	29150	MWIL	06 16 1430	S22 E03	06 16.8	4	(B)					
8590		HOLL	06 16 1444	S22 E03	06 16.8		B	BXO	10	2	2	4
8590		VORO	06 16 2122	S22 W03	06 16.6			AXX	7	1		2
8590		LEAR	06 17 0105	S21 W04	06 16.7		B	BXO	10	3	3	4
8590		SVTO	06 17 0626	S22 W05	06 16.9		A	AX		1		3
8590		KAND	06 17 0650	S22 W04	06 17.0			AX		1		3
8590	29150	MWIL	06 17 1430	S22 W09	06 16.9	4	(B)					
8590		HOLL	06 17 1919	S23 W12	06 16.9		B	BXO	10	3	3	2
8589		LEAR	06 16 0125	N27 E17	06 17.4		A	AX		1		3
8589		SVTO	06 16 0510	N28 E15	06 17.4		A	AX		1		3
8589		KAND	06 16 0655	N27 E14	06 17.4			AX		1	1	3
8589	29151	RAMY	06 16 1228	N27 E08	06 17.1		B	BXO	10	4	3	4
8589		MWIL	06 16 1430	N27 E10	06 17.4	3	(AF)					
8589		HOLL	06 16 1444	N28 E09	06 17.3		A	AX	10	1	1	4
8589	29151	MWIL	06 17 1430	N26 W07	06 17.1	4	(AP)					
8589		HOLL	06 17 1919	N27 W11	06 16.9		B	CAO	30	3	3	2
8589		LEAR	06 18 0453	N27 W15	06 17.0		B	DAO	50	8	6	2
8589		SVTO	06 18 0500	N27 W14	06 17.1		B	CRO	30	7	7	3
8589		KAND	06 18 0725	N27 W16	06 17.1			DSO		8	7	2
8589		RAMY	06 18 1307	N26 W20	06 17.0		B	DAO	60	7	5	3
8589	29151	MWIL	06 18 1430	N27 W20	06 17.0	5	(B)					
8589		HOLL	06 18 1638	N27 W21	06 17.0		B	CSO	20	9	7	3
8589		SVTO	06 19 0428	N27 W25	06 17.2		B	DSO	80	6	6	3
8589		KAND	06 19 0940	N27 W30	06 17.1			DAO		6	7	3
8589		RAMY	06 19 1151	N26 W33	06 16.9		B	CSO	60	11	8	5
8589	29151	MWIL	06 19 1445	N27 W33	06 17.0	5	(B)					
8589		HOLL	06 19 2015	N28 W35	06 17.1		B	DAO	100	7	7	3
8589		LEAR	06 20 0105	N29 W39	06 17.0		B	DAO	60	7	8	3
8589		SVTO	06 20 0620	N28 W43	06 16.9		B	DAO	150	3	7	3

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SUNSPOT GROUPS
(Ordered by Central Meridian Passage Date)

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8589	29151	KAND	06	20	0730	N27	W42	06	17.0			DAO	70	2	6	1
8589		RAMY	06	20	1138	N27	W45	06	17.0		B	DAO		3	9	4
8589		MWIL	06	20	1445	N28	W46	06	17.0	5	(B)					
8589		HOLL	06	20	2007	N27	W48	06	17.1		B	DSO	90	2	7	3
8589		VORO	06	20	2200	N29	W50	06	17.0			DAO	165	3	6	3
8589		LEAR	06	21	0140	N29	W52	06	17.0		B	DSO	80	2	7	3
8589		SVTO	06	21	0621	N28	W57	06	16.8		B	CSO	80	2	10	3
8589		KAND	06	21	0635	N27	W56	06	16.9			DSO		2	8	5
8589		RAMY	06	21	1229	N28	W58	06	17.0		B	DSO	60	3	7	3
8589		MWIL	06	21	1445	N28	W59	06	17.0	4	(B)					
8589	29151	HOLL	06	21	1600	N27	W57	06	17.2		B	DSO	60	3	7	3
8589		LEAR	06	22	0110	N28	W64	06	17.0		B	DSO	80	2	8	3
8589		KAND	06	22	0555	N27	W65	06	17.2			CSO		2	7	4
8589		SVTO	06	22	0700	N28	W70	06	16.8		B	CSO	80	2	8	3
8589		MWIL	06	22	1445	N27	W72	06	17.0	4	(B)					
8589		HOLL	06	22	1547	N27	W72	06	17.0		B	CSO	90	3	8	4
8589		LEAR	06	23	0053	N28	W79	06	16.9		A	HS	60	1	2	4
8589		VORO	06	23	0440	N27	W83	06	16.7			HRX	95	1		2
8583	29143	SVTO	06	11	0500	S12	E80	06	17.2		B	BXO	10	3	3	4
8583		KAND	06	11	0910	S13	E77	06	17.2			AX		1	1	3
8583		RAMY	06	11	1350	S12	E71	06	16.9		A	HS	40	2	2	3
8583		MWIL	06	11	1400	S12	E73	06	17.1	4	(AP)					
8583		HOLL	06	11	1520	S12	E72	06	17.1		A	HH	210	1	1	3
8583		VORO	06	11	2139	S13	E68	06	17.0			HAX	84	1		3
8583		LEAR	06	12	0110	S13	E67	06	17.1		B	CSO	150	7	8	4
8583		KAND	06	12	0630	S12	E67	06	17.3			DAO		3	10	3
8583		SVTO	06	12	1215	S13	E62	06	17.2		B	DAO	240	11	10	3
8583		RAMY	06	12	1239	S12	E62	06	17.2		B	DAO	140	10	9	3
8583	29143	MWIL	06	12	1400	S13	E62	06	17.3	5	(BP)					
8583		HOLL	06	12	1610	S12	E62	06	17.3		B	DSO	80	6	8	3
8583		VORO	06	12	2144	S13	E58	06	17.3			DAI	277	5	8	3
8583		LEAR	06	13	0109	S13	E56	06	17.3		B	DAO	180	8	10	3
8583		SVTO	06	13	0732	S13	E53	06	17.3		B	DAO	100	14	10	3
8583		KAND	06	13	0815	S12	E51	06	17.2			DAO		5	10	3
8583		MWIL	06	13	1430	S13	E49	06	17.3	5	(B)					
8583		HOLL	06	13	2010	S12	E46	06	17.3		B	DAO	170	16	10	1
8583		VORO	06	13	2125	S13	E45	06	17.3			DAI	295	8	8	3
8583		LEAR	06	14	0035	S14	E43	06	17.3		B	DAI	200	12	10	3
8583	29143	SVTO	06	14	0450	S13	E41	06	17.3		B	EAO	340	18	11	3
8583		KAND	06	14	0635	S13	E39	06	17.2			DAO		15	10	3
8583		RAMY	06	14	1209	S13	E36	06	17.2		B	DAI	180	18	9	4
8583		MWIL	06	14	1445	S13	E35	06	17.2	5	(B)					
8583		HOLL	06	14	1510	S12	E36	06	17.3		B	DAI	170	12	9	3
8583		VORO	06	14	2300	S13	E31	06	17.3			DAI	302	8	8	2
8583		LEAR	06	15	0055	S13	E29	06	17.2		B	DAI	200	23	10	4
8583		SVTO	06	15	0520	S12	E26	06	17.2		B	DAO	170	16	9	3
8583		KAND	06	15	0800	S13	E25	06	17.2			DAO		14	10	4
8583		RAMY	06	15	1217	S12	E23	06	17.2		B	DSO	120	20	9	4
8583		HOLL	06	15	1427	S12	E22	06	17.2		B	DSI	110	16	10	4
8583	29143	MWIL	06	15	1445	S13	E22	06	17.3	5	(BG)					
8583		VORO	06	15	2137	S13	E18	06	17.2			DAI	197	9	7	2
8583		LEAR	06	16	0125	S13	E15	06	17.2		B	DSO	180	22	10	3
8583		SVTO	06	16	0510	S13	E13	06	17.2		B	DAO	150	14	8	3
8583		KAND	06	16	0655	S13	E12	06	17.2			DAO		12	9	3
8583		RAMY	06	16	1228	S13	E10	06	17.3		B	DSO	110	13	7	4
8583		MWIL	06	16	1430	S13	E08	06	17.2	5	(B)					
8583		HOLL	06	16	1444	S12	E08	06	17.2		B	DSO	110	17	8	4
8583		VORO	06	16	2122	S12	E05	06	17.3			DAI	164	9	7	2
8583		LEAR	06	17	0105	S13	E02	06	17.2		B	DSO	120	19	7	4
8583	29143	SVTO	06	17	0626	S13	W01	06	17.2		B	CSO	50	8	7	3
8583		KAND	06	17	0650	S13	E01	06	17.4			DSO		8	7	3
8583		HOLL	06	17	1919	S13	W08	06	17.2		B	DAO	80	7	7	2
8583		VORO	06	17	2200	S12	W09	06	17.2			DAI	58	4	6	2
8583		LEAR	06	18	0453	S13	W14	06	17.1		B	DAO	40	9	8	2
8583		SVTO	06	18	0500	S13	W13	06	17.2		B	CRO	30	6	8	3
8583		KAND	06	18	0725	S12	W14	06	17.2			CAO		6	8	2
8583		RAMY	06	18	1307	S13	W17	06	17.3		B	CAO	20	5	6	3
8583		MWIL	06	18	1430	S13	W18	06	17.2	4	(BP)					

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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
8583		HOLL	06 18 1638	S13 W19	06 17.2		B	CSO	10	4	7	3
8583		SVTO	06 19 0428	S12 W28	06 17.1		A	HR	20	3	2	3
8583		KAND	06 19 0940	S12 W31	06 17.1			CSO		4	3	3
8583		RAMY	06 19 1151	S14 W29	06 17.3		B	BXO	10	6	6	5
8583	29143	MWIL	06 19 1445	S12 W34	06 17.0	4	(AP)					
8583		HOLL	06 19 2015	S13 W34	06 17.3		B	CSO	40	4	7	3
8583		LEAR	06 20 0105	S09 W40	06 17.0		A	AX		1		3
8583		RAMY	06 20 1138	S13 W45	06 17.1		B	BXO		2	2	4
8588		LEAR	06 15 0055	S23 E33	06 17.6		A	AX		1	1	4
8588		RAMY	06 15 1217	S22 E26	06 17.5		A	AX	10	2	1	4
8588		HOLL	06 15 1427	S21 E25	06 17.5		B	DAO	30	6	2	4
8588	29148	MWIL	06 15 1445	S21 E25	06 17.5	4	(B)					
8588		VORO	06 15 2137	S22 E21	06 17.5			BXO	20	2	2	2
8588		LEAR	06 16 0125	S22 E17	06 17.4		A	AX		2	1	3
8588		SVTO	06 16 0510	S22 E16	06 17.4		A	AX		2	1	3
8588		RAMY	06 16 1228	S21 E13	06 17.5		B	BXO	10	4	3	4
8588	29148	MWIL	06 16 1430	S22 E12	06 17.5	4	(B)					
8588		HOLL	06 16 1444	S21 E12	06 17.5		B	DAO	20	3	4	4
8588		VORO	06 16 2122	S22 E08	06 17.5			BXI	25	5	4	2
8588		LEAR	06 17 0105	S22 E05	06 17.4		B	CAO	30	9	5	4
8588		SVTO	06 17 0626	S22 E03	06 17.5		B	CSO	20	6	5	3
8588		KAND	06 17 0650	S21 E03	06 17.5			CSO		6	4	3
8588	29148	MWIL	06 17 1430	S22 W01	06 17.5	4	(B)					
8588		HOLL	06 17 1919	S22 W03	06 17.6		B	CSO	30	2	3	2
8588		VORO	06 17 2200	S21 W04	06 17.6			BXO	23	3	3	2
8588		LEAR	06 18 0453	S21 W09	06 17.5		B	CSO	20	3	3	2
8588		SVTO	06 18 0500	S22 W08	06 17.6		A	AX		2	1	3
8588		KAND	06 18 0725	S21 W08	06 17.7			AX		2	1	2
8588		RAMY	06 18 1307	S22 W11	06 17.7		A	AX		3	2	3
8588	29148	MWIL	06 18 1430	S21 W12	06 17.7	4	(AF)					
8588		HOLL	06 18 1638	S21 W13	06 17.7		A	AX	10	2	1	3
8588		SVTO	06 19 0428	S21 W19	06 17.7		A	AX	10	2	1	3
8588		RAMY	06 19 1151	S21 W25	06 17.6		B	BXO		4	4	5
8588		HOLL	06 19 2015	S22 W29	06 17.6		B	BXO	10	2	2	3
8591A		LEAR	06 17 0105	N15 E06	06 17.5		A	AX	10	2	1	4
8591		VORO	06 16 2122	N13 E30	06 19.1			BXO	17	2	3	2
8591		LEAR	06 17 0105	N12 E25	06 18.9		B	BXO	10	3	2	4
8591		SVTO	06 17 0626	N13 E23	06 19.0		B	BXO		2	2	3
8591		KAND	06 17 0650	N14 E21	06 18.9			BXO		3	3	3
8591		RAMY	06 18 1307	N13 E04	06 18.8		A	AX		3	2	3
8591	29153	MWIL	06 18 1430	N14 E03	06 18.8	4	(B)					
8591		HOLL	06 18 1638	N13 E02	06 18.8		B	BXO	10	2	3	3
8591		RAMY	06 19 1151	N15 W08	06 18.9		A	AX		3	1	5
8591	29153	MWIL	06 19 1445	N15 W09	06 18.9	3	(AF)					
8591		HOLL	06 19 2015	N15 W11	06 19.0		A	AX		1		3
8585		RAMY	06 12 1239	N37 E84	06 19.3		B	DSO	120	2	8	3
8585	29144	MWIL	06 12 1400	N37 E85	06 19.4	4	B +					
8585		HOLL	06 12 1610	N38 E80	06 19.1		B					
8585		VORO	06 12 2144	N36 E79	06 19.2			DAI	348	2	3	3
8585		LEAR	06 13 0109	N38 E80	06 19.5		B	DAO	120	4	7	3
8585		SVTO	06 13 0732	N37 E76	06 19.4		B	DAO	150	3	9	3
8585		KAND	06 13 0815	N37 E74	06 19.3			DAO		4	7	3
8585	29144	MWIL	06 13 1430	N37 E71	06 19.3	4	(B)					
8585	29145	MWIL	06 13 1430	N42 E75	06 19.8	4	(AP)					
8585		HOLL	06 13 2010	N38 E67	06 19.2		B	DAO	170	6	7	1
8585		VORO	06 13 2125	N37 E68	06 19.4			DAI	406	5	5	3
8585		LEAR	06 14 0035	N36 E65	06 19.2		B	DAO	140	5	8	3
8585		SVTO	06 14 0450	N38 E68	06 19.7		B	DHO	340	5	8	3
8585		KAND	06 14 0635	N37 E62	06 19.3			DSO		5	6	3
8585		RAMY	06 14 1209	N39 E58	06 19.2		B	DSO	180	8	10	4
8585	29144	MWIL	06 14 1445	N37 E58	06 19.3	5	(B)					
8585	29145	MWIL	06 14 1445	N42 E62	06 19.7	4	(AP)					
8585		HOLL	06 14 1510	N40 E58	06 19.3		B	DAO	150	7	7	3
8585		VORO	06 14 2300	N36 E54	06 19.3			DAI	246	3	5	2
8585		LEAR	06 15 0055	N37 E52	06 19.2		B	DAO	210	9	11	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	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
8585		SVTO	06	15	0520	N38	E50	06	19.3		B	DAO	20	6	8	3
8585		KAND	06	15	0800	N37	E50	06	19.4			CAO		5	9	4
8585		RAMY	06	15	1217	N38	E46	06	19.2		B	DSO	160	5	8	4
8585		HOLL	06	15	1427	N39	E46	06	19.3		B	DSO	150	6	8	4
8585	29144	MWIL	06	15	1445	N37	E46	06	19.3	5	(B)					
8585	29145	MWIL	06	15	1445	N42	E49	06	19.6	4	(AP)					
8585		VORO	06	15	2137	N36	E43	06	19.3			DAI	281	4	6	2
8585		LEAR	06	16	0125	N36	E40	06	19.3		B	DSO	150	5	7	3
8585		SVTO	06	16	0510	N38	E38	06	19.3		B	DSO	200	4	8	3
8585		KAND	06	16	0655	N37	E37	06	19.3			CAO		3	7	3
8585		RAMY	06	16	1228	N38	E33	06	19.2		B	DSO	190	7	7	4
8585	29144	MWIL	06	16	1430	N37	E33	06	19.3	4	(B)					
8585		HOLL	06	16	1444	N37	E33	06	19.3		B	DSO	170	6	7	4
8585		VORO	06	16	2122	N37	E31	06	19.4			CAI	244	6	6	2
8585		LEAR	06	17	0105	N36	E29	06	19.4		B	DSO	200	9	8	4
8585		SVTO	06	17	0626	N37	E24	06	19.2		B	CAO	200	4	9	3
8585		KAND	06	17	0650	N37	E25	06	19.3			CSO		4	9	3
8585	29144	MWIL	06	17	1430	N37	E21	06	19.3	5	(B)					
8585		HOLL	06	17	1919	N38	E18	06	19.3		B	CAO	140	3	6	2
8585		VORO	06	17	2200	N36	E21	06	19.6			HKX	260	3		2
8585		LEAR	06	18	0453	N37	E14	06	19.3		B	CAO	130	3	7	2
8585		SVTO	06	18	0500	N38	E14	06	19.3		B	CAO	150	4	7	3
8585		KAND	06	18	0725	N37	E12	06	19.3			CSO		4	7	2
8585		RAMY	06	18	1307	N38	E08	06	19.2		B	CSO	150	4	5	3
8585	29144	MWIL	06	18	1430	N38	E10	06	19.4	5	(BF)					
8585		HOLL	06	18	1638	N38	E08	06	19.3		B	CSO	110	5	7	3
8585		SVTO	06	19	0428	N38	E02	06	19.3		B	CSO	200	2	6	3
8585		KAND	06	19	0940	N37	W01	06	19.3			CAO		3	8	3
8585		RAMY	06	19	1151	N38	W04	06	19.2		B	CSO	130	12	8	5
8585	29144	MWIL	06	19	1445	N38	W03	06	19.4	5	(BF)					
8585		HOLL	06	19	2015	N38	W06	06	19.3		B	ESO	190	6	12	3
8585		LEAR	06	20	0105	N38	W07	06	19.5		B	CSO	180	3	6	3
8585		SVTO	06	20	0620	N37	W09	06	19.5		A	HA	140	2	3	3
8585		KAND	06	20	0730	N37	W09	06	19.6			HA		3	2	1
8585		RAMY	06	20	1138	N38	W15	06	19.3		B	CSO	160	7	9	4
8585	29144	MWIL	06	20	1445	N38	W14	06	19.5	5	(BF)					
8585		HOLL	06	20	2007	N38	W16	06	19.5		B	DSO	120	4	5	3
8585		VORO	06	20	2200	N36	W16	06	19.6			HAX	231	4		3
8585		LEAR	06	21	0140	N38	W18	06	19.6		B	CSO	140	7	5	3
8585		SVTO	06	21	0621	N38	W23	06	19.4		B	CAO	140	3	5	3
8585		KAND	06	21	0635	N37	W22	06	19.5			CAO		3	5	5
8585		RAMY	06	21	1229	N38	W27	06	19.3		B	DSO	130	5	8	3
8585	29144	MWIL	06	21	1445	N38	W26	06	19.5	5	(BF)					
8585		HOLL	06	21	1600	N38	W27	06	19.5		B	DSO	180	6	6	3
8585		LEAR	06	22	0110	N38	W31	06	19.5		B	DSO	170	5	6	3
8585		KAND	06	22	0555	N37	W33	06	19.6			CSO		5	6	4
8585		SVTO	06	22	0700	N38	W37	06	19.3		B	CAO	140	3	6	3
8585	29144	MWIL	06	22	1445	N37	W38	06	19.5	5	(BF)					
8585		HOLL	06	22	1547	N37	W40	06	19.4		B	CSO	140	5	5	4
8585		LEAR	06	23	0053	N40	W43	06	19.5		B	CSO	120	2	3	4
8585		VORO	06	23	0440	N36	W45	06	19.6			HAX	186	1		2
8585		SVTO	06	23	0813	N37	W48	06	19.5		A	HS	100	1	3	3
8585		KAND	06	23	0830	N36	W47	06	19.6			HS		1	3	3
8585	29144	MWIL	06	23	1445	N36	W49	06	19.7	5	(AP)					
8585		HOLL	06	23	1502	N35	W50	06	19.6		A	HA	70	2	2	3
8585		LEAR	06	24	0108	N38	W56	06	19.5		A	HS	100	5	4	5
8585		SVTO	06	24	0345	N35	W58	06	19.5		A	HA	180	1	3	3
8585	29144	MWIL	06	24	1445	N35	W61	06	19.7	5	(BP)					
8585		HOLL	06	24	1449	N34	W62	06	19.7		A	HS	80	2	2	3
8585		VORO	06	24	2347	N36	W67	06	19.6			HAX	182	1		2
8585		SVTO	06	25	0440	N35	W75	06	19.2		A	HA	180	1	3	3
8585	29144	MWIL	06	25	1430	N35	W73	06	19.8	4	(AP)					
8585		HOLL	06	25	1459	N35	W76	06	19.5		A	HA	70	1	2	4
8585		VORO	06	25	2305	N36	W79	06	19.6			HAX	205	1		3
8585		LEAR	06	26	0050	N37	W80	06	19.6		A	HA	120	1	3	5
8585	29144	MWIL	06	26	1430	N35	W88	06	19.6	3	AP					
8604		LEAR	06	24	0108	N13	W40	06	21.0		B	CAO	30	3	3	5
8604		SVTO	06	24	0345	N11	W43	06	20.9		B	CRO	20	4	5	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Mo	Day	Observation Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8604	29171	MWIL	06	24	1445	N12	W49	06	20.9	5	(B)					
8604		HOLL	06	24	1449	N11	W51	06	20.8		B	DSO	40	4	4	3
8604		VORO	06	24	2347	N13	W54	06	20.9			DAI	139	4	5	2
8604		SVTO	06	25	0440	N12	W57	06	20.9		B	CAO	130	8	6	3
8604	29171	MWIL	06	25	1430	N12	W64	06	20.8	5	(B)					
8604		HOLL	06	25	1459	N12	W65	06	20.7		B	CAO	70	5	6	4
8604		VORO	06	25	2305	N13	W67	06	20.9			CAI	281	6	6	3
8604		LEAR	06	26	0050	N14	W68	06	20.9		B	DAO	190	7	8	5
8604		SVTO	06	26	0500	N11	W75	06	20.6		B	CAO	140	3	10	4
8604	29171	MWIL	06	26	1430	N12	W78	06	20.7	5	(BP)					
8604		HOLL	06	26	1718	N11	W79	06	20.8		B	CAO	120	6	7	4
8604		LEAR	06	27	0100	N14	W80	06	21.0		B	CAO	60	2	7	4
8601		HOLL	06	22	1547	S15	W19	06	21.2		B	BXO	10	2	4	4
8601		LEAR	06	23	0053	S15	W25	06	21.1		B	BXO	10	4	2	4
8601		VORO	06	23	0440	S14	W26	06	21.2			BXO	23	3	1	2
8601		SVTO	06	23	0813	S14	W27	06	21.3		B	CRO	10	4	3	3
8601		KAND	06	23	0830	S14	W29	06	21.2			AX		2	1	3
8601	29165	MWIL	06	23	1445	S14	W31	06	21.3	4	(BP)					
8601		HOLL	06	23	1502	S16	W31	06	21.3		B	BXO	30	4	5	3
8601		LEAR	06	24	0108	S13	W37	06	21.2		B	BXO	20	7	6	5
8601		SVTO	06	24	0345	S15	W41	06	21.0		A	AX	10	3	2	3
8601	29165	MWIL	06	24	1445	S14	W46	06	21.1	3	(B)					
8601		HOLL	06	24	1449	S15	W48	06	21.0		A	AX	10	2	1	3
8601		SVTO	06	25	0440	S14	W53	06	21.2		B	BXO	10	3	6	3
8601	29165	MWIL	06	25	1430	S14	W58	06	21.2	3	(AP)					
8601		HOLL	06	25	1459	S15	W59	06	21.1		B	BXO	10	3	6	4
8601	29165	MWIL	06	26	1430	S15	W75	06	20.9	3	(AP)					
8600	29160	MWIL	06	21	1445	N20	W03	06	21.4	3	(AP)					
8600	29160	MWIL	06	22	1445	N19	W18	06	21.2	4	(AP)					
8600		HOLL	06	22	1547	N19	W18	06	21.3		B	BXO	20	2	3	4
8600		LEAR	06	23	0053	N19	W25	06	21.1		B	CRO	20	3	2	4
8600		KAND	06	23	0830	N18	W29	06	21.1			AX		1	1	3
8600	29160	MWIL	06	23	1445	N19	W31	06	21.2	3	(AP)					
8600		LEAR	06	24	0108	N20	W37	06	21.2		B	CSO	20	6	4	5
8600		SVTO	06	24	0345	N18	W37	06	21.3		B	BXO	20	7	6	3
8600	29160	MWIL	06	24	1445	N19	W44	06	21.2	5	(B)					
8600		HOLL	06	24	1449	N18	W46	06	21.1		A	AX	20	2	1	3
8600		VORO	06	24	2347	N19	W50	06	21.2			AXX	16	1		2
8600		SVTO	06	25	0440	N17	W55	06	21.0		B	BXO	10	3	5	3
8600	29160	MWIL	06	25	1430	N18	W59	06	21.1	4	(AP)					
8600		HOLL	06	25	1459	N18	W59	06	21.1		A	AX		1		4
8600		VORO	06	25	2305	N19	W64	06	21.1			AXX	12	1		3
8600		LEAR	06	26	0050	N19	W64	06	21.1		A	AX	10	1		5
8600		SVTO	06	26	0500	N17	W70	06	20.9		A	AX	10	1		4
8600	29160	MWIL	06	26	1430	N17	W75	06	20.9	3	(AP)					
8600		LEAR	06	27	0100	N21	W74	06	21.4		A	HS	20	1	2	4
8600		SVTO	06	27	0535	N19	W80	06	21.1		A	AX	10	1	1	3
8600	29178	MWIL	06	27	1430	N19	W80	06	21.5	2	X					
8595A		RAMY	06	21	1229	N27	E11	06	22.4		B	BXO		3	2	3
8605	29166	MWIL	06	23	1445	S25	W15	06	22.4	4	(B)					
8605		HOLL	06	23	1502	S25	W15	06	22.5		B	BXO	10	4	3	3
8605		LEAR	06	24	0108	S24	W19	06	22.6		B	CRO	20	4	4	5
8605		SVTO	06	24	0345	S25	W23	06	22.4		B	DRO	20	2	3	3
8605	29166	MWIL	06	24	1445	S25	W28	06	22.4	4	(B)					
8605		HOLL	06	24	1449	S25	W28	06	22.4		B	BXO	30	5	5	3
8605		SVTO	06	25	0440	S25	W39	06	22.2		A	AX		1		3
8605	29166	MWIL	06	25	1430	S24	W43	06	22.3	3	(AP)					
8605		HOLL	06	25	1459	S24	W43	06	22.3		A	AX		1		4
8607		RAMY	06	20	1138	N22	E34	06	23.1		B	BXO		2	2	4
8607	29176	MWIL	06	25	1430	N22	W35	06	22.9	3	(B)					
8607	29176	MWIL	06	26	1430	N22	W49	06	22.8	3	(B)					
8607		HOLL	06	26	1718	N22	W50	06	22.9		B	CRO	20	3	3	4
8607		LEAR	06	27	0100	N23	W56	06	22.7		A	AX	10	1	1	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8595	29152	MWIL	06	17	1430	N27 E73	06 23.3	3	(AP)					
8595	29152	MWIL	06	18	1430	N26 E58	06 23.1	3	(AP)					
8595		RAMY	06	19	1151	N28 E48	06 23.2		B	BXO		3	5	5
8595		RAMY	06	21	1229	N26 E23	06 23.3		B	BXO		4	3	3
8595	29161	MWIL	06	21	1445	N26 E22	06 23.3	4	(B)					
8595		HOLL	06	21	1600	N26 E22	06 23.4		B	BX	20	4	3	3
8595		LEAR	06	22	0110	N26 E16	06 23.3		B	BXO	10	3	2	3
8595		KAND	06	22	0555	N26 E13	06 23.2			AX		5	2	4
8595		SVTO	06	22	0700	N27 E11	06 23.1		B	AXO	10	7	3	3
8595	29161	MWIL	06	22	1445	N26 E08	06 23.2	4	(B)					
8595		HOLL	06	22	1547	N22 E03	06 22.9		B	FSO	50	10	16	4
8595		LEAR	06	23	0053	N26 E03	06 23.3		B	CRO	20	5	2	4
8595	29167	MWIL	06	23	1445	N20 W02	06 23.5	4	(BF)					
8595		HOLL	06	23	1502	N19 W02	06 23.5		A	AX	10	2	1	3
8595B	29163	MWIL	06	22	1445	N16 E35	06 25.3	4	(BP)					
8595B		LEAR	06	23	0053	N15 E28	06 25.1		B	BXO	10	4	1	4
8595B		LEAR	06	24	0108	N15 E14	06 25.1		A	AX		1		5
8592		SVTO	06	19	0428	N23 E81	06 25.4		A	HS	60	1	5	3
8592		KAND	06	19	0940	N22 E77	06 25.3			HS		1	2	3
8592		RAMY	06	19	1151	N24 E74	06 25.2		A	HS	60	2	2	5
8592	29154	MWIL	06	19	1445	N22 E75	06 25.4	5	(AP)					
8592		HOLL	06	19	2015	N22 E79	06 25.9		B	EAO	210	5	12	3
8592		LEAR	06	20	0105	N19 E74	06 25.7		B	DAO	150	4	10	3
8592		SVTO	06	20	0620	N23 E71	06 25.7		B	CKO	240	5	14	3
8592		KAND	06	20	0730	N23 E67	06 25.5			HS		4	3	1
8592		RAMY	06	20	1138	N23 E70	06 25.9		B	FAI	210	9	20	4
8592	29154	MWIL	06	20	1445	N22 E64	06 25.5	5	(BP)					
8592		HOLL	06	20	2007	N22 E65	06 25.8		B	FAC	340	14	23	3
8592		VORO	06	20	2200	N22 E58	06 25.4			HAX	157	3		3
8592		LEAR	06	21	0140	N21 E66	06 26.1		B	FAI	340	10	23	3
8592		SVTO	06	21	0621	N23 E51	06 25.2		B	CAO	130	4	3	3
8592		KAND	06	21	0635	N22 E50	06 25.1			CAO		3	4	5
8592		RAMY	06	21	1229	N23 E48	06 25.2		B	DAO	90	8	6	3
8592	29154	MWIL	06	21	1445	N22 E48	06 25.3	5	(BG)					
8592		HOLL	06	21	1600	N22 E47	06 25.3		B	DAO	100	9	4	3
8592		LEAR	06	22	0110	N20 E43	06 25.3		B	CAO	130	3	7	3
8592		KAND	06	22	0555	N22 E40	06 25.3			CAO		5	3	4
8592		SVTO	06	22	0700	N23 E38	06 25.2		B	CSO	80	5	5	3
8592	29154	MWIL	06	22	1445	N22 E35	06 25.3	5	(AP)					
8592		HOLL	06	22	1547	N18 E33	06 25.2		B	CSO	100	13	7	4
8592		LEAR	06	23	0053	N22 E30	06 25.3		B	CSO	90	2	2	4
8592		VORO	06	23	0440	N22 E28	06 25.3			HAX	118	3		2
8592		SVTO	06	23	0813	N22 E25	06 25.3		B	CSO	40	3	3	3
8592		KAND	06	23	0830	N23 E25	06 25.3			HA		4	2	3
8592	29154	MWIL	06	23	1445	N22 E22	06 25.3	4	(AP)					
8592		HOLL	06	23	1502	N22 E22	06 25.3		A	HS	50	2	2	3
8592		LEAR	06	24	0108	N22 E17	06 25.3		B	CSO	60	3	2	5
8592		SVTO	06	24	0345	N23 E13	06 25.1		B	CSO	70	3	3	3
8592	29154	MWIL	06	24	1445	N22 E10	06 25.4	5	(AP)					
8592		HOLL	06	24	1449	N22 E08	06 25.2		A	HS	50	1	2	3
8592		VORO	06	24	2347	N23 E05	06 25.4			HAX	114	2		2
8592		SVTO	06	25	0440	N23 E02	06 25.3		A	HA	80	1	2	3
8592	29154	MWIL	06	25	1430	N22 W03	06 25.4	5	(AP)					
8592		HOLL	06	25	1459	N23 W04	06 25.3		A	HS	50	1	2	4
8592		VORO	06	25	2305	N23 W07	06 25.4			HAX	97	2		3
8592		LEAR	06	26	0050	N23 W08	06 25.4		A	HS	60	1	2	5
8592		SVTO	06	26	0500	N22 W12	06 25.3		A	HS	40	1	2	4
8592	29154	MWIL	06	26	1430	N22 W16	06 25.4	5	(BP)					
8592		HOLL	06	26	1718	N22 W18	06 25.3		A	HS	40	2	2	4
8592		LEAR	06	27	0100	N22 W21	06 25.4		A	HS	40	1	2	4
8592		SVTO	06	27	0535	N23 W24	06 25.4		A	HS	40	1	1	3
8592		KAND	06	27	0910	N23 W26	06 25.4			HA		1	1	3
8592	29154	MWIL	06	27	1430	N23 W28	06 25.4	5	(AP)					
8592		HOLL	06	27	1500	N22 W29	06 25.4		A	HS	30	1	2	4
8592		LEAR	06	28	0125	N23 W34	06 25.4		A	HS	40	1	2	3
8592		SVTO	06	28	0550	N23 W38	06 25.3		A	HS	30	1	1	3
8592		KAND	06	28	0610	N22 W37	06 25.4			HA		1	2	5

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMP	Max	Mag	Spot	Corrected	Spot	Long.	Qual
			Mo	Day	(UT)	CMD	Mo	H	Class	Area (10-6 Hemi)	Count	Extent (Deg)	
8592	29154	MWIL	06	28	1500	N23 W42	06 25.4	5	(AP)				
8592		HOLL	06	28	1600	N22 W42	06 25.4		A	30	1	1	3
8592		VORO	06	28	2205	N23 W46	06 25.4			64	1		3
8592		LEAR	06	29	0056	N24 W48	06 25.3		A	30	1	1	4
8592		SVTO	06	29	0605	N23 W51	06 25.3		A	30	1	2	3
8592		KAND	06	29	0930	N23 W52	06 25.4		HS		1	2	5
8592	29154	MWIL	06	29	1445	N23 W55	06 25.4	4	(AP)				
8592		HOLL	06	29	1452	N23 W56	06 25.3		A	40	1	1	4
8592		VORO	06	29	2157	N23 W59	06 25.4		HAX	34	1		2
8592		LEAR	06	30	0047	N24 W60	06 25.4		A	20	1	1	2
8592		KAND	06	30	0645	N21 W62	06 25.5		AX		1		4
8592		SVTO	06	30	1056	N23 W71	06 25.0		A	30	1	2	2
8592	29154	MWIL	06	30	1430	N23 W67	06 25.4	4	(AP)				
8592		HOLL	06	30	1515	N22 W68	06 25.4		A	30	1	1	3
8592		VORO	06	30	2235	N22 W72	06 25.4		HAX	25	1		2
8592		LEAR	07	01	0115	N24 W72	06 25.6		A	10	1	1	2
8592		SVTO	07	01	0520	N22 W77	06 25.4		A	30	1	1	3
8592	29154	MWIL	07	01	1430	N23 W80	06 25.5	3	AP				
8596		KAND	06	20	0730	N23 E79	06 26.4				1		1
8596	29155	MWIL	06	20	1445	N20 E72	06 26.1	4	(BP)				
8596		VORO	06	20	2200	N21 E68	06 26.1		DAI	104	4	2	3
8596		SVTO	06	21	0621	N23 E62	06 26.0		B	20	4	3	3
8596		KAND	06	21	0635	N22 E61	06 26.0		DAO		2	3	5
8596		RAMY	06	21	1229	N23 E58	06 26.0		B	30	3	4	3
8596	29155	MWIL	06	21	1445	N21 E58	06 26.1	4	(B)				
8596		HOLL	06	21	1600	N22 E57	06 26.0		B	60	3	3	3
8596		LEAR	06	22	0110	N21 E53	06 26.1		B	60	6	7	3
8596		KAND	06	22	0555	N21 E49	06 26.0		CRO		3	3	4
8596		SVTO	06	22	0700	N23 E48	06 26.0		B	30	5	5	3
8596	29155	MWIL	06	22	1445	N21 E45	06 26.1	4	(BP)				
8596		HOLL	06	22	1547	N21 E44	06 26.0		B	30	4	2	4
8596		LEAR	06	23	0053	N18 E39	06 26.0		A	30	1	1	4
8596		VORO	06	23	0440	N20 E37	06 26.0		HAX	23	1		2
8596		SVTO	06	23	0813	N20 E35	06 26.0		A	10	1	1	3
8596		KAND	06	23	0830	N20 E34	06 25.9		BXO		3	3	3
8596	29155	MWIL	06	23	1445	N20 E32	06 26.1	4	(AP)				
8596		HOLL	06	23	1502	N21 E31	06 26.0		A	20	1	1	3
8596		LEAR	06	24	0108	N20 E26	06 26.0		A	20	1	1	5
8596		SVTO	06	24	0345	N21 E23	06 25.9		A	10	1	1	3
8596	29155	MWIL	06	24	1445	N20 E19	06 26.1	5	(AP)				
8596		HOLL	06	24	1449	N21 E18	06 26.0		A	20	2	1	3
8596		VORO	06	24	2347	N20 E14	06 26.1		AXX	13	1		2
8596		SVTO	06	25	0440	N21 E11	06 26.0		A	10	1	1	3
8596	29155	MWIL	06	25	1430	N23 E05	06 26.0	4	(BG)				
8596		HOLL	06	25	1459	N21 E04	06 25.9		B	10	4	4	4
8596		VORO	06	25	2305	N23 E02	06 26.1		AXX	10	2		3
8596		LEAR	06	26	0050	N22 E02	06 26.2		B	10	2	1	5
8596		SVTO	06	26	0500	N22 E01	06 26.3		B	140	11	8	4
8596		HOLL	06	26	1718	N22 W09	06 26.0		A	10	1	1	4
8596		LEAR	06	27	0100	N23 W13	06 26.0		A	10	1	1	4
8596		SVTO	06	27	0535	N20 W13	06 26.2		B	200	20	6	3
8596		SVTO	06	28	0550	N22 W20	06 26.7		B	230	24	11	3
8596		VORO	06	28	2205	N22 W33	06 26.4		DAI	131	8	2	3
8596		SVTO	06	29	0605	N21 W32	06 26.8		B	310	32	13	3
8596		VORO	06	29	2157	N22 W46	06 26.4		CAO	81	3	2	2
8596		SVTO	06	30	1056	N22 W53	06 26.4		B	150	12	12	2
8596		VORO	06	30	2235	N21 W61	06 26.3		HAX	79	2		2
8599A	29177	MWIL	06	26	1430	S13 W02	06 26.4	3	(B)				
8599A		HOLL	06	26	1718	S12 W03	06 26.5		B	10	3	2	4
8599A	29177	MWIL	06	27	1430	S12 W15	06 26.5	3	(B)				
8599A		MWIL	06	28	1500	S11 W30	06 26.4	3	(B)				
8599A		VORO	06	28	2205	S12 W33	06 26.4		AXX	5	1		3
8599A	29177	MWIL	06	29	1445	S10 W43	06 26.4	3	(B)				
8598		KAND	06	20	0730	N21 E80	06 26.4		CSO		2	12	1
8598		KAND	06	20	0730	N23 E79	06 26.4		AX		1		1
8598	29157	MWIL	06	20	1445	N20 E81	06 26.8	3	AP				

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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
8598	29158	MWIL	06 20 1445	N25	E84	06 27.1	2	AP					
8598		VORO	06 20 2200	N24	E81	06 27.2			HAX	82	1	3	3
8598		SVTO	06 21 0621	N21	E74	06 26.9		A	HA	180	1	2	3
8598		KAND	06 21 0635	N20	E72	06 26.8			HA		1	3	5
8598		KAND	06 21 0635	N25	E73	06 26.9			HA		2	2	5
8598		RAMY	06 21 1229	N26	E74	06 27.3		B	CAO	60	6	12	3
8598	29157	MWIL	06 21 1445	N20	E69	06 26.9	5	(AP)					
8598	29158	MWIL	06 21 1445	N25	E72	06 27.2	4	(BP)					
8598		HOLL	06 21 1600	N25	E75	06 27.5		B	EAO	150	7	12	3
8598		LEAR	06 22 0110	N24	E68	06 27.3		B	CAO	80	10	16	3
8598		KAND	06 22 0555	N20	E66	06 27.3			CAO		4	15	4
8598		KAND	06 22 0555	N25	E65	06 27.3			CAO		9	16	4
8598		SVTO	06 22 0700	N26	E63	06 27.2		B	CAO	60	2	17	3
8598	29157	MWIL	06 22 1445	N21	E56	06 26.9	5	(AP)					
8598	29158	MWIL	06 22 1445	N25	E60	06 27.3	5	(BG)					
8598		HOLL	06 22 1547	N25	E62	06 27.5		B	EAO	180	8	15	4
8598		LEAR	06 23 0053	N23	E53	06 27.1		B	FAO	180	14	16	4
8598		VORO	06 23 0440	N24	E53	06 27.3			CAO	190	11	13	2
8598		SVTO	06 23 0813	N25	E48	06 27.1		B	EAO	120	14	16	3
8598		KAND	06 23 0830	N21	E46	06 26.9			HA		1	3	3
8598		KAND	06 23 0830	N25	E49	06 27.1			CAO		10	10	3
8598	29157	MWIL	06 23 1445	N21	E43	06 26.9	5	(AP)					
8598	29158	MWIL	06 23 1445	N24	E46	06 27.2	5	(BG)					
8598		HOLL	06 23 1502	N23	E47	06 27.2		B	FAI	270	17	16	3
8598		LEAR	06 24 0108	N22	E41	06 27.2		B	FAI	290	28	16	5
8598		SVTO	06 24 0345	N25	E39	06 27.2		B	FAI	280	33	18	3
8598	29158	MWIL	06 24 1445	N23	E31	06 27.0	5	(B)					
8598		HOLL	06 24 1449	N23	E33	06 27.2		B	FAC	360	27	17	3
8598		VORO	06 24 2347	N22	E29	06 27.2			EAI	567	24	16	2
8598		SVTO	06 25 0440	N23	E25	06 27.1		B	FKI	960	31	20	3
8598	29158	MWIL	06 25 1430	N23	E18	06 27.0	5	(BG)					
8598		HOLL	06 25 1459	N23	E16	06 26.8		B	FKI	420	45	18	4
8598		VORO	06 25 2305	N22	E15	06 27.1			EKI	690	39	17	3
8598		LEAR	06 26 0050	N23	E15	06 27.2		G	FAC	580	70	20	5
8598		SVTO	06 26 0500	N23	E12	06 27.1		B	EAI	450	22	11	4
8598	29158	MWIL	06 26 1430	N22	E04	06 26.9	5	(BG)					
8598		HOLL	06 26 1718	N23	E02	06 26.9		B	FAC	550	54	9	4
8598		LEAR	06 27 0100	N23	E02	06 27.2		BG	FAI	510	73	24	4
8598		SVTO	06 27 0535	N23	W02	06 27.1		B	FKI	590	68	17	3
8598		KAND	06 27 0910	N23	W05	06 27.0			FCA		23	18	3
8598	29158	MWIL	06 27 1430	N22	W09	06 26.9	5	(D)					
8598		HOLL	06 27 1500	N21	W07	06 27.1		B	FKC	510	56	20	4
8598		LEAR	06 28 0125	N22	W14	06 27.0		BG	FAI	470	77	18	3
8598		SVTO	06 28 0550	N25	W20	06 26.7		B	DAO	170	18	6	3
8598		KAND	06 28 0610	N21	W18	06 26.9			FAO		39	19	5
8598	29158	MWIL	06 28 1500	N22	W22	06 26.9	5	(D)					
8598		HOLL	06 28 1600	N22	W21	06 27.0		B	FAC	280	48	19	3
8598		VORO	06 28 2205	N24	W23	06 27.1			DAI	355	31	13	3
8598		LEAR	06 29 0056	N23	W27	06 26.9		BG	FAI	340	52	20	4
8598		SVTO	06 29 0605	N25	W30	06 26.9		B	DAO	100	24	6	3
8598		KAND	06 29 0930	N22	W31	06 27.0			FAO		16	18	5
8598	29158	MWIL	06 29 1445	N22	W36	06 26.8	4	(D)					
8598		HOLL	06 29 1452	N23	W34	06 27.0		B	FSI	190	36	16	4
8598		VORO	06 29 2157	N23	W37	06 27.1			DAI	252	9	12	2
8598		LEAR	06 30 0047	N23	W39	06 27.0		BG	FAI	190	25	17	2
8598		KAND	06 30 0645	N21	W44	06 26.9			FSO		21	17	4
8598		SVTO	06 30 1056	N26	W41	06 27.3		B	DAO	40	8	5	2
8598	29158	MWIL	06 30 1430	N21	W50	06 26.8	5	(BP)					
8598		HOLL	06 30 1515	N21	W48	06 26.9		B	FAO	140	11	17	3
8598		VORO	06 30 2235	N21	W52	06 26.9			DAI	160	4	11	2
8598		LEAR	07 01 0115	N23	W54	06 27.0		B	FAO	120	8	15	2
8598		SVTO	07 01 0520	N23	W51	06 27.4		A	HR	50	1	2	3
8598		HOLL	07 01 1440	N21	W61	06 27.0		B	EAO	100	7	15	3
8598		LEAR	07 02 0105	N23	W68	06 26.9		B	FAO	150	12	18	3
8598		HOLL	07 02 1751	N21	W75	06 27.1		B	CSO	90	5	2	2
8598		LEAR	07 03 0110	N23	W80	06 27.0		A	HA	60	1	2	4
8594	29159	MWIL	06 20 1445	N14	E87	06 27.2	3	AP					
8594		HOLL	06 20 2007	N13	E80	06 26.9		B	CAO	210	5	4	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat CMD		CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8594		VORO	06	20	2200	N13 E82	06 27.1			HAX	400	2	1	3
8594		LEAR	06	21	0140	N12 E79	06 27.0		A	HK	240	3	3	3
8594		SVTO	06	21	0621	N15 E75	06 26.9		B	DAO	200	6	6	3
8594		KAND	06	21	0635	N14 E73	06 26.8			DAO		5	5	5
8594		RAMY	06	21	1229	N14 E73	06 27.0		B	DAC	230	7	8	3
8594	29159	MWIL	06	21	1445	N14 E72	06 27.0	5	(BP)					
8594		HOLL	06	21	1600	N14 E71	06 27.0		B	DAO	360	8	7	3
8594		LEAR	06	22	0110	N13 E67	06 27.1		B	DAO	310	8	6	3
8594		KAND	06	22	0555	N14 E63	06 27.0			DKO		11	10	4
8594		SVTO	06	22	0700	N14 E61	06 26.9		B	DAO	260	6	8	3
8594	29159	MWIL	06	22	1445	N14 E59	06 27.1	5	(BP)					
8594		HOLL	06	22	1547	N16 E63	06 27.4		B	FAI	280	17	17	4
8594		LEAR	06	23	0053	N14 E53	06 27.0		B	EAI	290	14	11	4
8594		VORO	06	23	0440	N13 E51	06 27.0			DKI	440	11	7	2
8594		SVTO	06	23	0813	N14 E48	06 27.0		B	DAO	220	8	7	3
8594		KAND	06	23	0830	N14 E49	06 27.0			DKO		5	10	3
8594	29159	MWIL	06	23	1445	N13 E45	06 27.0	5	(D)					
8594		HOLL	06	23	1502	N14 E44	06 26.9		B	CAO	180	8	8	3
8594		LEAR	06	24	0108	N14 E39	06 27.0		B	DAI	180	17	8	5
8594		SVTO	06	24	0345	N15 E35	06 26.8		B	DAO	280	9	8	3
8594	29159	MWIL	06	24	1445	N12 E31	06 26.9	5	(BG)					
8594		HOLL	06	24	1449	N13 E31	06 26.9		B	DAC	170	9	8	3
8594		VORO	06	24	2347	N13 E27	06 27.0			DAI	321	13	8	2
8594		SVTO	06	25	0440	N14 E24	06 27.0		B	DAO	230	10	9	3
8594	29159	MWIL	06	25	1430	N13 E18	06 27.0	4	(AP)					
8594		HOLL	06	25	1459	N13 E18	06 27.0		A	HA	190	19	8	4
8594		VORO	06	25	2305	N13 E13	06 26.9			DAI	222	17	7	3
8594		LEAR	06	26	0050	N12 E13	06 27.0		BG	DAI	130	26	9	5
8594		SVTO	06	26	0500	N14 E09	06 26.9		B	DAO	100	12	8	4
8594	29159	MWIL	06	26	1430	N13 E04	06 26.9	4	(BF)					
8594		HOLL	06	26	1718	N13 E03	06 26.9		B	DAC	140	22	9	4
8594		LEAR	06	27	0100	N13 W01	06 27.0		B	DAI	100	24	9	4
8594		SVTO	06	27	0535	N13 W03	06 27.0		B	DAI	180	26	8	3
8594		KAND	06	27	0910	N14 W05	06 27.0			DSO		7	9	3
8594	29159	MWIL	06	27	1430	N14 W08	06 27.0	4	(AP)					
8594		HOLL	06	27	1500	N13 W08	06 27.0		B	DSO	90	16	9	4
8594		LEAR	06	28	0125	N13 W14	06 27.0		B	DAI	70	18	9	3
8594		SVTO	06	28	0550	N15 W16	06 27.0		B	DRO	40	15	9	3
8594		KAND	06	28	0610	N13 W17	06 27.0			BXI		10	8	5
8594	29159	MWIL	06	28	1500	N14 W21	06 27.0	4	(AP)					
8594		HOLL	06	28	1600	N14 W21	06 27.1		B	CAO	50	19	8	3
8594		VORO	06	28	2205	N14 W25	06 27.0			DAI	90	11	7	3
8594		LEAR	06	29	0056	N14 W27	06 27.0		B	DAO	80	19	8	4
8594		SVTO	06	29	0605	N15 W28	06 27.1		B	BXO	30	15	6	3
8594	29159	MWIL	06	29	1445	N15 W35	06 27.0	4	(AP)					
8594		HOLL	06	29	1452	N15 W34	06 27.0		B	CSO	40	12	8	4
8594		VORO	06	29	2157	N14 W38	06 27.0			BXI	17	4	3	2
8594		LEAR	06	30	0047	N15 W38	06 27.1		B	CSO	40	7	5	2
8594	29159	MWIL	06	30	1430	N14 W49	06 26.9	4	(AP)					
8594		HOLL	06	30	1515	N14 W48	06 27.0		A	AX	20	5	4	3
8594		LEAR	07	01	0115	N14 W52	06 27.2		B	BXO	10	5	5	2
8594	29164	MWIL	07	01	1430	N16 W55	06 27.5	4	(BP)					
8594		LEAR	07	02	0105	N16 W64	06 27.3		B	BXO	60	4	4	3
8594	29164	MWIL	07	02	1445	N16 W65	06 27.8	4	(AF)					
8596A		KAND	06	21	0635	N25 E73	06 26.9			HA		2	2	5
8596A		KAND	06	22	0555	N25 E65	06 27.3			CAO		9	16	4
8596A		KAND	06	23	0830	N25 E49	06 27.1			CAO		10	10	3
8596A		KAND	06	27	0910	N23 W05	06 27.0			FCA		23	18	3
8596A		KAND	06	28	0610	N21 W18	06 26.9			FAO		39	19	5
8596A		KAND	06	29	0930	N22 W31	06 27.0			FAO		16	18	5
8596A		KAND	06	30	0645	N21 W44	06 26.9			FSO		21	17	4
8596A		SVTO	07	01	0520	N21 W58	06 26.9		B	EAO	140	6	12	3
8596A	29158	KAND	07	01	0730	N21 W60	06 26.8			FAO		6	16	3
8596A		MWIL	07	01	1430	N21 W63	06 26.9	4	(BP)					
8596A		SVTO	07	02	0500	N22 W70	06 26.9		B	CSO	60	5	17	3
8596A		KAND	07	02	0805	N21 W72	06 26.9			CSO		5	16	3
8596A	29158	MWIL	07	02	1445	N21 W74	06 27.0	5	(BP)					
8596A		SVTO	07	03	0505	N21 W83	06 26.9		A	HS	30	1	3	4

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8597		RAMY	06 21 1229	N22	E66	06 26.6		B	CSO	110	2	6	3
8597		HOLL	06 21 1600	N21	E65	06 26.6		B	DSO	140	2	6	3
8597		SVTO	06 22 0700	N22	E60	06 26.9		A	HA	120	1	3	3
8597		HOLL	06 22 1547	N21	E56	06 26.9		A	HA	100	2	2	4
8597		LEAR	06 23 0053	N18	E56	06 27.3		B	EAO	150	7	12	4
8597		SVTO	06 23 0813	N19	E50	06 27.1		B	EAO	160	5	13	3
8597		LEAR	06 24 0108	N17	E43	06 27.3		B	ESO	100	11	14	5
8597		SVTO	06 24 0345	N21	E40	06 27.2		B	ESO	260	8	12	3
8616		SVTO	06 21 0621	N27	E75	06 27.1		A	HS	70	2	3	3
8616	29182	MWIL	06 30 1430	N30	W43	06 27.2	3	(AF)					
8616	29182	MWIL	07 01 1430	N28	W56	06 27.3	3	(AP)					
8616		LEAR	07 02 0105	N30	W60	06 27.4		B	BXO	30	4	4	3
8616		SVTO	07 02 0500	N29	W65	06 27.2		B	CSO	30	2	5	3
8616		KAND	07 02 0805	N29	W64	06 27.4			HA		1	2	3
8616	29182	MWIL	07 02 1445	N29	W68	06 27.4	4	(B)					
8616		HOLL	07 02 1751	N28	W68	06 27.5		B	BXO	10	2	3	2
8616		LEAR	07 03 0110	N31	W74	06 27.3		A	AX		1		4
8606		VORO	06 20 2200	N20	E79	06 26.9			HAX	283	1		3
8606		LEAR	06 22 0110	N18	E70	06 27.4		B	DAO	160	3	14	3
8606	29164	MWIL	06 22 1445	N17	E70	06 27.9	4	(BF)					
8606		VORO	06 23 0440	N19	E55	06 27.4			DAI	255	4	11	2
8606		KAND	06 23 0830	N18	E56	06 27.6			BXO		3	5	3
8606	29164	MWIL	06 23 1445	N18	E53	06 27.6	4	(B)					
8606		HOLL	06 23 1502	N18	E52	06 27.6		B	BXO	10	2	5	3
8606	29164	MWIL	06 24 1445	N17	E40	06 27.6	4	(B)					
8606		HOLL	06 24 1449	N17	E38	06 27.5		B	DAO	60	7	5	3
8606		VORO	06 24 2347	N19	E32	06 27.4			DAI	310	6	11	2
8606		SVTO	06 25 0440	N18	E30	06 27.5		B	CRO	50	11	8	3
8606	29164	MWIL	06 25 1430	N17	E25	06 27.5	5	(B)					
8606		HOLL	06 25 1459	N17	E25	06 27.5		B	DAO	70	11	6	4
8606		VORO	06 25 2305	N19	E19	06 27.4			DAI	373	30	9	3
8606		LEAR	06 26 0050	N16	E20	06 27.5		B	DAI	120	17	8	5
8606		SVTO	06 26 0500	N17	E17	06 27.5		B	DRO	70	8	5	4
8606	29164	MWIL	06 26 1430	N17	E12	06 27.5	4	(B)					
8606		HOLL	06 26 1718	N17	E11	06 27.5		B	DAC	110	13	7	4
8606		LEAR	06 27 0100	N17	E07	06 27.6		B	DAI	80	15	6	4
8606		SVTO	06 27 0535	N17	E03	06 27.5		B	DAO	140	20	7	3
8606		KAND	06 27 0910	N17	E01	06 27.4			CSO		5	6	3
8606	29164	MWIL	06 27 1430	N17	W02	06 27.4	5	(B)					
8606		HOLL	06 27 1500	N17	W03	06 27.4		B	CAO	70	13	7	4
8606		LEAR	06 28 0125	N17	W07	06 27.5		B	DAO	80	15	7	3
8606		SVTO	06 28 0550	N18	W10	06 27.5		B	DSO	40	11	7	3
8606		KAND	06 28 0610	N16	W10	06 27.5			CRO		10	8	5
8606	29164	MWIL	06 28 1500	N17	W15	06 27.5	4	(BG)					
8606		HOLL	06 28 1600	N17	W13	06 27.7		B	DAO	30	10	4	3
8606		VORO	06 28 2205	N17	W19	06 27.5			BXO	40	15	7	3
8606		LEAR	06 29 0056	N18	W21	06 27.4		B	DSO	60	12	9	4
8606		SVTO	06 29 0605	N17	W23	06 27.5		B	DSO	90	7	7	3
8606		KAND	06 29 0930	N17	W26	06 27.4			CAO		8	7	5
8606	29164	MWIL	06 29 1445	N17	W28	06 27.5	4	(B)					
8606		HOLL	06 29 1452	N17	W26	06 27.6		B	CSO	40	12	7	4
8606		VORO	06 29 2157	N17	W32	06 27.5			DAI	73	4	6	2
8606		LEAR	06 30 0047	N18	W34	06 27.4		B	DSO	60	5	8	2
8606		KAND	06 30 0645	N16	W34	06 27.7			AX		1		4
8606		SVTO	06 30 1056	N18	W41	06 27.3		B	DSO	40	3	8	2
8606	29164	MWIL	06 30 1430	N17	W43	06 27.3	4	(B)					
8606		HOLL	06 30 1515	N15	W42	06 27.4		B	CSO	40	7	7	3
8606		VORO	06 30 2235	N16	W46	06 27.4			DAI	62	5	7	2
8606		LEAR	07 01 0115	N17	W47	06 27.6		B	DSO	70	8	8	2
8606		SVTO	07 01 0520	N17	W49	06 27.6		B	DSO	90	9	8	3
8606		KAND	07 01 0730	N16	W54	06 27.3			HS		1	1	3
8606		HOLL	07 01 1440	N15	W57	06 27.4		A	AX	10	2	1	3
8606		LEAR	07 02 0105	N17	W59	06 27.7		B	BXO	10	2	2	3
8606		SVTO	07 02 0500	N17	W63	06 27.5		B	BXO	10	4	7	3
8599		RAMY	06 21 1229	S16	E80	06 27.6		A	HS	50	1	2	3

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8599	29162	MWIL	06	21	1445	S16 E83	06 27.9	3	AP					
8599		HOLL	06	21	1600	S16 E81	06 27.8		A	HA	60	2	2	3
8599		LEAR	06	22	0110	S17 E77	06 27.9		B	DAO	90	3	5	3
8599		KAND	06	22	0555	S16 E75	06 27.9			AX		6	3	4
8599		SVTO	06	22	0700	S16 E72	06 27.7		B	DAO	80	4	9	3
8599	29162	MWIL	06	22	1445	S16 E69	06 27.8	4	(BP)					
8599		HOLL	06	22	1547	S16 E69	06 27.9		B	DAC	110	6	5	4
8599		LEAR	06	23	0053	S17 E63	06 27.8		B	DAC	100	9	7	4
8599		VORO	06	23	0440	S17 E63	06 28.0			DAI	163	6	6	2
8599		SVTO	06	23	0813	S16 E59	06 27.8		B	CSO	120	4	8	3
8599		KAND	06	23	0830	S16 E60	06 27.9			DSO		7	8	3
8599	29162	MWIL	06	23	1445	S16 E57	06 27.9	4	(BP)					
8599		HOLL	06	23	1502	S17 E57	06 27.9		B	CAO	110	7	7	3
8599		LEAR	06	24	0108	S17 E52	06 28.0		B	DAI	130	10	10	5
8599		SVTO	06	24	0345	S16 E49	06 27.9		B	CAO	140	7	8	3
8599	29162	MWIL	06	24	1445	S16 E44	06 27.9	4	(BP)					
8599		HOLL	06	24	1449	S17 E44	06 28.0		B	CAO	100	7	9	3
8599		VORO	06	24	2347	S17 E40	06 28.0			DAI	163	7	8	2
8599		SVTO	06	25	0440	S16 E36	06 27.9		B	CSO	120	7	9	3
8599	29162	MWIL	06	25	1430	S16 E32	06 28.0	4	(BG)					
8599		HOLL	06	25	1459	S16 E32	06 28.0		B	DSO	110	13	10	4
8599		VORO	06	25	2305	S16 E27	06 28.0			DAI	140	8	9	3
8599		LEAR	06	26	0050	S17 E25	06 27.9		B	DAO	110	17	9	5
8599		SVTO	06	26	0500	S16 E24	06 28.0		B	CAO	80	8	9	4
8599	29162	MWIL	06	26	1430	S16 E18	06 28.0	5	(BP)					
8599		HOLL	06	26	1718	S16 E16	06 27.9		B	EAO	90	7	13	4
8599		LEAR	06	27	0100	S16 E13	06 28.0		B	EAO	80	13	12	4
8599		SVTO	06	27	0535	S17 E08	06 27.8		B	CAO	100	21	14	3
8599		KAND	06	27	0910	S16 E04	06 27.7			CSO		4	3	3
8599	29162	MWIL	06	27	1430	S16 E02	06 27.7	5	(BP)					
8599		HOLL	06	27	1500	S16 E04	06 27.9		A	HA	40	4	3	4
8599		LEAR	06	28	0125	S13 W02	06 27.9		B	DAO	60	9	8	3
8599		SVTO	06	28	0550	S13 W03	06 28.0		B	CSO	30	6	9	3
8599		KAND	06	28	0610	S11 W06	06 27.8			BXO		2	2	5
8599		KAND	06	28	0610	S16 W04	06 27.9			CRO		7	9	5
8599	29162	MWIL	06	28	1500	S15 W10	06 27.9	4	(BP)					
8599		HOLL	06	28	1600	S17 W11	06 27.8		B	CAO	20	7	11	3
8599		VORO	06	28	2205	S16 W16	06 27.7			HAX	21	4		3
8599		LEAR	06	29	0056	S14 W18	06 27.7		A	HA	20	2	1	4
8599		SVTO	06	29	0605	S16 W22	06 27.6		B	BXO	20	8	3	3
8599		KAND	06	29	0930	S15 W23	06 27.6			AX		5	4	5
8599	29180	MWIL	06	29	1445	S10 W25	06 27.7	3	(BP)					
8599	29162	MWIL	06	29	1445	S15 W24	06 27.8	3	(BG)					
8599		HOLL	06	29	1452	S13 W25	06 27.7		B	CRO	30	11	8	4
8599		VORO	06	29	2157	S15 W29	06 27.7			AXX	5	2		2
8599		LEAR	06	30	0047	S14 W32	06 27.6		B	BXO	10	5	1	2
8599		KAND	06	30	0645	S15 W34	06 27.7			AX		3	1	4
8599		SVTO	06	30	1056	S16 W36	06 27.7		B	DSO	30	5	5	2
8599	29162	MWIL	06	30	1430	S15 W37	06 27.8	4	(BG)					
8599		HOLL	06	30	1515	S15 W38	06 27.7		B	BXO	10	6	3	3
8599		VORO	06	30	2235	S15 W43	06 27.7			AXX	3	1		2
8599		LEAR	07	01	0115	S14 W45	06 27.7		B	BXO	10	2	2	2
8599		SVTO	07	01	0520	S11 W48	06 27.7		A	AX	20	3	1	3
8599		HOLL	07	01	1440	S16 W47	06 28.1		A	AX	10	1	1	3
8609		VORO	06	23	0440	N16 E68	06 28.3			BXO	17	2	3	2
8609		KAND	06	23	0830	N17 E65	06 28.3			BXO		3	4	3
8609	29168	MWIL	06	23	1445	N16 E63	06 28.4	4	(B)					
8609		HOLL	06	23	1502	N17 E62	06 28.3		B	BXO	20	3	4	3
8609	29168	MWIL	06	24	1445	N17 E49	06 28.3	4	(B)					
8609		VORO	06	24	2347	N17 E45	06 28.4			BXO	24	2	3	2
8609	29168	MWIL	06	25	1430	N17 E38	06 28.5	3	(AF)					
8609		LEAR	06	26	0050	N15 E33	06 28.5		A	AX		1		5
8609	29168	MWIL	06	26	1430	N16 E25	06 28.5	3	(AF)					
8609		HOLL	06	26	1718	N16 E22	06 28.4		A	AX	10	3	4	4
8609	29168	MWIL	06	27	1430	N17 E11	06 28.4	3	(AF)					
8609		HOLL	06	27	1500	N17 E07	06 28.1		B	BXO		2	4	4
8609	29168	MWIL	06	28	1500	N12 W03	06 28.4	2	AP					
8609	29168	MWIL	06	29	1445	N17 W14	06 28.5	3	(AF)					

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8609		HOLL	06 29 1452	N18 W14	06 28.5		B	BXO	10	2	3	4
8609A		LEAR	06 23 0053	N16 E74	06 28.6		B	CAO	90	6	9	4
8609A		SVTO	06 23 0813	N18 E72	06 28.8		B	CAO	90	7	18	3
8610	29172	MWIL	06 24 1445	N12 E61	06 29.2	3	(BF)					
8610	29172	MWIL	06 25 1430	N12 E47	06 29.1	3	(AP)					
8610		HOLL	06 25 1459	N13 E47	06 29.2		B	BXO		3	5	4
8610		VORO	06 25 2305	N12 E41	06 29.0			AXX	16	3	1	3
8610		LEAR	06 26 0050	N11 E38	06 28.9		B	BXO		4	2	5
8610		SVTO	06 26 0500	N13 E36	06 28.9		A	AX		1		4
8610	29172	MWIL	06 26 1430	N12 E31	06 28.9	4	(AP)					
8610		HOLL	06 26 1718	N11 E29	06 28.9		B	CSO	20	3	3	4
8610		LEAR	06 27 0100	N11 E25	06 28.9		B	BXO	10	2	2	4
8610		SVTO	06 27 0535	N15 E17	06 28.5		A	AX	10	2	2	3
8610	29172	MWIL	06 27 1430	N13 E18	06 29.0	3	(AP)					
8610		HOLL	06 27 1500	N12 E17	06 28.9		B	BXO	10	3	3	4
8610		LEAR	06 28 0125	N12 E12	06 29.0		A	AX	10	1	1	3
8610	29183	MWIL	06 30 1430	N10 W22	06 28.9	4	(AP)					
8610	29184	MWIL	06 30 1430	N13 W20	06 29.1	4	(BP)					
8610		HOLL	06 30 1515	N12 W21	06 29.0		B	BXO	10	6	3	3
8610		LEAR	07 01 0115	N13 W26	06 29.2		B	CSO	20	3	4	2
8610		SVTO	07 01 0520	N08 W30	06 29.1		A	AX	10	3	2	3
8610		KAND	07 01 0730	N12 W31	06 29.1			AX		1		3
8610	29183	MWIL	07 01 1430	N12 W35	06 29.1	3	(AP)					
8610		HOLL	07 01 1440	N12 W34	06 29.1		A	AX	20	2	1	3
8610		SVTO	07 02 0500	N12 W44	06 29.0		A	AX		1		3
8602		VORO	06 23 0440	N18 E82	06 29.4			HAX	330	3	1	2
8602		KAND	06 23 0830	N19 E80	06 29.4			BXO		2	2	3
8602	29169	MWIL	06 23 1445	N18 E77	06 29.5	4	(BP)					
8602		HOLL	06 23 1502	N19 E79	06 29.6		B	CAO	100	6	5	3
8602		LEAR	06 24 0108	N18 E72	06 29.5		B	DAI	420	8	10	5
8602		SVTO	06 24 0345	N19 E71	06 29.6		B	FAO	330	11	18	3
8602	29173	MWIL	06 24 1445	N19 E62	06 29.3	4	(AP)					
8602	29169	MWIL	06 24 1445	N19 E64	06 29.5	5	(B)					
8602		HOLL	06 24 1449	N19 E63	06 29.4		B	DAO	250	9	10	3
8602		VORO	06 24 2347	N19 E63	06 29.8			DAI	701	9	10	2
8602		SVTO	06 25 0440	N18 E58	06 29.6		B	CAO	400	15	11	3
8602	29173	MWIL	06 25 1430	N19 E49	06 29.3	5	(B)					
8602		HOLL	06 25 1459	N18 E51	06 29.5		B	CAO	260	16	13	4
8602		VORO	06 25 2305	N19 E50	06 29.8			DAI	528	13	10	3
8602		LEAR	06 26 0050	N16 E48	06 29.7		B	EKO	340	22	12	5
8602		SVTO	06 26 0500	N18 E44	06 29.5		B	CAO	300	12	8	4
8602	29173	MWIL	06 26 1430	N18 E37	06 29.4	5	(BP)					
8602		HOLL	06 26 1718	N18 E38	06 29.6		B	DKI	360	29	7	4
8602		LEAR	06 27 0100	N17 E33	06 29.5		B	DKO	300	15	7	4
8602		SVTO	06 27 0535	N18 E32	06 29.7		B	EKO	420	39	11	3
8602		KAND	06 27 0910	N18 E27	06 29.4			CKO		6	4	3
8602	29173	MWIL	06 27 1430	N18 E24	06 29.4	4	(D)					
8602		HOLL	06 27 1500	N18 E27	06 29.7		B	CKO	340	25	8	4
8602		LEAR	06 28 0125	N18 E21	06 29.6		B	DKO	320	23	8	3
8602		SVTO	06 28 0550	N19 E16	06 29.5		B	DAO	270	11	5	3
8602		KAND	06 28 0610	N18 E16	06 29.5			CSO		23	8	5
8602	29173	MWIL	06 28 1500	N18 E11	06 29.5	5	(BG)					
8602		HOLL	06 28 1600	N17 E12	06 29.6		B	DKO	200	32	9	3
8602		VORO	06 28 2205	N19 E10	06 29.7			HKX	424	27	8	3
8602		LEAR	06 29 0056	N18 E07	06 29.6		B	DKO	250	20	7	4
8602		SVTO	06 29 0605	N18 E03	06 29.5		B	DAO	290	23	6	3
8602		KAND	06 29 0930	N19 E00	06 29.4			CKI		10	6	5
8602	29173	MWIL	06 29 1445	N18 W03	06 29.4	5	(BP)					
8602		HOLL	06 29 1452	N19 W04	06 29.3		B	DKO	250	19	7	4
8602		VORO	06 29 2157	N19 W05	06 29.5			HKX	372	7	4	2
8602		LEAR	06 30 0047	N18 W07	06 29.5		B	DKO	220	14	6	2
8602		KAND	06 30 0645	N18 W11	06 29.4			CKO		14	6	4
8602		SVTO	06 30 1056	N18 W15	06 29.3		B	DKO	240	14	7	2
8602	29173	MWIL	06 30 1430	N18 W16	06 29.4	4	(D)					
8602		HOLL	06 30 1515	N18 W17	06 29.3		B	DKO	180	16	6	3
8602		VORO	06 30 2235	N18 W20	06 29.4			HKX	404	11	4	2

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8602		LEAR	07 01 0115	N18 W21	06 29.5		B	DAO	230	23	7	2
8602		SVTO	07 01 0520	N18 W24	06 29.5		B	DKI	330	15	6	3
8602		KAND	07 01 0730	N18 W26	06 29.4			DAO		9	6	3
8602	29173	MWIL	07 01 1430	N18 W30	06 29.4	5	(BG)					
8602		HOLL	07 01 1440	N18 W29	06 29.5		B	C O	210	8	6	3
8602		LEAR	07 02 0105	N18 W36	06 29.4		B	DKO	280	16	6	3
8602		SVTO	07 02 0500	N18 W38	06 29.4		B	DKO	310	9	7	3
8602		KAND	07 02 0805	N19 W40	06 29.4			DAO		7	5	3
8602	29173	MWIL	07 02 1445	N19 W43	06 29.4	5	(BG)					
8602		HOLL	07 02 1751	N18 W46	06 29.3		B	CAO	180	8	3	2
8602		LEAR	07 03 0110	N20 W49	06 29.4		B	DKO	230	17	5	4
8602		SVTO	07 03 0505	N19 W52	06 29.3		B	DAO	360	11	5	4
8602		KAND	07 03 0825	N18 W53	06 29.4			CAI		10	5	3
8602	29173	MWIL	07 03 1445	N19 W56	06 29.4	5	(BG)					
8602		HOLL	07 03 1701	N18 W58	06 29.4		B	DAO	180	7	5	3
8602		RAMY	07 03 1825	N18 W60	06 29.3		B	DSO	150	5	5	3
8602		VORO	07 04 0118	N18 W63	06 29.3			HAX	291	6		2
8602		LEAR	07 04 0135	N20 W62	06 29.4		B	DAO	220	6	5	3
8602		SVTO	07 04 0520	N18 W65	06 29.4		B	CAO	280	7	5	3
8602		KAND	07 04 0755	N19 W66	06 29.4			CAO		4	6	4
8602		RAMY	07 04 1237	N18 W70	06 29.3		B	CAO	160	4	6	4
8602	29173	MWIL	07 04 1430	N18 W69	06 29.4	5	(AP)					
8602		HOLL	07 04 1525	N19 W70	06 29.4		A	HA	120	1	2	2
8602		VORO	07 04 2333	N18 W75	06 29.4			HAX	265	1		3
8602		LEAR	07 05 0132	N19 W77	06 29.3		A	HA	80	2	3	4
8602		KAND	07 05 0655	N18 W80	06 29.3			HS		1	2	4
8602		RAMY	07 05 1315	N15 W85	06 29.2		A	HA	60	2	8	2
8602	29173	MWIL	07 05 1445	N17 W83	06 29.4	5	(AP)					
8602		HOLL	07 05 1527	N17 W82	06 29.5		A	HA	60	1	2	3
8612		SVTO	06 23 0813	S16 E76	06 29.1		B	CAO	40	2	4	3
8612	29170	MWIL	06 23 1445	S16 E77	06 29.4	4	(B)					
8612	29170	MWIL	06 24 1445	S16 E65	06 29.5	4	(BG)					
8612	29170	MWIL	06 25 1430	S16 E53	06 29.6	5	(BF)					
8612	29170	MWIL	06 26 1430	S16 E38	06 29.5	4	(AP)					
8612		KAND	06 27 0910	S16 E29	06 29.6			HS		1	1	3
8612	29170	MWIL	06 27 1430	S16 E25	06 29.5	4	(AP)					
8612		HOLL	06 27 1500	S17 E25	06 29.5		A	HS	30	3	2	4
8612		LEAR	06 28 0125	S17 E19	06 29.5		B	CSO	30	3	3	3
8612		SVTO	06 28 0550	S15 E19	06 29.7		B	DAO	90	5	6	3
8612		KAND	06 28 0610	S15 E15	06 29.4			AX		3	1	5
8612	29170	MWIL	06 28 1500	S16 E12	06 29.5	4	(AP)					
8612		HOLL	06 28 1600	S17 E12	06 29.6		A	HS	20	3	3	3
8612		LEAR	06 29 0056	S15 E08	06 29.6		B	DAO	50	7	1	4
8612		SVTO	06 29 0605	S15 E05	06 29.6		B	DSO	100	5	4	3
8612		KAND	06 29 0930	S15 E00	06 29.4			AX		3	1	5
8612		HOLL	06 29 1452	S14 W01	06 29.5		B	CSO	50	7	4	4
8612		LEAR	06 30 0047	S14 W07	06 29.5		B	CSO	50	5	3	2
8612		KAND	06 30 0645	S18 W12	06 29.4			AX		3	1	4
8612		SVTO	06 30 1056	S16 W13	06 29.5		B	DAO	50	5	6	2
8612		HOLL	06 30 1515	S14 W15	06 29.5		B	CAO	40	4	4	3
8612		LEAR	07 01 0115	S14 W20	06 29.6		A	HS	40	1	2	2
8612		SVTO	07 01 0520	S15 W22	06 29.6		B	DAO	150	7	4	3
8603		VORO	06 23 0440	S17 E82	06 29.4			DAO	157	2	2	2
8603		KAND	06 23 0830	S16 E81	06 29.5			BXO		2	3	3
8603		HOLL	06 23 1502	S16 E79	06 29.6		B	CSO	40	2	5	3
8603		LEAR	06 24 0108	S15 E72	06 29.5		B	EAO	150	9	14	5
8603		SVTO	06 24 0345	S15 E71	06 29.5		B	CSO	110	11	13	3
8603	29175	MWIL	06 24 1445	S14 E70	06 29.9	4	(BP)					
8603		HOLL	06 24 1449	S15 E67	06 29.7		B	EAO	240	6	13	3
8603		VORO	06 24 2347	S17 E68	06 30.1			DAI	554	8	21	2
8603		SVTO	06 25 0440	S15 E62	06 29.9		B	FAO	360	12	19	3
8603	29175	MWIL	06 25 1430	S15 E60	06 30.1	4	(BP)					
8603		HOLL	06 25 1459	S15 E60	06 30.2		B	FAC	290	22	20	4
8603		VORO	06 25 2305	S17 E57	06 30.3			DAI	705	16	19	3
8603		LEAR	06 26 0050	S17 E55	06 30.2		BG	FAI	290	33	16	5
8603		SVTO	06 26 0500	S15 E55	06 30.4		B	FAI	240	15	19	4
8603	29175	MWIL	06 26 1430	S15 E49	06 30.3	4	(BP)					

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(Ordered by Central Meridian Passage Date)

JUNE 1999

NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8603		HOLL	06 26	1718	S15	E45	06 30.1		B	FAC	360	23	20	4
8603		LEAR	06 27	0100	S16	E41	06 30.1		B	FAI	340	37	19	4
8603		SVTO	06 27	0535	S15	E39	06 30.2		BG	FKI	400	55	20	3
8603		KAND	06 27	0910	S16	E39	06 30.3			FAO		22	16	3
8603	29175	MWIL	06 27	1430	S15	E36	06 30.3	4	(BG)					
8603		HOLL	06 27	1500	S15	E35	06 30.3		B	FAC	350	30	16	4
8603		LEAR	06 28	0125	S16	E30	06 30.3		B	FAI	310	41	15	3
8603		SVTO	06 28	0550	S15	E28	06 30.4		BG	EAI	200	29	13	3
8603		KAND	06 28	0610	S15	E25	06 30.1			CRI		43	16	5
8603	29175	MWIL	06 28	1500	S15	E22	06 30.3	5	(BG)					
8603		HOLL	06 28	1600	S15	E22	06 30.3		B	EAC	130	32	15	3
8603		VORO	06 28	2205	S16	E17	06 30.2			EAI	372	39	19	3
8603		LEAR	06 29	0056	S15	E16	06 30.2		B	EAI	190	37	15	4
8603		SVTO	06 29	0605	S16	E14	06 30.3		BG	EAI	200	41	15	3
8603		KAND	06 29	0930	S14	E10	06 30.1			FAO		33	18	5
8603	29175	MWIL	06 29	1445	S14	E06	06 30.1	5	(BG)					
8603		HOLL	06 29	1452	S14	E09	06 30.3		B	EAI	90	43	14	4
8603		VORO	06 29	2157	S15	E00	06 29.9			DAI	334	23	13	2
8603		LEAR	06 30	0047	S14	E02	06 30.2		B	EAI	150	33	14	2
8603		KAND	06 30	0645	S15	W02	06 30.1			CAO		51	18	4
8603		SVTO	06 30	1056	S14	W06	06 30.0		BG	DSI	80	29	9	2
8603	29175	MWIL	06 30	1430	S14	W07	06 30.1	5	(D)					
8603		HOLL	06 30	1515	S14	W07	06 30.1		BG	EAI	100	42	14	3
8603		VORO	06 30	2235	S15	W12	06 30.0			EAI	359	29	12	2
8603		LEAR	07 01	0115	S14	W11	06 30.2		BG	EAI	140	39	13	2
8603		SVTO	07 01	0520	S14	W14	06 30.2		BG	EAI	160	36	13	3
8603		KAND	07 01	0730	S15	W19	06 30.0			EAC		22	11	3
8603	29175	MWIL	07 01	1430	S15	W21	06 30.0	5	(D)					
8603		HOLL	07 01	1440	S15	W22	06 30.0		BG	EAC	190	27	12	3
8603		LEAR	07 02	0105	S14	W27	06 30.0		BG	EAI	170	28	13	3
8603		SVTO	07 02	0500	S15	W25	06 30.3		B	FAO	270	26	18	3
8603		KAND	07 02	0805	S15	W32	06 30.0			FAC		15	16	3
8603	29175	MWIL	07 02	1445	S15	W35	06 30.0	5	(D)					
8603		HOLL	07 02	1751	S16	W37	06 30.0		B	EAC	220	24	12	2
8603		LEAR	07 03	0110	S14	W40	06 30.0		BG	FAI	260	28	16	4
8603		SVTO	07 03	0505	S15	W45	06 29.9		BG	EAO	420	23	15	4
8603		KAND	07 03	0825	S16	W45	06 30.0			EAO		19	15	3
8603	29175	MWIL	07 03	1445	S15	W49	06 30.0	5	(BG)					
8603		HOLL	07 03	1701	S16	W52	06 29.9		B	EAC	260	18	12	3
8603		RAMY	07 03	1825	S16	W51	06 30.0		B	EAO	190	10	12	3
8603		VORO	07 04	0118	S15	W56	06 29.9			DAI	446	11	9	2
8603		LEAR	07 04	0135	S14	W55	06 30.0		BG	EAI	280	18	12	3
8603		SVTO	07 04	0520	S17	W58	06 29.9		B	EAO	340	15	13	3
8603		KAND	07 04	0755	S15	W59	06 30.0			EAO		9	12	4
8603		RAMY	07 04	1237	S16	W61	06 30.0		B	EAI	240	14	13	4
8603	29175	MWIL	07 04	1430	S15	W63	06 29.9	5	(BG)					
8603		HOLL	07 04	1525	S15	W65	06 29.8		B	EAC	140	9	12	2
8603		VORO	07 04	2333	S15	W68	06 29.9			DAI	302	4	8	3
8603		LEAR	07 05	0132	S14	W69	06 29.9		B	DAO	180	11	10	4
8603		KAND	07 05	0655	S16	W74	06 29.8			DSO		3	11	4
8603		RAMY	07 05	1315	S18	W75	06 29.9		B	DAO	110	4	10	2
8603	29175	MWIL	07 05	1445	S16	W76	06 29.9	4	(BG)					
8603		HOLL	07 05	1527	S17	W75	06 30.0		B	DAO	120	5	10	3
8603		VORO	07 05	2129	S15	W80	06 29.9			DAI	163	2	8	3
8603A		SVTO	06 24	0345	N16	E79	06 30.1		A	AX		1		3
8603A	29174	MWIL	06 24	1445	N15	E73	06 30.1	4	(AP)					
8603A		VORO	06 24	2347	N14	E68	06 30.1			HAX	38	1		2
8603A	29174	MWIL	06 25	1430	N15	E60	06 30.1	4	(AP)					
8603A		VORO	06 25	2305	N14	E56	06 30.2			AXX	5	1		3
8603A	29174	MWIL	06 26	1430	N15	E46	06 30.1	3	(AP)					
8603A		SVTO	06 28	0550	N12	E27	06 30.3		A	AX		2	2	3
8603A		KAND	06 28	0610	N12	E26	06 30.2			BXO		2	3	5
8617		LEAR	07 02	0105	N15	W15	06 30.9		B	BXO	10	4	2	3
8617		SVTO	07 02	0500	N14	W19	06 30.8		B	BXO	10	6	4	3
8617		KAND	07 02	0805	N14	W21	06 30.7			CRO		3	4	3
8617	29189	MWIL	07 02	1445	N14	W24	06 30.8	4	(B)					
8617		HOLL	07 02	1751	N13	W27	06 30.7		B	BXO	20	9	5	2

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

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NOAA/ USAF Group	Mt Wilson Group	Sta	Observation Time		Lat	CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
8617		LEAR	07 03	0110	N15	W29	06 30.8		B	DSO	60	12	5	4
8617		SVTO	07 03	0505	N13	W33	06 30.7		B	DAO	70	18	6	4
8617		KAND	07 03	0825	N13	W34	06 30.8			CAI		11	7	3
8617	29189	MWIL	07 03	1445	N14	W37	06 30.8	5	(B)					
8617		HOLL	07 03	1701	N13	W39	06 30.8		B	DAO	170	10	7	3
8617		RAMY	07 03	1825	N13	W40	06 30.7		B	DAO	100	6	7	3
8617		VORO	07 04	0118	N13	W44	06 30.7			DAI	221	7	6	2
8617		LEAR	07 04	0135	N14	W44	06 30.7		B	DAO	170	16	7	3
8617		SVTO	07 04	0520	N13	W46	06 30.7		B	DAO	220	15	8	3
8617		KAND	07 04	0755	N13	W48	06 30.7			DAO		4	8	4
8617		RAMY	07 04	1237	N14	W52	06 30.6		B	DAO	190	12	7	4
8617	29189	MWIL	07 04	1430	N13	W51	06 30.7	5	(B)					
8617		HOLL	07 04	1525	N14	W52	06 30.7		B	DAO	170	11	9	2
8617		VORO	07 04	2333	N13	W56	06 30.7			DAI	328	4	6	3
8617		LEAR	07 05	0132	N14	W57	06 30.7		B	DAO	170	10	7	4
8617		KAND	07 05	0655	N13	W60	06 30.8			CSO		3	8	4
8617		RAMY	07 05	1315	N09	W65	06 30.7		B	DAO	120	3	6	2
8617	29189	MWIL	07 05	1445	N12	W65	06 30.7	5	(B)					
8617		HOLL	07 05	1527	N11	W65	06 30.7		B	DSO	130	4	8	3
8617		VORO	07 05	2129	N13	W69	06 30.7			DAI	206	5	6	3
8617		LEAR	07 06	0629	N13	W73	06 30.8		B	DAO	1500	8	9	4
8617		KAND	07 06	0640	N17	W75	06 30.6			BXO		5	9	4
8617		SVTO	07 06	0700	N13	W74	06 30.7		B	DHO	120	4	8	3
8617		RAMY	07 06	1138	N13	W76	06 30.7		B	DSO	50	4	7	3
8617	29189	MWIL	07 06	1430	N13	W78	06 30.7	4	(BF)					
8617		HOLL	07 06	1750	N11	W80	06 30.7		B	DSO	60	3	7	2

Stations reporting:

HOLL = Holloman
KAND = Kandilli
LEAR = Learmonth

MWIL = Mt. Wilson
PALE = Palehua
RAMY = Ramey

SVTO = San Vito
TACH = Tashkent
VORO = Voroshilov

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1999

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
01	0457	0504	0515D	1-	1					1	No flare		
01	0515E	0520	0545	1+	1					1	No flare		
01	0952	0957	1028	2	1					1	No flare		
01	1108	1115	1150	1-	5	1	2	1			1100	C6.2	8562
01	1236	1249	1352	1	1		1				1231	C1.2	8557
01	1354	1358	1432	1	1		1				No flare		
01	1900	1905	1930	1-	5			1		3	1853	C1.2	
01	1928	1935	2000	1+	1					1	No flare		
01	2244	2250	2334	2	5					3	2242	C5.1	
01	2335	2342	2500	2+	1					1	2334		8552
02	0335	0338	0346	1-	1					1	0340	C2.5	
02	0359	0405	0434	2	1					1	0340	C2.5	
02	0752	0757	0815	1	1					1	No flare		
02	1029	1036	1112	3	1		1				No flare		
02	1105	1112	1144	1	1		1				1109	C2.0	
02	1340	1342	1358	1	3					2	1336	C1.6	
02	1925	1937	2010	1-	5			1		2	1923	C2.3	
02	2043	2053	2238	3	3					2	2050	C5.0	
03	0530	0535	0607	2-	1					1	No flare		
03	0641	0649	0656	1	5	1	2				0640	M1.0	8562
03	1130	1140	1140D	1-	1			1			1129	C2.9	8562
03	1155	1200	1215	1-	1			1			1153	C2.3	8562
03	1615	1620	1645	1+	1					1	No flare		
03	2109	2112	2142	2-	5					5	2109	C5.0	8554
04	0545	0552	0637	2	1					1	No flare		
04	0658	0703U	0742	1	5	1	2				0652	M3.9	8552
04	0911	1000U	1027	1	1		1				*		
04	1034	1117U	1156	1	1		1				No flare		
04	1138	1145	1145D	1-	5			1		1	1136	C2.7	
04	1234	1241	1300	1-	1			1			1235	C1.8	8557
04	1426	1432	1455	1-	1			1			1425	C1.8	8554
04	1528	1530	1547	1	1					1	No flare		
04	1928	1932	1953	1	1					1	No flare		
05	0716	0719	0734	1	1		1				No flare		
05	0825	0842	0924	1	1		1				No flare		
05	1338	1404	1522	1	1		1				No flare		
05	1536	1554U	1650	1	1		1				No flare		
06	1105	1112	1258	1	1		1				1126	C2.0	
06	1529	1539	1612	1	1		1				No flare		
07	1352	1410	1445	2	1		1				No flare		
07	1445	1517	1552	3	1		1				No flare		
08	0734	0800	0832	1	1		1				*		
08	0841	0844	0859	1	1		1				No flare		
08	0910	0945	1032	2	1		1				0916	C1.4	
08	1750	1800	1845	1-	5			1		3	1749	C2.6	8574
08	1910	1916	2000	2+	1					1	No flare		
09	0222	0223	0240	1	1					1	*		
09	1513	1544	1608	1+	5		1			1	No flare		
09	1628	1655	1730	1	1		1				No flare		
09	1709	1715	1745	1-	1			1			1707	C1.2	8574
09	1855	1906	2000	1-	5			1		4	1853	C3.0	8574
09	2042	2050	2135	2+	1					1	No flare		
09	2249	2252	2315	1+	1					1	No flare		
10	1001	1009	1044	1	1		1				*		
10	1445	1458	1521	1	1		1				1449		8578
10	2058	2103	2122D	2	1					1	2053	C1.9	8574
10	2122E	2128	2158	2	1					1	No flare		
11	1110	1156	1240	1	5	1	1	1			1107	C8.8	
11	1809	1817	1915	1-	5			1		5	1808	C3.9	8569

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

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JUNE 1999

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
11	2009	2019	2045	2-	3					2	No flare		
11	2055	2110	2144	2	3					2	No flare		
12	0828	0830	0845	1-	1					1	No flare		
12	1325	1338	1445	2	5	1		1		5	1319	M1.0	8583
12	1530	1535	1645	2+	1					1	No flare		
12	2115	2124	2202	2	5					4	2113	C4.1	8574
12	2202	2220	2246	2	5					3	2206	C3.2	8583
12	2250E	2253	2326	2	1					1	2250	C3.5	
13	0748	0802	0849	1	1		1				0739	C2.3	8569
13	1306	1311	1330	1-	1			1			1306	C2.4	8569
13	1428	1430	1444	1-	1					1	No flare		
13	1512	1514	1528	1-	1					1	No flare		
15	0724	0734	0759	1	1		1				No flare		
16	1534	1600	1651	1	1		1				No flare		
16	1805	1813	1830	1-	5			1		3	1739	C1.9	
17	0731	0800U	0831	2	1		1				No flare		
17	0919	0928	0949	1	1		1				0914	C3.2	
17	1716	1730	1925	2+	5		2	1		6	1647	M3.6	
18	0527	0530	0600D	2	1					1	0535	C1.5	
18	0600	0602	0634	2-	1					1	*		
18	0711	0716	0727	1	5	1	2				0708	C5.8	
18	1105	1120	1220	1-	5		1	1			1104	C4.4	
18	1355	1400	1400D	1-	5			1		3	1356	C1.4	
18	1423	1432	1540	1-	5			1		4	1433	C2.2	8582
18	1602	1610	1610D	1-	5			1		3	*		
18	1638	1647	1647D	1-	5		1	1		3	1638	C5.8	
18	1756	1803	1830	1-	5		1	1		2	No flare		
18	1818	1824	1854	2-	5					2	No flare		
18	1955	2008	2100	1-	5			1		2	1956	C7.0	8585
18	2000	2013	2055	2	5					4	1956	C7.0	8585
18	2131	2139	2245	2+	5					3	No flare		
19	1340	1400	1500	2	5	1	2	1		5	1342	C5.1	
19	2227	2236	2329	2+	5					3	2228	C4.0	
20	0345	0349	0425	2	1					1	No flare		
20	0723	0726	0805	2-	1					1	0747	C1.3	
20	0835	0841	0857	1	5	1	2				0833	C5.5	
20	1233	1243	1328	1	1		1				No flare		
20	1355	1403	1435	1-	5			1		5	1355	C2.8	
20	1526	1536	1700	3-	5	1	2	1		6	1525	M2.9	8592
20	1702	1709	1729	1-	5		1			1	No flare		
20	1721	1727	1810	1-	5			1		5	1720	C3.8	
20	1910	1922	1922D	1-	5			1		7	1908	C5.1	8592
20	2001	2006	2043	2-	5					3	2008		
20	2105	2111	2145	2-	5					4	2104	C3.8	
21	0558	0615	0721	1	1		1				No flare		
21	0953	1000	1033	1	1		1				No flare		
22	1202	1220	1300	1-	1			1			1150	C2.6	
22	1710	1715	1745	2	1					1	*		
22	1817	1825	2019	3	5					4	1737	M1.7	
22	1820	1835	2000	2	5			1		3	1737	M1.7	
23	0042	0048	0115	2	1					1	0037	C7.9	8583
23	0540	0549	0656	2+	1					1	No flare		
23	0654	0706	0804	1	5	1	2				0649	M1.7	8598
23	0820	0830	0857	1	1		1				No flare		
23	1817	1819	1845	1-	5			1		4	1814	C2.8	8598
23	1828	1833	1850	1	5					4	1829	C2.5	
23	1847	1900	1908	1-	5			1		4	1851	C2.8	

* = no flare patrol.

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1999

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide Spread Index	Number of Station Reports by Type					Flare (UT)	X-ray Class	NOAA Region
						SWF	SEA	SPA	LF- SPA	SES			
23	2045	2053	2134	2	5					6	2044	C5.1	
23	2305	2315	0024	2+	5					3	2306	M1.1	
24	0657	0700	0726	1	1					1	0649		8598
24	0740	0749	0810	1	1		1				0738		8597
24	0808	0811	0838	1	5	1	2				0806	C6.5	8598
24	1222	1223	1245	1-	1			1			No flare		
24	1314	1320	1337	1-	1			1			1321E		8595
24	1412	1417	1445	1-	5			1		1	No flare		
24	1542	1545	1625	1-	5			1		1	1538	C2.3	8598
24	1641	1655	1718	1	1		1				No flare		
24	1837	1845	1945	1-	5			1		4	1826	C3.3	8598
24	2002	2006	2037	2-	5					5	2000	C3.3	8594
24	2248	2305	2336	2	5					2	2300	C3.4	8603
25	2158	2203	2228	1+	1					1	2152	C2.4	
26	0359	0400	0436	1+	1					1	0353	C1.7	
26	0511	0516	0704	2	1		1				0508	M2.3	8596
26	0604	0610	0628D	1	1					1	No flare		
26	0628E	0630	0710	2	1					1	No flare		
26	0718	0727	0812	1	5		2				0714	C7.0	8598
26	1152	1153	1220	1-	5		1	1			1149	C3.1	
26	1236	1238	1300	1-	1			1			1233	C2.2	8598
26	1330	1338	1435	1-	5		2	1		5	1328	C3.0	8598
26	1646	1652	1736	1-	5			1		3	1642	C4.1	8596
26	2032	2037	2100	1-	5			1		5	2028	C4.2	8602
27	0727	0731	0818	2	1					1	No flare		
27	1520	1534	1608	1-	5	1	2	1		1	1516	C2.0	8611
27	1835	1850	1930	1-	5			1		4	1821	C3.4	8598
27	2046	2054	2132	2	5					5	2045	C3.2	8611
28	0104	0110	0140	2	1					1	No flare		
28	1800	1806	1840D	2	1					1	No flare		
28	1818	1824	1900D	2	1					1	1815	C2.2	
28	1840	1852	2015	3	1					1	1839		8611
28	1900E	1913	1948D	2+	1					1	1859	C6.2	8611
29	0353	0356	0445	2+	1					1	No flare		
29	0505	0512	0554	1+	3		1			1	0501	M1.4	
29	0704	0708	0815	3-	1					1	0705		8603
29	0816	0823U	0846	2	5	1	2				0813	M3.1	8611
29	1240	1250	1320	1-	1			1			1240	C2.8	8596
29	1408	1413	1413D	1-	5					4	1407	C3.7	
29	1451	1513	1600	2+	3					3	1455	C3.9	8602
29	1521	1523	1620	1-	5		1	1		1	No flare		
29	1704	1715	1750	1	1		1				No flare		
29	1758	1803	1905	1-	5			1		4	1753	C3.0	8603
29	1908	1910	2025	2-	5			1		7	1907	M1.6	8603
29	2206	2212	2259	2	3					4	2204	C7.9	8603
30	0325	0330	0430	2+	1					1	No flare		
30	0526	0533	0615	2+	1					1	0524		8611
30	1014	1017	1052	2	1					1	No flare		
30	1124	1132	1245	2	5	1	2	1		2	1124	M1.9	8603
30	1128	1141	1219	1+	5		1			2	1124	M1.9	8603
30	1555	1600	1630	1-	1			1			1548		8603
30	1636	1645	1710	1-	5			1		3	1636		8603
30	1732	1737	1758	1+	1					1	1717		8602
30	1804	1810	2002	2	5		1	1		5	1803	M2.0	8603
30	1912	1936	2002	2	3					3	1911		8611
30	2010	2015	2100	1-	5			1		5	2007	M1.1	8606

* = no flare patrol.

OBSERVATORIES REPORTING FOR JUNE 1999

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Columbia City, Indiana, USA      SES      Panska Ves, Czech Republic    SES, SEA, SWF
Edenvale, Rep of S. Africa      SES      Rimavska Sobota, Slovakia     SEA
Houston, Texas, USA             SES      Rochester, New Hampshire, USA SES
Hudson, Ohio, USA               SES      Sun City Center, FL, USA      SES
Itapetinga, Brazil              SPA      Tucson, Arizona, USA          SES
Koniz, Switzerland              SES      Upice, Czech Republic         SEA
Marlboro, Massachusetts, USA    SES      Zilina, Slovakia              SEA
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Observations are not necessarily continuous.

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

JUNE 1999

OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
01	0000	0655	CULG	0003.0	0005.0	III	G	2	18X	150	
		0956	HIRA	0003.2	0003.4	III	B	1	25X	130	
			CULG	0114.0	0114.0	III	B	1	30	70	
			CULG	0157.0	0157.0	III	B	2	18	140	
			CULG	0229.0	0229.0	III	B	1	30	70	
			CULG	0408.0	0408.0	III	B	1	23	70	
			SVTO	0414.0	0415.0	III		1	50	68	
			CULG	0415.0	0415.0	III	B	2	23	110	
			SVTO	0557.0	0603.0	III		1	35	63	
			CULG	0558.0	0559.0	III	G	2	20	150	
			IZMI	0603.0	0603.2	III	G	2	50	215	
			IZMI	0603.0E	1200.00	III	N	2	45X	120U	
			IZMI	0603.0E	1200.00	I	N	2	80	270X	
			CULG	0613.0	0615.0	III	G	2	23	180	
			IZMI	0613.0	0614.9	III	GG	2	45X	270X	
	0603	1200	SVTO	0613.0	0751.0	III	N	3	35	85	
			HIRA	0613.8	0614.6	III	G	2	25X	330	
			IZMI	0614.0	0615.3	CONT		1	50	95	
			BLN	0614.2	0614.5	III		1	250	450	
			BLN	0625.0	0625.3	III	G,RS	1	450	550	
	0430	1810	BLN	0625.0	0742.0	III	GG,RS,U	1	350	550X	
			CULG	0625.0	0647.0	III	N	1	25	90	
			IZMI	0625.8	0626.2	III	G	1	45X	200	
			SVTO	0628.0	1044.0	CONT		1	35	85	
			ONDR	0629.5	0631.1	DCIM	G	1	1040	2000X	
	0416	1741	ONDR	0629.5	0631.1	DCIM	G	1	2000X	3945	
			IZMI	0644.1	0645.0	III	G	2	45X	145	
			IZMI	0722.0U	0731.0U	III	S	2	45X	180	
			BLN	0750.0	0750.5	III	RS	3	480	540	
	0801	1658	POTS	0801	1658	I	S,C,DC	2	110U	400	
			POTS	0833	1527	III	N	2	110U	170U	
			SVTO	0833.0	1023.0	III	N	2	35	85	
			POTS	0834.2	0834.4	III	G	2	40X	170U	
			POTS	0841.2	0841.6	III	G	3	40X	250	
			POTS	0846.3	0846.6	III	B	2	40X	225	
			POTS	0853.7	0854.0	III	G,U	3	115	160	
			IZMI	0908.0	0908.4	III	G,HARM	2	45X	235	
			POTS	0908.0	0908.7	III	G,U	3	40X	250	
			HIRA	0908.2	0908.4	III	B	1	25X	220	
			IZMI	0908.4	0908.6	V		2	50	65	
			POTS	0909.8	0910.1	III	G	2	40X	145	
			POTS	0916	1630	III	N	2	40X	90U	
			POTS	0927.1	0927.4	III	G	3	40X	145	
			IZMI	0927.2	0927.4	III	G	1	50	150	
			IZMI	0931.7	0932.5	III	G	2	45X	240	
			POTS	0932.1	0932.2	III	B	2	40X	225	
			IZMI	0941.0	1006.0U	III	S	2	45X	135	
			POTS	1000.9	1002.2	III	G,C	3	40X	170U	
			BLN	1001.0	1002.0	III	GG	3	490	530	
			POTS	1012.9	1013.3	III	G	3	40X	170U	
			ONDR	1103.1	1104.1	DCIM		1	3055X	4315X	
			ONDR	1103.4	1104.4	DCIM	G	1	910	2000X	
			SVTO	1145.0	1247.0	III	N	2	35	58	
			SGMR	1201.0	1236.0	III	N	1	30	60	
			POTS	1201.2	1201.6	III	G	2	40X	300	
			POTS	1214.2	1214.6	III	G	2	40X	250	
			POTS	1216.5	1216.7	III	B	2	40X	225	
			POTS	1237.2	1237.4	III	B	2	40X	170U	
			POTS	1246.6	1246.8	III	B	2	40X	170U	
			SVTO	1323.0	1531.0	III	N	2	35	85	
			POTS			1402.4	1403.1	III	G,C	2	40X	170U
			SGMR			1430.0	1432.0	III		1	30	65
			POTS			1430.1	1430.6	III	G	2	40X	170U
			BLN			1455.0	1457.0	III	G	2	380	458
			SGMR			1456.0	1515.0	III	N	1	30	65
			POTS			1456.1	1457.0	III	GG	3	40X	170U
			POTS			1515.1	1515.4	III	B	2	40X	350
			SVTO			1629.0	1630.0	III		1	39U	51U
			PALE	1847.0	1929.0	CONT		1	25	60	

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

Spectral Observations

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JUNE 1999

OBSERVATION			EVENT				FREQUENCY			Remarks
Start	End	Sta	Start	End	Spectral	Event	Int	Lower	Upper	
Day	(UT)		(UT)	(UT)	(UT)	Class	Remarks	(1-3)	(MHz)	(MHz)
01			SGMR	1847.0	1922.0	CONT		2	30	75
	1915	2400	HIRA	2245.0	2245.2	III	B	1	60	300
	2105	2400	CULG	2245.0	2245.0	III	B	1	30	180
			CULG	2316.0	2400.00	III	N	1	25	180
			PALE	2316.0	2316.0	III		1	25	60
			PALE	2332.0	2340.0	III		1	25	60
02	0000	0655	CULG	0000.0E	0036.0	III	N	1	25	180
			PALE	0004.0	0004.0	III		1	25	40
			PALE	0017.0	0026.0	III		1	25	65
			CULG	0315.0	0350.0	III	N	2	20	130
			PALE	0315.0	0317.0	III		1	25	60
			PALE	0333.0	0336.0	III		2	25	75
	0000	0957	HIRA	0334.0	0336.5	III	G	1	25X	100
	0430	1810	BLN							
			CULG	0452.0	0452.0	III	B	1	25	75
			CULG	0554.0	0645.0	III	N	1	30	150
	0600	1200	IZMI	0621.7	0621.8	III	b	1	50	95
			SVTO	0622.0	0623.0	III		1	38	84
			IZMI	0622.8	0623.2	III	G	2	45X	150
			IZMI	0646.00	1200.00	III	B	2	45X	95
			IZMI	0702.9	0703.2	III	B	2	45X	215
			SVTO	0703.0	0703.0	III		2	35	85
			SVTO	0719.0	0859.0	III	N	2	35	85
			SVTO	0719.0	1645.0	CONT		1	35	85
			IZMI	0722.8	0723.0	III	B, HARM	2	45	150
			IZMI	0831.6	0831.8	III	B	2	45X	95
	0415	1741	ONDR	0905.5	0906.2	DCIM	G	1	3045X	4335X
			SVTO	1013.0	1013.0	III		2	37	59
			IZMI	1027.5	1028.6	III	GG	2	45X	160
			SGMR	1110.0	2031.0	III	N	1	30	80
			SVTO	1110.0	1640.0	III	N	2	35	85
			IZMI	1110.6	1110.9	III	G	2	45X	270X
			IZMI	1110.7	1110.9	V		2	50	65
			IZMI	1111.4	1111.5	III	B	1	240	270X
			IZMI	1113.6	1113.7	I	G	2	200	215
			IZMI	1116.9	1117.7	III	G	2	45X	270X
			IZMI	1117.0	1117.7	V	G	2	50	90
			IZMI	1142.6	1147.1	III	GG	2	45X	95
			SVTO	1143.0	1150.0	V		3	35	79
			PALE	1639.0	1640.0	III		1	25	75
			PALE	1922.0	2310.0	III	N	1	25	60
	2110	2400	CULG	2218.0	2220.0	III	G	1	30	150
	1914	2400	HIRA	2218.6	2219.0	III	B	1	50	130
			CULG	2247.0	2252.0	III	G	1	25	90
03			PALE	0016.0	0018.0	III		1	25	50
	0000	0655	CULG	0018.0	0018.0	III	B	1	35	170
			PALE	0100.0	0105.0	III		2	25	60
			CULG	0101.0	0106.0	III	G	1	18	90
			CULG	0114.0	0114.0	III	B	1	35	140
			CULG	0138.0	0140.0	III	B	1	20	150
			CULG	0210.0	0305.0	III	N	1	20	180
			PALE	0219.0	0257.0	III	N	2	25	70
	0000	0957	HIRA	0237.4	0237.6	III	B	1	50	130
			HIRA	0240.2	0240.4	III	B	1	60	100
			CULG	0303.0	0303.0	III	G	1	130	260
			HIRA	0304.4	0304.8	III	B	2	120	230
	0414	1742	ONDR							
			CULG	0414.0	0415.0	III	G	2	20	130
			CULG	0504.0	0627.0	III	N	1	30	160
			SVTO	0537.0	0545.0	III		2	36	84
			SVTO	0538.0	1751.0	CONT		2	35	85
			IZMI	0600.0E	1200.00	I	N	1	80	270
	0600	1200	IZMI	0600.0E	1200.00	III	N	1	45X	95
			IZMI	0609.4	0609.8	III	G	1	45	120
			SVTO	0626.0	0627.0	III		2	35	78
			IZMI	0627.1	0627.2	III	B	2	45X	85
			SVTO	0709.0	0818.0	III	N	2	35	78

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

JUNE 1999

OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
03	0430 1810	IZMI	0710.0	0713.8	III	GG	2	45X	90	
		IZMI	0809.6	0811.2	III	GG	2	45X	160	
		IZMI	0817.8	0818.7	III	G,HARM	2	45	240	
		IZMI	0939.1	0939.4	III	B	2	60	150	
		IZMI	1007.3	1007.7	III	G	2	75	165	
		SVTO	1035.0	1036.0	III		2	35	84	
		SGMR	1036.0	1036.0	III		1	30	60	
		IZMI	1036.2	1036.6	III	G	2	45X	150	
		BLN	1036.2	1036.9	DCIM		2	370	550X	
		SGMR	1110.0	1111.0	III		1	30	70	
		SVTO	1110.0	1121.0	III	N	2	35	80	
		IZMI	1110.8	1111.2	III	G,HARM	2	45X	95	
		SGMR	1120.0	1121.0	III		1	30	60	
		IZMI	1120.4	1120.8	III	G	2	45X	135	
		SGMR	1226.0	1253.0	III	N	2	30	80	
	1914 2400	SVTO	1226.0	1253.0	III	N	2	35	85	
		BLN	1500.7	1501.6	III	GG	2	250	550X	
		SGMR	1503.0	2152.0	CONT		3	30	80	
		PALE	1613.0	1655.0	CONT		1	25	60	
		SVTO	1621.0	1624.0	III		3	35	85	
		PALE	1703.0	2301.0	III	N	1	25	60	
		HIRA	2019.4	2019.6	III	B	1	25X	140	
		HIRA	2101.2	2101.4	III	B	1	50	340	
	2110 2400	CULG	2127.0	2127.0	III	B	2	25	150	
		HIRA	2127.4	2127.6	III	B	1	25X	130	
		CULG	2211.0	2211.0	III	B	1	25	90	
		CULG	2220.0	2220.0	III	B	1	30	70	
		CULG	2245.0	2248.0	III	G	2	20	440	
		SGMR	2245.0	2245.0	III		1	30	80	
		HIRA	2245.4	2245.6	III	B	1	25X	80	
		CULG	2250.0	2250.0	III	B	1	23	90	
		CULG	2300.0	2304.0	III	G	1	25	500	
04	0000 0710	CULG	0014.0	0014.0	III	B	1	50	420	
		PALE	0044.0	0044.0	III		1	25	50	
		CULG	0253.0	0302.0	III	G	1	20	150	
		PALE	0255.0	0256.0	III		1	25	60	
		PALE	0323.0	0325.0	III		3	25	75	
		CULG	0324.0	0325.0	III	G	3	18	450	
	0000 0958	HIRA	0324.2	0324.8	III	B	3	25X	140	
		CULG	0438.0	0440.0	III	G	1	20	180	
		CULG	0502.0	0710.00	III	N	1	20	180	
		SVTO	0530.0	0655.0	III	N	2	35	85	
		CULG	0537.0	0540.0	III	G	2	25	330	
		HIRA	0537.6	0537.8	III	B	2	50	320	
		CULG	0603.0	0604.0	III	G	3	25	180	
		HIRA	0603.4	0603.8	III	B	3	30	240	
		HIRA	0606.0	0608.0	III	G	1	50	240	
		IZMI	0606.00	1200.00	I	N	1	55	270	
	0606 1200	IZMI	0606.00	0608.1	III	GG	2	45X	270X	
		BLN	0607.7	0608.3	DCIM	P	2	330	550X	
		IZMI	0641.3	0643.8	III	GG	2	45X	160	
		HIRA	0641.4	0641.6	III	B	1	30	130	
		ONDR	0652.2	0709.1	DCIM	GG,FS	2	800X	2000X	
		IZMI	0652.6	0721.10	III	N	2	45X	270X	
		BLN	0653.1	0700.0	DCIM	P	2	270	550X	
		ONDR	0653.2	0710.0	DCIM	GG	2	2000X	4365X	
		BLN	0654.7	0658.3	III	GG,RS	2	380	550X	
		IZMI	0655.4	0655.6	III	G,RS,FS	2	50	62	
	0430 1810 0414 1750	SVTO	0658.0	0728.0	IV		3	35	85	
		CULG	0700.0	0703.0	UNCLF		1	400	860	
		BLN	0700.1	0706.8	DCIM		1	250X	550X	
		CULG	0702.0	0706.0	II	SH	1	100	180	SWF
		IZMI	0702.4	0706.9	CONT		1	200U	270X	
		IZMI	0702.4	0717.00	II	HARM	2	45X	170U	
		CULG	0704.0	0710.0	II	FN	2	30	90	ESS 800
		HIRA	0704.0	0708.0	II		3	50	90	
		HIRA	0705.0	0716.5	II		3	50	150	
		IZMI	0720.00	0723.52	I	S	1	45	90	

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

Spectral Observations

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
04		IZMI	0753.0U	1200.0D	III	N	1	45	90U	
		ONDR	0754.1	0801.2	DCIM	GG,FS	2	800X	2000X	
		BLEN	0754.9	0759.2	DCIM	P	1	290	550X	
		ONDR	0755.4	0800.0	DCIM		1	2000X	4355X	
		BLEN	0800.1	0801.3	DCIM	P	1	330	550X	
		SVTO	0805.0	0805.0	III		1	35U	70U	
		IZMI	0946.9	0947.3	III	G	2	45X	85X	
		SVTO	0947.0	0947.0	III		1	36U	60U	
		IZMI	1041.9	1042.1	III	G	2	45X	110	
		SGMR	1042.0	1042.0	III		1	30	70	
		SVTO	1042.0	1048.0	III		1	35	85	
		IZMI	1044.4	1044.8	III	G	2	45X	95	
		IZMI	1126.3	1126.6	III	G	2	50	245	
	1139 1259	POTS	1139	1259 U	I	S	2	110U	400	
		SGMR	1154.0	1155.0	III		1	30	65	
		SVTO	1154.0	1157.0	III		2	35	64	
		POTS	1154.5	1200.8	III	GG	3	40X	170U	
		SVTO	1233.0	1233.0	III		1	35U	80U	
		POTS	1233.6	1234.0	III	G	2	40X	170U	
		SGMR	1256.0	1259.0	III		1	30	80	
		SVTO	1256.0	1300.0	V		2	35	85	
		POTS	1256.2	1258.8	III	GG	3	40X	300	
		SGMR	1418.0	1518.0	III	N	2	30	80	
		SVTO	1418.0	1533.0	III	N	2	35	85	
		SGMR	1617.0	1617.0	III		1	30	80	
		SVTO	1617.0	1617.0	III		2	35	85	
		PALE	1738.0	1746.0	III		3	25	75	
		SGMR	1738.0	1746.0	V		3	30	80	
		SVTO	1740.0	1741.0	III		2	35	85	
		PALE	1827.0	1828.0	III		2	25	70	
		SGMR	1827.0	1828.0	III		1	30	80	
		PALE	1944.0	1950.0	III		2	25	70	
		SGMR	1945.0	2053.0	III	N	2	30	80	
	1914 2400	HIRA	1949.2	1950.0	III	G	1	25X	220	
		PALE	2019.0	2026.0	III		2	25	75	
		HIRA	2024.5	2026.5	III	G	1	30	240	
		PALE	2052.0	2052.0	III		1	25	55	
	2110 2400	CULG	2110.0E	2200.0	III	N	1	25	160	
		PALE	2147.0	2159.0	III		1	28	55	
		SGMR	2150.0	2158.0	III		1	30	60	
		HIRA	2158.0	2158.2	III	B	1	30	200	
		CULG	2250.0	2306.0	III	G	2	20	170	
		HIRA	2253.0	2254.0	III	G	1	25X	130	
		PALE	2253.0	2335.0	III	N	1	28	62	
		HIRA	2305.8	2306.0	III	B	1	25X	150	
05	0000 0650	PALE	0114.0	0116.0	III		1	38	56	
		CULG	0114.0	0125.0	III	G	1	20	150	
		PALE	0119.0	0120.0	III		1	27	55	
		CULG	0302.0	0306.0	III	G	1	35	140	
	0000 0958	CULG	0414.0	0420.0	III	G	1	25	150	
		HIRA	0419.6	0419.8	III	B	1	40	140	
	0430 1810	BLEN								
		CULG	0533.0	0535.0	III	G	1	20	150	
	0603 1200	SVTO	0533.0	0534.0	III		2	35	85	
		IZMI	0603. E	1200.0D	I	S	1	200	260	
		IZMI	0657.9	0658.2	III	G	2	45X	95	
		IZMI	0704.0U	1145.0U	III	N	1	45X	95	
	0414 1743	IZMI	0706.7	0711.2	III	GG	2	45X	140	
		SVTO	0707.0	0709.0	III		2	35	84	
		ONDR	0813.4	0814.5	DCIM	GG,SP	2	800X	2000X	
		SVTO	0920.0	0920.0	III		2	36	83	
		SVTO	1144.0	1144.0	III		2	35	59	
		SGMR	1607.0	1607.0	III		1	30	50	
		SVTO	1607.0	1607.0	III		1	36	82	
		SGMR	1755.0	1758.0	III		1	30	66	
	1913 2400	PALE	1757.0	1758.0	III		1	28	38	
		HIRA								
	2110 2400	CULG	2157.0	2157.0	III	G	1	30	90	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
05		PALE	2302.0	2303.0	III		2	28	57	
		CULG	2303.0	2303.0	III	B	2	23	180	
06	0000 0959	HIRA								
	0000 0650	CULG	0009.0	0009.0	III	B	1	30	180	
		PALE	0150.0	0151.0	III		1	38	54	
		CULG	0151.0	0151.0	III	B	1	23	70	
		PALE	0220.0	0220.0	III		1	45	55	
		CULG	0221.0	0224.0	III	G	1	25	75	
		CULG	0322.0	0322.0	III	B	1	35	100	
	0413 1742	ONDR								
	0430 1810	BLEN								
	0548 1200	IZMI	0548.0E	0830.0U	I	S,C	2	190	270X	
		SVTO	0549.0	0550.0	III		3	35	84	
		IZMI	0549.8	0550.5	III	B	2	45X	130	
		CULG	0550.0	0650.0D	III	N	1	23	140	
		SVTO	0607.0	0608.0	III		1	35	85	
		IZMI	0607.4	0608.4	III	G	2	45X	135	
		IZMI	0616.9	0618.6	III	GG	2	45	140	
		SVTO	0617.0	0626.0	III		2	35	84	
		IZMI	0626.0U	1129.0U	III	N	1	45X	95	
		SVTO	0657.0	0657.0	III		1	37	47	
	0813 0913	POTS	0813 E	0913 U	I	S	1	150	300	
		SVTO	0815.0	0815.0	III		1	35	50	
		IZMI	0830.0U	1200.0D	I	N	1	190	270	
		SVTO	0850.0	0851.0	III		2	35	58	
		IZMI	0850.6	0851.0	III	G	2	45X	95	
		POTS	0850.6	0851.2	III	G	2	40X	120	
		POTS	0855.9	0856.0	III	B	2	110U	170U	
		SGMR	1331.0	1332.0	III		1	30	50	
		SGMR	1444.0	1444.0	III		1	30	45	
		SVTO	1444.0	1444.0	III		1	36	58	
		SGMR	1802.0	1802.0	III		1	30	70	
	1913 2400	HIRA								
		PALE	2049.0	2049.0	III		1	25	52	
	2110 2400	CULG	2236.0	2241.0	III	G	1	28	90	
07	0000 0959	HIRA								
	0000 0650	CULG	0252.0	0253.0	III	G	1	35	80	
	0413 1744	ONDR								
	0430 1810	BLEN								
	0604 1200	IZMI	0604.0E	0910.0U	I	N	1	200	270	
		IZMI	0641.7	0641.9	III	B	2	45X	95	
		IZMI	0744.0U	1016.0U	III	N	1	45X	95	
		SVTO	0745.0	0759.0	III	N	1	35	55	
	0836 1733	POTS	0836 E	1733 U	I	S,C,DC	2	110U	300	
		IZMI	0910.0U	1200.0D	I	S	2	100U	270X	
		POTS	0932.1	0932.2	III	B	2	130	250	
		POTS	1117.4	1118.1	III	G	2	110U	170U	
		POTS	1417.4	1421.8	III	G	2	110U	170U	
		POTS	1430.0	1440.1	III	G	3	40X	300	
		SGMR	1430.0	1440.0	III	N	1	30	60	
		SVTO	1430.0	1440.0	III	N	1	35	85	
		SVTO	1512.0	1512.0	III		1	35	50	
		POTS	1512.6	1512.9	III	B	1	40X	70	
		POTS	1540.3	1540.7	III	G	2	110U	170U	
		POTS	1631.9	1639.1	III	G	2	40X	160	
		SGMR	1632.0	1634.0	III		1	30	45	
		POTS	1658.4	1703.3	III	G	1	40X	70	
		SGMR	1704.0	1705.0	III		1	30	40	
		SGMR	1735.0	1736.0	III		1	30	60	
	1913 2400	HIRA								
	2110 2400	CULG	2143.0	2143.0	III	B	1	60	180	
08	0000 0650	CULG								
	0336 1823	POTS	0407	1823 U	I	S	2	110U	350	
	0412 1745	ONDR								
	0430 1810	BLEN								
		POTS	0626.3	0626.6	III	G	2	80	250	

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OBSERVATION		Sta	EVENT		Event	Int	FREQUENCY		Remarks
Start	End		Start	End			Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Spectral Class	(1-3)	(MHz)	(MHz)	
08	0600 1200	POTS	0626.8	0626.9	III	B	1	110U	170U
		IZMI	0634.0U	1134.0U	I	N	1	200	260
		IZMI	0648.7	0650.5	III	G	1	55	150
		POTS	0648.7	0650.3	III	GG,RS	2	80	170U
		SVTO	0707.0	0709.0	III		2	35U	59U
		POTS	0707.6	0712.2	III	G	3	40X	275
		IZMI	0707.8	0709.0	III	G	1	45X	150
		IZMI	0711.7	0712.1	III	GG	2	55	270X
		POTS	0719.3	0720.1	III	G	1	110U	170U
		POTS	0721.2	0722.5	DCIM		1	200U	500
		POTS	0743.6	0743.8	III	G	2	110U	170U
		IZMI	0805.0U	1103.0U	III	N	1	45	95
		POTS	0831.7	0837.8	III	G	2	40X	170U
		SVTO	0837.0	0855.0	III	N	3	36	84
		IZMI	0837.6	0837.7	III	G	2	45X	95
		IZMI	0854.1	0854.9	III	G	2	45X	270
		POTS	0854.1	0855.1	III	G	3	40X	275
	0000 1000	HIRA	0854.8	0855.0	III	B	1	30	220
		POTS	0945.6	0945.8	III	B	1	130	170U
		IZMI	1020.1	1022.8	III	GG	2	45X	270X
		POTS	1020.1	1023.0	III	G	3	40X	700
		SGMR	1021.0	1022.0	III		1	30	80
		POTS	1133.2	1133.6	III	G	2	110U	170U
		POTS	1142.0	1142.3	III	G	2	110U	225
		SGMR	1151.0	1151.0	III		1	30	60
		POTS	1151.1	1151.4	III	G	3	40X	170U
		POTS	1228.9	1230.4	III	G	3	40X	170U
		SGMR	1229.0	1229.0	III		1	35	60
		POTS	1413.2	1413.6	DCIM		2	300	550
		POTS	1428.0	1428.3	III	B	2	40X	70
		SGMR	1428.0	1510.0	III	N	2	30	70
		POTS	1439.6	1439.7	III	B	2	110U	140
		POTS	1450.1	1450.8	III	G	3	40X	250
		POTS	1507.2	1515.1	III	GG	3	40X	360
		POTS	1629.2	1640.4	III	GG,RS	3	40X	350
		SGMR	1635.0	1639.0	III		2	30	80
		SVTO	1635.0	1639.0	III		2	35	85
		POTS	1645.4	1645.7	III	G	1	110U	250
		SGMR	1943.0	1944.0	III		1	30	70
	2000 2400	HIRA							
		SGMR	2119.0	2119.0	III		1	30	65
	2110 2400	CULG	2119.0	2119.0	III	B	1	30	140
		CULG	2155.0	2155.0	III	B	1	30	140
09	0000 0650	CULG	0010.0	0021.0	III	GG	2	18X	300
	0000 1000	HIRA	0010.0	0021.0	III	G	1	25X	270
		CULG	0025.0	0034.0	II	SH,H	2	40	100
		CULG	0027.0	0029.0	II	FN,H	1	30	50
	0335 1823	POTS	0340.5	0340.7	III	G,U	1	225	450
		POTS	0417	1823 U	I	S	1	110U	350
	0419 1745	ONDR							
	0430 1810	BLEN							
	0605 1200	IZMI	0656.0U	0709.0U	I	N	1	245	270
		POTS	0917.5	0917.6	III	G,RS	1	300	600
		SVTO	1231.0	1232.0	III		1	41U	56U
		POTS	1426.8	1427.1	III	B	3	50	250
		SGMR	1515.0	1519.0	III		1	30	75
		POTS	1521.4	1527.8	III	GG	2	40X	220
		POTS	1544.4	1548.2	III	GG,C	2	40X	250
		SGMR	1545.0	1549.0	III		1	30	75
		SVTO	1545.0	1547.0	III		2	40U	84U
		POTS	1547.2	1547.4	DCIM		2	325	750
		SGMR	1615.0	1619.0	III		1	30	75
		POTS	1701.0	1713.6	III	GG	2	40X	350
		SGMR	1950.0	1951.0	III		2	30	75
		SGMR	2050.0	2051.0	III		1	30	70
	1913 2400	HIRA	2230.0	2230.2	III	B	1	25X	180
	2110 2400	CULG	2230.0	2231.0	III	G	2	23	180
		CULG	2235.0	2235.0	III	B	1	28	80

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day (UT)	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
09		CULG	2326.0	2332.0	III	G	1	20	90	
10		PALE	0007.0	0207.0	III	N	1	25	60	
	0000 0650	CULG	0016.0	0016.0	III	B	2	18	180	
	0000 1001	HIRA	0016.4	0016.6	III	B	1	25X	170	
		CULG	0106.0	0110.0	III	G	1	20	160	
		CULG	0114.0	0115.0	III	G	2	20	160	
		CULG	0126.0	0126.0	III	B	1	23	75	
		CULG	0255.0	0255.0	III	B	1	20	160	
	0335 1816	POTS	0343	1645	III	N	1	40X	90U	
		CULG	0343.0	0347.0	III	G	1	23	140	
		POTS	0346	1716	III	N	1	40X	90U	
		CULG	0350.0	0351.0	III	G	2	23	180	
		PALE	0350.0	0350.0	III		1	25	55	
		POTS	0350.1	0351.3	III	G	3	40X	170U	
		HIRA	0350.4	0350.8	III	B	2	25X	160	
		POTS	0404	1805	I	S,C,DC	1	110U	350	
	0412 1747	ONDR								
		CULG	0420.0	0422.0	III	G	2	20	260	
		POTS	0420.5	0422.2	III	GG	3	40X	350	
		SVTO	0421.0	0421.0	III		1	36U	83U	
		HIRA	0421.2	0421.6	III	B	1	25X	220	
	0430 1810	BLEN								
		POTS	0438.4	0438.7	III	G	2	110U	170U	
		SVTO	0513.0	0518.0	III		2	35	85	
		POTS	0513.9	0519.9	III	GG	3	40X	170U	
		CULG	0514.0	0515.0	III	G	1	23	180	
		HIRA	0514.0	0514.2	III	B	1	30	160	
		CULG	0518.0	0519.0	III	G	1	23	180	
		HIRA	0518.2	0518.4	III	B	1	30	160	
	0547 1200	IZMI	0547.5	0547.7	III	B	1	45X	95U	
		SVTO	0617.0	0626.0	V		2	35	85	
		IZMI	0617.8	0619.0	III	G	2	45X	150	
		POTS	0617.8	0627.3	III	GG	3	40X	250	
		CULG	0618.0	0618.0	III	B	1	28	160	
		CULG	0622.0	0626.0	III	G	3	25	180	
		IZMI	0622.3	0626.9	III	GG	2	45X	150	
		HIRA	0622.5	0623.5	III	G	2	25X	130	
		IZMI	0637.2	0637.4	III	B	1	50	150	
		POTS	0637.2	0637.4	III	G	2	110U	170U	
		IZMI	0654.0	0654.4	III	G,HARM	2	45	270	
		POTS	0654.0	0654.5	III	G	2	40X	275	
		SVTO	0654.0	0654.0	III		1	36	84	
		SVTO	0807.0	0810.0	III		1	36	83	
		IZMI	0807.7	0807.9	III	B	2	45X	95	
		POTS	0807.7	0810.7	III	G	2	40X	225	
		IZMI	0810.3	0810.9	III	G	2	45X	130	
		IZMI	0837.4	0837.5	III	B	1	45	95	
		IZMI	0857.3	0857.4	III	B	1	45	95	
		POTS	0857.3	0857.5	III	B	2	40X	170U	
		IZMI	0953.4	0954.7	III	GG	2	45X	150	
		POTS	0953.7	0954.9	III	GG	3	40X	250	
		POTS	1012.1	1013.9	III	G	3	40X	350	
		IZMI	1012.4	1013.8	III	GG	2	45X	270X	
		SGMR	1013.0	1013.0	III		1	30	50	
		SVTO	1013.0	1014.0	V		3	35	85	
		IZMI	1028.2	1028.3	III	B	2	45X	95	
		POTS	1028.2	1028.4	III	G	2	40X	130	
		IZMI	1029.2	1059.7	III	G	1	50	245	
		POTS	1048.6	1048.7	III	B	2	110U	170U	
		POTS	1059.1	1059.9	III	G	2	70	250	
		POTS	1105.2	1106.0	III	G	2	110U	170U	
		IZMI	1124.0U	1132.2U	III	N	1	45	95U	
		SGMR	1124.0	1125.0	III		1	30	80	
		SVTO	1124.0	1132.0	III		2	35	85	
		IZMI	1124.6	1125.0	III	G	2	45X	230	
		POTS	1124.6	1129.6	III	G	3	40X	170U	
		SVTO	1132.0	1244.0	CONT		1	35	75	
		POTS	1132.1	1132.3	III	B	2	40X	140	

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OBSERVATION		Sta	EVENT		Event Remarks	Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)		Start (UT)	End (UT)			Lower (MHz)	Upper (MHz)	
10		POTS	1132.6	1132.9	DCIM	1	320	370	
		POTS	1143.6	1146.1	III	3	40X	350	
		IZMI	1144.0	1144.1	III	2	45	70	
		IZMI	1145.5	1146.0	III	2	55	260	
		SGMR	1246.0	1247.0	III	1	30	60	
		SVTO	1246.0	1248.0	III	2	36	84	
		POTS	1246.4	1247.1	III	2	40X	170U	
		POTS	1433.2	1442.1	III	2	40X	375	
		SGMR	1443.0	1444.0	III	1	30	45	
		SVTO	1443.0	1616.0	CONT	1	35	85	
		SGMR	1500.0	1616.0	CONT	1	30	80	
		POTS	1707.6	1708.7	III	3	40X	170U	
		PALE	1708.0	1708.0	III	1	28	55	
		SGMR	1708.0	1708.0	III	1	30	80	
		SVTO	1708.0	1708.0	III	2	35	63	
	1913 2400	HIRA							
	2110 2400	CULG							
11	0000 0650	CULG	0039.0	0049.0	II	3	50	250	ESS 950
		CULG	0039.0	0049.0	II	3	30	130	
		HIRA	0040.0	0044.5	II	3	80	140	
		PALE	0040.0	0047.0	II	2	25	75	ESS 0700
	0000 1001	HIRA	0040.0	0042.5	II	3	50	80	
		CULG	0041.0	0042.0	III	2	20	150	
		CULG	0049.0	0056.0	II	1	35	55	
		CULG	0049.0	0100.0	II	2	40	130	ESS 500
		PALE	0051.0	0116.0	IV	1	25	75	
		PALE	0103.0	0104.0	III	1	30	55	
		CULG	0104.0	0104.0	III	1	30	90	
	0412 1757	ONDR							
	0330 1215	POTS	0425	1215 U	I	2	40X	300	
		POTS	0447.2	0447.9	III	2	110U	160	
		POTS	0505	1215 U	III	1	110U	170U	
		POTS	0522	1215 U	III	2	110U	170U	
	0601 1200	CULG	0523.0	0527.0	III	1	50	180	
		IZMI	0649.6U	1200.0U	I	1	200	240U	
		IZMI	0738.1	0738.2	III	1	45X	120	
		IZMI	1105.6	1120.0U	III	1	45X	270X	
	0430 1810	BLEN	1110.4	1120.4	DCIM	2	400	550X	
		POTS	1111.0	1121.1	DCIM	2	200U	750	
		POTS	1115.3	1131.5	II	3	40X	170U	
		IZMI	1115.9	1122.3	II	2	45X	110	
		SVTO	1116.0	1145.0	II	2	35	85	ESS 0800
		SGMR	1117.0	1129.0	II	2	30	80	ESS 1000
		IZMI	1122.0U	1144.9U	I	2	45X	95	
		SGMR	1129.0	1200.0	IV	2	30	80	
	1913 2400	SVTO	1129.0	1302.0	IV	2	35U	80U	
		HIRA							
	2110 2400	PALE	2158.0	2158.0	III	1	30	46	
		CULG	2159.0	2159.0	III	1	25	60	
12	0000 1002	HIRA							
		CULG	0004.0	0004.0	III	2	40	180	
		CULG	0031.0	0248.0	I	1	120	180	
	0330 1828	CULG	0116.0	0116.0	III	1	40	130	
		POTS	0350	1828 U	I	1	110U	300	
	0400 0650	CULG							
		CULG							
	0601 1200	IZMI	0614.3	0615.9	III	1	45X	95	
		POTS	0713.5	0713.7	III	1	40X	70	
		IZMI	0738.0U	0741.8	I	1	220	260	
		POTS	0829.3	0829.4	III	1	110U	170U	
		SVTO	1047.0	1245.0	CONT	2	35	64	
		POTS	1159.0	1159.4	III	2	40X	170U	
		ONDR	1326.2	1340.0	DCIM	1	800X	2000X	
		POTS	1333.1	1336.6	DCIM	1	200U	600	
	0430 1810	BLEN	1333.2	1336.5	DCIM	2	400	550X	
		SVTO	1338.0	1349.0	CONT	1	35	64	
		SVTO	1347.0	1349.0	CONT	1	47U	64U	
		SVTO	1347.0	1349.0	II	1	47U	64U	ESS 0500

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Event Remarks	Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class				Lower (MHz)	Upper (MHz)	
12	1913	2400	HIRA									
			SGMR	2023.0	2024.0	III			1	30	80	
			PALE	2111.0	2112.0	III			1	25	45	
			SGMR	2111.0	2112.0	III			1	30	50	
			PALE	2157.0	2157.0	III			1	29	37	
			PALE	2244.0	2252.0	III			2	25	60	
			PALE	2349.0	2349.0	III			1	25	45	
13	0000	1002	HIRA									
			PALE	0147.0	0147.0	III			2	25	60	
			PALE	0254.0	0254.0	III			1	30	50	
	0200	0650	CULG	0254.0	0254.0	III		B	1	20	80	
	0330	1828	POTS	0330	E 1828	U I		S	1	110U	375	
	0412	1747	ONDR									
			POTS	0430	1203	III		N	1	110U	170U	
	0430	1810	BLEN									
			POTS	0515.6	0517.8	III		G	2	40X	140	
			CULG	0516.0	0518.0	III		G	1	23	90	
			CULG	0523.0	0523.0	III		B	1	23	45	
	0605	1200	IZMI	0605.0E	1200.00	I		S	1	200	245	
			POTS	0632.0	0633.8	III		G	2	110U	150	
			POTS	0659	1451	III		N	1	40X	90U	
			SVTO	0700.0	0700.0	III			2	35U	47U	
			SVTO	0736.0	0737.0	III			1	35	50	
			POTS	1451.2	1451.5	III		B	2	40X	140	
			SVTO	1639.0	1640.0	III			1	36U	57U	
	1913	2400	HIRA									
			CULG	2346.0	2347.0	II		SH	1	90	150	
	2110	2400	CULG	2346.0	2347.0	II		FN	1	45	75	
			CULG	2352.0	2354.0	UNCLF			1	60	80	
14	0000	0650	CULG									
	0000	1003	HIRA									
	0330	1828	POTS	0351	1828	U I		S,C,DC	1	40X	350	
	0411	1748	ONDR									
	0430	1810	BLEN									
	0548	1200	IZMI	0548.0E	0953.00	I		N	1	200	270	
			POTS	1127.3	1129.6	III		G	1	110U	225	
			POTS	1258.4	1258.6	III		G	2	110U	170U	
			SGMR	1315.0	1315.0	III			1	30	60	
			SVTO	1324.0	1634.0	CONT			1	35	85	
			SGMR	1334.0	1419.0	CONT			1	30	60	
			POTS	1353.9	1354.3	III		B	2	40X	250	
			SVTO	1354.0	1354.0	III			2	36	70	
			POTS	1418.9	1419.4	III		G	2	110U	250	
			POTS	1447.8	1448.0	III		B	2	40X	170U	
	1913	2400	HIRA									
	2110	2400	CULG	2240.0	2242.0	III		G	1	30	70	
			CULG	2252.0	2256.0	III		G	1	25	90	
			CULG	2336.0	2400.00	III		N	1	30	170	
15	0000	1003	HIRA									
	0000	0650	CULG	0000.0E	0250.0	III		N	1	30	170	
			CULG	0257.0	0436.0	I		S	1	70	170	
	0330	1828	POTS	0330	E 1828	U I		S	1	110U	400	
	0411	1748	ONDR									
	0430	1820	BLEN									
			CULG	0443.0	0443.0	III		B	1	23	140	
			SVTO	0443.0	0444.0	III			2	38	60	
			POTS	0443.4	0443.7U	III		G	2	40X	170U	
			POTS	0443.7U	0444.0	V			3	40X	50	
			POTS	0552	1510	III		N	1	110U	170U	
	0604	1200	IZMI	0607.0U	0727.0U	I		N	1	200	245	
			IZMI	0610.3	0610.6	III		G	1	45	135	
			POTS	0610.3	0610.6	III		G	2	80	220	
			POTS	0929.7	0930.0	III		G	2	40X	225	
			IZMI	0931.0	0931.2	III		B	2	45X	270X	
			POTS	0931.1	0931.3	III		B	2	40X	350	
			POTS	0946	1611	III		N	1	40X	90U	

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OBSERVATION			EVENT		Spectral Class	Event Remarks	Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)			Lower (MHz)	Upper (MHz)	
15			IZMI	1010.0U	1200.0D	I	N	1	200	220
			IZMI	1017.7	1017.9	III	G	2	200	270X
			POTS	1017.7	1017.8	III	G	2	200U	300
			POTS	1047.2	1059.1	III	GG	2	40X	250
			IZMI	1047.3	1048.1	III	GG	2	45X	260
			IZMI	1051.7	1053.0	III	G	2	50	95
			POTS	1246.6	1246.9	III	G	2	110U	170U
			POTS	1409.7	1410.6	III	G	2	40X	250
			SVTO	1410.0	1410.0	III		2	37	61
			POTS	1442.7	1443.1	III	G	2	110U	250
			POTS	1549.7	1549.8	III	B	2	70	170U
	1913	2400	HIRA							
			PALE	1954.0	1955.0	III		1	30	55
	2110	2400	CULG							
			PALE	2327.0	2327.0	III		1	29	37
16	0000	0650	CULG	0132.0	0132.0	III	B	1	30	75
			CULG	0226.0	0226.0	III	B	1	28	90
			CULG	0319.0	0320.0	III	G	1	23	170
			CULG	0328.0	0333.0	II	UE	1	50	140
	0411	1748	ONDR							
	0330	0901	POTS	0414	0901 U	I	S	1	200U	350
			POTS	0428	0901 U	III	N	1	40X	90U
			CULG	0428.0	0430.0	III	G	1	23	180
	0430	1820	BLEN							
			CULG	0516.0	0516.0	III	B	3	18X	280
			SVTO	0516.0	0517.0	III		2	35U	85U
			POTS	0516.1	0516.7	III	G	3	40X	375
	0000	1003	HIRA	0516.4	0616.6	III	B	1	25X	50X
			CULG	0521.0	0521.0	III	B	1	110	180
			CULG	0524.0	0524.0	III	B	1	20	50
			POTS	0537.9	0538.0	III	G	2	200U	400
			CULG	0557.0	0559.0	III	G	1	25	50
	0600	1200	IZMI	0600.0E	1200.0D	I	S	1	50U	270X
			CULG	0604.0	0606.0	III	G	2	25	90
			IZMI	0612.9	0613.1	III	G	2	45X	270X
			IZMI	0612.9	0613.1	V	G	2	45X	180
			POTS	0612.9	0613.4	III	G	3	40X	325
			CULG	0613.0	0613.0	III	G	3	40	240
			SVTO	0613.0	0627.0	III	N	2	40U	85U
			IZMI	0613.7	0617.4	III	G	1	45X	120
			CULG	0627.0	0627.0	III	B	1	40	170
			IZMI	0627.3	0627.9	III	G	2	55	120
			POTS	0627.3	0627.5	III	B	2	40X	90U
			IZMI	0630.0U	1044.0U	III	N	1	45X	95
			SVTO	0643.0	0643.0	III		2	40U	85U
			IZMI	0917.8	0918.2	III	G,FS	2	45X	125
	0928	1828	POTS	0928 E	1828 U	I	S	1	110U	350
			IZMI	1023.0	1023.1	III	G	2	200	260
			POTS	1041.6	1041.8	III	B	2	40X	140
			POTS	1128.1	1128.3	III	G	2	110U	170U
			POTS	1203.2	1207.9	III	G	3	110U	225
			SGMR	1222.0	1222.0	III		1	30	60
			POTS	1222.1	1222.7	III	G	2	40X	300
			POTS	1301.9	1302.0	III	B	2	50	130
			POTS	1339.8	1345.1	III	GG	3	40X	375
			SGMR	1340.0	1345.0	III		2	30	80
			POTS	1401.2	1404.8	III	GG	3	40X	300
			SGMR	1403.0	1406.0	III		1	30	70
			POTS	1405.9	1406.1	III	B	2	40X	120
			SGMR	1432.0	1523.0	III	N	2	30	80
			POTS	1432.5	1440.3	III	G	2	40X	300
			SVTO	1434.0	1524.0	III	N	2	35	85
			POTS	1448.7	1455.4	III	G	3	40X	250
			POTS	1459.4	1505.7	III	G	2	40X	170U
			POTS	1524.3	1524.7	III	G	2	40X	150
			POTS	1603.8	1604.1	III	G	2	40X	160
			SGMR	1614.0	1844.0	III	N	1	30	80
			POTS	1614.8	1617.3	III	G,U	2	40X	170U

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
16		POTS	1629.6	1629.8	III	G	2	40X	300	
		POTS	1645.1	1650.8	III	G	2	40X	350	
		PALE	1650.0	1650.0	III		1	25	60	
		SVTO	1650.0	1650.0	III		2	35	81	
		PALE	1719.0	1746.0	III	N	1	25	75	
		SVTO	1719.0	1720.0	III		2	35	85	
		POTS	1719.3	1721.6	III	G	3	40X	250	
		POTS	1735.3	1735.7	III	G	3	40X	170U	
		POTS	1745.6	1746.2	III	G	2	40X	350	
		POTS	1822.7	1823.4	III	G	2	40X	225	
		PALE	1823.0	1844.0	III	N	1	28	57	
1913	2400	HIRA								
		PALE	1959.0	2021.0	III	N	1	25	55	
		SGMR	1959.0	2001.0	III		1	30	75	
		PALE	2128.0	2228.0	III	N	1	28	55	
		SGMR	2128.0	2129.0	III		2	30	80	
2110	2400	CULG	2129.0	2129.0	III	B	2	25	140	
		CULG	2140.0	2140.0	III	B	1	25	90	
		CULG	2239.0	2307.0	III	N	1	20	80	
17	0000 1004	HIRA								
	0000 0650	CULG	0000.0	0008.0	III	G	2	20	180	
		CULG	0120.0	0154.0	III	N	1	30	90	
		CULG	0214.0	0251.0	III	N	1	25	160	
		CULG	0250.0	0250.0	III	B	2	20	180	
		CULG	0327.0	0329.0	III	G	1	20	160	
		PALE	0327.0	0327.0	III		1	25	55	
0330	1828	POTS	0352	1828 U	I	S	1	110U	400	
		CULG	0404.0	0405.0	III	G	1	25	180	
		POTS	0404.8	0405.4	III	G	3	40X	170U	
		POTS	0416	1828 U	III	N	1	110U	170U	
		POTS	0441	1532	III	N	1	40X	90U	
		CULG	0448.0	0448.0	III	B	1	30	150	
		POTS	0448.1	0448.3	III	B	2	40X	170U	
0605	1200	I2MI	0629.4	0630.7	III	G,FS	2	45X	215	
		POTS	0629.5	0629.9	III	G	2	40X	250	
		I2MI	0732.2	0732.6	UNCLF		1	50	70	
		POTS	0931.8	0938.6	II	UE	2	110U	160	
		I2MI	1108.8	1108.9	III	B	2	45	70	
		I2MI	1109.0U	1140.0U	I	N	1	105	230	
		POTS	1109.1	1109.5	DCIM		2	330	500	
		I2MI	1121.7	1129.5	III	GG	2	45X	135	
		POTS	1121.7	1126.7	III	G	2	40X	250	
		I2MI	1143.0	1150.0U	III	S	1	45	95	
		POTS	1153.8	1153.9	DCIM		1	500	700	
		POTS	1223.5	1223.6	III	B	2	130	350	
		POTS	1313.3	1317.0	III	G,RS	3	40X	250	
		SGMR	1316.0	1317.0	III		1	30	80	
		SGMR	1403.0	1405.0	III		2	30	80	
		POTS	1403.2	1405.2	III	GG	2	40X	320	
		SVTO	1404.0	1429.0	III	N	2	35	85	
		SGMR	1429.0	1430.0	III		1	30	70	
		POTS	1429.1	1430.8	III	G	3	40X	250	
		POTS	1440.3	1441.7	III	G	2	40X	170U	
		SGMR	1457.0	1543.0	III	N	1	30	80	
		SVTO	1457.0	1459.0	III		2	35	85	
		POTS	1457.5	1459.7	III	G	3	40X	170U	
		SVTO	1517.0	1517.0	III		2	35	85	
		POTS	1517.4	1517.7	III	B	2	40X	90U	
		POTS	1543.1	1543.4	III	G	2	40X	170U	
0411	1750	ONDR	1722.0	1727.1	DCIM		1	800X	2000X	
0430	1820	BLN	1722.0	1730.0	CONT		2	1000	2800X	
		POTS	1724.6	1727.3	III	G,C	2	40X	250	
		SGMR	1725.0	1728.0	V		2	30	65	
		PALE	1726.0	1727.0	III		1	28	55	
		POTS	1731.1	1742.5	II	SH	2	40X	120	
		PALE	1733.0	1740.0	II		1	32	70	ESS 0600
		SGMR	1733.0	1753.0	II		2	30	80	ESS 0700
		POTS	1733.6	1734.9U	II	F	2	40X	45	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
17		SVTO	1734.0	1738.0	II		2	50	66	ESS 0500
	1913 2400	HIRA								
	2110 2400	CULG	2237.0	2237.0	III	B	1	25	150	
		PALE	2359.0	0107.0	III	N	1	25	65	
18		PALE	0010.0	0010.0	III		1	25	65	
	0000 0650	CULG	0010.0	0010.0	III	B	1	20	160	
		CULG	0031.0	0032.0	III	G	1	30	180	
		PALE	0032.0	0032.0	III		1	25	55	
		CULG	0149.0	0150.0	III	G	1	30	90	
		CULG	0308.0	0308.0	III	B	1	20	260	
		CULG	0342.0	0342.0	III	B	1	30	90	
	0330 1834	POTS	0349	1834 U	I	S	1	110U	400	
		CULG	0403.0	0403.0	III	B	1	30	90	
		POTS	0439.2	0439.4	DCIM		2	450	620	
		CULG	0502.0	0502.0	III	B	1	28	80	
		POTS	0509	1801	III	N	1	110U	170U	
		POTS	0514.3	0515.1	III	G	2	80	350	
		POTS	0536.9	0537.1	III	B	2	80	275	
	0547 1200	IZMI	0536.9	0537.9	III	G	1	45X	95U	
		CULG	0537.0	0538.0	III	G	1	28	90	
		IZMI	0601.9	1118.0U	I	N	1	200	260	
		POTS	0618	1246	III	N	2	110U	170U	
		IZMI	0655.9	0656.0	III	G,RS	1	80	95	
		SVTO	0710.0	0808.0	III	N	2	35	85	
		IZMI	0710.1	0712.0U	III	GG	2	45X	270X	
		POTS	0710.1	0711.5	III	G,C	3	40X	300	
		IZMI	0710.4	0711.7	V	G	2	45X	125	
	0000 1004	HIRA	0710.4	0710.6	III	B	1	25X	50X	
	0430 1820	BLEN	0710.5	0712.1	III	GG,RS	2	300	550X	
		POTS	0710.9	0711.1	DCIM		2	500	650	
	0412 1751	ONDR	0711.5	0712.0	DCIM	G	1	800X	1295	
		IZMI	0711.9	0712.6	III	GG,FS	2	45X	270X	
		POTS	0711.9	0712.4	III	G	2	40X	600	
		IZMI	0724.1	0724.8	III	GG,HARM	2	45X	270X	
		POTS	0724.1	0731.2	III	GG,C	3	40X	375	
		BLEN	0725.9	0726.1	III	RS	2	450	550X	
		IZMI	0726.0	0727.9	III	GG	2	45X	95	
		IZMI	0727.3	0728.5	CONT		2	50	95	
		ONDR	0730.2	0731.0	DCIM	G	1	800X	1275	
		IZMI	0730.7	0731.4	III	G	1	50	95	
		IZMI	0739.0	0739.1	III	B	1	45	85	
		IZMI	0748.2	0749.2	III	G	2	45X	125	
		POTS	0748.2	0749.2	III	G	2	40X	160	
		IZMI	0758.8	0759.3	III	G	2	45	95	
		POTS	0759	1823	III	N	2	40X	90U	
		IZMI	0759.3	0759.8	V		2	50	75	
		IZMI	0808.2	0808.8	III	G	2	45X	95	
		POTS	0808.2	0808.7	III	G	3	40X	90U	
		IZMI	0814.0	0814.2	III	B,HARM	2	50	150	
		POTS	0814.0	0814.4	III	G	3	40X	225	
		POTS	0934.6	0941.2	III	G	2	125	400	
		IZMI	0940.9	0941.0	III	G	2	200	270X	
		IZMI	1010.1	1011.2	III	G	1	50	90	
		IZMI	1019.6	1020.2	III	G	1	45X	70	
		IZMI	1029.3	1033.7	III	GG	2	45X	95	
		SVTO	1030.0	1059.0	III	N	1	35	78	
		IZMI	1045.9	1050.7	III	GG	2	45X	95	
		POTS	1045.9	1048.9	III	G	3	40X	350	
		SGMR	1046.0	1059.0	III	N	1	30	60	
		IZMI	1055.3	1055.5	III	B	2	50	75	
		POTS	1057.9	1058.4	III	G,U	3	40X	150	
		IZMI	1058.0	1059.6	III	G	2	45X	95	
		POTS	1059.4	1059.8	III	B	3	40X	90U	
		IZMI	1127.0	1133.5	III	GG	2	45X	270X	
		SGMR	1128.0	1131.0	III		2	30	80	
		SVTO	1128.0	1132.0	III		2	35	85	
		POTS	1128.8	1140.9	III	GG,RS,U	3	40X	550	
		IZMI	1129.3	1131.6	V	G	2	45X	125	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End				Spectral	Event		Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks		(MHz)	(MHz)	
18		POTS	1129.6U	1130.2U	V		3	40X	65	
		BLN	1130.4	1130.8	III	RS	1	400	550X	
		POTS	1130.9U	1131.3	V		3	40X	65	
		BLN	1132.7	1137.6	III	GG,RS	2	300	550X	
		IZMI	1136.6	1136.7	III	B	1	55	70	
		IZMI	1137.3	1137.7	III	G	2	200	270X	
		IZMI	1139.1	1141.2	III	GG	2	45X	125	
		IZMI	1144.3	1144.4	III	B	2	45	120	
		SGMR	1256.0	1256.0	III		1	30	60	
		SVTO	1256.0	1256.0	III		1	35	53	
		SGMR	1357.0	1427.0	III	N	3	30	80	
		SVTO	1357.0	1427.0	III	N	3	35	85	
		POTS	1357.3	1404.5	III	GG	3	40X	170U	
		POTS	1358.2	1358.9	V		3	40X	70	
		POTS	1422.8	1425.6	III	G,C	3	40X	400	
		POTS	1508.5	1510.5	III	G	2	60	360	
		POTS	1622.2	1629.1	III	G	3	70	450	
		PALE	1638.0	1700.0	III	N	2	25	75	
		SGMR	1638.0	1645.0	V		3	30	80	
		SVTO	1638.0	1700.0	III	N	3	35	85	
		POTS	1638.6	1642.7	IV (?)		3	40X	270	
		BLN	1640.3	1644.1	DCIM	GG,RS	2	1000X	2800X	
		BLN	1643.6	1644.2	III	GG,RS	2	1600	1800	
		SGMR	1646.0	1657.0	II		2	30	60	
		SGMR	1646.0	1659.0	III	N	1	30	60	
		POTS	1646.8	1651	II	SH	2	40X	90U	
		POTS	1646.9	1650 U	II	F	2	40X	65	
		SVTO	1648.0	1651.0	II		2	35U	85U	ESS 0700
		SGMR	1657.0	1705.0	V		2	30	65	
		POTS	1659.8	1700.3	III	G	2	40X	375	
		SGMR	1744.0	1745.0	III		1	30	45	
		PALE	1812.0	1812.0	III		1	40	60	
		SGMR	1812.0	1828.0	III	N	3	30	80	
		POTS	1812.6	1822.0	III	GG	3	40X	225	
		PALE	1818.0	1828.0	III		2	25	70	
		PALE	1853.0	1859.0	III		2	25	65	
		SGMR	1853.0	1859.0	III		2	30	80	
	1913 2400	HIRA								
		PALE	1931.0	1931.0	III		1	40	55	
		PALE	2037.0	2037.0	III		1	35	55	
		SGMR	2037.0	2037.0	III		1	30	80	
	2115 2400	CULG	2158.0	2203.0	III	G	1	28	90	
		PALE	2201.0	2201.0	III		1	25	55	
		SGMR	2201.0	2201.0	III		1	30	60	
		CULG	2252.0	2255.0	III	G	2	20	70	
		CULG	2351.0	2352.0	III	G	2	18X	50	
19	0000 1004	HIRA								
	0000 0650	CULG	0000.0	0001.0	III	G	2	18X	180	
		CULG	0036.0	0116.0	III	N	1	20	90	
		PALE	0051.0	0052.0	III		1	25	40	
		PALE	0108.0	0110.0	III		2	25	45	
		PALE	0304.0	0305.0	III		1	25	40	
		CULG	0305.0	0305.0	III	B	1	20	110	
		CULG	0332.0	0342.0	III	G	1	40	150	
	0330 1834	POTS	0408	05524	III	N	1	40X	90U	
	0412 1751	ONDR								
	0430 1820	BLN								
		CULG	0524.0	0524.0	III	B	1	25	70	
		CULG	0532.0	0537.0	III	GG	2	18X	250	
		SVTO	0532.0	0545.0	III	N	2	36	84	
		POTS	0532.1	0537.3	III	GG	3	40X	250	
		CULG	0545.0	0545.0	III	B	1	28	180	
		POTS	0545.0	0545.4	III	G	2	40X	145	
	0602 1200	IZMI	0600.7	0601.7	III	G	1	45	95U	
		POTS	0617	1834 U	I	S,W	1	150	250	
		IZMI	0902.9	0903.0	I	G	1	230	243	
		POTS	0931.7	0931.9	III	G	2	40X	300	
		IZMI	1003.1	1003.3	III	G	2	200	270	

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OBSERVATION			EVENT			FREQUENCY			Remarks		
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)		Lower (MHz)	Upper (MHz)
19			IZMI	1133.2	1133.6	III	G	2	45	270X	
			POTS	1133.2	1133.7	III	G	2	75	450	
			POTS	1729.3	1729.6	III	G	2	70	155	
			POTS	1814.8	1814.9	III	B	1	110U	300	
			SGMR	1849.0	1849.0	III		1	30	70	
	1913	2400	HIRA								
			PALE	2235.0	2236.0	III		1	30	55	
2115	2400	CULG	2236.0	2236.0	III	B	1	25	60		
20	0000	1005	HIRA								
			PALE	0038.0	0039.0	III		2	25	70	
	0000	0650	CULG	0038.0	0039.0	III	G	1	20	90	
			CULG	0256.0	0257.0	III	G	1	23	100	
			PALE	0256.0	0256.0	III		1	25	60	
			CULG	0456.0	0500.0	III	G	2	18X	100	
			SVTO	0456.0	0459.0	III		1	35	67	
	0330	1834	POTS	0456.2	0507.4	III	G,RS	2	40X	170U	
			CULG	0507.0	0507.0	III	B	1	60	140	
	0555	1200	IZMI	0604.8	0605.0	III	G	2	45X	125	
			POTS	0604.9	0605.1	III	G	2	40X	170U	
			CULG	0605.0	0605.0	III	B	1	20	80	
			POTS	0638	1834 U	I	S	2	110U	400	
			IZMI	0751.0	0751.1	III	B	1	45	95	
			IZMI	0756.5	0756.7	I	G	1	220	243	
			IZMI	1151.6	1152.1	III	G	2	45X	70	
			POTS	1228.9	1232.2	III	G	2	110U	160	
			SGMR	1252.0	1257.0	III		1	30	50	
			SVTO	1252.0	1257.0	III		2	35	49	
			POTS	1350.0	1407.2	III	GG,C,RS	3	40X	800X	
			SGMR	1350.0	1400.0	III	N	3	30	80	
			SVTO	1354.0	1407.0	III	N	3	35	85	
	0412	1751	ONDR	1358.4	1359.2	DCIM		1	800X	1080	
	0430	1820	BLEN	1358.7	1359.6	DCIM	GG,RS	2	250	550X	
			SGMR	1405.0	1407.0	III		1	30	70	
			POTS	1513.0	1513.3	III	G	1	40X	90U	
			SGMR	1513.0	1513.0	III		1	30	60	
			ONDR	1529.2	1535.2	DCIM	G	2	800X	2000X	
			SGMR	1530.0	1535.0	V		2	30	70	
			SVTO	1530.0	1534.0	V		3	35	85	
			POTS	1530.1	1540.1	III	GG	2	40X	400	
			POTS	1532.7	1532.8	DCIM		2	480	670	
			POTS	1534.7	1535.0	DCIM		2	500	800X	
			POTS	1618.8U	1619.2U	UNCLF		2	40X	70	
			ONDR	1713.3	1714.2	DCIM	GG,SP	2	965	1990	
			BLEN	1713.6	1714.5	DCIM	P	1	1000X	3200	
			POTS	1826.6	1827.1	III	G	2	110U	170U	
			PALE	1827.0	1827.0	III		1	40	55	
			SGMR	1827.0	1827.0	III		1	30	60	
			SGMR	1828.0	1828.0	III		1	30	60	
	1913	2400	HIRA								
	2115	2400	CULG	2134.0	2137.0	III	G	1	30	90	
			CULG	2155.0	2155.0	III	G	1	25	130	
			CULG	2307.0	2307.0	III	B	2	20	180	
			PALE	2307.0	2307.0	III		1	29	58	
21			PALE	0001.0	0006.0	III		3	25	75	
	0000	0650	CULG	0001.0	0008.0	III	GG	2	18X	180	
	0000	1005	HIRA	0003.2	0004.2	III	G	1	25X	50X	
			CULG	0018.0	0018.0	III	B	1	25	80	
			CULG	0128.0	0132.0	III	G	1	20	180	
			PALE	0128.0	0130.0	III		1	32	50	
			CULG	0242.0	0246.0	III	G	1	30	90	
			CULG	0328.0	0328.0	III	B	2	20	75	
			PALE	0328.0	0328.0	III		1	30	60	
	0334	1831	POTS	0359	1655	III	N	2	40X	90U	
			POTS	0406	1752	I	S	1	110U	400	
	0412	1750	ONDR								
			POTS	0504.2	0505.0	DCIM		1	250	400	
			CULG	0609.0	0637.0	III	N	1	23	180	

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OBSERVATION			EVENT				FREQUENCY			Remarks	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)
21	0548	1200	POTS	0624.5	0627.2	III	GG,RS	2	40X	300	
			IZMI	0624.5	0626.1	III	GG	2	45X	270	
			IZMI	0628.7	0628.8	III	B	1	55	95	
			POTS	0630	1822	III	N	2	110U	170U	
			IZMI	0630.6	0630.7	III	G,HARM	2	55	245	
			IZMI	0636.7	0636.8	III	B	2	45X	95	
			IZMI	0651.7	0654.6	III	G	1	45	95	
			IZMI	0657.6	1111.0U	III	N	2	45X	135	
			SVTO	0725.0	0725.0	III		3	35U	82U	
			POTS	0725.3	0725.8	III	G	3	40X	170U	
			IZMI	0725.4	0725.7	III	G	2	45X	150	
			IZMI	0731.9	0732.5	III	G	2	75	95	
			POTS	0741.1	0741.9	III	G	3	40X	170U	
			SVTO	0813.0	0935.0	CONT		2	35U	60U	
	0430	1820	BLN	0821.2	0826.1	III	GG	1	520	550X	
			POTS	0911.3	0913.5	DCIM		1	200U	800X	
			POTS	0934.7	0935.6	III	G	2	40X	250	
			SVTO	0954.0	0954.0	III		2	35	67	
			IZMI	0954.4	0954.5	III	G,HARM	2	45X	95	
			POTS	0954.4	0954.5	III	G	3	40X	90U	
			IZMI	0954.5	0954.6	V		2	45X	65	
			POTS	0954.5	0954.8	V		3	40X	50	
			POTS	1023.7	1024.9	III	G	3	40X	250	
			IZMI	1023.8	1025.0	III	GG	2	45X	160	
			IZMI	1026.9	1027.1	III	B	2	50	70	
			SGMR	1054.0	1054.0	III		1	30	60	
			SVTO	1054.0	1054.0	III		2	35	62	
			IZMI	1054.3	1054.4	III	B	2	45X	120	
			POTS	1054.3	1054.6	III	B	3	40X	150	
			SGMR	1127.0	1127.0	III		1	30	60	
			SVTO	1127.0	1127.0	III		2	35	64	
			IZMI	1127.1	1127.4	III	G	2	45X	95	
			POTS	1127.1	1127.5	III	G	3	40X	90U	
			SVTO	1218.0	1219.0	III		1	35	61	
			SGMR	1219.0	1219.0	III		1	30	60	
			SVTO	1219.0	1220.0	III		1	35	61	
			POTS	1331.0	1331.2	III	B	2	40X	170U	
			SGMR	1436.0	2113.0	III	N	3	30	80	
			SVTO	1436.0	1532.0	III	N	2	35	85	
			POTS	1450.9	1452.2	III	GG	2	40X	375	
			POTS	1458.3	1459.3	III	G	2	40X	170U	
			SVTO	1618.0	1623.0	V		2	35	85	
			POTS	1618.7	1623.2	III	GG	2	40X	160	
			POTS	1739.5	1751.3	III	GG	2	40X	300	
			PALE	1740.0	1743.0	III		1	30	55	
			PALE	1748.0	1750.0	III		1	30	55	
			PALE	1821.0	1826.0	III		1	27	56	
			PALE	1909.0	1911.0	III		2	25	60	
			PALE	1944.0	1945.0	III		3	25	65	
	1913	2400	HIRA	1944.6	1944.8	III	B	1	25X	50X	
			PALE	2016.0	2113.0	III	N	3	25	75	
			SGMR	2110.0	2113.0	III		3	30	80	
	2110	2400	HIRA	2110.8	2112.6	III	G	3	25X	50X	
			CULG	2111.0	2113.0	III	G	3	25	480	
			CULG	2118.0	2119.0	III	G	1	100	180	
			CULG	2135.0	2400.0	III	N	1	23	180	
			PALE	2325.0	0151.0	III	N	3	25	75	
			HIRA	2344.4	2344.6	III	B	2	25X	50X	
			CULG	2353.0	2355.0	III	G	3	18X	180	
22	0000	0650	CULG	0035.0	0055.0	III	N	1	23	90	
			CULG	0124.0	0200.0	III	N	1	30	150	
			CULG	0146.0	0152.0	III	GG	2	18X	430	
	0000	1005	HIRA	0146.0	0157.0	III	G	2	25X	50X	
			CULG	0224.0	0224.0	III	B	1	35	180	
			PALE	0229.0	0254.0	III	N	2	25	60	
			CULG	0230.0	0231.0	III	G	2	20	180	
			HIRA	0230.0	0230.4	III	B	1	25X	50X	
			CULG	0251.0	0255.0	III	G	1	20	150	

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
22	0334	1831	CULG	0331.0	0331.0	III	B	1	23	90	
			POTS	0334 E	1831 U	I	S,C,DC	3	110U	400	
			CULG	0401.0	0401.0	III	B	1	23	70	
	0412	1752	ONDR								
			POTS	0427	1819	III	N	1	110U	170U	
			POTS	0504	1816	III	N	1	40X	90U	
	0548	1200	POTS	0507.7	0508.0	III	G	2	40X	250	
			CULG	0519.0	0519.0	III	B	1	23	70	
			SVTO	0526.0	0534.0	III		2	35	84	
			POTS	0526.8	0533.7	III	G	2	40X	350	
			CULG	0527.0	0534.0	III	G	1	23	180	
			IZMI	0555. U	1140. U	I	N	1	50	270X	
			SVTO	0614.0	0811.0	III	N	2	35	85	
			IZMI	0614.4	0614.9	III	G	2	45X	125	
			POTS	0614.7	0615.0	III	G	3	40X	170U	
			CULG	0615.0	0650.00	III	N	1	30	180	
			POTS	0616	1816	III	N	2	40X	90U	
			IZMI	0616.5	0616.9	III	G	2	45	70	
			IZMI	0619.6	1140.00	III	N	2	45X	180U	
			CULG	0630.0	0630.0	III	B	2	28	180	
			IZMI	0630.0	0630.6	III	G	2	45X	95	
			POTS	0630.2	0630.7	III	G	3	40X	170U	
			HIRA	0630.4	0630.6	III	B	2	50	90	
			POTS	0653.7	0658.5	III	GG	3	40X	250	
			POTS	0717.0	0720.4	III	GG	3	40X	170U	
			POTS	0800.8	0804.9	II	UE	2	110U	170U	
			POTS	0809.6	0811.5	III	G	2	40X	250	
			POTS	0818.2	0818.9	III	G	2	40X	300	
			POTS	0901.9	0902.9	III	GG	3	40X	250	
			HIRA	0902.0	0902.2	III	B	2	50	140	
			IZMI	0902.0	0902.9	III	GG	2	45X	125	
			HIRA	0905.2	0905.4	III	B	1	50	80	
			IZMI	0905.5	0905.8	III	GG	2	45X	120	
			IZMI	0905.5	0905.9	CONT		1	50	65	
			POTS	0914.9	0918.3	III	GG	3	40X	300	
			IZMI	0915.1	0918.2	III	GG	2	45X	270	
			HIRA	0915.8	0917.8	III	G	2	30	210	
			POTS	0924.8	0929.4	III	G,P	2	40X	275	
			SVTO	0948.0	0958.0	III		2	35	79	
			SVTO	1048.0	1049.0	III		2	37	65	
			SGMR	1049.0	1049.0	III		1	30	60	
			SVTO	1100.0	1110.0	III		1	38	80	
			POTS	1147.4	1148.1	III	G,U	1	200U	375	
			SVTO	1342.0	1343.0	III		2	36	84	
			SGMR	1343.0	1343.0	III		1	30	70	
			SGMR	1423.0	1423.0	III		1	30	60	
			SVTO	1423.0	1423.0	III		2	35	83	
			SGMR	1519.0	1519.0	III		1	30	80	
			SVTO	1519.0	1519.0	III		2	35	84	
			SGMR	1745.0	1749.0	V		1	30	70	
			POTS	1745.9	1748.4	III	G	2	40X	225	
			SGMR	1815.0	1816.0	III		1	30	80	
			PALE	1819.0	1952.0	IV		2	25U	70U	
			SGMR	1819.0	1824.0	III		2	30	80	
			POTS	1819.5	1829 U	III	GG,C	3	40X	200U	
	0430	1820	BLEN	1819.5	1827.3	DCIM	Z,F,P	3	1000X	2500	
			POTS	1820	1831 U	DCIM		2	200U	800X	
			BLEN	1821.2	1824.3	III	RS,U	2	1300	2400	
			SGMR	1824.0	1828.0	II		2	30	80	ESS 1400
			SGMR	1828.0	1949.0	IV		1	30	80	
	2115	2400	CULG	2244.0	2249.0	III	G	2	20	180	
			PALE	2246.0	2247.0	III		2	25	75	
			SGMR	2246.0	2247.0	III		1	30	80	
	1914	2400	HIRA	2246.2	2247.2	III	G	2	25X	160	
23	0000	0650	CULG	0012.0	0012.0	III	B	1	200	300	
			CULG	0053.0	0055.0	III	G	2	18	350	
			PALE	0053.0	0055.0	III		1	25	60	
	0000	1005	HIRA	0053.2	0054.0	III	G	2	25X	320	

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OBSERVATION			EVENT				FREQUENCY		Remarks	
Start Day	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)		Upper (MHz)
23		CULG	0056.0	0056.0	III	B	1	30	180	
		CULG	0134.0	0136.0	III	G	1	20	90	
		PALE	0134.0	0136.0	III		1	25	65	
		CULG	0200.0	0200.0	III	B	1	20	90	
		PALE	0200.0	0200.0	III		1	25	75	
		CULG	0209.0	0212.0	III	G	1	23	90	
		CULG	0235.0	0235.0	III	B	1	30	70	
		PALE	0239.0	0240.0	III		1	25	45	
		CULG	0240.0	0240.0	III	B	1	20	70	
		POTS	0429	1820	III	N	2	110U	170U	
0334	1826	POTS	0429	1820	III	N	2	40X	90U	
		CULG	0429.0	0431.0	III	G	1	35	170	
		CULG	0438.0	0441.0	III	G	1	20	180	
		CULG	0452.0	0454.0	III	G	1	30	80	
		POTS	0532	1826	I	S,C,DC	2	40X	300	
		CULG	0537.0	0545.0	III	GG	1	23	100	
		SVTO	0537.0	0545.0	III		2	35	77	
		CULG	0545.0	0553.0	II	SH	2	30	100	ESS 1000
		HIRA	0545.0	0549.0	II	SH	2	50	90	ESS 1100
		SVTO	0545.0	0555.0	II		2	35	85	ESS 0600
		POTS	0545.4	0552.9	II	UE	3	40X	90U	
		CULG	0546.0	0550.0	II	FN	2	25	45	
		HIRA	0546.5	0549.0	II	FN	1	25X	40	ESS 1100
		CULG	0553.0	0615.0		CONT	1	30	50	
		SVTO	0604.0	0605.0	III		1	40	47	
0548	1046	IZMI	0607.0	0609.3	III	G	2	45X	120	
		SVTO	0632.0	0633.0	III		1	52	66	
		IZMI	0632.8	0633.0	III	G	2	50	95	
		CULG	0633.0	0633.0	III	B	1	50	90	
		IZMI	0648.3	0722.4U	III	S	2	45X	135	
0412	1751	ONDR	0649.5	0706.3		DCIM	2	800X	2000X	
		SVTO	0651.0	0902.0	IV		2	03	85	
0430	1820	BLEN	0652.7	0702.2		DCIM	3	320	550X	
		POTS	0653.8	0703 U	III	GG,C,RS	3	40X	200U	
		IZMI	0654.8	0657.4	III	GG	2	45X	150	
		POTS	0655.1	0703.5		DCIM	2	200U	800X	
		IZMI	0702.9	0703.5		UNCLF	2	55	65	
		IZMI	0704.0U	0812.0U	I	N	2	45	120	
		IZMI	0708.4	0712.9	II	HARM	2	50	120	
		IZMI	0732.0U	0817.0U	III	N	2	45X	95	
		IZMI	0749.8	0750.1	III	G	2	45X	140	
		IZMI	0854.4	0855.0	III	GG	2	45X	95	
		SVTO	0920.0	0921.0	III		2	36	76	
		IZMI	0920.3	0920.8	III	G	2	45X	270	
		HIRA	0920.6	0920.8	III	B	1	50	150	
		IZMI	1013.8	1015.7	III	GG	2	45X	260	
		SVTO	1014.0	1016.0	III		2	35	85	
		IZMI	1027.2	1027.9	III	G,RS	1	55	65	
		SVTO	1112.0	1116.0	III		2	36	83	
		POTS	1112.3	1116.4	III	GG,RS	3	40X	300	
1104	1200	IZMI	1112.4	1113.1	III	GG	2	45X	270	
		SGMR	1113.0	1114.0	III		1	30	70	
		IZMI	1115.3	1116.5	III	G	2	45X	135	
		SVTO	1133.0	1208.0	III	N	2	36	84	
		SGMR	1143.0	1146.0	III		2	30	80	
		IZMI	1143.3	1144.6	III	G	2	45	170	
		POTS	1143.3	1144.2	III	G	3	40X	250	
		IZMI	1143.6	1144.0	V		2	45X	135	
		IZMI	1146.5	1146.7	III	B	2	45X	75	
		SGMR	1208.0	1302.0		CONT	/	30	70	
		SGMR	1208.0	1302.0	IV		/	30	70	
		SGMR	1208.0	1302.0	IV		1	30	70	
		SVTO	1223.0	1255.0	IV		2	35	85	
		SVTO	1302.0	1302.0	III		1	36	59	
		POTS	1615.3	1615.6		DCIM	2	200U	400	
		POTS	1714.0	1714.5		DCIM	1	200U	400	
		POTS	1816.0	1817.7		DCIM	1	200U	400	
1914	2400	HIRA								
		PALE	2116.0	2117.0	III		1	35	55	

OBSERVATION			EVENT			FREQUENCY			Remarks	
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)		Lower (MHz)
23			PALE	2134.0	2134.0	III		1	28	55
			SGMR	2134.0	2135.0	III		1	30	55
	2115	2400	CULG	2134.0	2245.0	III	N	1	25	160
			PALE	2157.0	2328.0	III	N	1	25	60
			SGMR	2157.0	2200.0	III		2	30	60
			CULG	2200.0	2200.0	III	B	2	28	100
24	0000	0650	CULG	0009.0	0009.0	III	B	1	20	100
			CULG	0032.0	0032.0	III	B	1	50	90
			CULG	0046.0	0046.0	III	B	1	35	90
	0334	1826	POTS	0445	1826	I	S,C,DC	2	110U	350
	0605	1200	IZMI	0558.8	0559.0	III	B	1	45X	90U
			IZMI	0602.3	0602.6	III	B	1	30	85
			IZMI	0650.3	0658.5	III	GG	2	45X	160
			POTS	0651	1516	III	N	2	110U	170U
			POTS	0651	1756	III	N	2	40X	90U
			SVTO	0652.0	0658.0	III		1	36	67
			IZMI	0700.3	0701.4	III	G	1	45X	110
			IZMI	0714.7	1134.0U	I	S	1	200	270
			SVTO	0742.0	0801.0	III	N	2	35	77
			IZMI	0750.0U	0830.0U	III	N	1	45X	95
			POTS	0753.5	0758.1	III	G	3	40X	170U
			IZMI	0756.4	0758.1	III	G	2	45X	145
	0430	1820	BLEN	0807.0	0807.3	III	G	2	320	420
			SVTO	0817.0	0825.0	V		3	35	85
			IZMI	0817.5	0819.2	III	G	2	45X	125
			POTS	0817.5	0823.2U	III	G,C,RS	3	40X	350
	0413	1752	ONDR	0820.4	0822.1	DCIM		1	800X	2000X
			IZMI	0820.8	0825.6	III	GG	2	45X	170
	0000	1005	HIRA	0820.8	0821.8	III	G	2	25X	150
			IZMI	0821.3	0823.9	V		2	45X	95
			SVTO	0829.0	0859.0	CONT		1	35	63
			POTS	0909.7	0914.0	DCIM		1	200U	400
			IZMI	0921.0	0921.2	III	G	2	84	270
			POTS	0921.0	0921.4	III	G	2	110U	300
			SGMR	1028.0	1029.0	III		2	30	65
			SVTO	1028.0	1030.0	III		3	35	80
			IZMI	1028.1	1028.8	III	G	2	45X	160
			POTS	1028.2	1029.5	III	G	3	40X	170U
			IZMI	1028.7	1029.3	V		2	45X	90
			SGMR	1041.0	1041.0	III		1	30	35
			SGMR	1244.0	1304.0	III	N	1	30	65
			SVTO	1244.0	1304.0	III	N	2	36	53
			SVTO	1418.0	1					

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Event Remarks	Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class				Lower (MHz)	Upper (MHz)	
25			CULG	0334.0	0340.0	III		GG	2	20	180	
			PALE	0334.0	0337.0	II			1	30	60	ESS 0800
	0413	1752	ONDR									
	0430	0900	BLEN									
			SVTO	0434.0	1800.0	CONT			2	35	85	
			CULG	0444.0	0522.0	I		S	2	60	160	
			CULG	0522.0	0522.0	III		B	2	23	90	
			CULG	0525.0	0645.00	III		N	1	23	90	
			IZMI	0605.0E	1115.00	III		N	2	45X	95	
	0605	1200	IZMI	0605.0E	1115.00	I		S	2	70	245	
			IZMI	0609.6	0610.1	III		G	2	45X	100	
			CULG	0610.0	0610.0	III		B	2	23	90	
			IZMI	0851.1	0852.1	III		GG	2	45X	270X	
			IZMI	0851.4	0852.5	V			2	45	70	
	0000	1005	HIRA	0851.6	0851.8	III		B	2	25X	100	
			SGMR	1235.0	1236.0	III			1	30	60	
			SGMR	1453.0	2215.0	CONT			1	30	80	
			SVTO	1453.0	1456.0	III			2	35	85	
	1915	2400	HIRA									
			PALE	1916.0	2139.0	III		N	1	25	60	
	2115	2400	CULG	2115.0E	2400.00	I		S	2	60	160	
			CULG	2205.0	2337.0	III		N	1	23	90	
			PALE	2306.0	0229.0	III		N	1	28	55	
			CULG	2349.0	2349.0	III		B	2	18	90	
26	0000	0645	CULG	0000.0E	0645.00	I		S	2	60	160	
			PALE	0014.0	0210.0	CONT			1	35	55	
			CULG	0040.0	0103.0	III		N	1	28	90	
			CULG	0106.0	0107.0	III		G	2	25	90	
			CULG	0202.0	0613.0	III		N	1	23	180	
			SVTO	0415.0	1800.0	CONT			2	35	85	
	0413	1753	ONDR	0511.0	0512.0	DCIM		GG	2	800X	2000X	
	0430	1820	BLEN	0511.9	0512.0	III			1	450	550X	
	0548	1200	IZMI	0548.0E	1200.00	I		S,C	2	50	255	
			IZMI	0612.8	0612.9	III		B	2	45	95	
			IZMI	0658.2	0658.3	III		G	2	110	215	
			IZMI	0707.8U	1132.00	III		N	2	45X	95U	
			IZMI	0714.2	0726.1	III		S	2	45X	270X	
	0000	1006	HIRA	0715.0	0721.0	III		G	2	25X	270	
			ONDR	0715.4	0723.0	DCIM		G	1	800X	2000X	
			BLEN	0716.1	0724.0	DCIM		P	2	320	550X	
			IZMI	0745.0	0745.4	III		G	2	45X	120	
			IZMI	0745.4	0745.8	V			2	45X	85	
			IZMI	0750.5	0754.2	II			2	50	65	
			IZMI	0813.6	0814.2	III		G	2	45X	255	
			IZMI	0835.1	0835.7	III		G	2	45X	270X	
			IZMI	0835.4	0836.6	CONT			2	50	95	
			IZMI	0942.3	0943.4	III		GG	2	45X	270X	
			SGMR	1119.0	2217.0	CONT			2	30	80	
			PALE	1822.0	0500.0	CONT			1	35	75	
			PALE	1952.0	2125.0	III		N	1	25	75	
	1915	2400	HIRA	1952.8	1953.0	III		B	1	25X	80	
			HIRA	2026.6	2026.8	III		B	1	25X	120	
	2115	2400	CULG	2115.0E	2400.00	I		S	2	60	160	
			HIRA	2125.6	2125.8	III		B	1	25X	80	
			CULG	2229.0	2255.0	III		N	1	23	100	
			PALE	2255.0	2259.0	III			1	25	70	
			CULG	2259.0	2300.0	III		G	2	23	100	
			CULG	2329.0	2329.0	III		B	2	20	110	
			PALE	2329.0	0046.0	III		N	1	25	70	
27	0000	0645	CULG	0000.0E	0645.00	I		S	2	60	160	
			CULG	0018.0	0046.0	III		N	2	18	180	
	0000	1006	HIRA	0018.4	0018.6	III		B	1	30	150	
			CULG	0124.0	0152.0	III		N	2	18	180	
			PALE	0150.0	0152.0	III			2	25	75	
			HIRA	0150.5	0151.5	III		G	1	25X	150	
			CULG	0247.0	0248.0	III		G	1	23	140	
			CULG	0300.0	0528.0	III		N	1	25	100	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start End (UT) (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
27		CULG	0323.0	0325.0	III	G	3	18X	130	
		PALE	0323.0	0324.0	III		3	25	75	
		HIRA	0323.2	0324.0	III	G	3	25X	120	
	0414 1752	ONDR								
		SVTO	0457.0	0836.0	CONT		2	35	85	
		HIRA	0502.0	0502.2	III	B	1	40	130	
		CULG	0503.0	0505.0	III	G	2	23	180	
		CULG	0532.0	0617.0	III	S	1	25	90	
	0600 1200	IZMI	0600.0E	1200.00	I	S	2	50	230	
		IZMI	0604.00	1100.00	III	N	1	45X	120	
		CULG	0641.0	0642.0	III	G	2	25	170	
		IZMI	0641.5	0642.4	III	G	2	45X	125	
		SVTO	0836.0	0854.0	IV		3	35	85	
	0430 0900	IZMI	0836.7	0843.6	III	GG	2	45X	270X	
		HIRA	0837.0	0849.0	III	GG	3	40	140	
		BLN	0837.0	0843.8	DCIM	C	2	380	2800	
		BLN	0837.9	0838.1	III	RS	2	440	550X	
		IZMI	0841.9	0851.5	II	HARM	2	45X	130	
		IZMI	0853.2	0854.3	III	GG	2	45X	95	
		SVTO	0854.0	1800.0	CONT		2	35	85	
		IZMI	0903.9	0904.8	III	G	2	45X	95	
		SGMR	1135.0	2200.0	CONT		1	30	80	
		IZMI	1147.1	1148.8	III	GG	2	45X	125	
		PALE	1810.0	1811.0	III		1	30	55	
	1915 2400	HIRA								
		PALE	1959.0	1959.0	III		1	25	45	
	2115 2400	PALE	2032.0	2149.0	III	N	2	25	75	
		CULG	2115.0E	2322.0	I	S	1	100	170	
		CULG	2148.0	2258.0	III	N	1	23	90	
		CULG	2338.0	2338.0	III	B	1	23	90	
28	0000 0645	CULG	0020.0	0105.0	III	N	1	40	160	
		PALE	0033.0	0038.0	III		2	25	56	
		CULG	0034.0	0038.0	III	G	2	18X	150	
	0000 1006	HIRA	0034.6	0035.0	III	B	1	25X	70	
		CULG	0114.0	0119.0	III	G	2	18X	250	
		PALE	0114.0	0118.0	III		1	25	56	
		HIRA	0114.8	0115.4	III	G	1	25X	250	
		HIRA	0117.8	0118.0	III	B	1	25X	170	
		CULG	0136.0	0138.0	III	G	3	18X	180	
		HIRA	0136.0	0136.5	III	B	3	25X	200	
		HIRA	0138.0	0138.2	III	B	1	25X	140	
		CULG	0216.0	0217.0	III	G	2	18X	180	
		PALE	0216.0	0217.0	III		1	25	70	
		HIRA	0216.4	0216.6	III	B	1	25X	220	
		CULG	0228.0	0230.0	III	G	2	18X	180	
		PALE	0228.0	0230.0	III		2	25	70	
		HIRA	0228.6	0228.8	III	B	2	25X	200	
		CULG	0306.0	0358.0	III	N	2	18	180	
	0430 1820	PALE	0311.0	0319.0	III		1	25	45	
		PALE	0336.0	0337.0	III		1	25	75	
		HIRA	0336.6	0336.8	III	B	1	25X	180	
		SVTO	0358.0	0358.0	III		1	36	50	
		CULG	0431.0	0433.0	III	G	2	18	750	
		SVTO	0431.0	0433.0	III		2	35	84	
		BLN	0431.7	0432.8	III	GG	3	220X	550X	
		HIRA	0431.8	0432.8	III	G	1	25X	260	
		CULG	0511.0	0512.0	III	G	1	30	140	
		SVTO	0511.0	0511.0	III		1	42	60	
		SVTO	0539.0	0539.0	III		1	36	84	
		CULG	0540.0	0540.0	III	B	1	23	280	
		CULG	0603.0	0633.0	III	N	1	28	90	
		SVTO	0603.0	0610.0	III		2	35	85	
		IZMI	0605.0E	1200.00	I	N	1	55	250	
	0605 1200	IZMI	0605.0E	1155.00	III	N	1	45X	95	
		IZMI	0605.1	0606.8	III	G	2	45X	95	
		CULG	0610.0	0610.0	III	B	2	30	240	
		IZMI	0610.4	0610.6	III	G	2	45X	240	
		SVTO	0629.0	0758.0	III	N	2	35	85	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start	End				Spectral	Event		Lower	Upper	
Day (UT)	(UT)		(UT)	(UT)	Class	Remarks		(MHz)	(MHz)	
28	0702 1758 0414 1750	IZMI	0652.6	0655.3	III	GG	2	45X	115	
		POTS	0702 E	1758	I	S	2	110U	250	
		ONDR	0703.4	0705.1	DCIM	G	1	800X	995	
		IZMI	0703.9	0708.1	III	GG	2	45X	170	
		POTS	0704.1	0713.4	III	GG	3	40X	350	
		HIRA	0704.6	0706.2	III	G	1	50	130	
		SVTO	0711.0	0713.0	III		3	35	85	
		IZMI	0711.2	0713.4	III	GG	2	45X	170	
		HIRA	0711.5	0712.5	III	G	3	50	160	
		SVTO	0719.0	0721.0	III		3	35	85	
		POTS	0719.2	0726.8	III	GG	3	40X	500	
		IZMI	0719.3	0720.7	III	GG	3	45X	270X	
		IZMI	0719.7	0720.4	CONT		2	50	150	
		BLN	0719.8	0720.7	III	GG	3	220X	550X	
		HIRA	0720.0	0720.4	III	B	3	40	370	
		IZMI	0721.0	0724.1	III	GG	2	45X	125	
		IZMI	0725.9	0726.8	III	GG	2	45X	150	
		POTS	0733	1752	III	N	2	40X	90U	
		POTS	0733	1758 U	III	N	2	110U	170U	
		IZMI	0733.4	0734.7	III	GG	2	45X	160	
		IZMI	0750.1	0750.4	III	G	2	45X	95	
		IZMI	0753.6	0753.7	III	G	2	45X	70	
		IZMI	0758.2	0758.6	III	G	2	45X	95	
		IZMI	0832.3	0832.4	III	G	2	45X	124	
		SVTO	0906.0	0908.0	III		2	35	68	
		IZMI	0906.1	0908.7	III	GG	2	45X	270X	
		POTS	0906.1	0906.9	III	GG,RS	3	40X	300	
		SVTO	0916.0	0921.0	V		3	35	85	
		HIRA	0916.2	0916.4	III	B	2	25X	500	
		ONDR	0916.2	0921.1	DCIM	GG	2	800X	2000X	
		POTS	0916.3	0921.5	IV		3	40X	800X	
		IZMI	0916.4	0916.7	V	HARM	2	45X	270X	
		IZMI	0916.4	0916.8	III	G	2	45X	270X	
		IZMI	0917.1	0921.6	III	GG	2	45X	270X	
		HIRA	0919.2	0920.4	III	G	2	40	130	
		SGMR	0957.0	0957.0	III		1	30	50	
		SVTO	0957.0	0959.0	III		3	35	85	
		IZMI	0957.2	0958.6	III	GG	2	45X	125X	
		POTS	0957.2	0958.7	III	G	3	40X	400	
		SVTO	1007.0	1019.0	III	N	2	35	85	
		IZMI	1017.8	1023.7	III	GG	2	45X	205	
		POTS	1017.8	1019.6	III	GG,C	3	40X	250	
		SGMR	1153.0	1153.0	III		1	30	80	
		SVTO	1153.0	1330.0	III	N	2	35	85	
		IZMI	1153.4	1154.2	III	GG	2	45X	95	
		POTS	1153.4	1154.2	III	G	3	40X	170U	
		IZMI	1156.4	1156.5	III	B	2	50	70	
		BLN	1214.0	1214.1	UNCLF		2	220X	390	
		SGMR	1219.0	1222.0	III		2	30	80	
		POTS	1219.1	1223.5	III	G,C	3	40X	350	
		POTS	1258.9	1307.0	III	GG,C	3	40X	375	
		SGMR	1259.0	1614.0	III	N	2	30	80	
		POTS	1328.2	1328.9	III	G	3	40X	225	
		SVTO	1418.0	1630.0	CONT		1	35	85	
		SVTO	1423.0	1452.0	III	N	2	35	85	
		POTS	1423.2	1423.5	III	B	3	40X	145	
		SGMR	1733.0	1741.0	III	N	1	30	80	
		PALE	1737.0	1737.0	III		1	40	55	
		SGMR	1842.0	1934.0	III	N	1	30	75	
		PALE	1903.0	1905.0	III		1	25	55	
		PALE	1918.0	1923.0	III		1	25	56	
		SGMR	2021.0	2359.0	CONT		2	30	80	
		PALE	2022.0	0128.0	III	N	2	25	70	
		HIRA	2022.0	2025.0	III	G	1	50	140	
		HIRA	2027.4	2027.6	III	B	1	30	140	
		HIRA	2056.0	2058.0	III	G	1	50	200	
		PALE	2056.0	2103.0	II		2	25	65	ESS 0500
		SGMR	2056.0	2058.0	III		1	30	80	
		SGMR	2056.0	2104.0	II		1	38	80	ESS 0400

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OBSERVATION			Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Day	Start (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
28	2115	2400	CULG	2131.0	2217.0	III	N	2	28	180	
			HIRA	2154.8	2155.0	III	B	1	25X	90	
			HIRA	2207.5	2209.0	III	G	2	40	120	
			CULG	2218.0	2326.0	III	N	1	25	90	
			CULG	2351.0	2400.0	III	N	1	23	130	
29	0000	0645	CULG	0007.0	0007.0	III	B	1	23	150	
			CULG	0049.0	0049.0	III	B	1	30	150	
			CULG	0101.0	0103.0	III	G	1	30	150	
			CULG	0126.0	0127.0	III	G	2	20	160	
			HIRA	0126.4	0126.6	III	B	1	25X	150	
	0000	1006	CULG	0200.0	0221.0	III	N	1	23	180	
			PALE	0207.0	0257.0	III	N	1	25	55	
			CULG	0311.0	0401.0	I	S	1	110	160	
			CULG	0319.0	0357.0	III	N	1	30	100	
			POTS	0334	0700 U	I	S,C,DC	2	80	300	
	0334	0700	POTS	0335	0632	III	N	2	40X	90U	
			POTS	0344.6	0344.7	DCIM		1	300	470	
			CULG	0345.0	0345.0	III	B	1	300	480	
			ONDR	0438.0	1704.0	CONT		2	35	85	
			CULG	0453.0	0454.0	III	G	1	28	140	
	0415	0813	SVTO	0457.0	0531.0	III	N	2	35	85	
			POTS	0457.2	0515.4	III	GG,C	3	40X	600	
			POTS	0457.6	0512 U	DCIM		2	200U	800X	
			CULG	0458.0	0501.0	III	G	2	18X	600	
			HIRA	0458.0	0459.0	III	G	3	25X	330	
	0430	1820	BLN	0458.0	0514.6	DCIM	P	2	400	550X	
			CULG	0502.0	0508.0	III	GG	3	18X	350	
			HIRA	0502.5	0507.5	III	G	3	25X	240	
			BLN	0505.4	0513.4	III	GG	2	260	550X	
			CULG	0508.0	0515.0	III	GG	2	18	280	
			CULG	0514.0	0525.0	II	SH	2	35	80	ESS 750 FLA
			SVTO	0514.0	0522.0	II		2	46	81	ESS 0900
			POTS	0515 U	0522 U	II	UE	2	40X	75	
			CULG	0515.0	0520.0	II	FN	2	23	40	
			CULG	0522.0	0645.0D	CONT		1	30	90	
			CULG	0529.0	0533.0	III	G	1	23	150	
			POTS	0530.4	0531.1	III	G,C	3	40X	170U	
			POTS	0541.2	0541.6	III	G	2	110U	350	
			CULG	0542.0	0542.0	III	B	1	30	180	
			POTS	0553.3	0554.1	III	G	2	110U	170U	
			POTS	0555.1	0555.5	DCIM		1	275	450	
			IZMI	0602.0E	1200.0D	I	S	2	50U	230	
			CULG	0610.0	0645.0D	I	S	1	110	160	
			IZMI	0632.0U	1200.0D	III	N	1	45X	95U	
			IZMI	0659.8	0659.9	III	B	2	45X	170	
			POTS	0659.8	0700.2	III	B	3	40X	250	
			IZMI	0659.9	0700.1U	V		2	45	85	
			SVTO	0816.0	0820.0	III		2	35	85	
			IZMI	0816.9	0822.7	III	GG	2	45X	125	
			IZMI	0905.2	0905.9	III	GG	2	45X	230	
			SGMR	1055.0	2239.0	CONT		2	30	80	
			IZMI	1124.4	1124.6	III	G	2	45X	120	
			IZMI	1125.2	1126.0	III	G	2	45X	270X	
			IZMI	1126.4	1127.9	III	GG	2	45X	270X	
			IZMI	1128.3	1129.0	III	GG	2	200	270X	
			IZMI	1142.0	1142.6	III	G	2	45X	125	
			SGMR	1236.0	1237.0	III		2	30	80	
			SVTO	1236.0	1245.0	V		2	35	85	
			BLN	1236.4	1241.7	III	GG	2	260	380	
			SGMR	1238.0	1247.0	V		2	30	80	
			BLN	1239.4	1241.9	DCIM	P	2	330	550X	
			POTS	1316 E	1812 U	I	S,C,DC	2	110U	300	
			POTS	1335	1812 U	III	N	2	40X	90U	
			POTS	1347	1806	III	N	2	110U	170U	
			POTS	1408.8	1410.6	III	G	3	40X	90U	
			POTS	1444.2	1444.5	III	B	3	40X	90U	
			SGMR	1750.0	1802.0	III		3	30	80	

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OBSERVATION		Sta	Start (UT)	End (UT)	EVENT		Int (1-3)	FREQUENCY		Remarks
Start Day (UT)	End (UT)				Spectral Class	Event Remarks		Lower (MHz)	Upper (MHz)	
29		PALE	1752.0	1931.0	III	N	3	25	75	
		POTS	1752.5	1810.5	III	GG,C,RS	3	40X	750	
		POTS	1753.5	1809.5	DCIM	P	2	200U	600	
		BLEN	1754.4	1756.7	III	GG,RS	2	1000X	1300	
		SVTO	1756.0	1800.0	III		2	35	85	
		PALE	1908.0	2042.0	CONT		1	25	56	
		SGMR	1909.0	1923.0	III	N	3	30	80	
		PALE	1915.0	0043.0	CONT		2	30	60	
1916	2400	HIRA								
		PALE	2024.0	2027.0	III		2	25	55	
2115	2400	CULG	2115.0E	2400.0D	III	S	2	25	160	
		PALE	2208.0	0500.0	III	N	1	25	60	
30	0000 0645	CULG	0000.0E	0645.0D	III	S	1	25	160	
		CULG	0037.0	0040.0	III	G	2	18	400	
	0000 1006	HIRA	0038.5	0039.5	III	G	1	25X	400	
		PALE	0119.0	0225.0	CONT		1	25	75	
0334	1824	POTS	0334 E	1824 U	I	S,C,DC	3	40X	400	
		POTS	0401.7	0402.1	UNCLF		1	200U	350	
		SVTO	0406.0	0756.0	CONT		2	35	85	
		POTS	0416	1818	III	N	2	40X	90U	
		CULG	0437.0	0445.0	III	GG	2	18X	180	
		POTS	0437.6	0445.1U	III	GG	3	40X	150	
		HIRA	0438.0	0443.0	III	G	2	25X	120	
		SVTO	0438.0	0444.0	III		2	35	85	
0430	1820	BLEN	0444.5	0444.9	DCIM	S	2	440	550X	
		BLEN	0510.2	0511.6	DCIM	P	2	450	550X	
		CULG	0526.0	0529.0	III	G	2	25	50	
		IZMI	0548.0E	1140.0U	III	N	1	45X	95U	
0548	1205	IZMI	0548.0E	1205.0D	I	N	2	50	270	
		CULG	0617.0	0617.0	III	B	2	25	180	
		HIRA	0617.4	0617.6	III	B	2	30	130	
		IZMI	0617.4	0618.6	III	G	2	45X	170	
		POTS	0617.4	0617.8	III	B	3	40X	300	
		IZMI	0617.6	0617.7	V	G	2	50	90	
		IZMI	0624.6	0626.1	III	GG	2	45X	150	
		POTS	0624.6	0626.8	III	GG	3	40X	150U	
		IZMI	0624.7	0626.0	V	G	2	50	65	
		HIRA	0624.8	0626.0	III	G	2	30	130	
		CULG	0625.0	0627.0	III	G	2	25	140	
		IZMI	0625.1	0626.7	CONT		1	50	90	
		IZMI	0635.1	0710.0U	III	S	2	45X	270X	
		POTS	0635.5	0706.5	III	GG,C,RS	3	40X	600	
		CULG	0636.0	0645.0D	III	GG	3	25	180	
		HIRA	0636.0	0646.5	III	GG	2	25X	150	
		BLEN	0640.0	0710.7	DCIM	S	2	460	550X	
		BLEN	0705.0	0705.5	III	S	1	220X	500	
		IZMI	0705.0	0706.8	III	GG	3	45X	270X	
		HIRA	0705.4	0705.8	III	B	1	25X	130	
		IZMI	0709.6	0709.9	III	G	2	45X	170	
		POTS	0710	1820	III	N	2	110U	170U	
		POTS	0923.5	0924.1	III	G	3	55	350	
		HIRA	0923.6	0923.8	III	B	2	100	160	
		IZMI	0923.7	0923.8	III	G	2	55	220	
		IZMI	0937.8	0942.3	II		2	45X	65	
		SVTO	0944.0	1800.0	CONT		2	35	85	
		POTS	0944.6	0944.8	III	G	1	220	450	
		IZMI	0952.7	0952.9	III	G	2	45X	125	
		IZMI	1046.8	1047.3	III	G	2	45	125	
		IZMI	1122.7	1133.1	III	S	2	45X	270X	
		SGMR	1123.0	1139.0	III	N	3	30	80	
		SVTO	1123.0	1138.0	III	N	3	35	85	
		POTS	1123.2	1137.7	IV	P	3	40X	800X	
		IZMI	1124.8	1127.5	III	GG	3	45X	270X	
		IZMI	1125.3	1128.1	CONT		2	45X	270X	
		BLEN	1125.4	1137.4	DCIM	P	1	220X	2800X	
		IZMI	1130.6	1131.4	CONT	STA	2	45X	70	
		POTS	1130.6	1135.0U	II	SH	3	40X	75	
		POTS	1130.8U	1132.2U	II	F	3	40X	50U	

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OBSERVATION					EVENT				FREQUENCY		Remarks
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Spectral Class	Event Remarks	Int (1-3)	Lower (MHz)	Upper (MHz)	
30			IZMI	1131.9	1137.3	III	GG	2	190U	270X	
			IZMI	1132.8	1133.8	III	G	3	45X	270X	
			IZMI	1133.9	1137.3	CONT	STA	1	200	270X	
			IZMI	1135.5	1139.0U	II		2	50	70U	
			SGMR	1203.0	2129.0	CONT		1	30	80	
			SGMR	1430.0	1430.0	III		2	30	80	
			SVTO	1430.0	1430.0	III		3	35	85	
			POTS	1430.7	1431.7	III	GG	3	40X	375	
			POTS	1546.7	1549.6	III	GG	3	40X	170U	
			POTS	1555.0	1559.0	DCIM	P	2	200U	670	
	0415	1751	ONDR	1556.3	1557.4	DCIM		1	800X	2000X	
			POTS	1600.4	1606.1	DCIM	RS	2	200U	400	
			POTS	1621.5	1621.6	III	B	3	40X	170U	
			POTS	1633.6	1637.6	DCIM	P	2	200U	650	
			SVTO	1634.0	1637.0	III		2	35	85	
			BLEN	1635.0	1639.5	CONT		2	1000X	4000X	
			SGMR	1635.0	1641.0	V		2	30	80	
			PALE	1636.0	1636.0	III		1	25	60	
			POTS	1636.4	1636.6	III	G	3	40X	90U	
			ONDR	1656.3	1659.3	DCIM	G	1	800X	1745	
			POTS	1656.6	1703.4	DCIM	P	2	200U	400	
	1917	2400	PALE	1657.0	1658.0	III		1	25	75	
			POTS	1657.2	1658.8	III	G	3	40X	170U	
			POTS	1800.8	1805.4	DCIM		1	200U	400	
			BLEN	1805.7	1810.5	CONT		1	1000X	4000X	
			PALE	1900.0	2158.0	CONT		1	25	75	
			PALE	1930.0	1934.0	III		2	25	75	
			SGMR	1931.0	1934.0	V		2	30	80	
			PALE	1947.0	1948.0	III		1	25	60	
			HIRA	2010.0	2010.2	III	B	1	300	500X	
			PALE	2014.0	2314.0	III	N	1	25	55	
	2115	2400	CULG	2115.0E	2400.0D	III	S	1	20	180	
			CULG	2156.0	2159.0	III	G	1	50	300	
			CULG	2207.0	2209.0	III	G	1	30	280	

Event Remarks:

B = Single burst C = Underlying continuum (particularly with Type I) DC = Drifting chains DP = Drifting pairs F = Fundamental emission (Type II) FS = Fine structures (Type IV) G = Small group of bursts (<10) GG = Large group of bursts (>10) H = Herringbone HARM = Harmonic	N = Intermittent activity in this period MOV = Moving (Type IV) MWB = Meter wave burst RS = Reverse slope burst S = Storm in the sense of intermittent but apparently connected actively SH = Secondary harmonic emission STA = Stationary (Type IV) U = U-shaped burst of Type III UE = Uncertain emission (Type II) W = Weak
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Frequency qualifiers:

X = Extends beyond instrument range	U = Uncertain frequency
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Remarks:

SWF = Associated short wave fade observed
 ESS = Estimated shock speed in km/s (Type II)
 FLA = Associated flare observed (class optional)

Stations Reporting:

CULG = Culgoora PALE = Palehua BLEN = Bleien	IZMI = Izmiran POTS = Potsdam	LEAR = Learmonth SGMR = Sagamore Hill ONDR = Ondrejov SVTO = San Vito
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**SOLAR RADIO NOISE STORM AT 164 MHZ
FROM NANCAY RADIOHELIOGRAPH
JUNE 1999**

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/06/99	+0.62	+0.29	II	8H20 E	15H18 D
02/06/99	-0.12	+0.34	I	8H19 E	15H18 D
02/06/99	+0.90	+0.37	I	8H19 E	15H18 D
03/06/99	+0.12	+0.28	I	8H20 E	15H18 D
03/06/99	+0.14	-0.33	I	8H20 E	15H18 D
03/06/99	+0.99	+0.88	II	8H20 E	15H18 D
04/06/99	+0.45	+0.36	II	7H59 E	15H18 D
04/06/99	+0.56	-0.40	II	7H59 E	15H18 D
04/06/99	+1.10	+0.81	II	7H59 E	15H18 D
05/06/99	+0.76	+0.36	II	8H00 E	15H29 D
06/06/99	+0.85	-0.29	I	8H00 E	15H29 D
06/06/99	+1.05	-0.42	I	8H00 E	15H29 D
07/06/99	+1.36	-0.40	III	8H39 E	15H19 D
08/06/99	-0.20	+0.19	I	10H40	11H28 D
08/06/99	+1.26	-0.23	I	8H20 E	11H28 D
09/06/99	-0.28	+0.25	I	12H10	15H19 D
10/06/99	-1.02	+0.98	II	8H57 E	15H20 D
10/06/99	+0.40	+0.00	I	13H50	15H20 D
11/06/99	-1.18	+0.42	I	8H57 E	14H55 D
11/06/99	-1.13	+0.84	II	8H57 E	14H55 D
11/06/99	+0.67	+0.26	I	12H20	14H55 D
12/06/99	-1.09	+0.28	I	10H05 E	15H20 D
12/06/99	-1.02	-0.33	II	13H38	15H20 D
12/06/99	-0.60	-0.39	I	10H05 E	15H20 D
12/06/99	+0.59	+0.50	I	10H05 E	15H20 D
13/06/99	-0.40	-0.23	II	8H21 E	15H20 D
14/06/99	-0.98	+0.51	I	9H13 E	14H26 D
14/06/99	-0.03	+0.40	I	9H13 E	14H26 D
16/06/99	-0.76	+0.65	I	8H21 E	15H21 D
16/06/99	+0.36	-0.47	I	8H21 E	14H30 D
16/06/99	+1.49	+0.50	I	8H21 E	15H05 D
17/06/99	-0.67	+0.50	I	10H15	15H21 D
17/06/99	+0.81	+0.47	I	11H37	15H21 D
18/06/99	-0.26	+0.51	I	8H22 E	15H21 D
18/06/99	+0.48	+0.39	I	8H22 E	15H21 D
18/06/99	+1.10	+0.42	I	8H22 E	15H21 D
20/06/99	-0.95	+0.60	I	8H32 E	15H22 D
21/06/99	-0.71	+0.70	I	8H23 E	15H22 D
21/06/99	+0.36	+0.64	I	9H40	15H22 D
22/06/99	-0.81	+0.33	I	8H23 E	15H22 D

¹ POSITIVE E-W AND S-N COORDINATES CORRESPOND TO THE N-W QUADRANT

² IMP1: FLUX < 5 SFU IMP2: 5 < FLUX < 20 SFU IMP3: 20 < FLUX < 100 SFU
IMP4: 100 < FLUX < 300 SFU IMP5: 300 SFU

³ E NOISE STORM IN PROGRESS AT THE BEGINNING OF THE NANCAY OBSERVATIONS
D NOISE STORM IN PROGRESS AT THE END OF THE NANCAY OBSERVATIONS

22/06/99	-0.28	+0.51	I	8H23 E	15H22 D
22/06/99	+0.60	+0.62	I	8H23 E	15H22 D
23/06/99	+0.59	-0.31	I	10H10 E	15H22 D
24/06/99	-0.43	+0.20	III	8H23 E	15H23 D
25/06/99	-0.22	+0.20	IV	8H24 E	15H23 D
26/06/99	+0.03	+0.19	V	8H23 E	15H22 D
28/06/99	+0.59	+0.20	II	9H12 E	15H23 D
29/06/99	+0.03	+0.33	III	8H53 E	15H24 D
29/06/99	+0.79	+0.22	III	8H53 E	15H24 D
30/06/99	-0.24	-0.64	II	8H15 E	15H18 D
30/06/99	+0.28	-0.33	III	8H15 E	15H18 D
30/06/99	+1.02	+0.20	III	8H15 E	15H18 D

**SOLAR RADIO NOISE STORM AT 164 MHZ
FROM NANCAY RADIOHELIOGRAPH
JUNE 1999**

DAY	HELIOGRAPHICS POSITIONS MEAN VALUES ¹		IMP ²	OBSERVING TIME ³	
	E-W	S-N		START(UT)	END(UT)
01/06/99	+0.62	+0.22	III	8H20 E	15H18 D
02/06/99	-0.05	+0.33	I	8H19 E	15H18 D
02/06/99	+0.76	+0.51	I	8H19 E	15H18 D
03/06/99	+0.06	+0.28	II	8H20 E	15H18 D
03/06/99	+0.96	+0.33	II	8H20 E	15H18 D
03/06/99	+0.20	+0.29		8H20 E	15H18 D
04/06/99	+0.42	-0.31	II	7H59 E	15H18 D
04/06/99	+0.48	+0.34	II	7H59 E	15H18 D
04/06/99	+0.59	-0.39	III	7H59 E	15H18 D
04/06/99	+1.15	+0.65	I	7H59 E	15H18 D
05/06/99	+0.51	-0.28	II	8H00 E	15H29 D
05/06/99	+0.65	+0.34	I	8H00 E	15H29 D
05/06/99	+0.81	-0.45	III	8H00 E	15H29 D
05/06/99	+0.88	-0.33	II	8H00 E	15H29 D
06/06/99	+0.81	-0.26	I	8H00 E	15H29 D
06/06/99	+1.01	-0.43	I	8H00 E	15H29 D
07/06/99	+1.16	-0.39	III	8H39 E	15H19 D
08/06/99	+1.15	-0.22	I	8H20 E	11h28 D
09/06/99	-0.22	+0.25	I	13H20	15H19 D
10/06/99	+0.43	+0.25	I	13H08	15H20 D
11/06/99	-0.76	-0.31	I	8H57 E	14H55 D
11/06/99	+0.64	+0.31	I	8H57 E	14H55 D
12/06/99	-0.96	-0.26	I	13H34	15H20 D
12/06/99	-0.53	-0.28	I	10H05 E	15H20 D
12/06/99	+0.64	+0.48	I	10H05 E	15H20 D
13/06/99	-0.91	-0.11	I	8H21 E	15H20 D

13/06/99	-0.34	-0.23	I	8H21 E	15H20 D
14/06/99	-0.16	+0.54	I	9H13 E	14H26 D
14/06/99	-0.11	-0.23	I	9H13 E	14H26 D
16/06/99	+0.43	-0.43	I	8H21 E	15H21 D
17/06/99	-0.40	+0.54	I	8H22 E	10H50
17/06/99	+0.82	+0.47	I	8H22 E	15H21 D
18/06/99	+0.43	+0.47	I	8H22 E	15H21 D
18/06/99	+0.78	-0.22	II	13H35	15H21 D
22/06/99	+0.57	+0.57	I	8H23 E	15H22 D
23/06/99	+0.57	-0.31	I	9H17 E	15H22 D
23/06/99	+0.70	+0.54	I	9H17 E	15H22 D
24/06/99	-0.47	+0.23	II	8H23 E	15H23 D
24/06/99	+0.80	+0.67	I	8H23 E	15H23 D
25/06/99	-0.23	+0.20	III	8H24 E	15H23 D
26/06/99	+0.00	+0.20	III	8H23 E	15H22 D
26/06/99	+1.19	+0.26	I	8H23 E	15H22 D
28/06/99	-0.25	-0.28	I	9H12 E	15H23 D
28/06/99	-0.08	+0.36	I	9H12 E	15H23 D
28/06/99	+0.51	+0.17	I	9H12 E	15H23 D
29/06/99	+0.00	-0.28	II	8H53 E	15H24 D
29/06/99	+0.74	+0.20	I	8H53 E	15H24 D
30/06/99	+0.25	-0.31	II	8H15 E	15H18 D
30/06/99	+0.31	+0.34	I	8H15 E	15H18 D

15, 27 JUNE 1999: NO DATA

OTHERS DAYS: NO DETECTABLE NOISE STORM

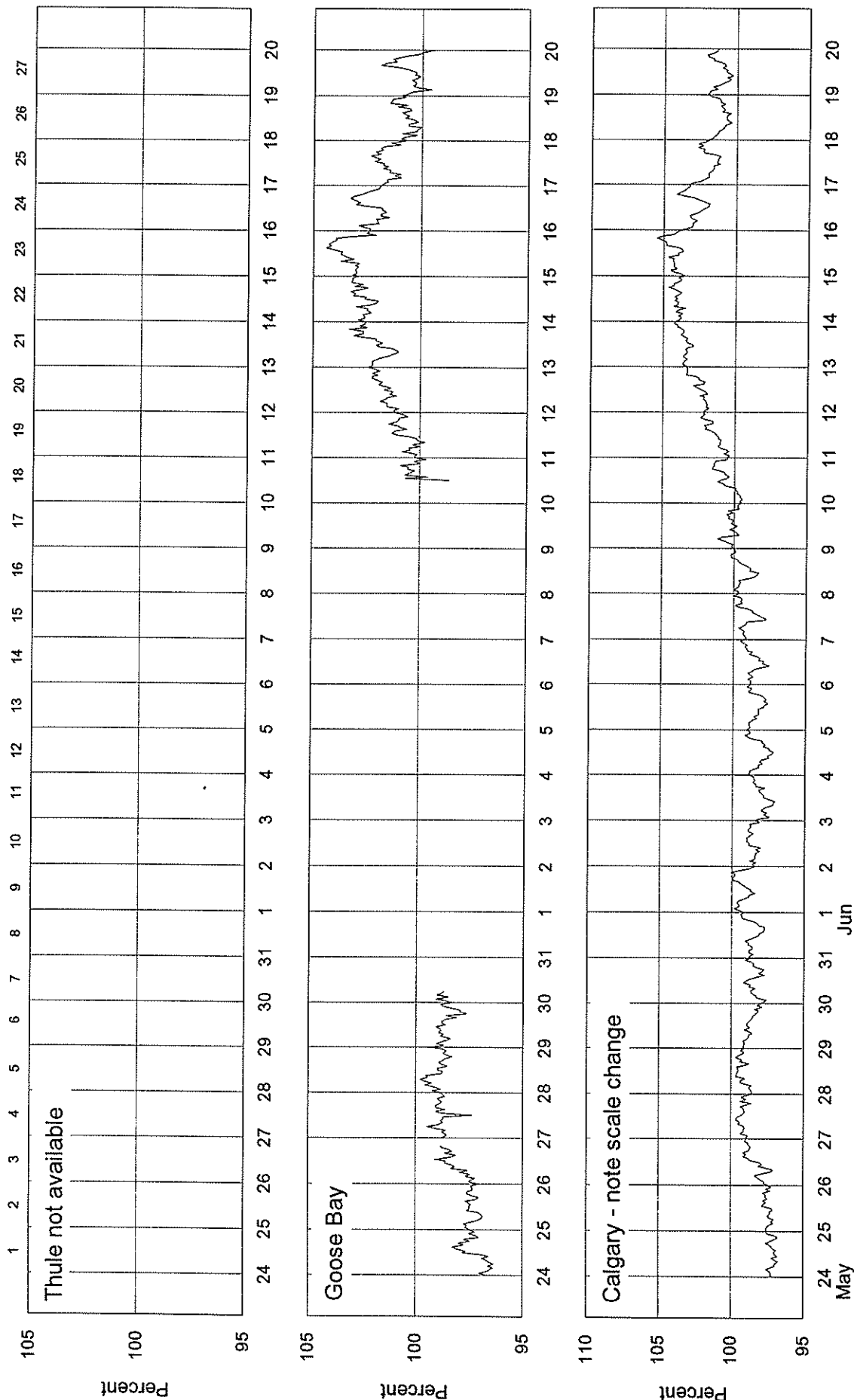
COSMIC RAY INDICES (Neutron Monitor)

June 1999

Day	THULE Average (cts/h)/100	GOOSE BAY Average (cts/h)/100	CALGARY Average (cts/h)/300	KIEL Average (cts/h)/100	MOSCOW Average (cts/h)/64	CLIMAX Average (cts/h)/100	BEIJING Average (cts/h)/256	HALEAKALA Average (cts/h)/1000
1	No data	7043.9	3815.0	6032.5	8983.5	4057.8	1935.4	3552.3
2	at time of	7047.6	3786.5	6036.0	8984.1	4049.1	1930.1	3548.1
3	publication	7028.7 (20)	3761.3	6034.6	8969.9	4031.9	1920.1	3550.2
4	---	---	3770.3	6034.0	8935.2	4040.2	1920.2	3546.8
5	---	---	3779.5	6031.6	8920.7	4042.7	1919.3	3543.2
6	---	---	3789.7	6024.2	8879.9	4028.7	1915.1	3541.8
7	---	---	3806.7	6029.2	8891.1	4039.2	1917.2	3542.6
8	---	---	3820.0	6040.0	8903.7	4057.6	1914.6	3554.1
9	---	---	3847.2	6089.2	8971.5	4099.1	1925.4	3564.5
10	7164.4 (12)	---	3859.2	6109.5	8997.9	4130.1	1934.8	3583.4
11	7196.4	---	3892.5	6179.1	9123.5	4181.1	1937.5	3597.5
12	7270.0	---	3933.2	6218.2	9184.3	4214.8	1940.6	3605.5
13	7305.9	---	3975.3	6260.9	9270.8	4255.7	1941.5	3615.7
14	7346.3	---	3994.7	6293.3	9317.3	4271.4	1942.8	3629.0
15	7396.2	---	4007.5	6306.6	9336.2	4292.4	1950.3	3633.2
16	7321.5	---	3954.2	6244.9	9241.3	4235.8	1941.2	3622.2
17	7271.7	---	3916.7	6205.1	9164.1	4192.9	1936.9	3600.2
18	7201.9	---	3881.2	6157.4	9102.3	4160.9	1928.7	3584.7
19	7196.0	---	3887.8	6147.3	9081.3	4145.0	1923.4	3579.7
20	7133.0	---	3849.7	6111.2	9031.7	4091.9	1921.6	3571.0
21	7146.2	---	3846.3	6129.2	9041.9	4105.0	1925.5	3565.0
22	7152.7	---	3843.5	6118.5	9048.2	4101.5	1926.3	3563.9
23	7102.9	---	3840.8	6071.0	8989.7	4085.5	1928.7	3565.6
24	7125.0	---	3850.3	6106.5	9016.7	4104.2	1927.1	3573.8
25	7108.4 (17)	---	3815.0	6090.5	8994.8	4086.3	1915.8	3570.8
26	---	---	3805.0	6064.7	8940.7	4080.5	1909.7	3577.7
27	---	---	3710.0	5917.2	8733.2	3965.1	1883.1	3529.2
28	---	---	3698.8	5915.9	8744.2	3960.4	1877.8	3538.2
29	7003.0 (7)	---	3758.3	5975.9	8829.4	4019.5	1887.5	3551.0
30	7005.0	---	3783.7	6022.5	8901.3	4051.9	1889.2	3555.5
31								
Mean		7169.8	3842.7	6099.9	9017.7	4106.0	1922.2	3571.9

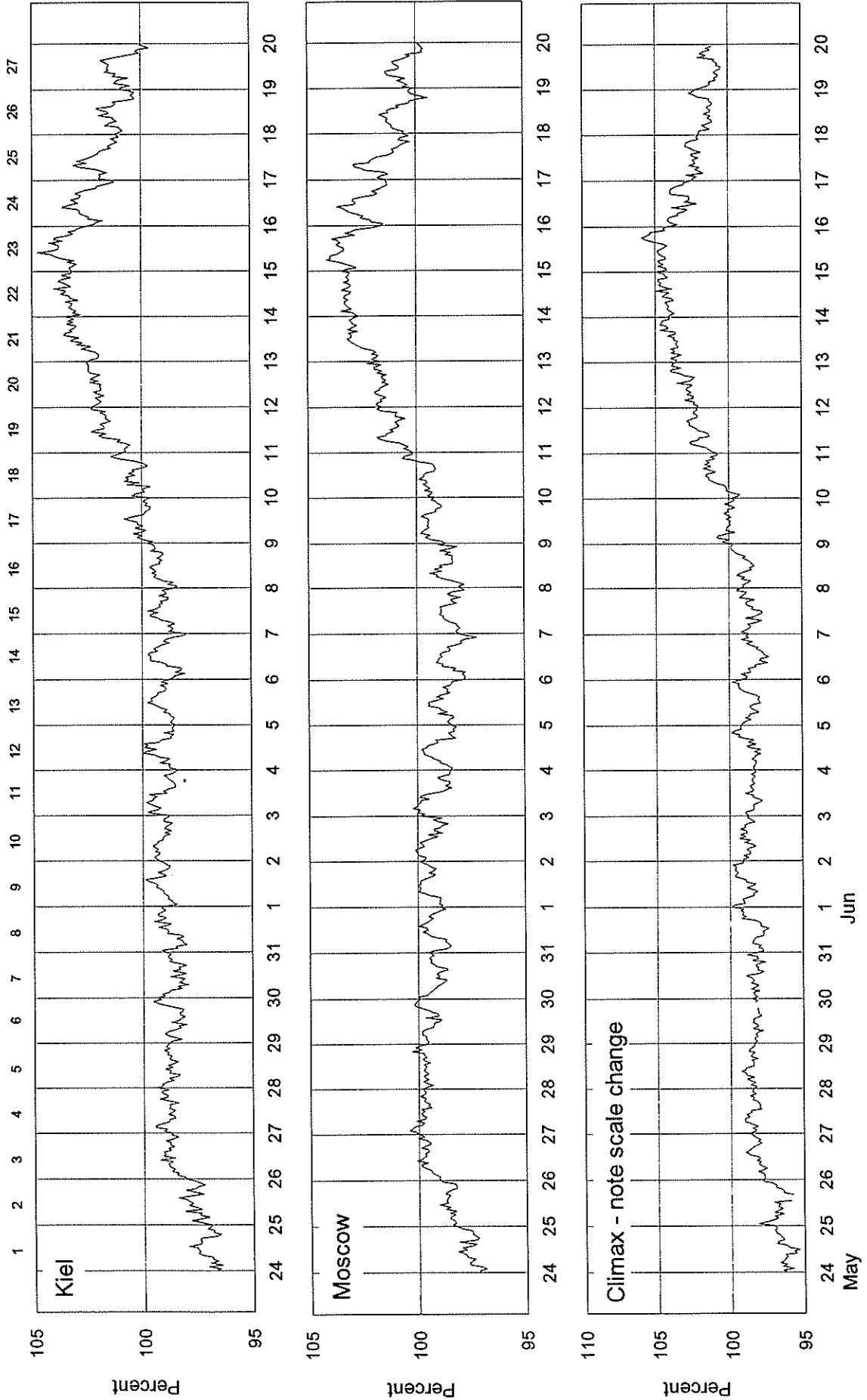
For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours, and for Haleakala, whenever the sum of all three sections falls below 60 hours.

COSMIC RAY INDICES (Neutron Monitor) Bartels Rotation 2264 - Beginning 24 May 99



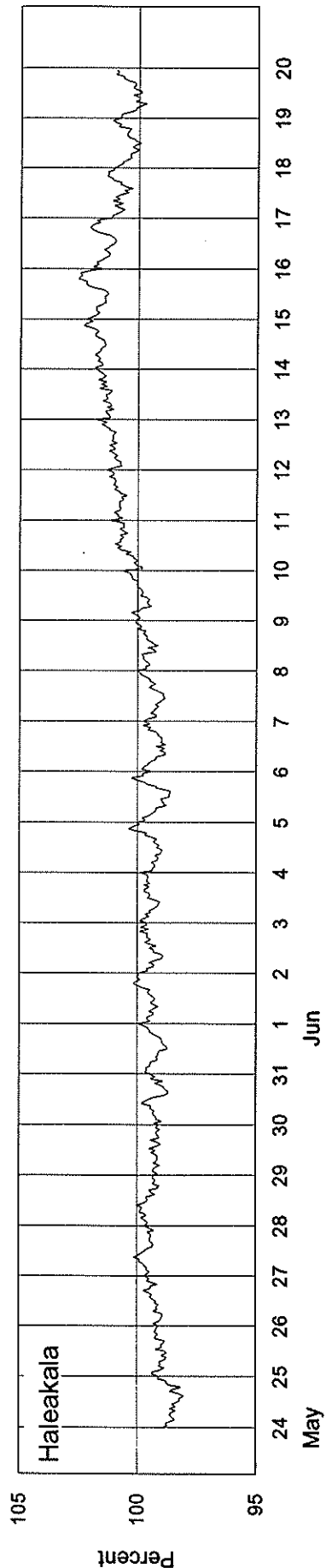
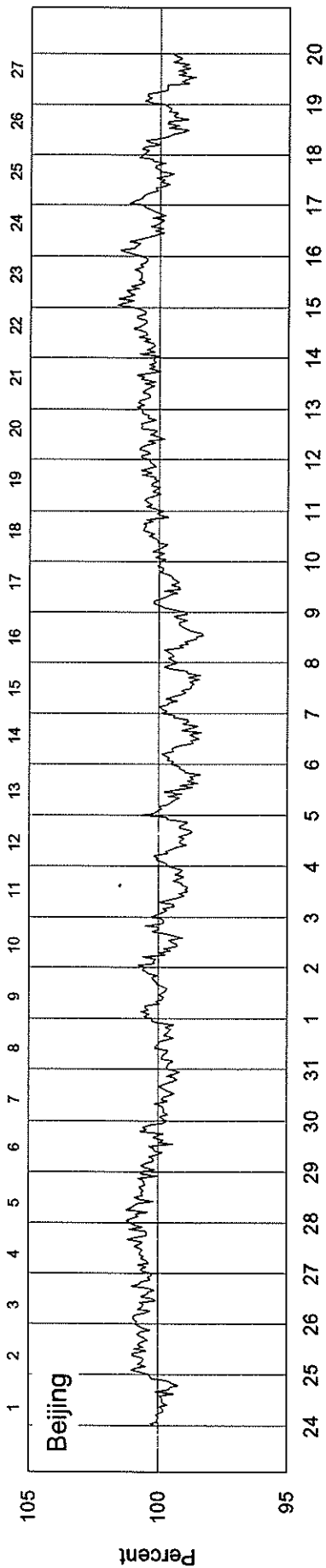
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2264 - Beginning 24 May 99



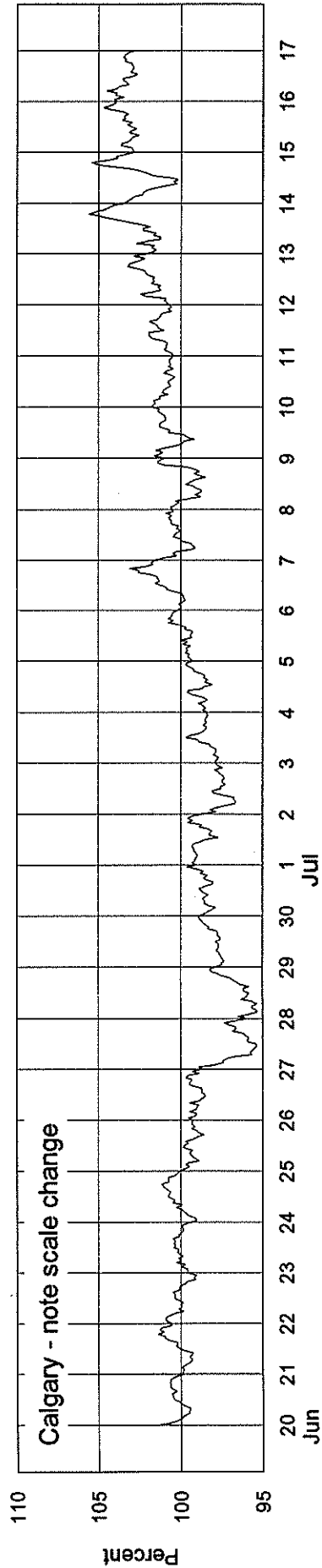
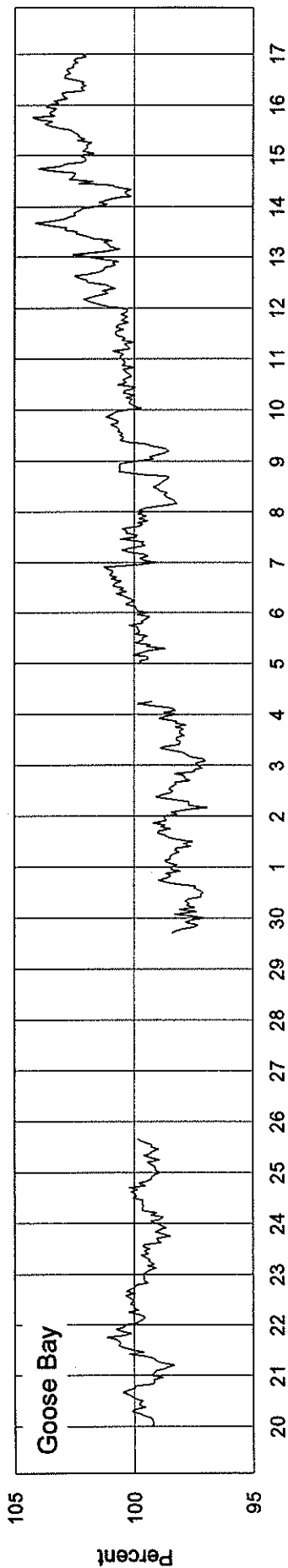
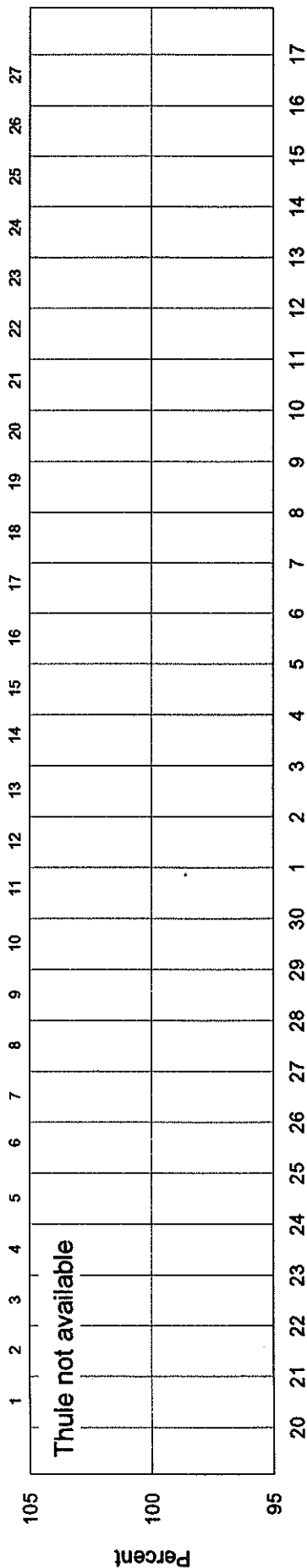
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2264 - Beginning 24 May 99



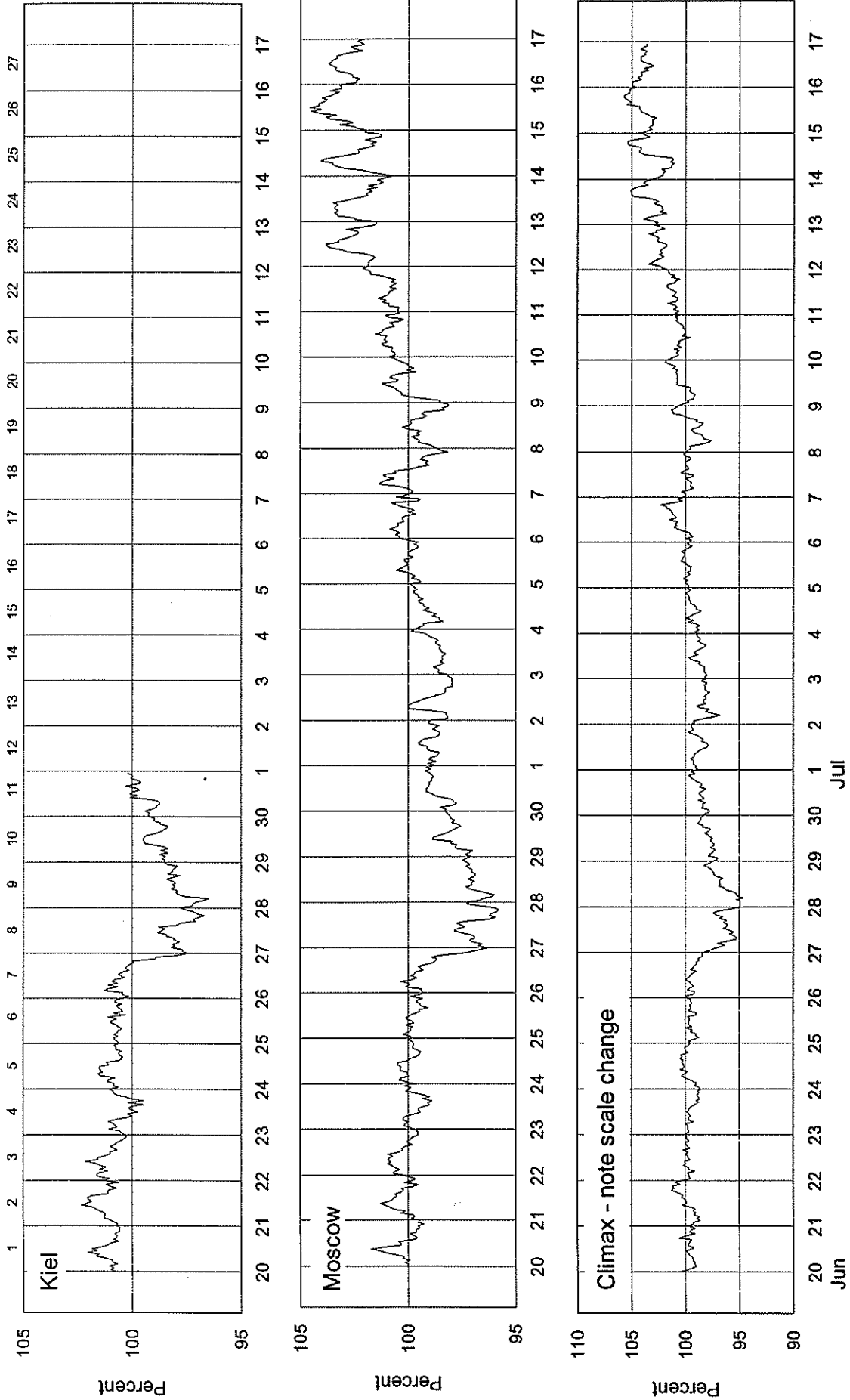
COSMIC RAY INDICES (Neutron Monitor)

Bartels Rotation 2265 - Beginning 20 Jun 99



COSMIC RAY INDICES (Neutron Monitor)

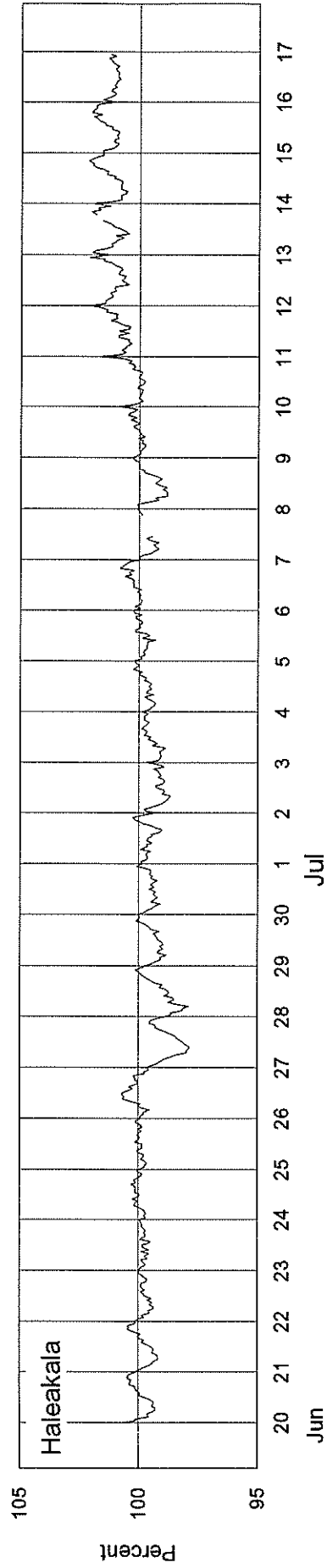
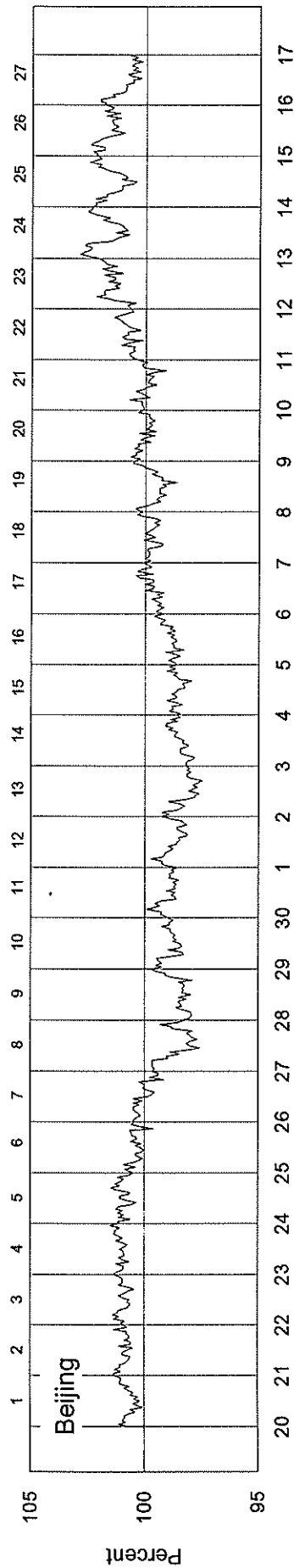
Bartels Rotation 2265 - Beginning 20 Jun 99



COSMIC RAY INDICES

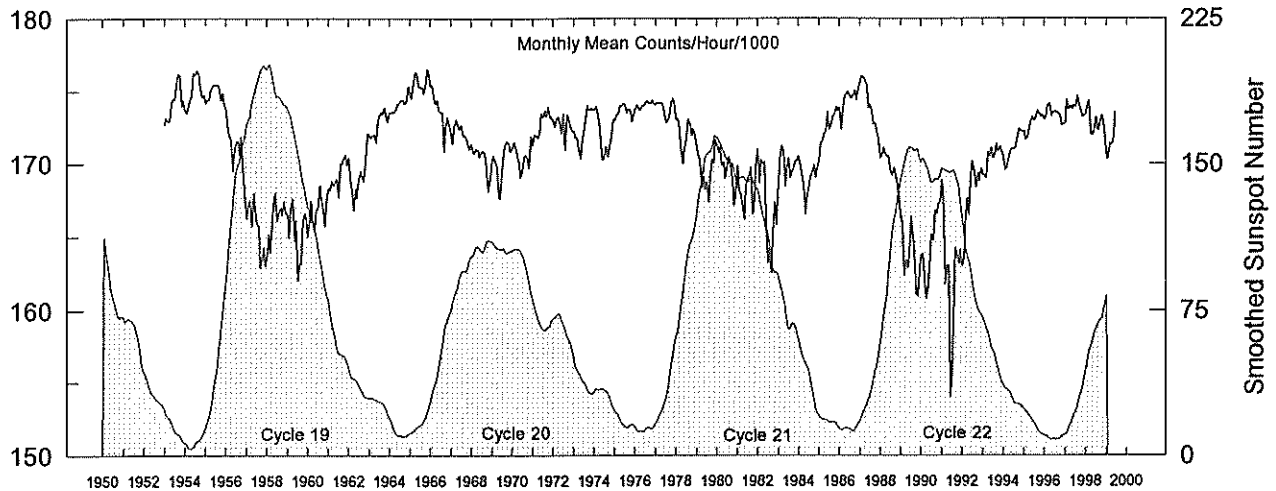
(Neutron Monitor)

Bartels Rotation 2265 - Beginning 20 Jun 99



180
Jun 99

Huancayo* Neutron Monitor Pressure-Corrected/Adjusted Values Jan 1953 - Jun 1999



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1953	1727	1732	1730	1729	1742	1744	1744	1756	1762	1761	1740	1744	1743
1954	1737	1735	1738	1744	1747	1763	1761	1764	1762	1754	1746	1748	1750
1955	1742	1744	1744	1751	1754	1755	1754	1755	1753	1744	1749	1741	1749
1956	1738	1724	1719	1718	1696	1707	1715	1716	1706	1719	1697	1675	1711
1957	1663	1671	1675	1658	1680	1670	1659	1658	1630	1633	1643	1630	1656
1958	1635	1652	1639	1657	1677	1680	1661	1667	1670	1665	1675	1666	1662
1959	1666	1649	1671	1676	1647	1661	1621	1632	1632	1661	1666	1663	1654
1960	1650	1663	1675	1660	1654	1669	1669	1685	1674	1670	1657	1677	1667
1961	1684	1682	1688	1685	1688	1690	1677	1701	1700	1704	1706	1699	1692
1962	1704	1687	1683	1688	1683	1677	1690	1695	1690	1688	1703	1721	1691
1963	1720	1718	1720	1720	1715	1729	1734	1736	1734	1739	1732	1729	1727
1964	1735	1736	1736	1736	1739	1741	1742	1744	1744	1741	1743	1753	1741
1965	1748	1745	1756	1764	1762	1754	1753	1753	1748	1754	1765	1764	1755
1966	1754	1754	1747	1741	1744	1737	1736	1736	1708	1725	1732	1727	1737
1967	1721	1714	1726	1731	1727	1724	1727	1720	1720	1718	1713	1710	1721
1968	1714	1708	1708	1710	1710	1705	1708	1709	1706	1698	1681	1689	1704
1969	1702	1706	1702	1698	1678	1676	1695	1708	1714	1716	1714	1709	1701
1970	1709	1715	1712	1707	1701	1691	1695	1705	1706	1705	1697	1719	1705
1971	1712	1720	1720	1718	1722	1735	1732	1737	1732	1739	1732	1732	1728
1972	1730	1726	1731	1732	1728	1721	1734	1710	1733	1733	1726	1723	1727
1973	1723	1719	1718	1709	1704	1716	1723	1733	1740	1737	1738	1738	1725
1974	1737	1740	1736	1729	1713	1703	1704	1712	1705	1713	1718	1731	1720
1975	1730	1733	1734	1740	1740	1742	1740	1735	1737	1738	1729	1733	1736
1976	1738	1741	1739	1737	1740	1740	1742	1743	1742	1742	1744	1741	1741
1977	1741	1743	1742	1742	1740	1735	1729	1730	1732	1742	1745	1741	1739
1978	1731	1731	1726	1710	1700	1710	1717	1731	1729	1719	1724	1720	1721
1979	1711	1707	1702	1684	1691	1682	1688	1674	1689	1703	1700	1717	1696
1980	1713	1708	1712	1699	1701	1690	1698	1705	1699	1688	1672	1680	1697
1981	1699	1682	1680	1671	1662	1685	1690	1693	1697	1666	1675	1700	1683
1982	1710	1687	1703	1700	1702	1662	1632	1643	1625	1662	1674	1658	1671
1983	1688	1703	1713	1709	1685	1697	1704	1690	1694	1697	1703	1702	1699
1984	1705	1699	1693	1685	1665	1677	1684	1691	1695	1699	1691	1698	1690
1985	1703	1714	1716	1721	1723	1736	1724	1727	1732	1734	1739	1737	1725
1986	1739	1724	1734	1746	1748	1750	1748	1745	1747	1751	1744	1752	1744
1987	1757	1760	1760	1757	1754	1738	1741	1735	1728	1728	1721	1718	1741
1988	1704	1706	1711	1706	1705	1705	1696	1692	1698	1690	1688	1674	1698
1989	1663	1660	1624	1635	1629	1638	1664	1650	1640	1611	1609	1627	1637
1990	1638	1638	1623	1608	1616	1630	1651	1648	1668	1666	1673	1673	1644
1991	1689	1682	1617	1631	1630	1540	1555	1611	1642	1638	1632	1641	1626
1992	1630	1635	1659	1677	1665	1689	1702	1696	1684	1693	1688	1697	1676
1993	1692	1692	1690	1708	1705	1711	1704	1707	1714	1709	1712	1709	1705
1994	1705	1696	1697	1703	1708	1711	1711	1711	1718	1724	1723	1722	1711
1995	1723	1717	1718	1726	1730	1732	1730	1733	1736	1735	1732	1734	1729
1996	1730	1734	1740	1742	1733	1735	1736	1736	1735	1733	1727	1727	1734
1997	1728	1744	1738	1740	1737	1741	1739	1747	1741	1737	1733	1733	1738
1998	1734	1741	1744	1721	1720	1723	1732	1723	1728	1733	1731	1719	1729
1999	1703	1704	1714	1713	1719	1736							1715

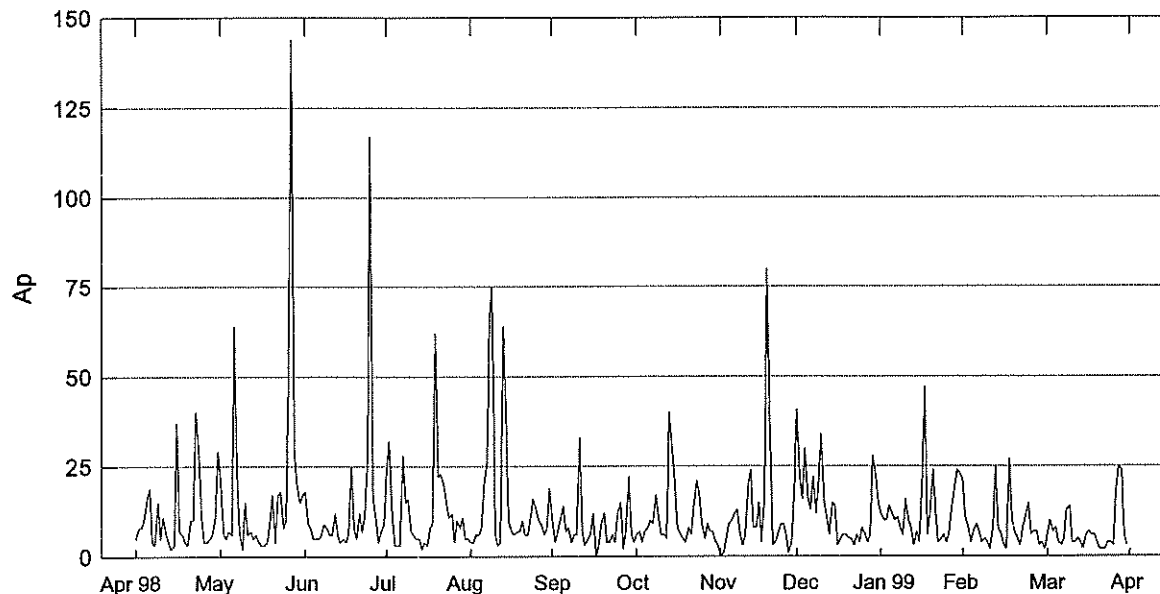
Multiply table entries by 100 to obtain hourly counting rate for Huancayo, Peru: S12 W75, Alt=3400m, Cutoff Rigidity=12.92GV (1980). NOTE: Secular changes in the Earth's magnetic field resulted in a slow lowering of the geomagnetic cutoff rigidity at Huancayo over the 40 year period. This dataset was adjusted by applying a linear time-correction based on the calculated change in response to the change in the vertical cutoff. * Data from Jan 92 on are from the 18-NM64 at Haleakala, Hawaii: N20 W156, Alt=3030m, Cutoff Rigidity=12.91GV (1980). Multiply table entries by 2057.6 to obtain equivalent Haleakala counting rate. NOTE: Monthly means for January 1995 through March 1998 are corrected values.

Geomagnetic Activity Indices

June 1999

Kp Three-Hourly Indices													Km Three-Hourly Indices													aa Provisional			
Day	1	2	3	4	5	6	7	8	Sum	Ap	Cp	1	2	3	4	5	6	7	8	Am	N	S	M						
1	0+	1	1+	1-	2	2+	2+	2+	12+	6	0.3	0+	1+	2-	1-	2-	2o	2-	2+	11	16	7	6	17	KK				
2	3	1+	1	2-	1	1+	1+	4+	15+	10	0.5	3-	1+	1+	2+	1o	1o	1+	4o	17	19	10	13	16					
3	3+	2-	1+	2-	2-	1-	1+	2-	13+	7	0.3	3+	2-	2-	2o	1+	1o	1o	2-	14	18	10	17	11					
4	2-	2	2+	1+	2+	2+	2-	3-	16+	8	0.4	1+	2o	2+	1+	2+	2-	1+	3-	15	22	12	13	21	K				
5	Q9	2	0+	0+	1	1	1-	2-	8	4	0.1	2o	0+	0o	1o	1o	1-	1+	1-	6	9	5	7	7	CK				
6	Q6	0+	1-	1-	1	1	1+	1-	6-	3	0.1	0+	1o	1-	1+	1+	1+	0+	0o	5	7	5	6	7	CC				
7		0+	1	1-	1-	1	2-	2-	2+	10-	5	0.2	0+	1-	0+	0+	1o	2-	1+	2+	7	13	5	3	15	C			
8	D5*	2+	3	3+	3+	2+	4-	2+	2-	22	13	0.8	2+	3+	4-	3+	2o	3+	2-	2-	27	32	22	30	24				
9	D4*	3-	3	1+	1+	3-	4	4-	3+	21+	14	0.8	3o	3o	1+	1-	2o	3+	4-	3+	26	29	32	25	36				
10		2+	2-	1	1-	1-	1-	1-	8+	4	0.1	2o	2-	1o	1-	1-	1-	1-	0+	7	10	6	10	7	C				
11	Q10	0+	1-	1-	1	1	1	2-	2	8+	4	0.1	0o	0+	1o	1o	1o	1o	2o	2o	7	8	10	6	12	CC			
12		2+	2	0+	0+	1+	1+	1+	1+	10-	5	0.2	3-	2+	0+	0+	1o	2-	1o	1+	10	10	8	9	9	CC			
13		2	1	1-	1-	1	1-	1+	2-	9+	4	0.2	2+	2o	1o	0+	1o	0+	2-	2-	9	12	8	10	10	CC			
14	Q2	0+	1	1	0+	0+	0	0+	1-	4	2	0.0	0+	1o	2-	0+	0o	0o	0+	1-	4	4	3	4	3	CC			
15		0+	0	0+	1-	2+	3+	1+	1+	10-	6	0.2	0o	0o	0+	0+	2+	3-	1+	1+	9	15	7	2	20	KK			
16		1	1	2	3-	2	1+	3-	1+	14	7	0.4	0+	1o	2o	3-	2-	1+	2o	2-	12	18	7	12	13	C			
17		2	2	2+	1	1+	1+	1	1+	12+	6	0.3	2+	3-	3-	1+	1+	1o	1-	1+	12	16	8	14	10	CC			
18		1	2+	2-	1+	2-	2-	1	3-	13+	6	0.3	1o	2o	2-	2-	1+	1+	1-	3-	12	18	9	13	14	CC			
19	Q8	2-	2-	1	1-	1	1+	1-	0+	8+	4	0.1	2o	1+	1+	1-	0+	1+	0+	0o	7	9	5	8	6	CC			
20	Q4	0+	0+	0	1-	1+	1	1	0	5-	2	0.0	0+	0+	0o	1-	1o	1-	0+	0o	3	7	2	2	7	CC			
21	Q1	0	0+	0+	1-	1-	1-	0+	0+	3+	2	0.0	0o	0o	0o	1-	1-	0+	0o	0o	2	6	2	3	5	CC			
22	Q3	0	0	0+	0+	1-	1-	0+	1+	4-	2	0.0	0o	0o	0+	1-	0+	0+	0+	2-	4	5	3	2	6	CC			
23		1-	1	1+	1+	1-	1-	1	2	9	4	0.2	1o	1+	2-	1+	1o	1-	1-	2+	9	10	5	7	8	CC			
24		1+	1	1-	1	2-	1	2-	1	9+	4	0.2	1o	1o	1+	1+	1+	1-	1+	1-	7	10	5	6	9	CC			
25	Q7	2-	1	0+	1-	0+	1-	1-	1	6+	3	0.1	1+	1o	0+	0+	0+	1-	0+	1-	4	8	3	5	5	CK			
26	D3*	2	3+	4-	3-	3+	2+	5-	3	25	18	1.0	2-	3o	3+	3o	3o	2+	4-	3-	29	43	17	30	31				
27	D1	2	3-	2+	4-	5	4	5+	4-	29-	25	1.2	2-	3-	2o	3o	4o	3+	4o	4-	34	43	20	18	45				
28	D2	2	6	5+	3+	2+	2	2+	2+	26-	24	1.2	2o	6-	5o	3+	1+	2-	2-	2o	41	45	24	53	16				
29		1+	2-	2-	2+	2	2	2	1	14	6	0.3	1+	2o	2o	2+	2+	2o	2o	1o	14	20	10	13	17	K			
30	Q5	1	1-	1+	0+	0+	1-	1-	0+	5+	3	0.1	1-	1-	1+	0+	0+	0+	1-	0+	4	7	5	8	4	CC			
Mean											7	0.32											12.3	16.4	9.2	12.7			
Kp Three-Hourly Indices													Ks Three-Hourly Indices													Prov			
Day	1	2	3	4	5	6	7	8	An	1	2	3	4	5	6	7	8	As	Sa	Ri	Ra	Rs	IMF						
1	0+	2-	2-	1-	2o	3-	2o	3-	14	1-	1+	2-	0+	1o	1o	1o	1+	7	181.2	137	140	134							
2	3-	1+	2-	3-	2-	1+	2-	4+	21	3-	1o	1+	2-	0+	0+	1-	3+	13	178.1	135	141	130							
3	4-	2-	2+	2+	2-	2-	2-	2o	19	3o	2-	1+	1+	1o	0o	0+	1o	9	178.5	131	137	131							
4	2-	2o	2+	2-	2+	2+	2-	3o	17	1+	2o	2o	1o	2+	1+	1o	3-	13	175.9	140	150	128							
5	2+	0+	0o	1+	2-	1+	2-	1+	9	1+	0+	0o	1o	0+	0o	1+	0+	4	168.8	144	137	120							
6	1-	1o	1o	2-	1+	2-	0+	0o	7	0+	1-	0+	1o	1-	1o	0o	0o	3	172.9	146	146	125							
7	1-	1-	0+	1o	1+	2+	2-	2+	10	0+	0+	0o	0o	1-	1o	1o	3-	6	162.4	123	122	113							
8	2+	3+	3+	4-	3-	4-	2+	2+	30	2+	3+	4o	3o	1+	3-	1o	1o	23	161.3	131	140	112							
9	3-	3o	2-	1+	2+	4-	3+	3+	26	3o	3+	1+	0+	1+	3o	4-	3+	25	170.3	160	136	122							
10	2+	2o	1+	1-	1-	1o	1o	1-	9	2o	1+	1o	0+	0+	1-	0o	0o	5	166.0	146	148	117							
11	0o	0+	1o	1o	2-	1o	2-	2o	8	0o	0o	1o	1o	0+	1-	2+	2+	7	169.8	159	172	121							
12	2+	2+	0+	0+	1+	2-	1+	2-	11	3o	3-	0+	0o	1-	1+	1-	1o	10	173.2	153	176	125							
13	2o	2-	1o	1o	1+	1-	2-	2o	10	2+	2+	1-	0o	0+	0o	2-	2-	9	173.0	152	170	125							
14	0+	1o	1+	1-	0+	0o	0o	1o	4	0o	1-	2o	0+	0o	0o	0o	0+	3	173.5	147	154	125							
15	0+	0o	1-	1-	3o	3+	2-	2-	13	0o	0o	0+	0o	1+	1+	1o	1o	5	163.5	139	139	115							
16	1-	1+	2o	3-	2o	2o	3-	2-	15	0o	1-	2-	2+	1o	1-	1+	2-	9	157.6	120	116	108							
17	3-	3o	3-	2-	2-	2-	1+	2-	16	2-	2o	3-	1o	1o	0+	0o	1o	9	151.3	97	91	101							
18	1o	2+	2-	2-	2-	2o	1+	3o	14	1o	2-	2-	1+	1o	1-	0+	2+	9	151.2	80	91	101							
19	2o	2-	1+	1o	1o	2-	1-	0+	9	2o	1-	1+	0+	0+	1-	0o	0o	5	143.3	79	77	93							
20	0+	0+	0o	1o	2-	2-	1o	0o	5	0o	0o	0o	0+	0+	0o	0o	0o	1	156.5	62	71	107							
21	0+	0o	0o	1+	1+	0+	0+	0+	3	0o	0o	0+	0+	0o	0o	0o	0o	1	150.3	79	93	100							
22	0+	0+	1-	1o	1o	1o	0+	2-	6	0o	0o	0o	0+	0o	0o	0o	2-	2	166.9	106	118	118							
23	1o	2-	2-	1+	1+	1+	1o	2o	10	1o	1o	2o	1+	1-	0+	0+	2+	8	173.0	144	152	125							
24	1+	1+	2-	2-	2-	1+	2-	1+	10	1-	1-	1-	1-	1o	0o	1-	0o	4	191.1	195	184	144							
25	2-	1o	0+	1o	1-	1o	0+	1+	6	1+	1o	0o	0o	0o	0o	0o	0+	2	207.5	194	181	162							
26	2o	4-	4-	3+	4-	2+	4+	3+	37	1+	3-	3o	3-	2+	2o	3o	2o	21	206.1	182	201	161							
27	2o	3o	2+	3+	4o	4-	4+	4-	39	1+	2+	2-	2+	4-	3o	4-	4-	28	214.3	165	187	169							
28	3-	6+	5o	4-	2o	2o	2o	2+	51	2-	5o	5o	3-	1o	1+	1+	1+	31	203.2	169	181	157							
29	2-	2o	2o	3-	2+	2+	2+	1o	16	1+	2o	2+	2o	2o	1+	1+	1-	11	197.7	160	154	152							
30	1o	1-	2-	1-	1o	1-	1o	0+	6	0+	0+	1-	0+	0o	0o	0o	0o	2	216.5	148	159	172							
Mean											15.0											9.5	175.2	137.4	142.1	127.2			

Daily Average Indices Ap Jul 1998 - Jun 1999

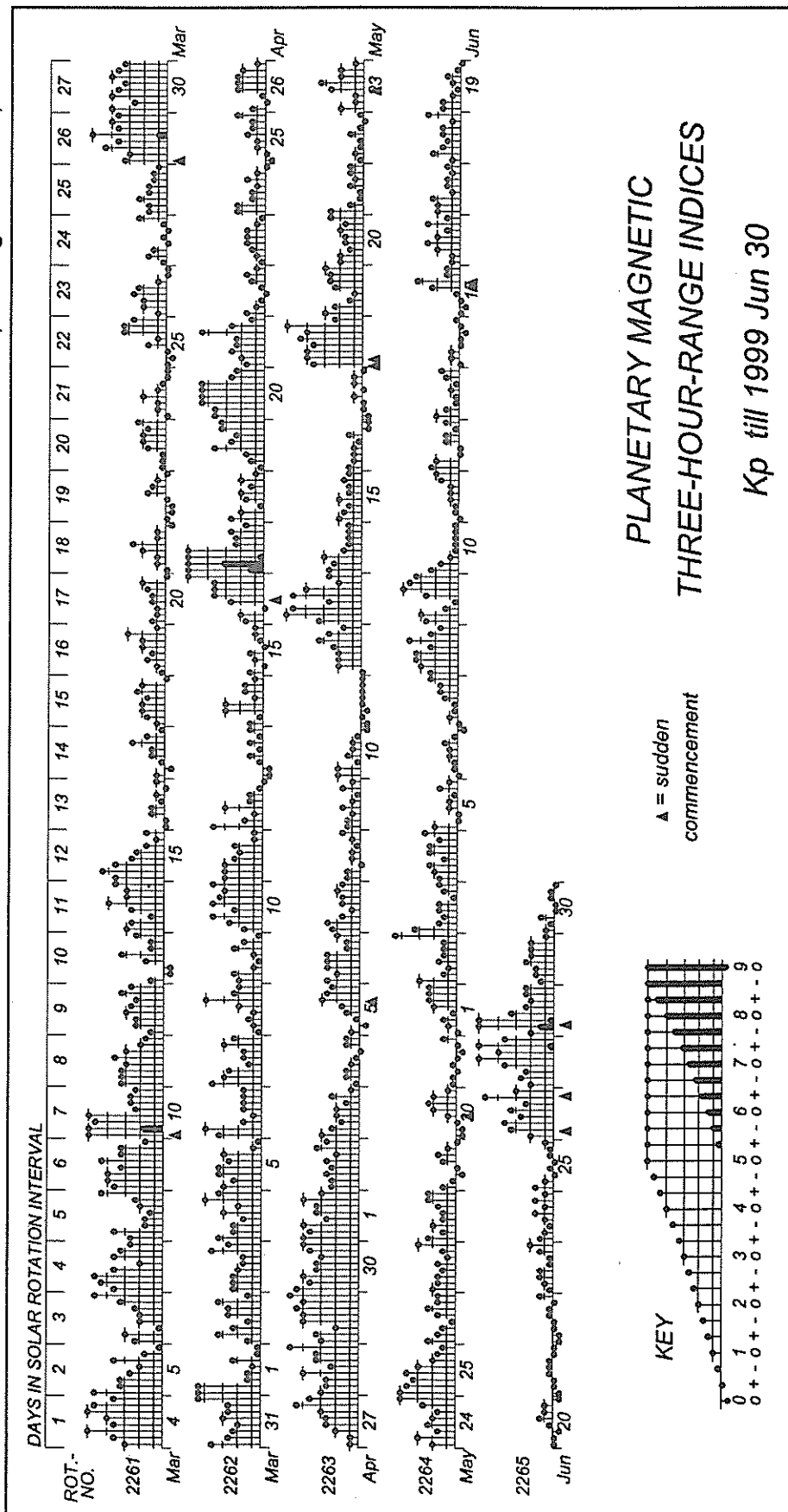


Day	Jul 98	Aug	Sep	Oct	Nov	Dec	Jan 99	Feb	Mar	Apr	May	Jun
1	5	21	18	24	4	11	6	0	41	12	21	6
2	8	6	9	32	4	4	7	1	22	10	11	10
3	8	5	8	14	6	7	4	5	16	10	8	7
4	10	7	5	3	6	10	7	9	30	14	4	8
5	16	6	5	3	8	14	8	10	16	12	7	4
6	19	64	5	3	20	7	10	12	13	10	9	3
7	4	24	6	28	26	8	9	13	22	11	7	5
8	3	7	9	15	66	4	17	6	12	8	4	13
9	15	2	8	16	75	6	11	3	21	6	5	14
10	5	15	6	7	6	6	6	6	34	16	4	4
11	11	6	6	6	3	33	6	20	15	10	2	4
12	6	7	12	5	4	7	5	24	11	8	8	5
13	4	5	6	5	64	3	40	8	6	3	25	4
14	2	6	4	2	41	5	29	8	15	7	8	2
15	3	4	5	4	10	6	20	15	14	4	6	6
16	37	3	4	3	7	12	8	4	3	18	3	7
17	7	3	6	8	6	0	6	17	5	47	2	6
18	6	4	25	9	7	3	5	80	6	6	27	6
19	4	9	8	62	7	9	4	40	6	12	10	4
20	3	17	5	22	10	12	8	3	5	24	7	2
21	10	4	12	23	6	4	6	4	5	12	5	2
22	10	17	7	20	6	4	14	6	3	4	3	2
23	40	18	11	15	11	6	21	9	6	5	8	4
24	28	8	28	11	16	4	17	9	4	6	11	4
25	11	10	117	12	13	12	9	6	8	4	15	3
26	4	49	17	4	10	15	5	1	6	6	6	18
27	4	144	10	10	9	2	9	4	4	14	7	25
28	5	30	4	8	6	7	7	17	6	19	7	24
29	6	20	7	11	8	22	7		28	24	3	6
30	11	15	9	5	19	6	4		22	23	4	3
31	29	17		5		4	3		15		2	
Mean	11	18	13	13	16	8	10	12	14	12	8	7

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

GeoForschungsZentrum Potsdam

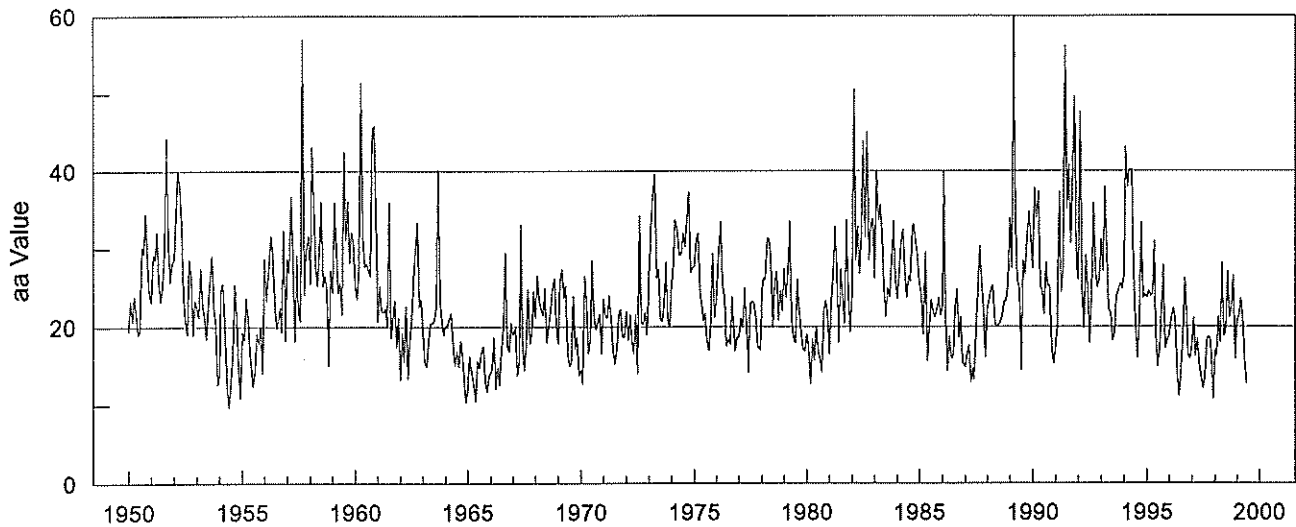
Kp through June 30, 1999



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 1999 Jun 30

Monthly Mean aa Index Jan 1950 - Jun 1999



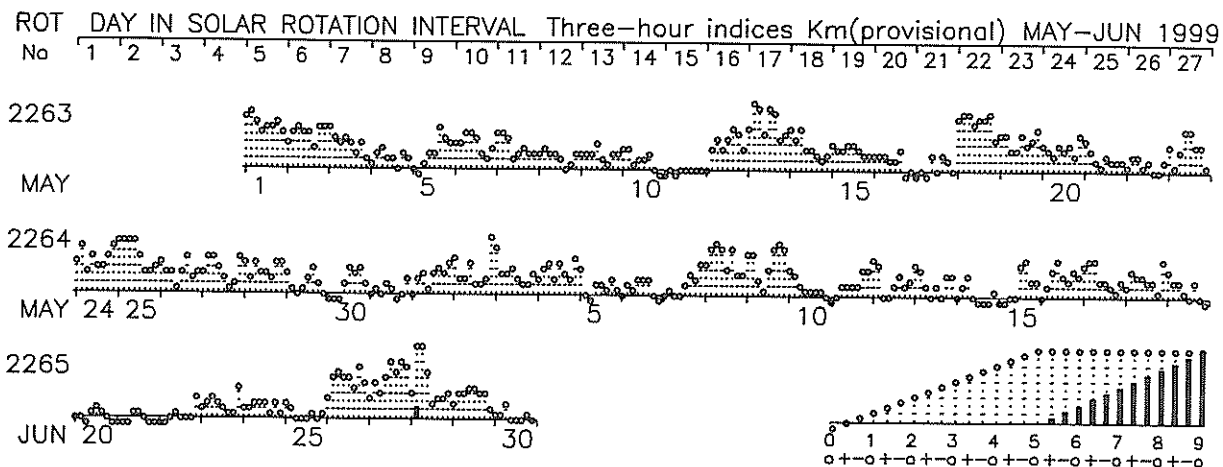
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	24.6	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.5	23.1	26.6	32.8	26.9	18.0	27.2	24.0	20.4	33.7	24.1	19.3	24.4
1982	24.2	50.6	28.5	32.9	26.7	32.1	43.9	31.4	45.1	28.5	33.0	33.8	34.2
1983	26.2	40.0	33.6	35.7	31.6	24.9	21.3	24.9	23.7	28.3	33.5	26.0	29.1
1984	23.5	26.7	30.7	32.5	27.2	23.7	26.4	25.8	32.6	33.1	31.0	29.0	28.5
1985	25.7	24.1	19.0	29.5	15.6	19.9	23.4	22.0	21.2	22.2	23.7	21.4	22.3
1986	22.4	40.0	21.1	14.3	18.8	15.9	16.3	22.3	24.7	18.6	21.2	15.3	20.9
1987	14.8	16.6	17.6	12.9	14.7	13.2	19.3	24.3	30.3	25.8	22.4	16.0	19.0
1988	22.4	23.4	24.8	25.2	20.5	20.0	20.2	20.6	21.4	23.2	23.3	25.5	22.5
1989	33.9	27.5	60.1	32.8	25.7	24.9	14.4	28.4	26.7	31.4	34.7	31.4	31.0
1990	27.4	37.8	33.9	37.4	25.1	24.6	21.6	28.2	25.1	25.1	17.4	15.2	26.6
1991	17.2	20.1	37.3	24.3	27.3	56.2	35.2	40.8	30.7	44.1	49.7	28.0	34.2
1992	25.9	47.7	24.5	19.8	29.1	24.8	17.9	24.1	35.8	27.0	25.0	26.1	27.3
1993	31.2	27.1	37.9	29.2	22.1	21.8	18.2	19.2	23.8	24.6	25.5	24.8	25.5
1994	26.5	43.2	37.9	40.2	40.2	27.2	20.6	16.0	20.2	33.3	23.6	24.1	29.4
1995	23.6	24.5	23.8	24.2	30.9	19.1	14.9	17.0	22.2	27.9	17.2	18.2	22.0
1996	18.8	20.8	22.3	20.5	14.0	11.1	14.7	18.8	26.2	23.5	16.3	15.9	18.6
1997	17.4	21.0	16.3	18.4	15.1	13.7	12.1	13.7	18.4	18.7	18.0	10.8	16.1
1998	16.8	16.4	21.2	18.0	28.1	18.8	19.3	27.0	21.1	22.4	26.5	15.9	21.0
1999	20.8	21.3	23.5	21.3	15.8	12.7							19.2

PLANETARY GEOMAGNETIC ACTIVITY

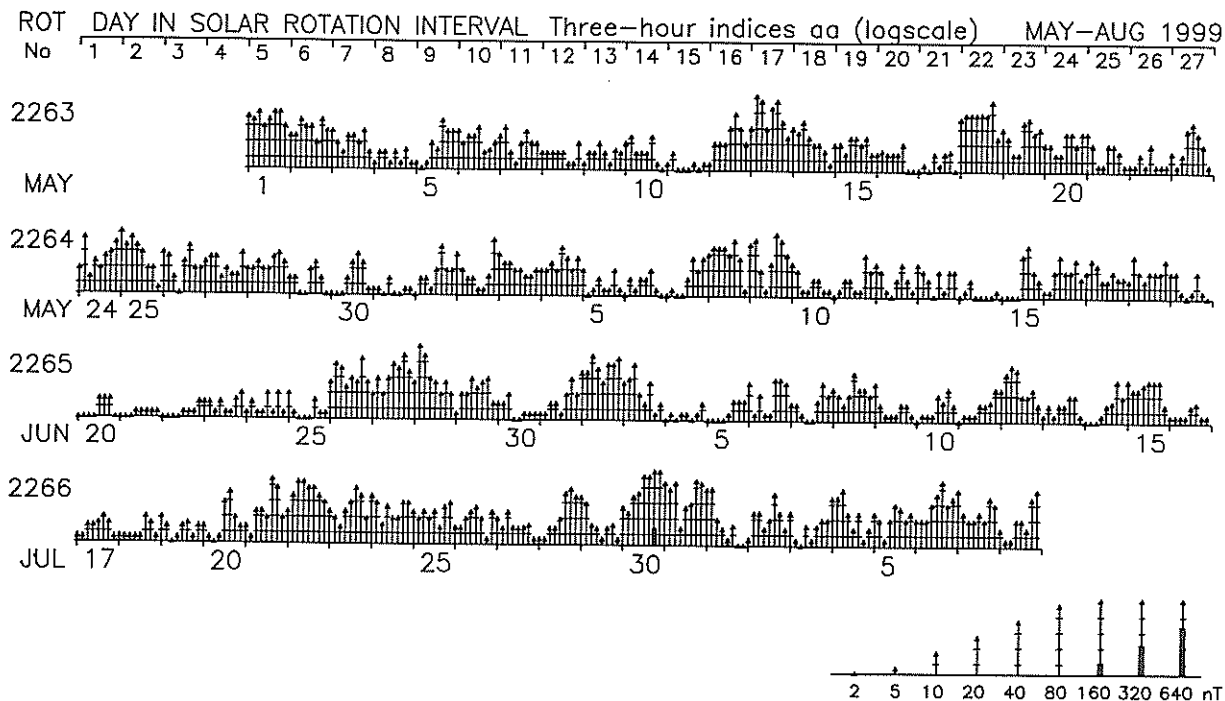
3-HOUR-RANGE INDICES Km AND aa BY 27-DAY SOLAR ROTATION INTERVAL

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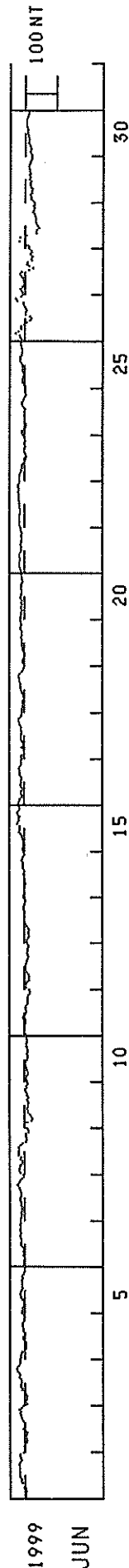
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WDC-C2 FOR GEOMAGNETISM, KYOTO UNIVERSITY

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

JUNE 1999

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	UNIT=NT																							
2	-2	-1	-2	-3	-1	3	2	10	11	-5	16	17	19	19	19	19	19	21	15	12	13	15	15	5
3	0	-2	-3	-6	-3	-6	-3	-1	-3	-5	-1	5	12	0	2	5	15	11	13	16	13	17	12	6
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5	14	13	11	9	1	-3	-2	-2	-4	-4	5	5	0	2	5	6	8	8	7	4	3	2	3	9
6	10	7	7	3	3	4	8	12	14	15	13	11	7	9	9	9	9	7	9	6	3	1	2	4
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10	1	-4	-6	-24	-10	-19	-15	-10	-9	-20	-9	-10	-11	-10	-8	-9	-7	-7	-3	-2	-5	-6	-10	-4
11	-5																							
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13	-6	-7	-1	-14	-12	-14	-13	-11	-7	-4	-4	-3	-3	-6	-7	-10	-12	-10	-8	-10	-10	-11	-11	-8
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26	11	15	19	30	22	12	14	14	4	-5	-15	-20	-15	-2	-2	-6	-2	2	5	6	27	30	14	8
27	10	11	15	10	5	3	6	6	9	13	17	12	-12	-24	-11	-5	-7	-21	-21	-22	-15	-21	-18	-12
28	-11	-7	1	20	2	17	-3	-34	-38	-38	-43	-39	-35	-33	-32	-32	-30	-28	-25	-27	-28	-27	-29	-28
29	-24	-18	-17	-16	-19	-21	-22	-18	-15	-15	-18	-13	-15	-14	-15	-14	-14	-11	-11	-13	-15	-18	-19	-19
30	-19	-16	-16	-17	-15	-14	-9	-11	-11	-10	-9	-8	-7	-8	-5	-4	-4	-4	-4	-6	-8	-9	-11	-11

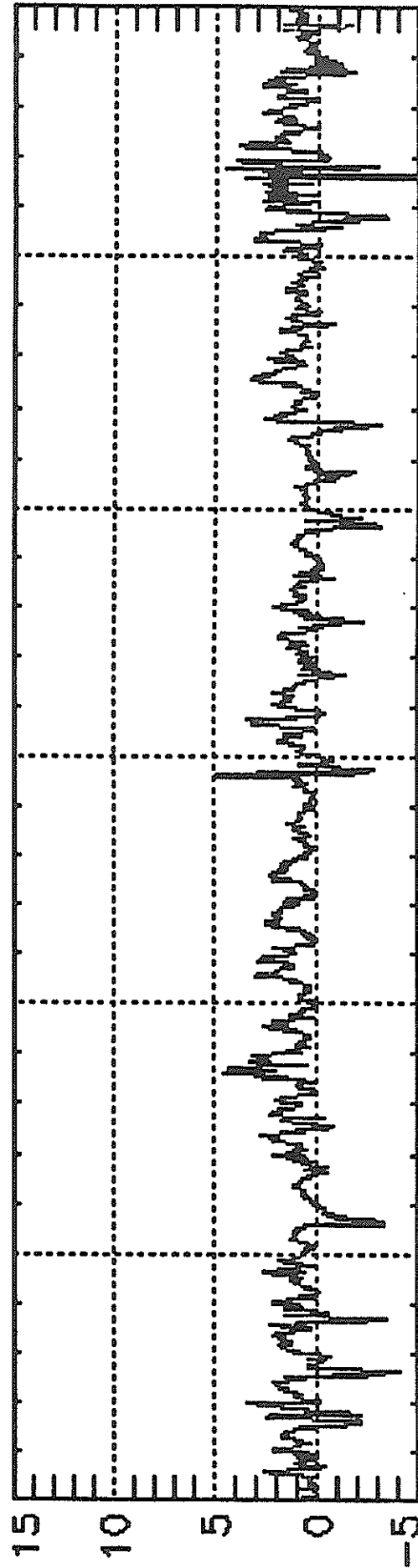


Note: The baselines for the observatories were adjusted for secular change for the Provisional Dst values for June 1999.

WDC C1 for Geomagnetism, Copenhagen

Polar Cap index
Thule(Qaanaaq), THL

1999-06-01



6-01 6-06 6-11 6-16 6-21 6-26

Date, mm-dd

Data source: Solar-Terrestrial Physics Division
Danish Meteorological Institute

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Jun 99

PRINCIPAL MAGNETIC STORMS

JUNE 1999

Sta	Geomag Lat	Commencement Time		Type	SC Amplitudes			Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges			End Hour	
		Day	(UT)		D (Min)	H (Gamma)	Z (Gamma)		D K (Min)	H (Gamma)	Z (Gamma)	Day	(UT)
UJJ	13.6N	02	2100	..	..	..	..		-	5	86	31	03 20
NGP	11.3N	02	2100	..	..	..	..		-	6	109	23	03 20
ABG	09.4N	02	2100	..	..	..	..	02(8)	4	7	87	35	03 20
PND	02.0N	02	2100	..	..	..	..		-	5	74	32	03 20
ETT	00.7S	02	2100	..	..	..	..		-	--	102	42	04 14
TRD	01.1S	02	2100	..	..	..	..		-	5	101	47	03 20
UJJ	13.6N	08	0000	..	..	..	..		-	6	90	25	08 21
NGP	11.3N	08	0000	..	..	..	..		-	4	124	19	08 21
ABG	09.4N	08	0000	..	..	..	..	08(3)	4	6	105	32	08 21
PND	02.0N	08	0000	..	..	..	..		-	3	111	32	08 21
TRD	01.1S	08	0000	..	..	..	..		-	3	170	57	08 21
HYB	07.6N	15	1308	SC	- 0.2	8	- 1		-	--	--	--	-- --
ETT	00.7S	15	1308	SC	- 0.3	12	9		-	--	142	40	16 14
KRC	16.4N	26	2013	SC	- 3	57	29	26(7)	5	9	98	34	27 23
UJJ	13.6N	26	0300	..	..	..	..		-	10	190	50	28 13
NGP	11.3N	26	0300	..	..	..	..		-	9	226	48	28 13
ABG	09.4N	26	0300	..	..	..	..	28(2)	7	7	205	55	28 13
HYB	07.6N	26	0327	SC	- 0.2	24	- 1	26(7) 28(3)	5	7	216	46	28 12
HYB	07.6N	26	2018	SC	- 0.3	37	- 3	26(7) 28(3)	5	7	216	46	28 12
PND	02.0N	26	0300	..	..	..	..		-	6	237	129	28 13
ETT	00.7S	26	0328	SC	- 0.1	35	20		-	--	--	--	-- --
ETT	00.7S	26	2016	SC	0.2	26	30		-	--	311	277	28 12
TRD	01.1S	26	0300	..	..	..	..		-	4	--	--	28 13
HER	33.6S	26	2016	SC	3	25	21	28(2)	6	24	129	117	28 11
KRC	16.4N	28	0222	..	..	..	..	28(2)	7	12	181	83	29 06

Stations:

ABG = ALIBAG	CZT = PORT ALFRED	HON = HONOLULU	PMG = PORT MORESBY
AMS = MARTIN DE VIVIES	DRV = DUMONT D'URVILLE	HYB = HYDERABAD	PND = PONDICHERRY
ANN = ANNAMALAINAGAR	ETT = ETAIYAPURAM	JAI = JAIPUR	SHL = SHILLONG
BJI = BEIJING	GNA = GNANGARA	KRC = KARACHI	SIT = SITKA
CAN = CANBERRA	GUA = GUAM	NGP = NAGPUR	TRD = TRIVANDRUM
CMO = COLLEGE	HER = HERMANUS	PAF = PORT AUX FRANCAIS	UJJ = UJJAIN

Stations reporting no storms observed: BJI

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

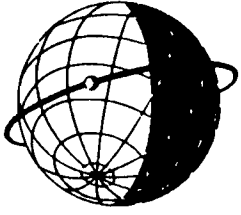
JUNE 1999

Storm Sudden Commencements (SSC)			Solar Flare Effects (sfe)		
Day	Time	Quality: Station Group*	Day	Begin-End	Station(s)
15	1308	A: WNG* GUI B: NUR* NGK* VAL HRB NAG COI C: SOD* BDV* GCK* EBR SPT QUE HYB ETT	01	0628-0640	MMB+ KAK+ KNY+ HYB ETT
26	0325	A: NAG* COI ETT B: WNG* VAL CLF* SPT* GUI HYB C: NGK* BDV* GCK EBR QUE	02	0510-0525	MMB+ KAK+ KNY+
26	2016	A: WNG* NGK* VAL* CLF* HRB* NAG GCK* EBR* COI SPT* GUI HYB ETT GNA* HER B: NUR* BDV* QUE	07	0455-0504	ETT
28	0511	A: NGK VAL COI* SPT* B: WNG C: NAG* si: HRB QUE GUI sfe: HYB	18	0711-0716	BDV+
			20	1529-1542	BDV+
			23	0331-0346	ETT
			26	0510-0525	MMB+ KAK+ KNY+
			28	0510-0530	HYB (see SSC)
			29	0504-0535	MMB+ KAK+ KNY+
			30	0600-0612	HYB ETT
			30	1125-1129	BDV+

REPORTING OBSERVATORIES (up to the 2nd of August 1999):

SOD NUR WNG NGK VAL BDV CLF HRB NAG GCK MMB EBR COI SPT KAK KNY QUE GUI HYB ETT GNA
HER CNB

Three-letter codes identify each observatory. Reporting stations have been grouped by the character of the observed event. The letter A means very remarkable; B means fair, but unmistakable; C means very poor, doubtful; and - means no quality figure given. The * means that the SSC, at least in one component, was preceded by a small reversed impulse. SSCs are given only when five or more stations report the event. SFEs include all reports. If an SFE is confirmed by solar or ionospheric events, the name of the station is identified with a plus sign (+).



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."